SOT Program

55th Annual Meeting and ToxExpo™

March 13–17, 2016

New Orleans, Louisiana

SOT | Society of Toxicology

Creating a Safer and Healthier World by Advancing the Science and Increasing the Impact of Toxicology

www.toxicology.org

Dear Colleagues:

The Society of Toxicology 55th Annual Meeting and ToxExpo, March 13–17, 2016, in New Orleans, Louisiana, promises stimulating lectures and presentations on scientific breakthroughs, important education and professional training opportunities, and time to connect with friends and create new collaborations.

I am pleased to announce that this year's meeting contains an exciting twist to our familiar program, as we will be featuring five talented and cutting-edge scientists through two plenary sessions, one each on Monday and Tuesday, and the Medical Research Council keynote on Wednesday. This new format allows you more access to emerging scientific knowledge. Our goal is to provide a forum for novel discoveries and approaches related to toxicology and to facilitate the advancement of toxicology by fostering the integration of toxicology with other biomedical disciplines. Through these endeavors we are working toward fulfilling our mission of creating a safer and healthier world by advancing the science and increasing the impact of toxicology.

Beyond this change, the program for our meeting at the Ernest N. Morial Convention Center in New Orleans contains all of the activities for which this premier event is known: more than 150 scientific sessions, thousands of abstract presentations, continuing education courses, approximately 350 ToxExpo exhibitors offering you the latest information on services and technology, awards presentations, receptions, career guidance and support, student activities, and more.

Please join me in New Orleans for our 55th Annual Meeting and ToxExpo, where collaborations begin and learning never ends.

Sincerely,

Peter L. Goering, PhD

2015–2016 SOT President

Awards Ceremony
(All Attendees Welcome)
Sunday, March 13
5:15 PM–6:30 PM
Great Hall B

Welcome Reception
(All Attendees Welcome)
Sunday, March 13
6:30 PM–7:30 PM
Great Hall A

25-Year (Or More) Member Reception
(By Invitation Only)
Sunday, March 13
7:00 PM–8:00 PM
Lobby A Lounge

SOT Annual Business Meeting
(All SOT Members Invited)
Tuesday, March 15
4:45 PM–6:15 PM
Room 207

These events take place in the New Orleans Ernest N. Morial Convention Center.

Society of Toxicology New Orleans Louisiana 2016

55th Annual Meeting and ToxExpo

Scientific Program Overview

Scientific Themes

- ♜ Advances in Neurotoxicology
- ♞ Developmental Toxicity: Mechanisms and Evaluation
- ♥ Health and Environmental Impacts of Man-Made and Naturally Released Toxicants
- ♦ Molecular Toxicology: Mechanistic Insights and Hazard Assessment
- ♠ Recent Advances in Safety Assessment
- ♣ Toxicity of Metals

Sunday, March 13

7:00 AM to 7:45 AM

CONTINUING EDUCATION SUNRISE MINI-COURSE

SR01 Basic Principles and Practices for Applying Epigenetics in Mechanistic Toxicology ♦ (p94)

8:15 AM to 12:00 Noon

CONTINUING EDUCATION MORNING COURSES

AM02 Advancing the Detection, Imaging, and Pitfalls in Monitoring Oxidative Stress in Health and Disease ♥ ♦ (p96)

AM03 Adverse Outcome Pathway (AOP) Development and Evaluation ♦ ♠ (p96)

AM04 Contribution of Mitochondria to Drug-Induced Organ Toxicities ♦ (p98)

AM05 Discovery and Validation of miRNA Biomarkers Bridging Preclinical and Clinical Toxicity: Lessons Learned from Hepatotoxicity ♦ ♠ (p98)

AM06 Embryology and Developmental Toxicity Testing ♞ (p99)

AM07 Next-Generation Sequencing in Toxicogenomics ♦ ♠ (p99)

1:15 PM to 5:00 PM

CONTINUING EDUCATION AFTERNOON COURSES

PM08 Approaches to Investigate and Assess Risks Associated with Drug-Induced Liver Injury (DILI) ♥ ♠ (p100)

PM09 Exploring Chemical Space in the New Toxicity Testing Paradigm: From Data Curation to Computational Simulations ♠ (p100)

PM10 Genetics and Population Variability in Chemical Toxicity: The What, the How, and So What? ♥ ♦ (p102)

PM11 Human Health Risk Assessment: A Case Study Application of Principles ♥ (p102)

PM12 Unique Approaches to Safety Assessment of Gene, Cell, and Nucleic Acid-Based Therapies ♠ (p104)

PM13 Zebrafish As a Tool in Toxicology and Drug Discovery Screening ♥ ♠ (p104)

If found, please return to:

Name:

Contact Telephone:

Monday, March 14

8:00 AM to 9:20 AM

DAILY PLENARY SESSION

- Regenerative Medicine and Tissue Engineering
  Lecturers: Doris Taylor, Texas Heart Institute; and Joan Nichols, University of Texas Medical Branch (p124)

9:30 AM to 12:15 PM

SYMPOSIUM SESSION

- Opening the Black Box: Understanding the Molecular Mechanisms of Developmental Toxicity ♞ ♦ (p125)

WORKSHOP SESSIONS

- Dietary Exposures to Heterocyclic Amines As a Potential Risk Factor for Neurological Disease ♜ (p126)
- Mitochondria As the Central Target of Environmental Contaminants, Pharmaceutical Agents, and Toxicants: Mechanisms of Toxicity and Disease (p126)
- Nanotoxicology and Ocular Drug Delivery: One Size Does Not Fit All (p127)
- Scientific Reproducibility: Does This Pose a Problem for 21st Century Toxicology? ♦ ♠ (p127)
- The Cancer Risk Assessment for Ingested Hexavalent Chromium: Challenges and Controversies ♣ (p128)
- Transient Receptor Potential A1 (TRPA1) Cation Channels: Fluttering Hearts, Headaches and Hot Flashes—Can One "Environmental Sensor" Be the Cause of All the Pain? ♜ (p128)

REGIONAL INTEREST SESSION

- The Toxicological Implications of the Gulf Oil Spill: Research Accomplishments and Research Needs ♥ (p129)

PLATFORM SESSIONS

- Investigating Mode of Action in Chemical Carcinogenesis (p130)
- Ozone Research ♥ (p130)

9:30 AM to 12:45 PM

POSTER SESSIONS

- Arsenic Toxicity ♣ (p142)
- Bioinformatics and Toxicology ♠ (p131)
- Biomonitoring (p135)
- Cell Death and Apoptosis (p147)
- Immunotoxicology (p148)
- Neurotoxicology of Therapeutic Agents and Abused Substances ♜ (p141)
- Neurotoxicology—Developmental Neurotoxicity ♜ (p137)
- Neurotoxicology—Emerging Technologies for Neurotoxicity Screening ♜ (p136)
- Neurotoxicology—General ♜ (p139)
- Neurotoxicology—Halogenated Hydrocarbons ♜ (p138)
- Respiratory Toxicology (p144)
- Systems Biology and Toxicology ♠ (p133)
- Toxicity of Metal Mixtures ♣ (p144)

9:30 AM to 4:30 PM

RESEARCH FUNDING INSIGHTS

- Network with Program Officers (p125)

12:00 Noon to 1:30 PM

RESEARCH FUNDING SESSION

- Research Funding Luncheon: Multiple Perspectives on the Grant Process (p151)

12:30 PM to 1:20 PM

MERIT AWARD LECTURE

- Forty-Five Years Modeling Dose-Response Relationships: An Unanticipated Career!

Lecturer: Melvin Andersen, ScitoVation LLC (p152)

12:30 PM to 1:50 PM

ROUNDTABLE SESSIONS

- Is a "Thresholdable" Carcinogen Still a Delaney Carcinogen? ♠ (p152)
- Trichloroethylene Exposure and Development of Fetal Cardiac Malformations: What Do the Data Tell Us About Inhalation Exposures Resulting from Vapor Intrusion and Potential Health Risks to Pregnant Women? ♞ (p152)

1:15 PM to 4:30 PM

POSTER SESSIONS

- Exposure Assessment (p171)
- Genetic Toxicology I (p154)
- Genetic Toxicology II (p155)
- Mercury Toxicity ♣ (p164)
- Metal Toxicity ♣ (p162)
- Mixtures ♥ (p156)
- Nanotoxicology: General (p160)
- Natural Products ♥ (p158)
- Neurotoxicology—Mercury Neurotoxicity ♜ ♣ (p165)
- Neurotoxicology—Metals: Lead, Cadmium, and Others ♜ ♣ (p165)
- Ocular Toxicology (p166)
- Safety Assessment: Drug Development ♠ (p168)
- Safety Assessment: Drug Discovery ♠ (p170)
- Toxicology Education (p153)

1:30 PM to 2:30 PM

MEET THE DIRECTORS

- A Conversation with Linda Birnbaum and Pamela McInnes
  Lecturers: Linda Birnbaum, NIEHS; and Pamela McInnes, NCATS (p173)

2:00 PM to 4:45 PM

SYMPOSIUM SESSIONS

- Health and Environmental Hazard Assessments of Nanomaterials Along Their Lifecycle ♥ (p173)
- The Promise and Reality of Alternative Methods in Inhalation Toxicology and the Development of Inhaled Therapeutics (p174)

WORKSHOP SESSIONS

- Moving Beyond Prioritization towards True *In Vitro*-Based Safety Assessment ♠ (p174)
- Quantitative Cumulative Risk Assessment: Is It Feasible Today? ♠ (p175)
- The Role of the Epigenome in Exposure Effects, Susceptibility, and Public Health ♦ (p175)
- Using 21st Century Approaches to Evaluate Endocrine-Active Compounds ♠ (p176)

HISTORICAL HIGHLIGHTS

- Toxicologic Legacies of Major 21st Century Man-Made/Natural Disasters ♥ (p176)

PLATFORM SESSIONS

- AhR and Disease Processes ♥ (p177)
- Pluripotent Stem Cells in Cardiovascular Research (p177)

4:45 PM to 6:00 PM

SOT/EUROTOX DEBATE

- Preclinical (Safety) Toxicology Testing Predicts the Clinical Outcome
  Lecturers: Thomas M. Monticello, Amgen; and Ruth Roberts, ApconiX Ltd (p179)

Tuesday, March 15

8:00 AM to 9:20 AM

DAILY PLENARY SESSION

- Inflammation and Neurodegenerative Disease
  Lecturers: Stephen Skaper, University of Padua; and Alan I. Faden, University of Maryland School of Medicine (p181)

9:30 AM to 12:15 PM

SYMPOSIUM SESSIONS

- Drug-Induced Taste Change in Clinical Practice and Preclinical Safety Evaluation (p182)
- Genotypic and Intrinsic Risk Factors That Increase Susceptibility to Inhaled Pollutants (p183)
- Systems Understanding of the Impact of the Nrf2 Pathway on Chemical Toxicity and Cell Fate ♦ (p183)
- Unknown, Unknowns: Exploring the Unidentified Fraction of Complex Mixtures (p184)

WORKSHOP SESSIONS

- Bioactivity-Based Margin of Exposure Safety Assessment: The Next Stop along the Road to 21st Century Safety Assessments ♠ (p184)
- Maternal Exposure to Nanoparticles—How Does It Affect the Fetus? Status, Mechanisms, and Future Directions ♞ (p185)
- Multi-Omics in Predictive Toxicology: Development and Application in Environmental Monitoring Programs ♦ (p185)
- Scientific and Regulatory Advances in Safety Evaluation of Heavy Metals in Food ♠ ♣ (p186)

PLATFORM SESSION

- Zebrafish Models: Advances and Applications in DART (p186)

9:30 AM to 12:45 PM

POSTER SESSIONS

- Alternative Models: Fish, Worms, and More ♦ ♠ (p186)
- Carcinogenesis I (p200)
- Carcinogenesis II (p202)
- Chemical and Biological Weapons ♥ (p204)
- Developmental Basis of Adult Disease ♞ (p189)
- Endocrine Toxicology (p191)
- Inflammation in Disease (p193)
- Inflammation: Methods and Mechanisms (p194)
- Liver—Mechanisms ♦ (p196)
- Liver—Models (p198)
- Risk Assessment 1 (p207)
- Stem Cell Biology and Toxicology (p188)
- Toxic Inhalants Research (p206)

9:30 AM to 4:30 PM

RESEARCH FUNDING INSIGHTS

- Network with Program Officers (p182)

12:30 PM to 1:20 PM

LEADING EDGE IN BASIC SCIENCE AWARD LECTURE

- New Frontiers at the Nexus of Epigenomics and Toxicology

Lecturer: Cheryl Lyn Walker, Texas A&M Institute of Biosciences and Technology (p211)

1:15 PM to 4:30 PM

POSTER SESSIONS

- 3D Cell and Organ-on-a-Chip Models ♦ ♠ (p211)
- Alternative Models for Ocular and Skin Toxicity (p212)
- Biological Modeling (p213)
- Clinical and Translational Toxicology (p230)
- Food Safety/Nutrition 1 ♥ (p217)
- Gene Regulation and Signal Transduction ♦ (p218)
- Medical Devices (p227)
- Neurotoxicology—Dopaminergic Systems and Toxicants ♜ (p221)
- Neurotoxicology—Manganese Neurotoxicity ♜ ♣ (p222)
- Neurotoxicology—Neurodegenerative Diseases ♜ (p223)
- Neurotoxicology—Pesticide Neurotoxicity ♜ (p224)
- Non-Pharmaceutical Safety Assessment ♠ (p228)
- Oxidative Injury and Redox Biology ♦ (p219)
- Particulate Matter Toxicology (p215)
- Receptors (p226)

2:00 PM to 4:45 PM

SYMPOSIUM SESSIONS

- New Mechanistic Insights into How the Immune System Drives Hepatic Adverse Drug Reactions (p232)
- Reciprocal Synergism: New Insights into Thyroid Hormone Action in Brain Development and Neurodevelopmental Toxicity ♜ ♞ (p232)
- The Role of Gene SLC30A10 on Manganese Homeostasis and Functional Outcomes: Implications for Homeostasis and Neurotoxicity ♜ ♣ (p233)
- Using Multi- and Transgenerational Effects of Environmental Exposures in Diverse Animal Models for Assessment of Human Health Risks ♞ (p233)

WORKSHOP SESSIONS

- Cannabis in the Courtroom ♜ (p234)
- Read-Across: Building Scientific Confidence in the Development and Evaluation of Read-Across for Regulatory Purposes Using Tox21 Approaches ♦ ♠ (p234)
- Safety Assessment of Topically Exposed Cosmetic Ingredients: Lessons Learned ♠ (p235)

PLATFORM SESSIONS

- Nanotoxicology: *In Vivo* (p235)
- Qualification of "New" DART Tools for Hazard Identification ♞ (p236)

4:45 PM to 6:15 PM

SOT ANNUAL BUSINESS MEETING

SOT Members are encouraged to attend (p237)

Wednesday, March 16

8:00 AM to 9:20 AM

DAILY PLENARY SESSION—KEYNOTE MEDICAL RESEARCH COUNCIL (MRC) LECTURE

- Regenerating CNS Myelin—From Mechanisms to Medicines

Lecturer: Robin J.M. Franklin, Wellcome Trust-MRC Cambridge Stem Cell Institute, University of Cambridge (p239)

9:30 AM to 12:15 PM

SYMPOSIUM SESSIONS

- Patient-Specific Stem Cells As Models for Gene, Drug, and Environment Interactions in Disease (p239)
- Sulfur Mustard Poisoning: Mechanisms of Dermal and Pulmonary Toxicity and New Treatment Approaches ♥ (p240)

WORKSHOP SESSIONS

- An Update on Juvenile Animal Testing ♞ (p241)
- Moving Beyond Cancer: Current State of the Science of Noncancer Health Effects of Arsenic ♣ (p241)
- Paradigm Change in Toxicology: What Will It Take to Bring Advances in the Science of Toxicology into Regulatory Use? ♦ ♠ (p242)
- Screening Chemicals for Neurotoxicity Outcomes—Using Large Datasets and Multiple Endpoints to Develop "Toxicity Profiles" ♜ ♦ (p242)

INFORMATIONAL SESSION

- Tox21 Challenge To Build Predictive Models of Nuclear Receptor and Stress Response Pathways As Mediated by Exposure to Environmental Toxicants and Drugs ♦ (p243)

PLATFORM SESSIONS

- Effects of Food-Associated Agents on Inflammation, Metabolic Disease, and Cancer ♥ (p243)
- Nrf2 in Redox Biology (p244)

9:30 AM to 4:30 PM

RESEARCH FUNDING INSIGHTS

- Network with Program Officers (p239)

9:30 AM to 12:45 PM

POSTER SESSIONS

- Autoimmunity/Hypersensitivity (p260)
- Biomarkers (p251)
- Cardiovascular Toxicology (p257)
- Computational and Systems Toxicology I ♠ (p244)
- Computational and Systems Toxicology II ♠ (p246)
- Ecotoxicology (p263)
- Nanotoxicology: *In Vitro* (p253)
- Nanotoxicology: *In Vivo* (p255)
- Pesticides (p261)
- Pharmacogenetics/Genetic Polymorphisms ♦ (p253)
- Risk Assessment 2 (p248)
- Risk Assessment 3 (p250)

12:30 PM to 1:20 PM

DISTINGUISHED TOXICOLOGY SCHOLAR AWARD LECTURE

- Bioactivation: An Initiating Event in Chemical-Induced Tissue Injury

Lecturer: I. Glenn Sipes, University of Arizona (p266)

12:30 PM to 1:50 PM

ROUNDTABLE SESSION

- Combination Toxicology: Are We Testing the Right Things? (p267)

INFORMATIONAL SESSIONS

- Updating FDA's Redbook: The Importance of Stakeholder Involvement ♠ (p267)
- Why Did the Scientific Program Committee Reject My Proposal? Developing a Good Idea Into an Accepted SOT Session (p268)

EDUCATION-CAREER DEVELOPMENT SESSION

- The Evolution of the Postdoc: Transitioning from Trainee to Professional in the Modern Era (p268)

1:15 PM to 4:30 PM

POSTER SESSIONS

- Alternative *In Vitro* Toxicity Models ♠ (p274)
- Animal Models of Disease (p275)
- Animal Models: Methods and Measurements (p276)
- Cytochrome P450 (p279)
- Developmental and Juvenile Toxicology ♞ (p286)
- Developmental Toxicology (Non-Rodent) ♞ (p288)
- Epidemiology and Public Health (p268)
- Epigenetics ♦ (p282)
- Food Safety/Nutrition 2 (p271)
- Kidney—Models to Mechanisms and Molecular Biomarkers (p277)
- Liver—Translational (p281)
- Regulation and Policy (p270)
- Reproductive Toxicology ♞ (p284)
- Tobacco Products (p272)

2:00 PM to 4:45 PM

SYMPOSIUM SESSIONS

- High-Content Imaging for Predictive Toxicology: Discriminating between Adverse and Adaptive Outcomes ♦ (p289)
- Novel Roles of Reactive Oxygen Species (ROS) in Human Diseases: Why ROS Never Gets Stale (p289)
- Use of the Adverse Outcome Pathway (AOP) Concept to Link Epidemiological to Mechanistic Data on the Correlation of Pesticide Exposures and Parkinson's Disease ♜ ♦ (p290)

WORKSHOP SESSIONS

- Advanced Techniques in PBPK Modeling to Improve Quantitative Risk Assessment for Infants and Children ♞ ♠ (p291)
- "Breaking Bad": Cardiovascular Autophagy Gone Rogue: A Putative Mechanism of Toxicity and a Drug Target in Disease (p291)
- *In Vitro* Dosimetry of Engineered Nanomaterials: Too Complicated to Consider, Too Important to Ignore (p292)
- Medical Device Biomaterials: Challenges in Assessing the Toxicity and Biocompatibility of Nanomaterials, Bioabsorbables, and Tissue Scaffolds (p292)

PLATFORM SESSIONS

- Heavy Metals: Mechanisms and Disease Pathogenesis ♣ (p293)
- Innovations in Toxicology Education (p293)

5:00 PM to 5:50 PM

TRANSLATIONAL IMPACT AWARD LECTURE

- Translational Non-Invasive Biomarkers of Acetaminophen-Induced Liver Injury

Lecturer: Richard Beger, NCTR, US Food and Drug Administration (p294)

5:00 PM to 6:20 PM

SOCIETY OF TOXICOLOGY AND JAPANESE SOCIETY OF TOXICOLOGY MINI-SYMPOSIUM

- Advances in Metal Toxicity
  Lecturers: Michael Aschner, Albert Einstein College of Medicine; and Yoshito Kumagai, University of Tsukuba (p295)

5:00 PM to 6:20 PM

EDUCATION-CAREER DEVELOPMENT SESSION

- "Talksicology": Effective Oral Presentation Techniques (p295)

Thursday, March 17

9:30 AM to 12:15 PM

SYMPOSIUM SESSION

- Mitochondrial Dysfunction as a Pathogenic Mechanism and Therapeutic Target for Neurodegenerative Diseases ♜ ♣ (p296)

WORKSHOP SESSIONS

- Beyond Benchmark Dose: Advancing Probabilistic and Bayesian Approaches in Hazard Characterization ♠ (p297)
- Bringing More Science into the Process of Risk Assessment for Endogenous Chemicals with Exogenous Exposures ♠ (p297)
- Developmental Immunotoxicology—Are We Adequately Evaluating Safety? ♞ (p298)
- Potential Health and Environmental Effects of Unconventional Hydraulic Fracturing ♥ (p298)
- Which Human Cell Lines Should I Use? Choosing the Appropriate Biological Systems for High-Throughput Toxicity Testing ♠ (p299)

PLATFORM SESSIONS

- Advances in Mammary Gland Biology and Toxicology (p299)
- Electronic Cigarette Research (p300)
- Flame Retardants (p300)

9:30 AM to 12:45 PM

POSTER SESSIONS

- Biotransformation (p303)
- Disposition and Pharmacokinetics (p302)
- Emerging Technologies (p308)
- MicroRNA Biomarkers ♦ (p305)
- Nanotoxicology: Carbon Based (p306)
- Persistent Organic Pollutants ♥ (p301)
- Skin Responses and Toxicology (p307)
- *Late-Breaking Poster Session List—Access via Mobile Event App or Online Planner.*

SOT | Society of Toxicology

Creating a Safer and Healthier World by Advancing the Science and Increasing the Impact of Toxicology

55th Annual Meeting and ToxExpo
March 13–17, 2016

Program Contents

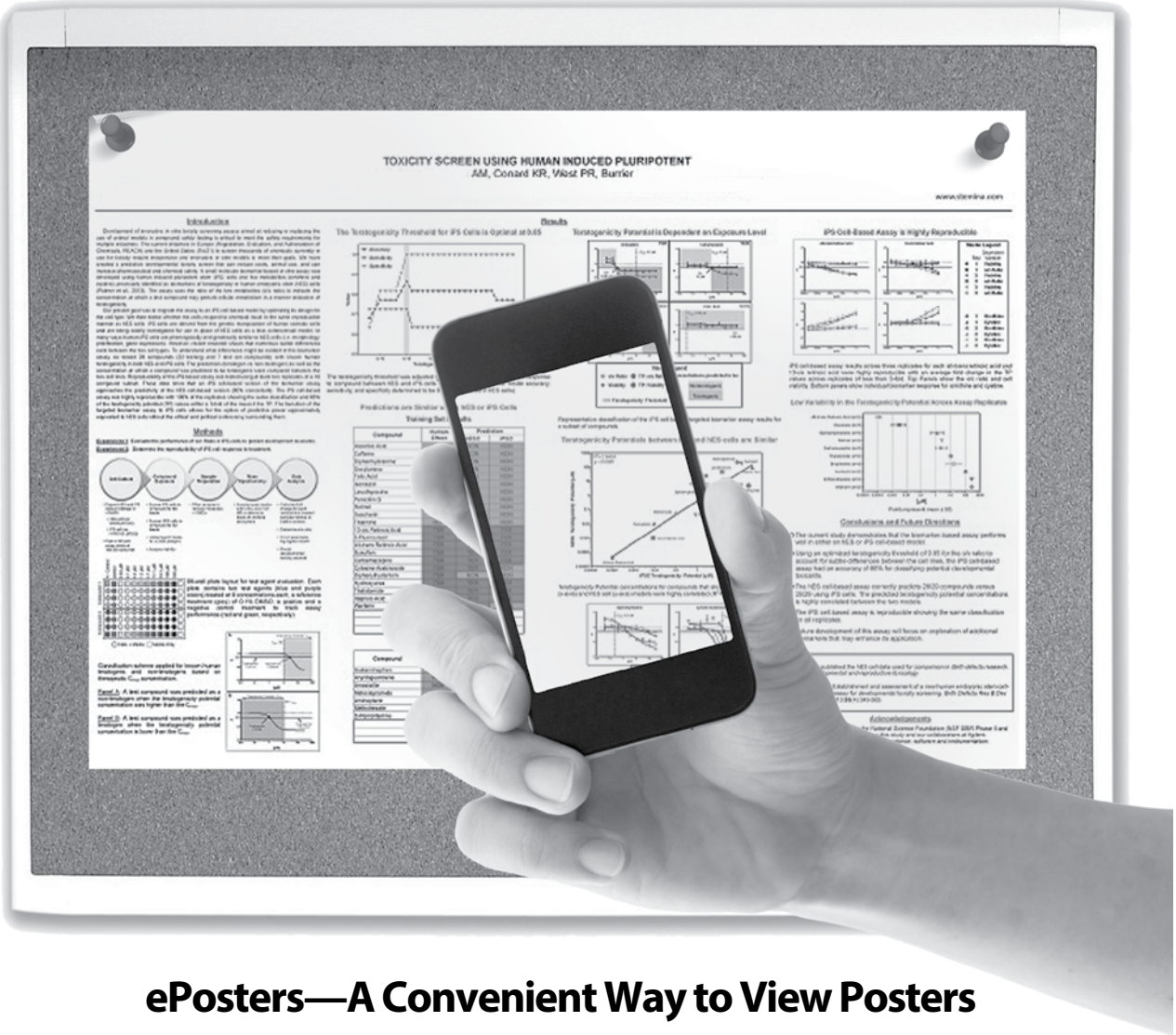
i	Scientific Program Overview
2	ePosters—A Convenient Way to View Posters
3	SOT 2016 Annual Meeting Mobile Event App
4	How to Use This *Program*
5	Events and Maps
33	ToxExpo Exhibits
43	Registration
46	General Information
55	Career Advancement and Development Resources
58	Awards and Fellowships
79	Special Events
94	Continuing Education
106	Sessions Index
113	Posters
121	Program
346	SOT Leadership
361	SOT History—Awards and Honors
368	SOT References
383	Support SOT

#2016SOT #toxexpo

All text and graphics are © 2016 by the Society of Toxicology. All rights reserved. No text or graphics may be copied or used without written permission from the Society of Toxicology. For further information, please contact SOT Headquarters. Some New Orleans photos are courtesy of New Orleans Convention and Visitors Bureau and New Orleans Ernest N. Morial Convention Center unless otherwise noted. For promotional use only. No advertising use is permitted. Some photos by Jeff Anding, Cheryl Gerber, and Chris Granger.

Did You Miss a Poster?

SOT provides you an alternative.



ePosters—A Convenient Way to View Posters

Now, in addition to attending the poster sessions, you can view some of the posters through the SOT Mobile Event App.

Search and view the ePosters on your mobile device using the ePoster feature in the SOT Mobile Event App—before, during, and after the meeting (until May 11, 2016).

If you are a poster presenter, please take a few minutes to upload your PowerPoint or PDF poster through the user-friendly presentation system at: **https://cms.psav.com/sot2016p**.

IMPORTANT:
ePosters are only available until May 11, 2016

Access the SOT 2016 App at:

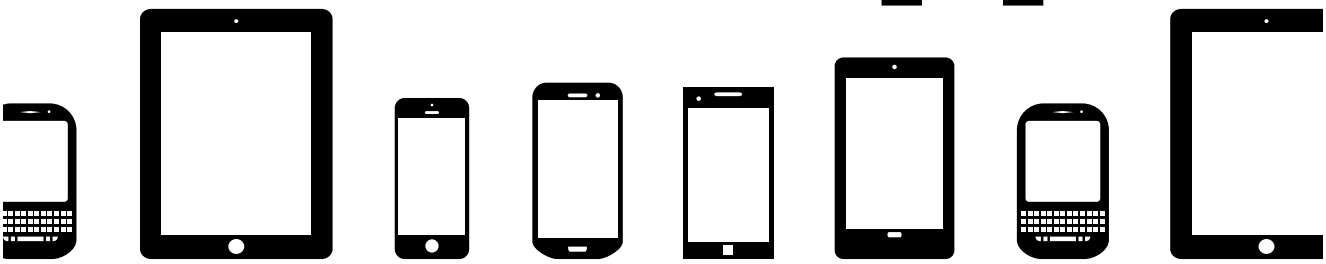
GET IT ON Google Play | Download on the App Store | Access via Mobile Web **www.toxicology.org/mobileapp**

Use the Mobile Event App to manage your time and maximize your experience at the meeting!

Access event information from any **mobile** device, manage your schedule, and so much **more!**

Enhance Your SOT Annual Meeting Experience with the

Mobile Event App!



Access the SOT 2016 Annual Meeting Mobile Event App

You can download the SOT 2016 Mobile Event App from Google Play™ and the Apple Store™. Access to the app also is available from the SOT website at **www.toxicology.org/mobileapp**.

You can better manage your time and maximize your overall experience during the Annual Meeting. Download the app today!

The SOT Mobile Event App will allow you to:

- Connect with fellow attendees
- Build your schedule with individual presentations, sessions, abstracts, and other commitments
- View presentation details, abstracts, and ePosters
- Boolean search via session or abstract title, keywords, thematic track, author name or affiliation
- Works on both tablets and phones

Access the SOT 2016 App at:

GET IT ON Google Play | Download on the App Store | Access via Mobile Web **www.toxicology.org/mobileapp**

To connect to the free wireless Internet, browse the available wireless networks and select the **SOT2016** wireless network. Once connected, launch your web browser and click the "proceed" button on the start page.

How to Use This *Program*

The Society of Toxicology's Annual Meeting is always an exciting opportunity to highlight advancements in the science of toxicology. In order to maximize the value of your Annual Meeting attendance, we offer this *Program* Publication Layout Overview, Program Schedule Scientific Session Reference, and Scientific Session Type Legend to assist you. We hope that you find this information useful and welcome your comments.

Program Publication Layout Overview

Section	*Description*
Front Fold-Out Cover—Scientific Program Overview	This quick reference guide lists the Annual Meeting scientific sessions with corresponding page numbers in the *Program* Schedule section. Color-coded icons identify sessions within each scientific theme.
Daily Calendar (pages 5–13)	This at-a-glance calendar is your guide to the daily activities of the Annual Meeting, including special sessions; Regional Chapter, Special Interest Group, Specialty Section, and ancillary functions; and SOT committee meetings. We encourage you to tear out the daily guide for easy reference. Please note that the scientific session details are included at the end of each day's guide.
Schedule by Event Name (pages 15–24)	This is an alphabetical listing of all the functions held during the Annual Meeting. You may use this easy-to-read schedule to quickly locate an event. Please note that the scientific sessions are located in the Scientific Program Overview on the front fold-out cover or Daily Calendar on pages 5–13.
Scientific Session Index (pages 106–112)	This index lists the scientific sessions by type, date, and time. In addition, this information includes the session titles with abstract numbers, poster boards, session locations, and corresponding page numbers in the Program Schedule section.
Poster Session Schedules and Poster Board Numbering Map (pages 113–118)	The Poster Session Schedule and Poster Board Numbering Map are displayed with a mock layout of the ToxExpo Exhibit Hall to assist you in finding poster sessions. Each poster schedule identifies the session titles, abstract numbers, and poster board number locations for each morning and afternoon. Posters are displayed in the Exhibit Hall Monday–Wednesday and Great Hall A on Thursday.
Author Index (pages 312–336)	The numerals following the author names refer to the abstract numbers referenced in this *Program*, *The Toxicologist,* the Mobile Event App, and Online Planner. The asterisk after the abstract number indicates the author is the first presenter.
Abstract Keyword Index (pages 337–345)	This index provides a listing of keywords by subject or chemical and the relevant abstract(s) referenced in this *Program*, *The Toxicologist*, the Mobile Event App, and Online Planner.

Program Schedule Scientific Session Reference (pages 121–310)

The Program Schedule layout is ordered by date and start time. Please refer to the description below. Each scientific session listing includes a session abstract and list of speakers or the featured presenters.

Listing	*Description*
Session Type and Title	Session type and title display in bold type. A brief description for each scientific session type is listed below.
Endorser(s):	Identifies endorsement from SOT Special Interest Groups, Specialty Sections, Regional Chapters, or SOT Committees. Endorsers are listed alphabetically.
Abstract Number or Presentation Time	The first number listed is the abstract number, or the SOT final identifying number. For scientific sessions (but not Continuing Education Courses or Poster Presentations), the second number is the presentation time. Individual abstracts can be found using the Mobile Event App or Online Planner, in the PDF of *The Toxicologist* via the SOT website (free to all attendees), and in *The Toxicologist* publication (available for purchase on-site for $40).
Poster Sessions	The poster board number is listed above the title of each individual poster presentation for easy reference.

Session Type Legend

EC Education-Career Development Sessions (80 minutes)—Sessions that provide the tools and resources to toxicologists that will enhance their professional and scientific development

E Exhibitor-Hosted Sessions (60 minutes)—Informative sessions developed by an exhibiting company or SOT Supporter

FS Featured Sessions (50–165 minutes)—Plenary, Keynote, and other special lectures

HH Historical Highlights (165 minutes)—Sessions that provide a review of a historical body of science that has impacted toxicology

IS Informational Sessions (80 or 165 minutes)—These present the latest science in toxicology or other learning opportunities that address the professional interests and needs of toxicologists in the areas of career development, general information, and planned scientific activities and are not based on the outcome of scientific research

PL Platform Sessions (165 minutes)—Oral presentations that cover new areas, concepts, or data

PS Poster Sessions (195 minutes)—Topic-specific presentations that cover new areas, concepts, or data

RI Regional Interest Session (165 minutes)—Central topics of relevance that describe public health and/or ecological problems of a particular region

R Roundtable Sessions (80 minutes)—These provide an overview of controversial subjects, followed by questions and discussion

S Symposium Sessions (165 minutes)—Cutting-edge science: new areas, concepts, or data

W Workshop Sessions (165 minutes)—Generally accepted, state-of-the-art knowledge in toxicology in informal interactive presentations with ample time for discussion

Daily Calendar

Events are listed alphabetically by the event start time.
Most events are held in the New Orleans Ernest N. Morial Convention Center (CC) unless otherwise noted.

Saturday — March 12

8:00 AM to 5:00 PM
ToxExpo Set Up
CC Exhibit Hall

9:00 AM to 9:30 AM
Council Orientation Breakfast
Hilton Riverside Elmwood

9:00 AM to 5:30 PM
SOT CCT/MiRNA Biomarkers for Toxicology
CC Room 207

9:30 AM to 11:30 AM
Council Orientation Meeting
Hilton Riverside Oak Alley

12:00 Noon to 6:00 PM
American Board of Toxicology
Board of Directors Meeting
Marriott at the Convention Center Fleur de Lis

12:00 Noon to 1:00 PM
Council Luncheon
Hilton Riverside Elmwood

1:00 PM to 2:30 PM
SOT CCT/MiRNA Biomarkers for Toxicology
Poster Session and Luncheon
CC Room 217

1:00 PM to 5:00 PM
Council Meeting
Hilton Riverside Oak Alley

4:00 PM to 7:00 PM
@SOT Center—Internet Access
CC Lobby A

4:00 PM to 7:00 PM
Housing Desk
CC Lobby A

4:00 PM to 7:00 PM
Registration
CC Lobby A

4:00 PM to 7:00 PM
SOT Office
CC Room 226

4:00 PM to 7:00 PM
Speaker Ready Room
(Scientific Session and ePoster Upload)
CC Room 214

4:30 PM to 5:15 PM
Continuing Education Committee
Walk-Through
CC Room 210

5:00 PM to 5:15 PM
Undergraduate Diversity Program:
Registration for CDI Travel Awardees
CC Room 275 Foyer

5:15 PM to 7:30 PM
Undergraduate Diversity Program:
Opening Event *(CDI Travel Awardees)*
CC Room 275

7:30 PM to 8:30 PM
Committee on Diversity Initiatives
Reunion *(Open to All, especially Current and Past Participants and Volunteers in the Undergraduate Education Program)*
CC Room 275 *(Use Hall H Entrance)*

Sunday — March 13

7:00 AM to 6:00 PM
@SOT Center—Internet Access
CC Lobby A

7:00 AM to 8:00 PM
Coat/Luggage Check
CC Great Hall Foyer

7:00 AM to 4:00 PM
Concession Stands
CC Lobby A

7:00 AM to 7:45 AM
Continuing Education Sunrise Mini-Course
(Ticket Required)
CC *(See Signage or Mobile Event App for Room Location)*

7:00 AM to 5:30 PM
SOT Office
CC Room 226

7:00 AM to 5:30 PM
Speaker Ready Room
(Scientific Session and ePoster Upload)
CC Room 214

7:00 AM to 8:00 PM
Registration
CC Lobby A

7:30 AM to 9:30 AM
Career Resource and Development
Committee Meeting
CC Room 225

8:00 AM to 5:00 PM
Guest/Spouse Hospitality Room
Hilton Riverside Trafalgar

8:00 AM to 5:00 PM
Housing Desk
CC Lobby A

8:00 AM to 12:00 Noon
Scientific Liaison Coalition Meeting
CC Room 202

8:00 AM to 5:00 PM
ToxExpo Set Up
CC Exhibit Hall

8:00 AM to 9:45 AM
Undergraduate Education Program:
Toxicology Presentations *(CDI Travel Awardees and Registered Undergraduates)*
CC Room 272

8:15 AM to 12:00 Noon
Continuing Education Morning Courses
(Ticket Required)
CC *(See Signage or Mobile Event App for Room Location)*

9:00 AM to 11:30 AM
SOT FDA Colloquium Organizing
Committee Meeting
CC Room 223

9:55 AM to 11:00 AM
Undergraduate Education Program:
Interactive Presentation *(CDI Travel Awardees and Registered Undergraduates)*
CC Room 275

11:10 AM to 12:00 Noon
Undergraduate Education Program:
Toxicology Presentation *(CDI Travel Awardees and Registered Undergraduates)*
CC Room 272

11:45 AM to 1:15 PM
Continuing Education Luncheon for Speakers,
Committee, and Student Volunteers
CC Room 215

11:45 AM to 12:45 PM
Graduate Education Subcommittee Meeting
CC Room 225

12:00 Noon to 12:45 PM
Undergraduate Education Program:
Lunch and Networking *(CDI Travel Awardees and Registered Participants)*
CC Room 275

12:00 Noon to 1:15 PM
University of Cincinnati's TERA Center:
A Ternion of Risk Issues
Hilton Riverside Belle Chasse

12:30 PM to 3:30 PM
Toxicological Sciences
Associate Editors Meeting
Hilton Riverside Ascot

12:55 PM to 1:55 PM
Undergraduate Education Program: Breakout
Sessions for Advisors—Tips for Advising
Prospective Graduate Students
(CDI Advisor Travel Awardees)
CC Room 281

12:55 PM to 1:55 PM
Undergraduate Education Program: Breakout
Sessions for Students—Planning for Graduate
School *(CDI Travel Awardees and Registered Undergraduates)*
CC Rooms 278, 279, 280

1:00 PM to 5:00 PM
Job Bank Center
CC Room 237

1:15 PM to 5:00 PM
Continuing Education Afternoon Courses
(Ticket Required)
CC *(See Signage or Mobile Event App for Room Location)*

2:05 PM to 2:55 PM
Undergraduate Education Program: Career
Roundtables—Opportunities in Toxicology
(CDI Travel Awardees and Registered Undergraduates)
CC Rooms 278, 279, 280

3:00 PM to 5:00 PM
Gabriel L. Plaa Award Interviews
(Award Applicants)
CC Room 201

3:00 PM to 5:00 PM
Undergraduate Education Program: Open
Time with Academic Toxicology Program
Directors and Internship Hosts *(CDI Travel Awardees and Registered Undergraduates)*
CC Room 272

3:30 PM to 4:00 PM
Council Members Photographed
CC Great Hall C

4:00 PM to 5:00 PM
Awards Recipients Photographed
CC Great Hall C

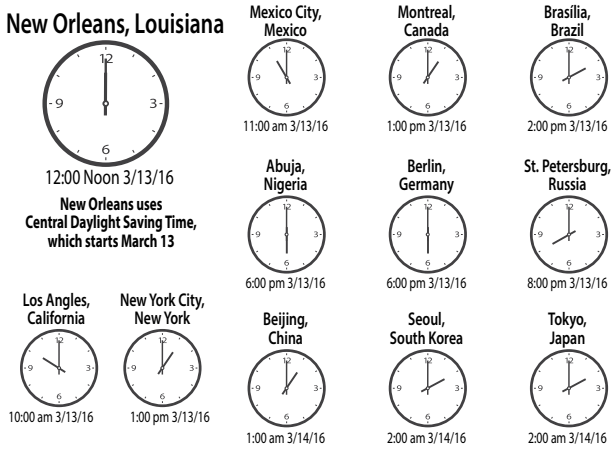
4:00 PM to 5:00 PM
K–12 Subcommittee Meeting
CC Room 223

4:45 PM to 5:15 PM
Awards Ceremony Music—
Performed by Clarence Johnson III
CC Great Hall B

5:15 PM to 6:30 PM
Awards Ceremony *(All Attendees Welcome)*
CC Great Hall B

6:30 PM to 7:30 PM
Welcome Reception
CC Great Hall A

What time is it in New Orleans...



Events are listed alphabetically by the event start time. Most events are held in the New Orleans Ernest N. Morial Convention Center (CC) unless otherwise noted.

Sunday (Continued) March 13

7:00 PM to 8:00 PM
25-Year (Or More) Member Reception
(By Invitation Only)
CC Lobby A Lounge

7:30 PM to 10:30 PM
Arizona Night
Hilton Riverside Oak Alley

7:30 PM to 10:00 PM
Lovelace Respiratory Research Institute's Annual Reception
Hilton Riverside River Room

7:30 PM to 9:00 PM
Student/Postdoctoral Scholar Mixer
(Ticket Required)
CC La Nouvelle Orleans Ballroom B

8:00 PM to 10:00 PM
Harihara Mehendale Retirement Celebration
Hilton Riverside Versailles Ballroom

Scientific Program Overview by Day & Time

Sunday March 13

7:00 AM to 7:45 AM

Continuing Education Sunrise Mini-Course

SR01 Basic Principles and Practices for Applying Epigenetics in Mechanistic Toxicology

Pick up a course location flyer upon entering the convention center or see signage at the CE booths on the Second Floor for room assignments.

8:15 AM to 12:00 Noon

Continuing Education Morning Courses

AM02 Advancing the Detection, Imaging, and Pitfalls in Monitoring Oxidative Stress in Health and Disease

AM03 Adverse Outcome Pathway (AOP) Development and Evaluation

AM04 Contribution of Mitochondria to Drug-Induced Organ Toxicities

AM05 Discovery and Validation of miRNA Biomarkers Bridging Preclinical and Clinical Toxicity: Lessons Learned from Hepatotoxicity

AM06 Embryology and Developmental Toxicity Testing

AM07 Next-Generation Sequencing in Toxicogenomics

1:15 PM to 5:00 PM

Continuing Education Afternoon Courses

PM08 Approaches to Investigate and Assess Risks Associated with Drug-Induced Liver Injury (DILI)

PM09 Exploring Chemical Space in the New Toxicity Testing Paradigm: From Data Curation to Computational Simulations

PM10 Genetics and Population Variability in Chemical Toxicity: The What, the How, and So What?

PM11 Human Health Risk Assessment: A Case Study Application of Principles

PM12 Unique Approaches to Safety Assessment of Gene, Cell, and Nucleic Acid-Based Therapies

PM13 Zebrafish As a Tool in Toxicology and Drug Discovery Screening

At the heart of ToXchange is an enhanced
SOT membership directory that allows you to stand out and be seen!

- Create a customized SOT Member "My Page"
- Update your "My Page" 24/7
- Search for and find other SOT members based on their profile information
- Be identified by SOT members based on your profile information
- Communicate with your SOT peers with easy-to-use, secure networking tools
- Participate in blogs, community discussions, and much more!

Plus, you can link to your other social networks, making ToXchange your one-stop professional online resource.

Hosted on a safe and secure network platfrom, ToXchange is specifically designed for SOT Members.

Visit the SOT Pavillion, booth 500 in the Exhibit Hall, for on-site information.

ToXchange www.toXchange.org
It's YOUR Network. Be a part of it.

Events are listed alphabetically by the event start time. Most events are held in the New Orleans Ernest N. Morial Convention Center (CC) unless otherwise noted.

Monday March 14

6:15 AM to 7:45 AM
SOT Mentoring Breakfast
(Registration Required)
CC Room R01

6:30 AM to 8:00 AM
Carcinogenesis Specialty Section Officers Meeting
Marriott at the Convention Center Julia

6:30 AM to 8:00 AM
Clinical and Translational Toxicology Specialty Section Officers Meeting
CC La Nouvelle Orleans Ballroom B

6:30 AM to 8:00 AM
Dermal Toxicology Specialty Section Officers Meeting
CC La Nouvelle Orleans Ballroom B

6:30 AM to 8:00 AM
Food Safety Specialty Section Officers Meeting
CC La Nouvelle Orleans Ballroom B

6:30 AM to 8:00 AM
Immunotoxicology Specialty Section Officers Meeting
CC La Nouvelle Orleans Ballroom B

6:30 AM to 8:00 AM
In Vitro and Alternative Methods Specialty Section Officers Meeting
CC La Nouvelle Orleans Ballroom B

6:30 AM to 8:00 AM
Inhalation and Respiratory Specialty Section Officers Meeting
CC La Nouvelle Orleans Ballroom B

6:30 AM to 8:00 AM
Mechanisms Specialty Section Officers Meeting
CC La Nouvelle Orleans Ballroom B

6:30 AM to 8:00 AM
Mixtures Specialty Section Officers Meeting
Café Adelaide

6:30 AM to 7:45 AM
Molecular and Systems Biology Specialty Section Officers Meeting
Hilton Riverside Le Croissant

6:30 AM to 8:00 AM
Neurotoxicology Specialty Section Officers Meeting
CC La Nouvelle Orleans Ballroom B

6:30 AM to 8:00 AM
Past Presidents Breakfast
CC Room 215

6:30 AM to 8:00 AM
Regulatory and Safety Evaluation Specialty Section Officers Meeting
CC Room 240

6:30 AM to 8:00 AM
Risk Assessment Specialty Section Officers Meeting
CC La Nouvelle Orleans Ballroom B

6:45 AM to 7:45 AM
Women in Toxicology Special Interest Group Executive Committee Meeting
Hilton Riverside Durham

7:00 AM to 6:00 PM
@SOT Center—Internet Access
CC Lobby A

7:00 AM to 6:00 PM
Coat/Luggage Check
CC Great Hall Foyer

7:00 AM to 4:00 PM
Concession Stands
CC Lobby A

7:00 AM to 5:00 PM
Registration
CC Lobby A

7:00 AM to 5:00 PM
SOT Office
CC Room 226

7:00 AM to 5:00 PM
Speaker Ready Room
(Scientific Session and ePoster Upload)
CC Room 214

7:00 AM to 8:00 AM
Reproductive and Developmental Toxicology Specialty Section Officers Meeting
CC Room 224

7:00 AM to 7:45 AM
Scientific Program Committee Walk-Through
CC Room 206

7:30 AM to 9:30 AM
Poster Set Up *(See Poster Session Schedule or Mobile Event App for Details)*
CC Exhibit Hall

8:00 AM to 9:20 AM
Daily Plenary Session: Regenerative Medicine and Tissue Engineering, *Lecturers: Doris Taylor, Texas Heart Institute; and Joan Nichols, University of Texas Medical Branch*
CC Great Hall A

8:00 AM to 5:00 PM
Guest/Spouse Hospitality Room
Hilton Riverside Trafalgar

8:00 AM to 5:00 PM
Housing Desk
CC Lobby A

8:00 AM to 3:30 PM
Undergraduate Diversity Program Meeting Participation
CC

9:00 AM to 10:00 AM
Exhibitor-Hosted Session: Covance
CC Room 212

9:00 AM to 10:00 AM
Exhibitor-Hosted Session: SOLVO Biotechnology
CC Room 211

9:00 AM to 10:00 AM
Exhibitor-Hosted Session: TERA Center, University of Cincinnati
CC Room 213

9:00 AM to 10:00 AM
Exhibitor-Hosted Session: US Environmental Protection Agency
CC Room 205

9:00 AM to 5:00 PM
Job Bank Center
CC Room 237

9:15 AM to 10:15 AM
Complimentary Coffee
CC Exhibit Hall

9:15 AM to 2:00 PM
Concession Stands
CC Exhibit Hall

9:15 AM to 4:30 PM
SOT Pavilion, Booth 500
CC Exhibit Hall

9:15 AM to 4:30 PM
ToxExpo Exhibits Open
CC Exhibit Hall

9:30 AM to 11:30 AM
IUTOX Global Collaboration Coffee
CC Rivergate Room

9:30 AM to 12:45 PM
Poster Sessions
CC Exhibit Hall

9:30 AM to 4:30 PM
Research Funding Insights
CC Room 204

9:30 AM to 12:15 PM
Scientific Sessions
CC *(See Session Index on Pages 106–112 or Mobile Event App for Room Locations)*

10:00 AM to 11:00 AM
Trainee Discussion with Plenary Session Presenters: Drs. Taylor and Nichols
(Ticket Required; Limited Seating)
CC Lobby A Lounge

10:30 AM to 11:30 AM
Exhibitor-Hosted Session: American Preclinical Services
CC Room 205

10:30 AM to 11:30 AM
Exhibitor-Hosted Session: Envigo
CC Room 213

10:30 AM to 11:30 AM
Exhibitor-Hosted Session: Lhasa Limited
CC Room 212

10:30 AM to 11:30 AM
Exhibitor-Hosted Session: NeuroScience Associates, Inc.
CC Room 211

11:30 AM to 1:00 PM
In Vitro Toxicology Lecture and Luncheon: Multicellular Model Systems for *In Vitro* Toxicity Testing—Strengths and Challenges, *Lecturer: Norbert E. Kaminski, Michigan State University (Ticket Required)*
CC La Nouvelle Orleans Ballroom B

11:45 AM to 12:15 PM
Global Gallery of Toxicology Poster Session—Representative Attended
(Near SOT Pavilion, Booth 500)
CC Exhibit Hall

11:45 AM to 12:15 PM
Regional Chapter, Special Interest Group, and Specialty Section Poster Sessions—Representative Attended
(Near SOT Pavilion, Booth 500)
CC Exhibit Hall

12:00 Noon to 1:30 PM
Continuing Education Committee Meeting
CC Room 224

12:00 Noon to 1:00 PM
Exhibitor-Hosted Session: Data Sciences International
CC Room 205

12:00 Noon to 1:00 PM
Exhibitor-Hosted Session: Inhalation Sciences Sweden AB
CC Room 211

12:00 Noon to 1:00 PM
Exhibitor-Hosted Session: Qualyst Transporter Solutions, LLC
CC Room 213

12:00 Noon to 1:00 PM
Exhibitor-Hosted Session: US Environmental Protection Agency
CC Room 212

12:00 Noon to 1:30 PM
Research Funding Luncheon: Multiple Perspectives on the Grant Process
CC Room R01

12:00 Noon to 1:30 PM
Special Interest Group Collaboration Group Meeting
CC Room 202

12:15 PM to 1:45 PM
Biotechnology Specialty Section Mentoring Luncheon
CC Room 236

12:15 PM to 1:45 PM
Ethical, Legal, and Social Issues Specialty Section Meeting/Luncheon
Marriott at the Convention Center River Bend Ballroom 1

12:15 PM to 1:45 PM
HESI Luncheon Seminar
Hilton Riverside Jefferson Ballroom

12:15 PM to 2:00 PM
Mid-Atlantic Regional Chapter Luncheon
Calcasieu Restaurant

12:15 PM to 1:45 PM
Risk Assessment Specialty Section Mentoring Luncheon
CC Room 235

12:15 PM to 1:45 PM
Toxicologic and Exploratory Pathology Specialty Section Meeting/Luncheon
Marriott at the Convention Center River Bend Ballroom 2

12:30 PM to 1:20 PM
Merit Award Lecture: Forty-Five Years Modeling Dose-Response Relationships: An Unanticipated Career!
Lecturer: Melvin Andersen, ScitoVation LLC
CC Room R08

12:30 PM to 2:00 PM
Northeast Regional Chapter Student Luncheon
Marriott at the Convention Center Julia

12:30 PM to 1:50 PM
Scientific Sessions
CC *(See Session Index on Pages 106–112 or Mobile Event App for Room Locations)*

12:45 PM to 1:00 PM
Announcement of Daily Winner of Diamond Level Supporter Exhibitor Drawing
CC Exhibit Hall

12:50 PM to 1:15 PM
Poster Set Up *(See Poster Session Schedule or Mobile Event App for Details)*
CC Exhibit Hall

1:15 PM to 4:30 PM
Poster Sessions
CC Exhibit Hall

1:30 PM to 2:30 PM
Exhibitor-Hosted Session: BioReliance
CC Room 205

1:30 PM to 2:30 PM
Exhibitor-Hosted Session: Charles River
CC Room 212

1:30 PM to 2:30 PM
Exhibitor-Hosted Session: MPI Research
CC Room 211

1:30 PM to 2:30 PM
Exhibitor-Hosted Session: Phase Holographic Imaging
CC Room 213

1:30 PM to 2:30 PM
Meet the Directors: A Conversation with Linda Birnbaum, NIEHS; and Pamela McInnes, NCATS
CC Room 220

2:00 PM to 4:45 PM
Scientific Sessions
CC *(See Session Index on Pages 106–112 or Mobile Event App for Room Locations)*

2:00 PM to 3:00 PM
Specialty Section Collaboration and Communication Group Meeting
CC Room 202

2:30 PM to 3:30 PM
Complimentary Lemonade and Popcorn
CC Exhibit Hall

3:00 PM to 4:00 PM
Exhibitor-Hosted Session: In Vitro ADMET Laboratories LLC
CC Room 205

3:00 PM to 4:00 PM
Exhibitor-Hosted Session: Litron Laboratories
CC Room 213

3:00 PM to 4:00 PM
Exhibitor-Hosted Session: MultiCASE Inc
CC Room 211

3:00 PM to 4:00 PM
Exhibitor-Hosted Session: Sinclair Research Center
CC Room 212

3:30 PM to 4:30 PM
Undergraduate Diversity Program: Host Mentor and Peer Mentor Meeting
CC Room 281

3:30 PM to 4:30 PM
Undergraduate Diversity Program: Presentation *(CDI Travel Awardees)*
CC Room 275

Continued on next page

Events are listed alphabetically by the event start time. Most events are held in the New Orleans Ernest N. Morial Convention Center (CC) unless otherwise noted.

Monday (Continued) March 14

4:30 PM to 5:30 PM
Exhibitor-Hosted Session: InSphero Inc.
CC Room 205

4:30 PM to 5:30 PM
Exhibitor-Hosted Session: InStem
CC Room 212

4:30 PM to 5:30 PM
Exhibitor-Hosted Session: Seahorse Bioscience, a part of Agilent Technologies
CC Room 211

4:30 PM to 5:30 PM
Undergraduate and K–12 Education Networking
CC Room 223

4:30 PM to 5:00 PM
Undergraduate Diversity Program: Program Closing Session *(CDI Travel Awardees)*
CC Room 275

4:45 PM to 6:15 PM
American Board of Toxicology Open Mixer
Hilton Riverside Versailles Ballroom

4:45 PM to 6:15 PM
Michigan and Allegheny-Erie Regional Chapters Joint Reception
Hilton Riverside Grand Salon 13

4:45 PM to 6:30 PM
Ohio Valley Regional Chapter Reception
Poppy's Time Out Sports Bar

4:45 PM to 6:45 PM
Roundtable of Toxicology Consultants Annual Business Meeting
Hilton Riverside Melrose

4:45 PM to 6:00 PM
SOT/EUROTOX Debate: Preclinical (Safety) Toxicology Testing Predicts the Clinical Outcome, *Lecturers: Thomas M. Monticello, Amgen, Inc.; and Ruth Roberts, ApconiX Ltd*
CC Great Hall B

5:00 PM to 9:00 PM
American Association of Chinese in Toxicology Special Interest Group Distinguished Chinese Toxicologist Lectureship Award and Reception
Hilton Riverside Grand Ballroom D

5:00 PM to 7:00 PM
COSMOS DB Data Share Point Launch Event
Hilton Riverside Ascot

5:00 PM to 6:00 PM
Human Toxicology Project Consortium: Priorities and Opportunities for Replacement of Animal Tests: A Discussion with NICEATM and ICCVAM Leadership
Hilton Riverside Belle Chasse

5:00 PM to 6:30 PM
In Vitro Models for Tobacco Regulatory Science: Collaborative Efforts in Respiratory Toxicology
Hilton Riverside Fountain

5:00 PM to 6:30 PM
Midwest Regional Chapter Mixer
Hilton Riverside Grand Salon 7

5:00 PM to 6:15 PM
Toxicologists of African Origin Special Interest Group Networking Event
Mulate's Restaurant

5:30 PM to 7:30 PM
Lone Star and South Central Regional Chapters Mixer
Bei Tempi Ristorante

5:30 PM to 7:30 PM
Pacific Northwest Regional Chapter Reception
Annunciation Restaurant

6:00 PM to 7:30 PM
Biological Modeling Specialty Section Meeting/Reception
Hilton Riverside Grand Salon 18

6:00 PM to 7:30 PM
Biotechnology Specialty Section Meeting/Reception
Hilton Riverside Grand Salon 3

6:00 PM to 7:30 PM
Dermal Toxicology Specialty Section Meeting/Reception
Hilton Riverside Grand Salon 20

6:00 PM to 9:00 PM
Korean Toxicologists Association in America Special Interest Group Meeting/Reception
Singha Thai Cafe

6:00 PM to 7:30 PM
Mechanisms Specialty Section Meeting/Reception
Hilton Riverside Grand Ballroom C

6:00 PM to 11:00 PM
MPI Research: Got Science?
Marriott at the Convention Center
Blaine Kern Ballroom

6:00 PM to 7:30 PM
Regulatory and Safety Evaluation Specialty Section Meeting/Reception
Hilton Riverside Grand Ballroom A

6:00 PM to 7:30 PM
Reproductive and Developmental Toxicology Specialty Section Meeting/Reception
Hilton Riverside Grand Ballroom B

6:00 PM to 8:00 PM
Southeastern Regional Chapter Reception
Drago's Seafood Restaurant

6:00 PM to 8:00 PM
St. John's University Alumni and Friends Dinner
Hilton Riverside Compass

6:00 PM to 7:30 PM
Stem Cells Specialty Section Meeting/Reception
Hilton Riverside Grand Salon 12

6:00 PM to 9:00 PM
Toxicological Sciences/Oxford University Press Appreciation Dinner *(By Invitation Only)*
Annunciation Restaurant

6:30 PM to 7:45 PM
Toxicologists of African Origin Special Interest Group Reception
Mulate's Restaurant

7:00 PM to 9:30 PM
Association of Scientists of Indian Origin Special Interest Group Reception
Marriott at the Convention Center
River Bend Ballroom

Scientific Program Overview by Day & Time

Monday March 14

8:00 AM to 9:20 AM

DAILY PLENARY SESSION

- Regenerative Medicine and Tissue Engineering *Lecturers: Doris Taylor, Texas Heart Institute; and Joan Nichols, University of Texas Medical Branch* (Great Hall A)

9:30 AM to 12:15 PM

SYMPOSIUM SESSION

- Opening the Black Box: Understanding the Molecular Mechanisms of Developmental Toxicity (Great Hall B)

WORKSHOP SESSIONS

- Dietary Exposures to Heterocyclic Amines As a Potential Risk Factor for Neurological Disease (Room R04)
- Mitochondria As the Central Target of Environmental Contaminants, Pharmaceutical Agents, and Toxicants: Mechanisms of Toxicity and Disease (Room 220)
- Nanotoxicology and Ocular Drug Delivery: One Size Does Not Fit All (Room R02)
- Scientific Reproducibility: Does This Pose a Problem for 21st Century Toxicology? (Great Hall A)
- The Cancer Risk Assessment for Ingested Hexavalent Chromium: Challenges and Controversies (Room 217)
- Transient Receptor Potential A1 (TRPA1) Cation Channels: Fluttering Hearts, Headaches and Hot Flashes—Can One "Environmental Sensor" Be the Cause of All the Pain? (Room 208)

REGIONAL INTEREST SESSION

- The Toxicological Implications of the Gulf Oil Spill: Research Accomplishments and Research Needs (Room R08)

PLATFORM SESSIONS

- Investigating Mode of Action in Chemical Carcinogenesis (Room 206)
- Ozone Research (Room R06)

9:30 AM to 12:45 PM

POSTER SESSIONS

(Exhibit Hall—*See Poster Board Map on pages 113–117*)

- Arsenic Toxicity
- Bioinformatics and Toxicology
- Biomonitoring
- Cell Death and Apoptosis
- Immunotoxicology
- Neurotoxicology of Therapeutic Agents and Abused Substances
- Neurotoxicology—Developmental Neurotoxicity
- Neurotoxicology—Emerging Technologies for Neurotoxicity Screening
- Neurotoxicology—General
- Neurotoxicology—Halogenated Hydrocarbons
- Respiratory Toxicology
- Systems Biology and Toxicology
- Toxicity of Metal Mixtures

9:30 AM to 4:30 PM

RESEARCH FUNDING INSIGHTS

- Network with Program Officers (Room 204)

12:00 Noon to 1:30 PM

RESEARCH FUNDING SESSION

- Research Funding Luncheon: Multiple Perspectives on the Grant Process (Room R01)

12:30 PM to 1:20 PM

MERIT AWARD LECTURE

- Forty-Five Years Modeling Dose-Response Relationships: An Unanticipated Career! *Lecturer: Melvin Andersen, ScitoVation LLC* (Room R08)

12:30 PM to 1:50 PM

ROUNDTABLE SESSIONS

- Is a "Thresholdable" Carcinogen Still a Delaney Carcinogen? (Room 208)
- Trichloroethylene Exposure and Development of Fetal Cardiac Malformations: What Do the Data Tell Us About Inhalation Exposures Resulting from Vapor Intrusion and Potential Health Risks to Pregnant Women? (Room 217)

1:15 PM to 4:30 PM

POSTER SESSIONS

(Exhibit Hall—*See Poster Board Map on pages 113–117*)

- Exposure Assessment
- Genetic Toxicology I
- Genetic Toxicology II
- Mercury Toxicity
- Metal Toxicity
- Mixtures
- Nanotoxicology: General
- Natural Products
- Neurotoxicology—Mercury Neurotoxicity
- Neurotoxicology—Metals: Lead, Cadmium, and Others
- Ocular Toxicology
- Safety Assessment: Drug Development
- Safety Assessment: Drug Discovery
- Toxicology Education

1:30 PM to 2:30 PM

MEET THE DIRECTORS

- A Conversation with Linda Birnbaum and Pamela McInnes *Lecturers: Linda Birnbaum, NIEHS; and Pamela McInnes, NCATS* (Room 220)

2:00 PM to 4:45 PM

SYMPOSIUM SESSIONS

- Health and Environmental Hazard Assessments of Nanomaterials Along Their Lifecycle (Room 217)
- The Promise and Reality of Alternative Methods in Inhalation Toxicology and the Development of Inhaled Therapeutics (Room R02)

WORKSHOP SESSIONS

- Moving Beyond Prioritization towards True *In Vitro*-Based Safety Assessment (Room 208)
- Quantitative Cumulative Risk Assessment: Is It Feasible Today? (Room R04)
- The Role of the Epigenome in Exposure Effects, Susceptibility, and Public Health (Great Hall B)
- Using 21st Century Approaches to Evaluate Endocrine-Active Compounds (Great Hall A)

HISTORICAL HIGHLIGHTS

- Toxicologic Legacies of Major 21st Century Man-Made/Natural Disasters (Room R08)

PLATFORM SESSIONS

- AhR and Disease Processes (Room 206)
- Pluripotent Stem Cells in Cardiovascular Research (Room R06)

4:45 PM to 6:00 PM

SOT/EUROTOX DEBATE

- Preclinical (Safety) Toxicology Testing Predicts the Clinical Outcome *Lecturers: Thomas M. Monticello, Amgen; and Ruth Roberts, ApconiX Ltd* (Great Hall B)

Events are listed alphabetically by the event start time. Most events are held in the New Orleans Ernest N. Morial Convention Center (CC) unless otherwise noted.

Tuesday March 15

6:30 AM to 8:00 AM
Regulatory and Safety Evaluation Specialty Section Global Regulations Breakfast—Next Stop: China
CC Room R01

6:45 AM to 8:15 AM
Education Committee Meeting
CC Room 225

6:45 AM to 7:45 AM
Graduate Student Leadership Committee Meeting
CC Room 215

6:45 AM to 7:45 AM
Postdoctoral Assembly Executive Board Meeting
CC Room 202

7:00 AM to 6:00 PM
@SOT Center—Internet Access
CC Lobby A

7:00 AM to 8:00 AM
Awards Committee Meeting
CC Room 224

7:00 AM to 8:00 AM
Central States Regional Chapter Breakfast Meeting
Bourbon House Restaurant

7:00 AM to 6:00 PM
Coat/Luggage Check
CC Great Hall Foyer

7:00 AM to 4:00 PM
Concession Stands
CC Lobby A

7:00 AM to 8:30 AM
Past Presidents' 5K Fun Run/Walk
(See Mobile Event App for Shuttle Details)
Audubon Park

7:00 AM to 4:30 PM
SOT Office
CC Room 226

7:00 AM to 4:30 PM
Speaker Ready Room
(Scientific Session and ePoster Upload)
CC Room 214

7:30 AM to 9:30 AM
Poster Set Up *(See Poster Session Schedule or Mobile Event App for Details)*
CC Exhibit Hall

7:30 AM to 8:30 AM
Toxic Substances Control Act (TSCA) Task Force Meeting
CC Room 223

8:00 AM to 9:20 AM
Daily Plenary Session: Inflammation and Neurodegenerative Disease, *Lecturers: Stephen Skaper, University of Padua; and Alan I. Faden, University of Maryland School of Medicine*
CC Great Hall A

8:00 AM to 5:00 PM
Guest/Spouse Hospitality Room
Hilton Riverside Trafalgar

8:00 AM to 2:15 PM
High School Student and Teacher Workshop: Safety Matters: Toxicology and Product Safety
CC Room 276

8:00 AM to 11:00 AM
Housing Desk
CC Lobby A

8:00 AM to 4:00 PM
Registration
CC Lobby A

8:30 AM to 5:00 PM
Job Bank Center
CC Room 237

9:00 AM to 10:00 AM
Audit Committee Meeting
CC Room 225

9:00 AM to 10:00 AM
Exhibitor-Hosted Session: Altasciences
CC Room 205

9:00 AM to 10:00 AM
Exhibitor-Hosted Session: Envigo
CC Room 213

9:00 AM to 10:00 AM
Exhibitor-Hosted Session: MPI Research
CC Room 211

9:00 AM to 10:00 AM
Exhibitor-Hosted Session: Organovo
CC Room 212

9:15 AM to 10:15 AM
Complimentary Coffee
CC Exhibit Hall

9:15 AM to 2:00 PM
Concession Stands
CC Exhibit Hall

9:15 AM to 4:30 PM
SOT Pavilion, Booth 500
CC Exhibit Hall

9:15 AM to 4:30 PM
ToxExpo Exhibits Open
CC Exhibit Hall

9:30 AM to 12:45 PM
Poster Sessions
CC Exhibit Hall

9:30 AM to 4:30 PM
Research Funding Insights
CC Room 204

9:30 AM to 12:15 PM
Scientific Sessions
CC *(See Session Index on Pages 106–112 or Mobile Event App for Room Locations)*

10:00 AM to 12:00 Noon
High School Poster Exposition
(Across from SOT Pavilion, Booth 500)
CC Exhibit Hall

10:00 AM to 11:00 AM
Trainee Discussion with Plenary Session Presenters: Drs. Skaper and Faden
(Ticket Required; Limited Seating)
CC Lobby A Lounge

10:30 AM to 11:30 AM
Exhibitor-Hosted Session: Battelle
CC Room 213

10:30 AM to 11:30 AM
Exhibitor-Hosted Session: Charles River
CC Room 212

10:30 AM to 11:30 AM
Exhibitor-Hosted Session: Corning Life Sciences
CC Room 211

10:30 AM to 11:30 AM
Exhibitor-Hosted Session: Promega Corporation
CC Room 205

11:00 AM to 12:00 Noon
ToxExpo Exhibit Hall Council Walk-Through
CC Exhibit Hall

12:00 Noon to 1:30 PM
Endowment Fund Board Meeting
CC Room 224

12:00 Noon to 1:00 PM
Exhibitor-Hosted Session: ACEA Biosciences and Cellular Dynamics International, A FUJIFILM Company
CC Room 213

12:00 Noon to 1:00 PM
Exhibitor-Hosted Session: emka TECHNOLOGIES
CC Room 211

12:00 Noon to 1:00 PM
Exhibitor-Hosted Session: Sony Biotechnology Inc.
CC Room 205

12:00 Noon to 1:00 PM
Exhibitor-Hosted Session: US Environmental Protection Agency
CC Room 212

12:00 Noon to 1:15 PM
Postdoctoral Assembly Luncheon
(Ticket Required)
CC Rivergate Room

12:15 PM to 1:45 PM
American Association of Chinese in Toxicology Special Interest Group Career Development Workshop
CC Room R01

12:15 PM to 1:45 PM
Association of Scientists of Indian Origin Special Interest Group Lunch and Learn
Marriott at the Convention Center Julia

12:15 PM to 1:45 PM
Comparative and Veterinary Specialty Section Meeting/Luncheon
Marriott at the Convention Center River Bend Ballroom 1

12:15 PM to 1:45 PM
Drug Discovery Toxicology Specialty Section Mentoring Event
CC Room 201

12:15 PM to 1:15 PM
International Neurotoxicology Association Business Meeting
Hilton Riverside Belle Chasse

12:15 PM to 1:45 PM
Medical Device and Combination Product Officers Meeting
Grand Isle Restaurant

12:15 PM to 1:45 PM
Occupational and Public Health Specialty Section Meeting/Luncheon
Marriott at the Convention Center River Bend Ballroom 2

12:30 PM to 1:20 PM
Leading Edge in Basic Science Award Lecture: New Frontiers at the Nexus of Epigenomics and Toxicology, *Lecturer: Cheryl Lyn Walker, Texas A&M Institute of Biosciences and Technology*
CC Room R08

12:45 PM to 1:00 PM
Announcement of Daily Winner of Diamond Level Supporter Exhibitor Drawing
CC Exhibit Hall

12:50 PM to 1:15 PM
Poster Set Up *(See Poster Session Schedule or Mobile Event App for Details)*
CC Exhibit Hall

1:15 PM to 4:30 PM
Poster Sessions
CC Exhibit Hall

1:30 PM to 2:30 PM
Exhibitor-Hosted Session: ChanTest and Charles River
CC Room 212

1:30 PM to 2:30 PM
Exhibitor-Hosted Session: Ellegaard Göttingen Minipigs, Marshall BioResources, and CiToxLAB Scantox
CC Room 205

1:30 PM to 2:30 PM
Exhibitor-Hosted Session: InSphero Inc.
CC Room 213

1:30 PM to 2:30 PM
Exhibitor-Hosted Session: SenzaGen
CC Room 211

2:00 PM to 4:45 PM
Scientific Sessions
CC *(See Session Index on Pages 106–112 or Mobile Event App for Room Locations)*

2:30 PM to 3:30 PM
Complimentary Lemonade and Popcorn
CC Exhibit Hall

3:00 PM to 4:00 PM
Exhibitor-Hosted Session: Axol Biosciences
CC Room 212

3:00 PM to 4:00 PM
Exhibitor-Hosted Session: BioReliance
CC Room 213

3:00 PM to 4:00 PM
Exhibitor-Hosted Session: NSF International/Health Sciences
CC Room 205

3:00 PM to 4:00 PM
Exhibitor-Hosted Session: Stemina Biomarker Discovery
CC Room 211

4:00 PM to 5:15 PM
Undergraduate Student Meeting
(All Undergraduate Meeting Registrants Invited)
CC Room 223

4:30 PM to 5:30 PM
Exhibitor-Hosted Session: Axion BioSystems
CC Room 211

4:30 PM to 5:30 PM
Exhibitor-Hosted Session: Clyde Biosciences
CC Room 212

4:30 PM to 5:30 PM
Exhibitor-Hosted Session: Instem
CC Room 213

4:30 PM to 5:30 PM
Exhibitor-Hosted Session: Leadscope Inc., Lhasa Limited, and MultiCASE Inc.
CC Room 205

4:45 PM to 6:15 PM
SOT Annual Business Meeting
(All SOT Members Invited)
CC Room 207

4:45 PM to 6:00 PM
ToxExpo 2017 Exhibit Space Selection Process
CC Room 215

5:00 PM to 7:00 PM
Human Toxicology Project Consortium: Hands-On Seminar: Creating an Adverse Outcome Pathway in the AOP Wiki
Hilton Riverside Belle Chasse

6:00 PM to 7:30 PM
Carcinogenesis Specialty Section Meeting/Reception
Hilton Riverside Grand Salon 6

6:00 PM to 7:30 PM
Cardiovascular Toxicology Specialty Section Meeting/Reception
Hilton Riverside Grand Salon 1

6:00 PM to 7:30 PM
Clinical and Translational Toxicology Specialty Section Meeting/Reception
Hilton Riverside Grand Salon 16

6:00 PM to 7:30 PM
Inhalation and Respiratory Specialty Section Meeting/Reception
Hilton Riverside Grand Salon 13

6:00 PM to 7:30 PM
Mixtures Specialty Section Meeting/Reception
Hilton Riverside Grand Salon 22

Events are listed alphabetically by the event start time. Most events are held in the New Orleans Ernest N. Morial Convention Center (CC) unless otherwise noted.

Tuesday (Continued) March 15

6:00 PM to 7:30 PM
Molecular and Systems Biology Specialty Section Meeting/Reception
Hilton Riverside Grand Salon 21

6:00 PM to 7:30 PM
Ocular Toxicology Specialty Section Meeting/Reception
Hilton Riverside Grand Salon 12

6:00 PM to 9:00 PM
Southern California and Mountain West Regional Chapters Mixer
Angela King Gallery

6:00 PM to 7:30 PM
Superfund Research Program Meeting
Marriott at the Convention Center Julia

6:30 PM to 9:00 PM
Hispanic Organization of Toxicologists Special Interest Group Reception and Awards Ceremony
Jonathan Ferrara Gallery

7:00 PM to 10:00 PM
University of Rochester Toxicology Program Annual Alumni Reception
Hilton Riverside River Room

7:30 PM to 10:30 PM
Northern California Regional Chapter Reception
Pat O's on the River Grand Terrace

7:30 PM to 9:00 PM
Tox ShowDown
Hilton Riverside Jefferson Ballroom

9:00 PM to 11:00 PM
Michigan State University Environmental Toxicology Reception
Hilton Riverside Melrose

9:00 PM to 11:00 PM
Rutgers Joint Graduate Program in Toxicology Annual Dessert Reception
Hilton Riverside Versailles Ballroom

Scientific Program Overview by Day & Time

Tuesday March 15

8:00 AM to 9:20 AM

DAILY PLENARY SESSION

- Inflammation and Neurodegenerative Disease
  Lecturers: Stephen Skaper, University of Padua; and Alan I. Faden, University of Maryland School of Medicine (Great Hall A)

9:30 AM to 12:15 PM

SYMPOSIUM SESSIONS

- Drug-Induced Taste Change in Clinical Practice and Preclinical Safety Evaluation (Room R06)
- Genotypic and Intrinsic Risk Factors That Increase Susceptibility to Inhaled Pollutants (Room 217)
- Systems Understanding of the Impact of the Nrf2 Pathway on Chemical Toxicity and Cell Fate (Room 206)
- Unknown, Unknowns: Exploring the Unidentified Fraction of Complex Mixtures (Room 208)

WORKSHOP SESSIONS

- Bioactivity-Based Margin of Exposure Safety Assessment: The Next Stop along the Road to 21st Century Safety Assessments (Great Hall B)
- Maternal Exposure to Nanoparticles—How Does It Affect the Fetus? Status, Mechanisms, and Future Directions (Room 220)
- Multi-Omics in Predictive Toxicology: Development and Application in Environmental Monitoring Programs (Room R08)
- Scientific and Regulatory Advances in Safety Evaluation of Heavy Metals in Food (Room R02)

PLATFORM SESSION

- Zebrafish Models: Advances and Applications in DART (Room R04)

9:30 AM to 12:45 PM

POSTER SESSIONS

(Exhibit Hall—*See Poster Board Map on pages 113–117*)

- Alternative Models: Fish, Worms, and More
- Carcinogenesis I
- Carcinogenesis II
- Chemical and Biological Weapons
- Developmental Basis of Adult Disease
- Endocrine Toxicology
- Inflammation in Disease
- Inflammation: Methods and Mechanisms
- Liver—Mechanisms
- Liver—Models
- Risk Assessment 1
- Stem Cell Biology and Toxicology
- Toxic Inhalants Research

9:30 AM to 4:30 PM

RESEARCH FUNDING INSIGHTS

- Network with Program Officers (Room 204)

12:30 PM to 1:20 PM

LEADING EDGE IN BASIC SCIENCE AWARD LECTURE

- New Frontiers at the Nexus of Epigenomics and Toxicology, *Lecturer: Cheryl Lyn Walker, Texas A&M Institute of Biosciences and Technology* (Room R08)

1:15 PM to 4:30 PM

POSTER SESSIONS

(Exhibit Hall—*See Poster Board Map on pages 113–117*)

- 3D Cell and Organ-on-a-Chip Models
- Alternative Models for Ocular and Skin Toxicity
- Biological Modeling
- Clinical and Translational Toxicology
- Food Safety/Nutrition 1
- Gene Regulation and Signal Transduction
- Medical Devices
- Neurotoxicology—Dopaminergic Systems and Toxicants
- Neurotoxicology—Manganese Neurotoxicity
- Neurotoxicology—Neurodegenerative Diseases
- Neurotoxicology—Pesticide Neurotoxicity
- Non-Pharmaceutical Safety Assessment
- Oxidative Injury and Redox Biology
- Particulate Matter Toxicology
- Receptors

2:00 PM to 4:45 PM

SYMPOSIUM SESSIONS

- New Mechanistic Insights into How the Immune System Drives Hepatic Adverse Drug Reactions (Great Hall A)
- Reciprocal Synergism: New Insights into Thyroid Hormone Action in Brain Development and Neurodevelopmental Toxicity (Room R08)
- The Role of Gene SLC30A10 on Manganese Homeostasis and Functional Outcomes: Implications for Homeostasis and Neurotoxicity (Room R02)
- Using Multi- and Transgenerational Effects of Environmental Exposures in Diverse Animal Models for Assessment of Human Health Risks (Great Hall B)

WORKSHOP SESSIONS

- Cannabis in the Courtroom (Room 217)
- Read-Across: Building Scientific Confidence in the Development and Evaluation of Read-Across for Regulatory Purposes Using Tox21 Approaches (Room 220)
- Safety Assessment of Topically Exposed Cosmetic Ingredients: Lessons Learned (Room 208)

PLATFORM SESSIONS

- Nanotoxicology: *In Vivo* (Room R04)
- Qualification of "New" DART Tools for Hazard Identification (Room R06)

4:45 PM to 6:15 PM

SPECIAL MEMBER SESSION

- SOT Annual Business Meeting (Room 207)

Events are listed alphabetically by the event start time. Most events are held in the New Orleans Ernest N. Morial Convention Center (CC) unless otherwise noted.

Wednesday March 16

6:30 AM to 8:00 AM
Academy of Toxicological Sciences
Board of Directors Meeting
Hilton Riverside Durham

6:45 AM to 8:00 AM
Hispanic Organization of Toxicologists
Special Interest Group Mentoring Breakfast
CC Rivergate Room

6:45 AM to 8:00 AM
Special Interest Group Collaboration Group
Global Hot Topics Event
CC Room R01

7:00 AM to 6:00 PM
Coat/Luggage Check
CC Great Hall Foyer

7:00 AM to 8:30 AM
Committee on Diversity Initiatives Meeting
CC Room 216

7:00 AM to 4:00 PM
Concession Stands
CC Lobby A

7:00 AM to 8:30 AM
Graduate Student Leadership Committee
Executive Board Meeting
CC Room 224

7:00 AM to 4:30 PM
SOT Office
CC Room 226

7:00 AM to 4:30 PM
Speaker Ready Room
(Scientific Session and ePoster Upload)
CC Room 214

7:00 AM to 8:00 AM
ToxExpo Liaison Working Group
CC Room 223

7:30 AM to 8:30 AM
Contemporary Concepts in Toxicology
Conferences Committee Meeting
CC Room 215

7:30 AM to 9:30 AM
Poster Set Up *(See Poster Session Schedule or Mobile Event App for Details)*
CC Exhibit Hall

8:00 AM to 6:00 PM
@SOT Center—Internet Access
CC Lobby A

8:00 AM to 9:20 AM
Daily Plenary Session: Keynote Medical Research Council (MRC) Lecture, *Lecturer: Robin J.M. Franklin, Wellcome Trust-MRC Cambridge Stem Cell Institute, University of Cambridge*
CC Great Hall A

8:00 AM to 5:00 PM
Guest/Spouse Hospitality Room
Hilton Riverside Trafalgar

8:00 AM to 4:00 PM
Registration
CC Lobby A

8:30 AM to 5:00 PM
Job Bank Center
CC Room 237

9:00 AM to 10:00 AM
Exhibitor-Hosted Session: Charles River
CC Room 212

9:00 AM to 10:00 AM
Exhibitor-Hosted Session:
Hepregen Corporation
(now Ascendance Biotechnology, Inc)
CC Room 205

9:15 AM to 10:15 AM
Complimentary Coffee
CC Exhibit Hall

9:15 AM to 2:00 PM
Concession Stands
CC Exhibit Hall

9:15 AM to 4:30 PM
SOT Pavilion, Booth 500
CC Exhibit Hall

9:15 AM to 4:30 PM
ToxExpo Exhibits Open
CC Exhibit Hall

9:30 AM to 12:45 PM
Poster Sessions
CC Exhibit Hall

9:30 AM to 4:30 PM
Research Funding Insights
CC Room 204

9:30 AM to 12:15 PM
Scientific Sessions
CC *(See Session Index on Pages 106–112 or Mobile Event App for Room Locations)*

10:00 AM to 11:00 AM
Trainee Discussion with Medical Research Council (MRC) Lecturer: Dr. Franklin
(Ticket Required; Limited Seating)
CC Lobby A Lounge

10:30 AM to 11:30 AM
Exhibitor-Hosted Session: Envigo
CC Room 213

10:30 AM to 11:30 AM
Exhibitor-Hosted Session: UNIConnect
CC Room 205

11:30 AM to 12:30 PM
Finance Committee Meeting
CC Room 225

11:30 AM to 1:00 PM
Membership Committee Meeting
CC Room 216

12:00 Noon to 1:00 PM
Exhibitor-Hosted Session: Eurofins BioPharma Product Testing and AnaPath
CC Room 211

12:00 Noon to 1:00 PM
Exhibitor-Hosted Session: Fraunhofer ITEM
CC Room 205

12:00 Noon to 1:00 PM
Exhibitor-Hosted Session: ICF International
CC Room 212

12:00 Noon to 1:30 PM
Regional Chapter Collaboration and Communications Committee (RC4) Meeting
CC Room 223

12:15 PM to 1:45 PM
In Vitro and Alternative Methods Specialty Section Meeting/Luncheon
Marriott at the Convention Center
Blaine Kern Ballroom A

12:15 PM to 1:45 PM
Molecular and Systems Biology Specialty Section Mentoring Event
Capdeville Restaurant

12:30 PM to 12:45 PM
Announcement of Exhibitor Provided Raffle Prizes
CC Exhibit Hall

12:30 PM to 2:00 PM
Board of Publications Meeting
CC Room 224

12:30 PM to 1:20 PM
Distinguished Toxicology Scholar Award Lecture: Bioactivation: An Initiating Event in Chemical-Induced Tissue Injury,
Lecturer: I. Glenn Sipes, University of Arizona
CC Room R08

12:30 PM to 1:50 PM
Scientific Sessions
CC *(See Session Index on Pages 106–112 or Mobile Event App for Room Locations)*

12:45 PM to 1:00 PM
Announcement of Daily Winner of Diamond Level Supporter Exhibitor Drawing
CC Exhibit Hall

12:50 PM to 1:15 PM
Poster Set Up *(See Poster Session Schedule or Mobile Event App for Details)*
CC Exhibit Hall

1:15 PM to 4:30 PM
Poster Sessions
CC Exhibit Hall

1:30 PM to 2:00 PM
Undergraduate Education Subcommittee Meeting
CC Room 215

2:00 PM to 4:45 PM
Scientific Sessions
CC *(See Session Index on Pages 106–112 or Mobile Event App for Room Locations)*

2:15 PM to 4:00 PM
Undergraduate Educator Network Meeting
CC Room 215

2:30 PM to 3:30 PM
Complimentary Lemonade and Popcorn
CC Exhibit Hall

4:30 PM to 5:30 PM
Exhibitor-Hosted Session:
Sinclair Research Center
CC Room 212

4:30 PM to 10:00 PM
ToxExpo Tear Down
CC Exhibit Hall

4:45 PM to 5:45 PM
Immunotoxicology Specialty Section Mentoring Event
Marriott at the Convention Center
River Bend Ballroom 2

4:45 PM to 7:00 PM
Women in Toxicology
Special Interest Group Reception
Hilton Riverside Versailles Ballroom

5:00 PM to 6:20 PM
Scientific Sessions
CC *(See Session Index on Pages 106–112 or Mobile Event App for Room Locations)*

5:00 PM to 6:20 PM
Society of Toxicology and Japanese Society of Toxicology Mini-Symposium:
Advances in Metal Toxicity
CC Room 217

5:00 PM to 5:50 PM
Translational Impact Award Lecture:
Translational Non-Invasive Biomarkers of Acetaminophen-Induced Liver Injury,
Lecturer: Richard Beger, NCTR, US Food and Drug Administration
CC Room R08

6:00 PM to 7:30 PM
Drug Discovery Toxicology Specialty Section Meeting/Reception
Hilton Riverside Grand Salon 16

6:00 PM to 7:30 PM
Food Safety Specialty Section Meeting/Reception
Hilton Riverside Grand Salon 13

6:00 PM to 7:30 PM
Immunotoxicology Specialty Section Meeting/Reception
Hilton Riverside Grand Salon A

6:00 PM to 7:30 PM
Medical Device and Combination Product Specialty Section Meeting/Reception
Hilton Riverside Grand Salon 22

6:00 PM to 7:30 PM
Metals Specialty Section Meeting/Reception
Hilton Riverside Grand Salon 12

6:00 PM to 7:30 PM
Nanotoxicology Specialty Section Meeting/Reception
Hilton Riverside Grand Salon 21

6:00 PM to 7:30 PM
Neurotoxicology Specialty Section Meeting/Reception
Hilton Riverside Grand Ballroom A

6:00 PM to 7:30 PM
Risk Assessment Specialty Section Meeting/Reception
Hilton Riverside Grand Ballroom B

7:00 PM to 8:30 PM
President's Reception *(By Invitation Only)*
Hilton Riverside Napoleon Ballroom

8:30 PM to 10:00 PM
Academy of Toxicological Sciences Annual Business Meeting and Reception
(Ticket Required)
Hilton Riverside Jefferson Ballroom

Events are listed alphabetically by the event start time. Most events are held in the New Orleans Ernest N. Morial Convention Center (CC) unless otherwise noted.

Scientific Program Overview by Day & Time

Wednesday — March 16

8:00 AM to 9:20 AM

DAILY PLENARY SESSION—KEYNOTE MEDICAL RESEARCH COUNCIL (MRC) LECTURE

- Regenerating CNS Myelin—From Mechanisms to Medicines *Lecturer: Robin J.M. Franklin, Wellcome Trust-MRC Cambridge Stem Cell Institute, University of Cambridge* (Great Hall A)

9:30 AM to 12:15 PM

SYMPOSIUM SESSIONS

- Patient-Specific Stem Cells As Models for Gene, Drug, and Environment Interactions in Disease (Great Hall B)
- Sulfur Mustard Poisoning: Mechanisms of Dermal and Pulmonary Toxicity and New Treatment Approaches (Room R02)

WORKSHOP SESSIONS

- An Update on Juvenile Animal Testing (Room R08)
- Moving Beyond Cancer: Current State of the Science of Noncancer Health Effects of Arsenic (Room 220)
- Paradigm Change in Toxicology: What Will It Take to Bring Advances in the Science of Toxicology into Regulatory Use? (Room 208)
- Screening Chemicals for Neurotoxicity Outcomes—Using Large Datasets and Multiple Endpoints to Develop "Toxicity Profiles" (Room 217)

INFORMATIONAL SESSION

- Tox21 Challenge To Build Predictive Models of Nuclear Receptor and Stress Response Pathways As Mediated by Exposure to Environmental Toxicants and Drugs (Room R04)

PLATFORM SESSIONS

- Effects of Food-Associated Agents on Inflammation, Metabolic Disease, and Cancer (Room R06)
- Nrf2 in Redox Biology (Room 206)

9:30 AM to 4:30 PM

RESEARCH FUNDING INSIGHTS

- Network with Program Officers (Room 204)

9:30 AM to 12:45 PM

POSTER SESSIONS

(Exhibit Hall—*See Poster Board Map on pages 113–117*)

- Autoimmunity/Hypersensitivity
- Biomarkers
- Cardiovascular Toxicology
- Computational and Systems Toxicology I
- Computational and Systems Toxicology II
- Ecotoxicology
- Nanotoxicology: *In Vitro*
- Nanotoxicology: *In Vivo*
- Pesticides
- Pharmacogenetics/Genetic Polymorphisms
- Risk Assessment 2
- Risk Assessment 3

12:30 PM to 1:20 PM

DISTINGUISHED TOXICOLOGY SCHOLAR AWARD LECTURE

- Bioactivation: An Initiating Event in Chemical-Induced Tissue Injury, *Lecturer: I. Glenn Sipes, University of Arizona* (Room R08)

12:30 PM to 1:50 PM

ROUNDTABLE SESSION

- Combination Toxicology: Are We Testing the Right Things? (Room 208)

INFORMATIONAL SESSIONS

- Updating FDA's Redbook: The Importance of Stakeholder Involvement (Room 217)
- Why Did the Scientific Program Committee Reject My Proposal? Developing a Good Idea Into an Accepted SOT Session (Room R02)

EDUCATION-CAREER DEVELOPMENT SESSION

- The Evolution of the Postdoc: Transitioning from Trainee to Professional in the Modern Era (Room 220)

1:15 PM to 4:30 PM

POSTER SESSIONS

(Exhibit Hall—*See Poster Board Map on pages 113–117*)

- Alternative *In Vitro* Toxicity Models
- Animal Models of Disease
- Animal Models: Methods and Measurements
- Cytochrome P450
- Developmental and Juvenile Toxicology
- Developmental Toxicology (Non-Rodent)
- Epidemiology and Public Health
- Epigenetics
- Food Safety/Nutrition 2
- Kidney—Models to Mechanisms and Molecular Biomarkers
- Liver—Translational
- Regulation and Policy
- Reproductive Toxicology
- Tobacco Products

2:00 PM to 4:45 PM

SYMPOSIUM SESSIONS

- High-Content Imaging for Predictive Toxicology: Discriminating between Adverse and Adaptive Outcomes (Room 208)
- Novel Roles of Reactive Oxygen Species (ROS) in Human Diseases: Why ROS Never Gets Stale (Room R08)
- Use of the Adverse Outcome Pathway (AOP) Concept to Link Epidemiological to Mechanistic Data on the Correlation of Pesticide Exposures and Parkinson's Disease (Great Hall B)

WORKSHOP SESSIONS

- Advanced Techniques in PBPK Modeling to Improve Quantitative Risk Assessment for Infants and Children (Room 220)
- "Breaking Bad": Cardiovascular Autophagy Gone Rogue: A Putative Mechanism of Toxicity and a Drug Target in Disease (Room 217)
- *In Vitro* Dosimetry of Engineered Nanomaterials: Too Complicated to Consider, Too Important to Ignore (Room R02)
- Medical Device Biomaterials: Challenges in Assessing the Toxicity and Biocompatibility of Nanomaterials, Bioabsorbables, and Tissue Scaffolds (Room R04)

PLATFORM SESSIONS

- Heavy Metals: Mechanisms and Disease Pathogenesis (Room R06)
- Innovations in Toxicology Education (Room 206)

5:00 PM to 5:50 PM

TRANSLATIONAL IMPACT AWARD LECTURE

- Translational Non-Invasive Biomarkers of Acetaminophen-Induced Liver Injury, *Lecturer: Richard Beger, NCTR, US Food and Drug Administration* (Room R08)

5:00 PM to 6:20 PM

SOCIETY OF TOXICOLOGY AND JAPANESE SOCIETY OF TOXICOLOGY MINI-SYMPOSIUM

- Advances in Metal Toxicity, *Lecturer: Michael Aschner, Albert Einstein College of Medicine; and Yoshito Kumagai, University of Tsukuba* (Room 217)

5:00 PM to 6:20 PM

EDUCATION-CAREER DEVELOPMENT SESSION

- "Talksicology": Effective Oral Presentation Techniques (Room 220)

Did You Miss a Poster?

SOT provides you an alternative.

ePosters—A Convenient Way to View Posters

Now, in addition to attending the poster sessions, you can view some of the posters through the SOT Mobile Event App.

Search and view the ePosters on your mobile device using the ePoster feature in the SOT Mobile Event App—before, during, and after the meeting (until May 11, 2016). If you are a poster presenter, please take a few minutes to upload your PowerPoint or PDF poster through the user-friendly presentation system at: **https://cms.psav.com/sot2016p**.

Events are listed alphabetically by the event start time. Most events are held in the New Orleans Ernest N. Morial Convention Center (CC) unless otherwise noted.

Thursday — March 17

7:00 AM to 1:00 PM
Coat/Luggage Check
CC Great Hall Foyer

7:00 AM to 11:30 AM
Speaker Ready Room
(Scientific Session and ePoster Upload)
CC Room 214

7:00 AM to 1:00 PM
SOT Office
CC Room 226

8:00 AM to 1:00 PM
@SOT Center—Internet Access
CC Lobby A

8:00 AM to 10:00 AM
Guest/Spouse Hospitality Room
Hilton Riverside Trafalgar

8:00 AM to 1:00 PM
Registration
CC Lobby A

8:15 AM to 9:15 AM
SOT Strategic Plan Update: Summary and Implementation of the Career Advancement, Recruitment, and Education Process
CC Room 206

8:30 AM to 12:00 Noon
Concession Stands
CC Lobby A

8:30 AM to 9:30 AM
Poster Set Up *(See Poster Session Schedule or Mobile Event App for Details)*
CC Great Hall A

9:30 AM to 12:45 PM
Poster Sessions *(Including Late-Breaking)*
CC Great Hall A

9:30 AM to 12:15 PM
Scientific Sessions
CC *(See Session Index on Pages 106–112 or Mobile Event App for Room Locations)*

12:00 Noon to 1:30 PM
Scientific Program Committee Meeting
CC Room 225

12:30 PM to 4:00 PM
Satellite Meeting: Updates on 21st Century Toxicology Activities and Related Efforts: Invited Presentations and Open Microphone
Hilton Riverside Jefferson Ballroom

1:00 PM to 5:00 PM
Satellite Meeting: 3D or Not 3D: That Is the [Predictive Toxicology] Question…
CC Room 213

1:00 PM to 6:00 PM
Satellite Meeting: A Toxicology User's Guide to the Roadmap Epigenomics and ENCODE Data Resources
CC Room 205

Scientific Program Overview by Day & Time

Thursday — March 17

9:30 AM to 12:15 PM

SYMPOSIUM SESSION

- Mitochondrial Dysfunction as a Pathogenic Mechanism and Therapeutic Target for Neurodegenerative Diseases (Room 208)

WORKSHOP SESSIONS

- Beyond Benchmark Dose: Advancing Probabilistic and Bayesian Approaches in Hazard Characterization (Room R02)
- Bringing More Science into the Process of Risk Assessment for Endogenous Chemicals with Exogenous Exposures (Room 220)
- Developmental Immunotoxicology—Are We Adequately Evaluating Safety? (Room R08)
- Potential Health and Environmental Effects of Unconventional Hydraulic Fracturing (Room R04)
- Which Human Cell Lines Should I Use? Choosing the Appropriate Biological Systems for High-Throughput Toxicity Testing (Room 217)

PLATFORM SESSIONS

- Advances in Mammary Gland Biology and Toxicology (Room 206)
- Electronic Cigarette Research (Room R06)
- Flame Retardants (Great Hall B)

9:30 AM to 12:45 PM

POSTER SESSIONS

(Great Hall A—*See Poster Board Map on page 118*)

- Biotransformation
- Disposition and Pharmacokinetics
- Emerging Technologies
- MicroRNA Biomarkers
- Nanotoxicology: Carbon Based
- Persistent Organic Pollutants
- Skin Responses and Toxicology
- *Late-Breaking Poster Session details—Use Mobile Event App or Online Planner.*

Session Etiquette

- Ask questions following presentations or at the direction of the moderator.
- Cell phones and other electronic devices should be set on mute.
- Electronic capture of scientific sessions by any method is prohibited.
- Inviting children under the age of 15 and guest/spouse registrants into the Exhibit Hall is prohibited. Session chair must provide consent for the guest/spouse or child to attend the session.

Recording, Photography, Videotaping, and Cell Phone Policies

- Photographing or videotaping in the Exhibit Hall is prohibited.
- Electronic capture of scientific sessions by any method is prohibited.
- All cell phones and electronic devices must be put on mute while attending scientific sessions.

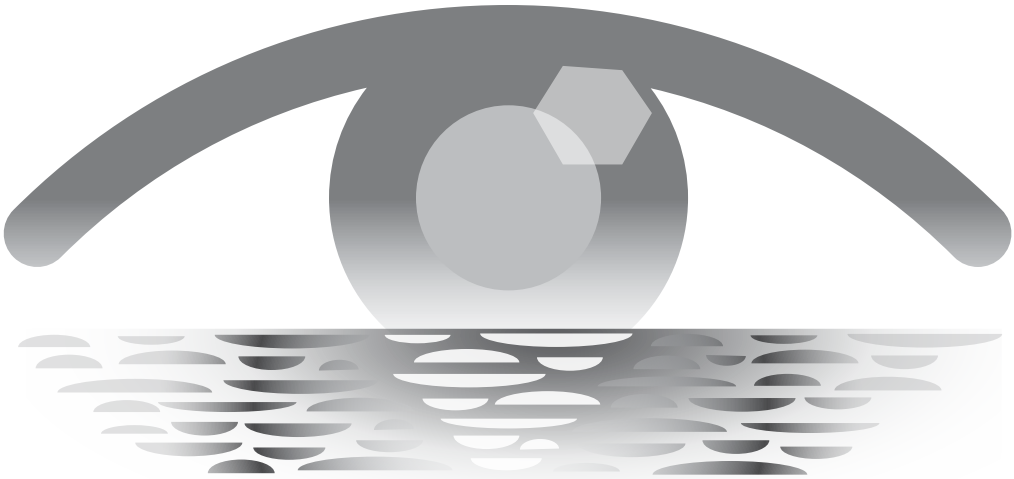
The policies adopted above will be enforced by the Society. Individuals who do not comply will be asked to leave the session, or Exhibit Hall.

Safety and Security Tips

- Wear your name badge in the New Orleans Ernest N. Morial Convention Center.
- Remove your name badge when leaving the convention center.
- If you see a demonstration, please contact any member of the SOT Annual Meeting staff.
- If you see actions that appear threatening, notify the nearest security officer.
- SOT representatives will respond to media inquires.
- If a disruption occurs please follow directions and avoid becoming involved in the situation.

SOT | Contemporary Concepts in Toxicology

JUNE 27–28, 2016 • SOUTH SAN FRANCISCO, CALIFORNIA



Ocular **Toxicology**

Pharmacology and Drug Delivery: *An Eye on the Future*

REGISTRATION | SCIENTIFIC PROGRAM | HOUSING

ON

WWW.TOXICOLOGY.ORG/OCULAR

Global Gallery of Toxicology

A Worldwide Vision for Toxicology

Opportunity to Learn About Toxicology Societies Around the World

• Accomplishments • Initiatives • Perspectives •

Posters will be displayed prominently in the ToxExpo Exhibit Hall.

Please see details on page 48.

Schedule by Event Name

Event:	Date:	Time:	Location:	Room:
@SOT Center—Internet Access	Saturday, Mar 12	4:00 PM to 7:00 PM	Convention Center	Lobby A
@SOT Center—Internet Access	Sunday, Mar 13	7:00 AM to 6:00 PM	Convention Center	Lobby A
@SOT Center—Internet Access	Monday, Mar 14	7:00 AM to 6:00 PM	Convention Center	Lobby A
@SOT Center—Internet Access	Tuesday, Mar 15	7:00 AM to 6:00 PM	Convention Center	Lobby A
@SOT Center—Internet Access	Wednesday, Mar 16	8:00 AM to 6:00 PM	Convention Center	Lobby A
@SOT Center—Internet Access	Thursday, Mar 17	8:00 AM to 1:00 PM	Convention Center	Lobby A
25-Year (Or More) Member Reception *(By Invitation Only)*	Sunday, Mar 13	7:00 PM to 8:00 PM	Convention Center	Lobby A Lounge
A				
Academy of Toxicological Sciences Board of Directors Meeting	Wednesday, Mar 16	6:30 AM to 8:00 AM	Hilton Riverside	Durham
Academy of Toxicological Sciences Annual Business Meeting and Reception *(Ticket Required)*	Wednesday, Mar 16	8:30 PM to 10:00 PM	Hilton Riverside	Jefferson Ballroom
Allegheny-Erie and Michigan Regional Chapters Joint Reception	Monday, Mar 14	4:45 PM to 6:15 PM	Hilton Riverside	Grand Salon 13
American Association of Chinese in Toxicology Special Interest Group Distinguished Chinese Toxicologist Lectureship Award and Reception	Monday, Mar 14	5:00 PM to 9:00 PM	Hilton Riverside	Grand Ballroom D
American Association of Chinese in Toxicology Special Interest Group Career Development Workshop	Tuesday, Mar 15	12:15 PM to 1:45 PM	Convention Center	Room R01
American Board of Toxicology Board of Directors Meeting	Saturday, Mar 12	12:00 Noon to 6:00 PM	Marriott at the Convention Center	Fleur de Lis
American Board of Toxicology Open Mixer	Monday, Mar 14	4:45 PM to 6:15 PM	Hilton Riverside	Versailles Ballroom
Announcement of Daily Winner of Diamond Level Supporter Exhibitor Drawing	Monday, Mar 14	12:45 PM to 1:00 PM	Convention Center	Exhibit Hall
Announcement of Daily Winner of Diamond Level Supporter Exhibitor Drawing	Tuesday, Mar 15	12:45 PM to 1:00 PM	Convention Center	Exhibit Hall
Announcement of Daily Winner of Diamond Level Supporter Exhibitor Drawing	Wednesday, Mar 16	12:45 PM to 1:00 PM	Convention Center	Exhibit Hall
Announcement of Exhibitor Provided Raffle Prizes	Wednesday, Mar 16	12:30 PM to 12:45 PM	Convention Center	Exhibit Hall
Arizona Night	Sunday, Mar 13	7:30 PM to 10:30 PM	Hilton Riverside	Oak Alley
Association of Scientists of Indian Origin Special Interest Group Reception	Monday, Mar 14	7:00 PM to 9:30 PM	Marriott at the Convention Center	River Bend Ballroom
Association of Scientists of Indian Origin Special Interest Group Lunch and Learn	Tuesday, Mar 15	12:15 PM to 1:45 PM	Marriott at the Convention Center	Julia
Audit Committee Meeting	Tuesday, Mar 15	9:00 AM to 10:00 AM	Convention Center	Room 225
Awards Ceremony Music—Performed by Clarence Johnson III	Sunday, Mar 13	4:45 PM to 5:15 PM	Convention Center	Great Hall B
Awards Ceremony *(All Attendees Welcome)*	Sunday, Mar 13	5:15 PM to 6:30 PM	Convention Center	Great Hall B
Awards Committee Meeting	Tuesday, Mar 15	7:00 AM to 8:00 AM	Convention Center	Room 224
Awards Recipients Photographed	Sunday, Mar 13	4:00 PM to 5:00 PM	Convention Center	Great Hall C
B				
Biological Modeling Specialty Section Meeting/Reception	Monday, Mar 14	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 18
Biotechnology Specialty Section Mentoring Luncheon	Monday, Mar 14	12:15 PM to 1:45 PM	Convention Center	Room 236
Biotechnology Specialty Section Meeting/Reception	Monday, Mar 14	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 3
Board of Publications Meeting	Wednesday, Mar 16	12:30 PM to 2:00 PM	Convention Center	Room 224
C				
Carcinogenesis Specialty Section Officers Meeting	Monday, Mar 14	6:30 AM to 8:00 AM	Marriott at the Convention Center	Julia
Carcinogenesis Specialty Section Meeting/Reception	Tuesday, Mar 15	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 6
Cardiovascular Toxicology Specialty Section Meeting/Reception	Tuesday, Mar 15	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 1
Career Resource and Development Committee Meeting	Sunday, Mar 13	7:30 AM to 9:30 AM	Convention Center	Room 225
Central States Regional Chapter Breakfast Meeting	Tuesday, Mar 15	7:00 AM to 8:00 AM	Bourbon House Restaurant	
Clinical and Translational Toxicology Specialty Section Officers Meeting	Monday, Mar 14	6:30 AM to 8:00 AM	Convention Center	La Nouvelle Orleans Ballroom B

Event:	Date:	Time:	Location:	Room:
Clinical and Translational Toxicology Specialty Section Meeting/Reception	Tuesday, Mar 15	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 16
Coat/Luggage Check	Sunday, Mar 13	7:00 AM to 8:00 PM	Convention Center	Great Hall Foyer
Coat/Luggage Check	Monday, Mar 14	7:00 AM to 6:00 PM	Convention Center	Great Hall Foyer
Coat/Luggage Check	Tuesday, Mar 15	7:00 AM to 6:00 PM	Convention Center	Great Hall Foyer
Coat/Luggage Check	Wednesday, Mar 16	7:00 AM to 6:00 PM	Convention Center	Great Hall Foyer
Coat/Luggage Check	Thursday, Mar 17	7:00 AM to 1:00 PM	Convention Center	Great Hall Foyer
Committee on Diversity Initiatives Reunion *(Open to All, especially Current and Past Participants and Volunteers in the Undergraduate Education Program)*	Saturday, Mar 12	7:30 PM to 8:30 PM	Convention Center *(Use Hall H Entrance)*	Room 275
Committee on Diversity Initiatives Meeting	Wednesday, Mar 16	7:00 AM to 8:30 AM	Convention Center	Room 216
Comparative and Veterinary Specialty Section Meeting/Luncheon	Tuesday, Mar 15	12:15 PM to 1:45 PM	Marriott at the Convention Center	River Bend Ballroom 1
Complimentary Coffee	Monday, Mar 14	9:15 AM to 10:15 AM	Convention Center	Exhibit Hall
Complimentary Coffee	Tuesday, Mar 15	9:15 AM to 10:15 AM	Convention Center	Exhibit Hall
Complimentary Coffee	Wednesday, Mar 16	9:15 AM to 10:15 AM	Convention Center	Exhibit Hall
Complimentary Lemonade and Popcorn	Monday, Mar 14	2:30 PM to 3:30 PM	Convention Center	Exhibit Hall
Complimentary Lemonade and Popcorn	Tuesday, Mar 15	2:30 PM to 3:30 PM	Convention Center	Exhibit Hall
Complimentary Lemonade and Popcorn	Wednesday, Mar 16	2:30 PM to 3:30 PM	Convention Center	Exhibit Hall
Concession Stands	Sunday, Mar 13	7:00 AM to 4:00 PM	Convention Center	Lobby A
Concession Stands	Monday, Mar 14	7:00 AM to 4:00 PM	Convention Center	Lobby A
Concession Stands	Monday, Mar 14	9:15 AM to 2:00 PM	Convention Center	Exhibit Hall
Concession Stands	Tuesday, Mar 15	7:00 AM to 4:00 PM	Convention Center	Lobby A
Concession Stands	Tuesday, Mar 15	9:15 AM to 2:00 PM	Convention Center	Exhibit Hall
Concession Stands	Wednesday, Mar 16	7:00 AM to 4:00 PM	Convention Center	Lobby A
Concession Stands	Wednesday, Mar 16	9:15 AM to 2:00 PM	Convention Center	Exhibit Hall
Concession Stands	Thursday, Mar 17	8:30 AM to 12:00 Noon	Convention Center	Lobby A
Contemporary Concepts in Toxicology Conferences Committee Meeting	Wednesday, Mar 16	7:30 AM to 8:30 AM	Convention Center	Room 215
Continuing Education Committee Walk-Through	Saturday, Mar 12	4:30 PM to 5:15 PM	Convention Center	Room 210
Continuing Education Luncheon for Speakers, Committee, and Student Volunteers	Sunday, Mar 13	11:45 AM to 1:15 PM	Convention Center	Room 215
Continuing Education Sunrise Mini-Course *(Ticket Required)*	Sunday, Mar 13	7:00 AM to 7:45 AM	Convention Center *(See Signage or Mobile Event App for Room Location)*	
Continuing Education Morning Courses *(Ticket Required)*	Sunday, Mar 13	8:15 AM to 12:00 Noon	Convention Center *(See Signage or Mobile Event App for Room Location)*	
Continuing Education Afternoon Courses *(Ticket Required)*	Sunday, Mar 13	1:15 PM to 5:00 PM	Convention Center *(See Signage or Mobile Event App for Room Location)*	
Continuing Education Committee Meeting	Monday, Mar 14	12:00 Noon to 1:30 PM	Convention Center	Room 224
COSMOS DB Data Share Point Launch Event	Monday, Mar 14	5:00 PM to 7:00 PM	Hilton Riverside	Ascot
Council Orientation Breakfast	Saturday, Mar 12	9:00 AM to 9:30 AM	Hilton Riverside	Elmwood
Council Orientation Meeting	Saturday, Mar 12	9:30 AM to 11:30 AM	Hilton Riverside	Oak Alley
Council Luncheon	Saturday, Mar 12	12:00 Noon to 1:00 PM	Hilton Riverside	Elmwood
Council Meeting	Saturday, Mar 12	1:00 PM to 5:00 PM	Hilton Riverside	Oak Alley
Council Members Photographed	Sunday, Mar 13	3:30 PM to 4:00 PM	Convention Center	Great Hall C
D				
Daily Plenary Session: Regenerative Medicine and Tissue Engineering, *Lecturers: Doris Taylor, Texas Heart Institute; and Joan Nichols, University of Texas Medical Branch*	Monday, Mar 14	8:00 AM to 9:20 AM	Convention Center	Great Hall A
Daily Plenary Session: Inflammation and Neurodegenerative Disease, *Lecturers: Stephen Skaper, University of Padua; and Alan I. Faden, University of Maryland School of Medicine*	Tuesday, Mar 15	8:00 AM to 9:20 AM	Convention Center	Great Hall A
Daily Plenary Session: Keynote Medical Research Council (MRC) Lecture, *Lecturer: Robin J.M. Franklin, Wellcome Trust-MRC Cambridge Stem Cell Institute, University of Cambridge*	Wednesday, Mar 16	8:00 AM to 9:20 AM	Convention Center	Great Hall A

Event:	Date:	Time:	Location:	Room:
Dermal Toxicology Specialty Section Officers Meeting	Monday, Mar 14	6:30 AM to 8:00 AM	Convention Center	La Nouvelle Orleans Ballroom B
Dermal Toxicology Specialty Section Meeting/Reception	Monday, Mar 14	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 20
Distinguished Toxicology Scholar Award Lecture: Bioactivation: An Initiating Event in Chemical-Induced Tissue Injury, *Lecturer: I. Glenn Sipes, University of Arizona*	Wednesday, Mar 16	12:30 PM to 1:20 PM	Convention Center	Room R08
Drug Discovery Toxicology Specialty Section Mentoring Event	Tuesday, Mar 15	12:15 PM to 1:45 PM	Convention Center	Room 201
Drug Discovery Toxicology Specialty Section Meeting/Reception	Wednesday, Mar 16	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 16
E				
Education Committee Meeting	Tuesday, Mar 15	6:45 AM to 8:15 AM	Convention Center	Room 225
Endowment Fund Board Meeting	Tuesday, Mar 15	12:00 Noon to 1:30 PM	Convention Center	Room 224
Ethical, Legal, and Social Issues Specialty Section Meeting/Luncheon	Monday, Mar 14	12:15 PM to 1:45 PM	Marriott at the Convention Center	River Bend Ballroom 1
Exhibitor-Hosted Sessions:				
Exhibitor-Hosted Session: ACEA Biosciences and Cellular Dynamics International, A FUJIFILM Company	Tuesday, Mar 15	12:00 Noon to 1:00 PM	Convention Center	Room 213
Exhibitor-Hosted Session: Altasciences	Tuesday, Mar 15	9:00 AM to 10:00 AM	Convention Center	Room 205
Exhibitor-Hosted Session: American Preclinical Services	Monday, Mar 14	10:30 AM to 11:30 AM	Convention Center	Room 205
Exhibitor-Hosted Session: Axion BioSystems	Tuesday, Mar 15	4:30 PM to 5:30 PM	Convention Center	Room 211
Exhibitor-Hosted Session: Axol Biosciences	Tuesday, Mar 15	3:00 PM to 4:00 PM	Convention Center	Room 212
Exhibitor-Hosted Session: Battelle	Tuesday, Mar 15	10:30 AM to 11:30 AM	Convention Center	Room 213
Exhibitor-Hosted Session: BioReliance	Monday, Mar 14	1:30 PM to 2:30 PM	Convention Center	Room 205
Exhibitor-Hosted Session: BioReliance	Tuesday, Mar 15	3:00 PM to 4:00 PM	Convention Center	Room 213
Exhibitor-Hosted Session: ChanTest and Charles River	Tuesday, Mar 15	1:30 PM to 2:30 PM	Convention Center	Room 212
Exhibitor-Hosted Session: Charles River	Monday, Mar 14	1:30 PM to 2:30 PM	Convention Center	Room 212
Exhibitor-Hosted Session: Charles River	Tuesday, Mar 15	10:30 AM to 11:30 AM	Convention Center	Room 212
Exhibitor-Hosted Session: Charles River	Wednesday, Mar 16	9:00 AM to 10:00 AM	Convention Center	Room 212
Exhibitor-Hosted Session: Clyde Biosciences	Tuesday, Mar 15	4:30 PM to 5:30 PM	Convention Center	Room 212
Exhibitor-Hosted Session: Corning Life Sciences	Tuesday, Mar 15	10:30 AM to 11:30 AM	Convention Center	Room 211
Exhibitor-Hosted Session: Covance	Monday, Mar 14	9:00 AM to 10:00 AM	Convention Center	Room 212
Exhibitor-Hosted Session: Data Sciences International	Monday, Mar 14	12:00 Noon to 1:00 PM	Convention Center	Room 205
Exhibitor-Hosted Session: Ellegaard Göttingen Minipigs, Marshall BioResources, and CiToxLAB Scantox	Tuesday, Mar 15	1:30 PM to 2:30 PM	Convention Center	Room 205
Exhibitor-Hosted Session: emka TECHNOLOGIES	Tuesday, Mar 15	12:00 Noon to 1:00 PM	Convention Center	Room 211
Exhibitor-Hosted Session: Envigo	Monday, Mar 14	10:30 AM to 11:30 AM	Convention Center	Room 213
Exhibitor-Hosted Session: Envigo	Tuesday, Mar 15	9:00 AM to 10:00 AM	Convention Center	Room 213
Exhibitor-Hosted Session: Envigo	Wednesday, Mar 16	10:30 AM to 11:30 AM	Convention Center	Room 213
Exhibitor-Hosted Session: Eurofins BioPharma Product Testing and AnaPath	Wednesday, Mar 16	12:00 Noon to 1:00 PM	Convention Center	Room 211
Exhibitor-Hosted Session: Fraunhofer ITEM	Wednesday, Mar 16	12:00 Noon to 1:00 PM	Convention Center	Room 205
Exhibitor-Hosted Session: Hepregen Corporation (now Ascendance Biotechnology, Inc)	Wednesday, Mar 16	9:00 AM to 10:00 AM	Convention Center	Room 205
Exhibitor-Hosted Session: ICF International	Wednesday, Mar 16	12:00 Noon to 1:00 PM	Convention Center	Room 212
Exhibitor-Hosted Session: In Vitro ADMET Laboratories LLC	Monday, Mar 14	3:00 PM to 4:00 PM	Convention Center	Room 205
Exhibitor-Hosted Session: Inhalation Sciences Sweden AB	Monday, Mar 14	12:00 Noon to 1:00 PM	Convention Center	Room 211
Exhibitor-Hosted Session: InSphero Inc.	Monday, Mar 14	4:30 PM to 5:30 PM	Convention Center	Room 205
Exhibitor-Hosted Session: InSphero Inc.	Tuesday, Mar 15	1:30 PM to 2:30 PM	Convention Center	Room 213
Exhibitor-Hosted Session: Instem	Monday, Mar 14	4:30 PM to 5:30 PM	Convention Center	Room 212
Exhibitor-Hosted Session: Instem	Tuesday, Mar 15	4:30 PM to 5:30 PM	Convention Center	Room 213
Exhibitor-Hosted Session: Leadscope Inc., Lhasa Limited, and MultiCASE Inc.	Tuesday, Mar 15	4:30 PM to 5:30 PM	Convention Center	Room 205
Exhibitor-Hosted Session: Lhasa Limited	Monday, Mar 14	10:30 AM to 11:30 AM	Convention Center	Room 212
Exhibitor-Hosted Session: Litron Laboratories	Monday, Mar 14	3:00 PM to 4:00 PM	Convention Center	Room 213
Exhibitor-Hosted Session: MPI Research	Monday, Mar 14	1:30 PM to 2:30 PM	Convention Center	Room 211
Exhibitor-Hosted Session: MPI Research	Tuesday, Mar 15	9:00 AM to 10:00 AM	Convention Center	Room 211

Event:	Date:	Time:	Location:	Room:
Exhibitor-Hosted Session: MultiCASE Inc	Monday, Mar 14	3:00 PM to 4:00 PM	Convention Center	Room 211
Exhibitor-Hosted Session: NeuroScience Associates, Inc.	Monday, Mar 14	10:30 AM to 11:30 AM	Convention Center	Room 211
Exhibitor-Hosted Session: NSF International/Health Sciences	Tuesday, Mar 15	3:00 PM to 4:00 PM	Convention Center	Room 205
Exhibitor-Hosted Session: Organovo	Tuesday, Mar 15	9:00 AM to 10:00 AM	Convention Center	Room 212
Exhibitor-Hosted Session: Phase Holographic Imaging	Monday, Mar 14	1:30 PM to 2:30 PM	Convention Center	Room 213
Exhibitor-Hosted Session: Promega Corporation	Tuesday, Mar 15	10:30 AM to 11:30 AM	Convention Center	Room 205
Exhibitor-Hosted Session: Qualyst Transporter Solutions, LLC	Monday, Mar 14	12:00 Noon to 1:00 PM	Convention Center	Room 213
Exhibitor-Hosted Session: Seahorse Bioscience, a part of Agilent Technologies	Monday, Mar 14	4:30 PM to 5:30 PM	Convention Center	Room 211
Exhibitor-Hosted Session: SenzaGen	Tuesday, Mar 15	1:30 PM to 2:30 PM	Convention Center	Room 211
Exhibitor-Hosted Session: Sinclair Research Center	Monday, Mar 14	3:00 PM to 4:00 PM	Convention Center	Room 212
Exhibitor-Hosted Session: Sinclair Research Center	Wednesday, Mar 16	4:30 PM to 5:30 PM	Convention Center	Room 212
Exhibitor-Hosted Session: SOLVO Biotechnology	Monday, Mar 14	9:00 AM to 10:00 AM	Convention Center	Room 211
Exhibitor-Hosted Session: Sony Biotechnology Inc.	Tuesday, Mar 15	12:00 Noon to 1:00 PM	Convention Center	Room 205
Exhibitor-Hosted Session: Stemina Biomarker Discovery	Tuesday, Mar 15	3:00 PM to 4:00 PM	Convention Center	Room 211
Exhibitor-Hosted Session: TERA Center, University of Cincinnati	Monday, Mar 14	9:00 AM to 10:00 AM	Convention Center	Room 213
Exhibitor-Hosted Session: UNIConnect	Wednesday, Mar 16	10:30 AM to 11:30 AM	Convention Center	Room 205
Exhibitor-Hosted Session: US Environmental Protection Agency	Monday, Mar 14	9:00 AM to 10:00 AM	Convention Center	Room 205
Exhibitor-Hosted Session: US Environmental Protection Agency	Monday, Mar 14	12:00 Noon to 1:00 PM	Convention Center	Room 212
Exhibitor-Hosted Session: US Environmental Protection Agency	Tuesday, Mar 15	12:00 Noon to 1:00 PM	Convention Center	Room 212
F				
Finance Committee Meeting	Wednesday, Mar 16	11:30 AM to 12:30 PM	Convention Center	Room 225
Food Safety Specialty Section Officers Meeting	Monday, Mar 14	6:30 AM to 8:00 AM	Convention Center	La Nouvelle Orleans Ballroom B
Food Safety Specialty Section Meeting/Reception	Wednesday, Mar 16	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 13
G				
Gabriel L. Plaa Award Interviews *(Award Applicants)*	Sunday, Mar 13	3:00 PM to 5:00 PM	Convention Center	Room 201
Global Gallery of Toxicology Poster Session—Representative Attended *(Near SOT Pavilion, Booth 500)*	Monday, Mar 14	11:45 AM to 12:15 PM	Convention Center	Exhibit Hall
Graduate Education Subcommittee Meeting	Sunday, Mar 13	11:45 AM to 12:45 PM	Convention Center	Room 225
Graduate Student Leadership Committee Meeting	Tuesday, Mar 15	6:45 AM to 7:45 AM	Convention Center	Room 215
Graduate Student Leadership Committee Executive Board Meeting	Wednesday, Mar 16	7:00 AM to 8:30 AM	Convention Center	Room 224
Guest/Spouse Hospitality Room	Sunday, Mar 13	8:00 AM to 5:00 PM	Hilton Riverside	Trafalgar
Guest/Spouse Hospitality Room	Monday, Mar 14	8:00 AM to 5:00 PM	Hilton Riverside	Trafalgar
Guest/Spouse Hospitality Room	Tuesday, Mar 15	8:00 AM to 5:00 PM	Hilton Riverside	Trafalgar
Guest/Spouse Hospitality Room	Wednesday, Mar 16	8:00 AM to 5:00 PM	Hilton Riverside	Trafalgar
Guest/Spouse Hospitality Room	Thursday, Mar 17	8:00 AM to 10:00 AM	Hilton Riverside	Trafalgar
H				
Harihara Mehendale Retirement Celebration	Sunday, Mar 13	8:00 PM to 10:00 PM	Hilton Riverside	Versailles Ballroom
HESI Luncheon Seminar	Monday, Mar 14	12:15 PM to 1:45 PM	Hilton Riverside	Jefferson Ballroom
High School Student and Teacher Workshop: Safety Matters: Toxicology and Product Safety	Tuesday, Mar 15	8:00 AM to 2:15 PM	Convention Center	Room 276
High School Poster Exposition *(Across from SOT Pavilion, Booth 500)*	Tuesday, Mar 15	10:00 AM to 12:00 Noon	Convention Center	Exhibit Hall
Hispanic Organization of Toxicologists Special Interest Group Reception and Awards Ceremony	Tuesday, Mar 15	6:30 PM to 9:00 PM	Jonathan Ferrara Gallery	
Hispanic Organization of Toxicologists Special Interest Group Mentoring Breakfast	Wednesday, Mar 16	6:45 AM to 8:00 AM	Convention Center	Rivergate
Housing Desk	Saturday, Mar 12	4:00 PM to 7:00 PM	Convention Center	Lobby A
Housing Desk	Sunday, Mar 13	8:00 AM to 5:00 PM	Convention Center	Lobby A
Housing Desk	Monday, Mar 14	8:00 AM to 5:00 PM	Convention Center	Lobby A
Housing Desk	Tuesday, Mar 15	8:00 AM to 11:00 AM	Convention Center	Lobby A

Event:	Date:	Time:	Location:	Room:
Human Toxicology Project Consortium: Priorities and Opportunities for Replacement of Animal Tests: A Discussion with NICEATM and ICCVAM Leadership	Monday, Mar 14	5:00 PM to 6:00 PM	Hilton Riverside	Belle Chasse
Human Toxicology Project Consortium: Hands-On Seminar: Creating an Adverse Outcome Pathway in the AOP Wiki	Tuesday, Mar 15	5:00 PM to 7:00 PM	Hilton Riverside	Belle Chasse
I				
Immunotoxicology Specialty Section Officers Meeting	Monday, Mar 14	6:30 AM to 8:00 AM	Convention Center	La Nouvelle Orleans Ballroom B
Immunotoxicology Specialty Section Mentoring Event	Wednesday, Mar 16	4:45 PM to 5:45 PM	Marriott at the Convention Center	River Bend Ballroom 2
Immunotoxicology Specialty Section Meeting/Reception	Wednesday, Mar 16	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon A
In Vitro and Alternative Methods Specialty Section Officers Meeting	Monday, Mar 14	6:30 AM to 8:00 AM	Convention Center	La Nouvelle Orleans Ballroom B
In Vitro and Alternative Methods Specialty Section Meeting/Luncheon	Wednesday, Mar 16	12:15 PM to 1:45 PM	Marriott at the Convention Center	Blaine Kern Ballroom A
In Vitro Models for Tobacco Regulatory Science: Collaborative Efforts in Respiratory Toxicology	Monday, Mar 14	5:00 PM to 6:30 PM	Hilton Riverside	Fountain
In Vitro Toxicology Lecture and Luncheon: Multicellular Model Systems for *In Vitro* Toxicity Testing—Strengths and Challenges, *Lecturer: Norbert E. Kaminski, Michigan State University (Ticket Required)*	Monday, Mar 14	11:30 AM to 1:00 PM	Convention Center	La Nouvelle Orleans Ballroom B
Inhalation and Respiratory Specialty Section Officers Meeting	Monday, Mar 14	6:30 AM to 8:00 AM	Convention Center	La Nouvelle Orleans Ballroom B
Inhalation and Respiratory Specialty Section Meeting/Reception	Tuesday, Mar 15	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 13
International Neurotoxicology Association Business Meeting	Tuesday, Mar 15	12:15 PM to 1:15 PM	Hilton Riverside	Belle Chasse
IUTOX Global Collaboration Coffee	Monday, Mar 14	9:30 AM to 11:30 AM	Convention Center	Rivergate
J				
Job Bank Center	Sunday, Mar 13	1:00 PM to 5:00 PM	Convention Center	Room 237
Job Bank Center	Monday, Mar 14	9:00 AM to 5:00 PM	Convention Center	Room 237
Job Bank Center	Tuesday, Mar 15	8:30 AM to 5:00 PM	Convention Center	Room 237
Job Bank Center	Wednesday, Mar 16	8:30 AM to 5:00 PM	Convention Center	Room 237
K				
K–12 Subcommittee Meeting	Sunday, Mar 13	4:00 PM to 5:00 PM	Convention Center	Room 223
Korean Toxicologists Association in America Special Interest Group Meeting/Reception	Monday, Mar 14	6:00 PM to 9:00 PM	Singha Thai Cafe	
L				
Leading Edge in Basic Science Award Lecture: New Frontiers at the Nexus of Epigenomics and Toxicology, *Lecturer: Cheryl Lyn Walker, Texas A&M Institute of Biosciences and Technology*	Tuesday, Mar 15	12:30 PM to 1:20 PM	Convention Center	Room R08
Lone Star and South Central Regional Chapters Mixer	Monday, Mar 14	5:30 PM to 7:30 PM	Bei Tempi Ristorante	
Lovelace Respiratory Research Institute's Annual Reception	Sunday, Mar 13	7:30 PM to 10:00 PM	Hilton Riverside	River Room
M				
Mechanisms Specialty Section Officers Meeting	Monday, Mar 14	6:30 AM to 8:00 AM	Convention Center	La Nouvelle Orleans Ballroom B
Mechanisms Specialty Section Meeting/Reception	Monday, Mar 14	6:00 PM to 7:30 PM	Hilton Riverside	Grand Ballroom C
Medical Device and Combination Product Officers Meeting	Tuesday, Mar 15	12:15 PM to 1:45 PM	Grand Isle Restaurant	
Medical Device and Combination Product Specialty Section Meeting/Reception	Wednesday, Mar 16	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 22
Meet the Directors: A Conversation with Linda Birnbaum, NIEHS; and Pamela McInnes, NCATS	Monday, Mar 14	1:30 PM to 2:30 PM	Convention Center	Room 220
Membership Committee Meeting	Wednesday, Mar 16	11:30 AM to 1:00 PM	Convention Center	Room 216
Merit Award Lecture: Forty-Five Years Modeling Dose-Response Relationships: An Unanticipated Career! *Lecturer: Melvin Andersen, ScitoVation LLC*	Monday, Mar 14	12:30 PM to 1:20 PM	Convention Center	Room R08
Metals Specialty Section Meeting/Reception	Wednesday, Mar 16	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 12
Michigan and Allegheny-Erie Regional Chapters Joint Reception	Monday, Mar 14	4:45 PM to 6:15 PM	Hilton Riverside	Grand Salon 13

Event:	Date:	Time:	Location:	Room:
Michigan State University Environmental Toxicology Reception	Tuesday, Mar 15	9:00 PM to 11:00 PM	Hilton Riverside	Melrose
Mid-Atlantic Regional Chapter Luncheon	Monday, Mar 14	12:15 PM to 2:00 PM	Calcasieu Restaurant	
Midwest Regional Chapter Mixer	Monday, Mar 14	5:00 PM to 6:30 PM	Hilton Riverside	Grand Salon 7
Mixtures Specialty Section Officers Meeting	Monday, Mar 14	6:30 AM to 8:00 AM	Café Adelaide	
Mixtures Specialty Section Meeting/Reception	Tuesday, Mar 15	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 22
Molecular and Systems Biology Specialty Section Officers Meeting	Monday, Mar 14	6:30 AM to 7:45 AM	Hilton Riverside	Le Croissant
Molecular and Systems Biology Specialty Section Meeting/Reception	Tuesday, Mar 15	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 21
Molecular and Systems Biology Specialty Section Mentoring Event	Wednesday, Mar 16	12:15 PM to 1:45 PM	Capdeville Restaurant	
Mountain West and Southern California Regional Chapters Mixer	Tuesday, Mar 15	6:00 PM to 9:00 PM	Angela King Gallery	
MPI Research: Got Science?	Monday, Mar 14	6:00 PM to 11:00 PM	Marriott at the Convention Center	Blaine Kern Ballroom
N				
Nanotoxicology Specialty Section Meeting/Reception	Wednesday, Mar 16	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 21
Neurotoxicology Specialty Section Officers Meeting	Monday, Mar 14	6:30 AM to 8:00 AM	Convention Center	La Nouvelle Orleans Ballroom B
Neurotoxicology Specialty Section Meeting/Reception	Wednesday, Mar 16	6:00 PM to 7:30 PM	Hilton Riverside	Grand Ballroom A
Northeast Regional Chapter Student Luncheon	Monday, Mar 14	12:30 PM to 2:00 PM	Marriott at the Convention Center	Julia
Northern California Regional Chapter Reception	Tuesday, Mar 15	7:30 PM to 10:30 PM	Pat O's on the River Grand Terrace	
O				
Occupational and Public Health Specialty Section Meeting/Luncheon	Tuesday, Mar 15	12:15 PM to 1:45 PM	Marriott at the Convention Center	River Bend Ballroom 2
Ocular Toxicology Specialty Section Meeting/Reception	Tuesday, Mar 15	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 12
Ohio Valley Regional Chapter Reception	Monday, Mar 14	4:45 PM to 6:30 PM	Poppy's Time Out Sports Bar	
P				
Pacific Northwest Regional Chapter Reception	Monday, Mar 14	5:30 PM to 7:30 PM	Annunciation Restaurant	
Past Presidents Breakfast	Monday, Mar 14	6:30 AM to 8:00 AM	Convention Center	Room 215
Past Presidents' 5K Fun Run/Walk *(See Mobile Event App for Shuttle Details)*	Tuesday, Mar 15	7:00 AM to 8:30 AM	Audubon Park	
Postdoctoral Assembly Executive Board Meeting	Tuesday, Mar 15	6:45 AM to 7:45 AM	Convention Center	Room 202
Postdoctoral Assembly Luncheon *(Ticket Required)*	Tuesday, Mar 15	12:00 Noon to 1:15 PM	Convention Center	Rivergate
Poster Sessions	Monday, Mar 14	9:30 AM to 12:45 PM	Convention Center	Exhibit Hall
Poster Sessions	Monday, Mar 14	1:15 PM to 4:30 PM	Convention Center	Exhibit Hall
Poster Sessions	Tuesday, Mar 15	9:30 AM to 12:45 PM	Convention Center	Exhibit Hall
Poster Sessions	Tuesday, Mar 15	1:15 PM to 4:30 PM	Convention Center	Exhibit Hall
Poster Sessions	Wednesday, Mar 16	9:30 AM to 12:45 PM	Convention Center	Exhibit Hall
Poster Sessions	Wednesday, Mar 16	1:15 PM to 4:30 PM	Convention Center	Exhibit Hall
Poster Sessions *(Including Late-Breaking)*	Thursday, Mar 17	9:30 AM to 12:45 PM	Convention Center	Great Hall A
Poster Set Up *(See Poster Session Schedule or Mobile Event App for Details)*	Monday, Mar 14	7:30 AM to 9:30 AM	Convention Center	Exhibit Hall
Poster Set Up *(See Poster Session Schedule or Mobile Event App for Details)*	Monday, Mar 14	12:50 PM to 1:15 PM	Convention Center	Exhibit Hall
Poster Set Up *(See Poster Session Schedule or Mobile Event App for Details)*	Tuesday, Mar 15	7:30 AM to 9:30 AM	Convention Center	Exhibit Hall
Poster Set Up *(See Poster Session Schedule or Mobile Event App for Details)*	Tuesday, Mar 15	12:50 PM to 1:15 PM	Convention Center	Exhibit Hall
Poster Set Up *(See Poster Session Schedule or Mobile Event App for Details)*	Wednesday, Mar 16	7:30 AM to 9:30 AM	Convention Center	Exhibit Hall
Poster Set Up *(See Poster Session Schedule or Mobile Event App for Details)*	Wednesday, Mar 16	12:50 PM to 1:15 PM	Convention Center	Exhibit Hall
Poster Set Up *(See Poster Session Schedule or Mobile Event App for Details)*	Thursday, Mar 17	8:30 AM to 9:30 AM	Convention Center	Great Hall A
President's Reception *(By Invitation Only)*	Wednesday, Mar 16	7:00 PM to 8:30 PM	Hilton Riverside	Napoleon Ballroom

Event:	Date:	Time:	Location:	Room:
R				
Regional Chapter Collaboration and Communications Committee (RC4) Meeting	Wednesday, Mar 16	12:00 Noon to 1:30 PM	Convention Center	Room 223
Regional Chapter Poster Sessions—Representative Attended *(Near SOT Pavilion, Booth 500)*	Monday, Mar 14	11:45 AM to 12:15 PM	Convention Center	Exhibit Hall
Registration	Saturday, Mar 12	4:00 PM to 7:00 PM	Convention Center	Lobby A
Registration	Sunday, Mar 13	7:00 AM to 8:00 PM	Convention Center	Lobby A
Registration	Monday, Mar 14	7:00 AM to 5:00 PM	Convention Center	Lobby A
Registration	Tuesday, Mar 15	8:00 AM to 4:00 PM	Convention Center	Lobby A
Registration	Wednesday, Mar 16	8:00 AM to 4:00 PM	Convention Center	Lobby A
Registration	Thursday, Mar 17	8:00 AM to 1:00 PM	Convention Center	Lobby A
Regulatory and Safety Evaluation Specialty Section Officers Meeting	Monday, Mar 14	6:30 AM to 8:00 AM	Convention Center	Room 240
Regulatory and Safety Evaluation Specialty Section Meeting/Reception	Monday, Mar 14	6:00 PM to 7:30 PM	Hilton Riverside	Grand Ballroom A
Regulatory and Safety Evaluation Specialty Section Global Regulations Breakfast—Next Stop: China	Tuesday, Mar 15	6:30 AM to 8:00 AM	Convention Center	Room R01
Reproductive and Developmental Toxicology Specialty Section Officers Meeting	Monday, Mar 14	7:00 AM to 8:00 AM	Convention Center	Room 224
Reproductive and Developmental Toxicology Specialty Section Meeting/Reception	Monday, Mar 14	6:00 PM to 7:30 PM	Hilton Riverside	Grand Ballroom B
Research Funding Insights	Monday, Mar 14	9:30 AM to 4:30 PM	Convention Center	Room 204
Research Funding Insights	Tuesday, Mar 15	9:30 AM to 4:30 PM	Convention Center	Room 204
Research Funding Insights	Wednesday, Mar 16	9:30 AM to 4:30 PM	Convention Center	Room 204
Research Funding Luncheon: Multiple Perspectives on the Grant Process	Monday, Mar 14	12:00 Noon to 1:30 PM	Convention Center	Room R01
Risk Assessment Specialty Section Officers Meeting	Monday, Mar 14	6:30 AM to 8:00 AM	Convention Center	La Nouvelle Orleans Ballroom B
Risk Assessment Specialty Section Mentoring Luncheon	Monday, Mar 14	12:15 PM to 1:45 PM	Convention Center	Room 235
Risk Assessment Specialty Section Meeting/Reception	Wednesday, Mar 16	6:00 PM to 7:30 PM	Hilton Riverside	Grand Ballroom B
Roundtable of Toxicology Consultants Annual Business Meeting	Monday, Mar 14	4:45 PM to 6:45 PM	Hilton Riverside	Melrose
Rutgers Joint Graduate Program in Toxicology Annual Dessert Reception	Tuesday, Mar 15	9:00 PM to 11:00 PM	Hilton Riverside	Versailles Ballroom
S				
Satellite Meeting: Updates on 21st Century Toxicology Activities and Related Efforts: Invited Presentations and Open Microphone	Thursday, Mar 17	12:30 PM to 4:00 PM	Hilton Riverside	Jefferson Ballroom
Satellite Meeting: 3D or Not 3D: That Is the [Predictive Toxicology] Question…	Thursday, Mar 17	1:00 PM to 5:00 PM	Convention Center	Room 213
Satellite Meeting: A Toxicology User's Guide to the Roadmap Epigenomics and ENCODE Data Resources	Thursday, Mar 17	1:00 PM to 6:00 PM	Convention Center	Room 205
Scientific Liaison Coalition Meeting	Sunday, Mar 13	8:00 AM to 12:00 Noon	Convention Center	Room 202
Scientific Program Committee Walk-Through	Monday, Mar 14	7:00 AM to 7:45 AM	Convention Center	Room 206
Scientific Program Committee Meeting	Thursday, Mar 17	12:00 Noon to 1:30 PM	Convention Center	Room 225
Scientific Sessions	Monday, Mar 14	9:30 AM to 12:15 PM	Convention Center *(See Session Index on Pages 106–112 or Mobile Event App for Room Locations)*	
Scientific Sessions	Monday, Mar 14	12:30 PM to 1:50 PM	Convention Center *(See Session Index on Pages 106–112 or Mobile Event App for Room Locations)*	
Scientific Sessions	Monday, Mar 14	2:00 PM to 4:45 PM	Convention Center *(See Session Index on Pages 106–112 or Mobile Event App for Room Locations)*	
Scientific Sessions	Tuesday, Mar 15	9:30 AM to 12:15 PM	Convention Center *(See Session Index on Pages 106–112 or Mobile Event App for Room Locations)*	
Scientific Sessions	Tuesday, Mar 15	2:00 PM to 4:45 PM	Convention Center *(See Session Index on Pages 106–112 or Mobile Event App for Room Locations)*	

Event:	Date:	Time:	Location:	Room:
Scientific Sessions	Wednesday, Mar 16	9:30 AM to 12:15 PM	Convention Center *(See Session Index on Pages 106–112 or Mobile Event App for Room Locations)*	
Scientific Sessions	Wednesday, Mar 16	12:30 PM to 1:50 PM	Convention Center *(See Session Index on Pages 106–112 or Mobile Event App for Room Locations)*	
Scientific Sessions	Wednesday, Mar 16	2:00 PM to 4:45 PM	Convention Center *(See Session Index on Pages 106–112 or Mobile Event App for Room Locations)*	
Scientific Sessions	Wednesday, Mar 16	5:00 PM to 6:20 PM	Convention Center *(See Session Index on Pages 106–112 or Mobile Event App for Room Locations)*	
Scientific Sessions	Thursday, Mar 17	9:30 AM to 12:15 PM	Convention Center *(See Session Index on Pages 106–112 or Mobile Event App for Room Locations)*	
Society of Toxicology and Japanese Society of Toxicology Mini-Symposium: Advances in Metal Toxicity	Wednesday, Mar 16	5:00 PM to 6:20 PM	Convention Center	Room 217
SOT Annual Business Meeting *(All SOT Members Invited)*	Tuesday, Mar 15	4:45 PM to 6:15 PM	Convention Center	Room 207
SOT CCT/MiRNA Biomarkers for Toxicology	Saturday, Mar 12	9:00 AM to 5:30 PM	Convention Center	Room 207
SOT CCT/MiRNA Biomarkers for Toxicology Poster Session and Luncheon	Saturday, Mar 12	1:00 PM to 2:30 PM	Convention Center	Room 217
SOT/EUROTOX Debate: Preclinical (Safety) Toxicology Testing Predicts the Clinical Outcome, *Lecturers: Thomas M. Monticello, Amgen, Inc.; and Ruth Roberts, ApconiX Ltd*	Monday, Mar 14	4:45 PM to 6:00 PM	Convention Center	Great Hall B
SOT FDA Colloquium Organizing Committee Meeting	Sunday, Mar 13	9:00 AM to 11:30 AM	Convention Center	Room 223
SOT Mentoring Breakfast *(Registration Required)*	Monday, Mar 14	6:15 AM to 7:45 AM	Convention Center	Room R01
SOT Office	Saturday, Mar 12	4:00 PM to 7:00 PM	Convention Center	Room 226
SOT Office	Sunday, Mar 13	7:00 AM to 5:30 PM	Convention Center	Room 226
SOT Office	Monday, Mar 14	7:00 AM to 5:00 PM	Convention Center	Room 226
SOT Office	Tuesday, Mar 15	7:00 AM to 4:30 PM	Convention Center	Room 226
SOT Office	Wednesday, Mar 16	7:00 AM to 4:30 PM	Convention Center	Room 226
SOT Office	Thursday, Mar 17	7:00 AM to 1:00 PM	Convention Center	Room 226
SOT Pavilion, Booth 500	Monday, Mar 14	9:15 AM to 4:30 PM	Convention Center	Exhibit Hall
SOT Pavilion, Booth 500	Tuesday, Mar 15	9:15 AM to 4:30 PM	Convention Center	Exhibit Hall
SOT Pavilion, Booth 500	Wednesday, Mar 16	9:15 AM to 4:30 PM	Convention Center	Exhibit Hall
SOT Strategic Plan Update: Summary and Implementation of the Career Advancement, Recruitment, and Education Process	Thursday, Mar 17	8:15 AM to 9:15 AM	Convention Center	Room 206
South Central and Lone Star Regional Chapters Mixer	Monday, Mar 14	5:30 PM to 7:30 PM	Bei Tempi Ristorante	
Southeastern Regional Chapter Reception	Monday, Mar 14	6:00 PM to 8:00 PM	Drago's Seafood Restaurant	
Southern California and Mountain West Regional Chapters Mixer	Tuesday, Mar 15	6:00 PM to 9:00 PM	Angela King Gallery	
Speaker Ready Room *(Scientific Session and ePoster Upload)*	Saturday, Mar 12	4:00 PM to 7:00 PM	Convention Center	Room 214
Speaker Ready Room *(Scientific Session and ePoster Upload)*	Sunday, Mar 13	7:00 AM to 5:30 PM	Convention Center	Room 214
Speaker Ready Room *(Scientific Session and ePoster Upload)*	Monday, Mar 14	7:00 AM to 5:00 PM	Convention Center	Room 214
Speaker Ready Room *(Scientific Session and ePoster Upload)*	Tuesday, Mar 15	7:00 AM to 4:30 PM	Convention Center	Room 214
Speaker Ready Room *(Scientific Session and ePoster Upload)*	Wednesday, Mar 16	7:00 AM to 4:30 PM	Convention Center	Room 214
Speaker Ready Room *(Scientific Session and ePoster Upload)*	Thursday, Mar 17	7:00 AM to 11:30 AM	Convention Center	Room 214
Special Interest Group Poster Sessions—Representative Attended *(Near SOT Pavilion, Booth 500)*	Monday, Mar 14	11:45 AM to 12:15 PM	Convention Center	Exhibit Hall
Special Interest Group Collaboration Group Meeting	Monday, Mar 14	12:00 Noon to 1:30 PM	Convention Center	Room 202
Special Interest Group Collaboration Group Global Hot Topics Event	Wednesday, Mar 16	6:45 AM to 8:00 AM	Convention Center	Room R01
Specialty Section Poster Sessions—Representative Attended *(Near SOT Pavilion, Booth 500)*	Monday, Mar 14	11:45 AM to 12:15 PM	Convention Center	Exhibit Hall
Specialty Section Collaboration and Communication Group Meeting	Monday, Mar 14	2:00 PM to 3:00 PM	Convention Center	Room 202
St. John's University Alumni and Friends Dinner	Monday, Mar 14	6:00 PM to 8:00 PM	Hilton Riverside	Compass

Event:	Date:	Time:	Location:	Room:
Stem Cells Specialty Section Meeting/Reception	Monday, Mar 14	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 12
Student/Postdoctoral Scholar Mixer *(Ticket Required)*	Sunday, Mar 13	7:30 PM to 9:00 PM	Convention Center	La Nouvelle Orleans Ballroom B
Superfund Research Program Meeting	Tuesday, Mar 15	6:00 PM to 7:30 PM	Marriott at the Convention Center	Julia
T				
Tox ShowDown	Tuesday, Mar 15	7:30 PM to 9:00 PM	Hilton Riverside	Jefferson Ballroom
ToxExpo Set Up	Saturday, Mar 12	8:00 AM to 5:00 PM	Convention Center	Exhibit Hall
ToxExpo Set Up	Sunday, Mar 13	8:00 AM to 5:00 PM	Convention Center	Exhibit Hall
ToxExpo Exhibits Open	Monday, Mar 14	9:15 AM to 4:30 PM	Convention Center	Exhibit Hall
ToxExpo Exhibits Open	Tuesday, Mar 15	9:15 AM to 4:30 PM	Convention Center	Exhibit Hall
ToxExpo Exhibits Open	Wednesday, Mar 16	9:15 AM to 4:30 PM	Convention Center	Exhibit Hall
ToxExpo Exhibit Hall Council Walk-Through	Tuesday, Mar 15	11:00 AM to 12:00 Noon	Convention Center	Exhibit Hall
ToxExpo 2017 Exhibit Space Selection Process	Tuesday, Mar 15	4:45 PM to 6:00 PM	Convention Center	Room 215
ToxExpo Liaison Working Group	Wednesday, Mar 16	7:00 AM to 8:00 AM	Convention Center	Room 223
ToxExpo Tear Down	Wednesday, Mar 16	4:30 PM to 10:00 PM	Convention Center	Exhibit Hall
Toxic Substances Control Act (TSCA) Task Force Meeting	Tuesday, Mar 15	7:30 AM to 8:30 AM	Convention Center	Room 223
Toxicologic and Exploratory Pathology Specialty Section Meeting/Luncheon	Monday, Mar 14	12:15 PM to 1:45 PM	Marriott at the Convention Center	River Bend Ballroom 2
Toxicological Sciences Associate Editors Meeting	Sunday, Mar 13	12:30 PM to 3:30 PM	Hilton Riverside	Ascot
Toxicological Sciences/Oxford University Press Appreciation Dinner *(By Invitation Only)*	Monday, Mar 14	6:00 PM to 9:00 PM	Annunciation Restaurant	
Toxicologists of African Origin Special Interest Group Networking Event	Monday, Mar 14	5:00 PM to 6:15 PM	Mulate's Restaurant	
Toxicologists of African Origin Special Interest Group Reception	Monday, Mar 14	6:30 PM to 7:45 PM	Mulate's Restaurant	
Trainee Discussion with Plenary Session Presenters: Drs. Taylor and Nichols *(Ticket Required; Limited Seating)*	Monday, Mar 14	10:00 AM to 11:00 AM	Convention Center	Lobby A Lounge
Trainee Discussion with Plenary Session Presenters: Drs. Skaper and Faden *(Ticket Required; Limited Seating)*	Tuesday, Mar 15	10:00 AM to 11:00 AM	Convention Center	Lobby A Lounge
Trainee Discussion with Medical Research Council (MRC) Lecturer: Dr. Franklin *(Ticket Required; Limited Seating)*	Wednesday, Mar 16	10:00 AM to 11:00 AM	Convention Center	Lobby A Lounge
Translational Impact Award Lecture: Translational Non-Invasive Biomarkers of Acetaminophen-Induced Liver Injury, *Lecturer: Richard Beger, NCTR, US Food and Drug Administration*	Wednesday, Mar 16	5:00 PM to 5:50 PM	Convention Center	Room R08
U				
Undergraduate and K–12 Education Networking	Monday, Mar 14	4:30 PM to 5:30 PM	Convention Center	Room 223
Undergraduate Diversity Program: Registration for CDI Travel Awardees	Saturday, Mar 12	5:00 PM to 5:15 PM	Convention Center	Room 275 Foyer
Undergraduate Diversity Program: Opening Event *(CDI Travel Awardees)*	Saturday, Mar 12	5:15 PM to 7:30 PM	Convention Center	Room 275
Undergraduate Diversity Program Meeting Participation	Monday, Mar 14	8:00 AM to 3:30 PM	Convention Center	
Undergraduate Diversity Program: Host Mentor and Peer Mentor Meeting	Monday, Mar 14	3:30 PM to 4:30 PM	Convention Center	Room 281
Undergraduate Diversity Program: Presentation *(CDI Travel Awardees)*	Monday, Mar 14	3:30 PM to 4:30 PM	Convention Center	Room 275
Undergraduate Diversity Program: Program Closing Session *(CDI Travel Awardees)*	Monday, Mar 14	4:30 PM to 5:00 PM	Convention Center	Room 275
Undergraduate Education Program: Toxicology Presentations *(CDI Travel Awardees and Registered Undergraduates)*	Sunday, Mar 13	8:00 AM to 9:45 AM	Convention Center	Room 272
Undergraduate Education Program: Interactive Presentation *(CDI Travel Awardees and Registered Undergraduates)*	Sunday, Mar 13	9:55 AM to 11:00 AM	Convention Center	Room 275
Undergraduate Education Program: Toxicology Presentation *(CDI Travel Awardees and Registered Undergraduates)*	Sunday, Mar 13	11:10 AM to 12:00 Noon	Convention Center	Room 272
Undergraduate Education Program: Lunch and Networking *(CDI Travel Awardees and Registered Undergraduates)*	Sunday, Mar 13	12:00 Noon to 12:45 PM	Convention Center	Room 275
Undergraduate Education Program: Breakout Sessions for Students—Planning for Graduate School *(CDI Travel Awardees and Registered Undergraduates)*	Sunday, Mar 13	12:55 PM to 1:55 PM	Convention Center	Rooms 278, 279, 280

Event:	Date:	Time:	Location:	Room:
Undergraduate Education Program: Breakout Sessions for Advisors—Tips for Advising Prospective Graduate Students *(CDI Advisor Travel Awardees)*	Sunday, Mar 13	12:55 PM to 1:55 PM	Convention Center	Room 281
Undergraduate Education Program: Career Roundtables—Opportunities in Toxicology *(CDI Travel Awardees and Registered Undergraduates)*	Sunday, Mar 13	2:05 PM to 2:55 PM	Convention Center	Rooms 278, 279, 280
Undergraduate Education Program: Open Time with Academic Toxicology Program Directors and Internship Hosts *(CDI Travel Awardees and Registered Undergraduates)*	Sunday, Mar 13	3:00 PM to 5:00 PM	Convention Center	Room 272
Undergraduate Student Meeting *(All Undergraduate Meeting Registrants Invited)*	Tuesday, Mar 15	4:00 PM to 5:15 PM	Convention Center	Room 223
Undergraduate Education Subcommittee Meeting	Wednesday, Mar 16	1:30 PM to 2:00 PM	Convention Center	Room 215
Undergraduate Educator Network Meeting	Wednesday, Mar 16	2:15 PM to 4:00 PM	Convention Center	Room 215
University of Cincinnati's TERA Center: A Ternion of Risk Issues	Sunday, Mar 13	12:00 Noon to 1:15 PM	Hilton Riverside	Belle Chasse
University of Rochester Toxicology Program Annual Alumni Reception	Tuesday, Mar 15	7:00 PM to 10:00 PM	Hilton Riverside	River Room
W				
Welcome Reception	Sunday, Mar 13	6:30 PM to 7:30 PM	Convention Center	Great Hall A
Women in Toxicology Special Interest Group Executive Committee Meeting	Monday, Mar 14	6:45 AM to 7:45 AM	Hilton Riverside	Durham
Women in Toxicology Special Interest Group Reception	Wednesday, Mar 16	4:45 PM to 7:00 PM	Hilton Riverside	Versailles Ballroom

Toxicological Sciences

5-YEAR IMPACT FACTOR

Ranked Among the Top Journals in Toxicology

UNDER 2 WEEKS

Rapid Online Publication

Optional Open Access

The mission of *ToxSci*, the official journal of the Society of Toxicology, is to publish the most influential research in the field of toxicology.

Meet with Editor-in-Chief Gary W. Miller
SOT Pavilion, Booth 500
Monday to Wednesday
10:00 am–11:00 am and 2:00 pm–3:00 pm

OXFORD UNIVERSITY PRESS

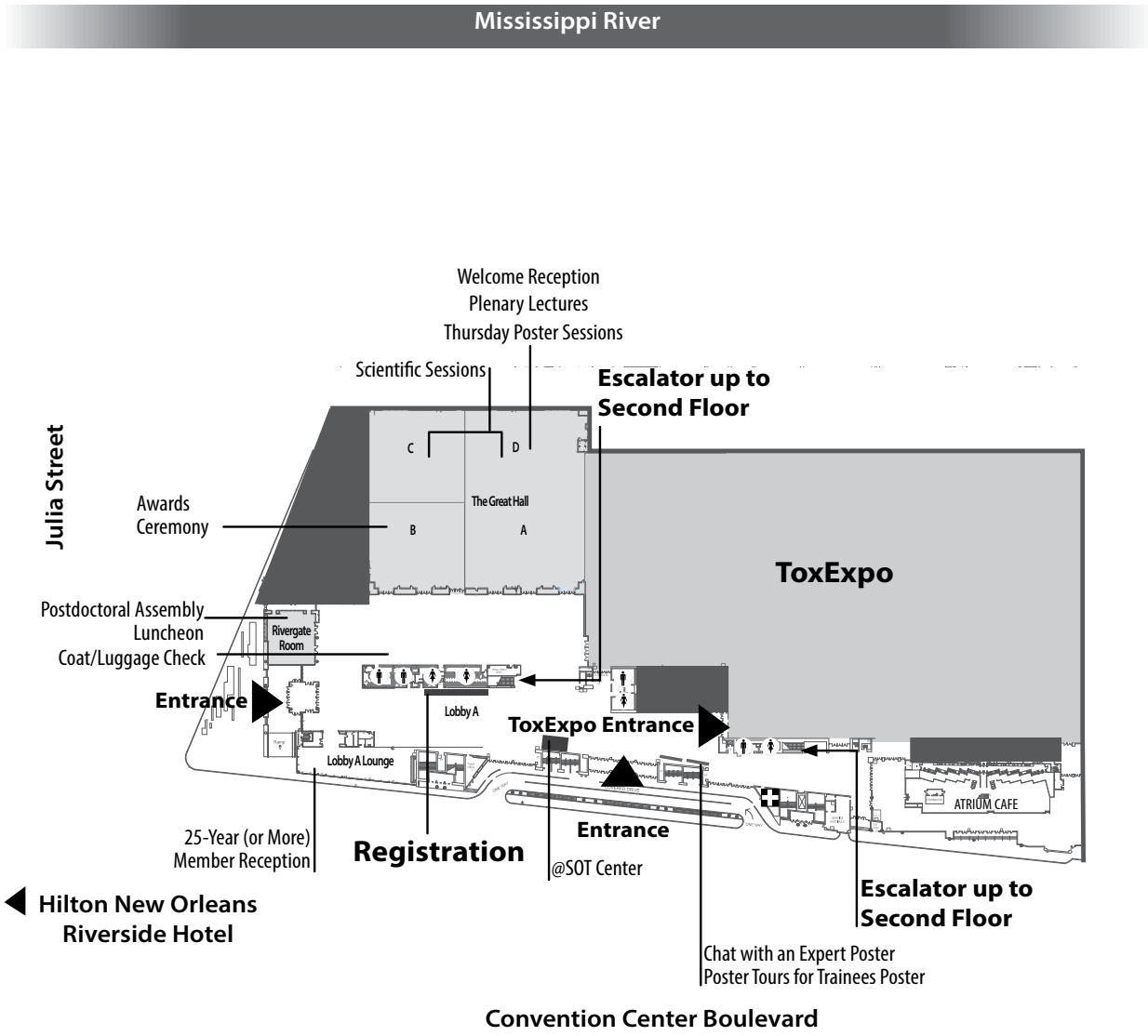
OXFORD OPEN

SOT | Society of Toxicology

New Orleans Ernest N. Morial Convention Center Maps

First Floor

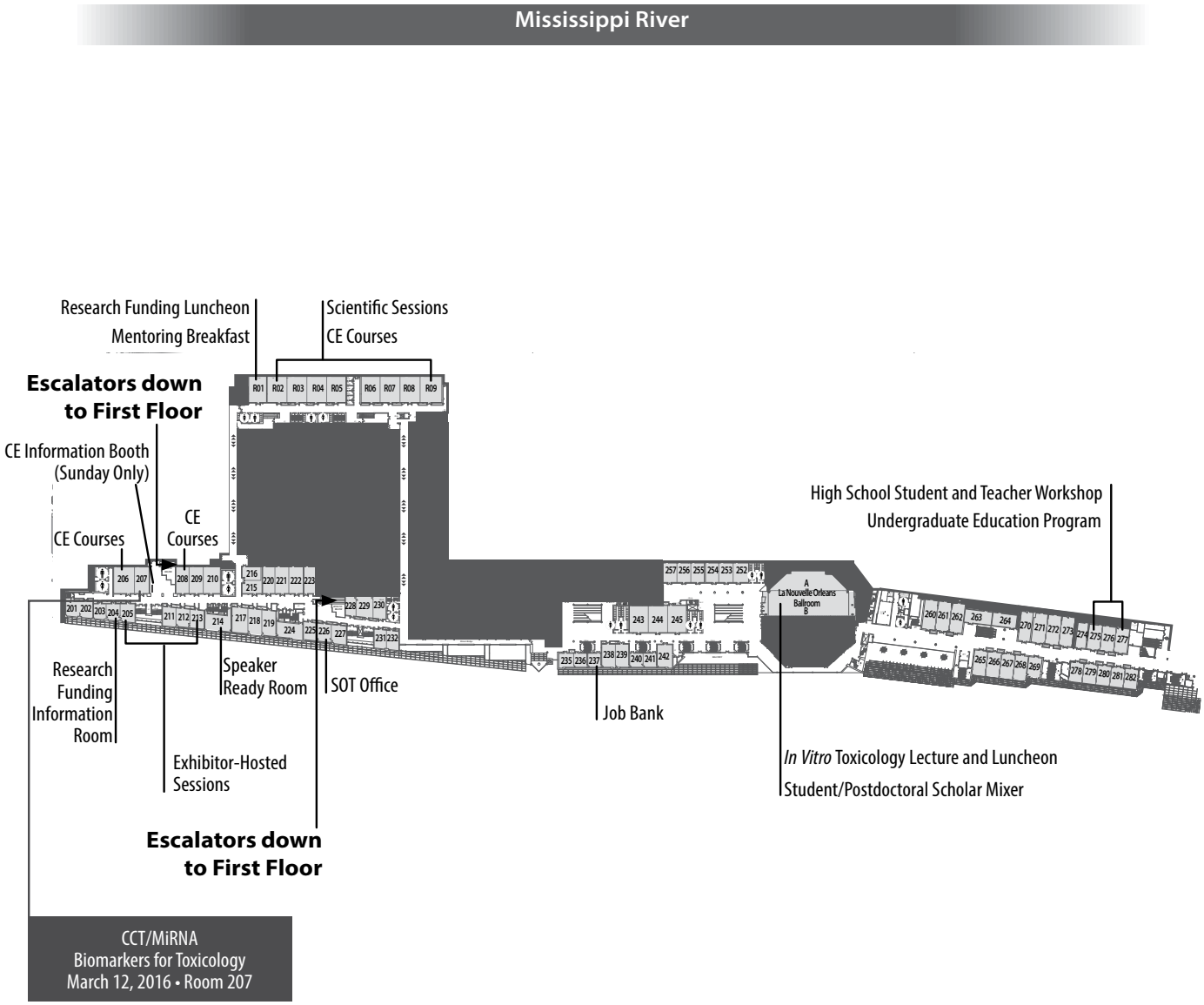
@SOT Center, Plenary Lectures, Poster Sessions, Registration, Scientific Sessions, and ToxExpo



New Orleans Ernest N. Morial Convention Center Maps

Second Floor

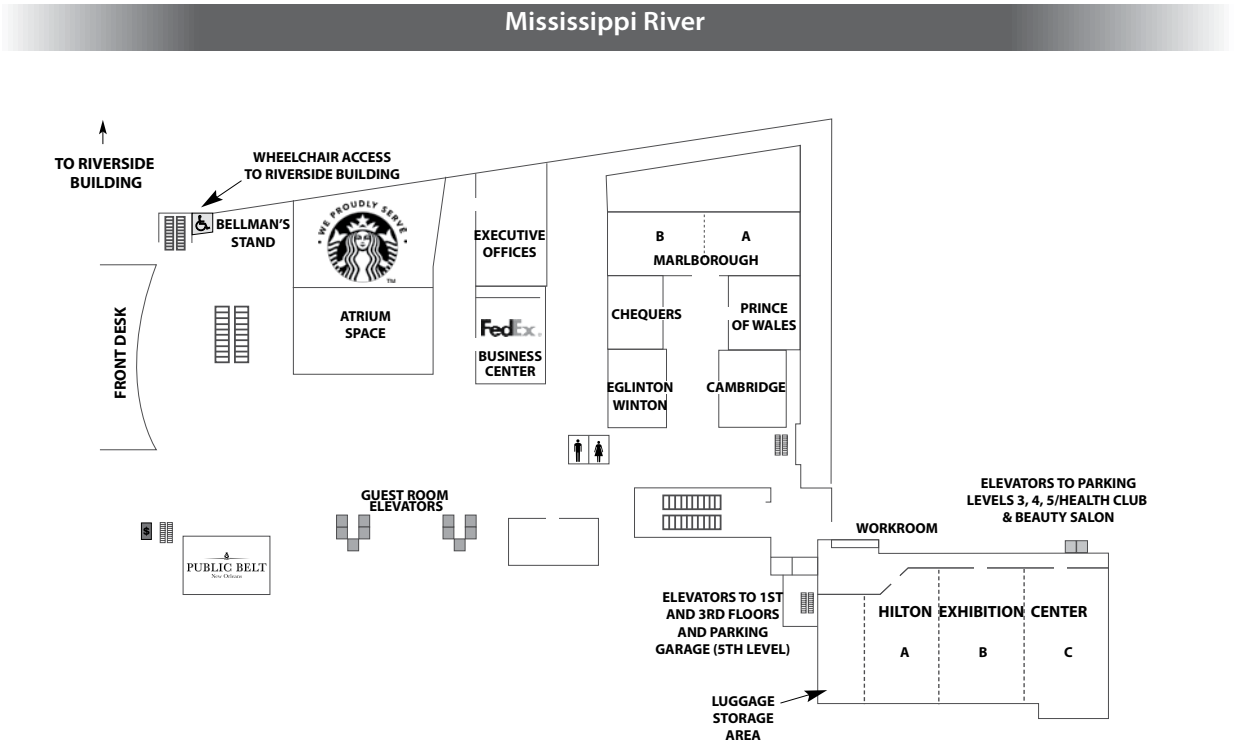
CE Course Rooms, Exhibitor-Hosted Sessions, Scientific Sessions, and Undergraduate Eduction Program



Hilton New Orleans Riverside Hotel Maps

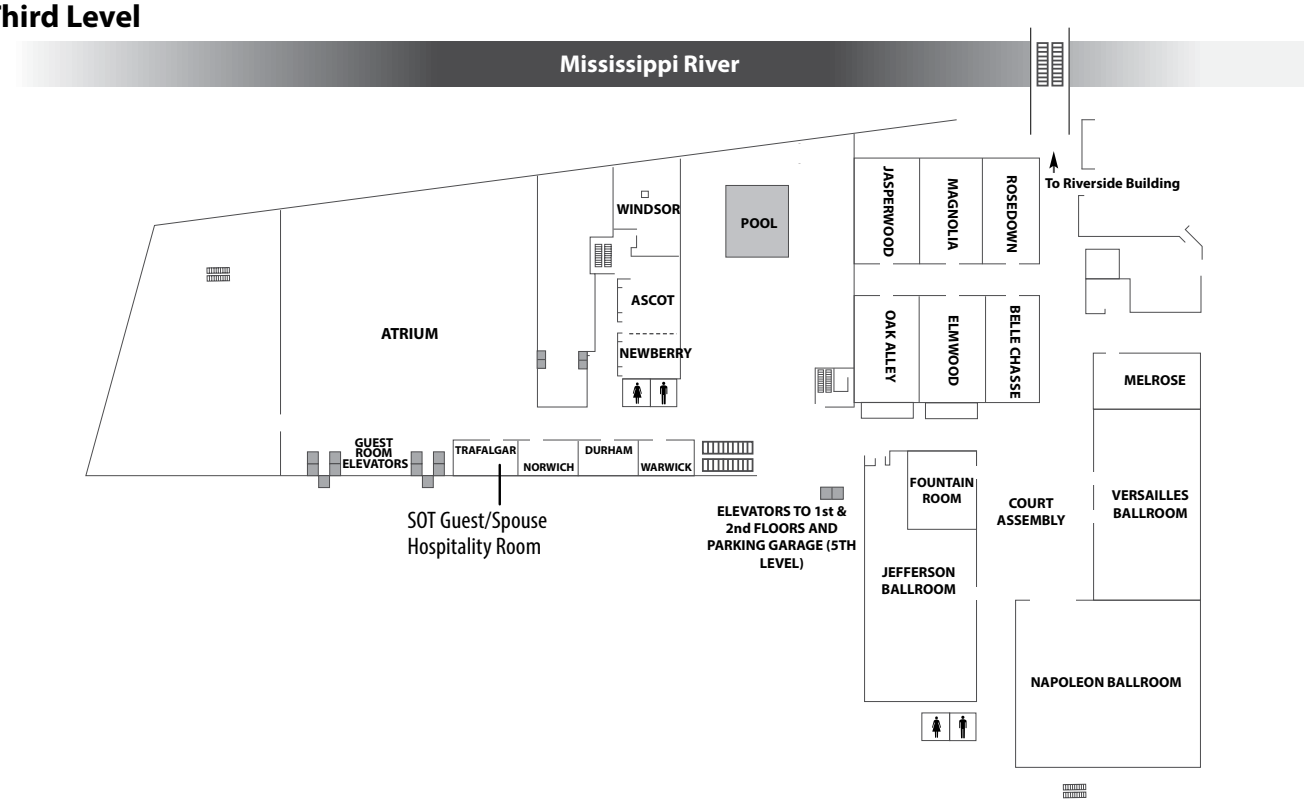
First Level

Second Level

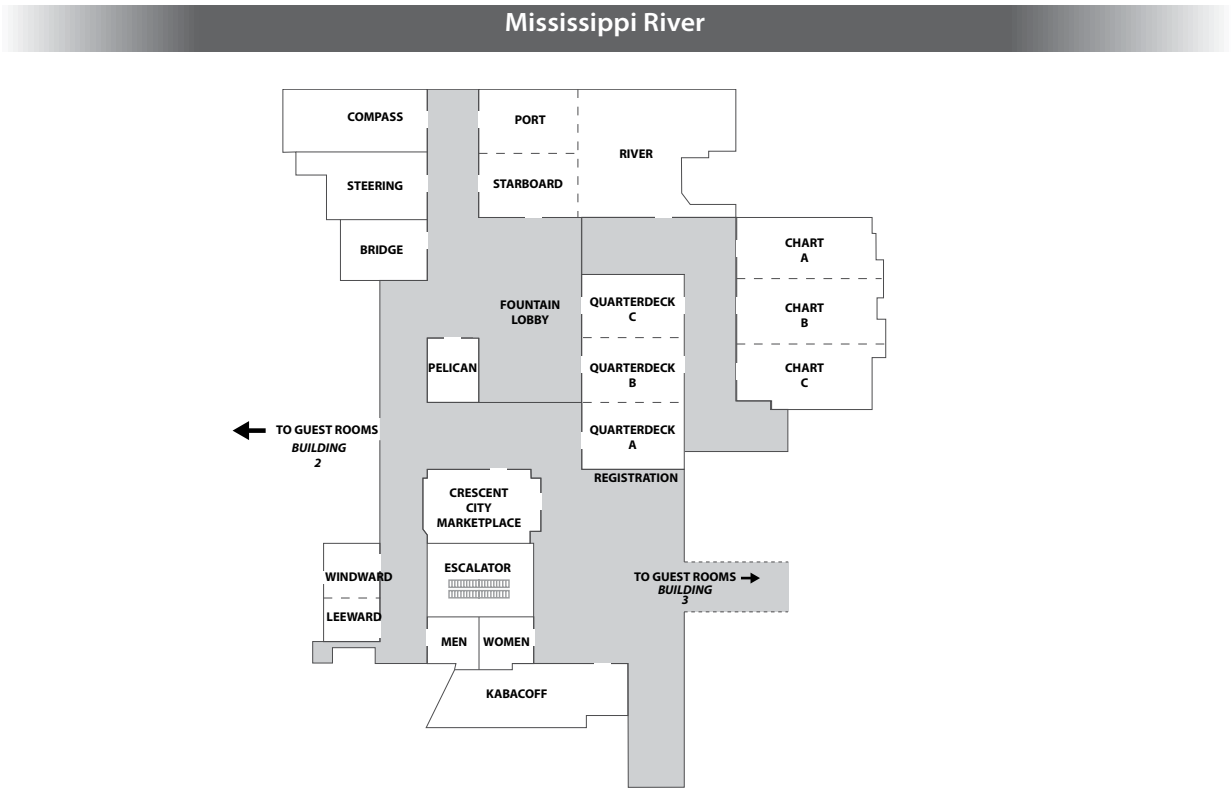


Hilton New Orleans Riverside Hotel Maps

Third Level

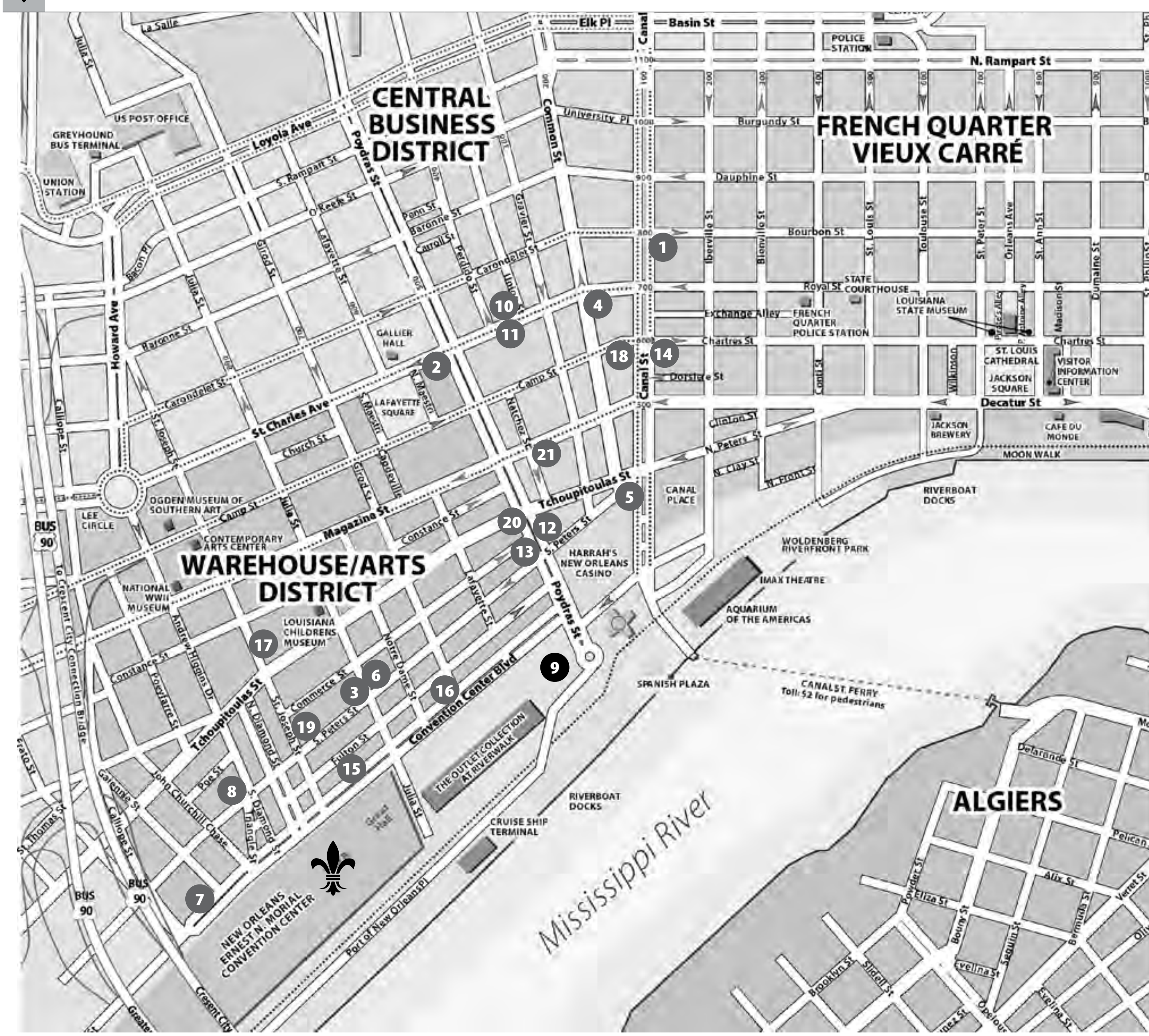


Riverside Complex



Map of New Orleans Hotel Locations

1	Astor Crowne Plaza	8	Hilton Garden Inn New Orleans Convention Center	15	New Orleans Downtown Marriott at the Convention Center
2	Blake Hotel	9	Hilton New Orleans Riverside *SOT Headquarters Hotel*	16	Omni Riverfront New Orleans
3	Courtyard by Marriott Convention Center	10	Hilton New Orleans St. Charles Avenue	17	Residence Inn by Marriott New Orleans Downtown
4	Courtyard by Marriott Downtown near the French Quarter	11	InterContinental New Orleans	18	Sheraton New Orleans
5	Doubletree by Hilton New Orleans	12	Le Meridien New Orleans	19	SpringHill Suites by Marriott Convention Center
6	Embassy Suites New Orleans Convention Center	13	Loews New Orleans	20	Staybridge Suites French Quarter Downtown
7	Hampton Inn & Suites New Orleans Convention Center	14	New Orleans Marriott	21	St. James Hotel New Orleans
⚜	New Orleans Ernest N. Morial Convention Center				



New Orleans Hotel Accommodations

1) Astor Crowne Plaza

739 Canal Street
Tel: 504.962.0500
www.astorneworleans.com

2) Blake Hotel

500 St. Charles Avenue
Tel: 504.522.9000
www. choicehotels.com/louisiana/new-orleans/ascend-hotels/la281?source=gglocaljn1

3) Courtyard by Marriott Convention Center

300 Julia Street
Tel: 504.581.9898
www.marriott.com/hotels/travel/msycy-courtyard-new-orleans-downtown-near-the-french-quarter

4) Courtyard by Marriott Downtown near the French Quarter

124 St. Charles Avenue
Tel: 504.581.9005
http://doubletree3.hilton.com/en/hotels/louisiana/doubletree-by-hilton-hotel-new-orleans-msytcdt/index.html

5) Double Tree by Hilton New Orleans

300 Canal Street
Tel: 504.581.1300
http://doubletree3.hilton.com/en/hotels/louisiana/doubletree-by-hilton-hotel-new-orleans-msytcdt/index.html

6) Embassy Suites New Orleans Convention Center

315 Julia Street
Tel: 504.525.1993
http://embassysuites3.hilton.com/en/hotels/louisiana/embassy-suites-by-hilton-new-orleans-convention-center-msycces/index.html

7) Hampton Inn & Suites New Orleans Convention Center

1201 Convention Center Boulevard
Tel: 504.566.9990
www.neworleanshamptoninns.com/hampton-inn-convention-center

8) Hilton Garden Inn New Orleans Convention Center

1001 South Peters Street
Tel: 504.525.0044
http://hiltongardeninn3.hilton.com/en/hotels/louisiana/hilton-garden-inn-new-orleans-convention-center-msygigi/index.html

9) Hilton New Orleans Riverside SOT Headquarters Hotel

SOT Headquarters Hotel

2 Poydras Street
Tel: 504.561.0500
http://www3.hilton.com/en/hotels/louisiana/hilton-new-orleans-riverside-msynhhh/index.html

10) Hilton New Orleans St. Charles Avenue

333 St. Charles Avenue
Tel: 504.378.2800
www.hhneworleansstcharles.com

11) InterContinental New Orleans

444 St. Charles Avenue
Tel: 504.525.5566
www.icneworleans.com

12) Le Meridien New Orleans

333 Poydras Street
Tel: 504.525.9444
www.lemeridienneworleanshotel.com

13) Loews New Orleans

300 Poydras Street
Tel: 504.595.3300
www.loewshotels.com/new-orleans

14) New Orleans Marriott

555 Canal Street
Tel: 504.581.1000
www.marriott.com/hotels/travel/msyla-new-orleans-marriott

15) New Orleans Downtown Marriott at the Convention Center

859 Convention Center Boulevard
Tel: 504.613.2888
www.marriott.com/hotels/travel/msymc-new-orleans-downtown-marriott-at-the-convention-center

16) Omni Riverfront New Orleans

701 Convention Center Boulevard
Tel: 504.524.8200
www.omnihotels.com/hotels/new-orleans-riverfront

17) Residence Inn by Marriott New Orleans Downtown

345 St. Joseph Street
Tel: 504.522.1300
www.marriott.com/hotels/travel/msyri-residence-inn-new-orleans-downtown

18) Sheraton New Orleans

500 Canal Street
Tel: 504.525.2500
www. sheratonneworleans.com

19) SpringHill Suites by Marriott Convention Center

301 St. Joseph Street
Tel: 504.522.3100
www. marriott.com/hotels/travel/msysh-springhill-suites-new-orleans-downtown

20) Staybridge Suites French Quarter Downtown

501 Tchoupitoulas Street
Tel: 504.571.1818
www.ihg.com/staybridge/hotels/us/en/new-orleans/msyps/hoteldetail?cm_mmc=googlemaps-_-sb-_-USEN-_-msyps

21) St. James Hotel New Orleans

330 Magazine Street
Tel: 504.304.4000
www.saintjameshotel.com

Use the SOT Mobile Event App to access a New Orleans city guide of hotels, restaurants, attractions, nightlife, and shopping. Download the app from your favorite app marketplace or access it via the SOT website.

New Orleans Regional Transit Authority
A system of streetcars and buses run throughout many areas of New Orleans with fares starting at $1.25. Visit NORTA website (**www.norta.com**) to plan your route.

At the SOT Pavilion…

Chat with colleagues and network with SOT Regional Chapter, Special Interest Group, and Specialty Section representatives.

Meet with *Toxicological Sciences* Editor-in-Chief Gary W. Miller and Managing Editor Virginia Hawkins.

Participate in #YouTox and learn how you can use social media to promote your science.

The SOT Pavilion is a place to connect with and learn about SOT.
Stop by **Booth 500** anytime during ToxExpo hours! See page 46 for more details.

The 3-day exposition associated with the Society of Toxicology Annual Meeting

ToxExpo Hours

Monday, March 14	9:15 AM to 4:30 PM
Tuesday, March 15	9:15 AM to 4:30 PM
Wednesday, March 16	9:15 AM to 4:30 PM

2,100+ Scientific Poster Presentations

350 Exhibitors

The toxicology marketplace featuring organizations with novel approaches and diverse solutions

ToxExpo.com

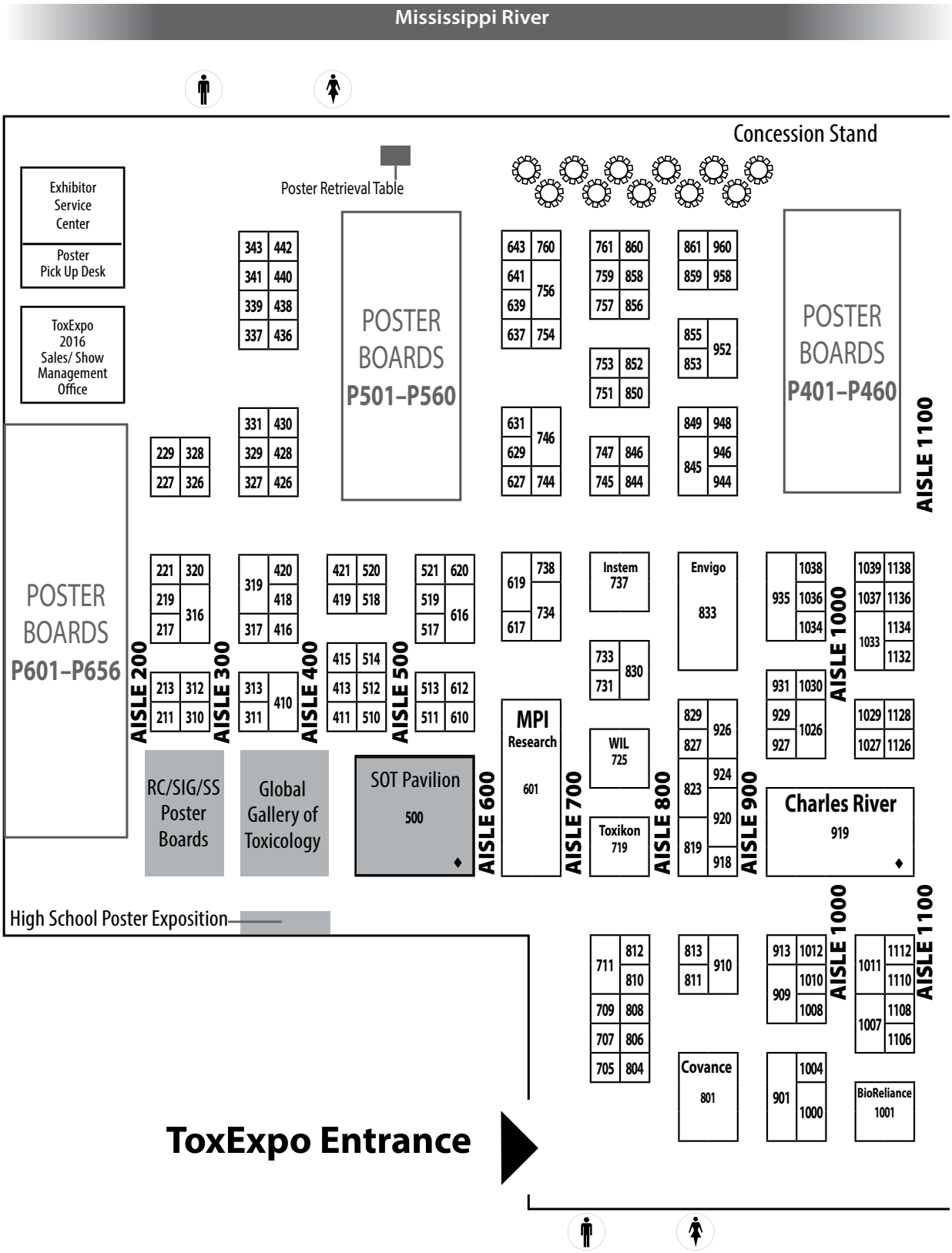
Connecting toxicologists with solution-based suppliers around the globe 24/7/365

ToxExpo Floor Plan

Exhibit Hall • First Floor

ToxExpo Hours:

Monday– Wednesday
9:15 AM–4:30 PM



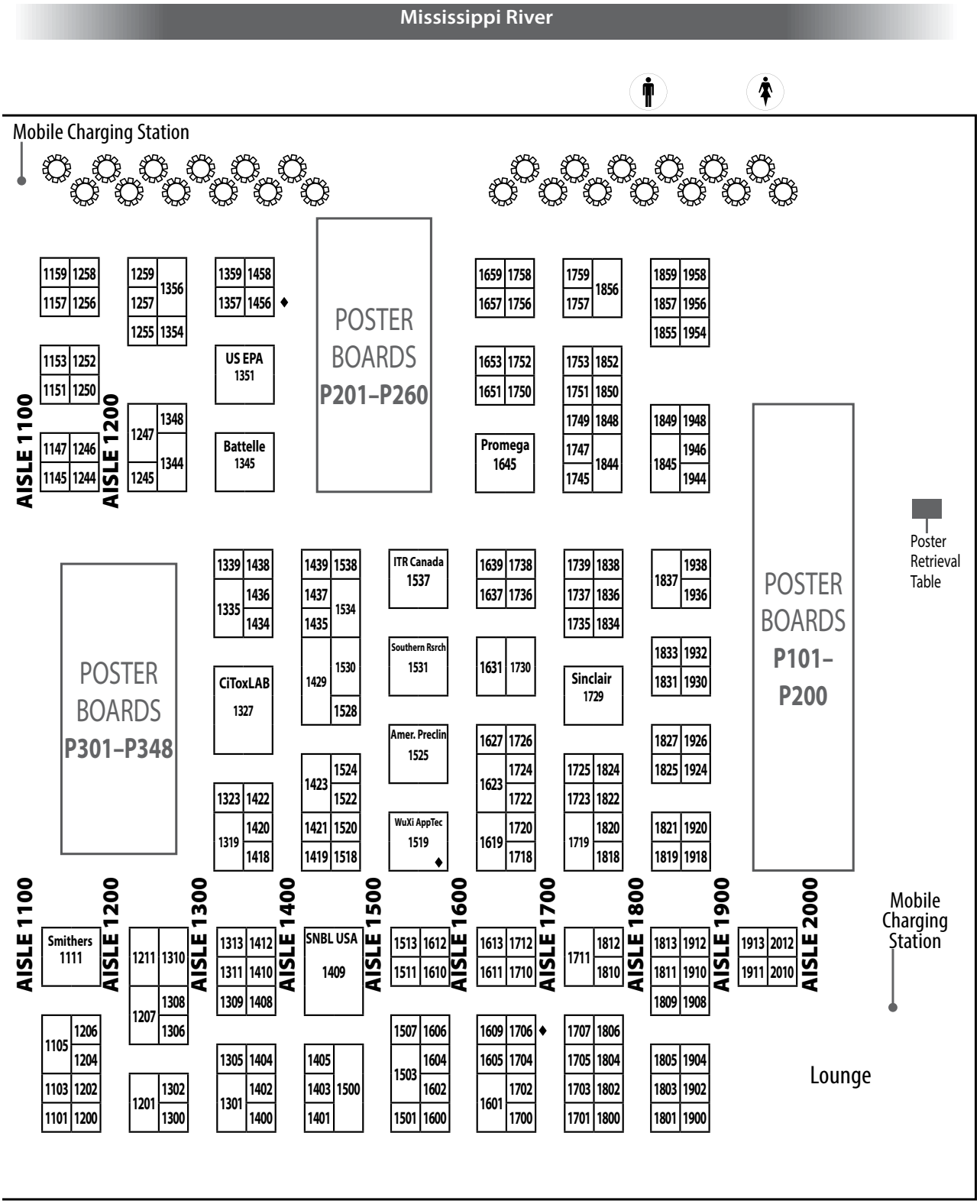
Special Mention and Thank You:

CiToxLAB—Attendee Bags

MilliporeSigma (BioReliance/EMD Millipore)—Lanyards

PreLabs—Hotel Room Keycards

ToxServices LLC—Notepads



ToxExpo 2016 Exhibitors

(As of January 22, 2016)

Use the Mobile Event App or visit ***www.ToxExpo.com*** *or the* **ToxExpo Directory** *for product/service descriptions, a map of booth locations, and other information.*

♦ Diamond Level Supporters
★ 2016 Annual Meeting Supporters
See complete listing of supporters on inside back cover and back cover.

Companies that have been ToxExpo Exhibitors for 25 years or more are set in bold typeface.

SOT Global Partners ◉
Complete list of SOT Global Partners can be found on page 381.

♦ **SOT Pavilion** **500**
- Member Services and Support
- Regional Chapter, Special Interest Group, and Specialty Section Interaction
- Meet with *Toxicological Sciences* Editors
- Social Media and Communication Outreach

Company Name	Booth Number
Abcam	1030
AbMax Biotechnology	1834
Abpro	1752
Absorption Systems	850
Accelera S.r.l.	1759
ACEA Biosciences, Inc.	410
ACGIH®	1751
Advinus Therapeutics Limited	754
Alabama Research & Development	**1034**
Alliance Pharma	1305
Alpha Genesis, Inc. (AGI)	1711
Alpha MED Scientific Inc.	311
Altasciences Clinical Research	1534
American Board of Toxicology (ABT)	1010
★ American College of Toxicology (ACT)	227
American College of Veterinary Ophthalmologists	1836
American Preclinical Services	1525
AnaPath GmbH/Safety Alliance	1410
Ani Lytics, Inc.	**1419**
Antech Diagnostics GLP	759
ApconiX Ltd.	519
Applied BioPhysics, Inc.	631
ArunA Biomedical, Inc.	1522
Axiogenesis	1730
Axion Biosystems, Inc.	846
Axol Bioscience	419
BASF SE	619
BASi (Bioanalytical Systems, Inc)	**1211**
★ **Battelle**	**1345**
BBD BIOPHENIX S.L. - BIOBIDE	1128
Better Research Better Life Foundation (BRBLF)	1804
Bio Medic Data Systems, Inc.	**935**
Bioculture (Mauritius) Ltd	1202
BioDetection Systems bv	331
BioLegend	1029
BioMedTech Laboratories	1710
Biopredic International	1258
BioreclamationIVT	**711**
BioSpyder Technologies, Inc	733
BioStat Consultants, Inc.	612
Bio-Techne	221
BTS Research	1301
Biotoxtech	929
Brains On-Line	1924
♦ Bristol-Myers Squibb Company	1706
Bruker	1308
★ **Calvert Laboratories, Inc.**	**845**
Camino Information Services	927
Cardno ChemRisk & Cardno	1038
CARE Research LLC/Colorado Histo-Prep	**1138**
Cayman Chemical	627
CBSET, Inc.	1520
Cedarlane	1511
CELENYS	1737
CellSystems GmbH	1659
Cellular Dynamics International, a FUJIFILM Company.	1201
CH Technologies (USA), Inc.	**1132**
♦ **Charles River** ◉	**919, 316**
Chemical Solutions Ltd.	827
CITI Program at University of Miami	1811
★ CiToxLAB	1327
Clontech Laboratories, Inc.	1501
Clyde Biosciences	1739
Comparative Biosciences, Inc. (CBI)	1004
CorDynamics	944
Corning Life Sciences	1027
Covance Inc. ◉	**801**
CRC Press - Taylor & Francis Group LLC	**1007**
Critical Path Institute	1802
CTEH®	1257
CXR Biosciences Limited	520
Cyprotex	734
Cytocentrics, Inc.	317
Data Sciences International (DSI)	**1344**
Detroit R & D, Inc.	620
DiaPharma Group, Inc.	219
Diversigen, Inc.	1602
DMT-USA Inc.	1838
Douglas Connect GmbH	1601
DV Biologics	1153
Dynex Technologies	313
EAG, Inc.	**610**
Eastern Virginia Medical School	1848
ECGVET, LLC	707
Ellegaard Göttingen Minipigs A/S	1619
Elm Hill Breeding Labs, Inc.	1513
Elsevier	**901**
emka TECHNOLOGIES, INC.	1437
Envigo ◉	**833**
Environmental Health Perspectives (EHP)	1357, 1359

Company Name	Booth Number
Enzo Life Sciences	421
EPISKIN	1837
Epithelix	643
EPL Archives, Inc.	1323
EPL, Inc.	**1319**
Eurofins BioPharma Product Testing Munich GmbH	1757
EUROFINS PHARMA DISCOVERY SERVICES	320
★ EUROTOX	329
Evercyte GmbH	1946
Exemplar Genetics	1421
Experimur	1507
Exponent, Inc.	745
FD NeuroTechnologies, Inc.	1944
FDA National Center for Toxicological Research	1912
FlowMetric	1720
Fraunhofer ITEM	1335
★ Genentech, Inc. ◉	1623
GENESIS LABORATORY MANAGEMENT, LLC	1806
Genox Corporation	428
Gentronix, Limited	731
Gyros	958
H&T Corporation	853
Hamilton Thorne	1012
HCTM CO.,LTD.	1723
HemoGenix Inc.	1420
Hepregen Corporation (now Ascendance Biotechnology, Inc)	1206
Hera BioLabs	1103
Hilltop Lab Animals, Inc.	415
Histo-Scientific Research Laboratories (HSRL)	1200
HistoTox Labs, Inc.	738
Histowiz	312
Horizon Discovery	1108
Human Toxicology Project Consortium (HTPC)	1704
Hurel Corporation	1302
Hurley Consulting Associates, Ltd.	1530
ICF International	1356
★ IDEXX BioResearch	1311
IIT Research Institute (IITRI)	**823**
Imabiotech	1722
ImQuest BioSciences, Inc.	430
In Vitro ADMET Laboratories (IVAL)	**804**
INDIGO Biosciences, Inc.	1422
Inhalation Sciences Sweden AB	1657
InoCardia Ltd	858
InSphero Inc.	1844, 1845
Instech Laboratories	**1033**
Instem	**737**
Institute for In Vitro Sciences, Inc.	1412
Integrated Laboratory Systems, Inc. (ILS)	1110
Integrated Nonclinical Development Solutions, Inc	753
IntelliCyt Corporation	1436

Pinpoint exhibitor booths and details quickly and easily with the interactive floor plan available through the SOT Mobile Event App.

Company Name	Booth Number
International Institute for the Advancement of Medicine	1147
Intertek	1405
InvitroCue	1653
IPS Therapeutique	1611
ITR Canada (Bozo & ITR Group)	**1537**
IUTOX	213
iuvo BioScience	757
iXCells Biotechnologies USA, LLC	512
Japanese Society of Toxicology	217
JOINN Laboratories Inc.	1749
JRF GLOBAL	1423
KAER Biotherapeutics	1039
KCAS Bioanalytical & Biomarker Services	1745
Kinder Scientific Company	1821
Korea Institute of Toxicology (KIT)	1824
Kunming Biomed International (KBI)	946
LAB ANIMAL	1306
Lab Products, Inc.	**913**
LabLogic Systems, Ltd.	510
Lampire Biological Laboratories, Inc.	511
Leadscope, Inc.	744
Leyden Group	617
Lhasa Limited	518
★ LikardaBio (a division of Likarda, LLC)	844
Litron Laboratories	1613
Lomir Biomedical, Inc.	**1105**
Lovelace Respiratory Research Institute (LRRI)	920
Luxcel Biosciences, Ltd.	420
Marshall BioResources	**1011**
Mary Ann Liebert, Inc.	1403
MatTek Corporation	756
MB Research Laboratories	1538
Medicilon Preclinical Research (Shanghai) LLC	1402
Medline Industries, Inc.	1435
MetaSystems Group, Inc.	413
Mexican Society of Toxicology	211
MicroConstants	1408
MicroMatrices Associates Ltd	416
Millar, Inc.	521
★ **MilliporeSigma (BioReliance/EMD Millipore)**	**1001, 1101**
Mimetas	1651
Mitologics	327
Molecular Networks GmbH	1252
Molecular Toxicology Inc.	1736
MPI Research ◉	**601**
★ **MRIGlobal**	**1145**
MultiCASE Inc.	1112
NAMSA	751
Nanion Technologies Inc.	418
nanoComposix	513
National Disease Research Interchange	1600
♦ National Institute of Environmental Health Sciences (NIEHS)	1456
National Jewish Health	747
National Library of Medicine	1354
National Toxicology Program	1458
NeuroScience Associates (NSA)	**1339**
Nexcelom Bioscience	1700
Northwest Life Science Specialties, LLC	639
★ NSF International/Health Sciences	1247
Nucro-Technics Incorporated	**808**
Oak Hill Genetics	859
OHO Trading Inc	1605
Organovo ◉	1701

(continued on next page)

Company Name	Booth Number
OtoScience Labs	1819
Oxford University Press ◉	310
Pacific BioLabs	1136
Path-Tec	1827
PDS Life Sciences	**926**
Perceptive Instruments Ltd.	1418
♦ Pfizer Worldwide Research and Development ◉	1037
Pharmaron	1310
Phase Holographic Imaging	1609
PhoenixBio Co., Ltd.	1606
Phylonix Pharmaceuticals Inc	806
Pluriomics	1753
PointCross Life Sciences	1157
Poly Scientific R&D Corp.	426
Porsolt	1738
Pre-Clinical Research Services, Inc. (PCRS)	1612
PreLabs	812
Primacyt Cell Culture Technology GmbH	1758
Primate Products, Inc.	**1313**
Primetrics Pte Ltd	1500
Product Safety Labs	**813**
Promega Corp.	1645
Prous Institute for Biomedical Research	1637
Puracyp, Inc.	761
Purina LabDiet	**909**
PWG Genetics	1401
QIAGEN Bioinformatics	**641**
QPS-THI	1813
QTest Labs	1438
Qualyst Transporter Solutions	637
Quidel	931
Quotient Bioresearch	1718
Ramboll Environ	1159
ReachBio	1300
Ricerca Biosciences LLC	**1207**
Ridglan Farms, Inc	924
RightAnswer.com	514
Rockland Immunochemicals, Inc.	1255
Royal Society of Chemistry	1850
RTC, Research Toxicology Centre S.p.A.	319
RTI International	1400
RURO, Inc.	1707
SafeBridge Consultants, Inc.	860
Sarstedt Inc	1524
Science/AAAS	1518
SciKon Innovation, Inc.	1750
SCIREQ, Inc. (Scientific Respiratory Equipment)	1439
ScitoVation	1404
Seahorse Bioscience, a part of Agilent Technologies	1126
Sekisui, XenoTech LLC	829
SenzaGen AB	1938
Sequani Limited	**910**
Seventh Wave	960
Shanghai InnoStar Biotech Co., Ltd (InnoStar)	616
Shanghai Institute of Materia Medica, Chinese Academy of Sciences	1725
Simulations Plus, Inc.	952
Sinclair Bio Resources	1639
Sinclair Research Center LLC	1729
Smithers	**1111**
SNBL USA SRC	1627
SNBL USA, Ltd ◉	**1409**
Society of Quality Assurance (SQA)	1604

Company Name	Booth Number
SOLVO Biotechnology	326
Sony Biotechnology Inc.	1822
Southern Research	**1531**
Springer	1810
SRI International	**1245**
Star-Oddi	1434
STEMCELL Technologies Inc	849
Stemina Biomarker Discovery, Inc.	1818
Stillmeadow Inc.	**918**
Strand Life Sciences	1204
Strategic Applications, Inc. (SAI)	**1429**
Suburban Surgical Company	**705**
Suven Life Sciences Limited	1831
Syngene International Limited	517
SynVivo	760
Sysmex	1809
Taconic	**819**
Taylor & Francis Group ◉	411
★ TERA Center, University of Cincinnati ◉	1703
That's Nice	1503
Three S Japan Co., Ltd.	855
Tianjin Hope Industry & Trade Co, Ltd	1259
Tianjin Institute of Pharmaceutical Research	1610
TNO Triskelion	1246
Toxicology Regulatory Services (TRS)	1008
Toxicology Research Laboratory (TRL)	1151
TOXI-COOP Toxicological Research Center	861
Toxikon Corporation	**719**
ToxPlanet	1309
★ ToxServices LLC	1528
ToxStrategies	948
TPL Path Labs	852, 856
Trevigen Inc.	1036
Triangle Research Labs, LLC	1256
TSE Systems, Inc.	830
UID	1026
UNIConnect	1348
upcyte technologies GmbH	1747
US EPA/Office of Research and Development	1351
Vala Sciences, Inc.	1735
Veritox, Inc.	1244
Vet Path Services (VPS)	1712
Vimta Labs Limited	1250
Visikol	1106
Vitrocell Systems GmbH	1134
Vitron, Inc.	**629**
VivaQuant, LLC	1913
Vivo Bio Tech Limited	1726
vivoPharm	746
Vivotecnia	1856
VRL Laboratories	1719
Wake Forest Innovations	1930
WestChina-Frontier PharmaTech Co., Ltd.	1631
★ **WIL Research ◉**	**725**
World Precision Instruments	810
Worldwide Primates, Inc.	709
♦ WuXi AppTec ◉	1519
Xenometrics	811
Xybion Medical Systems	1000

Exhibitor-Hosted Sessions Index

Exhibitor-Hosted Sessions E

(Listed by date and time, then alphabetically by presenter)

Exhibitor-Hosted Sessions are informative sessions developed by an exhibiting company or SOT Supporter.

Monday

9:00 AM to 10:00 AM

Presented by	Topic	Room	Page
Covance	Key Considerations for the Development of Oligonucleotide-Based Therapeutics	Room 212	125
SOLVO Biotechnology	*In Vitro* Proximal Tubule Cell Monolayers As a Predictive Tool for Nephrotoxicity: Investigating Time- and Dose-Dependent Renal Toxicity using Clinically Relevant Biomarkers	Room 211	125
TERA Center, University of Cincinnati	Endocrine Disruption: Research, Analysis, Regulation, and Communication	Room 213	125
US Environmental Protection Agency	US EPA and Unilever Present New Research Collaboration to Advance Nonanimal Approaches for Chemical Risk Assessment	Room 205	125

10:30 AM to 11:30 AM

Presented by	Topic	Room	Page
American Preclinical Services	Continuing Advancements for *In Vitro* and *In Vivo* Medical Device Hemocompatiblity Testing	Room 205	150
Envigo	Key Considerations in the Safety Evaluation of Drugs Targeting Immune Checkpoints	Room 213	150
Lhasa Limited	Advantages in Utilizing an Integrated *In Silico* Solution for ICH M7 Expert Review	Room 212	150
NeuroScience Associates, Inc.	Essential Elements and Considerations for Neurotoxicity Study Designs: Excerpts from the presentation given to the US FDA on September 16, 2015	Room 211	150

12:00 Noon to 1:00 PM

Presented by	Topic	Room	Page
Data Sciences International	Are Industry Blood Pressure Standards about to Change? A Discussion of New Clinical Findings and Potential Impact to Preclinical Assessment	Room 205	151
Inhalation Sciences Sweden AB	XposeALI—Setting a New Standard for ALI Cell Exposures	Room 211	151
Qualyst Transporter Solutions, LLC	Why Basolateral Transporters Matter—Their Importance in Predicting Biliary Clearance and Hepatotoxicity	Room 213	151
US Environmental Protection Agency	Stakeholder Session: US EPA Endocrine Disruptor Screening Program (EDSP) and the Use of High-Throughput Assays and Predictive Models to Screen for Endocrine Activity	Room 212	151

1:30 PM to 2:30 PM

Presented by	Topic	Room	Page
BioReliance	ICH M7—Dealing with Genotoxic Impurities	Room 205	173
Charles River	Biomarker Immunoassays: To Validate or Not to Validate, That Is the Question	Room 212	173
MPI Research	Do You See What Eye See? Ocular Distribution for Exposure Assessment	Room 211	173
Phase Holographic Imaging	New Way of Evaluating Drug Toxicity—Label-Free Live-Cell Kinetic Imaging Cytometry	Room 213	173

3:00 PM to 4:00 PM

Presented by	Topic	Room	Page
In Vitro ADMET Laboratories LLC	Cryopreserved Human Enterocytes and Hepatocytes for the Evaluation of Adverse Drug Properties	Room 205	178
Litron Laboratories	Multiplexed Assays for Flow Cytometry: Case Example of Mode of Action Determination for Genotoxic Agents	Room 213	178
MultiCASE Inc	CASE Ultra: Combining Statistical and Rule-Based Methodologies	Room 211	178
Sinclair Research Center	The Miniature Swine As a Model in Translational Medicine: Clinical and Pathology Evaluations	Room 212	178

4:30 PM to 5:30 PM

Presented by	Topic	Room	Page
InSphero Inc.	Use of 3D InSight™ Human Liver Microtissues As a Tool for Prediction of Drug-Induced Liver Injury	Room 205	178
Instem	How to Make SEND Business As Usual	Room 212	178
Seahorse Bioscience, a part of Agilent Technologies	Functional Assays for Assessing Mitochondrial Toxicants and Other Energy Metabolism Disruptors in Live Cells	Room 211	178

Tuesday

9:00 AM to 10:00 AM

Presented by	Topic	Room	Page
Altasciences	Efficiently Generating Reliable Toxicological Data on Protein Therapeutics	Room 205	182
Envigo	Dealing with Uncertainty: Science-Based Solutions to the Challenges of Worldwide Agrochemical Registration	Room 213	182
MPI Research	Ocular Gene and Cell Therapy Safety Studies: Critical Ophthalmology Endpoints to Consider	Room 211	182
Organovo	Advances in the Use of Bioprinted 3D Human Liver Tissues for the Assessment of Drug-Induced Liver Toxicity	Room 212	181

10:30 AM to 11:30 AM

Presented by	Topic	Room	Page
Battelle	Conducting Aerosol and Vapor Inhalation Studies Using Highly Hazardous Chemical Agents: A Case Study of Sulfur Mustard (HD) Vapor Inhalation to Swine	Room 213	209
Charles River	Inflammation—Discovery to Toxicology	Room 212	209
Corning Life Sciences	Corning HepatoCells and 3D Organotypic Spheroid Culture Systems for Predicting Drug-Induced Liver Toxicity	Room 211	209
Promega Corporation	Combining Real-Time Measurement of Cell Viability and Extraction of RNA from the Same 3D Spheroids	Room 205	209

12:00 Noon to 1:00 PM

Presented by	Topic	Room	Page
ACEA Biosciences & Cellular Dynamics International, A FUJIFILM Company	Combining xCELLigence® CardioECR Technology & iPSC Cardiomyocytes for Relevant Frontline and Mechanistic Cardiotoxicity Screening	Room 213	210
emka TECHNOLOGIES	easyTEL-Digital, New Implanted Telemetry for Large Animals	Room 211	210
Sony Biotechnology Inc.	The Next Generation of Cardiomyocyte Contractility, Cell Migration, and Cell Viability Assays Using the Sony SI8000 Live Cell Imaging Platform	Room 205	210
US Environmental Protection Agency	Stakeholder Session: US EPA Endocrine Disruptor Screening Program (EDSP) and the Use of High-Throughput Assays and Predictive Models to Screen for Endocrine Activity	Room 212	210

1:30 PM to 2:30 PM

Presented by	Topic	Room	Page
ChanTest and Charles River	Complete CV Assessment, *In Vitro* through *In Vivo*	Room 212	231
Ellegaard Göttingen Minipigs, Marshall BioResources, and CiToxLAB Scantox	Can We Learn More from Our Göttingen Minipig Toxicology Studies?	Room 205	231
InSphero Inc.	3D Human Liver Tissues for the Assessment of Drug Induced Liver Versatile Tool for More Physiologically Relevant Efficacy and Safety Assessment	Room 213	231
SenzaGen	Genomics—The Future of Sensitization Testing and Safety Assessment	Room 211	232

3:00 PM to 4:00 PM

Presented by	Topic	Room	Page
Axol Biosciences	The Use of iPSC-Derived Cells As *In Vitro* Models for Toxicity Screening	Room 212	237
BioReliance	Evaluation of the Human Renal Proximal Tubule Epithelial Cell Line, SA7K, in a Multiplexed qHTS Platform for Investigating Nephrotoxicity and a 3D Organ-on-a-Chip OrganoPlate™ Platform for Measuring Renal Clearance	Room 213	236
NSF International/ Health Sciences	Performing Toxicological Risk Assessment of Leachables in Combination Products	Room 205	236
Stemina Biomarker Discovery	Practical Application of a Human Stem Cell Assay for Developmental Toxicity Testing	Room 211	237

4:30 PM to 5:30 PM

Presented by	Topic	Room	Page
Axion BioSystems	Protecting Life's Circuitry: *In Vitro*, Functional Evaluation of Neurotoxicity and Cardiotoxicity Using the Maestro Multiwell Microelectrode Array (MEA) Platform	Room 211	237
Clyde Biosciences	Stem-Cell Derived Cardiomyocyte Preparations in Single Cell, 2D, and 3D Tissue Systems: Their Role in Cardiotoxicology and Novel Lead Investigation	Room 212	237
Instem	KnowledgeScan™, a New Approach to Target Safety Assessment	Room 213	237
Leadscope Inc., Lhasa Limited, and MultiCASE Inc.	Implementation of ICH M7 Recommended (Q)SAR Analyses	Room 205	237

TOX EXPO™ *Your 24/7 source for the latest developments in equipment, technology, toxicology services, and publications*

9:00 AM to 10:00 AM

Presented by	Topic	Room	Page
Charles River	*In Vitro* Toxicology and Integrated Toxicology—What Are These?	Room 212	239
Hepregen Corporation (now Ascendance Biotechnology, Inc)	Use of Long-Term Micropatterned Primary Human Hepatocyte Cultures (HepatoPac) to Assess Efficacy and Tolerability of Antisense Oligonucleotides	Room 205	239

10:30 AM to 11:30 AM

Presented by	Topic	Room	Page
Envigo	Key Considerations in the Safety Evaluation of Novel Therapeutic Modalities for Oncology	Room 213	266
UNIConnect	Software Considerations When Expanding Your Tox Lab to Include PGx Testing	Room 205	266

12:00 Noon to 1:00 PM

Presented by	Topic	Room	Page
Eurofins BioPharma Product Testing and AnaPath	Implantation Studies for Medical Devices According to ISO 10993-6—Pitfalls, Diagnostic Problems, Misinterpretations	Room 211	266
Fraunhofer ITEM	Testing Approaches Towards Safe Nanoproducts	Room 205	266
ICF International	DRAGON ONLINE: A Web-Based Tool for Systematic Literature Review	Room 212	266

4:30 PM to 5:30 PM

Presented by	Topic	Room	Page
Sinclair Research Center	Behavioral and Neurological Assessments in the Miniature Swine	Room 212	294

Additional sessions may be scheduled after the printing of this Program. *Please see the* ToxExpo Directory *or use the Mobile Event App for the most current schedule.*

ToxExpo 2017 Exhibit Space Selection Process

Tuesday, March 15, at 4:45 PM in Room 215

Priority Point booth sales for 2017 will take place on an appointment basis at the ToxExpo Sales Office. Those companies in higher point levels will be contacted in advance of the meeting with their scheduled appointment time. If you did not receive an appointment in advance, please plan to attend the 2017 Sales Meeting.

Join the Society of Toxicology or upgrade your membership to a level that's right for you.

Membership is affordable and adds value!

Communicate, connect, and collaborate with colleagues via ToXchange. If it is happening within SOT, it is in ToXchange.

Access *Toxicological Sciences*, the official journal of SOT.

Qualify for reduced SOT member rates for SOT meetings, courses, and events.

Join one or more of the 27 Specialty Sections, 18 Regional Chapters, and 6 Special Interest Groups.

Utilize career resources such as the SOT Job Bank and Mentor Match throughout the year.

Nominate and apply for SOT member awards—more than 45 awards are available to members.

Full members demonstrate a continuing professional interest in toxicology and have conducted and published original research, and/or are generally recognized as expert in some area of toxicology.

Associate members are engaged in continuing professional scientific activities in toxicology.

Postdoctoral members hold a PhD or other doctoral degree (e.g., MD, DVM) with an interest in toxicology and are under the direction of a research mentor.

Student members are enrolled in a graduate degree program related to toxicology.

Dues assistance opportunities exist for approved members in developing countries. Undergraduate students can become involved as SOT Undergraduate Student Affiliates.

8,000 members from more than 70 countries worldwide

Use the online membership application to join or upgrade your membership. Visit **www.toxicology.org** and select Join SOT at the top of the page.

Special offer to nonmember 2016 Annual Meeting attendees: submit your completed application for the May review cycle (deadline May 1, 2016) and, upon acceptance, SOT will waive your 2016 membership dues.

Registration

Annual Meeting Registration Fees

	On-Site
SOT Member	$430
Nonmember	$780
SOT Retired/Emeritus Member	$170
Postdoctoral SOT Member	$185
Postdoctoral Nonmember	$270
Graduate Student SOT Member	$165
Graduate Student Nonmember	$230
Undergraduate Student*	$0
High School Student*	$0
SOT Global Partner	$0
Press	$0
Guest *(Nonscientist)*	$100

(Guests do not have access to the Scientific Sessions or the ToxExpo.)
**Copy of Student ID Required*

Continuing Education Sunrise Mini-Course Fees
(includes continental breakfast)

(Only Annual Meeting Registrants May Enroll in CE Courses.)

	On-Site
SOT Member/Global Partner	$125
SOT Retired/Emeritus Member	$125
Nonmember	$145
Postdoctoral *(SOT Member or Nonmember)*	$125
Graduate or Undergraduate Student *(SOT Member or Nonmember)*	$95
Press	$0

Continuing Education Course Fees
(per morning or afternoon course)

(Only Annual Meeting Registrants May Enroll in CE Courses.)

	On-Site
SOT Member/Global Partner	$220
SOT Retired/Emeritus Member	$180
Nonmember	$370
Postdoctoral *(SOT Member or Nonmember)*	$160
Graduate or Undergraduate Student *(SOT Member or Nonmember)*	$115
Press	$0

See Registration Form for additional options.

Annual Meeting Registration Includes:

Awards Ceremony, Sunday, March 13, 5:15 pm–6:30 pm.

Welcome Reception, Sunday, March 13, 6:30 pm–7:30 pm.

Daily Plenary Lectures, Monday, March 14–Wednesday, March 16, 8:00 am–9:20 am.

All Scientific Sessions, 9:30 am, Monday, March 14, through 12:45 PM, Thursday, March 17 (see Program Schedule beginning on page 121 for additional details).

ToxExpo, Exhibit Hall, Monday, March 14–Wednesday, March 16, 9:15 am–4:30 pm.

Participants also are encouraged to register for the Continuing Education Courses. These are available during three time intervals on Sunday, March 13—the Sunrise Mini-Course is 7:00 am–7:45 am, morning courses are 8:15 am–12:00 noon, and afternoon courses are 1:15 pm–5:00 pm.

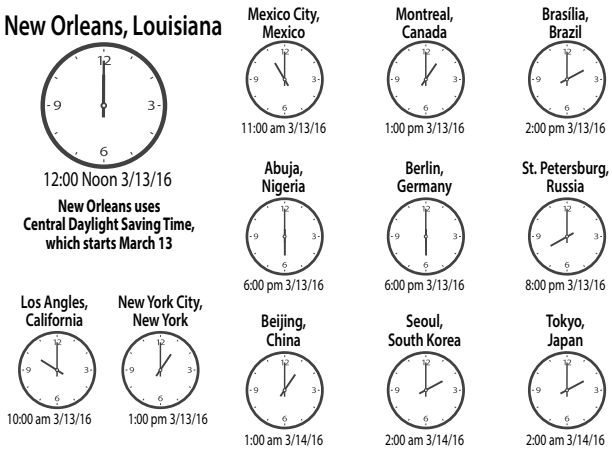
Registration Hours

The Registration Desk is located in the lobby of the First Floor in the New Orleans Ernest N. Morial Convention Center.

Registration hours:

Saturday	4:00 PM–7:00 PM
Sunday	7:00 AM–8:00 PM
Monday	7:00 AM–5:00 PM
Tuesday	8:00 AM–4:00 PM
Wednesday	8:00 AM–4:00 PM
Thursday	8:00 AM–1:00 PM

What time is it in New Orleans...



2016 SOT Annual Meeting Policies

By registering for the 2016 SOT Annual Meeting, you are agreeing to the following terms and conditions:

For individuals who are not members of SOT, participation in SOT's Annual Meeting and ToxExpo is available only to bona fide individuals who are engaged in or promote the field of toxicology or biotechnology research and support the growth and development of the toxicology field. For organizations, participation in the SOT's Annual Meeting and ToxExpo is available only to bona fide organizations with public policy positions and business practices that are generally consistent with SOT's mission, goals, reputation, and its policies and principles as determined by SOT. SOT reserves the right to review applications for participation at SOT's Annual Meeting and ToxExpo to confirm that the applicant meets these criteria and may, at SOT's sole discretion, reject a registration by any individual or organization or withdraw registration privileges at any time if any individual or organization is found to be inconsistent with SOT's principles and interests.

Unless written notification by the registrant, stating otherwise, is submitted to SOT Headquarters prior to the Annual Meeting or while registering on-site, SOT Annual Meeting registrants grant SOT permission:

To reproduce, copy, and publish image, voice, and any or all media taken at the Annual Meeting.

To share registrant contact information with organizations that we believe might have a product or service of interest to you. Limited data provided to third parties include name, affiliation, title, and business address. Your telephone and fax numbers, and email will not be disclosed to third parties.

To share registrant name and affiliation with SOT exhibiting companies.

To be included in the Attendee listing—registrant name and affiliation shared.

SOT Annual Meeting registrants are prohibited from:

Inviting children under the age of 15 and guest/spouse registrants into the Exhibit Hall. Session chair must provide consent for the guest/spouse or child to attend the session.

Soliciting in the ToxExpo Exhibit Hall unless they are a current exhibitor. SOT and ToxExpo retains the right to have removed from the exposition any company that has not duly contracted for exhibit space.

Taking photographs or other electronic capture of scientific sessions in meeting rooms or the ToxExpo without the consent of the session chair and the presenter(s)/author(s).

Photographing colleagues against the backdrop of scientific posters on display without the express consent of the presenting author(s).

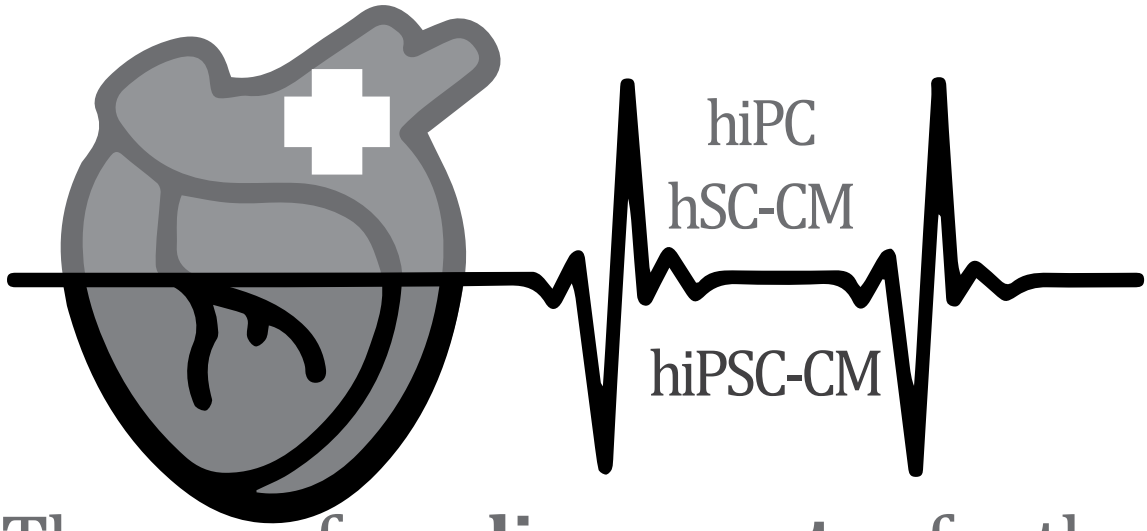
Photographing exhibit booths.

Speaking on cell phone while attending scientific sessions.

The policies adopted above will be enforced by the Society. Those individuals who do not comply will be asked to leave the session or ToxExpo floor. If you have any questions regarding these policies, please contact the SOT Headquarters Office.

SOT | Contemporary Concepts in Toxicology

OCTOBER 25–26, 2016 • ARLINGTON, VIRGINIA



The use of **cardiomyocytes** for the **assessment** of **proarrhythmic** risk

REGISTRATION | SCIENTIFIC PROGRAM | HOUSING
ON
WWW.TOXICOLOGY.ORG/hiPC

Society of Toxicology

55th Annual Meeting

Past Presidents' 5K Fun Run/Walk

New Orleans, Louisiana

March 15, 2016

Audubon Park

"People who get together to sweat together, stay together!"
—Jay Goodman, SOT Past President

For registration information, visit the 5K Fun Run tab under the Special Events section of the SOT Annual Meeting website.

Registration is only $25 and all proceeds will go toward the SOT Endowment Fund.

Supported by:

IDEXX BioResearch

MilliporeSigma

General Information

SOT Services

SOT Pavilion

Stop by the SOT Pavilion anytime during ToxExpo hours. Get answers to SOT questions and have impromptu (or scheduled) conversations with friends and colleagues. You can:

Chat with *Toxicological Sciences* Editor-in-Chief Gary W. Miller from 10:00 am–11:00 am and 2:00 pm–3:00 pm, Monday through Wednesday. Managing Editor Virginia Hawkins also is available Monday through Wednesday from 9:15 am–4:30 pm.

Meet representatives from SOT Regional Chapters, Special Interest Groups, and Specialty Sections, including a daily Meet the Leaders opportunity from 3:00 pm–4:00 pm.

Share your Annual Meeting, SOT, and toxicology experiences (#YouTox) in our social media corner.

Receive guidance on how to communicate your science more effectively.

Learn about SOT activities, programs, and membership.

You're always welcome at the SOT Pavilion. The Pavilion is located at Booth #500 inside the ToxExpo Exhibit Hall and is open the following hours:

Monday	9:15 AM–4:30 PM
Tuesday	9:15 AM–4:30 PM
Wednesday	9:15 AM–4:30 PM

Mobile Event App

Use the Mobile Event App to access 55th Annual Meeting details. Bring it with you on your mobile device of choice.

(See page 3 for more details.)

The Toxicologist: The Official Record of the 2016 Annual Meeting Abstracts

The Toxicologist is an important scientific resource, as it is the official compilation of all accepted abstracts for the 55th Annual Meeting of the Society of Toxicology. With more than 2,500 abstracts for the meeting, this supplementary issue of *Toxicological Sciences* is a critical publication for accessing the latest findings in toxicology.

A copy of the printed version of *The Toxicologist* may be purchased for $40 by preordering via the registration form or on-site while supplies last.

The Toxicologist PDF is available for download via the SOT website.

Full abstracts can be accessed via the Mobile Event App or Online Planner available on the SOT website and app market places.

Viewing Abstracts

All abstracts are available in the Mobile Event App and Online Planner. *The Toxicologist* is available to download as a PDF via the SOT website. The Late-Breaking Abstracts Supplement is available to download as a PDF via the SOT website.

(Please see Late-Breaking Abstract details on page 296.)

The *Program:* The Guide to the SOT 2016 Annual Meeting and ToxExpo

The *Program* is a printed guide to all the activities of the 2016 Annual Meeting and ToxExpo. The *Program* includes detailed information on the scientific sessions including an overview for these sessions, with the exception of the poster and platform sessions. The *Program* includes the poster session schedule and a map of the poster boards, as well as an overview of all the Continuing Education course offerings.

The *Program* PDF is available for download via the SOT website.

Copies of the *Program* are available on-site for meeting registrants.

ToxExpo Directory

The *ToxExpo Directory* is a complimentary publication available on-site that details ToxExpo Exhibitors, their contact information, and their featured products and services. The directory index feature assists attendees with identifying an Exhibitor who offers a specific product or service.

Attendees can use the SOT Mobile Event App to discover additional information about ToxExpo Exhibitors who have the ability to feature a digital profile, which can be different than their printed version.

Exhibitor Information

Full exhibit information details may be found on pages 33–41.

Exhibit Hall (Hours/Location)

Exhibit Hours at the New Orleans Ernest N. Morial Convention Center:

Monday–Wednesday,
ToxExpo 9:15 AM–4:30 PM

The ToxExpo Exhibition is located on the First Floor of the convention center. A map of the Exhibit Hall is located on pages 34–35. Exhibit personnel may enter the hall one hour before the ToxExpo opens with an Exhibitor badge. Poster presenters may enter the hall at the poster set-up times specified on page 113. *ToxExpo Directory* copies are available throughout the convention center.

ToxExpo 2017 Exhibit Space Selection Process

Priority Point booth sales for 2017 will take place on an appointment basis at the ToxExpo Sales Office. Those companies in higher point levels will be contacted in advance of the meeting with their scheduled appointment time. If you did not receive an appointment in advance, please plan to attend the 2017 Sales Meeting on Tuesday, March 15, at 4:45 pm in Room 215.

Guest/Spouse Hospitality Room

The SOT Guest/Spouse Hospitality Room is located in the Hilton Riverside Hotel in the Trafalgar Room. The Hospitality Room provides guest registrants (nonscientists) with a place to meet and socialize with other guests. The room is open Sunday through Thursday, and information on local attractions is available. Guests and spouses must be registered for the Annual Meeting to access the Hospitality Room. Guests must register for the Annual Meeting with the person they are accompanying.

Guest/Spouse Hospitality Room Hours:

Sunday	8:00 AM–5:00 PM
Monday	8:00 AM–5:00 PM
Tuesday	8:00 AM–5:00 PM
Wednesday	8:00 AM–5:00 PM
Thursday	8:00 AM–10:00 AM

Internet Access at the Convention Center

SOT understands the importance of being connected to your daily activities while attending the Annual Meeting and provides several ways for you to access the Internet while in the convention center.

@SOT Center—Internet Access

SOT provides computers for attendees in the @SOT Center to use to access the Internet. The @SOT Center is located on the Lobby Level of the convention center.

Free Wireless Internet Access

As a service to Annual Meeting registrants, SOT is providing free wireless Internet access throughout the convention center in all locations where SOT events are being held.

To connect to the free wireless Internet, browse the available wireless networks and select the SOT2016 wireless network. Once connected, launch your web browser and click the "proceed" button on the start page. You will then be connected to the SOT welcome splashpage and the free wireless network with Internet access.

Letter of Attendance

Please stop by Registration after Tuesday morning if you would like a letter of attendance for your participation in the 2016 SOT Annual Meeting and/or the Continuing Education Course(s). If you missed your chance to get your attendance letter at the meeting, you can send your request to sothq@toxicology.org or call 703.438.3115.

Lost and Found

Lost and found articles may be taken to the SOT Headquarters Office, Room 226, in the convention center. Any items left in the office after 12:30 pm, on Thursday, March 17, will be taken back to SOT Headquarters. If you do not remove your poster at the end of your session, you will find it on the "Poster Retrieval Tables" located in the Exhibit Hall. Any posters left behind at 4:30 pm on Wednesday will be taken to SOT Headquarters Office Thursday morning, March 17. All posters not claimed by 1:00 pm on Thursday, March 17, will be recycled.

Media Support Services

SOT welcomes accredited representatives of media organizations to its Annual Meeting. Attending media representatives receive complimentary registration for the meeting, and interviews can be arranged with SOT Council members, meeting speakers and presenters, and SOT general members. For more information, please contact:

Michelle Werts
SOT Headquarters: 703.438.3115
Email: michelle@toxicology.org

SOT Headquarters Office

The SOT Headquarters Office is located in the convention center, Room 226. SOT leadership and staff utilize this office to conduct SOT business while on-site. Use the office to report or reclaim lost and found items at the convention center.

SOT Headquarters Office Hours:

Saturday	4:00 PM–7:00 PM
Sunday	7:00 AM–5:30 PM
Monday	7:00 AM–5:00 PM
Tuesday	7:00 AM–4:30 PM
Wednesday	7:00 AM–4:30 PM
Thursday	7:00 AM–1:00 PM

Speaker Ready Room

The Speaker Ready Room is located in Room 214. SOT provides all confirmed presenters in scientific sessions with login credentials to access the submission site to preload your presentations. Poster presenters should use the submission site at **https://cms.psav.com/sot2016p** to upload ePosters. Scientific session presenters should use the submission site at **https://cms.psav.com/sot2016** to preload presentations. All presentations should be preloaded in advance of the meeting, but not fewer than 30 minutes prior to the start of the sessions if loaded in the Speaker Ready Room. Presenters will not be able to upload a presentation in the session room.

Speaker Ready Room Hours:

Saturday	4:00 PM–7:00 PM
Sunday	7:00 AM–5:30 PM
Monday	7:00 AM–5:00 PM
Tuesday	7:00 AM–4:30 PM
Wednesday	7:00 AM–4:30 PM
Thursday	7:00 AM–11:30 AM

Poster Displays

Global Gallery of Toxicology

Toxicology societies from around the world are invited to participate in the Global Gallery of Toxicology. Now in its fifth year, posters of these societies are prominently displayed during the meeting, showcasing their formation, key accomplishments, strategic initiatives, and activities. The 2016 Global Gallery poster session is listed in the scientific program with a "Representative Attended" poster time from 11:45 am to 12:15 pm on Monday, March 14. Posters are available for viewing during the ToxExpo hours adjacent to the SOT Pavilion. The goal of SOT and of all these societies is to increase the reliance of international decision-makers on the science of toxicology and to advance human health and disease prevention.

High School Poster Exposition

On Tuesday, March 15, from 10:00 am–12:00 noon, high school students present their research posters in a special area near the SOT Pavilion. Some students are on-site and others present through a virtual connection. More information can be found on page 84.

RC, SIG, and SS Posters

Dedicated poster space is available for the SOT Regional Chapters, Special Interest Groups, and Specialty Sections during the Annual Meeting. The poster area is located adjacent to the SOT Pavilion in the ToxExpo Exhibit Hall and is attended on Monday, March 14, from 11:45 am–12:15 pm.

Scientific ePosters

SOT is pleased to offer our poster presenters the opportunity to share their research electronically as well as in their assigned poster sessions. Poster presenters are encouraged to upload their ePosters. ePosters are available to meeting attendees through the Mobile Event App until May 11, 2016.

Scientific Poster Printing Services

SOT is pleased to offer our poster presenters a convenient printing service through Shepard Exposition Services, the official general service contractor for the Annual Meeting. No need to worry about traveling with your poster or having your poster lost in shipping. Simply complete the online form, email or upload your poster using the link provided, review and approve the final layout of your poster, and then pick up your poster on-site. Shepard will produce the materials for a reasonable price, which will include production, transportation, and storage for the show. **The deadline to take advantage of this service is February 27, 2016.**

The order form is located online on the SOT Annual Meeting website at **www.toxicology.org/events/am/am2016/forms.asp**.

New Orleans Ernest N. Morial Convention Center

The SOT 55th Annual Meeting and ToxExpo is held at the convention center located at 900 Convention Center Boulevard in downtown New Orleans. This recently renovated convention center sits on the banks of the Mississippi River and is a short walk to the French Quarter. It is considered one of the top ten convention venues in North America.

Accessibility for Persons with Disabilities

The convention center and most of the SOT hotels are accessible to persons with disabilities. If you require more information about accessibility, please contact Heidi Prange at SOT Headquarters: 703.438.3115 ext. 1424.

LSA Interpretation Services
800.305.9673 | www.lsaweb.com

Language Services Associates (LSA) is a nationwide full-service firm providing translators and interpreters in 180 languages.

Scoot Around
888.441.7575 | www.scootaround.com

Scootaround Inc. is North America's #1 source for wheelchair, scooter, and powerchair rentals.

Business Center

The New Orleans Ernest N. Morial Convention Center UPS Store/Business Center is located in Exhibit Hall F lobby. The Business Center offers services such as UPS shipping, common office supplies, high-quality full color and black and white copying, printing, and uploading documents from a memory stick or CD.

UPS Store Business Center Inside
New Orleans Ernest N. Morial Convention Center
Tel: 504.670.8941 | Email: store6216@theupsstore.com

Business Center Hours:

Saturday–Sunday	9:00 AM–5:00 PM
Monday–Tuesday	8:00 AM–5:00 PM
Wednesday	8:00 AM–6:30 PM
Thursday–Friday	8:00 AM–5:00 PM

Child Care Services

Child care services are not provided during the Annual Meeting. Arrangements may be made by contacting the concierge desk at your hotel. To ensure safety, children are not permitted in session rooms, the Exhibit Hall, or the poster area.

Coat/Luggage Check

For your convenience, a coat/luggage check is available in the Great Hall Foyer near the Registration area. The coat/luggage check is open Sunday, March 13, through Thursday, March 17. There is a fee of $3 per item checked. Laptops, cameras, and other electronics will not be accepted.

Hours of operation:

Sunday	7:00 AM–8:00 PM
Monday	7:00 AM–6:30 PM
Tuesday	7:00 AM–6:30 PM
Wednesday	7:00 AM–7:00 PM
Thursday	7:00 AM–1:00 PM

Coat/Luggage Check hours are subject to change.

First Aid and Emergency Services at the Convention Center

If an emergency should occur while at the convention center, proceed directly to the nearest house phone, located throughout the facility, and dial 3040 for security. You will be connected directly to the 24-hour manned security department at the convention center.

A First Aid room is located in Lobby B.

An emergency medical technician is on duty:

Saturday	12:00 Noon–7:00 PM
Sunday	6:00 AM–8:00 PM
Monday	7:00 AM–6:00 PM
Tuesday	7:00 AM–6:00 PM
Wednesday	7:00 AM–6:00 PM
Thursday	7:00 AM–1:00 PM

Please note that in accordance with regulations, the first aid administrator is not permitted to dispense any medication.

Food Services in the Convention Center

Coffee Breaks

The exhibiting companies are pleased to sponsor complimentary coffee in the Exhibit Hall 9:15 am–10:15 am Monday–Wednesday. See Exhibit Hall signage for locations.

Concessions

Concession stands are available in the Exhibit Hall from 9:15 am–2:00 pm, Monday–Wednesday. Breakfast and lunch items will be available for purchase, as well as coffee, soda, bottled water, and snacks. Seating is available in the Concession areas in the Exhibit Hall. Concession stands are run by Centerplate Catering, providing outstanding and delectable food and beverage at the New Orleans Convention Center. Starbucks is located inside the center and open in the morning for coffee/pastries.

Restaurants

A full restaurant listing may be found on the SOT website and via the City Guide feature in the Mobile Event App.

Green in New Orleans

The city's compact downtown area is very walkable and minimizes the need for transportation. At the New Orleans Ernest N. Morial Convention Center, new green practices are helping save water, conserve energy, and reduce waste. Look for recycling bins around the center and put your paper products to better use. For more information, visit the MCCNO website (**www.mccno.com**). Outside of the convention center, the city of New Orleans also is doing its part to be green, with its New Orleans Area Green Business Project encouraging "green" practices among businesses in the region, by offering tools to implement more efficient and sustainable business operations.

Housing Desk

SOT Housing Partner—*Connections Housing*

For information regarding your hotel reservation on-site, please visit the SOT Housing Desk located in the Registration area of New Orleans Ernest N. Morial Convention Center.

Housing Desk Hours:

Saturday	4:00 PM–7:00 PM
Sunday	8:00 AM–5:00 PM
Monday	8:00 AM–5:00 PM
Tuesday	8:00 AM–11:00 AM

Housing Desk hours are subject to change. For housing assistance after Tuesday, please call 404.918.9129.

Convention Center Location and Parking

New Orleans Ernest N. Morial Convention Center
900 Convention Center Boulevard

Ample parking is available in close proximity to the convention center for an hourly/daily fee.

Metered street parking is available in areas surrounding the convention center at a rate of $1.50 per hour. Parking meters are enforced 8:00 am–6:00 pm, Monday through Saturday, unless otherwise noted.

Check the Visit New Orleans Ernest N. Morial Convention Center website (**www.mccno.com/about-us/maps-directions**) for more information about parking.

Overnight Parking

Fulton Place Parking Center
901 Convention Center Boulevard

This secure parking garage is located across from the convention center and offers the best rate for overnight parking near the convention center.

Please check the SOT Hotel Accommodations and Services PDF on the Annual Meeting website for valet and self-parking rates for your hotel.

Weather

New Orleans has a subtropical climate.

72° TO 52° F

For an up-to-date, detailed weather forecast, visit the National Weather Service Forecast Office at www.srh.noaa.gov/lix.

New Orleans General Information

New Orleans is the birthplace of jazz, home to Creole cuisine, and rich with history and culture. It is centrally located with an easily walkable downtown and world-class convention facilities. It's a place of chefs and delectable cuisine and a unique blend of French, Spanish, Caribbean, and African cultural influences in its architecture, food, people, and music. Most of the city's restaurants, attractions, tours, accommodations, and event venues are within walking distance of each other; it's easy to get around the "Big Easy" and is the perfect setting for networking. Within the 12-blocks of the historic French Quarter, come enjoy the charm of New Orleans, while attending the SOT Annual Meeting. New Orleans combines big-city choices with the small-town friendliness. *Laissez les bons temps rouler*—let the good times roll!

Science-Based Attractions in New Orleans

Audubon Aquarium of the Americas
1 Canal Street | Tel: 504.581.4629

One of the top five aquariums in the country is located just steps away from the convention center in the historic French Quarter! The aquarium is home to more than 10,000 animals representing 400 species, including rare and endangered species. See the only two Sea Otters in the South play, or view exotic frogs; animal presentations and feedings help you understand these underwater creatures.

Audubon Butterfly and Insectarium
423 Canal Street | Tel: 504.581.4629

The Audubon Butterfly Garden and Insectarium is dedicated to the largest group of animals on the planet: insects. This family-friendly attraction allows you to experience insect encounters, bug animation and surprises in an immersion theater, a serene Japanese butterfly garden, and much more.

Audubon Zoo
6500 Magazine Street | Tel: 504.581.4629

Visit the Audubon Zoo and see animals from all over the world in natural habitat settings, including the natives at the Louisiana Swamp Exhibit. The zoo grounds include more than 50 acres, and are located on the former site of an 18th-century sugar plantation and the 1884 World Exposition. Take a ride on the swamp train to easily view all their major exhibits, and bring your bathing suit for the Cool Zoo water park stop!

New Orleans Area Activities

For things to do in New Orleans, go to **www.neworleanscvb.com**.

Blain Kern's Mardi Gras World
1380 Port of New Orleans Place | Tel: 504.361.7821

Take a tour of Blaine Kern Studios, where they have been building Mardi Gras floats for over 60 years. See what it takes to create these magnificent centerpieces of the parade, at the place where Mardi Gras lives all year long.

French Quarter
Between Canal Street and Esplanade Avenue

New Orleans's French Quarter, also known as Vieux Carré, comprises 78 square blocks, which are situated between Canal Street and Esplanade Avenue. Founded in 1718 by Jean-Baptiste Le Moyne de Bienneville, the whole city developed around this area, which has now been designated a National Historic Landmark. From Bourbon Street and beyond you can view the Quarter's architecture, which is a mix of Spanish, French, Creole, and American styles, or find some of the best restaurants in the city and explore eclectic shops. The Quarter is a vibrant place where you can always discover something new, whether it is a local artist or a jazz band playing on the street corner.

Garden District
St. Charles Avenue to Magazine Street, and Jackson Avenue to Louisiana Avenue

After a pleasant ride on the St. Charles Avenue Streetcar, take some time to explore one of New Orleans' prettiest neighborhoods, which happens to be home to one of the best-preserved collections of historic Southern mansions, many of which are owned by local celebrities. Walk down Magazine Street to enjoy its numerous boutique shops and wonderful restaurants, or explore Lafayette Cemetery No.1 to see why New Orleans is considered one of the most haunted cities in America.

St. Charles Avenue Streetcar Line
St. Charles Avenue

You can hop on the oldest continually operating street railway system in the world, made famous by Tennessee Williams' "A Streetcar Named Desire," to explore areas of New Orleans such as the Garden District, Uptown, and Riverbend for only a $1.25 fare each way.

St. Louis Cathedral
615 Père Antoine Alley | Tel: 504.525.9585

The jewel of Jackson Square, originally built in 1718, the current cathedral dates back to the mid 1800's, making it one of the oldest cathedrals in the United States. St. Louis Cathedral's beautiful architecture is a blend of Renaissance and Spanish Colonial styles that is uniquely New Orleans. Each year hundreds of pilgrims flock to the cathedral's cemetery to see the tomb of Marie Laveau, a renowned Voodoo priestess in New Orleans.

The Cabildo
701 Chartres Street | Tel: 504.568.6968

Now the flagship building of the Louisiana State Museum, this building was once the site of the Louisiana Purchase and the home of the Louisiana State Supreme Court until 1908. This historic building, where monumental decisions such as Plessy v. Ferguson originated, now houses exhibitions on Louisiana's history.

The Ogden Museum of Southern Art
925 Camp Street | Tel: 504.539.9650

The Ogden Museum of Southern Art is the home of wonderful collections of paintings, photography, and ceramics all from below the Mason-Dixon line. Every Thursday night the museum stays open late for Ogden After Hours, featuring live music and soul food while you peruse the galleries.

The National World War II Museum
945 Magazine Street | Tel: 504.528.1944

While you're in New Orleans visit one of the top museums in the country on World War II, for a special, immersive, and enlightening experience. Walk through three grand pavilions to view larger-than-life exhibits with retellings of stories of survival. Be sure to see "Beyond All Boundaries," a 4D film narrated by Tom Hanks in the museum's Solomon Victory Theater.

New Orleans Golf Courses

Audubon Park Golf Course
6500 Magazine Street | Tel: 504.212.5290
(19 minutes from the convention center)

Re-designed in 2001 by Dennis Griffiths, this course sits in the middle of the city and boasts a competitive executive 18-hole course that is a par 62, while its 4,220-yard layout is set among 100-year-old oak trees.

Lakewood Golf Club
4801 General DeGaulle Drive | Tel: 504.373.5926
(12 minutes from the convention center)

This recently renovated course has hosted 26 New Orleans Opens, and celebrated its 50th Anniversary in 2011. You can expect thrilling courses with challenging fairways, tees, and greens, all tucked among gorgeous cypress and oak trees.

English Turn Golf and Country Club
1 Clubhouse Drive | Tel: 504.391.8018
(18 minutes from the convention center)

This 18-hole championship course was designed by world-famous golfer Jack Nicklaus in 1988. This former PGA Tour stop boasts expansive green lawns surrounded by flower gardens.

New Orleans Fun Facts

- The first Mardi Gras parade took place on Shrove Tuesday in 1838 in New Orleans.
- Riders on Mardi Gras floats are required, by law, to be masked.
- New Orleans is the birthplace of Jazz, the only true American musical art form. Jazz gave birth to the Blues and Rock and Roll music. Jazz was originally called jass, in reference to the fragrant jasmine that women in the New Orleans Storyland red light district wore. Jazz musicians originally played in the district bordellos.
- The total mileage of canals both above and below ground in New Orleans exceeds that of Venice in Italy.
- Originally built in 1718, the St. Louis Cathedral in New Orleans is the oldest cathedral in the US. The present structure, the third one on the site, dates from 1789.
- Helping New Orleans live up to its reputation as Hollywood South, 25 feature-length films and 12 TV series or pilots were shot in the city in 2014, and 130 feature-length films have been shot here in the last five years.
- Poker and craps were invented in New Orleans during the 1700s.
- The formal transfer of the Louisiana Purchase was made at the Cabildo building in New Orleans on December 20, 1803.
- New Orleans has more than 140 registered festivals, providing year-round entertainment for locals and visitors alike.
- The famous beignet is the Louisiana State donut.

Getting around Town—Public Transportation

New Orleans Regional Transit Authority
A system of streetcars and buses runs throughout many areas of New Orleans with fares starting at $1.25. Visit NORTA website (**www.norta.com**) to plan your route.

SOT
56th Annual Meeting and ToxExpo™

Baltimore is the host city for SOT 2017 Annual Meeting, March 12–16.

Be sure to visit the Baltimore Desk across from Registration for more information.

Baltimore, Maryland

www.toxicology.org | www.toxexpo.com

At the heart of ToXchange is an enhanced
SOT membership directory
that allows you to
stand out and
be seen!

- Create a customized SOT Member "My Page"
- Update your "My Page" 24/7
- Search for and find other SOT members based on their profile information
- Be identified by SOT members based on your profile information
- Communicate with your SOT peers with easy-to-use, secure networking tools
- Participate in blogs, community discussions, and much more!

Plus, you can link to your other social networks, making ToXchange your one-stop professional online resource.

Hosted on a safe and secure network platfrom, ToXchange is specifically designed for SOT Members.

Visit the SOT Pavillion, booth 500 in the Exhibit Hall, for on-site information.

ToXchange www.toXchange.org
It's YOUR Network. Be a part of it.

job bank

Free Job Search Service for Members

8,000

3,000

Available Year Round

- Find and Share the Right Position
- Advertise Your Position to the Right Candidates

Job Seekers

Find Your Next Career Opportunity

Academia

Government

Industry

Employers

&

- Recruit Highly Qualified Candidates
- Supplement Your Hiring Process

WWW.TOXICOLOGY.ORG/JOBBANK

On-site services located in Room 237

SOT | Society of Toxicology

Career Advancement and Development Resources

Education-Career Development Opportunities

Chat with an Expert

Monday, March 14 to Thursday, March 17
Time Varies by Group

(Meet at the Chat with an Expert Poster Board in Lobby A near the ToxExpo Entrance)

Hosted by:
Graduate Student Leadership Committee

The purpose of Chat with an Expert is to provide graduate students and postdoctoral scholars with the opportunity to network informally with well-established toxicologists while obtaining career advice and meeting new colleagues. Small groups are composed by matching research interests of students and postdocs with those of an expert. The expert for each group identifies a time and a place for an informal meeting, and the group meets at the Chat with an Expert Poster before proceeding to the meeting location. This program also includes opportunities for postdocs to host informal meetings with graduate students. Expert and graduate student/postdoc registration occurs prior to the Annual Meeting. There are opportunities for graduate students/postdocs to sign up on-site at the Poster Board in Lobby A or at the Student/Postdoctoral Scholar Mixer on Sunday evening.

Poster Tours for Trainees

Monday, March 14 to Wednesday, March 16
Time Varies by Group

(Meet at the Poster Tour Board in Lobby A near the ToxExpo Entrance)

Hosted by:
Postdoctoral Assembly

The Postdoctoral Assembly organizes Poster Tours for Trainees for graduate students and postdoctoral scientists to participate in a one-hour guided poster tour with an expert toxicologist. These small group tours provide the opportunity for trainees to take part in critical evaluation of cutting-edge toxicology methods and research findings and network with an expert toxicologist. Guide and trainee sign-up occurs prior to the Annual Meeting. Sign-up is open for trainees on-site during the Student/Postdoctoral Scholar Mixer on Sunday evening. All groups will meet at their appointed time at the Poster Tours for Trainees Board located in Lobby A near the entrance to ToxExpo.

Research Funding Insights

Monday, March 14 to Wednesday, March 16,
9:30 AM to 4:30 PM
Room 204

Hosted by:
Career Resource and Development Committee

Representatives from federal agencies funding research, including NIH program and review staff of the Center for Scientific Review and NIEHS, are available in the Research Funding Room for individual conversations. Make an appointment with your program officer in advance or at their exhibit booth, or check the posted schedule, to meet with the staff member who can discuss with you aspects of scientific review or specific grant opportunities. New investigators are especially encouraged to meet with program staff.

SOT Mentoring Breakfast

Monday, March 14, 6:15 AM to 7:45 AM
Room R01

(Registration Required)

Endorser(s):
Career Resource and Development Committee
Graduate Student Leadership Committee
Postdoctoral Assembly

The Society of Toxicology recognizes the importance of mentoring in the scientific and professional development of its members. The Career Resource and Development Committee, in conjunction with the Postdoctoral Assembly and Graduate Student Leadership Committee, is pleased to announce the fifth annual Mentoring Breakfast.

The Mentoring Breakfast is for SOT members at any career stage—from graduate students and postdoctoral scholars to senior scientists—who are seeking a mentor. Brief presentations will be followed by small group discussions led by trained facilitators. Facilitators will work to match participants with compatible mentors. Note that mentor information will be provided after the Annual Meeting and only mentees should attend the breakfast.

A limit of 50 mentees will be accepted on a first-come, first-served basis for this event at a cost of $10/person, which includes a continental breakfast.

Education-Career Development Sessions

The Evolution of the Postdoc: Transitioning from Trainee to Professional in the Modern Era

Wednesday, March 16, 12:30 PM to 1:50 PM

See full description on page 268.

"Talksicology": Effective Oral Presentation Techniques

Wednesday, March 16, 5:00 PM to 6:20 PM

See full description on page 295.

Trainee Discussion with Plenary Session Presenters: Drs. Taylor and Nichols

Monday, March 14, 10:00 AM to 11:00 AM
Lobby A Lounge

(Ticket Required; Limited Seating)

Lecturers: *Doris Taylor, Director, Regenerative Medicine Research at the Texas Heart Institute, Houston, TX; and Joan Nichols, University of Texas Medical Branch, Galveston, TX.*

Drs. Taylor and Nichols will meet informally for discussion with graduate students and postdoctoral scholars after their Plenary Session *(see page 124)*. Registration is limited to SOT graduate student and postdoctoral members.

Research Funding Luncheon: Multiple Perspectives on the Grant Process

Monday, March 14, 12:00 Noon to 1:30 PM
Room R01

Investigators from various federal agencies will be on hand for this luncheon to provide multiple perspectives on the art of preparing successful grant packages. Panelists will discuss the grant submission process and offer advice about how to submit a potentially successful grant and offer tips about how to make a submission stand out.

Trainee Discussion with Plenary Session Presenters: Drs. Skaper and Faden

Tuesday, March 15, 10:00 AM to 11:00 AM
Lobby A Lounge

(Ticket Required; Limited Seating)

Lecturers: *Stephen Skaper, University of Padua, Padua, Italy; and Alan I. Faden, University of Maryland School of Medicine, Baltimore, MD.*

Drs. Skaper and Faden will meet informally for discussion with graduate students and postdoctoral scholars after their Plenary Session *(see page 181)*. Registration is limited to SOT graduate student and postdoctoral members.

Trainee Discussion with Medical Research Council (MRC) Lecturer: Dr. Franklin

Wednesday, March 16, 10:00 AM to 11:00 AM
Lobby A Lounge

(Ticket Required; Limited Seating)

Lecturer: *Robin J.M. Franklin, Wellcome Trust-MRC Cambridge Stem Cell Institute, University of Cambridge, Cambridge, United Kingdom.*

Dr. Franklin will meet informally for discussion with graduate students and postdoctoral scholars after his Keynote MRC Lecture *(see page 239)*. Registration is limited to SOT graduate student and postdoctoral members.

Annual Meeting Job Bank Center

Located in Room 237, the on-site Job Bank Center provides access to the SOT Job Bank as well as assistance in facilitating interviews during the SOT Annual Meeting. We offer personalized assistance if you are new to the Job Bank or have questions. For your convenience, printers are available for producing hard copies of candidate resumes and interview information. All candidates and positions must be sought online.

The center is available during the following hours of operation:

Sunday	1:00 PM–5:00 PM
Monday	9:00 AM–5:00 PM
Tuesday	8:30 AM–5:00 PM
Wednesday	8:30 AM–5:00 PM

Employers recognize and appreciate that the Annual Meeting Job Bank Center provides a cost-effective and efficient way to interview a distinguished pool of candidates. For your convenience, we provide five interview rooms on-site during the hours listed above. Employers may reserve interview rooms ahead of time or at the meeting on a first-come, first-served basis.

The SOT Job Bank is a permanent service for SOT members and employers. For additional information, contact Kevin Merritt at SOT Headquarters: 703.438.3115 ext. 1601 or email: careerresources@toxicology.org. Online service can be found at **www.toxicology.org/jobbank**.

Mentor Match

Online Mentoring Program

The Society of Toxicology recognizes the importance of mentoring in the scientific and professional development of its members throughout the year. The objective of the Mentor Match online program is to provide a service that matches mentees with potential mentors from the SOT membership to provide advice on career path selection, professional development, and life/work balance topics. SOT members are encouraged to share their professional knowledge and experience by serving as mentors for colleagues and for the next generation of toxicologists. The SOT Annual Meeting provides a great opportunity for the mentor and mentee to meet in person. We strongly encourage members of the Society to visit the Mentor Match site and register online as mentors and/or mentees. The Mentor Match program is accessible to all active SOT members by visiting **www.toxicology.org/mentormatch**.

SOT Encourages Undergraduate Involvement

Undergraduate Student Affiliates—Sign up on the SOT website to

Participate in the Undergraduate ToXchange community

Receive communications from SOT

Special Programs for Undergraduates at the SOT Annual Meeting

These are coordinated by the SOT Education Committee and Committee on Diversity Initiatives.

- **Undergraduate Diversity Program for students from groups underrepresented in the sciences and their advisors**
- **Sunday Undergraduate Education Program for any undergraduate student registering for this event with Annual Meeting registration**
- **Pfizer SOT Undergraduate Student Travel Award and SOT Undergraduate Intern Travel Award for outstanding students presenting abstracts**
- **Undergraduate Student Meeting, Tuesday, March 15, 4:00 pm–5:15 pm** ***(all undergraduates welcome; network with graduate students and postdoctoral scholars)***

Support for toxicology career presentations through the ToxScholar Outreach Grants

Toxicologists receive travel support for visits to campuses to present seminars and meet informally with students to introduce toxicology and discuss career pathways. Funds also are available for international career presentations.

SOT Recognizes Undergraduate Educators

The SOT 2016 Undergraduate Educator Award is presented to Antonio T. Baines North Carolina Central University

Find more information at
www.toxicology.org/undergraduate

SOT 2016 Honorary Membership

Honorary membership is awarded by the Society of Toxicology to people who are not members of the Society in recognition of outstanding and sustained contributions to advancing the science and field of toxicology. Raymond B. Nagle is named Society of Toxicology Honorary Member for 2016.

Raymond B. Nagle

Raymond Nagle, MD, PhD, involves himself within molecular pathology studies in prostate carcinogenesis. His research program has focused for the past several years on understanding the biological basis for the variability in the clinical evolution and spread of prostate cancer. In collaboration with Drs. Anne Cress, Timothy Bowden, Ronald Heimark, and many others, his group has worked to define molecular events during the progression of the disease that allow the cancer to migrate out of the site of origin in the prostate and thus metastasize to the bone and other sites. Such knowledge may provide the basis for predicting the probable outcome of an individual's tumor as well as suggest approaches to block the evolution and dissemination of prostate cancer.

Dr. Nagle received combined training in anatomic and clinical pathology at the University of Washington. Subsequently, he received an NIH postdoctoral fellowship in experimental pathology which led to a PhD degree. He was an associate pathologist in the Department of Experimental Pathology at Walter Reed Army Institute of Research where he was involved in studies of pathogenesis of African Trypanosomiasis as well as acute renal failure. Following military service, he served on the faculty at the University of Maryland where his research primarily dealt with mechanisms of acute renal failure as well as models of experimental glomerulonephritis. In 1968, he joined the faculty at the University of Arizona College of Medicine. His work as a surgical pathologist led to a research program focusing on the role and identification of cytokeratins in the diagnosis of human neoplasms.

Dr. Nagle has more than 28 funded research grants, and has authored more than 180 papers and abstracts in the area of solid tumor pathology and prostate cancer progression.

SOT Award Recipients

Awards Ceremony Music

Sunday, March 13, 4:45 PM to 5:15 PM
Great Hall B

Performed by Clarence Johnson III

Known for his fierce and often sultry saxophone sound and astounding virtuosity, New Orleanean Clarence Johnson III enjoys a successful career as a recording and performing artist, an educator, and also appears in films and television. Currently, Clarence is celebrating the national release of his latest recording, "Watch Him Work," his first release in nearly 15 years. The new original material, which features himself and his latest creation, Cornerstone, can best be described as a fresh take on jazz fusion, which is reminiscent of the compositional styles of Stanley Clarke, George Duke, the Brecker Bros., and the Yellow Jackets. Clarence Johnson III will perform for SOT Annual Meeting attendees prior to the SOT Awards Ceremony.

Awards Ceremony

Sunday, March 13, 5:15 PM to 6:30 PM
Great Hall B

Please join the Awards Committee, in conjunction with Council, the Board of Publications, and the Education Committee, as we honor distinguished scientists with presentation of Awards at our prestigious SOT Awards Ceremony. Also conferred at this ceremony are a number of grants, fellowships, and awards for cutting-edge and novel research. Please refer to the Awards and Fellowships section of the SOT website for complete details at **www.toxicology.org/awards**.

Endowment Fund 2015 Awards

The Endowment Fund Awards are conferred during the Annual Meeting. View the recipients of the SOT Endowment 2015 Awards during the musical performance. SOT Endowment Funds have a mission of assisting in advancing the science of toxicology by providing financial support for the Society's programs. The vision for the SOT Endowment Fund is to establish and increase in net worth a set of Endowment Funds that will provide significant, stable, long-term financial support to aid in achieving the Society's strategic objectives. To learn more visit: **www.toxicology.org/endowment**.

Achievement Award

Lauren Aleksunes

Lauren Aleksunes, PharmD, PhD, DABT

A graduate of the University of Connecticut, Dr. Aleksunes received her PharmD and PhD degrees in 2002 and 2006, respectively. Her postdoctoral training in Toxicology was performed at the University of Kansas Medical Center. Currently, Dr. Aleksunes serves as Associate Professor of Pharmacology and Toxicology in the Ernest Mario School of Pharmacy at Rutgers, The State University of New Jersey. She also is a Resident Scientist in the Environmental and Occupational Health Sciences Institute.

Dr. Aleksunes is responsible for multiple lines of research that have identified critical roles for xenobiotic transporters in the disposition and toxicity of environmental contaminants and pharmaceuticals. Along with her colleagues, Dr. Aleksunes has worked to identify the transport proteins involved in xenobiotic-induced renal toxicity, hepatotoxicity and liver disease, and the placental disposition of chemicals. Their overarching goal is to translate mechanistic findings from cell and animal studies to patient populations. Dr. Aleksunes' work stands to fundamentally change the way we assess the risk of target organ toxicities and exposures to the developing fetus.

Dr. Aleksunes has been a member of SOT since 2003. In 2006, she was the recipient of the Women in Toxicology Special Interest Group Graduate Student Achievement Award. She was very active with the Postdoctoral Assembly and served on their Executive Board from 2008 to 2010. She also has served the Society by participating on the Membership Committee from 2011 to 2014 and as Councilor of the Mid-Atlantic Regional Chapter and Mechanism Specialty Section. During an 8-year period, Dr. Aleksunes was awarded K99/R00, R21 and two R01 grants including her selection for the NIEHS Outstanding New Environmental Scientists (ONES) program. She has published more than 80 peer-reviewed articles and served on several Editorial Boards. Dr. Aleksunes also is the Director of the T32-funded Joint Graduate Program in Toxicology and the SOT-funded Summer Intern Program at Rutgers.

Arnold J. Lehman Award

Alan Boobis

Alan Boobis, OBE, PhD, FSB, FBTS

Dr. Boobis received his PhD in Pharmacology from the University of Glasgow. Currently he is a Professor of Biochemical Pharmacology in the Centre for Pharmacology and Therapeutics, Division of Experimental Medicine, Department of Medicine, as well as serving as Director of the Public Health England Toxicology Unit at Imperial College London.

With an exemplary career track record, Dr. Boobis has become recognized internationally for his contributions to the science and practice of Toxicology, dose response modelling, and human health risk assessment. He has played a key role in furthering the field of risk assessment scientifically, having led the development and advancement of incorporating pharmacokinetic and mechanistic knowledge into risk assessment, becoming the standard. His contributions to the World Health Organization (WHO) International Programme on Chemical Safety project over several years led to a Mode of Action Human Relevance Framework which is in use by many federal agencies as the standard for risk assessment of individual chemicals around the world. He has long served as member and Chair of the Joint Food and Agriculture Organization (FAO)/(WHO) Meeting on Pesticide Residues (JMPR) and of their Joint Expert Committee on Food Additives (JECFA, residues of veterinary drugs). Such is his dedication to pesticide evaluations and assessments, and through the application of the latest science in this endeavor, he was the recipient of the Officer of the Most Excellent Order of the British Empire in 2003.

Throughout his career spanning four decades, Dr. Boobis has published more than 200 original papers in Metabolism, Carcinogenesis, Mechanisms of Toxicity, and improved testing strategies. As an SOT member, he is frequently an invited speaker to the SOT Annual Meeting. For his significant achievements and recognition in advancing the scientific basis of risk assessment he is the recipient of many international awards and honors, serves on numerous Grant Review Committees, and Academic and Expert Advisory Committees.

Best Postdoctoral Publication Awards

The Postdoctoral Assembly congratulates these three recipients for their accomplishments. These awards are presented during the Postdoctoral Assembly Luncheon on March 15, 2016.

Alicia Bolt

Alicia Bolt, PhD, Lady Davis Institute for Medical Research, Montreal, QC, Canada

Tungsten Targets the Tumor Microenvironment to Enhance Breast Cancer Metastasis

Bolt AM, Sabourin V, Flores Molina M, Police AM, Negro Silva LF, Plourde D, Lemaire M, Ursini-Siegel J, and Mann KK.

Toxicological Sciences, 2015 Jan, 143(1):165–177.

Pamela Noyes

Pamela Noyes, PhD, Chevron Energy Technology Company, Houston, TX

Advanced Morphological-Behavioral Test Platform Reveals Neurodevelopmental Defects in Embryonic Zebrafish Exposed to Comprehensive Suite of Halogenated and Organophosphate Flame Retardants

Noyes PD, Haggard DE, Gonnerman GD, and Tanguay RL.

Toxicological Sciences, 2015 May, 145(1): 177–195.

Pei-Li Yao

Pei-Li Yao, PhD, Pennsylvania State University, State College, PA

Inhibition of Testicular Embryonal Carcinoma Cell Tumorigenicity by Peroxisome Proliferator-Activated Receptor-β/δ- and Retinoic Acid Receptor-Dependent Mechanisms

Yao PL, Chen L, Dobrzański TP, Phillips DA, Zhu B, Kang BH, Gonzalez FJ, and Peters JM.

Onctotarget, 2015 Jul, DOI: 10.18632/Oncotarget.5415.

Board of Publications Award for the Best Paper in *Toxicological Sciences*

The Society of Toxicology Board of Publications has selected the paper titled "A Systems Biology Approach Utilizing a Mouse Diversity Panel Identifies Genetic Differences Influencing Isoniazid-Induced Microvesicular Steatosis" (*Toxicological Sciences*, 2014, 140(2) 481–492.

Rachel J. Church, Hong Wu, Merrie Mosedale, Susan J. Sumner, Wimal Pathmasiri, Catherine L. Kurtz, Matthew T. Pletcher, John S. Eaddy, Karamjeet Pandher, Monica Singer, Ameesha Batheja, Paul B. Watkins, Karissa Adkins, and Alison H. Harrill.

The Society of Toxicology, and the scientific community in general, values diversity. We strive to include investigators from all over the world, from all work sectors, and from all cultural persuasions. Why then do we perform the vast majority of our studies in animal models of genetic purity? Of course, we like to minimize noise in our experimental system and using a well-characterized genetic strain of mice or rats does facilitate that, but it also limits the translatability of the findings to strains with different genetic makeups. The human race is genetically diverse and we know that individual variability in susceptibility and response plays an important role in toxicology. Shouldn't our experimental strategies aim to represent the genetic diversity of populations? Dr. Church and colleagues used an approach that does exactly that to study the differential vulnerability to isoniazid, a mainstay therapy in the treatment of tuberculosis. Liver toxicity can occur in up to 20% of users, who face likely mortality without treatment. Thus, identification of the genetic underpinnings of vulnerability to this drug could greatly facilitate public health efforts to control the disease.

The Mouse Diversity Panel was developed to represent the genetic variability within the various strains of laboratory mice. By utilizing a panel of well-characterized strains the level of genetic diversity is estimated to be similar to that seen in the human population. The availability of DNA arrays that cover the mouse genome allows the investigator to perform quantitative trait locus mapping to interrogate the genetic basis of vulnerability. The investigator coupled these powerful genetic techniques with metabolomics and a suite of clinically relevant measures. The team was able to show that isoniazid caused features of fatty liver disease and that the variation in response was due to genetic factors. Polymorphisms in the gene *Plin2* were identified to be associated with increased toxicity. *Plin2* has previously been suggested to play a role in fatty liver disease, providing support for this association. The paper by Church et al. focused on an important toxicological question and utilized several sophisticated tools to answer the question. The work is an excellent example of the use of systems biology within the field of toxicology and for this reason it is being recognized as the Board of Publication's Best Paper of the Year.

Distinguished Toxicology Scholar Award

I. Glenn Sipes

I. Glenn Sipes, PhD, ATS

Dr. Sipes received his PhD in Pharmacology from the University of Pittsburgh. After serving as a staff fellow at NIH, he was recruited in 1973 to the College of Medicine at the University of Arizona with appointments in the Departments of Anesthesiology, Pharmacology, and Toxicology, and as founding Director of the Center for Toxicology and of the Southwest Environmental Health Sciences Center. Upon his retirement in 2011 he was appointed Professor Emeritus. He remains active in toxicology as a technical advisor to the Joint Expert Committee on Food Additives for WHO/FAO and as member and chair of the Expert Panel of the Research Institute for Fragrance Materials.

Dr. Sipes' research interests have focused primarily on the disposition/metabolism of chemicals and how these events relate to toxic outcomes. Early work brought attention to the bioactivation and covalent binding of bromobenzene, CCl4 and CHCl3 as related to liver injury. He and his colleagues at Arizona developed the first animal models of halothane- hepatotoxicity, which were based on the formation of reductive metabolites. Later work on vitamin A potentiation of chemical-induced liver injury helped establish the key role of Kupffer cells in the progression of liver injury. Dr. Sipes worked for over two decades on NIEHS grants studying the disposition/metabolism of chemicals of interest to NTP. His studies produced many novel findings as to how various chemicals are metabolized. Of note was the extensive work on the species variation in the metabolism and ovarian toxicity of 4-vinylcyclohexene.

Over the span of this career Dr. Sipes was the major advisor for 42 MS Toxicology, 30 PhD candidates, 27 postdoctoral fellows, and a mentor to numerous junior faculty. Many of these trainees and young faculty have established impressive careers in toxicology.

Dr. Sipes has been active within the Society since joining in 1977. He served on the Membership Committee, Board of Publications, and Editor of *Toxicology and Applied Pharmacology*. He served on SOT Council as Councilor, Secretary, and President. He was an early officer of the Mechanisms Specialty Section. Beyond SOT he has served on many editorial boards, and as President of International Union of Toxicology and of the Academy of Toxicological Sciences. He was selected as a Burroughs Wellcome Toxicology Scholar in 1985.

Distinguished Toxicology Scholar Award Lecture: Bioactivation: An Initiating Event in Chemical-Induced Tissue Injury, Wednesday, March 16, 12:30 pm to 1:20 pm, Room R08.

Education Awards

Kenneth Reuhl

Kenneth Reuhl, PhD, DABT

Dr. Reuhl currently serves as a Professor in the Department of Pharmacology and Toxicology, College of Pharmacy and Interim Director of the Environmental & Occupational Health Sciences Institute at Rutgers University, in Piscataway, New Jersey. He is past Director of the Joint Graduate Program, a member of the Graduate Program in Neuroscience, and serves on the Executive Council in the Graduate School for Biological Sciences.

Since his arrival at Rutgers, the State University of New Jersey, he embodied the mission of the College of Pharmacy, Medical School and University-at-large and is sought after for his talents in the interpretation of lesions produced by chemical, biological, physical, and psychological stressors. He is highly regarded in his field as evidenced by more than 130 peer-reviewed publications in high-impact scholarly journals. He has successfully trained more than 50 PhD and MS candidates plus more than 12 postdoctoral fellows and five PhD/MD students.

Having taught more than 15 courses in Toxicology Programs, he is considered an outstanding educator and a motivator of students. His teaching style is socratic and is committed to practical training in his field of expertise: toxicological pathology. With patience and good humor, his sense of precision and search for excellence are infectious to students. Dr. Reuhl routinely invites the best pathologists from around the country to his class to participate in training. Dr. Reuhl's impact is demonstrated by the untold numbers of students who learned in his classroom that have incorporated his teachings into their work as pathologists, pharmacists, pharmacologists, physicians, and healthcare providers. Regardless of their career path, his ability to successfully guide students through particularly thorny scientific problems is evidenced by his lab frequently being "overrun" with students, technicians, faculty and staff, most of whom end up gathered around him and his multi-headed microscope.

Dr. Reuhl has been an active member of the Society since 1989. During this time he has served on the Society's Scientific Program Committee, Awards Committee, and Membership Committee. In addition he has served as President of the Mid-Atlantic Regional Chapter and the Neurotoxicology Specialty Section. He has served on many editorial, advisory, and academic advisory boards, and organizing committees.

John Wise Sr.

John Wise Sr., PhD

Dr. Wise has made significant contributions to toxicology and distinguished himself for having taught and trained the next generation of toxicologists in a variety of educational levels. Not only does he teach high school students and their teachers, he also has taught a variety of undergraduate students, graduate students, junior faculty members, all while participating in K–12 outreach as well as lifelong learning programs attended by older students. Under his mentorship and guidance, Dr. Wise has trained more than 200 students including 87 undergraduates and countless more in the classroom setting.

He his highly regarded for his international efforts to bring his science to both toxicologists in America and to developing portions of the world. In his lab he has taught many scientists from all over the globe, with sensitivity to language barriers and differences between societies and cultures, he is touted with creating an atmosphere that is warm, encouraging and uplifting. Outside the lab, he volunteers to bring toxicology to the developing world directly. In collaboration with Vieques Conservation and Historical Trust, he has led volunteer efforts creating laboratory space to engage students in Vieques, Puerto Rico, a small island with no previous toxicology research facilities.

With his approach to educating the whole student, Dr. Wise spends one-on-one time with each student mentoring them to ensure they are on the correct path for them. He has a strong desire to ensure all his students achieve career and laboratory success regardless of their technical level. His goal is to have each student experience the wonder of scientific discovery, understand the scientific method, and tell the story of their findings to the world. He hopes to ensure each student leaves secure in their new skill set and with the ability to confidently present research to the public.

Dr. Wise received his PhD in Pharmacology from The George Washington University in Washington, DC in 1990. Currently he serves as Professor of Pharmacology and Toxicology and University Scholar at the University of Louisville in Louisville, Kentucky. A member of the Society since 1999, he has been very active with the Society's Education Committee's K–12 Subcommittee, Finance Committee, has served as Secretary/Treasurer for both the Metals Specialty Section and the Carcinogenesis Specialty Section and has served as President of both the Metals Specialty Section and the Northeast Regional Chapter.

Enhancement of Animal Welfare Award

Warren Casey

Warren Casey, PhD, DABT

Dr. Casey currently serves as the Director of the National Toxicology Programs Interagency Center for the Evaluation of Alternative Toxicological Methods (NICEATM) and the Executive Director to the Interagency Coordinating Committee on the Validation of Alternative Methods (ICCVAM). There he provides leadership and coordinates work within the US Federal Government to promote scientific validation and regulatory acceptance of safety testing methods and approaches that more accurately assess the safety and health hazards of chemicals, while reducing, refining, or replacing the use of animals.

At the epicenter of validating non-animal methods into regulatory use in the US and abroad, he and his team have introduced a more systematic review of traditional animal studies as a point of comparison for the evaluation of new approaches, as shown most recently for the uterotrophic assay. As announced in the Federal Register, this enabled the EPA to consider this approach now for the Endocrine Disruptor Screening Program where results from high throughput screening assays are now being accepted as alternatives to low throughput, animal-based Tier 1 tests. Currently undertaking a similar approach with the Hershberger assay and a computational model based on HTS assays that map the androgen receptor pathway is yet another example of the Dr. Casey's efforts to develop scientifically sound methods to validate alternative testing strategies to be considered by regulatory agencies. A few additional examples of his body of work include the development of integrated approaches to testing and assessment for skin sensitization submitted to OECD as case studies, service on international validation management groups for novel *in vitro* tests (e.g. eye irritation), analysis in support of waiving the requirement for dermal acute toxicity testing, and a new project to work with developmental toxicology experts to develop a list of reference chemicals to evaluate stem cell assays.

Dr. Casey received his PhD in Microbiology, Department of Microbiology from North Carolina State University in Raleigh, North Carolina. Dr. Casey is an active member of the Society and has presented at SOT Symposia and webinars, and sessions held during the SOT Annual Meetings.

Founders Award

Richard Adamson

Richard Adamson, PhD

During his distinguished career spanning over four decades, Dr. Adamson has used state-of-the art approaches to distinguish between safe and unsafe doses for humans in many ways. For newborns Dr. Adamson demonstrated that not only weight was a factor in administration of a dose to infants but, allowing for the development of drug metabolizing enzymes in the infant also was a major factor to reduce sensitivity to drugs. In the use of antibiotics in surgical procedures and myasthenia gravis, he and his colleagues demonstrated the synergy between some antibiotics and neuromuscular blocking agents as very important interactions between muscle relaxants. In studying absorption, distribution, metabolism, and excretion of folic acid antagonists, he found dichloromethotrexate (DCM) was metabolized by liver enzymes and methotrexate (MTX) was generally excreted by the kidneys. This suggested that DCM was the better folic acid antagonist for use when renal function is impaired, or in the case of immunosuppression such as cases of kidney transplantation.

In working with the National Research Council, Dr. Adamson was invited to a committee to investigate the safety of platinum catalytic converters in cars. The Committee concluded that the platinum and palladium emitted from automobiles was small and the chemical form and lack of methylation by microorganisms posed no known threat to the environment or individuals.

Dr. Adamson work with a Department of Health and Human Services committee reviewed the benefit and risks of fluoride in the use for prevention of dental cavities. The committee supported the use of fluoride in drinking water, toothpastes, mouth rinses, and fluoride dietary supplements at optimal levels. Dr. Adamson also investigated the carcinogenic potential of food additives, food contaminants, and pesticides. His long-term study of the use of saccharin without toxic effects led in part to various regulatory agencies to remove saccharin from their lists of carcinogens.

Dr. Adamson helped determine that MOPP combination chemotherapy for Hodgkin's disease caused toxicity due partly to the use of procarbazine, which led to the development by oncologists of other first line therapies for Hodgkin's disease. Working with Japanese investigators he found that heterocyclic amines resulting from cooking meat were carcinogenic, and determined that certain methods of cooking could reduce their formation. More recently, he has spoken out about the safety and benefits of caffeine consumption.

Dr. Adamson has been a steadfast member of the Society having joined in 1973. He served as the Society of Toxicology liaison to the American Association for Cancer Research. Among the many Awards and Honors he has received, in 1989 he was presented with the SOT Arnold J. Lehman Award.

Global Senior Scholar Exchange Program

Oladipo Ademuyiwa

Oladipo Ademuyiwa, BSc, MSc, PhD, *Federal University of Agriculture, Abeokuta, Nigeria*

Dr. Ademuyiwa is an expert in Biochemistry and Toxicology, specializing in metal exposure and nephro- and neuro-toxicity as well as dyslipidemia. He is a Professor and the Chair of the Biochemistry Department at the Federal University of Agriculture in Abeokuta, Nigeria. He received his BSc and his MSc from the University of Ife in Nigeria and his PhD from the Ludwig Maximilians University in Munich, Germany. Dr. Ademuyiwa then joined the Federal University of Agriculture in Abeokuta in 1995 first as a part-time lecturer in Toxicology and Pharmacological Biochemistry before being officially appointed as an Associate Professor in 2004 and Professor in 2008. His teaching includes Pharmacology and Environmental and Biochemical Toxicology to a total of 60 students from various departments. Dr. Ademuyiwa has published close to 50 publications and received multiple distinctions and awards, many of them international exchange awards, highlighting his desire to reach out internationally. He also was awarded the 2012 SOT/AstraZeneca/IUTOX Travel Award and attended the San Francisco Annual Meeting.

The Global Senior Scholarship Exchange Program will assist Dr. Ademuyiwa in strengthening the both research and educational programs at the Federal University of Agriculture through establishing relevant collaborations in human and ecological toxicology. Dr. Ademuyiwa is particularly interested in developing a strong toxicology curriculum at both undergraduate and graduate levels and in seeing his strengthened program serve as a model for other institutions in Nigeria. It is the hope that the newly trained students will help address the need for trained professionals in risk assessment and environmental and occupational health.

Weimin Gao

Host:
Weimin Gao, MD, MS, MPH, PhD, Texas Tech University, Lubbock, TX

Dr. Gao will host Dr. Ademuyiwa at Texas Tech University. Dr Gao is an Associate Professor and Associate Chair in the Department of Environmental Toxicology and the Institute of Environmental and Human Health, Texas Tech University System. Dr. Ademuyiwa will benefit from the well-established toxicology programs of TTU as well as the extensive research capacity available in the department and on the TTU campus. Dr. Gao will allow the scholar to engage during his visit in a stimulating dual research and teaching experience at TTU. The breadth of expertise available at TTU covering ecological, analytical, and human toxicology is highly complementary to the interests of Dr. Ademuyiwa's institution. Dr. Gao will visit Dr. Ademuyiwa the following year.

Wafa Hassen

Wafa Hassen, PhD, *High Institute of Biotechnology, Monastir, Tunisia*

Dr. Hassen, is a lecturer in the Department of Cellular Physiology and Toxicology at the High Institute of Biotechnology of Monastir, Tunisia. Dr. Hassen's research focuses on mechanisms of myeloma drug resistance, including drug metabolism and clearance as well as redox status and oxidative stress. She also is involved with the *in vitro* and *in vivo* study of mycotoxin toxicity, including human disease related to mycotoxins in food. Other faculty interests include toxicology and antitumor activity of polypeptides in scorpion and snake venom, medicinal herb extracts, organ toxicity due to metals, pesticides, and marine toxicology related to Tunisian coastal contamination.

Dr. Hassen received her PhD from the University of Monastir in 2006 and has been a lecturer there since that date. She is currently in charge of Master and PhD degree supervision; in addition Dr. Hassen is the co-founder and an active member of the Tunisian Society of Toxicology, established in 2009. She is currently leading the effort to register the national society with IUTOX. Prior to the establishment of the Tunisian Society of Toxicology, Dr. Hassan was involved with the Tunisian Society of Biological Sciences.

In addition to bolstering research efforts, the Global Senior Scholar Exchange Program might support the High Institute of Biotechnology programs by assisting in the development of a more formal toxicology curriculum and a master's degree in toxicology and by providing additional training in toxicology for the faculty teaching those courses. Another area is promoting more interaction between the Tunisian Society of Toxicology and SOT.

Mohamed B. Abou-Donia

Host:
Mohamed B. Abou-Donia, PhD, ATS, DABT,
Duke University Medical Center, Durham, NC

Dr. Abou-Doniais the director of the Neurotoxicology Laboratory at Duke University Medical Center, Durham, North Carolina. Work in his laboratory is directed toward understanding the basic mechanism by which chemicals, e.g., pesticides, solvents, industrial chemicals, heavy metals, drugs, and nerve agents, adversely affect the nervous system. Recently, he has been engaged in research to define nervous system injury resulting from occupational exposure to chemicals. He has much international experience, including a 2004 Fulbright Award to study the impact of pesticides on the environment in Egypt. The possibility of pesticide contamination and adverse effects on health is an important problem in Tunisia and of interest to faculty in Dr. Hassen's department. Dr. Abou-Donia will visit the University of Monastir and provide lectures as well as assist in developing a more complete toxicology curriculum at the institution, in addition to exploring possible research collaboration.

Leading Edge in Basic Science Award

Cheryl Lyn Walker

Cheryl Lyn Walker, PhD, ATS, Fellow AAAS

Dr. Walker currently serves as endowed Chair from the Robert E. Welch Foundation and is a Professor and Director of the Institute of Biosciences and Technology at the Texas A&M University in College Station, Texas.

Having made many contributions to our understanding of the fundamental mechanisms of carcinogenesis, Dr. Walker has made significant impacts in two fields. She has advanced the field of environmental epigenomics and cancer, revealing the mechanisms by which an epigenome can be reprogrammed by environmental exposures to increase risk of cancer. Further she has made seminal contributions to renal carcinogenesis and novel pathways and mechanisms triggered in cells by both endogenous and exogenous sources of reactive oxygen and reactive nitrogen species (ROS and RNS, respectively).

In the area of environmental epigenomics, Dr. Walker is a leader in developmental reprogramming, seeking to shed light on mechanisms by which environmental exposures early in life reprogram the epigenome to increase an adult's susceptibility to disease, such as cancer or obesity. In recent studies investigating the mechanisms by which xenoestrogens induce this reprogramming she identified the first direct pathway by which early life exposures can disrupt the cells epigenetics. These disruptions leave marks which can be used as biomarkers of early life exposure and/or future risk of disease. These alterations might be reversible in the future by interventions that modulate environmentally induced epigenetic changes.

Dr. Walker more recently made the novel discovery of a new signaling pathway in cells that involves the ATM and TSC2 tumor suppressors, which surprisingly, localize to the peroxisome, where they function as redox sensors that regulate peroxisome turnover and redox homeostasis. Her group was the first to report that ATM "moonlights" in the cytoplasm, where it activates TSC2 in response to reactive oxygen species (ROS) and reactive nitrogen species (RNS). In recent publications, Dr. Walker has answered two questions: how peroxisome number is regulated by cells and how peroxisomes are cleared following treatment with PPAR-agonists such as clofibrate. Her group was the first to discover that ATM is a resident at the peroxisome, and that peroxisome turnover is triggered when ATM is activated by peroxisomal ROS.

An active member of the Society since 1989, Dr. Walker has served on SOT Finance, Membership, Nominating, and Scientific Program Committees. She has been a member of SOT Council and served as SOT President in 2009.

Leading Edge in Basic Science Award Lecture; New Frontiers at the Nexus of Epigenomics and Toxicology, Tuesday, March 15, 12:30 pm to 1:20 pm, Room R08.

Merit Award

Melvin Andersen

Melvin Andersen, PhD, DABT, CIH, ATS

Dr. Andersen serves as Distinguished Research Fellow, ScitoVation LLC, Research Triangle Park, North Carolina, a newly created company emphasizing innovative cell based research. Prior to ScitoVation, he was at The Hamner Institutes for Health Sciences in Research Triangle Park, North Carolina. Over a 45-year career, he worked in Government (US Navy, DoD, US EPA), Industry (Chemical Industry Institute of Toxicology, Academia (Colorado State University) and Consulting (ICF Kaiser Consulting).

Dr. Andersen's research first transformed the field of toxicology by introducing physiologically-based pharmacokinetic (PBPK) modeling. Other long-term interests are in developing biologically realistic models of the uptake, distribution, metabolism, and biological effects of drugs and toxic chemicals and applying these models in safety assessments and quantitative health risk assessments.

As an educator he has taught short-courses in PBPK modeling for more than 30-years. More recently he developed courses on computational modeling of toxicity pathways. There are few people in the field that have not benefitted from his teaching in some way. Those fortunate enough to be guided by his enthusiastic classroom teaching have never forgotten his lessons. In addition, he has mentored 13 graduate students, supervised 13 postdoctoral researchers, and served on an additional 11 graduate student research committees.

In the Regulatory arena, Dr. Andersen served on or chaired many review panels on behalf of EPA and other agencies, both domestic and international, regarding many chemicals of environmental interest such as PFOA, TCDD, benzene, perchlorate, butadiene, formaldehyde, 1,1-dichloroethylene, JP-8 jet fuel toxicity. He also served on several National Academy of Sciences committees and was a contributor to the 2007 National Academy of Sciences report, "Toxicity Testing in the 21st Century: A Vision and a Strategy."

Dr. Andersen is author/co-author of 400 peer reviewed publications, 70 book chapters, and 30 technical reports. His work has more than 18,000 citations—a clear indicator of the value of his contributions. In recognition of his scientific achievements, he has received numerous awards including the Frank Blood, Achievement, Arnold J. Lehman, and Best Paper of the Year in *Toxicological Sciences* from the SOT, and numerous Best Paper Awards from different SOT specialty sections. He remains active in toxicology research with a focus on developing case studies to show the 21st century vision for toxicity testing/safety assessment in practice with specific cellular signaling pathways.

Merit Award Lecture: Forty-Five Years Modeling Dose-Response Relationships: An Unanticipated Career!, Monday, March 14, 12:30 pm to 1:20 pm, Room R08.

Perry J. Gehring Diversity Student Travel Award

This award is presented during the CDI Reunion.

Lizbeth Perez-Castro

Lizbeth Perez-Castro, *University of Puerto Rico at Cayey, Gurabo, PR*

Abstract Number: 1577
Poster Board Number: P415

Abstract Title: Mitochondrial Membrane Potential Changes in Response to Methylmercury-Induced Toxicity in Motor Neuron-Like Cells, NSC34 Cells: The Role of Dimethyl Fumarate in Neuronal Protection

Institution Where Research Was Conducted: Michigan State University

Pfizer SOT Endowment Fund Undergraduate Student Travel Awards

Sarah Delena Burnett

Sarah Delena Burnett, *University of Arkansas, Fayetteville, AR*

Abstract Number: 3208
Poster Board Number: P520

Abstract Title: Epigenetic Alterations in Human Liver HepaRG Cells Induced by Aflatoxin

James M. Ding

James M. Ding, *University of Texas at Austin, Austin, TX*

Abstract Number: 3183
Poster Board Number: P448

Abstract Title: Co-Occurrence of Genetic Variations and Drug Properties Is Associated with Increased Risk of Drug-Induced Liver Injury in Humans

Benjamin Alan Elser

Benjamin Alan Elser, *Indiana University, Bloomington, IN*

Abstract Number: 2042
Poster Board Number: P446

Abstract Title: Mechanism of 1,3-Dichloropropene (1,3-D) Induced Liver Tumors in Rat

Emily B. Fabyanic

Emily B. Fabyanic, *West Virginia University, Morgantown, WV*

Abstract Number: 1441
Poster Board Number: P170

Abstract Title: *In Vitro* Toxicological Assessment of 4-Methylcyclohexane Methanol and Propylene Glycol Phenyl Ether Mixtures

Laura Fisch

Laura Fisch, *Montana State University, Bozeman, MN*

Abstract Number: 2759
Poster Board Number: P314

Abstract Title: RBCs as Surrogates for Studying Lysosomal-Nanoparticle Interactions and Nanoparticle Toxicity

Eduardo Aztlán González

Eduardo Aztlán González, *University of California Davis, Davis, CA*

Abstract Number: 1174
Poster Board Number: P227

Abstract Title: Neurotoxic Effects of Silver Nanoparticles on Developing Zebrafish (*Danio rerio*)

Mina M. Huerta

Mina M. Huerta, *Oberlin College, Oberlin, OH*

Abstract Number: 2342
Poster Board Number: P313

Abstract Title: Investigating the Synergistic Effects of Chlorpyrifos and Cadmium Neurotoxicity in Alpha-Synuclein Overexpressing Dopaminergic Cell Model of Parkinson's Disease

Haydee M. Jacobs

Haydee M. Jacobs, *University of Massachusetts Amherst, Amherst, MA*

Abstract Number: 3294
Poster Board Number: P646

Abstract Title: Mono-2-ethylhexyl Phthalate (MEHP) Alters Embryonic Growth and Pancreatic Organogenesis in Zebrafish

Rachael A. McMinimy

Rachael A. McMinimy, *Oberlin College, Oberlin, OH*

Abstract Number: 2392
Poster Board Number: P415

Abstract Title: Acute Exposure to Chlorpyrifos Causes Mitochondrial Dysfunction in a Striatal Cell Model of Huntington's Disease

Chimwemwe Mwase

Chimwemwe Mwase, *Paine College, Augusta, GA*

Abstract Number: 1562a
Poster Board Number: P348

Abstract Title: Comparative Study of *Chlorella vulgaris* and *Phanerochaete chrysosporium* (ATCC® 24725 ™) on the Bioremediation Hexavalent Chromium: A Mathematical Modeling Study

Danyelle Beth Osowski

Danyelle Beth Osowski, *University of North Dakota, Grand Forks, ND*

Abstract Number: 1273
Poster Board Number: P422

Abstract Title: Increased Expression of CD44 in Cadmium and Arsenite Transformed UROtsa Cells

Lizbeth Perez-Castro

Lizbeth Perez-Castro, *University of Puerto Rico at Cayey, Gurabo, PR*

Abstract Number: 1577
Poster Board Number: P415

Abstract Title: Mitochondrial Membrane Potential Changes in Response to Methylmercury-Induced Toxicity in Motor Neuron-Like Cells, NSC34 Cells: The Role of Dimethyl Fumarate in Neuronal Protection

Institution Where Research Was Conducted: Michigan State University

Jiwon Seo

Jiwon Seo, *John Jay College of Criminal Justice, New York, NY*

Abstract Number: 1316
Poster Board Number: P522

Abstract Title: Maneb and Mancozeb Induce Senescence via p53, p27, and p15/16 Pathways

Carolyn Anne Smith

Carolyn Anne Smith, *United States Coast Guard Academy, New London, CT*

Abstract Number: 1875
Poster Board Number: P181

Abstract Title: Characterization of Xenobiotic Defense Mechanisms of the Pancreatic Beta Cell

Stephanie N. Thiede

Stephanie N. Thiede, *Purdue University, West Lafayette, IN*

Abstract Number: 2180
Poster Board Number: P110

Abstract Title: Quantifiable 3D *In Vitro* Vasculogenesis Assay Emphasizes Importance of Cell-Matrix Interactions When Screening Putative Developmental Toxins

Nancy Ly Tran

Nancy Ly Tran, *Bates College, Lewiston, ME*

Abstract Number: 3293
Poster Board Number: P234

Abstract Title: Role of Nrf1 Paralogs in Regulating the Transcriptional Response to Phthalates in Zebrafish (*Danio rerio*)

Jamie Lee Weimer

Jamie Lee Weimer, *Northern Kentucky University, Highland Heights, KY*

Abstract Number: 1181
Poster Board Number: P234

Abstract Title: High-Taurine Consumption during Adolescence Alters Biogenic Amines in a Sex-Dependent Manner in C57BL/6J Mice

Public Communications Awards

Steven Gilbert

Steven Gilbert, PhD, DABT

Dr. Gilbert is the Founder and Director of the Institute of Neurotoxicology and Neurological Disorder; Affiliate Professor in the Departments of Environmental and Occupational Health Sciences, and Interdisciplinary Arts and Sciences at the University of Washington. In addition to his years of teaching the next generation of scientists, Dr. Gilbert is engaged in multi-faceted and sustained efforts to educate the public and raise the awareness of the science of toxicology.

Launched 2006, he created www.toxipedia.org, a free online toxicology encyclopedia with the aim of broadening understanding how toxicology is combined with the protection of human health and the environment. Maintained and supported by Dr. Gilbert, this resource offers articles about toxic chemicals, health conditions, ethical considerations, and the history of toxicology, laws, and regulation. As a demonstration of its high impact, popularity and scope, Toxipedia has grown so that is now requires a full-time senior editor and a dedicated advisory board to govern content. Additionally, several other websites are supported by the Toxipedia, such as, IPMopedia (Integrated Pest Management), WANMEC (WA Nuclear Museum and Education Center), Health World Press, Facts on Composting, Women in Peace, and World Library of Toxicology, increasing the broad appeal and user base.

"A Small Dose of Toxicology" was written by Dr. Gilbert specifically for a non-specialist audience exploring principals of toxicology and effects of common chemicals such as asbestos, lead, mercury, and solvents and further delving into more common chemicals such as caffeine, alcohol, nicotine and other over the counter medications. Using easy to understand language, he explains core concepts in toxicology such as that many seemingly harmless substances at certain concentrations, can be toxic. This book has been popular with non-scientists and has engaged many undergraduates and other students. The reach has been extended dramatically by the second edition being availability as a free e-book online and is in the process of being translated into several other languages, such as Chinese, German, and Arabic, thus having a global impact.

Another successful initiative of Dr. Gilbert is an interactive poster entitled, Milestones of Toxicology. This poster, which is continually updated and distributed as a resource, provides a history of toxicology with humor and interest. Many toxicologists and students have enjoyed referencing this poster in their presentations. This has been translated into more than 14 languages, another indication of Dr. Gilbert's global significance.

An active member of the Society since 1987, Dr. Gilbert has served on many SOT Committees particularly those involved in education and outreach such as, the Communications Committee, Education Committee, K–12 Education Subcommittee. He also has served in the leadership for the Pacific Northwest Regional Chapter and on several SOT task forces. He also helped start the SOT Ethical, Legal, and Social Issues (ELSI) specialty section and remains active in issues addressing ethics.

Gary Ginsberg

Gary Ginsberg, PhD

Dr. Ginsberg is a Senior Toxicologist with the Connecticut Department of Public Health, where he evaluates human exposures to chemicals present in the air, water, soil, food, and in the workplace. He provides risk assessment expertise to state agencies in standard setting and site remediation projects. His dedication to toxicology is evident though his tireless endeavors to educate the public and other health care professionals with accurate and practical knowledge. He uses AM and FM radio, television, books, social media, paired with traditional approaches, such as educational sessions at meetings and conferences and print media.

A regular guest on the Dr. Oz show, Dr. Ginsberg has reached millions providing tips on what toxic chemicals to watch out for in the household, green living tips, and on maintaining a "healthy home." He also contributes to the Dr. Oz show blog and website on topics that inform parents about protecting their children from potentially harmful exposures. Dr. Ginsberg's monthly blog entries at the Yale School of Public Health website are titled "Is It Safe;" these entries are in a question and answer format on topical toxicology questions. Dr. Ginsberg is an adjunct faculty member at Yale and at the University of Connecticut School of Community Medicine.

Dr. Ginsberg co-authored "*What's Toxic, What's Not*" (Berkley Books, 2006); this book has been educating the layperson with his down-to-earth advice about the common hazards or concerns in homes, food, and yards. Dr. Ginsberg is able to consolidate vast amounts of science into easily digestible useful information to help protect consumers from potentially hazardous situations and alleviate unfounded fears of chemical risks. The content ranges from lead, mold and asbestos in homes to dioxins in food to chlorine in public pools.

In addition to TV and books, Dr. Ginsberg had a two-hour radio show for several years entitled "Greener Living with Dr. G" and currently has a weekly "What's Toxic, What's Not," segment on the "YOU The Owner's Manual" radio show available on several online streaming radio sites. The focus of these segments is to bring toxicology's headlines and hidden issues into focus in an easy to understand presentation. Dr. Ginsberg's duties at the State of Connecticut include consumer advisories that are often the subject of fact sheets and press releases; he has been quoted in many publications including: *Connecticut, New York Newsday, Simple Living, Reader's Digest, Money Magazine,* and *This Old House* and was the featured toxicologist on a recent Wastebusters video produced by the state of Connecticut. In addition his works have been quoted in Twitter, Facebook as well as *Huffington Post* and his own website www.whatstoxic.com.

SOT/SOT Endowment Fund/IUTOX Travel Awards

Khaled Abass

Khaled Abass, PhD, Minoufiya University, Menoufia, Egypt

Hossein Hassanian-Moghaddam

Hossein Hassanian-Moghaddam, MD, Loghman-Hakim Hospital, Tehran, Iran

Elena Jardan

Elena Jardan, MD, National Center of Public Health, Chisinau, Republic of Moldova

Monday Michael Onakpa

Monday Michael Onakpa, PhD, Veterinary Medicine of University of Abuja, Abuja, Nigeria

Zanina Perevska

Zanina Perevska, MD, PhD, University Clinic of Toxicology, Skopje, Macedonia

Ella Joy N. Perez

Ella Joy N. Perez, MD, Southern Philippines Medical Center Poison Treatment and Control Center, Davao, Philippines

Ganna Shayakhmetova

Ganna Shayakhmetova, PhD, Institute of Pharmacology and Toxicology NAMS of Ukraine, Kyiv, Ukraine

SOT Undergraduate Intern Travel Award

Jessica Ray

Jessica Ray, *Michigan State University, East Lansing, MI*

Abstract Number: 3501
Poster Board Number: P191

Abstract Title: Epigenetic Alterations in Response to the Inhalation of Different Sized Multi-Walled Carbon Nanotubes

Institution Where Research Was Conducted: University of Montana, Missoula, MT

Translational Impact Award

Richard D. Beger

Richard D. Beger, MS, PhD

Dr. Beger is the Branch Chief for the Biomarkers and Alternative Models Branch, part of the Division of Systems Biology at the US Food and Drug Administration's National Center for Toxicological Research (NCTR). He is an internationally recognized leader in toxicology, using computational modeling, metabolomics and proteomics to develop translational approaches to improve drug safety, disease detection/management, and human health.

Toward advancing the use of computational modeling, Dr. Beger is the primary co-inventor on two patents describing a novel quantitative spectrometric data-activity relationship (QSDAR) modeling technique. In collaboration with many global researchers this approach has been used to investigate compounds that bind to the estrogen receptor; the aryl hydrocarbon receptor, drugs that cause phospholipidosis and inhibit human Ether-à-go-go Related Gene (hERG); and polypharmacy by looking at inhibitors of CYP3A4 and CYP2D6. These models are proving to have an impact on predictive drug development and chemical safety assessment.

In the area of metabolomic biomarker discovery, Dr. Beger has made groundbreaking strides in several areas of concern. In preclinical models of kidney toxicity, he conducted studies that observed the affects of drugs (cisplatin and gentamicin) and food adulterants (melamine and cyanuric acid) on kidney tissue in rodents. In collaboration with other scientists, Dr. Beger conducted two human metabolomic studies. The first identified early biomarkers in children undergoing cardiopulmonary bypass surgery. The second study explored the serum of patients with acute renal injury. Biomarkers from previous preclinical rodent studies were found altered here and new biomarkers were identified.

Similarly, Dr. Beger has pursued translational metabolomics biomarkers in hepatotoxicity in both animal models and human studies. Preclinical studies on drugs (valproic acid, acetaminophen, felbamate), chemicals (carbon tetrachloride), and dietary supplements (green tea), showed altered metabolite levels in biofluids and/or tissues preceding obvious liver injury and during damage. In collaboration with other scientists at the Arkansas Children's Hospital in Little Rock, Arkansas, metabolomics studies have been done in biofluids of children without exposure to acetaminophen, upon therapeutic treatment, and in acetaminophen overdose situations. These studies found metabolic changes that translated between the preclinical and clinical studies.

Because of the diverse collaborative relationships including government regulators, discovery- and development-focused investigators, and clinicians, Dr. Beger has advanced the field of translational toxicology and medicine and actively pursued the identification of biomarkers that improve the assessment of drug safety and the individualized delivery of patient care.

Translational Impact Award Lecture: Translational Non-Invasive Biomarkers of Acetaminophen-Induced Liver Injury, Wednesday, March 16, 5:00 pm to 5:50 pm, Room R08.

Translational/Bridging Travel Award

Mohamed Salama

Mohamed Salama, MD, PhD

Dr. Salama obtained his Medical Degree in 1999 from Mansoura University, Egypt. There he began his clinical training and shortly thereafter started his post as clinical toxicologist at Mansoura University Poison Control Center. He received his MSc in Toxicology in 2006, and through a DAAD scholarship his PhD degree in Neurotoxicology in 2011 through collaboration with Philipps University in Marburg, Germany. Upon returning to Egypt he realized that there was a large gap between basic neurotoxicology research and clinical field. Translational initiatives were totally absent. Either one was a neuroscientist in a closed lab or a neurologist busy with patients.

Dr. Salama's passion and dedication to bridge the divide between basic and clinical research and to further the field of translational research is clearly evidenced through his many contributions to this field.

Dr. Salama established the first Experimental Neurology Unit in Egypt, resulting in published findings in international journals and invited presentations. His research on strategies that protect nerve cells from dying in Parkinson's disease received recognition, including the best research in Egypt for the year 2013, the best presentation in neurology at the International Student Congress of Medical Sciences (ISCOMS) in 2012, and Misr El-Kheir Foundation (MEK) international publications award in 2013. Following his success, many students became interested in experimental neurology and his program has since grown.

Continuing to close the gap between basic and clinical neurotoxicology, he established relationships with clinicians in the neurology field by focusing on translational research projects and by funding from international organizations (DFG, DAAD, IBRO, ISN, MDS, PMDF). In his third year of a DAAD funded project (230,000 Euros) Dr. Salama is trying to evaluate the environment-gene interaction in Parkinson's disease. These studies combine basic neurotoxicologists, clinical neurologists, and geneticists in one project.

Dr. Salama was selected as an SOT Global Senior Scholar in 2013 and was hosted by Dr. M.B. Abou-Donia, of Duke University. Through their collaboration he was able to establish the first Translational Neurotoxicology Fellowship degree in Egypt at Mansoura University.

Undergraduate Educator Award

Antonio T. Baines

Antonio T. Baines, BS, PhD

Dr. Baines is an associate professor in the Department of Biological and Biomedical Sciences with a joint appointment in the Cancer Research Program of the Julius L. Chambers Biomedical/Biotechnology Research Institute at North Carolina Central University in Durham, North Carolina. He has consistently demonstrated his passion for both teaching and conducting research. Dr. Baines has taught a number of undergraduate courses including Scientific Writing, Molecules of Cell Function, Introduction to Research, and a graduate-level course in toxicology and maintains an active cancer research program where he mentors undergraduate and graduate students.

Always seeking to inspire and motivate students, Dr. Baines serves as co-advisor to his department's Biology Society, where he works with and supports STEM students gaining summer clinical and research experiences. His passion and devotion for teaching is evident through the regularly organized special seminars where prominent speakers from academia, government, and industry are invited to interact with his undergraduates to discuss their respective fields and provide additional enrichment for the students. He also serves as a career advisor to students at University North Carolina at Chapel Hill where he is adjunct faculty in the Department of Pharmacology and a member in the curriculum in toxicology. Dr. Baines has established himself with a solid track record of propelling students into future biomedical positions. He serves as an excellent role model to his students through his dedication as a teacher, researcher, scientific mentor, and student advisor. He recently received the Recruitment and Retention Award from his dean as well as the University Award for Teaching Excellence, both testaments of his vital contributions to the advancement of science education.

Dr. Baines had his first experiences with toxicology through the 1993 SOT Undergraduate Program as a student. Since then, he has continued to contribute to the program as a peer mentor and for a number of years has provided the introductory toxicology presentation for the program. He can frequently be seen "paying it forward" with students at the SOT Annual Meeting ensuring they can derive the same exposure and inspiration as he encountered. Dr. Antonio Baines is a role model for his students because he reflects so many of the qualities that a well-rounded university professor should demonstrate.

SOT | Society of Toxicology

Do you know a toxicologist who deserves to be recognized? Submit nomination by October 9, 2016!

SOT recognizes distinguished toxicologists and students with prestigious awards each year.

Award recipients are honored during Annual Meeting Awards Ceremony and recognized in SOT publications.

Submit nominations and applications online.

Applications for 2017 national SOT awards are due October 9, 2016.

Regional Chapter Awards, Special Interest Group Awards, and Specialty Section Awards have various deadlines throughout the year.

Visit the Awards and Fellowships section of the website to view award details to make nominations.

www.toxicology.org

Supported Award Recipients

Colgate-Palmolive Grants for Alternative Research

David Pamies

David Pamies, MD, *Johns Hopkins Bloomberg School of Public Health,Baltimore, MD*

Project Title: A 3D *In Vitro* BBB-Microphysiological System to Study Cerebrovascular Perturbation

Lei Yin

Lei Yin, PhD, *University of Georgia, Athens, GA*

Project Title: Pathway-Based 3D Mini-Testis Model for Reproductive and Developmental Toxicity

Colgate-Palmolive Awards for Student Research Training in Alternative Methods

Shih-Yu Chang

Shih-Yu Chang, MS, *University of Washington, Seattle, WA*

Project Title: Isolation of Primary Nonparenchymal Hepatic Cells for Improving Liver *In Vitro/Ex Vivo* Microphysiological Systems

Host Institution: Institute for Drug Safety Sciences, The Hamner Institutes for Health Sciences

Tshepo Moto

Tshepo Moto, BS, MPH, *University of Pretoria, Pretoria, South Africa*

Project Title: Application of NexGen Health Risk Assessment Framework to Gold Nanoparticles Exposure Assessment

Host Institution: Institute of Environmental Medicine, Unit of Work Environment Toxicology, Karolinska Institutet

Colgate-Palmolive Postdoctoral Fellowship Award in *In Vitro* Toxicology

Katherine Dunnick

Katherine Dunnick, PhD, *The Hamner Institutes for Health Sciences, Durham, NC*

Project Title: Development of High Sensitivity *In Vitro* Fit-for-Purpose Assay to Detect DNA Double Strand Breaks

Syngenta Fellowship Award in Human Health Applications of New Technologies

Thomas Luechtefeld

Thomas Luechtefeld, BS, *Johns Hopkins Bloomberg School of Public Health, Baltimore, MD*

Project Title: Multi-Endpoint Toxicological Models with Integrated Data

SOT | Society of Toxicology
ENDOWMENT
Investing in the Future ...

invest in the future of toxicology

Contributors to the SOT Endowment Fund are helping to build for the future of toxicology through long-term financial support that generates critical resources to enable the Society to fulfill its mission, now and in the years to come. Please help SOT continue to make a difference by becoming a contributor to the SOT Endowment Fund.

Contribute Today!

The Endowment Fund Contribution Donor Form can be found on page 371.

Visit www.toxicology.org/endowment.

SOT Endowment Fund 2015 Award Recipients

SOT Endowment Fund—Helping the Society Fulfill Its Mission to Build for the Future

The SOT Endowment Fund is a family of funds comprising the Education Fund, Global Activities Fund, SOT Priorities Fund, and the 34 Named Funds.

In the SOT 2014–2015 fiscal year, the Education, Global Activities, and SOT Strategic Priorities Society Funds, and the Named Endowment Funds, Harry W. Hays Memorial Fund, contributed funding to SOT initiatives that addressed one or more of the Society's strategic objectives.

Undergraduate Educator Award

The Undergraduate Educator Award was conferred on Mindy F. Reynolds. This award was established to recognize efforts to increase the pipeline of future toxicologists and was funded through the SOT Endowment Education Fund.

SOT/AstraZeneca/SOT Endowment Fund/IUTOX Travel Awards

As part of our effort to strengthen global participation, the Global Activities Fund and the SOT Strategic Priorities Fund provided financial assistance for scientists from countries where toxicology is underrepresented to assist with travel to the Annual Meeting. The principal goal of these fellowships is to increase capacity in the developing country through strengthening toxicology within the university and the country. The International Union of Toxicology (IUTOX) administered the award review process. Historical listing of recipients can be found on page 365.

SOT Summer Research Internship Program

SOT encourages research experiences for undergraduate students which are excellent motivators for graduate school and careers in toxicology. The Endowment Fund helped support multiple Summer Research Internships in the SOT 2014–2015 fiscal year.

Student Travel to SOT Annual Meeting

Hundreds of students, many of them now leaders in SOT, attended their first SOT meeting by winning a Student Travel Award funded by the Society. From the early days of SOT to the present, it has been understood that such participation is essential to "building for the future of toxicology." For the 2015 Annual Meeting, the SOT Priorities and Education Society Endowment Funds provided funding for an additional ten students, who might not otherwise have found funding to participate in the Annual Meeting.

SOT Endowment Fund 2015 Award Recipients

Mary Amdur Student Award Fund

Mary Francis, BA, *Rutgers University, Piscataway, NJ*

Pamella Tijerina, BS, *New York University School of Medicine, Tuxedo Park, NJ*

Young Soo Choi Student Scholarship Award Fund

Woo-Cheol Sim, BS, *Seoul National University, Seoul, Republic of Korea*

Laxman S. Desai Association of Scientists of Indian Origin Student Award Fund

Nikita Joshi, MSc, MS, *Michigan State University, East Lansing, MI*

Pooja Naik, MS, *Texas Tech University Health Sciences Center, Amarillo, TX*

John Doull Student Award Fund

Yongquan Lai, PhD, *The University of North Carolina at Chapel Hill, Chapel Hill, NC*

Education Fund: Undergraduate Educator Award

Mindy Reynolds, PhD, *Washington College, Chestertown, MD*

Perry J. Gehring Biological Modeling Student Award Fund

Jeremy Leonard, PhD, *MS, BS, US EPA, Durham, NC*

Axelle Marchand, PhD, *Université de Montréal, Montreal, QC, Canada*

(continued to next page)

Perry J. Gehring Diversity Student Travel Award Fund

Latisha Pryor, *Fort Valley State University, Oglethorpe, GA*

Perry J. Gehring Risk Assessment Student Award Fund

Mylene Ratelle, PhD, *University of Montreal, Montreal, QC, Canada*

Perry J. Gehring Risk Assessment Best Postdoctoral Fellow Abstract Award Fund

Marjory Moreau, PhD, *Health Canada, Ottawa, ON, Canada*

HESI Young Investigator Endowment Award Fund

Edmund O'Brien, BS, *PhD, L'Oreal, Clark, NJ*

Fenna Sille, PhD, *University of California Berkeley, Berkeley, CA*

Vera W. Hudson and Elizabeth K. Weisburger Scholarship Fund

Andree-Anne Hudon Thibeault, BSc, *INRS Armand Frappier Institute, Laval, QC, Canada*

Jessica Sapiro, BS, MS, *University of Arizona, Tucson, AZ*

Frank C. Lu Food Safety Student Award Fund

Alexandra Turley, BS, *Michigan State University, East Lansing, MI*

Jean Lu Student Scholarship Award Fund

Marlene T. Kim, BS, *Rutgers, The State University of New Jersey, Camden, NJ*

Roger O. McClellan Student Award Fund

Erin Quist, DVM, MS, *NTP/NIEHS, Research Triangle Park, NC*

Harihara Mehendale Association of Scientists of Indian Origin Student Award Fund

Amruta Manke, BS, MS, *West Virginia University, Morgantown, WV*

Prajakta Shimpi, MPharm, *University of Rhode Island, Kingston, RI*

Molecular Biology Specialty Section Postdoctoral Fellow Research Award

Aditya Joshi, PhD, *University of Texas Medical Branch, Galveston, TX*

Anna Kopec, PhD, *Michigan State University, East Lansing, MI*

Natalia VanDuyn, PhD, *ORISE/US EPA, Research Triangle Park, NC*

Molecular Biology Student Award Fund

Kelly Fader, Hon BSc, *Michigan State University, East Lansing, MI*

Dilshan Harischandra, BS, *Iowa State University, Ames, IA*

Prajakta Shimpi, MPharm, *University of Rhode Island, Kingston, RI*

Sheldon D. Murphy Award Fund

Dwayne Carter, BS, *University of Texas Medical Branch, Galveston, TX*

Michael Osborne, *Imperial College London, Shoeburyness, Essex, United Kingdom*

Saurabh Vispute, BS, *St. John's University, Fresh Meadows, NY*

Emil A. Pfitzer Drug Discovery Postdoc Award Fund

Amrendra Ajay, PhD, *Harvard Medical School, Boston, MA*

Tamara Tal, BS, PhD, *US Environmental Protection Agency, Durham, NC*

Please refer to the Mobile Event App or Online Planner or these sections of this Program*—Daily Calendar, Event Listing, or Program Schedule—for date, time, and location of the Committee on Diversity Initiatives, Regional Chapter, Specialty Interest Group, and Specialty Section receptions, where the Endowment Fund Awards are conferred.*

Previous recipients can be found on the SOT website.

Emil A. Pfitzer Drug Discovery Student Award Fund

Melanie Abongwa, BSc, MSc, *Iowa State University, Ames, IA*

Monica Langley, BS, *Iowa State University, Ames, IA*

Chelsea Snyder, BS, *University of California Davis, Davis, CA*

Gabriel L. Plaa Education Award Fund

Eric Beier, PhD, *Rutgers University, Piscataway, NJ*

Anna Kopec, PhD, *Michigan State University, East Lansing, MI*

Shaun McCullough, MS, PhD, *US Environmental Protection Agency, Chapel Hill, NC*

Jaime Mirowsky, PhD, *University of North Carolina, Chapel Hill, NC*

Regulatory and Safety Evaluation Specialty Section Student Award Fund

Dana Lauterstein, BA, *MS, New York University, New York City, NY*

Kpobari Nkpaa, BSc, MSc, *University of Port Harcourt, Port Harcourt, Rivers, Nigeria*

Linda Schenk, MSc, PhD, *Karolinska Institutet, Stockholm, Sweden*

Joey Stevens, BS, BA, *US Environmental Protection Agency, Durham, NC*

Renal Toxicology Fellowship Award Fund

Blessy George, PharmD, *Rutgers University, Piscataway, NJ*

Susanne Ramm, PhD, *Harvard Medical School, Boston, MA*

Jessica Sapiro, BS, MS, *University of Arizona, Tucson, AZ*

Robert J. Rubin Student Travel Award Fund

Mary Francis, BA, *Rutgers University, Piscataway, NJ*

Paige Smith, MS, BS, *US FDA/NCTR, Jefferson, AR; and Colorado State University, Fort Collins, CO*

Dharm V. Singh Association of Scientists of Indian Origin Student Award Fund

Amrendra Ajay, PhD, *Harvard Medical School, Boston, MA*

Ratanesh Seth, PhD, *University of South Carolina, Columbia, SC*

Dharm V. Singh Carcinogenesis Award Fund

Elizabeth Lightbody, BScH, *Queen's University Cancer Research Institute, Kingston, ON, Canada*

Carl C. Smith Student Mechanisms Award Fund

Dwayne Carter, BS, *University of Texas Medical Branch, Galveston, TX*

Suvarthi Das, MS, *University of South Carolina, Columbia, SC*

Eric Ditzel, BS, *University of Arizona, Tucson, AZ*

Nikita Joshi, MSc, MS, *Michigan State University, East Lansing, MI*

Jamie Moscovitz, BA, *Rutgers University, Piscataway, NJ*

Deanna Salter, BS, *University of Rhode Island, Kingston, RI*

Prajakta Shimpi, MPharm, *University of Rhode Island, Kingston, RI*

Lisa Weatherly, BA, *University of Maine, Orono, ME*

Wei Zhang, PhD, *University of Kentucky, Lexington, KY*

Ronald G. Thurman Student Travel Award Fund

Anika Dzierlenga, BS, *University of Arizona, Tucson, AZ*

Dushani Palliyaguru, BA, *University of Pittsburgh, Pittsburgh, PA*

Prajakta Shimpi, MS, *University of Rhode Island, Kingston, RI*

SOT | Society of Toxicology
ENDOWMENT
Investing in the Future ...

To become an Endowment Fund contributor and enjoy the fulfillment of knowing that you are helping to build for the future of toxicology, please visit the Endowment Fund section of the SOT website. You can make a difference in the lives of toxicologists by your generous support. Add your name to the Honor Roll of Contributors.

51 Ways to Enhance Your Annual Meeting Experience

Regional Chapters

18

Participate in the reception of your hometown chapter while you are in New Orleans—Attend the local events during the year.

Special Interest Groups

6

Participate in events that bring together scientists who share a common interest in issues germane to their communities.

Specialty Sections

27

Participate in meetings and network with individuals who share common scientific interests, join in recognition of Award Recipients, and have some fun!

Participate—You'll be glad you did!

Be involved with a Regional Chapter, Special Interest Group, or Specialty Section. Their events are held throughout the Annual Meeting and are open to those who are interested in joining. If you're a component group member, you know these events are the perfect opportunity to connect with existing friends and colleagues, and create new relationships.

See page 87 for schedule.

SOT | Society of Toxicology

Special Events

All activities will be held at the New Orleans Ernest N. Morial Convention Center in New Orleans, Louisiana, unless otherwise noted.

Regional Chapter, Special Interest Group, and Specialty Section Receptions

Monday, March 14–Wednesday, March 16, Various Times

Many of the SOT RC, SIG, and SS meet during the SOT Annual Meeting. All current and prospective RC, SIG, and SS members are encouraged to attend. More information can be found on page 87–89.

Committee on Diversity Initiatives Reunion

Saturday, March 12, 7:30 PM to 8:30 PM
Room 275 *(Use Hall H Entrance)*

Hosted by:
Committee for Diversity Initiatives

Everyone is encouraged to join the Committee on Diversity Initiatives (CDI) as we celebrate the Undergraduate Diversity Program and the people who make it successful. The CDI Reunion is a great opportunity for former students, organizers of the program, and volunteers to gather and celebrate 27 years of success in encouraging the next generation of scientists. Please welcome and network with this year's undergraduate student participants. The program will include the presentation of the 2016 Perry J. Gehring Diversity Student Travel Award. Dessert, coffee, and tea will be served, so please mark your calendar and start the 55th Annual Meeting networking at the CDI Reunion.

Welcome Reception

Sunday, March 13, 6:30 PM to 7:30 PM
Great Hall A

Continue the celebration by attending the Welcome Reception following the Awards Ceremony. The Welcome Reception is a great opportunity to renew friendships and to make new acquaintances. Please join the Society in this kick-off of the Annual Meeting.

25-Year (Or More) Member Reception

Sunday, March 13, 7:00 PM to 8:00 PM
Lobby A Lounge

If you have been a member of the Society of Toxicology for 25 years or longer, please join your colleagues in recognition and celebration of your contributions to the Society. Be sure to wear your membership anniversary pin.

IUTOX Global Collaboration Coffee

Monday, March 14, 9:30 AM to 11:30 AM
Rivergate Room

All Global Gallery participants and representatives of societies from around the world are invited to the IUTOX Global Collaboration Coffee. This event offers an opportunity for scientific leaders to connect and gain a better understanding of the initiatives of societies around the world. Global Gallery participants are available at their poster on Monday, from 11:45 am to 12:15 pm. Please see page 48 for additional information about the poster display. Please contact Kevin Merritt (kevin@toxicology.org) for participation information in the IUTOX Global Collaboration Coffee and Global Gallery.

Regulatory and Safety Evaluation Specialty Section Global Regulations Breakfast—Next Stop: China

Tuesday, March 15, 6:30 AM to 8:00 AM
Room R01

Regulatory Landscape in China

Speaker: *Dr. Qing-li Wang, Executive Director, Pharmacology and Toxicology, Center for Drug Evaluation, China Food and Drug Administration, Beijing, China.*

Hosted by:
Regulatory and Safety Evaluation Specialty Section

Dr. Wang's talk will provide an overview on the regulatory landscape in China, giving insights into the organizational structure of cFDA, focusing on the approval processes for pharmaceuticals, and briefly looking into how traditional medicines, food, and dietary supplements/herbal products are regulated. The talk will also touch on new guidelines and regulatory requirements currently being drafted by cFDA, and the similarities and differences to US FDA, including new policies for pharmaceutical development in China.

Past Presidents' 5K Fun Run/Walk

Tuesday, March 15, 7:00 AM
Audubon Park

(See Mobile Event App for Shuttle Details)

Supported by:
IDEXX BioResearch and MilliporeSigma (BioReliance/EMD Millipore)

The sixth annual Past Presidents' 5K Fun Run/Walk is open to anyone interested, this event is a great opportunity to meet old friends and make new acquaintances in a casual environment, joining SOT's Past Presidents in showing support for SOT. Whether you're in it for some friendly competition or would rather take a leisurely stroll, this event's emphasis is on camaraderie and will bring together runners and walkers of all levels and paces. Come join us—we look forward to seeing you!

For information on registration, visit the Special Events section of the SOT Annual Meeting website or the Fun Run counter at registration on-site. Registration is only $25, and all proceeds support the SOT Endowment Fund.

SOT Annual Business Meeting

Tuesday, March 15, 4:45 PM to 6:15 PM
Room 207

SOT Members are encouraged to attend the 55th SOT Annual Business Meeting. The agenda includes discussion of plans for next year, a financial summary, and a review of the 2015–2016 accomplishments.

Tox ShowDown

Tuesday, March 15, 7:30 PM to 9:00 PM
Hilton New Orleans Riverside, Jefferson Ballroom

Chairperson(s): *Joanna Kreitinger, GSLC Secretary, University of Montana, Missoula, MT.*

Produced by:
Graduate Student Leadership Committee

Join hosts Phil Wexler and Sue Ford along with the Graduate Student Leadership Committee (GSLC) and your peers Tuesday night for the *Tox ShowDown*, an engaging quiz game modeled after the popular long-running show *It's Academic*. Three teams—the Endocrine Distruptors, the Free Radicals, and the Toxic Metabolites—will compete while answering questions concerning toxicology in its scientific context, as it relates to society, the arts, and culture.

Organized and supported by GSLC, this event is sure to be both informative and entertaining and a perfect way to celebrate the halfway point of the SOT Annual Meeting. The game provides attendees with a break, albeit still toxicologically oriented, from the more technical business of the meeting.

Special Interest Group Collaboration Group Global Hot Topics Event

The Global Challenges of Mycotoxins Toxicity

Wednesday, March 16, 6:45 AM to 8:00 AM
Room R01

Two experts from Mycotoxicity research field present their research findings.

Mycotoxins: Significance to Global Economics and Health. *Geromy Moore, USDA/ARS, New Orleans, LA.*

Storm Damage, Indoor Mold Contamination and the Potential Toxicity of Fungal Volatile Organic Compounds. *Joan Bennett, Rutgers University, Piscataway, NJ.*

Undergraduate Educator Network Meeting

Wednesday, March 16, 2:15 PM to 4:00 PM
Room 215

Chairperson(s): *Joshua Gray, US Coast Guard Academy, New London, CT.*

Endorser(s):
Education Committee
Undergraduate Education Subcommittee

The Education Committee and the Undergraduate Education Subcommittee host the Undergraduate Educator Network Meeting for all faculty involved in the teaching of toxicology to undergraduates, trainees thinking about teaching, and for those interested in including toxicology at the undergraduate level. Hear an update on initiatives for undergraduate faculty, provide your input, and discuss shared interests. The hour-long meeting is followed with networking time.

SOT Strategic Plan Update: Summary and Implementation of the Career Advancement, Recruitment, and Education Process

Thursday, March 17, 8:15 AM to 9:15 AM
Room 206

The 2015–2016 Council spent much of the past year examining the Society's programs and activities in career advancement, recruitment, and education (CARE) to address the new 2015–2018 Strategic Plan's strategic priority of "developing and supporting toxicologists to capitalize on future opportunities." Council appreciates the strong efforts and commitments of the CARE related committees: Education Committee, Committee on Diversity Initiatives, Career Resource and Development Committee, Postdoctoral Assembly, and Graduate Student Leadership Committee, and also recognizes the many benefits that each Committee's activities bring to building for the future of toxicology and SOT. The examination of these programs helped to identify opportunities to enhance some ongoing activities and changes in priorities for other activities. Additionally, Council reconfirmed the Society's commitment to diversity and inclusiveness as a core value that will be embraced in all aspects of the Society's activities. On Thursday, March 17, join Council for coffee and a discussion to learn more about how the Society will implement programs that will benefit the full pipeline of current and future toxicologists.

Attention: Students and Postdoctoral Scholars

- **Chat with an Expert**
- **Poster Tours for Trainees**
- **Research Funding Luncheon**
- **SOT Mentoring Breakfast**
- **Trainee Discussion with MRC Lecturer**
- **Trainee Discussions with Plenary Session Lecturers**

See full descriptions in Career section page 55.

Student and Postdoctoral Scholar Events

Undergraduate Diversity Program

Saturday, March 12 to Monday, March 14
Room 275

Chairperson(s): *Jorge Naciff, Procter & Gamble Company, Mason, OH.*

Hosted by:
Committee for Diversity Initiatives (CDI)

Recipients of the Undergraduate Diversity Program Student and Advisor Travel Awards participate in a three-day program to learn more about toxicology and careers in biomedical research. The program begins Saturday evening with networking within mentor groups, an introduction to toxicology, and the CDI Reunion, a celebration including current and past program participants and organizers. See the description below for the Sunday program. On Monday these students participate in scientific sessions, visit poster sessions, attend the *In Vitro* Lecture and Luncheon. They continue to network with graduate students, postdoctoral scholars, and career toxicologists before concluding this concentrated exposure to the discipline of toxicology and possibilities inherent in the pursuit of graduate studies in the biomedical sciences. For schedule details go to **www.toxicology.org/events/am/am2016/edout.asp.**

Sunday Undergraduate Education Program

Sunday, March 13, 8:00 AM to 5:00 PM
Room 275

Chairperson(s): *Jorge Naciff, Procter & Gamble Company, Mason, OH.*

Hosted by:
Committee for Diversity Initiatives (CDI)

Endorser(s):
Education Committee
Undergraduate Education Subcommittee

Any undergraduate student who attends the Annual Meeting is invited to register for the Sunday Undergraduate Education Program. The schedule for the day includes introductory lectures in different areas of toxicology, including an opportunity to explore and interpret data.

Students discuss with graduate students and academic program directors how to submit strong graduate school applications and succeed in graduate school, as well as learn the merits of specific graduate programs. They also network with SOT mentors and toxicologists in various employment sectors to become more familiar with different career paths in toxicology. For schedule details go to **www.toxicology.org/events/am/am2016/edout.asp.**

Undergraduate Diversity Program and Sunday Undergraduate Education Program

See full schedule on page 85.

Symposium

Genotypic and Intrinsic Risk Factors That Increase Susceptibility to Inhaled Pollutants

Organized by the Graduate Student Leadership Committee and Postdoctoral Assembly

Tuesday, March 15, 9:30 AM to 12:15 PM

See full description on page 183.

Education-Career Development Sessions

The Evolution of the Postdoc: Transitioning from Trainee to Professional in the Modern Era

Wednesday, March 16, 12:30 PM to 1:50 PM

See full description on page 268.

"Talksicology": Effective Oral Presentation Techniques

Wednesday, March 16, 5:00 PM to 6:20 PM

See full description on page 295.

Student/Postdoctoral Scholar Mixer

Sunday, March 13, 7:30 PM to 9:00 PM
La Nouvelle Orleans Ballroom B

(Ticket Required)

Hosted by:
Graduate Student Leadership Committee

The Graduate Student Leadership Committee hosts this opportunity for all students and postdoctoral scholars to gather, meet new colleagues, and reestablish relationships in an informal atmosphere at the beginning of the meeting. Learn about being involved in SOT by speaking with student leaders at the SOT component group posters. The GSLC Outstanding Leadership Award is presented during this event. Tickets are obtained at no cost by registering for the Mixer on the Annual Meeting Registration Form. Ticket and meeting badge are required. Complimentary refreshments and a cash bar are available.

In Vitro Toxicology Lecture and Luncheon

Multicellular Model Systems for *In Vitro* Toxicity Testing—Strengths and Challenges

Monday, March 14, 11:30 AM to 1:00 PM
La Nouvelle Orleans Ballroom B

(Ticket Required)

Chairperson(s): *Vicente Santa Cruz, Chevron Phillips Chemical Company LP, Conroe, TX; Co-Chairs: Barbara Kaplan, Mississippi State University, Mississippi State, MS; Emily N. Ford, Western New England University, Springfield, MA; and Daniel J. Spade, Brown University, Providence, RI.*

Lecturer: *Norbert E. Kaminski, Michigan State University, East Lansing, MI.*

Supported by:
An educational grant from the Colgate-Palmolive Company

Hosted by:
Education Committee

The goal of the *In Vitro* Toxicology Lecture series is to feature important research using *in vitro* and alternative techniques to study basic mechanisms and to illustrate how these test methods benefit animal welfare by refining, reducing, and replacing animal use whenever it is feasible. Undergraduate students, graduate students, postdoctoral scholars, and recipients of Colgate-Palmolive awards are among the guests at the *In Vitro* Toxicology Lecture and Luncheon. Students and postdoctoral scholars register for $10 (nonrefundable) via the Annual Meeting registration. Lunch service is available for those who arrive before 11:45 am.

A critical component of toxicological research is use of an appropriate model that will provide insight as to the effects and mechanisms by which xenobiotics alter physiological systems. Models depend on many factors including target tissue(s), whether a xenobiotic metabolite mediates the effects, and whether effects are direct or indirect. Also critical to model selection is consideration of ways to refine, reduce and replace animal use when possible. In many cases, *in vitro* systems can be used exclusively to assess xenobiotic effects and mechanisms, especially since these models can be further developed to examine effects on several cell types simultaneously.

Dr. Kaminski presents an introduction and provides several examples on the use of *in vitro* multicellular model systems, emphasizing both the strengths and challenges of the models and the information that is obtained. Questions regarding data interpretation and the limitations of such systems are discussed at the tables and participants report responses via electronic audience polling following the discussion.

High School Student and Teacher Workshop—Safety Matters: Toxicology and Product Safety

Tuesday, March 15, 8:00 AM to 2:15 PM
Room 276

Chairperson(s): *Wesley Gray, Southern University and A&M College, Baton Rouge, LA.*

Hosted by:
SOT South Central Regional Chapter

Supported by:
Education Committee
K–12 Subcommittee

High School teachers and students from the New Orleans area, plus high schoolers attending the SOT meeting, learn that "Safety Matters" at an all-day workshop on Tuesday, March 15. The workshop includes presentations introducing toxicology, activities to learn ways toxicologists can assess product safety, a tour of the Annual Meeting, and a ToxExpo scavenger hunt. Some students have posters displayed in the High School Poster Exposition. Toxicologists serve as mentors.

Mobile Event App

Use the Mobile Event App to access 55th Annual Meeting details. Bring it with you on your mobile device of choice.

(See page 3 for more details.)

High School Poster Exposition

Tuesday, March 15, 10:00 AM to 12:00 Noon
Exhibit Hall

Chairperson(s): *Marie Meagher Bourgeois, University of South Florida, Tampa, FL.*

Hosted by:
Education Committee
K–12 Subcommittee

High school students were invited to submit research posters for consideration for presentation in a special area near the SOT Pavilion. Students present on-site or by a virtual connection. Many of the students displaying posters also participate in the South Central Regional Chapter *Safety Matters* High School Student and Teacher Workshop on Tuesday. This display recognizes student effort and provides the high school students who have engaged in research with scientific meeting experience. Meeting attendees are invited to visit with these outstanding potential future toxicologists.

Undergraduate Student Meeting

Tuesday, March 15, 4:00 PM to 5:15 PM
Room 223

Chairperson(s): *Joshua Gray, US Coast Guard Academy, New London, CT.*

Hosted by:
Education Committee
Undergraduate Education Subcommittee

Undergraduate students are encouraged to participate in an informal meeting to talk about shared interests related to career paths in toxicology, discuss undergraduate tox-related activities, clubs, and majors on their campuses, and to provide feedback to the Undergraduate Education Subcommittee. A majority of this time is spent in small groups, undergraduates networking with graduate students and postdoctoral scholars.

Postdoctoral Assembly Luncheon

Tuesday, March 15, 12:00 Noon to 1:15 PM
Rivergate Room

(Ticket Required)

Chairperson(s): *Caitlin J. Murphy, Smithers Avanza, Gaithersburg, MD.*

Hosted by:
Postdoctoral Assembly

The Postdoctoral Assembly (PDA) Luncheon is a casual event that encourages engagement and networking among postdoctoral scholars. Finishing up a discussion from your morning poster session? Leaving early to set up a poster or attend another meeting? That's no problem; stop in when you can! Enjoy a buffet lunch while networking with others, including PDA officers, Postdoctoral Representatives, and SOT Councilors. This is the time for postdocs to relax, celebrate achievements, and have fun. A short program at 12:45 pm includes recognition of the Best Postdoctoral Publication Award recipients and the welcoming of the 2016–2017 PDA officers. Door prizes add even more fun to this lively event. Postdocs should reserve a ticket for $10 when registering for the Annual Meeting.

Undergraduate Diversity Program

Saturday, March 12 to Monday, March 14, Room 275

Chairperson(s): *Jorge Naciff, Procter & Gamble Company, Mason, OH.*

Hosted by:
Committee for Diversity Initiatives (CDI)

Saturday, March 12

Open to CDI Travel Awardees and Invited Guests.

5:00 PM–5:15 PM	**Registration for Students with Committee on Diversity Initiatives Travel Awards,** ***Room 275***
5:15 PM–7:30 PM	**Opening Event,** ***Room 275***
	Welcome Jorge Naciff, PhD, Procter & Gamble, Mason, OH.
5:25 PM–5:55 PM	**Icebreaker** Yasmeen Nkrumah-Elie, PhD, University of Colorado Anschutz Medical Campus, Denver, CO.
6:45 PM–7:30 PM	**Do You Like Science? Do You Want to Help People? Let's Try Toxicology! An Introduction to Toxicology** Antonio T. Baines, PhD, North Carolina Central University, Durham, NC.
7:30 PM–8:30 PM	**Committee on Diversity Initiatives Reunion,** ***Room 275*** Open to all, especially invited are those previously involved.
	Recognition of the 2016 Perry J. Gehring Diversity Student Travel Award Recipient Lizbeth Perez-Castro, 2015 Program Alumna, University of Puerto Rico at Cayey, Gurabo, PR.

Undergraduate Education Program

Sunday, March 13

Open to CDI Travel Award Recipients, Mentors, Organizers, and Undergraduates who register for the Sunday Undergraduate Education Program.

Chairperson(s): *Jorge Naciff, PhD, Procter & Gamble, Mason, OH; Judith Zelikoff, New York University School of Medicine, Tuxedo Park, NY.*

8:05 AM–8:15 AM	**Welcome from SOT President,** ***Room 272*** Peter Goering, PhD, US FDA, Silver Spring, MD. ***Chair:*** Jorge Naciff, PhD Procter and Gamble Company, Mason, OH.
8:15 AM–9:00 AM	**Integrating Toxicology Research to Determine Drug Safety** Lois D. Lehman-McKeemann, PhD, ATS, Bristol-Myers Squibb Company, Princeton, NJ.
9:00 AM–9:45 AM	**Does Air Pollution Exposure Contribute to the Etiology of Neurodevelopmental Disorders?** Deborah A. Cory-Slechta, PhD, University of Rochester Medical Center, Rochester, NY.
9:45 AM–9:55 AM	**Break**
9:55 AM–11:00 AM	**Interactive Session,** ***Room 275*** **Chemical Fingerprints: Toxicogenomics for Solving Toxicological Mysteries** Vanessa De La Rosa, PhD, University of New Mexico, Albuquerque, NM.
11:10 AM–12:00 Noon	**Human Health Assessment: Hazard Evaluation and Risk Assessment,** ***Room 272*** Marquea D. King, BS, PhD, US EPA, Washington, DC.
12:00 Noon–12:40 PM	**Lunch and Networking,** ***Room 275***
12:55 PM–1:55 PM	**Breakout Sessions for Students: What is Graduate School and What Can I Expect? How to Get into Graduate School,** ***Rooms 278–280*** ***Chair:*** Judith T. Zelikoff, New York University School of Medicine, Tuxedo Park, NY.

Sunday, March 13 *(Continued)*

12:55 PM–1:55 PM	**Breakout Session for Advisors: Tips for Advising Prospective Graduate Students or How to Get Your Students Accepted to Graduate School,** ***Room 281*** ***Facilitator:*** William D. Atchison, PhD, Michigan State University, Lansing, MI.
1:55 PM–2:05 PM	**Break**
2:05 PM–2:55 PM	**Career Roundtable: Opportunities in Toxicology,** ***Rooms 278–280*** ***Chair:*** Aimen K. Farraj, PhD, DABT, US EPA, Research Triangle Park, NC.
3:00 PM–5:00 PM	**Open Time with Academic Toxicology Program Directors and Internship Sponsors,** ***Room 272*** ***Chair:*** Judith T. Zelikoff, New York University School of Medicine, Tuxedo Park, NY. Featuring representatives from academic institutions across the country recruiting talented students interested in advanced studies in the biomedical sciences.
5:15 PM–6:30 PM	**Awards Ceremony,** Great Hall B
6:30 PM–7:30 PM	**Welcome Reception,** Great Hall A
7:30 PM–8:30 PM	**Student/Postdoctoral Scholar Mixer,** La Nouvelle Orleans Ballroom B

Undergraduate Diversity Program (Continued)

Monday, March 14

Open to CDI Travel Award Recipients, Mentors, and Organizers.

8:00 AM–9:20 AM	**Plenary Lecture,** ***Great Hall A*** **Regenerative Medicine and Tissue Engineering** Doris Taylor, Texas Heart Institute, Houston, TX; and Joan Nichols, University of Texas Medical Branch, Galveston, TX.
9:30 AM–11:05 AM	**Groups Attend Annual Meeting Sessions and Posters**
11:25 AM	**Mentors Leave Students at** ***In Vitro*** **Luncheon,** ***La Nouvelle Orleans Ballroom B***
11:30 AM–1:00 PM	***In Vitro*** **Lecture and Luncheon for Students,** ***La Nouvelle Orleans Ballroom B*** **Multicellular Model Systems for** ***In Vitro*** **Toxicity Testing—Strengths and Challenges** Norbert E. Kaminski, Michigan State University, East Lansing, MI.
1:15 PM–3:10 PM	**Groups Attend Annual Meeting Sessions and Posters**
3:30 PM–4:30 PM	**Career Presentation,** ***Room 275*** **From Toxic Molecules to Precision Medicine: A Journey of Discovery and Opportunity** Kenneth S. Ramos, MD, PhD, ATS, University of Arizona, Tucson, AZ.
3:30 PM–4:30 PM	**Host Mentor and Peer Mentor Meeting,** ***Room 281***
4:30 PM–5:00 PM	**Program Closing Session,** ***Room 275*** ***Chair:*** Jorge Naciff, PhD, Procter & Gamble, Mason, OH.

RC, SIG, and SS Events

Regional Chapter, Special Interest Group, and Specialty Section Poster Sessions—Representative Attended

Monday, March 14, 11:45 AM to 12:15 PM

Exhibit Hall (Near SOT Pavilion, Booth 500)

Regional Chapter Meetings, Luncheons, and Receptions

Monday, March 14, through Wednesday, March 16, Various Times

Many of the SOT Regional Chapters meet during the SOT Annual Meeting. All current and prospective Regional Chapter members are encouraged to attend.

Event	Date	Time	Location	Room
Central States Regional Chapter Breakfast Meeting	Tuesday, March 15	7:00 AM to 8:00 AM	Bourbon House Restaurant	
Lone Star and South Central Regional Chapters Mixer	Monday, March 14	5:30 PM to 7:30 PM	Bei Tempi Ristorante	
Michigan and Allegheny-Erie Regional Chapters Joint Reception	Monday, March 14	4:45 PM to 6:15 PM	Hilton Riverside	Grand Salon 13
Mid-Atlantic Regional Chapter Luncheon	Monday, March 14	12:15 PM to 2:00 PM	Calcasieu Restaurant	
Midwest Regional Chapter Mixer	Monday, March 14	5:00 PM to 6:30 PM	Hilton Riverside	Grand Salon 7
Northeast Regional Chapter Student Luncheon	Monday, March 14	12:30 PM to 2:00 PM	Marriott at the Convention Center	Julia
Northern California Regional Chapter Reception	Tuesday, March 15	7:30 PM to 10:30 PM	Pat O's on the River Grand Terrace	
Ohio Valley Regional Chapter Reception	Monday, March 14	4:45 PM to 6:30 PM	Poppy's Time Out Sports Bar	
Pacific Northwest Regional Chapter Reception	Monday, March 14	5:30 PM to 7:30 PM	Annunciation Restaurant	
Regional Chapter Collaboration and Communications Committee (RC4) Meeting	Wednesday, March 16	12:00 Noon to 1:30 PM	Convention Center	Room 223
Southeastern Regional Chapter Reception	Monday, March 14	6:00 PM to 8:00 PM	Drago's Seafood Restaurant	
Southern California and Mountain West Regional Chapters Mixer	Tuesday, March 15	6:00 PM to 9:00 PM	Angela King Gallery	

Special Interest Group Meetings, Luncheons, and Receptions

Monday, March 14, through Wednesday, March 16, Various Times

Each of the six Special Interest Groups hold a meeting/reception during the SOT Annual Meeting. All current and prospective SOT Special Interest Group members are encouraged to attend.

Event	Date	Time	Location	Room
American Association of Chinese in Toxicology Special Interest Group Distinguished Chinese Toxicologist Lectureship Award and Reception	Monday, March 14	5:00 PM to 9:00 PM	Hilton Riverside	Grand Ballroom D
American Association of Chinese in Toxicology Special Interest Group Career Development Workshop	Tuesday, March 15	12:15 PM to 1:45 PM	Convention Center	Room R01
Association of Scientists of Indian Origin Special Interest Group Reception	Monday, March 14	7:00 PM to 9:30 PM	Marriott at the Convention Center	River Bend Ballroom
Association of Scientists of Indian Origin Special Interest Group Lunch and Learn	Tuesday, March 15	12:15 PM to 1:45 PM	Marriott at the Convention Center	Julia
Hispanic Organization of Toxicologists Special Interest Group Reception and Awards Ceremony	Tuesday, March 15	6:30 PM to 9:00 PM	Jonathan Ferrara Gallery	
Hispanic Organization of Toxicologists Special Interest Group Mentoring Breakfast	Wednesday, March 16	6:45 AM to 8:00 AM	Convention Center	Rivergate Room
Korean Toxicologists Association in America Special Interest Group Meeting/Reception	Monday, March 14	6:00 PM to 9:00 PM	Singha Thai Cafe	
Special Interest Group Collaboration Group Meeting	Monday, March 14	12:00 Noon to 1:30 PM	Convention Center	Room 202
Special Interest Group Collaboration Group Global Hot Topics Event	Wednesday, March 16	6:45 AM to 8:00 AM	Convention Center	Room R01
Toxicologists of African Origin Special Interest Group Networking Event	Monday, March 14	5:00 PM to 6:15 PM	Mulate's Restaurant	
Toxicologists of African Origin Special Interest Group Reception	Monday, March 14	6:30 PM to 7:45 PM	Mulate's Restaurant	
Women in Toxicology Special Interest Group Reception	Wednesday, March 16	4:45 PM to 7:00 PM	Hilton Riverside	Versailles Ballroom

Specialty Section Meetings, Luncheons, and Receptions

Monday, March 14, through Wednesday, March 16, Various Times

Each of the 27 SOT Specialty Sections hold either a luncheon or early evening meeting/reception during the SOT Annual Meeting. All current and prospective SOT Specialty Section members are encouraged to attend.

Event	Date	Time	Location	Room
Biological Modeling Specialty Section Meeting/Reception	Monday, March 14	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 18
Biotechnology Specialty Section Mentoring Luncheon	Monday, March 14	12:15 PM to 1:45 PM	Convention Center	Room 236
Biotechnology Specialty Section Meeting/Reception	Monday, March 14	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 3
Carcinogenesis Specialty Section Officers Meeting	Monday, March 14	6:30 AM to 8:00 AM	Marriott at the Convention Center	Julia
Carcinogenesis Specialty Section Meeting/Reception	Tuesday, March 15	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 6
Cardiovascular Toxicology Specialty Section Meeting/Reception	Tuesday, March 15	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 1
Clinical and Translational Toxicology Specialty Section Officers Meeting	Monday, March 14	6:30 AM to 8:00 AM	Convention Center	La Nouvelle Orleans Ballroom B
Clinical and Translational Toxicology Specialty Section Meeting/Reception	Tuesday, March 15	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 16
Comparative and Veterinary Specialty Section Meeting/Luncheon	Tuesday, March 15	12:15 PM to 1:45 PM	Marriott at the Convention Center	River Bend Ballroom 1
Dermal Toxicology Specialty Section Officers Meeting	Monday, March 14	6:30 AM to 8:00 AM	Convention Center	La Nouvelle Orleans Ballroom B
Dermal Toxicology Specialty Section Meeting/Reception	Monday, March 14	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 20
Drug Discovery Toxicology Specialty Section Mentoring Event	Tuesday, March 15	12:15 PM to 1:45 PM	Convention Center	Room 201
Drug Discovery Toxicology Specialty Section Meeting/Reception	Wednesday, March 16	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 16
Ethical, Legal, and Social Issues Specialty Section Meeting/Luncheon	Monday, March 14	12:15 PM to 1:45 PM	Marriott at the Convention Center	River Bend Ballroom 1
Food Safety Specialty Section Officers Meeting	Monday, March 14	6:30 AM to 8:00 AM	Convention Center	La Nouvelle Orleans Ballroom B
Food Safety Specialty Section Meeting/Reception	Wednesday, March 16	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 13
Immunotoxicology Specialty Section Officers Meeting	Monday, March 14	6:30 AM to 8:00 AM	Convention Center	La Nouvelle Orleans Ballroom B
Immunotoxicology Specialty Section Mentoring Event	Wednesday, March 16	4:45 PM to 5:45 PM	Marriott at the Convention Center	River Bend Ballroom 2
Immunotoxicology Specialty Section Meeting/Reception	Wednesday, March 16	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon A
In Vitro and Alternative Methods Specialty Section Officers Meeting	Monday, March 14	6:30 AM to 8:00 AM	Convention Center	La Nouvelle Orleans Ballroom B
In Vitro and Alternative Methods Specialty Section Meeting/Luncheon	Wednesday, March 16	12:15 PM to 1:45 PM	Marriott at the Convention Center	Blaine Kern Ballroom A
Inhalation and Respiratory Specialty Section Officers Meeting	Monday, March 14	6:30 AM to 8:00 AM	Convention Center	La Nouvelle Orleans Ballroom B
Inhalation and Respiratory Specialty Section Meeting/Reception	Tuesday, March 15	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 13
Mechanisms Specialty Section Officers Meeting	Monday, March 14	6:30 AM to 8:00 AM	Convention Center	La Nouvelle Orleans Ballroom B
Mechanisms Specialty Section Meeting/Reception	Monday, March 14	6:00 PM to 7:30 PM	Hilton Riverside	Grand Ballroom C

(continued to next page)

Specialty Section Meetings, Luncheons, and Receptions (Continued)

Event	Date	Time	Location	Room
Medical Device and Combination Product Officers Meeting	Tuesday, March 15	12:15 PM to 1:45 PM	Grand Isle Restaurant	
Medical Device and Combination Product Specialty Section Meeting/Reception	Wednesday, March 16	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 22
Metals Specialty Section Meeting/Reception	Wednesday, March 16	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 12
Mixtures Specialty Section Officers Meeting	Monday, March 14	6:30 AM to 8:00 AM	Café Adelaide	
Mixtures Specialty Section Meeting/Reception	Tuesday, March 15	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 22
Molecular and Systems Biology Specialty Section Officers Meeting	Monday, March 14	6:30 AM to 7:45 AM	Hilton Riverside	Le Croissant
Molecular and Systems Biology Specialty Section Meeting/Reception	Tuesday, March 15	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 21
Molecular and Systems Biology Specialty Section Mentoring Event	Wednesday, March 16	12:15 PM to 1:45 PM	Capdeville Restaurant	
Nanotoxicology Specialty Section Meeting/Reception	Wednesday, March 16	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 21
Neurotoxicology Specialty Section Officers Meeting	Monday, March 14	6:30 AM to 8:00 AM	Convention Center	La Nouvelle Orleans Ballroom B
Neurotoxicology Specialty Section Meeting/Reception	Wednesday, March 16	6:00 PM to 7:30 PM	Hilton Riverside	Grand Ballroom A
Occupational and Public Health Specialty Section Meeting/Luncheon	Tuesday, March 15	12:15 PM to 1:45 PM	Marriott at the Convention Center	River Bend Ballroom 2
Ocular Toxicology Specialty Section Meeting/Reception	Tuesday, March 15	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 12
Regulatory and Safety Evaluation Specialty Section Officers Meeting	Monday, March 14	6:30 AM to 8:00 AM	Convention Center	Room 240
Regulatory and Safety Evaluation Specialty Section Meeting/Reception	Monday, March 14	6:00 PM to 7:30 PM	Hilton Riverside	Grand Ballroom A
Regulatory and Safety Evaluation Specialty Section Global Regulations Breakfast—Next Stop: China	Tuesday, March 15	6:30 AM to 8:00 AM	Convention Center	Room R01
Reproductive and Developmental Toxicology Specialty Section Officers Meeting	Monday, March 14	7:00 AM to 8:00 AM	Convention Center	Room 224
Reproductive and Developmental Toxicology Specialty Section Meeting/Reception	Monday, March 14	6:00 PM to 7:30 PM	Hilton Riverside	Grand Ballroom B
Risk Assessment Specialty Section Officers Meeting	Monday, March 14	6:30 AM to 8:00 AM	Convention Center	La Nouvelle Orleans Ballroom B
Risk Assessment Specialty Section Mentoring Luncheon	Monday, March 14	12:15 PM to 1:45 PM	Convention Center	Room 235
Risk Assessment Specialty Section Meeting/Reception	Wednesday, March 16	6:00 PM to 7:30 PM	Hilton Riverside	Grand Ballroom B
Specialty Section Collaboration and Communication Group Meeting	Monday, March 14	2:00 PM to 3:00 PM	Convention Center	Room 202
Stem Cells Specialty Section Meeting/Reception	Monday, March 14	6:00 PM to 7:30 PM	Hilton Riverside	Grand Salon 12
Toxicologic and Exploratory Pathology Specialty Section Meeting/Luncheon	Monday, March 14	12:15 PM to 1:45 PM	Marriott at the Convention Center	River Bend Ballroom 2

Satellite Meetings

Updates on Activities Related to 21st Century Toxicology and Related Efforts: Invited Presentations and Open Microphone

Thursday, March 17, 12:30 PM to 4:00 PM
Hilton New Orleans Riverside, Jefferson Ballroom

Hosted by: *Thomas Hartung, Johns Hopkins Center for Alternatives to Animal Testing (CAAT), Baltimore, MD.*

Please join the Center for Alternatives to Animal Testing (CAAT, http://caat.jhsph.edu), the Human Toxicology Project Consortium (HTPC, http://humantoxicologyproject.org), and The Human Toxome Project Consortium (http://humantoxome.com) for our annual satellite meeting on 21st century toxicology activities and related efforts. The satellite meeting provides an informal setting in which interested stakeholders can update each other on these important topics.

The meeting features a number of invited presentations and leaves time for an "open microphone" segment in which participants are welcome to give brief presentations on germane topics, with or without a few slides.

The draft program is as follows:

12:30 PM—Box Lunch *(for pre-registered participants)* and Welcome. *Thomas Hartung, Johns Hopkins University*

1:00 PM—Invited Speakers *(10 minute presentations each followed by 5 minute of discussion)*

ToxCast Update. *Russell Thomas, US Environmental Protection Agency*

EDSP21 Update. *David Dix, US Environmental Protection Agency*

Tox21 Update. *Richard Paules, US National Toxicology Program*

Hamner TT21C Update. *Melvin Andersen, Hamner Institutes*

NICEATM Update. *Warren Casey, NICEATM*

SEURAT/EU Tox-Risk Update. *Michael Schwarz, University of Tuebingen*

CAAT's Read-Across Initiative and Human Toxome-Related Activity Update. *Thomas Hartung, Johns Hopkins*

Human Toxicology Project Consortium Update. *Catherine Willett, HTPC*

Evidence-Based Toxicology Update. *Martin Stephens, Johns Hopkins*

3:15 PM—Open Microphone for Additional Presentations and Discussion

4:00 PM—Adjourn

Please register by email at your earliest convenience: Jamie DeRita: jderita1@jhu.edu. Box lunches are available to those who have pre-registered.

3D or Not 3D: That Is the [Predictive Toxicology] Question…

Thursday, March 17, 1:00 PM to 5:00 PM
Room 213

Hosted by: *Elaine Faustman, University of Washington, Seattle, WA; and Barbara Klieforth, US Environmental Protection Agency, Washington, DC.*

Purpose of the Meeting: How complex must cell cultures be to replicate the dynamics of tissue interactions and functions in order to be predictive of *in vivo* responses? We will discuss the latest successes and challenges in differing organotypic and three-dimensional cell culture systems. The US EPA's Chemical Safety for Sustainability program provided Science to Achieve Results (STAR) research grants to develop and evaluate medium- to high-throughput toxicity screening systems in order to assess chemicals. Their work, on tissue systems including the brain, liver, kidney, testis, breast tissue, heart, and neurovascular systems, is intended to complement ongoing US EPA research and lead to refined models of how organs and tissues respond to environmental chemicals. Researchers from the four US EPA STAR grant Centers and from US EPA's Office of Research and Development will present their work.

Registration: Open registration. No fee to register and attend.

Lectures followed by Q&A and a hands-on tutorial of the tools.

For more information on this Satellite Meeting, contact Barbara Klieforth: klieforth.barbara@epa.gov.

A Toxicology User's Guide to the Roadmap Epigenomics and ENCODE Data Resources

Thursday, March 17, 1:00 PM to 6:00 PM
Room 205

Hosted by: *Ivan Rusyn, Texas A&M University, College Station, TX; and Lisa Chadwick, NIEHS, Research Triangle Park, NC.*

Purpose of the Meeting: Improvements in DNA sequencing technologies have resulted in an exponential increase in the amount of genomic and epigenomic data available. Some of these data have been generated as part of large-scale, focused mapping efforts aimed at understanding how genes are regulated, such as the NIH Roadmap Epigenomics Program, and ENCODE (Encyclopedia of DNA Elements). Efforts such as these can be extremely valuable for hypothesis generation and data mining, but can only be useful if one knows what is available and how to use it. This SOT satellite meeting will provides toxicology researchers with an overview of these two NIH-funded programs, introduce attendees to the informatics tools that have been developed to help navigate these large datasets, and walk through several use cases. The meeting is of broad interest to researchers interested in learning more about how environmental exposure might impact gene regulation.

Registration: Open registration. No fee to register and attend.

Lectures followed by Q&A and a hands-on tutorial of the tools.

For more information on this Satellite Meeting, contact Lisa Chadwick: chadwickl@niehs.nih.gov.

Become an SOT Heritage Fellow

SOT | Society of Toxicology
ENDOWMENT
Investing in the Future ...

Make a Bequest to the Society of Toxicology Endowment

Help make the world a safer and healthier place by growing toxicology and toxicologists.

www.toxicology.org/endowment

You Have the Power to Advance the Science of Toxicology!

Consider Organizing a Contemporary Concepts in Toxicology Meeting

Your Concept Just Might Be the One to Totally Change the Whole Industry

SOT | Contemporary Concepts in Toxicology

Contemporary Concepts in Toxicology (CCT) Meetings expand the opportunities and forums for members to engage in the exchange of ideas and information relevant to toxicology. CCT Meetings are one-to two-day focused, open registration, scientific meetings designed to support the contemporary and rapidly progressing areas of toxicological sciences. CCT Meetings also can be held as webinars.

If you think that your research area could be enhanced by thought leader collaboration or that public health and safety could be improved by disseminating your research findings more broadly, please consider organizing an SOT CCT Meeting. The CCT Conference Committee and the SOT Headquarters staff are prepared to help move your meeting forward.

The Society will underwrite all liabilities of the CCT Meeting (up to the $25,000 in seed money) with the exception that the meeting at least break even financially. Profit sharing for the SOT component groups is available. For more information about CCT Meetings, please visit the SOT website at **www.toxicology.org/cct.**

CCT Meetings focus on a wide range of topics. Here are some upcoming CCT Conferences:

Ocular **Toxicology**

Pharmacology and Drug Delivery: *An Eye on the Future*

June 27–28, South San Francisco, CA

hiPC
hSC-CM
hiPSC-CM

The use of **cardiomyocytes** for the **assessment** of **proarrhythmic** risk

October 25–26, Arlington, VA

*Toxico***Epigenetics**

The Interface of Epigenetics and Risk Assessment

November 2–4, Tysons Corner, VA

In order to sustain the quality standards of the Society, only meetings in which SOT maintains scientific and administrative control will be considered. Meetings developed and administered by other organizations may be eligible for sponsorship and/or endorsement by the Society of Toxicology. For more information go to **www.toxicology.org/cct**.

Thank You, Speakers

On behalf of the SOT Council and the entire membership of the Society of Toxicology, thank you to all of the speakers who graciously agreed to come to New Orleans to participate in the 2016 Annual Meeting. SOT's Annual Meeting is the largest international forum to highlight novel discoveries and emerging fields and how they apply to toxicology. You played an important role in helping SOT showcase this year's achievements in research and education, and your time, efforts, and expertise are truly appreciated.

Tell the world why you love toxicology.

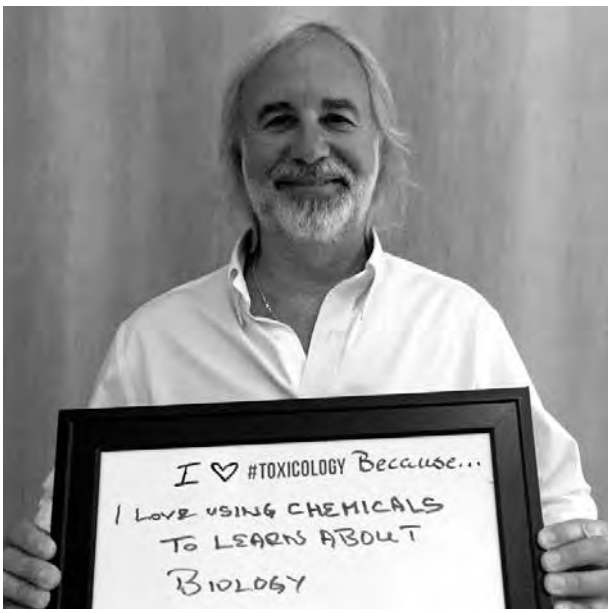
Tao Wang @SOToxicology Mar 13

I ♥ #TOXICOLOGY because…
toxicological testing helps to ensure the safety of medicines to patients
#YouTox #IAMATOXICOLOGIST

Stop by the SOT Pavilion to learn about the GSLC #YouTox campaign.

Norbert E. Kaminski
20 hours ago

I ♥ #TOXICOLOGY because…
i love using chemicals to learn about biology #YouTox
#IAMATOXICOLOGIST



Like • Comment • Share 2

100 people like this.

Write a comment…

Continuing Education Courses

The Continuing Education (CE) Program offers a wide range of courses that cover established knowledge in toxicology, as well as new developments in toxicology and related disciplines. Courses can be applied toward certifying and licensing board requirements and may also be used for recertification with the American Board of Toxicology (ABT). Both basic and advanced course topics are offered. The basic course is intended to provide a broad overview of an area or to assist individuals in learning new techniques or approaches. The advanced course is intended to be of interest to individuals with previous knowledge of the subject or already working in the field.

All courses are held on Sunday, March 13, 2016, at the New Orleans Ernest N. Morial Convention Center. Please check the signage in the Registration area and at the CE Booths for room assignments. Note: Your course materials are available outside of the room immediately prior to the course (they are not available at the Registration area). If you have your course ticket, go directly to the assigned course room. If you have not received your course ticket or have not registered, please check in at Registration on Saturday afternoon/evening or on Sunday morning. If you have misplaced your ticket, please go to the Continuing Education Booths near the course classrooms on Sunday. The booths are open from 6:30 am–5:30 pm.

7:00 AM–7:45 AM—Continuing Education Sunrise Mini-Course:

SR01 Basic Principles and Practices for Applying Epigenetics in Mechanistic Toxicology ♦

8:15 AM–12:00 Noon—Continuing Education Morning (AM) Courses:

AM02 Advancing the Detection, Imaging, and Pitfalls in Monitoring Oxidative Stress in Health and Disease ♥ ♦

AM03 Adverse Outcome Pathway (AOP) Development and Evaluation ♦ ♠

AM04 Contribution of Mitochondria to Drug-Induced Organ Toxicities ♦

AM05 Discovery and Validation of miRNA Biomarkers Bridging Preclinical and Clinical Toxicity: Lessons Learned from Hepatotoxicity ♦ ♠

AM06 Embryology and Developmental Toxicity Testing ♞

AM07 Next-Generation Sequencing in Toxicogenomics ♦ ♠

1:15 PM–5:00 PM—Continuing Education Afternoon (PM) Courses:

PM08 Approaches to Investigate and Assess Risks Associated with Drug-Induced Liver Injury (DILI) ♥ ♠

PM09 Exploring Chemical Space in the New Toxicity Testing Paradigm: From Data Curation to Computational Simulations ♠

PM10 Genetics and Population Variability in Chemical Toxicity: The What, the How, and So What? ♥ ♦

PM11 Human Health Risk Assessment: A Case Study Application of Principles ♥

PM12 Unique Approaches to Safety Assessment of Gene, Cell, and Nucleic Acid-Based Therapies ♠

PM13 Zebrafish As a Tool in Toxicology and Drug Discovery Screening ♥ ♠

Registration for the Annual Meeting and a Continuing Education course ticket are required.

SUNDAY MORNING

Sunday Morning, March 13
7:00 AM to 7:45 AM
CC Second Floor

(See Mobile Event App or Signage at CE Booths for Room Location)

Basic Principles and Practices for Applying Epigenetics in Mechanistic Toxicology

SR01 | CE BASIC | SUNRISE MINI-COURSE

♦ **Molecular Toxicology: Mechanistic Insights and Hazard Assessment**

Chairperson(s): *Shaun D. McCullough, US Environmental Protection Agency, Chapel Hill, NC; and Ronald N. Hines, US Environmental Protection Agency, Research Triangle Park, NC.*

Endorser(s):
***In Vitro* and Alternative Methods Specialty Section**
Mechanisms Specialty Section
Molecular and Systems Biology Specialty Section

The genetic material of every organism exists within the context of regulatory networks that govern gene expression collectively called the epigenome. These epigenetic regulators, chromatin modifications, DNA methylation, and noncoding RNAs, act in concert to shape the way that cells, tissues, and organisms respond to their environment and toxicant exposure. Incorporating epigenetics into both *in vitro* and *in vivo* toxicological studies allows for a better understanding of the molecular events underlying the adverse health effects of toxicant exposure, improves our ability to identify vulnerable populations, and facilitates the identification of modifiable risk factors. The goal of this course is to provide toxicologists from a broad range of backgrounds with an overview of the epigenome and general considerations for designing experiments to examine the role of the epigenetics in their toxicological studies. This course will mention noncoding RNAs but focus primarily on participants gaining a fundamental understanding of the role of chromatin and DNA methylation in the regulation of gene expression. The principles and applications of basic experimental techniques, such as chromatin immunoprecipitation (ChIP) and DNA methylation analysis for evaluating epigenetic changes in toxicological studies, will also be discussed. This course will be of broad interest to investigators that are interested in integrating epigenetic approaches into their current or future toxicological studies.

Part 1: Principles of Epigenetics: An Introduction to the Mechanisms of Gene Regulation. Ronald N. Hines, US EPA, Research Triangle Park, NC.

Part 2: Experimental Techniques for Incorporating Chromatin and DNA Methylation Analysis into Mechanistic Toxicology. Shaun D. McCullough, US EPA, Chapel Hill, NC.

Society of Toxicology
56th Annual Meeting and ToxExpo™

March 12–16, 2017

Contribute to Continuing Education in 2017!

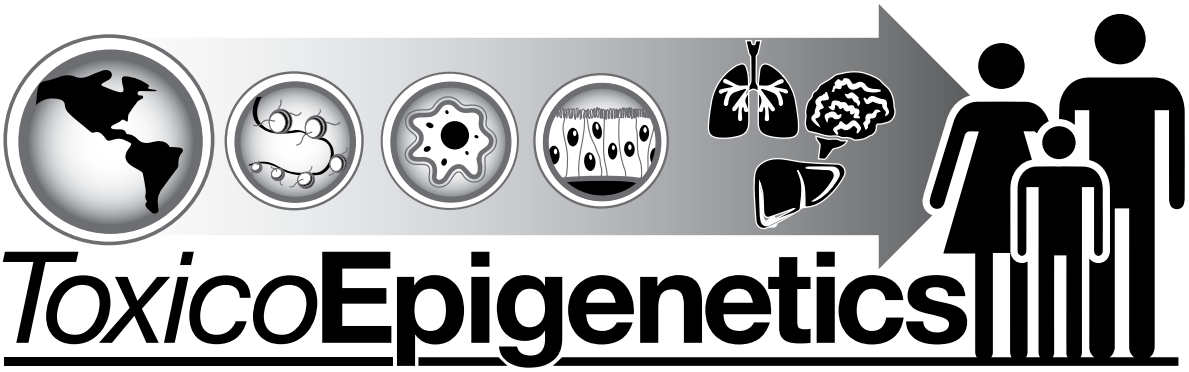
Submit a CE Proposal by April 30, 2016

SOT invites you to share your expertise with your peers!

www.toxicology.org

SOT | Contemporary Concepts in Toxicology

NOVEMBER 2–4, 2016 • TYSONS CORNER, VIRGINIA



ToxicoEpigenetics

The Interface of Epigenetics and Risk Assessment

REGISTRATION | SCIENTIFIC PROGRAM | HOUSING
ON
WWW.TOXICOLOGY.ORG/TEG

Sunday Morning, March 13
8:15 AM–12:00 Noon
CC Second Floor
(See Mobile Event App or Signage at CE Booths for Room Location)

Advancing the Detection, Imaging, and Pitfalls in Monitoring Oxidative Stress in Health and Disease

AM02 | CE ADVANCED | MORNING COURSE

♥ **Health and Environmental Impacts of Manmade and Naturally Released Toxicants**

♦ **Molecular Toxicology: Mechanistic Insights and Hazard Assessment**

Chairperson(s): *Maria B. Kadiiska, NIEHS/NIH, Research Triangle Park, NC; and Ronald P. Mason, NIEHS/NIH, Research Triangle Park, NC.*

Endorser(s):
Immunotoxicology Specialty Section
Mechanisms Specialty Section
Molecular and Systems Biology Specialty Section

Oxidative stress is recognized to play a role in the etiology of numerous diseases as well as in environmental exposures. Exploration of oxidative stress mechanisms is a field of ever-increasing attention, both in science and in commerce. The field is maturing and there is a great effort to study and understand biomarkers at both a chemical and enzymatic molecular-mechanism level. Since increases in oxidative stress are measured using biomarkers, the goal of this course is to convey the most up-to-date knowledge on biomarkers; present novel approaches and advanced methods that can be employed *in vivo* to measure, predict, and even prevent oxidative stress; and to discuss the methods and pitfalls for distinguishing oxidative stress from systemic toxicities, immunotoxicities and inflammation. Technologically advanced methods, including molecular magnetic resonance imaging, HPLC-MS, spectro(fluoro)metric assays, and immunoassays are potentially rich areas for innovation in systemic oxidative stress research. Consequently, the course outlines the most up-to-date developments in newly emerging methodologies that will enhance the understanding of oxidative stress mechanisms by measuring, detecting, and even imaging it *in vivo*. The panel of experts evaluates the advantages, applicability, and pitfalls of each method, discusses the most recent data on *in vivo* and *in situ* imaging of molecular free radical metabolites with emphasis on both the current state of technology, different areas of toxicology including immunotoxicology, crosstalks with the innate immune mediators, and likely future developments. Because the detection and understanding of oxidative stress could lead to better intervention strategies, output from the course will help identify the most useful applications for a given technique to detect oxidative stress *in vivo*. Attendees will leave the course with enhanced understanding that measurement of oxidative stress *in vivo* requires innovative, unconventional methodologies in combination with advanced technologies and often a multidisciplinary approach.

We Detect Free Radicals Not Because It Is Easy but Because It Is Hard. Ronald P. Mason, NIH/NIEHS, Research Triangle Park, NC.

***In Vivo, In Situ* Imaging of Free Radical Adducts in Animal Disease Models.** Rheal A. Towner, Oklahoma Medical Research Foundation, Oklahoma City, OK.

Oxidative Damage Detection in Macromolecules: Free Radical-Innate Immune Crosstalk in Liver Disease. Saurabh Chatterjee, University of South Carolina, Columbia, SC.

Xenobiotic Free Radical Detection in Biological Systems Using HPLC: A Technique for All. Arno G. Siraki, University of Alberta, Edmonton, AB, Canada.

Oxidative Modification of Proteins: Detection and Role in Autoimmunity. M. Firoze Khan, University of Texas Medical Branch, Galveston, TX.

Validation of Best Detection Methods for Oxidative Stress Biomarkers in Biological Fluids. Maria B. Kadiiska, NIEHS/NIH, Research Triangle Park, NC.

Reinterpreting the Best Biomarker of Oxidative Stress: The 8-iso-PGF2α/PGF2α Ratio Distinguishes Chemical from Enzymatic Lipid Peroxidation. Thomas J. van 't Erve, NIEHS/NIH, Research Triangle Park, NC.

Sunday Morning, March 13
8:15 AM–12:00 Noon
CC Second Floor
(See Mobile Event App or Signage at CE Booths for Room Location)

Adverse Outcome Pathway (AOP) Development and Evaluation

AM03 | CE BASIC | MORNING COURSE

♦ **Molecular Toxicology: Mechanistic Insights and Hazard Assessment**

♠ **Recent Advances in Safety Assessment**

Chairperson(s): *Stephen Edwards, US Environmental Protection Agency, Research Triangle Park, NC; and Andrea Terron, EFSA (European Food Safety Agency), Parma, Italy.*

Endorser(s):
***In Vitro* and Alternative Methods Specialty Section**
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

The Adverse Outcome Pathway provides a construct for assembling mechanistic information at different levels of biological organization in a form designed to support regulatory decision making. In particular, it frames the link between molecular and cellular events that can be measured in high-throughput toxicity testing and the organism or population-level events that are commonly relevant in defining risk. Recognizing the importance of this emerging framework, the Organisation for Economic Co-operation and Development (OECD) launched a program to support the development, documentation, and consideration of AOPs by the international community in 2012. In 2014, a handbook was developed to guide users in the documentation and evaluation of AOPs and their entry into an official knowledgebase. The handbook draws on longstanding experience in consideration of mechanistic data (e.g., mode-of-action analysis) to inform risk assessment. To further assist users, a training program was developed by members of the OECD Extended Advisory Group to teach users the basic principles of AOP development and the best practices as outlined in the OECD AOP handbook. Training sessions began in early 2015, and this course will provide training for interested SOT scientists. Following this course, all participants will be familiar with the core principles of AOP development and assessment and the OECD efforts to support this effort. They will also know how the OECD guidance for AOP development has been implemented in the Wiki module of the AOP Knowledgebase. They will learn how to assemble and evaluate the evidence supporting the AOPs using established best practices from Mode of Action analysis.

To reinforce the concepts, they will participate in a live demo where an AOP is developed from a training case study with their assistance and entered into the AOP-Wiki. The value of AOP development will be demonstrated via examples from the European Food Safety Agency and by considering integrated approaches to testing and assessment using the skin sensitization AOP, which was endorsed by the OECD in 2012.

Introduction. Stephen Edwards, US EPA, Research Triangle Park, NC.

Introduction to Adverse Outcome Pathways and International Activities Guiding AOP Development. Kristie Sullivan, Physicians Committee for Responsible Medicine, Washington, DC.

Principles and Best Practices for AOP Development. Dan Villeneuve, US EPA, Duluth, MN.

Weight of Evidence/Confidence Analysis in the Development and Documentation of AOPs. Bette Meek, University of Ottawa, Ottawa, ON, Canada.

Assembling AOP Information in the International AOP Knowledgebase. Carole Yauk, Health Canada, Ottawa, ON, Canada.

Applying AOPs to the Development of Integrated Approaches on Testing and Assessment (IATA). Gavin Maxwell, Unilever, Sharnbrook, United Kingdom.

Implementing the AOP Framework at EFSA. Andrea Terron, EFSA (European Food Safety Agency), Parma, Italy.

Continuing Education Courses Online

Register Now

Access Continuing Education courses covering more than 20 topics that were presented during SOT Annual Meetings... anywhere, anytime, and from any device!

Benefits of Continuing Education

- **Keep your knowledge up-to-date**
- **Access presentations by top experts**
- **Stay competitive in your field**

Why *CEd-Tox* Online?

- **Learn anywhere, anytime**
- **Earn hours for certification**
- **View in a group setting**

For a listing of courses and to register, visit **www.toxicology.org/cedtox.asp**.
Graduate Student and Postdoctoral SOT members, as well as individuals from developing countries, receive complimentary access to all online courses.

CEd-Tox

SOT | Society of Toxicology

Creating a Safer and Healthier World by Advancing the Science and Increasing the Impact of Toxicology

Society of Toxicology
1821 Michael Faraday Drive, Suite 300 | Reston, Virginia 20190
Tel: 703.438.3115 | Website: www.toxicology.org | Email: Rachel Frohberg at rachel@toxicology.org

Sunday Morning, March 13
8:15 AM–12:00 Noon
CC Second Floor
(See Mobile Event App or Signage at CE Booths for Room Location)

Contribution of Mitochondria to Drug-Induced Organ Toxicities

AM04 | CE BASIC | MORNING COURSE

♦ **Molecular Toxicology: Mechanistic Insights and Hazard Assessment**

Chairperson(s): *Varsha G. Desai, NCTR, US Food and Drug Administration, Jefferson, AR; and Yvonne Will, Pfizer R&D, Groton, CT.*

Endorser(s):
Drug Discovery Toxicology Specialty Section
Mechanisms Specialty Section
Regulatory and Safety Evaluation Specialty Section

Mitochondria generate more than 90% of energy essential for the cell. Impaired mitochondrial function, therefore, can affect virtually every tissue and organ in the living organism. Tissues with the highest energy needs, such as the heart, brain, liver, kidney, and skeletal muscle are particularly vulnerable to the defects in mitochondrial bioenergetics that can manifest into tissue-specific pathologies. A distinctive feature of mitochondria is that, besides the nucleus, these organelles contain their own genome (mitochondrial DNA). However, coordination between nuclear and mitochondrial genomes is crucial in regulating mitochondrial function. It is also becoming increasingly evident that mitochondria are a prime target of many therapeutic drugs and environmental toxins that can alter their function through different mechanisms, leading to cellular injury, resulting in organ toxicity, and, in the worst case, death. Additionally, mitochondria serve as an important player in the execution of apoptosis (programmed cell death), a process that serves as a major defense mechanism to remove unwanted and potentially dangerous cells. Collectively, these functions highlight a critical role of mitochondria in the life and death of the cell.

This course will provide an in-depth overview of mitochondrial biology and different mechanisms in which drugs can affect mitochondrial function. Particular emphasis is given to mitochondrial toxicity causing heart, liver, and kidney injury. In addition, we will describe novel high-throughput *in vitro* screening technologies in isolated mitochondria and cell models to elucidate potential mitochondrial toxicity. Several other methodologies will also be discussed that can reveal the mitochondrial target(s) of drug toxicity in different organs. The utility and limitations of these approaches will also be described. This course concludes by providing the participants with in-depth knowledge of basic mitochondrial function and important insights into how subtle changes in mitochondrial activity can progress to overt pathology in tissues and help identify potential biomarkers of early stages of mitochondrial toxicity. Moreover, this course will present how preclinical data on mitochondrial toxicity can help in understanding toxicities in humans.

Contribution of Mitochondria to Drug-Induced Organ Toxicities: An Overview. Varsha G. Desai, National Center for Toxicological Research, US FDA, Jefferson, AR.

Mitochondrial Function and Dysfunction in Disease and Drug-Induced Toxicity. James A. Dykens, EyeCyte Therapeutics, San Diego, CA.

Mitochondrial Toxicity: A Decade of Technology Development, a Decade of Learnings. Yvonne Will, Pfizer R&D, Groton, CT.

Mitochondrial Dysfunction in Acute Kidney Injury. Rick G. Schnellmann, Medical University of South Carolina, Charleston, SC.

Doxorubicin-Induced Mitochondrial Cardiomyopathy. Kendall B. Wallace, University of Minnesota Medical School Duluth, Duluth, MN.

Sunday Morning, March 13
8:15 AM–12:00 Noon
CC Second Floor
(See Mobile Event App or Signage at CE Booths for Room Location)

Discovery and Validation of miRNA Biomarkers Bridging Preclinical and Clinical Toxicity: Lessons Learned from Hepatotoxicity

AM05 | CE ADVANCED | MORNING COURSE

♦ **Molecular Toxicology: Mechanistic Insights and Hazard Assessment**

♠ **Recent Advances in Safety Assessment**

Chairperson(s): *Alison Harrill, University of Arkansas for Medical Sciences, Little Rock, AR; and Brian Chorley, US Environmental Protection Agency, Research Triangle Park, NC.*

Endorser(s):
Clinical and Translational Toxicology Specialty Section
Molecular and Systems Biology Specialty Section
Regulatory and Safety Evaluation Specialty Section

Micro(mi)RNAs are small, noncoding RNAs that play an important role in the regulation of biological processes in cells. Owing to recent findings that: (1) miRNA sequences are highly conserved across species, (2) certain miRNAs exhibit tissue-specific expression, and (3) miRNA are highly stable in biological fluids, significant effort has been spent to identify miRNA biomarkers for a variety of toxicological pathologies. However, in addition to basic research and discovery efforts, significant effort must be spent on qualification of biomarkers with regards to specificity for the organ of interest and for the ability of a biomarker to detect comparable injury across species. A major effort is to use miRNA profiles as a "liquid biopsy" that can inform underlying tissue pathology. Thus, the goal of this course is to provide investigators with an overview of the techniques and strategies necessary to progress a biomarker from the discovery stage to practical use in animal and human xenobiotic safety assessment. Well studied biomarkers, such as miR-122, will be used as case studies to demonstrate the path from nonclinical discovery to a validated clinical biomarker.

Introduction. Brian Chorley, US EPA, Research Triangle Park, NC.

Utilizing miRNAs to Assess Organ Specificity: Using miR-122 to Distinguish between Liver and Muscle Injury. Warren Glaab, Merck Research Laboratories, West Point, PA.

Emerging Biomarkers of Liver Injury: From miR-122 to Liquid Biopsies in the Clinic. Jiri Aubrecht, Pfizer Inc., Groton, CT.

Clinical Qualification of a miRNA Biomarker in a Hospital Setting: miR-122 in Acute Liver Failure Patients. Daniel Antoine, University of Liverpool, Liverpool, United Kingdom.

Exosomes and Their miRNA Cargos: Potential Biomarkers for Liver Diseases. Banishree Saha, University of Massachusetts Medical School, Worcester, MA.

Sunday Morning, March 13
8:15 AM–12:00 Noon
CC Second Floor
(See Mobile Event App or Signage at CE Booths for Room Location)

Embryology and Developmental Toxicity Testing

AM06 | CE BASIC | MORNING COURSE

Developmental Toxicity: Mechanisms and Evaluation

Chairperson(s): *John M. DeSesso, Exponent, Alexandria, VA; and Anthony R. Scialli, Scialli Consulting LLC, Arlington, VA.*

Endorser(s):
Drug Discovery Toxicology Specialty Section
Regulatory and Safety Evaluation Specialty Section
Reproductive and Developmental Toxicology Specialty Section

Mammalian embryo-fetal development comprises a complex and carefully orchestrated set of activities that can be perturbed by maternal and environmental factors. Perturbations of developing offspring can result in no discernible effect, reduced fetal weights at term, increased prevalence of anatomical variations, congenital defects, and/or the demise of the offspring. This course will focus on preclinical species and will begin by providing an overview of mammalian development, including important gestational milestones, comparative interspecies timelines, and definitions of critical periods in development. Next we will discuss how this information has factored into the design of traditional preclinical studies. The presentation will conclude with a brief introduction to normal variability in some organ systems. This variability is the source of considerable controversy when interpreting traditional developmental toxicity safety tests. Succeeding presentations will discuss two organ systems that are the center of debate among scientists charged with extrapolating results found in safety assessments to potential human risk. The normal embryological development of the first organ system to function, the cardiovascular system, will be described with consideration of normal anatomical variations and nonadverse structural changes. The second organ system to be described is the skeletal system. Particular attention will be paid to its state of maturity at term in various species, the potential influence of maternal toxicity on skeletal maturation, and postnatal development of the skeleton throughout the lactation period. The final presentation will address the development of new testing methods that might be used to prioritize substances for testing or even to replace whole animal testing for developmental toxicity. The presentation will describe basic methods for whole embryo culture, embryonic stem cell test, and a Zebrafish assay, along with various proposed improvements in each. It will finish with some thoughts about integrating the results from multiple assays, and a survey of the regulatory landscape for these emerging methods. Information from the preceding presentations will provide the audience with an understanding of how the biological basis of prenatal developmental toxicity testing and the results of such tests should impact risk assessment and ultimately, the rationale for the design and use of drugs and chemicals that minimizes environmental impact and ensures human health.

Introduction. Anthony R. Scialli, Scialli Consulting LLC, Arlington, VA.

Comparative Embryological Development, Gestational Landmarks, and Their Influence on Test Designs. John M. DeSesso, Exponent, Alexandria, VA.

Details of Skeletal Development and How this Matters When Interpreting Results. John M. Rogers, US EPA, Research Triangle Park, NC.

Normal and Abnormal Development of Heart and Great Vessels: Understanding the Problem and Interpreting the Findings. H. Scott Baldwin, Vanderbilt University School of Medicine, Nashville, TN.

Principles of Validation. Anthony R. Scialli, Scialli Consulting LLC, Arlington, VA.

Developmental Toxicity Testing without Animals: The Big Slippery Mountain. Robert E. Chapin, Pfizer Inc., Groton, CT.

Sunday Morning, March 13
8:15 AM–12:00 Noon
CC Second Floor
(See Mobile Event App or Signage at CE Booths for Room Location)

Next-Generation Sequencing in Toxicogenomics

AM07 | CE ADVANCED | MORNING COURSE

Molecular Toxicology: Mechanistic Insights and Hazard Assessment

Recent Advances in Safety Assessment

Chairperson(s): *Weida Tong, NCTR, US Food and Drug Administration, Jefferson, AR; and Jos Kleinjans, Maastricht University, Maastricht, The Netherlands.*

Endorser(s):
Biotechnology Specialty Section
Molecular and Systems Biology Specialty Section
Regulatory and Safety Evaluation Specialty Section

The purpose of toxicogenomics is to study the effects of chemical, biological and physical agents in biological systems at the molecular level and thereby elucidating the molecular mechanisms underlying the expression of toxicity. Recent technology developments in next-generation sequencing (NGS) have opened completely new possibilities for the deep characterization of molecular mechanisms of toxicity at various levels of cellular regulation providing information on substance-induced genomic variations, and on transcriptomic and epigenomic changes. We argue that these developments will strengthen our understanding of toxic mechanisms-of-action and ultimately lead to a systems-wide toxicity analysis thus enabling the development of safer drugs, industrial chemicals, consumer products and improved regulation. This course will discuss various NGS application for an enhanced understanding of underlying mechanisms of toxicity and potential utility in regulatory setting. The discussed topics include but are not limited to applicability of respective NGS platforms for analyzing mutational spectra, gene expression modifications, and epigenomic alterations induced by toxicants in a range of biological systems, compare their performance with standardized qPCR/microarray techniques, present use cases and highlight future challenges.

Next-Generation Sequencing: Next Wave of Opportunities, Challenges, and Anxiety. Jos Kleinjans, Maastricht University, Maastricht, The Netherlands.

Next-Generation Sequencing: Technology and Bioinformatics. Wenming Xiao, NCTR/US FDA, Jefferson, AR.

DNA-Seq: Toxicant-Induced Mutation Analysis. Florian Caiment, Maastricht University, Maastricht, The Netherlands.

Epigenomics: A New Opportunity in Toxicogenomics. Ralf Herwig, Max-Planck-Institute for Molecular Genetics, Berlin, Germany.

RNA-Seq: Mechanistic and Predictive Toxicology. Weida Tong, NCTR/US FDA, Jefferson, AR.

RNA-Seq As a Way to Access Transcriptomic Information in Archival Tissues. Susan Hester, National Health and Environmental Effects Research Laboratory, US EPA, Research Triangle Park, NC.

Sunday Afternoon, March 13
1:15 PM–5:00 PM
CC Second Floor
(See Mobile Event App or Signage at CE Booths for Room Location)

Approaches to Investigate and Assess Risks Associated with Drug-Induced Liver Injury (DILI)

PM08 | CE ADVANCED | AFTERNOON COURSE

♥ **Health and Environmental Impacts of Manmade and Naturally Released Toxicants**

♠ **Recent Advances in Safety Assessment**

Chairperson(s): *Monicah Otieno, Janssen Pharmaceuticals, Spring House, PA; and Paul Watkins, The Hamner-UNC Institute for Drug Safety Sciences, Research Triangle Park, NC.*

Endorser(s):
Drug Discovery Toxicology Specialty Section
Mechanisms Specialty Section

Drug-induced liver injury (DILI) in the clinic is a major cause for drug attrition during development. DILI can be characterized as intrinsic or idiosyncratic. Properties of intrinsic DILI include a dose-response in presentation of injury that may be predicted by animal studies enabling application of safety thresholds and inclusion of liver injury biomarkers for clinical risk assessment. Idiosyncratic DILI (iDILI) is unpredictable and usually occurs following drug exposure in large populations e.g., during Phase III clinical trials or postmarketing. Given that this is a major cause for costly drug withdrawals, there has been significant effort in identifying properties that predispose some compounds to a high risk for iDILI. Both immune and nonimmune mechanisms are hypothesized to contribute to iDILI. This course will discuss DILI hazards that can be used to identify a compound's potential to cause DILI. A general overview and introduction of DILI will be provided, followed by a clinician's perspective on DILI focusing on presentation of DILI using examples of key withdrawals. Subsequent presentations will focus on established and emerging science on DILI hazard risks; this will include a presentation on the role of reactive metabolites (RM) and covalent binding in increasing risk for immune or nonimmune mediated DILI. A basic overview on mechanisms of RM formation, methods for detection, and mechanistic studies correlating covalent binding with DILI will be discussed. The relationship between dose, covalent binding thresholds, and DILI also will be addressed. This will be followed by a presentation on hepatic transporters and the role they play in DILI, either through delayed hepatotoxicity resulting from liver accumulation of parent/metabolites and/or inhibition of efflux of toxic bile acids. Mitochondrial toxicity also has been identified as a key hazard for DILI compounds; an overview of mitochondrial toxicity, its role in iDILI, and how interplay with hepatic transport inhibition may increase risk for DILI will be presented. The final presentation will introduce the concept of computational, systems pharmacology approaches integrating all of the mechanisms discussed by the previous speakers along with drug exposure, to put data from various sources into context.

Overview of DILI and Associated Risk Hazards. Monicah Otieno, Janssen Pharmaceuticals, Spring House, PA.

Clinical Perspective Including Risk Identification and Management. Paul Watkins, The UNC Institute for Drug Safety Sciences, Research Triangle Park, NC.

Role of Reactive Metabolites in Immune DILI. Jack Uetrecht, University of Toronto, Toronto, ON, Canada.

Role of Hepatic Transporters in DILI. Kim Brouwer, University of North Carolina at Chapel Hill, Chapel Hill, NC.

Role of Mitochondrial Toxicity in DILI. Yvonne Will, Pfizer Inc., Groton, CT.

Computational Approaches to Integrate DILI Hazards and Predict DILI Potential. Brett Howell, The UNC Institute for Drug Safety Sciences, Research Triangle Park, NC.

Sunday Afternoon, March 13
1:15 PM–5:00 PM
CC Second Floor
(See Mobile Event App or Signage at CE Booths for Room Location)

Exploring Chemical Space in the New Toxicity Testing Paradigm: From Data Curation to Computational Simulations

PM09 | CE BASIC | AFTERNOON COURSE

♠ **Recent Advances in Safety Assessment**

Chairperson(s): *Cecilia Tan, US Environmental Protection Agency, Research Triangle Park, NC; and Daniel Chang, Chemical Computing Group, Inc., Montreal, QC, Canada*

Endorser(s):
Biological Modeling Specialty Section
***In Vitro* and Alternative Methods Specialty Section**
Molecular and Systems Biology Specialty Section

In an effort to determine mechanisms-of-action of toxicants known to induce adverse human health outcomes, traditional toxicity testing focuses on lengthy and costly *in vivo* animal studies on a chemical-by-chemical basis. In such a paradigm, there is no need to consider chemical space. The accelerated rate of production and distribution of new chemicals in the commercial market precludes such approaches today, and rather, high-throughput *in vitro* and *in silico* analyses are encouraged in order to rapidly screen hundreds to thousands of chemicals. The recent advancements in these high-throughput screening approaches, along with computational chemistry and cheminformatics, have provided toxicologists the foundation and opportunity to identify molecular fingerprints that impact each aspect of the source-to-outcome continuum for large amounts of chemicals. Inherent chemical structures and properties are key determinants of exposure potential (based on e.g., function and use), environmental persistence and transformation in environmental and biological systems, and toxicity potential. Computational approaches expand the chemical space through identification of chemicals with similar molecular descriptors capable of influencing these behaviors, thus allowing investigators to predict their toxicity or exposure potential, while foregoing actual testing. Attendees enrolled in this course will learn about the availability of different tools and vast numbers of resources to help them triage *in vitro* efforts, rationalize mode-of-action information, screen chemicals in a virtual world, and understand the issues of domain of applicability in toxicological studies. Investigators specializing in computational, molecular, and environmental toxicology, as well as those conducting high-throughput analysis for drug discovery or chemical screening, will experience the opportunity to address critical issues regarding evaluation of chemical space along the source-to-outcome continuum through comprehensive lectures and case studies.

Computational Chemistry in Toxicity Testing, Hazard and Risk Assessments. Daniel Chang, Chemical Computing Group, Inc., Montreal, QC, Canada.

Applications of Cheminformatics in the Regulatory Assessment of Chemicals. Andrew Worth, European Commission—Joint Research Centre, Ispra, Italy.

Progress towards Predicting Potential Hazards and Assessing Risk in the Early Stage of Drug Discovery. BinQing Wei, Genentech Inc., South San Francisco, CA.

Advancements in Applying Predictive Computational Tools to Prioritize Environmental Chemicals Investigated in High-Throughput Screening Assays. Jeremy Leonard, North Carolina State University, Raleigh, NC.

The Contributions of Chemistry Standards and Database Tools at the Chemical-Biology Interface. Antony Williams, US EPA, Durham, NC.

Conquering Chemical Space with Cheminformatics Workflow and *In Silico* Profiling to Complement High-Throughput Screening.
Rocky Goldsmith, Chemical Computing Group, Inc., Montreal, QC, Canada.

SOT | Society of Toxicology

Council and Annual Meeting Organizing Committees

Thank You

Council

Peter L. Goering ..... President
John B. Morris ..... Vice President
Patricia E. Ganey ..... Vice President-Elect
Leigh Ann Burns Naas ..... Secretary
Ruth A. Roberts ..... Secretary-Elect
George P. Daston ..... Treasurer
Norbert E. Kaminski ..... Past President
Aaron Barchowsky ..... Councilor
Rosonald R. Bell ..... Councilor
Myrtle A. Davis ..... Councilor
Ofelia A. Olivero ..... Councilor
Tao Wang ..... Councilor
John A. Wisler ..... Councilor

Continuing Education Committee

Gary O. Rankin ..... Chair
Kimberly A. Henderson ..... Co-Chair
Niranjan S. Goud ..... Member
Michael F. Hughes ..... Member
Saber M. Hussain ..... Member
Bette Meek ..... Member
Monicah A. Otieno ..... Member
Cynthia V. Rider ..... Member
James G. Wagner ..... Member
Senthilkumar Perumal Kuppusamy ..... Postdoctoral Representative
Kevin Trout ..... Student Representative

Scientific Program Committee

John B. Morris ..... Chair
Patricia E. Ganey ..... Co-Chair
William D. Atchison ..... Member
Jeanine L. Bussiere ..... Member
Brian J. Day ..... Member
Jennifer L. Freeman ..... Member
Mary Beth Genter ..... Member
Paul C. Howard ..... Member
Matthew J. LeBaron ..... Member
Donald R. Mattison ..... Member
Barry S. McIntyre ..... Member
Sean E. Ottinger ..... Member
Lisa M. Sweeney ..... Member

Sunday Afternoon, March 13
1:15 PM–5:00 PM
CC Second Floor
(See Mobile Event App or Signage at CE Booths for Room Location)

Genetics and Population Variability in Chemical Toxicity: The What, the How, and So What?

PM10 | CE BASIC | AFTERNOON COURSE

♥ **Health and Environmental Impacts of Manmade and Naturally Released Toxicants**

♦ **Molecular Toxicology: Mechanistic Insights and Hazard Assessment**

Chairperson(s): *Ivan Rusyn, Texas A&M University, College Station, TX; and Barbara A. Wetmore, ScitoVation, LLC, Research Triangle Park, NC.*

Endorser(s):
Drug Discovery Toxicology Specialty Section
Molecular and Systems Biology Specialty Section
Risk Assessment Specialty Section

The US EPA defines "variability" as "the range of toxic response or exposure—for example, the dose that might cause a toxic response can vary from one person to the next depending on factors such as genetic differences, preexisting medical conditions, etc." What are "genetic differences"? How do toxicologists and regulators estimate "population variability"? What new computational and experimental tools are available to substitute default "uncertainty factor" to account for variation in susceptibility among the members of the human population (i.e., interindividual variability)? This continuing education course is designed to review basics of genetics and demonstrate how appreciation for the role of genetic variability and novel experimental and *in silico* models can become key elements in human health assessments of chemicals. By superimposing the opportunities that are now afforded by sequencing technologies and novel experimental models and data onto the risk assessment paradigm, this course will be informative to the risk assessment practitioners and the toxicology research community, and increase the scientific impact of the fundamental toxicology studies. In addition, this course is directly responsive to the new SOT Strategic Plan (2015–2018) and the Central Challenge of shaping the future of toxicology in a changing scientific landscape. By using case studies of how the scientific disciplines of genetics and toxicology intertwine, this course will strengthen the impact and relevance of toxicology.

Genetics for Toxicologists: Why Should We Care? Ivan Rusyn, Texas A&M University, College Station, TX.

Basic Concepts in Genetics, Heritability, Genome-Wide Association, and Related Toxicology Study Designs. Fred A. Wright, North Carolina State University, Raleigh, NC.

Pharmacogenomics Tools to Unravel the Genetic Basis of Toxicodynamic Variability. Nancy J. Cox, Vanderbilt University, Nashville, TN.

Strategies to Quantitate Chemical-Specific Toxicokinetic Variability Due to Genetics and Other Factors. Barbara A. Wetmore, ScitoVation, LLC, Research Triangle Park, NC.

Advancing Risk Assessment with Genetic and Population Variability Data. Weihsueh A. Chiu, Texas A&M University, College Station, TX.

Sunday Afternoon, March 13
1:15 PM–5:00 PM
CC Second Floor
(See Mobile Event App or Signage at CE Booths for Room Location)

Human Health Risk Assessment: A Case Study Application of Principles

PM11 | CE ADVANCED | AFTERNOON COURSE

♥ **Health and Environmental Impacts of Manmade and Naturally Released Toxicants**

Chairperson(s): *John C. Lipscomb, US Environmental Protection Agency, Cincinnati, OH; and Bette Meek, University of Ottawa, Ottawa, ON, Canada.*

Endorser(s):
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

This advanced, case study application course will build on course content previously presented and archived by the Society of Toxicology through CE courses presented in 2013 (Basic Principles of Human Risk Assessment) and 2014 (Methodologies in Human Health Risk Assessment). In this course, real world examples from publicly available, peer reviewed, completed risk assessments will be used as teaching aids. Course modules will be organized according to the four components of the Risk Assessment Paradigm: Hazard Characterization, Dose-Response Assessment, Exposure Assessment, and Risk Characterization. The Hazard Characterization component will consist of a guided case study based evaluation of the strength and consistency of available hazard data culminating in a weight of evidence synthesis of hazard information; Dose-response information including default (allometric scaling), pharmacokinetic approaches including a live benchmark dose application from completed assessments will be presented and discussed; Information documenting actual (measured) exposure and/or data useful in determining a default measure of exposure will be presented and discussed; Risk Characterization will demonstrate the development of drinking water maximum contaminant levels, maximum contaminant level-goals, reference values, and cancer slope factors; as well as methods to estimate risk at a given contaminant level. The course booklet will contain a worksheet on the risk assessment examples, to be completed during the class. Unique to this course, students will be provided a risk assessment problem consisting of fundamental environmental contamination levels and original publications describing toxicity studies and will be asked to characterize the hazard, estimate exposures via soil and water, develop measures of toxic potency, and develop risk values for a hypothetical environmental contaminant. The results will be provided through an open access "drop box" type application.

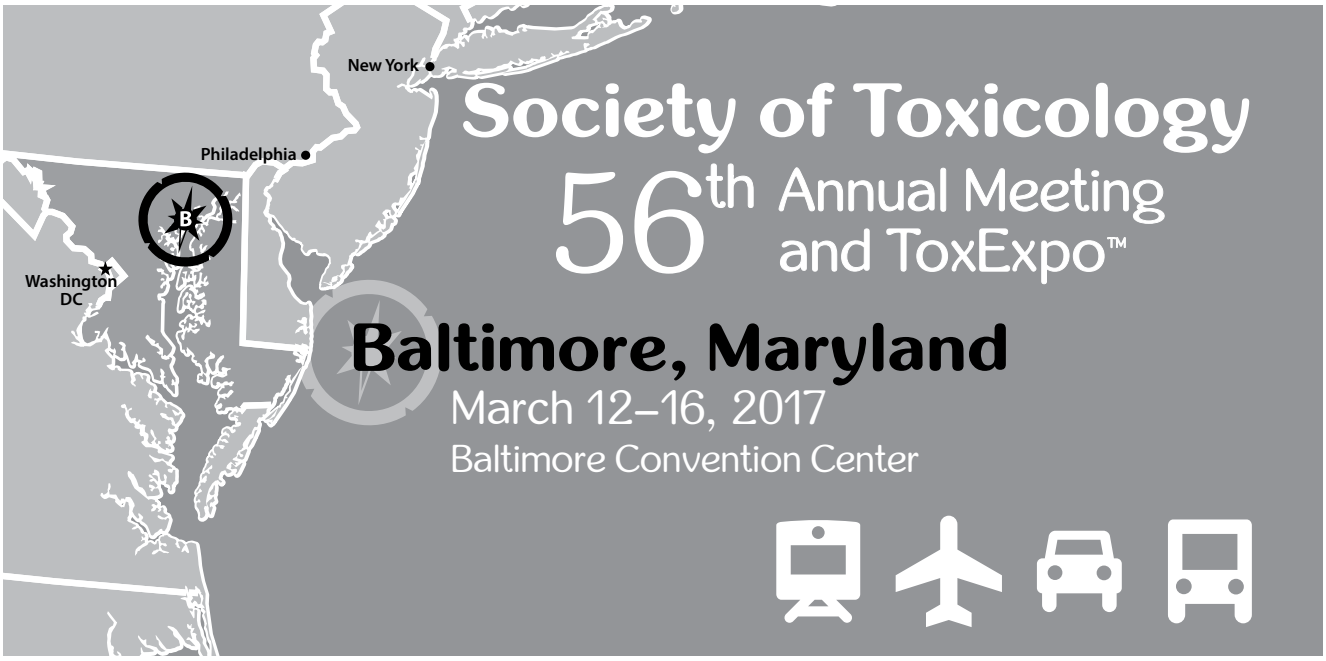
Introduction. Bette Meek, University of Ottawa, Ottawa, ON, Canada.

Hazard Characterization. Zhongyu (June) Yan, Dow AgroSciences, Indianapolis, IN.

Dose-Response Assessment. Q. Jay Zhao, US EPA, Cincinnati, OH.

Exposure Assessment. Robinan Gentry, Ramboll ENVIRON, Monroe, LA.

Risk Characterization. John C. Lipscomb, US EPA, Cincinnati, OH.



2017 Annual Meeting Session Proposal Deadline: April 30, 2016

Why Submit a Proposal?

1. To present new developments in toxicology
2. To provide attendees with an opportunity to learn about state-of-the-art technology and how it applies to toxicological research
3. To provide attendees with an opportunity to learn about the emerging fields and how they apply to toxicology

Session Types

Continuing Education—Emphasis on quality presentations of generally accepted, established knowledge in toxicology
Note: CE Courses will be held on Sunday.

Symposia—Cutting-edge science, new areas, concepts, or data

Workshops—State-of-the-art knowledge in toxicology

Roundtables—Controversial subjects

Historical Highlights—Review of a historical body of science that has impacted toxicology

Informational Sessions—Scientific planning or membership development

Education-Career Development Sessions—Sessions that provide the tools and resources to toxicologists that will enhance their professional and scientific development

Regional Interest—Central topics of relevance that describe public health and/or ecological problems of a particular region

Submit your proposal online at www.toxicology.org

Sunday Afternoon, Afternoon, March 13
1:15 PM–5:00 PM
CC Second Floor
(See Mobile Event App or Signage at CE Booths for Room Location)

Unique Approaches to Safety Assessment of Gene, Cell, and Nucleic Acid-Based Therapies

PM12 | CE BASIC | AFTERNOON COURSE

♠ **Recent Advances in Safety Assessment**

Chairperson(s): *Timothy MacLachlan, Novartis, Cambridge, MA; and Joy Cavagnaro, AccessBio, Boyce, VA.*

Endorser(s):
Biotechnology Specialty Section
Regulatory and Safety Evaluation Specialty Section

The platforms used for therapeutic treatment of disease have been greatly expanding over the last decade beyond the standard small molecule approaches and the now widespread use of proteins and monoclonal antibodies. The prospect of gene therapy began several decades ago with the promise that misfunctioning genes could be simply replaced, but was stunted in its growth with several notable safety events in the clinic. Now gene therapy is making a furious comeback, with several industry and academic groups employing various technologies and racing to catch up. Cell therapy has experienced similar peaks and valleys in interest, with stem cells touted as a platform able to replace entire damaged organ systems. Multiple variants of what one would call a cell therapy now are in development ranging for treatment with fully differentiated somatic cells to naïve cells able to grow and differentiate *in vivo*. A combination of gene and cell therapy approaches is used in the widely popular T cell immunotherapy approaches for cancer treatment where cells are modified *ex vivo* to target tumors after reintroduction to the patient. Considering the potency of T cells it is not surprising that safety concerns have limited their target profile. Finally, the concept of knocking down expression of gene expression has gained significant momentum with the introduction of therapeutic RNA interference and most recently with gene editing via a variety of methods. All of these "advanced therapy" platforms require very unique approaches outside of the standards defined by internationally accepted guidance for preclinical safety assessment. Not only does the biopharmaceutical mantra of "case by case" apply, but standard issues such as immunogenicity, tumorigenicity and appropriate animal models take on new meaning when applied to these therapies. With start-up companies being formed and larger pharmaceutical companies investing heavily in these therapeutic areas, there is a growing need for toxicologists to be familiar with these platforms. This course will aim to introduce the audience to each of these four general categories of advanced therapies as well as provide a regulatory perspective on these modalities and highlight where the standard approaches for safety assessment either do not apply or require unique application.

Toxicological Approaches to Gene Therapy. Joy Cavagnaro, AccessBio, Boyce, VA.

Toxicological Approaches to T-Cell Immunotherapies. Timothy MacLachlan, Novartis, Cambridge, MA.

Toxicological Approaches to Cell Therapies. Cliff Sachs, MedImmune, Gaithersburg, MD.

Toxicological Approaches to Genome Editing. Kathleen Meyer, Sangamo Biosciences Inc., Richmond, CA.

Think Like a Regulator: US FDA Considerations for Preclinical Studies for Cell and Gene Therapy Products. Becky Robinson, Center for Biologics Evaluation and Research, US FDA, Silver Spring, MD.

Sunday Afternoon, Afternoon, March 13
1:15 PM–5:00 PM
CC Second Floor
(See Mobile Event App or Signage at CE Booths for Room Location)

Zebrafish As a Tool in Toxicology and Drug Discovery Screening

PM13 | CE BASIC | AFTERNOON COURSE

♥ **Health and Environmental Impacts of Manmade and Naturally Released Toxicants**

♠ **Recent Advances in Safety Assessment**

Chairperson(s): *Mamta Behl, National Toxicology Program/NIEHS, Research Triangle Park, NC; and Arantza Muriana, BBD BioPhenix S.L.-Biobide, San Sebastian-Donostia, Spain.*

Endorser(s):
***In Vitro* and Alternative Methods Specialty Section**
Molecular and Systems Biology Specialty Section
Reproductive and Developmental Toxicology Specialty Section

The zebrafish is a powerful tool to screen compounds, especially for early development since it is a vertebrate, has a high genetic homology with humans, and the assays can be automated to provide relatively high-throughput along with high-content analysis. Adult and developing zebrafish are increasingly being used to assess development, gene expression, and behavior to screen and prioritize compounds for toxicity testing and safety evaluation. Specifically, the zebrafish has proven extremely relevant in the evaluation of acute toxicity and developmental toxicity, as well as organ-specific toxicities, including cardiotoxicity, hepatotoxicity, and neurotoxicity.

The purpose of this course is to bring together experts from the pharmaceutical industry, CROs, academia, and the Government to provide insight on the current developments in the use of zebrafish in the field of toxicology and drug safety and efficacy assessment, and to highlight some ongoing challenges in the field. The course will begin with important basics of zebrafish biology such as selection of strains, husbandry, dose-response and time course, and will highlight its application in toxicology. The second talk will focus on the recent advancements of zebrafish as a tool to assess developmental toxicity. The third talk will focus on the systematic optimization of variables for efficient screening, and tools for data management, visualization and analysis. Speaker four will highlight the use of zebrafish in drug discovery as a rapid and cost effective method to screen for a number of new molecular entities entering clinical phases. Finally, speaker five will build upon the information presented by the previous speakers to shed light on the utility in screening of drugs for efficacy and safety, and ultimately for acceptance of data for regulatory purposes.

The course will address critical questions on the status of this model in hazard identification and risk assessment for environmental toxicants including progress in the field, loopholes, and data-gaps, novel upcoming developments, and the impact of this model on toxicology research in the 21st century, as well as the impact on safety assessment of drugs.

Introduction and Course Goals. Mamta Behl, National Toxicology Program/NIEHS, Research Triangle Park, NC.

The Ins and Outs of Using Zebrafish for Mechanistic Toxicology Studies. Antonio Planchart, Department of Biological Sciences, North Carolina State University, Raleigh, NC.

Developmental Toxicology Research in Zebrafish. Kimberly Brannen, Merck, West Point, PA.

Optimizing Multi-Dimensional Bioactivity Screening in Zebrafish. Robert Tanguay, Oregon State University, Sinnhuber Aquatic Research Laboratory, Corvallis, OR.

Innovative Zebrafish Hepatotoxicity, Cardiotoxicity, and Neurobehavioral Toxicity Assays for Drug Selection. Arantza Muriana, BBD BioPhenix S.L.-Biobide, San Sebastian-Donostia, Spain

Recent Developments and Recognition of Zebrafish for Use in Safety Evaluation by the Regulatory Agencies. Gopala Krishna, Supernus Pharmaceuticals, Inc., Rockville, MD.

Zebrafish—Whatever You Ever Wondered About! Additional Discussion with All Panel Speakers

SOT FDA Colloquia on Emerging Toxicological Science Challenges in Food and Ingredient Safety

Upcoming Events and Live Webcasts • FDA, College Park, Maryland

State of the Art in the Cramer Classification Scheme and Threshold of Toxicological Concern

Ivan Rusyn, Chair, *Texas A&M, College Station, Texas*

March 29, 2016

Safety Assessment Approaches to a Sensitive Subpopulations

Allen Rudman, Chair, *FDA CFSAN, College Park, Maryland*

April/May 2016

Access Event Materials

Recordings, Presentation Slides, Captioning Record

www.toxicology.org/fda

Complexities in Evaluating Human Clinical and Observational Data for Ingredient Safety Assessment: Partially Hydrogenated Oils (PHOs) as a Case Study

November 7, 2014

Application of ADME/PK Studies to Improve Safety Assessments for Foods and Cosmetics

February 23, 2015

Immunotoxicology in Food and Ingredient Safety Assessment: Approaches and Case Studies

April 14, 2015

Contemporary Issues in Risk Assessment

June 17, 2015

Contemporary Issues in Computational and *In Silico* Methods for Food Ingredient Assessment

October 13, 2015

Role of Mode of Action in Dose-Response Assessment for Carcinogens

January 25, 2016

Scientific Session Index

General Scientific Sessions (Listed by type, then date and time)

- EC Education-Career Development Sessions
- FS Featured Sessions
- HH Historical Highlights Session
- IS Informational Sessions
- PL Platform Sessions
- PS Poster Sessions
- RI Regional Interest Session
- R Roundtable Sessions
- S Symposium Sessions
- W Workshop Sessions

Abstract numbers are four digits. Poster Boards are indicated with a "P" followed by 3 digits.

Exhibitor-Hosted Sessions are informative sessions developed by an exhibiting company or SOT supporter. The Exhibitor-Hosted Session Index is located on pages 39–41.

All sessions will be held at the New Orleans Ernest N. Morial Convention Center.

Monday

FS FEATURED SESSION

Date/Time	Topic/Abstract #	Room	Page
Monday 8:00 AM	Daily Plenary Session: Regenerative Medicine and Tissue Engineering	Great Hall A	124

S SYMPOSIUM SESSION

Date/Time	Topic/Abstract #	Room	Page
Monday 9:30 AM	Opening the Black Box: Understanding the Molecular Mechanisms of Developmental Toxicity #1014a–1018	Great Hall B	125

W WORKSHOP SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Monday 9:30 AM	Dietary Exposures to Heterocyclic Amines As a Potential Risk Factor for Neurological Disease #1019–1023	Room R04	126
Monday 9:30 AM	Mitochondria As the Central Target of Environmental Contaminants, Pharmaceutical Agents, and Toxicants: Mechanisms of Toxicity and Disease #1024–1029	Room 220	126
Monday 9:30 AM	Nanotoxicology and Ocular Drug Delivery: One Size Does Not Fit All #1030a–1034	Room R02	127
Monday 9:30 AM	Scientific Reproducibility: Does This Pose a Problem for 21st Century Toxicology? #1035a–1039	Great Hall A	127
Monday 9:30 AM	The Cancer Risk Assessment for Ingested Hexavalent Chromium: Challenges and Controversies #1040–1045	Room 217	128
Monday 9:30 AM	Transient Receptor Potential A1 (TRPA1) Cation Channels: Fluttering Hearts, Headaches and Hot Flashes—Can One "Environmental Sensor" Be the Cause of All the Pain? #1046a–1050	Room 208	128

RI REGIONAL INTEREST SESSION

Date/Time	Topic/Abstract #	Room	Page
Monday 9:30 AM	The Toxicological Implications of the Gulf Oil Spill: Research Accomplishments and Research Needs #1051–1055	Room R08	129

PL PLATFORM SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Monday 9:30 AM	Investigating Mode of Action in Chemical Carcinogenesis #1056–1062	Room 206	130
Monday 9:30 AM	Ozone Research #1063–1071	Room R06	130

PS POSTER SESSIONS

**Author-attended 9:30 am–11:00 am; otherwise author-attended 11:15 am–12:45 pm. Poster Board Map are on pages 113–117.*

Date/Time		Topic/Abstract #	Room	Page
Monday 9:30 AM	*	Bioinformatics and Toxicology #1072–1099 Poster Boards P101–P128	Exhibit Hall	131
Monday 9:30 AM		Systems Biology and Toxicology #1100–1128 Poster Boards P129–P157	Exhibit Hall	133
Monday 9:30 AM	*	Biomonitoring #1129–1147 Poster Boards P158–P176	Exhibit Hall	135
Monday 9:30 AM		Neurotoxicology—Emerging Technologies for Neurotoxicity Screening #1148–1160 Poster Boards P201–P213	Exhibit Hall	136
Monday 9:30 AM	*	Neurotoxicology—Developmental Neurotoxicity #1161–1184 Poster Boards P214–P237	Exhibit Hall	137
Monday 9:30 AM		Neurotoxicology—Halogenated Hydrocarbons #1185–1198 Poster Boards P238–P251	Exhibit Hall	138
Monday 9:30 AM	*	Neurotoxicology—General #1199–1232 Poster Boards P252–P329	Exhibit Hall	139
Monday 9:30 AM		Neurotoxicology of Therapeutic Agents and Abused Substances #1233–1248 Poster Boards P330–P345	Exhibit Hall	141
Monday 9:30 AM	*	Arsenic Toxicity #1249–1267 Poster Boards P346–P416	Exhibit Hall	142

Monday 9:30 AM		Toxicity of Metal Mixtures #1268–1277 Poster Boards P417–P426	Exhibit Hall	144
Monday 9:30 AM	*	Respiratory Toxicology #1278–1314a Poster Boards P427–P514	Exhibit Hall	144
Monday 9:30 AM		Cell Death and Apoptosis #1315–1331 Poster Boards P521–P537	Exhibit Hall	147
Monday 9:30 AM	*	Immunotoxicology #1332–1369 Poster Boards P601–P638	Exhibit Hall	148

FS FEATURED SESSION

Date/Time	Topic/Abstract #	Room	Page
Monday 12:30 PM	Merit Award Lecture: Forty-Five Years Modeling Dose-Response Relationships: An Unanticipated Career!	Room R08	152

R ROUNDTABLE SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Monday 12:30 PM	Is a "Thresholdable" Carcinogen Still a Delaney Carcinogen? #1370	Room 208	152
Monday 12:30 PM	Trichloroethylene Exposure and Development of Fetal Cardiac Malformations: What Do the Data Tell Us About Inhalation Exposures Resulting from Vapor Intrusion and Potential Health Risks to Pregnant Women? #1371	Room 217	152

PS POSTER SESSIONS

**Author-attended 1:15 pm–2:45 pm; otherwise author-attended 3:00 pm–4:30 pm. Poster Board Map are on pages 113–117.*

Date/Time		Topic/Abstract #	Room	Page
Monday 1:15 PM	*	Toxicology Education #1372–1386 Poster Boards P101–P115	Exhibit Hall	153
Monday 1:15 PM		Genetic Toxicology I #1387–1411 Poster Boards P116–P140	Exhibit Hall	154
Monday 1:15 PM	*	Genetic Toxicology II #1412–1428 Poster Boards P141–P157	Exhibit Hall	155
Monday 1:15 PM		Mixtures #1429–1455 Poster Boards P158–P184	Exhibit Hall	156
Monday 1:15 PM	*	Natural Products #1456–1495 Poster Boards P201–P240	Exhibit Hall	158
Monday 1:15 PM		Nanotoxicology: General #1496–1526 Poster Boards P241–P311	Exhibit Hall	160
Monday 1:15 PM	*	Metal Toxicity #1527–1562a Poster Boards P312–P348	Exhibit Hall	162
Monday 1:15 PM		Mercury Toxicity #1563–1572 Poster Boards P401–P410	Exhibit Hall	164
Monday 1:15 PM	*	Neurotoxicology—Mercury Neurotoxicity #1573–1585 Poster Boards P411–P423	Exhibit Hall	165
Monday 1:15 PM		Neurotoxicology—Metals: Lead, Cadmium, and Others #1586–1599 Poster Boards P424–P437	Exhibit Hall	165
Monday 1:15 PM	*	Ocular Toxicology #1600–1616 Poster Boards P438–P454	Exhibit Hall	166
Monday 1:15 PM		Safety Assessment: Drug Development #1617–1656 Poster Boards P501–P541	Exhibit Hall	168
Monday 1:15 PM	*	Safety Assessment: Drug Discovery #1657–1678 Poster Boards P542–P603	Exhibit Hall	170
Monday 1:15 PM		Exposure Assessment #1679–1698 Poster Boards P609–P628	Exhibit Hall	171

FS FEATURED SESSION

Date/Time	Topic/Abstract #	Room	Page
Monday 1:30 PM	Meet the Directors: A Conversation with Linda Birnbaum and Pamela McInnes	Room 220	173

S SYMPOSIUM SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Monday 2:00 PM	Health and Environmental Hazard Assessments of Nanomaterials Along Their Lifecycle #1699a–1703	Room 217	173
Monday 2:00 PM	The Promise and Reality of Alternative Methods in Inhalation Toxicology and the Development of Inhaled Therapeutics #1704–1710	Room R02	174

W WORKSHOP SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Monday 2:00 PM	Moving Beyond Prioritization towards True *In Vitro*–Based Safety Assessment #1711–1715	Room 208	174
Monday 2:00 PM	Quantitative Cumulative Risk Assessment: Is It Feasible Today? #1716a–1720	Room R04	175
Monday 2:00 PM	The Role of the Epigenome in Exposure Effects, Susceptibility, and Public Health #1721a–1725	Great Hall B	175
Monday 2:00 PM	Using 21st Century Approaches to Evaluate Endocrine-Active Compounds #1726a–1730	Great Hall A	176

HH HISTORICAL HIGHLIGHTS SESSION

Date/Time	Topic/Abstract #	Room	Page
Monday 2:00 PM	Toxicologic Legacies of Major 21st Century Man-Made/Natural Disasters #1731	Room R08	176

PL PLATFORM SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Monday 2:00 PM	AhR and Disease Processes #1732–1738	Room 206	177
Monday 2:00 PM	Pluripotent Stem Cells in Cardiovascular Research #1739–1745	Room R06	177

FS FEATURED SESSION

Date/Time	Topic/Abstract #	Room	Page
Monday 4:45 PM	SOT/EUROTOX Debate: Preclinical (Safety) Toxicology Testing Predicts the Clinical Outcome	Great Hall B	179

Tuesday

FS FEATURED SESSION

Date/Time	Topic/Abstract #	Room	Page
Tuesday 8:00 AM	Daily Plenary Session: Inflammation and Neurodegenerative Disease	Great Hall A	181

S SYMPOSIUM SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Tuesday 9:30 AM	Drug-Induced Taste Change in Clinical Practice and Preclinical Safety Evaluation #1746–1750	Room R06	182
Tuesday 9:30 AM	Genotypic and Intrinsic Risk Factors That Increase Susceptibility to Inhaled Pollutants #1751a–1756	Room 217	183
Tuesday 9:30 AM	Systems Understanding of the Impact of the Nrf2 Pathway on Chemical Toxicity and Cell Fate #1757a–1761	Room 206	183
Tuesday 9:30 AM	Unknown, Unknowns: Exploring the Unidentified Fraction of Complex Mixtures #1762a–1766	Room 208	184

W WORKSHOP SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Tuesday 9:30 AM	Bioactivity-Based Margin of Exposure Safety Assessment: The Next Stop along the Road to 21st Century Safety Assessments #1767a–1771	Great Hall B	184
Tuesday 9:30 AM	Maternal Exposure to Nanoparticles—How Does It Affect the Fetus? Status, Mechanisms, and Future Directions #1772a–1777	Room 220	185
Tuesday 9:30 AM	Multi-Omics in Predictive Toxicology: Development and Application in Environmental Monitoring Programs #1778a–1782	Room R08	185
Tuesday 9:30 AM	Scientific and Regulatory Advances in Safety Evaluation of Heavy Metals in Food #1783a–1787	Room R02	186

PL PLATFORM SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Tuesday 9:30 AM	Zebrafish Models: Advances and Applications in DART #1788–1794	Room R04	186

PS POSTER SESSIONS

**Author-attended 9:30 am–11:00 am; otherwise author-attended 11:15 am–12:45 pm. Poster Board Map are on pages 113–117.*

Date/Time		Topic/Abstract #	Room	Page
Tuesday 9:30 AM	*	Alternative Models: Fish, Worms, and More #1795–1821 Poster Boards P101–P127	Exhibit Hall	186
Tuesday 9:30 AM		Stem Cell Biology and Toxicology #1822–1839 Poster Boards P128–P145	Exhibit Hall	188
Tuesday 9:30 AM	*	Developmental Basis of Adult Disease #1840–1861 Poster Boards P146–P167	Exhibit Hall	189
Tuesday 9:30 AM		Endocrine Toxicology #1862–1893a Poster Boards P168–P199	Exhibit Hall	191
Tuesday 9:30 AM	*	Inflammation in Disease #1894–1917 Poster Boards P201–P224	Exhibit Hall	193
Tuesday 9:30 AM		Inflammation: Methods and Mechanisms #1918–1948 Poster Boards P225–P255	Exhibit Hall	194
Tuesday 9:30 AM	*	Liver–Mechanisms #1949–1987 Poster Boards P301–P339	Exhibit Hall	196
Tuesday 9:30 AM		Liver–Models #1988–2018 Poster Boards P340–P422	Exhibit Hall	198
Tuesday 9:30 AM	*	Carcinogenesis I #2019–2054 Poster Boards P423–P458	Exhibit Hall	200
Tuesday 9:30 AM		Carcinogenesis II #2055–2088 Poster Boards P459–P532	Exhibit Hall	202
Tuesday 9:30 AM	*	Chemical and Biological Weapons #2089–2129 Poster Boards P533–P613	Exhibit Hall	204
Tuesday 9:30 AM		Toxic Inhalants Research #2130–2136 Poster Boards P614–P620	Exhibit Hall	206
Tuesday 9:30 AM	*	Risk Assessment 1 #2137–2170 Poster Boards P621–P654	Exhibit Hall	207

FS FEATURED SESSION

Date/Time	Topic/Abstract #	Room	Page
Tuesday 12:30 Pm	Leading Edge in Basic Science Award Lecture: New Frontiers at the Nexus of Epigenomics and Toxicology	Room R08	211

PS POSTER SESSIONS

**Author-attended 1:15 pm–2:45 pm; otherwise author-attended 3:00 pm–4:30 pm. Poster Board Map are on pages 113–117.*

Date/Time		Topic/Abstract #	Room	Page
Tuesday 1:15 PM	*	3D Cell and Organ-on-a-Chip Models #2171–2188 Poster Boards P101–P118	Exhibit Hall	211
Tuesday 1:15 PM		Alternative Models for Ocular and Skin Toxicity #2189–2209 Poster Boards P119–P139	Exhibit Hall	212
Tuesday 1:15 PM	*	Biological Modeling #2210–2240 Poster Boards P140–P170	Exhibit Hall	213
Tuesday 1:15 PM		Particulate Matter Toxicology #2241–2266 Poster Boards P171–P196	Exhibit Hall	215
Tuesday 1:15 PM	*	Food Safety/Nutrition 1 #2267–2288 Poster Boards P197–P218	Exhibit Hall	217
Tuesday 1:15 PM		Gene Regulation and Signal Transduction #2289–2309 Poster Boards P219–P239	Exhibit Hall	218
Tuesday 1:15 PM	*	Oxidative Injury and Redox Biology #2310–2333 Poster Boards P240–P303	Exhibit Hall	219
Tuesday 1:15 PM	*	Neurotoxicology—Dopaminergic Systems and Toxicants #2334–2351 Poster Boards P305–P322	Exhibit Hall	221
Tuesday 1:15 PM		Neurotoxicology—Manganese Neurotoxicity #2352–2368 Poster Boards P323–P339	Exhibit Hall	222
Tuesday 1:15 PM	*	Neurotoxicology—Neurodegenerative Diseases #2369–2387 Poster Boards P340–P410	Exhibit Hall	223

Tuesday 1:15 PM		Neurotoxicology—Pesticide Neurotoxicity #2388–2415 Poster Boards P411–P438	Exhibit Hall	224
Tuesday 1:15 PM	*	Receptors #2416–2439 Poster Boards P439–P502	Exhibit Hall	226
Tuesday 1:15 PM		Medical Devices #2440–2454 Poster Boards P506–P520	Exhibit Hall	227
Tuesday 1:15 PM	*	Non–Pharmaceutical Safety Assessment #2455–2480 Poster Boards P521–P606	Exhibit Hall	228
Tuesday 1:15 PM		Clinical and Translational Toxicology #2481–2496 Poster Boards P609–P624	Exhibit Hall	230

S SYMPOSIUM SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Tuesday 2:00 PM	New Mechanistic Insights into How the Immune System Drives Hepatic Adverse Drug Reactions #2497–2502	Great Hall A	232
Tuesday 2:00 PM	Reciprocal Synergism: New Insights into Thyroid Hormone Action in Brain Development and Neurodevelopmental Toxicity #2503a–2507	Room R08	232
Tuesday 2:00 PM	The Role of Gene SLC30A10 on Manganese Homeostasis and Functional Outcomes: Implications for Homeostasis and Neurotoxicity #2508a–2512	Room R02	233
Tuesday 2:00 PM	Using Multi- and Transgenerational Effects of Environmental Exposures in Diverse Animal Models for Assessment of Human Health Risks #2513–2518	Great Hall B	233

W WORKSHOP SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Tuesday 2:00 PM	Cannabis in the Courtroom #2519a–2523	Room 217	234
Tuesday 2:00 PM	Read-Across: Building Scientific Confidence in the Development and Evaluation of Read-Across for Regulatory Purposes Using Tox21 Approaches #2524–2529	Room 220	234
Tuesday 2:00 PM	Safety Assessment of Topically Exposed Cosmetic Ingredients: Lessons Learned #2530–2536	Room 208	235

PL PLATFORM SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Tuesday 2:00 PM	Nanotoxicology: *In Vivo* #2537–2544	Room R04	235
Tuesday 2:00 PM	Qualification of "New" DART Tools for Hazard Identification #2545–2551	Room R06	236

Wednesday

FS FEATURED SESSION

Date/Time	Topic/Abstract #	Room	Page
Wednesday 8:00 AM	Daily Plenary Session—Keynote Medical Research Council (MRC) Lecture: Regenerating CNS Myelin—From Mechanisms to Medicines	Great Hall A	239

S SYMPOSIUM SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Wednesday 9:30 AM	Patient-Specific Stem Cells As Models for Gene, Drug, and Environment Interactions in Disease #2552a–2556	Great Hall B	239
Wednesday 9:30 AM	Sulfur Mustard Poisoning: Mechanisms of Dermal and Pulmonary Toxicity and New Treatment Approaches #2557a–2561	Room R02	240

W WORKSHOP SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Wednesday 9:30 AM	An Update on Juvenile Animal Testing #2562a–2566	Room R08	241
Wednesday 9:30 AM	Moving Beyond Cancer: Current State of the Science of Noncancer Health Effects of Arsenic #2567–2572	Room 220	241
Wednesday 9:30 AM	Paradigm Change in Toxicology: What Will It Take to Bring Advances in the Science of Toxicology into Regulatory Use? #2573a–2579	Room 208	242
Wednesday 9:30 AM	Screening Chemicals for Neurotoxicity Outcomes—Using Large Datasets and Multiple Endpoints to Develop "Toxicity Profiles" #2580–2585	Room 217	242

IS INFORMATIONAL SESSION

Date/Time	Topic/Abstract #	Room	Page
Wednesday 9:30 AM	Tox21 Challenge To Build Predictive Models of Nuclear Receptor and Stress Response Pathways As Mediated by Exposure to Environmental Toxicants and Drugs #2586	Room R04	243

PL PLATFORM SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Wednesday 9:30 AM	Effects of Food-Associated Agents on Inflammation, Metabolic Disease, and Cancer #2587–2593	Room R06	243
Wednesday 9:30 AM	Nrf2 in Redox Biology #2594–2602	Room 206	244

PS POSTER SESSIONS

**Author-attended 9:30 am–11:00 am; otherwise author-attended 11:15 am–12:45 pm. Poster Board Map are on pages 113–117.*

Date/Time		Topic/Abstract #	Room	Page
Wednesday 9:30 AM	*	Computational and Systems Toxicology I #2603–2629 Poster Boards P101–P127	Exhibit Hall	244
Wednesday 9:30 AM		Computational and Systems Toxicology II #2630–2660 Poster Boards P128–P158	Exhibit Hall	246
Wednesday 9:30 AM	*	Risk Assessment 2 #2661–2693 Poster Boards P161–P193	Exhibit Hall	248
Wednesday 9:30 AM		Risk Assessment 3 #2694–2719 Poster Boards P201–P226	Exhibit Hall	250
Wednesday 9:30 AM	*	Biomarkers #2720–2745 Poster Boards P227–P252	Exhibit Hall	251
Wednesday 9:30 AM		Pharmacogenetics/Genetic Polymorphisms #2746–2754 Poster Boards P301–P309	Exhibit Hall	253
Wednesday 9:30 AM	*	Nanotoxicology: *In Vitro* #2755–2789a Poster Boards P310–P345	Exhibit Hall	253
Wednesday 9:30 AM		Nanotoxicology: *In Vivo* #2790–2819a Poster Boards P345–P427	Exhibit Hall	255
Wednesday 9:30 AM	*	Cardiovascular Toxicology #2820–2859 Poster Boards P431–P510	Exhibit Hall	257
Wednesday 9:30 AM		Autoimmunity/Hypersensitivity #2860–2878 Poster Boards P511–P528	Exhibit Hall	260
Wednesday 9:30 AM	*	Pesticides #2879–2918 Poster Boards P531–P610	Exhibit Hall	261
Wednesday 9:30 AM		Ecotoxicology #2919–2956 Poster Boards P611–P648	Exhibit Hall	263

FS FEATURED SESSION

Date/Time	Topic/Abstract #	Room	Page
Wednesday 12:30 PM	Distinguished Toxicology Scholar Award Lecture: Bioactivation: An Initiating Event in Chemical-Induced Tissue Injury	Room R08	266

R ROUNDTABLE SESSION

Date/Time	Topic/Abstract #	Room	Page
Wednesday 12:30 PM	Combination Toxicology: Are We Testing the Right Things? #2957	Room 208	267

IS INFORMATIONAL SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Wednesday 12:30 PM	Updating FDA's Redbook: The Importance of Stakeholder Involvement #2958	Room 217	267
Wednesday 12:30 PM	Why Did the Scientific Program Committee Reject My Proposal? Developing a Good Idea Into an Accepted SOT Session #2959	Room R02	268

EC EDUCATION-CAREER DEVELOPMENT SESSION

Date/Time	Topic/Abstract #	Room	Page
Wednesday 12:30 PM	The Evolution of the Postdoc: Transitioning from Trainee to Professional in the Modern Era #2960	Room 220	268

PS POSTER SESSIONS

**Author-attended 1:15 pm–2:45 pm; otherwise author-attended 3:00 pm–4:30 pm. Poster Board Map are on pages 113–117.*

Date/Time		Topic/Abstract #	Room	Page
Wednesday 1:15 PM	*	Epidemiology and Public Health #2961–2985 Poster Boards P101–P125	Exhibit Hall	268
Wednesday 1:15 PM		Regulation and Policy #2986–3003 Poster Boards P126–P143	Exhibit Hall	270
Wednesday 1:15 PM	*	Food Safety/Nutrition 2 #3004–3028 Poster Boards P146–P170	Exhibit Hall	271
Wednesday 1:15 PM		Tobacco Products #3029–3048 Poster Boards P171–P190	Exhibit Hall	272
Wednesday 1:15 PM	*	Alternative *In Vitro* Toxicity Models #3049–3081 Poster Boards P201–P233	Exhibit Hall	274
Wednesday 1:15 PM		Animal Models of Disease #3082–3095 Poster Boards P236–P249	Exhibit Hall	275
Wednesday 1:15 PM	*	Animal Models: Methods and Measurements #3096–3108 Poster Boards P301–P313	Exhibit Hall	276
Wednesday 1:15 PM		Kidney–Models to Mechanisms and Molecular Biomarkers #3109–3140 Poster Boards P317–P348	Exhibit Hall	277
Wednesday 1:15 PM	*	Cytochrome P450 #3141–3165 Poster Boards P401–P425	Exhibit Hall	279
Wednesday 1:15 PM		Liver—Translational #3166–3188 Poster Boards P431–P453	Exhibit Hall	281
Wednesday 1:15 PM	*	Epigenetics #3189–3220 Poster Boards P501–P532	Exhibit Hall	282
Wednesday 1:15 PM		Reproductive Toxicology #3221–3257 Poster Boards P533–P609	Exhibit Hall	284
Wednesday 1:15 PM	*	Developmental and Juvenile Toxicology #3258–3280 Poster Boards P610–P632	Exhibit Hall	286
Wednesday 1:15 PM		Developmental Toxicology (Non-Rodent) #3281–3300 Poster Boards P633–P652	Exhibit Hall	288

SYMPOSIUM SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Wednesday 2:00 PM	High-Content Imaging for Predictive Toxicology: Discriminating between Adverse and Adaptive Outcomes #3301a–3305	Room 208	289
Wednesday 2:00 PM	Novel Roles of Reactive Oxygen Species (ROS) in Human Diseases: Why ROS Never Gets Stale #3306a–3311	Room R08	289
Wednesday 2:00 PM	Use of the Adverse Outcome Pathway (AOP) Concept to Link Epidemiological to Mechanistic Data on the Correlation of Pesticide Exposures and Parkinson's Disease #3312a–3316	Great Hall B	290

WORKSHOP SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Wednesday 2:00 PM	Advanced Techniques in PBPK Modeling to Improve Quantitative Risk Assessment for Infants and Children #3317a–3321	Room 220	291
Wednesday 2:00 PM	"Breaking Bad": Cardiovascular Autophagy Gone Rogue: A Putative Mechanism of Toxicity and a Drug Target in Disease #3322a–3326	Room 217	291
Wednesday 2:00 PM	*In Vitro* Dosimetry of Engineered Nanomaterials: Too Complicated to Consider, Too Important to Ignore #3327–3332	Room R02	292
Wednesday 2:00 PM	Medical Device Biomaterials: Challenges in Assessing the Toxicity and Biocompatibility of Nanomaterials, Bioabsorbables, and Tissue Scaffolds #3333a–3337	Room R04	292

PLATFORM SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Wednesday 2:00 PM	Heavy Metals: Mechanisms and Disease Pathogenesis #3338–3345	Room R06	293
Wednesday 2:00 PM	Innovations in Toxicology Education #3346–3353	Room 206	293

FEATURED SESSION

Date/Time	Topic/Abstract #	Room	Page
Wednesday 5:00 PM	Translational Impact Award Lecture: Translational Non-Invasive Biomarkers of Acetaminophen-Induced Liver Injury	Room R08	294
Wednesday 5:00 PM	Society of Toxicology and Japanese Society of Toxicology Mini-Symposium: Advances in Metal Toxicity	Room 217	295

EDUCATION-CAREER DEVELOPMENT SESSION

Date/Time	Topic/Abstract #	Room	Page
Wednesday 5:00 PM	"Talksicology": Effective Oral Presentation Techniques #3354	Room 220	295

Thursday

SYMPOSIUM SESSION

Date/Time	Topic/Abstract #	Room	Page
Thursday 9:30 AM	Mitochondrial Dysfunction As a Pathogenic Mechanism and Therapeutic Target for Neurodegenerative Diseases #3355a–3360	Room 208	296

WORKSHOP SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Thursday 9:30 AM	Beyond Benchmark Dose: Advancing Probabilistic and Bayesian Approaches in Hazard Characterization #3361a–3366	Room R02	297
Thursday 9:30 AM	Bringing More Science into the Process of Risk Assessment for Endogenous Chemicals with Exogenous Exposures #3367a–3371	Room 220	297
Thursday 9:30 AM	Developmental Immunotoxicology—Are We Adequately Evaluating Safety? #3372–3376	Room R08	298
Thursday 9:30 AM	Potential Health and Environmental Effects of Unconventional Hydraulic Fracturing #3377a–3381	Room R04	298
Thursday 9:30 AM	Which Human Cell Lines Should I Use? Choosing the Appropriate Biological Systems for High-Throughput Toxicity Testing #3382–3387	Room 217	299

PLATFORM SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Thursday 9:30 AM	Advances in Mammary Gland Biology and Toxicology #3388–3393	Room 206	299
Thursday 9:30 AM	Electronic Cigarette Research #3395–3403	Room R06	300
Thursday 9:30 AM	Flame Retardants #3404–3410	Great Hall B	300

PS POSTER SESSIONS

**Author-attended 9:30 am–11:00 am; otherwise author-attended 11:15 am–12:45 pm. Poster Board Map are on page 118.*

Date/Time		Topic/Abstract #	Room	Page
Thursday 9:30 AM	*	Persistent Organic Pollutants #3411–3427 Poster Boards P101–P117	Great Hall A	301
Thursday 9:30 AM		Disposition and Pharmacokinetics #3428–3449 Poster Boards P118–P139	Great Hall A	302
Thursday 9:30 AM	*	Biotransformation #3450–3465 Poster Boards P140–P155	Great Hall A	303
Thursday 9:30 AM		MicroRNA Biomarkers #3466–3481 Poster Boards P156–P171	Great Hall A	305
Thursday 9:30 AM	*	Nanotoxicology: Carbon Based #3482–3508 Poster Boards P172–P198	Great Hall A	306
Thursday 9:30 AM		Skin Responses and Toxicology #3509–3526 Poster Boards P201–P218	Great Hall A	307
Thursday 9:30 AM	*	Emerging Technologies #3527–3558 Poster Boards P219–P250	Great Hall A	308

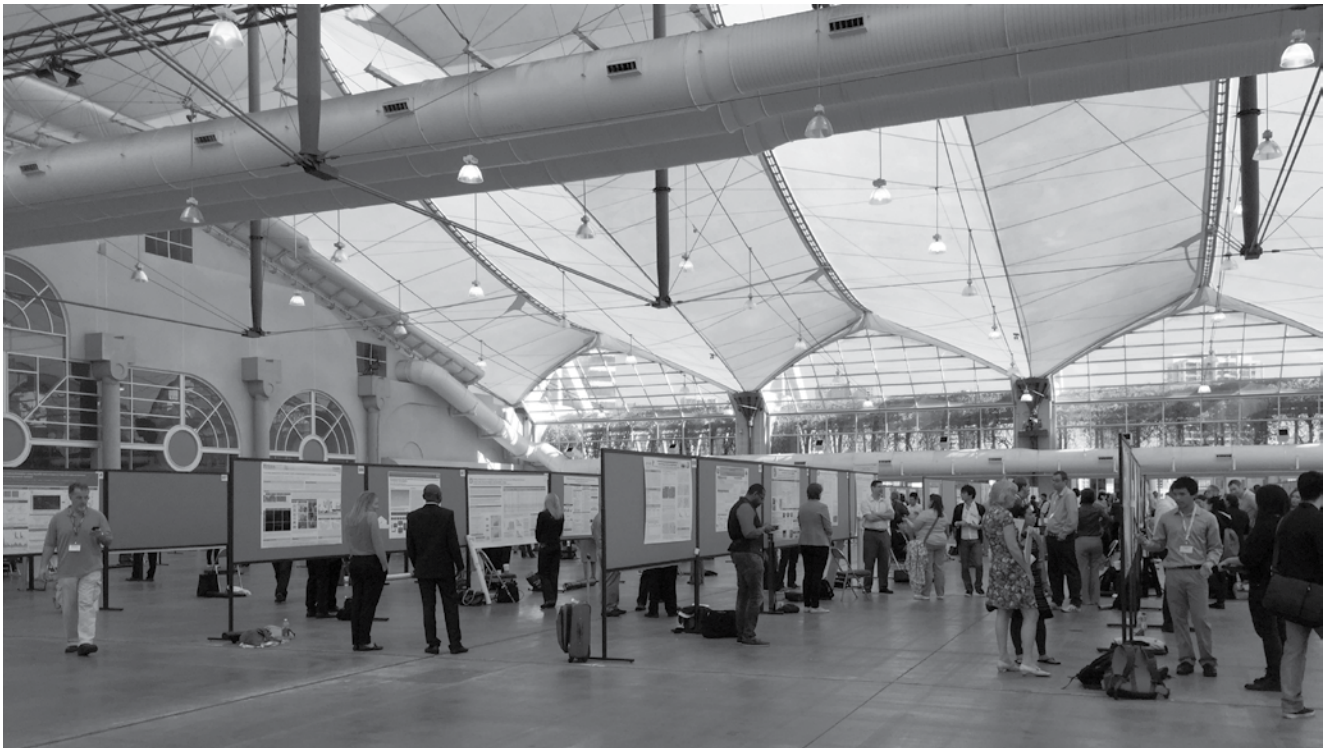
PS POSTER SESSIONS

**Author-attended 9:30 am–12:45 pm. Poster Board Map are on page 118. View abstracts via Mobile Event App, Online Planner, or downloadable PDF.*

Date/Time		Topic/Abstract #	Room
Thursday 9:30 AM	*	Late-Breaking Poster Session	Great Hall A

Late-Breaking Abstracts Scheduled for Thursday

In December, we invited our colleagues to submit an abstract during the late-breaking abstract submission phase. We are pleased with the number of abstracts received for consideration and that an overwhelming number were accepted for the Annual Meeting. These abstracts are presented on Thursday, March 17, along with several dynamic symposium, workshop, and regular poster sessions already scheduled. You can find the poster sessions in Great Hall A. The PDF supplement of the late-breaking abstracts is available to download via the SOT website in early March. The abstracts are not available in the final *Program* but are fully searchable through the SOT Mobile Event App and Online Planner.



Poster Session Schedule and Poster Board Map

Monday, March 14 to Wednesday, March 16—Exhibit Hall—First Floor *(See map below)*

MONDAY

Morning, March 14—9:30 AM to 12:45 PM
Poster Set Up—7:30 AM to 9:30 AM

Afternoon, March 14—1:15 PM to 4:30 PM
Poster Set Up—12:50 PM to 1:15 PM

TUESDAY

Morning, March 15—9:30 AM to 12:45 PM
Poster Set Up—7:30 AM to 9:30 AM

Afternoon, March 15—1:15 PM to 4:30 PM
Poster Set Up—12:50 PM to 1:15 PM

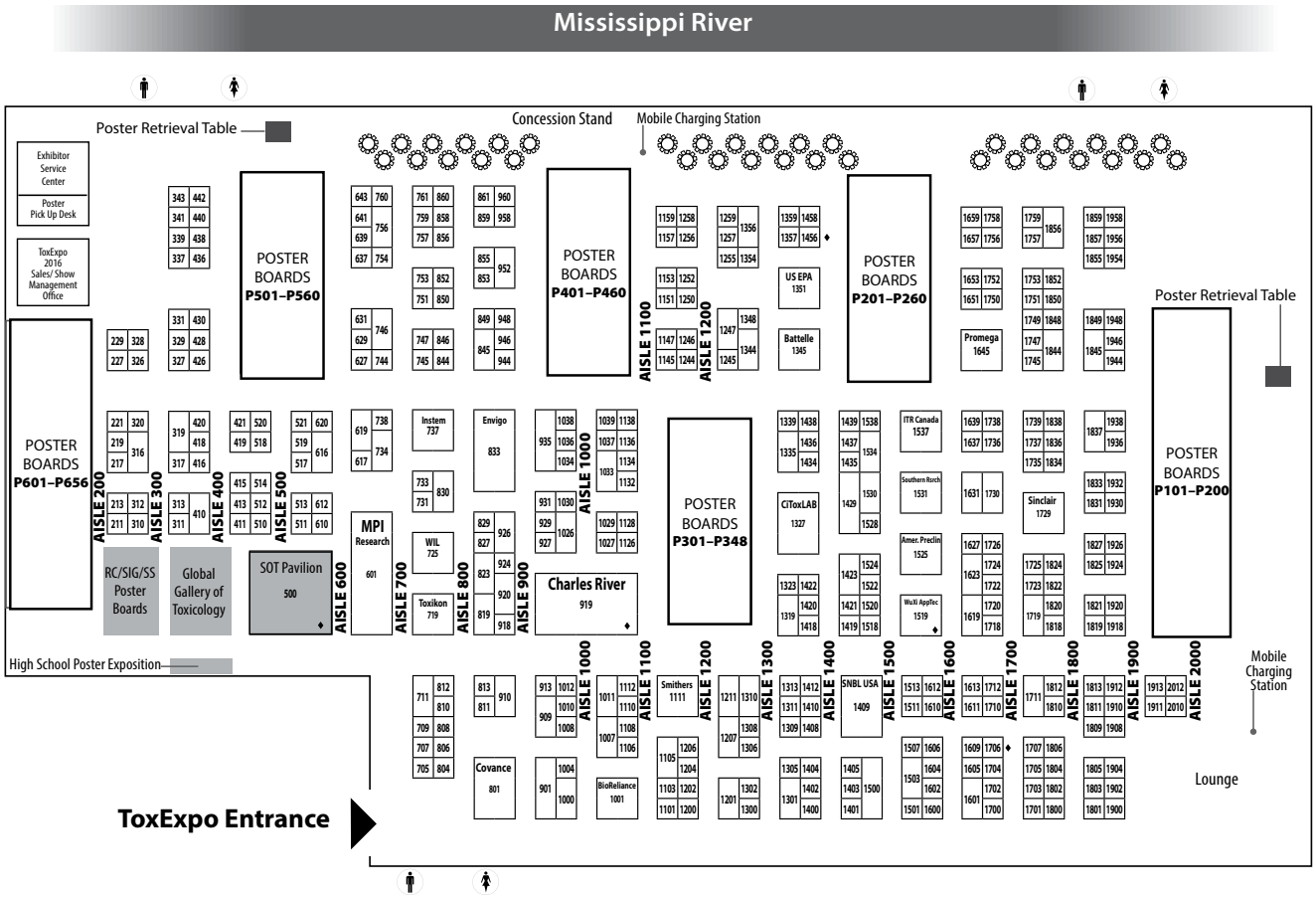
WEDNESDAY

Morning, March 16—9:30 AM to 12:45 PM
Poster Set Up—7:30 AM to 9:30 AM

Afternoon, March 16—1:15 PM to 4:30 PM
Poster Set Up—12:50 PM to 1:15 PM

Thursday, March 17—Great Hall A—First Floor *(See map on page 118)*

Morning, March 17—9:30 AM to 12:45 PM
Poster Set Up—8:30 AM to 9:30 AM



If you do not remove your poster at the end of your session, you will find it on the "Poster Retrieval Tables" located in the back of the Exhibit Hall near poster boards P501–P560; and the far right wall near poster boards P101–P200. Any posters left behind at 4:30 pm on Wednesday will be taken to SOT Headquarters Office, Room 226, Thursday morning, March 17. All posters not claimed by 1:00 pm on Thursday, March 17, will be recycled.

Photography in the ToxExpo and all Poster Sessions is prohibited without the consent of exhibitors or poster presenter(s)/ author(s). Please respect your colleagues' right to privacy.

The numbers listed refer to the poster location that does not change throughout the week. Presenters should display posters ONLY on the date and time communicated in their acceptance notice. A list of Poster Session dates and times with abstract numbers can be found on pages 106–112. The full map of the Exhibit Hall can be found on pages 34–35 to assist you in finding Poster Sessions.

Poster Board Numbering Overview

P501–P560

P556	P557	P558	P559	P560
P555	P554	P553	P552	P551
P546	P547	P548	P549	P550
P545	P544	P543	P542	P541
P536	P537	P538	P539	P540
P535	P534	P533	P532	P531
P526	P527	P528	P529	P530
P525	P524	P523	P522	P521
P516	P517	P518	P519	P520
P515	P514	P513	P512	P511
P506	P507	P508	P509	P510
P505	P504	P503	P502	P501

P401–P460

P456	P457	P458	P459	P460
P455	P454	P453	P452	P451
P446	P447	P448	P449	P450
P445	P444	P443	P442	P441
P436	P437	P438	P439	P440
P435	P434	P433	P432	P431
P426	P427	P428	P429	P430
P425	P424	P423	P422	P421
P416	P417	P418	P419	P420
P415	P414	P413	P412	P411
P406	P407	P408	P409	P410
P405	P404	P403	P402	P401

P201–P260

P256	P257	P258	P259	P260
P255	P254	P253	P252	P251
P246	P247	P248	P249	P250
P245	P244	P243	P242	P241
P236	P237	P238	P239	P240
P235	P234	P233	P232	P231
P226	P227	P228	P229	P230
P225	P224	P223	P222	P221
P216	P217	P218	P219	P220
P215	P214	P213	P212	P211
P206	P207	P208	P209	P210
P205	P204	P203	P202	P201

P101–P200

P196	P197	P198	P199	P200
P195	P194	P193	P192	P191
P186	P187	P188	P189	P190
P185	P184	P183	P182	P181
P176	P177	P178	P179	P180
P175	P174	P173	P172	P171
P166	P167	P168	P169	P170
P165	P164	P163	P162	P161
P156	P157	P158	P159	P160
P155	P154	P153	P152	P151
P146	P147	P148	P149	P150
P145	P144	P143	P142	P141
P136	P137	P138	P139	P140
P135	P134	P133	P132	P131
P126	P127	P128	P129	P130
P125	P124	P123	P122	P121
P116	P117	P118	P119	P120
P115	P114	P113	P112	P111
P106	P107	P108	P109	P110
P105	P104	P103	P102	P101

P601–P656

P604	P603	P602	P601
P605	P606	P607	P608
P612	P611	P610	P609
P613	P614	P615	P616
P620	P619	P618	P617
P621	P622	P623	P624
P628	P627	P626	P625
P629	P630	P631	P632
P636	P635	P634	P633
P637	P638	P639	P640
P644	P643	P642	P641
P645	P646	P647	P648
P652	P651	P650	P649
P653	P654	P655	P656

P301–P348

P304	P303	P302	P301
P305	P306	P307	P308
P312	P311	P310	P309
P313	P314	P315	P316
P320	P319	P318	P317
P321	P322	P323	P324
P328	P327	P326	P325
P329	P330	P331	P332
P336	P335	P334	P333
P337	P338	P339	P340
P344	P343	P342	P341
P345	P346	P347	P348

Exhibit Hall Entrance

Photography in the ToxExpo and all Poster Sessions is prohibited without the consent of exhibitors or poster presenter(s)/author(s). Please respect your colleagues' right to privacy.

The numbers listed on the map refer to the poster board location that does not change throughout the week. Please display your poster only on the date and time assigned to you. The full map of the Exhibit Hall can be found on pages 34–35 to assist you in finding Poster Sessions.

Monday Morning, March 14—9:30 AM to 12:45 PM—Exhibit Hall
Poster Set Up—7:30 AM to 9:30 AM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
Bioinformatics and Toxicology	1072–1099	P101–P128
Systems Biology and Toxicology	1100–1128	P129–P157
Biomonitoring	1129–1147	P158–P176
Neurotoxicology—Emerging Technologies for Neurotoxicity Screening	1148–1160	P201–P213
Neurotoxicology—Developmental Neurotoxicity	1161–1184	P214–P237
Neurotoxicology—Halogenated Hydrocarbons	1185–1198	P238–P251
Neurotoxicology—General	1199–1232	P252–P329
Neurotoxicology of Therapeutic Agents and Abused Substances	1233–1248	P330–P345
Arsenic Toxicity	1249–1267	P346–P416
Toxicity of Metal Mixtures	1268–1277	P417–P426
Respiratory Toxicology	1278–1314a	P427–P514
Cell Death and Apoptosis	1315–1331	P521–P537
Immunotoxicology	1332–1369	P601–P638

Monday Afternoon, March 14—1:15 PM to 4:30 PM—Exhibit Hall
Poster Set Up—12:50 PM to 1:15 PM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
Toxicology Education	1372–1386	P101–P115
Genetic Toxicology I	1387–1411	P116–P140
Genetic Toxicology II	1412–1428	P141–P157
Mixtures	1429–1455	P158–P184
Natural Products	1456–1495	P201–P240
Nanotoxicology: General	1496–1526	P241–P311
Metal Toxicity	1527–1562a	P312–P348
Mercury Toxicity	1563–1572	P401–P410
Neurotoxicology—Mercury Neurotoxicity	1573–1585	P411–P423
Neurotoxicology—Metals-Lead, Cadmium, and Others	1586–1599	P424–P437
Ocular Toxicology	1600–1616	P438–P454
Safety Assessment—Drug Development	1617–1656	P501–P541
Safety Assessment—Drug Discovery	1657–1678	P542–P603
Exposure Assessment	1679–1698	P609–P628

Photography in the ToxExpo and all Poster Sessions is prohibited without the consent of exhibitors or poster presenter(s)/author(s). Please respect your colleagues' right to privacy.

The numbers listed on the map refer to the poster board location that does not change throughout the week. Please display your poster only on the date and time assigned to you. The full map of the Exhibit Hall can be found on pages 34–35 to assist you in finding Poster Sessions.

Tuesday Morning, March 15—9:30 AM to 12:45 PM—Exhibit Hall
Poster Set Up—7:30 AM to 9:30 AM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
Alternative Models: Fish, Worms, and More	1795–1821	P101–P127
Stem Cell Biology and Toxicology	1822–1839	P128–P145
Developmental Basis of Adult Disease	1840–1861	P146–P167
Endocrine Toxicology	1862–1893a	P168–P199
Inflammation in Disease	1894–1917	P201–P224
Inflammation: Methods and Mechanisms	1918–1948	P225–P255
Liver—Mechanisms	1949–1987	P301–P339
Liver—Models	1988–2018	P340–P442
Carcinogenesis I	2019–2054	P423–P458
Carcinogenesis II	2055–2088	P459–P532
Chemical and Biological Weapons	2089–2129	P533–P613
Toxic Inhalants Research	2130–2136	P614–P620
Risk Assessment 1	2137–2170	P621–P654

Tuesday Afternoon, March 15—1:15 PM to 4:30 PM—Exhibit Hall
Poster Set Up—12:50 PM to 1:15 PM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
3D Cell and Organ-on-a-Chip Models	2171–2188	P101–P118
Alternative Models for Ocular and Skin Toxicity	2189–2209	P119–P139
Biological Modeling	2210–2240	P140–P170
Particulate Matter Toxicology	2241–2266	P171–P196
Food Safety/Nutrition 1	2267–2288	P197–P218
Gene Regulation and Signal Transduction	2289–2309	P219–P239
Oxidative Injury and Redox Biology	2310–2333	P240–P303
Neurotoxicology—Dopaminergic Systems and Toxicants	2334–2351	P305–P322
Neurotoxicology—Manganese Neurotoxicity	2352–2368	P323–P339
Neurotoxicology—Neurodegenerative Diseases	2369–2387	P340–P410
Neurotoxicology—Pesticide Neurotoxicity	2388–2415	P411–P438
Receptors	2416–2439	P439–P502
Medical Devices	2440–2454	P506–P520
Non-Pharmaceutical Safety Assessment	2455–2480	P521–P606
Clinical and Translational Toxicology	2481–2496	P609–P624

Photography in the ToxExpo and all Poster Sessions is prohibited without the consent of exhibitors or poster presenter(s)/author(s). Please respect your colleagues' right to privacy.

The numbers listed on the map refer to the poster board location that does not change throughout the week. Please display your poster only on the date and time assigned to you. The full map of the Exhibit Hall can be found on pages 34–35 to assist you in finding Poster Sessions.

Wednesday Morning, March 16—9:30 AM to 12:45 PM—Exhibit Hall
Poster Set Up—7:30 AM to 9:30 AM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
Computational and Systems Toxicology I	2603–2629	P101–P127
Computational and Systems Toxicology II	2630–2660	P128–P158
Risk Assessment 2	2661–2693	P161–P193
Risk Assessment 3	2694–2719	P201–P226
Biomarkers	2720–2745	P227–P252
Pharmacogenetics/Genetic Polymorphisms	2746–2754	P301–P309
Nanotoxicology: *In Vitro*	2755–2789a	P310–P345
Nanotoxicology: *In Vivo*	2790–2819a	P346–P427
Cardiovascular Toxicology	2820–2859	P431–P510
Autoimmunity/Hypersensitivity	2860–2878	P511–P528
Pesticides	2879–2918	P531–P610
Ecotoxicology	2919–2956	P611–P648

Wednesday Afternoon, March 16—1:15 PM to 4:30 PM—Exhibit Hall
Poster Set Up—12:50 PM to 1:15 PM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
Epidemiology and Public Health	2961–2985	P101–P125
Regulation and Policy	2986–3003	P126–P143
Food Safety/Nutrition 2	3004–3028	P146–P170
Tobacco Products	3029–3048	P171–P190
Alternative *In Vitro* Toxicity Models	3049–3081	P201–P233
Animal Models of Disease	3082–3095	P236–P249
Animal Models: Methods and Measurements	3096–3108	P301–P313
Kidney—Models to Mechanisms and Molecular Biomarkers	3109–3140	P317–P348
Cytochrome P450	3141–3165	P401–P425
Liver—Translational	3166–3188	P431–P453
Epigenetics	3189–3220	P501–P532
Reproductive Toxicology	3221–3257	P533–P609
Developmental and Juvenile Toxicology	3258–3280	P610–P632
Developmental Toxicology (Non Rodent)	3282–3300	P633–P652

Photography in the ToxExpo and all Poster Sessions is prohibited without the consent of exhibitors or poster presenter(s)/author(s). Please respect your colleagues' right to privacy.

The numbers listed on the map refer to the poster board location that does not change throughout the week. Please display your poster only on the date and time assigned to you. The full map of the Exhibit Hall can be found on pages 34–35 to assist you in finding Poster Sessions.

Thursday Morning, March 17—9:30 AM to 12:45 PM—Great Hall A
Poster Set Up—8:30 AM to 9:30 AM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
Persistent Organic Pollutants	3411–3427	P101–P117
Disposition and Pharmacokinetics	3428–3449	P118–P139
Biotransformation	3450–3465	P140–P155
MicroRNA Biomarkers	3466–3481	P156–P171
Nanotoxicology: Carbon Based	3482–3508	P172–P198
Skin Responses and Toxicology	3509–3526	P201–P218
Emerging Technologies	3527–3558	P219–P250
Late-Breaking Abstracts	*TBD*	*TBD*

Poster Board Numbers for Late-Breaking Abstracts appear in italics in the map on the right.

Thursday Poster Sessions and all late–breaking abstracts are presented on Thursday in Great Hall A. Please check the Mobile Event App and Online Planner for details. The PDF supplement of these additional abstracts is available to download via the SOT website in early March. These abstracts are not printed in the final *Program*. Poster layout is subject to change based on the final number of accepted late–breaking submissions.

P646	P645	P644	P643	P642	P641	P640	P639	P638	P637	P636	P635	P634	P633	P632	P631
P615	P616	P617	P618	P619	P620	P621	P622	P623	P624	P625	P626	P627	P628	P629	P630
P614	P613	P612	P611	P610	P609	P608	P607	P606	P605	P604	P603	P602	P601	P600	P599
P583	P584	P585	P586	P587	P588	P589	P590	P591	P592	P593	P594	P595	P596	P597	P598
P582	P581	P580	P579	P578	P577	P576	P575	P574	P573	P572	P571	P570	P569	P568	P567
P551	P552	P553	P554	P555	P556	P557	P558	P559	P560	P561	P562	P563	P564	P565	P566
P550	P549	P548	P547	P546	P545	P544	P543	P542	P541	P540	P539	P538	P537	P536	P535
P519	P520	P521	P522	P523	P524	P525	P526	P527	P528	P529	P530	P531	P532	P533	P534
P518	P517	P516	P515	P514	P513	P512	P511	P510	P509	P508	P507	P506	P505	P504	P503
P487	P488	P489	P490	P491	P492	P493	P494	P495	P496	P497	P498	P499	P500	P501	P502
P486	P485	P484	P483	P482	P481	P480	P479	P478	P477	P476	P475	P474	P473	P472	P471
P455	P456	P457	P458	P459	P460	P461	P462	P463	P464	P465	P466	P467	P468	P469	P470
P454	P453	P452	P451	P450	P449	P448	P447	P446	P445	P444	P443	P442	P441	P440	P439
P423	P424	P425	P426	P427	P428	P429	P430	P431	P432	P433	P434	P435	P436	P437	P438
P422	P421	P420	P419	P418	P417	P416	P415	P414	P413	P412	P411	P410	P409	P408	P407
P391	P392	P393	P394	P395	P396	P397	P398	P399	P400	P401	P402	P403	P404	P405	P406
P390	P389	P388	P387	P386	P385	P384	P383	P382	P381	P380	P379	P378	P377	P376	P375
P359	P360	P361	P362	P363	P364	P365	P366	P367	P368	P369	P370	P371	P372	P373	P374
P358	P357	P356	P355	P354	P353	P352	P351	P350	P349	P348	P347	P346	P345	P344	P343
P327	P328	P329	P330	P331	P332	P333	P334	P335	P336	P337	P338	P339	P340	P341	P342
P326	P325	P324	P323	P322	P321	P320	P319	P318	P317	P316	P315	P314	P313	P312	P311
P295	P296	P297	P298	P299	P300	P301	P302	P303	P304	P305	P306	P307	P308	P309	P310
P294	P293	P292	P291	P290	P289	P288	P287	P286	P285	P284	P283	P282	P281	P280	P279
P263	P264	P265	P266	P267	P268	P269	P270	P271	P272	P273	P274	P275	P276	P277	P278
P262	P261	P260	P259	P258	P257	P256	P255	P254	P253	P252	P251	P250	P249	P248	P247
P231	P232	P233	P234	P235	P236	P237	P238	P239	P240	P241	P242	P243	P244	P245	P246
P230	P229	P228	P227	P226	P225	P224	P223	P222	P221	P220	P219	P218	P217	P216	P215
P197	P198	P201	P202	P203	P204	P205	P206	P207	P208	P209	P210	P211	P212	P213	P214
P196	P195	P194	P193	P192	P191	P190	P189	P188	P187	P186	P185	P184	P183	P182	P181
P165	P166	P167	P168	P169	P170	P171	P172	P173	P174	P175	P176	P177	P178	P179	P180
P164	P163	P162	P161	P160	P159	P158	P157	P156	P155	P154	P153	P152	P151	P150	P149
P133	P134	P135	P136	P137	P138	P139	P140	P141	P142	P143	P144	P145	P146	P147	P148
P132	P131	P130	P129	P128	P127	P126	P125	P124	P123	P122	P121	P120	P119	P118	P117
P101	P102	P103	P104	P105	P106	P107	P108	P109	P110	P111	P112	P113	P114	P115	P116

Entrance

Photography in the ToxExpo and all Poster Sessions is prohibited without the consent of exhibitors or poster presenter(s)/author(s). Please respect your colleagues' right to privacy.

The numbers listed on the map refer to the poster board location that does not change throughout the week. Please display your poster only on the date and time assigned to you. The full map of the Exhibit Hall can be found on pages 34–35 to assist you in finding Poster Sessions.

ad·van·tage
/ədˈvan(t)ij/

noun

1. A condition or circumstance that puts one in a favorable or superior position.
   "by attending the luncheon I feel like I have an advantage"

synonyms: upper-hand, edge, lead, leg-up

verb

1. Put in a favorable or more favorable position.

—plan now to attend the—

Research Funding Insights

Explore Research Funding Opportunities and Strategies with Funding Agency Experts

Date: Monday–Wednesday
Time: 9:30 AM–4:30 PM
Location: Room 204
Goals: To facilitate individual discussions with agency experts on all stages of the grant process.

Research Funding Luncheon

In the world of grants, having an advantage helps.

All meeting attendees invited. New investigators are encouraged to attend.

Date: Monday
Time: 12:00 Noon–1:30 PM
Location: Room R01
Goals: To discuss all aspects of the review process from multiple perspectives.

This is your chance to meet with agency review administrators and program officers in a face-to-face environment and discuss your research, your plans, and your needs. Make plans to take advantage of these unique events!

Recording, Photography, and Electronic Device Policies

The Society does not permit photography or the electronic capture of scientific sessions in meeting rooms or the ToxExpo without the consent of the session chair and the presenter(s)/author(s). This policy also includes photographing colleagues against the backdrop of scientific posters on display without the express consent of the presenting author(s).

Photographing exhibit booths is prohibited.

Electronic capture of scientific sessions by any method is prohibited.

All cell phones and electronic devices must be put on mute while attending scientific sessions.

The policies adopted above is enforced by the Society. Those individuals who do not comply are asked to leave the session or ToxExpo floor. If you have any questions regarding these policies, please contact the SOT Headquarters Office.

Session Etiquette for Attendees

Attendees are encouraged to ask questions following the presentations by speakers or at the direction of the moderator. Given the importance of the scientific program to attendees and out of respect for the presenters, we ask that you adhere to the following rules of etiquette:

Cell phones and other electronic devices should be set on mute.

Electronic capture of scientific sessions by any method is prohibited.

Inviting children under the age of 15 and guest/spouse registrants into the Exhibit Hall is prohibited. Session chair must provide consent for the guest/spouse or child to attend the session.

These policies are enforced by the Society. Individuals who do not comply are asked to leave the session. Any items that are left behind in any of the rooms should be taken to the SOT Headquarters Office, Room 226. If you have any questions regarding these polices, please contact the SOT Headquarters staff at Registration.

Safety and Security

The possibility of demonstrators is very real given the nature of our conference. Activities might range from verbal confrontations, protests, and strikes, to riots. We recommend the following procedures:

Have your name badge available upon entering the convention center. Wear your name badge in the convention center. When leaving the facility, remove it so as to blend with other people. Conceal bags and other items that might identify you as an SOT meeting attendee.

If you see a demonstration or protest beginning, please contact any member of the SOT Annual Meeting staff and they will initiate an SOT response. If you see actions that appear threatening, notify the nearest security officer.

Do not engage, defend either side, or subdue person(s) in any type of disturbance. Demonstrators are usually trying to attract media attention. Don't help them!

SOT representatives will respond to media inquiries. Do not participate in interviews or other media responses.

In the unlikely event that outsiders disrupt a scientific session or other event, SOT security officials have developed a contingency plan. Please follow directions from the chairperson and avoid becoming involved in the situation.

Safety Tips

Walk "smart" when you leave the convention center:

Know your destination and the best way to reach it.

Travel along sidewalks in lighted areas at night and don't walk alone.

Establish a "buddy" system with another attendee to walk to and from the convention center.

Share schedules and check up on each other periodically.

Build your awareness of unknown surroundings by reviewing local information.

Laptop computers, smartphones, and electronic tablets are attractive, easy targets for thieves. Be sure they are stored in a secure place.

Jackets with pockets provide a convenient alternative to reduce the chance for lost or stolen handbags.

Our first priority is safety. The best way to stay safe is to be aware of your surroundings and to avoid situations where you feel uncomfortable.

The Program Schedule layout is ordered by date and start time. All scientific sessions and special events are held in the New Orleans Ernest N. Morial Convention Center unless otherwise noted.

SATURDAY EVENING

Saturday Evening, March 12
5:15 PM to 7:30 PM
CC Room 275
(By Invitation Only)

Undergraduate Diversity Program Opening Event

Chairperson(s): *Jorge Naciff, Procter & Gamble Company, Mason, OH.*

Hosted by:
Committee for Diversity Initiatives

Open to CDI Travel Awardees in the Undergraduate Diversity Program and SOT program volunteers assisting with the Undergraduate Program. Full program details are found on pages 85–86.

Saturday Evening, March 12
7:30 PM to 8:30 PM
CC Room 275
(Use Hall H Entrance)

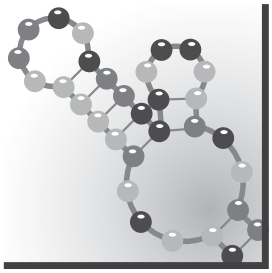
Committee on Diversity Initiatives Reunion

Hosted by:
Committee on Diversity Initiatives

Everyone is encouraged to join the Committee on Diversity Initiatives (CDI) as we celebrate the Undergraduate Diversity Program and the people who make it successful. The CDI Reunion is a great opportunity for former students, organizers of the program, and volunteers to gather and celebrate 27 years of success in encouraging the next generation of scientists. Please welcome and network with this year's undergraduate student participants. The program includes the presentation of the 2016 Perry J. Gehring Diversity Student Travel Award. Dessert, coffee, and tea are served, so please mark your calendar and start the 55th Annual Meeting networking at the CDI Reunion.

SOT | Contemporary Concepts in Toxicology

MARCH 12, 2016 • NEW ORLEANS, LOUISIANA



miRNA Biomarkers for Toxicology

REGISTRATION | SCIENTIFIC PROGRAM | HOUSING
ON
WWW.TOXICOLOGY.ORG/miRNA

SUNDAY MORNING

Sunday Morning, March 13
7:00 AM to 7:45 AM
CC Second Floor
(Ticket Required;
See Mobile Event App or Signage at CE Booths for Room Location)

Continuing Education Sunrise Mini-Course

Full Continuing Education Course details may be found on page 94.

Sunday Morning and Afternoon, March 13
8:00 AM to 3:00 PM
CC Room 275
(Registration Required)

Undergraduate Education Program

Chairperson(s): *Jorge Naciff, Procter & Gamble Company, Mason, OH.*

Hosted by:
Committee for Diversity Initiatives

The Sunday Undergraduate Education Program is open to all undergraduate students who register for this event using the Annual Meeting Registration Form, the undergraduate students and advisors receiving CDI travel funding, Pfizer SOT Undergraduate Travel Awardees, and SOT program volunteers. Full program details are found on pages 85–86.

Sunday Morning, March 13
8:15 AM to 12:00 Noon
CC Second Floor
(Ticket Required;
See Mobile Event App or Signage at CE Booths for Room Location)

Continuing Education Morning Courses

Full Continuing Education Course details may be found on pages 96–99.

SUNDAY AFTERNOON

Sunday Afternoon, March 13
1:15 PM to 5:00 PM
CC Second Floor
(Ticket Required;
See Mobile Event App or Signage at CE Booths for Room Location)

Continuing Education Afternoon Courses

Full Continuing Education Course details may be found on pages 100–104.

Sunday Afternoon, March 13
3:00 PM to 5:00 PM
CC Room 272
(Registration Required)

Undergraduate Education Program: Open Time with Academic Program Directors and Internship Sponsors

Chairperson(s): *Judith T. Zelikoff, PhD, New York University School of Medicine, Tuxedo Park, NY.*

Hosted by:
Committee for Diversity Initiatives

This event is open to undergraduate students who register for this event using the Annual Meeting Registration Form, the undergraduate students and advisors receiving CDI travel funding, Pfizer SOT Undergraduate Travel Awardees, and SOT program volunteers. Academic program directors, internship hosts, undergraduate students, and faculty advisors meet informally to discuss research and graduate study opportunities. Full program details are found on pages 85–86.

Sunday Afternoon, March 13
4:45 PM to 6:30 PM
CC Great Hall B
(All Attendees Welcome)

Awards Ceremony

Pre-Ceremony Musical Performance

4:45 PM to 5:15 PM

Clarence Johnson III performs for SOT Annual Meeting attendees prior to the SOT Awards Ceremony. Known for his fierce and often sultry saxophone sound and astounding virtuosity, New Orleanean Clarence Johnson III enjoys a successful career as a recording and performing artist, an educator, and also appears in films and television. Currently, Clarence is celebrating the national release of his latest recording, "Watch Him Work," his first release in nearly 15 years. The new original material, which features himself and his latest creation, Cornerstone, can best be described as a fresh take on jazz fusion, which is reminiscent of the compositional styles of Stanley Clarke, George Duke, the Brecker Bros., and the Yellow Jackets. Find additional event details on the SOT 2016 Annual Meeting website at **www.toxicology.org/events/am/am2016/socialevents.asp**.

Awards Ceremony

5:15 PM to 6:30 PM

SOT honors our 2016 Honorary Member, SOT award recipients, and our supported award recipients at the SOT Awards Ceremony (pages 58–72) following the pre-ceremony musical performance.

Presentation of plaques are made to:

Honorary Member

Global Senior Scholar Exchange Program

Supported Awards:

- Colgate-Palmolive Award for Student Research Training in Alternative Methods
- Colgate-Palmolive Grants for Alternative Research
- Colgate-Palmolive Postdoctoral Fellowship Award in *In Vitro* Toxicology
- Syngenta Fellowship Award in Human Health Applications of New Technologies

SOT Awards:

- Achievement Award
- Arnold J. Lehman Award
- Board of Publications Best Paper in *Toxicological Sciences*
- Distinguished Toxicology Scholar Award
- Education Awards
- Enhancement of Animal Welfare Award
- Founders Award*
- Leading Edge in Basic Science Award
- Merit Award
- Public Communications Awards
- Translational Impact Award
- Translational/Bridging Travel Award
- Undergraduate Educator Award*

**Supported by the SOT Endowment Fund*

In addition, recipients of the Pfizer SOT Undergraduate Student Travel Awards, SOT Undergraduate Intern Travel Award, and SOT/SOT Endowment Fund/IUTOX Travel Awards are recognized.

SUNDAY EVENING

Sunday Evening, March 13
6:30 PM to 7:30 PM
CC Great Hall A
(All Attendees Welcome)

Welcome Reception

Continue the celebration by attending the Welcome Reception following the Awards Ceremony. The Welcome Reception is a great opportunity to renew friendships and to make new acquaintances. Please join the Society in this kick-off of the Annual Meeting.

Sunday Evening, March 13
7:00 PM to 8:00 PM
CC Lobby A Lounge

25-Year (Or More) Member Reception

If you have been a member of the Society of Toxicology for 25 years or longer, please join your colleagues in recognition and celebration of your contributions to the Society. Be sure to wear your membership anniversary pin.

Sunday Evening, March 13
7:30 PM to 9:00 PM
CC La Nouvelle Orleans Ballroom B
(Ticket Required)

Student/Postdoctoral Scholar Mixer

Hosted by:
Graduate Student Leadership Committee

The Graduate Student Leadership Committee hosts this opportunity for all students and postdoctoral scholars to gather, meet new colleagues, and reestablish relationships in an informal atmosphere at the beginning of the meeting. Learn about being involved in SOT by speaking with student leaders at the SOT component group posters. The GSLC Outstanding Leadership Award is presented during this event. Tickets are obtained at no cost by registering for the Mixer on the Annual Meeting Registration Form. Ticket and meeting badge are required. Complimentary refreshments and a cash bar are available.

MONDAY MORNING

Monday Morning, March 14
8:00 AM to 9:20 AM
CC Great Hall A

Daily Plenary Session: Regenerative Medicine and Tissue Engineering

Building a Heart: From Cells to Tissues to Organs

Lecturer: *Doris Taylor, Texas Heart Institute, Houston, TX.*

Cardiovascular disease (CVD) is the number one cause of death in the United States. However, few treatments for CVD provide a means to regain full cardiac function with no long-term side effects. Novel tissue-engineered products may provide a way to overcome the limitations of current CVD therapies by replacing injured myocardium with functioning tissue or by inducing more constructive forms of endogenous repair. Dr. Taylor will discuss some of the factors that must be considered in the development of tissue-engineered products and review the methods currently being investigated to generate more.

From 3D Microchip to Human Organ Culture Models: Trachea, Bronchi/Bronchiole and Lung Biomimetic Models for Disease Modeling, Drug Discovery, and Toxicology Evaluation

Lecturer: *Joan Nichols, University of Texas Medical Branch, Galveston, TX.*

We have learned a great deal about respiratory tract and lung physiology or pathophysiology of disease from the study of animal disease models, tissues from patients isolated at autopsy or growth of monoclonal human cell populations in two dimensional (2D) cultures. Animal models, mainly mice, have been widely used in research and although animal models can simulate human disease they never fully mirror all aspects of human immune response or pathophysiology of disease. Because of this many drug treatments and vaccines developed solely using animal models have been ineffective when used in patient care. Recent advances in microfabrication technology, microfluidics, and tissue engineering have provided a new approach to the development of human 3D tissue culture models which enable production of robust long-lived human tissue analogs. Use of these models along with more complex 3D human organ culture models, containing multiple cell phenotypes, provides a more reasonable approximation of what occurs in the dynamic *in vivo* microenvironment of human tissues. Microfluidic supported 3D respiratory tract and lung models are currently being used as advanced human testing platforms for evaluating drug response or drug toxicity, hopefully reducing the cost of drug development. Human tissue models may also provide a mechanism for development of personalized medical care based on testing of drugs on a patient's own cells or engineered tissues in the future.

Monday Morning, March 14
6:15 AM to 7:45 AM
CC Room R01
(Registration Required)

SOT Mentoring Breakfast

Endorser(s):
Career Resource and Development Committee
Graduate Student Leadership Committee
Postdoctoral Assembly

The Society of Toxicology recognizes the importance of mentoring in the scientific and professional development of its members. The Career Resource and Development Committee, in conjunction with the Postdoctoral Assembly and Graduate Student Leadership Committee, is pleased to host the fifth annual Mentoring Breakfast.

The Mentoring Breakfast is for SOT members at any career stage—from graduate students to postdoctoral fellows to senior scientists—who are seeking a mentor. Brief presentations are followed by small group discussions led by trained facilitators. Facilitators work to match participants with compatible mentors. Note that mentor information is provided after the Annual Meeting and only mentees should attend the breakfast.

A limit of 50 mentees are accepted on a first-come, first-served basis for this event at a cost of $10/person, which includes a continental breakfast.

Monday Morning, March 14
6:30 AM to 7:45 AM
Hilton Riverside Le Croissant

Molecular and Systems Biology Specialty Section Officers Meeting

Monday Morning, March 14
6:30 AM to 8:00 AM
Marriott at the Convention Center Julia

Carcinogenesis Specialty Section Officers Meeting

Monday Morning, March 14
6:30 AM to 8:00 AM
CC La Nouvelle Orleans Ballroom B

Specialty Section Officers Meetings: Clinical and Translational Toxicology; Dermal Toxicology; Food Safety; Immunotoxicology; *In Vitro* and Alternative Methods; Inhalation and Respiratory; Mechanisms; Neurotoxicology; and Risk Assessment

Monday Morning, March 14
6:30 AM to 8:00 AM
Café Adelaide

Mixtures Specialty Section Officers Meeting

Monday Morning, March 14
6:30 AM to 8:00 AM
CC Room 240

Regulatory and Safety Evaluation Specialty Section Officers Meeting

Monday Morning, March 14
6:45 AM to 7:45 AM
Hilton Riverside Durham

Women in Toxicology Special Interest Group Executive Committee Meeting

Monday Morning, March 14
7:00 AM to 8:00 AM
CC Room 224

Reproductive and Developmental Toxicology Specialty Section Officers Meeting

Monday Morning, March 14
8:00 AM to 5:00 PM
CC Room 275

Undergraduate Diversity Program

Chairperson(s): *Jorge Naciff, Procter & Gamble Company, Mason, OH.*

Hosted by:
Committee for Diversity Initiatives

Monday morning activities are for CDI Travel Award Recipients and Mentors. Full program details are found on pages 85–86.

Monday Morning, March 14
9:00 AM to 10:00 AM
CC Room 213

Exhibitor-Hosted Session: Endocrine Disruption: Research, Analysis, Regulation, and Communication

Presented by:
TERA Center, University of Cincinnati

The purpose of the workshop is to engage stakeholders in endocrine disruption research, analysis, assessment, regulation, and communication so that potential public health risks are better understood and public health safety is achieved.

Monday Morning, March 14
9:00 AM to 10:00 AM
CC Room 211

Exhibitor-Hosted Session: *In Vitro* Proximal Tubule Cell Monolayers As a Predictive Tool for Nephrotoxicity: Investigating Time- and Dose-Dependent Renal Toxicity Using Clinically Relevant Biomarkers

Presented by:
SOLVO Biotechnology

Available using human or rodent primary proximal tubule cells, viable in culture for up to 14 days, we will describe an *in vitro* kidney model retaining uptake and efflux transporter, and drug metabolizing enzyme activity; expression of megalin and cubilin; and modulation of clinically relevant biomarkers in response to toxicants.

Monday Morning, March 14
9:00 AM to 10:00 AM
CC Room 212

Exhibitor-Hosted Session: Key Considerations for the Development of Oligonucleotide-Based Therapeutics

Presented by:
Covance

Oligonucleotide-based therapeutics has the potential to be a major drug class with molecules currently in development for the treatment of a wide range of indications. As this area has evolved so has the learning on how to assess the bio-distribution and safety of these molecules.

Monday Morning, March 14
9:00 AM to 10:00 AM
CC Room 205

Exhibitor-Hosted Session: US EPA and Unilever Present New Research Collaboration to Advance Nonanimal Approaches for Chemical Risk Assessment

Presented by:
US Environmental Protection Agency

US EPA and Unilever will present progress on a research collaboration to develop ground-breaking scientific approaches to better assess the safety of chemicals found in some consumer products without using animal data. US EPA and Unilever are developing a series of case studies based on chemicals of mutual interest.

Monday Morning, March 14
9:30 AM to 11:30 AM
CC Rivergate Room

IUTOX Global Collaboration Coffee

The IUTOX Global Collaboration Coffee offers an opportunity for invited scientific leaders to gain a better understanding of the initiatives of societies around the world and how where opportunities for collaboration exist to address the issues of the global toxicology community. Following this event, attendees will adjourn to the Global Gallery, where leaders may share their posters in the "Representative Attended" poster time from 11:45 am to 12:15 pm.

Monday Morning, March 14
9:30 AM to 4:30 PM
CC Room 204

Research Funding Insights

Hosted by:
Career Resource and Development Committee

Open to all attendees: Representatives from federal agencies funding research, including NIH program and review staff of the Center for Scientific Review and NIEHS, will be available in the Research Funding Room for individual and group conversations to discuss aspects of scientific review or specific grant opportunities. Come by or schedule a meeting in advance with your program officer. New investigators welcome!

Monday Morning, March 14
9:30 AM to 12:15 PM
CC Great Hall B

Symposium Session: Opening the Black Box: Understanding the Molecular Mechanisms of Developmental Toxicity

Developmental Toxicity: Mechanisms and Evaluation

Molecular Toxicology: Mechanistic Insights and Hazard Assessment

Chairperson(s): *Barry McIntyre, NIEHS, Research Triangle Park, NC; and Joshua Gamse, Bristol-Myers Squibb, New Brunswick, NJ.*

Endorser(s):
Mechanisms Specialty Section
Reproductive and Developmental Toxicology Specialty Section

The development of an organism from egg to adult is a complex series of interlocked events, which depends on precise coordination in time and space. When xenobiotic agents interfere with development, they can alter cellular growth and differentiation, leading to permanent changes in tissue/organ structure and function, i.e., developmental malformations. Over the past 40+ years, developmental toxicologists have strived to understand the mechanisms of action resulting in these lesions. With the advent of novel molecular tools, an enhanced understanding of developmental biology, and new model systems, great progress has recently been made in deciphering some of the fundamental drivers of altered development. In this session, we will explore recent findings in developmental

toxicology that have begun to link teratogens with their potential mechanisms of action. The first speaker uses a zebrafish cardiovascular model to explore the role of the G-protein-coupled estrogen receptor on heart rate. In the second presentation, the speaker describes a novel mechanism for arsenic disruption in TGFB-SMAD signal transduction during formation of heart valves and coronary vessels. The third speaker demonstrates how altered TGF-beta and FGF signaling impact the development of the forebrain. Using an *in vitro* murine limb bud culture system and classic histone deacetylase inhibitors, the fourth speaker reveals the role of protein acetylation in the action of some developmental toxicants. Finally, using thalidomide and its analogs, the fifth speaker presents compelling data on the mechanism of thalidomide action in phocomelia. These speakers, who come from a mix of academic and industry backgrounds, will demonstrate how understanding the mechanisms underlying developmental toxicology allows for the prediction of class effects, the discovery of subtle but important developmental changes, and the design of more informative *in vitro* and *in vivo* methods for detecting teratogenicity. (Abstract #1014a)

#1014b	9:35	**Acute Estrogen Exposure Increases Heart Rate via a G-Protein-Coupled Estrogen Receptor Mechanism in Zebrafish.** D. Gorelick. University of Alabama, Birmingham, AL. Sponsor: *B. McIntyre.*
#1015	10:04	**Fetal Arsenic Exposure Disrupts TGFß2-SMAD Signaling and Developmental EMT.** *T. Camenisch*. University of Arizona, Tucson, AZ.
#1016	10:33	**TGFß and FGF Inhibition Elucidates Mechanisms Controlling the Formation of the Diencephalon.** *J. Gamse.* Bristol-Myers Squibb, New Brunswick, NJ.
#1017	11:02	**The Role of Histone Deacetylase Inhibition in Mediating the Effects of Developmental Toxicants on Limb Development.** *B. Hales*. McGill University, Montreal, QC, Canada.
#1018	11:31	**Elucidation of the Mechanism of Action of Thalidomide and IMiD Compounds Gives Novel Insights into Their Pleiotropic Effects.** R. Chopra. Celgene, Summit, NJ. Sponsor: *B. McIntyre*.
	12:00	**Panel Discussion/Q&A.**

Monday Morning, March 14
9:30 AM to 12:15 PM
CC Room R04

Workshop Session: Dietary Exposures to Heterocyclic Amines As a Potential Risk Factor for Neurological Disease

Advances in Neurotoxicology

Chairperson(s): *Jason Cannon, Purdue University, West Lafayette, IN; and Kenneth Turteltaub, Lawrence Livermore National Laboratory, Livermore, CA.*

Endorser(s):
Clinical and Translational Toxicology Specialty Section
Neurotoxicology Specialty Section

Neurodegenerative diseases, such as Parkinson's Disease (PD), have been repeatedly linked to diverse risk factors, including genetics and environmental exposures such as pesticides, solvents, and a variety of heavy metals. Further, epidemiological and genetic data suggest that no single toxicant class or genetic mutation is a major cause of the idiopathic forms of this disease. Aside from coffee (caffeine), dietary factors have not been examined to the same extent as environmental toxicants as potential etiological factors in PD. Heterocyclic aromatic amines (HAAs) may be encountered in a variety of foods, notably cooked meats and drinks. High-temperature cooking and resultant charring can produce several toxic compounds, including HAAs. There is limited knowledge on the neurological effects of HAAs. However, multiple HAAs affect dopamine metabolism, and specific HAAs have been linked to essential tremor and, more recently, PD. This workshop will focus on newly emerging data suggesting a potential role of HAAs in neurological diseases, including PD. A diverse group of experts have been assembled to address this especially timely topic. In fact, recent publications from the speakers' laboratories have shown that HAA blood levels are associated with essential tremor and PD and that *in vitro* and *in vivo* treatments are selectively

toxic to dopaminergic neurons. Speaker expertise includes clinical studies (neurology, Elan Louis), *in vitro* and *in vivo* modeling (neurotoxicology, Jason Cannon), analytical/transport (PhIP quantification/pharmacokinetic analysis in biological fluids and tissue, Kenneth Turteltaub), and biomarkers (exposure and adduct formation, Robert Turesky). The session will begin with a brief introduction of the key findings to date and gaps in the literature. In each of the talks, the speaker will relate how doses in their cellular and animal studies relate to typical human exposures. The first speaker will discuss the association of HAA blood levels in humans with the essential tremor and PD. The second speaker will discuss the utilization of novel blood-brain-barrier models to predict HAA entry into the brain. This speaker will also discuss how this model system, in conjunction with significant pharmacokinetic data collected in both human studies and animal models, might be used in translational studies. The third speaker will discuss data on selective dopaminergic toxicity of specific HAAs. While the relationship between HAAs and essential tremor is much more established, published and preliminary data now suggests that more detailed studies in PD and PD models are needed. Multiple brain systems are affected in PD; however, loss of dopaminergic neurons in the substantia nigra or changes in their function are a major contributor to the characteristic motor phenotypes. Thus, initial studies in primary culture focus on determining if dopamine neurons exhibit heightened sensitivity to specific HAAs, compared to gamma-aminobutyric acid (GABA)-ergic neurons (spared in PD). Emerging data on ET pathophysiology suggests that cerebellar abnormalities may important. Thus, ET-relevant pathologies that should also be investigated will be discussed. The fourth speaker will broadly discuss mechanisms of toxicity and innovative biomarker studies being conducted in humans and animal models. Here, how actual human exposures and systemic biomarkers relate to laboratory animal studies will be discussed. Significant time will be allotted for a critical evaluation of the presentations to identify key gaps in the literature. Given that the literature on HAAs is focused on genotoxicity, the discussion will emphasize the following key gaps: 1) What is the potential overlap with key neurotoxic mechanisms of action? and 2) How should such mechanisms be explored? The limited identification of causative factors of neurological diseases provides an impetus for this timely workshop. (Abstract #1019)

	9:30	**Introduction.** *J. Cannon*. Purdue University, West Lafayette, IN.
#1020	9:40	**Relationship between Blood Harmane Levels and Neurodegenerative Disease.** E. Louis. Yale School of Medicine, New Haven, CT. Sponsor: *J. Cannon*.
#1021	10:10	**Novel Blood-Brain Barrier Models to Assess PhIP Transport into Brain.** *K. Turteltaub*. Lawrence Livermore National Laboratory, Livermore, CA.
#1022	10:40	**PhIP Exposure and Dopaminergic Neuron Toxicity.** *J. Cannon*. Purdue University, West Lafayette, IN.
#1023	11:10	**Heterocyclic Aromatic Amine Exposure: Biomarker Studies from Rodents to Humans.** R. Turesky. University of Minnesota, Minneapolis, MN. Sponsor: *J. Cannon*.
	11:40	**Panel Discussion/Q&A.** *K. Turteltaub.* Lawrence Livermore National Laboratory, Livermore, CA.

Monday Morning, March 14
9:30 AM to 12:15 PM
CC Room 220

Workshop Session: Mitochondria As the Central Target of Environmental Contaminants, Pharmaceutical Agents, and Toxicants: Mechanisms of Toxicity and Disease

Chairperson(s): *Rodrigo Franco, University of Nebraska-Lincoln, Lincoln, NE; and Joel N. Meyer, Duke University, Durham, NC.*

Endorser(s):
Drug Discovery Toxicology Specialty Section
Molecular and Systems Biology Specialty Section
Neurotoxicology Specialty Section

Mitochondrial dysfunction is widely recognized as a central component in the etiology of human diseases such as cancer and neurodegeneration,

as well as in numerous other rare disorders. Furthermore, many pharmaceuticals, drugs, and contaminants have been identified as previously unrecognized mitochondrial toxicants. However, the exact molecular mechanisms by which mitochondrial dysfunction regulates disease progression are poorly understood. In this workshop we will review novel research findings regarding the causative role of mitochondria dysfunction and the resultant alterations in cellular bioenergetics, redox signaling, and DNA-damage response to disease progression induced by environmental contaminants, pharmaceutical agents, and toxicants (substance abuse). We will also discuss advances made by the pharmaceutical industry in investigating mitochondrial toxicities of drugs, and present novel toxicological approaches for metabolomics, high-throughput analysis of bioenergetics, and mitochondrial toxicity, as well as the importance of these approaches for the identification of novel mechanisms of disease progression and environmental and pharmacological/drug abuse risk factors. This topic will be of great importance to basic researchers, graduate students, post-doctoral trainees, and academics across disciplines as well as risk assessors, regulators, and individuals within distinct Specialty Sections. (Abstract #1024)

	9:30	**Introduction.** *R. Franco*. University of Nebraska-Lincoln, Lincoln, NE.
#1025	9:35	**Mitochondrial Redox Signaling Regulates Cellular Metabolism and Drives Cancer Progression.** M. Bonini. College of Medicine. University of Illinois at Chicago, Chicago, IL. Sponsor: *R. Franco*.
#1026	10:03	**Energy Metabolism, Redox Homeostasis, and Dopaminergic Cell Death Induced by Gene-Environment Interactions.** *R. Franco*. University of Nebraska-Lincoln, Lincoln, NE.
#1027	10:31	**Gene-Environment Interactions in Mitochondrial Diseases.** *S. Chan*. Medical University of South Carolina, Charleston, SC.
#1028	10:59	**Genetic and Developmental Stage Sensitivity to Mitochondrial Toxicity.** *J.N. Meyer.* Duke University, Durham, NC.
#1029	11:27	**Drug-Induced Mitochondrial Toxicity—A Decade of Assay Development, a Decade of Learning.** *Y. Will*. Pfizer Inc, Groton, CT.
	11:55	**Panel Discussion/Q&A.**

Monday Morning, March 14
9:30 AM to 12:15 PM
CC Room R02

Workshop Session: Nanotoxicology and Ocular Drug Delivery: One Size Does Not Fit All

Chairperson(s): *Chris J. Somps, Pfizer, Inc., Groton, CT; and Donald A. Fox (OTSS Member), University of Houston, Houston, TX.*

Endorser(s):
Nanotoxicology Specialty Section
Neurotoxicology Specialty Section
Ocular Toxicology Specialty Section

Ocular drug delivery is impeded by numerous barriers the eye evolved to isolate and protect ocular tissues and preserve optimal visual function. For example, the blood-ocular barriers make delivery of therapeutic concentrations of systemically administered drugs more difficult. Local drug delivery (topical or peri-ocular) to ocular structures, at the front and back of the eye, are challenged by the various clearance and diffusional barriers such as lacrimation, mucosal barriers, cornea/sclera, choroidal, vitreous body, etc. Bypassing some of these barriers using direct injection or implants into the vitreous body carries safety, cost, and patient compliance concerns. Nanomaterials, because of their small size and potential to control surface properties and targeting, hold significant promise for improving transport of therapeutic agents across many of these ocular barriers. Hydrogels, polymeric micelles, liposomes, dendrimers, and cyclodextrans are just a few of the nanomaterials currently being developed for improved ocular drug and gene delivery. However, the potential ocular toxicity of these nanomaterials remains to be determined. Moreover, the efficacy and safety associated with their long- term use is unknown. The goal of the proposed session is to bring together academic and industry researchers, as well as government regulators, to further define and

understand the unique safety issues confronting those that are developing and/or using nanoparticles for improved ocular drug delivery. The session will start with a broad overview of nanotoxicology and strategies for assessing the safety of nanoscale materials. The second speaker will focus on the current use of nanomaterials for enhanced delivery of ocular therapeutics to the eye. The third speaker will describe nanoparticles for the treatment of different diseases, particularly those associated with the retina and retinal pigment epithelium. The fourth speaker will discuss the retinotoxicity of current and proposed nanomaterials. The final speaker will address the current US FDA framework and strategies for regulating drug products using nanomaterials for ocular drug delivery. Special emphasis will be placed on the following emerging and evolving concepts as they relate to nano-sized drug delivery platforms for the eye: 1) current and future use of therapeutic nanomaterials for drug and gene therapies, 2) examples of nanomaterial-enabled ocular drug delivery platforms and associated toxicity evaluations, 3) mechanisms of retinotoxicity of nanomaterials, and 4) current US FDA thinking on efficacy and safety of nano-sized ocular drug delivery platforms. (Abstract #1030a)

#1030b	9:35	**Overview of Nanomaterial Toxicology and Strategies for Assessing the Safety of Nanoscale Materials.** *N.J. Walker*. NIEHS-NTP, Durham, NC.
#1031	10:04	**Nanomaterials and Drug Delivery to the Eye.** G.A. Lutty. Johns Hopkins University, Baltimore, MD. Sponsor: *C. Somps*.
#1032	10:33	**Lack of Toxicity Associated with Nanoparticle-Mediated Gene Therapy for Ocular Diseases.** M.I. Naash. University of Houston, Houston, TX. Sponsor: *C. Somps*.
#1033	11:02	**Nanomaterials and Retinal Toxicity.** *W.K. Boyes*. US EPA, Research Triangle Park, NC.
#1034	11:31	**FDA Perspective on Safety Assessment Needs for Nanoparticles Used for Drug Delivery to the Eye.** W.A. Chambers. US FDA, Silver Spring, MD. Sponsor: *C. Somps.*
	12:00	**Panel Discussion/Q&A.**

Monday Morning, March 14
9:30 AM to 12:15 PM
CC Great Hall A

Workshop Session: Scientific Reproducibility: Does This Pose a Problem for 21st Century Toxicology?

♦ **Molecular Toxicology: Mechanistic Insights and Hazard Assessment**

♠ **Recent Advances in Safety Assessment**

Chairperson(s): *J. Craig Rowlands, The Dow Chemical Company, Midland, MI; and Alan Boobis, Imperial College, London, United Kingdom.*

Endorser(s):
Occupational and Public Health Specialty Section
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

The safe use of chemicals relies upon the identification of exposure levels below which there is reasonable certainty of no harm. Traditionally, this has been achieved using studies in experimental animals prospectively and/or epidemiological surveillance prospectively or retrospectively. However, rapid advances in the development of mechanism-based biomarkers of disease, predictive *in vitro* assays and *in silico*-based computational modeling offer the prospect of more efficient, accurate, and relevant assessments. The application of these advances to human clinical and observational studies has the potential to provide investigators with a fuller understanding of human effects from exposure to environmental chemicals and responses to therapeutic agents. However, an increasing number of biomedical journals and funding agencies are raising significant concerns that much of what is published in the biomedical literature cannot be reproduced. Given that the published literature provides much of the basis for the fundamental understanding of a toxicants mechanism(s) of action, this lack of reproducibility raises important challenges for moving toxicology from an animal-based system to a system of mechanism of action-based toxicity predictions. Further, the impact on outcomes and confidence can be significant for human clinical

Abstract #

and observational studies that rely upon biomarkers of human diseases. The workshop will comprise a series of highly focused presentations representing differing points of views of the extent, potential impacts, and solutions for the lack of reproducibility of published biomedical, epidemiological, and toxicological research. Each speaker will provide their views regarding the extent of the problem and, more importantly, approaches that are available to mitigate the problems. (Abstract #1035a)

#1035b	9:35	**Reproducibility and Reliability of Biomedical Research: The Extent of the Problem.** C.G. Begley. TetraLogic Pharmaceuticals, Malvern, PA. Sponsor: *J.C. Rowlands*.
#1036	10:05	**Providing Advice to Risk Managers Based on Imperfect and Potentially Incorrect Information.** *A. Boobis*. Imperial College, London, United Kingdom.
#1037	10:35	**Evidence-Based Approaches for Enhancing the Reproducibility of Toxicological Studies.** *M. Stephens*. CAAT, John Hopkins University, Baltimore, MD.
#1038	11:05	**Interpreting Epidemiologic Studies: Quality Matters.** *J. LaKind*. LaKind Assc., Catonsville, MD.
#1039	11:35	**Addressing Data Reproducibility at the US Environmental Protection Agency Office of Research and Development.** *R.N. Hines*. US EPA, Research Triangle Park, NC.
	12:05	**Panel Discussion/Q&A.**

Monday Morning, March 14
9:30 AM to 12:15 PM
CC Room 217

Workshop Session: The Cancer Risk Assessment for Ingested Hexavalent Chromium: Challenges and Controversies

Toxicity of Metals

Chairperson(s): *Deborah Proctor, ToxStrategies, Inc, Mission Viejo, CA; and Annie Jarabek, NCEA, US Environmental Protection Agency, Research Triangle Park, NC.*

Endorser(s):
Metals Specialty Section
Risk Assessment Specialty Section

In 2008, the National Toxicology Program (NTP) released the findings of its two-year drinking water bioassay of hexavalent chromium (Cr[VI]). NTP concluded that there was clear evidence of carcinogenicity based on increased incidence of small intestinal tumors in mice (at 20,180 mg/L), and oral cavity tumors in rats (at 60,180 mg/L). The tumor data for the mouse small intestine have been used in several regulatory risk assessments from 2008 to 2011, and a linear low-dose extrapolation has been consistently applied based on the conclusion that Cr(VI) acts by an unknown or mutagenic mode of action (MOA). However, recent research challenges that characterization, supporting the hypotheses that intestinal tumors in mice arose by a non-mutagenic MOA involving cytotoxicity with regenerative hyperplasia and genomic instability associated with epigenetic mechanisms. Such data may have implications for low-dose extrapolation approaches for cancer risk assessment, and inform whether linear or nonlinear assumptions are appropriate. Furthermore, Cr(VI) is reduced to Cr(III) (and thus detoxified) in gastric fluid, a kinetic process which may greatly impact Cr(VI) absorption in the small intestine. The relevance of the dose levels administered to rodents by NTP to human exposure levels has also been debated. The lowest administered drinking water concentration was 5,000 ppb Cr(VI). Nationwide data collected by US EPA under the third Unregulated Contaminant Monitoring Rule (UCMR 3) shows that while approximately 80% of samples are below 0.5 ppb (10,000 fold lower than the lowest NTP concentration), 3% of samples were =5 ppb and <0.1% were between 50100 ppb. Recognizing the importance of both low-dose extrapolation and inter-species differences in gastrointestinal toxicokinetics, physiologically based pharmacokinetic (PBPK) models have been developed to estimate target tissue dose and inform these issues. This symposium will present diverse perspectives, with supporting data, regarding approaches for PBPK modeling and analyses of mechanistic data supporting hypothesized MOAs for Cr(VI)-induced gastrointestinal tract tumors.

Abstract #

Resulting implications for dose-response extrapolation will be presented for discussion. (Views expressed in this abstract are those of the authors and do not necessarily represent the views or policies of the US EPA.) (Abstract #1040)

	9:30	**Introduction to Cr(VI) Oral Cancer Risk Assessment.** *D. Proctor*. ToxStrategies, Inc, Mission Viejo, CA.
#1041	9:40	**Toxicokinetic Modeling of Cr(VI) in the Gastrointestinal Tract for Rodent-to-Human Extrapolation.** A. Sasso. US EPA National Center for Environmental Assessment, Washington, DC. Sponsor: *D. Proctor.*
#1042	10:07	**Mechanisms for Cr(VI)-Induced Carcinogenicity: Perspectives from Past and Current Research.** *J.P. Wise*. University of Louisville, Louisville, KY.
#1043	10:34	**Non-Mutagenic MOA for Cr(VI) Involving Intestinal Cytotoxicity and Regenerative Hyperplasia.** *C. Thompson*. ToxStrategies, Inc., Katy, TX.
#1044	11:01	**Systematic Analysis of Mechanistic Information for Cr(VI).** *C. Gibbons*. US EPA National Center for Environmental Assessment, Washington, DC.
#1045	11:28	**Dose-Response Analysis Options for Hexavalent Chromium-Induced Cancers.** *M. Deveau*[1], and I.D. Moffat[2]. [1]University of Ottawa, ON, Canada; and [2]Health Canada, Ottawa, ON, Canada.
	11:55	**Panel Discussion/Q&A.**

Monday Morning, March 14
9:30 AM to 12:15 PM
CC Room 208

Workshop Session: Transient Receptor Potential A1 (TRPA1) Cation Channels: Fluttering Hearts, Headaches and Hot Flashes—Can One "Environmental Sensor" Be the Cause of All the Pain?

Advances in Neurotoxicology

Accreditation Statement: This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Medical Education (ACCME) through the joint providership of The University of Arkansas for Medical Sciences (UAMS) College of Medicine and the Society of Toxicology (SOT). The UAMS College of Medicine is accredited by the ACCME to provide continuing medical education for physicians.

Designation Statement: The UAMS College of Medicine designates this live activity for a maximum of 2.75 *AMA PRA Category 1 Credit(s)*™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Target Audience: Physicians and other health care providers

(Continued)

Abstract #

Learning Objectives: After the activity, the participant will be able to: (1) Identify environmental irritants that activate TRPA1 and their most common sources ; (2) Describe the interaction between volatile toxics such as acrolein and the TRPA1 channel and its role in the health effects of inhaled toxicants; (3) Explain the various different health effects of TRPA1 agonists to patients or individuals who are at higher risk of adverse responses (i.e. elderly); (4) Associate exposure to irritants in tobacco smoke with cardiopulmonary toxicity and appraise the effects of several e-cigarette flavorants; (5) Describe the integrated and protective role of TRPA1 receptors against inhaled toxics; (6) Describe the role of TRPA1 and environmental irritants in triggering the trigeminovascular reflex and migraine; (7) Identify how lifestyle and environmental exposures can alter individual epigenetics; (8) Associate lifestyle and environmental factors with changes in pain threshold and heat sensitivity.

Chairperson(s): *Mehdi Saeed Hazari, US Environmental Protection Agency, Research Triangle Park, NC; and Daniel J. Conklin, University of Louisville, Louisville, KY.*

The following Specialty Sections recommend this session as being of special interest to its members:
Cardiovascular Toxicology Specialty Section
Inhalation and Respiratory Specialty Section
Neurotoxicology Specialty Section

The role of transient receptor potential (TRP) cation channels, particularly TRPA1, in numerous toxicological pathways has garnered great interest over the last decade. These investigations have focused on the ability of TRPA1 to act as an environmental sensor for chemical irritants such as acrolein, formaldehyde, and chloramines, which are found in disinfectants, but also as a mediator of pain, inflammation, and acute physiological changes given it is a target of reactive oxygen species such as hydrogen peroxide and even endogenous agonists such as 4-hydroxynonenol. These features, as well as its presence on sensory neurons throughout the body, make TRPA1 an important component in the mode of toxicity of not only gaseous irritants, but also chemicals transmitted in water or by direct contact with the skin. Although it has become clear that TRPA1 contributes to the acute adverse health effects of exposure, new studies have now revealed that it is also involved in the development and progression of chronic diseases. This latter phenomenon is likely related to variations in the TRPA1 gene, which manifest at a young age, but also due to a lifetime of accrued epigenetic changes that essentially alter the responsiveness of an individual to a given exposure. Therefore, this session will highlight the newly understood multifaceted roles of TRPA1 in environmental sensing. The presentations will focus on a broad array of topics including how TRPA1 mediates acute cardiovascular effects after inhalation of air pollutants. Findings will show that inhalation of not only typical TRPA1-activating gaseous irritants, but also particulate matter, causes cardiac arrhythmogenesis as well as vascular responses through TRPA1- mediated mechanisms. Attendees will also hear about the role of TRPA1 in the masking effects of flavorants such as menthol and cinnamon in e-cigarettes, which has important implications in both studying the health effects of these alternative tobacco products and their potential regulation. In addition, chemical sensitivity to environmental irritants will be explored in relation to TRPA1 and trigeminal-vascular mechanisms, which are nasal sensory pathways that alter blood flow to the brain and are linked to episodic headaches. Finally, the broader implications of TRPA1 variability, lifestyle, and environment will be addressed from an epigenetic perspective in a study of identical twins to demonstrate links to susceptibility and chronic pain. (Abstract #1046a)

	9:30	**Introduction.** *Mehdi Hazari*. US EPA, Research Triangle Park, NC.
#1046b	9:35	**TRP Ion Channels as Key Targets of Tobacco and Electronic Cigarette Irritants and Flavor Additives.** *S.E. Jordt.* Duke University, Durham, NC.
#1047	10:05	**Examining the Role of TRPA1 in Air Pollution-Induced Cardiac Arrhythmias and Autonomic Imbalance.** *M.S. Hazari*. US EPA, Research Triangle Park, NC.

Abstract #

#1048	10:35	**From Tobacco Smoke to Gas Attacks—How TRPA1 Modulates Cardiopulmonary Toxicity of Acrolein.** *D.J. Conklin*. University of Louisville, Louisville, KY.
#1049	11:05	**TRPA1 and Meningeal Vasodilatation Due to Environmental Irritants–Mechanisms of Migraine.** J. Hurley. Indiana University, Indianapolis, IN. Sponsor: *M.S. Hazari.*
#1050	11:35	**Epigenetic Changes in the TRPA1 Promoter Show Pain Sensitivity Is Affected by Lifestyle and Environment.** S. McMahon. King's College, London, London, United Kingdom. Sponsor: *M.S. Hazari*.
	12:05	**Panel Discussion/Q&A.**

Monday Morning, March 14
9:30 AM to 12:15 PM
CC Room R08

Regional Interest Session: The Toxicological Implications of the Gulf Oil Spill: Research Accomplishments and Research Needs

Health and Environmental Impacts of Manmade and Naturally Released Toxicants

Accreditation Statement: This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Medical Education (ACCME) through the joint providership of The University of Arkansas for Medical Sciences (UAMS) College of Medicine and the Society of Toxicology (SOT). The UAMS College of Medicine is accredited by the ACCME to provide continuing medical education for physicians.

Designation Statement: The UAMS College of Medicine designates this live activity for a maximum of 2.75 *AMA PRA Category 1 Credit(s)*™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Target Audience: Physicians and other health care providers

Learning Objectives: After the activity, the participant will be able to: (1) Examine the role of toxicological science in addressing human exposure to environmental contaminants associated with technological disasters; (2) Describe transdisciplinary environmental epidemiological study designs tailored to addressing complex population-based environmental health threats; (3) Apply the findings associated with the impact of interactions between chemical and non-chemical stressors on human health in clinical- and other health care delivery settings.

Chairperson(s): *Bernard Goldstein, University of Pittsburgh, Pittsburgh, PA; and Maureen Lichtveld, Tulane University, New Orleans, LA.*

The following Specialty Section recommends this session as being of special interest to its members:
Risk Assessment Specialty Section

This session will focus on existing toxicological research concerning the impact of the Gulf Oil Spill on human health, discuss the many remaining uncertainties requiring toxicological research, and review the availability to toxicological scientists of the more than $1 billion that has or will be spent in different programs on research related to preventing and to understanding the potential impact of future oil spills affecting American coastal waters and communities. More than five years ago the Deepwater Horizon explosion released millions of barrels of oil into the Gulf of Mexico over a five-month period. The chemical and physical characteristics of this crude oil changed over time because of its interaction with sea, shore and sun. Much of it was burned at sea, releasing combustion products. An unprecedented amount of a chemical dispersant sprayed on the oil spill added to the potential toxicological implications. The potential impact on seafood safety also has been a significant issue, with

Abstract #

concern both about health effects to those ingesting seafood as well as the economic and social implications to Gulf communities dependent on gathering seafood. After the spill, a Society of Toxicology Working Group developed a two-page description of the toxicological implications aimed broadly at the public and at decision makers: www.toxicology.org/pubs/docs/pr/toxtopics/deepwater_oil_spill.pdf. This serves as a baseline for the proposed seminar that will be co-chaired by Maureen Lichtveld, the chair of the Department of Global Environmental Health Sciences at Tulane University School of Public Health and Tropical Medicine, who has been actively involved in the oil spill response, and Bernard Goldstein of the University of Pittsburgh, who has reviewed the subject with Dr. Lichtveld (*New Engl J Med* 364:1334–1348, 2011) and has been significantly involved in three of the programs funding oil spill activities. Dr. Goldstein was also involved in the SOT Communications Strategy that led to the SOT Working Group document. The opening presentation will be delivered by Linda Birnbaum, director of the NIEHS, who will provide an overview of the NIEHS response that has led to funding for the large majority of oil spill toxicological research and for future research needs. This will be followed by scientists directly involved in research related to the oil spill. Cornelius Elferink of the University of Texas Medical Branch will present studies related to petrogenic PAH contamination in Gulf seafood and its implications to local seafood consumers, including use of a PAH assay dependent on aryl hydrocarbon receptor responsiveness. Jeffrey Wickliffe will present information from the NIEHS consortia (Tulane, Texas Medical Branch, University of Florida and Louisiana State University) relevant to assessing the risks of seafood contamination. Dr. Lichtveld will discuss the utilization of toxicological research in epidemiological studies evaluating the impact of the oil spill and other Gulf area stressors on the health of vulnerable populations. Last, Dr. Goldstein will build upon the previous presentations, discuss the extent to which toxicological research has provided answers to the questions about potential human health impacts raised by the SOT Working Group, and describe the many active research initiatives providing funding for oil spill research and critique the extent to which toxicological research has been included. (Abstract #1051a)

	9:30	**Introduction.**
#1051b	9:40	**Gulf Oil Spill Response: Health Research, Community-Academic Partnerships, Lessons Learned, and Future Preparedness.** *L.S. Birnbaum*. NIEHS, Research Triangle Park, NC.
#1052	10:15	**A Toxicological Assessment of Petrogenic PAH Contamination in Gulf Seafood Following the Deepwater Horizon Oil Disaster.** *C.J. Elferink*. University of Texas Medical Branch, Galveston, TX.
#1053	10:40	**Human Health Risk Assessments Regarding Consumption of Fish and Shellfish from the Northern Gulf of Mexico Following the Deepwater Horizon Accident: Results Across Three Academic Research Consortia.** *J. Wickliffe.* Tulane University, New Orleans, LA.
#1054	11:05	**Linking Bench to Trench: Embedding Toxicological Science in Environmental Epidemiologic Studies to Unravel Complex Health Threats in Gulf Coast Reproductive-Age Women and Infants.** *M. Lichtveld*. Tulane University, New Orleans, LA.
#1055	11:30	**Opportunities and Needs for Toxicological Research Related to the Gulf Oil Spill.** *B. Goldstein*. University of Pittsburgh, Pittsburgh, PA.
	11:55	**Panel Discussion/Q&A.**

Abstract #

Monday Morning, March 14
9:30 AM to 12:15 PM
CC Room 206

PL

Platform Session: Investigating Mode of Action in Chemical Carcinogenesis

Chairperson(s): *B. Bhaskar Gollapudi, Exponent, Inc., Midland, MI; and Matthew J. LeBaron, The Dow Chemical Company, Midland, MI.*

#1056	9:30	**Time-Course Interactions Between Cell Proliferation and DNA Sequence Variants in a Mouse Model of Latent Carcinogenicity.** C.E. Wood, W. Ward, B. Chorley, G. Carswell, A. Fisher, A. DeAngelo, and *S.D. Hester*. US EPA, Research Triangle Park, NC.
#1057	9:50	**Metabolic Enzyme Activity Is Not Necessary for CAR-Mediated Liver Tumor Formation: A Case Study with Two Agrochemicals.** *M.J. LeBaron*[2], J. LaRocca[1], M. Schisler[2], L. Kan[2], and *R.J. Rasoulpour*[1]. [1]Dow AgroSciences, Indianapolis, IN; and [2]The Dow Chemical Company, Midland, MI.
#1058	10:10	**Mode of Action (MOA) of Triclosan Induced Mouse Liver Tumors.** *Z. Wang*, *X. Li*, and *J.E. Klaunig*. Indiana University, Bloomington, IN.
#1059	10:30	**Histone Modification Changes Reveal Target Organ Carcinogenicity of the Non-Genotoxic Liver Carcinogen Methapyrilene in Fischer 344 Rats.** S. Shpyleva, I. Kindrat, *F.A. Beland*, *T. Chen*, and *I.P. Pogribny*. National Center for Toxicological Research, Jefferson, AR.
#1060	10:50	**Interlaboratory Transferability of a Multiplexed Flow Cytometric Assay That Provides Information on Genotoxic Mode of Action.** S. Bryce[3], D. Bernaki[3], *J. Bemis*[3], *S. Dertinger*[3], R. Spellman[5], M. Engel[5], M. Schuler[5], A. Zeller[2], A. Sutter[1], S. Wilde[1], U. Hemmann[6], M. Ruppert[6], B. Meyerhoefer[6], E. Lorge[7], and P. Heikkinen[4]. [1]Bayer HealthCare AG, Berlin, Germany; [2]F. Hoffman-La Roche, Basel, Swaziland; [3]Litron Labs, Rochester, NY; [4]Orion Corporation, Esspo, Finland; [5]Pfizer, Groton, CT; [6]Sanofi-Aventis, Frankfurt, Germany; and [7]Servier Group, Gidy, France. Sponsor: *S. Dertinger.*
#1061	11:20	**Diet-Induced Obesity Increases the Frequency of Pig-a Mutations in Erythrocytes of Male Mice.** *M. Wilson*[2], *S. Dertinger*[1], *D. Torous*[1], *S. Avlasevich*[1], B. Simon-Friedt[2], and *J. Wickliffe*[2]. [1]Litron Laboratories, Rochester, NY; and [2]Tulane University, New Orleans, LA.
#1062	11:45	**DNA Repair by MGMT and AAG in the Protection Against Colorectal Carcinogenesis.** B. Kaina. University Medical Center, Mainz, Germany. Sponsor: *E. Fritsche.*

Monday Morning, March 14
9:30 AM to 12:15 PM
CC Room R06

PL

Platform Session: Ozone Research

♥ **Health and Environmental Impacts of Manmade and Naturally Released Toxicants**

Chairperson(s): *Urmila Kodavanti, US Environmental Protection Agency, Research Triangle Park, NC; and Robert Devlin, US Environmental Protection Agency, Research Triangle Park, NC.*

#1063	9:30	**Innate Lymphoid Cells Mediate Type 2 Immunity in the Lungs of Mice Repeatedly Exposed to Ozone.** K.M. White[2], *J. Harkema*[1], and K. Kumagai[1]. [1]Michigan State University, East Lansing, MI; and [2]Spelman College, Atlanta, GA.

Abstract #

#1064 9:45 **Scavenger Receptor BI Regulates Pulmonary Inflammation after Ozone Exposure.** R.M. Tighe[1], A. Birukova[1], M.J. Yaeger[2], B. Luo[2], M.B. Fessler[3], *C.J. Wingard*[2], and *K.M. Gowdy*[2]. [1]Duke University, Durham, NC; [2]East Carolina University, Greenville, NC; and [3]Nathional Institutes of Environmental Health Sciences, Research Triangle Park, NC.

#1065 10:00 **Comparative Toxicity of Simulated Smog Atmospheres in Healthy and Allergic Mice.** *M. McGee*[1], L. Copeland[2], Q. Krantz[2], C. King[2], J. Krug[2], C. Wood[2], *M. Gilmour*[2], and *S. Gavett*[2]. [1]Oak Ridge Institute for Science, and Education, Oak Ridge, TN; and [2]US EPA, Research Triangle Park, NC.

#1066 10:15 **Coconut, Fish, and Olive Oil-Rich Diets Modify Ozone-Induced Metabolic Effects.** *S.J. Snow*[1,2], *H. Tong*[1], *D. Miller*[3], M. Schladweiler[1], J. Richards[1], D. Andrews[1], and *U. Kodavanti*[1]. [1]US EPA, Durham, NC; [2]ORISE, Durham, NC; and [3]UNC, Chapel Hill, NC.

#1067 10:30 **Ozone-Induced Pulmonary Injury and Vascular Contractility Are Differentially Impacted by Coconut, Fish, and Olive Oil-Rich Diets.** M.C. Schladweiler[3], *S. Snow*[1,3], *H. Tong*[3], V. Bass[1,2], J. Richards[3], R. Jaskot[3], and *U. Kodavanti*[3]. [1]ORISE, Rtp, NC; [2]UNC, Chapel Hill, NC; and [3]US EPA, Durham, NC.

#1068 10:45 **Active versus Sedentary Lifestyle from Childhood to Adult and Susceptibility to Ozone: An Animal Model.** *C.J. Gordon*, P.M. Phillips, A.F. Johnstone, A. Ledbetter, M.C. Schladweiler, *S.J. Snow*, and *U.P. Kodavanti*. US EPA, Research Triangle Park, NC.

#1069 11:00 **Acute Ozone-Induced Pulmonary and Systemic Metabolic Effects Are Diminished in Adrenalectomized Rats.** *D.B. Miller*[2], *M.C. Schladweiler*[1], *S.J. Snow*[1], J.E. Richards[1], *D.L. Andrews*[1], *A.J. Ghio*[1], A.D. Ledbetter[1], and *U.P. Kodavanti*[1]. [1]US Environmental Protection Agency, Research Triangle Park, NC; and [2]University of North Carolina Chapel Hill, Durham, NC.

#1070 11:15 **Inhalation of Simulated Smog Affects Cardiac Function in Mice.** *H. Tong*[1], Q. Krantz[2], M. McGee[2], J. Krug[2], C. King[2], and *S. Gavett*[2]. [1]US EPA, Chapel Hill, NC; and [2]US EPA, Research Triangle Park, NC.

#1071 11:40 **Changes in DNA Methylation Associated with Acute Ozone Exposures in Healthy Human Subjects.** *J. Mirowsky*[4], M.-A. Bind[2], B. Coull[1], Z. Liu[1], J. Schwartz[1], D. Diaz-Sanchez[3], K. Duncan[4], and *R. Devlin*[3]. [1]Harvard University, Boston, MA; [2]Harvard University, Cambridge, MA; [3]United States Environmental Protection Agency, Chapel Hill, NC; and [4]University of North Carolina, Chapel Hill, NC.

Abstract #

Monday Morning, March 14
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Bioinformatics and Toxicology

♠ Recent Advances in Safety Assessment

Chairperson(s): *Mark Gosink, Pfizer Inc., Groton, CT.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *9:30 AM–11:00 AM*

#1072 **Poster Board Number P101**
Bioinformatics Choices Substantially Impact Isoform Analysis of RNA-Seq Data from a Toxicogenomics Study. J.Z. Xu[2], X. Chen[1], S. Subramani[2], B. Gong[2], and *W. Tong*[2]. [1]Harbin Medical University, Harbin, Heihongjiang, China; and [2]National Center for Toxicological Research, Jefferson, AR.

#1073 **Poster Board Number P102**
Utilizing RNA-Seq to Increase the Sensitivity of a Micropatterned Human Hepatocyte Co-Culture Platform (HepatoPac®) in Identifying Human Drug Induced Liver Injury. *P. Koza-Taylor*[2], S. Mathur[2], O. Ukairo[1], O. Irrechukwu[1], *M. Lawton*[2], and *M. Aleo*[2]. [1]Hepregen, Medford, MA; and [2]Pfizer, Groton, CT.

#1074 **Poster Board Number P103**
Evaluation of the Literature Prioritization Capabilities of SWIFT-Review, a Tool for Conducting Systematic Reviews of Environmental Health Questions. B.E. Howard[2], K. Miller[2], J. Phillips[2], *K. Thayer*[1], and R. Shah[2]. [1]National Institute of Environmental Health Sciences, Research Triangle Park, NC; and [2]Sciome, LLC, Research Triangle Park, NC.

#1075 **Poster Board Number P104**
Using Literature Network Analysis to Evaluate Information Gained from ToxCast Chemical Screening. S. Watford, and *M. Martin*. US EPA, Research Triangle Park, NC.

#1076 **Poster Board Number P105**
Elucidating the Molecular Interactions of PTEN Tumor Supressor. S. Yeguvapalli, and *K.N. Chitrala*. Sri Venkateswara University, Tirupati, India.

#1077 **Withdrawn.**

#1078 **Poster Board Number P107**
An Adaptive Method for Normalization of MicroRNA Array Data. Y. Zhu[1], Q. Zhao[2], *K. Staflin*[1], D. Sheinson[1], M. Sweeney[1], J. Tarrant[1], *W. Proctor*[1], J. Vogt[1], and M. Tseng[1]. [1]Genentech, Inc., South San Francisco, CA; and [2]Yale University, New Haven, CT.

#1079 **Poster Board Number P108**
Network Analysis on ToxCast Data. H. Ye, H. Luo, H. Ng, S.D. Sakkiah, *W. Tong*, and H. Hong. National Center for Toxicological Research, Jefferson, AR. Sponsor: *W. Tong.*

#1080 **Poster Board Number P109**
Inferring Transcriptional Regulatory Networks for Alzheimer's Insights: Brain *In Situ* Hybridization Maps as an Alternative to Microarrays. *G.K. Acquaah-Mensah*[1], and R.C. Taylor[2]. [1]Massachusetts College of Pharmacy, and Health Sciences, Worcester, MA; and [2]Pacific Northwest National Laboratory, Richland, WA.

Abstract #

#1081 **Poster Board Number P110**
Metabolomics Investigation of Xenobiotics and Emtabolic Pathway Networks in Tumors, Adjacent Mucosa, and Stool from Colorectal Cancer Patients. D.G. Brown, and *E.P. Ryan*. CSU, Fort Collins, CO.

#1082 **Poster Board Number P111**
Novel Computational Approaches for High Content Image Analyses (HCA) of Organoid Neurosphere Cultures *In Vitro*. M.R. Schmuck[1], T. Temme[2], M. Barenys[1], A. Mosig[2], and *E. Fritsche*[1]. [1]IUF-Leibniz Research Institute for Environmental Medicine, Duesseldorf, Germany; and [2]Ruhr University Bochum, Bochum, Germany.

#1083 **Poster Board Number P112**
Predicting Chemical-Induced Human Organ Injuries Based on Gene Expression Changes Caused by Chemical Treatment of Cultured Human Cells. R. Liu, X. Yu, and *A. Wallqvist*. DoD Biotechnology High Performance Computing Software Applications Institute, Frederick, MD.

#1084 **Poster Board Number P113**
Multi-Omic Analysis of Effects of Estrogen Agonists Using *In Vitro* and *In Vivo* Models Combining Genomics and Metabolomics Data. C.B. Livi[1], R.A. Fasani[1], D.R. Choudhury[1], M. Rosenberg[1], R. Chen[3], H. Li[3], *A. Fornace*[3], *J.D. Yager*[5], S. Odwin-DaCosta[5], *K. Boekelheide*[2], *M.M. Vantangoli*[2], S. Madnick[2], *M.E. Andersen*[4], *P.D. McMullen*[4], S. Pendse[4], A. Maertens[5], L. Zhao[5], T. Luechtefeld[5], A. Kleensang[5], M. Bouhifd[5], *N. Garcia-Reyero*[6], and *T. Hartung*[5]. [1]Agilent Technologies, Santa Clara, CA; [2]Brown University, Providence, RI; [3]Georgetown University, Washington, DC; [4]Hamner Institutes for Health Sciences, Research Triangle Park, NC; [5]Johns Hopkins University, Baltimore, MD; and [6]US Army Engineer Research, and Development Center, Vicksburg, MS.

#1085 **Poster Board Number P114**
Molecular Modeling of AhR Ligand Binding Domain Interactions with 2,3,7,8-Tetrachlorodibenzo-p-dioxin, Indole-3-Carbinol and Resveratrol. K.N. Chitrala[1], *P. Nagarkatti*[1,2], and *M. Nagarkatti*[1,2]. [1]University of South Carolina, School of Medicine, Columbia, SC; and [2]WJB Dorn VA Medical Center, Columbia, SC.

#1086 **Poster Board Number P115**
The Comparative Toxicogenomics Database (CTD): Expanding Exposome and Phenotype Content to Elucidate Chemical-Disease Relationships. *C.J. Mattingly*[2], *C.J. Grondin*[2], R. Johnson[2], D. Sciaky[2], B.L. King[1], J. Wiegers[2], T.C. Wiegers[2], and *A.P. Davis*[2]. [1]Mount Desert Island Biological Laboratory, Salisbury Cove, ME; and [2]NCSU, Raleigh, NC.

#1087 **Poster Board Number P116**
ToxReporter: Viewing the Genome Through the Eyes of a Toxicologist. *M. Gosink*. Pfizer Inc., Groton, CT.

#1088 **Poster Board Number P117**
Anticancer Activity of Natural DNA Methyltransferase Inhibitors. *W. Maldonado-Rojas*[1], *M. Olivero-Acosta*[1], and *E. Melendez*[2]. [1]University of Cartagena, Cartagena, Colombia; and [2]University of Puerto Rico, Mayagüez, Puerto Rico.

Abstract #

#1089 **Poster Board Number P118**
Prenatal Bisphenol A Exposure Induces Changes in Global and Individual Transposon DNA Methylation in Both Mice and Humans. *C. Faulk*[2], J. Kim[1], *M. Sartor*[1], and *D. Dolinoy*[1]. [1]University of Michigan, Ann Arbor, MI; and [2]University of Minnesota, Minneapolis, MN.

#1090 **Poster Board Number P119**
Mining the Tox21 Literature with SWIFT-Review. B.E. Howard[2], J. Phillips[2], K. Miller[2], *K. Thayer*[1], and R. Shah[2]. [1]National Institute of Environmental Health Sciences, Research Triangle Park, NC; and [2]Sciome, LLC, Research Triangle Park, NC.

#1091 **Poster Board Number P120**
A Bioinformatics Strategy to Enhance DILI Prediction by Integrating Diverse Predictive Models. K. McEuen[1,2], L. Wu[1], S. Thakkar[1], *W. Tong*[1], and *M. Chen*[1]. [1]National Center for Toxicological Research, Jefferson, AR; and [2]The University of Arkansas at Little Rock, and the University of Arkansas for Medical Sciences, Little Rock, AR. Sponsor: *M. Chen*.

#1092 **Poster Board Number P121**
Integrative Analyses of miRNA and Proteomics Identify Potential Biological Pathways Associated with Onset of Pulmonary Fibrosis in the Bleomycin Rat Model. S. Fukunaga[1,2], A. Kakehashi[1], K. Sumida[2], M. Kushida[2], H. Asano[2], M. Gi[1], and H. Wanibuchi[1]. [1]Department of Molecular Pathology, Osaka City University Graduate School of Medicine, Osaka, Japan; and [2]Environmental Health Science Laboratory, Sumitomo Chemical Co., Ltd., Osaka, Japan. Sponsor: *T. Yamada*.

#1093 **Poster Board Number P122**
Mining and Visualization of Compound- and Target-Toxicity Relationships from Historical Toxicology Study Reports Using IBM Watson. *R.J. Brennan*[4], *Z. Jayyosi*[2], A. Amberg[3], D. Aldous[4], W.S. Spangler[1], I.R. Stanoi[1], S.M. Glissmann[1], Y. Chen[1], and J. Connelly[4]. [1]IBM, San Jose, CA; [2]Sanofi, Framingham, MA; [3]Sanofi, Frankfurt, Germany; and [4]Sanofi, Waltham, MA. Sponsor: *R. Brennan*.

#1094 **Poster Board Number P123**
Predicting Potential Protein Targets for Chemical Toxins Using Molecular Similarity Search, *In Silico* Docking and *In Vitro* Validation. *J.M. Gearhart*[2], J.S. Frey[3], C.A. Mauzy[1], and Y. Chushak[3]. [1]711th Human Performance Wing, Wright-Patterson AFB, OH; [2]The Henry M. Jackson Foundation For Military Medicine, Wright Patterson AFB, OH; and [3]The Henry M. Jackson Foundation For Military Medicine, Wright-Patterson AFB, OH.

#1095 **Poster Board Number P124**
Real-Time Cell Viability Profiling of Tox21 10K Compounds. *J.-H. Hsieh*[1], *R. Huang*[2], *R. Tice*[3], *R. Paules*[3], *M. Xia*[2], and *S. Auerbach*[3]. [1]Kelly Government Solutions, Durham, NC; [2]NCATS, Rockville, MD; and [3]NIH/NIEHS, Durham, NC.

#1096 **Poster Board Number P125**
Human Physiologically-Based Pharmacokinetic Models Based on Quantitative Property-Property and Structure-Property Relationships. S. Chebekoue, and *K. Krishnan*. Université de Montréal, Montréal, QC, Canada.

Abstract #

#1097 **Poster Board Number P126**
An Automated Method to Assess and Document the Validity of *In Silico* Models.
J.C. Madden[1], M.T. Cronin[1], *F. Pognan*[2], and C.M. Ellison[1]. [1]Liverpool John Moores University, Liverpool, United Kingdom; and [2]Novartis Pharma AG, CH-4002 Basel, Switzerland.

#1098 **Poster Board Number P127**
QSAR Modeling to Predict Androgen Receptor Pathway Activity. *Q. Zang*[2], *D. Allen*[2], *W. Casey*[3], *R. Judson*[1], and *N. Kleinstreuer*[2]. [1]US EPA/ORD/NCCT, Durham, NC; [2]ILS, Inc., Durham, NC; and [3]NIEHS/NICEATM, Durham, NC.

#1099 **Poster Board Number P128**
QSAR-Based Prediction of Ames Mutagenicity for Regulatory Submissions. V.K. Gombar, M.S. Lawless, and R.D. Clark. Simulations Plus, Lancaster, CA. Sponsor: *S. Ferguson*.

Monday Morning, March 14
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Systems Biology and Toxicology

Recent Advances in Safety Assessment

Chairperson(s): *Miao Li, University of Iowa, Iowa City, IA; and Maxwell C.K. Leung, US Environmental Protection Agency, Research Triangle Park, NC.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *11:15 AM–12:45 PM*

#1100 **Poster Board Number P129**
TCDD-Elicited Reorganization of Hepatic Metabolism in Support of Profibrotic Processes. *T.R. Zacharewski*, *K.A. Fader*, D.A. Ammendolia, *P. Dornbos*, K. Kumagai, *J.R. Harkema*, S.Y. Lunt, and *R. Nault*. Michigan State University, East Lansing, MI.

#1101 **Poster Board Number P130**
Generation of Computationally Predicted Adverse Outcome Pathway Networks Through Integration of Publicly Available *In Vivo*, *In Vitro*, Phenotype, and Biological Pathway Data. N.O. Oki[1], S.M. Bell[1], R.-L. Wang[2], M. Nelms[1], and *S.W. Edwards*[3]. [1]Oak Ridge Institute for Science, and Education, Research Triangle Park, NC; [2]US EPA, Cincinnati, OH; and [3]US EPA, Research Triangle Park, NC.

#1102 **Poster Board Number P131**
Investigating Key Event-Based Points of Departure for Adverse Oxidative Events in Human Bronchial Epithelial Cells Exposed to Zinc: A Systems Biology Approach. *J.M. Currier*[1], *W.-Y. Cheng*[1], *R. Conolly*[2], and *B. Chorley*[2]. [1]ORISE/US EPA, Research Triangle Park, NC; and [2]US EPA, Research Triangle Park, NC.

#1103 **Poster Board Number P132**
Pyruvate Kinase Isoform Switching and Hepatic Metabolic Reprogramming by the Environmental Contaminant 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin (TCDD). *R. Nault*[1], *K.A. Fader*[1], M.P. Kirby[1], S. Ahmed[3], *J. Matthews*[2,3], A.D. Jones[1], S.Y. Lunt[1], and *T.R. Zacharewski*[1]. [1]Michigan State University, East Lansing, MI; [2]University of Oslo, Oslo, Norway; and [3]University of Toronto, Toronto, ON, Canada.

Abstract #

#1104 **Poster Board Number P133**
Multiscale Systems Modeling of Male Reproductive Tract Defects: From Genes to Populations. *M.C. Leung*[2,3], R.M. Spencer[1], and *T.B. Knudsen*[3]. [1]Lockheed Martin, Research Triangle Park, NC; [2]Oak Ridge Institute for Science, and Education, Oak Ridge, TN; and [3]US Environmental Protection Agency, Research Triangle Park, NC.

#1105 **Poster Board Number P134**
Microphysiological Systems (MPS) to Identify Organ-Organ Interactions in Toxicology: Hepatic Metabolism Enhances Nephrotoxicity of Aristolochic Acid. *S.-Y. Chang*[2], *E. Weber*[2], *E.J. Kelly*[2], *D.L. Eaton*[2], and T. Neumann[1]. [1]Nortis, Inc., Seattle, WA; and [2]University of Washington, Seattle, WA.

#1106 **Poster Board Number P135**
Systems Toxicology Assessment of a Candidate Modified Risk Tobacco Product Compared to a Combustible Cigarette. I. Gonzalez Suarez[1], F. Martin[1], D. Marescotti[1], E. Guedj[1], S. Acali[1], S. Johne[1], R. Dulize[1], K. Baumer[1], D. Peric[1], D. Goerdetier[1], S. Frentzel[1], N.V. Ivanov[1], C. Mathis[1], *A.W. Hayes*[2], M.C. Peitsch[1], and J. Hoeng[1]. [1]Philip Morris International, Neuchatel, Switzerland; and [2]Spherix Consulting, Rockville, MD.

#1107 **Poster Board Number P136**
A Multiplatform Metabolic Phenotyping Approach Integrated with Pathway Mapping to Identify Biochemical Differences Between Healthy Smokers and Non-Smokers. M.R. Kaluarachichi[2], C.L. Boulange[2], I. Garcia-Perez[2], J.C. Lindon[2], and E. Minet[1]. [1]British American Tobacco, Southampton, United Kingdom; and [2]Metabometrix Ltd, London, United Kingdom. Sponsor: *M. Gaca*.

#1108 **Poster Board Number P137**
Classifying Carcinogens Using Weighted Gene Co-Expression Network Analysis (WGCNA). B.M. Paisley[1,2], J.J. Sutherland[1,4], R.A. Jolly[1,3], *T.K. Baker*[1,2], and *J.L. Stevens*[1,5]. [1]Eli Lilly, and Company, Indianapolis, IN; [2]Investigative Toxicology, Eli Lilly, and Company, Indianapolis, IN; [3]Risk Assessment/Global REACH, Eli Lilly, and Company, Indianapolis, IN; [4]Tailored Therapeutics, Eli Lilly, and Company, Indianapolis, IN; and [5]Toxicology, Eli Lilly, and Company, Indianapolis, IN.

#1109 **Poster Board Number P138**
Application of the SILAC Method to Identify Protein Adducts of PCB Quinones. *M. Li*, Y. Li, M. Pope, *L. Robertson*, and *G. Ludewig*. University of Iowa, Iowa City, IA.

#1110 **Poster Board Number P139**
Translational Biomarkers of Acetaminophen-Induced Hepatotoxicity in Urine Samples. *L.K. Schnackenberg*[3], J. Sun[3], J. Greenhaw[3], S. Bhattacharyya[1], *P. Gill*[2], *W.F. Salminen*[5], *D.L. Mendrick*[4], *L.P. James*[1], and *R.D. Beger*[3]. [1]Arkansas Children's Hospital Research Institute, Little Rock, AR; [2]Arkansas Children's Research Institute, Little Rock, AR; [3]National Center for Toxicological Research, US FDA, Jefferson, AR; [4]National Center for Toxicological Research, US FDA, Silver Spring, MD; and [5]ProNatural Brands LLC, Sarasota, FL.

#1111 **Poster Board Number P140**
Stably Expressed Genes in Rat Liver - Sex Differences Involved in Liver Function and Drug Metabolism. K. Wang, *V. Vijay*, and *J. Fuscoe*. US FDA, Jefferson, AR.

Abstract #

#1112 **Poster Board Number P141**
Comparison of Clinical Pathology Data from Pen/Group Housed and Individually Housed Cynomolgus Monkeys. C. Voyer, and A. Provencher. Charles River, Sherbrooke, QC, Canada. Sponsor: *M. Vezina.*

#1113 **Poster Board Number P142**
A Mechanism-Based Hepatotoxicity Simulation Model to Capture Dose-Dependent Cell Death Dynamics in Response to the Drugs Amiodarone and Valproate. A. Crudu[2], R. Note[2], A. Riu[2], B. Fromenty[1], G. Ouedraogo[2], O. Perin[2], S. Jager[2], C. Gomes[2], S. Teissier[2], I. Suzuki[2], K. Fujita[3], Y. Matsuoka[3], S. Ghosh[3], and H. Kitano[3]. [1]INSERM UMR991, Rennes, France; [2]L'Oréal, Aulnay-sous-Bois, France; and [3]The System Biology Institute, Tokyo, Japan. Sponsor: *E. Dufour.*

#1114 **Poster Board Number P143**
Woodsmoke Exposure Alters Serum Composition That Induces Inflammatory Gene Expression and Impairs *Ex Vivo* Wound Healing. *M. Campen*[2], L. Heine[2], *J. Liu*[1], J. Brower[1], G. Herbert[2], B. Sanchez[2], *K. Zychowski*[2], L. Topper[2], *M. Doyle-Eisele*[1], and *J. McDonald*[1]. [1]Lovelace Respiratory Research Institute, Albuquerque, NM; and [2]University of New Mexico, Albuquerque, NM.

#1115 **Poster Board Number P144**
The Effect of Antibiotic Treatment on Microbiome Metabolites Observed in Rat Blood. C. Behr[1], *B. van Ravenzwaay*[1], H.G. Kamp[1], E. Fabian[1], G. Krennrich[1], W. Mellert[1], E. Peter[2], V. Straus[1], and T. Walk[2]. [1]BASF SE, Ludwigshafen am Rhein, Germany; and [2]Metanomics GmbH, Berlin, Germany.

#1116 **Poster Board Number P145**
Metabolic Network of Estrogen Metabolism in Human Mammary Gland: Validation and Influence of Soy Isoflavones. K. Schmalbach[5], A. Cecil[5], R. Hauptstein[5], S.T. Soukup[2], D. Pemp[5], C. Kleider[5], L.N. Geppert[3], C. Köllmann[3], P. Eckert[1], I. Neshkova[4], T. Dandekar[5], S. Kulling[2], *H. Esch*[5], and *L. Lehmann*[5]. [1]Group Practice for Plastic Surgery, and Hand Surgery Wuerzburg, Wuerzburg, Germany; [2]Max Rubner-Institute, Karlsruhe, Germany; [3]TU Dortmund, Dortmund, Germany; [4]University Hospital of Wuerzburg, Wuerzburg, Germany; and [5]University of Wuerzburg, Wuerzburg, Germany.

#1117 **Poster Board Number P146**
Using Connectivity Mapping Approach to Evaluate Modes of Action of Large Set of Chemicals in MCF7 Cells. Y. Shan, *J.M. Naciff*, X. Wang, X. Wei, L.A. Reinsalu, R.C. Schinaman, and *G.P. Daston*. Procter & Gamble, Mason, OH.

#1118 **Poster Board Number P147**
Intestine-Liver Interactions in TCDD-Elicited Steatohepatitis. *K.A. Fader*, *R. Nault*, D.A. Ammendolia, T.A. Lydic, *R.B. Crawford*, *N.E. Kaminski*, and *T.R. Zacharewski*. Michigan State University, East Lansing, MI.

#1119 **Poster Board Number P148**
A Multi-Scale Network Perspective on the Aryl Hydrocarbon Receptor Toxicity Pathway. N. Shilpa, *M.E. Andersen*, and *S. Bhattacharya*. The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

Abstract #

#1120 **Poster Board Number P149**
Development of a Predictive Systems Toxicology Platform to Enhance Novel Molecule Design. *K. Johnson*[2], *M. LeBaron*[2], S. Sriram[1], K. Yang[1], J. Raymond[1], B. Veeramani[1], *R. Rasoulpour*[1], and N. Elango[1]. [1]Dow Agrosciences, Indianapolis, IN; and [2]The Dow Chemical Company, Midland, MI.

#1121 **Poster Board Number P150**
Importance of Chemical Delivery Methods for High-Throughput Screening. *L. Truong*, *S.M. Bugel*, *M.T. Simonich*, and *R.L. Tanguay*. Oregon State University, Corvallis, OR.

#1122 **Poster Board Number P151**
Glutamine, Glutaminase and γ-Glutamyl-Transferase Activities Are Essential for Lung Tumorigenesis. *D.R. Sappington*, R.B. Penney, E. Siegel, and *G. Boysen*. University of Arkansas for Medical Sciences, Little Rock, AR.

#1123 **Poster Board Number P152**
Families of Polyproline Peptides in Human Butyrylcholinesterase Tetramers. H. Peng. University of Nebraska Medical Center, Omaha, NE. Sponsor: *O. Lockridge*

#1124 **Poster Board Number P153**
Integrating Multi-Omic Data with Apical Endpoints in a C57BL/6J Diet-Induced Obesity Mouse Model. *K.P. Glover*[2], J. Caverly Rae[2], *Y. Dragan*[2], F. Burns[2], M. Mawn[2], H.M. Jensen[2], C.C. Yde[1,2], P. Mukerji[2], L. Stenman[2], and *S. Loveless*[2]. [1]Aarhus University, Aarhus, Denmark; and [2]DuPont, Newark, DE.

#1125 **Poster Board Number P154**
Redox Proteomics of Environmental Low-Dose Cadmium and Pulmonary Health. *Y.-M. Go*, *J. Chandler*, M. Orr, L. Hao, and *D.P. Jones*. Emory University, Atlanta, GA.

#1126 **Poster Board Number P155**
Determining the Role of AhR in Immunoglobulin Expression Using CRISPR Cas 9. *N. Panstingel*, and *C. Sulentic*. Wright State University, Dayton, OH.

#1127 **Poster Board Number P156**
BDE-153 Demonstrated Liver Toxicity in Models of Hepatic Cells in Monolayer and Tridimensional Cultures. L.C. Pereira[2], F.V. Duarte[1], A.T.I. Varela[1], A.P. Rolo[1], *C.M. Palmeira*[1], and *D.J. Dorta*[2]. [1]University of Coimbra, Coimbra, Portugal; and [2]University of São Paulo, Ribeirão Preto, Brazil.

#1128 **Poster Board Number P157**
Liver Transcriptomic and Metabolic Reprogramming After Exposure to Diesel Exhaust. G. Ramanathan[1], Y. Zhao[2], F. Yin[1], M.E. Rosenfeld[3], X. Yang[2], and J.A. Araujo[1]. [1]UCLA School of Medicine, Los Angeles, CA; [2]University of California, Los Angeles, Los Angeles, CA; and [3]University of Washington, Los Angeles, CA. Sponsor: *M. Campen.*

Abstract #

Monday Morning, March 14
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Biomonitoring

Chairperson(s): *Justin G. Teeguarden, Pacific Northwest National Laboratory, Richland, WA; and Arnold Schecter, University of Louisville School of Medicine, Louisville, KY.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *9:30 AM–11:00 AM*

#1129 **Poster Board Number P158**
Extrapolating Salivary Acinar Cell *In Vitro* Pesticide Transport to Whole Animals Using Computational Modeling. *C. Timchalk*, *Z.A. Carver*, *T.J. Weber*, and *J.N. Smith*. Pacific Northwest National Laboratory (PNNL), Richland, WA.

#1130 **Poster Board Number P159**
Non-Invasive Saliva Human Biomonitoring: Development of a Transwell Assay to Support Exposure Science Assessment and Health Impacts. *T.J. Weber*, *J.N. Smith*, Z.A. Carver, and *C. Timchalk*. Pacific Northwest National Laboratory, Richland, WA.

#1131 **Poster Board Number P160**
2, 4 - Dichlorophenoxyacetic Acid (2, 4-D) Transport Across an *In Vitro* Salivary Acinar Cell System: A Novel Approach to Biomonitoring. *Z.A. Carver*, *C. Timchalk*, *J.N. Smith*, and *T.J. Weber*. Pacific Northwest National Laboratory, Richland, WA.

#1132 **Poster Board Number P161**
Navajo Birth Cohort Study: Metal Biomonitoring and Source Attribution. *J. Ong*[2], J. Hoover[2], C. Shuey[1], E. O'Donald[2], M. Cajero[2], and *J. Lewis*[2]. [1]Southwest Research, and Information Center, Albuquerque, NM; and [2]University of New Mexico, Albuquerque, NM.

#1133 **Poster Board Number P162**
Increased Oxidative Stress Status, Cadmium, Lead and Selenium of Roadside Dispensers of Gasoline in Nigeria. *O.M. Akinosun*[2], and A. Sanni[1]. [1]University College Hospital, Ibadan, Nigeria; and [2]University of Ibadan, Ibadan, Nigeria.

#1134 **Poster Board Number P163**
Validation of Dried Blood Spot Method for Detection of Aflatoxin B1-Lysine Adduct in Animals and Humans. *K. Xue*, *L. Tang*, and *J.-S. Wang*. University of Georgia, Athens, GA.

#1135 **Poster Board Number P164**
Prenatal Exposure to Pyrethroid Insecticides Metabolites Measured in Umbilical Cord Blood Serum. M. Wren[3], M. Liu[3], A. Vetrano[2], B. Buckley[3], *J.R. Richardson*[1], and *S.L. Shalat*[4]. [1]College of Pharmacy, Northeastern Ohio Medical School, Rootstown, OH; [2]Robert Wood Johnson Medical School, New Brunswick, NJ; [3]Rutgers, The State University of New Jersey, Piscataway, NJ; and [4]School of Public Health, Georgia State University, Atlanta, GA.

#1136 **Poster Board Number P165**
RapidFire-Ion Mobility-Mass Spectrometry Supports High-Throughput Assessment of the Human Exposome in Blood and Urine. E.S. Baker, X. Zhang, T.O. Metz, D.G. Thomas, D. Mehinagic, J. Ma, R. Renslow, and *J.G. Teeguarden*. Pacific Northwest National Laboratory, Richland, WA.

Abstract #

#1137 **Poster Board Number P166**
Differential Bisphenol A Levels in Sewage Wastewater Effluents from Communities Located within Metropolitan Detroit Area. J.M. Santos[1,3], A. Joakim[1], D. Putt[1], B. Hosea[1], D. Kaplan[1], M. Jurban[2], and *H. Kim*[1]. [1]Detroit R&D, Inc., Detroit, MI; [2]Detroit Water, and Sewage Department, Detroit, MI; and [3]Federal University of Goias, Jatai, Brazil. Sponsor: *H. Kim*.

#1138 **Poster Board Number P167**
Troubleshooting Challenges Arising from Contamination during the Translation of a Published Method (LC-MS/MS) for Measurement of Bisphenol A in Biological Fluids at Trace Level. B. Buscher[8], D. van de Lagemaat[8], W. Gries[4], D. Beyer[2], D.A. Markham[7], *R.A. Budinsky*[7], *S.S. Dimond*[6], R.V. Nath[5], *S.A. Snyder*[3], and S.G. Hentges[1]. [1]American Chemistry Council, Washington, DC; [2]Bayer Pharma, Wuppertal, Germany; [3]Covestro LLC, Pittsburgh, PA; [4]Currenta GmbH & Co, Leverkusen, Germany; [5]SABIC Research & Technology, Bangalore, India; [6]Saudi Basic Industries Corporation, Bedford, NH; [7]The Dow Chemical Company, Midland, MI; and [8]TNO Triskelion BV, Zeist, Netherlands.

#1139 **Poster Board Number P168**
Bioactive Bisphenol A Is Unmeasurable in Serum During Pregnancy at Exposures Typical for the US and Canada. M.I. Churchwell[2], N.C. Twaddle[2], D.R. Doerge[2], and *J.G. Teeguarden*[1]. [1]Pacific Northwest National Laboratory, Richland, WA; and [2]US Food and Drug Administration, Jefferson, AR.

#1140 **Poster Board Number P169**
Urine and Serum Biomonitoring of Exposure to Dietary Estrogens in Pregnant Women in the United States: Soy Isoflavones and the Mycotoxin Zearalenone. S.C. Fleck[1], D.R. Doerge[1], and *J.G. Teeguarden*[2]. [1]National Center for Toxicological Research, Jefferson, AR; and [2]Pacific Northwest National Laboratory, Richland, WA.

#1141 **Poster Board Number P170**
Simultaneous Determination of Androgens and Estrogens in Human Urine by Liquid Chromatography. D.C. Escobar-Wilches[1], M.L. Lopez-Gonzalez[1], L.E. Torres-Sanchez[2], and *A. Sierra-Santoyo*[1]. [1]Cinvestav-IPN, Mexico City, Mexico; and [2]Instituto Nacional de Salud Publica, Cuernavaca, Morelos, Mexico.

#1142 **Poster Board Number P171**
Phthalate Exposure During Puberty: A Window for Interaction Between the Endocrine and the Immune System. N. Lambrechts[5], C. Franken[2], E. Govarts[5], E. Den Hond[5], V. Nelen[1], I. Loots[2], W. Baeyens[6], I. Sioen[3], T. Nawrot[4], L. Bruckers[4], S. Voorspoels[5], and G. Schoeters[5]. [1]PIH, Antwerp, Belgium; [2]University of Antwerp, Antwerp, Belgium; [3]University of Ghent, Ghent, Belgium; [4]University of Hasselt, Hasselt, Belgium; [5]VITO, Mol, Belgium; and [6]VUB, Brussels, Belgium. Sponsor: *L. Aylward.*

#1143 **Poster Board Number P172**
Metals & Organics Biomonitoring in Female Vietnamese Electronic Waste Recyclers, General Population, & US NHANES. *A. Schecter*[3], H.T. Quynh[1], W. Shropshire[4], J. Lanceta[3], J. Kincaid[3], and *L. Birnbaum*[2]. [1]Center Ecological Agriculture, Hanoi, Viet Nam; [2]NIH, Research Triangle Park, NC; [3]University of Louisville, Louisville, KY; and [4]University of Texas, Houston, TX.

Abstract #

#1144 **Poster Board Number P173**
Dose Reconstruction in Workers Exposed to Permethrin and Cypermethrin and Determination of Biological Reference Values Using a Toxicokinetic Model. J. Côté, and *M. Bouchard*. University of Montreal, Montreal, QC, Canada.

#1145 **Poster Board Number P174**
Rapid Determination and Validation of S-Phenylmercapturic Acid in Workers' Urine Using A Dilute-and-Shoot Approach and Ultra Performance Liquid Chromatography Coupled with Electrospray Tandem Mass Spectrometry (UPLC-MS/MS). *S. Gagné*, and J. Poulin. IRSST, Montréal, QC, Canada.

#1146 **Poster Board Number P175**
Population Urinary Toxicokinetic Approach for Human Biomonitoring. D. Barbeau[1], M. Neely[3], A. Balestra[1], M. Marques[1], J.-B. Woillard[2], and A. Maitre[1]. [1]University of Grenoble, Grenoble, France; [2]University of Limoges, Limoges, France; and [3]University of Southern California, Los Angeles, CA. Sponsor: *C. Viau.*

#1147 **Poster Board Number P176**
Para-Dichlorobenzene Exposure Is Associated with the Alteration of Thyroid Functions in US Adults and Adolescents. *Y. Wei*[2], and J. Zhu[1]. [1]Fort Valley State University, Fort Valley, GA; and [2]Mercer University School of Medicine, Macon, GA.

Monday Morning, March 14
9:30 AM to 12:45 PM
CC Exhibit Hall

PS

Poster Session: Neurotoxicology—Emerging Technologies for Neurotoxicity Screening

Advances in Neurotoxicology

Chairperson(s): *Tim Shafer, US Environmental Protection Agency, Research Triangle Park, NC.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *11:15 AM–12:45 PM*

#1148 **Poster Board Number P201**
Brain-on-a-Chip Multi Chamber Platform to Study Cellular Migration. *D. Pamies*[3], E. Lavell[3], H. Guerrero-Cazares[3], *H. Thomas*[3], *H. Helena*[3], *B.-P. Anna*[1], A. Quinones-Hinojosa[3], L. Andre[4], and O. Killic[2]. [1]European Commission, Ispra, Italy; [2]Johns Hopkins University, Baltimore, MD; [3]Johns Hopkins University., Baltimore, MD; and [4]Yale University., West Haven, CT.

#1149 **Poster Board Number P202**
Effects of Conazole Fungicides on Spontaneous Activity in Neural Networks. B.S. Lynch[2], C.M. Mack[1], and *T.J. Shafer*[1]. [1]Integrated System Toxicology Division, NHEERL, United States Environmental Protection Agency, Research Triangle Park, NC; and [2]North Carolina Central University, Durham, NC.

#1150 **Poster Board Number P203**
Further Evaluation of Developmental Neurotoxicity (DNT) Hazard Screening using Neural Networks from Rat Cortical Neurons on Multi-Well Microelectrode Arrays. J. Brown, K. Wallace, D. Hall, *W.R. Mundy*, and *T. Shafer*. US Environmental Protection Agency, Research Triangle Park, NC.

Abstract #

#1151 **Poster Board Number P204**
Characterization of Toxcast Phase II Compounds Disruption of Spontaneous Network Activity in Cortical Networks Grown on Multi-Well Microelectrode Array (mwMEA) Plates. *J.D. Strickland*[1], *M. Martin*[2], *A.M. Richard*[2], *K. Houck*[2], and *T.J. Shafer*[2]. [1]Axion Biosystems, Atlanta, GA; and [2]US Environmental Protection Agency, Research Triangle Park, NC.

#1152 **Poster Board Number P205**
Acute and Chronic Exposure to Insecticides Modulates Electrical Activity and Spike Patterns of Primary Cortical Cultures on Multi-Electrode Arrays. *M.M. Dingemans*, M.G. Schutte, F.M. Wijnolts, R.G. van Kleef, A. de Groot, and *R.H. Westerink*. Utrecht University, Utrecht, Netherlands.

#1153 **Poster Board Number P206**
Non-Invasive, On-Chip Measurements of Neuronal Cell Health and Function upon Low Level Sarin Exposure. N.O. Fischer, *H.A. Enright*, S.H. Felix, P. Spackman, E. Mukerjee, S. Hok, C. Valdez, D.A. Soscia, K. Kulp, and E.K. Wheeler. Lawrence Livermore National Laboratory, Livermore, CA.

#1154 **Poster Board Number P207**
Human iPSC-Derived Neurons on Microelectrode Arrays (MEAs) for *In Vitro* Neurotoxicity Testing. M.W. de groot, F.M. Wijnolts, and *R.H. Westerink*. Utrecht University, Utrecht, Netherlands.

#1155 **Poster Board Number P208**
Human StemCell-Derived Neurons for Neurotoxicity Functional Screens. *C.J. Strock*[1], J.A. Bradley[1], M. Roach[2], K. Gomes[2], and R. Malavarca[2]. [1]Cyprotex US, LLC, Watertown, MA; and [2]PhoenixSongs Biologicals, Branford, CT.

#1156 **Poster Board Number P209**
Potential Use of Microelectrode Arrays Using Human iPS-Derived Neuronal Cells to Evaluate Neurotoxicity. *A. Okamura*[1,2], *T. Shirakawa*[1,2], K. Nagata[1], and A. Okada[1]. [1]Astellas Pharma Inc., Osaka, Japan; and [2]Consortium for Safety Assessment using Human iPS Cells (CSAHi), Tokyo, Japan.

#1157 **Poster Board Number P210**
Multi-Electrode Array (MEA) Recordings for Neurotoxicity Screening of Illicit Drugs. L. Hondebrink[1], A.H. Verboven[2], S. Drega[2], S. Schmeink[2], M.W. de Groot[2], R.G. van Kleef[2], F.M. Wijnolts[2], A. de Groot[2], J. Meulenbelt[1], and *R.H. Westerink*[2]. [1]University Medical Center Utrecht, Utrecht, Netherlands; and [2]Utrecht University, Utrecht, Netherlands.

#1158 **Poster Board Number P211**
Peripheral Nerve-on-a-Chip for Predictive Preclinical Pharmaceutical Testing. *J.L. Curley*[1,2], and M.J. Moore[1,2]. [1]AxoSim Technologies, New Orleans, LA; and [2]Tulane University, New Orleans, LA. Sponsor: *J.L. Curley.*

#1159 **Poster Board Number P212**
Combining MR Imaging with Microelectrode Array Studies to Further Neural Network Ontogeny Analysis. *F.T. Goodfellow*, G. Simchick, Q. Zhao, and *S. Stice*. The University of Georgia, Athens, GA.

Abstract #

#1160 **Poster Board Number P213**
The MED64-Qquad II System Increases Throughput for *In Vitro* MEA Pharmacology Studies with Acute Brain Slices. S. Yasuoka, R. Yamazaki, and G. Cheng. Alpha MED Scientific Inc., Ibaraki, Osaka, Japan. Sponsor: *P. McNutt.*

Monday Morning, March 14
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Neurotoxicology—Developmental Neurotoxicity

Advances in Neurotoxicology

Chairperson(s): *Russell L. Carr, Mississippi State University, Mississippi State, MS.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *9:30 AM–11:00 AM*

#1161 **Poster Board Number P214**
AOP-Based Identification of Species-Specific Thyroid Hormone Disruptors Using Human and Rodent Neural Progenitor Cells. K. Dach, *S. Giersiefer*, F. Bendt, U. Huebenthal, H. Heuer, and *E. Fritsche*. IUF - Leibniz Research Institute for Environmental Medicine, Duesseldorf, Germany.

#1162 **Poster Board Number P215**
Understanding the Relationship between Alterations in Thyroid Hormone Levels and Subsequent Neurodevelopmental Impacts. L. Brown, T. Pepping, and K. He. Abt Associates, Bethesda, MD. Sponsor: *D. Hattis.*

#1163 **Poster Board Number P216**
Comparative Developmental Neurotoxicity of Tobacco Smoke and Nicotine, *In Vivo* and *In Vitro*. *F.J. Seidler*, *E.D. Levin*, and *T.A. Slotkin*. Duke University Medical Center, Durham, NC.

#1164 **Poster Board Number P217**
Neurobehavioral Effects of Exposure to Tobacco Smoke Extract in Rats During Critical Windows of Gestational Development. *B.J. Hall*, M. Cauley, H.J. White, S. Junaid, A. Kiany, Y. Abreu-Villaça, and *E.D. Levin*. Duke University, Durham, NC.

#1165 **Poster Board Number P218**
E-Cigarette Exposure Induces Neuro-Alterations in Mice Exposed During Early Life. *D.E. Lauterstein*, *P.B. Tijernia*, *K. Corbett*, *T. Gordon*, C.B. Klein, and *J.T. Zelikoff*. New York University, Tuxedo, NY.

#1166 **Poster Board Number P219**
Neonatal Exposure to Air Pollution and the Autism Phenotype in the Prairie Vole. *J.L. Allen*, *M.E. Sobolewski*, K.A. Conrad, *K.B. Morris-Schaffer*, *C. Klocke*, E.S. Barrett, and *D.A. Cory-Slechta*. University of Rochester School of Medicine, Rochester, NY.

#1167 **Poster Board Number P220**
Gestational PM2.5 Exposure Disrupts Brain Development. *C.R. Klocke*[2], *J.L. Allen*[2], *M. Sobolewski*[2], *J. Blum*[1], *D. Lauterstein*[1], *J.T. Zelikoff*[1], and *D. Cory-Slechta*[2]. [1]New York University, Tuxedo, NY; and [2]University of Rochester Medical School, Rochester, NY.

Abstract #

#1168 **Poster Board Number P221**
Neonatal Ultrafine Particulate Matter Inhalation Exposure Adversely Impacts White Matter Development. *K.B. Morris-Schaffer*, *J.L. Allen*, C. Wong, *G. Oberdorster*, and *D.A. Cory-Slechta*. University of Rochester Medical Center, Rochester, NY.

#1169 **Poster Board Number P222**
Developmental Exposure to Diesel Exhaust Induces an Autism-Related Behavioral Phenotype in Mice. *Y.R. Chang*[2], E. Kalata[2], T.B. Cole[2], and *L.G. Costa*[1,2]. [1]University of Parma, Parma, Italy; and [2]University of Washington, Seattle, WA.

#1170 **Poster Board Number P223**
Effect of Repeated Juvenile Exposure to Δ9-Tetrahydrocannabinol on the Performance of Adolescent Rats in the Elevated Plus Maze. A.N. Mohammed, N. Alugubelly, *B.L. Kaplan*, and *R.L. Carr*. Mississippi State University, Mississippi State, MS.

#1171 **Poster Board Number P224**
Migration of Human Neural Crest Cells as Functional Endpoint to Screen for Developmental Neurotoxicity. J. Nyffeler, X. Dolde, and *M. Leist*. University of Konstanz, Konstanz, Germany.

#1172 **Poster Board Number P225**
Toxic Effects of Astemizole on Neurite Growth and Synaptogenesis of CNS Neurons. T. Shirao[1], N. Koganezawa[1], Y. Ishizuka[1], H. Yamazaki[1], K. Hanamura[1], and Y. Sekino[2]. [1]Gunma University Graduate School of Medicine, Maebashi, Japan; and [2]National Institute for Health Sciences, Tokyo, Japan. Sponsor: *Y. Fueta.*

#1173 **Poster Board Number P226**
Comparing Efficacies of Diazepam (DZP) and MK-801 as Treatments for Tetramethylenedisulfotetramine (TMDT) Poisoning in a Juvenile Rat Model. M.P. Shakarjian[1,2], M. Laukova[1], S. Shapiro[1], *P.K. Stanton*[1], J. Veliskova[1], and L. Velisek[1]. [1]New York Medical College, Valhalla, NY; and [2]Rutgers Robert Wood Johnson Medical School, Piscataway, NJ.

#1174 **Poster Board Number P227**
Neurotoxic Effects of Silver Nanoparticles on Developing Zebrafish (*Danio rerio*). E.A. Gonzalez, *M. La Merrill*, and G. Cherr. University of California, Davis, Davis, CA. Sponsor: *M. La Merrill.*

#1175 **Poster Board Number P228**
Effects of Vitamin D Receptor-Acting Compounds on Larval Motility in Zebrafish. A.N. Oliveri[1], D. Mahapatra[2], *S.W. Kullman*[2], and *E.D. Levin*[1]. [1]Duke University Medical Center, Durham, NC; and [2]North Carolina State University, Raleigh, NC.

#1176 **Poster Board Number P229**
The Anti-Rheumatic Drug, Leflunomide, Implicates the Aryl Hydrocarbon Receptor in Altered Dopaminergic Biology. *C.J. Mattingly*, *A. Planchart*, and *E. Cook*. NCSU, Raleigh, NC.

#1177 **Poster Board Number P230**
Lipopolysaccharide-Induced Premature Delivery in Mice Is Accompanied by Disturbances in Central Respiratory Rhythm Generation. *C.V. Smith*, S.C. Ramirez, J.E. Koschnitzky, T.M. Anderson, N.A. Baertsch, and J.-M. Ramirez. Seattle Children's Research Institute, Seattle, WA.

Abstract #

#1178 **Poster Board Number P231**
Investigating a Mechanism of Developmental Neurotoxicity: Quaternary Ammonium Compounds and Their Effect on Cholesterol Biosynthesis. J. Herron[1], R. Reese[2], K. Mirnics[2], N.A. Porter[2], and L. Xu[1]. [1]University of Washington, Seattle, WA; and [2]Vanderbilt University, Nashville, TN.

#1179 **Poster Board Number P232**
An Extended One-Generation Reproduction and Developmental Neurotoxicity (DNT) Drinking Water Study (OECD 443) of Ethylene Dichloride (EDC) in Crl:CD(SD) Rats. *J.S. Bus*[3], J.P. Maurissen[4], J.H. Charlap[5], *C.A. Picut*[5], R. Collins[1], *C.J. Bevan*[2], and *J.C. Lamb*[3]. [1]BioSTAT Consultants Inc, Portage, MI; [2]CJB Consulting LLC, Loveland, OH; [3]Exponent Inc., Alexandria, VA; [4]JPM NeuroTox LLC, Midland, MI; and [5]WIL Research, Ashland, OH.

#1180 **Poster Board Number P233**
Developmental Alcohol Exposure Reduces Experience-Dependent Plasticity in Adolescent Mice without Affecting Cortical Microglial Behavior or Dendritic Spine Dynamics. *E.L. Wong*, G.O. Sipe, C.E. Lamantia, and A.K. Majewska. University of Rochester Medical Center, Rochester, NY.

#1181 **Poster Board Number P234**
High-Taurine Consumption During Adolescence Alters Biogenic Amines in a Sex-Dependent Manner in C57BL/6J Mice. J. Weimer, J. Brown, C. Ludwig, and *C.P. Curran*. Northern Kentucky University, Highland Heights, KY.

#1182 **Poster Board Number P235**
The Effects of DEHP on Placenta and Fetal Brain Development. Y.-C. Chuang, J.-Y. Chiu, *M.-W. Chao*, and C.-Y. Tseng. Chung Yuan Christian University, Taoyuan, Taiwan.

#1183 **Poster Board Number P236**
Hypoxic Preconditioning Modulates Anti-Inflammatory Responses Mediated by Disrupted in Schizophrenia-1(disc1) Gene Expression. *J.-R. Liu*, X. Han, Y.-J. Li, and J. Ibla. Harvard Medical School, Boston, MA.

#1184 **Poster Board Number P237**
Novel Human Hindbrain and Spinal Cord Model for Neurotoxicity Studies. N. Sehgal, and R. Ashton. University of Madison, Madison, WI. Sponsor: *T. Knudsen.*

Abstract #

Monday Morning, March 14
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Neurotoxicology—Halogenated Hydrocarbons

Advances in Neurotoxicology

Chairperson(s): *Jessica S. Plavicki, University of Wisconsin, Madison, WI; and Sarah J. Blossom, University of Arkansas for Medical Sciences, Little Rock, AR.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *11:15 AM–12:45 PM*

#1185 **Poster Board Number P238**
Embryonic 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) Exposure Disrupts Central Nervous System (CNS) Angiogenesis and Blood Brain Barrier (BBB) Development. *J.S. Plavicki*, *M.S. Yue*, *T.R. Baker*, M.R. Taylor, and *R.E. Peterson*. University of Wisconsin, Madison, WI.

#1186 **Poster Board Number P239**
Exposure to 2,3,7,8-Tetrachlorodibenzo-p-dioxin (tcdd) Induces Expression of Prostaglandin E Synthase 3 and N-methyl-d-aspartate-receptor 1 Splice Variants 3 and 4 in the Developing Anteroventral Periventricular Nucleus (avpv). *J. Del Pino*[1], and *S.L. Petersen*[2]. [1]Complutense University of Madrid, Madrid, Spain; and [2]University of Massachusetts, Madrid, MA.

#1187 **Poster Board Number P240**
Assessing the Role of the Transcription Factor Sox9b in TCDD-Induced Cerebrovascular Malformations. J.C. Gawdzik, M.R. Taylor, *R.E. Peterson*, and *J.S. Plavicki*. University of Wisconsin, Madison, WI.

#1188 **Poster Board Number P241**
Developmental Mismatch Between Fetal and Adult Steroid Concentrations: Enhanced Hormonal Dysregulation in Adult Mice Maternal Exposed to a Mixture of Low Dose Endocrine Disrupting Chemicals. *M. Sobolewski*, K. Conrad, K. Harvey, *K. Morris-Schaffer*, *C.R. Klocke*, *J.L. Allen*, and *D.A. Cory-Slechta*. University of Rochester Medical Center, Rochester, NY.

#1189 **Poster Board Number P242**
A Pilot Study on Possible Involvement of Dioxin Exposure in Neurodegenerative Diseases. Y. Chen, T. Xu, S.L. Xu, H.Q. Xie, and *B. Zhao*. Chinese Academy of Sciences, Beijing, China.

#1190 **Poster Board Number P243**
Constitutive Activation of Ahr Signaling Disrupts Dendritic Growth and Cellular Migration of Cortical Pyramidal Neurons in the Developing Mouse Brain. E. Kimura[2], K.-i. Kubo[1], T. Endo[2], W. Ling[2], K. Nakajima[1], M. Kakeyama[2,4], and *C. Tohyama*[2,3]. [1]Keio University, Tokyo, Japan; [2]The University of Tokyo, Tokyo, Japan; [3]University of Tsukuba, Ibaraki, Japan; and [4]Waseda University, Saitama, Japan.

#1191 **Poster Board Number P244**
PCB 95-Induced Dendritic Growth in Primary Cultures of Rat Hippocampal Neurons Is Dependent on mTOR Activation. *G.W. Miller*, *K. Keil*, *H. Chen*, *K. Dhakal*, *S. Sethi*, J.W. Kim, and *P.J. Lein*. University of California Davis, Davis, CA.

Abstract #

#1192 **Poster Board Number P245**
DNA Methylation as a Mediator of 2,2′,3,5′,6-Hexachlorobiphenyl (PCB 95) Induced Dendritic Arborization. *K.P. Keil*, S. Sethi, and *P.J. Lein*. University of California Davis, Davis, CA.

#1193 **Poster Board Number P246**
3,3′-Dichlorobiphenyl (PCB 11) and Its Metabolites Increase Dendritic Arborization in Primary Rat Cortical and Hippocampal Neurons. S. Sethi[1], *K. Keil*[1], *K. Hayakawa*[1], *H. Chen*[1], F. Wei[1], Y. Dong[1], X. Li[2], *I. Pessah*[1], *H.-J. Lehmler*[2], and *P. Lein*[1]. [1]University of California Davis, Davis, CA; and [2]University of Iowa, Iowa City, IA.

#1194 **Poster Board Number P247**
Defining the Neurotoxic Potential of Nondioxin-Like PCBs Present in Fish from US Lakes Using a Ryanodine Receptor-Equivalency Scheme. *E.B. Holland*[1,2], W. Feng[2], Y. Dong[2], and *I.N. Pessah*[2]. [1]CSU Long Beach, Long Beach, CA; and [2]UC Davis, Davis, CA.

#1195 **Poster Board Number P248**
Genetic Susceptibility to Developmental Delays and Neurotoxicity in PCB-Treated Mice. K. Klinefelter[2], A.L. Juarez[1], S. Hampton[2], M. Kromme[2], M. Stegman[2], and *C.P. Curran*[2]. [1]Cincinnati Children's Medical Center, Cincinnati, OH; and [2]Northern Kentucky University, Highland Heights, KY.

#1196 **Poster Board Number P249**
Sustained Metabolic Phenotype and Associated Neuroimmune Effects After Prenatal Trichloroethylene Exposure. *S.J. Blossom*[2], S.B. Melnyk[2], W.D. Wessinger[2], M. Li[2], and C. Cooney[1]. [1]Central Arkansas Veterans Healthcare System, Little Rock, AR; and [2]University of Arkansas for Medical Sciences, Little Rock, AR.

#1197 **Poster Board Number P250**
BDE-47 and BDE-49 Inhibition of Axon Outgrowth in Cultured Hippocampal Neurons Is Reversed with Triiodothyronine or Antioxidant Co-Treatment. *H. Chen*, A.C. Bautista, K. Hayakawa, and *P.J. Lein*. University of California Davis, Davis, CA.

#1198 **Poster Board Number P251**
HBCD and PBDEs: Comparisons of the Potential Neurotoxicological Mode of Action of Two Brominated Flame Retardants. L.V. Dishaw, *A. Kraft*, *J. Li*, *K. Newhouse*, A. Luke, and *S. Rieth*. US Environmental Protection Agency, Washington, DC.

Abstract #

Monday Morning, March 14
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Neurotoxicology—General

Advances in Neurotoxicology

Chairperson(s): *Darryl B. Hood, The Ohio State University, Columbus, OH; and Prasada Rao S. Kodavanti, US Environmental Protection Agency, Research Triangle Park, NC.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *9:30 AM–11:00 AM*

#1199 **Poster Board Number P252**
Diacetyl Causes Age-Enhanced Ubiquitin Aggregation in the Neuroepithelium of the Rat Nose. *A.F. Hubbs*, A.P. Cole, K.L. Fluharty, L.A. Battelli, P. Charles, M.L. Kashon, A.M. Cumpston, W.T. Goldsmith, M.C. Jackson, W. McKinney, D.G. Frazer, *K. Sriram*, and J.S. Fedan. National Institute for Occupational Safety, and Health, Morgantown, WV.

#1200 **Poster Board Number P253**
High Fructose/High Fat Diets Mediate Changes in Protein Carbonyl Content in the Rat Brain with and without Ozone Exposure. J.M. Valdez, J.E. Richards, A.F. Johnstone, *J.E. Royland*, and *P.R.S. Kodavanti*. US EPA, Research Triangle Park, NC.

#1201 **Poster Board Number P254**
Effects of Altitude and Toluene on Neuroelectrophysiology in Sprague Dawley Rats. *D.A. Mahle*[4], S.M. McInturf[2], M. Miklasevich[1], A. Barnett[3], and J.G. Rohan[3]. [1]CAMRIS, Wright Patterson AFB, OH; [2]NAMRU-D, Wright Patterson AFB, OH; [3]ORISE, Wright Patterson AFB, OH; and [4]US Air Force, Wright Patterson AFB, OH.

#1202 **Poster Board Number P255**
Histopathological Analysis of the Brain from Mice Treated with Abraxane. T. Maejima, C. Kuwata, T. Ohsawa, I. Igarashi, S. Hakamata, K. Kai, and *W. Takasaki*. Daiichisankyo Co., Ltd., Tokyo, Japan.

#1203 **Poster Board Number P256**
Assessment of the Neurotoxicity of n-Butanol. D. Segal. US Environmental Protection Agency, Washington, DC. Sponsor: *S. Makris.*

#1204 **Poster Board Number P257**
A Preliminary Analysis of Central Auditory Dysfunction Induced by Jet Fuel Exposures. E.A. Merrill[2], P.J. Robinson[2], T.R. Sterner[2], and *D.R. Mattie*[1]. [1]AFRL, WPAFB, OH; and [2]HJF, WPAFB, OH. Sponsor: *D. Mattie.*

#1205 **Poster Board Number P302**
Electrophysiological Characterization of Neuronal Activity in *Ex Vivo* Hippocampal Slices Following Repeated *In Vivo* Exposures to Jet Fuel in Rats. J.G. Rohan[2,3], M.K. Miklasevich[1,2], S.M. McInturf[2], C.P. Gut[1,2], M.D. Grimm[1,2], J.E. Reboulet[1,2], and *K.L. Mumy*[2]. [1]CAMRIS International, Bethesda, MD; [2]Naval Medical Research Unit Dayton, WPAFB, OH; and [3]Oak Ridge Institute for Science, and Education, Oak Ridge, TN.

#1206 **Poster Board Number P303**
Acute Diesel Exhaust Exposure Induces Microglial Activation and Suppresses Adult Hippocampal Neurogenesis but Does Not Induce Apoptosis. *J.L. Coburn*[2], *T.B. Cole*[2], and *L.G. Costa*[1,2]. [1]University of Parma, Parma, Italy; and [2]University of Washington, Seattle, WA.

Abstract #

#1207 **Poster Board Number P304**
Microglia Modulate the Effect of Diesel Exhaust Particles on Neuronal Death: Role of Pro-Inflammatory Cytokines. *P.J. Roque*[2], and *L.G. Costa*[1,2]. [1]University of Parma, Parma, Italy; and [2]University of Washington, Seattle, WA.

#1208 **Poster Board Number P305**
Functional Neurotoxicity Evaluation of Noribogaine Using Video-EEG in Cynomolgus Monkeys. *S. Authier*[3], M. Pouliot[3], D. Paquette[2], R. Kubaszky[3], J. Arezzo[1], R.J. Stubbs[7], R.J. Gerson[5], L.T. Friedhofff[6], and H. Weis[4]. [1]Albert Einstein College of Medicine, New York, NY; [2]Centre Vétérinaire DMV, Montréal, QC, Canada; [3]CiToxLAB North America, Laval, QC, Canada; [4]DemeRx, Inc., Fort Lauderdale, FL; [5]Gerson Pharma Solutions, LLC, Lincoln University, PA; [6]Lawrence T Friedhofff, River Vale, NJ; and [7]Stubbs & Hensel Pharma Consulting, LLC, Blue Bell, PA.

#1209 **Poster Board Number P306**
Redox Control of Neuroinflammation by Post-Translational Activation of Glutamate Cysteine Ligase. *P.B. McElroy*[2], L.-P. Liang[2], *B.J. Day*[1], and *M. Patel*[2]. [1]National Jewish Health, Denver, CO; and [2]University of Colorado Anschutz Medical Campus, Aurora, CO.

#1210 **Poster Board Number P307**
Ameliorative Effect of Propolis and Ginger versus Neurotoxicity and Oxidative Stress Evoked by Monosodium Glutamate in Male Albino Rats. *N. E.-H.Y. Awad*, M.E. Elhalwagy, and A.R. Zaki. Beni-sueif University- Cairo, Egypt, Egypt.

#1211 **Poster Board Number P308**
Microglia Are Biosensors of Neuroinflammogens and Neurotoxicity, Whereas Astrocytes Are Linked Only to Neurotoxicity. *J.P. O'Callaghan*, *K.A. Kelly*, *A.R. Locker*, *L.T. Michalovicz*, and *D.B. Miller*. CDC/NIOSH, Morgantown, WV.

#1212 **Poster Board Number P309**
Corticosterone Priming of the Neuroinflammatory Response to AChE Inhibitors Results in Overexpression of Tlr2 and Downstream Targets, but Not Activation of the Nlrp3 Inflammasome. *L.T. Michalovicz*, *K.A. Kelly*, *A.R. Locker*, *D.B. Miller*, and *J.P. O'Callaghan*. CDC/NIOSH, Morgantown, WV.

#1213 **Poster Board Number P310**
Revealing Behavioral Learning Deficit Phenotypes Subsequent to *In Utero* Exposure to Benzo(a)pyrene. M.M. McCallister[4], Z. Li[4], T. Zhang[3], A. Ramesh[4], R.S. Clark[4], M. Maguire[4], B. Hutsell[1], *C.M. Newland*[1], and *D.B. Hood*[2,3]. [1]Auburn University, Auburn, AL; [2]College of Medicine, The Ohio State University, Columbus, OH; [3]College of Public Health, The Ohio State University, Columbus, OH; and [4]Meharry Medical College, Nashville, TN.

#1214 **Poster Board Number P311**
Exploration of the Gulf War Illness Phenotype in a Mouse Model Challenged with LPS at Long Term Time Points. *K.A. Kelly*, *A.R. Locker*, *L.T. Michalovicz*, *D.B. Miller*, and *J.P. O'Callaghan*. CDC/NIOSH, Morgantown, WV.

Abstract #

#1215 **Poster Board Number P312**
Comparison of Nerve Excitability, Nerve Conduction Velocity, and Behavioral Tests for Acrylamide-Induced Peripheral Neuropathy. *D.L. Freeborn*, G.L. Jung, K.L. McDaniel, *V.C. Moser*, and *D.W. Herr*. US EPA, Durham, NC.

#1216 **Poster Board Number P313**
Exposure to Fine Particulate Matter Increases Glutamate Uptake in Bergmann Glia Cells. E. Suárez, *A. De Vizcaya-Ruiz*, and *A. Ortega*. Cinvestav, Distrito Federal, Mexico.

#1217 **Poster Board Number P314**
Exposure to Airborne Ambient Ultrafine Particulate Matter Alters the Expression of Several Noncoding RNAs and Metallothioneins in Primary Human Neurons. *P. Solaimani*[2], A. Saffari[1], C. Sioutas[1], and *A. Campbell*[2]. [1]University of Southern California, Los Angeles, CA; and [2]Western University of Health Sciences, Pomona, CA.

#1218 **Poster Board Number P315**
Neurotoxic Effect of the Alkyl Polycyclic Aromatic Hydrocarbons in Human Neuroblastoma Cells. *S.N. Sarma*, *J.M. Blais*, and *H.M. Chan*. University of Ottawa, Ottawa, ON, Canada.

#1219 **Poster Board Number P316**
Circulating NGF Increases by Systemic Oxidative Stress and Orchestrates an Antioxidant Response via the TrkA/Akt Pathway in the Central Nervous System. C.E. Garza-Lombo, *C. Valdovinos-Flores*, J.H. Limon-Pacheco, R. Leon-Rodriguez, P. Petrosyan, and *M.E. Gonsebatt*. Universidad Nacional Autonoma de Mexico, Mexico, Mexico.

#1220 **Poster Board Number P317**
Monitoring Calcium Fluxes from Cerebral Cortical Cultures to Identify Effective Treatments Against GABA-A Receptor Channel Poisons. M. Laukova[1], J. Veliskova[1], *P.K. Stanton*[1], L. Velisek[1], and M.P. Shakarjian[1,2]. [1]New York Medical College, Valhalla, NY; and [2]Rutgers Robert Wood Johnson Medical School, Piscataway, NJ.

#1221 **Poster Board Number P318**
Gender Differences in Expression of ATP-Binding Cassette Transporters at Blood-Brain Interfaces in Response to a Hepatotoxic Dose of Acetaminophen. K.M. Flores, J.R. Renfro, and *J. Manautou*. University of Connecticut, Storrs, CT.

#1222 **Poster Board Number P319**
***In Vitro* Assessment of Human Neurotoxicity via High Content Analysis of Neurite Outgrowth Inhibition in SHSY5Y Cells and Induced Pluripotent Stem Cell (iPSc) Derived Neurons.** *P. Hewitt*, A. Kunz, J. Sebbel, and C. van Amsterdam. Merck KGaA, Darmstadt, Germany.

#1223 **Poster Board Number P320**
Molecular Insights into Pharmacological Inhibition of Microglial Pro-Inflammatory Response Using Mass Spectrometry-Based Proteomics. A. Morris[1], J. Guergues[2], D. Chaput[2], and S.M. Stevens[2]. [1]Rider University, Lawrenceville, NJ; and [2]University of South Florida, Tampa, FL. Sponsor: *R. Pollenz.*

Abstract #

#1224 **Poster Board Number P321**
Assessment of Microcystin's Neurotoxicity Using Two Knockout Strains of the Alternative Model *Caenorhabditis elegans*. *C. Moore*, and B. Puschner. University of California-Davis School of Veterinary Medicine, Davis, CA.

#1225 **Poster Board Number P322**
Use of Stem Cell Derived Peripheral Neurons as a Model of Chemotherapeutic Induced Peripheral Neuropathy. S. Delaney[2], C. Wing[2], N. Favre[2], G. Luerman[1], E. Dolan[2], and B. Murphy[1]. [1]Axiogenesis Inc, Plymouth Meeting, PA; and [2]University of Chicago, Chicago, IL. Sponsor: *E. Clarke.*

#1226 **Poster Board Number P323**
Acute Hydrogen Sulfide Exposure Induces Neurodegeneration via Activation of Inflammasomes in Brain. *D.-S. Kim*[1], *P. Anantharam*[1], E.M. Whitley[2], E. Gilbreath[3], B. Mahama[1], and *W.K. Rumbeiha*[1]. [1]Iowa State University, Ames, IA; [2]LLC, Gainesville, FL; and [3]Tuskegee University, Tuskegee, AL.

#1227 **Poster Board Number P324**
Small Molecule OT-404 Inhibits Oxidative Stress (OS) and NFκB Providing Protection in Cisplatin-Induced Peripheral Neuropathy (CIPN). R. Alobaidi[1,2], S. Thangirala[2], S.A. Mousa[2], and *H.A. El-Fawal*[1]. [1]Albany College of Pharmacy, and Health Sciences, Albany, NY; and [2]Pharmaceutical Research Institute, Rensselaer, NY.

#1228 **Poster Board Number P325**
Development of an *In Vitro* Neuromuscular Junction System Between Human Stem Cell-Derived Motoneurons and Human Skeletal Muscle to Evaluate Compound Toxicity. N. Santhanam[3], L. Kumanchik[3], Y. Cai[3], M. Jackson[3], X. Guo[3], A. Lavado[3], C.W. McAleer[3], Y. Wang[3], M.T. Schnepper[3], C. Martin[3], F. Sommerhage[3], C.J. Long[3], *A. Riu*[1], J. Langer[2], L. Breton[1], and J.J. Hickman[3]. [1]L'Oreal Research, and Innovation division, Aulnay-sous-Bois, France; [2]L'Oreal Research, and Innovation division, Clark, NJ; and [3]University of Central Florida, Orlando, FL. Sponsor: *E. Dufour.*

#1229 **Poster Board Number P326**
Persistent Neuroinflammation in a Mouse Model of Tetramethylenedisulfotetramine (TETS)-Induced Status Epilepticus. C.A. Boosalis[1], D. Zolkowska[2], *D. Bruun*[1], J. Silverman[2], M. Rogawski[2], and *P. Lein*[1]. [1]University of California-Davis, Davis, CA; and [2]University of California-Davis, Sacramento, CA. Sponsor: *P. Lein.*

#1230 **Poster Board Number P327**
Circadian Rhythm Disturbances Altered Learning, Response Inhibition, and Cholinergic Signaling in Long-Evans Rats. *P. Eubig*[2], R. Balachandran[2], M. Leventhal[2], K. Duenas[2], A. Robertson[2], S. Beaudin[1], and M. Mahoney[2]. [1]University of California, Santa Cruz, CA; and [2]University of Illinois, Urbana, IL.

#1231 **Poster Board Number P328**
***In Vitro* Neurotoxicity of Different Tricresyl Phosphate (TCP) Isomers and Mixtures.** D.J. Duarte, J.M. Rutten, *M. van den Berg*, and *R.H. Westerink*. Utrecht University, Utrecht, Netherlands.

Abstract #

#1232 **Poster Board Number P329**
Neonatal Interleukin-1β Exposure Induces Chronic Neuroinflammatory Responses and Brain Damage in the Adult Rat. S. Lu[3], *L.-T. Tien*[1], Y. Pang[3], J.W. Lee[3], S. Lin[3], T.K. Jones[2,3], A.J. Bhatt[3], R.D. Savich[3], and L.-W. Fan[3]. [1]Fu Jen Catholic University, New Taipei City, Taiwan; [2]Tougaloo College, Tougaloo, MS; and [3]University of Mississippi Medical Center, Jackson, MS.

Monday Morning, March 14
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Neurotoxicology of Therapeutic Agents and Abused Substances

Advances in Neurotoxicology

Chairperson(s): *Henrik Viberg, Uppsala University, Uppsala, Sweden; and William Slikker Jr., National Center for Toxicological Research, US Food and Drug Administration, Jefferson, AR.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *11:15 AM–12:45 PM*

#1233 **Poster Board Number P330**
Serotonin Reuptake Inhibitory Effects of Illegal Compounds Adulterated in the Anti-Obesity Food. *S.H. Jung*[2], *Y.-J. Choi*[2], K.-W. Kang[2], K. Shin[1], and *B.-H. Lee*[2]. [1]Catholic University, Bucheon, Korea, Republic of; and [2]Seuol National University, Seoul, Korea, Republic of.

#1234 **Poster Board Number P331**
The Effect of Acute Acetaminophen Overdose on Hearing: Auditory Brainstem Responses, Protein Binding and Oxidative Stress in Cochleae. *M.R. McGill*[2], S. Kennon-McGill[2], D. Durham[1], and *H. Jaeschke*[1]. [1]University of Kansas Medical Center, Kansas City, KS; and [2]Washington University School of Medicine, St. Louis, MO.

#1235 **Poster Board Number P332**
Acute Acetaminophen (APAP) Intoxication Decreases Locomotor Activity and Modifies Glial Cells Markers in Brain Areas Involved in the Locomotion and Memory Regulation. M.B. Vigo[4], M.J. Peréz[5], E. Casim[4], M.B. Di Carlo[2], A. Scazziota[2], S. Martinez[1], *J.E. Manautou*[6], and C.I. Ghanem[3,4]. [1]3er UA, Departamento de Biología Celular, Histología, Embriología y Genética, Facultad de Medicina, UBA, Bs As, Argentina; [2]Dpto.Bioquimica Clinica, FFyB, UBA, Bs As, Argentina; [3]Facultad de Farmacia y Bioquímica. UBA, Bs As, Argentina; [4]Instituto de Investigaciones Farmacológicas (ININFA). CONICET-UBA, Bs As, Argentina; [5]Instituto de Química y Fisicoquímica Biológica. (IQUIFIB). CONICET, Bs As, Argentina; and [6]University of Connecticut, Storrs, CT.

#1236 **Poster Board Number P333**
Neonatal Exposure to Paracetamol (Acetaminophen) and CB1R Agonist Show an Additive Adverse Neurodevelopmental Effect. *G. Philippot*, A. Fredriksson, and *H. Viberg*. Uppsala University, Uppsala, Sweden.

#1237 **Poster Board Number P334**
Drug-Induced Neurotoxicity Assessments: Validation of a Neurological and Functional Observation Battery in the Sinclair Miniature Swine. A. Stricker-Krongrad[2], M. Zhong[2], A. Fuller[2], D. Brocksmith[1], J. Liu[2], and *G. Bouchard*[2]. [1]Sinclair BioResources, Auxvasse, MO; and [2]Sinclair Research Center, Auxvasse, MO.

Abstract #

#1238 **Poster Board Number P335**
Evaluation of the Effects of Tanezumab on Sympathetic Ganglia in Cynomolgus Monkeys (*Macaca fascicularis*): Stereologic, Histomorphologic, and Cardiofunctional Assessments. *P. Belanger*[2], *M. Butt*[4], P. Butler[2], S. Bhatt[1], S. Foote[1], D. Shelton[3], M. Evans[2], R. Arends[1], S. Hurst[1], *C. Okerberg*[2], T. Cummings[1], D. Potter[1], J. Steidl-Nichols[1], and *M. Zorbas*[2]. [1]Pfizer, Inc., Groton, CT; [2]Pfizer, Inc., San Diego, CA; [3]Pfizer, Inc., South San Francisco, CA; and [4]Tox Path Specialists, Frederick, MD.

#1239 **Poster Board Number P336**
Approach to Development of Simple Method for Detecting Rewarding Effect of Morphine Using Zebrafish. Y. Yoshizawa, I. Miyawaki, J. Deguchi, and H. Funabashi. Sumitomo Dainippon Pharma Co., Ltd., Osaka, Japan. Sponsor: *T. Yamada.*

#1240 **Poster Board Number P337**
Changes in Gene Expression After Prolonged Sevoflurane Exposure in Developing Monkeys. *F. Liu*, *T.A. Patterson*, *M.G. Paule*, *W. Slikker*, and *C. Wang*. National Center for Toxicological Research, Jefferson, AR.

#1241 **Poster Board Number P338**
Sevoflurane-Induced Developmental Neurotoxicity and Potential Biomarkers. *W. Slikker*[1], *F. Liu*[1], X. Han[2], *T.A. Patterson*[1], *M.G. Paule*[1], and *C. Wang*[1]. [1]NCTR/US FDA, Jefferson, AR; and [2]Sanford-Burham Medical Research Institute, Lake Nona, FL.

#1242 **Poster Board Number P339**
Relationship Between Ketamine-Induced Toxicity and NMDA Receptor-Mediated Calcium Influx in Developing Neurons. *C. Wang*, *F. Liu*, *T.A. Patterson*, *M.G. Paule*, and *W. Slikker*. National Center for Toxicological Research, Jefferson, AR.

#1243 **Poster Board Number P340**
Serotonin 5HT2 Receptors Antagonism Prevents the Development and Expression of Ketamine-Induced Behavioral Sensitization in Mice. Y. Abreu-Villaca[1,2], J.P. Galvanho[2], A.C. Manhaes[2], and C.C. Filgueiras[2]. [1]Duke University Medical Center, Durham, NC; and [2]UERJ, Rio de Janeiro, Brazil. Sponsor: *E. Levin.*

#1244 **Poster Board Number P341**
Concurrent Inhibition of Vesicular Monoamine Transporter 2 Does Not Protect Against 3,4-Methylenedioxymethamphetamine (MDMA; Ecstasy) Induced Neurotoxicity. *T.J. Monks*, *A.B. Cholanians*, *L.L. Lizarraga*, A.V. Phan, and *S.S. Lau*. The University of Arizona, Tucson, AZ.

#1245 **Poster Board Number P342**
High-Resolution Metabolomics of Anti-Seizure Therapy in Pregnant Women with Epilepsy. *D.I. Walker*[2], K.D. Pennell[4], R.H. Finnell[5], K.J. Meador[3], *D.P. Jones*[2], and P.B. Pennell[1]. [1]Brigham, and Women's Hospital, Harvard Medical School, Boston, MA; [2]Emory University, Atlanta, GA; [3]Stanford University, Stanford, CA; [4]Tufts University, Medford, MA; and [5]University of Texas at Austin, Austin, TX.

#1246 **Poster Board Number P343**
Identification of Cochlear Hair Cell Injury After Treatment with Kanamycin and Furosemide in C57BL6 Mice. *K. Tenneson*, and J.-F. Lafond. Charles River, Senneville, QC, Canada.

Abstract #

#1247 **Poster Board Number P344**
Retigabine Avoids Behavioral Neurotoxicity Associated with Early Life Phenobarbital Exposure in Rats. S. Frankel, N. Medvedeva, S.B. Gutherz, C.V. Kulick, C. Soper, A. Kondratyev, and P.A. Forcelli. Georgetown University, Washington, DC. Sponsor: *R. Tucker.*

#1248 **Poster Board Number P345**
Time-Course Study on Marijuana-Induced Dyslipidemia in Brain of Rats. *R.N. Ugbaja*, *O. Ademuyiwa*, B.O. Onunkwor, *O.A. Dosumu*, *D. Babayemi*, and T.F. Akinhanmi. Federal University of Agriculture, Abeokuta, Nigeria.

Monday Morning, March 14
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Arsenic Toxicity

♣ Toxicity of Metals

Chairperson(s): *Andrew Monnot, Cardno-ChemRisk, San Francisco, CA; and Britton C. Goodale, Geisel School of Medicine at Darmouth, Hanover, NH.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *9:30 AM–11:00 AM*

#1249 **Poster Board Number P346**
Time Course of Arsenic-Induced Lipotoxic and Non-Lipotoxic Dyslipidemia in Male Albino Rats: Comparison Between Pentavalent Inorganic and Organic Arsenic Through Drinking Water. *O. Ademuyiwa*[2], J.O. Fatoki[3], R.N. Ugbaja[2], T.F. Akinhanmi[2], *O.K. Afolabi*[3], *O.O. Ogunrinola*[4], *A.D. Wusu*[4], *E.O. Abam*[1], *O.A. Dosumu*[2], *D.O. Babayemi*[2], and O.B. Onunkwor[2]. [1]Bells University of Technology, Ota, Nigeria; [2]Federal University of Agriculture, Abeokuta, Nigeria; [3]Ladoke Akintola University of Technology, Ogbomosho, Nigeria; and [4]Lagos State University, Lagos, Nigeria.

#1250 **Poster Board Number P347**
Low Level Arsenic Exposure Reveals Mitochondrial Dynamics Regulation of Self-Renewal. A. Cheikhi, F. Ambrosio, and *A. Barchowsky*. University of Pittsburgh, Pittsburgh, PA.

#1251 **Poster Board Number P348**
Involvement of CNC-bZIP Protein NRF1 in Arsenic-Induced Impairments in Adipogenesis and Adipose Function. Y. Hou[1], P. Xue[2], R. Zhao[1], J. Dong[5], Z. Liu[1], J. Fu[1], H. Wang[1], Y. Xu[1], M. Yamamoto[4], *Q. Zhang*[3], *M.E. Andersen*[3], W. Qu[2], and *J. Pi*[1]. [1]China Medical University, Shenyang, China; [2]Fudan University, Shanghai, China; [3]The Hamner Institutes for Health Sciences, Research Triangle Park, NC; [4]Tohoku University, Sendai, Japan; and [5]Wuhan University of Science, and Technology, Wuhan, China.

#1252 **Poster Board Number P401**
Arsenic Toxicity Is Influenced by the Host-Associated Microbiome. M.P. Coryell, S. Schneider, T.R. McDermott, and S.T. Walk. Montana State University, Bozeman, MT. Sponsor: *D. Keil.*

#1253 **Poster Board Number P402**
Effects of Low-Dose Arsenic Exposure on Innate Immune Signaling in Human Primary Bronchial Epithelial Cells. *B.C. Goodale*, and *B.A. Stanton*. Geisel School of Medicine at Darmouth, Hanover, NH.

Abstract #

#1254 **Poster Board Number P403**
Dose-Response of Low-Dose Arsenite Cytotoxicity in a Human Keratinocyte Cell Line. K. Pennington[2], *K.T. Bogen*[1], *L. Arnold*[2], *A. Chowdhury*[2], and *S.M. Cohen*[2]. [1]Exponent Health Sciences, Oakland, CA; and [2]University of Nebraska Medical Center, Omaha, NE.

#1255 **Poster Board Number P404**
Genomic Targets of Sex Steroid Hormones for the Arsenic Metabolism Regulation in HepG2 Cells. C.O. Puente-Valenzuela, J.J. Duarte-Sustaita, A. Mendez-Hernandez, and G.G. García-Vargas. Universidad Juarez del Estado de Durango, Gomez Palacio, Mexico. Sponsor: *L.M. Del Razo.*

#1256 **Poster Board Number P405**
Arsenic Transformation of Human Prostate Epithelial and Stem Cells Show Decreased Toll Like Receptor -3 (tlr3) Expression: Correlation with Down-Regulated miR 29, 147 and 152 Clusters and Increased Expression of DNA Methyl Transferases Dnmt1, 3a and 3b. *C. Escudero-Lourdes*[2], E.E. Uresti-Rivera[1], *N.O. Ngalame*[1], *M.P. Waalkes*[1], and *E.J. Tokar*[1]. [1]National Institute of Environmental Health Sciences, Durham, NC; and [2]Universidad Autonoma de San Luis Potosi, San Luis Potosi, Mexico.

#1257 **Poster Board Number P406**
Specificity Protein (Sp) Transcription Factors Are Downregulated in Arsenite - Transformed Human Urothelial Cells (UROtsa). *V. Nair*, *S. Somji*, *S.H. Garrett*, and *D.A. Sens*. University of North Dakota, Grand Forks, ND.

#1258 **Poster Board Number P407**
A Role for Anterior Gradient 2 in a MCF-10A Cell Model of Arsenic Induced Breast Cancers. *J.L. Van Gieson*, *S.H. Garrett*, *D.A. Sens*, and *S. Somji*. University of North Dakota, Grand Forks, ND.

#1259 **Poster Board Number P408**
Urinary Metabolomic Shifts in Pregnant Women Exposed to Arsenic. *K. Bailey*[2], E. Martin[3], J. Laine[3], A. Olshan[3], L. Smeester[3], *Z. Drobna*[3], *M. Styblo*[3], M. Rubio-Andrade[1], G. Garcia-Vargas[1], and *R. Fry*[3]. [1]Facultad de Medicina, Gomez Palacio, Mexico; [2]Syngenta Crop Protection, LLC, Research Triangle Park, NC; and [3]University of North Carolina at Chapel Hill, Chapel Hill, NC.

#1260 **Poster Board Number P409**
Tobacco Smoking Decreases Arsenic Methylation Capacity in Alcohol Abstemious Women in Northern Mexico. L. Lopez-Carrillo[2], E.E. Félix-Arellano[2], C. Hernández-Alcaraz[2], R.U. Hernández-Ramírez[2], *A.J. Gandolfi*[3], and *M.E. Cebrian*[1]. [1]Cinvestav-IPN, Mexico City, Mexico; [2]Instituto Nacional de Salud Publica, Cuernavaca, Morelos, Mexico; and [3]University of Arizona, Tucson, AZ.

Abstract #

#1261 **Poster Board Number P410**
Association Between Variants in Arsenic Methyltransferase (*AS3MT*) and Urinary Metabolites of Inorganic Arsenic: Role of Exposure Level. X. Xu[5], *Z. Drobna*[5], S. Voruganti[5], K. Barron[5], C. González-Horta[4], B. Sánchez-Ramírez[4], L. Ballinas-Casarrubias[4], R. Hernández Cerón[2], D. Viniegra Morales[2], F. Baeza Terrazas[2], M. Ishida[4], D. Gutiérrez-Torres[4], J. Saunders[5], *R. Fry*[5], D. Loomis[3], *G. García-Vargas*[6], *L.M. Del Razo*[1], *M. Styblo*[5], and M. Mendez[5]. [1]Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional, México DF, Mexico; [2]Colegio de Médicos Cirujanos y Homeópatas del Estado de Chihuahua, Chihuahua, Mexico; [3]International Agency for Research of Cancer, Lyon, France; [4]UACH, Chihuahua, Mexico; [5]UNC Chapel Hill, Chapel Hill, NC; and [6]Universidad Juárez del Estado de Durango, Durango, Mexico.

#1262 **Poster Board Number P411**
DNA Methylation Characteristics of Arsenic-Associated Diabetes in a Prospective Cohort in Chihuahua, Mexico. E. Martin[6], *K. Bailey*[6], L. Smeester[6], C. González-Horta[4], B. Sánchez-Ramírez[4], L. Ballinas-Casarrubias[4], M. Ishida[4], D. Gutiérrez-Torres[4], R. Hernández Cerón[2], D. Viniegra Morales[2], F. Baeza Terrazas[2], L.M. Del Razo[1], G. García-Vargas[5], J. Buse[6], D. Loomis[3], *Z. Drobna*[6], *M. Styblo*[6], and *R.C. Fry*[6]. [1]Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional, Chihuahau, Mexico; [2]Colegio de Médicos Cirujanos y Homeópatas del Estado de Chihuahua, Chihuahua, Mexico; [3]IARC, Lyon Cedex, France; [4]Universidad Autónoma de Chihuahua, Chihuahua, Mexico; [5]Universidad Juárez del Estado de Durango, Gómez Palacio, Mexico; and [6]University of North Carolina at Chapel Hill, Chapel Hill, NC.

#1263 **Poster Board Number P412**
DNA Methylation Change of LINE-1 Associated with Chronic Arsenic Exposure Through a Cross Sectional Study in Bangladesh. T. Suzuki[1], K. Hossain[2], S. Himeno[3], and *K. Nohara*[1]. [1]National Institute for Environmental Studies, Tsukuba, Japan; [2]Rajshahi University, Rajshahi, Bangladesh; and [3]Tokushima Bunri University, Tokushima, Japan.

#1264 **Poster Board Number P413**
Risks Associated with Arsenic Exposure Resulting from the Consumption of California Wines Sold in the United States. *A. Monnot*[3], *B. Tvermoes*[2], R. Gerads[1], H. Gurleyuk[1], and *D. Paustenbach*[3]. [1]Brooks Rand Labs, Seattle, WA; [2]Cardno-ChemRisk, Boulder, CO; and [3]Cardno-ChemRisk, San Francisco, CA.

#1265 **Poster Board Number P414**
Rice, Arsenic, and Public Health: Consumption of Rice Products Containing Low Levels of Arsenic and Its Relationship to Health. L.A. Fahnestock, J. Sabate, *R.D. Smith*, M. Randhawa, G. Siapco, and S. Soret. Loma Linda University, Loma Linda, CA.

#1266 **Poster Board Number P415**
Antioxidants Ameliorate Impairment of Vascular Smooth Muscle Cell Mitochondrial Function by Monomethylarsonous Acid. *J. Angermann*, C. Pace, T. Das Banerjee, and R. Dagda. University of Nevada, Reno, NV. Sponsor: *J. Angermann*.

Abstract #

#1267 **Poster Board Number P416**
Hyper-Resistance to Acute Arsenic Toxicity of CD34+ Epidermal Cells Enriched from HaCat Keratinocytes. X. Wu, J. Fu, H. Wang, Y. Hou, *J. Pi*, and *Y. Xu*. China Medical University, Shenyang, China.

Monday Morning, March 14
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Toxicity of Metal Mixtures

♣ Toxicity of Metals

Chairperson(s): *Nicole S. Olgun, CDC, Morgantown, WV; and Howard Mielke, Tulane University, New Orleans, LA.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *11:15 AM–12:45 PM*

#1268 **Poster Board Number P417**
Exposure to Endocrine Disrupting Heavy Metals During Pregnancy: Infant-Related and Mother-Related Outcomes. *J. Gomes*[2], A. Rahman[2], and P. Kumarathasan[1]. [1]Health Canada, Ottawa, ON, Canada; and [2]University of Ottawa, Ottawa, ON, Canada. Sponsor: *J. Gomes.*

#1269 **Poster Board Number P418**
Assessing Human Metal Accumulations in an Urban Superfund Site. *K. Hailer*[2], M. Calhoun[2], B. West[2], and L. Lin[1]. [1]Montana State University, Bozeman, MT; and [2]Montana Tech, Butte, MT.

#1270 **Poster Board Number P419**
Perturbation of the Fecal Microbiome from Metal Exposed Rats. *J.A. Lewis*[3], B.C. Dancy[3], C.L. Horton[3], Y.S. Lee[1], *M.S. Madejczyk*[1], G. Ackermann[2], G. Humphrey[2], R. Knight[2], and J.D. Stallings[3]. [1]Fellow, Oak Ridge Institute for Science, and Education, Fort Detrick, MD; [2]University of California, San Diego, La Jolla, CA; and [3]US Army Center for Environmental Health Research, Fort Detrick, MD.

#1271 **Poster Board Number P420**
Effects of Heavy Metals on Calcium Oxalate (CaOx) Crystal Formation in a *Drosophila melanogaster* Model of Nephrolithiasis. *G.M. Landry*[1], T. Hirata[1], C.J. Gallo[1], P. Cabrero[2], K&L.R. Strohmaier[1], P. Williams[1], J.A. Dow[2], E. Furrow[3], and M.F. Romero[1]. [1]Mayo Clinic College of Medicine, Rochester, MN; [2]University of Glasgow, Glasgow, United Kingdom; and [3]University of Minnesota, St. Paul, MN.

#1272 **Poster Board Number P421**
Environmental Metals and Stress Hormones: Do Lead, Cadmium, or Cortisol Promote the Shortening of Telomeres? H. Alkhafaf, R. Lichtler, K. Esteves, S. Drury, and *J. Wickliffe*. Tulane University, New Orleans, LA.

#1273 **Poster Board Number P422**
Increased Expression of CD44 in Cadmium and Arsenite Transformed UROtsa Cells. D.B. Osowski, *A. Slusser-Nore*, E.R. Evanoff, *S. Somji*, *S.H. Garrett*, *D.A. Sens*, and *J.R. Dunlevy*. University of North Dakota, Grand Forks, ND.

Abstract #

#1274 **Poster Board Number P423**
Cytotoxicity and DNA Damage Induced by Copper and Zinc Organometallics in the HC-04 Non-Cancer Human Liver Cell Line. D. Desaulniers, G.-H. Xiao, and C. Cummings-Lorbetskie. Health Canada, Ottawa, ON, Canada. Sponsor: *R. Mehta.*

#1275 **Poster Board Number P424**
Dynamics of Zinc and Arsenite Binding to XPA Zinc Finger and PARP-1 Zinc Finger 1 Peptides. J. Huestis, X. Zhou, L. Chen, C. Feng, L.G. Hudson, and *K.J. Liu*. University of New Mexico, Albuquerque, NM.

#1276 **Poster Board Number P425**
Coagulation/flocculation Processes Using Inorganic Chemicals as Treatment for Textile Effluents. *C.T. Onwordi*[1,2], and P.C. Onianwa[2]. [1]Lagos State University, Lagos, Nigeria; and [2]University of Ibadan, Ibadan, Nigeria.

#1277 **Poster Board Number P426**
Human Health Risk of Heavy Metal Levels in Periwinkle, *Tympanotonus fuscatus* (Gastropoda) from a Contaminated Near Shore Tropical Wetland. *A.I. Usese*[2], *L.O. Chukwu*[2], R. Naidu[3,4], M.M. Rahman[3,4], S. Islam[3,4], and E.O. Oyewo[1]. [1]Nigerian Institute of Oceanography, and Marine Research, Victoria Island, Lagos, Nigeria; [2]University of Lagos, Lagos, Nigeria; [3]University of New Castle, Callaghan, New South Wales, Australia; and [4]University of South Australia, Mawson Lakes, South Australia, Australia.

Monday Morning, March 14
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Respiratory Toxicology

Chairperson(s): *Brian Day, National Jewish Health, Denver, CO.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *9:30 AM–11:00 AM*

#1278 **Poster Board Number P427**
Genetic Susceptibility and Occupational Exposure to Beryllium. *A. Weston*, E.C. McCanlies, and K. Kreiss. National Institute for Occupational Safety, and Health, Morgantown, WV.

#1279 **Poster Board Number P428**
Standardization of Exhaled Breath Condensate (EBC) Collection Using a Feedback Regulated Breathing Pattern. B.R. Winters[3], *M. Madden*[4], *M. Angrish*[5], M. Stiegel[1], T. Risby[2], and *J. Pleil*[5]. [1]Duke University, Durham, NC; [2]Johns Hopkins University, Baltimore, MD; [3]University of North Carolina, Chapel Hill, NC; [4]US EPA, Chapel Hill, NC; and [5]US EPA, Research Triangle Park, NC.

#1280 **Poster Board Number P429**
Malondialdehyde-Acetaldehyde (MAA) Adducted Surfactant Protein Induced Lung Inflammation Is Mediated Through Scavenger Receptor A (SRA). M. Sapkota, and T.A. Wyatt. University of Nebraska Medical Center, Omaha, NE. Sponsor: *M.L. McCaskill.*

Abstract #

#1281 **Poster Board Number P430**
Persistent Increases in Inflammatory Cytokines, Akt, and MAPK/ERK Pathways After Inhalation Exposure of Rats to Libby Amphibole (LA) or Amosite: Comparison to Effects After Intratracheal Exposure to LA or Naturally Occurring Asbestos. *S.H. Gavett*[2], D.L. Andrews[2], *U.P. Kodavanti*[2], and J.M. Cyphert[1]. [1]Duke University, Durham, NC; and [2]US EPA, Research Triangle Park, NC.

#1282 **Poster Board Number P431**
Inflammatory Effects of Acrolein, Crotonaldehyde and Hexanal on Air-Lifted Primary Bronchial Human Epithelial Cells. A.M. Dwivedi, *L. Ernstgård*, *G. Johanson*, and L. Palmberg. Karolinska Institutet, Stockholm, Sweden.

#1283 **Poster Board Number P432**
Dung Biomass Smoke Exposure Attenuates Immune Responses to Toll-Like Receptor Ligands in Airway Epithelial Cells and Mice. *C.E. McCarthy*, P.F. Duffney, T.H. Thatcher, R.P. Phipps, and P.J. Sime. University of Rochester, Rochester, NY.

#1284 **Poster Board Number P433**
Pulmonary Responses Following Inhalation of Sand Dust Collected from Hydraulic Fracturing Operations. J.S. Fedan[1], J.A. Thompson[1], B.Y. Farris[2], W. McKinney[1], A.M. Cumpston[1], M.C. Jackson[1], K.A. Russ[1], and *J.R. Roberts*[1]. [1]National Institute for Occupational Safety, and Health, Morgantown, WV; and [2]West Virginia University, Morgantown, WV.

#1285 **Poster Board Number P434**
Activation and Desensitization of Transient Receptor Potential Vanilloid-1 (TRPV1) Variants by Coal Fly Ash Particles and Associations with Asthma Symptom Control Metrics. *C. Rice*, C. Stockmann, *E. Romero*, D. Shapiro, *J. Veranth*, and *C. Reilly*. University of Utah, Salt Lake City, UT.

#1286 **Poster Board Number P435**
Toxicological Characteristics of Russian Anthophyllite: Chemical Composition and Cancer Potency Considerations. *A. Korchevskiy*, and J. Rasmuson. Chemistry & Industrial Hygiene, Inc., Wheat Ridge, CO.

#1287 **Poster Board Number P436**
Polyhexamethyleneguanidine-Phosphate Induce Epithelial-to-Mesenchymal Transition in Human Lung Adenocarcinoma Cell Line, A549. *D.Y. Shin*, *H.R. Kim*, L. Seung Mee, and K.H. Chung. Sungkyunkwan University, Suwon, Korea, Republic of.

#1288 **Poster Board Number P437**
Naphthalene DNA Adduct Formation in *Ex Vivo* Rodent Tissues. S.A. Carratt[3], B.A. Buchholz[1], *X. Ding*[2], and *L.S. Van Winkle*[3]. [1]CAMS/LLNL, Livermore, CA; [2]SUNY, Albany, NY; and [3]UC Davis, Davis, CA.

#1289 **Poster Board Number P438**
Reactive Oxygen Species-Induced DNA Effects of Peripheral Blood Mononuclear Cells Isolated from Rats After Pulmonary Exposure to Welding Fume. M. Shoeb, *V. Kodali*, *A. Erdely*, T. Meighan, R. Salmen, T. Eye, *P.C. Zeidler-Erdely*, *B. Farris*, *J.R. Roberts*, and *J.M. Antonini*. NIOSH, Morgantown, WV.

Abstract #

#1290 **Poster Board Number P439**
DNA Damage and Senescence Result in Epithelial Dysfunction and Pulmonary Fibrosis. *T. Beach*, *C.J. Johnston*, *A.M. Groves*, J.P. Williams, and *J.N. Finkelstein*. University of Rochester, Rochester, NY.

#1291 **Poster Board Number P440**
Gender Differences in Murine Pulmonary Responses Elicited by Nano-Crystalline Cellulose. *A.A. Shvedova*[2,6], E.R. Kisin[2], *N. Yanamala*[2], M.T. Farcas[2], A.L. Sayre[2], D.W. Gutkin[4], P.M. Fournier[3], A. Star[3], R. Reiner[5], S. Halappanavar[1], and *V.E. Kagan*[3]. [1]Health Canada, Ottawa, ON, Canada; [2]NIOSH, Morgantown, WV; [3]University of Pittsburgh, Pittsburgh, PA; [4]UPMC, Pittsburgh, PA; [5]USDA Forest Service, Madison, WI; and [6]WVU, Morgantown, WV.

#1292 **Poster Board Number P441**
Immunomodulatory and Epigenetic Effects of Resveratrol in the Attenuation of SEB-Induced Acute Lung Injury. H.F. Alghetaa[1,2], E. Zumbrun[2], A.K. Mohammed[1,2], D. Elliot[2], *P. Nagarkatti*[2], and *M. Nagarkatti*[2,3]. [1]University of Baghdad - College of Veterinary Medicine, Baghdad, Iraq; [2]University of South Carolina - School of Medicine, Columbia, SC; and [3]Veterans Affairs, Columbia, SC.

#1293 **Poster Board Number P442**
***In Situ* Metabolite Profiling of Remodeled Arteries in Pulmonary Arterial Hypertension Using Innovative Mass Spectrometry Imaging Tools.** H. Gregory[1], S.J. Dumas[2], R. Legouffe[1], G. Picard De Muller[1], P. Dorfmüller[2], E. Fadel[2], M. Humbert[2], J. Stauber[1], S. Cohen-kaminsky[2], F. Pamelard[1], and *D. Bonnel*[1]. [1]Imabiotech, Loos, France; and [2]LabEx LERMIT, Le Plessis Robinson, France.

#1294 **Poster Board Number P443**
Inhibition of Lactate Dehydrogenase Prevents Radiation-Induced Fibrotic Responses in the Lung. *J.L. Judge*, J.P. Williams, R.P. Phipps, P.J. Sime, and R.M. Kottmann. University of Rochester, Rochester, NY.

#1295 **Poster Board Number P444**
Acetaminophen Attenuates House Dust Mite Induced Allergic Airway Disease in Mice. *G.J. Smith*[2], R.S. Thrall[3], M.M. Cloutier[1], *J.E. Manautou*[2], and *J.B. Morris*[2]. [1]Connecticut Children's Medical Center, Hartford, CT; [2]University of Connecticut, Storrs, CT; and [3]University of Connecticut Health Center, Storrs, CT. Sponsor: *J. Morris.*

#1296 **Poster Board Number P445**
Sensitivity and Resistance to Lung Inflammatory and Pathological Changes in Carbon Nanotube Exposures Among Inbred Mouse Strains. *E.A. Frank*[2], *V.S. Carreira*[2], D.R. Prows[1], and *J.S. Yadav*[2]. [1]Cincinnati Children's Hospital Medical Center, Cincinnati, OH; and [2]University of Cincinnati, Cincinnati, OH.

#1297 **Poster Board Number P446**
Changes in Vascular and Exhaled Breath Condensate Nitrite Following Acute Traffic Pollution Exposure Using Oral Nitrite Prophylaxis via Beet Juice. *H. Kipen*[2], C. Guo[1], R. Laumbach[3], S. Alimokhtari[3], K. Black[3], and *A. Gow*[1]. [1]Rutgers School of Pharmacy, Piscataway, NJ; [2]Rutgers School of Public Health, Basking Ridge, NJ; and [3]Rutgers School of Public Health, Piscataway, NJ.

Abstract #

#1298 **Poster Board Number P447**
Subacute and Subchronic Inhalation of Aminoethylpiperazine Results in Portal-of-Entry but Not Systemic Effects in Fischer 344 Rats. *J.A. Hotchkiss*, K.E. Stebbins, and *B.J. Hughes*. The Dow Chemical Company, Midland, MI.

#1299 **Poster Board Number P448**
Proinflammatory Responses in Lungs of Rats Exposed to Emissions from 1. and 2. Generation Biodiesel Fuels. P.A. Magnusson[4], J. Gromadzka-Ostrowska[5], O. Myhre[4], H.J. Dahlman[4], J. Biedrzycki[1], M. Gajewska[5], J. Wilczak[5], R. Mruk[5], M. Kruszewski[2], A. Lankoff[2,3], and J. Øvrevik[4]. [1]Automotive Industry Institute, Warsaw, Poland; [2]Institute of Nuclear Chemistry, and Technology, Warsaw, Poland; [3]Jan Kochanowski University, Kielce, Poland; [4]Norwegian Institute of Public Health, Oslo, Norway; and [5]Warsaw University of Life Sciences, Warsaw, Poland. Sponsor: *U.C. Nygaard.*

#1300 **Poster Board Number P449**
Human Equivalent Concentrations for Diacetyl Based on Minimal Bronchiolar Respiratory Effects Observed in Animals: A Refined Analysis Using Current Toxicology Data and Dosimetry Models. M.E. Glynn[2], *R.E. Adams*[2], *E.M. Beckett*[2], P.K. Scott[3], *J.S. Pierce*[2], and *B.L. Finley*[1]. [1]Cardno ChemRisk, Brooklyn, NY; [2]Cardno ChemRisk, Chicago, IL; and [3]Cardno ChemRisk, Pittsburgh, PA.

#1301 **Poster Board Number P450**
TRPV4 Inhibitor Improves Pulmonary Function and Oxygen Saturation in a Pig Translational Model of Chemically Induced Acute Lung Injury. *S. Achanta*[1], M.A. Gentile[1], D.J. Behm[2], T.J. Roethke[2], M.D. Gunn[1], I.M. Cheifetz[1], and *S.E. Jordt*[1]. [1]Duke University School of Medicine, Durham, NC; and [2]GlaxoSmithKline Pharmaceuticals, King of Prussia, PA.

#1302 **Poster Board Number P501**
Extracted Cookstove Emissions Differentially Alter Pro-Inflammatory and Adaptive Gene Expression in Lung Epithelial Cells. *E.A. Gibbs-Flournoy*[2], B. Preston[1], M. Hays[3], J. McGee[3], L. Copeland[3], and J.A. Dye[3]. [1]CSS-Dynamac (Jacobs), Durham, NC; [2]ORISE/US EPA, Research Triangle Park, NC; and [3]US EPA, Research Triangle Park, NC.

#1303 **Poster Board Number P502**
Pulmonary Inflammation and Injury Caused by Environmentally Persistent Free Radicals Is Mediated Through Activation of the Aryl Hydrocarbon Receptor. A.C. Harmon[1], V.Y. Hebert[3], *S.A. Cormier*[4], M. Jennings[1], *W.L. Backes*[2], *R. Reed*[2], and *T.R. Dugas*[1]. [1]Louisiana State University, Baton Rouge, LA; [2]Louisiana State University Health Sciences Center, New Orleans, LA; [3]Louisiana State University Health Sciences Center, Shreveport, LA; and [4]University of Tennessee Health Science Center, Memphis, TN. Sponsor: *T. Dugas.*

#1304 **Poster Board Number P503**
Exposure to Inhaled Air Pollutants Results in Altered Barrier Structure in the Duodenal Epithelium of ApoE KO Mice. M.N. Fitch[3], J. Lucero[3], *M.J. Campen*[2], *A. Lund*[3], and *J.D. McDonald*[1]. [1]Lovelace Respiratory Research Institute, Albuquerque, NM; [2]University of New Mexico, Albuquerque, NM; and [3]University of North Texas, Denton, TX.

Abstract #

#1305 **Poster Board Number P504**
Effects of DEHP and Its Metabolite MEHP on Growth Factors in A549 Cells Are Not Mediated by PPARγ or AhR. *L. Rafael-Vázquez*, and *B. Quintanilla-Vega*. CINVESTAV-IPN, Mexico City, Mexico.

#1306 **Poster Board Number P505**
Inflammatory Responses and Its Mechanisms Induced by Polyhexamethylene Biguanide. H.R. Kim, J.J. Kim, D.Y. Shin, and K.H. Chung. Sungkyunkwan University, Suwon, Korea, Republic of.

#1307 **Poster Board Number P506**
Chronic Over-Consumption of Alcohol Reduces Levels of Antimicrobial Peptides (LL-37) in Human Broncho Alveolar Lavage Fluid (BALF), Pulmonary Monocytes and Alveolar Epithelial Cells. O. Ogunsakin, H. Hottor, and *M. McCaskill*. Tulane University, New Orleans, LA.

#1308 **Poster Board Number P507**
39-Week Inhalation Toxicity and Fibrogenicity of Abrasive Blasting Sand and Specular Hematite. *W.M. Gwinn*[2], *M.F. Cesta*[2], *M.D. Stout*[2], J.H. Roycroft[2], C.S. Smith[2], J.A. Dill[1], G.L. Baker[1], A. Gupta[1], B.K. Hayden[1], K.M. Patton[1], and *D. Germolec*[2]. [1]Battelle, Richland, WA; and [2]NIEHS, Research Triangle Park, NC.

#1309 **Poster Board Number P508**
Circulating Inflammatory Potential in Obstructive Sleep Apnea Patients. *K. Zychowski*[2], B. Sanchez[2], G. Herbert[2], R.P. Pedrosa[3], G. Lorenzi-Filho[3], L. Drager[3], V.Y. Polotsky[1], and *M. Campen*[2]. [1]Johns Hopkins University School of Medicine, Baltimore, MD; [2]University of New Mexico, Albuquerque, NM; and [3]University of São Paulo Medical School, São Paulo, Brazil.

#1310 **Poster Board Number P509**
Threshold for the Interactive Effects of Cigarette Smoke and Asbestos Exposure for the Risk of Lung Cancer. *E.S. Fung*, M. Kovochich, *D.M. Cowan*, and *A.K. Madl*. Cardno ChemRisk, LLC, Aliso Viejo, CA.

#1311 **Poster Board Number P510**
Identifying Genetic Predictors of Response to Respiratory Toxicants Using the Collaborative Cross Mouse Genetic Reference Population. *S. Kelada*. University of North Carolina, Chapel Hill, NC.

#1312 **Poster Board Number P511**
Altered Metabolism of Lung Mesothelial Cells in Response to Asbestos Exposure. C. Mesaros[2], D. Ciccimaro[2], L. Guo[2], N.W. Snyder[1], and I.A. Blair[2]. [1]Drexel University, Philadelphia, PA; and [2]University of Pennsylvania, Philadelphia, PA. Sponsor: *T. Penning.*

#1313 **Poster Board Number P512**
Toxicological Effects of Inhaled Fracking Sand Dust on Reactivity and Neurogenic Responses of Isolated Rat Trachea. K.A. Russ, W. McKinney, A.M. Cumpston, M.C. Jackson, J. Thompson, and J.S. Fedan. National Institute for Occupational Safety, and Health, Morgantown, WV. Sponsor: *J. Roberts.*

Abstract #

#1314 **Poster Board Number P513**
Instillation of Indium-Tin Oxide Production Facility Particles in Rats Induces Pulmonary Toxicity. *M. Badding*[1], N. Fix[3], M. Orandle[2], M. Barger[2], *K. Dunnick*[4], K. Cummings[2], and S. Leonard[2]. [1]Exponent, Alexandria, VA; [2]National Institute for Occupational Safety, and Health, Morgantown, WV; [3]State University of New York at Buffalo, Buffalo, NY; and [4]The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#1314a **Poster Board Number P514**
Role of Osteopontin and Proteinase 3 in BAL and Blood in Phosgene-Induced Lung Edema. W. Li[1], and *J. Pauluhn*[2]. [1]Department of Toxicology, 4th Military Medical University, Xi'an, Shaanxi, China; and [2]Global Phosgene Steering Group, Bayer MaterialScience AG, Leverkusen, Germany.

Monday Morning, March 14
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Cell Death and Apoptosis

Chairperson(s): *Bashir M. Rezk, Southern University at New Orleans, New Orleans, LA; and Qiang Shi, National Center for Toxicological Research, US Food and Drug Administration, Jefferson, AR.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *11:15 AM–12:45 PM*

#1315 **Poster Board Number P521**
A Comparative Study of Essential Oils and Their Chemotypes on A549 Lung Cancer Cells. *E.R. Esposito*, K. Adair, K. Murphy, S. Baltzley, and A. AlGhananeem. Sullivan University College of Pharmacy, Louisville, KY.

#1316 **Poster Board Number P522**
p53-Independent Activation of p21 in Response to Mitomycin C and Decarbamoylmitomycin C. J. Seo, B.T. Huang, *S.-Y. Cheng*, and E. Champeil. John Jay College of Criminal Justice, New York, NY.

#1317 **Poster Board Number P523**
Gastric Mucosal Cells as an Early Screening Assay for Drug Toxicity. S. Goineau. Porsolt Sas, Le Genest Saint Isle, France. Sponsor: *G. Froget.*

#1318 **Poster Board Number P524**
Crizotinib and Ceritinib Induce Apoptosis and Necrosis in Primary Rat Hepatocytes at Therapeutic Levels. *Q. Shi*, *X. Yang*, J.J. Greenhaw, and *W.B. Mattes*. US Food and Drug Administration (FDA), The National Center for Toxicological Research (NCTR), Jefferson, AR.

#1319 **Poster Board Number P525**
Comparative Cytotoxicity of Halobenzoquinone Isomers in Mammalian Cell Lines. *J. Li*, S. Vemula, and X.-F. Li. University of Alberta, Edmonton, AB, Canada.

#1320 **Poster Board Number P526**
The Curcumin Derivative RL112 Induces Apoptosis in Ovarian Cancer Cell Lines. P. Gwavava, M. Nimick, S. Taurin, B.C. Hawkins, and *R.J. Rosengren*. University of Otago, Dunedin, New Zealand.

#1321 **Poster Board Number P527**
Celastrol Induced Cytotoxicity and Apoptosis in A549 Cells. *B. Alpertunga*, and T. Jannuzzi. Istanbul University Faculty of Pharmacy, Istanbul, Turkey.

Abstract #

#1322 **Poster Board Number P528**
Methylmercury Induces Oxidative Stress, Caspase-3 Activation and Cleavage of Rock-1 in Primary Astroglial Cells. A. Antunes dos Santos, and *M. Aschner*. Albert Einstein College of Medicine, New York, NY.

#1323 **Poster Board Number P529**
Phosphine Gas Inhalation Induces Apoptosis in the Heart in Rats. D.K. Andres, B.J. Benton, O.C. Clark, J. Simons, J.A. Tressler, J.F. Andres, J. Devorak, R. Ray, and *A.M. Sciuto*. US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD.

#1324 **Poster Board Number P530**
Enhanced Radiation-Induced Cell Killing Through Modulation of Autophagic Flux in Prostate Cancer Cells. *T.A. Thompson*, T. Borunda, T. Anderson Daniels, D. MacKenzie, K. White, and J. Norenberg. University of New Mexico, Albuquerque, NM.

#1325 **Poster Board Number P531**
Cytotoxicity of Whole Smoke Conditioned Media Generated from 3R4F Reference Cigarettes to Human Aortic Endothelial Cells. O. Makwana[2], H. Flockton[1], G. Watters[1], W. Fields[2], and B. Bombick[2]. [1]Covance Laboratories Ltd, Harrogate, United Kingdom; and [2]R.J. Reynolds Tobacco Company, Winston-Salem, NC. Sponsor: *R. Potts.*

#1326 **Poster Board Number P532**
Targeting Acute Promyelocytic Leukemia Using Prolonged Low Doses of Cisplatin. S. Dasari, C. Yedjou, V.R. Velma, and *P.B. Tchounwou*. Jackson State University, Jackson, MS. Sponsor: *P. Tchounwou.*

#1327 **Poster Board Number P533**
Preclinical Studies of Medicinal Plant for the Treatment of Ovarian Cancer. A.T. Mbemi, C. Yedjou, V.I. Ogungbe, and *P.B. Tchounwou*. Jackson State University, Jackson, MS. Sponsor: *P. Tchounwou.*

#1328 **Poster Board Number P534**
ASD-49, A Novel Aspirin-Derived Small Molecule, as a Potential Therapeutic Agent for Colorectal Cancer. *D.N. Karelia*[1], M.K. Pandey[1], D. Plano[2], S. Amin[1], and A.K. Sharma[1]. [1]Penn State College of Medicine, Hershey, PA; and [2]University of Navarra, Pamplona, Spain.

#1329 **Poster Board Number P535**
Nupr1/Chop Signal Axis Is Involved in Mitochondrion-Related Endothelial Cell Apoptosis Induced by Methamphetamine. W. Xie[2], D. Cai[2], D. Qiao[2], X. Yue[2], Q. Wang[2], D. Li[2], *Z. Lin*[1], and H. Wang[2]. [1]Kansas State University, Manhattan, KS; and [2]Southern Medical University, Guangzhou, China.

#1330 **Poster Board Number P536**
Lead Nitrate-Induced Cell Cycle Arrest, Genotoxic and Apoptotic Effect in Human Leukemia (HL-60) Cells. H.M. Tchounwou, C. Yedjou, and *P.B. Tchounwou*. Jackson State University, Jackson, MS. Sponsor: *P. Tchounwou.*

#1331 **Poster Board Number P537**
Molecular Mechanisms of Cisplatin Cytotoxicity in Acute Promyelocytic Leukemia Cells. *P.B. Tchounwou*. Jackson State University, Jackson, MS.

Abstract #

Monday Morning, March 14
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Immunotoxicology

Chairperson(s): *Isaah Mohar, Gradient Corp., Seattle, WA; and Jessica Meyers, University of Rochester, Rochester, NY.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *9:30 AM–11:00 AM*

#1332 **Poster Board Number P601**
Understanding Anti-CD137-Induced Liver Toxicity. M. Wang[3], *B.R. Baumgart*[1], F. Simutis[1], *W. Freebern*[2], *K.D. Chadwick*[2], *R.T. Bunch*[1], *C. Ju*[3], and *K.D. Price*[2]. [1]Bristol-Myers Squibb, Mt Vernon, IN; [2]Bristol-Myers Squibb, New Brunswick, NJ; and [3]University of Colorado Health Sciences Center, Aurora, CO.

#1333 **Poster Board Number P602**
Investigation of the Mechanism of Idiosyncratic Clozapine-Induced Agranulocytosis Using a Rat Model. A.S. Johnston. University of Toronto, Toronto, ON, Canada. Sponsor: *J. Uetrecht.*

#1334 **Poster Board Number P603**
Alterations of Tnf-Mediated Leukocyte Recruitment in Trovafloxacin-Treated Mice. G. Giustarini, L. Kruijssen, J. Smit, R. Bleumink, M. Bol-Schoenmakers, M. van Roest, and *R. Pieters*. Utrecht University, Utrecht, Netherlands.

#1335 **Poster Board Number P604**
Early Juvenile Exposure of Mice to High-Dose Acetaminophen Confers Elevated Serum Eotaxin Levels and Sociability Impairments in Adulthood. *M.T. Edwards*[2], *G.G. Gould*[2], R. Alvarez[1], and *S.T. Schultz*[2]. [1]Naval Medical Research Unit, Ft. Sam Houston, San Antonio, TX; and [2]The University of Texas Health Science Center at San Antonio, San Antonio, TX.

#1336 **Poster Board Number P605**
Direct Effects of Ethanol at Toxicologically Relevant Concentrations on TLR3 Conformation and Ligand Binding. W. Tan, V. Le, E. Lewis, S. Gwaltney, B. Manikanthan, A. Shack, B. Nanduri, and *S.B. Pruett*. Mississippi State University, Mississippi State, MS.

#1337 **Poster Board Number P606**
Identification of the Cleaved Klotho Protein That Protects Against Oxidative Cigarette Smoke Induced Cell Death. M. Njenga, T. Lone, and *D.J. Blake*. Fort Lewis College, Durango, CO.

#1338 **Poster Board Number P607**
E-Cigarette Liquids Alter Human Peripheral Blood Neutrophil, Alveolar Macrophage, and Natural Killer Cell Function. P.W. Clapp, E.A. Pawlak, P.B. Setzer, and *I. Jaspers*. University of North Carolina at Chapel Hill, Chapel Hill, NC.

#1339 **Poster Board Number P608**
Crack Cocaine Effect on the Immune Responses of Rats Exposed to Its Smoke, Twice a Day, for 28 Days. I.M. Hueza[1,2], and F. Ponce[2]. [1]Federal University of São Paulo - UNIFESP, Diadema, Brazil; and [2]School of Veterinary Medicine, and Animal Science - University of São Paulo, São Paulo, Brazil. Sponsor: *K. Welch.*

Abstract #

#1340 **Poster Board Number P609**
Δ9-Tetrahydrocannabinol (THC) Inhibits Early Response to Cpg-odn-Mediated Activation of Human Plasmacytoid Dendritic Cells (pDC). *J.E. Henriquez*, M. Rizzo, M. Schultz, R.B. Crawford, and N.E. Kaminski. Michigan State University, East Lansing, MI. Sponsor: *N. Kaminski.*

#1341 **Poster Board Number P610**
Δ9-THC-Mediated Suppression of Human Plasmacytoid Dendritic Cell and CD14+ Leukocyte Maturation. M.D. Rizzo, *J.E. Henriquez*, R.B. Crawford, and *N.E. Kaminski*. Michigan State University, East Lansing, MI. Sponsor: *N. Kaminski.*

#1342 **Poster Board Number P611**
Increased Dendritic Cell Population and Antigen Presenting Function of CB1-/-CB2-/- Derived Mouse Bone Marrow Cells. *J.E. Suarez-Martinez*, *R.B. Crawford*, and *N.E. Kamisnki*. Michigan State University, East Lansing, MI.

#1343 **Poster Board Number P612**
β-Glucan Administration Enhances Immune Responses through Activation of Regulatory T Cells and Cytokine Production in Mice Exposed to Aflatoxin B1. *S. Albakheet*, S.F. Ahmad, and *S.M. Attia*. King Saud University, Riyadh, Saudi Arabia.

#1344 **Poster Board Number P613**
The Food Preservative tBHQ Suppresses Expression of Il-2 And CD25 Independent of Nrf2 in Human Jurkat T Cells. *J.W. Zagorski*, *A.E. Turley*, T.P. Maser, and *C.E. Rockwell*. Michigan State University, East Lansing, MI.

#1345 **Poster Board Number P614**
Protection of Vitamin C and Vitamin E Against Adverse Effects of Phthalate in RAW264.7 Macrophage Cell Line. J.-F. Chang, J.-H. Yang, C.-Y. Tseng, and *M.-W. Chao*. Chung Yuan Christian University, Taoyuan, Taiwan. Sponsor: *M.-W. Chao.*

#1346 **Poster Board Number P615**
Upregulation of IgM Production by the Nrf2 Activator tBHQ in LPS-Activated Mouse Splenocytes. J. Bursley, T. Dunivin, S. Umthong, *J. Zagorski*, *A. Turley*, H. Dover, and *C. Rockwell*. Michigan State University, East Lansing, MI.

#1347 **Poster Board Number P616**
Lipid Antigen Presentation for T Cell Activation Is Inhibited by Polycyclic Aromatic Hydrocarbons. S. Huang. University of Cincinnati College of Medicine, Cincinnati, OH.

#1348 **Poster Board Number P617**
Effect of Carbamate Pesticides on Human Natural Killer Activity. *Q. Li*, M. Kobayashi, and T. Kawada. Nippon Medical School, Tokyo, Japan.

#1349 **Poster Board Number P618**
Dietary Exposure to Low Levels of Mercury Re-Tunes BCR Signaling Sensitivity Potentially Favoring a More Autoimmune Repertoire. *A. Rosenspire*[2], R. Gill[2], and *M.J. McCabe*[1]. [1]Robson Forensic Inc, Lancaster, PA; and [2]Wayne State University, Detroit, MI.

#1350 **Poster Board Number P619**
Developmental Arsenate Exposures Suppress Murine Splenocyte Mitogenesis, without Altering Spleen and Thymus Lymphocyte Population Subsets or Bone Marrow Lymphoid Progenitors. *S. Medina*, S. McClain, *H. Xu*, *F.T. Lauer*, *D. MacKenzie*, *A.M. Allan*, and *S.W. Burchiel*. University of New Mexico, Albuquerque, NM.

Abstract #

#1351 **Poster Board Number P620**
A Pilot Study of Arsenic-Induced Immunomodulation of the Prostate Tumor Microenvironment. *J. Shearer*[2], C. Umbaugh[2], V. Carpio[2], and *M. Figueiredo*[1]. [1]Purdue University, West Lafayette, IN; and [2]University of Texas Medical Branch, Galveston, TX.

#1352 **Poster Board Number P621**
Environmentally Relevant Concentrations of As^{+3} and MMA^{+3} Inhibit IL-7 Signaling in Immature Mouse T Cells. *H. Xu*, *F.T. Lauer*, *K.J. Liu*, *L.G. Hudson*, and *S.W. Burchiel*. University of New Mexico College of Pharmacy, Albuquerque, NM.

#1353 **Poster Board Number P622**
Immunotoxic Effects of Sodium Tungstate Dihydrate on Female B6C3F1/N Mice When Administered in Drinking Water. *R. Frawley*[2], *M. Smith*[3], *K. White*[3], S. Elmore[2], R. Herbert[2], R. Moore[1], L. Staska[4], *M. Behl*[2], *M. Hooth*[2], G. Kissling[2], and *D. Germolec*[2]. [1]EPL, Research Triangle Park, NC; [2]NIEHS, Research Triangle Park, NC; [3]Virginia Commonwealth University, Richmond, VA; and [4]WIL Research, Hillsborough, NC.

#1354 **Poster Board Number P623**
The Role of Transcription Factor FoxP3 in the Asbestos-Induced Apoptosis in MT-2 Cells. H. Matsuzaki[1], S. Lee[1], M. Maeda[2], N. Kumagai-takei[1], K. Yoshitome[1], *Y. Nishimura*[1], and *T. Otsuki*[1]. [1]Kawasaki Medical School, Kurashiki, Japan; and [2]Okayama University Graduate School of Natural Science, and Technology, Okayama, Japan.

#1355 **Poster Board Number P624**
Study for Immunological Importance of Increased Plasma Decoy Receptor 3 Level in Silicosis. S. Lee[2], *Y. Nishimura*[2], S. Yamamoto[2], T. Hatayama[2], H. Matsuzaki[2], N. Kumagai-Takei[2], K. Yoshitome[2], H. Hayashi[2], K. Uragami[1], M. Kusaka[3], W. Fujimoto[2], and T. Otsuki[2]. [1]Hinase-Uragami Iin, Okayama, Japan; [2]Kawasaki Medical School, Kurashiki, Japan; and [3]Kusaka Hospital, Okayama, Japan.

#1356 **Poster Board Number P625**
Chronic Exposure to Chrysotile Asbestos Induces Il-17 Production in Cultured Human Peripheral Cd4+ T Cells *In Vitro*. *T. Ostuki*[1], M. Maeda[2], N. Kumagai-Takei[1], H. Matsuzaki[1], S. lee[1], K. Yoshitome[1], and *Y. Nishimura*[1]. [1]Kawasaki Medical School, Kurashiki, Japan; and [2]Okayama University Graduate School of Natural Science, and Technology, Okayama, Japan.

#1357 **Poster Board Number P626**
Alteration of Oxidative Phospholylation-Related Complexes in Human T Cell Lines, MT-2 and Its Sublines Continuously Exposed to Asbestos Fibers, by Transient Exposure to Asbestos. S. Yamamoto, S. Lee, H. Matsuzaki, N. Kumagai-Takei, T. Hatayama, K. Yoshitome, *Y. Nishimura*, and *T. Otsuki*. Kawasaki Medical School, Kurashiki, Japan.

#1358 **Poster Board Number P627**
Effect of IL-2 Addition on Granzyme B Expression and Proliferation in CD8+ Lymphocytes Exposed to Asbestos During MLR. N. Kumagai-Takei, *Y. Nishimura*, H. Matsuzaki, S. Lee, K. Yoshitome, H. Hayashi, and *T. Otsuki*. Kawasaki Medical School, Kurashiki, Japan.

Abstract #

#1359 **Poster Board Number P628**
Developmental Activation of the Aryl Hydrocarbon Receptor (AHR) Differentially Modifies Gene Expression Patterns in Naïve and Activated CD8+ T Cells. *C.M. Post*[1], *B. Winans*[1], J. Myers[1], W.L. Kraus[2], and *B.P. Lawrence*[1]. [1]University of Rochester School of Medicine & Dentistry, Rochester, NY; and [2]University of Texas Southwestern Medical Center, Dallas, TX.

#1360 **Poster Board Number P629**
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)-Mediated Alterations of EBF1 in Impaired Early Human B Cell Development. *J. Li*[2,3], *A.S. Phadnis-Moghe*[3], *R.B. Crawford*[1,3], and *N.E. Kaminski*[1,2,3]. [1]Department of Pharmacology, and Toxicology, Michigan State University, East Lansing, MI; [2]Genetics Program, Michigan State University, East Lansing, MI; and [3]Institute for Integrative Toxicology, Michigan State University, East Lansing, MI.

#1361 **Poster Board Number P630**
Aryl Hydrocarbon Receptor Activation in CD11c+ Cells Mediates Effects of TCDD on T Lymphocyte Development in the Thymus. *J.M. Kreitinger*, B.P. Seaver, *C.A. Beamer*, and *D.M. Shepherd*. University of Montana, Missoula, MT.

#1362 **Poster Board Number P631**
Aryl Hydrocarbon Receptor Activation Alters Mouse and Human Dendritic Cell Gene Expression Profiles During Influenza A Virus Infection. A.M. Franchini, *G.B. Jin*, and *P. Lawrence*. University of Rochester, Rochester, NY. Sponsor: *P. Lawrence.*

#1363 **Poster Board Number P632**
Differential Effects of the Aryl Hydrocarbon Receptor on Immunoglobulin Gene Expression in Human B Cells. *N. L.K. Burra*, and *C.E.W. Sulentic*. Wright State University, Dayton, OH.

#1364 **Poster Board Number P633**
Role of Aryl Hydrocarbon Receptor (AHR) Polymorphisms in TCDD-Mediated Biological Activity in the Human B Cell. *N. Kovalova*, *R. Crawford*, and *N. Kaminski*. Michigan State University, Lansing, MI. Sponsor: *N. Kaminski.*

#1365 **Poster Board Number P634**
Activation of the Aryl Hydrocarbon Receptor by Categorically Different Ligands Alters the Immune Response to Influenza A Virus Infection. *L.A. Boule*, *G.-B. Jin*, and *B.P. Lawrence*. University of Rochester Medical Center, Rochester, NY.

#1366 **Poster Board Number P635**
Aryl Hydrocarbon Receptor-Mediated Accumulation of Immune Cells in Adipose Tissue of Mice. S. Kado, W.L.W. Chang, and *C.F. Vogel*. University of California, Davis, CA.

#1367 **Poster Board Number P636**
Impact of AhR Activation on the Phenotype and Function of Bone Marrow Derived Dendritic Cells After Exposure to *Pseudomonas aeruginosa*. S.L. Cole, *J.M. Kreitinger*, B.P. Seaver, *C.A. Beamer*, and *D.M. Shepherd*. University of Montana, Missoula, MT.

#1368 **Poster Board Number P637**
Persistent Changes in Dendritic Cell Function Following Developmental Activation of the Aryl Hydrocarbon Receptor. *J.L. Meyers*, *B.N. Winans*, *L. Boule*, and *B.P. Lawrence*. University of Rochester, Rochester, NY.

Abstract #

#1369 **Poster Board Number P638**
A Computational Approach for Characterizing Subtle Changes in DNA Methylation in CD4+ T Cells. *T. Zurlinden*[1], *K. Gilbert*[2], and *B. Reisfeld*[1]. [1]Colorado State University, Fort Collins, CO; and [2]University of Arkansas for Medical Sciences, Little Rock, AR. Sponsor: *T. Zurlinden.*

Monday Morning, March 14
10:00 AM to 11:00 AM
CC Lobby A Lounge
(Ticket Required; Limited Seating)

Trainee Discussion with Plenary Session Presenters: Drs. Taylor and Nichols

Chairperson(s): *Gabriel Knudsen, NIEHS, Research Triangle Park, NC; and Caitlin J. Murphy, Smithers Avanza, Gaithersburg, MD.*

Lecturers: *Doris Taylor, Director, Regenerative Medicine Research at the Texas Heart Institute, Houston, TX; and Joan Nichols, University of Texas Medical Branch, Galveston, TX.*

Drs. Taylor and Nichols meet informally for discussion with graduate students and postdoctoral scholars after their Plenary Session (*see page 124*). Registration is limited to SOT graduate student and postdoctoral members.

Monday Morning, March 14
10:30 AM to 11:30 AM
CC Room 212

Exhibitor-Hosted Session: Advantages in Utilizing an Integrated *In Silico* Solution for ICH M7 Expert Review

Presented by:
Lhasa Limited

Lhasa Limited, the world leader for knowledge and data sharing in chemistry and the life sciences, will present their views on the benefits of utilizing an integrated *in silico* solution to comply with the ICH M7 guidelines.

Monday Morning, March 14
10:30 AM to 11:30 AM
CC Room 205

Exhibitor-Hosted Session: Continuing Advancements for *In Vitro* and *In Vivo* Medical Device Hemocompatiblity Testing

Presented by:
American Preclinical Services

The *in vivo* thrombogenicity test is a method for screening blood contacting medical devices for thrombogenicity. The results are used to aid in the generation of safety data. The *in vivo* test is a screening designed to determine the thrombogenicity in comparison to a predicate device already on the market.

Monday Morning, March 14
10:30 AM to 11:30 AM
CC Room 211

Exhibitor-Hosted Session: Essential Elements and Considerations for Neurotoxicity Study Designs: Excerpts from the presentation given to the US FDA on September 16, 2015

Presented by:
NeuroScience Associates, Inc.

As the session title suggests, the focus of this presentation and discussion will be essential elements for thorough assessment of neurotoxic effects of any insult to the brain. The presentation given here summarizes the presentation given by Dr. Switzer, at the US FDA on September 16, 2015.

Monday Morning, March 14
10:30 AM to 11:30 AM
CC Room 213

Exhibitor-Hosted Session: Key Considerations in the Safety Evaluation of Drugs Targeting Immune Checkpoints

Presented by:
Envigo

Checkpoint inhibitors are a new and exciting class of therapeutics. As with any drug that targets the immune system, careful consideration in the design and execution of study programs are required. The session is aimed at safety assessment professionals keen to learn more about the subject matter.

Monday Morning, March 14
11:30 AM to 1:00 PM
CC La Nouvelle Orleans Ballroom B
(Ticket Required)

In Vitro Toxicology Lecture and Luncheon: Multicellular Model Systems for *In Vitro* Toxicity Testing—Strengths and Challenges

Chairperson(s): *Vicente Santa Cruz, Chevron Phillips Chemical Company LP, Conroe, TX; Co-Chairs: Barbara Kaplan, Mississippi State University, Mississippi State, MS; Emily N. Ford, Western New England University, Springfield, MA; and Daniel J. Spade, Brown University, Providence, RI.*

Lecturer: *Norbert E. Kaminski, Michigan State University, East Lansing, MI.*

Supported by:
An educational grant from the Colgate-Palmolive Company

Hosted by:
Education Committee

The goal of the *In Vitro* Toxicology Lecture series is to feature important research using *in vitro* and alternative techniques to study basic mechanisms and to illustrate how these test methods benefit animal welfare by refining, reducing, and replacing animal use whenever it is feasible. Undergraduates, graduate students, postdoctoral scholars, and recipients of Colgate-Palmolive awards are among the guests at the *In Vitro* Toxicology Lecture and Luncheon. Students and postdoctoral scholars register for $10 (nonrefundable) via the Annual Meeting registration. Dr. Kaminski presents an introduction to the topic, challenge participants to discuss specific questions at their tables, and then participants report responses.

The format includes electronic audience polling and activities based on the review of data related to the development and validation of *in vitro* models.

Remember to bring your mobile devices to the event. The presentation abstract can be found on page 83. Lunch service is available for those who arrive before 11:45 am.

Monday Morning, March 14
11:45 AM to 12:15 PM
CC Exhibit Hall *(Near SOT Pavilion, Booth 500)*

Global Gallery of Toxicology Poster Session—Representative Attended

Representatives from toxicology-related scientific societies from around the world present a poster showcasing their history, key accomplishments, strategic initiatives, current and future activities, and more. The goal of SOT and of all these societies is to increase the reliance of international decision-makers on the science of toxicology to advance human health and disease prevention.

Monday Morning, March 14
11:45 AM to 12:15 PM
CC Exhibit Hall *(Near SOT Pavilion, Booth 500)*

Regional Chapter, Special Interest Group, and Specialty Section Poster Sessions—Representative Attended

MONDAY AFTERNOON

Monday Afternoon, March 14
12:00 Noon to 1:30 PM
CC Room R01

Research Funding Luncheon: Multiple Perspectives on the Grant Process

Experts from various federal agencies to provide multiple perspectives on the art of preparing successful grant packages. See page 56 for more information.

Monday Afternoon, March 14
12:00 Noon to 1:30 PM
CC Room 202

Special Interest Group Collaboration Group Meeting

Monday Afternoon, March 14
12:00 Noon to 1:00 PM
CC Room 205

Exhibitor-Hosted Session: Are Industry Blood Pressure Standards about to Change? A Discussion of New Clinical Findings and Potential Impact to Preclinical Assessment

Presented by:
Data Sciences International

Compelling results from the latest research on blood pressure question current industry standards on systolic blood pressure measurement. Join us for a panel discussion from preclinical and clinical experts on the importance of accurate blood pressure measurements; and the impact beyond the laboratory.

Monday Afternoon, March 14
12:00 Noon to 1:00 PM
CC Room 212

Exhibitor-Hosted Session: Stakeholder Session: US EPA Endocrine Disruptor Screening Program (EDSP) and the Use of High-Throughput Assays and Predictive Models to Screen for Endocrine Activity

Presented by:
US Environmental Protection Agency

The US EPA's Endocrine Disruptor Screening Program (EDSP) is incorporating high throughput and predictive model approaches for screening chemicals for endocrine activity. These sessions concern the benefits of this transition as well as progress, next steps, and opportunities to participate. This approach will accelerate the pace of screening, decrease costs, and reduce animal testing.

Monday Afternoon, March 14
12:00 Noon to 1:00 PM
CC Room 213

Exhibitor-Hosted Session: Why Basolateral Transporters Matter—Their Importance in Predicting Biliary Clearance and Hepatotoxicity

Presented by:
Qualyst Transporter Solutions, LLC

Hepatic basolateral efflux transporters are an under-recognized class of transporters and are responsible for the efflux of endogenous compounds, drugs and metabolites into the systemic circulation. The impact of basolateral efflux transporters on hepatotoxicity, cholestasis, and drug interactions will be discussed. In addition, we will review various methodologies for determination of basolateral efflux, protein binding effects, and the impact of transporter induction on basolateral efflux.

Monday Afternoon, March 14
12:00 Noon to 1:00 PM
CC Room 211

Exhibitor-Hosted Session: XposeALI—Setting a New Standard for ALI Cell Exposures

Presented by:
Inhalation Sciences Sweden AB

Combining PreciseInhale and its module for ALI cell exposures, XposeALI, provides new possibilities for researchers to study inflammatory and toxic effects of cells exposed to airborne particles. Listen to Dr. Per Gerde describe his ground breaking technology and Dr. Lena Palmberg (Karolinska Institute) explain its possibilities when studying nanoparticles.

Monday Afternoon, March 14
12:15 PM to 2:00 PM
Calcasieu Restaurant

Mid-Atlantic Regional Chapter Luncheon

Monday Afternoon, March 14
12:15 PM to 1:45 PM
CC
See room listing below.

Specialty Section Mentoring Luncheons: Biotechnology (Room 236); and Risk Assessment (Room 235)

Monday Afternoon, March 14
12:15 PM to 1:45 PM
Marriott at the Convention Center
See room listing below.

Specialty Section Meetings/Luncheons: Ethical, Legal, and Social Issues (River Bend Ballroom 1); and Toxicologic and Exploratory Pathology (River Bend Ballroom 2)

Monday Afternoon, March 14
12:30 PM to 1:20 PM
CC Room R08

FS

Merit Award Lecture: Forty-Five Years Modeling Dose-Response Relationships: An Unanticipated Career!

Lecturer: *Melvin Andersen, ScitoVation LLC, Research Triangle Park, NC.*

Instead of postdoctoral work on shark hemoglobin, military service plunked me down in a laboratory assessing the toxicity of chemicals found onboard nuclear submarines. The new life was bewildering. Why did we use probit analyses for dose response; why the logarithm of inhaled concentration as a measure of dose; what's the relationship expected between inhaled concentration and chemical in tissue or between the amount of chemical and response? These questions came to mind based on training in modeling small and large molecule kinetics, but received no ready answers. My career, through another six positions working with many talented colleagues, provided opportunities to use quantitative modeling tools to look at these and other aspects of dose-response relationships. This retrospective examines my experience using quantitative models for understanding dose-response relationships. This talk touches on pharmacokinetics, pharmacodynamics and new directions in cell pathway-based models. The main lessons of a long career are that models require us to state our ideas clearly and quantitatively and then to see if our ideas are correct or in need of revision. The use of these models repeatedly shows that it is even more important to know our ideas are wrong than simply to think they might be right.

Monday Afternoon, March 14
12:30 PM to 2:00 PM
Marriott at the Convention Center Julia

Northeast Regional Chapter Student Luncheon

Monday Afternoon, March 14
12:30 PM to 1:50 PM
CC Room 208

R

Roundtable Session: Is a "Thresholdable" Carcinogen Still a Delaney Carcinogen?

♠ **Recent Advances in Safety Assessment**

Chairperson(s): *Suzanne Compton Fitzpatrick, US Food and Drug Administration, College Park, MD; and A. Wallace Hayes, Harvard School of Public Health, Andover, MA.*

Endorser(s):
Food Safety Specialty Section
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

The 1958 Food Additives Amendment to the Food, Drugs, and Cosmetic Act was a response to concerns about the safety of new food additives. Congressman Delaney believed that there was a connection between increased uses of food chemicals and the rapid increase in reported cancer cases. The Delaney Clause was a provision in the amendment that stated that no food additive shall be deemed to be safe if found to induce cancer when ingested by man or laboratory animals. It applies to all food additives, as well as pesticides used on food crops and veterinary drugs given to food animals. At the time of its enactment, the Delaney Clause may have been a reasonable standard because the comparatively crude scientific detection technology of the time precluded discovery of tiny

Abstract #

amounts of chemicals. Additionally, the mechanisms by which chemicals induce cancer were not well understood, and it was assumed that even one molecule of a carcinogen could cause harm. The Delaney Clause has been a source of controversy since its enactment. This Roundtable will debate the relevance of the Delaney Clause to the 21st century regulatory issues that US FDA and US EPA must address. Dr. Keefe from US FDA will present the issues, including the role of Delaney in the current regulatory paradigm. Dr. Hayes will moderate the debate. Some pre-formulated questions will be developed to help guide and stimulate the discussion. Dr. Dourson and Dr. Williams are both highly respected risk assessors. Each debater will present some initial arguments followed by a moderated and lively debate. The audience will be encouraged to participate. (Abstract #1370)

12:30 **Defining the Question.** D. Keefe. US FDA, College Park, MD. Sponsor: *S. Fitzpatrick.*

12:40 **No, "Thresholdable" Carcinogens Should Not Be Considered Delaney Carcinogens.** *G. Williams*. New York Medical College, Valhalla, NY.

1:00 **Yes, "Thresholdable" Carcinogens Are Still Delaney Carcinogens.** *M. Dourson*. Toxicology Excellence for Risk Assessment, Cincinnati, OH.

1:20 **Panel Discussion/Q&A.**

Monday Afternoon, March 14
12:30 PM to 1:50 PM
CC Room 217

R

Roundtable Session: Trichloroethylene Exposure and Development of Fetal Cardiac Malformations: What Do the Data Tell Us About Inhalation Exposures Resulting from Vapor Intrusion and Potential Health Risks to Pregnant Women?

♘ **Developmental Toxicity: Mechanisms and Evaluation**

Chairperson(s): *Laurie C. Haws, ToxStrategies, Inc., Austin, TX; and Gary Ginsberg, Connecticut Department of Public Health, Hartford, CT.*

Endorser(s):
Reproductive and Developmental Toxicology Specialty Section
Risk Assessment Specialty Section
Women in Toxicology Special Interest Group

In 2011, the US EPA developed a Reference Concentration (RfC) for trichloroethylene of 2.0 µg/m3 based on two co-critical studies. One of the co-critical studies reported a dose-dependent increase in fetal cardiac malformations (FCM) in pregnant rats exposed to TCE via drinking water throughout pregnancy. As a result of concerns about this specific endpoint, some EPA regions and states recently issued interim action levels and response recommendations for TCE exposures from vapor intrusion based on accelerated timeframes meant to be protective of the developing fetus during the 3-week period in the first trimester during which the fetal heart develops. These actions have stimulated substantial debate about this particular endpoint within the scientific and regulatory communities, with some arguing that shortcomings of the *in utero* rat study should preclude it from being used as a co-critical study in the TCE inhalation risk assessment, while others argue that the overall weight of the evidence supports the conclusion that FCM is a sensitive adverse endpoint for TCE inhalation exposure, thereby justifying the use of the *in utero* rat study as a co-critical study. This session is intended to stimulate thought-provoking and open dialogue with members of the audience during a moderated panel discussion immediately following the scientific presentations. The moderated panel discussion will incorporate state-of-the-art tools in live audience polling to stimulate discussions. The goal of the roundtable is to identify the specific areas of agreement and/or disagreement and uncertainty regarding the toxicological evidence supporting the association between inhalation exposures to TCE and the potential for FCM and, through discussion, to develop strategies to help bring clarity to these areas. (Abstract #1371)

12:30 **Introduction.** *L. Haws*. ToxStrategies, Inc., Austin, TX.

12:34 **Developing Interim Action Levels and Response Regulations for TCE Exposures from Vapor Intrusion.** D. Stralka. US EPA Region 9, San Francisco, CA. Sponsor: *L. Haws*.

Abstract #

12:46 **Evidence Supporting Fetal Cardiac Malformations as a Sensitive Adverse Effect for Inhalation Exposures to TCE.** *S. Makris*. US EPA, Washington, DC.

12:58 **Do Toxicological and Epidemiological Data Support Concerns About Pregnant Women Being Exposed to TCE via Inhalation?** *J. DeSesso*. Exponent, Inc., Alexandria, VA.

1:10 **Panel Discussion/Q&A.** *S. Hays*. Summit Toxicology, LLP; SciPinion, LLC, Allenspark, CO.

Monday Afternoon, March 14
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Toxicology Education

Chairperson(s): *Larissa M. Williams, Bates College, Lewiston, ME; and Christine Curran, Northern Kentucky University, Highland Heights, KY.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *1:15 PM–2:45 PM*

#1372 **Poster Board Number P101**
K–12 Students Flock to ToxTown in San Diego: Results of an SOT K–12 Education Outreach Workshop. *V.S. Bhat*[2], *M. Bourgeois*[7], *W. Gray*[4], *J. Sapiro*[5], *A. Nguyen*[1], *M. Gwinn*[8], *A. Slitt*[6], and *B. Eidemiller*[3]. [1]Kansas State University, Manhattan, KS; [2]NSF International, Ann Arbor, MI; [3]SOT Education Committee, Reston, VA; [4]Southern University, Baton Rouge, LA; [5]University of Arizona, Tucson, AZ; [6]University of Rhode Island, Kingston, RI; [7]University of South Florida, Tampa, FL; and [8]US Environmental Protection Agency, Wash, DC.

#1373 **Poster Board Number P102**
K–12 Students Supported by SOT to Attend Central States SOT Regional Chapter Meetings. *P. Kasturi*[3], *U. Apte*[3], *C. Croutch*[2], *R. Casillas*[2], and *A. Nguyen*[1]. [1]Kansas State University, Manhattan, KS; [2]MRIGlobal, Kansas, MO; and [3]University of Kansas Medical Center, Kansas, KS.

#1374 **Poster Board Number P103**
NorCal SOT K–12 Student Outreach: Lessons Learned and Ideas for Future Outreach. *D. Zane*[1], and *T. Parman*[2]. [1]Intarcia Therapeutics, Hayward, CA; and [2]SRI International, Menlo Park, CA.

#1375 **Poster Board Number P104**
"Tools, Techniques, and Analysis" and "Citizen Science": A New Approach to the Separation of a Single Introductory Laboratory Course into Two New Courses, and the Addition of a Toxicology-Based Exercise to Both. *K.E. Stine*. Auburn University at Montgomery, Montgomery, AL.

#1376 **Poster Board Number P105**
Authentic Learning, Collaboration and Student Awareness of Evidence-Based Science. S. Swenson, and Y. He. John Jay College, CUNY, New York, NY. Sponsor: *S.-Y. Cheng.*

#1377 **Poster Board Number P106**
Scaffolding Assessment of Forensic Toxicology Program. *S.-Y. Cheng*, and S. Swenson. John Jay College of Criminal Justice, New York, NY.

Abstract #

#1378 **Poster Board Number P107**
An Inquiry-Based Cultural Eutrophication Lab: Experimental Design, Data Analysis, and Conclusions. *M. Pomeroy-Black*, and M.D. Yates. LaGrange College, LaGrange, GA. Sponsor: *M. Pomeroy-Black.*

#1379 **Poster Board Number P108**
What's in Your Water? Infusing Environmental Toxicology into a Non-Majors Informatics Course. *C.P. Curran*, J. Moses, and M. Day. Northern Kentucky University, Highland Heights, KY.

#1380 **Poster Board Number P109**
Women in Science (WIS) STEM Program for 6th and 7th Grade Girls Features Toxicology Education. *S. Ford*, *D. Hardej*, E. Megehee, and M. Nitopi. St. John's University, Queens, NY.

#1381 **Poster Board Number P110**
Toxicarnival: A Toxicology Awareness Program Using Carnival Games to Teach Basic Toxicology Concepts. *D. Hardej*, and *B. Kistinger*. St. John's University/Mid-Atlantic SOT, Queens, NY.

#1382 **Poster Board Number P111**
Translating Toxicology for the General Public: Novel Approaches for Reducing Traffic-Related Air Pollution. M. Lyons, K. Ollier, K. Brown, A. Zekic, J. Hockenbury, C. Marini, Z. Hart, and *C.P. Curran*. Northern Kentucky University, Highland Heights, KY.

#1383 **Poster Board Number P112**
Introducing Toxicology Concepts in General Biology Courses Through Inquiry Based Modules. T.M. Borrás-Pacheco, H.M. Orozco-Mercado, W. Torres-Rivera, and *L.B. Mendez*. Universidad del Este, Carolina, PR.

#1384 **Poster Board Number P113**
Incorporating Toxicology in a Public Health Summer Institute—A Golden Opportunity to Reach High School Students. R. Salazar, and *M. Bourgeois*. University of South Florida College of Public Health, Tampa, FL.

#1385 **Poster Board Number P114**
Inspiring the Next Generation to the World of Toxicology: Successful K–12 Outreaches. K. Thompson, J.E. Cañas-Carrell, *L. Ponnusamy*, K. Wooten, and E. Reátegui-Zirena. The Institute of Environmental, and Human Health, Texas Tech University, Lubbock, TX.

#1386 **Poster Board Number P115**
The Toxicology Education Foundation: Taking the Message Public. *P. Wexler*. National Library of Medicine, Bethesda, MD.

Abstract #

Monday Afternoon, March 14
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Genetic Toxicology I

Chairperson(s): *Joanna Klapacz, The Dow Chemical Co, Midland, MI; and Robert Schiestl, University of California Los Angeles, Los Angeles, CA.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *3:00 PM–4:30 PM*

#1387 **Poster Board Number P116**
MUS81-EME1 as a Novel Anti-Cancer Therapeutic Target. *S. Mukherjee*[2], K.-H. Ang[3], J. Chau[2], H. Yakubi[2], M. Arkin[3], and W.-D. Heyer[1,2]. [1]University of California Davis, Davis, CA; [2]University of California, Davis, Davis, CA; and [3]University of California, San Francisco, San Francisco, CA.

#1388 **Poster Board Number P117**
The Mutagenic Potential of *Aloe vera* Extracts in Mouse Lymphoma Assay. *X. Guo*, S. Dial, *N. Mei*, and *M. Moore*. NCTR/US FDA, Jefferson, AR.

#1389 **Poster Board Number P118**
Analysis of Inherited Germline Mutations of ENU-Treated Mice by Whole Exome Sequencing. K. Masumura[2], N. Toyoda-Hokaiwado[2], A. Ukai[2], Y. Gondo[3], M. Honma[2], and T. Nohmi[1,2]. [1]Biological Safety Research Center, NIHS, Tokyo, Japan; [2]National Institute of Health Sciences, Tokyo, Japan; and [3]RIKEN BioResource Center, Ibaraki, Japan. Sponsor: *A. Nishikawa.*

#1390 **Poster Board Number P119**
Bisphenol A Alters Cellular Microenvironment to Promote Survival After Oxidative Stress. N.R. Gassman[3], *E. Coskun*[1], P. Jaruga[1], M. Dizdaroglu[1], and *S.H. Wilson*[2]. [1]National Institute of Standards, and Technology, Gaithersburg, MD; [2]NIEHS/NIH, Research Triangle Park, NC; and [3]University of South Alabama Mitchell Cancer Institute, Mobile, AL.

#1391 **Poster Board Number P120**
The Non-Narcotic Antitussive Benzonatate Is Not Mutagenic or Genotoxic in *In Vitro* and *In Vivo* Assays. K. Dobo[2], W. Madraymootoo[1], V. Wagner[1], and *S. Teo*[3]. [1]BioReliance, Rockville, MD; [2]Pfizer, Groton, CT; and [3]Pfizer, Madison, NJ. Sponsor: *S. Teo.*

#1392 **Poster Board Number P121**
The New Generation of the DEL Assay Detecting "Non-Mutagenic" Carcinogens. *R. Schiestl*, L. Parfenova, D. Nguyen, and V. Kutepova. UCLA, Los Angeles, CA. Sponsor: *R. Schiestl.*

#1393 **Poster Board Number P122**
Red Blood Cell Pig-a Assay and Pigret Assay in Rats with Pyrene. I. Yoshida, A. Matsumoto, Y. Sakai, Y. Harada, and T. Hashizume. Takeda Pharmaceutical Company Limited, Fujisawa, Kanagawa, Japan. Sponsor: *M. Friedman.*

#1394 **Poster Board Number P123**
Validation of the Neutral Red Uptake Assay in BALB/c 3T3 Cells. *C.S. Farabaugh*, S.B. Hurtado, and M.M. Wells. WIL Research, Skokie, IL.

Abstract #

#1395 **Poster Board Number P124**
Propargite Technical: *In Vivo* Mutation Assay at the cII Locus in Big Blue® Transgenic F344 Rats. *C. Koenig*[1], *R. Young*[2], *R. Kulkarni*[2], *M. McKeon*[2], R. Russell[2], *E. Freeman*[3], and *B. Gollapudi*[3]. [1]Arysta LifeScience, Waterbury, CT; [2]BioReliance Corporation, Rockville, MD; and [3]Exponent, Midland, MI. Sponsor: *C. Koenig.*

#1396 **Poster Board Number P125**
The Development of a Modified Comet Assay for Assessment of Global and Region-Specific DNA Methylation Status. T.A. Townsend, M.E. Bishop, S.D. Shelton, and *M.G. Manjanatha*. US FDA, NCTR/DGMT, Jefferson, AR.

#1397 **Poster Board Number P126**
mESC-Based *In Vitro* Differentiation Models for Analyzing the Impact of Genotoxic Agents on Stress Response and Functionality of Vascular Cell Types. G. Fritz, and T. Hennicke. Heinrich Heine University, Duesseldorf, Germany. Sponsor: *R. Landsiedel.*

#1398 **Poster Board Number P127**
Comet Assay in Rat Nasal Tissue. *K. Pant*[2], S.W. Bruce[2], S. Springer[2], M. Klug-LaForce[2], P. Sareen[1,2], L.J. Rausch[1], and *R. Kulkarni*[2]. [1]AkzoNobel, Inc, Chicago, IL; and [2]BioReliance by SAFC, Rockville, MD. Sponsor: *K. Pant.*

#1399 **Poster Board Number P128**
Improvements to *In Silico* Mutagenicity Predictivity of Aromatic Amines with Access to Proprietary Data. S.J. Canipa[2], D.S. Macmillan[2], R.V. Williams[2], *P. Leavitt*[1], *M. Mack*[1], and *L. Custer*[1]. [1]Bristol-Myers Squibb, New Brunswick, NJ; and [2]Lhasa Limited, Leeds, United Kingdom. Sponsor: *C. Barber.*

#1400 **Poster Board Number P129**
A Targeted Approach to Improving the Applicability Domain of *Salmonella* Mutagenicity (Q)SAR Models. *M.T. Kim*, J.W. Yoo, B. Minnier, N. Kruhlak, and L. Stavitskaya. US Food and Drug Administration, Silver Spring, MD.

#1401 **Poster Board Number P130**
Deficiencies in Mitochondrial Fission and Fusion Sensitize the Nematode *Caenorhabditis elegans* to Cisplatin-Induced Larval Growth Delays and Alterations in Mitochondrial DNA Copy Number. L.L. Smith, and *J.N. Meyer*. Duke University, Durham, NC.

#1402 **Poster Board Number P131**
Correlation of the *Pig-a* Assay with Regulatory Genetic Toxicology Endpoints. J. Bhalli, R.E. Neft, C. Tebbe, K. McNeil, M. Chan, J. Vanosdol, V. Sharma, E. Shaw, and R. Fiedler. Covance, Greenfield, IN. Sponsor: *G. Weinbauer.*

#1403 **Poster Board Number P132**
Reduced mtDNA Content Sensitizes *C. elegans* to Environmental Mitotoxicants. *A. Luz*, and *J. Meyer*. Duke University, Durham, NC.

#1404 **Poster Board Number P133**
Relationship between Oxidatively-Induced DNA Damage and DNA Repair Enzyme APE1 in Cancer and Normal Cell Lines. *L.D. Scanlan*, B.C. Nelson, E. Coskun, A. Tona, M. Dizdaroglu, and P. Jaruga. National Institute of Standards, and Technology, Gaithersburg, MD.

Abstract #

#1405 **Poster Board Number P134**
POLD3 Mutation Compromise Somatic Hypermutation in Human Burkett's Lymphoma Cells. W. Wu, Z. Xiao, I. Ban, and *V. Poltoratsky*. St. Johns University, Jamaica, NY.

#1406 **Poster Board Number P135**
Detection of DNA Double-Strand Breaks in the Liver of Mice Exposed to 1,2-Dichloropropane. *R.-S. Wang*, T. Toyooka, Y. Yanagiba, and M. Suda. Japan National Institute of Occupational Safety, and Health, Kawasaki, Japan.

#1407 **Poster Board Number P136**
Brominated Trihalomethane Toxicity in Human Urothelial Cell Lines. R.A. Pegram[2], J.A. Campbell[1], *S.O. Simmons*[2], T.M. Ross[2], D.M. DeMarini[2], and B.N. Chorley[2]. [1]NCBA/SEE Program, Washington, DC; and [2]US EPA, Research Triangle Park, NC.

#1408 **Poster Board Number P137**
BDE-100 Has Genotoxic but No Mutagenic Potential. V. Bruno, L.C. Pereira, M.F. Franco-Bernardes, G. Meireles, M.J. Tasso, D.P. de Oliveira, and *D.J. Dorta*. Universidade de São Paulo, Ribeirão Preto, Brazil.

#1409 **Poster Board Number P138**
Detection of DNA Cross-Links in Rat Liver and Kidney in the *In Vivo* Alkaline Comet Assay. C. Beevers, G. Pearce, L. Foster, and R. Mortimer. Covance Laboratories Ltd, Harrogate, United Kingdom. Sponsor: *J. Bhalli.*

#1410 **Poster Board Number P139**
Immunomagnetic Enrichment of CD71-Positive Reticulocytes Enhances the Efficiency and Precision of Human Blood Micronucleated Reticulocyte Scoring via Flow Cytometry. S. Avlasevich[1], *D. Torous*[1], *J. Bemis*[1], Y. Chen[2], and *S. Dertinger*[1]. [1]Litron Laboratories, Rochester, NY; and [2]University of Rochester Medical Center, Rochester, NY.

#1411 **Poster Board Number P140**
Qualification of Upper Respiratory Tract Tissues for Inhalation Exposure of Transgenic Big Blue® Mice. R.R. Young, and H. Dinesdurage. BioReliance by SAFC, Rockville, MD. Sponsor: *K. Pant.*

Monday Afternoon, March 14
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Genetic Toxicology II

Chairperson(s): *Leslie Recio, ILS, Research Triangle Park, NC.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *1:15 PM–2:45 PM*

#1412 **Poster Board Number P141**
Acute Exposure to DEHP and Its Metabolite MEHP Cause Genotoxicity and Mutagenesis in Mammalian Chinese Hamster Ovary Cells. Y.-J. Chang, P.-Y. Lin, C.-Y. Tseng, and *M.-W. Chao*. Chung Yuan Christian University, Taoyuan, Taiwan. Sponsor: *M.-W. Chao.*

Abstract #

#1413 **Poster Board Number P142**
Coexposures to Inorganic Arsenic and MMS Initiates Synergistic Responses Associated with Cellular Carcinogenesis. *A.Y. Efremenko*, *P. Balbuena*, *H.J. Clewell*, and *R.A. Clewell*. The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#1414 **Poster Board Number P143**
Generation of a Double-Gene Knockout Mammalian Cell Line Using CRISPR Technology. D. Burris, and *V. Poltoratsky*. St. John's University, Queens, NY.

#1415 **Poster Board Number P144**
Flow Cytometry for *In Vitro* Assessment of Genotoxic Substances. G. Marceau, F. Merah, S. Lavallée, F. Leroux, and A. Nelson. ITR Laboratories Canada, Baie d'Urfe, QC, Canada. Sponsor: *X.-X. Li.*

#1416 **Poster Board Number P145**
Investigation of Cytotoxicity and Genotoxicity of Caffeic Acid, a Dietary Bioactive Compound, in Association with 5-Azacytidine in Jurkat Cells. L.C. Hernandes[2], C.d.S. Machado[1], A.R. Machado[2], D.L. Ribeiro[1], R.V. Burim[2], M. d.L. Bianchi[2], and L.M. Antunes[2]. [1]School of Medicine of Ribeirão Preto, USP, Ribeirao Preto, Brazil; and [2]School of Pharmaceutical Sciences of Ribeirão Preto - University of São Paulo, Ribeirao Preto, Brazil. Sponsor: *D. Palma.*

#1417 **Poster Board Number P146**
Extreme Expressions of DNA Repair Proteins APE1 and MTH1 in Human Breast Cancer as Measured by Liquid Chromatography and Isotope Dilution Tandem Mass Spectrometry. *E. Coskun*[1,3], P. Jaruga[3], A.-S. Jemth[2], O. Loseva[2], *L.D. Scanlan*[3], A. Tona[3], M.S. Lowenthal[3], P. Reddy[3], T. Helleday[2], and M. Dizdaroglu[3]. [1]Gazi University, Ankara, Turkey; [2]Karolinska Institutet, Stockholm, Sweden; and [3]National Institute of Standards, and Technology, Gaithersburg, MD.

#1418 **Poster Board Number P147**
Flow Cytometry and Microscopy Method Comparison for *In Vivo* Micronucleus Studies in Rat Bone Marrow and Peripheral Blood. F. Merah, M. Charlebois, S. Thebault, J. Godin-Ethier, G. Marceau, and A. Nelson. ITR Laboratories, Montreal, QC, Canada. Sponsor: *X.-X. Li.*

#1419 **Poster Board Number P148**
Profiling Genetic Susceptibility to Food Carcinogens Using Budding Yeast. *M. Fasullo*, J. Freedland, and N. St. John. SUNY Polytechnic Institute, Albany, NY. Sponsor: *M. Fasullo.*

#1420 **Poster Board Number P149**
Evaluation of Genotoxic Effects Induced by Tio2 and ZnO Nanoparticles. J.J. Kim. Sungkyunkwan University, Seoul, Korea, Democratic People's Republic of. Sponsor: *D.Y. Shin.*

#1421 **Poster Board Number P150**
***In Vitro* Genotoxic Assessment of PCB3 Metabolites.** *S. Flor*, and *G. Ludewig*. University of Iowa, Iowa City, IA.

#1422 **Poster Board Number P151**
Assessment of the Genotoxic and Mutagenic Potential of Acrylamide in Rats and Mice by Use of the MN and Pig-a Assays. *L. Recio*[1], K. Shepard[1], J. Davis[1], *M. Friedman*[2], D. Marroni[2], and C. Hobbs[1]. [1]ILS, Research Triangle Park, NC; and [2]SNF, Andrézieux, France.

Abstract #

#1423 **Poster Board Number P152**
Genotoxicity and Expression of Pro-Inflammatory Molecular Markers in Emissions from a 2010 Diesel Truck Equipped with Diesel Particulate Filter (DPF) and a Selective Catalytic Reduction (SCR) System. *N. Kado*[2,3], *C.F. Vogel*[3], *P. Wong*[2], K. Na[1], C. La[3], S. Yoon[2], J. Collins[2], A. Alvarado[2], J. Herner[2], W. Robertson[1], K. Sahay[1], and L. Smith[2]. [1]California Environmental Protection Agency, El Monte, CA; [2]California Environmental Protection Agency, Sacramento, CA; and [3]University of California, Davis, CA.

#1424 **Poster Board Number P153**
Identification and Characterization of *N*[7]-Guanine Adducts of 1-Bromopropane. M.R. Nepal, J. Ahn, K.S. Jeong, K. Noh, M.J. Kang, and *T.C. Jeong*. Yeungnam University, Gyeongsan, Korea, Republic of.

#1425 **Poster Board Number P154**
Formation and Repair of Exogenous Formaldehyde-Induced DNA-Protein Crosslinks. *Y. Lai*, X. Tian, and *J. Swenberg*. The University of North Carolina at Chapel Hill, Chapel Hill, NC. Sponsor: *J. Swenebrg*.

#1426 **Poster Board Number P155**
Integration of *In Vivo* Genotoxicity Assessment Including Multiple Endpoints and Tissues into a Repeat-Dose Toxicity Study. *Z. Ji*, L.K. Sosinski, *N. Visconti*, M.W. Koehler, *N.S. Ball*, and *M.J. LeBaron*. The Dow Chemical Company, Midland, MI.

#1427 **Poster Board Number P156**
Down-Regulation of Poly (ADP-Ribose) Polymerase 1 Leads to Change of Hydroquinone Cytotoxicity in TK6 Cells. Y. Sha. Shenzhen Prevention, and Treatment Center for Occupational Diseases, Shenzhen, China. Sponsor: *R. Lloyd*.

#1428 **Poster Board Number P157**
Protective Effects of Parp Inhibitors at High Levels of Ros. I. Ban, and *V. Poltoratsky*. St. John's University, Jamaica, NY.

Monday Afternoon, March 14
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Mixtures

Health and Environmental Impacts of Manmade and Naturally Released Toxicants

Chairperson(s): *Olushola M. Awoyemi, Tennessee State University, Nashville, TN; and Dorothy Yu Huang, University of Calgary, Calgary, AB, Canada.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *3:00 PM–4:30 PM*

#1429 **Poster Board Number P158**
Critical Evaluation of Air-Liquid Interface Cell Exposure Systems for *In Vitro* Assessment of Atmospheric Pollutants. *M.A. Higuchi*[3], A. Ledbetter[3], D.S. Morgan[2], *S.D. McCullough*[3], R.B. Devlin[3], and *J. Zavala*[1]. [1]ORISE Fellow, US EPA, Research Triangle Park, NC; [2]Student contractor, US EPA, Research Triangle Park, NC; and [3]US EPA, Research Triangle Park, NC.

Abstract #

#1430 **Poster Board Number P159**
Toxicological Investigation of Coal Fly Ash (CFA) as Soil Amendment for the Production of Bioenergy Feedstock. *O.M. Awoyemi*, and E.K. Dzantor. Tennessee State University, Nashville, TN.

#1431 **Poster Board Number P160**
Effect of Diesel Exhaust Exposure on the Liver in Mouse Fed with N-3 Polyunsaturated Fatty Acids-Deficient Diet. M. Nakamura[4], *A.A. El-ghoneimy*[1,3], *A. Onoda*[1,4,5], Y. Shinkai[1], *H.M. Shaheen*[1,2], K. Takeda[1], and M. Umezawa[1]. [1]Cent. Env. Health Next Gen., RIST, Tokyo Univ. Sci., Noda, Japan; [2]Fac. Vet. Med, Damanhour University, Damanhour, Egypt; [3]Fac. Vet. Med, South Valley University, Qena, Egypt; [4]Grad. School Pharm. Sci. Tokyo Univ. Sci., Noda, Japan; and [5]JSPS Research Fellow, Tokyo, Japan. Sponsor: *K. Nohara*.

#1432 **Poster Board Number P161**
Modeling Bacterial Mixtures in the Cervix During Pregnancy and the Association with MicroRNA Expression and Subsequent Gestational Age. *A.P. Sanders*[3], *C. Gennings*[3], K. Svensson[3], A. Mercado-Garcia[4], M. Solano[4], *A.A. Baccarelli*[2], M.M. Tellez-Rojo[4], *R.O. Wright*[3], and H.H. Burris[1]. [1]Beth Israel Deaconess Medical Center, Boston, MA; [2]Harvard School of Public Health, Boston, MA; [3]Icahn School of Medicine at Mount Sinai, New York, NY; and [4]National Institute of Public Health, Cuernavaca, Mexico.

#1433 **Poster Board Number P162**
Safety Evaluation and Cytotoxicity of Compounds Isolated from a Bioactive Fraction of Peltophorum Africanum, a Medicinal Plant Used to Treat Pain Associated with Inflammatory Conditions. *S.A. Adebayo*[1,2], J.L. Shai[1], and K. Eloff[2]. [1]Tshwane University of Technology, Pretoria, South Africa; and [2]University of Pretoria, Pretoria, South Africa.

#1434 **Poster Board Number P163**
Health Hazard Assessment of Alcohol-To-Jet (ATJ) Synthetic Kerosene with Aromatics (SKA) Alternative Jet Fuel. *D.R. Mattie*[1], *K.L. Mumy*[3], *B.A. Wong*[2,3], *L.M. Sweeney*[2,3], *G. Reddy*[4], *W.C. McCain*[4], and *T.R. Sterner*[2]. [1]711 HPW/RHDJ, Wright-Patterson AFB, OH; [2]HJF, Wright-Patterson AFB, OH; [3]NAMRU-D, Wright-Patterson AFB, OH; and [4]USAPHC, Aberdeen Proving Ground, MD.

#1435 **Poster Board Number P164**
Assessment of Water Cytotoxicity in Northern Alberta Rivers Near the Oil Sands. *D.Y. Huang*[3], I. Dey[3], L. Xie[3], W. Zhang[1], S. Gabos[2], and D.W. Kinniburgh[2,3]. [1]Alberta Health, Edmonton, AB, Canada; [2]University of Alberta, Edmonton, AB, Canada; and [3]University of Calgary, Calgary, AB, Canada.

#1436 **Poster Board Number P165**
Advancing the State-of-the-Science in Estimating Cancer Risk of Polycyclic Aromatic Hydrocarbon Mixtures. *M. Pratt*[4], *H. Carlson-Lynch*[2], *L. Flowers*[4], M. Gehlhaus[4], *P. McClure*[2], *J. Melia*[2], G. Rice[3], L. Teuschler[1], and K. Hogan[4]. [1]LK Teuschler, and Associates, Inc., St. Petersburg, FL; [2]SRC, Inc., Syracuse, NY; [3]US Environmental Protection Agency, Cincinnati, OH; and [4]US Environmental Protection Agency, Washington, DC.

Abstract #

#1437 **Poster Board Number P166**
Mixtures of Full and Partial Agonists: Several Mechanisms of Receptor Activation Are Consistent with Generalized Concentration Addition. *T.F. Webster*. Boston University School of Public Health, Boston, MA.

#1438 **Poster Board Number P167**
DNA Strand Breaks Induced by Organic Extracts from Engine Emissions Produced at Various Engine Operating Modes Using Diesel or Biodiesel (B100) Fuel. B. Novotna[4], J. Stolcpartova[3,4], V. Beranek[1], M. Vojtisek-Lom[1,2], and *J. Topinka*[4]. [1]Center of Vehicles for Sustainable Mobility, Czech Technical University in Prague, Czech Republic; [2]Faculty of Mechanical Engineering, Technical University of Liberec, Czech Republic; [3]Institute of Environmental Studies, Charles University in Prague, Czech Republic; and [4]Institute of Experimental Medicine AS CR, Prague, Czech Republic.

#1439 **Poster Board Number P168**
Use of Partial Least Squares Regression to Identify GC/MS Spectral Peaks Correlated with Toxicity Outcomes in Rats of Crude Oil from Various Sources. J.T. Salley[4], *R.J. Al Suliman*[4], *S. Jaligama*[3], H. Barnett[4], *S. Korpela*[2], V.Y. Hebert[1], *T.R. Dugas*[2], and *S.A. Meyer*[4]. [1]Louisiana State Univ. Hlth. Sci. Ctr., Shreveport, LA; [2]Louisiana State Univ. Sch. Vet. Med., Baton Rouge, LA; [3]Univ. Tennessee Hlth. Sci. Ctr., Memphis, TN; and [4]University of Louisiana-Monroe, Monroe, LA.

#1440 **Poster Board Number P169**
Strengths and Limitations of Generalized Concentration Addition in Modeling PPARγ Activation by Endocrine-Disrupting Compounds. *J. Watt*, *T. Webster*, and *J. Schlezinger*. Boston University School of Public Health, Boston, MA.

#1441 **Poster Board Number P170**
***In Vitro* Toxicological Assessment of 4-Methylcyclohexane Methanol and Propylene Glycol Phenyl Ether Mixtures.** E. Fabyanic, *A. Han*, M. Prediger, and *J. Boyd*. West Virginia University, Morgantown, WV. Sponsor: *J. Boyd.*

#1442 **Poster Board Number P171**
An *In Vitro* Absorption Screen with Rosin/Resins Using Everted Rat Intestinal Sacs. L. Higgins[1], R. Powrie[1], M. Penman[2], S. Green[2], R. Lobbes[2], L. Rodenburg[2], and *C. Elcombe*[1]. [1]CXR Biosciences, Dundee, United Kingdom; and [2]Hydrocarbon Resins & Rosin Resins REACH Consortium (H4R), Brussels, Belgium.

#1443 **Poster Board Number P172**
***In Vitro* Hepatotoxicity of Mixtures of Benzylpiperazine (BZP) and 3-Trifluoromethylphenylpiperazine (TFMPP).** D. Dias da Silva, P. Moreira, M.J. Silva, and M. de Lourdes Bastos. UCBIO/Requimte, University of Porto, Porto, Portugal. Sponsor: *S. Ali*

#1444 **Poster Board Number P173**
A Mechanistic Comparison of Human and Mouse Lung Cell Responses to a Polycyclic Aromatic Hydrocarbon Mixture: Inflammation and the P38 Pathway. *R.S. Osgood*[2], K. Velmurugan[2], K.-N. Xiong[2], J. Xiong[2], *B.L. Upham*[1], and *A.K. Bauer*[2]. [1]Michigan State University, East Lansing, MI; and [2]University of Colorado Anschutz Medical Campus, Aurora, CO.

Abstract #

#1445 **Poster Board Number P174**
QSAR Modeling Toxicity Predictions of the Constituents of Crude 4-Methylcyclohexanemethanol (MCHM) and Structurally Related Chemicals. *B. Winans*[1], *R.M. Novick*[1], *S.M. Green*[2], and *D.J. Paustenbach*[1]. [1]Cardno ChemRisk, San Francisco, CA; and [2]Eastman Chemical Company, Kingsport, TN.

#1446 **Poster Board Number P175**
Co-Exposure to Iron, Lead and Cadmium Increases Susceptibility to Cardiovascular Disease and Hepatic Damage in Male Wistar Rats. *O.A. Odunola*[2], O.A. Akinbode[2], *M.A. Gbadegesin*[2], *S.E. Owumi*[2], *K.A. Akinwumi*[1], *A.M. Adegoke*[2], and *O.J. Olugbami*[2]. [1]Bells University, Ota, Nigeria; and [2]University of Ibadan, Ibadan, Nigeria.

#1447 **Poster Board Number P176**
The Effects of Surinamese Nutraceutical and Medicinal Plant Extracts on Scratch Wound Healing of Endothelial Cells. Y. Asare[2], D. Mans[1], and *J. Wickliffe*[2]. [1]Antom De Kom University, Paramaribo, Suriname; and [2]Tulane University, New Orleans, LA.

#1448 **Poster Board Number P177**
Two Simulated-Smog Atmospheres With Different Chemical Compositions Produce Contrasting Mutagenicity in Salmonella. *J. Zavala*[4], J. Krug[2], S.H. Warren[3], Q.T. Krantz[3], C. King[3], *S.H. Gavett*[3], M. Lewandowski[2], W.A. Lonneman[2], T.E. Kleindienst[2], M. Meier[1], *M. Higuchi*[3], *M.I. Gilmour*[3], and D.M. DeMarini[3]. [1]Health Canada, Ottawa, ON, Canada; [2]NERL, US EPA, Research Triangle Park, NC; [3]NHEERL, US EPA, Research Triangle Park, NC; and [4]ORISE, NHEERL, US EPA, Research Triangle Park, NC.

#1449 **Withdrawn.**

#1450 **Poster Board Number P179**
In Search of the Proinflammatory Constituents of Combustion-Derived Particulate Matter. J. Øvrevik[1], A.I. Totlandsdal[1], A. Kubátová[2], N. Bach[1], A.K. Bølling[1], R.E. Cochran[2], K. Ondrušová[2], B.C. Brinchmann[1], E. le Ferrec[3], D. Lagadic-Gossmann[3], P.E. Schwarze[1], J.A. Holme[1], and M. Låg[1]. [1]Norwegian Institute of Public Health, Oslo, Norway; [2]University of North Dakota, Grand Forks, ND; and [3]University of Rennes 1, Rennes, France. Sponsor: *U.C. Nygaard.*

#1451 **Poster Board Number P180**
***In Vitro* Screening to *In Vivo* Testing of Polycyclic Aromatic Compounds at the National Toxicology Program.** *C.V. Rider*, *S.S. Auerbach*, *J.-H. Hsieh*, *E. Tokar*, *D. Germolec*, *S.S. Ferguson*, K. Shockley, *E. Mutlu*, S. Masten, and *S. Waidyanatha*. NTP/NIEHS, Research Triangle Park, NC.

#1452 **Poster Board Number P181**
An Exposure Profile Approach to Investigate Health Risks Associated with Chemical Mixtures. E.S. Coker, B. Woods, H. Krapfl, and *B. Malczewska-Toth*. New Mexico Department of Health, Santa Fe, NM.

#1453 **Poster Board Number P182**
Feasibility of Using Disability-Adjusted Life Years (DALYs) in Human Health Risk Assessment from Exposure to Hazardous Air Pollutant (HAP) Mixtures. *M. Mumtaz*[1], and Y. Zhou[2]. [1]ATSDR/CDC, Atlanta, GA; and [2]NCEH/CDC, Atlanta, GA.

Abstract #

#1454 **Poster Board Number P183**
Toxicological-Based Classification of Petroleum Hydrocarbon Fractions for Assessment of Air Concentrations. G. Balagopal, *O. Grabovska*, D. Piche, D. Jugloff, T. Onica, and J. Schroeder. Ontario Ministry of the Environment, and Climate Change (MOECC), Toronto, ON, Canada.

#1455 **Poster Board Number P184**
Optimal Experimental Design and Statistical Modeling for Identifying Toxicological Interactions of Environmental Pollutants. J.T. Perkins, *M. Petriello*, L. Xu, *B. Hennig*, and A. Stromberg. University of Kentucky, Lexington, KY.

Monday Afternoon, March 14
1:15 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Natural Products

Health and Environmental Impacts of Manmade and Naturally Released Toxicants

Chairperson(s): *Anthony B. Ojekale, Lagos State University, Ojo, Lagos, Nigeria; and Monday M. Onakpa, University of Abuja, Abuja, Nigeria.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *1:15 PM–2:45 PM*

#1456 **Poster Board Number P201**
The Effect of Green Tea Extract on Working Memory in Healthy Women. *Y. Liu*, A.D. Fly, *Z. Wang*, and *J.E. Klaunig*. Indiana University, Bloomington, IN.

#1457 **Poster Board Number P202**
A Comprehensive Toxicological Safety Assessment of an Extract of *Olea europaea* L. Leaves (Bonolive®). *A. Clewell*[1], E. Béres[2], A. Vértesi[2], R. Glávits[2], G. Hirka[2], *J. Endres*[1], *T. Murbach*[1], and I. Pasics[2]. [1]AIBMR Life Sciences, Inc., Puyallup, WA; and [2]Toxi-Coop Zrt., Budapest, Hungary.

#1458 **Poster Board Number P203**
A Toxicological Safety Assessment of an Extract of *Morus alba* L. Leaves. T. Marx[1], R. Glávits[2], G. Hirka[2], *J. Endres*[1], *A. Clewell*[1], and I. Pasics[2]. [1]AIBMR Life Sciences, Inc., Puyallup, WA; and [2]Toxi-Coop Zrt., Budapest, Hungary.

#1459 **Poster Board Number P204**
A Comprehensive Toxicological Safety Assessment of the Purine Alkaloid Theacrine. *J.R. Endres*[1], *N. Deshmukh*[2], R. Glávits[3], G. Hirka[3], *A. Clewell*[1], T. Marx[1], and I. Pasics[3]. [1]AIBMR Life Sciences, Inc., Puyallup, WA; [2]INTOX Pvt. Ltd., Pune, India; and [3]Toxi-Coop Zrt., Budapest, Hungary.

#1460 **Poster Board Number P205**
Regulatory Effects of Platycodin D on Bone Remodeling. *H.G. Jeong*[2], J.H. Choi[2], Y. Han[1], H.G. Kim[2], H.M. Jeong[1], H.S. Lee[4], Y.C. Chung[3], and K.Y. Lee[1]. [1]Chonnam National University, Gwangju, Korea, Republic of; [2]Chungnam National University, Daejeon, Korea, Republic of; [3]International University of Korea, Jinju, Korea, Republic of; and [4]Korea Research Institute of Bioscience and Biotechnology, Daejeon, Korea, Republic of.

#1461 **Poster Board Number P206**
The Effect of Administering Multiple Doses of Tall Larkspur (*Delphinium barbeyi*) to Cattle. *K.D. Welch*, B.T. Green, D.R. Gardner, D. Cook, and J.A. Pfister. USDA/ARS/PPRL, Logan, UT.

Abstract #

#1462 **Poster Board Number P207**
Toxicological Evaluation of *Striga hermonthica* Leaves Extract in Wistar Albino Rats. *M.M. Onakpa*, P. Adamu, and D. Akumka. University of Abuja, Abuja, Nigeria.

#1463 **Poster Board Number P208**
Oral Administration of *Archachatina marginata* Hemolymph Prevents Renal Damage in Adrenaline Induced Hypertensive Wistar Rats. *A.B. Ojekale*[2], P. Jewo[1], U. Agbafor[2], and J. Oguntola[1]. [1]Lagos State University College of Medicine, Ikeja, Lagos, Nigeria; and [2]Lagos State University, Ojo, Lagos, Nigeria.

#1464 **Poster Board Number P209**
***Gymnema sylvestre* Prevents Initial Progression of Obesity Induced by a High-Fat Diet in C57bl/6j Mice.** H.-J. Kim, and *M.-H. Cho*. Seoul National University, Seoul, Korea, Republic of.

#1465 **Withdrawn.**

#1466 **Poster Board Number P211**
Toxicological and Reversibility Assessment of *Dalbergia saxatilis* Hook, F. (*Papilionaceae*) Root Extract in Rats. O.K. Yemitan[2], and O.O. Adeyemi[1]. [1]College of Medicine of the University of Lagos, Lagos, Nigeria; and [2]Lagos State University College of Medicine, Lagos, Nigeria. Sponsor: *P. Wright*.

#1467 **Poster Board Number P212**
Chemomodulatory Action of 4-Methylthio-3-Butenyl Isothiocyanate on Carcinogenesis in Rats. I. Suzuki[1,3], Y.-M. Cho[3], T. Hirata[3,4], T. Toyoda[3], J.-i. Akagi[3], A. Nishikawa[3], Y. Nakamura[2], and *K. Ogawa*[3]. [1]Gifu University, Gifu, Japan; [2]Kyoto Prefectural University, Kyoto, Japan; [3]National Institute of Health Sciences, Tokyo, Japan; and [4]Showa University, Tokyo, Japan.

#1468 **Poster Board Number P213**
The Inhibitory Effects of *Salvia plebeia* on Atopic Dermatitis-Like Skin Lesions. J.K. Choi[2], *S. Lee*[1], and *S.-H. Kim*[2]. [1]Korea Research Institute of Bioscience, and Biotechnology, Jeongeup, Korea, Republic of; and [2]Kyungpook National University, Daegu, Korea, Republic of.

#1469 **Poster Board Number P214**
Inhibitory Effects of Capsaicin on Dimethylnitrosamine-Induced Hepatic Fibrosis in Rat. J.H. Choi[1], Y.C. Chung[2], and *H.G. Jeong*[1]. [1]Chungnam National University, Daejeon, Korea, Republic of; and [2]International University of Korea, Jinju, Korea, Republic of.

#1470 **Poster Board Number P215**
Inhibitory Effects of Saponins from the Roots of *Platycodon grandiflorum* on High-Fat Diet-Induced Non-Alcoholic Steatohepatitis by Inducing Antioxidant Enzymes and Fatty Acid Oxidation. Y.C. Chung[2], J.H. Choi[1], C.Y. Choi[4], S.W. Jin[1], H.G. Kim[1], S.J. Kim[1], Y.C. Lee[3], and *H.G. Jeong*[1]. [1]Chungnam National University, Daejeon, Korea, Republic of; [2]International University of Korea, Jinju, Korea, Republic of; [3]Jangsaeng Doraji Co., Ltd., Jinju, Korea, Republic of; and [4]Jeollanamdo Institute of Natural Resources Research, Jangheung, Korea, Republic of.

#1471 **Poster Board Number P216**
Toxic Effects of the Aqueous Root Extract of *Talinum triangulare* as Investigated in Rodents. *F.R. Aigbe*, M.O. Oyatorisa, and O.O. Adeyemi. University of Lagos, Lagos, Nigeria.

Abstract #

#1472 **Poster Board Number P217**
Effect of Rutaecarpine in Tert-butyl Hydroperoxide-Induced Apoptosis by Up-Regulating Phase II Enzymes through TRPV1/CaMKII/Akt Pathway in HepG2. S.S. Won[1], S.W. Jin[1], Y.P. Hwang[2], and *H.G. Jeong*[1]. [1]Chungnam National University, Daejeon, Korea, Republic of; and [2]International University of Korea, Jinju, Korea, Republic of.

#1473 **Poster Board Number P218**
Effect of Betulinic Acid on eNOS Phosphorylation and No Synthesis via Calcium Signaling Pathway. S.W. Jin, S.J. Kim, and *H.G. Jeong*. Chungnam National University, Daejeon, Korea, Republic of.

#1474 **Poster Board Number P219**
Some Natural Amino Acids Ameliorate Metabolic Dysfunction by Activating SIRT1. W.-C. Sim, Y.-J. Choi, D.G. Kim, and *B.-H. Lee*. Seoul National University, Seoul, Korea, Republic of.

#1475 **Poster Board Number P220**
Microcystin-LR Promotes Liver Cell Proliferation by Activating Akt/mTORC1/S6K1 Pathway. J. Liu, B. Wang, and L. Xu. School of Medicine, Zhejiang University, Hangzhou, China. Sponsor: *H. Wang.*

#1476 **Poster Board Number P221**
Effects of Chemopreventive Natural Compounds on Function and Expression of Human P-Glycoprotein. *T. Nabekura*, T. Kawasaki, M. Furuta, T. Kaneko, and Y. Uwai. Aichi Gakuin University, Nagoya, Japan. Sponsor: *M. Satoh.*

#1477 **Poster Board Number P222**
Epigallocatechin-3-Gallate Enhances Benzo[a] pyrene-Induced Cytotoxicity Through Increased Reactive Oxygen Species Production in Human Lung Epithelial Cells. *M. Cromie*, Q. Wang, and *W. Gao*. Texas Tech University, Lubbock, TX. Sponsor: *M. Cromie.*

#1478 **Poster Board Number P223**
Cytotoxicity Characterization of the Novel Polyarsenical Arsenicin A in Human Cell Lines. *B. Moe*[1], L. Chen[1], W.R. Cullen[2], X.-F. Li[1], and X.C. Le[1]. [1]University of Alberta, Edmonton, AB, Canada; and [2]University of British Columbia, Vancouver, BC, Canada.

#1479 **Poster Board Number P224**
Comparative Study of Microcystin-LR on PP2A in Various Tumor Cell Lines. L. Xu[2], H. Wang[2], K. Xu[2], B. Wang[2], J. Liu[2], and *H. Wang*[1]. [1]University of Washington, Seattle, WA; and [2]Zhejiang University, Hangzhou, China.

#1480 **Poster Board Number P225**
Exposure of the Human HepaRG Liver Cell Line to Pyrrolizidine Alkaloids Results in a Gene Expression Profile Characteristic for Genotoxic Carcinogens. A.A. Peijnenburg, G. Stoopen, C.M. Polman, T.F. Bovee, and P.J. Hendriksen. RIKILT, Wageningen University, and Research Centre, Wageningen, Netherlands. Sponsor: *J. Louisse.*

#1481 **Poster Board Number P226**
Punicic, Jacaric, and Lithocholic Acid Induce ER Stress, Mitochondrial Dysfunction and Autophagy in Human Prostate Cancer Cells. A. Gafar[1,3], *H. Draz*[3], J. Gasmi[3], A. Goldberg[3], M. Bashandy[1], V. Titorenko[2], and *T. Sanderson*[3]. [1]Al-Azhar University, Cairo, Egypt; [2]Concordia University, Montreal, QC, Canada; and [3]INRS-Institut Armand-Frappier, Laval, QC, Canada.

Abstract #

#1482 **Poster Board Number P227**
Strategies to Protect Against Triptolide Based on Its Toxic Mechanism. W. Wang, and Z. Huang. Sun Yat-sen University, Guangzhou, China. Sponsor: *H. Raabe.*

#1483 **Poster Board Number P228**
Comparing Early Life Stage Effects in Zebrafish of Extraction Methods for *Stellera chamaejasme*, an Herbal Plant Used in Mongolian Medicine. W. Dong[2], J. Zong[2], M. Li[2], J. Yang[2], S. Tai[2], L. Xu[2], M. Chernick[3], D.E. Hinton[3], B. Yang[1], and *W. Dong*[2,3]. [1]Department of Dermatology, People's Hospital of Hubei Province, Wuhan, China; [2]Inner Mongolia Provincial Key Laboratory for Toxicants, and Animal Disease/ Inner Mongolia University for the Nationalities, Tongliao, China; and [3]Nicholas School of the Environment, Duke University, Durham, NC. Sponsor: *W. Dong.*

#1484 **Poster Board Number P229**
Supercritical Fluid Extraction and Characterization of Essential Oil from *Moringa oleifera* Seeds and Leaves Using GC/MS/MS. *E.U. Obi*. Texas Southern University, Houston, TX.

#1485 **Poster Board Number P230**
Antioxidant Potential of *Momordica charantia*. G.S. Iscan, S. Yilmaz, G. Coksari, O.B. Acikara, N. Artik, and T. Coban. Ankara University, Ankara, Turkey. Sponsor: *M. Iscan.*

#1486 **Poster Board Number P231**
Effect of Impressic Acid on 6-Hydroxydopamine-Induced Neuronal Cell Death and Oxidative Stress. C.F. Zheng, S.W. Jin, Y.H. Kim, and *H.G. Jeong*. Chungnam National University, Daejeon, Korea, Republic of.

#1487 **Poster Board Number P232**
Cardiotoxic Potential of 4-O-Methylhonokiol on Japanese Medaka (*Oryzias latipes*) Embryo-Larval Development. *S.K. Singha*, M.A. Ibrahim, M. Ilias, I.A. Khan, and *A.K. Dasmahapatra*. University of Mississippi, University, MS.

#1488 **Poster Board Number P233**
Effect of Platycodin D on Heme Oxygenase-1 Through Akt/Nrf2 Pathway in Endothelial Cells. G.H. Lee[1], Y.C. Chung[2], and *H.G. Jeong*[1]. [1]Chungnam National University, Daejeon, Korea, Republic of; and [2]International University of Korea, Jinju, Korea, Republic of.

#1489 **Poster Board Number P234**
Effect of Impressic Acid on Endothelial Nitric Oxide Synthase Activation in Endothelial Cells. S.J. Kim, S.W. Jin, Y.H. Kim, and *H.G. Jeong*. Chungnam National University, Daejeon, Korea, Republic of.

#1490 **Poster Board Number P235**
Myelostimulation by Echinacea Herbal Supplement and *E. purpurea* Independent of Bacterial LPS, Other Components That Activate Monocytes and Lipophilic Phytoconstituents. *S.K. Nagumalli*[2], *H.F. Hussin*[2], D.L. Barney[3], N.D. Pugh[1], D.S. Pasco[1], and *S.A. Meyer*[2]. [1]National Ctr. for Natural Products Res., Univ. Mississippi, University, MS; [2]University of Louisiana-Monroe, Monroe, LA; and [3]USDA-N. Central Regional Plant Intro. Station (NCRPIS), Ames, IA.

Abstract #

#1491 **Poster Board Number P236**
Comparison of 1H-NMR Fingerprints of *Echinacea purpurea* Extracts with Stimulation of Myelopoiesis in Rat to Identify Active Constituents. *H.F. Hussin*, *S.K. Nagumalli*, T.W. Sasek, K.A. El Sayed, and *S.A. Meyer*. University of Louisiana-Monroe, Monroe, LA.

#1492 **Poster Board Number P237**
Potential of Phytochemicals in Modulation of Cardiovascular Diseases and Breast Cancer Induced by Polycyclic Aromatic Hydrocarbons. *S. Kondraganti*, and *B. Moorthy*. Baylor College of Medicine, Houston, TX.

#1493 **Poster Board Number P238**
Amoebicidal Activity of Extracts of *Rhus trilobata* on *Entamoeba histolytica* Trophozoites. H.A. García-Ramírez[2], M. d.C. González-Horta[2], R. Infante-Ramírez[2], M.R. Hernández-Castaños[2], P. Talamás-Rohana[1], and B.E. Sánchez-Ramírez[2]. [1]Centro de Investigación y Estudios Avanzados, México, DF, Mexico; and [2]Universidad Autónoma de Chihuahua, Chihuahua, Chih., Mexico. Sponsor: *L.M. del Razo Jiménez.*

#1494 **Poster Board Number P239**
General Composition and Antifungal Effect of Commercial Ethanolic Mexican Propolis on *Aspergillus flavus*. *R.-U. Antonio*[2], M.-A. GCG[1], M.-A. A[3], T.-E. RS[2], and *M.-C. AG*[2]. [1]Faculty of Agronomy, UANL, Gral Escobedo, NL, Mexico; [2]Faculty of Veterinary Medicine, UANL, Gral Escobedo, NL, Mexico; and [3]UNAM, Edo México, Mexico.

#1495 **Poster Board Number P240**
Compounds and Fractions from *Oxyanthus speciosus* Showed Good *In Vitro* Antimycobacterial Activity and Low Cytotoxicity Profile. *A.O. Aro*, M.D. Awoufack, J.N. Eloff, and L.J. McGaw. University of Pretoria, Onderstepoort, South Africa.

Monday Afternoon, March 14
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Nanotoxicology: General

Chairperson(s): *Zhongyuan Guo, Binghamton University, Binghamton, NY; and Tahereh Ziglari, University of Montana, Missoula, MT.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *3:00 PM–4:30 PM*

#1496 **Poster Board Number P241**
Nano-Scaled Cerium Oxide Induces Platelet Activation *In Vivo*. *D.C. Davidson*[1], M. Barger[1], R. Derk[1], *T.A. Stueckle*[1], *J. Ma*[1], *J. Cohen*[2], *P. Demokritou*[2], and *L. Wang*[1]. [1]CDC/NIOSH, Morgantown, WV; and [2]Harvard School of Public Health, Boston, MA.

#1497 **Poster Board Number P242**
Animal Inhalation Exposure to Nanomaterials: Design, Conduct, and Data Interpretation. B.T. Chen. NIOSH, Morgantown, WV. Sponsor: *P. Joseph.*

Abstract #

#1498 **Poster Board Number P243**
A Framework for the Derivation of a Health-Based Occupational Exposure Limit for Silver Nanoparticles. *B.A. Weldon*[4], *E.M. Faustman*[4], *G. Oberd&örster*[3], T. Workman[4], *W.C. Griffith*[4], *C. Kneuer*[1], and *I.J. Yu*[2]. [1]Federal Institute for Risk Assessment, Berlin, Germany; [2]Hoseo University, Asan, Korea, Republic of; [3]University of Rochester, Rochester, NY; and [4]University of Washington, Seattle, WA.

#1499 **Poster Board Number P244**
Effects of CdSe/ZnS Quantum Dots on Reactive Oxygen Species and Respiratory Burst in Peripheral Blood Leukocytes Taken from Gclm Wild-Type, Heterozygous and Null Mice. *C.C. White*, *D. Botta*, *C.M. Schaupp*, *D.K. Scoville*, X. Gao, and *T.J. Kavanagh*. University of Washington, Seattle, WA.

#1500 **Poster Board Number P245**
Different Surface Coatings on IONP Project Differential Proteomic Patterns of Protein Corona. *V. Escamilla-Rivera*[1], A. Solorio-Rodriguez[1], M. Uribe-Ramirez[1], R. Winkler[2], and *A. De Vizcaya-Ruiz*[1]. [1]Cinvestav, Distrito Federal, Mexico; and [2]Cinvestav-Irapuato, Irapuato, Mexico.

#1501 **Poster Board Number P246**
Integrated 'Omics' of Coelomic Fluid: An Attempt to Understand Phenomics of TiO2 Nanoparticle Toxicity. *S.P. Bitragunta*, and S.G. Palani. Birla Institute of Technology, and Science Pilani, Hyderabad Campus, Hyderabad, India.

#1502 **Poster Board Number P247**
Cholesterol-Induced Phenotypic Alterations in Cellular Response to Nanoparticles. *J.H. Shannahan*, *V.C. Minarchick*, and *J.M. Brown*. University of Colorado, Aurora, CO.

#1503 **Poster Board Number P248**
Topical Skin Treatment with Nanoparticles Modulates the Contact Hypersensitivity Response in a Murine Model. *B.C. Palmer*, S. Jatana, and L. DeLouise. University of Rochester, Rochester, NY.

#1504 **Poster Board Number P249**
A Computational Framework for Interspecies Pharmacokinetics, Exposure and Toxicity Assessment of Gold Nanoparticles. *Z. Lin*[1], *N.A. Monteiro-Riviere*[1], R. Kannan[2], and *J.E. Riviere*[1]. [1]Kansas State University, Manhattan, KS; and [2]University of Missouri, Columbia, MO.

#1505 **Poster Board Number P250**
Identifying the Effects of Size and Shape on the Physicochemical Properties of Cerium Oxide Nanoparticles. C.M. Sims, J.M. Gorham, T.J. Cho, I. Levin, V.A. Hackley, and *B.C. Nelson*. National Institute of Standards, and Technology, Gaithersburg, MD.

#1506 **Poster Board Number P251**
***In Vitro* Aerosol Exposure System for Nanotoxicity: Dosimetric Analysis Using Nanometals and Nanometal Oxides.** *T.B. Tilly*, *J.J. Schlager*, and *S.M. Hussain*. Molecular Bioeffects Branch, Bioeffects Division, Human Effectiveness Directorate; 711th Human Performance Wing/RHDJ, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH.

Abstract #

#1507 **Poster Board Number P252**
Iron-Doped Apatite Nanoparticles Increase Bacteriophage Infectivity and Macrophage Bioactivity. *K.L. Trout*[2], J.M. Andriolo[2], *A. Holian*[2], M.L. Pedulla[1], *M.K. Hailer*[1], and J.L. Skinner[1]. [1]Montana Tech, Butte, MT; and [2]University of Montana, Missoula, MT.

#1508 **Poster Board Number P253**
Particulate Matter Releases from Nano-Enabled Products Across Their Life Cycle (LCPM): An Integrated Methodology Linking LCPM Exposures to Hazard. *J.M. Cohen*, A.K. Pal, C.Y. Watson, G.M. DeLoid, and P. Demokritou. Harvard School of Public Health, Boston, MA.

#1509 **Poster Board Number P254**
Proteomic Profiling of Protein S-Glutathionylation Reveals Selective Redox Regulation of Macrophage Pathways During Nanoparticle-Induced Oxidative Stress. *B.D. Thrall*, J. Duan, V. Kodali, M. Gaffrey, and W.-J. Qian. Pacific Northwest National Laboratory, Richland, WA.

#1510 **Poster Board Number P255**
Method for Identification of Low Soluble, Biopersistent Dusts (GBS). O. Creutzenberg, T. Hansen, S. Schuchardt, T. Tillmann, and J. Knebel. Fraunhofer ITEM, Hannover, Germany. Sponsor: *C. Dasenbrock*.

#1511 **Poster Board Number P256**
Surface and Size-Dependent Effects of Silver Nanoparticles on Two Aquatic Invertebrates: *D. magna* and *G. fossarum*. S. Cambier[1], K. Mehennaoui[1], E.J. Keuzenkamp[4], A. Georgantzopoulou[1,2], T. Serchi[1], L. Giamberini[3], and *A.C. Gutleb*[1]. [1]Luxembourg Institute of Science, and Technology, Esch sur Alzette, Luxembourg; [2]Norsk Institutt for vannforskning, Oslo, Norway; [3]Université de Lorraine, Metz, France; and [4]Wageningen University, Wageningen, Netherlands.

#1512 **Poster Board Number P257**
Nanomaterials-Induced Alteration of Telomere Status: A Comparative Approach with *In Vitro* and *In Vivo*, the Nematode *Caenorhabditis elegans*. N. Chatterjee, Y.-H. Kim, and J. Choi. University of Seoul, Seoul, Korea, Republic of. Sponsor: *B.-H. Lee.*

#1513 **Poster Board Number P258**
Human RBC As a Surrogate to Study Particle-Induced Phagolysosomal Damage. *T. Ziglari*, *D. Anderson*, *L. Fisch*, and *A. Holian*. University of Montana, Missoula, MT. Sponsor: *A. Holian.*

#1514 **Poster Board Number P259**
Assessment of Bactericidal Effects of Food Contact Materials Containing Silver Nanoparticles and Expression of Silver Resistance Genes During Subchronic Exposure. L. Valencia, K. Williams, K. Gokulan, R. Trbojevich, C. Cerniglia, M. Boudreau, and S. Khare. National Center for Toxicological Research, US Food and Drug Administration, Jefferson, AR. Sponsor: *R. Trbojevich.*

#1515 **Poster Board Number P260**
Alteration of Allergic Response Following an Acute Pulmonary Exposure to Nickel Oxide Nanoparticles in a Murine OVA Asthma Model. *K.A. Roach*[2], *C.E. McLoughlin*[1], *S.E. Anderson*[1,2], A.B. Stefaniak[1], D. Schwegler-Berry[1], and *J.R. Roberts*[1,2]. [1]CDC/NIOSH, Morgantown, WV; and [2]West Virginia University, Morgantown, WV.

Abstract #

#1516 **Poster Board Number P301**
Ingestion of Nanoparticles Used in Food Interrupts Intestinal Epithelial Function and Triggers Pro-Inflammatory Signaling. *Z. Guo*[1], *E. Tako*[2], and *G. Mahler*[1]. [1]Binghamton University, Binghamton, NY; and [2]Cornell University, Ithaca, NY.

#1517 **Poster Board Number P302**
Dermal Application of Nanoporous Silica Nanoparticles Aggravates Atopic Dermatitis. *S. Lee*[1], J.K. Choi[2], and *S.-H. Kim*[2]. [1]Korea Research Institute of Bioscience, and Biotechnology, Jeongeup-si, Jeonbuk, Korea, Republic of; and [2]Kyungpook National University, Daegu, Korea, Republic of.

#1518 **Poster Board Number P303**
Proteomic Analysis of Protein Carbonylation: A Useful Tool to Unravel Nanoparticle Toxicity Mechanisms. M.D. Driessen[2], S. Mues[1], A. Vennemann[3], B. Hellack[4], A. Bannuscher[2], V. Vimalakanthan[2,5], C. Riebeling[2], R. Ossig[1], M. Wiemann[3], J. Schneckenburger[1], T.A. Kuhlbusch[4], B. Renard[5], A. Luch[2], and *A. Haase*[2]. [1]Biomedical Technology Center, Westfälische Wilhelms-Universität, Münster, Germany; [2]German Federal Institute for Risk Assessment, Berlin, Germany; [3]IBE R&d gGmbH, Münster, Germany; [4]Institute of Energy, and Environmental Technology (IUTA) e.V., Duisburg, Germany; and [5]Robert-Koch-Institut (RKI), Berlin, Germany.

#1519 **Poster Board Number P304**
Toxicological Effects of a Food Additive Tio2 to the Nematode *C. elegans*: Does the Nano Matter? *H. Ma*[1], C. Yuan[1], X. Gao[1], S. Li[2], and L. Wallis[3]. [1]University of Wisconsin Milwaukee, Milwaukee, WI; [2]US EPA/Mid-Continent Ecology Division, Duluth, MN; and [3]Western Washington University, Bellingham, WA.

#1520 **Poster Board Number P305**
Indirect and Direct Nanomaterial Interaction Influences Vascular Reactivity. *V.C. Minarchick*[1], *P.A. Stapleton*[2], *J.H. Shannahan*[1], E.M. Sabolsky[2], *T.R. Nurkiewicz*[2], and *J.M. Brown*[1]. [1]University of Colorado Denver, Aurora, CO; and [2]West Virginia University, Morgantown, WV.

#1521 **Poster Board Number P306**
The Effect of Acute Exposure to TiO2 Nano Fiber in the Lungs of Sprague Dawley Male Rats. D.A. Hunter, C.A. Mays, D. Patel, J. Wu, and *W.E. Gato*. Georgia Southern University, Statesboro, GA.

#1522 **Poster Board Number P307**
Positively Charged Nanoparticles Lead to Artifacts in a *C. elegans* Toxicity Assay. S.K. Hanna, A. Montoro Bustos, M.R. Winchester, B.C. Nelson, J.T. Elliott, and E.J. Petersen. National Institute of Standards, and Technology, Gaithersburg, MD. Sponsor: *E. Coskun.*

#1523 **Poster Board Number P308**
Sphingosine Kinase 1 Deficiency Protects Against Particle-Induced Lysosome Membrane Permeabilization and NLRP3 Inflammasome Activity in Macrophages. *F. Jessop*, *R.F. Hamilton*, and *A. Holian*. University of Montana, Missoula, MT.

Abstract #

#1524 **Poster Board Number P309**
Examining the Hepatic Effect of TiO2 Nano Fiber Ingestion in Sprague Dawley Rats. K.B. Anderson, D.A. Hunter, C.A. Mays, D. Patel, J. Wu, and *W.E. Gato*. Georgia Southern University, Statesboro, GA.

#1525 **Poster Board Number P310**
Stable Isotope Method to Measure Drug Release from Nanomedicines. *S.T. Stern*, S. Skoczen, and S.E. McNeil. Cancer Research Technology Program, Frederick National Laboratory, Frederick, MD.

#1526 **Poster Board Number P311**
Computational Dosimetry Reveals the of Role Particles and Ions in the Toxicity of Soluble Silver Nanoparticles. D.G. Thomas[2], *J. Smith*[2], V.K. Kodali[1], M. Littke[2], H. Jolley[2], *B.D. Thrall*[2], *J.G. Pounds*[2], and *J.G. Teeguarden*[2]. [1]National Institute for Occupational Safety, and Health (NIOSH), Morgantown, WV; and [2]Pacific Northwest National Laboratory (PNNL), Richland, WA.

Monday Afternoon, March 14
1:15 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Metal Toxicity

♣ Toxicity of Metals

Chairperson(s): *Jesus Olivero-Verbel, University of Cartagena, Cartagena, Colombia; and Joshua D. Chandler, Emory University, Atlanta, GA.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *1:15 PM–2:45 PM*

#1527 **Poster Board Number P312**
3-Hydroxy-3-Methylglutaryl Coenzyme A Reductase Activity in Low Level Cadmium Exposure. *O.O. Ogunrinola*[4], *A.D. Wusu*[4], *O.K. Afolabi*[3], *E.O. Abam*[1], *E.A. Balogun*[5], *O.O. Odukoya*[2], and *O. Ademuyiwa*[2]. [1]Bells University of Technology, Ota, Ogun-State, Nigeria, Ota, Nigeria; [2]Federal University of Agriculture, Abeokuta, Ogun-State, Nigeria, Abeokuta, Nigeria; [3]Ladoke Akintola University, Ogbomosho, Oyo-State, Nigeria, Ogbomosho, Nigeria; [4]Lagos State University, Ojo-Lagos, Nigeria, Lagos, Nigeria; and [5]University of Ilorin, Ilorin, Kwara-State, Nigeria, Ilorin, Nigeria.

#1528 **Poster Board Number P313**
Involvement of Polyubiquitin-Coding Gene, UBB, in Cadmium Toxicity in Human Proximal Tubular Cells. *J.-Y. Lee*, *M. Tokumoto*, and *M. Satoh*. Aichi Gakuin University, Nagoya, Japan.

#1529 **Poster Board Number P314**
Low Dose Oral Cadmium Increases Airway Reactivity and Lung Neuronal Gene Expression in Mice. *J.D. Chandler*, C. Wongtrakool, S.A. Banton, S. Li, M. Orr, D.B. Barr, D. Neujahr, R.L. Sutliff, Y.-M. Go, and *D.P. Jones*. Emory University, Atlanta, GA.

#1530 **Poster Board Number P315**
Low Level Cadmium Causes Dysglycemia and Decreased Serum Leptin in the db/db Mouse, a Model of Type II Diabetes Mellitus. *J. Edwards*. Midwestern University, Downers Grove, IL.

Abstract #

#1531 **Poster Board Number P316**
Involvement of Hyperglycemia or Cadmium Exposure in the Induction of the Polyol Pathway and Morphological Changes in Human Proximal Tubule Cells. *B.A. Davis*, *S.H. Garrett*, *D.A. Sens*, and *S. Somji*. University of North Dakota, Grand Forks, ND.

#1532 **Poster Board Number P317**
The Inhibition of Transcriptional Activities of YY1 and FOXF1 Triggers the Expression of Renal Toxicity by Cadmium. *M. Tokumoto*, *J.-Y. Lee*, and *M. Satoh*. Aichi Gakuin University, Nagoya, Japan.

#1533 **Poster Board Number P318**
Cadmium Exposure Influences Angiogenic Pathways in the Preeclamptic Placenta via Epigenetic Mechanisms. *S. Brooks*. UNC-CH, Durham, NC.

#1534 **Poster Board Number P319**
Effect of Cadmium on p53 Accumulation in Various Cell Lines and Mouse Tissues. *M. Satoh*, *J.-Y. Lee*, and *M. Tokumoto*. Aichi Gakuin University, Nagoya, Japan.

#1535 **Poster Board Number P320**
Prophylactic Effects of Coconut (*Cocos nucifera* L.) Water Against Sub-Chronic Low Level Cadmium-Induced Toxicity. O.A. Ogunrinola[1], *O.O. Ogunrinola*[2], O.S. Shokunbi[1], O.O. Fajana[2], and J.A. Osakwue[2]. [1]Babcock University, Ilishan-Remo, Ogun State, Nigeria; and [2]Lagos State University OJO, Lagos State, Nigeria.

#1536 **Poster Board Number P321**
The Most Scientifically-Supported Approach for Assessing the Carcinogenicity of Oral Exposure to Hexavalent Chromium: Non-Linear, Non-Threshold versus Threshold Approaches. *J.T. Haney*. Texas Commission on Environmental Quality, Austin, TX.

#1537 **Poster Board Number P322**
Exposure to Cr(VI) Affects Multiple Aspects of Chromatin Dynamics to Attenuate Transcription and Enhance γH2AX Propagation. *A. VonHandorf*[2], *F.J. Sánchez-Martín*[1], J. Biesiada[2], M. Medvedovic[2], and *A. Puga*[2]. [1]IMIM Hospital del Mar Medical Research Institute, Barcelona, Spain; and [2]University of Cincinnati, Cincinnati, OH.

#1538 **Poster Board Number P323**
Chromium in Texas Groundwater—Is Allergic Contact Dermatitis a Risk? *S.E. Ethridge*, and *A.F. Jenkins*. TCEQ, Austin, TX.

#1539 **Poster Board Number P324**
Insights into Chromate Genotoxicity from a One Environmental Health Perspective: Alligators, Turtles, and Whales Oh My! *J.L. Young*[2], *S.S. Wise*[2], *C.F. Wise*[2], T. Fukuda[1], and *J.P. Wise*[2]. [1]Tohoku University, Sendai, Japan; and [2]University of Louisville, Louisville, KY.

#1540 **Poster Board Number P325**
Sodium Dichromate Causes Direct and Persistent Injury to Liver and Kidneys After a Single Intra-Peritoneal Injection in Male Sprague-Dawley Rats. E.E. Carroll[1], and *M.S. Madejczyk*[2]. [1]Army Public Health Center (Provisional), Edgewood, MD; and [2]ORISE Postdoctoral Fellow at US Army CEHR, Frederick, MD.

Abstract #

#1541 **Poster Board Number P326**
Toxicogenomic Evaluation of *In Vivo* and *In Vitro* Rat Liver and Kidney Models After Exposure to Cobalt. *M.S. Madejczyk*[2], M.G. Permenter[1], D.M. Kumsher[1], C.E. Baer[1], W.E. Dennis[3], J.D. Stallings[3], and *J.A. Lewis*[3]. [1]Excet, Inc., Fort Detrick, MD; [2]ORISE Postdoctoral Fellow at US Army CEHR, Fort Detrick, MD; and [3]US Army CEHR, Fort Detrick, MD.

#1542 **Poster Board Number P327**
Inhalation Cancer Risk Assessment of Cobalt Metal. *G. Brorby*[3], *M. Suh*[2], *C. Thompson*[1], L. Mittal[1], and *D. Proctor*[2]. [1]ToxStrategies, Inc., Katy, TX; [2]ToxStrategies, Inc., Mission Viejo, CA; and [3]ToxStrategies, Inc., Richmond, CA.

#1543 **Poster Board Number P328**
Estimating Lead (Pb) Bioavailability in a Mouse Model. *D.J. Thomas*, P. Alava, K. Bradham, C. Nelson, and J. Misenheimer. US EPA, Research Triangle Park, NC.

#1544 **Poster Board Number P329**
Closing the Ineffective Lead Treatment Gap: Lessons from Hurricane Katrina in New Orleans, USA for Establishing an Effective Lead Intervention Strategy. *H. Mielke*, C. Gonzales, and E. Powell. Tulane University School of Medicine, New Orleans, LA.

#1545 **Poster Board Number P330**
KXRF-Measured Bone Lead (Pb) as a Biomarker for Pb Exposure and Toxicity Among Children Diagnosed with Pb Poisoning. *A.J. Specht*[2], Y. Lin[3], *M. Weisskopf*[1], C. Yan[3], H. Hu[4], J. Xu[3], and *L.H. Nie*[2]. [1]Harvard University, Boston, MA; [2]Purdue University, West Lafayette, IN; [3]Shanghai Jiao Tong University School of Medicine, Shanghai, China; and [4]University of Toronto, Toronto, ON, Canada.

#1546 **Poster Board Number P331**
Identification and Characterization of Lactic Acid Bacteria with Lead (II) Biosorption Activity. Y.-J. Yi[1], J.-M. Lim[1], S. Gu[1], W.-K. Lee[2], S.-M. Lee[1], and B.-T. Oh[1]. [1]Chonbuk National University, Iksan-si, Korea, Republic of; and [2]Chungbuk National University, Cheongju-si, Korea, Republic of. Sponsor: *W. Koh*.

#1547 **Poster Board Number P332**
Lipid Alterations in Hepatic and Brain Microsomes Following Subchronic Lead Exposure. *E.O. Abam*[1,2], *O.O. Ogunrinola*[2], *A.D. Wusu*[2], O.K. Afolabi[2], *O.A. Dosumu*[2], *B.O. Onunkwor*[2], *E.A. Balogun*[2], O.O. Odukoya[2], and *O. Ademuyiwa*[2]. [1]Bells University of Technology, Ota, Nigeria; and [2]Federal University of Agriculture, Abeokuta, Nigeria.

#1548 **Poster Board Number P333**
Intellectual Function, Hematological, Hepatic and Molecular Markers in Children Exposed to Lead in Cartagena, Colombia. N. Alvarez-Ortega, *K. Caballero-Gallardo*, and *J. Olivero-Verbel*. University of Cartagena, Cartagena, Colombia.

#1549 **Poster Board Number P334**
Lead-Induced DNA Damage: Efficacy of Chelators and Vitamin C. *D.O. Adebisi*, *U.R. Ngozi*, O.O. Beno, B. Semiu, O. Temitayo, and *A. Oladipo*. Federal University of Agriculture, Abeokuta, Nigeria.

Abstract #

#1550 **Poster Board Number P335**
Lead and Cortisol Synergistically Accelerate Senescence in Primary Human Umbilical Vein Epithelial Cells. R. Lichtler, K. Esteves, S. Drury, *M. Wilson*, and *J. Wickliffe*. Tulane University, New Orleans, LA.

#1551 **Poster Board Number P336**
Intranasal Manganese Exposure: Implications for Adult Neurogenesis and Copper Concentrations in Subventricular Zone. *S.L. O'Neal*, *S. Fu*, and *W. Zheng*. Purdue University, West Lafayette, IN.

#1552 **Poster Board Number P337**
Bone Manganese As a Biomarker for Manganese Exposure—An *In Vivo* Pilot Study. *Y. Liu*, *F. Mostafaei*, D. Rolle, *W. Zheng*, E. Wells, and *L. Nie*. Purdue University, West Lafayette, IN. Sponsor: *W. Zheng*.

#1553 **Poster Board Number P338**
Manganese Levels in Blood and Associated Factors in Urban Population Aged 40 or More in a City in the Southern Brazil. A.L.C. Silva[2], M.R. Urbano[2], M.d.F.H. Carvalho[1], M.L. Buzzo[1], T. Peixe[2], and M.M. Paoliello[2]. [1]Adolfo Lutz Institute, Sao Paulo, Brazil; and [2]State University of Londrina, Londrina, Brazil. Sponsor: *M. Aschner*.

#1554 **Poster Board Number P339**
Tungsten Alters B-Cell Differentiation Through Down-Regulation of IL-7R and PreBCR Signaling Pathways. T.H. Wu, *A.M. Bolt*, D. Plourde, Y.K. Young, A.D. Kelly, and *K.K. Mann*. McGill University/Lady Davis Institute for Medical Research, Montreal, QC, Canada.

#1555 **Poster Board Number P340**
Investigating the Effects of Sex and Age of Mice on Tungsten Deposition and Adipogenesis in the Bone. *A.M. Bolt*, T.H. Wu, D. Plourde, *L.F. Negro Silva*, and *K.K. Mann*. McGill University, Lady Davis Institute for Medical Research, Montreal, QC, Canada.

#1556 **Poster Board Number P341**
Alterations in Antioxidant/Oxidant Proteins Following Treatment of Transformed and Normal Colon Cells with Tellurium Compounds. *P. Vij*, and *D. Hardej*. St. John's University, Queens, NY.

#1557 **Poster Board Number P342**
Protective Effect of Ethanolic Extract of *Grewia carpinifolia* Leaves on Vanadium-Induced Toxicity. *O.E. Adebiyi*, A. Obisesan, *F.O. Olayemi*, and J.O. Olopade. University of Ibadan, Ibadan, Nigeria, Oyo State, Nigeria.

#1558 **Poster Board Number P343**
Comparison of the Toxicity of Sintered vs. Unsintered Indium-Tin Oxide Particles on Murine Macrophage and Epidermal Cells. *N.S. Olgun*, A.M. Morris, A.B. Stefaniak, K.J. Cummings, M.L. Kashon, and S.S. Leonard. National Institute for Occupational Safety, and Health, Morgantown, WV.

#1559 **Poster Board Number P344**
Prevalence of Anti-Nuclear Antibodies Among Navajo Birth Cohort Study Participants with Elevated Urine Uranium Levels. D. MacKenzie, E. Erdei, *J. Ong*, B. Pacheco, C. Miller, and *J. Lewis*. University of New Mexico College of Pharmacy, Albuquerque, NM.

Abstract #

#1560 **Poster Board Number P345**
Environmental Uranium Exposure and Immune Biomarkers Among Younger Generations of Navajo Tribal Members. E. Erdei, D. MacKenzie, C. Miller, B. Pacheco, J. Hoover, *J. Ong*, and *J. Lewis*. University of New Mexico, Albuquerque, NM.

#1561 **Poster Board Number P346**
Lung Function in Gulf War I Veterans Exposed to Depleted Uranium Inhalation and Shrapnel Injury: Updating the Cohort. S.E. Hines[1,2], A. Barnes[2], P. Gucer[1,2], J. Gaitens[1,2], M. Oliver[1,2], M. Condon[1,2], T. Roth[1,2], *K. Squibb*[1,2], and *M. McDiarmid*[1,2]. [1]Baltimore VA Medical Center, Baltimore, MD; and [2]University of Maryland School of Medicine, Baltimore, MD.

#1562 **Poster Board Number P347**
SATB2 Plays a Role in Anchorage -Independent Growth and Cell Migration in Normal and Metal Transformed Human Bronchial Epithelial Cells. A. Jordan[2], F. Wu[2], T. Kluz[2], S. Shen[1], *H. Sun*[2], *L.A. Cartularo*[2], and *M. Costa*[2]. [1]New York University, New York, NY; and [2]New York University, Tuxedo, NY.

#1562a **Poster Board Number P348**
Comparative Study of *Chlorella vulgaris* and Phanerochaete chrysosporium (ATCC® 24725 TM) on the Bioremediation Hexavalent Chromium: A Mathematical Modeling Study. C. Mwase, B. Mohanty, and C. Abubucker. Department of Mathematics, Science, and Technology, Paine College, Augusta, GA.

Monday Afternoon, March 14
1:15 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Mercury Toxicity

♣ Toxicity of Metals

Chairperson(s): *Nikaeta Sadekar, St. John's University, Jamaica, NY; and Olabisi O. Ogunrinola, Lagos State University, Ojo-Lagos, Nigeria, Lagos, Nigeria.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *3:00 PM–4:30 PM*

#1563 **Poster Board Number P401**
Activation of Nrf2 Through S-Transmerculation of Methylmercury Glutathione Adduct to Keap1 in SH-SY5Y Cells. *Y. Abiko*, E. Yoshida, and *Y. Kumagai*. University of Tsukuba, Tsukuba, Japan. Sponsor: *Y. Kumagai.*

#1564 **Poster Board Number P402**
Role of MRTF, a Novel Transcription Factor, in Induction of TNF-α Gene Expression by Methylmercury. N. Endo, *A. Naganuma*, and *G.-W. Hwang*. Tohoku University, Sendai, Japan. Sponsor: *A. Naganuma.*

#1565 **Poster Board Number P403**
Developmental Exposure to MeHg Inhibits Myogenic Differentiation in C2C12 Myoblasts. *L. Prince*, and *M.D. Rand*. University of Rochester, Rochester, NY.

#1566 **Poster Board Number P404**
Methylmercury Induces Cytotoxicity Through Transport of Pyruvate into Mitochondria. *J.-Y. Lee*[1,2], Y. Ishida[2], *A. Naganuma*[2], and *G.-W. Hwang*[2]. [1]Aichi Gakuin University, Nagoya, Japan; and [2]Tohoku University, Sendai, Japan.

Abstract #

#1567 **Poster Board Number P405**
Total Mercury and Methylmercury Analysis in the Muscle and Gonads of Seafoods Using Heating Vaporization Atomic Absorption Spectrometry. K. Yoshimoto[2,3], A. Yamamoto[1], C. Koriyama[1], Y. Ishibashi[3], M. Tabata[4], A. Nakano[2], and *M. Yamamoto*[2]. [1]Kagoshima University, Kagoshima, Japan; [2]National Institute for Minamata Disease, Minamata, Japan; [3]Prefectural University of Kumamoto, Kumamoto, Japan; and [4]Saga University, Saga, Japan.

#1568 **Poster Board Number P406**
Effect of Low Level Sub Chronic Inorganic Mercury Exposure on the Level of Essential Elements Analysed by ICP-MS in Rat Blood. *A.D. Wusu*[3], *O.O. Ogunrinola*[3], O.K. Afolabi[2], *E.O. Abam*[4], D.O. Babayemi[1], O.A. Dosumu[1], O.B. Onunkwor[1], *E.A. Balogun*[5], *O.O. Odukoya*[1], *T.C. Onwordi*[3], and *O. Ademuyiwa*[1]. [1]Federal University of Agriculture, Abeokuta, Nigeria; [2]Ladoke Akintola University of Technology, Ogbomosho, Nigeria; [3]Lagos State University, Lagos, Nigeria; [4]The Bell University, Ogun, Nigeria; and [5]University of Ilorin, Ilorin, Nigeria.

#1569 **Poster Board Number P407**
Associations of the Gut Microbiome with Methylmercury Biotransformation and Elimination in Humans Following Fish Consumption. *S.W. Caito*, D. Vorojeikina, A. Grier, S. Gill, *E. van Wijngaarden*, and *M.D. Rand*. University of Rochester, Rochester, NY.

#1570 **Poster Board Number P408**
Wheat Bran Enhances Urinary Elimination and Reduces Mercury Levels in Blood and Brain After Methylmercury Exposure in Mice. M. Nagano[2], M. Fujimura[2], and K. Inaba[1]. [1]Azabu University, Sagamihara, Kanagawa, Japan; and [2]National Institute for Minamata Disease, Minamata, Kumamoto, Japan. Sponsor: *M. Yamamoto.*

#1571 **Poster Board Number P409**
Histopathological Examination of Kidney, Liver and Spleen of Male Sprague-Dawley Rats Orally Exposed to Ras Sindoor. *N. Sadekar*, and *L.D. Trombetta*. St. John's University, Queens, NY.

#1572 **Poster Board Number P410**
The Tibetan Medicine Zuotai Influences Clock Gene Expressions in the Liver of Mice. H. Li[2], W.-K. Li[2], Q. Wu[2], *L.-X. Wei*[1], and *J. Liu*[2]. [1]Northwest Plateau Institute of Biology of Chinese Academy of Sciences, Xining, China; and [2]Zunyi Medical College, Zunyi, China.

Abstract #

Monday Afternoon, March 14
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Neurotoxicology—Mercury Neurotoxicity

Advances in Neurotoxicology

Toxicity of Metals

Chairperson(s): *Mary Beth Genter, University of Cincinnati, Cincinnati, OH; and Jordan Bailey, Michigan State University, East Lansing, MI.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *1:15 PM–2:45 PM*

#1573 **Poster Board Number P411**
Transient Receptor Potential A1 Contributes to Late-Stage Methylmercury Toxicity in Mouse Dorsal Root Ganglia. E. Formiller, *H. Hannon*, and *W.D. Atchison*. Michigan State University, East Lansing, MI.

#1574 **Poster Board Number P412**
Role of Homo- and Heteromeric Nicotinic Acetylcholine Receptors in Mediating Cytotoxicity After Acute Methylmercury Exposure in PC12 Cells. *M. Rios-Cabanillas*, and *W.D. Atchison*. Michigan State University, East Lansing, MI.

#1575 **Poster Board Number P413**
Contribution of AMPA Receptors in Methylmercury-Induced Cell Death in the Motor Neuron NSC34 Cell Line. *A. Colón-Rodriguez*, R.K. Hajela, and *W.D. Atchison*. Michigan State University, East Lansing, MI.

#1576 **Poster Board Number P414**
Spinal Cord Cell Cultures Are More Susceptible to Acute Methylmercury Exposure Than Motor Neuron Like Cells, NSC34 Cells. P. Elosegui Rodriguez[2], D. Wiwatratana[1], and *W. Atchison*[1]. [1]Michigan State University, East Lansing, MI; and [2]University of Puerto Rico, Cayey, PR. Sponsor: *W. Atchison*.

#1577 **Poster Board Number P415**
Mitochondrial Membrane Potential Changes in Response to Methylmercury- Induced Toxicity in Motor Neuron-Like Cells, NSC34 Cells: the Role of Dimethyl Fumarate in Neuronal Protection. L. Pérez-Castro[3], G. Bazany[1], D. Wiwatratana[2], and *W. Atchison*[2]. [1]Calvin College, Grand Rapids, MI; [2]Michigan State University, East Lansing, MI; and [3]University of Puerto Rico in Cayey, Cayey, PR. Sponsor: *W. Atchison*.

#1578 **Poster Board Number P416**
Contributions of Extracellular and Intracellular Calcium Concentration in MeHg-Induced Cytotoxicity in Mouse Primary Cortical Astrocytes. J. Ortiz-Rodriguez[2], R. Jaiman-Cruz[1], and *W.D. Atchison*[1]. [1]Michigan State University, E. Lansing, MI; and [2]Univ of Puerto Rico-Cayey, Cayey, PR.

#1579 **Poster Board Number P417**
Low *In Situ* Expression of Antioxidative Enzymes in Cerebellar Granular Cells Susceptible to Methylmercury in a Rat Model of Minamata Disease. M. Fujimura, and F. Usuki. National Institute for Minamata Disease, Minamata, Japan. Sponsor: *A. Naganuma*.

Abstract #

#1580 **Poster Board Number P418**
Methyl Mercury (MeHg) Alters Nuclear Factor Erythroid 2-Related Factor 2 (Nrf2) Gene Expression in Primary Astrocytes. *M. Culbreth*, and *M. Aschner*. Albert Einstein College of Medicine, Bronx, NY.

#1581 **Poster Board Number P419**
Antioxidant Response During Methylmercury Neurotoxicity: Sex-Related Differences. J.A. Ruszkiewicz, and *M. Aschner*. Albert Einstein College of Medicine, Bronx, NY.

#1582 **Poster Board Number P420**
Role of Cystathionine Gamma-Lyase in the Health Risks of Methylmercury. M. Akiyama[3], T. Toyama[1], E. Yoshida[2], T. Unoki[3], *Y. Abiko*[3], Y. Shinkai[3], and *Y. Kumagai*[3]. [1]Tohoku University, Sendai, Japan; [2]Tokyo University of Science, Noda, Japan; and [3]University of Tsukuba, Tsukuba, Japan.

#1583 **Poster Board Number P421**
Shining Synchrotron Light on Minamata Disease: An Infamous Organo-Mercury Poisoning Event. *A.K. James*[3], K. Eto[1], M. Marumoto[1], M. Sakamoto[1], J. Cotelesage[3], G.E. Watson[2], J.L. O'Donoghue[2], G.J. Myers[2], P.H. Krone[3], I.J. Pickering[3], and G.N. George[3]. [1]National Institute for Minamata Disease, Kumamoto, Japan; [2]University of Rochester, Rochester, NY; and [3]University of Saskatchewan, Saskatoon, SK, Canada.

#1584 **Poster Board Number P422**
Maternal Methylmercury Exposure Through Rice Ingestion and Offspring Development. *S. Rothenberg*[1], X. Yu[2], and C. Hong[1]. [1]University of South Carolina, Columbia, SC; and [2]Xinhua Hospital Affiliated to Shanghai Jiao Tong School of Medicine, Shanghai, China.

#1585 **Poster Board Number P423**
Neuroantibodies (NAb) in Males with Mercury (Hg) Exposure: Prevalence and Association with Clinical Signs. *H.A. El-Fawal*[1], I. Abdel Moneim[2,3], R.M. El-Gazzar[3], and M.Y. Shamy[2,3]. [1]Albany College of Pharmacy, and Health Sciences, Albany, NY; [2]King Abdulaziz University, Jeddah, Saudi Arabia; and [3]University of Alexandria, Alexandria, Egypt.

Monday Afternoon, March 14
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Neurotoxicology—Metals: Lead, Cadmium, and Others

Advances in Neurotoxicology

Toxicity of Metals

Chairperson(s): *Wei Zheng, Purdue University, West Lafayette, IN; and Masashi Kitazawa, University of California, Merced, Merced, CA.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *3:00 PM–4:30 PM*

#1586 **Poster Board Number P424**
Copper Exposure Alters Brain Inflammatory Responses and Impairs Clearance of Amyloid-beta. *M. Kitazawa*, and H.-W. Hsu. University of California, Merced, Merced, CA.

Abstract #

#1587 **Poster Board Number P425**
Roles of Lead Exposure in Alzheimer's Disease: Relationship to Brain Amyloid Aggregation. Y. Du[1,2], P. Territo[1], and *W. Zheng*[2]. [1]Indiana University School of Medicine, Indianapolis, IN; and [2]Purdue University, West Lafayette, IN.

#1588 **Poster Board Number P426**
Embryonic Exposure to 100 µG/l Lead Results in Expression Changes in Genes Associated with Nervous System Development and Function in the Aged Adult Zebrafish Brain with Sex-Specific Alteration in P38 Mapk. *J. Lee*, and *J.L. Freeman*. Purdue University, West Lafayette, IN.

#1589 **Poster Board Number P427**
Role of Synaptic Structural Plasticity in Impairments of Spatial Learning and Memory Induced by Developmental Lead Exposure in Wistar Rats. Y. Xiao[1], H. Fu[2], X. Han[1], X. Hu[1], Y. Chen[1], Q. Wei[1], and Q. Hu[1]. [1]Faculty of Preventive Medicine, School of Public Health,Sun Yat-sen University, Guangzhou, China; and [2]The Jackson Laboratory, Bar Harbor, ME. Sponsor: *Y. He.*

#1590 **Poster Board Number P428**
The TrkB Receptor Ligand 7,8-Dihydroxyflavone (7,8-DHF) Reverses the Effects of Developmental Lead Exposure on Presynaptic Neurotransmitter Release in Adult Rat Hippocampus. *P.K. Stanton*[2], X.-l. Zhang[2], *K.H. Stansfield*[1], *J.L. McGlothan*[1], and *T.R. Guilarte*[1]. [1]Columbia University, New York, NY; and [2]New York Medical College, Valhalla, NY.

#1591 **Poster Board Number P429**
The Olfactory Tubercle: A Novel Target for Lead-Induced Cocaine Responsivity. *K.H. Stansfield*, B.D. Soares, *J.L. McGlothan*, and *T.R. Guilarte*. Columbia University, New York City, NY.

#1592 **Poster Board Number P430**
Polychlorinated Biphenyls (PCBs) and Lead Act Synergistically on Brain Dopamine Cells *In Vitro*. *S.H. Enayah*. University of Iowa, Iowa City, IA. Sponsor: *I. Fuortes.*

#1593 **Poster Board Number P431**
Adult-Only Lead Exposure Impairs Adult Hippocampal Neurogenesis and Cognitive Behavior in Knock-In Mice Expressing the Human Apolipoprotein E4 Allele. *A.K. Engstrom*[2], N. Maeda[1], and *Z. Xia*[2]. [1]University of North Carolina, Chapel Hill, NC; and [2]University of Washington, Seattle, WA.

#1594 **Poster Board Number P432**
The Toxic Effects of Cadmium on Adult Neurogenesis. *H. Wang*, *A.K. Engstrom*, and *Z. Xia*. University of Washington, Seattle, WA.

#1595 **Poster Board Number P433**
A Gene-Environment Interaction Study to Understand the Role of Native Alpha-Synuclein in Cadmium-Induced Neurotoxicity. J.A. Jimenez[1], W. Chong[1], *G. Kwakye*[1], and M. Saito[2]. [1]Oberlin College, Oberlin, OH; and [2]Woods Hole Oceanographic Institution, Woods Hole, MA.

#1596 **Poster Board Number P434**
Exposure to Metal Mixtures in Welding Fume: Effects on Neuropsychological Functions. *E.J. Ward*[2], R. Bowler[3], M. Nour[2], S. Snyder[2], F. Rosenthal[2], and *U. Dydak*[1,2]. [1]Indiana University School of Medicine, Indianapolis, IN; [2]Purdue University, West Lafayette, IN; and [3]San Francisco State University, San Francisco, CA.

Abstract #

#1597 **Poster Board Number P435**
A Preliminary Study About Antidepressant-Like or Antianxiety-Like Activity of Tibetan Medicine Zuotai Containing Heavy Metal by the Tail Suspension Test(TST) and the Chronic Unpredictable Mild Stress(CUMS) Model of KM Mice. J. Zhao, Y. Du, C. Li, M. Zhang, H. Yang, H. Bi, and *L. Wei**. Northwest Institute of Plateau Biology, Chinese Academy of Sciences, Xining, China.

#1598 **Poster Board Number P436**
Investigating Zinc Toxicity in Olfactory Neurons: *In Silico*, *In Vitro*, and *In Vivo* Studies. *H. Hsieh*[1], K.S. Vignesh[2], M.C. Horwath[2], T.M. Hopkins[2], G.S. Deepe[2], S.K. Pixley[2], and *M.B. Genter*[1]. [1]University of Cincinnati, Cincinnati, OH; and [2]University of Cincinnati College of Medicine, Cincinnati, OH.

#1599 **Poster Board Number P437**
Arsenic Induces *In Vitro* and *In Vivo* Accumulation of Alpha-Synuclein: Implications in Parkinson's Disease. *A.B. Cholanians*, *S.S. Lau*, and *T.J. Monks*. The University of Arizona, Tucson, AZ.

Monday Afternoon, March 14
1:15 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Ocular Toxicology

Chairperson(s): *Patrick McNutt, USAMRICD, Gunpowder, MD; and Clive Steven Roper, Charles River Laboratories, Tranent, United Kingdom.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *1:15 PM–2:45 PM*

#1600 **Poster Board Number P438**
Inhibition of ADAM17 Reduces EMMPRIN Expression after Mustard Exposure of Corneal Organ Cultures. *M.K. Gordon*[2], *A. DeSantis-Rodrigues*[2], *Y. Chang*[2], R.A. Hahn[2], P. Zhou[2], *D.R. Gerecke*[2], and K.K. Svoboda[1]. [1]Baylor College of Dentistry, Texas A&M University, Dallas, TX; and [2]Rutgers University, Piscataway, NJ.

#1601 **Poster Board Number P439**
Development of an Ocular Vapor Exposure Model for Chloropicrin and Hydrofluoric Acid. R.D. Causey[1], J.J. Autrey[2], K.J. McGowan[2], H. Cheng[1], J.G. Lehman[1], J. Lakin[1], and *A.L. Ruff*[1]. [1]United States Army Medical Research Institute of Chemical Defense, APG, MD; and [2]United States Army Public Health Command, APG, MD.

#1602 **Poster Board Number P440**
Endothelial Toxicity Is Responsible for Acute and Chronic Pathologies Following Ocular Sulfur Mustard Exposure: A Novel Injury Modality and Therapeutic Target. *P. McNutt*, and M. Lyman. USAMRICD, Gunpowder, MD.

#1603 **Poster Board Number P441**
Ocular Irritation Risk Assessments Using *In Vitro* BCOP (OECD 437) and 3D Assays (OECD 492). C.S. Roper, J.L. Vinall, and J.B. Welch. Charles River Laboratories, Tranent, United Kingdom. Sponsor: *S. Bulera.*

Abstract #

#1604 **Poster Board Number P442**
Histopathological Findings on the Cornea in the Bovine Corneal Opacity and Permeability Test (BCOP Test) for Alternative to Eye Irritation Test. M. Furukawa[2], T. Sakakibara[2], K. Ito[2], S. Sasaki[2], M. Koshita[2], S. Okumura[2], K. Kawamura[2], M. Matsuura[2], and *H. Kojima*[1]. [1]National Institute of Health Sciences, Tokyo, Japan; and [2]Safety Research Institute for Chemical Compounds, Co., Ltd, Sapporo, Japan.

#1605 **Poster Board Number P443**
An Adaptive Study Design to Evaluate for the Onset, Progression, and Reversibility of Lenticular Changes in Wistar Han Igs Rats. *R. Yeager*[1], J. Johnson[1], J. Wetter[1], Y. Lao[1], *J. Ford*[2], J. Ruger[2], J. Bartoe[2], and T. Hudzik[1]. [1]AbbVie, Inc., North Chicago, IL; and [2]MPI Research, Mattawan, MI.

#1606 **Poster Board Number P444**
Optical Coherence Tomography (OCT) Correlating with Histopathology for Peripheral Retina Degeneration in a Chronic Monkey Toxicity Study. *L. Mueller*, *B. Jacobsen*, A. Herrmann, and *B. Altmann*. F. Hoffmann-La Roche, Basel, Switzerland.

#1607 **Poster Board Number P445**
Application of Optical Coherence Tomography (OCT) for Examination of the Posterior Segment of the Eye in the Beagle Dog. E. Grosdidier[1], J. Silvano[1], A.-S. Augsburger[2], and *R. Forster*[1]. [1]CITOXLAB, Evreux, France; and [2]DMV Clinique Vétérinaire, Bois Guillaume, France.

#1608 **Poster Board Number P446**
Coefficient of Variation in the Electroretinographic Response of Laboratory Animals. J.N. Ver Hoeve[2,5], C.B. Kim[2,5], T.M. Nork[2,5], *J.S. Eaton*[2,4], *B. Christian*[1], and *C.J. Murphy*[2,3,4]. [1]Covance Laboratories, Inc., Madison, WI; [2]Ocular Services On Demand (OSOD), Madison, WI; [3]University of California-Davis, School of Medicine, Sacramento, CA; [4]University of California-Davis, School of Veterinary Medicine, Davis, CA; and [5]University of Wisconsin-Madison, School of Medicine & Public Health, Madison, WI.

#1609 **Poster Board Number P447**
Reduced Disc Shedding Contribute to Kava Kava Extract-Induced Retinal Degeneration in F344/N Rats. H. Yamashita[3,4], M.J. Hoenerhoff[3], K.R. Shockley[1], S.D. Peddada[1], K.E. Gerrish[2], D. Sutton[3], C.A. Cummings[5], Y. Wang[3], J.F. Foley[3], M. Behl[3], R.C. Sills[3], and *A.R. Pandiri*[3]. [1]Biostatistics, and Computational Biology Branch, NIEHS, Research Triangle Park, NC; [2]Molecular Genomics Core Laboratory, NIEHS, Research Triangle Park, NC; [3]National Toxicology Program, National Institute of Environmental Health Sciences (NIEHS), Research Triangle Park, NC; [4]Taisho Pharmaceutical Co., Ltd., Saitama, Japan; and [5]UltraPath Imaging, Research Triangle Park, NC.

#1610 **Poster Board Number P448**
Attributes of the Tear Film in Species Used in Preclinical Ocular Toxicology Investigations of Dry Eye Disease (DED). *A.D. Rodrigues*[1], *J.S. Eaton*[2,3], and *C.J. Murphy*[2,3]. [1]Allergan, Irvine, CA; [2]Ocular Services On Demand, Madison, WI; and [3]School of Veterinary Medicine, University of California – Davis, Davis, CA.

Abstract #

#1611 **Poster Board Number P449**
***In Vitro* Assessment of the Inflammatory Potential of Ocular Delivery Systems.** A. Cercillieux, *F. Lorget*, *C. Farman*, S. Laing, J.A. Aaronson, A. Famili, D. Chang, K. Rajagopal, *E. Thackaberry*, and *K. Staflin*. Genentech, South San Francisco, CA.

#1612 **Poster Board Number P450**
Assessment of the Predictive Capacity of SkinEthic™ HCE Human Corneal Test Method for Serious Eye Damage/Eye Irritation Assessment: A Depth Analysis Based on the Drivers of UN GHS Classification. N. Alepee, V. Leblanc, M.H. Grandidier, L. Nardelli, G. Swaka, and J. Cotovio. L'Oreal, Aulnay Sous Bois, France. Sponsor: *E. Dufour.*

#1613 **Poster Board Number P451**
Use of HPLC/UPLC-Spectrophotometry for Detection of Formazan in SkinEthic™ HCE Reconstructed Human Corneal Test Method to Expand Its Applicability to Strongly Coloured Chemicals. M.H. Grandidier, L. Nardelli, M. Talleur, J. Cotovio, V. Leblanc, and N. Alepee. L'Oreal, Aulnay Sous Bois, France. Sponsor: *E. Dufour.*

#1614 **Poster Board Number P452**
Intra- and Inter-Laboratory Evaluation of SkinEthic™ HCE Test Method on Solid and Liquid Chemicals for Serious Eye Damage/Eye Irritation Assessment. V. Leblanc[3], E. Adriaens[1], M.H. Grandidier[3], K. Hollanders[4], A. Jacobs[4], M. Meloni[5], L. Nardelli[3], *C. Roper*[2], E. Santirocco[5], F. Toner[2], A. Van Rompay[4], J. Vinall[2], J. Cotovio[3], and N. Alepee[3]. [1]Adriaens Consulting, Aalter, Belgium; [2]Charles River Laboratories, Edinburgh, United Kingdom; [3]L'Oreal, Aulnay Sous Bois, France; [4]Vito NV, Mol, Belgium; and [5]Vitroscreen, Milano, Italy. Sponsor: *E. Dufour.*

#1615 **Poster Board Number P453**
Using the Short Time Exposure (STE) and Eye Irritation Test (EIT) for Full GHS Categorization of Ocular Irritation. J.A. Willoughby[2], B. Meyer[2], L. Blakeman[2], B. Franz-Jonas[2], and C. Dilworth[1]. [1]Cyprotex PLC, Macclesfield, United Kingdom; and [2]Cyprotex US, LLC, Kalamazoo, MI. Sponsor: *C. Strock.*

#1616 **Poster Board Number P454**
Critical Review of the UN GHS Decision Criteria for Chemicals Causing Irreversible Effects on the Eye/Serious Damage to the Eye: Cosmetics Europe Analysis. M. Klaric[4], U. Pfannenbecker[2], E. Adriaens[1], N. Alépée[7], J. Barroso[5], J. Hibatallah[3], K.R. Mewes[6], and P. McNamee[8]. [1]Adriaens Consulting, Aalter, Belgium; [2]Beiersdorf AG, Hamburg, Germany; [3]Chanel Parfums Beauté, Neuilly sur Seine, France; [4]Cosmetics Europe, Brussels, Belgium; [5]European Commission Joint Research Centre, Ispra, Italy; [6]Henkel AG & Co. KGaA, Düsseldorf, Germany; [7]L'Oréal Research & Innovation, Aulnay, France; and [8]The Procter & Gamble Company, Egham, United Kingdom.

Abstract #

Monday Afternoon, March 14
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Safety Assessment: Drug Development

♠ Recent Advances in Safety Assessment

Chairperson(s): *James E. McDuffie, Janssen Research & Development, LLC, San Diego, CA; and Nicola J. Stagg, Genentech, South San Francisco, CA.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *3:00 PM–4:30 PM*

#1617 **Poster Board Number P501**
28-Day Repeated Dose Intravenous Toxicity Study of Combination Excipient [5% PharmasolveTM + 45% Propylene Glycol + 50% Polyethylene Glycol 400] in Wistar Rats. *V. Goyal*, *S. Pandey*, S. Kakade, P. Are, P. Nalge, V. Sthevaan, U. Bijegaonkar, and R. Nirogi. Suven Life Sciences Ltd, Hyderabad, India.

#1618 **Poster Board Number P502**
Emerging Biologics Development Methods: Free-Ranging Cynomolgus Monkeys Undergoing Continuous Intravenous Infusion with an Implanted Port Catheter System—A Method Transfer in Courtesy to the "Refinement" in the 3 R's. C. Miller[1], *S. Korte*[2], A. Salva[1], N. Snippe[2], F. Runge[2], and H. van Wijk[1]. [1]Covance Laboratories Harrogate, Harrogate, United Kingdom; and [2]Covance Preclinical Service GmbH, Münster, Germany.

#1619 **Poster Board Number P503**
Site-Specific Covalent Chemical Ligation Strategy for Monoclonal and Polyclonal Immunoglobulins at the Nucleotide Binding Sites. *D. Lac*[2], *S.C. Feng*[2], G. Bhardwaj[2], H. Le[1], J. Tran[1], L. Xing[1], G. Fung[2], R. Liu[2], H. Cheng[1], and *K.S. Lam*[2]. [1]University of California, Davis, Davis, CA; and [2]University of California, Davis, School of Medicine, Sacramento, CA. Sponsor: *K.S. Lam.*

#1620 **Poster Board Number P504**
Safety Evaluation of 2-Deoxy-D-Glucose (2DG) Following 28 Day Oral Gavage Administration in Beagle Dogs. *K.E. Elsass*. Battelle, West Jefferson, OH.

#1621 **Poster Board Number P506**
Hyperglycemia Potentiates Antiretroviral Drug-Induced Mitochondrial Toxicity in Blood-Brain Barrier Endothelium: A Critical Need for Safety Evaluation of HAART Therapy in Diabetics? *R.K. Sajja*, *S. Prasad*, *M.A. Kaisar*, and *L. Cucullo*. Texas Tech University HSC, Amarillo, TX.

#1622 **Poster Board Number P507**
Cardiovascular and Pulmonary Safety Pharmacology Evaluation of 2 DG in Dog. M.A. Hawk. Battelle, West Jefferson, OH.

#1623 **Poster Board Number P508**
Structural Analysis of Pharmacological Co-Crystals of Furosemide. B.K. London[3], M.O. Claville[1], *S. Babu*[1], F.R. Fronczek[2], and *R.M. Uppu*[3]. [1]Hampton University, Hampton, VA; [2]Louisiana State University, Baton Rouge, LA; and [3]Southern University, and A&M College, Baton Rouge, LA.

Abstract #

#1624 **Poster Board Number P509**
Nonclinical Safety Studies of *Clostridium difficile* Toxoid Vaccine in Rabbit. *G. Ravel*[3], A. Caron[2], F. Spezia[1], L. Quemeneur[3], S. Keech[3], and P. Pietrobon[4]. [1]CiToxLAB, Evreux, France; [2]Sanofi, Alfortville, France; [3]Sanofi Pasteur, Marcy l'Etoile, France; and [4]Sanofi Pasteur, Swiftwater, PA.

#1625 **Poster Board Number P510**
An Inhalation Safety Assessment Model: A Method for Delivering Test Articles Via the Pulmonary Artery. *B.M. Roche*, R.B. Borders, J. Kieper, K. Landis, N. Stewart, M. Sexton, and J. Herrada. WIL Research, Ashland, OH.

#1626 **Poster Board Number P511**
Toxicity and Pharmacokinetics of ZMapp™, a Promising Ebola Therapeutic, in Rats. *J.P. Bakke*[2], M.T. Harrison[2], K. Matsuyama[2], T. Tran[2], K. Altera[2], A. Montano[2], M.B. Brennan[1], T.J. Nyhuis[1], L. Zeitlin[1], and *J. Mirsalis*[2]. [1]Mapp Pharmaceuticals, San Diego, CA; and [2]SRI International, Menlo Park, CA.

#1627 **Poster Board Number P512**
Automated Blood Collection for Arterial Blood Gas Sampling in Unrestrained Monkeys. *D. Hopper*[1], T. Riggs[1], M. Shelton[1], C. Kreilein[1], N. Suttles[1], S. Kurtz[1], B. Kemmerling[1], *L. Kinter*[2], K. Bigge[1], and P. Kruzich[1]. [1]BASI, Mount Vernon, IN; and [2]GLP Scientific Consulting, Unionville, PA.

#1628 **Poster Board Number P513**
A Comparison of Dry Powder Inhalation Setups Used in Nonclinical Testing. M. Freke, and A. Viau. Charles River, Montreal, QC, Canada. Sponsor: *M. Vezina.*

#1629 **Poster Board Number P514**
***In Vivo* Safety Testing of Biosimilar Drugs—Recent Experiences.** P. Baldrick. Covance Laboratories, Harrogate, United Kingdom. Sponsor: *P. Sausen.*

#1630 **Poster Board Number P515**
Development and Use of *In Vitro* Alternatives to Animal Testing by the Pharmaceutical Industry 1980–2013. *R. Roberts*[1], J.-Y. Goh[3], R. Weaver[2], N. Platt[3], and L. Dixon[3]. [1]ApconiX, Alderley Edge, United Kingdom; [2]Servier, Suresnes, France; and [3]The Association of the British Pharmaceutical Industry, London, United Kingdom.

#1631 **Poster Board Number P516**
Identification of Leukocyte Subsets in Cynomolgus Monkey Spleen Using Flow Cytometry. C.S. Eberle, D. Trani, R. Chen, M. Perpetua, Y.Q. Xiao, and *G. Bannish*. Envigo, East Millstone, NJ. Sponsor: *G. Bannish.*

#1632 **Poster Board Number P517**
Retrospective Study of Clinical Pathology Changes in Sick or Moribund Animals. *L. Ramaiah*. Envigo, East Millstone, NJ.

#1633 **Poster Board Number P518**
Long Term Intrathecal Bolus Administration Studies in Cynomolgus Monkeys: Expected Background Findings, Procedure-Related Observations and Recommended Procedures. F. Ludwig, *S. Korte*, and M. Niehoff. Covance Preclinical Services GmbH; Muenster, Germany.

Abstract #

#1634 **Poster Board Number P519**
Assessing the Changing Landscape of Microsampling Use Through a Global Cross-Company Initiative. J. Edwards, A. Bottomley, and K. Chapman. NC3Rs, London, United Kingdom. Sponsor: *N. Burden.*

#1635 **Poster Board Number P520**
Inhibition of Solute Carrier (SLC) Transporters Assayed in Corning® Transportocells™ with Radiolabelled Probe Substrates Synthesised In-House. C. Cantrill, J. Lewis, V. Wilson, D. Hendry, and M. Hall. Quotient Bioresearch Ltd, Rushden, United Kingdom. Sponsor: *P. Atterson.*

#1636 **Withdrawn.**

#1637 **Poster Board Number P522**
Bridging Repeat Dose Toxicity Studies in Adult and Juvenile Rats for a Dopamine Receptor Antagonist, Molindone. *G. Krishna*, S. Goel, and *G. Gopalakrishnan*. Supernus Pharmaceuticals Inc, Rockville, MD.

#1638 **Poster Board Number P523**
BTK Small Molecule Inhibitors Induce Pancreatic Toxicity in Sprague-Dawley Rats. R. Erickson[1], L. Schutt[1], J. Tarrant[1], M. McDowell[1], H. Wong[2], L. Liu[1], J. Crawford[1], R. Carano[1], S.-C. Lewin-Koh[1], *K. Staflin*[1], E. Murrary[1], W. Kennedy[1], U. Klein[1], *D. Diaz*[1], *E. Harstad*[1], D. Danilenko[1], W. Young[1], *D. Dambach*[1], and *D. Misner*[1]. [1]Genentech, Inc., South San Francisco, CA; and [2]University of Vancouver B.C., Vancouver, BC.

#1639 **Poster Board Number P524**
Diagnostic Tools to Enhance Long Term Intrathecal Delivery Studies in Non-Human Primates. *S. Korte*, M. Niehoff, and F. Ludwig. Covance Preclinical Services GmbH; Muenster, Germany.

#1640 **Poster Board Number P525**
***In Vivo* Reactivation of Murine Gammaherpesvirus-68 (MHV-68) from Latently Infected Syngeneic Tumor Cells Due to Treatment with Immunomodulators.** *J. Aligo*, K. Brosnan, P. Rafferty, and D. Weinstock. Janssen Research, and Development, Spring House, PA.

#1641 **Poster Board Number P526**
Neurological Effects of Chronic Treatment with Fulranumab in Sexually Mature Cynomolgus Monkeys. *M. Rocca*[1], L. Kuseryk[1], C. Han[1], C. Pendley[1], M. Butt[2], and *T. Coogan*[1]. [1]Janssen R & D, Spring House, PA; and [2]Tox Path Specialists, Frederick, MD.

#1642 **Poster Board Number P527**
Evaluation of the Internal Exposure to Squalene-Containing Adjuvant Following Intramuscular Injection of H5N1 Influenza Vaccine to Mice. *M.A. Tegenge*[2], L.S. Von Tungeln[1], *R.J. Mitkus*[2], S.A. Anderson[2], M.M. Vanlandingham[1], R.A. Forshee[2], and *F.A. Beland*[1]. [1]Division of Biochemical Toxicology, Jefferson, AR; and [2]Office of Biostatistics & Epidemiology, Silver Spring, MD.

#1643 **Poster Board Number P528**
Toxicology Evaluation of Drugs Administered via the Intranasal Route. *A. Emami*, N.S. Patel, J.H. Chang, and R.D. Mellon. US FDA, Silver Spring, MD.

Abstract #

#1644 **Poster Board Number P529**
Non-Clinical Safety Profile of CEA-IL2v and FAP-IL2v Immunocytokines: Does Targeting Impact Toxicity? F. Crameri[1], S. Weber[1], A.M. Giusti[2], S. Dudal[1], H.P. Grimm[1], D. Tuerck[1], H. Hinton[2], *J. Patterson*[1], S. Bassett[1], P. Maliver[1], I. Waldhauer[2], A. Freimoser-Grundschober[2], V. Nicolini[2], and C. Klein[2]. [1]F. Hoffmann-La Roche Ltd, Basel, Switzerland; and [2]F. Hoffmann-La Roche Ltd, Zuerich, Switzerland.

#1645 **Poster Board Number P530**
Basmisanil, a Negative Allosteric Modulator of the Gamma-Aminobutyric Acid aα5 Receptor Subtype, Does Not Show Convulsions at Relevant Exposures. A. Rothfuss[2], C. Wandel[1], A. Thomas[2], E. Husar[2], R. Gasser[2], M. Schmitt[2], G. Trube[2], F. Knoflach[2], J. Nöldeke[2], and M.-C. Hernandez[2]. [1]Roche Pharma Development, Basel, Switzerland; and [2]Roche Pharma Research, and Early Development, Basel, Switzerland. Sponsor: *L. Mueller.*

#1646 **Poster Board Number P531**
Integrated Arrhythmia Analysis within the DSI Ponemah Data Acquisition and Analysis Program: First Experience with Data Insights™. *H. Holzgrefe*[1], *R. Kaiser*[1], K. Norton[1], N. Sadekova[1], A. Mehendale[2], and C. Kolin[2]. [1]Charles River Laboratories, Reno, NV; and [2]Data Sciences International, St. Paul, MN.

#1647 **Poster Board Number P532**
FcRn Mediated Transport *In Vitro* and Gestation Age Dependent Transfer of Human Immunoglobulins Across Placenta in Timed-Pregnant Guinea Pigs. Y. Xi, M.G. Norton, C. Stuart, L. Zhong, P. Zhang, and *E.B. Struble*. US FDA, CBER, Silver Spring, MD.

#1648 **Poster Board Number P533**
Carcinogenic Assessment of Baricitinib in Rats and Mice. *M.A. Carfagna*, and J.M. Sullivan. Eli Lilly, and Company, Indianapolis, IN.

#1649 **Poster Board Number P534**
Comparison of Selected Clinical Pathology Parameters in Two Strains of Rats in Different Cage Environments Used in Toxicology Studies. A. Adamou, and C. Copeman. Charles River, Montreal, QC, Canada. Sponsor: *M. Vezina.*

#1650 **Poster Board Number P535**
Nonclinical Safety Profile of Ponatinib, a Tyrosine Kinase Inhibitor for the Treatment of Chronic Myeloid Leukemia. *J. Singh*, J. Iuliucci, and N. Narasimhan. Ariad Pharmaceuticals, Cambridge, MA.

#1652 **Poster Board Number P537**
A 4-Week Repeated-Dose Toxicity Study of TPN902 in Beagle Dogs. L. Gong, J. Yao, J. Wang, R. Tan, G. Huang, J. Li, Z. Wang, J. Shen, H. Jiang, and *J. Ren*. Shanghai Institute of Materia Medica, Chinese Academy of Sciences, Shanghai, China.

#1653 **Poster Board Number P538**
Chaperone-Mediated Autophagy in Renal Tubules After Treatment with a PEG-Linked Protein: *In Vitro* and *In Vivo* Tools for Early Screening of Reversible Kidney Tubular Epithelial Cell Toxicity. *J.E. McDuffie*, S. Lee, J.Y. Ma, J. Kanerva, *Y. Chen*, S. Snook, and F. Schoetens. Janssen Research & Development, LLC, San Diego, CA.

Abstract #

#1654 **Poster Board Number P539**
Development of a PD-1 Receptor Occupation Method in Cynomolgus Whole Blood. *S.A. Kirk*, A. Head, and K. Troth. Covance Laboratories Ltd, Harrogate, United Kingdom.

#1655 **Poster Board Number P540**
Comparative Toxicokinetics and Toxicity of ST-101 (Olmesartan Medoxomil/Rosuvastatin Calcium) versus Single Agents in Beagle Dogs. *O.J. D'Cruz*[1,2], M. Munsif[1], and L. Hwang[1]. [1]Autotelic Inc, Fountain Valley, CA; and [2]Stocosil Inc, City of Industry, CA.

#1656 **Poster Board Number P541**
Mitochondria-Targeted Platinum Coordination Compounds May Increase Cell Adhesion and Inhibit Cell Migration. *L. Zhang*[5], J. Li[5], X. He[1], X. Lv[4], D. Chen[5], L. Li[1], C. Chen[2], Y. Zhao[2], F. Wang[4], *N. Monteiro-Riviere*[3], and Z. Guo[5]. [1]Institute of Biochemistry, and Cell Biology, Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences, Shanghai, China; [2]Institute of High Energy Physics, Chinese Academy of Sciences, Beijing, China; [3]Kansas State University, Manhattan, KS; [4]Shanghai University of Chinese Traditional Medicine, Shanghai, China; and [5]Soochow University, Suzhou, China.

Monday Afternoon, March 14
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Safety Assessment: Drug Discovery

♠ Recent Advances in Safety Assessment

Chairperson(s): *Thomas Steger-Hartmann, Bayer HealthCare, Berlin, Germany; and Yu Zhong, Genentech, South San Francisco, CA.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *1:15 PM–2:45 PM*

#1657 **Poster Board Number P542**
Age-Related Acute Thrombocytopenia in Cynomolgus Monkeys Induced by a Therapeutic Monoclonal Antibody. J. Sun[1], Y. Zhang[1], H. Jiang[2], Z. Li[2], L. Gong[1], and *J. Ren*[1]. [1]Shanghai Institute of Materia Medica, Chinese Academy of Sciences, Shanghai, China; and [2]Shanghai Jiaotong University School of Medicine, Shanghai Cancer Institute, Shanghai, China.

#1658 **Poster Board Number P543**
Antisense Oligonucleotide Gapmers Demonstrate Heparin-Induced Thrombocytopenia Potential in a Selective Manner: Proposal of a Novel Mechanism of Toxicity. *D. Petrucci*[1], D. Exler[1], A. Murray[1], S. Kaushik[1], T. Knox[1], S. Fenner[2], B. Andrews[2], J. Parry[3], K. Frazier[1], and *K. French*[1]. [1]GlaxoSmithKline, King of Prussia, PA; [2]GlaxoSmithKline, Stevenage, United Kingdom; and [3]GlaxoSmithKline, Ware, United Kingdom.

#1659 **Poster Board Number P544**
Safety Profile of BT-11: A Novel LANCL2-Based Therapeutic For Crohn's Disease. *M. Ehrich*[2], P. Bissel[2], K. Boes[2], J. Hinckley[2], *B.S. Jortner*[2], *G. Magnin-Bissel*[2], S.R. Werre[2], A. Carbo[1], R. Montecillas[1], C. Philipson[1], R.D. Gandour[1], and J. Bassaganya-Riera[1]. [1]Biotherapeutics, Inc., Blacksburg, VA; and [2]Virginia-Maryland College of Veterinary M, Blacksburg, VA.

Abstract #

#1660 **Poster Board Number P545**
Seizure Risk Assessment Using Rat Telemetry Electroencepharography (EEG) System; Pentylenetetrazole and 4-Aminopyridine Induced Different Effects on EEG. K. Watanabe, T. Tsubouchi, K. Ikeda, and H. Funabashi. Sumitomo Dainippon Pharma Co., Ltd., Osaka, Japan. Sponsor: *T. Yamada.*

#1661 **Poster Board Number P548**
Anxiolytic Effects of Noribogaine on Novelty Stress in Rats and Zebrafish. *X. Li*[2], A.V. Kalueff[3], and E.L. Maillet[1]. [1]DemeRx, Inc, Miami, FL; [2]ITR Laboratories Canada Inc, Baie d'Urfe, QC, Canada; and [3]ZENEREI LLC, Slidell, LA.

#1662 **Poster Board Number P547**
Effects of *Argemone mexicana* Methanolic Leaf Extract on Antioxidant and Liver Phase-One Oxidizing Enzymes During Malaria Infection in Mice. *E.A. Balogun*[3], T.O. Sunmonu[1], A.I. Adeogun[2], and T. Popoola[2]. [1]Ahlikman University, Ilorin, Nigeria; [2]University of Agric., Abeokuta, Nigeria; and [3]University of Ilorin, Ilorin, Nigeria.

#1663 **Poster Board Number P548**
Synthesis of Potent and Selective AKR1C3 Inhibitors for Acute Myeloid Leukemia Therapy. *K. Verma*[1], T. Zhang[2], T.M. Penning[2], and P.C. Trippier[1]. [1]Texas Tech University Health Sciences Center, Amarillo, TX; and [2]University of Pennsylvania, Philadelphia, PA.

#1664 **Poster Board Number P549**
Blockade of IL-1 Signaling Overcomes Resistance to Erlotinib in Head and Neck Squamous Cell Carcinoma. *A. Stanam*, L. Love-Homan, M. Espinosa-Cotton, and *A. Simons-Burnett*. University of Iowa, Iowa City, IA.

#1665 **Poster Board Number P550**
An Early Screening Model in the Conscious Dog with Simultaneous Evaluation of Cardiovascular and Respiratory Functions. S. Rompion. Porsolt Sas, Le Genest Saint Isle, France. Sponsor: *G. Froget.*

#1666 **Poster Board Number P551**
PAK1/2 Kinase Inhibitors Cause Acute On-Target Cardiovascular Toxicity in Rodents. *Y. Zhong*, G. Cain, P. Katavolos, R. Vega, C. Chou, H. La, L. Murray, T. O'Brien, C. Ndubaku, J. Rudolph, and *D. Diaz*. Genentech, South San Francisco, CA.

#1667 **Poster Board Number P552**
Lysosomal Adaptation: How Cells Respond to Lysosomotropic Compounds. *S. Lu*, T. Sung, R. Abraham, and *B. Jessen*. Pfizer Inc, San Diego, CA.

#1668 **Poster Board Number P553**
Mechanisms for Hepatobiliary Toxicity in Rats Treated with Antagonists of Melanin Concentrating Hormone Receptor 1 (MCHR1). *M. Otieno*[2], V. Bhaskaran[1], E. Janovitz[1], Y. Callejas[1], W.B. Foster[1], J.R. Megill[1], *L. Lehman-McKeeman*[1], and *B. Gemzik*[1]. [1]Bristol-Myers Squibb, Princeton, NJ; and [2]Janssen Pharmaceuticals (J&J), Springhouse, PA.

Abstract #

#1669 **Poster Board Number P554**
Utility of 3d Human Liver Microtissues for Prediction of Compounds That Cause Drug-Induced Liver Injury in Humans. A.J. Foster[1], *W.R. Proctor*[2], J. Vogt[2], C. Summers[1], K. Oldman[1], M. Kijanska[3], J. Haugstetter[3], J.M. Kelm[3], D. Misner[2], P. Morgan[1], *S. Messner*[3], and D.P. Williams[1]. [1]AstraZeneca, Cambrigde, United Kingdom; [2]Genentech, South San Francisco, CA; and [3]InSphero AG, Schlieren, Switzerland.

#1670 **Poster Board Number P555**
A High Content Imaging (HCI) BAC-GFP Toxicity Pathway Reporter Platform for Mechanism-Based Assessment of Drug-Induced Liver Injury (DILI). B. ter Braak, S. Wink, S. Hiemstra, M. Niemeijer, S. Huppelschoten, and *B. van de Water*. Leiden University, Leiden, Netherlands.

#1671 **Poster Board Number P556**
Kidney Safety Biomarkers in Rodents and Non-Rodents Following Amphotericin B Administration. *J.E. McDuffie*[1], *M. Sonee*[3], J.Y. Ma[1], *Y. Chen*[1], J. Kanerva[1], X. Wu[2], K. Li[2], Y. Zhang[2], R. Meng[2], *F. Almy*[3], L. Smith[3], L. Varacallo[3], C. Lanigan[1], S. Lee[1], S. Bryant[3], C. Johnson[3], *M. Otieno*[3], *B. Zimmerman*[3], *D. Simic*[3], and *S. Snook*[1]. [1]Janssen Research & Development, L.L.C., San Diego, CA; [2]Janssen Research & Development, L.L.C., Shanghai, China; and [3]Janssen Research & Development, L.L.C., Spring House, PA.

#1672 **Poster Board Number P557**
Feasibility Study of Novel Kidney Safety Biomarkers in Male Beagle Dogs Following Cisplatin Administration: Assay Validations and Normal Baselines in Male and Female Dogs. *Y. Chen*[1], L. Smith[2], *F. Almy*[2], J. Ma[1], C. Lanigan[1], *M. Otieno*[2], *S. Snook*[1], *M. Sonee*[2], and *J.E. McDuffie*[1]. [1]Janssen Research & Development, L.L.C., San Diego, CA; and [2]Janssen Research & Development, L.L.C., Spring House, PA.

#1673 **Poster Board Number P558**
Microfluidics and High-Content Imaging for *In Vitro* to *In Vivo* Safety and Efficacy Assessments. D.J. Sloan[1], *J. Gordon*[2], and R. McClelland[1]. [1]SciKon Innovation, Chapel Hill, NC; and [2]The Tauri Group, Frederick, MD.

#1674 **Poster Board Number P559**
Application of a Machine Learning Method to Identify Kinases Associated with Recurrent Hemodynamic Liabilities. *R. Denton*[3], S. Hnatyshyn[2], *G. Thalody*[1], *J. Hennan*[1], *S. Ruepp*[2], and *P. Levesque*[1]. [1]Bristol-Myers Squibb, Hopewell, NJ; [2]Bristol-Myers Squibb, Lawrenceville, NJ; and [3]Bristol-Myers Squibb, Wallingford, CT.

#1675 **Poster Board Number P560**
Application of a Shared Preclinical Database (eTOX) for Early Safety Assessment in Pharmaceutical Development (eTOX I). T. Steger-Hartmann[1], *F. Pognan*[2], and M. Pawletta[1]. [1]Bayer HealthCare, Berlin, Germany; and [2]Novartis, Basel, Switzerland. Sponsor: *F. Pognan.*

#1676 **Poster Board Number P601**
Predicting and Assessing the Risk of Drug Crystallization. *S. Ruepp*[4], E. Janovitz[1], T. Brodie[3], R. White[2], J. Hynes[4], J. Carman[4], D. Pan[3], C. Su[4], *Y. Wu*[5], *U. Hanumegowda*[5], and *B. Gemzik*[4]. [1]Bristol-Myers Squibb, Hopewell, NJ; [2]Bristol-Myers Squibb, Mount Vernon, IN; [3]Bristol-Myers Squibb, New Brunswick, NJ; [4]Bristol-Myers Squibb, Princeton, NJ; and [5]Bristol-Myers Squibb, Wallingford, CT.

Abstract #

#1677 **Poster Board Number P602**
Exploiting the Diversity Outbred Mouse Model to Identify a Sensitive Preclinical Model and Underlying Mechanism of MK-0536 Induced Liver Injury. K. Pearson[1], *T. Johnson*[1], R. Gonzalez[1], L. LaFranco-Scheuch[1], *R. Amin*[1], *R. Amin*[1], *W. Glaab*[1], *F. Sistare*[1], and *A. Harrill*[2]. [1]Merck, West Point, PA; and [2]The University of Arkansas for Medical Sciences, Little Rock, AR.

#1678 **Poster Board Number P603**
Age-Related Differences of Transporter Gene Expression in the Kidney of Rats. Y.-J. Xu, Y. Wang, *J. Liu*, and Y.-F. Lu. Zunyi Medical College, Zunyi, China.

Monday Afternoon, March 14
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Exposure Assessment

Chairperson(s): *Nadia Moore, Veritox, Inc., Redmond, WA.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *3:00 PM–4:30 PM*

#1679 **Poster Board Number P609**
Analysis of Ingredient Lists to Quantitatively Characterize Chemicals in Consumer Products. K.K. Isaacs[2], K. Phillips[1,2], *J. Wambaugh*[2], and *P.S. Price*[2]. [1]Oak Ridge Institute for Science, and Education, Research Triangle Park, NC; and [2]US Environmental Protection Agency, Research Triangle Park, NC.

#1680 **Poster Board Number P610**
Qualitative Structure-Property Relationships for Predicting Chemical Functional Use and Weight Fractions in Consumer Articles. K. Phillips[2,3], *J. Wambaugh*[3], P. Egeghy[3], C. Grulke[1], and K. Isaacs[3]. [1]Lockheed Martin, Research Triangle Park, NC; [2]Oak Ridge Institute for Science, and Education, Oak Ridge, TN; and [3]US Environmental Protection Agency, Research Triangle Park, NC.

#1681 **Poster Board Number P611**
EPA's Multiple-Strategy Approach for Characterizing the Composition of Consumer Products. *P. Price*, K. Isaac, K. Phillips, and *J. Wambaugh*. US Environmental Protection Agency, Durham, NC.

#1682 **Poster Board Number P612**
Product Deformulation to Identify Exposure Pathways for ToxCast Chemicals. *J. Wambaugh*[4], A. Yau[3], K. Phillips[2,4], K.A. Favela[3], C. Nicolas[2,4], D. Biryol[2,4], C. Grulke[1,4], *A. Richard*[4], *P. Price*[4], A. Williams[4], K. Isaacs[4], and *R. Thomas*[4]. [1]Lockheed Martin, Research Triangle Park, NC; [2]Oak Ridge Institute for Science, and Education, Oak Ridge, TN; [3]Southwest Research Institute, San Antonio, TX; and [4]US EPA, Research Triangle Park, NC.

#1683 **Poster Board Number P613**
Using ToxPi to Determine Biological Activity and Toxicity of Chemicals Present at Superfund Sites in North Carolina. S.K. Tilley[1], A. Nguyen[1], K. To[2], *D.M. Reif*[2], and *R.C. Fry*[1]. [1]Gillings School of Global Public Health, Chapel Hill, NC; and [2]North Carolina State University, Raleigh, NC.

Abstract #

#1684 **Poster Board Number P614**
Comparative Study of Potential Ambient Air Exposures to Residents Living Near Contaminated Sites. C. DeHate[1], R. DeHate[1], *G. Johnson*[1], B. Skelly[2], and *R. Harbison*[1]. [1]College of Public Health, Tampa, FL; and [2]GEI Consultants, Valrico, FL.

#1685 **Poster Board Number P615**
Chemical Emissions via Smoke Produced Through Burning of Scrap Tires, Firewood and Liquefied Petroleum Gas as Fuel Sources for Singeing Meat in Ghana. *E. Afriyie-Gyawu*[2], A. Brown[2], R. Barham[1], and H. Rochani[2]. [1]Erskine College, Due West, SC; and [2]Georgia Southern University, Statesboro, GA.

#1686 **Poster Board Number P616**
Factors Affecting Hydrocarbon Gas and Vapor Exposure of Upstream Oil and Gas Workers During Completion and Production Activities at Unconventional Shale Oil and Gas Wells. *J.E. Snawder*[1], M. Alexander-Scott[1], M.J. Breitenstein[1], E.J. Esswein[2], B.C. Johnson[1], B. King[2], C.A. Striley[1], and J. Toseski[1]. [1]National Institute for Occupational Safety, and Health, Cincinnati, OH; and [2]National Institute for Occupational Safety, and Health, Denver, CO.

#1687 **Poster Board Number P617**
Impact on the Respiratory System Due to Travel to Cities Abroad—A Focus on Changing Air Pollution Levels. M.J.R. Vilcassim, *L.C. Chen*, and *T. Gordon*. New York University, Tuxedo, NY.

#1688 **Poster Board Number P618**
Relationships Between Number, Surface Area, and Mass Concentrations of Different Nanoparticles in Workplaces. M. Zhang[2], *Q. Zhang*[1], and H. Zou[2]. [1]University of Louisville, Louisville, KY; and [2]Zhejiang Province Center for Disease Control, and Prevention, Hang zhou, China.

#1689 **Poster Board Number P619**
Assessment of Indoor Formaldehyde Concentrations Following the Installation and Removal of Laminate Flooring. *J.S. Pierce*[1], A. Abelmann[1], P.S. Ruestow[1], J.T. Lotter[1], *E.M. Beckett*[1], *H.A. Fritz*[1], J.L. Bare[1], and K.M. Unice[2]. [1]Cardno ChemRisk, Chicago, IL; and [2]Cardno ChemRisk, Pittsburgh, PA.

#1690 **Poster Board Number P620**
Historical Ambient Airborne Asbestos Concentrations in the United States - An Analysis of Published and Unpublished Literature. A. Abelmann[1], M.E. Glynn[1], *J.S. Pierce*[1], P.K. Scott[2], S. Serrano[3], and *D.J. Paustenbach*[3]. [1]Cardno ChemRisk, Chicago, IL; [2]Cardno ChemRisk, Pittsburgh, PA; and [3]Cardno ChemRisk, San Francisco, CA.

#1691 **Poster Board Number P621**
Prevalence and Health Risk from Exposure to Naturally Occurring Arsenic and Uranium in Well Water in Connecticut. *S.M. Rusnak, ScD*. Connecticut Department of Public Health, Hartford, CT.

#1692 **Poster Board Number P622**
Dietary Intake of Perfluorooctane Sulfonate (PFOS) and Implications for Drinking Water Limits. *H.N. Lynch*, *L.E. Kerper*, *M. Seeley*, and *B.D. Beck*. Gradient, Cambridge, MA.

Abstract #

#1693 **Poster Board Number P623**
Estimate of 4-Methylcyclohexanemethanol (MCHM) Exposure with Normal Use of Contaminated Water During the Elk River Spill. *R.M. Novick*[3], P.K. Scott[2], *B. Winans*[3], *S.M. Green*[4], and *D.J. Paustenbach*[1]. [1]Cardno ChemRisk, Jackson, WY; [2]Cardno ChemRisk, Pittsburgh, PA; [3]Cardno ChemRisk, San Francisco, CA; and [4]Eastman Chemical Company, Kingsport, TN.

#1694 **Poster Board Number P624**
Use of the Risk21 Framework to Determine Adequacy of Various Data Streams for Exposure Modeling in Risk Assessments. *P.M. Hinderliter*, W. Chen, C.C. Truman, and *K.D. Yi*. Syngenta Crop Protection, LLC, Greensboro, NC.

#1695 **Poster Board Number P625**
Soil Concentrations of Environmental Contaminants at Urban Agricultural Sites in New Orleans, Louisiana. K.M. Moller, J. Hartwell, *B.R. Simon-Friedt*, *M. Wilson*, and *J.K. Wickliffe*. Tulane University, New Orleans, LA.

#1696 **Poster Board Number P626**
Risks Assessment of Total Petroleum Hydrocarbon (TPH) in Four Important Seafood from Crude Oil Polluted Waters of Ogoniland, Rivers State, Nigeria. K.W. Nkpaa, and *M.O. Wegwu*. University of Port Harcourt, Choba, Port Harcourt, Rivers State, Nigeria.

#1697 **Poster Board Number P627**
Polybrominated Diphenyl Ethers (PBDE) and Their Hydroxlyated and Methoxylated Derivatives in Seafood and Dust Collected from the Puget Sound, Washington Region. S. Cade, L.-J. Kuo, and *I. Schultz*. Pacific NW National Lab, Sequim, WA.

#1698 **Poster Board Number P628**
Internal Exposure to PAHs Using the INTEGRA Integrated Exposure Modelling Paradigm. *D. Sarigiannis*[1,2,3], S. Karakitsios[1,2], and A. Gotti[1]. [1]Aristotle University of Thessaloniki, Thessaloniki, Greece; [2]Centre for Research, and Technology Hellas, Thessaloniki, Greece; and [3]Institute for Advanced Study, Pavia, Italy. Sponsor: *T. Hartung*.

Monday Afternoon, March 14
1:30 PM to 2:30 PM
CC Room 220

FS

Meet the Directors: A Conversation with Linda Birnbaum and Pamela McInnes

Chairperson(s): *John B. Morris, Society of Toxicology Vice President; University of Connecticut, Storrs, CT.*

Lecturers: *Linda Birnbaum, NIEHS, Research Triangle Park, NC; and Pamela McInnes, NCATS, Bethesda, MD.*

This important session will provide an informal venue for meeting attendees to have a candid and open discussion with two key leaders of federal organizations with missions to protect and improve public health: Dr. Linda Birnbaum, PhD, Director, National Institute of Environmental Health Sciences (NIEHS), NIH, and Dr. Pamela McInnes, DDS, Deputy Director, National Center for Advancing Translational Sciences (NCATS), NIH. The entire session will be devoted to a question-and-answer format concerning scientific directions and priorities for NIEHS and NCATS including funding priorities and outlooks, and training opportunities. As NIEHS and NCATS are partners in the Tox21 initiative a focus will be upon the utility and future of high throughput testing. Dr. Birnbaum has served as the Director of the National Institute of Environmental Health Sciences and the National Toxicology Program since 2009. Dr. McInnes was appointed deputy director of NCATS in January 2014.

Monday Afternoon, March 14
1:30 PM to 2:30 PM
CC Room 212

E

Exhibitor-Hosted Session: Biomarker Immunoassays: To Validate or Not to Validate, That Is the Question

Presented by:
Charles River

The increased reliance on biomarkers to evaluate the toxicity and/or efficacy of new drugs during preclinical toxicology studies has driven routine validation of new analysis methods. Use of commercial immunoassay kits offers advantages, as the methods are usually functional. Some, however, require optimization of the methodology to suit regulatory compliance.

Monday Afternoon, March 14
1:30 PM to 2:30 PM
CC Room 211

E

Exhibitor-Hosted Session: Do You See What Eye See? Ocular Distribution for Exposure Assessment

Presented by:
MPI Research

We use our eyes to understand the world around us, which is why diseases that distort or destroy our vision can be so devastating. This seminar will discuss a variety of *in vivo* and *ex vivo* biodistribution modalities to help you "see" your compound in the ocular space.

Monday Afternoon, March 14
1:30 PM to 2:30 PM
CC Room 205

E

Exhibitor-Hosted Session: ICH M7—Dealing with Genotoxic Impurities

Presented by:
BioReliance

BioReliance will provide an overview of this legislation and go into detail on what are genotoxic impurities and why be concerned. We will then elucidate on what approaches and specific assays are acceptable per the guideline and BioReliance's experience and recommendations on the proper assay designs.

Monday Afternoon, March 14
1:30 PM to 2:30 PM
CC Room 213

E

Exhibitor-Hosted Session: New Way of Evaluating Drug Toxicity—Label-Free Live-Cell Kinetic Imaging Cytometry

Presented by:
Phase Holographic Imaging

Cell-based assays are indispensable in the assessment of drug toxicity. The majority of traditional assays require toxic stains. Holographic imaging cytometry offers label-free, quantitative real-time monitoring of drug effects on multiple cellular generations with more physiological relevancy and less experimental complexity. Seeing is believing, but quantitative seeing is knowing.

Monday Afternoon, March 14
2:00 PM to 3:00 PM
CC Room 202

Specialty Section Collaboration and Communication Group Meeting

Monday Afternoon, March 14
2:00 PM to 4:45 PM
CC Room 217

S

Symposium Session: Health and Environmental Hazard Assessments of Nanomaterials Along Their Lifecycle

♥ **Health and Environmental Impacts of Manmade and Naturally Released Toxicants**

Chairperson(s): *Aaron Erdely, NIOSH, Morgantown, WV; and James Bonner, North Carolina State University, Raleigh, NC.*

Endorser(s):
Inhalation and Respiratory Specialty Section
Nanotoxicology Specialty Section
Occupational and Public Health Specialty Section

Unprecedented global investment in innovative nanoscale science and engineering has led to the production and utilization of novel materials in expanding fields of electronics, medicine, and composites. Incorporation of advanced materials into existing products through functionalization reactions improves performance, durability, and efficiency in various consumer markets. However, health and environmental hazards of these critical nanomaterials during production, distribution, formulation, use, and disposal have raised concerns. To date, most toxicology research has focused on the as-produced nanomaterial while neglecting the potential health and environmental risks of downstream formulations and applications. This session will highlight 1) exposure potential during production, use, and disposal; 2) hazard identification along the lifecycle of a wide range of nanomaterials; 3) release-testing scenarios with efficacy testing for various nano-enabled products; and 4) the environmental fate of nanomaterials. The outcome of this session will be practical understanding of the most recent research of nanomaterials from a lifecycle perspective. Linking real-world exposures across the lifecycle of nano-enabled products to potential adverse health effects will provide regulators and researchers with essential data needed for effective risk assessment. (Abstract #1699a)

Abstract #

#1699b 2:05 **Rules and Rates of Release from Nano-Enabled Products: Correlating Aging Conditions, the Properties of Product Matrices, and Nanomaterials.** W. Wohlleben. BASF, Ludwigshafen, Germany. Sponsor: *A. Erdely.*

#1700 2:37 **Linking Exposures of Particles Released Across Lifecycle of Nano-Enabled Products to Toxicology: An Integrated Methodology for Particle Sampling, Extraction, Dispersion, and Dosing.** P. Demokritou. Harvard School of Public Health, Boston, MA. Sponsor: *A. Erdely.*

#1701 3:09 **Toxicological Evaluation of Carbon Nanotubes from a Lifecycle Perspective.** *A. Erdely*[1], L. Bishop[1], *L. Sargent*[1], and *J. Bonner*[2]. [1]NIOSH, Morgantown, WV; and [2]North Carolina State University, Raleigh, NC.

#1702 3:41 **Quantifying Exposures from Nanotized Products While Assessing Product Efficacy Across Their Value Chain.** P. Westerhoff, R. Reed, J. Hutchison, G. Lowry, and P. Herckes. Arizona State University, Tempe, AZ. Sponsor: *A. Erdely.*

#1703 4:13 **Environmental Interactions of Nanomaterials in Aquatic Ecosystems.** M. Wiesner. Duke University, Durham, NC. Sponsor: *A. Erdely.*

Monday Afternoon, March 14
2:00 PM to 4:45 PM
CC Room R02

Symposium Session: The Promise and Reality of Alternative Methods in Inhalation Toxicology and the Development of Inhaled Therapeutics

Chairperson(s): *Jon A. Hotchkiss, Toxicology and Environmental Research and Consulting, The Dow Chemical Company, Midland, MI; and Amy J. Clippinger, PETA International Science Consortium, Ltd., Norfolk, VA.*

Endorser(s):
***In Vitro* and Alternative Methods Specialty Section**
Inhalation and Respiratory Specialty Section
Regulatory and Safety Evaluation Specialty Section

The respiratory tract is the portal of entry for inhaled gases, vapors, and aerosols into the body. The risk and impact of occupational and environmental exposures to inhaled xenobiotics on human health is often based on guideline-driven inhalation toxicity testing in animals. Similarly, testing the efficacy, pharmacokinetics, and toxicological profile of inhaled therapeutics and excipients is still often conducted in animals. The unique characteristics of the respiratory tract that make it both a potential target organ and a route of systemic exposure present a unique opportunity to develop alternatives to animal tests that are cheaper, faster, based on human mechanisms of action, and that adhere to the 3Rs of reducing, replacing, and refining animal use. Unfortunately, the development, validation, and regulatory acceptance of alternative testing methods for inhaled materials lags behind other exposure routes and organ systems. Much of this may be attributed to the complex interplay of the physical-chemical characteristics of test substances and the regional variation in cell types present along the upper and lower respiratory tract, which together determine the dosimetry, absorption, and metabolism of inhaled materials. This symposium will highlight *in silico* and *in vitro* approaches, including the development and dosimetrically relevant exposure of organotypic air liquid interface (ALI) cultures of human airway epithelial, stromal, and effector cells and application of organ on a chip microdevices to rapidly and efficiently examine exposure-response relationships without the need for traditional *in vivo* inhalation exposure of laboratory animals. The goal of this symposium is to provide participants with a working knowledge of state-of-the-art computational tools and *in vitro* methods currently available and under development to predict acute inhalation toxicity, identify chemical respiratory sensitizers, enhance the testing of inhaled therapeutics and excipients, replace subchronic inhalation toxicity testing, and examine systemic effects and pharmacokinetic properties of inhaled materials. (Abstract #1704)

2:00 **Introduction.** *J.A. Hotchkiss*. Toxicology, and Environmental Research, and Consulting, The Dow Chemical Company, Midland, MI.

Abstract #

#1705 2:05 **Integrating Alternative Methods within a Regulatory Framework and the Impact of AOPs in Designing an Integrated Testing Strategy to Replace Repeat Exposure Inhalation Toxicity Testing.** *D.G. Allen*. Integrated Laboratory Systems, Inc., Research Triangle Park, NC.

#1706 2:35 ***In Silico* Models to Predict Acute Inhalation Toxicity and Identify Potential Chemical Respiratory Sensitizers.** *D.M. Wilson*. The Dow Chemical Company, Midland, MI.

#1707 3:05 **Air-Liquid Interface (ALI) Culture Systems and Exposure Modalities as Replacements for Inhalation Toxicity Testing.** *S. Constant.* Epithelix, Geneva, Switzerland.

#1708 3:35 **Co-Culture Systems Mimicking the Human Lung Barrier to Assess the Risk of Inhaled Nanomaterials.** *B. Rothen-Rutishauser*. University of Fribourg, Fribourg, Switzerland.

#1709 4:05 **Microengineered Physiological Biomimicry: Human Organ-On-Chips.** D. Huh. Department of Bioengineering, University of Pennsylvania, Philadelphia, PA. Sponsor: *J.A. Hotchkiss.*

#1710 4:35 **Concluding Remarks.** *A.J. Clippinger*. PETA International Science Consortium, Ltd., Norfolk, VA.

Monday Afternoon, March 14
2:00 PM to 4:45 PM
CC Room 208

Workshop Session: Moving Beyond Prioritization towards True *In Vitro*-Based Safety Assessment

♠ Recent Advances in Safety Assessment

Chairperson(s): *Miyoung Yoon, The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and Rebecca Clewell, The Hamner Institutes for Health Sciences, Research Triangle Park, NC.*

Endorser(s):
Biological Modeling Specialty Section
***In Vitro* and Alternative Methods Specialty Section**
Risk Assessment Specialty Section

The field of toxicity testing is undergoing a global paradigm shift toward the use of *in vitro* approaches for assessing chemical risk. There are already several global initiatives demonstrating the utility of high-throughput screening to prioritize compounds for further testing. The next step for *in vitro*-based toxicity testing is to move from prioritization to prediction i.e., replacing animal-based risk assessment strategies with safety assessments based on human biology queried with *in vitro* assays. This session highlights research aimed at supporting this transition, including development of appropriate cellular assays, selection of predictive *in vitro* biomarkers, definition of points of departure (PoD) *in vitro* and development and improvement of *in vitro-in vivo* extrapolation (IVIVE) tools. We also emphasize the current challenges associated with development and acceptance of these new methods. The first talk describes the need for an integrated testing approach when using *in vitro*-based point of departure with a focus on the development of *in vitro* metabolism systems and biokinetic models that allow dose extrapolation between *in vitro* and *in vivo* scenarios. We will also discuss the use of advanced *in vitro* metabolism systems for *in vitro*-based safety assessment, focusing on challenges for prediction of metabolite-mediated toxicity and tools for *in vitro* -based prediction of repeat exposure toxicity. The topic then transitions to the research efforts to identify biochemical and molecular markers predictive of mode of actions for adverse responses *in vivo*. This talk emphasizes the use of high-content -omic technologies for *in vitro* testing and determining *in vitro* PoDs. The next talk presents a case study of *in vitro* -only safety assessment for use of quercetin in skin lotions. This presentation describes the process of conducting a pathway-based safety assessment in the context of making product safety decisions. The case study demonstrates the process of developing fit-for-purpose *in vitro* assays, setting *in vitro* PoDs, and using IVIVE to translate that PoD to a safe human exposure. The final talk discusses challenges in applying *in vitro* assays for human safety prediction, focusing on approaches in the European Union to increase confidence and reliability of *in vitro* assays for

Abstract #

in vitro -based safety assessments. Overall, the session provides an opportunity to learn more about the current efforts to merge multiple data streams in order to move *in vitro* testing tools beyond prioritization and create new *in vitro* -only safety assessment approaches. (Abstract #1711)

	2:00	**Overview.** *R. Clewell*. The Hamner Institutes for Health Sciences, Research Triangle Park, NC.
#1712	2:10	**Addressing Metabolism and Kinetics *In Vitro*—Not Just for Dose Extrapolation.** *M. Yoon*. The Hamner Institutes for Health Sciences, Research Triangle Park.
#1713	2:45	**Linking Adaptation to Adversity in Human *In Vitro* Experiments to Move Beyond Hazard Identification.** P. Jennings. Medical University of Innsbruck, Innsbruck, Austria. Sponsor: *R. Clewell*.
#1714	3:20	**Integrating Biokinetics and Biodynamics for Consumer Safety Assessment Using Quercetin as a Case Study.** Y. Adeleye. Unilever, Safety, and Environmental Assurance Centre, Bedfordshire, United Kingdom. Sponsor: *R. Clewell*.
#1715	3:55	**Increasing Confidence and Reliability of *In Vitro* Assays for *In Vitro*-Based Safety Assessments.** S. Coecke. JRC Institute for Health, and Consumer Protection, European Commission, Ispra, Italy. Sponsor: *R. Clewell*.
	4:30	**Panel Discussion/Q&A.**

Monday Afternoon, March 14
2:00 PM to 4:45 PM
CC Room R04

Workshop Session: Quantitative Cumulative Risk Assessment: Is It Feasible Today?

♠ Recent Advances in Safety Assessment

Chairperson(s): *Gregory Brorby, ToxStrategies, Inc., Richmond, CA; and Moiz Mumtaz, Agency for Toxic Substances Disease Registry, Atlanta, GA.*

Endorser(s):
Risk Assessment Specialty Section
Mixtures Specialty Section

Environmental exposures are complex and include a variety of stressors. Toxicologists and risk assessors continue to be greatly interested in assessing the cumulative risk associated with multiple chemical exposures (such as metals, solvents, pesticides, and persistent organic pollutants) and non-chemical stressors (e.g., stress, noise, biological agents, and socioeconomic status), particularly in underserved, environmental justice communities. Limited studies have been published that document joint exposures to some chemical and non-chemical stressors. Moreover, much of the work conducted to date is qualitative in nature, and methods for quantitatively accounting for the interaction between chemical and non-chemical stressors remain elusive. The workshop will focus on recent efforts to move beyond purely qualitative approaches to cumulative risk assessment, including leveraging existing chemical mixtures risk assessment methodologies, semi-quantitative screening tools, and case studies of unique modeling strategies for quantitatively combining risks from chemical and non-chemical stressors. Limitations of these approaches, and areas for future research, will also be discussed. (Abstract #1716a)

#1716b	2:05	**Can Chemical Mixtures Risk Assessment Methods Guide Development of Quantitative Cumulative Risk Assessment Methods?** G. Rice. US EPA, Cincinnati, OH. Sponsor: *G. Brorby*.
#1717	2:34	**CalEnviroScreen: Current Applications and Future Directions in Cumulative Risk Assessment.** *L. Zeise*. California Environmental Protection Agency, Sacramento, CA.
#1718	3:03	**Cumulative Risk and Adverse Birth Outcomes: The Gulf Resilience on Women's Health Study.** *J. Wickliffe*. Tulane University, New Orleans, LA.
#1719	3:32	**Cumulative Risk Assessment of Urban Air Toxics: A Pilot Study in San Antonio, Texas.** *M. Suh*. ToxStrategies, Inc., Mission Viejo, CA.
#1720	4:01	**A Blood Pressure Effects-Based Cumulative Risk Assessment in a Low-Income Community.** J. Peters. Boston University School of Public Health, Boston, MA. Sponsor: *G. Brorby*.
	4:30	**Panel Discussion/Q&A.**

Monday Afternoon, March 14
2:00 PM to 4:45 PM
CC Great Hall B

Workshop Session: The Role of the Epigenome in Exposure Effects, Susceptibility, and Public Health

♦ Molecular Toxicology: Mechanistic Insights and Hazard Assessment

Chairperson(s): *Shaun D. McCullough, US Environmental Protection Agency, Chapel Hill, NC; and Dana C. Dolinoy, University of Michigan, Ann Arbor, MI.*

Endorser(s):
Mechanisms Specialty Section
Molecular and Systems Biology Specialty Section
Women in Toxicology Special Interest Group

The genome contains the blueprint for the structure and function of cells, tissues, and organs; however, the use of this information is controlled by three different regulatory mechanisms: (1) chromatin modifications, (2) DNA methylation, and (3) noncoding RNAs, collectively referred to as the epigenome. The epigenome is a dynamic framework that is responsive to acute environmental exposures, yet changes to the epigenome can also be stable enough to have chronic and even multi-generational implications. Investigations into the role of the epigenome in toxicology are rapidly evolving as a result of novel applications of epigenomics to toxicological studies that are constantly emerging. Thus it is critical to understand the role of the epigenome in cause and effect relationships among exposures, susceptibility, and health outcomes and how those relationships can be examined in the context of public health. The epigenome may hold the key to understanding mechanisms involved in many toxicological phenomena, including the effects of developmental exposures, trans-generational exposure effects, and interactions between chemical and non-chemical stressors in exposure outcomes. Further, recent publicly available tools for epigenomics analysis provide practical opportunities for a broad range of toxicologists to incorporate the epigenome into their translational research program. One such resource, the NIH Roadmap Epigenomics Project, is an integrative analysis of 111 reference human epigenomes from stem cells and primary tissues that represent organ systems that are frequently involved in disease. Through the integration of innovative tools and techniques, such as the Epigenomics Roadmap and longitudinal cohorts, current translational studies are providing novel approaches to understanding the epigenetic mechanisms underlying exposure effects, susceptibility, and risk modification. The goal of this workshop is to explore the recent applications of epigenomics to cutting-edge translational toxicology research. To achieve this we will bring experts together to discuss the involvement of the epigenome in the origins of exposure-related susceptibility and disease from development through adulthood and across generations. The session will open with an overview of the epigenome as a potential mediator of susceptibility and exposure effects following exposure to chemical and non-chemical stressors. The workshop will then focus on two examples of how environmental exposures induce changes in chromatin dynamics and DNA methylation that are associated with adverse health effects and susceptibility to the development of future disease. To complement these presentations the session will then discuss publicly available resources that toxicologists can use to integrate the epigenome into their research programs, as well as principles and examples of the integration of epigenomics into multi-omics (transcriptomics, metabolomics, genomics, etc.) datasets to identify biomarkers and characterize mechanisms of toxicity. Further, this workshop will include a panel discussion on the current and future prospects for epigenomics in toxicology. Following this workshop, attendees will have a better understanding of the role of the epigenome in health and disease, and learn how epigenomics can be integrated into translational toxicological studies. (Abstract 1721a)

Abstract #

#1721b 2:10 **Epigenome: Tool for Assessment of Health Impact of Cumulative Exposure to Chemical and Non-Chemical Stressors.** *K. Olden*. US EPA, Washington, DC.

#1722 2:38 **Environmental Epigenomics as a Mechanism in Developmental Reprogramming.** *C.L. Walker*. Texas A&M University, Houston, TX.

#1723 3:06 **Environmental Epigenomics–Translation to Large-Scale Human Studies.** A. Baccarelli. Harvard University, Boston, MA. Sponsor: *S. McCullough.*

#1724 3:34 **The NIH Roadmap Epigenomics Program, and How It Can Help You!** L.H. Chadwick. NIEHS, Research Triangle Park, NC. Sponsor: *S. McCullough.*

#1725 4:02 **Integration of Epigenomics Data with Other "-Omics" Datasets in Translational Toxicology Studies.** R. Shah. Sciome, LLC, Research Triangle Park, NC. Sponsor: *S. McCullough.*

4:30 **Panel Discussion/Q&A.**

Monday Afternoon, March 14
2:00 PM to 4:45 PM
CC Great Hall A

Workshop Session: Using 21st Century Approaches to Evaluate Endocrine-Active Compounds

♠ Recent Advances in Safety Assessment

Chairperson(s): *Mary Sue Marty, The Dow Chemical Company, Midland, MI; and Katie Paul Friedman, Bayer CropScience, Durham, NC.*

Endorser(s):
***In Vitro* and Alternative Methods Specialty Section**
Reproductive and Developmental Toxicology Specialty Section

New 21st century tools are providing valuable information that can contribute to chemical prioritization for endocrine screening and aid in the identification of early events in the mode of action of these chemicals. This session will examine 21st century approaches to evaluating potential endocrine bioactivity and how these data can be integrated for endocrine screening prioritization, endocrine activity determination, and safety assessments. The first presentation will describe an estrogen receptor (ER) model based on the results of ToxCast high-throughput screening (HTS) *in vitro* assays, its performance with reference chemicals, and its application as an alternative assessment of estrogen bioactivity in the US EPA's Endocrine Disruptor Screening Program (EDSP). The second presentation will examine ToxCast HTS results for three triazole fungicides, and how these data can be integrated with other toxicity and exposure data to enable human health-protective EDSP prioritization. The third presentation will focus on the potential targets for chemical-induced epigenetic changes in endocrine signaling pathways during sensitive windows of development, including the role of micro RNAs in multigenerational toxicity, and relevant regulatory assays with potential for adaptation. The fourth presentation will describe the use of an HTS zebrafish embryo model to identify phenotypic and transcriptomic signatures of selected endocrine-active compounds to develop a predictive endocrine disruptor framework. The final presentation will describe the requirements for fit for purpose assays using ER models in a "top-down adverse outcome pathway" approach (defining key events leading to an apical outcome) or a "bottom-up toxicity pathway" approach (defining key events leading to a loss in cellular homeostasis), along with advantages and disadvantages of each in assessing potential endocrine activity. This session critically bridges development of 21st century tools to discussion of their current applications to pathway-based science and regulatory decisions. (Abstract #1726a)

#1726b 2:05 **Screening Chemicals for Estrogen Bioactivity Using Computational Approaches.** P. Browne. US EPA, Washington, DC. Sponsor: *M.S. Marty.*

#1727 2:34 **Predictive Data-Driven Framework for Endocrine Prioritization: Triazole Fungicide Case Study.** *K. Paul Friedman.* Bayer CropScience, Durham, NC.

Abstract #

#1728 3:03 **The Role of Epigenetics in Toxicity Responses to Endocrine-Active Compounds.** M. Jacobs. Public Health England, Chilton, United Kingdom. Sponsor: *M.S. Marty.*

#1729 3:32 **Using Zebrafish Phenotypic and Transcriptomic Screening to Define Potential Endocrine Activity.** *R. Tanguay*. Oregon State University, Corvallis, OR.

#1730 4:01 **Development of Fit-for-Purpose Assays: Adverse Outcome Pathway and Toxicity Pathway Approaches to Defining *In Vitro* Assays Sufficient for Safety Assessment.** *R. Clewell*. The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

4:30 **Panel Discussion/Q&A.**

Monday Afternoon, March 14
2:00 PM to 4:45 PM
CC Room R08

Historical Highlights Session: Toxicologic Legacies of Major 21st Century Man-Made/Natural Disasters

♥ Health and Environmental Impacts of Manmade and Naturally Released Toxicants

Chairperson(s): *Mitchell D. Cohen, NYU School of Medicine/Dept. of Environmental Medicine, Tuxedo, NY; and Mitsuaki Yoshida, Institute of Radiation Emergency Medicine, Hirosaki University (IREM/HU), Hirosaki, Japan.*

Endorser(s):
Immunotoxicology Specialty Section
Inhalation and Respiratory Specialty Section

Just 16 years into the 21st century, there have been a series of major man-made/natural disasters to befall the world, and each has engendered its own particular toxicologic legacy. In 2015–2016, the anniversaries of the World Trade Center disaster (15-year), the landing of Hurricanes Katrina and Rita (10-year), and the tsunami-induced disaster at the Fukushima Daiichi Nuclear Plant (5-year) will be upon us. Similarly, it will be 8 years since the great California wildfires that lasted four months and consumed >1.5 million acres. Each of these events gave rise to adverse health effects among those affected by the disasters, and many of these pathologies are still (or are becoming increasingly) evident. Over the years, clinical and laboratory-based studies have allowed the basis for many of the documented pulmonary/immuno-toxicologic effects from exposures to toxicants generated in each disaster to become clearer. The purpose of this session is to bring together experts to discuss the pulmonary/immuno-toxicologic impacts on human health from each event; a final talk will provide attendees with information about the new NIH/NIEHS Disaster Research Response (DR2) Project and provide recommendations as to how such disasters like those covered in this session should be evaluated (i.e., what to do before, during, after) to mitigate toxicologic risks to those individuals that might be in potentially affected areas. It is expected that this session will provide attendees with the most up-to-date toxicology-related information on each of these major disasters. Accordingly, this will allow for development of better preparation paradigms to mitigate the risks to human health in the event any of these types of disasters occur again. (Abstract #1731)

2:00 **Introduction.** *M.D. Cohen*. Dept of Environmental Medicine NYU School of Medicine, Tuxedo, NY.

2:05 **Pulmonary/Immunotoxicologic Impacts of the WTC Disaster.** *M.D. Cohen*. Dept of Environmental Medicine NYU School of Medicine, Tuxedo, NY.

2:35 **Immuno-Toxicologic Impacts of the Fukushima Disaster.** M. Yoshida. Institute of Radiation Emergency Medicine, Hirosaki University (IREM/HU), Hirosaki, Japan. Sponsor: *M.D. Cohen*.

3:05 **Great California Wildfires of 2008: A Bigger Problem Than Burned Trees.** *J.A. Last*. Dept. of Pulmonary, and Critical Care Medicine, UC Davis Medical School, Davis, CA.

Abstract #

3:35 **Adverse Respiratory Impacts of Hurricanes Katrina and Rita.** R.J. Rando. School of Public Health & Tropical Medicine, Tulane University, New Orleans, LA. Sponsor: *M.D. Cohen*.

4:05 **Integrating Health and Toxicology Research into Disaster Responses: The New NIH Disaster Research Response (DR2) Project.** *A. Miller*. NIEHS, NIH, Bethesda, MD.

4:25 **Moderated Discussion Among the Participants and Attendees.** M. Yoshida. Institute of Radiation Emergency Medicine, Hirosaki University (IREM/HU), Hirosaki, Japan. Sponsor: *M.D. Cohen*.

Monday Afternoon, March 14
2:00 PM to 4:45 PM
CC Room 206

PL

Platform Session: AhR and Disease Processes

Health and Environmental Impacts of Manmade and Naturally Released Toxicants

Chairperson(s): *Joshua A. Harrill, Center for Toxicology and Environmental Health, North Little Rock, AR; and Chad Brocker, National Institutes of Health, Bethesda, MD.*

#1732 2:00 **The Role of the Aryl Hydrocarbon Receptor and its Diverse Ligands in Oral Squamous Cell Cancer Migration and Tumorigenesis.** *E. Stanford*[2], Z. Wang[2], O. Novikov[2], M. Kukuruzinska[1], M. Bais[1], and *D. Sherr*[2]. [1]Boston University School of Dental Medicine, Boston, MA; and [2]Boston University School of Public Health, Boston, MA.

#1733 2:25 **Ligand-Dependent Modulation of the Aryl Hydrocarbon Receptor Mediates Expression of the Neutrophil Chemotactic Gene Cxcl5 in Primary Mouse Keratinocytes.** *K.J. Smith*[2], J.A. Boyer[2], E. Muku[2], K. Gowda[1], S.G. Amin[1], A.B. Glick[2], and *G.H. Perdew*[2]. [1]Penn State College of Medicine, Hershey, PA; and [2]The Pennsylvania State University, University Park, PA.

#1734 2:50 **Aryl Hydrocarbon Receptor Regulates the Hematopoietic Niche Interactions in Normal Steady State Hematopoiesis.** Z. Unnisa, *K.P. Singh*, *E.C. Hemry*, and *T.A. Gasiewicz*. School of Medicine, and Dentistry, University of Rochester, Rochester, NY. Sponsor: *K. Singh*.

#1735 3:10 **Downstream Mechanisms of Aryl Hydrocarbon Receptor Activation: Inhibitory Effects on Osteogenic Differentiation.** C. Yun, A. Kannan, S. Mitchell, D.S. Chun, R.D. Freshman, M. Schallmo, J. Weiner, R. Cook, K. Sonn, S. Bellary, C. Park, J. Yun, W.K. Hsu, and *E.L. Hsu*. Northwestern University, Chicago, IL.

#1736 3:30 **Preliminary Characterization of the Interleukin-1 Receptor 1, Tumor Necrosis Factor Receptor 1 and 2 Knockout Rats as a Model for Studying the Mode-of-Action of the Hepatotoxic Effects of 2,3,7,8-Tetrachlorodibenzo-p-dioxin.** *A. Phadnis-Moghe*[1], K. Rivera-Caraballo[4], *J. Harrill*[3], *R. Crawford*[1], *R. Budinsky*[2], J. Thomas[2], *J.C. Rowlands*[2], and *N. Kaminski*[1]. [1]Michigan State University, East Lansing, MI; [2]The Dow Chemical Company, Midland, MI; [3]The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and [4]University of Puerto Rico, Humacao, PR.

Abstract #

#1737 3:50 **Ah Receptor Expression in Mouse Embryonic Stem Cells Delays Cell Cycle Progression Through Mitosis and Causes Pluripotency Loss.** *C.-I. Ko*, Y. Fan, *Q. Wang*, M. de Gannes, *Y. Xia*, and *A. Puga*. University of Cincinnati, Cincinnati, OH. Sponsor: *A. Puga*.

#1738 4:20 **Regulation of Ahr Expression by an Orphan Nuclear Receptor Nr2e3.** K. Tilak, D. Kim, and *K. Kim*. University of Cincinnati, Cincinnati, OH.

Monday Afternoon, March 14
2:00 PM to 4:45 PM
CC Room R06

PL

Platform Session: Pluripotent Stem Cells in Cardiovascular Research

Chairperson(s): *Xi Yang, NCTR, US Food and Drug Administration, Jefferson, AR; and Maria L. Vlaming, Pluriomics B.V., Leiden, Netherlands.*

#1739 2:00 **Understanding the Role of the Integrated Stress Response in iPSC Derived Human Cardiac Myocytes: From Progenitor Cell to Differentiated Cardiac Myocyte.** G.H. Searfoss, J.A. Willy, and *T.K. Baker*. Eli Lilly, and Company, Indianapolis, IN.

#1740 2:20 **Evaluation of Acute and Chronic Effects of Kinase Inhibitors on Electrical and Contractile Activity of Human iPSC-Derived Cardiomyocytes.** X. Zhang, B. Xi, and Y.A. Abassi. ACEA Biosciences Inc, San Diego, CA. Sponsor: *C. Jin*.

#1741 2:40 **Assessment of the Electromechanical Window of Human IPSC-Derived Cardiomyocytes and Its Modulation by Compounds Affecting Cardiac Function.** X. Zhang, B. Xi, X. Wang, and Y.A. Abassi. ACEA Biosciences Inc, San Diego, CA. Sponsor: *C. Jin*.

#1742 3:00 **High-Throughput Comprehensive Cardiac Safety and Toxicity Assessment Using Human iPSC-Derived Cardiomyocytes.** R. Kettenhofen[1], A. Duenbostell[1], O. Keminer[3], G. Luerman[2], and M. Stevens[2]. [1]Axiogenesis AG, Cologne, Germany; [2]Axiogenesis Inc, Plymouth Meeting, PA; and [3]Fraunhofer IME, Aachen, Germany. Sponsor: *E. Clarke*.

#1743 3:20 **Multimodal Screening of Functional and Structural Drug Toxicities Using Human Stem Cell-Derived Cardiomyocytes.** *M. Brock*, J. Heidmann, A. Kauss, and *D. Misner*. Genentech, South San Francisco, CA.

#1744 3:40 **Cardiotoxicity of Anticancer Drugs Assessed by Electrophysiology- and Biochemistry-Based Assays Using Human Induced Pluripotent Stem Cell (hiPSC) Derived Cardiomyocytes.** T. de Korte, F. Stevenhagen, S.C. den Hartogh, K. Langenberg, M. Dunska, C. Grandela, S.R. Braam, and M.L. Vlaming. Pluriomics B.V., Leiden, Netherlands. Sponsor: *J. Louisse*.

#1745 4:15 **Identification of the Cellular Effects of Sofosbuvir and Amiodarone Using hiPSC-Derived Cardiomyocytes.** D.C. Millard[1], *C.J. Strock*[3], S. Stoelzle-Feix[4], N. Becker[4], K. Juhasz[4,5], N. Fertig[4], C.T. January[6], B.D. Anson[2], and J.D. Ross[1]. 1Axion Biosystems, Inc, Atlanta, GA; [2]Cellular Dynamics International, a Fujifilm Company, Madison, WI; [3]Cyprotex, Watertown, MA; [4]Nanion Technologies GmbH, Munich, Germany; [5]Technische Universität München, Munich, Germany; and [6]University of Wisconsin, Madison, WI.

Monday Afternoon, March 14
3:00 PM to 4:00 PM
CC Room 211

Exhibitor-Hosted Session: CASE Ultra: Combining Statistical and Rule-Based Methodologies

Presented by:
MultiCASE Inc

MultiCASE Inc, the leading provider of *in silico* toxicology solutions for chemical and pharmaceutical industries, will share its experience in implementing and combining statistical and expert rule-based methodologies for better performance and regulatory acceptance. Highlights, interpretation scenarios, and case studies will be presented.

Monday Afternoon, March 14
3:00 PM to 4:00 PM
CC Room 205

Exhibitor-Hosted Session: Cryopreserved Human Enterocytes and Hepatocytes for the Evaluation of Adverse Drug Properties

Presented by:
In Vitro ADMET Laboratories LLC

Orally administered xenobiotics are subjected in intestinal metabolism/absorption and hepatic metabolism/systemic circulation. The isolation and characterization of human and animal enterocytes, and the application of enterocytes in conjunction with hepatocytes to define adverse drug properties including metabolism, drug-drug interactions, and toxicity will be described.

Monday Afternoon, March 14
3:00 PM to 4:00 PM
CC Room 212

Exhibitor-Hosted Session: The Miniature Swine As a Model in Translational Medicine: Clinical and Pathology Evaluations

Presented by:
Sinclair Research Center

The use of miniature swine as a nonrodent species in safety assessments has continued to expand, and they are becoming routinely used as a model for human diseases. The specific features of the miniature swine, their impact on pharmacotoxicology, and clinical and anatomic pathology data will be presented.

Monday Afternoon, March 14
3:00 PM to 4:00 PM
CC Room 213

Exhibitor-Hosted Session: Multiplexed Assays for Flow Cytometry: Case Example of Mode of Action Determination for Genotoxic Agents

Presented by:
Litron Laboratories

The MultiFlow™ family of kits enables fast, reliable, high-throughput, high-content flow cytometry-based analyses. The MultiFlow DNA Damage kit—p53, γH2AX, phospho-histone H3 is a multiplexed, add-and-read assay that provides classification of compounds based on genotoxic mode of action. Information on related kits will also be provided.

Monday Afternoon, March 14
3:30 PM to 4:30 PM
CC Room 281

Undergraduate Diversity Program: Host Mentor and Peer Mentor Meeting

Chairperson(s): *Jorge Naciff, Procter & Gamble Company, Mason, OH.*

Host mentors and peer mentors meet to provide feedback on the Undergraduate Education Program.

Monday Afternoon, March 14
4:30 PM to 5:30 PM
CC Room 211

Exhibitor-Hosted Session: Functional Assays for Assessing Mitochondrial Toxicants and Other Energy Metabolism Disruptors in Live Cells

Presented by:
Seahorse Bioscience, a part of Agilent Technologies

As toxicology testing moves more toward *in vitro* methods, robust cell-based assays for assessment of mitochondrial toxicity of drug candidates are required. The Seahorse XF Cell Mito Stress Test has been successfully used to screen for mitochondrial toxicants and can distinguish mitochondrial toxicity from overall loss of viability.

Monday Afternoon, March 14
4:30 PM to 5:30 PM
CC Room 212

Exhibitor-Hosted Session: How to Make SEND Business As Usual

Presented by:
Instem

The goal of SEND is to improve the quality, efficiency and speed of getting new drugs to market. All industry stakeholders will hear from a panel of experts about accelerating the production and management of high quality eStudy data packages that are easy to review and more efficient to submit.

Monday Afternoon, March 14
4:30 PM to 5:30 PM
CC Room 205

Exhibitor-Hosted Session: Use of 3D InSight™ Human Liver Microtissues As a Tool for Prediction of Drug-Induced Liver Injury

Presented by:
InSphero Inc.

Prediction of DILI is an important task in drug developmment. InSphero will present the results from recent evaluation studies by the pharmaceutical industry using 3D InSight Human Liver Microtissues for prediction of DILI, performed with more than 100 clinically known test compounds.

Monday Afternoon, March 14
4:30 PM to 5:30 PM
CC Room 223

Undergraduate and K–12 Education Networking

Hosted by:
Education Committee
Undergraduate Subcommittee
K–12 Subcommittee

K–12 Regional Chapter Outreach Contacts, presenters in the education topic poster session, and all others interested in effective education and outreach gather for more in-depth discussion of the education posters and to share ideas and resources in this informal networking time.

Monday Afternoon, March 14
4:45 PM to 6:30 PM
Poppy's Time Out Sports Bar

Ohio Valley Regional Chapter Reception

Monday Afternoon, March 14
4:45 PM to 6:00 PM
CC Great Hall B

FS

SOT/EUROTOX Debate: Preclinical (Safety) Toxicology Testing Predicts the Clinical Outcome

Chairperson(s): *Patricia E. Ganey, Michigan State University, East Lansing, MI; and Mumtaz Iscan, Ankara University, Ankara, Turkey.*

SOT Debater: *Thomas M. Monticello, Amgen, Inc., Thousand Oaks, CA.*

EUROTOX Debater: *Ruth Roberts, ApconiX Ltd, Alderley Edge, United Kingdom.*

Endorser(s):
Society of Toxicology (SOT)
European Societies of Toxicology (EUROTOX)

Each year the SOT Annual Meeting includes a debate that continues a tradition that originated in the early 1990s in which leading toxicologists advocate opposing sides of an issue of significant toxicological importance. This year, our debaters address the proposition: Preclinical (Safety) Toxicology Testing Predicts the Clinical Outcome.

Preclinical safety testing of new drug candidates is a crucial step in pharmaceutical drug development and is a highly controlled process based on specific regional and global regulatory agency criteria. Preclinical toxicology testing includes a sequential series of *in silico, in vitro,* and *in vivo* toxicology studies prior to first in human (FIH) clinical trials. Specifically, data on genotoxicity, general toxicology, and safety/secondary pharmacology are generated, and then used to characterize potential safety risks for humans by identifying tolerated doses and target organs of toxicity. These studies are also used to identify potential safety biomarkers to be used in the context of dose and exposure, informing clinicians of appropriate monitoring and also the potential for reversibility after a dose-free period. Although preclinical toxicology studies are a regulatory requirement, there has been debate recently that has questioned their utility in evaluating human safety risks. On the one hand, toxicities noted in patients may differ from those noted in animals, questioning the relevance of the animal studies, advocating instead for alternative models such as the "organ/tissue on a chip." This is consistent with the concept introduced by Russell and Burch for the 3Rs: reduction, refinement, and replacement in animal experimentation. On the other hand, preclinical animal toxicology studies may play an important role in predicting toxic dose and exposure, even if the dose-limiting toxicities in animals and humans differ. The debaters will discuss the state of the science on preclinical safety testing and whether it can predict clinical outcome.

Regardless of framework differences and personal convictions, each scientific debate delegate will present relevant evidence and compelling scientific arguments to persuade and appeal to the response of the audience in order to obtain the approval or refusal of the motion. In addition to being a featured session at the SOT Annual Meeting in New Orleans, Louisiana, this debate will again take place (with the debaters taking the reverse positions) in Istanbul, Turkey, during the 52nd Congress of the European Societies of Toxicology (2016 EUROTOX Annual Congress), September 4–7, 2016.

MONDAY EVENING

Monday Evening, March 14
5:00 PM to 6:15 PM
Mulate's Restaurant

Toxicologists of African Origin Special Interest Group Networking Event

Monday Evening, March 14
5:00 PM to 6:30 PM
Hilton Riverside Grand Salon 7

Midwest Regional Chapter Mixer

Monday Evening, March 14
5:00 PM to 9:00 PM
Hilton Riverside Grand Ballroom D

American Association of Chinese in Toxicology Special Interest Group Distinguished Chinese Toxicologist Lectureship Award and Reception

Monday Evening, March 14
5:30 PM to 7:30 PM
Bei Tempi Ristorante

Lone Star and South Central Regional Chapters Mixer

Monday Evening, March 14
5:30 PM to 7:30 PM
Annunciation Restaurant

Pacific Northwest Regional Chapter Reception

Monday Evening, March 14
6:00 PM to 7:30 PM
Hilton Riverside
See room listing below.

Specialty Section Meetings/Receptions: Biological Modeling (Grand Salon 18); Biotechnology (Grand Salon 3); Dermal Toxicology (Grand Salon 20); Mechanisms (Grand Ballroom C); Regulatory and Safety Evaluation (Grand Ballroom A); Reproductive and Developmental Toxicology (Grand Ballroom B); and Stem Cells (Grand Salon 12)

Monday Evening, March 14
6:00 PM to 8:00 PM
Drago's Seafood Restaurant

Southeastern Regional Chapter Reception

Monday Evening, March 14
6:00 PM to 9:00 PM
Singha Thai Cafe

Korean Toxicologists Association in America Special Interest Group Meeting/Reception

Monday Evening, March 14
6:30 PM to 7:45 PM
Mulate's Restaurant

Toxicologists of African Origin Special Interest Group Reception

Monday Evening, March 14
7:00 PM to 9:30 PM
Marriott at the Convention Center River Bend Ballroom

Association of Scientists of Indian Origin Special Interest Group Reception

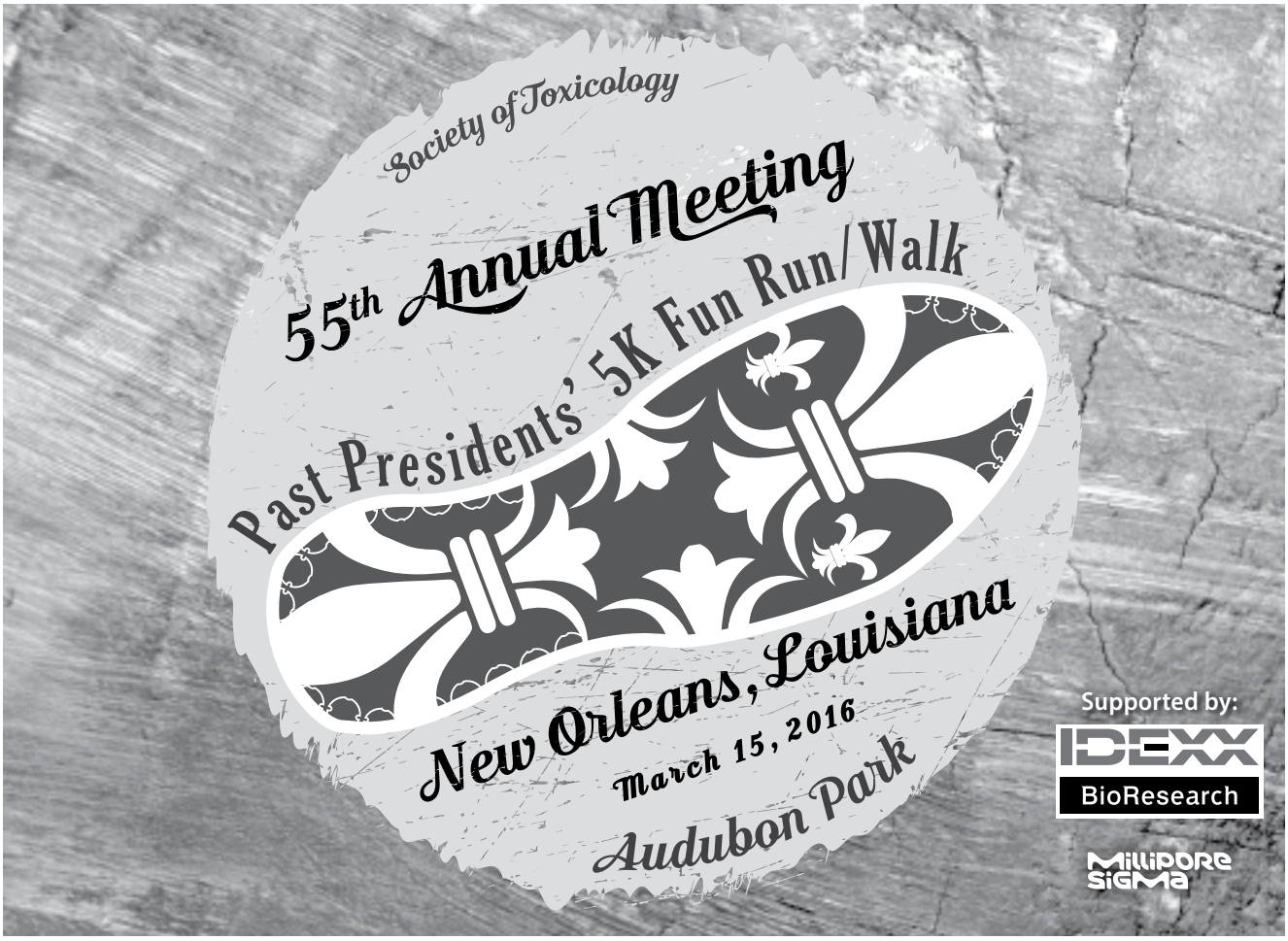
Don't Miss All the Fun

TOX SHOWDOWN

Produced by:
Graduate Student Leadership Committee

Join us for an evening of tox trivia and fun as three teams compete to see who knows the most when it comes to toxicological fact and fancy.

Tuesday, March 15 | 7:30 PM
Hilton New Orleans Riverside
Jefferson Ballroom



EC Education-Career Development Sessions
E Exhibitor-Hosted Sessions
FS Featured Sessions
HH Historical Highlights Session
IS Informational Sessions
PL Platform Sessions

Tuesday Morning, March 15
8:00 AM to 9:20 AM
CC Great Hall A

FS

Daily Plenary Session: Inflammation and Neurodegenerative Disease

Mast Cells and Glia: Two Tracks on the Road to Neuroinflammation

Lecturer: *Stephen Skaper, University of Padua, Padua, Italy.*

One of the more important recent advances in neuroscience research is the understanding that there is extensive communication between the immune system and the central nervous system (CNS). Proinflammatory cytokines play a key role in this communication. The emerging realization is that glia and microglia, in particular (which are the brain's resident macrophages), constitute an important source of inflammatory mediators and may have fundamental roles in CNS disorders from neuropathic pain and epilepsy to neurodegenerative diseases. Microglia respond also to proinflammatory signals released from other non-neuronal cells, principally those of immune origin. Mast cells are of particular relevance in this context. These immune-related cells, while resident in the CNS, are capable of migrating across the blood-spinal cord and blood-brain barriers in situations where the barrier is compromised as a result of CNS pathology. Emerging evidence suggests the possibility of mast cell-glia communication and opens exciting new perspectives for designing therapies to target neuroinflammation by differentially modulating the activation of non-neuronal cells normally controlling neuronal sensitization, both peripherally and centrally. This presentation will provide an overview of recent progress relating to the pathobiology of neuroinflammation, the role of microglia, neuroimmune interactions involving mast cells, in particular, and the possibility that mast cell-microglia crosstalk may contribute to the exacerbation of acute symptoms of chronic neurodegenerative disease and accelerate disease progression, as well as promote pain transmission pathways.

Inflammation and Neurodegeneration in CNS Injury: Evolving Concepts and New Therapeutic Targets

Lecturer: *Alan I. Faden, University of Maryland School of Medicine, Baltimore, MD.*

It has long been claimed that prior traumatic brain injury (TBI) increases the subsequent incidence of Alzheimer's disease (AD). However, recent larger epidemiological studies indicate a relationship to subsequent dementia but not to AD. There is also a well-recognized association between repeated mild TBI and progressive cognitive decline or other neuropsychiatric abnormalities. The latter was first described in boxers as dementia pugilistica, and has received widespread attention in relationship to high-contact sports. The term chronic traumatic encephalopathy (CTE) has been used to define a "specific" entity marked by neurobehavioral changes and deposition of phosphorylated tau protein. Less well appreciated with regard to post-traumatic neurodegeneration is the role of sustained neuroinflammation, even though this association has been recognized pathologically for decades. More recent experimental work, as well as clinical neuroimaging studies, has underscored the relationship between chronic neuroinflammation and progressive brain neurodegeneration in a number of disorders including TBI, while providing mechanistic support. Manifested by extensive microglial and astroglial activation, chronic traumatic brain inflammation (CTBI), or perhaps better termed chronic traumatic inflammatory encephalopathy (CTIE), appears likely to be the most important cause of post-traumatic neurodegeneration and related cognitive decline in terms of prevalence. Perhaps even more critically, emerging preclinical studies indicate that persistent neuroinflammation and associated neurodegeneration may be treatable weeks to months after the initiating insult(s).

Tuesday Morning, March 15
6:30 AM to 8:00 AM
CC Room R01

Regulatory and Safety Evaluation Specialty Section Global Regulations Breakfast—Next Stop: China

Tuesday Morning, March 15
7:00 AM to 8:00 AM
Bourbon House Restaurant

Central States Regional Chapter Breakfast Meeting

Tuesday Morning, March 15
7:00 AM
Audubon Park
(See Mobile Event App for Shuttle Details)

Past Presidents' 5K Fun Run/Walk

Supported by:
IDEXX BioResearch and MilliporeSigma

The sixth annual Past Presidents' 5K Fun Run/Walk is open to anyone interested, this event is a great opportunity to meet old friends and make new acquaintances in a casual environment, joining SOT's Past Presidents in showing support for SOT. Whether you're in it for some friendly competition or would rather take a leisurely stroll, this event's emphasis is on camaraderie and will bring together runners and walkers of all levels and paces. Come join us—we look forward to seeing you!

Tuesday Morning, March 15
8:00 AM to 2:15 PM
Room 276

High School Student and Teacher Workshop—Safety Matters: Toxicology and Product Safety

Chairperson(s): *Wesley Gray, Southern University and A&M College, Baton Rouge, LA.*

Hosted by:
SOT South Central Regional Chapter

Supported by:
Education Committee
K–12 Subcommittee

High School teachers and students from the New Orleans area, plus high schoolers attending the SOT meeting, learn that "Safety Matters" at an all-day workshop on Tuesday, March 15. The workshop includes presentations introducing toxicology, activities to learn ways toxicologists can assess product safety, a tour of the Annual Meeting, and a ToxExpo scavenger hunt. Some students have posters displayed in the High School Poster Exposition. Toxicologists serve as mentors.

Tuesday Morning, March 15
9:00 AM to 10:00 AM
CC Room 212

E

Exhibitor-Hosted Session: Advances in the Use of Bioprinted 3D Human Liver Tissues for the Assessment of Drug-Induced Liver Toxicity

Presented by:
Organovo

3D bioprinted tissues exhibit architectural and functional features that mimic key aspects of a natural tissue environment, allowing for generation of clinically translatable toxicity data from biochemical, genomic, metabolic and histologic endponts. Several case studies using bioprinted liver tissues for toxicity testing will be presented.

Tuesday Morning, March 15
9:00 AM to 10:00 AM
CC Room 213

Exhibitor-Hosted Session: Dealing with Uncertainty: Science-Based Solutions to the Challenges of Worldwide Agrochemical Registration

Presented by:
Envigo

The session will discuss the roadmap for successful registration and registration of agrochemical products. Case studies will be discussed which highlight the relevant human and environmental safety studies conducted in support of regulatory submissions, the submission process itself in different jurisdictions and how to plan for a successful registration.

Tuesday Morning, March 15
9:00 AM to 10:00 AM
CC Room 205

Exhibitor-Hosted Session: Efficiently Generating Reliable Toxicological Data on Protein Therapeutics

Presented by:
Altasciences

The complex nature of protein/peptide therapeutics can affect the integrity of toxicokinetic data and how it should be interpreted. Through case studies, this session will demonstrate how concerns directly relevant to the generation of toxico/pharmacokinetic and pharmacodynamic data can be addressed by innovative and proactive bioanalytical method development.

Tuesday Morning, March 15
9:00 AM to 10:00 AM
CC Room 211

Exhibitor-Hosted Session: Ocular Gene and Cell Therapy Safety Studies: Critical Ophthalmology Endpoints to Consider

Presented by:
MPI Research

Gene and cell therapies are making significant advances in preclinical and clinical development for management of various diseases in ophthalmology. Familiarization with current ocular therapeutic strategies, common intraocular dosing routes, and eye-specific safety endpoint assessments will help you successfully develop your IND-enabling study designs.

Tuesday Morning, March 15
9:30 AM to 4:30 PM
CC Room 204

Research Funding Insights

Hosted by:
Career Resource and Development Committee

Open to all attendees: Representatives from federal agencies funding research, including NIH program and review staff of the Center for Scientific Review and NIEHS, are available in the Research Funding Room for individual and group conversations to discuss aspects of scientific review or specific grant opportunities. Come by or schedule a meeting in advance with your program officer. New investigators welcome!

Abstract #

Tuesday Morning, March 15
9:30 AM to 12:15 PM
CC Room R06

Symposium Session: Drug-Induced Taste Change in Clinical Practice and Preclinical Safety Evaluation

Chairperson(s): *Tao Wang, Novartis Pharmaceuticals, Emeryville, CA; and Keith Mansfield, Novartis, Cambridge, MA.*

Endorser(s):
Clinical and Translational Toxicology Specialty Section
Regulatory and Safety Evaluation Specialty Section

Drug-induced taste disorder is one of the most distressing adverse side effects reported by chemotherapy patients. Taste change (dysgeusia) not only reduces the quality of life for affected patients, but can lead to malnutrition, weight loss, and, in severe cases, difficulty in maintaining a therapeutic regimen. The goal of this session is to review current understanding of taste changes in clinical practice, and how the identification of taste change in preclinical investigations in animal models can provide mechanistic insights and help develop mitigation strategies to guide clinical practice. The symposium will review taste change in patients, including clinical symptoms, type of dysgeusia, diagnostic methods, and current approaches to the treatment of taste disorders. Since smell and taste are closely related, a follow-up presentation will focus on the biochemical and physiological mechanisms of drug-induced changes, and describe enrichment procedures help patients overcome aberrant taste and smell. After presentation of the clinical perspective, the preclinical safety evaluation of taste changes with an emphasis on morphological evaluation and biomarker in rats and dogs will be presented. The description of morphological and molecular tests for taste change will be followed by a comprehensive presentation of physiological methods for functional evaluation of taste change in preclinical animal models. The presentations will also outline how these functional tests can facilitate the development of approaches to overcome dysgeusia. (Abstract #1746)

	9:30	**Overview of Taste Change.** *T. Wang*. Novartis, Emeryville, CA.
#1747	9:50	**Taste Disorders in Patients: Symptoms, Diagnosis, and Treatment.** M. Grushka. William Osler Health System, Toronto, ON, Canada. Sponsor: *T. Wang*.
#1748	10:20	**Drug-Induced Taste and Smell Disturbance.** T. Hummel. Smell & Taste Clinic, Department of Otorhinolaryngology, TU Dresden, Fetscherstrasse, Dresden, Germany. Sponsor: *T. Wang*.
#1749	10:50	**Preclinical Safety Investigations of Drug-Induced Taste Change in Animal Models—Histology and Biomarkers.** K. Mansfield. Novartis Pharmaceuticals, Cambridge, MA. Sponsor: *T. Wang.*
#1750	11:25	**Chemosensory Assessment in Animal Models Undergoing Chemotherapy Treatment.** J. Glendinning. Barnard College, Columbia University, New York, NY. Sponsor: *T. Wang.*
	12:00	**Panel Discussion/Q&A.**

Abstract #

Tuesday Morning, March 15
9:30 AM to 12:15 PM
CC Room 217

Symposium Session: Genotypic and Intrinsic Risk Factors That Increase Susceptibility to Inhaled Pollutants

Chairperson(s): *Desinia B. Miller, University of North Carolina-Chapel Hill, Chapel Hill, NC; and Gabriel Knudsen, National Cancer Institute at NIEHS, Research Triangle Park, NC.*

Endorser(s):
Graduate Student Leadership Committee
Occupational and Public Health Specialty Section
Postdoctoral Assembly

The mandated Clean Air Act (CAA) requires the Environmental Protection Agency to set National Ambient Air Quality Standards (NAAQS) to mitigate high-level harmful emissions from natural and man-made sources. These standards strive to protect the health of the most vulnerable human population from potential pollutant-induced adverse health outcomes. However, because of limited research on susceptible subpopulations, the determinations of NAAQS for at-risk groups have proven to be difficult. As a result, an uncertainty factor of 10 is employed in the absence of actual data on susceptibility. A few epidemiological and experimental studies have implicated risk factors such as genotype, sex, ethnicity, life stage, and underlying diseases in human inter-variation that increase susceptibility to adverse health effects of inhaled pollutants. However, the mechanisms of how these factors increase sensitivity to inhaled pollutants in at-risk groups have not been well understood. The aims of this symposium are to 1) address the underlying health conditions that can influence risk of adverse health effects associated with inhaled pollutants and 2) identify biologically plausible mechanisms and/or interactions between these risk factors and inhaled pollutant injury. The six trainee presenters will focus on different risk factors and examine how underlying conditions alter the adverse health effects of inhaled pollutants, with the emphasis on potential mechanisms. The first two presenters will focus on gene-environment interactions that affect susceptibility to inhaled pollutants, while one of the speakers will also address the differential risk due to sex. The third speaker will use *in utero* data to discuss how air pollution exposure during different life stages can modify health risk. The last three presenters will focus on pre-existing respiratory and metabolic conditions that have been implicated in increased susceptibility to inhaled pollutants. Altogether, attendees will learn about different characteristics that influence susceptibility and gain insight into likely mechanisms by which air pollution effects are altered in at-risk groups. Additionally, it will provide identification and further characterization of potential sensitive populations to consider in future epidemiological and inhalation risk assessment studies. (Abstract #1751a)

#1751b 9:35 **Interaction of Alpha-Synuclein with Divalent Metal Manganese Alters Disease Progression in Transgenic Models of Parkinson's Disease.** *D.S. Harischandra*. Iowa State University, Ames, IA.

#1752 10:00 **Human Airway Epithelium: Ethinyl Estradiol-Mediated Sex Differences in Smokers and Non-Smokers.** *M. Rubelli.* University of North Carolina, Chapel Hill, Chapel Hill, NC.

#1753 10:25 ***In Utero* Secondhand Smoke Exposures Increase the Lungs' Susceptibility to Developing Emphysema-Related Respones as Adults.** *A. Noel*. School of Veterinary Medicine, Baton Rouge, LA.

#1754 10:50 **The Effect of Diesel Exhaust Exposure on Patients with Allergic Rhinitis–Implications for NK Cell Physiology.** *E. Pawlak*. University of North Carolina, Chapel Hill, Chapel Hill, NC.

#1755 11:15 **Inhaled Ozone Causes More Severe Lung Lesions in Hyperglycemic, Insulin-Resistant KKAy Mice as Compared to Normoglycemic, Insulin-Sensitive C57BL/6 Mice.** D.N. Jackson-Humbles. Michigan State University, Ann Arbor, MI. Sponsor: *D.B. Miller*.

Abstract #

#1756 11:40 **Obesity as Risk Factor for Ozone-Induced Cardiopulmonary Effects and Metabolic Impairment.** *S.J. Snow.* Cardiopulmonary, and Immunology Branch, US EPA, Durham, NC.

12:05 **Panel Discussion/Q&A.**

Tuesday Morning, March 15
9:30 AM to 12:15 PM
CC Room 206

Symposium Session: Systems Understanding of the Impact of the Nrf2 Pathway on Chemical Toxicity and Cell Fate

♦ Molecular Toxicology: Mechanistic Insights and Hazard Assessment

Chairperson(s): *Chris Corton, US Environmental Protection Agency, Durham, NC; and Thomas Kensler, University of Pittsburgh, Pittsburgh, PA.*

Endorser(s):
Mechanisms Specialty Section
Molecular and Systems Biology Specialty Section

The transcription factor Nrf2 plays a significant role in protecting cells from endogenous and exogenous stresses. Initial studies of the Nrf2 pathway focused on altered metabolism of toxins, leading to their enhanced detoxication and elimination. Continuing studies expanded this view of Nrf2 action to include pathways affecting recognition, repair, and removal of damaged macromolecules. Most recent studies have focused on the links between cellular metabolism and cell fate. Some of these actions are mediated through cross-talk with other signaling networks. This symposium will highlight recent exciting findings in the field that greatly extend our systems understanding of the function and regulation of Nrf2 using a broad range of omic tools. The first speaker will describe the first screen for genetic effectors of Nrf2 activity. The second speaker will discuss a novel screening strategy in a large gene expression compendium to identify signaling pathways that affect Nrf2. The third speaker will describe a unique role for Nrf2 in circadian rhythm. The fourth and fifth speakers will describe exciting work that links Nrf2, metabolic reprogramming, and cell fate. The session will be of interest to scientists interested in stress pathways and how omics tools can be applied to study mechanisms of toxicity. (Abstract #1757a)

#1757b 9:35 **Imaging-Based RNA Interference Screening Identifies Novel Regulators of Nrf2 Signaling: Consequences for Drug-Induced Liver Injury.** *B. van de Water*. Leiden University, Leiden, Netherlands.

#1758 10:05 **A Biomarker-Based Screen of a Large Gene Expression Compendium Reveals Regulation of Nrf2 by CAR and STAT5b.** *C. Corton*. US EPA, Durham, NC.

#1759 10:35 **Closing the Loop: Defining the Role of Nrf2 in Clock Repression.** *T. Sutter*. University of Memphis, Memphis, TN.

#1760 11:05 **The Nrf2-Notch Axis: Expanding the Cell Fate Network.** *T. Kensler*. University of Pittsburgh, Pittsburgh, PA.

#1761 11:35 **Crosstalk Between Regulation of Redox Balance and Cell Proliferation by NRF2.** H. Motohashi. Tohoku University, Miyagi, Japan. Sponsor: *C. Corton*.

12:05 **Panel Discussion/Q&A.**

Abstract #

Tuesday Morning, March 15
9:30 AM to 12:15 PM
CC Room 208

Symposium Session: Unknown, Unknowns: Exploring the Unidentified Fraction of Complex Mixtures

Chairperson(s): *Cynthia Rider, NTP/NIEHS, Research Triangle Park, NC; and Bethany Hannas, The Dow Chemical Company, Midland, MI.*

Endorser(s):
Mixtures Specialty Section
Occupational and Public Health Specialty Section
Risk Assessment Specialty Section

Assessing risk from exposure to complex mixtures, ranging from botanical dietary supplements to traffic pollution, is exceptionally challenging. A hallmark of complex chemical mixtures is the presence of unidentified mixture mass. The contribution of these unknown chemicals is difficult to characterize. In terms of exposure, there is a prevailing tendency to measure only a select subset of target constituents (i.e., those with reason for toxicological concern or those that are present at the highest concentrations) within a complex mixture, resulting in a significant unidentified fraction. Paradoxically, toxicological assessments are typically limited to chemicals for which exposure data are available. These targeted strategies were developed to focus attention on the chemicals of greatest concern, but they implicitly overlook the unidentified fraction, which can represent the largest mass of the mixture. In risk assessment of chemical mixtures, component-based approaches, which deal exclusively with mixture constituents for which exposure and toxicological data are available, are far more common than those that consider whole mixtures. This is based on both a lack of available whole mixtures data and uncertainties in extrapolating from a reference mixture to a mixture of concern. In contrast to component-based approaches, whole mixture approaches account for the unknown mixture mass but do not identify the impact attributable to the unknown fraction. In this workshop, the unidentified fraction of complex mixtures will be brought to the forefront. Advances in chemical analysis, toxicology, and whole mixtures risk assessment will be discussed in the context of exploring the unknown portion of complex mixtures. Speakers from academia, government, and industry with diverse expertise will discuss the latest techniques for exploring complex mixtures, including the unidentified fraction. Throughout the discussion, areas that require further development or refinement will be identified. Finally, comparison of the current standard (i.e., targeted approaches) with more global whole mixtures methods will be made in terms of data needs, feasibility, and added value. (Abstract #1762a)

#1762b	9:35	**Bridging Chemical Exposures Technology with Bioactivity through Combining Passive Wristband Samplers and Bioassays to Better Understand Mixtures.** K. Anderson. Oregon State University, Corvallis, OR. Sponsor: *C. Rider.*
#1763	10:04	**Predicting Network Activity from High-Throughput Metabolomics.** *D. Jones*. Emory University, Atlanta, GA.
#1764	10:33	**Combining Toxicological and Chemical Characterization of Complex Mixtures to Understand the Impact of the Unknown Fraction.** *J.E. Simmons.* US EPA, Research Triangle Park, NC.
#1765	11:02	**The Use of Statistical Models to Predict Systemic and Developmental Toxicity of Crude Oil as an Example of Complex Petroleum Substances.** *R.H. McKee*. American Petroleum Institute, Annandale, NJ.
#1766	11:31	**Whole Mixtures Risk Assessment: Considering Sufficient Similarity.** G. Rice. US EPA, Cincinnati, OH. Sponsor: *C. Rider.*
	12:00	**Panel Discussion/Q&A.**

Abstract #

Tuesday Morning, March 15
9:30 AM to 12:15 PM
CC Great Hall B

Workshop Session: Bioactivity-Based Margin of Exposure Safety Assessment: The Next Stop along the Road to 21st Century Safety Assessments

♠ **Recent Advances in Safety Assessment**

Chairperson(s): *J. Craig Rowlands, The Dow Chemical Company, Midland, MI; and Nigel Walker, National Toxicology Program at NIEHS, Research Triangle Park, NC.*

Endorser(s):
***In Vitro* and Alternative Methods Specialty Section**
Molecular and Systems Biology Specialty Section
Risk Assessment Specialty Section

The ultimate goal of toxicity testing in the 21st century is the reduction and eventual replacement of animal-based toxicity testing with *in vitro* assays primarily using cultured human cells coupled with human exposure information. While significant progress has been made toward this end, there are numerous challenges that must be overcome before the final goal can be realized. Nevertheless, there are important regulatory decisions that these alternative approaches can be applied to that can serve as interim approaches to safety assessment. By using margin of exposure (MOE) as the primary metric for safety assessment, bioactivities measured in alternative approaches combined with human exposure determined through *in vitro* to *in vivo* extrapolations (IVIVE) or human biomonitoring studies can be used for regulatory decisions such as testing prioritization, emergency response assessments, and safety assessments. Bioactivity-based MOE provides a risk-based and animal-sparing approach to evaluate chemical safety, drawing broadly from previous experience but incorporating alternative 21st century alternative approaches to increase efficiency and reduce animal usage. The workshop will comprise a series of highly focused presentations that evaluate using bioassay-based points of departure for regulatory decision-making in chemical risk assessment. Each speaker will demonstrate how their recommended approach provides a practical solution to specific regulatory decision. (Abstract #1767a)

#1767b	9:35	**Biological Canaries in the Coal Mine: Strategic Implications for Utilizing Bioactivity-Based Margins of Exposures in Human Health Risk Assessments.** *N. Walker*. NIEHS, Research Triangle Park, NC.
#1768	10:05	**An Exposure: Activity Profiling Method for Interpreting High-Throughput Screening Data for Estrogenic Activity.** *R. Becker.* American Chemistry Council, Washington, DC.
#1769	10:35	**Moving Forward with Canada's Chemicals Management Plan: Opportunities for the Integration of High-Throughput Technologies in a Margin of Exposure Approach to Support Risk Assessment Activities.** T. Barton-Maclaren. Hazard Methodology Division, Health Canada, Ottawa, ON, Canada. Sponsor: *J.C. Rowlands.*
#1770	11:05	**Predicting the Benchmark Dose for Dioxin-Induced Liver Tumors from the Gene Expression Changes at 28-Days.** *J.C. Rowlands*. The Dow Chemical Company, Midland, MI.
#1771	11:35	**Application of Genomic Benchmark Dose Analysis in the NTP Response to the Elk River Chemical Spill.** *S. Auerbach*. NIEHS, Research Triangle Park, NC.
	12:05	**Panel Discussion/Q&A.**

Abstract #

Tuesday Morning, March 15
9:30 AM to 12:15 PM
CC Room 220

Workshop Session: Maternal Exposure to Nanoparticles—How Does It Affect the Fetus? Status, Mechanisms, and Future Directions

Developmental Toxicity: Mechanisms and Evaluation

Chairperson(s): *Flemming R. Cassee, National Institute of Public Health and the Environment (RIVM), Bilthoven, Netherlands; and Susan L. Makris, US Environmental Protection Agency, Washington, DC.*

Endorser(s):
Inhalation and Respiratory Specialty Section
Reproductive and Developmental Toxicology Specialty Section

Information on the effects of maternal exposure and possible effects on the fetus to small particles (nanometer range) is scarce and fragmented. Yet both epidemiological and toxicological studies suggest that maternal exposure to NP can cause adverse health effects on embryonic development such as increased number of terminated pregnancies (Hougaard et al., 2015). In this workshop, we aim to present the latest scientific information on reproductive and developmental effects of nano-sized particles, either from environmental relevant exposure (i.e., diesel engine exhaust) or engineered nanoparticles (single-walled carbon nanotubes, silver, cadmium oxide). This workshop will include a panel discussion at the end on relevance of dose determination, animal model appropriateness for humans, and what the next steps are to understanding human risk. (Abstract #1772a)

#1772b	9:30	**Introduction: Reasons for Concern?** *F. Cassee*. National Institute for Public Health, and the Environment (RIVM), Bilthoven, Netherlands.
#1773	9:35	**The Reprotoxic Effect of Engineered Nanoparticles, *In Vivo* and *In Vitro*.** L. Campagnolo. University of Rome Tor Vergata, Rome, Italy. Sponsor: *F. Cassee*.
#1774	10:04	**Maternal Airway Exposure to Nanoparticles in Pregnancy–Effects and Lessons Learned from Rodent Models.** K.S. Hougaard. National Center for the Working Environment, Copenhagen, Denmark. Sponsor: *F. Cassee*.
#1775	10:33	**Exposure to Nanoparticles During Pregnancy Can Impact Obstetric Outcomes and Early-Life Development in a Mouse Model: A Tale of Two Metals.** *J.T. Zelikoff.* New York University School of Medicine, Tuxedo, NY.
#1776	11:02	**Distribution and Accumulation of 10 nm Silver Nanoparticles in Maternal Tissues and Visceral Yolk Sac of Pregnant Mice, and a Potential Effect on Embryo Growth.** *P.L. Goering*. US FDA CDRH, Silver Spring, MD.
#1777	11:31	**Potential Developmental and Early-Life Health Effects of Nanomaterials: Data Gaps and Research Needs for Risk Assessment.** *M.R. Gwinn*. National Center for Environmental Assessment (NCEA), US EPA, Washington, DC.
	12:00	**Panel Discussion/Q&A.** *S.L. Makris*. US EPA, Washington, DC.

Abstract #

Tuesday Morning, March 15
9:30 AM to 12:15 PM
CC Room R08

Workshop Session: Multi-Omics in Predictive Toxicology: Development and Application in Environmental Monitoring Programs

Molecular Toxicology: Mechanistic Insights and Hazard Assessment

Chairperson(s): *Susie Huang, AXYS Analytical Services Ltd., Sidney, BC, Canada; and Alvine Mehinto, Southern California Coastal Water Research Project, Costa Mesa, CA.*

Endorser(s):
Molecular and Systems Biology Specialty Section

The development of diverse omics technologies holds promise for understanding adverse outcomes induced by exposure to environmental chemicals. Omics technologies offer an efficient and high-throughput alternative to conventional toxicity testing, which is often not sensitive enough to detect effects of low-level chemical exposures and environmental mixtures. By evaluating changes in RNAs, proteins, and/or metabolite levels, omics technologies can inform on molecular initiating events as well as key pathways on the trajectory to adverse outcomes for exposed animals. This approach, known as adverse outcome pathway (AOP) analysis, has gained considerable interest recently through OECD and US EPA initiatives. Molecular biomarkers and fingerprints identified using this approach will be useful to identify the types of toxicants present in the environment and predict adverse health outcomes in humans and animals. The integration of the various omics technologies in environmental monitoring programs is powerful for toxicity assessments that can be used by government, industry, and academia to better define risk characterization. This workshop will focus on the development and application of omics techniques to investigate environmental issues. The speakers will present research studies that utilized omics technologies to identify chemical effects at different biological levels to develop AOPs. Their results will be used to discuss how omics data can be incorporated in monitoring programs and risk assessment. (Abstract #1778a)

#1778b	9:35	**Adverse Outcome Pathways and Enhancing the Role of Genomics in Chemical Risk Assessment.** G. Ankley. US EPA, Duluth, MN. Sponsor: *S. Huang.*
#1779	10:00	**Using Changes in the Transcriptome and Promoter Methylation to Explain Benzo[a] pyrene-Mediated Developmental Adverse Outcomes.** *K. Willett*. University of Mississippi, University, MS.
#1780	10:25	**Targeted Metabolomics Tools to Inform Systems Biology and Effects-Directed Analysis: Applications in Zebrafish Larvae and Sentinel Species.** *B. Chandramouli.* AXYS Analytical Services Ltd., Sidney, BC, Canada.
#1781	10:50	**Use of Genomic Tools to Determine Novel Adverse Outcome Pathways for the Assessment of Climate Change on Pesticide Toxicity in Salmonid Species of Fish.** *D. Schlenk*. University of California, Riverside, Riverside, CA.
#1782	11:15	**No Genome? No Problem! Development of a High-Quality Computationally Frugal *De Novo* RNA-Seq Method to Enable Predictive Toxicology in Sentinel Species.** C. Helbing. University of Victoria, Victoria, BC, Canada. Sponsor: *S. Huang*.
	11:40	**Panel Discussion/Q&A.**

Abstract #

Tuesday Morning, March 15
9:30 AM to 12:15 PM
CC Room R02

Workshop Session: Scientific and Regulatory Advances in Safety Evaluation of Heavy Metals in Food

♠ **Recent Advances in Safety Assessment**

♣ **Toxicity of Metals**

Chairperson(s): *Brinda Mahadevan, Regulatory Affairs, Abbott Nutrition, Abbott Laboratories, Columbus, OH; and Mansi Krishan, ILSI North America, Washington, DC.*

Endorser(s):
Association of Scientists of Indian Origin Special Interest Group
Food Safety Specialty Section
Metals Specialty Section

Recent reviews on the risk assessment of contaminants in food, the use of these data in the safety evaluation process, and the safety of the US food supply, in part through its monitoring programs, have led to significant advancements in regulatory and scientific recommendations in the area of food safety. It has also focused on the potential exposure posed by chemicals such as heavy metals, including metals that are essential and may be toxic. In order to prevent potentially unsafe food from reaching the marketplace, regulatory agencies such as the US FDA regulate four major heavy metals (arsenic, lead, cadmium, and mercury) in food. Globally, the Codex Committee on Contaminants in Foods (CCCF) plays a big role in setting safety limits for many of these heavy metals. For example, at the recent CCCF meeting, the maximum levels of lead in the General Standard on Contaminants in food and feed were established. Very few foods are totally free from heavy metals, although they may not be detectable. Therefore, while evaluating food safety from the point of view of heavy metal content, one has to bear in mind that the analysis and detection of heavy metals at the concentration levels commonly found in foods is fairly difficult. However, better analytical and diagnostic procedures have led to the detection of lower levels of heavy metals and how it links to human target organ damage. Most often zero risk/tolerance is expected in risk assessment when confronted with the detection of selected heavy metals in foods/ingredients. In an effort to broaden the understanding of the aforementioned issues pertaining to regulatory toxicology and safety of food, the following key aspects will be addressed in this workshop: 1) Approaches for an efficient method for large-scale surveying of potential toxicities for heavy metal contaminants; 2) global regulatory programs that help with enforcement and setting of safe exposure limits; 3) availability of a heavy metal dietary exposure screening tool for rapid evaluation of potential public health risk; and 4) applicability of such a tool to support efficient food safety risk management practices. (Abstract #1783a)

#1783b	9:35	**Heavy Metals in ToxCast: Relevance to Food Safety.** *K. Houck*. ORD/NCCT, US EPA, Research Triangle Park, NC.
#1784	10:03	**FDA and Codex Activity on Heavy Metals in Food.** L.P. Robin. US FDA, College Park, MD. Sponsor: *B. Mahadevan.*
#1785	10:31	**Introduction to the Metal Dietary Exposure Screening Tool.** *N. Tran*. Exponent Inc., Washington, DC.
#1786	10:59	**Case Studies Demonstrating the Utility of the Metal Dietary Exposure Screening Tool.** *C. Llewellyn*. The Coca-Cola Company, Atlanta, GA.
#1787	11:27	**Risk Assessment of Metals in Food Utilizing Mode of Action Analysis.** *S.M. Cohen*. University of Nebraska Medical Center, Omaha, NE.
	11:55	**Panel Discussion/Q&A.**

Abstract #

Tuesday Morning, March 15
9:30 AM to 12:15 PM
CC Room R04

Platform Session: Zebrafish Models: Advances and Applications in DART

Chairperson(s): *Vicki Sutherland, NIEHS, Research Triangle Park, NC; and Katharine Horzmann, Purdue University, West Lafayette, IN.*

#1788	9:30	**Reproducibility of Results in the Zebrafish Embryotoxicity Assay.** B. Flick, J. Hemmerich, E. Salinas, T. Ramirez, *B. van Ravenzwaay*, and J. Otte. BASF SE, Ludwigshafen am Rhein, Germany.
#1789	9:50	**Comparison of Predictivity for Developmental Toxicity in 3 Zebrafish Strains.** W. Nowland, R. St. Louis, C. Stethem, and D. Stedman. Pfizer Inc., Groton, CT. Sponsor: *G. Cappon.*
#1790	10:10	**Targeted Proteomic Analysis Associated with an *In Vitro* Zebrafish Developmental Toxicology Assay Using LC-MS/MS.** J.C. Olavarria[1], A. Machin[1], K. Apgar[1], C. Fernandez-Metzler[2], and R. King[2]. [1]Lampire Biological Laboratories, Pipersville, PA; and [2]Pharmacadence Analytical Services, Hatfield, PA. Sponsor: *J. Hillegass.*
#1791	10:30	**Microbiota Colonization Status Influences Developmental Toxicity of Bisphenol A in Embryonic Zebrafish.** *T. Tal*[2], D. Betancourt[2], D. Hunter[2], S. Espenschied[1], J. Rawls[1], S. Charla[2], T. Dean[2], and C. Wood[2]. [1]Duke University, Durham, NC; and [2]US EPA, Research Triangle Park, NC.
#1792	10:50	**Embryonic Atrazine Exposure Elicits Alterations in Genes Associated with Neuroendocrine Function in Adult Male Zebrafish.** *S.E. Wirbisky*, M.S. Sepulveda, *G.J. Weber*, A.S. Jannasch, and *J.L. Freeman*. Purdue University, West Lafayette, IN.
#1793	11:10	**Acute Developmental Toxicity of Crude MCHM in Zebrafish (*Danio rerio*) and Observed Neurobehavioral Alterations.** *K.A. Horzmann*, A.J. Whelton, and *J.L. Freeman*. Purdue University, West Lafayette, IN.
#1794	11:40	**Identification of Skeletal Disruptor Compounds Through *In Vivo* Screening in Zebrafish.** S. Thrikawala, R. Sachanandani, J.-k. Gustafsson, and M. Bondesson. University of Houston, Houston, TX. Sponsor: *D. Zalko.*

Tuesday Morning, March 15
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Alternative Models: Fish, Worms, and More

♦ **Molecular Toxicology: Mechanistic Insights and Hazard Assessment**

♠ **Recent Advances in Safety Assessment**

Chairperson(s): *Tetyana Kobets, New York Medical College, Valhala, NY; and Natalia Garcia-Reyero, US Army, Vicksburg, MS.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *9:30 AM–11:00 AM*

#1795 **Poster Board Number P101**
Strain-Specific Changes in Locomotor Behavior in Larval Zebrafish Elicited by Cholinergic Challenge. J.M. Hedge, K.A. Jarema, D.L. Hunter, and S. Padilla. US EPA, Research Triangle Park, NC. Sponsor: *C. McQueen.*

Abstract #

#1796 **Poster Board Number P102**
Defining the Developmental Toxicity of Commonly Used Flame Retardant Chemicals Using Zebrafish. S. Mann[2], *L. Truong*[1], G. Gonnerman[1], and *R. Tanguay*[1]. [1]Oregon State University, Corvallis, OR; and [2]University of California, Davis, Davis, CA. Sponsor: *R. Tanguay.*

#1797 **Poster Board Number P103**
Transcriptome and DNA Methylome Profiling of Early Zebrafish Embryos Exposed to TDCPP. *D.C. Volz*[2], J. Leet[3], D. Altomare[3], A. Chen[1], H. Stapleton[1], Y. Yu[2], and Y. Wang[2]. [1]Duke University, Durham, NC; [2]University of California, Riverside, CA; and [3]University of South Carolina, Columbia, SC.

#1798 **Poster Board Number P104**
Triclosan Is a Mitochondrial Uncoupler in Live Zebrafish. *J. Shim*[2], *L.M. Weatherly*[2], R.H. Luc[2], M.T. Dorman[2], A. Neilson[1], R. Ng[1], C.H. Kim[2], P.J. Millard[2], and J.A. Gosse[2]. [1]Seahorse Bioscience, Billerica, MA; and [2]University of Maine, Orono, ME.

#1799 **Poster Board Number P105**
Characterization of a Pxr-Null Zebrafish. M.C. Salanga[2], A. Kubota[2], B. Lemaire[2], R. Harbeitner[2], D. Gusenleitner[1], S. Monti[1], *J.J. Stegeman*[2], and *J.V. Goldstone*[2]. [1]Boston University, Boston, MA; and [2]Woods Hole Oceanographic Institution, Woods Hole, MA.

#1800 **Poster Board Number P106**
Elucidating Gene by Environment Interactions (GxE) Associated with Interindividual Variation in Response to Chemical Exposure. M. Meisner[1], L. Truong[2], *R.L. Tanguay*[2], and *D.M. Reif*[1]. [1]North Carolina State University, Raleigh, NC; and [2]Oregon State University, Corvallis, OR.

#1801 **Poster Board Number P107**
Genomic Editing with Crispr/Cas9 Confirms Pharmaceutical Target Knockdown Phenotype in Zebrafish. D.B. Stedman, S.W. Kumpf, W.S. Nowland, C.M. Stethem, R. St. Louis, *C.J. Bowman*, and *G.D. Cappon*. Pfizer, Groton, CT.

#1802 **Poster Board Number P108**
Phenotypically-Anchored Transcriptomic Response in Embryonic Zebrafish Developmentally Exposed to the Antimicrobial Agent, Triclosan. *D.E. Haggard*[1], *P.D. Noyes*[1], *F. Tilton*[1], *D. Thomas*[2], *K.M. Waters*[2], and *R.L. Tanguay*[1]. [1]Oregon State University, Corvallis, OR; and [2]Pacific Northwest National Laboratory, Richland, WA.

#1803 **Poster Board Number P109**
Toxicity Screening of a Subset of the ToxCast Phase III Chemical Library Using a Zebrafish Developmental Assay. K. Houck[2], S. Mosher[1], *R. Judson*[2], *J. Wambaugh*[2], *M. Martin*[2], and *S. Padilla*[2]. [1]ORISE, Research Triangle Park, NC; and [2]US EPA, Research Triangle Park, NC.

#1804 **Poster Board Number P110**
A Novel Orthotopic Embryo-Larval Zebrafish Xenograft Assay to Assess New Glioblastoma Therapeutics Efficacy. *L.C. Wehmas*, *R.L. Tanguay*, and J.A. Greenwood. Oregon State University, Corvallis, OR.

Abstract #

#1805 **Poster Board Number P111**
Development of a Larval Zebrafish Neurobehavioral Assay for Evaluating Narcotic-Like Effects of Alcohols and Alcohol Ethoxylate Surfactants. *S.M. Bugel*[1], *H.W. Broening*[2], *L. Truong*[1], J.K. La Du[1], *G. Carr*[2], *J.F. Nash*[2], *G. Daston*[2], and *R.L. Tanguay*[1]. [1]Oregon State University, Corvallis, OR; and [2]The Procter & Gamble Company, Cincinnati, OH. Sponsor: *S. Bugel.*

#1806 **Poster Board Number P112**
Development of Zebrafish Models for Human Acute Organophosphorus Poisoning. N. Garcia-Reyero[10], M. Faria[9], F. Padrós[6], P.J. Babin[8], D. Sebastián[4], J. Cachot[7], E. Prats[2], M. Arick[5], E. Rial[1], A. Knoll-Gellida[8], G. Mathieu[8], F. Le Bihanic[8], B.L. Escalon[10], A. Zorzano[4], A.M. Soares[9], and D. Raldúa[3]. [1]CIB-CSIC, Madrid, Spain; [2]CID-CSIC, Barcelona, Spain; [3]IDÆA-CSIC, Barcelona, Spain; [4]Institute for Research in Biomedicine, Barcelona, Spain; [5]Mississippi State University, Starkville, MS; [6]Universitat Autònoma de Barcelona, Bellaterra, Spain; [7]Université de Bordeaux, Barcelona, Spain; [8]Université de Bordeaux, Talence, France; [9]University of Aveiro, Aveiro, Portugal; and [10]US Army ERDC, Vicksburg, MS. Sponsor: *E. Perkins.*

#1807 **Poster Board Number P113**
Identification of Neuromast Disruptor Compounds Through *In Vivo* Screening in Zebrafish. R. Sachanandani[1], S. Thrikawala[1], J.-k. Gustafsson[1], and M. Bondesson[2]. [1]University of Houston, Department of Biology, and Biochemistry, Center for Nuclear Receptors, and Cell Signaling, Houston, TX; and [2]University of Houston, Department of Pharmacological, and Pharmaceutical Sciences, Houston, TX. Sponsor: *D. Zalko.*

#1808 **Poster Board Number P114**
Optimizing Assays to Identify Adult Zebrafish Behavioral Phenotypes. *A.J. Garcia*, *L. Truong*, *R. Tanguay*, and E. Johnson. Oregon State University, Corvallis, OR.

#1809 **Poster Board Number P115**
Developmental Toxicity from Exposure to Various Forms of Mercury Compounds in the Medaka Fish (*Oryzias latipes*) Embryos. *W. Dong*[1,2], *J. Liu*[4], L. Wei[3], J. Yang[1], and D.E. Hinton[2]. [1]Inner Mongolia Provincial Key Laboratory for Toxicants, and Animal Disease/Inner Mongolia University for the Nationalities, Tongliao, China; [2]Nicholas School of the Environment, Duke University, Durham, NC; [3]Northwest Institute of Plateau Biology, Chinese Academy of Sciences, Xining, China; and [4]Zunyi Medical College, Zunyi, China.

#1810 **Withdrawn.**

#1811 **Poster Board Number P117**
Assessment of *C. elegans In Vivo* ATP Status and Larval Development After Exposure to a Subset of Tox21 Compounds. J.R. Rice[1], P.E. Dunlap[1], M.V. Smith[4], M.F. Bridge[4], *J.H. Freedman*[5], *J. Zhao*[3], *R. Huang*[3], *M.S. Attene-Ramos*[3], *M. Xia*[3], *A. Simeonov*[3], and *W.A. Boyd*[1]. [1]NIEHS, Durham, NC; [2]NIH, Bethesda, MD; [3]NIH, Bethesda, MN; [4]Social & Scientific Systems, Inc., Durham, NC; and [5]University of Louisville, Louisville, KY.

Abstract #

#1812 **Poster Board Number P118**
The BPA Substitute Bisphenol S Induces Distinct Alterations of Germline Function.
Y. Chen, D.Y. Lee, L. Shu, X. Yang, and *P. Allard*. University of California, Los Angeles, CA.

#1813 **Poster Board Number P119**
Developmental and Behavioral Effects Following Chronic Exposure to Tris(1,3-Dichloro-2-Propyl)phosphate (TDCPP) in *Caenorhabditis elegans*. J. South, and *C.A. Dodd*. Fort Valley State University, Fort Valley, GA.

#1814 **Poster Board Number P120**
Transgenerational Effects of Aflatoxin B1 on the Nematode *Caenorhabditis elegans*.
K.T. Sunmola, W. Feng, *L. Tang*, and *J.-S. Wang*. University of Georgia, Athens, GA.

#1815 **Poster Board Number P121**
MicroRNAs As Biomarker of Toxicity Effects of Chemical Dispersed Oil Pollution in *Caenorhabditis elegans*. *Y. Zhang*, and *X. Pan*. East Carolina University, Greenville, NC.

#1816 **Poster Board Number P122**
Influence of Maternal Age on the Effects of Organic Selenium in *Daphnia pulex*. J.E. Roberts[2], T.S. Schwartz[1], and *J.M. Gohlke*[2,3]. [1]Auburn University, Auburn, AL; [2]University of Alabama at Birmingham, Birmingham, AL; and [3]Virginia Polytechnic Institute, and State University, Blacksburg, VA.

#1817 **Poster Board Number P123**
Luteolin Protects Against Methylmercury-Induced Biochemical and Neurobehavioral Deficits in Lobster Cockroach *Nauphoeta cinerea*. *I.A. Adedara*[2,4], D.B. Rosemberg[2], D.O. Souza[3], *E.O. Farombi*[4], *M. Aschner*[1], and J.B. Rocha[2]. [1]Albert Einstein College of Medicine, New York, NY; [2]Universidade Federal de Santa Maria, RS, Brazil, Santa Maria, Brazil; [3]Universidade Federal do Rio Grande do Sul, RS, Brazil, Santa Maria, Brazil; and [4]University of Ibadan, Ibadan, Nigeria.

#1818 **Poster Board Number P124**
Comparison of Novel *In Vitro* Systems for the Detection of Ciguatoxins and Their Use in Risk Extrapolation to Humans. I. Richter[1,2], A.H. Heussner[2], and *D.R. Dietrich*[2]. [1]Cawthron Institute, Nelson, New Zealand; and [2]University of Konstanz, Konstanz, Germany.

#1819 **Poster Board Number P125**
Inhibition of Endocannabinoid Degradation Interferes with Cephalic Regeneration in *Girardia tigrina*. *R. Sneed*. University of the District of Columbia, Washington, DC.

#1820 **Poster Board Number P126**
Genotoxic Potential of Amino- and Nitro-Substituted Mono- and Polycyclic Aromatic Amines in Chicken Egg Genotoxicity Assay (CEGA). *G.M. Williams*[2], *T. Kobets*[2], J.D. Duan[2], K.D. Brunnemann[2], *M.J. Iatropoulos*[2], *E. Vock*[1], and *U. Deschl*[1]. [1]Boehringer Ingelheim Pharma GmbH & Co, Biberach an der Riss, Germany; and [2]New York Medical College, Valhala, NY.

Abstract #

#1821 **Poster Board Number P127**
Structure-Activity Relationship in Genotoxicity of Alkenylbenzenes in Turkey and Chicken Egg Fetal Liver. *T. Kobets*[3], J.D. Duan[3], K.D. Brunnemann[3], *S. Etter*[2], *B. Smith*[2], *E. Vock*[1], *U. Deschl*[1], and *G.M. Williams*[3]. [1]Boehringer Ingelheim Pharma GmbH & Co, Biberach an der Riss, Germany; [2]Firmenich Inc., Plainsboro, NJ; and [3]New York Medical College, Valhala, NY.

Tuesday Morning, March 15
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Stem Cell Biology and Toxicology

Chairperson(s): *Joshua F. Robinson, University of California, San Francisco, San Francisco, CA; and Kameshwar P. Singh, School of Medicine and Dentistry, University of Rochester, Rochester, NY.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *11:15 AM–12:45 PM*

#1822 **Poster Board Number P128**
Role of ATP Binding Cassette Sub-Family Member 2 (ABCG2) in Mouse Embryonic Stem Cell Development. *M. Rosen*[2], *K. Chandler*[1], S. Jeffay[2], S. Charla[2], H. Nichols[2], M. Hoopes[2], and *E.S. Hunter*[2]. [1]NIEHS, Research Triangle Park, NC; and [2]US EPA, Research Triangle Park, NC.

#1823 **Poster Board Number P129**
Early Activation of Aryl Hydrocarbon Receptor Downregulates the Master Cardiac Transcription Factor Nkx2-5 and Upregulates Pacemaker Shox2. *Q. Wang*, *C.-I. Ko*, *Y. Fan*, and *A. Puga*. University of Cincinnati, Cincinnati, OH.

#1824 **Poster Board Number P130**
Development of a New Cell-Based Assay Using Human ES/iPS Cell-Derived Neural Stem Cells for Developmental Neurotoxicity Testing. M. Suga[1], H. Kii[2], T. Uozumi[2], Y. Kiyota[2], H. Yamada[1], and M.K. Furue[1]. [1]National Institutes of Biomedical Innovation, Health, and Nutrition, Osaka, Japan; and [2]Nikon Corporation, Tokyo, Japan. Sponsor: *A. Hirose.*

#1825 **Poster Board Number P131**
Humoral Factor from Rodent Astrocytes Promoted the Synaptic Transmission and Augmented Synchronized Population Bursts in Human Induced Pluripotent Stem Cell-Derived Neurons. N. Miyamoto, and K. Sawada. Eisai Co., LTD, Tsukuba, Japan. Sponsor: *S. Asakura.*

#1826 **Poster Board Number P132**
Pharmacological Responses in Cultured Human iPSC Derived Cortical Neurons Using Multi-Electrode Array. A. Odawara[3,4], H. Katoh[4], N. Matsuda[4], Y. Shi[2], H. Jiko[1], and I. Suzuki[4]. [1]Alpha Med Scientific Co., Ltd, Osaka, Japan; [2]Axol Bioscience Co., Ltd., Cambridge, United Kingdom; [3]Japan Society for the Promotion of Science Research Fellow, Tokyo, Japan; and [4]Tohoku Institute of Technology, Sendai, Miyagi, Japan. Sponsor: *P. McNutt.*

#1827 **Poster Board Number P133**
Toxicity Assessment by Mitochondrial Dynamics in Human iPS Cells. Y. Kanda, S. Yamada, and Y. Sekino. National Institute of Health Sciences, Setagaya-ku, Japan.

Abstract #

#1828 **Poster Board Number P134**
Assessing the Impact of Drug Treatment on Cardiomyocyte Function Through Combined Analysis of Beating, Metabolic Flux and Cellular Oxygenation. C. Carey[1], C. Bertinetti-Lapatki[2], *A. Roth*[2], and J. Hynes[1]. [1]Luxcel Biosciences, Cork, Ireland; and [2]Roche Innovation Center, Basel, Switzerland.

#1829 **Poster Board Number P135**
Impedance and Combined Extracellular Field Potential Recordings of CIPA Reference Compounds on iPS Cardiomyocytes. *C.T. Bot*[2], S. Stölzle-Feix[1], N. Becker[1], U. Thomas[1], K. Juhasz[1], L. Doerr[1], M. Rapedius[1], M. Beckler[1], M. George[1], A. Brüggemann[1], R. Haedo[2], J. Oestreich[2], G. Okeyo[2], J. Costantin[2], and N. Fertig[1]. [1]Nanion Technologies GMBH, Munich, Germany; and [2]Nanion Technologies Inc, Livingston, NJ.

#1830 **Poster Board Number P136**
Improved Functional Maturation of Human Induced Pluripotent Stem Cell (hiPSC) Derived Cardiomyocytes *In Vitro*: Multi-Electrode Array (MEA) Based Electrophysiological Characterization. M.L. Vlaming[2], F. Stevenhagen[2], T. de Korte[2], S.C. den Hartogh[2], K. Langenberg[2], M. Dunska[2], L.G. Tertoolen[1], C.L. Mummery[1], C. Grandela[2], and S.R. Braam[2]. [1]Leiden University Medical Centre, Leiden, Netherlands; and [2]Pluriomics B.V., Leiden, Netherlands. Sponsor: *J. Louisse.*

#1831 **Poster Board Number P137**
Overexpression of CXCR7 Enhances EPC-Mediated Angiogenesis in Diabetic Hind Limb Ischemia Through Activating Nrf2 Signal Pathway. X. Dai[2], J. Zeng[2], X. Yan[2], J. Chen[2], J. Chen[2], *Y. Li*[1], and *Y. Tan*[2]. [1]Department of Surgery, University of Louisville, Louisville, KY; and [2]KCHRI, Department of Pediatrics of the University of Louisville School of Medicine, Louisville, KY.

#1832 **Poster Board Number P138**
A Kit to Efficiently Generate Stem Cell-Derived Hepatocyte-Like Cells for High Throughput Toxicity Screening. J. Aho, A. DeLaForest, and M. Andersen. Bio-Techne, Minneapolis, MN. Sponsor: *J. Azcona-Olivera.*

#1833 **Poster Board Number P139**
An *Ex Vivo* Platform to Evaluate Compound Effects on Erythroid and Megakaryocyte Development. *E. Clarke*, and G. DosSantos. Reachbio LLC, Seattle, WA.

#1834 **Poster Board Number P140**
Cadmium and Arsenic Transformed Human Peripheral Lung Cells Expressing Cd34 Display Stem Cell-Like and Malignant Properties. *N. Makia*, *N. Ngalame*, and *E.J. Tokar*. NTP, NIEHS, Durham, NC.

#1835 **Poster Board Number P141**
Aluminum Maltolate Alters Cell Cycle Progression in Mouse Embryonic Stem Cells. *A. Aliberti*, and *F.A. Barile*. St. John's University, Queens, NY.

#1836 **Poster Board Number P142**
Exposure to Fine Airborne Particulate Matter (PM2.5) Impairs Bone Marrow-Derived Endothelial Progenitor Cell Function. *T. O'Toole*, *W. Abplanalp*, *D. Conklin*, *P. Haberzettl*, and *A. Bhatnagar*. University of Louisville, Louisville, KY.

Abstract #

#1837 **Poster Board Number P143**
Prenatal Cigarette Smoke (CS) Exposure Causes Alteration in Hematopoietic Stem and Progenitor Cells (HSPCs) and Epigenetic Modifications. *K.P. Singh*[2], N. Englert[1], Z. Unnisa[2], J.A. Bennett[2], E. Henry[2], T. Thatcher[2], B. Bennett[1], M.R. Campbell[1], P.J. Sime[2], R.P. Phipps[2], *T.A. Gasiewicz*[2], and D.A. Bell[1]. [1]NIEHS, Research Triangle Park, NC; and [2]School of Medicine, and Dentistry, University of Rochester, Rochester, NY. Sponsor: *K. Singh.*

#1838 **Poster Board Number P144**
Deceleration of Cell Cycle of Primitive Hematopoietic Progenitors (CFU-S13) from Senescent Mice at Steady State Was Reactively Accelerated After 2-Gy Whole-Body Irradiation. *Y. Hirabayashi*[1], I. Tsuboi[2], K. Kurata[4], *J. Kanno*[1], and Y. Kusunoki[3]. [1]National Institute of Health Sciences, Tokyo, Japan; [2]Nihon University School of Medicine, Tokyo, Japan; [3]Radiation Effects Research Foundation, Hiroshima, Japan; and [4]Tokyo Metropolitan Institute of Gerontology, Tokyo, Japan.

#1839 **Poster Board Number P145**
Epigenetic Mechanisms of Early Germ Cells Sensitivity to Environmental Chemicals. *J. Camacho*, Z. Lundby, A. Clark, and *P. Allard*. UCLA, Los Angeles, CA.

Tuesday Morning, March 15
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Developmental Basis of Adult Disease

Developmental Toxicity: Mechanisms and Evaluation

Chairperson(s): *Merle G. Paule, NCTR, US Food and Drug Administration, Jefferson, AR.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *9:30 AM–11:00 AM*

#1840 **Poster Board Number P146**
Long-Lasting Cognitive Deficits in Rhesus Monkeys After Neonatal General Anesthesia Induced by Sevoflurane. *M.G. Paule*[2], M. Li[2], X. Zhang[2], S. Liu[2], *J.P. Hanig*[1], *W. Slikker*[2], and *C. Wang*[2]. [1]Center for Drug Evaluation, and Research, US FDA, Silver Spring, MD; and [2]National Center for Toxicological Research, US FDA, Jefferson, AR.

#1841 **Poster Board Number P147**
Embryonic Iron Deficiency Permanently Alters Neural Structure: A Mechanism to Explain Some of the Long Term Consequences of Early Life Iron Deficiency. *M. Rudy*, and M. Mayer-Proschel. University of Rochester, Rochester, NY.

#1842 **Poster Board Number P148**
Developmental Toxicant Exposure and Early Neuroimmune Susceptibility to Alzheimer's Disease. A. vonderEmbse, Z.W. Hinton, Q. Hu, and *J.C. DeWitt*. East Carolina University Brody School of Medicine, Greenville, NC. Sponsor: *J. DeWitt.*

#1843 **Poster Board Number P149**
Early-Life Toxicant Exposure and Markers of Neuropathology in a Model of Alzheimer's Disease. Q. Hu, C. Boles, A. vonderEmbse, and *J. DeWitt*. East Carolina University, Greenville, NC.

Abstract #

#1844 **Poster Board Number P150**
Investigating the Role of the Epicardium in Heart Development: Insights from the *EHC* Mouse. L. Ridge[2], G. Tenin[2], E. Barnes[1], J. Wright[1], and K. Hentges[2]. [1]Jealott's Hill International Research Centre, Bracknell, United Kingdom; and [2]University of Manchester, Manchester, United Kingdom. Sponsor: *S. Plummer.*

#1845 **Poster Board Number P151**
DNA Methyltransferase 3a Is a Possible Mediator of *In Utero* Caffeine Effects on Adult Cardiac Function. *X. Fang*, R. Poulsen, J. Wang-Hu, N.S. Calvo, C.S. Simmons, S.A. Rivkees, and C.C. Wendler. University of Florida, Gainesville, FL.

#1846 **Poster Board Number P152**
Maternal PM2.5 Gestational Exposure Alters Fetal Size, Cardiac Function, Placental Morphology and Postnatal Growth in Mice. *K. Kaur*[2], C. Phoon[1], M. Veras[3], *J. Blum*[2], *S. Doherty-Lyons*[2], *P. Tijerina*[2], *S. Attreed*[2], *L.-C. Chen*[2], and *J. Zelikoff*[2]. [1]NYU, New York, NY; [2]NYU, Tuxedo, NY; and [3]U of São Paulo, São Paulo, Brazil.

#1847 **Poster Board Number P153**
Apparent Sex-Differences and Immune Alterations Due to Prenatal and Postnatal Exposure to Concentrated Ambient Particulate Matter. *P.B. Tijerina*, *J.L. Blum*, *D. Lauterstein*, G. Grunig, *L.-C. Chen*, and *J.T. Zelikoff*. NYU School of Medicine, Tuxedo, NY.

#1848 **Poster Board Number P154**
Aryl Hydrocarbon Receptor Dependent Mitochondrial Toxicity of PAHs. N. Jayasundara[1], J.S. Kozal[1], A.J. Bone[1], C.D. Lindberg[1], *J. Bailey*[1], S. Burwell[3], *E.D. Levin*[1,2], *J.N. Meyer*[1], and *R.T. Di Giulio*[1]. [1]Duke University, Durham, NC; [2]Duke University Medical Center, Durham, NC; and [3]McGill University, Montréal, QC, Canada.

#1849 **Poster Board Number P155**
Defining the Long-Term Behavioral and Physiological Effects of Developmental Exposure to Oxygenated Polycyclic Aromatic Hydrocarbons (OPAHs) in Zebrafish. *A.L. Knecht*, *L. Truong*, S. Proffitt, E. Johnson, and *R.L. Tanguay*. Oregon State University, Corvallis, OR.

#1850 **Poster Board Number P156**
Perinatal Exposure to the Flame Retardant Triphenyl Phosphate Accelerates Type 2 Diabetes and Causes Obesity in UCD-T2DM Rats. A.J. Green[1], J.L. Graham[2], G. Cano-Sancho[2], E.A. Gonzalez[2], P.J. Havel[2], and *M.A. La Merrill*[2]. [1]North Carolina State University, Raleigh, NC; and [2]University of California, Davis, CA.

#1851 **Poster Board Number P157**
Obstetric Factors Affect Immune Responses at Teenage in Children Born by C-Section. M.-V. Martikainen[3], L. Keski-Nisula[1], A. Karvonen[2], J. Pekkanen[4], M.-R. Hirvonen[3], and M. Roponen[3]. [1]Kuopio University Hospital, Kuopio, Finland; [2]National Institute for Health, and Welfare, Kuopio, Finland; [3]University of Eastern Finland, Kuopio, Finland; and [4]University of Helsinki, Helsinki, Finland. Sponsor: *M. Viluksela.*

#1852 **Poster Board Number P158**
Fatty Liver Increases Gastro-Intestinal Toxicity by Modulating TLR-4 Trafficking into Lipid Rafts. *V. Chandrashekaran*, *S. Das*, *D. Dattaroy*, F. Alhasson, M.M.O. Pena, J. Carson, F. Berger, and *S. Chatterjee*. University of South Carolina, Columbia, SC. Sponsor: *S. Chatterjee.*

Abstract #

#1853 **Poster Board Number P159**
Effects of *Ipomoea carnea* in Placental Tissue. Evaluation in Rodents and Ruminants. A.T. Gotardo[1], L.L. Lippi[1], K.B. Violin[2], and S.L. Górniak[1]. [1]College of Veterinary São Paulo University, Pirassununga, Brazil; and [2]IPEN-University of São Paulo, São Paulo, Brazil. Sponsor: *K. Welsh.*

#1854 **Poster Board Number P160**
Air Pollution Induced Placental Epigenetic Alterations in Early Life: A Candidate miRNA Approach. K. Vrijens[4], M. Tsamou[4], N. Madhloum[4], W. Lefebvre[3], C. Vanpoucke[1], W. Gyselaers[2,4], and T.S. Nawrot[4,5]. [1]Belgian Interregional Environment Agency, Brussels, Belgium; [2]East Limburg Hospital, Genk, Belgium; [3]Flemish Institute for Technological Research, Mol, Belgium; [4]Hasselt University, Diepenbeek, Belgium; and [5]Leuven University, Leuven, Belgium. Sponsor: *H. Roels.*

#1855 **Poster Board Number P161**
Prenatal Exposure to Di-(2-Ethylhexyl) Phthalate Affects Ovarian Follicle Numbers and Sex Steroid Hormones in the F1, F2, and F3 Generations of Mice. *S. Rattan*, E. Brehm, S. Niermann, and *J.A. Flaws*. University of Illinois at Urbana Champaign, Champaign, IL.

#1856 **Poster Board Number P162**
Low Dose Tetrabromobisphenol A (TBBPA) Alters Mammary and Uterine Development Following Prenatal Exposure in Wistar Rats. S. E.A. Gillera[1], *A.J. Filgo*[1], *D.K. Tucker*[1], *J.A. Flaws*[3], B. Horman[2], *H.B. Patisaul*[2], and *S.E. Fenton*[1]. [1]National Toxicology Program Laboratory, Research Triangle Park, NC; [2]NC State University, Raleigh, NC; and [3]University of Illinois, Urbana, IL.

#1857 **Poster Board Number P163**
Enhanced Spontaneous Mammary Tumor Susceptibility Induced by BPA Alternatives. *D.K. Tucker*[3], S.A. Bouknight[1], and *S.E. Fenton*[2]. [1]Charles River Laboratories, Inc., Durham, NC; [2]NIEHS, Research Triangle Park, NC; and [3]UNC at Chapel Hill, Chapel Hill, NC.

#1858 **Poster Board Number P164**
Prenatal Exposure to Bisphenol A and High Fat Diets Alters Lifecourse Metabolic Outcomes. *E.H. Marchlewicz*, B.N. Sanchez, K.E. Peterson, and *D.C. Dolinoy*. University of Michigan, Ann Arbor, MI.

#1859 **Poster Board Number P165**
Prenatal Exposure to Bisphenol A and Hyperactivity: Implications for Attention Deficit Hyperactivity Disorder, a Systematic Review and Meta-Analysis. J.R. Rochester, A.L. Bolden, and C.F. Kwiatkowski. The Endocrine Disruption Exchange (TEDX), Paonia, CO. Sponsor: *K. Howdeshell.*

#1860 **Poster Board Number P166**
Acute Exposure of Triclosan Induced Changes in Phase I and Phase II Enzyme Gene Expressions in Zebrafish. J. Yang, Z. Zhou, and *K.-M. Chan*. The Chinese University of Hong Kong, Shatin, Hong Kong.

#1861 **Poster Board Number P167**
Acute Exposure of Lead Induced Changes in Hepatic Metabolizing Enzyme Gene Expressions in Zebrafish. J. Yang, C.-L. Leung, and *K.-M. Chan*. The Chinese University of Hong Kong, Shatin, Hong Kong.

Abstract #

Tuesday Morning, March 15
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Endocrine Toxicology

Chairperson(s): *Martin Ronis, Louisiana State University Health Sciences Center, New Orleans, LA.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *11:15 AM–12:45 PM*

#1862 **Poster Board Number P168**
Weight-of-Evidence (WoE) Assessment of the Potential Effects of Perfluorohexanoic Acid on Endocrine Systems. R. Jung[1], N. Wang[2], I. Gaou[2], W. Buxton[4], S. Seiji[3], and *A. Lynch*[5]. [1]Archroma, Reinach, Switzerland; [2]Arkema, Paris, France; [3]Asahi Glass Company, Ltd, Osaka, Japan; [4]Chemours Company, Wilmington, DE; and [5]FluoroCouncil, Washington, DC. Sponsor: *A. Lynch.*

#1863 **Poster Board Number P169**
Estrogen Receptor Beta Mediates Hepatotoxicity Induced by Perfluorooctane Sulfonates (PFOS) in Mouse Liver. C. Xu[1], Q. Liu[1], Z.-Y. Jiang[2], and A. Gu[1]. [1]Nanjing Medical University, Nanjing, China; and [2]Ruijin Hospital, Shanghai JiaoTong University School of Medicine, Shanghai, China. Sponsor: *A. Gu.*

#1864 **Poster Board Number P170**
Weight of Evidence Evaluation of Potential Endocrine Disruption by 1,3-Diphenylguanidine Based on Results of Tier 1 Endocrine Disruption Screening Program Assays. *M.L. Kreider*, and J.M. Panko. Cardno ChemRisk, Pittsburgh, PA.

#1865 **Poster Board Number P171**
Development of a Robust QSAR Model for Prediction of Estrogen Receptor Binding Using Large Data Sets. H.W. Ng[1], H. Ye[1], H. Luo[1,2], S.D. Sakkiah[1], W. Ge[1], *W. Tong*[1], and H. Hong[1]. [1]NCTR/US FDA, Jefferson, AR; and [2]University of Arkansas at Little Rock/University of Arkansas for Medical Sciences Bioinformatics, Little Rock, AR.

#1866 **Poster Board Number P172**
Is There an Added Value to the Incorporation of a Metabolizing System in Biodetection Assays for Endocrine Active Substances? J. Mollergues[2], B. van Vugt-Lussenburg[1], M. Marin-Kuan[2], *B. Schilter*[2], and *K.C. Fussell*[2]. [1]BioDetection Systems, Amsterdam, Netherlands; and [2]Nestec Inc., Lausanne 26, Switzerland.

#1867 **Poster Board Number P173**
Developing an *In Vitro* Assay to Measure Key Signaling Events in Estrogen-Initiated Pathways and Guide Risk Assessment. *M.M. Miller*, D.L. Doheny, *P. Balbuena*, S.M. Ross, *C. Deisenroth*, and *R.A. Clewell*. The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#1868 **Poster Board Number P174**
Effect of Bisphenol A on the Fetal Production of Pituitary and Testicular Hormones and Its Mechanism. T. Takeda[2], Y. Kariyazono[2], M. Hitomi[2], Y. Hattori[1,2], S. Narimatsu[3], Y. Ishii[2], and *H. Yamada*[2]. [1]Japan Society for the Promotion, and Science, Tokyo, Japan; [2]Kyushu University, Fukuoka, Japan; and [3]Okayama University, Okayama, Japan.

Abstract #

#1869 **Poster Board Number P175**
Testing the Waters to Account for Metabolism in the T47D-kbluc Estrogen Receptor Transcriptional Activation Assay. *B.R. Hannas*, L. Kan, *K. Johnson*, L. Luna, *M. LeBaron*, and *R. Rasoulpour*. The Dow Chemical Company, Midland, MI.

#1870 **Poster Board Number P176**
Enhancement of the Endocrine Disruptor Knowledge Base for Assessing Endocrine Activity of Untested Chemicals. H. Hong, H.W. Ng, S.D. Sakkiah, W. Ge, H. Ye, H. Luo, G. Zhou, H. Fang, R. Perkins, and *W. Tong*. US FDA, Jefferson, AR.

#1871 **Poster Board Number P177**
Isolation, Culture and Characterization of Human Uterine Cells for Comparison to Current Estrogen Screening Assays. *P. Balbuena*, *S.M. Ross*, S. Rowley, *M. Miller*, B. Foley, and *R.A. Clewell*. The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#1872 **Poster Board Number P178**
Investigating the Role of Bisphenol-A in Benign Prostatic Hyperplasia. *J. Wynder*[3], T. Nicholson[3], J. Vellky[3], T. Liu[3], *C. Jeong*[3], F.V. Saal[1], R. Wood[2], and *W. Ricke*[3]. [1]University of Missouri-Columbia, Columbia, MO; [2]University of Rochester School of Medicine & Dentistry, Rochester, NY; and [3]University of Wisconsin-Madison, Madison, WI.

#1873 **Poster Board Number P179**
Effect of Subchronic Treatment with Genistein on Testicular Cytochrome P450 (CYP) Enzyme Expression in Adult Male Rats. H. Chung, W. Vogl, and *S.M. Bandiera*. University of British Columbia, Vancouver, BC, Canada.

#1874 **Poster Board Number P180**
Uterine Gene Expression and Response to 7,12-Dimethylbenz(a)anthracene (DMBA) Differ in Ovariectomized Rats Fed Soy Protein Isolate or Treated with 17 Beta Estradiol. *M.J. Ronis*[1], M. Blackburn[2], H. Gomez-Acevedo[2], *K. Shankar*[2], *R. Singhal*[2], M.A. Cleves[2], and *T.M. Badger*[2]. [1]Louisiana State University Health Sciences Center, New Orleans, LA; and [2]University of Arkansas for Medical Sciences, Little Rock, AR.

#1875 **Poster Board Number P181**
Characterization of Xenobiotic Defense Mechanisms of the Pancreatic Beta Cell. C.M. Smith[2], E.M. Bobczynski[2], V.R. Borges[2], T.M. Bull[2], E. Heart[1], and *J.P. Gray*[2]. [1]U. South Florida, Tampa, FL; and [2]US Coast Guard Academy, New London, CT.

#1876 **Poster Board Number P182**
Evaluation of Perfluorooctane Sulfonate (PFOS) and 2,2′,4,4′,5-Pentabromodiphenyl Ether (BDE-99) Stimulation of Insulin Secretion from INS-1 832/13 Pancreatic Beta Cells. E. Heart[2], *J.P. Gray*[3], and *A.L. Slitt*[1]. [1]U. of Rhode Island, Kingston, RI; [2]U. of South Florida, Tampa, FL; and [3]US Coast Guard Academy, New London, CT.

#1877 **Poster Board Number P183**
The Effect of DDE Exposure on Free Fatty Acid Regulation of Liver Cell and Beta Cell Function and Its Association with Type 2 Diabetes. *A.B. Ward*, *M.B. Dail*, and *J.E. Chambers*. Mississippi State University, Mississippi State, MS.

Abstract #

#1879 **Poster Board Number P184**
Effects of Zinc Status on Obesity-Induced Metabolic Disorder, and Cardiac Hypertrophy in Young Mice. S. Wang, M. Luo, and *L. Cai*. Kosair Children's Hospital Research Institute, University of Louisville, Louisville, KY. Sponsor: *L. Cai.*

#1880 **Poster Board Number P185**
Toxicity Assessment of Sprague Dawley Offspring Exposed to 2-Aminoanthracene *In Utero*. R. Toure, and *W.E. Gato*. Georgia Southern University, Statesboro, GA.

#1881 **Poster Board Number P186**
ToxCast Outcomes for Biphenyl Indicate Concordance with Recognized *In Vivo* Biological Effects. *J. Klapacz*[1], *S. Green*[2], *D.M. Wilson*[1], and A. Parks[1]. [1]The Dow Chemical Company, Midland, MI; and [2]The Eastman Chemical Company, Kingsport, TN.

#1882 **Poster Board Number P187**
Validation of High-Throughput Screening Data and Novel Mechanistic Insights into VDR-Xenobiotic Interactions by Orthogonal Assays. *D. Mahapatra*[2], *J.A. Franzosa*[1], *K.A. Houck*[1], and *S.W. Kullman*[2]. [1]US EPA, Research Triangle Park, NC; and [2]NCSU, Raleigh, NC.

#1883 **Poster Board Number P188**
Tributyltin Engages the RXR And LXR Nuclear Receptor Pathways to Modify Osteoblast/ Osteoclast Crosstalk and Enhance Bone Deposition in a Sex-Dependent Manner. *J. Watt*[3], A. Baker[2], B. Meeks[2], E. Morgan[1], L. Gerstenfeld[2], and *J. Schlezinger*[3]. [1]Boston University College of Arts, and Sciences, Boston, MA; [2]Boston University School of Medicine, Boston, MA; and [3]Boston University School of Public Health, Boston, MA.

#1884 **Poster Board Number P189**
Neurodevelopmental Endpoints Modulated by Thyroid Hormone in Primary Rat Neuron-Glia Co-Cultures. K.A. Hayakawa, *K.M. Walter*, and *P.J. Lein*. University of California, Davis, Davis, CA.

#1885 **Poster Board Number P190**
Effects of 2,2′,4,4′-Tetrabromodiphenyl ether (BDE 47) on Thyroxine Metabolism and Transport in Primary Rat and Human Hepatocytes. *V. Richardson*[2], and C. Mazur[1]. [1]US EPA, Athens, GA; and [2]US EPA, Research Triangle Park, NC.

#1886 **Poster Board Number P191**
Identification of Chemical Features Linked to Thyroperoxidase Inhibition. *S.O. Simmons*[3], E.D. Watt[3], *K. Paul-Friedman*[1], *K.A. Houck*[3], *R.S. Judson*[3], *M.W. Hornung*[2], and *K.M. Crofton*[3]. [1]Bayer CorpScience LP, Morrisville, NC; [2]US EPA, Duluth, MN; and [3]US EPA, Research Triangle Park, NC.

#1887 **Poster Board Number P192**
Potential Use of a Sodium/Iodide Symporter (NIS) Inhibition Assay for Thyroid Screening in FRTL Cells. A.R. Buckalew, A.S. Murr, D.R. Hallinger, *T.E. Stoker*, and *S.C. Laws*. National Health, and Environmental Effects Research Laboratory, US Environmental Protection Agency, Research Triangle Park, NC.

Abstract #

#1888 **Poster Board Number P193**
Development of an *In Vitro* Radioactive Iodide Uptake Assay (RAIU) with Human NIS-Expressing HEK293T-EPA Cell Line. A.S. Murr, D.R. Hallinger, A.R. Buckalew, *S.O. Simmons*, *T.E. Stoker*, and *S.C. Laws*. US Environmental Protection Agency, Research Triangle Park, NC.

#1889 **Poster Board Number P194**
Use of an *In Vitro* Radioactive Iodide Uptake (RAIU) Assay for High-Throughput Screening of ToxCast Chemicals at US EPA. D.R. Hallinger, A.S. Murr, A.R. Buckalew, *S.O. Simmons*, *S.C. Laws*, and *T.E. Stoker*. US Environmental Protection Agency, Research Triangle Park, NC.

#1890 **Poster Board Number P195**
Establishment of Sensitive, Quantitative and Real-Time Cellular Assays for Detection of Modulators for Human Thyroid Hormone Receptor. *C. Jin*, Y. Abassi, B. Choi, X. Wang, and X. Xu. ACEA Biosciences, Inc, San Diego, CA.

#1891 **Poster Board Number P196**
Integration of Relevant Carcinogenicity and Endocrine Data in a Systemic Approach Establishes the Mode of Action for Pronamide Induced Thyroid Tumors. J. LaRocca[1], *S. Marty*[2], *S. Papineni*[1], *M.J. LeBaron*[2], and *R.J. Rasoulpour*[1]. [1]Dow AgroSciences, Indianapolis, IN; and [2]The Dow Chemical Company, Midland, MI.

#1892 **Poster Board Number P197**
Identification of Molecular, Cellular and Behavioral Endpoints Associated with Developmental Hyperthyroidism and Hypothyroidism in Larval Zebrafish. *K.M. Walter*, *G.W. Miller*, *K. Hayakawa*, X. Chen, *B. Puschner*, and *P.J. Lein*. University of California Davis, Davis, CA.

#1893 **Poster Board Number P198**
An F1-Extended Two Generation Reproductive Toxicity Study to Evaluate the Dietary Effects of Carbendazim on Thyroid Glands and its Hormones in Wistar Rats. *S.K. Bommegowda*[4], *R.G. Gilmore*[4], R. Read[4], *J.C. Seely*[1], *A. Krygsman*[3], *J.J. Wrubel*[2], and *D.S. Dandekar*[4]. [1]EPL-Inc., Research Triangle Park, NC; [2]Nisso America Inc., New York, NY; [3]Troy Corporation, Florham Park, NJ; and [4]Xenometrics LLC, Stilwell, KS.

#1893a **Poster Board Number P199**
Estrogen Activity Determinations of Ethanol Extracts of Seven Hair Relaxers in Breast Cancer Cell Bioassays. T. Mitchell[3], G. Guirard[3], S. Cureaux[3], P. Ma[3], L. Stiel[2], S. Montgomery[1], and T. Wiese[3]. [1]Loma Linda University, Loma Linda, CA; [2]Loma Linda University, San Bernardino, CA; and [3]Xavier University of Louisiana, New Orleans, LA. Sponsor: *K. Coleman.*

Abstract #

Tuesday Morning, March 15
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Inflammation in Disease

Chairperson(s): *Alessandro Venosa, Rutgers University, Piscataway, NJ.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *9:30 AM–11:00 AM*

#1894 **Poster Board Number P201**
Immune Antibody and Cytokine Profiles Differentiate Behavior Phenotypes. *D.A. Lawrence*[2], T.K. Mondal[2], A. Mendoza[2], and L. Kearsing[1]. [1]Center for Disability Services, Albany, NY; and [2]Wadsworth Center/NYS Dept Health, Albany, NY.

#1895 **Poster Board Number P202**
***In Utero* Exposure to 2-Aminoanthracene and Type-1 Diabetes.** C.A. Mays, D.A. Hunter, and *W.E. Gato*. Georgia Southern University, Statesboro, GA.

#1896 **Poster Board Number P203**
Effect of Aspirin on Glucose Tolerance and Pancreatic Endocrine Function in Type 2 Diabetic Rats. *H. Raza*, L. Amiri, A. John, J. Shafarin, E. Adeghate, and F.C. Howarth. CMHS, UAE University, Al Ain, United Arab Emirates.

#1897 **Poster Board Number P204**
Genistein Modulation of Type 1 Diabetes (T1D) in Non-Obese Diabetic (NOD) Mice Following Developmental or Adult Exposure. G. Huang, and *T.L. Guo*. UGA, Athens, GA.

#1898 **Poster Board Number P205**
Blockade of CB1 Cannabinoid Receptors Is Associated with Growth of the Gut Bacterium Akkermansia Muciniphila and Attenuation of Diet-Induced Obesity. *P. Mehrpouya-Bahrami*[1], *P. Nagarkatti*[1], and *M. Nagarkatti*[2]. [1]School of Medicine, University of South Carolina, Columbia, SC; and [2]School of Medicine, University of South Carolina,and WJB Dorn VA Medical Center, Columbia, SC.

#1899 **Poster Board Number P206**
Alteration of the Gut Microbiota with Oral Broad-Spectrum Antibiotics Alleviates the Severity of Autoimmune Uveitis Through Modulation of Effector T Cell Subsets. *Y.K. Nakamura*, C. Metea, M. Asquith, H. Gruner, Y. Nakamura, C. Moscibrocki, J.T. Rosenbaum, and P. Lin. Oregon Health, and Science University, Portland, OR.

#1900 **Poster Board Number P207**
Indole-3-Carbinol Ameliorates Murine Colitis Symptoms Through Alterations in Gut Microbial Composition by Restoring Firmicute-Associated Species and Decreasing Colitis-Associated Bacteriodetes Species. P.B. Busbee[2], *M. Nagarkatti*[2], and *P. Nagarkatti*[1]. [1]University of South Carolina, Columbia, SC; and [2]University of South Carolina School of Medicine, Columbia, SC.

#1901 **Poster Board Number P208**
Fibroblast Growth Factor 21 Deficiency Attenuates DSS-Induced Acute Colitis through Activation of Intestinal Epithelial Cell Stat3-Mediated Pathway. *L. Liu*[1,2], *C. Zhao*[2], G. Dryden[2], C. McClain[2], and W. Feng[2]. [1]Jilin Agricultural Science, and Technology University, Jilin, China; and [2]University of Louisville, Louisville, KY.

Abstract #

#1902 **Poster Board Number P209**
CYP2E1-Mediated Oxidative Stress Regulates MyD88 Expression and Function in Toxin Potentiation of Nonalcoholic Steatohepatitis. *S. Das*[3], *D. Dattaroy*[3], *F. Alhasson*[3], *V. Chandrashekaran*[3], *R. Seth*[3], G. Michelotti[2], A.M. Diehl[1], *M. Nagarkatti*[3], *P. Nagarkatti*[3], and *S. Chatterjee*[3]. [1]Duke University, Durham, NC; [2]Metabolon, Inc., Durham, NC; and [3]University of South Carolina, Columbia, SC.

#1903 **Poster Board Number P210**
Differing Pulmonary Immune Responses Following Exposure to Thoracic Radiation in Fibrosis Sensitive and Resistant Mice. *A.M. Groves*, C.J. Johnston, R.S. Misra, *T.A. Beach*, J.P. Williams, and *J.N. Finkelstein*. University of Rochester, Rochester, NY.

#1904 **Poster Board Number P211**
Investigating the Role of B Cells in the Pathogenesis of Hydrocarbon Oil-Induced Diffuse Pulmonary Hemorrhage. *P. Prasad*[1,2], A. Chung[2], I. Valera[2], R. Sato[2], M.C. Fishbein[1], and R.R. Singh[2]. [1]UCLA, Los Angeles, CA; and [2]University of California Los Angeles, Los Angeles, CA.

#1905 **Poster Board Number P212**
Immune Responses in Co-Culture of Human Lung Cells (BEAS 2B) and Human PBMC's After Puerto Rican Airborne PM10 Exposure. *N.E. Crespo*. University of Puerto Rico, San Juan, PR.

#1906 **Poster Board Number P213**
Inhalation of Fine Particles from Mexico City Increases Exacerbations in an Asthma Model. *C.I. Falcon-Rodriguez*[3,4], A. Osornio-Vargas[5], *A. De Vizcaya-Ruiz*[2], I. Rosas-Perez[1], and P. Segura-Medina[3]. [1]Centro de Ciencias de la Atmósfera, Mexico City, Mexico; [2]CINVESTAV, Mexico City, Mexico; [3]INER, Mexico City, Mexico; [4]UNAM, Mexico City, Mexico; and [5]University of Alberta, Edmonton, AB, Canada. Sponsor: *A. de Vizcaya-Ruiz.*

#1907 **Poster Board Number P214**
The Effects of TNFα on Gap Junctions in Lung Epithelial Cells Exposed to Polycyclic Aromatic Hydrocarbons. D. Romo, *R.S. Osgood*, K.-N. Xiong, J. Xiong, and *A.K. Bauer*. University of Colorado Denver, Aurora, CO.

#1908 **Poster Board Number P215**
Cigarette Smoke Mediated Regulation of Epigenetic Signatures on NF-κB Proximal Promoter Region in Murine Macrophages and Human Monocytes. *G. Kaur*[2], A. Panday[1], A. Grove[1], and *S. Batra*[2]. [1]Louisiana State University, Baton Rouge, LA; and [2]Southern University, and A&M College, Baton Rouge, LA. Sponsor: *S. Batra.*

#1909 **Poster Board Number P216**
Salicylates Improve Hyperoxia-Compromised Phagocytic Function in Macrophages Through Inhibition of HMGB1 Release. *M. Wang*[2], and *L.L. Mantell*[1,2]. [1]Feinstein Institute for Medical Research, North Shore-LIJ Health System, Manhasset, NY; and [2]St John's University, Queens, NY.

#1910 **Poster Board Number P217**
Regulation of Macrophage Accumulation and Activation in the Lung Following Ozone Exposure by Farnesoid X Receptor. *M. Francis*, *G. Guo*, R. Sun, J. Cervelli, H. Choi, B. Kong, *J.D. Laskin*, and *D.L. Laskin*. Rutgers University, Piscataway, NJ.

Abstract #

#1911 **Poster Board Number P218**
Resolvin D1 Dampens Pulmonary Inflammation and Promotes Nontypeable Haemophilus Influenzae Clearance. *A. Croasdell*, S. Lacy, T.H. Thatcher, P.J. Sime, and *R.P. Phipps*. University of Rochester, Rochester, NY.

#1912 **Poster Board Number P219**
CF Airway Epithelia Contribute to the Compromised Innate Immunity Against Bacterial Infection. *X. Yang*[2], *V. Patel*[2], *M. Wang*[2], D.D. Thomas[3], and *L.L. Mantell*[1,2]. [1]Center for Inflammation, and Immunology, The Feinstein Institute for Medical Research, North Shore-LIJ Health Science, Manhasset, NY; [2]St. John's University, Jamaica, NY; and [3]University of Illinois at Chicago, Chicago, IL.

#1913 **Poster Board Number P220**
DHA Suppresses Macrophage Inflammatory Responses by Attenuating Notch Signaling Pathways. *L.K. Rogers*[1,2], K.M. Heyob[2], and M. Ali[2]. [1]The Ohio State University, Columbus, OH; and [2]The Research Institute at Nationwide Children's Hospital, Columbus, OH.

#1914 **Poster Board Number P221**
Bisphenol A and Phthalate May Promote Endometriosis via affecting Inflammatory Phenotype of Peritoneal Macrophages. *Q. Li*, M.K. Bagchi, and I.C. Bagchi. University of Illinois at Urbana-Champaign, Urbana, IL.

#1915 **Poster Board Number P222**
Role of Lipids in Macrophage Foam Cell Formation During Nitrogen Mustard-Induced Lung Fibrosis. *A. Venosa*, *A.J. Gow*, *J.D. Laskin*, and *D.L. Laskin*. Rutgers University, Piscataway, NJ.

#1916 **Poster Board Number P223**
Ascorbic Acid Attenuates Hyperoxia-Compromised Host Defense Against Pulmonary Bacterial Infection. *V.S. Patel*[2], V. Sampat[2], M.G. Espey[1], *R. Sitapara*[2], H. Wang[3], X. Yang[2], R. Kundu[2], C.R. Ashby[2], D.D. Thomas[4], and *L.L. Mantell*[2,3]. [1]National Cancer Institute, Bethesda, MD; [2]St. John's University, Jamaica, NY; [3]The Feinstein Institute for Medical Research, North Shore-LIJ Health Science, Manhasset, NY; and [4]University of Illinois at Chicago, Chicago, IL.

#1917 **Poster Board Number P224**
Novel Para-Phenyl Substituted Diindolylmethanes Inhibits Inflammatory Response in Murine Synovial Fibroblasts. *M.F. Afzali*[1], *S.H. Safe*[2], *W.H. Hanneman*[1], and *M.E. Legare*[1]. [1]Colorado State University, Fort Collins, CO; and [2]Texas A&M Health Science Center, Houston, TX, and Department of Veterinary Physiology, and Pharmacology, Texas A&M University, College Station, TX.

Abstract #

Tuesday Morning, March 15
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Inflammation: Methods and Mechanisms

Chairperson(s): *Zhihui Xiao, St. Johns University, Fresh Meadows, NY; and Pius Joseph, NIOSH, Morgantown, WV.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *11:15 AM–12:45 PM*

#1918 **Poster Board Number P225**
Blocking Immune Tolerance Unmasks the Potential for a Drug to Cause Idiosyncratic Liver Injury. A. Mak, and *J. Uetrecht*. University of Toronto, Toronto, ON, Canada.

#1919 **Poster Board Number P226**
Metformin Effect on Regulation of CXCL8 Production. Z. Xiao, W. Wu, I. Ban, and *V. Poltoratsky*. St. Johns University, Jamaica, NY.

#1920 **Poster Board Number P227**
Trpv4 Modulates Cyp2e1-Mediated Oxidative Stress Toxicity and Kupffer Cell Activation in Nonalcoholic Steatohepatitis. *R.K. Seth*[4], *S. Das*[4], *D. Dattaroy*[4], F. Alhasson[4], *G.A. Michelotti*[2], *M. Nagarkatti*[5], *P. Nagarkatti*[5], *P.D. Bell*[3], *W.B. Liedtke*[1], *A.M. Diehl*[1], and *S. Chatterjee*[4]. [1]Duke University, Durham, NC; [2]Metabolon, Inc., Durham, NC; [3]University of Alabama, Birmingham, AL; [4]University of South Carolina, Columbia, SC; and [5]University of South Carolina SOM, Columbia, SC.

#1921 **Poster Board Number P228**
Comparison of Early vs Late Pulmonary Toxicity in Crystalline Silica Exposed Rats. *P. Joseph*, *J. Roberts*, T.-h.B. Chen, W. McKinney, M. Orandle, and C. Umbright. NIOSH, Morgantown, WV.

#1922 **Poster Board Number P229**
Understanding Spatiotemporal Signaling Associated with Inflammation Caused by a Physical Stressor. *J. Boyd*[2], *A. Han*[2], E. Fabyanic[2], M. Prediger[2], and H. Currie[1]. [1]California University of Pennsylvania, California, PA; and [2]West Virginia University, Morgantown, WV.

#1923 **Poster Board Number P230**
Suppresion of Gastric Inflammatatory Markers and Mitochondrial Apoptotic Pathway by Methanol Extract of *Chasmanthera dependens* Stem in Ethanol-Induced Gastric Ulcer Healing. A.S. Tijani, *O.E. Farombi*, and S.B. Olaleye. University of Ibadan, Ibadan, Nigeria.

#1924 **Poster Board Number P231**
Classical and Alternative Activation of Cyanobacteria *Scytonema javanicum* and *Scytonema ocellatum* Lipopolysaccharide-Treated Rat Brain Microglia. L.C. Klemm[1], M.L. Hall[1], P. Williams[2], and *A.M. Mayer*[1]. [1]Midwestern University, Downers Grove, IL; and [2]University of Hawaii at Manoa, Honolulu, HI.

#1925 **Poster Board Number P232**
Utility of the Influenza Host Resistance Model for Clinical Risk Assessment. *J. Birkebak*[2], *R. Mikkelsen*[1], *F. Burleson*[1], and *L.A. Burns-Naas*[2]. [1]Burleson Research Technologies, Inc, Morrisville, NC; and [2]Gilead Sciences Inc, Foster city, CA.

Abstract #

#1926 **Poster Board Number P233**
TDAR: A Study Comparing Different Antigen (KLH) Supplier in Rats. C. Dumont, M.-H. Côté, C. Parente, and *M.-S. Piché*. Charles River, Senneville, QC, Canada. Sponsor: *M.-S. Piché.*

#1927 **Poster Board Number P234**
Detection of IgG and IgM Responses to Hepatitis B Antigen in Cynomolgous Monkey. G. Ferency[1], *G. Rao*[2], *O. Amy*[2], *J. Olsen*[1], J. Puchalski[1], and A.M. Frantz[1]. [1]Covance, Inc., Madison, WI; and [2]Genentech Inc., South San Francisco, CA.

#1928 **Poster Board Number P235**
Investigation of KLH (Keyhole Limpet Hemocyanin) Antigen Dose Response in Male and Female Cynomolgus Monkeys to Establish an Optimal Response to Study Immune Enhancement. *C.M. Satterwhite*[1], *R.W. Comba*[1], *A. Oldendorp*[2], and *R. Prell*[2]. [1]Charles River Laboratories, Reno, NV; and [2]Genentech, Inc., SO. San Francisco, CA.

#1929 **Poster Board Number P236**
Development of a Flow Cytometric Method to Measure Neutrophil Precursors in Cynomolgus Monkey. R. Magpantay, and *J.R. Piccotti*. Celgene, San Diego, CA.

#1930 **Poster Board Number P237**
A Novel Approach of Assessing Preclinical Immunotoxicity and Lead Optimization of Antibody-Drug Conjugates Using Flow Cytometry in Cynomolgus Monkeys. *R. Tadagavadi*[2], J. England[2], L. Manson[2], J. Hyde[2], J. Setser[2], *J. Mertens*[2], E.v.d. Horst[1], and *N. Makori*[2]. [1]Igenica Biotherapeutics, Burlingame, CA; and [2]WIL Research Laboratories, Ashland, OH.

#1931 **Poster Board Number P238**
Experimental Procedures Increase the IL6 and Stress Markers in Cynomolgus Monkey. A. Sakai, M. Izumi, T. Minami, T. Komaki, N. Matsumoto, T. Asahi, K. Yunomae, and *R. Nagata*. Shin Nippon Biomedical Laboratories (SNBL), Ltd., Kagoshima, Japan.

#1932 **Poster Board Number P239**
Cigarette Smoke Mediated Regulation of Autophagy in Raw 264.7 Macrophages. P. Bagam, and *S. Batra*. Southern University & A&M College, Baton Rouge, LA. Sponsor: *S. Batra.*

#1933 **Poster Board Number P240**
Establishment of Cell Based Model for Studying Human Angiotensinogen Gene Regulation After Xenobiotics. *C.M. Menezes*[2], and *R.A. Ansari*[1]. [1]Nova Southeastern University, Fort Lauderdale, FL; and [2]Universidade Federal da Bahia, Salvador, Brazil.

#1934 **Poster Board Number P241**
Nrf2 Promotes Th2 Differentiation in Murine and Human CD4 T Cells. *A.E. Turley*[1,2], *J.W. Zagorski*[1,2], *C.D. Klaassen*[3], P.E. Fields[3], and *C.E. Rockwell*[1,2]. [1]Michigan State University, East Lansing, MI; [2]Michigan State University, East Lansing, MI; and [3]University of Kansas Medical Center, Kansas City, KS.

#1935 **Poster Board Number P242**
***In Vitro* Screening Method for Characterization of Macrophage Activation Responses to Environmental Stress.** *B.W. Lewis*, *R. Sultana*, and Y. Saini. Louisiana State University, Baton Rouge, LA.

Abstract #

#1936 **Poster Board Number P243**
Stress-Mediated Immunomodulation: Metallothionein Decreases SDF-1α Mediated Chemotaxis. S. Bhandari, and *M.A. Lynes*. University of Connecticut, Storrs, CT.

#1937 **Poster Board Number P244**
Species Differences in the Effects of TCDD on a Transcriptional Regulatory Region within the Ig Heavy Chain Gene. *Z.J. Alfaheeda*. Wright State University, Dayton, OH.

#1938 **Poster Board Number P245**
Reducing the Number of hs1.2 Invariant Sequence Repeats in the 3′ Immunoglobulin Heavy Chain Regulatory Region Alters Ig Expression. *A. Snyder*, N. Panstingel, S. Abdullah, and *C. Sulentic*. Wright State University, Dayton, OH.

#1939 **Poster Board Number P246**
Immunogenicity of Green Fluorescent Protein and the Disruption of the Immunodominant T Cell Epitope. T. Eyes, A. Doig, *I. Kimber*, and *R.J. Dearman*. University of Manchester, Manchester, United Kingdom.

#1940 **Poster Board Number P247**
Retinoic Acid and IFNg Induce Parallel Arginase-1 and Nos-2 Gene Expression in Primary Mouse Kupffer Cells. *I. Mohar*[1,2], and I.N. Crispe[2]. [1]Gradient, Seattle, WA; and [2]University of Washington, Seattle, WA.

#1941 **Poster Board Number P248**
Development of a Co-Culture System for Inhalative Therapeutics Against *Pseudomonas aeruginosa* Infections. L. Boge[1], S. Häußler[2], J. Knebel[1], M. Müller[1], and S. Wronski[1]. [1]Fraunhofer Institute for Toxicology, and Experimental Medicine, Hannover, Germany; and [2]Twincore, Center for Experimental, and Clinical Infection Research, Hannover, Germany. Sponsor: *C. Dasenbrock*.

#1942 **Poster Board Number P249**
Compensatory Restitution by Nsaid-Induced Protein Against Intestinal Ulcerative Insults. S.-H. Park[2], H.J. Choi[2], K.H. Do[2], J. Kim[2], M. Yu[2], and *Y. Moon*[1,2]. [1]Immunoregulatory Therapeutics Group in Brain Busan 21 Project, Yangsan, Korea, Republic of; and [2]Pusan National University School of Medicine, Yangsan, Korea, Republic of.

#1943 **Poster Board Number P250**
Dysregulated Immune System Networks as an Outcome of Altered miRNA Expression and DNA Methylation in War Veterans with Posttraumatic Stress Disorder. *M. Bam*, X. Yang, *P. Nagarkatti*, and *M. Nagarkatti*. University of South Carolina School of Medicine, Columbia, SC.

#1944 **Poster Board Number P251**
Inhalation of Chemicals - Subjective Irritative Symptoms versus Inflammatory Markers in Plasma. *L. Ernstgård*, M. Bottai, *G. Johanson*, and B. Sjögren. Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden.

#1945 **Poster Board Number P252**
Exposure to Urban Dust Particles *In Vitro* and *In Vivo* Enhances Th17-Associated Cytokine Expression. J.H. Fechner[2], G. Hautenhauer[2], A. Rodridguez[1], C.A. O'Driscoll[2], X. Zhang[2], and J.D. Mezrich[2]. [1]University of Pueto Rico, San Juan, PR; and [2]University of Wisconsin, Madison, WI. Sponsor: *C. Bradfield.*

Abstract #

#1946 **Poster Board Number P253**
Exposure to Benzo(a)pyrene Results in Suppression of FcγRII (CD32) Antibody Binding by Disrupting Lipid Raft Membrane Integrity. C.S. Ryan[2], P.T. Samuel[2], B. Booker[2], *A. Ramesh*[2], T. Zhang[1], A. Shanker[2], M. Maguire[2], and *D.B. Hood*[1]. [1]College of Public Health, The Ohio State University, Columbus, OH; and [2]Meharry Medical College, Nashville, TN.

#1947 **Poster Board Number P254**
Allergen-Induced T Helper (th) 17 Cell Activation: Comparisons with *In Vitro* Th17 Cells. *R.J. Dearman*, M.D. Hayes, and *I. Kimber*. University of Manchester, Manchester, United Kingdom.

#1948 **Poster Board Number P255**
Interleukin 1 Cytokine Alone Is Sufficient to Induce Lymphocyte Proliferation. *R.J. Dearman*, and *I. Kimber*. University of Manchester, Manchester, United Kingdom.

Tuesday Morning, March 15
9:30 AM to 12:45 PM
CC Exhibit Hall

PS

Poster Session: Liver—Mechanisms

♦ Molecular Toxicology: Mechanistic Insights and Hazard Assessment

Chairperson(s): *José E. Manautou, University of Connecticut, Storrs, CT; and Saurabh Vispute, St. John's University, Jamaica, NY.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *9:30 AM–11:00 AM*

#1949 **Poster Board Number P301**
Sparstolinin B, a TLR4-Antagonist Attenuates Early Steatohepatitic Injury in Environmental Toxin Potentiation of Nonalcoholic Steatohepatitis. *D. Dattaroy*[3], *R.K. Seth*[3], *S. Das*[3], *F. Alhasson*[3], *V. Chandrashekaran*[3], G.A. Michelotti[2], D. Fan[3], *M. Nagarkatti*[3], *P. Nagarkatti*[3], A.M. Diehl[1], and *S. Chatterjee*[3]. [1]Duke University, Durham, NC; [2]Metabolon, Durham, NC; and [3]University of South Carolina, Columbia, SC.

#1950 **Poster Board Number P302**
FGF21 Mediates Alcohol-Induced Adipose Tissue Lipolysis by Activation of Systemic Release of Catecholamine in Mice. *C. Zhao*, L. Liu, C. McClain, and W. Feng. University of Louisville, Louisville, KY.

#1951 **Poster Board Number P303**
Caspase Inhibition Reduces Pathologic Tissue Factor Driven Procoagulant Activity *In Vitro* and *In Vivo*. *A.K. Kopec*[2], *N. Joshi*[2], H. Cline-Fedewa[2], A.P. Spada[1], P. Contreras[1], and *J.P. Luyendyk*[2]. [1]Contaus Pharmaceuticals Inc, San Diego, CA; and [2]Michigan State University, East Lansing, MI.

#1952 **Poster Board Number P304**
Downregulation of Hepatocyte Nuclear Factor 4-alpha as a Mechanism of PFOA- and PFOS-Induced Hepatic Effects. *K.M. Beggs*, J.N. Lampe, and *U. Apte*. University of Kansas Medical Center, Kansas City, KS.

Abstract #

#1953 **Poster Board Number P305**
Role of Fibroblast Growth Factor 15 in the Development of High Fat Diet Induced NASH. *J.D. Schumacher*[2], *B. Kong*[2], P. Yang[1], *L. Zhan*[2], R. Sun[1], J. Aa[1], *J. Richardson*[2], *D. Laskin*[2], and *G. Guo*[2]. [1]China Pharmaceutical University, Nanjing, China; and [2]Rutgers University, Piscataway, NJ.

#1954 **Poster Board Number P306**
RNA Sequencing Reveals Induction of Mmp12 by Fibrin(ogen) Engagement of Leukocyte αMβ2 Integrin as Critical for Liver Repair After Acetaminophen Overdose in Mice. *A.K. Kopec*[2], *N. Joshi*[2], H. Cline-Fedewa[2], *R. Nault*[2], *T. Zacharewski*[2], M.J. Flick[1], and *J.P. Luyendyk*[2]. [1]Cincinnati Children's Hospital, Cincinnati, OH; and [2]Michigan State University, East Lansing, MI.

#1955 **Poster Board Number P307**
Evaluation of Nuclear Receptor-Mediated Alterations in Liver Cytochrome P450 Using Cryopreserved Rat Hepatocytes as a Screen for Potential Hepatocarcinogens. *L.K. Markell*, S.M. Waters, H.M. Peterson, D.L. Nabb, and *X. Han*. DuPont Haskell Global Centers, Newark, DE.

#1956 **Poster Board Number P308**
Evaluation of Perfluorooctanesulfonic Acid (PFOS) in a Model of High Fat Diet Feeding and High Fat to Low Fat Diet Switch. *E. Martell*, C. Picard, *L. Armstrong*, *P. Shimpi*, and *A. Slitt*. University of Rhode Island, Kingston, RI.

#1957 **Poster Board Number P309**
Effects of Vildagliptin and Its Metabolite on Inflammation-Associated Genes in Human Hepatoma HepG2 and Monocytic HL-60 Cells. M. Asakura, H. Fujii, K. Atsuda, T. Itoh, and *R. Fujiwara*. Graduate School of Pharmaceutical Sciences, Kitasato University, Tokyo, Japan.

#1958 **Poster Board Number P310**
Identification of Novel UPR Member IBTKα: Linking Autophagy to the Pathogenesis of Non-Alcoholic Steatohepatitis. *J.A. Willy*, S.K. Young, *J.L. Stevens*, H.C. Masuoka, and R.C. Wek. Indiana University School of Medicine, Indianapolis, IN. Sponsor: *J. Stevens.*

#1959 **Poster Board Number P311**
Inflammatory Response of Kupffer Cells in 3D Bioprinted Human Liver Tissues. *R.N. Hardwick*, J. Hampton, D. Perusse, and *D.G. Nguyen*. Organovo, Inc., San Diego, CA.

#1960 **Poster Board Number P312**
Mouse Car Is Mainly Involved in Liver Injury and Tumor Development Induced by the Protoporphyrinogen Oxidase Inhibitor Herbicide Acifluorfen. K. Kuwata[1,3,5], K. Inoue[1], M. Takahashi[1], R. Ichimura[1], T. Morikawa[1], Y. Kodama[2], and *M. Yoshida*[4]. [1]Division of Pathology, National Institute of Health Sciences, Tokyo, Japan; [2]Division of Toxicology, National Institute of Health Sciences, Tokyo, Japan; [3]Drug Development Division, Mitsubishi Tanabe Pharma Corporation, Chiba, Japan; [4]Food Safety Commission of Japan, Tokyo, Japan; and [5]Laboratory of Veterinary Pathology, Tokyo University of Agriculture, and Technology, Tokyo, Japan.

#1961 **Poster Board Number P313**
Intestinal HIF-1α Deletion Exacerbate Steatosis Signatures Associated with Gut Barrier Function and Microbiota. T. Shao, L. Zhang, L. Liu, F. Li, C.J. McClain, and W. Feng. University of Louisville, Louisville, KY.

Abstract #

#1962 **Poster Board Number P314**
PCBs Diminish EGFR Signaling Pathways in Organopollutant-Mediated Steatohepatitis. J.E. Hardesty[2], K.C. Falkner[2], *M. Cave*[2], R.A. Prough[2], *H.B. Clair*[2], and *B. Wahlang*[1]. [1]University of Kentucky, Lexington, KY; and [2]University of Louisville, Louisville, KY.

#1963 **Poster Board Number P315**
Polymyxin B as a New Antidote Against Amanita Phalloides Poisoning: from *In Silico* to *In Vivo* Studies. J. Garcia[3], V. Costa[3], A. Carvalho[4], R. Silvestre[2], J.A. Duarte[3], D. Dourado[4], R. Dinis-Oliveira[3], P. Baptista[1], M.L. Bastos[3], and F. Carvalho[3]. [1]Polytechnic Institute of Bragança, Bragança, Portugal; [2]University of Minho, Braga, Portugal; [3]University of Porto, Porto, Portugal; and [4]Uppsala University, Uppsala, Sweden. Sponsor: *S. Ali*

#1964 **Poster Board Number P316**
Wnt/β-Catenin Signaling Drives Thioacetamide-Mediated Heteroprotection Against Acetaminophen-Induced Lethal Liver Injury. *V.P. Dadhania*[2], *B. Bhushan*[1], *U.M. Apte*[1], and *H.M. Mehendale*[2]. [1]University of Kansas Medical Center, Kansas City, KS; and [2]University of Louisiana at Monroe (ULM), Monroe, LA.

#1965 **Poster Board Number P317**
Fibrinogen Inhibits Biliary Hyperplasia and Fibrosis in Mice by Modulating IFNγ-Driven Macrophage Activation. *N. Joshi*[2,3], *A.K. Kopec*[2,3], H.C. Fedewa[3], *C.E. Rockwell*[2,3], M.J. Flick[1], and *J.P. Luyendyk*[2,3]. [1]Cincinnati Children's Hospital Medical Center, Cincinnati, OH; [2]Institute of Integrative Toxicology, East Lansing, MI; and [3]Michigan State University, East Lansing, MI.

#1966 **Poster Board Number P318**
SRT1720 Alleviates Cholestatic Injury in Mice by Altering Hepatic Bile Acid Composition and Enhancing Urinary Excretion of Bile Acids. *S.R. Kulkarni*[2], C.J. Soroka[2], L.R. Hagey[1], and J.L. Boyer[2]. [1]University of California at San Diego, La Jolla, CA; and [2]Yale University, New Haven, CT.

#1967 **Poster Board Number P319**
Synthetic Cathinones: Unveiling the Mechanisms for Liver Injury. M. d.L. Bastos[2], M.J. Valente[2], A.M. Araújo[2], F. Carvalho[2], P. Guedes de Pinho[2], and M. Carvalho[1]. [1]FP-ENAS, CEBIMED, Fundação Ensino e Cultura Fernando Pessoa, Porto, Portugal; and [2]UCIBIO-REQUIMTE, Laboratory of Toxicology, Porto, Portugal. Sponsor: *S. Ali*

#1968 **Poster Board Number P320**
Pterocarpus mildbraedii Extract Ameliorates Propanil -Induced Hepatotoxicity by Abrogation of Oxidative Stress and Mitochondria-Mediated Apoptosis in Rats. C.A. Otuechere[1], and *E.O. Farombi*[2]. [1]Redeemer's University, Ede Town, Nigeria; and [2]University of Ibadan, Ibadan, Nigeria.

#1969 **Poster Board Number P321**
Pparα and Car Receptors Differentially Regulate Hepatic Carboxylesterase Expression in Mice Treated with Perfluorooctanoic Acid. *X. Wen*[3], A.A. Baker[3], *C.D. Klaassen*[4], *J.R. Richardson*[2], and *L.M. Aleksunes*[1,3]. [1]Environmental, and Occupational Health Sciences Institute, Piscataway, NJ; [2]Northeast Ohio Medical University, Rootstown, OH; [3]Rutgers University, Piscataway, NJ; and [4]University of Washington, Seattle, WA.

Abstract #

#1970 **Poster Board Number P322**
Bile Canaliculi Dynamics Alterations As Early Preclinical Predictive Markers of Drug-Induced Cholestasis. M. Burbank[2,3], A. Sharanek[2], A. Burban[2], *N. Claude*[3], R.J. Weaver[3], C. Guguen-Guillouzo[1,2], and A. Guillouzo[2]. [1]Biopredic Int., Rennes, France; [2]INSERM U991, Rennes, France; and [3]International Research Institute Servier, Paris, France.

#1971 **Poster Board Number P323**
Dual Role of Epidermal Growth Factor Receptor (EGFR) Signaling in Acetaminophen-Induced Liver Injury and Regeneration. *B. Bhushan*, M.W. Manley, *Y. Xie*, *K. Du*, *M.R. McGill*, M. Lebofsky, *H. Jaeschke*, and *U. Apte*. University of Kansas Medical Center, Kansas City, KS.

#1972 **Poster Board Number P324**
Hepatotoxicity of Tyrosine Kinase Inhibitors. F. Paech, J. Bouitbir, and S. Krähenbühl. University Basel, Basel, Switzerland. Sponsor: *S. Messner.*

#1973 **Poster Board Number P325**
A High Cholesterol Diet Induces Mitochondrial Dysfuction and Liver Damage. M. Domínguez-Pérez[1], D.P. Rosales Cruz[1], N. Nuño Lambarri[1], M. Rosas Lemus[2], S. Uribe Carvajal[3], L.E. Gómez Quiroz[1], L. Bucio[1], V. Souza[1], R.U. Miranda Labra[1], and *M.C. Gutierrez Ruiz*[1]. [1]Universidad Autónoma Metropolitana, Mexico City, Mexico; [2]Universidad Nacional Autónoma de México, Mexico City, Mexico; and [3]Universidad Nacional Autónoma de México, Mexico City, Mexico.

#1974 **Poster Board Number P326**
Acetaminophen Induces Mitochondrial Oxidative Stress, Lipid Peroxidation, MIP1-a and MCP in HepaRG™ Cells. D. Thomas[1], M. Cottagiri[1], T. Stephens[1], J. Bonzo[2], M. Kumar[2], *M. Powers*[2], R. Witek[2], and D. Njoku[1]. [1]Johns Hopkins, Baltimore, MD; and [2]ThermoFisher, Frederick, MD. Sponsor: *M. Powers.*

#1975 **Poster Board Number P327**
Protective Effects of Carvacrol Against LPS-Induced Liver Injury. *Z. Suntres*. Northern Ontario School of Medicine, Thunder Bay, ON, Canada.

#1976 **Poster Board Number P328**
Acrolein, a Lipid-Derived Aldehyde, Is a Pathogenic Mediator of Gut-Liver Injury in Alcoholic Liver Disease. *W.-Y. Chen*, J. Zhang, *S. Barve*, *C. McClain*, and *S. Joshi-Barve*. University of Louisville, Louisville, KY.

#1977 **Poster Board Number P329**
Role of DNA Damage Response in Liver Regeneration After Acetaminophen Overdose. *P. Borude*, *B. Bhushan*, and *U. Apte*. University of Kansas Medical Center, Kansas City, KS.

#1978 **Poster Board Number P330**
HGF Induces Liver and Lungs Protection Against Antituberculosis Drugs in a Model of Experimental Pulmonary Tuberculosis. O. Bello Monroy[1,2], C. Enriquez Cortina[2], O.A. Escobedo Calvario[2], U. Juárez Hernández[1], B. Ramos Robles[1], R.U. Miranda Labra[2], L. Bucio[2], V. Souza[2], D. Mata Espinosa[1], J. Barrios Payán[1], B. Marquina Castillo[1], *M.C. Gutierrez Ruiz*[2], R. Hernández Pando[1], and L.E. Gómez Quiroz[2]. [1]INCMNSZ, Mexico City, Mexico; and [2]Universidad Autónoma Metropolitana, Mexico City, Mexico.

Abstract #

#1979 **Poster Board Number P331**
Troglitazone Inhibits Bile Acid Amidation: A Possible Risk Factor of Liver Injury. E. Ogimura, J. Deguchi, T. Nakagawa, M. Yabuki, and H. Funabashi. Sumitomo Dainippon Pharma Co., Ltd., Osaka, Japan. Sponsor: *T. Yamada.*

#1980 **Poster Board Number P332**
Use of Proliferating and Differentiated Upcyte Hepatocytes to Predict Toxicological Outcomes. A. Noerenberg[2], Y. Nahmias[1], G. Levy[1], S. Heinz[2], and *A. Kark*[3]. [1]The Hebrew University of Jerusalem, Jerusalem, Israel; [2]Upcyte Technologies GmbH, Hamburg, Germany; and [3]Upcyte Technologies GmbH, Hillsborough, NJ. Sponsor: *P. Hewitt.*

#1981 **Poster Board Number P333**
Mitochondria-Targeted Antioxidant Protects Against Acetaminophen Hepatotoxicity. *K. Du*, *J. Weemhoff*, and *H. Jaeschke*. University of Kansas Medical Center, Kansas City, KS.

#1982 **Poster Board Number P334**
Inhibition of Mitochondrial Gene Expression by Deoxynucleoside Analogues and Delayed Mitochondrial Dysfunction. *M.C. Korrapati*[1], K. Toyokawa[1], B. Sherf[1], and *J. Vanden Heuvel*[1,2]. [1]Indigo Biosciences, Inc., State College, PA; and [2]Penn State University, University Park, PA.

#1983 **Poster Board Number P335**
Understanding of Disease Mechanisms in NAFLD Using MS Imaging: Discovery of New Biomarkers Reflecting Disease State. G. Hamm[1], P.-M. Vaysse[1], A. van den Hoek[3], R. Kleemann[2], J. Stauber[1], H.M. Pincen[2], and *D. Bonnel*[1]. [1]Imabiotech, Loos, France; [2]TNO, Leiden, Netherlands; and [3]TNO, Leinden, Netherlands.

#1984 **Poster Board Number P336**
Critical Role of Mammalian Target of Rapamycin (mTOR) in Liver Damage Caused by VC Metabolites in Mice. A.L. Lang, B.R. Kaelin, H. Yeo, S.V. Hudson, L.G. Poole, C.M. McKenzie, C.N. Sharp, *G.E. Arteel*, and *J.I. Beier*. University of Louisville, Louisville, KY.

#1985 **Poster Board Number P337**
Mechanism and Functional Consequence of MRP2 Mislocalization in Nonalcoholic Steatohepatitis. *A.L. Dzierlenga*, *J.D. Clarke*, *D.M. Klein*, and *N.J. Cherrington*. University of Arizona, Tucson, AZ.

#1986 **Poster Board Number P338**
Evaluation of Respiratory Capacity Following Dili/Non-Dili Treatments; Seahorse Platform Optimization. *D. Simic*, M. Siegmann, L. Shanno, M. Singer, and *M. Otieno*. Janssen R&D (Johnson & Johnson), Spring House, PA.

#1987 **Poster Board Number P339**
Fasting-Induced Lipid Accumulation and Lipotoxicity in Hepatocyte-Specific Ppara Knockout Mice. *C. Brocker*, T. Yan, J. Bonzo, and *F. Gonzalez*. National Institutes of Health, Bethesda, MD.

Abstract #

Tuesday Morning, March 15
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Liver—Models

Chairperson(s): *Albert Li, In Vitro ADMET Laboratories LLC, Columbia, MD.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *11:15 AM–12:45 PM*

#1988 **Poster Board Number P340**
Three Dimensional Hepatotoxicity Screening Using Corning® HepatoCells, the Spheroid Microplate and the SCREEN-WELL® Hepatotoxicity Library. H. Sherman, H. Gitschier, and D. Randle. Corning Life Sciences, Kennebunk, ME. Sponsor: *C. Crespi.*

#1989 **Poster Board Number P341**
Development of a Co-Culture System of Endothelial and Hepatic Cells for Studying Busulfan-Induced Sinusoidal Obstruction Syndrome. K. Lidberg[2], T. Neumann[1], and *E.J. Kelly*[2]. [1]Nortis Inc., Seattle, WA; and [2]University of Washington, Seattle, WA.

#1990 **Poster Board Number P342**
***In Vitro* Hepatotoxicity Profiling Using Corning® Epic® Label-Free Technology with Primary Hepatocytes, HepG2 Cells, and Corning HepatoCells.** A.B. Bergeron, H.J. Gitschier, and D.H. Randle. Corning Life Sciences, Kennebunk, ME. Sponsor: *C. Crespi.*

#1991 **Poster Board Number P343**
A Comparison of *In Silico* Computational Programs for Predicting Drug-Induced Liver Injury. *M. Masuda-Herrera*, and *K. Ford*. Genentech, South San Francisco, CA.

#1992 **Poster Board Number P344**
A Multispecies Comparison of the Cytotoxicity of Riddelliine in Primary Hepatocytes. *W. Resager*, B. Stegelmeier, and S. Colegate. United States Department of Agriculture, Agricultural Research Service, Poisonous Plant Research Laboratory, Logan, UT.

#1993 **Poster Board Number P345**
Epalrestat Causes Apparent Apoptosis in Cultured Mouse and Human Hepatoma Cells. *L. Chen*, and *X. Cheng*. St. John's University, Queens, NY.

#1994 **Poster Board Number P346**
Development of a Translational High-Throughput Assay for Drug Induced Liver Injury in Zebrafish Larvae. A.D. Vliegenthart[1], C. Wei[1], J. Del Pozo[1], *D.J. Antoine*[2], P. Treskes[1], D.J. Webb[1], and J.W. Dear[1]. [1]University of Edinburgh, Edinburgh, United Kingdom; and [2]University of Liverpool, Liverpool, United Kingdom.

#1995 **Poster Board Number P347**
Human Hepatocyte/Kupffer Cell 3D Spheroid Co-Cultures: Characterization and Application for DILI Studies. P. Gunness[2], and *A.P. Li*[1]. [1]*In Vitro* ADMET Laboratories LLC, Columbia, MD; and [2]*In Vitro* ADMET Laboratories LLC, Malden, MA.

Abstract #

#1996 **Poster Board Number P348**
Modeling Drug-Induced Hepatic Fibrosis *In Vitro* Using Three-Dimensional Liver Tissue Constructs. *L.M. Norona*[2,3], *D.G. Nguyen*[1], D.A. Gerber[3], *S.C. Presnell*[1], and *E.L. LeCluyse*[2,3]. [1]Organovo, Inc., San Diego, CA; [2]The Hamner Institutes, Research Triangle Park, NC; and [3]The University of North Carolina at Chapel Hill, Chapel Hill, NC.

#1997 **Poster Board Number P401**
Functional Characterization of Human Induced Pluripotent Stem Cell-Derived Hepatocytes Differentiated at Flow Conditions Using Human Precision-Cut Liver Slices as Benchmark. V. Starokozhko[3], M. Hemmingsen[2], L. Larsen[2], S. Mohanty[2], M. Merema[3], R. Pimentel[2], A. Wolff[2], J. Emnéus[2], A. Aspegren[1], G.M. Groothuis[3], and M. Dufva[2]. [1]Takara Bio Europe AB, Göteborg, Sweden; [2]Technical University of Denmark, Lyngby, Denmark; and [3]University of Groningen, Groningen, Netherlands. Sponsor: *F.G. Russel.*

#1998 **Poster Board Number P402**
Evaluating Reactive Acyl Glucuronides Formation from Diclofenac Using a Resazurin/ Resorufin Assay with Primary Rat Hepatocytes. N. Hari Singh[1], M. McMillian[1], Y. Qu[1], C.W. Ng[2], Y. Zhou[2], H. Yu[2], and A. Ananthanarayanan[1]. [1]Invitrocue Pte Ltd, Singapore, Singapore; and [2]National University of Singapore, Singapore, Singapore. Sponsor: *M. Johnson.*

#1999 **Poster Board Number P403**
3D Organotypic Liver Models for High-Throughput Hepatotoxicity Testing. *S.M. Orbach*, *M.F. Ehrich*, and P. Rajagopalan. Virginia Tech, Blacksburg, VA.

#2000 **Poster Board Number P404**
In-Depth Characterization of 3D Human Liver Microtissues by Transcriptomic, Proteomic and Functional Analysis. *S. Messner*[2], L. Fredriksson Puigvert[3], C. Escher[1], M. Bober[1], K. Roessger[2], J.M. Kelm[2], W. Moritz[2], and M. Ingelman-Sundberg[3]. [1]Biognosys AG, Schlieren, Switzerland; [2]InSphero AG, Schlieren, Switzerland; and [3]Karolinska Institutet, Stockholm, Sweden.

#2001 **Poster Board Number P405**
Functional Evaluation of Bioprinted Human Liver Tissue as a Liver Injury Model. K. Tetsuka[2], M. Ohbuchi[2], H. Moriguchi[2], E. Kobayashi[1], M. Kanki[1], A. Miyashita[2], and K. Tabata[2]. [1]Astellas Pharma Inc., Osaka-shi, Japan; and [2]Astellas Pharma Inc., Tsukuba-shi, Japan. Sponsor: *A. Okada.*

#2002 **Poster Board Number P406**
A High Throughput Imaging-Based 3D Spheroid HepG2 Toxicity Pathway Reporter Platform for Repeated Dose Toxicity Evaluation. S. Hiemstra, S. Wink, and *B. van de Water*. Leiden University, Leiden, Netherlands.

#2003 **Poster Board Number P407**
Utilization of exVive 3D Human Liver Tissues for the Evaluation of Valproic Acid-Induced Liver Injury. C. Grundy, R. Smith, J. Nickel, *R.N. Hardwick*, and *D.G. Nguyen*. Organovo, Inc., San Diego, CA. Sponsor: *D. Nguyen.*

#2004 **Poster Board Number P408**
Novel Integrated *In Vitro* Gastrointestinal and Hepatic Model for Investigating Chemical Toxicity. *R. Less*, and P. Rajagopalan. Virginia Tech, Blacksburg, VA. Sponsor: *M. Ehrich.*

Abstract #

#2005 **Poster Board Number P409**
Validation of a High Content Imaging Assay for Steatosis and Phospholipidosis in a Micropatterned Human Hepatocyte Co-Culture Model. *C. Deisenroth*, *K. Wolf*, *J. Trask*, *E. LeCluyse*, *R. Clewell*, and *M. Andersen*. The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#2006 **Poster Board Number P410**
Primary Hepatocytes under Hemodynamics and Transport Conditions Mimic Toxicity Signatures to Amiodarone and Propylthiouracil in the Clinic. R. Figler, S. Marukian, M.S. Collado, M. Lawson, A. Mackey, D. Manka, B. Blackman, B. Wamhoff, and *A. Dash*. HemoShear Therapeutics, Charlottesville, VA.

#2007 **Poster Board Number P411**
A Human Heart-Liver Platform to Study Drug Metabolism and Toxicity. C. Oleaga[3], G. Legters[3], L. Kumanchik[3], V. Platt[3], L.R. Bridges[3], C. Martin[3], M. Jackson[3], C.W. McAleer[3], C.J. Long[3], J. Langer[2], *A. Riu*[1], *R. Note*[1], J.J. Hickman[3], S. Teissier[1], J. Cotovio[1], and L. Breton[1]. [1]L'Oreal Research, and Innovation Division, Aulnay-sous-Bois, France; [2]L'Oreal Research, and Innovation Division, Clark, NJ; and [3]University of Central Florida, Orlando, FL. Sponsor: *E. Dufour.*

#2008 **Poster Board Number P412**
A Promising, *In Vitro* Approach to Classify Drugs According to Their Potential to Cause Idiosyncratic, Drug-Induced Liver Injury. *A. Maiuri*, B. Wassink, J. Turkus, A. Breier, T. Lansdell, G. Kaur, *P. Ganey*, and *R. Roth*. Michigan State University, East Lansing, MI.

#2009 **Poster Board Number P413**
High Content Screening of Corning® HepatoCells for Hepatotoxicity. H. Sherman, H. Gitschier, and D. Randle. Corning Life Sciences, Kennebunk, ME. Sponsor: *C. Crespi.*

#2010 **Poster Board Number P414**
Detection of Drug Cholestatic Potential Using Confocal High Content Screening in HepaRG and Human Liver Microtissues. P. Walker, S. Ravenscroft, and C. Dilworth. Cyprotex, Cheshire, United Kingdom. Sponsor: *C. Strock.*

#2011 **Poster Board Number P415**
Toxicity of Exifone in Primary Rat Hepatocytes and Human HepaRG Cells (clone 5f). *T. Brayman*, and *D. Thompson*. Sigma-Aldrich, St. Louis, MO.

#2012 **Poster Board Number P416**
Mechanisms of Usnic Acid-Associated Hepatotoxicity in HepG2 Cells. *L. Guo*, and *S. Chen*. NCTR, Jefferson, AR.

#2013 **Poster Board Number P417**
Transcriptome Features of an HepaRG Cell Line Over-Expressing Human Flavin-Containing Monooxygenase-3 (FMO3). *S. Rudraiah*, S. Piekos, W. Krueger, T. Rasmussen, *X. Zhong*, and *J.E. Manautou*. University of Connecticut, Storrs, CT.

#2014 **Poster Board Number P418**
The Influence of System-Specific Factors on *In Vitro* Kinetics in 3D Flow-Based Liver Bioreactors. *M. Yoon*[1], *J.M. Pedersen*[1], *E.L. LeCluyse*[1], *J.M. Macdonald*[2], *M.E. Andersen*[1], and *H.J. Clewell*[1]. [1]The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and [2]The University of North Carolina, Chapel Hill, NC.

Abstract #

#2015 **Poster Board Number P419**
Exploration of Drug-Induced Mitochondrial Toxicity Mechanisms on Hepatic Mitochondria and Cultured Cells. R. Note[1], A. Crudu[1], A. Riu[1], M. Porceddu[2], C. Pertuiset[2], N. Buron[2], A. Borgne-Sanchez[2], and S. Teissier[1]. [1]L'Oréal, Aulnay-sous-Bois, France; and [2]Mitologics S.A.S., Paris, France. Sponsor: *E. Dufour.*

#2016 **Poster Board Number P420**
***In Vitro* Models for the Prediction of Idiosyncratic Drug Induced Liver Injury.** A. Granitzny[1], J. Knebel[1], *C. Dasenbrock*[1], P. Steinberg[2], and T. Hansen[1]. [1]Fraunhofer ITEM, Hannover, Germany; and [2]University of Veterinary Medicine Hannover, Hannover, Germany.

#2017 **Poster Board Number P421**
Lack of Adequate Classification of Hepatotoxicants Hinders Development of Predictive *In Vitro* DILI Screening Assays. *D. Thompson*. Sigma-Aldrich, St. Louis, MO.

#2018 **Poster Board Number P422**
Application of an *In Vitro* High Content Imaging Assay for Quantitative Assessment of Rat, Mouse, and Human Primary Hepatocyte Proliferation. V. Soldatow[2], *R. Peffer*[1], *D. Cowie*[1], *K. Lichti-Kaiser*[1], *R. Clewell*[2], *M. Andersen*[2], *E. LeCluyse*[2], and *C. Deisenroth*[2]. [1]Syngenta Crop Protection, LLC, Greensboro, NC; and [2]The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

Tuesday Morning, March 15
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Carcinogenesis I

Chairperson(s): *Jessica LaRocca, Dow AgroSciences, Indianapolis, IN; and Kate Z. Guyton, IARC-WHO, Lyon, France.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *9:30 AM–11:00 AM*

#2019 **Poster Board Number P423**
The Non-Narcotic Antitussive Benzonatate Is Not Carcinogenic in Rodent Assays. *S. Teo*[3], *M. McKeon*[1], and *S. Lee*[2]. [1]BioReliance, Rockville, MD; [2]Covance, Madison, WI; and [3]Pfizer, Madison, NJ.

#2020 **Poster Board Number P424**
Peroxisome Proliferator-Activated Receptor-β/δ (PPARβ/δ)-Dependent Inhibition of UVB-Induced Skin Carcinogenesis: Targeting p53 Mutant Cells. *D.H. Ralph*[2], K. Pramanik[2], F.J. Gonzalez[1], and *J.M. Peters*[2]. [1]National Cancer Institute, Bethesda, MD; and [2]The Pennsylvania State University, University Park, PA.

#2021 **Poster Board Number P425**
Ligand Activation of PPARβ/δ Inhibits EMT in a Human Colon Cancer Cell Line. K. Consevage[2], *K. Praminick*[2], *F. Gonzalez*[1], and *J. Peters*[2]. [1]National Cancer Institute, Bethesda, MD; and [2]Penn State University, State College, PA.

Abstract #

#2022 **Poster Board Number P426**
A Highly Sensitive Bioluminescence-Based Assay for Quantifying Cancer Cell Load in Target Organs: Implications for Studying Anticancer Drugs, Including Natural Redox-Active Quinones. *H. Zhu*[1], M.E. Kauffman[1], J.Z. Li[2], S. Sarkar[1], *M.A. Trush*[3], *Z. Jia*[4], and *Y.R. Li*[1]. [1]Campbell University School of Osteopathic Medicine, Buies Creek, NC; [2]College of Arts, and Science, University of Virginia, Charlottesville, VA; [3]Johns Hopkins University Bloomberg School of Public, Baltimore, MD; and [4]University of North Carolina at Greensboro, Greensboro, NC.

#2023 **Poster Board Number P427**
A Nutrient Mixture Modulates Ovarian ES-2 Cancer Progression by Inhibiting Xenograft Tumor Growth and Cellular MMP Secretion, Migration and Invasion. *M.W. Roomi*, N.W. Roomi, A. Niedzwiecki, and M. Rath. Dr. Rath Research Institute, Santa Clara, CA.

#2024 **Poster Board Number P428**
Peroxisome Proliferator-Activated Receptor-β/δ (pparβ/δ) Inhibition of Human Neuroblastoma Cell Tumorigenesis Is Associated with P53-Dependent Cell Differentiation. *P.-L. Yao*[2], L. Chen[2], J. Singh[2], T.P. Dobrzański[2], M.E. Campbell[2], J.A. Krevitz[2], *B. Zhu*[2], *F.J. Gonzalez*[1], U.S. Singh[3], and *J.M. Peters*[2]. [1]National Cancer Institute, Bethesda, MD; [2]Pennsylvania State University, University Park, PA; and [3]University of South Carolina, Columbia, SC.

#2025 **Poster Board Number P429**
Soy Protein Opposes Ethanol-Induced β-Catenin Signaling and Tumor Promotion in a Mouse Model of Hepatic Cancer. C. Pulliam[1], K. Mercer[2], L. Hennings[2], K. Lai[2], K. Pedersen[1], and *M. Ronis*[1]. [1]Louisiana State University Health Sciences Center, New Orleans, LA; and [2]University of Arkansas for Medical Sciences, Little Rock, AR.

#2026 **Poster Board Number P430**
Role of the Long Non-Coding RNA MALAT-1 in Pancreatic Cancer. *Y. Cheng*[2], P. Imanirad[2], *I. Jutooru*[1], A. Hoffmann[2], B. Morpurgo[2], and A.E. Golovko[2]. [1]Covance, Inc, Madison, WI; and [2]Texas A&M University, College Station, TX.

#2027 **Poster Board Number P431**
Protective Effect of Quercetin Against Benzo[a]pyrene-Induced DNA Damage in Sprague-Dawley Rats. *H.S. Kim*, and K.S. Kim. Sungkyunkwan University, Suwon, Korea, Republic of. Sponsor: *H.S. Kim.*

#2028 **Poster Board Number P432**
Epigenetic Downregulation of Mitochondrial Oxidative Phosphorylation-Related TMEM70 from an Early Stage of Hepatocarcinogenesis in Rats. S. Mizukami[1,2], A. Yafune[1,2], M. Kimura[1,2], *Y. Hasegawa-Baba*[1], *T. Yoshida*[1], and *M. Shibutani*[1]. [1]Laboratory of Veterinary Pathology, Tokyo University of Agriculture, and Technology, Tokyo, Japan; and [2]Pathogenic Veterinary Science, United Graduate School of Veterinary Science, Gifu University, Gifu, Japan. Sponsor: *M. Ema.*

#2029 **Poster Board Number P433**
Enhanced Phosphorylation of H3ser10 and H3ser28 Involves in Chemical Carcinogen-Induced Cell Transformation. X. Zhu, Z. Zhang, L. Chen, and *W. Chen*. Sun Yat-sen University, Guangzhou, China. Sponsor: *W. Chen.*

Abstract #

#2030 **Poster Board Number P434**
A Multiple Database Approach for Identifying Chemicals That Affect Cancer Pathways. *S. Iyer*[1], *N. Pham*[2], *M. Marty*[2], *M. Sandy*[1], G. Solomon[2], and *L. Zeise*[1]. [1]CalEPA, Oakland, CA; and [2]CalEPA, Sacramento, CA.

#2031 **Poster Board Number P435**
Mode of Action of Ethyl Tertiary-butyl Ether in the Rat Liver: Induction of Oxidative Stress, Cell Proliferation and Cell Cycle Arrest via Activation of CAR, PXR and PPARs. *A. Kakehashi*[5], M. Gi[5], H. Wanibuchi[5], A. Hagiwara[1], N. Imai[1], K. Nagano[4], F. Nishimaki[3], and *S. Fukushima*[2]. [1]DIMS Institute of Medical Science, Ichinomiya, Japan; [2]Japan Bioassay Research Center, Japan Industrial Safety & Health Association, Kanagawa, Japan; [3]Japan Petroleum Energy Center, Tokyo, Japan; [4]Nagano Toxicologic-Pathology Consulting, Kanagawa, Japan; and [5]Osaka City University Graduate School of Medicine, Osaka, Japan.

#2032 **Poster Board Number P436**
Design of a Rofecoxib-Combretastatin Hybrid Drug That Exerts Potent and Improved Antimicrotubule and Anti-Angiogenesis Properties Retaining Cox-2 Inhibition. *H.R. Madala*, S.R. Punganuru, M. Constantinos, and S. Kalkunte. Texas Tech University Health Sciences Center, Amarillo, TX.

#2033 **Poster Board Number P437**
26-Week Carcinogenesis Study of 1,2-Dichloroethane by Dermal Application in CB6F1-TG rasH2 Mice. M. Suguro, T. Numano, M. Kawabe, M. Akiyama, Y. Doi, and Y. Mera. DIMS Institute of Medical Science, Inc., Ichinomiya, Japan.

#2034 **Poster Board Number P438**
Activation of the Dietary Carcinogens B[a]P and PhIP in LNCaP Prostate Cancer Cells in the Presence of IL-6. *O. Graham*, and *N.J. Gooderham*. Imperial College London, London, United Kingdom.

#2035 **Poster Board Number P439**
Preventive Effects of Butyrate-Containing Structured Lipids on Experimental Liver Carcinogenesis. J.F. Ortega[2], R. Heidor[2], K. Furtado[2], J. Ract[2], L. Gioieli[2], E. Purgatto[2], *A. de Conti*[1], *I. Pogribny*[1], and F. Moreno[2]. [1]National Center for Toxicological Research, Jefferson, AR; and [2]University of São Paulo, São Paulo, Brazil.

#2036 **Poster Board Number P440**
No Lung Pathology in Mice from Twelve Months of Exposure to Styrene in the Absence of Cyp2f2 Metabolism. *G. Cruzan*[7], *J.S. Bus*[2], *M.I. Banton*[3], *S.S. Sarang*[5], *R. Waites*[4], D. Layko[6], and J. Raymond[1]. [1]Charles River Laboratories, Frederick, MD; [2]Exponent, Midland, MI; [3]Lyondell Bassell Corporation, Houston, TX; [4]SABIC, Mount Vernon, IN; [5]Shell International, Houston, TX; [6]The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and [7]ToxWorks, Bridgeton, NJ.

#2037 **Poster Board Number P441**
Effect of the Non-Genotoxic Carcinogens, Methapyrilene Hydrochloride and Bis-(2-Ethylhexyl) Phthalate (DEHP), on Intracellular Iron Metabolism in Rat Liver. I. Kindrat[1,2], S. Shpyleva[1], T. Chen[1], *F.A. Beland*[1], and *I.P. Pogribny*[1]. [1]US FDA, Jefferson, AR; and [2]National Medical University, Ivano-Frankivsk, Ukraine.

Abstract #

#2038 **Poster Board Number P442**
Using Transcriptomics and Cell Proliferation to Evaluate Mode of Action of Ethylbenzene in Wild-Type, Cyp2f2 Knockout and Cyp2f1 Humanized Mice Exposed for 5 Days. *M.E. Andersen*[4], *G. Cruzan*[5], *J.S. Bus*[1], *M.I. Banton*[2], *S.S. Sarang*[3], and M. Black[4]. [1]Exponent, Midland, MI; [2]LyondellBasell, Houston, TX; [3]Shell International, Houston, TX; [4]The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and [5]ToxWorks, Bridgeton, NJ.

#2039 **Poster Board Number P443**
Transcriptional Profiling Indicates That Hypoxia and Not Formation of Glutathione Metabolites Is a Key Mode of Action for Methylene Chloride Lung and Liver Cancer. *M.B. Black*, *P.D. McMullen*, S.N. Pendse, and *M.E. Andersen*. The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#2040 **Poster Board Number P444**
Benzo(a)pyrene [B(a)p]-Induced Colon Tumorigenesis Is Enhanced by Western Diet Consumption in the Pirc Rat Model: Role of B(a)p Biotransformation. *K.L. Harris*[1], M.S. Niaz[1], M.K. Washington[2], and *A. Ramesh*[1]. [1]Meharry Medical College, Nashville, TN; and [2]Vanderbilt University, Nashville, TN.

#2041 **Poster Board Number P445**
Mode of Action (MOA) of Perfluorooctanoic acid (PFOA) Induced Liver and Pancreatic Acinar Cell Tumors in Rats. *X. Li*, *Q. Wu*, *Z. Wang*, and *J.E. Klaunig*. Indiana University, Bloomington, IN.

#2042 **Poster Board Number P446**
Mechanism of 1,3-Dichloropropene (1,3-D) Induced Liver Tumors in Rat. B.A. Elser, *X. Li*, *Z. Wang*, and *J.E. Klaunig*. Indiana University, Bloomington, IN.

#2043 **Poster Board Number P447**
Investigations on the Carcinogenic Mechanism of N-Vinyl-2-Pyrrolidone (NVP). D. Fruth[1], E. Fabian[1], M. Schulz[1], F.I. Berger[1], *F. Oesch*[2], *B. van Ravenzwaay*[1], and *R. Landsiedel*[1]. [1]BASF SE, Ludwigshafen am Rhein, Germany; and [2]Johannes Gutenberg Univiersity, Mainz, Germany.

#2044 **Poster Board Number P448**
Diindolylmethane and Its Halogenated Derivatives Induce Protective Autophagy in Human Prostate Cancer Cells via Induction of Astrocyte Elevated Gene-1 (AEG-1) and Activation of AMP-Activated Protein Kinase (AMPK). *H. Draz*[1], *A. Goldberg*[1], *S.H. Safe*[2], and *J.T. Sanderson*[1]. [1]INRS–Institut Armand-Frappier, Laval, QC, Canada; and [2]Texas A&M University, Texas, TX.

#2045 **Poster Board Number P449**
Gene Expression Changes Following Repeat Oral Administration of Tetrabromobisphenol A (TBBPA) in Female Wistar Han Rats. S.M. Hall, S.J. Coulter, *G.A. Knudsen*, *J.M. Sanders*, and *L.S. Birnbaum*. NCI at NIEHS, Research Triangle Park, NC.

#2046 **Poster Board Number P450**
Low Doses of DiEthylHexylPhthalate (DEHP) and monoEthylHexylPhthalate (mEHP) Stimulate the Proliferation of Breast Cells. E. Ferraris, E. Kolasa, and *I. Plante*. INRS - Institut Armand-Frappier, Laval, QC, Canada.

Abstract #

#2047 **Poster Board Number P451**
Flaxseed Lignans Enriched in Secoisolariciresinol Diglucoside (SDG) Prevent Asbestos-Induced Peritoneal Inflammation in Mice. R.A. Pietrofesa[2], A. Velalopoulou[2], E. Arguiri[2], C.W. Menges[1], J.R. Testa[1], W.-T. Hwang[2], S.M. Albelda[2], and M. Christofidou-Solomidou[2]. [1]Fox Chase Cancer Center, Philadelphia, PA; and [2]University of Pennsylvania, Philadelphia, PA. Sponsor: *T. Penning.*

#2048 **Poster Board Number P452**
Inhibition of Pim Kinase Sensitizes Acute Myeloid Leukemia Cells with FLT3-ITD to Induction of Apoptosis by Topoisomerase-2 Inhibitors through Increased Oxidative Stress and DNA Damage. *K.A. Doshi*[2], K. Natarajan[2], A. Tron[1], D. Huszar[1], and M.R. Baer[2]. [1]AstraZeneca, Waltham, MA; and [2]University of Maryland Greenebaum Cancer Center, Baltimore, MD.

#2049 **Poster Board Number P453**
A Novel Chemoinformatics Approach for Prioritizing Pesticides and Other Carinogenic Hazards for IARC Monographs Evaluation. D. Kumar Barupal, N. Guha, D. Loomis, and *K.Z. Guyton*. IARC-WHO, Lyon, France.

#2050 **Poster Board Number P454**
Lack of Involvement of Mutagenicity in the Modes of Action Underlying Furan-Induced Hepatocarcinogenesis. D. Hibi, Y. Yokoo, T. Tsuchiya, Y. Ishii, S. Takasu, A. Kijima, K. Ogawa, and T. Umemura. National Institute of Health Sciences, Tokyo, Japan.

#2051 **Poster Board Number P455**
Characterization of Histone Modification and Transcriptional Complexity During MMAsIII-Induced UROtsa Cell Malignant Transformation. J. Zhu[2], X. Chen[2], J. Wang[1], X. Yan[2], M. Buck[1], *J.R. Olson*[3], and *X. Ren*[2,3]. [1]Department of Biochemistry, The State University of New York, Buffalo, NY; [2]Department of Epidemiology, and Environmental Health, The State University of New York, Buffalo, NY; and [3]Department of Pharmacology, and Toxicology, The State University of New York, Buffalo, NY.

#2052 **Poster Board Number P456**
Association of Single Nucleotide Polymorphism in C10orf32-As3MT with Arsenic Induced Skin Lesions and Skin Cancers. A. Giri[2], N. Das[1], and P. Bhattacharjee[3]. [1]CSIR-Indian Institute of Chemical Biology, Kolkata, India; [2]Queens College, City University of New York, Flushing, NY; and [3]University of Calcutta, Kolkata, India.

#2053 **Poster Board Number P457**
Application of the Bhas 42 Cell Transformation Assay for the Assessment of Electronic Cigarettes. D. Breheny[2], O. Oke[2], O.M. Camacho[2], *M.D. Gaca*[2], *K. Pant*[1], S.W. Bruce[1], M.K. Laforce[1], and N. Celestin[1]. [1]Bioreliance, Rockville, MD; and [2]British American Tobacco, Southampton, United Kingdom.

#2054 **Poster Board Number P458**
Dmav in Drinking Water Activated Nf-κB Signal Pathway in Bladder Epithelial Cells and Increased Il-1β Level in Urine of Rats. S. Xi, and S. Cao. China Medical University, Shenyang, China. Sponsor: *J. Pi.*

Abstract #

Tuesday Morning, March 15
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Carcinogenesis II

Chairperson(s): *Zhongyu (June) Yan, Dow AgroSciences, Indianapolis, IN; and Charles A. Miller, Tulane University, New Orleans, LA.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *11:15 AM–12:45 PM*

#2055 **Poster Board Number P459**
2,3,7,8-Tetrachlorodibenzo-*p*-dioxin (TCDD) Treatment in Adulthood Causes Urethral Cancer in *Nkx3.1*$^{+/-}$; *Pten*$^{+/-}$ Mice. *R.W. Moore*, A.J. Schneider, T.-M. Lin, and *R.E. Peterson*. University of Wisconsin-Madison, Madison, WI.

#2056 **Poster Board Number P460**
Piperlongumine Targets Sp Transcription Factors in Cancer Cells. K.B. Karki[2], *U.H. Jin*[2], *S. Safe*[2], G. Chadalapaka[2], and I. Jutooru[1]. [1]Covance,Inc, Madison, WI; and [2]Texas A&M University, College Station, TX.

#2057 **Poster Board Number P501**
Perinatal Exposure to the Phthalate Plasticizer DEHP Alters Mammary Glands Development in Rats. E. Kolasa[1], *B. Robaire*[2], and *I. Plante*[1]. [1]INRS - Institut Armand Frappier, Laval, QC, Canada; and [2]McGill University, Montreal, QC, Canada.

#2058 **Poster Board Number P502**
Relative Potency of Mono-Methylated Chrysenes as Ligands in an Aryl Hydrocarbon Receptor (AhR) Signaling Assay. A.Y. Alqassim, J. Cuccia, and *C. Miller*. Tulane University, New Orleans, LA.

#2059 **Poster Board Number P503**
Common Jamaican Herbal Medicine, Bizzy Nut, Inhibits Cell Cycle in Prostate Cancer Cells. A. Chumbow, *W. Gray*, and *O. Phillip*. Southern University, and A&M College, Baton Rouge, LA.

#2060 **Poster Board Number P504**
Role of P450 in Hepatotoxicity and Proliferation in Bile Duct Induced by Exposure to 1,2-Dichloropropane in Mice. X. Zhang[3,4], C. Zong[3,4], *L. Zhang*[3,4], *E. Garner*[1], C. Huang[3], W. Wu[3], J. Chang[3], T. Sakurai[4], *S. Ichihara*[2], and *G. Ichihara*[3,4]. [1]Lovelace Respiratory Reseach Institute, Albuquerque, NM; [2]Mie University, Tsu, Japan; [3]Nagoya University Graduate School of Medicine, Nagoya, Japan; and [4]Tokyo University of Science, Noda, Japan.

#2061 **Poster Board Number P505**
Hypoxia-Inducible Factor1 alpha (HIF-1α) Associated with CpG Demethylation May Regulate the Level of Mir-194-1 through Promoter Activity under the Hypoxia Conditions. Q. Kong, X.-S. Chen, and P. Xu. Sun Yat-Sen University, Guang Zhou, China. Sponsor: *X.-F. Ren.*

#2062 **Poster Board Number P506**
Increased Use of Mechanistic Data in IARC Monographs. *L. Benbrahim-Tallaa*. International Agency for Research on Cancer, Lyon Cedex 08, France.

Abstract #

#2063 **Poster Board Number P507**
Ethyl Acrylate Not Mutagenic in an *In Vivo* gpt delta Transgenic Mouse Assay. *R. Ellis-Hutchings*[5], *K. Wiench*[2], *S. Murphy*[1], S. Masumori[4], and *M. Hayashi*[3]. [1]Arkema, Inc., King of Prussia, PA; [2]BASF SE, Ludwigshafen, Germany; [3]Makoto International Consulting, Ebina, Japan; [4]Public Interest Incorporated Foundation Biosafety Research Center, Shizuoka, Japan; and [5]The Dow Chemical Company, Midland, MI.

#2064 **Poster Board Number P508**
Overexpression of Histone H3.1 Facilitates Cell Migration. Y. Liu, H. Sun, *T. Kluz*, *F. Wu*, X. Zhang, *D. Chen*, A. Munoz, *T. Des Marais*, Q. Chen, *J. Brocato*, *C. Jin*, and *M. Costa*. New York University School of Medicine, New York, NY.

#2065 **Poster Board Number P509**
Targeted Disruption of T-Cell Protein Tyrosine Phosphatase in Mouse Epidermis Promotes Chemically-Induced Skin Carcinogenesis. H. Lee[3], M. Kim[3], L.D. Morales[3], A.K. Vazquez[3], *T.J. Slaga*[2], *J. DiGiovanni*[1], and *D.J. Kim*[3]. [1]University of Texas at Austin, Austin, TX; [2]University of Texas Health Science Center at San Antonio, San Antonio, TX; and [3]University of Texas Rio Grande Valley, Edinburg, TX.

#2066 **Poster Board Number P510**
Specificity Protein (Sp) Transcription Factors as Non-Oncogene Addiction Genes in Cancer Cells. *E. Hedrick*[1], *Y. Cheng*[1], *U.-H. Jin*[1], K. Kim[2], and *S. Safe*[1]. [1]Texas A&M University, College Station, TX; and [2]University of Cincinnati, College Station, OH.

#2067 **Poster Board Number P511**
Chemically Induced Mammary Tumor Differences Between Rapid and Slow Arylamine N-Acetyltransferase Congenic Fischer 344 Rats Administered 7,12-Dimethylbenzanthracene (DMBA). *M.W. Stepp*[1], M.A. Doll[1], D.J. Samuelson[1], M.A.G. Sanders[2], *J.C. States*[1], and *D.W. Hein*[1]. [1]University of Louisville, Louisville, KY; and [2]University of Louisville Hospital, Louisville, KY.

#2068 **Poster Board Number P512**
Prochloraz: Further *In Vitro* Data Comparing Responses in Male Wild-Type Mouse and Human Cultured Hepatocytes Completes the Human Relevance Framework. C. Strupp[1], *S. Melching-Kollmuss*[2], L. Chatham[3], D. Lowes[3], *I. Fegert*[2], and *C. Elcombe*[3]. [1]Adama Europe, Schaffhausen, Switzerland; [2]BASF SE, Ludwigshafen, Germany; and [3]CXR Biosciences Ltd., Dundee, United Kingdom.

#2069 **Poster Board Number P513**
Transgenerational Effects of Developmental Exposure to Low-Dose Zeranol on Sexual Development, Reproduction and Mammary Carcinogenesis. *C.A. Lewis*, B. Estrella, *A. Green*, *J. Barrett*, *M. Gallo*, *J. Richardson*, and *H. Zarbl*. Rutgers, Piscataway, NJ.

#2070 **Poster Board Number P514**
AKT Phosphorylation of RNF6 Is Required for RNF6 Mediated Ubiquitination and Transcriptional Regulation of the Androgen Receptor. H. Shimelis[1], *D. Deshmukh*[2], Y. Xi[2], and Y. Qiu[2]. [1]Mayo Clinic, Rochester, MN; and [2]University of Maryland School of Medicine, Baltimore, MD.

Abstract #

#2071 **Poster Board Number P515**
Mutagenesis and Carcinogenesis of Chronic Exposure to Low-Dose DEHP and Its Metabolite MEHP in Mammalian CHO Cells. P.-Y. Lin, Y.-J. Chang, C.-Y. Tseng, and *M.-W. Chao*. Chung Yuan Christian University, Taoyuan, Taiwan. Sponsor: *M.-W. Chao.*

#2072 **Poster Board Number P516**
Overexpression of Canonical Histone H3 Promotes Malignant Cellular Transformation. *T.L. Des Marais*, H. Sun, T. Kluz, F. Wu, Y. Liu, X. Zhang, A. Munoz, Q.Y. Chen, J. Brocato, D. Chen, *C. Jin*, and *M. Costa*. NYU, Tuxedo, NY.

#2073 **Poster Board Number P517**
3D Matrix to Measure Nickel Carcinogenesis: A Focus on Nuclear Protein 1 (NUPR1). B.A. Narayanan, T.S. Blau, N.K. Narayanan, and *M. Costa*. New York University, Tuxedo, NY.

#2074 **Poster Board Number P518**
Histone Deacetylase Inhibitors Inhibit Rhabdomyosarcoma by Reactive Oxygen Species-Dependent Targeting of Specificity Protein Transcription Factors. *E. Hedrick*[3], L. Crose[1], C. Linardic[1], and *S. Safe*[2,3]. [1]Duke University Medical Center, Durham, NC; [2]Texas A&M Health Sciences Center, Houston, TX; and [3]Texas A&M University, College Station, TX.

#2075 **Poster Board Number P519**
Chromium Induces H4k16 Hypoacetylation by Inhibiting MOF Through NUPR1 Expression. Q.Y. Chen, X. Zhang, *T. Kluz*, *M. Costa*, and *H. Sun*. New York University School of Medicine, New York, NY.

#2076 **Poster Board Number P520**
Activation of Aryl Hydrocarbon Receptor (AhR) by Indole-3-Carbinol (i3c) Decreases Tumor Susceptibility in an Inflammatory Model of Colorectal Tumorigenesis. C.J. Diaz-Diaz, S.M. Ronnekleiv-Kelly, *M. Nukaya*, P. Geiger, *C. Bradfield*, and *G. Kennedy*. University of Wisconsin-Madison, Madison, WI.

#2077 **Poster Board Number P521**
PMA-Induced Differentiation of Human Myeloid Leukemia Cells Requires Inhibition of cdc2. A. Nakasone, D. Vasilyeva, S. Fiedler, V. Lauerre, P. Dolinsky, M. Gaspard, H. Silverstein, G. Packert, and X. Hu. Barry University, Miami, FL. Sponsor: *J. Rayner.*

#2078 **Poster Board Number P522**
Penfluridol Suppresses Glioblastoma Tumor Growth by Inhibiting Sonic Hedgehog Signaling. *A. Ranjan*, and *S. Srivastava*. Texas Tech University Health Sciences Center, Amarillo, TX.

#2079 **Poster Board Number P523**
Transplacental Dibenzo[def,p]Chrysene Exposure, Indole-3-Carbinol Intervention, and Alteration of Epigenetic Machinery. *T.A. Harper*, D.A. Sampson, J. Morre, and *D.E. Williams*. Oregon State University, Corvallis, OR.

#2080 **Poster Board Number P524**
Diindolylmethane Analogs Are Ligands for NR4A Nuclear Receptors in Colon Cancer Cells. *X. Li*[1], and *S. Safe*[1,2]. [1]Texas A&M University, College Station, TX; and [2]Texas A&M University Health Science Center, Houston, TX.

Abstract #

#2081 **Poster Board Number P525**
Global De-Regulation of Gene Expression in C3H/10T1/2 Cl 8 Mouse Embryo Cell Lines Transformed by Insoluble Ni(II) Compounds. *J.R. Landolph*, A.T. Pehl-DeSilva, and *K.A. Akinwumi*. University of Southern California, Los Angeles, CA.

#2082 **Poster Board Number P526**
Pentoxifylline Modulates Major Growth and Metabolic Pathways in Prostate Cancer Cells. *R.D. Canatsey*[1,2], G.T. Le[1,2], *T.J. Monks*[1,2], and *S.S. Lau*[1,2]. [1]Dept. of Pharmacology & Toxicology, College of Pharmacy, University of Arizona, Tucson, AZ; and [2]Southwest Environmental Health Sciences Center, Tucson, AZ.

#2083 **Poster Board Number P527**
The Role of PPARγ During Breast Tumour Angiogenesis. *J.Y. Shi*, A.J. Apostoli, R.E. Rubino, and *C.J. Nicol*. Queen's University, Kingston, ON, Canada.

#2084 **Poster Board Number P528**
microRna Expression Changes in the Liver of Fisher 344 Rats After Furan Exposure. *A. de Conti*, *V. Tryndyak*, *F.A. Beland*, *D.R. Doerge*, and *I. Pogribny*. NCTR, Jefferson, AR.

#2085 **Poster Board Number P529**
Linking Site-Specific Loss of Histone Acetylation to Repression of Gene Expression by the Mycotoxin Ochratoxin A. E. Limbeck, J.T. Vanselow, J. Hofmann, A. Schlosser, and *A. Mally*. University of Wuerzburg, Wuerzburg, Germany.

#2086 **Poster Board Number P530**
Formaldehyde-Induced DNA Damage in Bone Marrow. *R. Yu*[4], *B. Moeller*[1], M. Doyle-Eisele[1], D. Kracko[1], W. Bodnar[4], L. Pontel[3], K. Patel[3], T. Starr[2,4], and *J. Swenberg*[4]. [1]Lovelace Respiratory Research Institute, Albuquerque, NM; [2]TBS Associates, Raleigh, NC; [3]University of Cambridge, Cambridge, United Kingdom; and [4]University of North Carolina at Chapel Hill, Chapel Hill, NC.

#2087 **Poster Board Number P531**
The Relationship Between Forestomach Hyperplasia and Tumorigenesis in Rodents Following Chronic Oral Exposure to Possible Carcinogens. *J.M. Fritz*[2], *M.R. Gwinn*[2], and *C.E. Wood*[1]. [1]US EPA, Research Triangle Park, NC; and [2]US EPA, Washington, DC.

#2088 **Poster Board Number P532**
Transcriptional Profiling of Rats Exposed to Acrylamide Does Not Support a Genotoxic Mode of Action for Thyroid Cancer. N. Chepelev[2], R. Gagné[1], *L. Recio*[2], and C. Yauk[1]. [1]Health Canada, Ottawa, ON, Canada; and [2]Integrated Laboratory Systems, Research Triangle Park, NC.

Abstract #

Tuesday Morning, March 15
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Chemical and Biological Weapons

Health and Environmental Impacts of Manmade and Naturally Released Toxicants

Chairperson(s): *Robert Schiestl, University of California Los Angeles, Los Angeles, CA.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *9:30 AM–11:00 AM*

#2089 **Poster Board Number P533**
Delayed Scopolamine Efficacy Following Nerve Agent Challenge in the Hartley Guinea Pig. *J.L. Plahovinsak*, M. Edwards, N.A. Niemuth, and *J.A. Harvilchuck*. Battelle, Columbus, OH.

#2090 **Poster Board Number P534**
***In Vitro* Inhibition/Reactivation of Rat Serum Butyrylcholinesterase After Exposure to Nerve Agent Surrogates and OP Insecticidal Oxons.** R. Nichols, H. Chambers, and *J. Chambers*. Mississippi State University, Starkville, MS.

#2091 **Poster Board Number P535**
Novel Substituted Phenoxyalkyl Pyridinium Oximes Enhance Survival of Rats Receiving Lethal Levels of Nerve Agent Surrogates and Paraoxon. *R.B. Pringle*, *E.C. Meek*, H.W. Chambers, C.A. Leach, and *J.E. Chambers*. Mississippi State University, Mississippi State, MS.

#2092 **Poster Board Number P536**
Analysis of Rat Brain Acetylcholinesterase (AChE) Reactivation by Novel Oximes and Pralidoxime Chloride (2-PAM) After Inhibition with a Cyclosarin Surrogate. S.A. Dezell, H.W. Chambers, and *J.E. Chambers*. Mississippi State University, Mississippi State, MS.

#2093 **Poster Board Number P537**
Determination of the Median Effective Dose of Oxime Therapies Against Topical Challenges of Organophosphates in the Guinea Pig. *M.C. Babin*[1], *T.H. Snider*[1], *D.A. Jett*[3], *G.E. Platof*[2], and *D.T. Yeung*[3]. [1]Battelle, Columbus, OH; [2]National Institutes of Health/National Institute of Allergy, and Infectious Diseases, Bethesda, MD; and [3]National Institutes of Health/National Institute of Neurological Disorders, and Stroke, Bethesda, MD.

#2094 **Poster Board Number P538**
Nitrogen Mustard Upregulates Peroxisome Proliferator Activated Receptor (PPAR)-α in Mouse Skin. *L.B. Joseph*[2], *G.M. Composto*[2], *I.M. Wohlman*[2], *H.D. Kim*[1], *D.R. Gerecke*[2], *D.L. Laskin*[2], *J.D. Laskin*[2], and *D.E. Heck*[1]. [1]New York Medical College, Valhalla, NY; and [2]Rutgers University, Piscataway, NJ.

#2095 **Poster Board Number P539**
Tertiary and Quaternary Oxime Reactivation of Sarin-, Soman-, and Paraoxon-Inhibited Acetylcholinesterase in Zebrafish Larvae. J.A. Koenig, T.L. Dao, R.K. Kan, and T.-M. Shih. US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD. Sponsor: *J. Dillman*.

Abstract #

#2096 **Poster Board Number P540**
Absorption Kinetics and Blood Brain Barrier (BBB) Penetration by a Cyanide Antidote (CAX1) on a Mice Model. B.A. Mendenhall, L. Kiss, S. Crews, J. Lowry, V. Coronado, J. Ross, D. Brown, and *I. Petrikovics*. Sam Houston State University, Huntsville, TX. Sponsor: *I. Petrikovics.*

#2097 **Poster Board Number P541**
Peroxiredoxins Are Molecular Targets for the Sulfur Mustard Analog Mechlorethamine in Human Keratinocytes. *Y.-H. Jan*[3], *D.E. Heck*[2], V. Mishin[4], *R.P. Casillas*[1], *D.L. Laskin*[4], and *J.D. Laskin*[3]. [1]MRIGlobal, Kansas City, MO; [2]New York Medical College, Valhalla, NY; [3]Rutgers School of Public Health, Piscataway, NJ; and [4]Rutgers University, Piscataway, NJ.

#2098 **Poster Board Number P542**
A Novel Peptide Protects Against Nerve Agent Poisoning. *U. Wormser*[2], B. Brodsky[2], Y. Finkelstein[1], and E. Proscura[2]. [1]Shaare Zedek Medical Center, Jerusalem, Israel; and [2]The Hebrew University, Jerusalem, Israel.

#2099 **Poster Board Number P543**
Activation of Thioredoxin-Regulated Signaling in Human Lung Epithelial Cells by Nitrogen Mustard Vesicants. *D.E. Heck*[2], *Y.-H. Jan*[3], *R.P. Casillas*[1], *D.L. Laskin*[4], and *J.D. Laskin*[3]. [1]MRIGlobal, Kansas City, MO; [2]New York Medical College, Valhalla, NY; [3]Rutgers School of Public Health, Piscataway, NJ; and [4]Rutgers University, Piscataway, NJ.

#2100 **Poster Board Number P544**
Optimization of a Neurotoxicology Animal Model for Therapeutic Intervention Studies. W.M. Weber[2], *J.D. McDonald*[2], J. Lewine[3], *M. Doyle-Eisele*[2], R. Raulli[1], J. Laney[1], and E. Garcia[1]. [1]Biomedical Advanced Research, and Development Authority, Washington, DC; [2]Lovelace Respiratory Research Institute, Albuquerque, NM; and [3]Mind Research Network, Albuquerque, NM.

#2101 **Poster Board Number P545**
14C VX Skin Penetration from Water *In Vitro*. *C.H. Dalton*, S.J. Graham, and *J. Jenner*. Dstl, Salisbury, United Kingdom.

#2102 **Poster Board Number P548**
Acute Toxicity of Phorate Oxon in the Sprague-Dawley Rat by Oral Gavage. *M.K. Brittain*[1], *M.C. Babin*[1], *T.H. Snider*[1], *D.A. Jett*[2], *G.E. Platoff*[2], and *D.T. Yeung*[2]. [1]Battelle, Columbus, OH; and [2]National Institutes of Health, Bethesda, MD.

#2103 **Poster Board Number P547**
Oxime Therapy to Provide 50% Survival in the Hartley Guinea Pig Against Organophosphorus Challenges. *C. Wilhelm*[1], *T. Snider*[1], B. Reed[1], *M. Babin*[1], G. Platoff[2], D. Jett[2], and D. Yeung[2]. [1]Battelle, Columbus, OH; and [2]National Institutes of Health, Bethesda, MD.

#2104 **Poster Board Number P548**
Efficacy of Pyridostigmine Bromide as a Pretreatment Against Nerve Agents in Guinea Pigs. *J. Harvilchuck*, J. Richey, N. Niemuth, and *J. Plahovinsak*. Battelle, Columbus, OH.

Abstract #

#2105 **Poster Board Number P549**
Larval Zebrafish as a Model for Discovering Therapeutics for Chemical Threat Agent-Induced Seizures. S. Bandara[1], D. Feldman[2], *G. Miller*[1], C. Lossin[2], and *P. Lein*[1]. [1]University of California-Davis, Davis, CA; and [2]University of California-Davis, Sacramento, CA.

#2106 **Poster Board Number P550**
Substrate and Inhibitor Kinetics of Free and Copolymer-Complexed Recombinant Human Butyrylcholinesterase. *K. Poindexter*[2], *J. Liu*[2], *L.G. Sultatos*[1], N. Flynn[2], J.D. Ramsey[2], S. Hartson[2], A. Ranjan[2], and *C. Pope*[2]. [1]New Jersey Medical School, Rutgers University, Newark, NJ; and [2]Oklahoma State University, Stillwater, OK.

#2107 **Poster Board Number P551**
Blood-Based miRNA Biomarkers of VX Exposure. J.A. Gibbons[1,2], R. Balog[3,4], C. Rothwell[3], A. Melber[3], B. Benton[2], H. Hoard-Fruchey[3], and J.W. Sekowski[2]. [1]Excet, Inc., Springfield, VA; [2]US Army Edgewood Chemical Biological Center, APG-EA, MD; [3]US Army Medical Research Institute for Chemical Defense, APG-EA, MD; and [4]US Army Reserve, APG-EA, MD. Sponsor: *S. Hulet.*

#2108 **Poster Board Number P552**
Impact of Rabbitpox Virus Infection on Oral Pharmacokinetics of Tecovirimat in New Zealand White Rabbits. M. Borges[1], M. Trinh[1], C. Lovejoy[2], M. Biswajit[2], A. Berhanu[2], D. Grosenbach[2], F. Koide[3], and *M. Beliveau*[1]. [1]Certara Strategic Consulting, Montreal, QC, Canada; [2]Siga Technologies, Inc., New York City, NY; and [3]Southern Research, Frederick, MD.

#2109 **Poster Board Number P553**
Effect of a Novel Brain-Penetrating Oxime Reactivator on Sarin Surrogate-Induced Changes in Inflammatory Factor Gene Expression in the Rat Piriform Cortex. *M.B. Dail*, *E.C. Meek*, C.A. Leach, H.W. Chambers, and *J.E. Chambers*. Mississippi State University, MS State, MS.

#2110 **Poster Board Number P554**
A Hairless Guinea Pig Model of Sulfur Mustard Vapor-Induced Dermal Partial Thickness Injury. *F. Reid*[2], D. Barillo[1], *C.R. Croutch*[2], T. Culley[2], W. Sosna[2], and J. Roseman[2]. [1]Disaster Response/Critical Care Consultants LLC, Mt Pleasant, SC; and [2]MRIGlobal, Kansas City, MO.

#2111 **Poster Board Number P555**
Blood and Tissue Silver Levels Following Application of Silver-Based Dressing to a Chemical Burn Wound. D. Barillo[1], *C.R. Croutch*[2], *F. Reid*[2], T. Culley[2], W. Sosna[2], and J. Roseman[2]. [1]Disaster Response/Critical Care Consultants LLC, Mt Pleasant, SC; and [2]MRIGlobal, Kansas City, MO.

#2112 **Poster Board Number P556**
Modulation of Wound Repair by Matricellular Proteins in Mustard-Exposed Skin. *Y.-C. Chang*, *R. Hahn*, H.-Y. Chang, P. Zhou, *M. Gordon*, and *D. Gerecke*. Rutgers University, Piscataway, NJ.

#2113 **Poster Board Number P557**
Attenuation of Nitrogen Mustard (NM) Induced Pulmonary Injury and Fibrosis by Inhibitors of Tumor Necrosis Factor (TNF)α and Reactive Oxygen and Nitrogen Intermediates. *R. Malaviya*[3], V. Sunil[3], *A. Venosa*[3], K. Vayas[3], L. Hall[1], N.D. Heindel[2], C.J. Lacey[2], *J.D. Laskin*[3], and *D.L. Laskin*[3]. [1]Janssen Research, and Development, Raritan, NJ; [2]Lehigh University, Bethlehem, PA; and [3]Rutgers University, Piscataway, NJ.

Abstract #

#2114 **Poster Board Number P558**
Assessing Novel Adenosine Treatment Strategies for Neuroprotection After Soman Exposure in a Rat Model. T. Thomas[1], and T.-M. Shih[2]. [1]Army Research Laboratory, Aberdeen Proving Ground, MD; and [2]US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD. Sponsor: *J. Dillman*.

#2115 **Poster Board Number P559**
Efficacy of Dexamethasone, Doxycycline and Silibinin in Reversing Nitrogen Mustard-Induced Corneal Injury. *D.G. Goswami*, *N. Tewari-Singh*, R. Kant, C. Agarwal, *D. Kumar*, D.A. Ammar, J.M. Petrash, and *R. Agarwal*. University of Colorado Denver, Aurora, CO.

#2116 **Poster Board Number P560**
Corneal Injury Following Ocular Exposure to Sulfur Mustard Vapor: Clinical, Histopathological and Molecular Endpoints. *N. Tewari-Singh*[2], *D.G. Goswami*[2], R. Kant[2], *D. Kumar*[2], D.A. Ammar[2], J.M. Petrash[2], R.W. Enzenauer[2], *C.R. Croutch*[1], *R.P. Casillas*[1], and *R. Agarwal*[2]. [1]MRIGlobal, Kansas City, MO; and [2]University of Colorado Denver, Aurora, CO.

#2117 **Poster Board Number P601**
Activity-Based Protein Profiling Suggests Secondary Mechanisms of VX Intoxication. J.W. Sekowski[3], D. Carmany[1], A. Walz[3], F.-L. Hsu[3], F. Berg[3], D. Noort[2], R. Van Den Berg[2], J.A. Gibbons[1], and T. Glaros[3]. [1]Excet, Inc., Springfield, VA; [2]The Netherlands Organization, Rijswijk, Netherlands; and [3]US Army ECBC, APG-EA, MD. Sponsor: *S. Hulet*.

#2118 **Poster Board Number P602**
Protective Role of Surfactant Protein-D in Nitrogen Mustard Induced Lung Toxicity. V. Sunil, K. Vayas, J. Cervelli, M. Goedken, *R. Malaviya*, *J. Laskin*, and *D. Laskin*. Rutgers University, Piscataway, NJ.

#2119 **Poster Board Number P603**
Identification of Differentially Expressed Proteins in Inferior Colliculus During Acute Hydrogen Sulfide Exposure. *W.K. Rumbeiha*[1], *D.-S. Kim*[1], *P. Anantharam*[1], A. Hoffmann[3], M.L. Meade[3], J.M. Gearhart[3], E.M. Whitley[2], and B. Mahama[1]. [1]Iowa State University, Ames, IA; [2]LLC, Gainesville, FL; and [3]Wright Patterson Air Force Base, Dayton, OH.

#2120 **Poster Board Number P604**
Therapeutic Efficacy of Cobinamide for Treatment of Hydrogen Sulfide-Induced Neurotoxicity. *P. Anantharam*[1], E.M. Whitley[2], *D.-S. Kim*[1], D. Shao[1], *M. Langley*[1], B. Mahama[1], *A. Kanthasamy*[1], *G. Boss*[3], and *W.K. Rumbeiha*[1]. [1]Iowa State University, Ames, IA; [2]Pathogenesis LLC, Gainesville, FL; and [3]University of California, San Diego, San Diego, CA.

#2121 **Poster Board Number P605**
Effect of Lower and Higher Exposure Duration on Lewisite-Induced Corneal Injury. *D. Kumar*[2], *N. Tewari-Singh*[2], *D.G. Goswami*[2], R. Kant[2], *C.R. Croutch*[1], *R.P. Casillas*[1], D.A. Ammar[2], J.M. Petrash[2], and *R. Agarwal*[2]. [1]MRIGlobal, Kansas City, MO; and [2]University of Colorado Denver, Aurora, CO.

#2122 **Poster Board Number P606**
Screening Therapies to Counteract Chlorpyrifos Toxicity in Zebrafish. A. Govindarajan, *J.J. Stegeman*, and *J. Goldstone*. Woods Hole Oceanographic Institution, Woods Hole, MA.

Abstract #

#2123 **Poster Board Number P607**
Debridement of Sulfur Mustard Vapor-Induced Partial Thickness Injuries in Hairless Guinea Pig and Minipig. T. Culley[2], *C.R. Croutch*[2], *F. Reid*[2], W. Sosna[2], J. Roseman[2], and D. Barillo[1]. [1]Disaster Response/Critical Care Consultants LLC, Mt Pleasant, SC; and [2]MRIGlobal, Kansas City, MO.

#2124 **Poster Board Number P608**
Dorsal Dermal Partial Thickness Injury in Gottingen Minipigs Induced with Sulfur Mustard Vapor. *C.R. Croutch*[2], D. Barillo[1], *F. Reid*[2], T. Culley[2], W. Sosna[2], and J. Roseman[2]. [1]Disaster Response/Critical Care Consultants LLC, Mt Pleasant, SC; and [2]MRIGlobal, Kansas City, MO.

#2125 **Poster Board Number P609**
Attenuation of Sulfur Mustard Induced Lung Injury Using a Novel Catalytic Antioxidant. *C. McElroy*[1,2], E. Min[1], J. Huang[1], J. Loader[2], T. Hendry-Hofer[2], R. Garlick[2], J. Rioux[2], *L. Veress*[2], R. Smith[2], C. Osborne[2], D. Anderson[3], W. Holmes[3], D. Paradiso[3], C. White[2], and *B. Day*[1]. [1]National Jewish Health, Denver, CO; [2]University of Colorado, Aurora, CO; and [3]USAMRICD, Aberdeen, MD.

#2126 **Poster Board Number P610**
Comparative Effects of Silibinin and AEOL 10150 in Reversing Skin Injury from Topical Nitrogen Mustard Exposure. *A.K. Jain*[2], *D. Kumar*[2], *N. Tewari-Singh*[2], R. Kant[2], *D.G. Goswami*[2], C. Agarwal[2], D.J. Orlicky[2], *C.W. White*[2], *B.J. Day*[1], and *R. Agarwal*[2]. [1]National Jewish Health, Denver, CO; and [2]University of Colorado Denver, Aurora, CO.

#2127 **Poster Board Number P611**
Analytical Method Developments for the Cyanide Antidote CAX1 for Solubility, Pharmacokinetics and Blood-Brain Barrier Penetration Characterization. L. Kiss, C.-E. Chou, B.A. Mendenhall, S.R. Crews, V. Coronado, J. Lowry, X. Dong, R. Jacob Roy, M. Kaur, M.N. Alam, M.S. Hossain, D.E. Thompson, and *I. Petrikovics*. Sam Houston State University, Huntsville, TX.

#2128 **Poster Board Number P612**
Novel Radiation and Chemical Mitigators and Anticancer Drugs. *R. Schiestl*[2], *Y. Rivina*[1], and *M. Davoren*[2]. [1]Stanford, Palo Alto, CA; and [2]UCLA, Los Angeles, CA. Sponsor: *R. Schiestl*.

#2129 **Poster Board Number P613**
Multi System Injury Following Whole Body Exposure to Sulfur Mustard and Potential Treatments. *S. Dachir*, I. Rabinovitz, G. Yacov, M. Cohen, L. Cohen, H. Gutman, R. Gez, S. Chapman, V. Horwitz, and T. Kadar. The Hebrew University, Jerusalem, Israel.

Tuesday Morning, March 15
9:30 AM to 12:45 PM
CC Exhibit Hall

PS

Poster Session: Toxic Inhalants Research

Chairperson(s): *Kristen Ryan, NIEHS, Durham, NC.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *11:15 AM–12:45 PM*

#2130 **Poster Board Number P614**
A Multidisciplinary Approach for Inhalation Phosphine Poisoning. B. Wong, R. Lewandowski, H. Hoard-Fruchey, M. Martens, M.W. Perkins, T. Hamilton, J. Devorak, J. Simons, C. Rothwell, K.P. Sherman, A.M. Rodriguez, J. Tressler, and *A.M. Sciuto*. USAMRICD, Gunpowder, MD.

Abstract #

#2131 **Poster Board Number P615**
Comparative Pulmonary Toxicity of Inhaled Metalworking Fluids in Rats and Mice. *K.R. Ryan*[1], M. Toraason[4], M. Cesta[1], R. Herbert[1], A. Brix[2], M. Cora[1], K. Janardhan[3], K. Witt[1], G. Kissling[1], and *D.L. Morgan*[1]. [1]Division of the National Toxicology Program, NIEHS, Research Triangle Park, NC; [2]EPL Inc, Research Triangle Park, NC; [3]ILS Inc, Research Triangle Park, NC; and [4]NIOSH, Cincinnati, OH.

#2132 **Poster Board Number P616**
Acrolein Toxicity on Larynx: Damage on Vocal Fold Epithelial Barrier Function. X. Liu, *W. Zheng*, and M.P. Sivasankar. Purdue University, West Lafayette, IN.

#2133 **Poster Board Number P617**
Health Guidance to Short-Term Inhalation Exposures Revisited. J.S. Snyder, and E. Demchuk. Agency for Toxic Substances, and Disease Registry, Atlanta, GA. Sponsor: *P. Ruiz.*

#2134 **Poster Board Number P618**
Volatile Benzene Exposure Induces Inflammation, Insulin Resistance and Platelet Activation. *W. Abplanalp*, X. Li, J. McCracken, *P. Haberzettl*, *D. Conklin*, S. Srivastava, A. Bhatnagar, and *T. O'Toole*. University of Louisville, Louisville, KY. Sponsor: *T. O'Toole.*

#2135 **Poster Board Number P619**
Systemic Metabolic Impairment and Lung Injury Following Acrolein Inhalation. *U.P. Kodavanti*[4], M.C. Schladweiler[4], A.D. Ledbetter[4], *M. McGee*[1], J.E. Richards[4], D. Andrews[4], *D.B. Miller*[3], *A. Henriquez*[3], and *S. Snow*[2]. [1]ORISE/US EPA, Research Triangle Park, NC; [2]ORISE/US EPA, Research Triangle Park, NC; [3]UNC, Chapel Hill, NC; and [4]US EPA, Research Triangle Park, NC.

#2136 **Poster Board Number P620**
Acute Inhalation Toxicity of Oleoresin-Capsicum-Containing Smoke Used for Crowd-Control Applications. *B.J. Varsho*, J. Kapeles, E. Delacruz, and *G.L. DeGeorge*. MB Research Labs, Spinnerstown, PA.

Tuesday Morning, March 15
9:30 AM to 12:45 PM
CC Exhibit Hall

PS

Poster Session: Risk Assessment 1

Chairperson(s): *Joanne C. English, NSF International, Menlo Park, CA; and Lisa M. Sweeney, Naval Medical Research Unit Dayton, Wright Patterson AFB, OH.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *9:30 AM–11:00 AM*

#2137 **Poster Board Number P621**
Inhalation Cancer Risk Assessment of Hexavalent Chromium Based on Updated Mortality for Painesville Chromate Production Workers. *M. Suh*[6], K.S. Crump[2], L. Mittal[5], S. Hirsch[4], R. Valdes Salgado[4], C. Bartlett[4], C. Van Landingham[3], *A.C. Rohr*[1], and *D.M. Proctor*[6]. [1]Electric Power Research Institute, Palo Alto, CA; [2]Kenny Crump, Ruston, LA; [3]Ramboll Environ, Monroe, LA; [4]SciMetrika, Durham, NC; [5]ToxStrategies, Katy, TX; and [6]ToxStrategies, Mission Viejo, CA.

Abstract #

#2138 **Poster Board Number P622**
Threshold Mode of Action Analysis of a Genotoxic Carcinogen: A Case Study with 2-Mercaptobenzothiazole (MBT). *A.D. Phelka*, *V.S. Bhat*, *J.C. English*, and *K.D. Cox*. NSF International, Ann Arbor, MI.

#2139 **Poster Board Number P623**
An Updated Evaluation of Reported Chrysotile Asbestos No Observed Adverse Effect Levels (NOAELs) for Lung Cancer and Mesothelioma. *J.S. Pierce*[2], P.S. Ruestow[2], and *B.L. Finley*[1]. [1]Cardno ChemRisk, Brooklyn, NY; and [2]Cardno ChemRisk, Chicago, IL.

#2140 **Poster Board Number P624**
Diacetyl Exposure and Respiratory Disease: An Evaluation of the Current Weight of Evidence. *B.L. Finley*[1], M.E. Glynn[2], A. Abelmann[2], and *J.S. Pierce*[2]. [1]Cardno ChemRisk, Brooklyn, NY; and [2]Cardno ChemRisk, Chicago, IL.

#2141 **Poster Board Number P625**
Evaluation of Nitrogen Dioxide and Airway Hyper-Responsiveness. *M. Seeley*, and *J.E. Goodman*. Gradient, Cambridge, MA.

#2142 **Poster Board Number P626**
Diesel Engine Exhaust - A New Criteria Document for OEL Settting. *G. Johanson*[2], P. Taxell[1], T. Santonen[1], J. Järnberg[3], and A.-K. Alexandrie[3]. [1]Finnish Institute of Occupational Health, Helsinki, Finland; [2]Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden; and [3]Swedish Work Environment Authority, Stockholm, Sweden.

#2143 **Poster Board Number P627**
Evaluation of Atherosclerosis as a Mode of Action for the Cardiovascular Effects of Particulate Matter. *R.L. Prueitt*[2], *J.M. Cohen*[2], and *J.E. Goodman*[1]. [1]Gradient, Cambridge, MA; and [2]Gradient, Seattle, WA.

#2144 **Poster Board Number P628**
Estimating Human Equivalent Exposure Concentrations for Acetaldehyde Using CFD/PBPK Modeling. *R.A. Corley*, A.P. Kuprat, D.R. Einstein, *J.G. Teeguarden*, and S. Kabilan. Pacific Northwest National Laboratory, Richland, WA.

#2145 **Poster Board Number P629**
Provisional Advisory Levels (PALs) for Cyanide (HCN, KCN, NaCN). *S. Milanez*[2], *C. Baird*[4], M. McClanahan[3], and *G. Henningsen*[1]. [1]FR-ETS, Monument, CO; [2]Oak Ridge National Laboratory, Oak Ridge, TN; [3]Retired, Centers for Disease Control, and Prevention, Chamblee, GA; and [4]USA CHPPM, Aberdeen, MD.

#2146 **Poster Board Number P630**
Derivation of Health-Protective Screening Values for Chemicals in Settled Dust on Outdoor Surfaces. *C. Kuhlman*, and *S. Wnek*. Center for Toxicology, and Environmental Health, LLC, Little Rock, AR. Sponsor: *C. Kuhlman.*

#2147 **Poster Board Number P631**
Microcystin LR-Induced Reproductive Toxicity: Implications for Risk Assessment. B. Hawkins. US EPA, Cincinnati, OH. Sponsor: *H. El-Masri.*

#2148 **Poster Board Number P632**
Reproductive and Developmental Health Impacts of Cyanotoxins: A Comparative Review. A. Saulles[1], S. Mehta[2], and B. Foos[2]. [1]University of Michigan, Ann Arbor, MI; and [2]US Environmental Protection Agency, Washington, DC. Sponsor: *E. Ohanian.*

Abstract #

#2149 **Poster Board Number P633**
Meta-Regression Analysis of Lung Cancer Risk and Inorganic Arsenic in Drinking Water Studies. H. Ferdosi[1], *S. Lamm*[1], J. Ahn[2], and J. Li[3]. [1]CEOH, LLC., Washington, DC; [2]Georgetown University, Washington, DC; and [3]Johns Hopkins School of Medicine, Baltimore, MD.

#2150 **Poster Board Number P634**
Applying the "Severe Toxicity" Factor for Non-Genotoxic Carcinogenicity When Deriving PDE Values. *J.W. Card*, H. Fikree, and *L.A. Haighton*. Intertek Scientific & Regulatory Consultancy, Mississauga, ON, Canada.

#2151 **Poster Board Number P635**
Derivation of a Permitted Daily Exposure Value for Vincristine as a Carryover Contaminant in Drug Product. H. Fikree, *J.W. Card*, and *L.A. Haighton*. Intertek Scientific & Regulatory Consultancy, Mississauga, ON, Canada.

#2152 **Poster Board Number P636**
Establishing an Allowable Drinking Water Level for the Multifunctional Acrylate, Tripropylene Glycol Diacrylate. *J.C. English*, *V.S. Bhat*, and *K.D. Cox*. NSF International, Ann Arbor, MI.

#2153 **Poster Board Number P637**
Derivation of Drinking Water Criteria and Oral Risk Assessment of the Antimicrobial Agent Triclosan. *K.D. Cox*, and *J.C. English*. NSF International, Ann Arbor, MI.

#2154 **Poster Board Number P638**
Oral Risk Assessment and Derivation of Allowable Drinking Water Levels for 1-Hexanol. *J.A. Brickel*, *K.D. Cox*, *B.J. Lampe*, and *J.C. English*. NSF International, Ann Arbor, MI.

#2155 **Poster Board Number P639**
Oral Risk Assessment and Derivation of Acceptable Drinking Water Levels for Nonylphenol. N. Beetsch, *V.S. Bhat*, and *J.C. English*. NSF International, Ann Arbor, MI.

#2156 **Poster Board Number P640**
Derivation of the Health Advisory Guidance Values for Sub-Acute Exposure of Drinking Water. T. Nishimura[3], M. Hirata-Koizumi[2], T. Yamada[2], T. Kawamura[2], A. Ono[2], A. Hirose[2], and M. Ema[1]. [1]National Institute of Advanced Industrial Science, and Technology, Tsukuba, Japan; [2]National Institute of Health Sciences, Tokyo, Japan; and [3]Teikyo Heisei University, Tokyo, Japan. Sponsor: *A. Hirose.*

#2157 **Poster Board Number P641**
Chemical Hazard Assessment of Guanidine Compounds by Categorical Regression of Human Case-Report Data. *D. Petersen*. US EPA, Cincinnati, OH. Sponsor: *D. Petersen.*

#2158 **Poster Board Number P642**
Derivation of Toxicity Factors for a Set of Structurally Diverse Isocyanates. *T. Bredfeldt*, and J.-S. Lee. Texas Commission on Environmental Quality, Austin, TX.

#2159 **Poster Board Number P643**
Derivation of Relative Potency Factors for Toxicity Surrogates of Data-Poor Chemicals. *P.R. Dodmane*[1], J.P. Kaiser[2], *Q.J. Zhao*[2], and *S.C. Wesselkamper*[2]. [1]ORISE Participant, US EPA, National Center for Environmental Assessment (NCEA), Cincinnati, OH; and [2]US EPA, NCEA, Cincinnati, OH.

Abstract #

#2160 **Poster Board Number P644**
A Case Study on the Utility of a Tiered Surrogate Approach in Quantitative Risk Assessment of 2,4,6-Trinitrophenol. *L.E. Lizarraga*[1], and *Q.J. Zhao*[2]. [1]Oak Ridge Institute for Science, and Education, Cincinnati, OH; and [2]US EPA, National Center for Environmental Assessment, Cincinnati, OH.

#2161 **Poster Board Number P645**
GenRA: Evaluating Local Validity for Read-Across Prediction Using Chemical and Biological Information. *I. Shah*[3], J. Liu[1,2,3], *R.S. Judson*[3], *R.S. Thomas*[3], and *G. Patlewicz*[3]. [1]ORISE, Oak Ridge, TN; [2]UALR, Little Rock, AR; and [3]US EPA, Research Triangle Park, NC.

#2162 **Poster Board Number P646**
Preliminary Evaluation of the Draft NIOSH Occupational Exposure Banding Protocol. C. Whittaker, S. Gilbert, L. McKernan, and M. Seaton. NIOSH, Cincinnati, OH. Sponsor: *S. Perumal Kuppusamy.*

#2163 **Poster Board Number P647**
Development of a Master Database of Non-Cancer Threshold of Toxicological Concern and Potency Categorization Based on ToxPrint Chemotypes. *C. Yang*[1,6], K. Arvidson[9], M. Cheeseman[8], M. Cronin[5], S. Enoch[5], S. Escher[3], E. Fioravanzo[7], K. Jacobs[9], T. Steger-Hartmann[2], I. Tluczkiewicz[3], A. Tarkhov[6], J. Rathman[1], V. Vitcheva[1], A. Mostrag[1], and A. Worth[4]. [1]Altamira LLC, Columbus, OH; [2]Bayer HealthCare, Berlin, Germany; [3]Fraunhofer (ITEM), Hanover, Germany; [4]Joint Research Centre, European Commission, Ispra, Italy; [5]Liverpool John Moores University, Liverpool, United Kingdom; [6]Molecular Networks GmbH, Erlangen, Germany; [7]S-IN, Vicenza, Italy; [8]Steptoe&Johnson, Washington, DC; and [9]US FDA CFSAN, College Park, MD.

#2164 **Poster Board Number P648**
Application of Gene Set Enrichment Analysis for Identification of Critical Gene Expression Networks for Application in Human Health Risk Assessment. J. Dean[3], B. Hawkins[3], M. Black[1], R. Thomas[2], and *S. Wesselkamper*[3]. [1]The Hamner Institutes for Health Sciences, Research Triangle Park, NC; [2]US EPA, Research Triangle Park, NC; and [3]US EPA/NCEA, Cincinnati, OH.

#2165 **Poster Board Number P649**
A Next Generation Benchmark Dose Computation System. *K. Shao*[2], and *A. Shapiro*[1]. [1]Independent Consultant, Durham, NC; and [2]Indiana University, Bloomington, IN.

#2166 **Poster Board Number P650**
Challenges in Developing a Systematic Review Protocol for Environmental Contaminants. *T. Greene*[3], *A. Franzen*[3], *L. Yost*[2], *N. Beck*[1], R. Fensterheim[4], and *R. Gentry*[3]. [1]American Chemistry Council, Washington, DC; [2]Environ Ramboll, Chicago, IL; [3]Environ Ramboll, Monroe, LA; and [4]RegNet Environmental Services, Washington, DC.

#2167 **Poster Board Number P651**
Validating the Use of DoCTER, a Natural Language Processing Tool, for Prioritizing Scientific Literature. M. Cawley[1], *J. Wignall*[2], and A. Varghese[1]. [1]ICF International, Durham, NC; and [2]ICF International, Fairfax, VA.

Abstract #

#2168 **Poster Board Number P652**
Text Analytics to Gain Insights on Chemical-Specific MOAs. *P. Ross*[2], A. Turley[1], A. Bordner[1], *R. Blain*[2], and *W. Mendez*[2]. [1]ICF International, Durham, NC; and [2]ICF International, Fairfax, VA.

#2169 **Poster Board Number P653**
Automated Toxicological Synonym Generation Using Neural Network-Based Language Models. A. Varghese[1], T. Hong[1], and *P. Ross*[2]. [1]ICF International, Durham, NC; and [2]ICF International, Fairfax, VA.

#2170 **Poster Board Number P654**
Acute Toxicity When Concentration Varies with Time: A Case Study with Carbon Monoxide Inhalation by Rats. *L.M. Sweeney*[3,4], M.R. Goodwin[1,4], *R.A. James*[1,4], and D.R. Sommerville[2]. [1]CAMRIS, Bethesda, MD; [2]Edgewood Chemical Biological Command, Aberdeen Proving Ground, MD; [3]Henry M. Jackson Foundation, Bethesda, MD; and [4]Naval Medical Research Unit Dayton, Wright Patterson AFB, OH.

Tuesday Morning, March 15
10:00 AM to 12:00 Noon
CC Exhibit Hall *(Across from SOT Pavilion, Booth 500)*

High School Poster Exposition

Chairperson(s): *Marie Meagher Bourgeois, University of Southern Florida, Tampa, FL.*

Endorser(s):
Education Committee
K–12 Subcommittee

High school students were invited to submit research posters for consideration for presentation in a special area near the SOT Pavilion. Students present on-site or by a virtual connection. Many of the students displaying posters also participate in the South Central Regional Chapter *Safety Matters* High School Student and Teacher Workshop on Tuesday. This display recognizes student effort and provides the high school students who have engaged in research with scientific meeting experience. Meeting attendees are invited to visit with these outstanding potential future toxicologists.

Tuesday Morning, March 15
10:00 AM to 11:00 AM
CC Lobby A Lounge
(Ticket Required; Limited Seating)

Trainee Discussion with Plenary Session Presenters: Drs. Skaper and Faden

Chairperson(s): *Caitlin J. Murphy, Smithers Avanza, Gaithersburg, MD; and Karilyn E. Sant, University of Massachusetts, Amherst, MA.*

Lecturer: Stephen Skaper, University of Padua, Padua, Italy; and Alan I. Faden, University of Maryland School of Medicine, Baltimore, MD.

Drs. Skaper and Faden meet informally for discussion with graduate students and postdoctoral scholars after their Plenary Session (*see page 181*). Registration is limited to SOT graduate student and postdoctoral members.

Tuesday Morning, March 15
10:30 AM to 11:30 AM
CC Room 205

Exhibitor-Hosted Session: Combining Real-Time Measurement of Cell Viability and Extraction of RNA from the Same 3D Spheroids

Presented by:
Promega Corporation

Promega developed a new luminescent assay technology to measure viable cell number in real time. We'll describe an efficient experimental approach to use the same 3D spheroids for measuring the real-time onset of cytotoxicity and extracting RNA to detect changes in gene expression associated with events leading to cytotoxicity.

Tuesday Morning, March 15
10:30 AM to 11:30 AM
CC Room 213

Exhibitor-Hosted Session: Conducting Aerosol and Vapor Inhalation Studies Using Highly Hazardous Chemical Agents: A Case Study of Sulfur Mustard (HD) Vapor Inhalation to Swine

Presented by:
Battelle

In animal models it's critical to have stable aerosol or vapor concentration control for inhalation testing of highly hazardous compounds delivered inhalation in order to evaluate potential treatments. The considerations taken to meet these requirements and a case example system to deliver HD vapor to swine will be discussed.

Tuesday Morning, March 15
10:30 AM to 11:30 AM
CC Room 211

Exhibitor-Hosted Session: Corning HepatoCells and 3D Organotypic Spheroid Culture Systems for Predicting Drug-Induced Liver Toxicity

Presented by:
Corning Life Sciences

This session will introduce Corning HepatoCells, a renewable human hepatocyte-like cell for ADME/Tox studies. Data will be presented demonstrating HepatoCells ability to detect a wider range of known toxins compared to other liver cell models such as HepG2, as well as the improvement in sensitivity with 3D organotypic spheroid cultures.

Tuesday Morning, March 15
10:30 AM to 11:30 AM
CC Room 212

Exhibitor-Hosted Session: Inflammation—Discovery to Toxicology

Presented by:
Charles River

Recent advances in immunology and knowledge of mechanisms involved in inflammation raise hope for developing more effective treatments of autoimmune diseases, including arthritis. This session will briefly explore recent advances in inflammation, and highlight the importance of selecting appropriate *in vitro* and *in vivo* models for research.

TUESDAY AFTERNOON

Tuesday Afternoon, March 15
12:00 Noon to 1:15 PM
CC Rivergate Room
(Ticket Required)

Postdoctoral Assembly Luncheon

Chairperson(s): *Caitlin J. Murphy, Smithers Avanza, Gaithersburg, MD.*

Hosted by:
Postdoctoral Assembly

The Postdoctoral Assembly (PDA) Luncheon is a casual event that encourages engagement and networking among postdoctoral scholars. Finishing up a discussion from your morning poster session? Leaving early to set up a poster or attend another meeting? That's no problem; stop in when you can! Enjoy a buffet lunch while networking with others, including PDA officers, Postdoctoral Representatives, and SOT Councilors. This is the time for postdocs to relax, celebrate achievements, and have fun. A short program at 12:45 pm includes recognition of the Best Postdoctoral Publication Award recipients and the welcoming of the 2016–2017 PDA officers. Door prizes add even more fun to this lively event. Postdocs should reserve a ticket for $10 when registering for the Annual Meeting.

Tuesday Afternoon, March 15
12:00 Noon to 1:00 PM
CC Room 213

Exhibitor-Hosted Session: Combining xCELLigence® CardioECR Technology and iPSC Cardiomyocytes for Relevant Frontline and Mechanistic Cardiotoxicity Screening

Presented by:
ACEA Biosciences and Cellular Dynamics International, A FUJIFILM Company

The CardioECR Instrument combines impedance and multi-electrode array technology to simultaneously assess cardiomyocyte contractility, viability, and electrophysiology. This workshop covers (1) priniciple/workflow of utilizing CardioECR and iPSC Cardiomyocytes to assess acute and chronic cardiotoxicity; (2) mechanistic insights from combining CardioECR and disease-model iPSC-cardiomyocytes; (3) results from US FDA's CiPA studies.

Tuesday Afternoon, March 15
12:00 Noon to 1:00 PM
CC Room 211

Exhibitor-Hosted Session: easyTEL-Digital, New Implanted Telemetry for Large Animals

Presented by:
emka TECHNOLOGIES

The presentation describes key features of the newly released emka TECHNOLOGIES' easyTEL-Digital implanted telemetry for large animals. This powerful state of the art product is cost effective, easy to use, and specifically designed for cardiovascular, cardiorespiratory, neurological studies. QTest labs researchers will present results from trials made at their facility.

Tuesday Afternoon, March 15
12:00 Noon to 1:00 PM
CC Room 205

Exhibitor-Hosted Session: The Next Generation of Cardiomyocyte Contractility, Cell Migration, and Cell Viability Assays Using the Sony SI8000 Live Cell Imaging Platform

Presented by:
Sony Biotechnology Inc.

The Sony SI8000 Cell Motion Imaging System combines high-speed video microscopy with a motion vector algorithm to quantify cell motion. This new platform provides high resolution cardiomyocyte contractility analysis making it ideal for toxicology screening. Easily adapt the platform to assays such as cell migration, cell death, and viability assays.

Tuesday Afternoon, March 15
12:00 Noon to 1:00 PM
CC Room 212

Exhibitor-Hosted Session: Stakeholder Session: US EPA Endocrine Disruptor Screening Program (EDSP) and the Use of High-Throughput Assays and Predictive Models to Screen for Endocrine Activity

Presented by:
US Environmental Protection Agency

The US EPA's Endocrine Disruptor Screening Program (EDSP) is incorporating high-throughput and predictive model approaches for screening chemicals for endocrine activity. These sessions concern the benefits of this transition as well as progress, next steps, and opportunities to participate. This approach will accelerate the pace of screening, decrease costs, and reduce animal testing.

Tuesday Afternoon, March 15
12:15 PM to 1:45 PM
CC Room R01

American Association of Chinese in Toxicology Special Interest Group Career Development Workshop

Tuesday Afternoon, March 15
12:15 PM to 1:45 PM
Marriott at the Convention Center Julia

Association of Scientists of Indian Origin Special Interest Group Lunch and Learn

Tuesday Afternoon, March 15
12:15 PM to 1:45 PM
CC Room 201

Drug Discovery Toxicology Specialty Section Mentoring Event

Tuesday Afternoon, March 15
12:15 PM to 1:45 PM
Grand Isle Restaurant

Medical Device and Combination Product Officers Meeting

Tuesday Afternoon, March 15
12:15 PM to 1:45 PM
Marriott at the Convention Center
See room listing below.

Specialty Section Meetings/Luncheons: Comparative and Veterinary (River Bend Ballroom 1); Occupational and Public Health (River Bend Ballroom 2)

Abstract #

Tuesday Afternoon, March 15
12:30 PM to 1:20 PM
CC Room R08

Leading Edge in Basic Science Award Lecture: New Frontiers at the Nexus of Epigenomics and Toxicology

Lecturer: *Cheryl Lyn Walker, Texas A&M Institute of Biosciences and Technology, Houston, TX.*

The epigenome has long been recognized as an important target and read out of toxicants that modulate gene expression, with the initial focus on cytosine methylation of DNA, later on chromatin modifications that comprise the "histone code," and most recently noncoding RNAs. While much of the language of epigenetics has been elucidated, pathways by which environmental and toxic insults "reprogram" the epigenome are still being uncovered, with many exciting discoveries being made that promise to open new frontiers in toxicological research. In the area of cell metabolism, new insights are being made in understanding how hypoxia and TCA cycle enzymes regulate the activity of TET enzymes that oxidize 5-metylcytosine (5-mC) to 5-hydroxymethylcytosine (5-hmC), the so-called "sixth-base," to reprogram the DNA methylome. We are also discovering that the cell's epigenetic machinery is vulnerable to environmental exposures, especially during development. Even brief early life exposures can alter the epigenome and reprogram gene expression in a manner that persists across the life course. Finally, a new picture is emerging that epigenetic "readers, writers, and erasers" have important non-chromatin targets, and that perturbations affecting these enzymes can have far-reaching impact beyond the epigenome itself, directly modifying and regulating transcription factors, cell signaling pathways, and the cytoskeleton.

Tuesday Afternoon, March 15
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: 3D Cell and Organ-on-a-Chip Models

♦ **Molecular Toxicology: Mechanistic Insights and Hazard Assessment**

♠ **Recent Advances in Safety Assessment**

Chairperson(s): *Susan Tilton, Oregon State University, Corvallis, OR; and Sreenivasa Ramaiahgari, NIEHS, Durham, NC.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *1:15 PM–2:45 PM*

#2171 **Poster Board Number P101**
Development of Advanced 3D-Models with Human Primary Bronchial Epithelial Cells (PBEC) for Exposure to Nanoparticles Present in Air Pollution. L. Palmberg[1], J. Ji[1], A. Hedlin[1], M. Börjel[1,2], V. Kessler[3], G. Seisenbaeva[3], and *P. Gerde*[1,2]. [1]Karolinska Institutet, Stockholm, Sweden; [2]KFC, Huddinge, Sweden; and [3]Swedish University of Agricultural Sciences, Uppsala, Sweden.

Abstract #

#2172 **Poster Board Number P102**
Organotypic Three-Dimensional Culture Model Engineered to Recapitulate Morphogenetic Fusion Using Human Cells. D.G. Belair, *C.J. Wolf*, *K. Das*, *A. Watkins*, and *B.D. Abbott*. US EPA, Research Triangle Park, NC.

#2173 **Poster Board Number P103**
Characterization of 3D HepaRG Microtissues for Improved Adme/tox Predictions. K. Roessger[2], V. Shevchenko[1], C. Chesne[1], *S. Messner*[2], and J.M. Kelm[2]. [1]Biopredic International Ltd., Saint-Grégoire, France; and [2]InSphero AG, Schlieren, Switzerland.

#2174 **Poster Board Number P104**
Assessment of Androgenic and Anti-Androgenic Activity Using RWPE-1 Prostate Microtissues. *M. Vantangoli*[1], S. Madnick[1], S. Wilson[1], M. Dent[2], *P. Carmichael*[2], and *K. Boekelheide*[1]. [1]Brown University, Providence, RI; and [2]Unilever, Sharnbrook, United Kingdom.

#2175 **Poster Board Number P105**
Effect of Acclimation Conditions on 3D Human *In Vitro* ALI Airway Models: Exposure-Induced Inflammatory Response and Sampling Location-Specific Results. *H.P. Behrsing*[2], L.E. Haswell[1], *A.M. Hilberer*[2], D.W. Sheehan[2], E.A. Sly[2], M. Gaça[1], and *H.A. Raabe*[2]. [1]British American Tobacco, Southampton, SO15 8TL, United Kingdom; and [2]Institute for *In Vitro* Sciences, Inc., Gaithersburg, MD.

#2176 **Poster Board Number P106**
Human Relevant Intra-Laboratory Validated *In Vitro* Vasculo/Angiogenesis Test. T. Heinonen, O. Huttala, and T. Toimela. University of Tampere, Tampere, Finland. Sponsor: *T. Knudsen.*

#2177 **Poster Board Number P107**
N-(2-Aminoethyl) Ethanolamine-Induced Morphological, Biochemical, and Biophysical Alterations in Vascular Matrix Associated with Dissecting Aortic Aneurysm. Z. Chen, Y. Xu, P. Bujalowski, A.F. Oberhauser, and *P.J. Boor*. The University of Texas Medical Branch, Galveston, TX. Sponsor: *F. Khan.*

#2178 **Poster Board Number P108**
High Density Human Stem Cell Micromass to Model Teratogen-Induced Limb Malformations. S. Yu, J. Tan, K. Clark, P.G. Alexander, and R. Tuan. University of Pittsburgh, Pittsburgh, PA. Sponsor: *L. Vernetti.*

#2179 **Poster Board Number P109**
Metabolically Competent HepaRG Spheroid Model for *In Vitro* Toxicology Studies. *S. Ramaiahgari*, *S. Waidyanatha*, *W. Boyd*, *M. DeVito*, *R. Paules*, and *S. Ferguson*. DNTP, Durham, NC.

#2180 **Poster Board Number P110**
Quantifiable 3D *In Vitro* Vasculogenesis Assay Emphasizes Importance of Cell-Matrix Interactions When Screening Putative Developmental Toxins. S.N. Thiede, N. Bajaj, K. Buno, and S. Voytik-Harbin. Purdue University, West Lafayette, IN. Sponsor: *J. Freeman.*

#2181 **Poster Board Number P111**
C57BL/6 Fetal Mouse Midbrain Micromass Culture: A Case Study of Silver Nanoparticles. *J.J. Park*, B. Weldon, J.H. Park, W. Cruikshank, T. Workman, S. Hong, *T. Ward*, *W. Griffith*, *T.J. Kavanagh*, and *E.M. Faustman*. University of Washington, Seattle, WA.

Abstract #

#2182 **Poster Board Number P112**
Development of a 3D *In Vitro* Model for the Assessment of Repeated Dose Hepatotoxicity. A. Riu, S. Emery, R. Note, S. Teissier, and J. Cotovio. L'Oréal, Aulnay-sous-Bois, France. Sponsor: *E. Dufour.*

#2183 **Poster Board Number P113**
Molecular Initiating Events in Toxicity Pathways Using Organotypic Human *In Vitro* Models. P. Fowler, S. Scott, and P. Russell. Unilever, Bedford, United Kingdom. Sponsor: *P. Carmichael.*

#2184 **Poster Board Number P114**
3D Networks of iPSC-Derived Neurons and Glia for High-Throughput Neurotoxicity Screening. R. van Vught. Mimetas, Leiden, Netherlands. Sponsor: *F. Russel.*

#2185 **Poster Board Number P115**
Developmental Neurotoxicity of Flame Retardants Using a Rat Primary Three-Dimensional Organotypic *In Vitro* Model. R.C. Sa[1,2], O.C. Ulker[3], *L. Smirnova*[2], *T. Hartung*[2], and *H. Hogberg*[2]. [1]Federal University of Paraiba, Joao Pessoa, Brazil; [2]Johns Hopkins Bloomberg School of Public Health, Baltimore, MD; and [3]University of Ankara, Ankara, Turkey.

#2186 **Poster Board Number P116**
***In Vitro* Assessment of Carcinogenic Risk for PAHs Using a 3D Lung Epithelial Model.** L.K. Siddens, B.M. Tippman, K.L. Halvorson, C.V. Loehr, and *S.C. Tilton*. Oregon State University, Corvallis, OR.

#2187 **Poster Board Number P117**
Microfluidic 4-Organ-Chip Connecting Human Liver, Intestine, Kidney and Skin Equivalents to Approach ADME Profiling. I. Maschmeyer[1], A.K. Lorenz[1], J. Hübner[1], A.P. Ramme[1], R. Lauster[2], and U. Marx[1]. [1]TissUse GmbH, Berlin, Germany; and [2]TU Berlin, Berlin, Germany. Sponsor: *P. Hayden.*

#2188 **Poster Board Number P118**
Development of an *In Vitro* Pharmacokinetic Model to Describe Nicotine Kinetics in a Multi-Organ Culture System. *Y. Zhao*[3], M. Yoon[3], *M.D. Gaca*[1], G. Phillips[1], *H. Clewell*[3], *M.E. Andersen*[3], and *J.M. McKim*[2]. [1]British American Tobacco, R&D Centre, Southampton, United Kingdom; [2]IONTOX, Kalamazoo, MI; and [3]The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

Tuesday Afternoon, March 15
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Alternative Models for Ocular and Skin Toxicity

Chairperson(s): *Kathryn E. Page, The Clorox Company, Pleasanton, CA; and Judy Strickland, NIEHS, Research Triangle Park, NC.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *3:00 PM–4:30 PM*

#2189 **Poster Board Number P119**
Comparison of Ocular Irritancy Estimation Between BCOP and Reconstructed Human Cornea Like Epithelium (RhCE). *L. Milchak*, *D. Brandwein*, *J. Warmka*, and *A. Stieffenhofer*. 3M Company, St. Paul, MN.

Abstract #

#2190 **Poster Board Number P120**
Risk Assessment and Classification of Chemicals for Their Irritation/Corrosive Potential Using an *In Vitro* Method of Bovine Corneal Opacity and Permeability Test (BCOP). M.V. Patel[1], R. Verma[1], V. Dalal[1], S. Patel[1], and *V.J. Piccirillo*[2]. [1]Jai Research Foundation, Valvada, India; and [2]VJP Consulting, Inc., Ashburn, VA.

#2191 **Poster Board Number P121**
Evaluation of Topkat, Toxtree and Derek Ocular Irritation Qsar Models and Development of a Knowledge-Based Framework to Improve Severe Irritancy Predictions. B. Bhhatarai, *D.M. Wilson*, A.K. Parks, and E.W. Carney. The Dow Chemical Company, Midland, MI.

#2192 **Poster Board Number P122**
Is There Hope to Correctly Classify Severe Ocular Irritant Agrochemical Formulations Using *In Vitro* Methods: A Proof of Concept Using the Isolated Chicken Eye Test, Two Modified BCOP Protocols and an Epiocular™ ET50 Protocol. S.N. Kolle, *B. van Ravenzwaay*, and *R. Landsiedel*. BASF SE, Ludwigshafen am Rhein, Germany.

#2193 **Poster Board Number P123**
Predictive Performance of the Short Time Exposure (STE) Test for Identifying Eye Irritation Potential of Chemical Mixtures. T. Abo[1], K. Saito[1], M. Miyazawa[1], Y. Nukada[1], K. Ei[1], *J. Avalos*[2], and H. Sakaguchi[1]. [1]Kao Corporation, Tochigi, Japan; and [2]Kao USA Inc., Cincinnati, OH.

#2194 **Poster Board Number P124**
Correlation of Two *In Vitro* EpiOcular™ Test Methods and Consumer Eye Irritation Data for Cleaning Products. L.A. Strazdas[3], *K.E. Page*[3], *P.D. Elias*[3], N. Wilt[1], G. Mun[1], E. Sly[1], N. Sadowski[2], J. Saudan[3], and K. Mainquist[3]. [1]Institute for *In Vitro* Sciences, Inc., Gaithersburg, MD; [2]Institute for *In Vitro* Sciences, Inc., Gaithersburg, CA; and [3]The Clorox Company, Pleasanton, CA.

#2195 **Poster Board Number P125**
An Approach to Skin Sensitization Quantitative Risk Assessment Using a Bayesian Integrated Testing Strategy to Derive Potency. *C. Ryan*[2], J. Jaworska[3], P. Kern[1], and *G.F. Gerberick*[2]. [1]The Procter & Gamble Company, Beijing, China; [2]The Procter & Gamble Company, Mason, OH; and [3]The Procter & Gamble Company, Strombeek-Bever, Belgium.

#2196 **Poster Board Number P126**
Bayesian Integrated Testing Strategy (ITS) for Skin Sensitization Potency Assessment - A Decision Support System for Quantitative Weight of Evidence and Adaptive Testing Strategy. J. Jaworska[6], A. Natsch[1], *C. Ryan*[5], *J. Strickland*[2], T. Ashikaga[4], and M. Miyazawa[3]. [1]Givaudan Schweiz AG, Dübendorf, Switzerland; [2]ILS/NICEATM, Research Triangle Park, NC; [3]Kao Corporation, Tochigi, Japan; [4]Shisheido Company Limited, Kanagawa, Japan; [5]The Procter & Gamble Company, Mason, OH; and [6]The Procter & Gamble Company, Strombeek-Bever, Belgium.

Abstract #

#2197 **Poster Board Number P127**
Prediction of Systemic Bioavailability Using *In Vitro* Skin Absorption and Epidermal and Hepatic Metabolism of Phosphate Alkyl Ethoxylate Esters. J.D. Manwaring[1], T. Kirsch[2], C.M. Obringer[1], D. Foltz[1], T. Baker[1], C. Goebel[2], and J.A. Troutman[1]. [1]Procter & Gamble, Mason, OH; and [2]Procter & Gamble, Schwalbach, Germany. Sponsor: *G. Daston*.

#2198 **Poster Board Number P128**
Intra/Inter Reproducibility Analysis of the *In Vitro* Skin Sensitization Assay Using Reconstructed Human Epidermis. K. Saito[2], H. Mizumachi[2], M. Miyazawa[2], M. Ikezumi[1], A. Umetsu[1], H. Motohashi[1], M. Sakuma[3], M. Takeyoshi[3], and N. Imai[3]. [1]Hatano Research Institute, Food, and Drug Safety Center, Kanagawa, Japan; [2]Kao corporation, R&D Safety Science Research, Tochigi, Japan; and [3]KOSÉ Corporation, Fundamental Research Laboratories, Tokyo, Japan. Sponsor: *J. Avalos*.

#2199 **Poster Board Number P129**
Evaluation of the Episkin RHE Model in the SENS-IS Assay for Prediction of Skin Sensitization of Chemicals. F. Cottrez[2], E. Boitel[2], C. Pellevoisin[1], N. Seyler[1], and H. Groux[2]. [1]EPISKIN Academy, Lyon, France; and [2]ImmunoSearch, Grasse, France. Sponsor: *E. Dufour*.

#2200 **Poster Board Number P130**
Identification of Pre- and Pro-Haptens for Skin Sensization with Non-Animal Test Methods. D. Urbisch[3], E. Fabian[3], N. Honarvar[3], S.N. Kolle[3], A. Mehling[1], T. Ramirez[3], D. Vogel[3], W. Teubner[2], and *R. Landsiedel*[3]. [1]BASF Personal Care, and Nutrition, Düsseldorf, Germany; [2]BASF Schweiz AG, Basel, Switzerland; and [3]BASF SE, Ludwigshafen am Rhein, Germany.

#2201 **Poster Board Number P131**
The Potential of Protein Reactivity to Predict Skin Sensitizing Potency: Of Peptide Depletion, Reaction Time and Tested Concentrations. B. Wareing, S.N. Kolle, D. Urbisch, D. Mulliner, *B. van Ravenzwaay*, and *R. Landsiedel*. BASF SE, Ludwigshafen am Rhein, Germany.

#2202 **Poster Board Number P132**
Multivariate Models for Prediction of Human Skin Sensitization Hazard. *J. Strickland*[5], *Q. Zang*[5], M. Paris[5], *D.M. Lehmann*[2], *N. Kleinstreuer*[5], *D. Allen*[5], *N. Choksi*[5], *J. Matheson*[1], *A. Jacobs*[4], *A. Lowit*[3], and *W. Casey*[5]. [1]CPSC, Rockville, MD; [2]US EPA/ORD/NHEERL, Durham, NC; [3]US EPA/OSCSPP/OPP, Washington, DC; [4]US FDA/CDER, Silver Spring, MD; and [5]NIEHS/NICEATM, Durham, NC.

#2203 **Poster Board Number P133**
Reducing False Negatives of Chemicals in the *In Vitro* Skin Sensitization Test. K. Narita[2], P.T. Vo[2], F. Nakagawa[2], *H. Kojima*[1], and *H. Itagaki*[2]. [1]National Institute of Health Sciences, Tokyo, Japan; and [2]Yokohama National University, Yokohama, Japan.

#2204 **Poster Board Number P134**
Development of Photo-Direct Peptide Reactivity Assay. H. Nishida[1], T. Ashikaga[1], M. Hirota[1], S. Onoue[2], Y. Seto[2], and *H. Kouzuki*[1]. [1]Shiseido Research Center, Yokohama-shi, Japan; and [2]University of Shizuoka, Shizuoka-shi, Japan.

Abstract #

#2205 **Poster Board Number P135**
Prediction of Skin Sensitizing Potency of Chemicals by the Alternative Cell-Based Assay GARD. T. Lindberg, K. Zeller, A. Forreryd, A. Chawade, and *M. Lindstedt*. Lund University, Lund, Sweden.

#2206 **Poster Board Number P136**
Applicability Domain of the U-SENS™ Test Method for Skin Sensitization Testing over 175 Chemicals. C. Piroird, L. Nardelli, J. Cotovio, and N. Alepee. L'Oreal, Aulnay Sous Bois, France. Sponsor: *E. Dufour*.

#2207 **Poster Board Number P137**
Integrated Test Approach for *In Vitro* Skin Irritation and Sensitization Testing. H. Hofman-Huether, and H. Gehrke. Eurofins BioPharma Product Testing Munich GmbH, Planegg, Germany. Sponsor: *A. Poth*.

#2208 **Poster Board Number P138**
A Weight of Evidence Investigation of Agrochemical Actives and Formulations for Skin Sensitization Potential Using *In Silico, In Chemico, In Vitro*, and GHS Concentration Threshold Approaches. *S.C. Gehen*[1], R. Acosta Amado[1], *N.R. Visconti*[2], L. Luna[2], M. Corvaro[1], J. McFadden[2], *D.M. Wilson*[2], and *R.S. Settivari*[2]. [1]Dow AgroSciences, Indianapolis, IN; and [2]Dow Chemical Company, Midland, MI.

#2209 **Poster Board Number P139**
Combining *In Silico* and *In Vitro* Methods to Improve the Accuracy of Skin Sensitization Predictions for Chemicals. M. Lamm, N. Sadowski, and K.G. Norman. Institute for *In Vitro* Sciences, Gaithersburg, MD. Sponsor: *H. Raabe*.

Tuesday Afternoon, March 15
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Biological Modeling

Chairperson(s): *Eva McLanahan, CDC/ATSDR, Atlanta, GA; and Rory Conolly, US Environmental Protection Agency, Research Triangle Park, NC.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *1:15 PM–2:45 PM*

#2210 **Poster Board Number P140**
Agent-Based Computational Modeling of Cell Culture: Understanding Dosimetry *In Vitro* As Part of *In Vitro* to *In Vivo* Extrapolation. *R. Conolly*[2], *W. Cheng*[3], C. Eklund[2], J. Samet[1], *P. Wages*[1], K. Lavrich[1], and *S. Bhattacharya*[4]. [1]US EPA, Chapel Hill, NC; [2]US EPA, Research Triangle Park, NC; [3]US EPA/ORISE Internship/Research Participation Program, Research Triangle Park, NC; and [4]The Hamner Institutes, Research Triangle Park, NC.

#2211 **Poster Board Number P141**
Modeling Concurrent Binding of Mixed Integrin Species to Multiple ECM Ligands. S.V. Hudson, C.E. Dolin, L.G. Poole, V.L. Massey, D.W. Wilkey, G.N. Brock, M.L. Merchant, H.B. Frieboes, and *G.E. Arteel*. University of Louisville, Louisville, KY.

Abstract #

#2212 **Poster Board Number P142**
Oxidative Stress Response—Predicting Adaptive to Adverse Transition. *S. Das*[3], R. Kumar[3], A. Khanna[3], M.K. Narasimha[3], B. Thota[3], K. Rajendran[3], D. Raman[3], V. Rajagopalan[3], N. Dharwar[3], G.V. Balamurali[3], G. Jain[1], S. Cooper[2], A. Middleton[2], S. Glavin[2], A. White[2], *P. Carmichael*[2], and *K. Subramanian*[3]. [1]SEAC, Unilever, Bangalore, India; [2]SEAC, Unilever, UK, United Kingdom; and [3]Strand Life Sciences Pvt. Ltd, Bangalore, India.

#2213 **Poster Board Number P143**
Adverse Outcome Pathway (AOP) Network Development for Fatty Liver. *M.M. Angrish*[2], J.P. Kaiser[1], *C.A. McQueen*[2], and B.N. Chorley[2]. [1]US EPA, Cincinnati, OH; and [2]US EPA, Durham, NC.

#2214 **Poster Board Number P144**
Computational Modeling to Evaluate Alternative Hypotheses for the Linkage of Aromatase Inhibition to Vitellogenin Levels in Fathead Minnows. *W. Cheng*[3], *Q. Zhang*[4], A. Schroeder[1], D. Villeneuve[1], G. Ankley[1], and *R. Conolly*[2]. [1]US EPA, Duluth, MN; [2]US EPA, Research Triangle Park, NC; [3]ORISE, Research Triangle Park, NC; and [4]The Hamner Institutes, Research Triangle Park, NC.

#2215 **Poster Board Number P145**
Multiscale Modeling of Aerosol Deposition in the Complete Respiratory Tracts of Animals and Humans. A.P. Kuprat[2], S. Kabilan[2], O. Price[1], *B. Asgharian*[1], and *R.A. Corley*[2]. [1]Applied Research Associates, Raleigh, NC; and [2]Pacific Northwest National Laboratory, Richland, WA.

#2216 **Poster Board Number P146**
Comparison of Realistic and Idealized Breathing Patterns in Computational Models of Airflow and Vapor Dosimetry in the Rodent Upper Respiratory Tract. S.M. Colby, S. Kabilan, R.E. Jacob, A.P. Kuprat, D.R. Einstein, and *R.A. Corley*. Pacific Northwest National Laboratory, Richland, WA.

#2217 **Poster Board Number P147**
Development of a Mathematical Model of Anthrax in Humans and Application to Estimate Risk to Fielded Biological Threat Identification Equipment Operators. C.E. Hack[1], *J.M. Gearhart*[1], *T.R. Covington*[1], C.R. Starr[2], and R.R. Chapleau[2]. [1]711 HPW/RHDJ, Wright-Patterson AFB, OH; and [2]USAFSAM, Wright-Patterson AFB, OH.

#2218 **Poster Board Number P148**
Systems Toxicology Modeling for a Compound That Caused Drug Induced Liver Injury (DILI) in Humans but Not Preclinical Species. *H.A. Barton*[2], *M.D. Aleo*[2], B. Howell[1], *Y. Yang*[1], S. Siler[1], *P.B. Watkins*[1], and L. Shoda[1]. [1]Hamner Institute for Health Sciences, Research Triangle Park, NC; and [2]Pfizer, Inc., Groton, CT.

#2219 **Poster Board Number P149**
Development of Physiologically Based Pharmacokinetic (PBPK) Models for the Quantitative Characterization of Interspecies Oseltamivir Pharmacokinetics. N. Fausto[1,2], L. Loukotkova[1], *G. Gamboa*[1], and *A. Lumen*[1]. [1]NCTR/US FDA, Jefferson, AR; and [2]St. John's University, Queens, NY.

#2220 **Poster Board Number P150**
Pharmacovigilance Activities in Children. E. Ozcagli, and *B. Alpertunga*. Istanbul University Faculty of Pharmacy, Istanbul, Turkey.

Abstract #

#2221 **Poster Board Number P151**
Evaluating the Value of Augmenting *In Vitro* Hazard Assessment with Exposure and Pharmacokinetics Considerations for Chemical Prioritization. *C. Tan*[2], *J. Leonard*[2], S. Scholle[2], M. Winter[2], P. Key[2], *J. Lu*[2], and *D. Chang*[1]. [1]Chemical Computing Group, Montreal, QC, Canada; and [2]US EPA, Research Triangle Park, NC.

#2222 **Poster Board Number P152**
Integrating High Throughput Exposure and Hazard Data Using a Physiologically Based Pharmacokinetic/pharmacodynamic Model for Thyroid Peroxidase Inhibitors. *J. Leonard*, *C. Tan*, *M. Gilbert*, K. Isaacs, and *H. El-Masri*. US EPA, Research Triangle Park, NC.

#2223 **Poster Board Number P153**
***In Vitro-In Vivo* Extrapolation (*IVIV*E) to Support *In Silico/In Vitro* Based Risk Assessment: PBTK Modeling of Selected Potential Endocrine Modulators.** C. Haase, E. Fabian, T. Ramirez, *B. van Ravenzwayy*, and *R. Landsiedel*. BASF SE, Ludwigshafen am Rhein, Germany.

#2224 **Poster Board Number P154**
***In Vitro* to *In Vivo* Extrapolation for Estrogenic Activity of Environmental Chemicals.** *X. Chang*[3], *N. Kleinstreuer*[3], *P. Ceger*[3], *N. Choksi*[3], *J.-H. Hsieh*[1], *B.A. Wetmore*[4], *S. Ferguson*[2], *M. DeVito*[2], *D. Allen*[3], and *W. Casey*[3]. [1]Kelly Services, Inc., Durham, NC; [2]NIEHS/DNTP, Durham, NC; [3]NIEHS/NICEATM, Durham, NC; and [4]The Hamner Institutes for Health Sciences, Durham, NC.

#2225 **Poster Board Number P155**
Evaluation of Pharmacokinetic Assumptions Using a 443 Chemical Library. R. Pearce[2], W. Setzer[2], J. Davis[1,2], and *J. Wambaugh*[2]. [1]Syngenta, Research Triangle Park, NC; and [2]US EPA, Research Triangle Park, NC.

#2226 **Poster Board Number P156**
Multi-Route Toxicokinetic Predictions with GastroPlus™ Software for High-Throughput Exposure Assessments. L. Luna[1], N. Sunger[2], B. Bhhatarai[1], F. Zhang[1], *D. Wilson*[1], S. Arnold[1], A. Beasley[1], B. Landenberger[1], and *M. Bartels*[1]. [1]The Dow Chemical Company, Midland, MI; and [2]West Chester University, Philadelphia, PA.

#2227 **Poster Board Number P157**
Applications of the PBPK Model of Dioxins to Evaluate Real Life Exposure Scenarios. *C. Emond*[2], *P. Ruiz*[1], and *M. Mumtaz*[1]. [1]ATSDR/CDC, Atlanta, GA; and [2]BioSimulation Consulting Inc., Newark, DE.

#2228 **Poster Board Number P158**
Simulated Reconstructions of High Performance Aircraft Pilot Exposures Using Physiologically Based Pharmacokinetic Modeling. *H.A. Pangburn*[3], *T. Covington*[2], T. Habib[3], R.S. Mayes[4], C.C. Grigsby[1], D.K. Ott[4], and *J.M. Gearhart*[2]. [1]711th Human Performance Wing/RHXBC, WPAFB, OH; [2]Henry M. Jackson Foundation, WPAFB, OH; [3]STS on contract to United States Air Force School of Aerospace Medicine (USAFSAM), WPAFB, OH; and [4]USAFSAM, WPAFB, OH.

Abstract #

#2229 **Poster Board Number P159**
Reverse Dosimetry Modeling of Toluene Exposure Concentrations Based on Biomonitoring Levels from the Canadian Health Measures Survey. *H.G. Tohon*[3], *M. Moreau*[1], *M. Valcke*[2], *S. Haddad*[3], and *A. Nong*[1]. [1]Health Canada, Ottawa, ON, Canada; [2]National Institute of Public Health of Quebec, Montreal, QC, Canada; and [3]University of Montreal, Montreal, QC, Canada.

#2230 **Poster Board Number P160**
How Malathion Dermal Absorption Varies with Dermal Load, Based on Physiologically Based Pharmacokinetic Modeling of *In Vivo* Human Data. A. Singhal. Exponent, Inc., Suite 400, CA. Sponsor: *K. Bogen*.

#2231 **Poster Board Number P161**
Pbpk-Model Estimates of Bromodichloromethane (bdcm) Delivery to the Human Urinary Bladder. *E.M. Kenyon*, C. Eklund, *J.E. Simmons*, and *R.A. Pegram*. US EPA, Durham, NC.

#2232 **Poster Board Number P162**
Route-to-Route Extrapolation of 1,2-Dichloroethane Studies from the Oral Route to Inhalation Using Physiologically Based Pharmacokinetic Models. *M.L. Gargas*, and *L.M. Sweeney*. Independent Consultants, Dayton, OH.

#2233 **Poster Board Number P163**
Alcohol Calculations in a Stage 5 Transgender Female. *M.D. Dulaney*. Dulaney Toxicology Inc, Tallahassee, FL.

#2234 **Poster Board Number P164**
Utilization of Physiologically Based Pharmacokinetic Modeling (PBPK) to Understand the Role of Fetal Metabolism in Polycyclic Aromatic Hydrocarbon (PAH) Toxicity. *J. Smith*[2], *S.R. Crowell*[1], D. Mehinagic[2], N.C. Sadler[2], A.T. Wright[2], and R.A. Corley[2]. [1]Genentech, South San Francisco, CA; and [2]PNNL, Richland, WA.

#2235 **Poster Board Number P165**
Evaluating the All-Ages Lead Model Using Site-Specific Data: Approaches and Challenges. *E.D. McLanahan*[1], L. Wilder[1], D. Jackson[1], D. Mellard[1], K. Scruton[1], K. Bradham[2], and *R. Worley*[1,3]. [1]CDC/ATSDR, Atlanta, GA; [2]US EPA/ORD/NERL, Research Triangle Park, NC; and [3]Univ of Georgia, Athens, GA.

#2236 **Poster Board Number P166**
Comparison of All Ages Lead Model Version 4 with LeadSpread 8 in Evaluation of Lead Exposure at California Hazardous Waste Sites. *K.C. Gettmann*, L. Nakayama Wong, and *M.J. Wade*. Cal/EPA, Sacramento, CA.

#2237 **Poster Board Number P167**
Physiologically Based Pharmacokinetic Modeling of the Reduction of Hexavalent Chromium in the Gastrointestinal Tract of Mice, Rats, and Humans. *C.R. Kirman*[1], *D.M. Proctor*[4], *M. Suh*[4], *L.C. Haws*[3], *M.A. Harris*[2], and *S.M. Hays*[1]. [1]Summit Toxicology, LLP, Orange Village, OH; [2]ToxStrategies, Katy, TX; [3]ToxStrategies, Inc., Austin, TX; and [4]ToxStrategies, Inc., Mission Viejo, CA.

Abstract #

#2238 **Poster Board Number P168**
A Comprehensive Physiologically Based Pharmacokinetic Knowledgebase and Web-Based Interface for Rapid Model Ranking and Querying. *J. Lu*[3], *M.-R. Goldsmith*[1], C. Grulke[2], *D. Chang*[1], *J. Leonard*[3], E. Hypes[3], M. Fair[3], and *C. Tan*[3]. [1]Chemical Computing Group, Montreal, QC, Canada; [2]Lockheed Martin, Research Triangle Park, NC; and [3]US EPA, Research Triangle Park, NC.

#2239 **Poster Board Number P169**
Application of Physiologically-Based Pharmacokinetic Modeling to Explore the Role of Kidney Transporters in Renal Reabsorption of Perfluorooctanoic Acid in the Rat. *R.R. Worley*[1], and *J. Fisher*[2]. [1]CDC/ATSDR, Atlanta, GA; and [2]US FDA, Jefferson, AR.

#2240 **Poster Board Number P170**
Evaluation of the Short-Term Clearance of Perflourooctanoic Acid (PFOA) in a Clinical Trial Using a PBPK Model and Markov Chain Monte Carlo Analysis. *J. Campbell*[5], B. Allen[3], *G. Olsen*[1], *C. Elcombe*[2], E. Doyle[2], J. Evans[4], and *H. Clewell*[5]. [1]3M, St. Paul, MN; [2]CXR Biosciences, Dundee, United Kingdom; [3]Independent Consultant, Chapel Hill, NC; [4]The Beatson West of Scotland Cancer Centre, Glasgow, United Kingdom; and [5]The Hamner Institutes, Research Triangle Park, NC.

Tuesday Afternoon, March 15
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Particulate Matter Toxicology

Chairperson(s): *Matthew Campen, University of New Mexico, Albuquerque, NM.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *3:00 PM–4:30 PM*

#2241 **Poster Board Number P171**
Comparative Respiratory Toxicity of PM 2.5 to Human Lung Cells Cultured in Three Dimensions and in Monolayers. E.R.A. Ferraz[1,2], C.R. Rainho[2], A.S. Fernandes[2], and I. Felzenszwalb[2]. [1]Fluminense Federal University, Niteroi, Brazil; and [2]University of the State of Rio de Janeiro, Rio de Janeiro, Brazil. Sponsor: *D. Oliveira*.

#2242 **Poster Board Number P172**
Concentrations of Individual Fine Particulate Matter Components in the United States Around the 4th of July. E. Chan[2,3], A. Dickerson[1,3], and *B. Buckley*[2]. [1]Integrated Risk Information System, Office of Research, and Development, US EPA, Durham, NC; [2]National Center for Environmental Assessment, Office of Research, and Development, US EPA, Durham, NC; and [3]Oak Ridge Institute for Science, and Education, Oak Ridge, TN.

#2243 **Poster Board Number P173**
ROS Species Present on PM Are Associated with Biological Changes in Humans Exposed to Fine + Ultrafine CAPS. *R. Devlin*[1], V. Verma[2], A. Rappold[1], H. Tong[1], and R. Weber[2]. [1]US EPA, Research Triangle Park, NC; and [2]Georgia Institute of Technology, Atlanta, GA.

Abstract #

#2244 **Poster Board Number P174**
Temperature and Calcium Dependent Activation of TRPM8 by Particulate Materials. S.K. Marcus, Z. Lu, *E.G. Romero*, *C.E. Deering-Rice*, and *C.A. Reilly*. University of Utah, Salt Lake City, UT.

#2245 **Poster Board Number P175**
Regulatory T Cells and IL10 Suppress Pulmonary Host Defense During Early Life Exposure to Radical Containing Ultrafine Particulate Matter. *S. Jaligama*, N. Yadav, J. Minso, G.I. Lee, and *S.A. Cormier*. University of Tennessee Health Science Center, Memphis, TN.

#2246 **Poster Board Number P176**
Enhanced Nitrative and Oxidative Dysfunction of Upper and Lower Respiratory Tissues in World Trade Center Dust Exposed Mice. *M. Hernandez*, *A. Harrington*, K. Galdanes, *T. Gordon*, and *L.-C. Chen*. New York University, Tuxedo, NY. Sponsor: *L.-C. Chen.*

#2247 **Poster Board Number P177**
Transcriptome Analysis Reveals Chronic Ailment Progression from Fine, Coarse, and Supercoarse World Trade Center Particles on Exposed Rat Lung and Liver. M. Marshall, L. Horton, M. Sisco, C. Prophete, H. Sun, *J. Zelikoff*, M. Cohen, and *L.-C. Chen*. New York University School of Medicine, Tuxedo, NY.

#2248 **Poster Board Number P178**
Pulmonary and Cardiovascular Effects in Mice After Intratracheal Instillation of Particles from Burning Candles in Mice. *P. Moller*[2], A. Skovmand[2], A.C. Gouveia[2], I.K. Koponen[1], S. Loft[2], and M. Roursgaard[2]. [1]The National Research Centre for the Working Environment, Copenhagen O, Denmark; and [2]University of Copenhagen, Copenhagen K, Denmark.

#2249 **Withdrawn.**

#2250 **Poster Board Number P180**
Fine Particulate Matter (PM2.5) Exposure and the Cardiometabolic Effects in Circadian Dyssynchrony. *P. Haberzettl*, A. Bhatnagar, and *D.J. Conklin*. University of Louisville, Louisville, KY.

#2251 **Poster Board Number P181**
Chemical Composition Determines TRPA1 and Other Cellular Responses to Diesel Exhaust Particulate Materials. Z. Lu, *C.E. Deering-Rice*, and *C.A. Reilly*. University of Utah, Salt Lake City, UT.

#2252 **Poster Board Number P182**
Zebrafish Locomotor Responses Demonstrate Irritant Effects of Fine Particulate Matter Sources and a Role for TRPA1. J. Stevens, D. DeMarini, *M.S. Hazari*, D.L. Hunter, S. Padilla, and *A.K. Farraj*. US Environmental Protection Agency, Research Triangle Park, NC.

#2253 **Poster Board Number P183**
Immunologic Effect of Ozone and PM2.5 from Mexico City in a Guinea Pig Asthma Model. L.I. Garcia-Alonso[3,4], *C.I. Falcon-Rodriguez*[3], A. Osornio-Vargas[5], N. Manzano-Leon[2], I. Rosas-Perez[4], A. De Vizcaya-Ruiz[1], and P. Segura-Medina[3]. [1]CINVESTAV, Mexico City, Mexico; [2]INCAN, Mexico City, Mexico; [3]INER, Mexico City, Mexico; [4]UNAM, Mexico City, Mexico; and [5]University of Alberta., Edmonton, AB, Canada. Sponsor: *A. de Vizcaya-Ruiz.*

Abstract #

#2254 **Poster Board Number P184**
Pulmonary Inflammatory Responses to Acute Meteorite Dust Exposures - Implications for Human Space Exploration. *A.D. Harrington*[4,5], F.M. McCubbin[3], J. Kaur[5], A. Smirnov[2,5], K. Galdanes[4], M.A. Schoonen[1,5], *L.-C. Chen*[4], S.E. Tsirka[5], and *T. Gordon*[4]. [1]Brookhaven National Laboratory, Upton, NY; [2]Dowling College, Oakdale, NY; [3]NASA Johnson Space Center, Houston, TX; [4]New York University School of Medicine, Tuxedo, NY; and [5]Stony Brook University, Stony Brook, NY.

#2255 **Poster Board Number P185**
Differences in Responses to Diesel Exhaust Particles from Asthmatic and Non-Asthmatic Bronchial Epithelial Cells. *L.B. Mendez*, W. Torres-Rivera, and C. Torres. Universidad del Este, Carolina, PR.

#2256 **Poster Board Number P186**
Size-Resolved Oxidative Potential of Traffic-Related Particles. R.V. Luna-Serrano, E.D. Gonzalez-Figueroa, W. Torres-Rivera, and *L.B. Mendez*. Universidad del Este, Carolina, PR.

#2257 **Poster Board Number P187**
The Association Between Ambient PM2.5 Concentration and Rate of Asthma Hospitalizations in Louisiana, 2009. J. Ding, K. Gam, and *M. Lichtveld*. Tulane University, New Orleans, LA.

#2258 **Poster Board Number P188**
Evaluation of Different Particle Size Quantification Instruments - Strengths/ Weaknesses and Characteristics for Consideration in Determining the Appropriate Technique. P.J. Kuehl, D. Kracko, H. Irshad, E. Yates, and *J. McDonald*. Lovelace Respiratory Research Institute, Albuquerque, NM.

#2259 **Poster Board Number P189**
Investigation of Acute Pulmonary Deficits Associated with Biomass Fuel Cookstove Emissions in Rural Bangladesh. *J. Angermann*, D. Medgyesi, J. Parks, and H. Holmes. University of Nevada, Reno, NV. Sponsor: *J. Angermann.*

#2260 **Poster Board Number P190**
Simultaneous Exposure to Concentrated Ambient Particles and Acrolein Causes Cardiac Effects Mediated by Parasympathetic Modulation in Mice. *N. Kurhanewicz*[2], A. Ledbetter[1], L. Walsh[1], *A.K. Farraj*[1], and *M.S. Hazari*[1]. [1]Environmental Public Health Division, Research Triangle Park, NC; and [2]University of North Carolina, Chapel Hill, NC.

#2261 **Poster Board Number P191**
Serum-Borne Vascular Toxicity Following Inhalation of Mixed Engine Emissions and Treated Particles. *J. Liu*[1], J. Brower[1], *M. Doyle-Eisele*[1], G. Herbert[2], L. Heine[2], B. Sanchez[2], *K. Zychowski*[2], L. Topper[2], *J. McDonald*[1], and *M. Campen*[2]. [1]Lovelace Respiratory Research Institute, Albuquerque, NM; and [2]University of New Mexico, Albuquerque, NM.

Abstract #

#2262 **Poster Board Number P192**
Serum from Diesel Exhaust-Exposed Rats with Cardiac Dysfunction Alters Aortic Endothelial Cell Function *In Vitro*: Circulating Mediators as Causative Factors? *A.K. Farraj*[2], *J. Shanahan*[3], *L.C. Thompson*[2], C.M. Perez[1], N. Haykal-Coates[2], C. King[2], *M.S. Hazari*[2], and *J. Brown*[3]. [1]Meredith College, Raleigh, NC; [2]US Environmental Protection Agency, Research Triangle Park, NC; and [3]University of Colorado Anschutz Medical Campus, Aurora, CO.

#2263 **Poster Board Number P193**
Co-Exposure to Inhaled Ambient Particulate Matter and Acrolein Alters Myocardial Synchrony in Mice: Evidence for Trpa1 Involvement. *L.C. Thompson*, L. Walsh, N. Haykal-Coates, A.D. Ledbetter, D. Davies, M. Higuchi, *W.E. Cascio*, *M.S. Hazari*, and *A.K. Farraj*. US EPA, Research Triangle Park, NC.

#2264 **Poster Board Number P194**
Effect of Exposure to Different Size Fractions of Concentrated Ambient Particles on Blood Pressure. M.N. Saiduddin, A. Keebaugh, and *M. Kleinman*. University of California Irvine, Irvine, CA.

#2265 **Poster Board Number P195**
Electrocardiogram Changes in ApoE-/- Mice Following Exposure to the Semi-Volatile Fraction of Ultrafine Concentrated Ambient Particulate Matter. D.A. Herman, A. Keebaugh, and *M.T. Kleinman*. University of California, Irvine, Irvine, CA.

#2266 **Poster Board Number P196**
Characterization and Mutagenicity of Smoke from Smoldering and Flaming Combustion of Peat and Red Oak Biomass Fuels. *Y.H. Kim*, S. Warren, Q.T. Krantz, C. King, R. Jaskot, M. Hays, M. Landis, *M. Higuchi*, D. DeMarini, and *M.I. Gilmour*. US EPA, Research Triangle Park, NC.

Tuesday Afternoon, March 15
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Food Safety/Nutrition 1

Health and Environmental Impacts of Manmade and Naturally Released Toxicants

Chairperson(s): *Matthew Abramson, Cardno ChemRisk, Pittsburgh, PA; and Jorge G. Muniz Ortiz, US Department of Agriculture, Washington, DC.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *1:15 PM–2:45 PM*

#2267 **Poster Board Number P197**
Development of a Method to Estimate De Minimis Levels for Metals in Meat and Poultry. *J.G. Muniz Ortiz*[1], R. Duverna[1], A. Domesle[2], and *K. Dearfield*[1]. [1]Food Safety, and Inspection Service, Washington, DC; and [2]Office of Pest Management Policy, Washington, DC.

#2268 **Poster Board Number P198**
Clinical Safety Evaluation of the Novel Probiotic *Bacillus subtilis* CU1. M. Lefevre[2], P. Jüsten[2], and *A.R. Lobach*[1]. [1]Intertek Scientific & Regulatory Consultancy, Mississauga, ON, Canada; and [2]Lesaffre Human Care, Lesaffre Group, Marcq en Baroeul, France.

Abstract #

#2269 **Poster Board Number P199**
Dietary Questionnaire of Maize Consumption and Aflatoxin Content of Corn-Based Food Samples from Street Markets in the Metropolitan Area of Monterrey, Nuevo Leon, Mexico. R.S. Treviño-Espinosa[2], A.J. Ruiz-Uribe[2], R.M. Sanchez-Casas[2], P. Gonzalez-Barranco[1], M. Chavez-Bautista[2], *S.E. Elmore*[3], *T.D. Phillips*[3], and *A.G. Marroquin-Cardona*[2]. [1]Faculty of Chemistry, Universidad Autonoma de Nuevo Leon, San Nicolas de los Garza, NL, Mexico; [2]Faculty of Veterinary Medicine, Universidad Autonoma de Nuevo Leon, Gral. Escobedo, NL, Mexico; and [3]Texas A&M University, College Station, TX.

#2270 **Poster Board Number P200**
Development of a Noncancer Toxicity Criterion for Triethylene Glycol (TEG) Using Developmental Toxicity Data as the Most Sensitive Endpoint. *L.A. Beyer*[1], *M.L. Hixon*[1], *D.B. Mayfield*[2], *M.K. Peterson*[2], and E.M. Dubé[1]. [1]Gradient, Cambridge, MA; and [2]Gradient, Seattle, WA.

#2271 **Poster Board Number P201**
Aflatoxins Control in Milk and Dairy Feeds in the Mexican Highland Plateau. A.G. Valdivia[2], E.J. Rangel-Muñoz[2], C.A. Miranda-Castañeda[2], C.R. Cruz-Vazquez[1], T. Quezada-Tristan[2], R. Ortiz-Martinez[2], and L.E. Medina-Esparza[1]. [1]Instituto Tecnologico El Llano, Aguascalientes, Mexico; and [2]Universidad Autonoma de Aguascalientes, Aguascalientes, Mexico. Sponsor: *G. Pallas-Guzman.*

#2272 **Poster Board Number P202**
Longitudinal Aflatoxin Exposure in Pregnant Women in East Kenya. *L. Tang*[2], *K.S. Xue*[2], *M.-s. Kang*[2], J. Lerory[1], V. Hoffmann[1], K. Jones[1], and *J.-S. Wang*[2]. [1]International Food Policy Research Institute, Washington, DC; and [2]University of Georgia, Athens, GA. Sponsor: *J.-S. Wang.*

#2273 **Poster Board Number P203**
Using Reported Adverse Events to Identify Potential Health Risks and Individual Susceptibility Associated with Energy Drink Consumption. *D.A. Drechsel*[1], A. Banducci[1], M. Nelson[2], R. Novick[2], and *B. Tvermoes*[1]. [1]Cardno ChemRisk, Boulder, CO; and [2]Cardno ChemRisk, San Francisco, CA.

#2274 **Poster Board Number P204**
Current Status of Aflatoxin B1 Contamination in Grains and Peanuts Grown in the State of Georgia, USA. *A.G. Seawright*, *L. Tang*, and *J.S. Wang*. University of Georgia, Athens, GA.

#2275 **Poster Board Number P205**
Assessing Hazard Potential of Lead Exposure in Children or Adults: Case Studies of Two Food Products. *B. Flannery*, *D. Smegal*, and J. Spungen. US Food and Drug Administration, Center for Food Safety, and Applied Nutrition, College Park, MD.

#2276 **Poster Board Number P206**
Fusarium Mycotoxins Determination and Their Dietary Intake through Wheat and Flour Wheat by the Romanian Population. C. Juan[2], O. Stanciu[1], F. Loghin[1], D. Miere[1], M.-J. Ruiz[2], and J. Mañes[2]. [1]Iuliu Haţieganu Uni. of Medicine, and Pharmacy, Cluj-Napoca, Romania; and [2]University of Valencia, Valencia, Spain. Sponsor: *G. Font.*

#2277 **Poster Board Number P207**
Fluoride: Friend or Foe? *B. Kelman*[2], R. Evoy[1,2], *C. Chan*[2], and *N. Moore*[2]. [1]Columbia University, New York, NY; and [2]Veritox, Inc., Redmond, WA.

Abstract #

#2278 **Poster Board Number P208**
Evaluation of Metals in Different Species of Edible Mushrooms. M.-C. Rubio-Armendariz[2], A. Puteri[2], G. Luis-Gonzalez[2], A. Gutierrez-Fernandez[2], D. Glez-Weller[2], A. Hardisson[2], and *A.R. Anadon*[1]. [1]Universidad Complutense de Madrid, Madrid, Spain; and [2]Universidad de La Laguna, La Laguna, Spain.

#2279 **Poster Board Number P209**
Effect of Substitution and Stereochemistry on the Toxicity of Phenols and Organophosphorus Compounds. S. Mosley, T.B. Adams, S. Stice, and A. Mattia. US FDA, College Park, MD. Sponsor: *L. Rosenfeld.*

#2280 **Poster Board Number P210**
The Application of an Updated Cramer et al. Decision Tree to Food Ingredient Safety Assessment. S. Stice. US Food and Drug Administration, College Park, MD. Sponsor: *S. Choudhuri.*

#2281 **Poster Board Number P211**
An Exposure and Health Risk Assessment of Lead (Pb) in Chocolate. M.M. Abramson[1], *A.D. Monnot*[2], and *W.V. Christian*[1]. [1]Cardno ChemRisk, Pittsburgh, PA; and [2]Cardno ChemRisk, San Francisco, CA.

#2282 **Poster Board Number P212**
Effects of Serum Levels of Vitamin A and Its Precursors on Colorectal Cancer Mortality: An 18-Yr Follow-Up Study of a National Cohort. *E. Afriyie-Gyawu*, T. Ogunleke, C.O. Okoli, and J. Zhang. Georgia Southern University, Statesboro, GA. Sponsor: *E. Afriyie-Gyawu.*

#2283 **Poster Board Number P213**
Aflatoxin and Fumonisin Co-Exposure in a Population from the Metropolitan Area of Monterrey, Mexico. *S.E. Elmore*[1], *A.G. Marroquin Cardona*[2], M. Bautista[2], P. Gonzalez-Barranco[2], R.M. Sanchez-Casas[2], C. Maki[1], and *T.D. Phillips*[1]. [1]Texas A&M University, College Station, TX; and [2]Universidad Autonoma de Nuevo Leon, Monterrey, Mexico.

#2284 **Poster Board Number P214**
Serum Lycopene Levels and Prostate Cancer Mortality: An 18-Year Follow-Up Study of a National Cohort. *E. Afriyie-Gyawu*, D. Kanda, and J. Zhang. Georgia Southern University, Statesboro, GA. Sponsor: *E. Afriyie-Gyawu.*

#2285 **Poster Board Number P215**
Co-Associations Between Selected Nutrients and Mercury in Wild-Harvested Fish of the Northwest Territories, Canada. *B.D. Laird*, and E.S. Reyes. University of Waterloo, Waterloo, ON, Canada.

#2286 **Poster Board Number P216**
Assessment of Liver Enzyme Changes Among NHANES Respondents and Association with Use of Dietary Supplements. S. Fallah, M. Ho, K. Ly, K. Musa-Veloso, and *L.A. Haighton*. Intertek Scientific & Regulatory Consultancy, Mississauga, ON, Canada.

#2287 **Poster Board Number P217**
A Tiered Approach to Safety Evaluation of Newly-Expressed Proteins in GM Crops. C.R. Fleming. Dow AgroSciences, Indianapolis, IN. Sponsor: *R. Rasoulpour.*

Abstract #

#2288 **Poster Board Number P218**
Retrospective Assessment of Toxicology Data Needs to Support GRAS Determinations in Year 2015. *J. Heilman*, and N. Tran. Exponent, Inc., Washington, DC.

Tuesday Afternoon, March 15
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Gene Regulation and Signal Transduction

♦ Molecular Toxicology: Mechanistic Insights and Hazard Assessment

Chairperson(s): *Brad L. Upham, Michigan State University, East Lansing, MI.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *3:00 PM–4:30 PM*

#2289 **Poster Board Number P219**
Mild Endoplasmic Reticulum Stress Preconditioning Upregulates Gene Expression of Membrane Transporters. F. Usuki, and M. Fujimura. National Institute for Minamata Disease, Minamata, Japan. Sponsor: *A. Naganuma.*

#2290 **Poster Board Number P220**
Cigarette Smoke Exposure Leads to the Recruitment of Nlrp10 and Nlrp12 in Lipid Raft Entities. D.P. Singh, and *S. Batra*. Southern University, and A&M College, Baton Rouge, LA.

#2291 **Poster Board Number P221**
An Imaging-Based RNA-Interference Screen Reveals Novel Key Regulators of the Drug-Induced Endoplasmic Reticulum Stress Response. M. Niemeijer, G. Callegaro, and *B. van de Water*. Leiden University, Leiden, Netherlands.

#2292 **Poster Board Number P222**
Regulation of FGF15 Expression in Mouse Intestine. X. Fan[2], K. Jia[2], L. Ding[2], *X. Ding*[1], and *Q.-Y. Zhang*[2]. [1]College of Nanoscale Science, and Engineering, SUNY Polytechnic Institute, Albany, NY; and [2]Wadsworth Center, New York State Department of Health, and School of Public Health, State University, Albany, NY.

#2293 **Poster Board Number P223**
Modulation of NF-κB Activation Is a Major Contributor to Drug-Induced Liver Injury (DILI). S. Huppelschoten, S. Wink, A. Essing, and *B. van de Water*. Leiden University, Leiden, Netherlands.

#2294 **Poster Board Number P224**
Evaluation of Polycyclic Aromatic Compound Toxicity Using Metabolically-Competent *In Vitro* Liver Models. P.E. Dunlap, *S. Ramaiahgari*, *E.J. Tokar*, M. Fenton, *S. Waidyanatha*, *M. DeVito*, *W.A. Boyd*, *C. Rider*, and *S.S. Ferguson*. NIEHS, Research Triangle Park, NC.

#2295 **Poster Board Number P225**
Protective Effect of Sodium Tetrasulfide on Covalent Modification of Cellular Proteins and Cellular Toxicity Mediated By 1,4-Naphthoquinone, an Atmospheric Electrophile. R. Hirose, T. Unoki, Y. Shinkai, *Y. Abiko*, and *Y. Kumagai*. University of Tsukuba, Tsukuba, Japan.

Abstract #

#2296 **Poster Board Number P226**
CRM1 (Exportin 1) Inhibitors, Leptomycin B and Curcumin, Alter CRM1's Subcellular Distribution. K. Rahmani, and D.A. Dean. University of Rochester School of Medicine, and Dentistry, Rochester, NY. Sponsor: *J. Finkelstein*.

#2297 **Poster Board Number P227**
Liver Enzyme Inducibility of Polycyclic Aromatic Compounds in Metabolically-Competent Cultures of HepaRG. *S. Ferguson*, and S. Ramaiahgari. NIEHS, Durham, NC.

#2298 **Poster Board Number P228**
1,4-Naphthoquinone-Mediated Activation of the HSP90/HSF1 Signal Transduction Pathway and Its Modulation by Reactive Sulfur Species in Human A431 Cells. T. Unoki, Y. Shinkai, L. Sha, and *Y. Kumagai*. University of Tsukuba, Tsukuba, Japan.

#2299 **Poster Board Number P229**
Characterization of Ligand-Selective Activation of the Human and Mouse Aryl Hydrocarbon Receptors. *S.C. Faber*, *A. Soshilov*, and *M.S. Denison*. University of California, Davis, Davis, CA.

#2300 **Poster Board Number P230**
Characterizing Novel Alternative Splicing Isoforms of Critical Drug-Processing Genes in Mice. D.H. Cowles[1,2], *C.Y. Li*[2], and *J.Y. Cui*[2]. [1]Louisiana State University, Baton Rouge, LA; and [2]University of Washington, Seattle, WA. Sponsor: *J. Cui*.

#2301 **Poster Board Number P231**
Mechanistic Insight into Metformin-Mediated Repression of the Bile Salt Export Pump (BSEP; ABCB11). *B. Garzel*[4], H. Yang[2], S. Heyward[1], L. Zhang[3], S.-M. Huang[3], J.E. Polli[4], J.-P. Raufman[4], and H. Wang[4]. [1]BioreclamationIVT, Baltimore, MD; [2]China National Center for Food Safety Risk Assessment, Beijing, China; [3]US Food and Drug Administration, Silver Spring, MD; and [4]University of Maryland, Baltimore, Baltimore, MD.

#2302 **Poster Board Number P232**
Lead Acutely Induced Fibroblast Growth Factor 21 in Mouse Liver and Hepatocytes. *S.G. Vispute*, *Y. Le*, *L. Chen*, and *X. Cheng*. St. John's University, Queens, NY.

#2303 **Poster Board Number P233**
Genomic Analysis Directs a Multidisciplinary Approach to Define Toxicity for Inhalation Phosphine Poisoning. R.J. Lewandowski. USAMRICD, Gunpowder, MD. Sponsor: *A. Sciuto.*

#2304 **Poster Board Number P234**
The Gene Expressions of Ah Receptor Pathways Are Pervasively Regulated by Long Noncoding RNA Malat1. J. Chen[2], S. Ke[2], G. Wang[2], J. Cai[2], D. Li[1], and *Y. Tian*[2]. [1]State Key Laboratory of Animal Nutrition, Beijing, China; and [2]Texas A&M University, College Station, TX. Sponsor: *Y. Tian.*

#2305 **Poster Board Number P235**
Identification of a Conserved Long Noncoding RNA Elevated in Response to the Xenobiotic Activation of the Aryl Hydrocarbon Receptor. *G.R. Garcia*. Oregon State University, Corvallis, OR.

Abstract #

#2306 **Poster Board Number P236**
Erk-Creb Pathway Suppresses Glutathione-S-Transferase Pi Expression in Zebrafish (*Danio rerio*) Embryos. *J. Hrubik*, *B. Glisic*, and N. Andric. University of Novi Sad Faculty of Sciences, Novi Sad, Serbia.

#2307 **Poster Board Number P237**
Comparative Analysis of Nrf2 Target Genes Reveals Novel Functions. *S.E. Lacher*[2], J. Lee[2], X. Wang[1], M. Campbell[1], D. Bell[1], and M. Slattery[2]. [1]NIEHS, Research Triangle Park, NC; and [2]University of Minnesota Medical School, Duluth, MN.

#2308 **Poster Board Number P238**
Annexins: An Early Cell Signaling Response to Environmental Toxicants Relevant to Tumorigenesis. *B.L. Upham*[4], I. Sovadinova[2], J.-S. Park[1], D. Whitten[4], C. Wilkerson[4], and P. Babica[3]. [1]Daegu-Gyeongbuk Medical Innovation Foundation, Daegu, Korea, Republic of; [2]Masaryk University, Brno, Czech Republic; [3]Masaryk University; and Institute of Botany ASCR, East Lansing, Czech Republic; and [4]Michigan State University, East Lansing, MI.

#2309 **Poster Board Number P239**
Ligand-Activated Aryl Hydrocarbon Receptor Inhibits Pancreatic Cancer Cell Invasion. *U. Jin*, *Y. Chen*, and *S. Safe*. Texas A&M University, College Station, TX.

Tuesday Afternoon, March 15
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Oxidative Injury and Redox Biology

♦ Molecular Toxicology: Mechanistic Insights and Hazard Assessment

Chairperson(s): *Joshua D. Chandler, Emory University, Atlanta, GA.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *1:15 PM–2:45 PM*

#2310 **Poster Board Number P240**
A Putative Interaction of TSPO with NADPH Oxidase in Primary Microglia. *M.K. Loth*, *S.R. Guariglia*, *J. Choi*, *D.B. Re*, and *T.R. Guilarte*. Columbia University Medical Center, New York, NY.

#2311 **Poster Board Number P241**
Oxidative Stress Alters Developing Cell Fate via Transcriptional Networks. *L.M. Walker*, *N.R. Sparks*, and N.I. zur Nieden. University of California, Riverside, Riverside, CA.

#2312 **Poster Board Number P242**
Bromochloroacetate- Dibromoacetate- and Bromodichloroacetate-Induced Toxicity to the J774A.1 Macrophages. *E. Hassoun*, and X. Zeng. University of Toledo, Toledo, OH. Sponsor: *E. Hassoun.*

#2313 **Poster Board Number P243**
Investigation on the Effects of Oxidative Stress on Allergic Response Using Human Monocyte-Derived Cell. A. Suzuki, M. Mezaki, and *H. Itagaki*. Yokohama National University, Yokohama, Japan.

Abstract #

#2314 **Poster Board Number P244**
Hypochlorite/Hypochlorous Acid-Mediated Oxidation of Methionyl Tripeptides. *S. Babu*[1], A.D. Logan[2], L. Tucker[1], K. Windham[1], *R.M. Uppu*[2], and M.O. Claville[1]. [1]Hampton University, Hampton, VA; and [2]Southern University, and A&M College, Baton Rouge, LA.

#2315 **Poster Board Number P245**
Long-Term Effects of Prenatal Exposure to Low Doses of Internal Radiation on the Hippocampal Function. M. Bellés, J.V. Vallvé, N. Serra, *J.L. Domingo*, and V. Linares. Universitat Rovira i Virgili, Reus, Spain.

#2316 **Poster Board Number P246**
Potential Roles of Diclofenac Acyl Glucuronide in the Pathomechanism of Intestinal Toxicity After High Dose Diclofenac. R.J. Scialis[2], *I.L. Csanaky*[1,3], and *J.E. Manautou*[2]. [1]Children's Mercy Hospital & Clinics, Kansas City, MO; [2]University of Connecticut, Storrs, CT; and [3]University of Kansas Medical Center, Kansas City, KS.

#2317 **Poster Board Number P247**
Asbestos Induced Oxidative Stress in Lung Cells. L. Weng[2], C. Mesaros[2], N.W. Snyder[1], and I. Blair[2]. [1]Drexel University, Philadelphia, PA; and [2]University of Pennsylvania, Philadelphia, PA. Sponsor: *T. Penning.*

#2318 **Poster Board Number P248**
Dietary Antioxidants Counteract Ethanol-Induced Morphological Changes in Bones of Female Mice. A. Alund. The University of Arkansas for Medical Sciences, Little Rock, AR. Sponsor: *M. Ronis.*

#2319 **Poster Board Number P249**
Elevated Plasma Methionine Sulfoxide and Methionine in Non-Survivors of Acetaminophen Overdose. K.H. Liu[1], *M.R. McGill*[4], *J. Chandler*[1], S. Banton[1], K. Uppal[1], D. Walker[1], S. Curry[2], S. Li[1], *H. Jaeschke*[3], and *D. Jones*[1]. [1]Emory University, Atlanta, GA; [2]University of Arizona College of Medicine, Phoenix, AZ; [3]University of Kansas Medical Center, Kansas City, KS; and [4]Washington University at St. Louis Medical School, St. Louis, MO.

#2320 **Poster Board Number P250**
Assessing Effects of Environmental Quinones on Mitochondrial Function in Human Airway Epithelial Cells Using Extracellular Flux Technology. *K.S. Lavrich*[3], *P.A. Wages*[3], D. Suarez[2], *S.O. Simmons*[2], and J.M. Samet[1]. [1]US Environmental Protection Agency, Chapel Hill, NC; [2]US Environmental Protection Agency, Research Triangle Park, NC; and [3]University of North Carolina at Chapel Hill, Chapel Hill, NC.

#2321 **Poster Board Number P251**
Hydroxylated Non-Steroidal Anti-Inflammatory Drugs as a Source of Cytotoxic Free Radical Metabolites. A.G. Morgan, K. Michail, S. Khan, and *S.G. Arno*. University of Alberta, Edmonton, AB, Canada.

#2322 **Poster Board Number P252**
Nuclear Factor-κB1/RelA Mediates Inflammation in Human Lung Epithelial Cells at Atmospheric Oxygen Levels. L. Jagannathan[2], C.C. Jose[2], A. Arita[2], T. Kluz[2], H. Sun[2], X. Zhang[2], Y. Yao[2], A.V. Kartashov[1], A. Barski[1], *M. Costa*[2], and *S. Cuddapah*[2]. [1]Cincinnati Children's Hospital Medical Center, and Department of Pediatrics, College of Medicine, University of Cincinnati, Cincinnati, OH; and [2]NYU Langone Medical Center, Tuxedo, NY.

Abstract #

#2323 **Poster Board Number P253**
Does a Fish Model Matter? Comparative Toxicology of Oxidative Stress Toxicity in Zebrafish and Fathead Minnows. J. Corrales[1], L. Kristofco[1], B. Steele[1], S. Williams[1], M. Mills[3], *E. Gallagher*[3], *T. Kavanagh*[3], L. Shen[4], F. Melnikov[4], J. Kostal[2], A. Voutchkova-Kostal[2], P. Anastas[4], and *B. Brooks*[1]. [1]Baylor University, Waco, TX; [2]The George Washington University, Washington, D.C., DC; [3]University of Washington, Seattle, WA; and [4]Yale University, New Haven, CT. Sponsor: *B. Brooks.*

#2324 **Poster Board Number P254**
Towards Less Hazardous Industrial Chemicals: Comparative Behavioral Toxicology of Two Common Fish Models. B. Steele[1], L. Kristofco[1], J. Corrales[1], M. Mills[3], S. Williams[1], F. Melnikov[4], L. Shen[4], J. Kostal[2], A. Voutchkova[2], P. Anastas[4], T. Kavanagh[3], E. Gallagher[3], and *B. Brooks*[1]. [1]Baylor University, Waco, TX; [2]George Washington University, Washington, DC; [3]University of Washington, Seattle, WA; and [4]Yale University, New Haven, CT. Sponsor: *B. Brooks.*

#2325 **Poster Board Number P255**
Multiorgan Oxidative Damage Caused by Subchronic Exposure to Benzene or Hydroquinone. *R. Ruiz-Ramos*, H. García-Hernández, M.L. Betancourt-Aldazaba, N. López-Amador, A.L. Calderón-Garcidueñas, W.E. Becerra-Romero, H. Vivanco-Cid, and S.M. Waliszewski. Universidad Veracruzana, Veracruz, Mexico.

#2326 **Poster Board Number P256**
Redox Proteomics and Metabolomics Reveal Distinct Effects of Thiocyanate Switching of Oxidants in Human Lung Epithelia. *J.D. Chandler*, V. Tran, M.L. Orr, K. Liu, Y.-M. Go, and *D.P. Jones*. Emory University, Atlanta, GA.

#2327 **Poster Board Number P257**
Biopterin Oxidation and NOS Uncoupling: Regulators of Macrophage Function in Acute Lung Injury. *T. Golden*[2], M. Crabtree[1], and A. Gow[2]. [1]Oxford University, Oxford, United Kingdom; and [2]Rutgers University, Piscataway, NJ.

#2328 **Poster Board Number P258**
Inhibition of S-Nitrosoglutathione Reductase (GSNOR) Reduces Lung Inflammation. *S. Taylor*, G. Voronin, D. Fett, *T. Golden*, *D. Botehlo*, and A. Gow. Rutgers University, Piscataway, NJ.

#2329 **Poster Board Number P259**
Air Pollutant 9,10-Phenanthrenequinone-Induced Endothelial Cell Dysfunction: Roles of ROS, NF-kB and NQO1. *Z. Jia*[3], P. Nallasamy[3], *H. Zhu*[1], *W. Wu*[4], *S. Halley*[3], *M.A. Trush*[2], *K. Traore*[1], and *Y.R. Li*[1]. [1]Campbell University School of Osteopathic Medicine, Buies Creek, NC; [2]Johns Hopkins University Bloomberg School of Publi, Baltimore, MD; [3]University of North Carolina at Greensboro, Greensboro, NC; and [4]Xinxiang Medical University, Xinxiang, Henan Province, China.

#2330 **Poster Board Number P260**
Cardiotoxic Effects of 1,1-Difluoroethane Due to Oxidative Stress and Electrolyte Changes. *K. Joshi*, C.A. Lau-Cam, M. Barletta, and J. Wurpel. St. John's University, Queens, NY.

Abstract #

#2331 **Poster Board Number P301**
Environmentally Persistent Free Radicals Increase Systolic Blood Pressure and Block Compensatory Responses to Cardiac Stress in Rats with Ischemic Heart Disease. B.R. Burn[1,2], H. Xia[1,2], and *K.J. Varner*[1,2]. [1]LSU, Baton Rouge, LA; and [2]LSU HSC, New Orleans, LA.

#2332 **Poster Board Number P302**
Triclosan Is a Proton Ionophore Mitochondrial Uncoupler in Living Cells Including Primary Human Keratinocytes: Effects on Reactive Oxygen Species Production and on Mitochondrial Morphology Using Super-Resolution Microscopy. *L.M. Weatherly*, A.J. Nelson, *J. Shim*, A. Riitano, H.N. Hashmi, R. Sher, S.T. Hess, and *J.A. Gosse*. University of Maine, Orono, ME.

#2333 **Poster Board Number P303**
Effects of Vitamin E Succinate on the Metastatic Prostate Cancer Cells. B.M. Rezk[1], M. Khanna[2], I. Urka[1], M.E. Khedr[2], R. Shaw[1], Z.Y. Abd Elmageed[2], S.C. Sikka[2], and A.B. Abdel-Mageed[2]. [1]Southern University at New Orleans, New Orleans, LA; and [2]Tulane University, School of Medicine, New Orleans, LA.

Tuesday Afternoon, March 15
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Neurotoxicology—Dopaminergic Systems and Toxicants

Advances in Neurotoxicology

Chairperson(s): *Qian Lin, University of Louisville, Louisville, KY; and Rodrigo Franco, University of Nebraska-Lincoln, Lincoln, NE.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *3:00 PM–4:30 PM*

#2334 **Poster Board Number P305**
Down-Regulation of Myeloid Cell Leukemia 1 (MCL-1) Protein in the Striatum Following Treatment with 1-Methyl-4-Phenyl-1,2,3,6-Tetrahydropyridine (MPTP). E. Lu, *S. Sarkar*, J. Raymick, *M.G. Paule*, and *Q. Gu*. US FDA National Center for Toxicological Research, Jefferson, AR.

#2335 **Poster Board Number P306**
Erk ½ Activation Is Evident in Activated Microglia from the Striatum and Substantia Nigra of MPTP-Induced Mouse Models of PD. S. Sarkar[2], E. Lu[2], J. Raymick[2], L.S. Schmued[2], J. Hanig[1], *M.G. Paule*[2], and Q. Gu[2]. [1]CDER/US FDA, White Oak, MD; and [2]National Center for Toxicological Research, Jefferson, AR.

#2336 **Poster Board Number P307**
MPTP Neurotoxicity Is Highly Concordant Between the Sexes in BXD Recombinant Inbred Mouse Strains. *G. Alam*[3], *D.B. Miller*[1], *J.P. O'Callaghan*[1], *L. Lu*[2,4], *R.W. Williams*[4], and *B.C. Jones*[4]. [1]Centers for Disease Control, and Prevention-National Institute for Occupational Safety, and Health, Morgantown, WV; [2]Jiangsu Key Laboratory of Neuroregeneration, Nantong University, Nantong, China; [3]Northeast Ohio Medical School, Rootstown, OH; and [4]University of Tennessee Health Science Center, Memphis, TN.

Abstract #

#2337 **Poster Board Number P308**
Nurr1 Activation Prevents Neurotoxic Injury in the MPTP Model of Parkinson's Disease. *S.L. Hammond*[1], *K. Popichak*[1], P. Damale[1], E. Richman[1], L. Hunt[1], *S. Safe*[2], and *R. Tjalkens*[1]. [1]Colorado State University, Fort Collins, CO; and [2]Texas A&M University Health Sciences Center, Houston, TX.

#2338 **Poster Board Number P309**
Metabolic Flux Analysis in Human Dopaminergic Neurons Under Toxicant Stress. J. Delp[4], S. Gutbier[4], L. Zhao[2], *T. Hartung*[2], C. Zasada[3], S. Kempa[3], K. Nöh[1], and *M. Leist*[4]. [1]Forschungszentrum Jülich GmbH, Jülich, Germany; [2]Johns Hopkins University, Bloomberg School of Public Health, Baltimore, MD; [3]Max-Delbrück-Centrum für Molekulare Medizin, Berlin, Germany; and [4]University of Konstanz, Konstanz, Germany. Sponsor: *M. Leist*.

#2339 **Poster Board Number P310**
Ziram Inhibits Ubiquitin Activating Enzyme E1 in Human Neurons. M.D. Neely, K.E. Dennis, M. Moran, *W.M. Valentine*, and *A.B. Bowman*. Vanderbilt Medical Center, Nashville, TN.

#2340 **Poster Board Number P311**
***In Vitro* Toxicity and Resilience of a 3D Human Dopaminergic Model to Rotenone.** *G. Harris*, *J. Delp*, *D. Pamies*, *H. Hogberg*, *T. Hartung*, and *L. Smirnova*. CAAT, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD.

#2341 **Poster Board Number P312**
Mitochondrial Neurotoxic Pesticides Promote Epigenetic Dysregulation by Histone H3 and H4 Hyperacetylation in Dopaminergic Neuronal Model of Parkinson's Disease. *A. Charli*, *H. Jin*, *V. Anantharam*, *A. Kanthasamy*, and *A.G. Kanthasamy*. Iowa State University, Ames, IA.

#2342 **Poster Board Number P313**
Investigating the Synergistic Effects of Chlorpyrifos and Cadmium Neurotoxicity in Alpha-Synuclein Overexpressing Dopaminergic Cell Model of Parkinson's Disease. M. Huerta, and *G. Kwakye*. Oberlin College, Oberlin, OH.

#2343 **Poster Board Number P314**
Blocking Mitochondrial Fission Is Protective Against Paraquat-Induced Neurotoxicity. *K. Tieu* and R.B. Nisr. Peninsula Schools of Medicine, and Dentistry, Plymouth University, Plymouth, United Kingdom.

#2344 **Poster Board Number P315**
The Legacy Pesticide Dieldrin and Paraquat Decrease Maximum Respiratory Capacity in Rat Dopaminergic N27 Cells. J.T. Schmidt, and C.J. Martyniuk. University of Florida, Gainesville, FL. Sponsor: *N. Denslow.*

#2345 **Poster Board Number P316**
Neonatal Systemic Exposure to Lipopolysaccharide Enhances Adult Vulnerability to Paraquat Neurotoxicity. *L.-T. Tien*[1], Y. Pang[2], S. Lu[2], J.W. Lee[2], S. Lin[2], A.J. Bhatt[2], R.D. Savich[2], and *L.-W. Fan*[2]. [1]Fu Jen Catholic University, New Taipei City, Taiwan; and [2]University of Mississippi Medical Center, Jackson, MS.

Abstract #

#2346 **Poster Board Number P317**
Neurochemical Perturbations and Dopaminergic Injury Following Short-Term Inhalation Exposure to the Oil Dispersant COREXIT® EC9500A. *K. Sriram*, G.X. Lin, A.M. Jefferson, W.T. Goldsmith, M. Jackson, W. McKinney, J.S. Fedan, and D.G. Frazer. CDC-NIOSH, Morgantown, WV.

#2347 **Poster Board Number P318**
The "Bath Salts" Constituent 3,4-Methylenedioxypyrovalerone (MDPV) Induces Cytotoxic Effects on Human Dopaminergic Sh-Sy5y Cells. *S. Ali*[2], *H. Rosas-Hernandez*[1,2], *E. Cuevas*[2], S.M. Lantz-McPeak[2], B.L. Robinson[2], S.Z. Imam[2], *M.G. Paule*[2], C. Gonzalez[1], K.C. Rice[3], B.M. Gannon[4], and W.E. Fantegrossi[4]. [1]Laboratorio de Fsiologia Celular, UASLP, San Luis Potosi, SLP, Mexico; [2]NCTR, Jefferson, AR; [3]NIDA/NIAAA, Bethesda, MD; and [4]UAMS, Little Rock, AR.

#2348 **Poster Board Number P319**
M1 to M2 Microglial Switch Accompanies Cessation of Progressive Dopaminergic Cell Loss Following Lipopolysaccharide Exposure. *E. Beier*[2], and *J. Richardson*[1,2]. [1]Northeast Ohio Medical University, Rootstown, OH; and [2]Rutgers University, Piscataway, NJ.

#2349 **Poster Board Number P320**
Longterm Neuroprotection of Decellularized Brain Extracellular Matrix Containing bFGF by Intracerebral Transplantation in a Rat Parkinson's Disease Model. Q. Lin. University of Louisville, Louisville, KY. Sponsor: *Y. Tan.*

#2350 **Poster Board Number P321**
Environmental Neurotoxicant Manganese Alters Exosomal miRNAs and Autophagic Regulation in Cell Culture Model of Parkinson's Disease. *D. Harischandra*[1], M. Zamanian[2], D. Rhokad[1], H. Jin[1], V. Anantharam[1], M. Kimber[1], *A. Kanthasamy*[1], and *A. Kanthasamy*[1]. [1]Iowa State University, Ames, IA; and [2]Northwestern University, Evanston, IL.

#2351 **Poster Board Number P322**
Moleclar Mechanisms of Manganese-Induced Exosome Release and Its Relevance to Synucleopathies. D. Rokad, *D.S. Harischandra*, *H. Jin*, *V. Anantharam*, *A. Kanthasamy*, and *A.G. Kanthasamy*. Iowa State University, Ames, IA.

Abstract #

Tuesday Afternoon, March 15
1:15 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Neurotoxicology—Manganese Neurotoxicity

Advances in Neurotoxicology
Toxicity of Metals

Chairperson(s): *Ulrike Dydak, Purdue University, West Lafayette, IN; and Jolyn Fernandes, Emory University School of Medicine, Atlanta, GA.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *1:15 PM–2:45 PM*

#2352 **Poster Board Number P323**
Astroglial Mortalin Is Decreased in the Striatum of Manganese-Exposed Mine Workers and Enhances Neurotoxicity. *T.J. Cook*[1,3], J.G. Hoekstra[3], T. Stewart[3], K.K. Canales[3], P. Ho[3], A.A. Salvador[3], L.F. Gonzalez-Cuyar[3], G. Nelson[4], B.A. Racette[4,5], H. Checkoway[2], *D.L. Eaton*[3], and J. Zhang[3]. [1]Gradient Corporation, Seattle, WA; [2]University of California San Diego, La Jolla, CA; [3]University of Washington, Seattle, WA; [4]University of Witwatersrand, Parktown, South Africa; and [5]Washington University, St. Louis, MO.

#2353 **Poster Board Number P324**
Loss of Striatal Cholinergic Interneurons in the Presence of Intact Nigral Dopaminergic Neurons in Early Manganese-Induced Parkinsonism. K.K. Gonzales[1], *J. McGlothan*[1], *K. Stansfield*[1], *J. Schneider*[2], and *T. Guilarte*[1]. [1]Columbia University, New York, NY; and [2]Thomas Jefferson University, Philadelphia, PA.

#2354 **Poster Board Number P325**
Reversibility of Effects of Manganese Toxicity: A Longitudinal Neuroimaging Study on Welders. *U. Dydak*[1,2], *R. Ma*[2], *C.-L. Yeh*[2], E. Cameron[2], *D.A. Edmondson*[2], S.E. Zauber[1], S. Snyder[2], and *E. Ward*[2]. [1]Indiana University School of Medicine, Indianapolis, IN; and [2]Purdue University, West Lafayette, IN.

#2355 **Poster Board Number P326**
Parkinson's Disease versus Manganese Toxicity: A Neuroimaging Comparison. *D.A. Edmondson*[2], *C.-L. Yeh*[2], E. Azizi[2], *R. Ma*[2], *E. Ward*[2], S. Snyder[2], S.E. Zauber[1], and *U. Dydak*[1,2]. [1]Indiana University School of Medicine, Indianapolis, IN; and [2]Purdue University, West Lafayette, IN. Sponsor: *U. Dydak.*

#2356 **Poster Board Number P327**
The Effect of Manganese Exposure on ATP13A2-Deficient Mice. N. Santiago[4], E. Mullin[3], S. Pampohile[4], O. Ekhator[4], S. Linn[2], J. Holden[4], D. Lemkuhl[4], S. Karkare[4], D. Aga[3], J. Roth[3], B. Liou[1], Y. Sun[1], G. Shull[4], P. Schultheis[2], and S. Fleming[4]. [1]Cincinnati Children's Hospital Medical Center, Cincinnati, OH; [2]Northern Kentucky University, Highland Heights, KY; [3]University of Buffalo, Buffalo, NY; and [4]University of Cincinnati, Cincinnati, OH. Sponsor: *J. Richardson.*

Abstract #

#2357 **Poster Board Number P328**
Manganese Toxicity in *C. elegans*: Role of Insulin/Insulin-Like Growth Factor-1 Signaling Pathway (IIS). T. Vieira Peres[1], L. Arantes[3], M.R. Miah[1], R.B. Leal[2], and *M. Aschner*[1]. [1]Albert Einstein College of Medicine, Bronx, NY; [2]Universidade Federal de Santa Catarina, Florianópolis, Brazil; and [3]Universidade Federal de Santa Maria, Santa Maria, Brazil.

#2358 **Poster Board Number P329**
Combined Exposure to Methyl Mercury and Manganese During L1 Larvae Stage Causes Motor Decrease, Cholinergic Up Regulation and Oxidative Stress in L4 Caenorhabditis elegans. M.R. Schetinger[1,2], L. Arantes[1,2], T.V. Peres[1], *A.B. Bowman*[3], and *M. Aschner*[1]. [1]Albert Einstein College of Medicine, Bronx, NY; [2]Federal University of Santa Maria, Santa Maria, Brazil; and [3]Vanderbilt University Medical Center, Nashville, TN. Sponsor: *M. Aschner.*

#2359 **Poster Board Number P330**
Microglia Amplify Neuroinflammatory Activation of Astrocytes During Exposure to Manganese. *R. Tjalkens*, and *K. Kirkley*. Colorado State University, Fort Collins, CO.

#2360 **Poster Board Number P331**
Manganese Inhibition and Activation of Mitochondrial Oxidative Processes in Neuronal Cells. J. Fernandes, L. Hao, K.M. Bijli, J.D. Chandler, *M. Orr*, *D.P. Jones*, and *Y.-M. Go*. Emory University School of Medicine, Atlanta, GA.

#2361 **Poster Board Number P332**
Valproic Acid (VPA) Attenuates Manganese-Induced Repression of Astrocytic Glutamate Transporters Promoter Activities and Neurological Behavioral Deficits in Mice. J.A. Johnson[2], P. Karki[2], K. Smith[2], D.-S. Son[2], *M. Aschner*[1], and *E. Lee*[2]. [1]Albert Einstein School of Medicine, New York, NY; and [2]Meharry Medical College, Nashville, TN.

#2362 **Poster Board Number P333**
Pre- and Postnatal Exposure to Manganese Induces Dysregulation of Glutamate Transporter 1(GLT-1) and Adult Neurogenesis via the Transcription Factor Yin Yang 1 (YY1) in Mice. K. Smith[2], P. Karki[2], *M. Aschner*[1], and *E. Lee*[2]. [1]Albert Einstein School of Medicine, New York, NY; and [2]Meharry Medical College, Nashville, TN.

#2363 **Poster Board Number P334**
Increased Interactive Toxicities on the Blood-CSF-Barrier (BCB) Following Co-Exposure to Manganese (Mn) and Lead (Pb), *In Vitro*. *D. Cholger*, *X. Fu*, and *W. Zheng*. Purdue University, West Lafayette, IN.

#2364 **Poster Board Number P335**
Characterization of Intracellular Mn-Modifying Small Molecules Identified in a High Throughput Screen. K.J. Horning[2], K.K. Kumar[2], *M. Aschner*[1], and *A.B. Bowman*[2]. [1]Albert Einstein College of Medicine, Bronx, NY; and [2]Vanderbilt University Medical Center, Nashville, TN.

#2365 **Poster Board Number P336**
BTBD9, a Restless Leg Syndrome Associated Protein, Regulates Manganese-Induced Toxicity in *C. elegans*. *P. Chen*[1], J. Bornhorst[2], K.H. Lee[1], *A.B. Bowman*[3], and *M. Aschner*[1]. [1]Albert Einstein College of Medicine, Bronx, NY; [2]University of Potsdam, Nuthetal, Germany; and [3]Vanderbilt University, Nashville, TN. Sponsor: *M. Aschner.*

Abstract #

#2366 **Poster Board Number P337**
Aberrant Adult Neurogenesis in the Subventricular Zone (SVZ)-Rostral Migratory Stream (RMS)-Olfactory Bulb (OB) System Following Subchronic Manganese (Mn) Exposure. *X. Fu*[2], W. Jiang[2], X. Gao[1], A. Zeng[2], D. Cholger[2], *J. Cannon*[2], J. Chen[1], and *W. Zheng*[2]. [1]Indiana University, Indianapolis, IN; and [2]Purdue University, West Lafayette, IN. Sponsor: *W. Zheng.*

#2367 **Poster Board Number P338**
Decreased Fractional Anisotropy in Globus Pallidus of "Asymptomatic" Welders. E. Lee[1], M.R. Flynn[2], G. Du[1], M.M. Lewis[1], A.H. Herring[2], L. Kong[1], R.B. Mainman[1], and *X. Huang*[1]. [1]Pennsylvania State University College of Medicine, Hershey, PA; and [2]University of North Carolina, Chapel Hill, NC.

#2368 **Poster Board Number P339**
Developmental Manganese Overexposure or Adult 6-Hydroxydopamine Striatal Lesions Induce Exacerbated Learning Deficits in Combination. R.A. Bailey[1], A. Gutierrez[1], *R.M. Amos-Kroohs*[1], *C.V. Vorhees*[1,2], and *M.T. Williams*[1,2]. [1]Cincinnati Children's Research Foundation, Cincinnati, OH; and [2]University of Cincinnati, Cincinnati, OH.

Tuesday Afternoon, March 15
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Neurotoxicology—Neurodegenerative Diseases

Advances in Neurotoxicology

Chairperson(s): *Miles Bryan, Vanderbilt University, Nashville, TN; and Johnny Wise, Purdue University, West Lafayette, IN.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *3:00 PM–4:30 PM*

#2369 **Poster Board Number P340**
Mitochondrial DNA Damage and Dysfunction and Their Effects on Dopaminergic Neurodegeneration After Toxic Insult in *pink-1* and *pdr-1* Mutant Strains of *Caenorhabditis elegans*. *C.P. Gonzalez-Hunt*, I.T. Ryde, and *J.N. Meyer*. Duke University, Durham, NC.

#2370 **Poster Board Number P341**
The Selective mGluR Group I Agonist, 2-Chloro-5-Hydroxyphenylglycine, Increases BDNF and Myelin Proteins Following Cuprizone-Induced Demyelination. *K.S. Saitta*[1,2], Y. Huang[1], and C.F. Dreyfus[1]. [1]Rutgers Robert Wood Johnson Medical School, Piscataway, NJ; and [2]Rutgers University, Piscataway, NJ.

#2371 **Poster Board Number P342**
MDR1 Transporter Protects Against Paraquat-Induced Dopaminergic Neurodegeneration. *D. You*[2], *C.J. Gibson*[2], *M.M. Hossain*[1], *X. Wen*[2], *I. Yang*[2], *B. Buckley*[2], *J.R. Richardson*[1], and *L.M. Aleksunes*[2]. [1]Northeast Ohio Medical University, Rootstown, OH; and [2]Rutgers, the State University of New Jersey, Piscataway, NJ.

#2372 **Poster Board Number P343**
Mechanisms of PhIP-Induced Dopaminergic Neurotoxicity. *Z.S. Agim*, A. Jacquet, J.-C. Rochet, and *J.R. Cannon*. Purdue University, West Lafayette, IN.

Abstract #

#2373 **Poster Board Number P344**
c-Abl Regulates Rotenone-Induced Inflammatory Response via the Activation of NLRP3 Inflammasome. *V.J. Lawana*, N. Singh, S. Sarkar, *H. Jin*, *V. Anantharam*, *A. Kanthasamy*, and *A. Kanthasamy*. Iowa State University, Ames, IA.

#2374 **Poster Board Number P345**
Prokineticin 2 Plays a Role in Altered Neurogenesis and Non-Motor Deficits in PD Models. *M.R. Langley*, M. Neal, *J. Luo*, N. Kondru, C. Berg, H. Jin, V. Anantharam, A. Kanthasamy, and A. Kanthasamy. Iowa State University, Ames, IA.

#2375 **Poster Board Number P346**
Chronic Exposure to Manganese Causes Selective Changes in the Enteric Nervous System and Gut Physiology Leading to Altered Nutrient Metabolism and Intestinal Motility. S. Ghaisas, *D.S. Harishchandra*, H. Jin, V. Anantharam, A. Kanthasamy, and *A. Kanthasamy*. Iowa State University, Ames, IA.

#2376 **Poster Board Number P347**
Optineurin Expression in the Nigrostriatal Dopamine System in Normal and Rotenone-Treated Rats. *J. Wise*, and *J. Cannon*. Purdue University, West Lafayette, IN.

#2377 **Poster Board Number P348**
Astrocyte Specific Expression of DJ-1 Attenuates Rotenone-Induced Neurotoxicity: A Gene Therapy Approach. *B.R. De Miranda*, E. Burton, and J. Greenamyre. University of Pittsburgh, Pittsburgh, PA.

#2378 **Poster Board Number P401**
Activation of the Nuclear Receptor Nur77 by a Novel Diindolylmethane Analog Suppresses Inflammatory Gene Expression in Primary Astrocytes. *K.A. Popichak*[1], *S.L. Hammond*[1], *S.H. Safe*[2], and *R.B. Tjalkens*[1]. [1]Colorado State University, Fort Collins, CO; and [2]Texas A&M, Houston, TX.

#2379 **Poster Board Number P402**
A Potential Role for Phosphotidyl-Inositol-3-Kinase (PI3K) in Regulating Manganese Transport through an Autophagy-Mediated Mechanism. *M.R. Bryan*[2], M.A. Uhouse[2], A.M. Tidball[2], T.J. Bichell[2], G. Tipps[2], E. Bradley[2], *M. Aschner*[1], and *A. Bowman*[2]. [1]Einstein College, Bronx, NY; and [2]Vanderbilt University Medical Center, Nashville, TN. Sponsor: *A. Bowman.*

#2380 **Poster Board Number P403**
Dopamine and L-DOPA Induced Post-Translational Modifications of Alpha-Synuclein. *S.S. Lau*, *A.B. Cholanians*, and *T.J. Monks*. The University of Arizona, Tucson, AZ.

#2381 **Poster Board Number P404**
Preferential Extracellular Generation of the Active Parkinsonian Toxin MPP^+ by Transporter-Independent Export of the Intermediate $MPDP^+$. S. Schildknecht, R. Pape, and *M. Leist*. University of Konstanz; 78457 Konstanz, Germany. Sponsor: *M. Leist.*

#2382 **Poster Board Number P405**
Striatal Arginase Activity Deficit Is Ameliorated by Mn Exposure in HD Model Mice. K.G. Tipps[2], T.J.V. Bichell[1,2], E.M. Bradley[2], and *A.B. Bowman*[1,2]. [1]Vanderbilt University, Nashville, TN; and [2]Vanderbilt University Medical Center, Nashville, TN.

Abstract #

#2383 **Poster Board Number P406**
The Benefits of Swimming Exercise on the Aging Brain and Its Underlying Mechanism. F.-H. Yang[1], Y.-H. Yang[1], Y.-C. Chuang[1], S.-Y. Tong[1], J.D. Chen[1], Y.-C. Huang[2], *M.-W. Chao*[1], and C.-Y. Tseng[1]. [1]Chung Yuan Christian University, Taoyuan, Taiwan; and [2]Taoyuan General Hospital, Taoyuan, Taiwan.

#2384 **Poster Board Number P407**
Increased Respiration and Acidosis in a FUS Overexpression Model of Amyotrophic Lateral Sclerosis. K.L. Jackson, H.A. Dhaibar, R.D. Dayton, S.G. Cananzi, W.G. Mayhan, A.E. Glasscock, and R.L. Klein. LSU Health Sciences Center, Shreveport, LA. Sponsor: *K. McMartin.*

#2385 **Poster Board Number P408**
Environmental Exposure to Lead (Pb) and Tau Pathology *In Vitro*. *A. Eid*[2], *N. Zawia*[2], and S. Waseem[1]. [1]University of Hail, Hail, Saudi Arabia; and [2]University of Rhode Island, Kingston, RI.

#2386 **Poster Board Number P409**
Accumulation of Beta-Amyloid 1-42 in Hippocampus of Rats Chronically Exposed to Low Ozone Doses: A Model of Alzheimer's Disease. *S. Rivas-Arancibia*, and E. Rodriguez-Martinez. Universidad Nacional Autonoma de México, Mexico DF, Mexico. Sponsor: *S. Rivas-Arancibia.*

#2387 **Poster Board Number P410**
siRNA Based Silencing of Mammalian Target of Rapamycin in LUHMES Cell Model of Tauopathy. *M. Salama*[1], M. El-Husseiny[1], R. El-Ashry[1], N. Badawy[1], and W. Mohamed[2]. [1]Mansoura University, Mansoura, Egypt; and [2]Menoufia University, Menoufia, Egypt.

Tuesday Afternoon, March 15
1:15 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Neurotoxicology—Pesticide Neurotoxicity

Advances in Neurotoxicology

Chairperson(s): *Mohamed B. Abou-Donia, Duke University Medical Center, Durham, NC; and Larry P. Sheets, Bayer CropScience, Research Triangle Park, NC.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *1:15 PM–2:45 PM*

#2388 **Poster Board Number P411**
A Comparative Study on the Effects of Maneb, Copper, and Their Combination on Rat Hippocampal Astrocytes and Mouse Neuroblastoma Cells. H.A. Ebid, and *L.D. Trombetta*. St. John's University, Queens, NY.

#2389 **Withdrawn.**

#2390 **Poster Board Number P413**
Acute Low-Level Chlorpyrifos Exposure Alters Capsaicin Response in Dorsal Root Ganglion Neurons. *H.A. Enright*, S.H. Felix, E. Mukerjee, N.O. Fischer, D. Soscia, A. Kopacz, K. Kulp, and E.K. Wheeler. Lawrence Livermore National Lab, Livermore, CA.

#2391 **Poster Board Number P414**
Acute Exposure to Chlorpyrifos Causes Oxidative Stress in a Striatal Cell Model of Huntington's Disease. G. Kwakye, and *G. Dominah*. Oberlin College, Oberlin, OH.

Abstract #

#2392 **Poster Board Number P415**
Acute Exposure to Chlorpyrifos Causes Mitochondrial Dysfunction in a Striatal Cell Model of Huntington's Disease. R.A. McMinimy, S. Kallon, *G. Dominah*, and G. Kwakye. Oberlin College, Oberlin, OH.

#2393 **Poster Board Number P416**
Acute and Long-Term Exposure to Chlorpyrifos Induces Cell Death of Basal Forebrain Cholinergic Neurons Through Ache Variants Alteration. *P.V. Moyano Cires*, M.T. Frejo, M.J. Anadon, J.M. Garcia, M.J. Diaz, G. Gomez, and J. Del Pino. Complutense University of Madrid, Madrid, Spain.

#2394 **Poster Board Number P417**
Transcriptional Alterations of Cholinergic and Dopaminergic Genes in Mice Neonatally Exposed to the Combination of the Pesticides Carbaryl and Chlorpyrifos. *H. Viberg*, S. Hallgren, P. Hamberg, and *P. Eriksson*. Uppsala University, Uppsala, Sweden.

#2395 **Poster Board Number P418**
The Antioxidant Trolox Prevents Learning and Memory Deficits in a Rat Model of Subchronic Chlorpyrifos (CPF) Exposure. *D.A. Bruun*, *S.N. Levoe*, *K. Streifel*, *B. Flannery*, and *P.J. Lein*. University of California Davis, Davis, CA.

#2396 **Poster Board Number P419**
Stat-1 Is a Critical Regulator of Chlorpyrifos-Induced Cell Death in Dopaminergic Neuronal Cells. N. Singh, P. Phan, *V. Lawana*, H. Jin, *V. Anantharam*, *A. Kanthasamy*, and *A. Kanthasamy*. Iowa State University, Ames, IA.

#2397 **Poster Board Number P420**
The Effects of Occupational Chlorpyrifos Exposure in Alzheimer's Disease Development. J.R. Voorhees[1,3], M.T. Remy[3], L. McDaniel[3], and A.A. Pieper[1,2,3]. [1]Department of VA Center for the Prevention, and Treatment of Visual Loss, Iowa City, IA; [2]Neurology, Iowa City, IA; and [3]University of Iowa, Iowa City, IA. Sponsor: *L. Robertson.*

#2398 **Poster Board Number P421**
Molecular Dynamics Simulations of Patatin17 and the Patatin Domain of Neuropathy Target Esterase in Complex with Organophosphorus Compounds. *S. Wijeyesakere*, and R.J. Richardson. University of Michigan, Ann Arbor, MI.

#2399 **Poster Board Number P422**
Effects of Organophosphates Compounds on Neurite Outgrowth and on Cytoskeletal Components in Differntiated Human SH-SY5Y Neuroblastoma Cells. L.S. Fernandes[1], G.L. Emerick[2], A.C. Santos[1], and N.A.G. Santos[1]. [1]Faculdade de Ciências Farmacêuticas de Ribeirão Preto - Universidade de São Paulo - USP, Ribeirão Preto - SP, Brazil; and [2]Instituto de Ciências de Saúde, Universidade Federal do Mato Grosso – UFMT, Sinop-MT, Brazil. Sponsor: *G. Emerick.*

#2400 **Poster Board Number P423**
Evaluation of the Structurally Similar Organophosphate Flame Retardants, Plasticizers, and Pesticides for Neurotoxic Potential. *S.M. Marco*[2], *A. Tiethof*[2], *J. Richardson*[1], and B. Buckley[2]. [1]Northeast Ohio Medical University, Rootstown, OH; and [2]Rutgers University, Piscataway, NJ.

Abstract #

#2401 **Poster Board Number P424**
Occupational Pesticide Exposure and Parental Report of Attention Deficit Hyperactivity Disorder in Adolescent Pesticide Applicators in Egypt. *D.S. Rohlman*[3], A. Ismail[3], G. Abdel Rasoul[1], M.R. Bonner[2], O. Hendy[1], L. Ortega[3], K. Wang[3], and *J.R. Olson*[2]. [1]Menoufia University, Shebin El-Kom, Egypt; [2]State University of New York, Buffalo, NY; and [3]University of Iowa, Iowa City, IA.

#2402 **Poster Board Number P425**
Organophosphorous Pesticide Exposure and Neurobehavioral Performance Among Adolescents in Egypt: A Ten-Month Prospective Study. A.A. Ismail[3], G. Abdel Rasoul[1], M.R. Bonner[2], O. Hendy[1], K. Mara[3], K. Wang[3], *J.R. Olson*[2], and *D.S. Rohlman*[3]. [1]Menoufia University, Shebin El-Kom, Egypt; [2]State University of New York, Buffalo, NY; and [3]University of Iowa, Iowa City, IA.

#2403 **Poster Board Number P426**
Multi-Endpoint Analysis of Organophosphate Developmental Neurotoxicity in a Freshwater Planarian. *D. Hagstrom*, S. Zhang, H. Hirokawa, *P. Taylor*, and E.-M.S. Collins. University of California, San Diego, La Jolla, CA.

#2404 **Poster Board Number P427**
Kinetic Analysis of the Interactions Between the Organophosphorus Pesticide Metabolite Phorate Oxon and Oximes with Acetylcholinesterase. *R.A. Moyer*[1], K.G. McGarry[1], *M.C. Babin*[1], G.E. Platoff[2], D.A. Jett[2], and D.T. Yeung[2]. [1]Battelle, Columbus, OH; and [2]National Institutes of Health, Rockville, MD.

#2405 **Poster Board Number P428**
Early Differential Induction of Jun-D in the Central Nervous System of Hens Treated with Diisopropylphosphorofluoridate (DFP) May Be Involved in OPIDN. *T.V. Damodaran*[1,3], and *M.B. Abou-Donia*[2]. [1]Duke University Medical Center, Durahm, NC; [2]Duke University Medical Center, Durham, NC; and [3]North Carolina Central University, Durham, NC. Sponsor: *T. Damodaran.*

#2406 **Poster Board Number P429**
Antioxidant and Neuroprotective Effects of AEOL 10150 in a Rat Organophosphate Model. L.-P. Liang[2], *P.B. McElroy*[2], J. Huang[1], *B.J. Day*[2], and *M. Patel*[2]. [1]National Jewish Health, Denver, CO; and [2]University of Colorado Denver, Aurora, CO.

#2407 **Poster Board Number P430**
A Small Molecule Screen in Stem Cell-Derived Motor Neurons Identifies Inositol as a Potent Neuroprotective Drug Against Organophosphate Neurotoxicity. M. Prissette[1], H. Li[1], T. Obis[1], S. Merwin[1], N. Lamas[2], A. Sharma[1], S. Przedborski[1], C.E. Henderson[1], and D.B. Re[1]. [1]Columbia University, New York, NY; and [2]Project ALS Laboratory, New York, NY. Sponsor: *J. Graziano.*

#2408 **Poster Board Number P431**
Efficacy of Butyrylcholinesterase as a Topical Scavenger Agent Against the Organophosphate Paraoxon. K. Jorge[1], K. Fuhrman[2], J. Hinckley[2], and *M. Ehrich*[2]. [1]Midwestern University College of Veterinary Medicine, Glendale, AZ; and [2]Virginia-Maryland College of Veterinary Medicine, Blacksburg, VA.

Abstract #

#2409 **Poster Board Number P432**
Quantitative Magnetic Resonance Imaging (MRI) of Brain Lesions Predicts Cognitive Impairment Following Acute Organophosphate (OP) Intoxication in Rats. *B. Hobson*[1], D. Rowland[1], *K. Dhakal*[1], *D. Bruun*[1], D. Tancredi[1], S. Cherry[1], J. Garbow[2], and *P. Lein*[1]. [1]University of California, Davis, CA; and [2]Washington University, St. Louis, MO.

#2410 **Poster Board Number P433**
Persistent Behavioral Deficits, Neuroinflammation and Oxidative Stress in Rat Model of Acute Diisopropylfluorophosphate (DFP) Intoxication. *M. Guignet*[1], *K. Dhakal*[1], *B. Hobson*[1], *D. Bruun*[1], *K. Streifel*[1], J. Silverman[2], and *P. Lein*[1]. [1]University of California, Davis, Davis, CA; and [2]University of California, Davis, Sacramento, CA.

#2411 **Poster Board Number P434**
Analysis of Neonicotinoid Insecticides for Developmental Neurotoxicity. *L.P. Sheets*[1], *A.A. Li*[2], D.J. Minnema[4], R.H. Collier[3], *M.R. Creek*[5], and *R.C. Peffer*[4]. [1]Bayer CropScience, Research Triangle Park, NC; [2]Exponent, Inc., San Francisco, CA; [3]Landis International, Inc., Valdosta, GA; [4]Syngenta Crop Protection, Inc., Greensboro, NC; and [5]Valent USA Corporation, Dublin, CA.

#2412 **Poster Board Number P435**
Dietary Exposure to the Organochlorine Pesticide Dieldrin Results in Neurotoxic and Cardiotoxic Effects in Zebrafish (Danio rerio). A.M. Cowie[1], L. Slade[1], K. Sarty[3], A. Mercer[4], J. Koh[2], K. Kidd[4], P.C. Kienesberger[1], T. Pulinilkunnil[1], and C.J. Martyniuk[2]. [1]Dalhousie University, Saint John, NB, Canada; [2]University of Florida, Gainesville, FL; [3]University of New Brunswick, New Brunswick, NB, Canada; and [4]University of New Brunswick, Saint John, NB, Canada. Sponsor: *N. Denslow.*

#2413 **Poster Board Number P436**
Deltamethrin Exposure Inhibits Adult Hippocampal Neurogenesis and Causes Deficits in Learning and Memory in Mice. *M.M. Hossain*, and *J.R. Richardson*. Northeast Ohio Medical University, Rootstown, OH.

#2414 **Poster Board Number P437**
Effect of Repeated Juvenile Exposure to Permethrin and Deltamethrin on the Performance of Adolescent Rats in the Elevated Plus Maze. N. Alugubelly, A.N. Mohammed, and *R.L. Carr*. Mississippi State University, Mississippi State, MS.

#2415 **Poster Board Number P438**
Development of an *In Vitro* Blood-Brain Barrier Model to Measure the Transendothelial Electrical Resistance of Tight Junctions Due to Exposure to Pyrethroids. K. Flaugher, A. Keely, and *M. Chan*. Southern Illinois University Edwardsville, Edwardsville, IL.

Abstract #

Tuesday Afternoon, March 15
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Receptors

Chairperson(s): *Lisbeth Boule, University of Rochester Medical Center, Rochester, NY; and Mark E. Hahn, Woods Hole Oceanographic Institution, Woods Hole, MA.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *3:00 PM–4:30 PM*

#2416 **Poster Board Number P439**
Fc Gamma Receptors Are Expressed in the Developing Rat Brain and Activate Downstream Signaling upon Cross-Linking with Immune Complex. *M. Stamou*[1,2], *A.-C. Grodzki*[2], and *P.J. Lein*[2]. [1]Swiss Federal Institute of Technology (ETH) Zurich, Zurich, Switzerland; and [2]University of California Davis, Davis, CA.

#2417 **Poster Board Number P440**
5, 6-Benzoflavone Exposure Alters Lipogenic Gene Expression and Lipid Synthesis During Lactation. *K. Belton*, *L. Zhang*, *G.H. Perdew*, and *A. Patterson*. Penn State University, University Park, PA.

#2418 **Poster Board Number P441**
Nuclear Receptor 4A1 Is a Drug Target for Treating Rhabdomyosarcoma. *A. Lacey*[2], *E. Hedrick*[2], and *S. Safe*[1]. [1]Texas A&M Health Science Center, Houston, TX; and [2]Texas A&M University, College Station, TX.

#2419 **Poster Board Number P442**
Divergent Evolution of the Human Ah Receptor from Neanderthal Conferred Enhanced Resistance to Fire Use. *T.D. Hubbard*[2], *I.A. Murray*[2], *W.H. Bisson*[1], and *G.H. Perdew*[2]. [1]Oregon State University, Corvallis, OR; and [2]The Pennsylvania State University, University Park, PA.

#2420 **Poster Board Number P443**
Metagenomics Analysis of the Mouse Gut Microbiota Following Exposure to the Environmental Contaminant and AHR Agonist 2,3,7,8- Tetrachlorodibenzofuran. R. Nichols, *L. Zhang*, P.B. Smith, *G.H. Perdew*, and *A. Patterson*. Penn State University, University Park, PA. Sponsor: *A. Patterson.*

#2421 **Poster Board Number P444**
Examining Role of Peroxisome Proliferator-Activated Receptor-β/δ (PPARβ/δ) in Colon Cancer. X. Wang. Penn State University, University Park, PA. Sponsor: *J. Peters.*

#2422 **Poster Board Number P445**
Cellular Signaling Pathways Affected by TCDD in Laser Capture Microdissected Centrilobular and Periportal Hepatocytes Supports Regional Specificity for Key Events in the Adverse Outcome Pathway for AHR-Mediated Rodent Liver Tumor Promotion. *J. Harrill*[2], B. Parks[2], M. Black[2], P. McMullen[2], *R. Budinsky*[1], *J.C. Rowlands*[1], and *R. Thomas*[2]. [1]The Dow Chemical Company, Midland, MI; and [2]The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#2423 **Poster Board Number P446**
Hepatic Aryl Hydrocarbon Receptor Activity Attenuates Fibroblast Growth Factor 21 Induction. *N.G. Girer*, *I.A. Murray*, and *G.H. Perdew*. Pennsylvania State University, State College, PA.

Abstract #

#2424 **Poster Board Number P447**
Altered Basal and TCDD-Induced Gene Expression in AHRRa-Null Zebrafish Embryos Generated by ZFN-Mediated Gene Targeting. *M.E. Hahn*, *N. Aluru*, S.I. Karchner, and D.G. Franks. Woods Hole Oceanographic Institution, Woods Hole, MA.

#2425 **Poster Board Number P448**
Activation of the Aryl Hydrocarbon Receptor Attenuates the Cholesterol Synthesis Pathway via Alterations in the Sterol Regulatory Element Binding Protein-2 Levels. G.E. Muku, *I.A. Murray*, and *G.H. Perdew*. Veterinary, and Biomedical Sciences, Center for Molecular Toxicology, and Carcinogenesis, The Pennsylvania State University, University Park, PA.

#2426 **Poster Board Number P449**
Aryl Hydrocarbon Receptor Expression Is Required to Maintain Intestinal Host-Microbe Homeostasis in C57BL6/J Mice. I.A. Murray, L. Zhang, R. Nichols, I. Albert, *A.D. Patterson*, and *G.H. Perdew*. The Pennsylvania State University, University Park, PA.

#2427 **Poster Board Number P450**
Agonist-Specific Aryl Hydrocarbon Receptor-Mediated Differential Gene Expression. *A.D. Joshi*, and *C.J. Elferink*. University of Texas Medical Branch, Galveston, TX.

#2428 **Poster Board Number P451**
Loss of Hepatic Aryl Hydrocarbon Receptor Alters the Thermogenic Properties of White Fat and Protects Against Diet Induced Obesity. *D.E. Carter*, C. Porter, and *C. Elferink*. The University of Texas Medical Branch, Galveston, TX. Sponsor: *C. Porter.*

#2429 **Poster Board Number P452**
Regulation of Aquaporin 3 Expression by the Arylhydrocarbon Receptor Pathway Is Critical for Cell Migration. C. Tomkiewicz-Raulet. INSERM UMR 1124 Pharmacology, Toxicology, and Cell Signaling, Paris, France. Sponsor: *R. Barouki.*

#2430 **Poster Board Number P453**
Novel Roles for Ahr and Arnt in the Regulation of Alcohol Dehydrogenase Expression in Human Hepatic Cells. E. Attignon[1,2], A. Leblanc[1,2], B. Le-Grand[1,2], C. Duval[1,2], M. Aggerbeck[1,2], H. Rouach[1,2], and E. Blanc[1,2]. [1]INSERM UMR-S 1124, Paris, France; and [2]Paris Descartes University, Paris, France. Sponsor: *R. Barouki.*

#2431 **Poster Board Number P454**
Application of the PPARγ2-CALUX® Assay to the Biological Detection of Endocrine Active Chemicals. C. Dusserre[2,3], J. Mollergues[2], E. Lo Piparo[2], M. Marin-Kuan[2], H. Besselink[1], *B. Schilter*[2], and *K.C. Fussell*[2]. [1]BioDetection Systems, Amsterdam, Netherlands; [2]Nestec Inc., Lausanne 26, Switzerland; and [3]Universite Paris Descartes, Paris, France.

#2432 **Poster Board Number P455**
PPARα Activation Drives Zone-Specific Transcriptional Programs in the Rat Liver. *P.D. McMullen*, S.N. Pendse, B. Parks, *E.L. LeCluyse*, *R.A. Clewell*, and *M.E. Andersen*. The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

Abstract #

#2433 **Poster Board Number P456**
Use of Two Compounds to Validate Wild-Type (WT) and Constitutive Androstane Receptor (CAR) Knock-Out Rat Hepatocyte Cultures. A. Vardy[2], B. Elcombe[2], *C. Elcombe*[2], I. Fegert[1], M. Goettel[1], and N. Honarvar[1]. [1]BASF SE, Ludwigshafen, Germany; and [2]CXR Biosciences, Dundee, United Kingdom.

#2434 **Poster Board Number P457**
Comparative Genomic Profiling of Constitutive Androstane Receptor with Direct and Indirect Activators in Humanized Mice. B. Niu, A. Bataille, F. Pugh, I. Albert, and *C.J. Omiecinski*. Pennsylvania State University, University Park, PA.

#2435 **Poster Board Number P458**
Metabolomic Approaches Reveal the Role of CAR in Energy Metabolism. F. Chen, *T. Chen*, D.M. Coslo, *L. Zhang*, *A.D. Patterson*, and *C.J. Omiecinski*. The Pennsylvania State University, University Park, PA.

#2436 **Poster Board Number P459**
Characterisation of the Hepatic Effects of Phenobarbital (PB) and Pregnenolone 16A-Carbonitrile (PCN) in Constitutive Androstane Receptor (CAR, Nr1i3) and Pregnane X Receptor (PXR, Nr1i2) Double Knockout Rats. L. Chatham, C. Haines, and *C. Elcombe*. CXR Biosciences, Dundee, United Kingdom.

#2437 **Poster Board Number P460**
Pregnane X Receptor Plays a Role in Enhancing Resistance of Colon Cells to the Infection of *Salmonella typhimurium*. M. Wang, S. Ke, J. Wu, S. Lawhon, G. Wu, and *Y. Tian*. Texas A&M University, College Station, TX.

#2438 **Poster Board Number P501**
Alternative Exon 3 Inclusion in the Vitamin D Receptor (VDR) Modulates Transcriptional Activity for Target Genes: VDR, CYP24A1, CYP3A4 and CYP3A5. *A.J. Annalora*, *P.L. Iversen*, and *C.B. Marcus*. Oregon State University, Corvallis, OR.

#2439 **Poster Board Number P502**
Identifying a Pharmacophore for the Estrogen Receptor Alpha/Beta Heterodimer to Decipher Its Biological Role. *C. Coriano*, C. Sievers, and *W. Xu*. University of Wisconsin-Madison, Madison, WI.

Tuesday Afternoon, March 15
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Medical Devices

Chairperson(s): *Robert T. Przygoda, Johnson & Johnson, Cincinnati, OH; and Jon E. Dahl, Nordic Institute of Dental Materials, Oslo, Norway.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *1:15 PM–2:45 PM*

#2440 **Poster Board Number P506**
Evaluation of Thrombosis with an Accelerated Time to Occlusion (ATTO) *In Vivo* Swine Model. S. Gabriel, *A. Sawyer*, and *D. Nazarenko*. Becton Dickinson, Durham, NC.

Abstract #

#2441 **Poster Board Number P507**
Safety Assessment of Radiofrequency Renal Denervation in Swine. J.H. Keating[1], J.R. Stanley[1], A.R. Tzafriri[1], A.-M. Spognardi[1], P.M. Markham[1], and E.R. Edelman[2]. [1]CBSET Inc, Lexington, MA; and [2]MIT, Cambridge, MA. Sponsor: *S. Gad.*

#2442 **Poster Board Number P508**
Safety Assessment of an Intramedullary Bone Stabilization Device Using a Light-Curable Monomer. B.G. Zani[2], R. Baird[2], J.R. Stanley[2], P.M. Markham[2], M. Wilke[1], S. Zeiter[1], A. Beck[1], D. Nehrbass[1], G.A. Kopia[4], E.R. Edelman[5], and R. Rabiner[3]. [1]AO Foundation, Davos, Switzerland; [2]CBSET, Inc., Lexington, MA; [3]IlluminOss Medical, Inc., East Providence, RI; [4]Kopia Consulting, Hillsborough, NJ; and [5]MIT, Cambridge, MA. Sponsor: *S. Gad.*

#2443 **Poster Board Number P509**
Effect of Components in Resin-Based Dental Restoratives on Protein-S-Glutathionylation. J.T. Samuelsen, S. Uvsløkk, E. Morisbak, R. Becher, and *J.E. Dahl*. NIOM, Oslo, Norway.

#2444 **Poster Board Number P510**
Exposure to Dental Monomer Hydroxyethyl Methacrylate (HEMA) Induces Increased Transcription of Genes Involved in Oxidative Stress Responses. R. Becher[1,2], H.V. Rukke[1], *J.E. Dahl*[1], and J.T. Samuelsen[1]. [1]Nordic Institute of Dental Materials, Oslo, Norway; and [2]Norwegian Institute of Public Health, Oslo, Norway.

#2445 **Poster Board Number P511**
Proteome Changes Indicate Oxidative Stress and Protein Damage After Methacrylate Exposure in Human Monocyte Cell Line. *J.E. Dahl*[1,2], V. Barman Michelsen[4], J.-A. Bruun[3], E. Jensen[3], U. Örtengren[3], and J.T. Samuelsen[1]. [1]Nordic Institute of Dental Materials, Oslo, Norway; [2]University of Oslo, Oslo, Norway; [3]University of Tromso, Tromso, Norway; and [4]University of Bergen, Bergen, Norway.

#2446 **Poster Board Number P512**
Comparison of Cytotoxicity Results from Two Testing Laboratories Using ISO Mem Elution and Colony Formation Method. *Y. Zhou*[1], *M. Posgai*[1], *D. Malek*[2], J. Kringstad[4], A. Zdawczyk[3], and *R.T. Przygoda*[1]. [1]Johnson & Johnson, Cincinnati, OH; [2]Malek Toxicology Delaware LLC, Greenville, DE; [3]NAMSA, Northwood, OH; and [4]Wuxi AppTec, Inc, St. Paul, MN.

#2447 **Poster Board Number P513**
Resolving Hemolysis Test Failures in the Biological Evaluation of Blood-Contacting Medical Devices. *F.K. Hsia*[2], *N.S. Goud*[2], A. Andrews[1], and H.A. Schwanz[1]. [1]Boston Scientific Corporation, Maple Grove, MN; and [2]Boston Scientific Corporation, Marlborough, MA.

#2448 **Poster Board Number P514**
Are the Current Medical Device Extraction Procedures Sufficient for Genetic Toxicity Hazard Identification? *R.T. Przygoda*[1], *M. Posgai*[1], *Y. Zhou*[1], and *D. Malek*[2]. [1]Johnson & Johnson, Cincinnati, OH; and [2]Malek Toxicology, Greenville, DE.

Abstract #

#2449 **Poster Board Number P515**
***In Vitro* Hemocompatibility Evaluation of Nanocrystalline Diamond Coatings.** *S.A. Skoog*[2,3], Q. Lu[3], R.A. Malinauskas[3], A.V. Sumant[1], J. Zheng[3], *P.L. Goering*[3], R.J. Narayan[2], and B.J. Casey[3]. [1]Argonne National lab, Argonne, IL; [2]UNC/NC State, Raleigh, NC; and [3]US FDA, Silver Spring, MD.

#2450 **Poster Board Number P516**
***In Vitro* Biological Evaluation of Additive Manufactured Metal Discs.** *G. Kumar*[3], J. Chang[2], R. Patel[1], J. Coburn[3], M.A. Di Prima[3], A. Nguyen[3], and *P.L. Goering*[3]. [1]UMBC, Baltimore, MD; [2]University of Maryland, College Park, MD; and [3]US FDA, Silver Spring, MD.

#2451 **Poster Board Number P517**
Real Time Laser 3D Printing of Living Cells in Hydrogels with Two Photon Polymerization by Minimizing Chemical, Free Radical, and Phototoxicity. *P.E. Petrochenko*[2], P. Gruber[3], M. Markovic[3], R. Liska[3], J. Stampfl[3], *P.L. Goering*[2], R.J. Narayan[1], and A. Ovsianikov[3]. [1]UNC-Chapel Hill, and NC State University, Raleigh, NC; [2]US FDA, Silver Spring, MD; and [3]Vienna Univ of Technology, Vienna, Austria.

#2452 **Poster Board Number P518**
***In Vitro* Thrombogenicity Assessment: Comparison of an Ovine *In Vivo* Venous Implant Model to a Circulating Blood-Loop Thrombogenicity Assay for Medical Devices.** *K. Grove*, S. Deline, and *M.E. Smith*. American Preclinical Services, Minneapolis, MN.

#2453 **Poster Board Number P519**
Cytotoxicity Evaluation of Additively Manufactured Polymeric Discs. L. Ricles, E. Gonzalez, V. Hitchins, M.A. Di Prima, J. Coburn, S. Oh, *P.L. Goering*, and *G. Kumar*. US FDA, Silver Spring, MD.

#2454 **Poster Board Number P520**
Local Reactions to Subcutaneous Injection of HFAs. *O.P. Green*[2], A. Donnelly[1], and N. Lourens[3]. [1]Bespak Europe, Cambridge, United Kingdom; [2]WCA-Consulting, Faringdon, United Kingdom; and [3]WIL Research Europe, s-Hertogenbosch, Netherlands.

Tuesday Afternoon, March 15
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Non-Pharmaceutical Safety Assessment

♠ Recent Advances in Safety Assessment

Chairperson(s): *Ramesh C. Gupta, Murray State University, Hopkinsville, KY; and Brian J. Hughes, The Dow Chemical Company, Midland, MI.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *3:00 PM–4:30 PM*

#2455 **Poster Board Number P521**
Dose-Dependent Effects on Rat Liver miRNAs 200a/b and 429: Potential Early Biomarkers of Liver Carcinogenesis. *S. Plummer*[1], P. Brown[2], M. Beltran[1], M. Millar[2], J. Wright[1], and R. Currie[3]. [1]MicroMatrices Ltd, Dundee, United Kingdom; [2]MRC Centre for Reproductive Health, Edinburgh, United Kingdom; and [3]Syngenta Ltd, Bracknell, United Kingdom.

Abstract #

#2456 **Poster Board Number P522**
Toxicity Profiling of Flame Retardants in Zebrafish Embryos Using a Battery of Assays. A. Alzualde[1], A. Alday[1], *M. Behl*[2], R.R. Tice[2], R.R. Paules[2], *A. Muriana*[1], and C. Quevedo[1]. [1]BBD-BioPhenix, San Sebastián, Spain; and [2]NIEHS-NIH, Research Triangle Park, NC.

#2457 **Poster Board Number P523**
A Randomized, Double-Blind, Three Cohort Crossover Study Assessing Gastrointestinal Tolerability of Magnesium Sources in Healthy Adults. S. Ashmead[1], D. Liska[2], K. Sanoshy[2], C. Kern[2], K.M. Kelley[2], and J. Hartle[1]. [1]Albion, Clearfield, UT; and [2]Biofortis Innovation Services, Addison, IL. Sponsor: *J.C. Griffiths.*

#2458 **Poster Board Number P524**
Innovative Strategies for Agrochemical Safety Assessments: Use of Toxicokinetic Data for ArylexTM and RinskorTM. *L. Murphy*[2], *S. Papineni*[1], *M. Aggarwal*[1], *M.J. Bartels*[2], and *R. Rasoulpour*[1]. [1]Dow AgroSciences, Indianapolis, IN; and [2]The Dow Chemical Company, Midland, MI.

#2459 **Poster Board Number P525**
Inhalation Health Effects Testing of Isobutanol Gasoline Blend: A Promising New Biofuel. *D. Burnett*[1], J. Baustian[2], *G. Hoffman*[4], *R. Parker*[4], and *J. O'Callaghan*[3]. [1]BP, Global Product Stewardship, Naperville, IL; [2]Butamax™ Advanced Biofuels, Wilmington, DE; [3]CDC-NIOSH, Morgantown, WV; and [4]Envigo, East Millstone, NJ.

#2460 **Poster Board Number P526**
A New E-Cigarette Aerosol pH Technique with Improved Toxicological Relevance. *J.H. Lauterbach*, and S.J. Lauterbach. Lauterbach & Associates, LLC, Macon, GA.

#2461 **Poster Board Number P527**
Microbiological Prevention in the Concentration of Bacterial Pathogens on the Athletic Equipment in the Heal Complex at Paine College. M.J. Stephens, J.R. Johnson, and G.J. Swenson. Paine College, Augusta, GA. Sponsor: *T. Burns.*

#2462 **Poster Board Number P528**
Identification of Compounds That Modulate Retinol Signaling Using a Cell-Based qHTS Assay. *Y. Chen*[2], S. Sakamuru[1], R. Huang[1], D.H. Reese[2], and *M. Xia*[1]. [1]NIH, Bethesda, MD; and [2]US FDA, Laurel, MD.

#2463 **Poster Board Number P529**
A Biology Based Approach for Chemical Grouping Using Metabolomics. H.G. Kamp[1], *B. van Ravenzwaay*[1], E. Fabian[1], E. Peters[2], G. Krennrich[1], W. Mellert[1], V. Strauss[1], and T. Walk[2]. [1]BASF SE, Ludwigshafen am Rhein, Germany; and [2]metanomics GmbH, Berlin, Germany.

#2464 **Poster Board Number P530**
The Evaluation of the Safety of Self-Assembling Peptide Gel After the Intracranial Administration to Rats by Using an Open Field Test. *M. Tsunoda*[1], C. Sugaya[1], Y. Sugiura[1], Y. Nagai[2], and K. Sakanishi[2]. [1]Kitasato University School of Medicine, Sagamihara, Kanagawa, Japan; and [2]Menicon, Co., Kasugai, Aichi, Japan.

#2465 **Poster Board Number P531**
Application of Dermal Absorption Values to Refine Margin of Safety Calculations in EU Cosmetics Safety Assessments. M. Boylan, *J. Fleischer*, and *M. Whittaker*. ToxServices LLC, Washington, DC.

Abstract #

#2466 **Poster Board Number P532**
Successful Application of Skin Sensitization Quantitative Risk Assessment for Hair Dyes Using Skin Penetration Measurements. H. Rothe[2], *G.F. Gerberick*[1], and C. Goebel[2]. [1]The Procter & Gamble Company, Mason Business Center, OH; and [2]The Procter & Gamble Company, Schwalbach am Taunus, Germany.

#2467 **Poster Board Number P533**
Evaluation of the Chemical Inventories in the US FDA's Office of Food Additive Safety for Human Health Endpoints Using a Toxicity Prediction System. K. Arvidson[4], P. Volarath[4], A. Mostrag[1], B. Bienfait[2], A. Tarkhov[2], V. Vitcheva[1], J. Rathman[1,3], and *C. Yang*[1,2]. [1]Altamira LLC, Columbus, OH; [2]Molecular Networks GmbH, Erlangen, Germany; [3]Ohio State University, Columbus, OH; and [4]US FDA, College Park, MD.

#2468 **Poster Board Number P534**
Evaluating the Ability of High-Throughput Screening (HTS) Assays to Capture the Biological Activity of Industrial Chemicals. *K.O. Goyak*[2], *R. Alyea*[2], *R.A. Becker*[1], *L.M. Plunkett*[3], and J.B. Plunkett[3]. [1]American Chemistry Council, Washington, DC; [2]ExxonMobil Biomedical Sciences, Inc., Annandale, NJ; and [3]Integrative Biostrategies LLC, Houston, TX.

#2469 **Poster Board Number P535**
Sex Specific Differences in Repeat-Dose Toxicity in Rats After Treatment with n-Butyronitrile. *S.M. Green*. Eastman Chemical Company, Kingsport, TN. Sponsor: *S. Green.*

#2470 **Poster Board Number P536**
Re-Shaping Acute Toxicity Testing of Agrochemical Formulations by Combining the GHS ATE Formula and *In Vitro* Approaches. M. Corvaro[1], *S. Gehen*[2], K. Andrew[1], C. Arasti[1], R. Chatfield[1], F. MacLeod[1], H. Mikolajczak[1], J. Moore[1], and J. Mehta[1]. [1]Dow Agrosciences, Abingdon, United Kingdom; and [2]Dow Agrosciences, Indianapolis, IN. Sponsor: *D. Juberg.*

#2471 **Poster Board Number P537**
Development of an *In Vitro* Test for Allergenic Potency of Proteins. H. Tsukumo[3], N. Matsunari[3], M. Sugiyama[2], A. Toyoda[2,3], *H. Kojima*[1], and *H. Itagaki*[3]. [1]National Institute of Health Sciences, Setagaya, Japan; [2]Pola Chemical Industries, INC., Yokohama, Japan; and [3]Yokohama National University, Yokohama, Japan.

#2472 **Poster Board Number P538**
A Generic PBPK Model for Assessing *In Utero* Toxicokinetics: Application to Bisphenol A. *D. Sarigiannis*[1,2,3], S. Karakitsios[1,2], A. Gotti[1,3], and E. Handakas[1]. [1]Aristotle University of Thessaloniki, Thessaloniki, Greece; [2]Centre for Research, and Technology Hellas, Thessaloniki, Greece; and [3]Institute for Advanced Study, Pavia, Italy. Sponsor: *G. Miller.*

#2473 **Poster Board Number P539**
Evaluation of an Aqueous Extract of Terminalia Chebula for Anti-Arthritic Efficacy and Safety in Osteoarthritic Dogs: Radiographic Evidence. N. Murdock[1], *R.C. Gupta*[1], N. Vega[1], K. Kotora[1], J.F. Miller[1], J.T. Goad[1], M.A. Lasher[1], T.D. Canerdy[1], and S.R. Kalidindi[2]. [1]Murray State University, Murray/Hopkinsville, KY; and [2]Natreon Inc., New Brunswick, NJ.

Abstract #

#2474 **Poster Board Number P540**
Integrated Testing Strategies (ITS) for Choosing Surfactants and Preservatives Applied to Children's Cosmetic Products.
A.D. Canavez[1], G.A. Cararo[1], B.B. Swinka[1], A.C. Weihermann[1], C.R. Neumann[1], C. Sasson[1], O. Kruger[1], C. Brohem[1], R. Wielecosseles[1], *H. Maibach*[2], and M. Lorencini[1]. [1]Boticario Group, São José dos Pinhais, PR., Brazil; and [2]University of California San Francisco, California, USA, Brazil. Sponsor: *H. Maibach.*

#2475 **Poster Board Number P601**
Final Report on the Development of Non-Cancer Threshold of Toxicological Concern (TTC) Database to Support Alternative Assessment Methods for Cosmetics-Related Chemicals. *H.M. Hollnagel*[3], K. Arvidson[9], S. Barlow[2], *A. Boobis*[6], M.T. Cronin[7], *S.P. Felter*[8], D. Keller[5], K.L. Muldoon Jacobs[9], V. Vitcheva[1], A.P. Worth[4], and *C. Yang*[1]. [1]Altamira LLC, Columbus, OH; [2]Consultant, Brighton, United Kingdom; [3]Dow Europe GmbH, Horgen, Switzerland; [4]EC Joint Research Center, Ispra, Italy; [5]Henkel, Düsseldorf, Germany; [6]Imperial College, London, United Kingdom; [7]Liverpool John Moores University, Liverpool, United Kingdom; [8]P&G, Cincinnati, OH; and [9]US FDA CFSAN OFAS, College Park, MD.

#2476 **Poster Board Number P602**
COSMOS DB as an International Share Point for Exchanging Safety Evaluation and Toxicity Data, and Expanding the Known Chemical Space. M. Cronin[5], *C. Yang*[1,6], A. Bassan[10], K. Arvidson[8], *I. Boyer*[2], E. Fioravanzo[10], B. Heldreth[2], J. Kim[4], J. Madden[5], J. Rathman[1,9], C. Schwab[6], T. Yamada[7], and A. Worth[3]. [1]Altamira LLC, Columbus, OH; [2]Cosmetic Ingredient Review, Washington, DC; [3]EC Joint Research Centre, Ispra, Italy; [4]Foundation of Korea Cosmetic Industry Institute, Osan, Korea, Republic of; [5]Liverpool John Moores University, Liverpool, United Kingdom; [6]Molecular Networks GmbH, Erlangen, Germany; [7]National Institute of Technology, and Evaluation, Tokyo, Japan; [8]Office of Food Safety, US FDA CFSAN, College Park, MD; [9]Ohio State University, Columbus, OH; and [10]S-IN, Vicenza, Italy.

#2477 **Poster Board Number P603**
A Four-Organ-on-a-Chip Microfluidic System: Towards a Tool for Long-Term Systemic Toxicity Assessment. A. Lavado[4], C. Oleaga[4], S. Rothemund[4], Y. Cai[4], L. Kumanchik[4], L.R. Bridges[4], C. Martin[4], M. Jackson[4], C.W. McAleer[4], C.J. Long[4], J. Langer[3], *A. Riu*[3], *R. Note*[3], S. Teissier[2], J. Cotovio[2], L. Breton[2], M.L. Shuler[1], and J.J. Hickman[4]. [1]Cornell University, Ithaca, NY; [2]L'Oreal Research, and Innovation division, Aulnay-sous-Bois, France; [3]L'Oreal Research, and Innovation division, Clark, NJ; and [4]University of Central Florida, Orlando, FL. Sponsor: *E. Dufour.*

#2478 **Poster Board Number P604**
Evaluation of Chemically-Induced Choline Deficiency as the Mode of Action (MOA) for Diethanolamine-Induced Mouse Liver Tumors. *B.J. Hughes*[5], *J. Reichard*[4], *L. Haber*[4], *J. Klaunig*[3], *P. Fenner-Crisp*[2], and *J. Busch*[1]. [1]American Chemistry Council, Washington, DC; [2]Independent Consultant, North Garden, VA; [3]Indiana University, Zionsville, IN; [4]TERA Center, Cincinnati, OH; and [5]The Dow Chemical Company, Midland, MI. Sponsor: *B. Hughes.*

Abstract #

#2479 **Poster Board Number P605**
Assessment of the Impact of Different Anesthesia Methods on Clinical Pathology Parameters and Organ Weights on Rodent Studies. M. Chen, H. Pei, F. Yu, S. McPherson, W. Lv, and *Z. Chengen*. Wuxi AppTec, Suzhou, China.

#2480 **Poster Board Number P606**
Cinnamaldehyde, an Electronic Cigarette Flavoring, Adversely Effects Human Pulmonary Fibroblasts and Embryonic Stem Cells. *R.Z. Behar*, Y. Wang, and *P. Talbot*. University of California, Riverside, Riverside, CA.

Tuesday Afternoon, March 15
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Clinical and Translational Toxicology

Chairperson(s): *Shelli Schomaker, Pfizer Inc., Groton, CT; and William B. Mattes, NCTR, US Food and Drug Administration, Jefferson, AR.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *1:15 PM–2:45 PM*

#2481 **Poster Board Number P609**
Polymorphisms in *FcγR3A* and *TAP1* Genes Affect Antibody-Dependent Cell-Mediated Cytotoxicity Activity in Cynomolgus Monkeys. *J.C. Sanford*, *H. Wu*, *J. Harney*, and *K. Adkins*. Pfizer Inc., Groton, CT.

#2482 **Poster Board Number P610**
Evaluation of Glutamate Dehydrogenase as a Marker of Liver Injury in Human Patients with Evidence of Muscle Injury. *S. Schomaker*[2], R. Warner[3], K. Johnson[3], M. Binks[1], L. Fitz[1], S. Marraffino[1], and *J. Aubrecht*[2]. [1]Pfizer Inc., Cambridge, MA; [2]Pfizer Inc., Groton, CT; and [3]University of Michigan Medical School, Ann Arbor, MI.

#2483 **Poster Board Number P611**
Glutathione Depletion Circumvent Melphalan Resistance in Multiple Myeloma. *W. Hassen*[2,3], C. Gourzones[3], S. Lamure[3], O. Karmous[3,4], D. Hose[5], G. Cartron[1], B. Klein[3,4], and J. Moreaux[3,4]. [1]CHU Montpellier, Montpellier, France; [2]High Institute of Biotechnology, Monastir, Tunisia; [3]Institute of Human Genetics, Montpellier, France; [4]Laboratory for Monitoring Innovative Therapies, Department of Biological Hematology, CHRU Montpellier, Montpellier, France; and [5]Medizinische Klinik V, Heidelberg, Germany.

#2484 **Poster Board Number P612**
Risk Factors of Drug-Induced Hepatotoxicity in Acute Paracetamol Overdose Among Patients Admitted at Philippine General Hospital from January 2010 to December 2014. E.J.N. Perez[1,2], and *C.P.C. Dioquino*[1]. [1]Philippine General Hospital, Manila, Philippines; and [2]Southern Philippines Medical Center, Davao City, Philippines.

#2485 **Poster Board Number P613**
Changes in the Blood and Some Serum Chemistry Parameters of Wistar Rats Exposed to Methanolic Extract of the Root Bark of Afromosia Laxiflora. *G.M. Oladele*. University of Abuja, Abuja, Nigeria, Abuja, Nigeria.

Abstract #

#2486 **Poster Board Number P614**
Human Corneal Wound Healing Is Enhanced in an *Ex Vivo* Front of the Eye Model. *A.E. Vickers*[2], J.E. Herrmann[1], and *R.L. Fisher*[3]. [1]Allergan, Irvine, CA; [2]Human Translational Models, Irvine, CA; and [3]Vitron Inc, Tucson, AZ.

#2487 **Poster Board Number P615**
Metformin Scavenges Methylglyoxal to Form an Imidazolinone Metabolite in T2D Patients: A Potential Therapeutic to Alleviate T2D Complications. *T.L. Hargraves*. University of Arizona, Tucson, AZ. Sponsor: *S. Lau.*

#2488 **Poster Board Number P616**
Predictivity of Animal Models for Hepatotoxicity: Two Classes of Drugs. *W.B. Mattes*. NCTR/US FDA, Jefferson, AZ.

#2489 **Poster Board Number P617**
Regulation of Secreted miRNAs and P450 Isoforms in Acetaminophen Metabolism in HepaRG™ Cells and Acetaminophen Overdose in Children. *P.S. Gill*[3], S. Bhattacharyya[3], S. McCullough[2], P. Mishra[1], C. Luo[2], L. Letzig[2], and *L. James*[2]. [1]Genentech, San Francisco, CA; [2]University of Arkansas for Medical Sciences, ACHRI, Little Rock, AR; and [3]University of Arkansas for Medical Sciences, ACHRI, Little Rock, AR.

#2490 **Poster Board Number P618**
Next-Generation Sequencing Detects Differences in the Airway Microbiome After Smoke-Induced Inhalation Injury by Injury Type and Associated Bacterial Species. *D.M. Walsh*[1], *S.D. McCullough*[2], S. Yourstone[1], J.S. Kahle[2], S.W. Jones[1], C.D. Jones[1], *I. Jaspers*[1], and D. Diaz-Sanchez[2]. [1]University of North Carolina at Chapel Hill, Chapel Hill, NC; and [2]US EPA, Research Triangle Park, NC.

#2491 **Poster Board Number P619**
Inflammatory Mediator Generation in Surviving and Non-Surviving Acetaminophen Overdose Patients. B. Woolbright[2], *M. McGill*[2], M. Sharpe[2], S. Curry[1], and *H. Jaeschke*[2]. [1]Banner Good Samaritan Medical Center, Phoenix, AZ; and [2]Kansas University Medical Center, Kansas City, KS.

#2492 **Poster Board Number P620**
PXR and CAR Nuclear Receptors Play a Key Role in Maintaining Drug Metabolizing Enzymes Levels in Untreated and Treated Rats. K.P. Forbes, and X. Cui. Horizon Discovery, St. Louis, MO. Sponsor: *T. Brayman.*

#2493 **Poster Board Number P621**
Co-Culture of Human Hepatic Stellate Cells and Hepatocytes for Physiological Modeling of Liver Fibrosis. M. Kumar, R.M. Witek, B. Khaniya, J.A. Bonzo, *M.J. Powers*, and R.P. Witek. Thermo Fisher Scientific, Frederick, MD.

#2494 **Poster Board Number P622**
Epigenetic Mechanism for Chronic Oxidative Stress-Induced Resistance TT Doxorubicin Cytotoxicity in Renal Carcinoma Cells. *L. Ponnusamy*, *P.K.S. Mahalingaiah*, and *K.P. Singh*. The Institute of Environmental, and Human Health, Texas Tech University, Lubbock, TX.

#2495 **Poster Board Number P623**
Development of a Multiplatform Assay Using High Content Screening and Microelectrode Array to Assess Cardio, Neuro, and Hepato-Toxicity in a Group of Antipsychotic Drugs. *C.J. Strock*, J.A. Bradley, S. Qin, K. Gareau, and J. Gilbert. Cyprotex US, LLC, Watertown, MA.

Abstract #

#2496 **Poster Board Number P624**
Suramin Protects from Cisplatin-Induced Acute Kidney Injury. *T.V. Dupre*[3], M.A. Doll[3], C.N. Sharp[3], P.P. Shah[3], A. Kiefer[3], M.T. Scherzer[3], K. Saurabh[3], D. Saforo[3], D. Siow[3], L. Casson[3], G.E. Arteel[3], A.B. Jenson[3], J. Megyesi[2], *R.G. Schnellmann*[1], L.J. Beverly[3], and L.J. Siskind[3]. [1]Medical University of South Carolina, Louisville, KY; [2]University of Arkansas for Medical Sciences, and Central Arkansas, Little Rock, AR; and [3]University of Louisville, Louisville, KY.

Tuesday Afternoon, March 15
1:30 PM to 2:30 PM
CC Room 205

Exhibitor-Hosted Session: Can We Learn More from Our Göttingen Minipig Toxicology Studies?

Presented by:
Ellegaard Göttingen Minipigs, Marshall BioResources, and CiToxLAB Scantox

The Göttingen minipig is widely used for regulatory toxicology, and safety pharmacology endpoints can be added to the same studies or taken as stand-alone studies. Strategies to evaluate cardiovascular, respiratory and central nervous system pharmacology using the minipig will be presented. The seminar will allow time for discussions and questions.

Tuesday Afternoon, March 15
1:30 PM to 2:30 PM
CC Room 212

Exhibitor-Hosted Session: Complete CV Assessment, *In Vitro* through *In Vivo*

Presented by:
ChanTest and Charles River

This presentation will describe complete preclinical cardiovascular assessment, including *in vitro, in silico,* and *in vivo* assessments, and introduce arrhythmia detection. We will discuss both prospective and retrospective cases, highlighting the added sensitivity of PK/PD modeling. The forum will also showcase the latest approaches in socialized telemetry.

Tuesday Afternoon, March 15
1:30 PM to 2:30 PM
CC Room 213

Exhibitor-Hosted Session: Evolution of the Spheroid: Advanced 3D Microtissue Models As a Versatile Tool for More Physiologically Relevant Efficacy and Safety Assessment

Presented by:
InSphero Inc.

3D Microtissues reflect organ physiology more closely than conventional 2D cultures, but are still amenable to automation. Here the recent developments in 3D microtissue technology are presented which allow for high-throughput efficacy and safety testing. In addition, incorporation of spheroids into microphysiological systems will be discussed.

Tuesday Afternoon, March 15
1:30 PM to 2:30 PM
CC Room 211

Exhibitor-Hosted Session: Genomics—The Future of Sensitization Testing and Safety Assessment

Presented by:
SenzaGen

In vitro testing in human cellines using genomic technology is the future in safety testing of chemicals and proteins. SenzaGen is presenting their use of genomics for sensitization testing with GARD assays for skin and respiratory sensitization. Using +200 biomarkers enables better predictions, including potency information.

Tuesday Afternoon, March 15
2:00 PM to 4:45 PM
CC Great Hall A

Symposium Session: New Mechanistic Insights into How the Immune System Drives Hepatic Adverse Drug Reactions

Chairperson(s): *Robert Roth, Michigan State University, East Lansing, MI; and Bob van de Water, University of Leiden, Leiden, Netherlands.*

Endorser(s):
Drug Discovery Toxicology Specialty Section
Immunotoxicology Specialty Section
Mechanisms Specialty Section

Idiosyncratic drug-induced liver injury (IDILI) remains a public health problem and a major reason for curtailing the use of otherwise efficacious drugs. Why some patients are uniquely sensitive to IDILI and the mechanisms by which the death of hepatocytes occurs during these reactions remain incompletely understood. Studies in humans as well as in animal and *in vitro* models have begun to provide answers to these questions. A major working hypothesis for IDILI is the involvement of the immune system in its onset. Over the past years, groundbreaking progress has been made to decipher drug-immune interactions in IDILI. *In vivo* models and immunological approaches have yielded insight into mechanisms by which both the innate and adaptive immune system contribute to IDILI liabilities. In addition, integration of transcriptomics and systematic RNA-interference approaches allowed the deciphering of underlying molecular mechanisms by which liver cells are susceptible to injurious cytokines. For several drugs that cause IDILI in human patients, the reactions appear to involve activation of an adaptive immune response, and specific HLA polymorphisms are risk factors. The first presentation will summarize results of a novel, murine model in which an HLA polymorphism resulted in sensitivity to flucloxacillin-induced liver injury that was associated with proliferation of CD8+ T-cells, hepatic leukocyte infiltration and secretion of interferon-gamma (IFNg), and other factors. Liabilities for IDILI likely involve specific cellular perturbation due to patient-specific disease states. Given the high incidence of viral hepatitis infection, specific viral infections are likely contributors to IDILI. The second presentation will focus on a murine model of ximelagatran-induced liver injury, in which livers are sensitized to damage by combined viral infection and tumor necrosis factor alpha (TNF). Interestingly, many IDILI-associated drugs can sensitize hepatocytes to cytokine-mediated cell killing. This is exemplified by the synergistic liver cell killing mediated by exposure to nonsteroidal, anti-inflammatory drugs (NSAIDs) and TNF and/or IFNg. Recent studies have begun to unravel mechanisms by which this synergistic drug-cytokine interaction causes cell death. For example, exposure to diclofenac causes endoplasmic reticular stress that renders hepatocytes susceptible to killing by TNF. Moreover, diclofenac modulates TNF-dependent activation of NFkB signaling. State-of-the-art RNA-interference approaches in combination with live cell imaging have contributed to the deciphering of molecular determinants that drive the drug-mediated sensitization to TNF. Since liver cell injury also causes the activation of stress kinases, there is a contribution of specific, drug-induced kinase signaling perturbations to the onset of liver cell death caused by TNF coexposure. The role of MAPKs such as JNK and ERK in the cytotoxic, synergistic interaction of drugs with TNF and IFNg will be discussed. Together, the presentations will convey a spectrum of factors that contribute to the mechanistic understanding of drug-immune interactions that contribute to IDILI. Integration of these novel insights into safety assessment strategies will likely reduce the late-stage attrition of drug candidates and bring safer drugs to the patient population. (Abstract #2497)

Abstract #		
	2:00	**Introduction.** *R. Roth*. Michigan State University, East Lansing, MI.
#2498	2:05	**Immune Mechanisms of Idiosyncratic Liver Injury: Can We Predict the Unpredictable?** *L. Lehman-McKeeman*. Bristol-Myers-Squibb Corp., Princeton, NJ.
#2499	2:25	**Activation of Drug-Specific Cytotoxic T-Cells in Patients with IDILI and Modeling the Reaction in Experimental Animals.** D. Naisbitt. University of Liverpool, Liverpool, United Kingdom. Sponsor: *R. Roth*.
#2500	3:00	**Viral Preconditioning Sensitizes Livers of Mice to Injury from Exposure to Ximelagatran and TNF.** P. Knolle. Technical University of Munich, Munich, Germany. Sponsor: *R. Roth.*
#2501	3:35	**Mechanisms of Cytotoxic Interaction of Diclofenac and Tumor Necrosis Factor-Alpha (TNF).** *B. van de Water.* University of Leiden, Leiden, Netherlands.
#2502	4:10	**Drugs Associated with Idiosyncratic Liver Injury Synergize with TNF and IFNg to Cause Death of Hepatocytes: Role of MAPK Activation.** *R. Roth, A.R. Maiuri, P.E. Ganey*. Michigan State University, East Lansing, MI.

Tuesday Afternoon, March 15
2:00 PM to 4:45 PM
CC Room R08

Symposium Session: Reciprocal Synergism: New Insights into Thyroid Hormone Action in Brain Development and Neurodevelopmental Toxicity

Advances in Neurotoxicology
Developmental Toxicity: Mechanisms and Evaluation

Chairperson(s): *Ellen Fritsche, IUF - Leibniz Research Institute for Environmental Medicine, Duesseldorf, Germany; and Pamela Lein, University of California, Davis, CA.*

Endorser(s):
Mechanisms Specialty Section
Neurotoxicology Specialty Section
Risk Assessment Specialty Section

Clinical studies have linked inadequate thyroid hormone (TH) levels during gestation to compromised neurodevelopment that manifests as moderate to severe mental retardation, ataxia, and sensory deficits. Even mild reductions (subclinical) in maternal TH levels during early pregnancy are associated with decreased IQ in offspring. Experimental studies in rodents confirm that TH is essential for normal neurodevelopment and can influence numerous neurodevelopmental processes including neural precursor cell (NPC) and glia proliferation, neural migration, axonal and dendritic morphogenesis, synaptogenesis, and myelination. Based on this background, the concept of environmental goitrogenesis postulates that agents in the environment can produce developmental neurotoxicity if they cause a reduction in serum TH. However, recent insight into thyroid hormone action demonstrates that some tissues can autonomously regulate TH action. This recognition means that a chemical may interfere with TH action in the absence of changes in serum TH by interfering with the proper delivery of TH to target cells and/or downstream signaling mechanisms. This session will discuss ongoing research aimed at elucidating the molecular mechanisms by which TH signaling influences specific neurodevelopmental processes, understanding their conservation across *in vitro* and *in vivo* models and different species ranging from Xenopus to human, and applying this information to identify adverse outcome pathways of developmental neurotoxicity based on thyroid hormone disruption independent of changes in serum TH. (Abstract #2503a)

#2503b	2:05	**Setting the Stage: Overview of Evidence That TH Regulates Brain Development and Postulated Mechanisms of TH Disruption in DNT.** T.R. Zoeller. University of Massachusetts, Amherst, MA. Sponsor: *E. Fritsche.*

Abstract #

#2504 2:34 **Low-Level Thyroid Hormone Disruption and Neurodevelopmental Outcomes in Rodent Models.** *M. Gilbert*. US EPA, Research Triangle Park, NC.

#2505 3:03 **Species-Specific Actions of TH on Fetal Neurodevelopmental Processes: An *In Vitro* Approach Using Neurospheres.** *E. Fritsche*. IUF – Leibniz Research Institute for Environmental Medicine, Duesseldorf, Germany.

#2506 3:32 **Species-Specific Actions of TH on Neuronal Maturation *In Vitro* and *In Vivo*.** *P. Lein*. University of California, Davis, Davis, CA.

#2507 4:01 **The Canary in the Coal Mine: Xenopus Tadpole Optic Tectum Development as a Biosensor for Disruption of Thyroid Hormone Signaling.** *C.K. Thompson*. The Scripps Research Institute, La Jolla, CA.

4:30 **Panel Discussion/Q&A.**

Tuesday Afternoon, March 15
2:00 PM to 4:45 PM
CC Room R02

Symposium Session: The Role of Gene SLC30A10 on Manganese Homeostasis and Functional Outcomes: Implications for Homeostasis and Neurotoxicity

Advances in Neurotoxicology

Toxicity of Metals

Chairperson(s): *Roberto G. Lucchini, Icahn School of Medicine at Mount Sinai, New York, NY; and Donald R. Smith, University of California, Santa Cruz, Santa Cruz, CA.*

Endorser(s):
Clinical and Translational Toxicology Specialty Section
Metals Specialty Section
Neurotoxicology Specialty Section

A primary disorder of manganese homeostasis in humans was suggested by the observation of patients presenting with severe hyper-manganesemia, polycythemia, liver cirrhosis, and neurological disturbances including dystonia in absence of occupational or environmental sources of manganese intoxication. Autosomal-recessive homozygous mutations in the SLC30A10 were identified as the disease cause of this phenotype. The protein encoded by this gene has been shown to be an important manganese efflux transporter, and mutations of SLC30A10 block its intracellular trafficking and efflux activity. Early recognition of this disease is essential given that treatment with manganese chelation or oral iron supplementation, or their combination, might ameliorate symptoms and prevent progression of an otherwise potentially fatal illness. The knowledge of this new clinical disease caused by homozygous mutations of SLC30A10 gene has important implications in understanding mechanism of manganese neurotoxicity. This symposium will highlight the new evidence from human and experimental studies focusing on the influence of non-homozygous mutations in SLC30A10 on functional outcomes, parkinsonism, manganese homeostasis, and biomarkers. The impact of SLC30A10 expression will be presented on neurological performance of adolescents and elderly with environmental exposure to manganese, whereas the role of this Mn transporter will be considered as a potential determinant in a cohort of Parkinsonian cases and controls. Data on the variation of blood manganese in different human populations will be shown in relation to genetic variations of SLC30A10. The importance of new knowledge of possible mechanisms by which this manganese transporter contributes to neurotoxicity is essential to identifying early signs or pre-clinical damage in relation to manganese exposure. Cell and animal models will provide evidence of tissue- and cell-specific expression, and manganese-dependent regulation of SLC30A10. A focus on pregnancy and early-postnatal life will assess the hypothesis that altered SLC30A10 expression in maternal and infant liver function may influence manganese levels in maternal and infant bloodboth demonstrated manganese toxicity in children. The *C. elegans* model will be presented, showing how SLC30A10 overexpression protects from manganese-induced toxicity and dopaminergic neurotoxicity. Overall, this symposium will integrate innovative basic science studies with cutting-edge clinical and translational work on SLC30A10, a central player in the regulation of manganese homeostasis and the pathobiology of manganese neurotoxicity. (Abstract #2508a)

#2508b 2:05 **Influence of SLC30A10 on Neurophenotypes Across the Life Span.** *R.G. Lucchini*. Icahn School of Medicine at Mount Sinai, New York, NY.

#2509 2:34 **SLC30A10 Determines the Mn Concentrations in Blood of Healthy Humans.** K. Broberg. Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden. Sponsor: *R. Lucchini*.

#2510 3:03 **Manganese-Dependent Regulation of the Efflux Transporter SLC30A10.** *S. Mukhopadhyay*. The University of Texas at Austin, Austin, TX.

#2511 3:32 **The Role of SLC30A10 in Body Mn Homeostasis Over Pregnancy and Early Postnatal Life: Implications for Mn Toxicity.** *D.R. Smith*. University of California, Santa Cruz, Santa Cruz, CA.

#2512 4:01 **Gene SLC30A10 and Its Role in *C. elegans*.** *M. Aschner*. Albert Einstein College of Medicine, New York, NY.

4:30 **Panel Discussion/Q&A.**

Tuesday Afternoon, March 15
2:00 PM to 4:45 PM
CC Great Hall B

Symposium Session: Using Multi- and Transgenerational Effects of Environmental Exposures in Diverse Animal Models for Assessment of Human Health Risks

Developmental Toxicity: Mechanisms and Evaluation

Chairperson(s): *Kristine L. Willett, University of Mississippi, University, MS; and Jennifer L. Freeman, Purdue University, Lafayette, IN.*

Endorser(s):
Molecular and Systems Biology Specialty Section
Reproductive and Developmental Toxicology Specialty Section

There is a new appreciation that environmental factors acting during key developmental stages can cause irreversible changes in gene expression, and tissue structure or function, and increase the risk of developing disease. Furthermore, certain epigenetic consequences can be passed between generations, impacting offspring that were never exposed to the stressor. The way in which exposures cause multi- (into a F2 generation) and transgenerational (into a F3 generation) effects is unclear. This symposium will bring together a group of investigators who are actively engaged in determining if and by what mechanisms exposures in one generation are passed onto future subsequent generations. Speakers will highlight their work with different stressors causing multi- and/or transgenerational effects using evidence from human populations and diverse laboratory animal models with considerations for human health risk assessment. The origins of this field, as mediated by an adverse nutritional environment during prenatal and early postnatal life, resulting in transcriptional, epigenetic, and metabolic regulation and manifested in increased diabetes risk to subsequent generations in human and rodent populations, will lead off the session. The second talk will highlight the state of this research area in the field of toxicology, reviewing the various exposures reporting health effects in transgenerational studies. Current studies applying the unique aspect of the zebrafish model for multi- and transgenerational mechanistic studies will be highlighted in the next two talks relating to dioxin and atrazine, with the final talk discussing the considerations of this paradigm in a regulatory perspective for human health risk assessment and product safety. This symposium will be of interest to toxicological researchers engaged in developmental and reproductive toxicology and neurotoxicology; to those identifying epigenetic, genetic, and molecular mechanisms of adverse health outcomes in multi- and transgenerational exposure paradigms; and to those interested in health effects of exposure to endocrine disruptors, pesticides, and dioxins. (Abstract #2513)

2:00 **Introduction.** *K.L. Willett*. University of Mississippi, University, MS.

Abstract #

#2514 2:05 **Intergenerational Programming of Metabolic Disease: Evidence from Human Populations and Experimental Animal Models.** M.E. Patti. Harvard Medical School, Boston, MA. Sponsor: *K.L. Willett.*

#2515 2:40 **Transgenerational Effects of Environmental Exposures in Animals: A Literature Review.** V. Walker. NIEHS, Research Triangle Park, NC. Sponsor: *K.L. Willett*.

#2516 3:15 **Zebrafish as a Model for Adult-Onset and Transgenerational Male Infertility Due to TCDD Exposure.** *T. Baker*. University of Wisconsin-Madison, Madison, WI.

#2517 3:45 **Multigenerational Effects of the Endocrine-Disrupting Herbicide Atrazine in Zebrafish.** *J.L. Freeman*. Purdue University, Lafayette, IN.

#2518 4:15 **Transgenerational Effects and Implications to Product Safety Assessment.** *R. Rasoulpour.* Dow AgroSciences, Indianapolis, IN.

Tuesday Afternoon, March 15
2:00 PM to 4:45 PM
CC Room 217

Workshop Session: Cannabis in the Courtroom

Advances in Neurotoxicology

Chairperson(s): *George Corcoran, Wayne State University, Detroit, MI; and Sol Bobst, Nexeo Solutions LLC, The Woodlands, TX.*

Endorser(s):
Ethical, Legal, and Social Issues Specialty Section
Occupational and Public Health Specialty Section
Regulatory and Safety Evaluation Specialty Section

Presentations in this workshop build upon 2013 and 2014 roundtable and workshop sessions that laid a broad foundation for examining the legal applications and boundaries of toxicology and the law. They highlighted the fundamental time frame dichotomy and innate tension that exists between science and the law while critically exploring the validity and limitations of toxicology evidence. The current workshop focuses specifically on the scientific and legal issues surrounding cannabis and its various forms and congeners. For suspects charged with being under the influence of cannabis, challenges for forensic laboratories include drug pharmacokinetics and pharmacodynamics as well as supporting field evidence of impairment. Epidemiology has addressed degree and time of impairment and has advanced court claims of causation, negligence, and contributory negligence in motor vehicle accidents and psychotic episodes. Many forms of synthetic cannabinoids exist, including illegal agents and those new drugs being developed as therapies. Engineered cannabinoids can greatly exceed the potency of THC and endocannabinoid yet few are scheduled as controlled substances. This poses unique difficulties for legal intervention and the protection of public health. Federal and state cannabis laws differ substantially. States with legalized marijuana must deal with toxicological uncertainty, particularly as it relates to exposure-response relationships. The expanding availability of THC edibles and their consequences are considered from a poison center perspective, including dosing, delayed onset, adult deaths, and childhood near deaths. Finally, cannabis poses dilemmas for the forensic sciences as well as for toxicology and the SOT. One example is illustrated by growing efforts to establish per se blood or urine levels that would define impairment by statute, as currently exists for blood alcohol, with the potential passage of zero tolerance laws in some jurisdictions. The workshop closes with a panel discussion. (Abstract #2519a)

#2519b 2:05 **THC from the Forensics Lab.** *K. Schneider*. State of Virginia Department of Forensics, Fairfax, VA.

#2520 2:30 **Epidemiological Evidence Considerations with THC in Court.** *M. Barrie.* Oak Ride Associated University, Oak Ridge, TN.

#2521 2:55 **THC Cases in State versus Federal, Different Case Issues.** *L. Plunkett*. Integrative Biostrategies, Houston, TX.

Abstract #

#2522 3:25 **General Population Experiences with THC Edibles–A New Kind of High.** C. Hoyte. Rocky Mountain Poison Control Center, Denver, CO. Sponsor: *S. Bobst.*

#2523 3:50 **The Legal Dragnet for Elusive "THC".** R.T. Kennedy. New Mexico Court of Appeals, Albuquerque, NM. Sponsor: *S. Bobst.*

4:15 **Panel Discussion/Q&A.**

Tuesday Afternoon, March 15
2:00 PM to 4:45 PM
CC Room 220

Workshop Session: Read-Across: Building Scientific Confidence in the Development and Evaluation of Read-Across for Regulatory Purposes Using Tox21 Approaches

Molecular Toxicology: Mechanistic Insights and Hazard Assessment

Recent Advances in Safety Assessment

Chairperson(s): *Richard A. Becker, American Chemical Council, Washington, DC; and Grace Patlewicz, US Environmental Protection Agency, Research Triangle Park, NC.*

Endorser(s):
***In Vitro* and Alternative Methods Specialty Section**
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

Read-across, whereby chemical hazard data from data-rich chemicals are used to predict the hazards of another chemical lacking such data, is a well-established approach in chemical management. Even as read-across continues to generate considerable interest as a practical data gap-filling technique in category and analogue approaches for regulatory purposes, its acceptance by regulatory agencies remains a challenge. In an effort to enhance regulatory acceptance of read-across, several organizations have begun to develop systematic frameworks to characterize read-across justifications and make explicit the uncertainties and assumptions relied upon. Such efforts are intended to build scientific confidence associated with read-across for regulatory purposes. A growing strategy for reducing uncertainty in read-across is to incorporate Tox21 approaches in substantiating category rationales or their associated read-across justifications. For example, mechanistic information captured within Adverse Outcome Pathways (AOPs) could be used in category development as part of Integrated Approaches to Testing and Assessment (IATA). Additionally, data generated under the ToxCast program can be used in supporting read-across justifications for new and existing regulatory categories. This workshop will foster a cross-stakeholder discussion on what the key issues thwarting regulatory acceptance are and what progress has been made in investigating the utility of mechanistic information to meet different regulatory decision-making needs. The workshop will comprise a series of highly focused presentations that evaluate the development of chemical categories and associated read-across and their interpretation in regulatory decision-making in chemical risk assessment. Each speaker presenting a case study will be asked to consider how they are evaluating the confidence level of the read-across in terms of the supporting mechanistic data and whether, if appropriate, this anchors to a specific pathway(s) (e.g., AOPs). The session will be of broad interest to investigators and regulators across environmental, industrial, consumer products, and pharmaceutical toxicology that perform human and environmental risk assessment. (Abstract #2524)

2:00 **Introduction.** G. Patlewicz. US EPA, Research Triangle Park, NC. Sponsor: *R. Becker.*

#2525 2:05 **Making the Key Issues Driving Uncertainty in Read-Across Explicit Using the RAAF–Opportunities for Enhancement with Modern Approaches.** D. Knight. European Chemicals Agency, Helsinki, Finland. Sponsor: *R. Becker*.

#2526 2:30 **Actualizing the OECD Revised Guidance on Grouping of Chemicals with Practical Examples.** J. deKnecht. OECD, Paris, France. Sponsor: *R. Becker.*

Abstract #

#2527 2:55 **Propylene Glycol Ethers: A Read-Across Example for Low-Toxicity Chemicals.** N. Ball. The Dow Chemical Company, Midland, MI. Sponsor: *R. Becker.*

#2528 3:20 **Do Tox21 Approaches Such as Data from ToxCast Enhance Existing OECD Chemical Categories?** G. Patlewicz. US EPA, Research Triangle Park, NC. Sponsor: *R. Becker.*

#2529 3:45 **CAAT and the Work of the Read-Across Steering Group.** *T. Hartung*. John Hopkins CAAT, Baltimore, MD.

4:10 **Focused Discussion and Wrap-Up.** *R. Becker.* American Chemical Council, Washington, DC.

Tuesday Afternoon, March 15
2:00 PM to 4:45 PM
CC Room 208

Workshop Session: Safety Assessment of Topically Exposed Cosmetic Ingredients: Lessons Learned

♠ Recent Advances in Safety Assessment

Chairperson(s): *Andreas Schepky, Beiersdorf AG, Hamburg, Germany; and Bas Blaauboer, Institute for Risk Assessment Sciences (IRAS), Utrecht University, Utrecht, Netherlands.*

Endorser(s):
Biological Modeling Specialty Section
Dermal Toxicology Specialty Section
***In Vitro* and Alternative Methods Specialty Section**

The Cosmetics Europe Program aims to enable *in vitro*-only safety assessments of cosmetic ingredients performed on the basis of both hazard characterization and exposure assessment. The focus is on the development of models linking external exposure dose to local skin and internal exposure, and potential target organ toxicity after topical application. As a result of the 7th Amendment to the Cosmetic Directive, the use of animals for such studies is banned in the EU, and therefore information regarding systemic exposure of dermally applied chemicals must be derived from *in vitro* and/or *in silico* methods. This session provides an overview of three Task Force Projects, and how results will help in the animal-free safety assessment for skin sensitization and genotoxicity of topically applied chemicals. The session is rounded off with a regulators perspective on how we may gain acceptance of predictive approaches to the safety assessment of cosmetic ingredients by regulators themselves, as well as end-users and the consumer. The Skin Bioavailability and Metabolism (Skin BM) Task Force was set up to improve the measurement and prediction of the bioavailability of topically exposed compounds, with a specific focus on endpoints such as skin sensitization and genotoxicity. The Skin BM project has generated data from standardized dermal-based assays for a set of physicochemically diverse chemicals, which are relevant to cosmetics and dermal toxicities. An example of how these data can improve the predictive capacity of an *in silico* dermal penetration model will be presented. In addition, we will demonstrate how bioavailability information (including dermal absorption and metabolism) can be utilized when assessing outcomes from skin sensitization assays and dermal genotoxicity assays (using 3D skin). The Skin Tolerance Task Force has studied the complex biology of skin sensitization and conducted a screen and evaluation of different *in vitro* test methods, which provide insight into sensitizing characteristics of chemicals. Case studies demonstrating how the safety of topically applied cosmetic ingredients, e.g., resorcinol, cinnamic acid, or hair dyes, can be supported with this concept will be introduced. An evaluation of multiple integrated approaches to testing and assessment of skin sensitization will be presented, and a potential path toward regulatory acceptance of an optimized strategy will be discussed. The Genotoxicity Task Force has led three projects to help improve the predictive capacity of current *in vitro* genotoxicity assays and develop new *in vitro* models as follow-up alternatives to positive outcomes in the initial test battery. Work from these Task Forces will ultimately lead to a testing strategy to enable cosmetic industries to conduct safety assessments of chemicals without the use of animals. (Abstract #2530)

2:00 **Introduction.** *B. Blaauboer*. Institute for Risk Assessment Sciences (IRAS), Utrecht University, Utrecht, Netherlands.

Abstract #

#2531 2:10 **Generation of Dermal Bioavailability Data Using *In Vitro* Studies for Local Dermal Concentrations and *In Silico* Models.** *A. Schepky*. Beiersdorf AG, Hamburg, Germany.

#2532 2:25 **Skin Penetration *In Silico* Modeling—Use of *In Vitro* Data to Improve Kasting Model.** G. Kasting. University of Cincinnati, Cincinnati, OH. Sponsor: *A. Schepky.*

#2533 2:50 **Skin Sensitization Testing Strategy Evaluation.** *N.C. Kleinstreuer.* Integrated Laboratory Systems, Inc., Research Triangle Park, NC.

#2534 3:15 **Method Evaluation Process and Outcome for Skin Sensitization.** N. Alépée. L'Oréal Research & Innovation, Aulnay Sous Bois, France. Sponsor: *A. Schepky*.

#2535 3:40 **Use of Bioavailability Data to Interpret 3D Skin Genotoxicity Assay Outcomes.** *S. Pfuhler*. The Procter & Gamble Co., Cincinnati, OH.

#2536 4:05 **Gaining Acceptance of Predictive Approaches to the Safety Assessment of Cosmetic Ingredients.** M.P. Whelan. EURL/ECVAM European Commission Joint Research Centre, Ispra, Italy. Sponsor: *A. Schepky*.

4:30 **Panel Discussion/Q&A.**

Tuesday Afternoon, March 15
2:00 PM to 4:45 PM
CC Room R04

Platform Session: Nanotoxicology: *In Vivo*

Chairperson(s): *Alison Elder, University of Rochester, Rochester, NY; and Nicklas R. Jacobsen, National Research Centre for the Working Environment, Copenhagen, Denmark.*

#2537 2:00 **Histopathological Findings After 12 Months Inhalation to Nano Ceria.** L. Ma-Hock[1], H. Ernst[2], S. Gröters[1], S. Rittinghaus[2], J. Keller[1], *B. van Ravenzwaay*[1], D. Schaudien[2], and *R. Landsiedel*[1]. [1]BASF SE, Ludwigshafen am Rhein, Germany; and [2]Fraunhofer Institute for Toxicology, and Experimental Medicine, Hannover, Germany.

#2538 2:20 **Coo and La2O3 Nanoparticle-Induced Pulmonary Response in Mice After Whole-Body Inhalation Exposure.** J.D. Sisler[1], W. McKinney[1], *A. Mihalchik*[1], *R. Mercer*[1], J. Shaffer[1], M.E. Andrew[1], M. Wolfarth[1], *D. Porter*[1], L. Battelli[1], B.T. Chen[1], *V. Castranova*[2], and Y. Qian[1]. [1]National Institute of Occupational Safety, and Health, Morgantown, WV; and [2]WVU, Morgantown, WV.

#2539 2:40 **Repeated Inhalation Exposure to Amorphous Silica Nanoparticle-Containing Slurries: Derivation of Workplace Exposure Limits for the Electronics Industry.** *A. Elder*[2], A. Kennell[2], R. Gelein[2], S. Brenner[1], and *G. Oberdörster*[2]. [1]SUNY Polytechnic Institute, Albany, NY; and [2]University of Rochester, Rochester, NY.

#2540 3:00 **Investigating *In Vivo* Bioprocessing of Engineered Nanoparticles (NP): A Novel Approach in Nanotoxicology.** U.M. Graham[1], *G. Oberdorster*[2], and *A. Elder*[2]. [1]University of Kentucky, Lexington, KY; and [2]University of Rochester, Rochester, NY.

Abstract #

#2541 3:20 **Extra-Pulmonary Translocation of CeO2 Nanoparticles: From Lung to Liver After Subacute and Chronic Low Dose Inhalation.** J. Brunner[3], J. Tentschert[3], H. Jungnickel[3], P. Laux[3], L. Ma-Hock[1], J. Keller[1], T. Gebel[2], A. Luch[3], and R. Landsiedel[1]. [1]BASF SE, Ludwigshafen, Germany; [2]German Federal Institute for Occupational Safety, and Health, Dortmund, Germany; and [3]German Federal Institute for Risk Assessment, Berlin, Germany. Sponsor: *A. Haase.*

#2542 3:40 **Investigation of CeO2 Nanoparticle Toxicity in a 90-Day Inhalation Test.** D. Schwotzer, M. Niehof, T. Hansen, S. Schuchardt, T. Tillmann, H. Ernst, and O. Creutzenberg. Fraunhofer Institute for Toxicology, and Experimental Medicine, Hannover, Germany. Sponsor: *C. Dasenbrock.*

#2543 4:00 **Acute and Subchronic Oral Toxicity Studies in Rats with Different Nanoscale and Pigment Grade Titanium Dioxide Test Particles.** *D.B. Warheit*[1], *E.M. Donner*[2], and S.C. Brown[1]. [1]Chemours Company, Wilmington, DE; and [2]DuPont Company, Newark, DE.

#2544 4:20 **A Decision-Making Framework for the Grouping and Testing of Nanomaterials (DF4nano Grouping).** *R. Landsiedel*[3], J.H. Arts[2], M. Hadi[8], M.-A. Irfan[3], A. Keene[1], R. Kreiling[4], D. Lyon[9], M. Maier[5], K. Michel[6], N. Neubauer[3], T. Petry[11], U.G. Sauer[7], *K. Wiench*[3], W. Wohlleben[3], and *D. Warheit*[10]. [1]Afton Chemical, Richmond, VA; [2]AkzoNobel, Arnhem, Netherlands; [3]BASF SE, Ludwigshafen am Rhein, Germany; [4]Clariant Produkte GmbH, Sulzbach, Germany; [5]Evonik Degussa GmbH, Hanau, Germany; [6]Henkel AG & Co. KGaA, Düsseldorf, Germany; [7]Scientific Consultancy – Animal Welfare, Neubiberg, Germany; [8]Shell International B.V., The Hague, Netherlands; [9]Shell Oil Company, Houston, TX; [10]The Chemours Company, Newark, NJ; and [11]Toxminds BVBA, Brussels, Belgium.

Tuesday Afternoon, March 15
2:00 PM to 4:45 PM
CC Room R06

PL

Platform Session: Qualification of "New" DART Tools for Hazard Identification

Developmental Toxicity: Mechanisms and Evaluation

Chairperson(s): *Christopher J. Bowman, Pfizer, Inc, Groton, CT; and Thomas B. Knudsen, US Environmental Protection Agency, Research Triangle Park, NC.*

#2545 2:00 **The Role of Genetic Background on Adverse Health Effects Due to Prenatal Exposure to Environmental Obesogen Tributyltin.** *J. Tobacyk*[1], *M. La Merrill*[2], S. Luo[1], and *A. Harrill*[1]. [1]University of Arkansas for Medical Sciences, Little Rock, AR; and [2]University of California, Davis, Davis, CA.

#2546 2:20 **Differential Susceptibility to Diethylstilbestrol Exposure in Genetically Diverse Mice.** N.E. Carns, T. Konneker, and D.L. Aylor. North Carolina State University, Raleigh, NC. Sponsor: *S. Kelada.*

#2547 2:40 **Computational Approach Using Mouse Embryonic Stem Cells to Define a Mechanistic Applicability Domain for Prenatal Developmental Toxicity.** *S. Hunter*[2], M. Rosen[2], *N.C. Baker*[1], *R. Judson*[2], and *T. Knudsen*[2]. [1]Lockheed-Martin, Research Triangle Park, NC; and [2]US EPA, Research Triangle Park, NC.

Abstract #

#2548 3:00 **Prediction of *In Vivo* Developmental Toxicity of Tebuconazole in Rats Using Physiologically Based Kinetic Modeling-Facilitated Reverse Dosimetry of *In Vitro* Toxicity Data.** J. Louisse[2], H. Li[2], M. Zhang[2], J. Vervoort[2], I.M. Rietjens[2], and *B. van Ravenzwaay*[1]. [1]BASF SE, Ludwigshafen, Germany; and [2]Wageningen University, Wageningen, Netherlands.

#2549 3:20 ***In Vitro*-to-*In Vivo* Extrapolation of Xenoestrogens Using an Estrogen Responsive *In Vitro* Transcriptional Activation Assay and the *In Vivo* Uterotrophic Assay.** *J.M. Conley*[2], *B.R. Hannas*[2], N. Evans[2], J. Furr[2], *V. Sutherland*[1], *P.M. Foster*[1], *L.E. Gray*[2], and *V.S. Wilson*[2]. [1]NIEHS, Research Triangle Park, NC; and [2]US EPA, Research Triangle Park, NC.

#2550 3:40 **Bisphenol AF: Correlation of *In Vitro* Endocrine Responses with *In Vivo* Developmental Outcomes (A Case Example).** *V. Sutherland*[1], K. Pelch[1], *B. McIntyre*[1], *J.M. Conley*[4], *L.E. Gray*[4], *J.-H. Hsieh*[1], *L. Truong*[2], *R. Tanguay*[2], Z. Lundby[3], *P. Allard*[3], and *P.M. Foster*[1]. [1]National Toxicology Program, Research Triangle Park, NC; [2]Oregon State University, Corvallis, OR; [3]University of California, Los Angeles, Los Angeles, CA; and [4]US EPA, Research Triangle Park, NC.

#2551 4:10 **Exposure-Based Comparisons of Developmental Toxicity Signals Between Alternative Assays and *In Vivo* Rat with PF-04449913, a Smoothened Inhibitor.** *C.J. Bowman*[1], D.S. Stedman[1], S. Davenport[1], C. Stethem[1], *G. Stevens*[2], and *G.D. Cappon*[1]. [1]Pfizer, Inc, Groton, CT; and [2]Pfizer, Inc, La Jolla, CA.

Tuesday Afternoon, March 15
3:00 PM to 4:00 PM
CC Room 213

E

Exhibitor-Hosted Session: Evaluation of the Human Renal Proximal Tubule Epithelial Cell Line, SA7K, in a Multiplexed qHTS Platform for Investigating Nephrotoxicity and a 3D Organ-on-a-Chip OrganoPlate™ Platform for Measuring Renal Clearance

Presented by:
BioReliance

The pseudo-immortalized proximal tubule cell line, SA7K, from human primary renal proximal tubule epithelial cells has been utilized for investigating nephrotoxicity and transporter studies. Data will be presented demonstrating the utility of SA7K cells in a multiplexed qHTS platform for nephrotoxicity and a 3D organ-on-a-chip OrganoPlate™ platform for renal clearance.

Tuesday Afternoon, March 15
3:00 PM to 4:00 PM
CC Room 205

E

Exhibitor-Hosted Session: Performing Toxicological Risk Assessment of Leachables in Combination Products

Presented by:
NSF International/Health Sciences

Leachables in Combination Products are a potential safety concern. Often, rather than only one, multiple leachables are found in products. This session will describe the risk assessment process using reviews of existent public literature and, along with regulatory guidelines, the determination of a safe level of exposure for each leachable.

Tuesday Afternoon, March 15
3:00 PM to 4:00 PM
CC Room 211

Exhibitor-Hosted Session: Practical Application of a Human Stem Cell Assay for Developmental Toxicity Testing

Presented by:
Stemina Biomarker Discovery

devTOX qickPredict is a reliable, human stem cell screen for developmental toxicity. Using two structurally related compound series, we will demonstrate practical application of our assay for series ranking and enhancing read across and weight of evidence approaches for toxicity assessment. Additionally, ongoing collaborations and validation efforts will be discussed.

Tuesday Afternoon, March 15
3:00 PM to 4:00 PM
CC Room 212

Exhibitor-Hosted Session: The Use of iPSC-Derived Cells As *In Vitro* Models for Toxicity Screening

Presented by:
Axol Biosciences

Toxicologists have access to a range of iPSC-derived cell types, including cardiomyocytes, hepatocytes, and renal cells, used in toxicity screening. We discuss how these models are accurate and representative cell models, and how they can phase out inconsistencies in primary cell assays and reduce the use of *in vivo* models.

Tuesday Afternoon, March 15
4:00 PM to 5:15 PM
CC Room 223

Undergraduate Student Meeting

Chairperson(s): *Joshua Gray, US Coast Guard Academy, New London, CT.*

Hosted by:
Education Committee
Undergraduate Education Subcommittee

Undergraduate students are encouraged to participate in an informal meeting to talk about shared interests related to career paths in toxicology, discuss undergraduate tox-related activities, clubs, and majors on their campuses, and to provide feedback to the Undergraduate Education Subcommittee. A majority of this time is spent in small groups, undergraduates networking with graduate students and postdoctoral scholars.

Tuesday Afternoon, March 15
4:30 PM to 5:30 PM
CC Room 205

Exhibitor-Hosted Session: Implementation of ICH M7 Recommended (Q)SAR Analyses

Presented by:
Leadscope Inc., Lhasa Limited, and MultiCASE Inc.

This session outlines principles to consider when generating a (Q)SAR assessment consistent with the ICH M7 guideline. Presentations will cover when an expert opinion might be beneficial, what it may contain, and how the prediction results and accompanying opinions may be documented.

Tuesday Afternoon, March 15
4:30 PM to 5:30 PM
CC Room 213

Exhibitor-Hosted Session: KnowledgeScan™, a New Approach to Target Safety Assessment

Presented by:
Instem

This session will introduce KnowledgeScan™ Target Safety Assessment, which utilizes a combination of manual and automatic data-mining approaches to help users assess the potential safety consequences of targeting specific biological pathways. This assessment is rapid, comprehensive, reproducible, and cost-effective and will appeal to Discovery Toxicologists working in preclinical safety.

Tuesday Afternoon, March 15
4:30 PM to 5:30 PM
CC Room 211

Exhibitor-Hosted Session: Protecting Life's Circuitry: *In Vitro*, Functional Evaluation of Neurotoxicity and Cardiotoxicity Using the Maestro Multiwell Microelectrode Array (MEA) Platform

Presented by:
Axion BioSystems

The Maestro MEA platform assesses the activity of cultured primary or iPSC-derived neurons and cardiomyocytes on the benchtop. This session will discuss the application of MEA technology to (1) high-throughput environmental neurotoxicology screening, (2) acute cardiac safety studies under the CiPA initiative, and (3) advanced preclinical assessment of drug-drug interactions.

Tuesday Afternoon, March 15
4:30 PM to 5:30 PM
CC Room 212

Exhibitor-Hosted Session: Stem-Cell Derived Cardiomyocyte Preparations in Single Cell, 2D, and 3D Tissue Systems: Their Role in Cardiotoxicology and Novel Lead Investigation

Presented by:
Clyde Biosciences

This session will highlight the electrical and mechanical properties of iPS-derived cardiomyocytes in a series of formats (3D micro-structures, 2D cultures to single cells). The process of excitation-contraction coupling will be discussed including the intracellular Ca signal and the differences in the adult phenotype discussed.

Tuesday Afternoon, March 15
4:45 PM to 6:15 PM
CC Room 207

SOT Annual Business Meeting

SOT Members are encouraged to attend the 55th SOT Annual Business Meeting. The agenda includes discussion of plans for next year, a financial summary, and a review of the 2015–2016 accomplishments.

Tuesday Evening, March 15
6:00 PM to 7:30 PM
Hilton Riverside
See room listing below.

Specialty Section Meetings/Receptions: Carcinogenesis(Grand Salon 6); Cardiovascular Toxicology (Grand Salon 1); Clinical and Translational Toxicology (Grand Salon 16); Inhalation and Respiratory (Grand Salon 13); Mixtures (Grand Salon 22); Molecular and Systems Biology (Grand Salon 21); and Ocular Toxicology (Grand Salon 12);

Tuesday Evening, March 15
6:00 PM to 9:00 PM
Angela King Gallery

Southern California and Mountain West Regional Chapters Mixer

Tuesday Evening, March 15
6:30 PM to 9:00 PM
Jonathan Ferrara Gallery

Hispanic Organization of Toxicologists Special Interest Group Reception and Awards Ceremony

Tuesday Evening, March 15
7:30 PM to 10:30 PM
Pat O's on the River Grand Terrace

Northern California Regional Chapter Reception

Tuesday Evening, March 15
7:30 PM to 9:00 PM
Hilton Riverside, Jefferson Ballroom

Tox ShowDown

Chairperson(s): *Joanna Kreitinger, GSLC Secretary, University of Montana, Missoula, MT.*

Produced by:
Graduate Student Leadership Committee

Join hosts Phil Wexler and Sue Ford along with the Graduate Student Leadership Committee (GSLC) and your peers Tuesday night for the *Tox ShowDown*, an engaging quiz game modeled after the popular long-running show *It's Academic*. Teams of three contestants compete at answering questions concerning toxicology not only in its historical and scientific context, but as it relates to arts and culture.

Organized and supported by GSLC, this event is sure to be both informative and entertaining and a perfect way to celebrate the halfway point of the SOT Annual Meeting. The game provides attendees with a break, albeit still toxicologically-oriented, from the more technical business of the meeting.

WEDNESDAY MORNING

Wednesday Morning, March 16
6:45 AM to 8:00 AM
CC Rivergate Room

Hispanic Organization of Toxicologists Special Interest Group Mentoring Breakfast

Wednesday Morning, March 16
6:45 AM to 8:00 AM
CC Room R01

Special Interest Group Collaboration Group Global Hot Topics Event—The Global Challenges of Mycotoxins Toxicity

Wednesday Morning, March 16
8:00 AM to 9:20 AM
CC Great Hall A

FS

Daily Plenary Session: Keynote Medical Research Council (MRC) Lecture

Regenerating CNS Myelin—From Mechanisms to Medicines

Lecturer: *Robin J.M. Franklin, Wellcome Trust-MRC Cambridge Stem Cell Institute, University of Cambridge, Cambridge, United Kingdom.*

Remyelination, the process by which new myelin sheaths are restored to demyelinated axons, represents one of the most compelling examples of adult multipotent stem cells contributing to regeneration of the injured CNS. This process can occur with remarkable efficiency in multiple sclerosis (MS), and in experimental models, revealing an impressive ability of the adult CNS to repair itself. However, the inconsistency of remyelination in MS, and the loss of axonal integrity that results from its failure, makes enhancement of remyelination an important therapeutic objective. There is now compelling evidence that aging is the major contributor to the declining efficiency of remyelination and that this is largely due to a failure of stem cell differentiation. This talk will review recent studies we have undertaken aimed at obtaining a detailed understanding of the mechanisms of regulating differentiation during remyelination and hence identifying novel therapeutic targets.

Wednesday Morning, March 16
9:00 AM to 10:00 AM
CC Room 212

E

Exhibitor-Hosted Session: *In Vitro* Toxicology and Integrated Toxicology—What Are These?

Presented by:
Charles River

In vitro toxicology tests utilize mammalian tissues. Acceptance and regulatory demand for these is increasing with validation testing leading to OECD guidelines. AOPs provide mechanistic approaches that can lead to test banks. These are part of integrated testing strategies allowing products to be brought to market more rapidly and safely.

Wednesday Morning, March 16
9:00 AM to 10:00 AM
CC Room 205

E

Exhibitor-Hosted Session: Use of Long-Term Micropatterned Primary Human Hepatocyte Cultures (HepatoPac) to Assess Efficacy and Tolerability of Antisense Oligonucleotides

Presented by:
Hepregen Corporation (now Ascendance Biotechnology, Inc)

Micropatterned primary hepatocyte co-cultures have many advantages compared to standard 2D primary hepatocyte cultures including physiologically relevant protein expression and culture longevity. We sought to assess whether those properties could improve our ability to screen for well-tolerated and pharmacologically antisense oligonucleotides in a more relevant human cellular system.

Wednesday Morning, March 16
9:30 AM to 4:30 PM
CC Room 204

Research Funding Insights

Hosted by:
Career Resource and Development Committee

Open to all attendees: Representatives from federal agencies funding research, including NIH program and review staff of the Center for Scientific Review and NIEHS, available in the Research Funding Room for individual and group conversations to discuss aspects of scientific review or specific grant opportunities. Come by or schedule a meeting in advance with your program officer. New investigators welcome!

Wednesday Morning, March 16
9:30 AM to 12:15 PM
CC Great Hall B

S

Symposium Session: Patient-Specific Stem Cells as Models for Gene, Drug, and Environment Interactions in Disease

Chairperson(s): *Aaron B. Bowman, Vanderbilt University Medical Center, Nashville, TN; and Jason R. Richardson, Northeast Ohio Medical University, Rootstown, OH.*

Endorser(s):
Mechanisms Specialty Section
Neurotoxicology Specialty Section
Stem Cells Specialty Section

With the advent of adult stem cell technology there is an increasing interest in the potential for using stem cells for screening for drug and chemical toxicity and drug efficacy. More important, researchers are now using this technology in an attempt to understand mechanisms behind individual and population differences in these outcomes based on genetics. Indeed, by using a patient's own stem cells and converting them to disease-specific cells, better understanding of disease pathophysiology and, ultimately, a personalized approach for therapeutic intervention may be attainable. Using the powerful tools of genetics and induced pluripotent stem cell (iPSC) technology, the speakers in this symposium will discuss new and cutting-edge research that provides examples of the power of this approach for mechanistic and clinical/translational studies. Speakers representing academia, government, and industry will provide diverse viewpoints on the utilization of iPSC modeling in both broad and specific contexts. The session will begin with a brief 5-minute overview of iPSC and stem cell technology by one of the co-chairs. The first full speaker of the session will utilize several specific examples of how iPSC- based models of genetic disease (diabetes, heart disease, and neurological disorders) have been used to predict drug efficacy and disease-specific vulnerabilities to toxicants. The second speaker will provide a specific example of how iPSC technology can be used to translate pathophysiological mechanisms described in non-human models to this patient-specific human model system (e.g, gene-environment interactions between Huntington's disease and manganese) and utilization of the iPSC model for preclinical testing of small molecules developed in a non-human model system. The third speaker will present how iPSC technology led to discovery of gene-environment interactions in the context of a single common genetic risk factor for Alzheimer's disease. The fourth speaker will discuss how iPSC technology can be leveraged to screen

for disease-modifying agents with neuroprotective and/or neurotoxic effects. The final speaker will detail genetic susceptibility to agents that induce carcinogenicity using this technology. By including examples of disease affecting distinct organ systems, this session provides diverse viewpoints of the utility of iPSC technology across disciplines. The format for the presentation will be 25-minute talks, with 4 minutes for audience questions. A 20-minute panel discussion will then address broad applications of the iPSC model system to explore gene x environment x drug interactions in human disease. The panel will address key determinants in successful iPSC-based model applications, including (a) developmental lineage specificity, (b) cellular/tissue/organ modeling, (c) appropriate controls and sampling size, (d) multigenic versus monogenic effects, (e) statistical concerns, and sample size. Further, the panel will be open to discussions and topics of interest to members of the audience. (Abstract #2552a)

#2552b	9:35	**Use of Human iPSC-Derived Cells as a Means to Investigate the Relationship Between Genes and Disease.** B. Anson. Cellular Dynamics, Inc, Madison, WI. Sponsor: *A. Bowman*.
#2553	10:03	**Patient-Derived iPSC Models as a Translational Tool Between Human and Non-Human Model Systems for Environmental Health Research.** *A. Bowman*. Vanderbilt University Medical Center, Nashville, TN.
#2554	10:31	**Modeling Gene-Environment Interactions in Alzheimer's Disease.** *J.R. Richardson*. Department of Pharmaceutical Sciences, Northeast Ohio Medical University, Rootstown, OH.
#2555	10:59	**Leveraging Novel Technologies for Human iPSC-Based Screening.** X. Zeng. XCell Science Inc., Novato, CA. Sponsor: *A. Bowman*.
#2556	11:27	**Differential Susceptibility of Stem Cells in Inorganic Carcinogenesis.** *E. Tokar.* NIEHS, Research Triangle Park, NC.
	11:55	**Panel Discussion/Q&A.**

Wednesday Morning, March 16
9:30 AM to 12:15 PM
CC Room R02

Symposium Session: Sulfur Mustard Poisoning: Mechanisms of Dermal and Pulmonary Toxicity and New Treatment Approaches

Health and Environmental Impacts of Manmade and Naturally Released Toxicants

Accreditation Statement: This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Medical Education (ACCME) through the joint providership of The University of Arkansas for Medical Sciences (UAMS) College of Medicine and the Society of Toxicology (SOT). The UAMS College of Medicine is accredited by the ACCME to provide continuing medical education for physicians.

Designation Statement: The UAMS College of Medicine designates this live activity for a maximum of 2.75 *AMA PRA Category 1 Credit(s)*™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Target Audience: Physicians and other health care providers

(Continued)

Learning Objectives: After the activity, the participant will be able to: (1) Describe the toxicological concerns regarding sulfur mustard and specifically the incapacitating eye, skin, and respiratory tract damage produced by this chemical; (2) Discuss the mechanisms of toxicity of sulfur mustard on the skin, lungs, eyes and bone marrow and why it is a carcinogen; (3) Describe the current treatment for sulfur mustard-induced blisters, including mechanical dermabrasion, surgery and laser debridement ("lasablation"), in addition to symptomatic and supportive treatment; (4) Describe current treatment approaches for sulfur mustard-induced lung damage using anti-inflammatory agents (e.g., steroids), antioxidants (e.g., tocopherols, melatonin, acetylcysteine, nitric oxide synthase inhibitors), and protease inhibitors (e.g., doxycycline, aprotinin, ilomastat); (5) Describe new therapeutic strategies for sulfur mustard-induced tissue damage (e.g. stem cells, antioxidants) and pitfalls in therapy (e.g. PARP-inhibitors); (6) Discuss the principles of a rapid test using an antibody for the reliable detection of pure sulfur mustard on the skin.

Chairperson(s): *Allister Vale, University of Birmingham, Birmingham, United Kingdom; and Horst Thiermann, Bundeswehr Institute of Pharmacology and Toxicology, Munich, Germany.*

The following Specialty Section recommends this session as being of special interest to its members:
Clinical and Translational Toxicology Specialty Section

Sulfur mustard (Bis[2-chloroethyl] sulphide, SM), a chemical sometimes referred to as mustard gas, is a liquid that boils at 217C and freezes at 13C to 15C, which explains its persistence in the environment. Droplets of SM released in an explosion can pose a risk to health from inhalation, ingestion of contaminated food and water, as well as contact with the skin and eyes. SM was first used as a chemical warfare agent almost 100 years ago (July 12, 1917) in Belgium in WWI. Since then it has been deployed in Ethiopia, China, Yemen, and Iran with several hundred thousand casualties resulting. The potential further use of SM in military conflicts and by terrorists remains a threat that if realized would result in a large number of casualties with severely incapacitating eye, skin, respiratory tract, and possibly systemic damage. SM produces acute damage to the skin (blisters, skin necrosis), to the eyes (corneal damage with temporary blindness), and to the respiratory tract (nose bleeds, tracheobronchitis, and acute respiratory distress syndrome), and it can be lethal at high concentrations. SM depresses bone marrow function, which may lead to secondary infection. Long-term disability due to respiratory complications is common. SM is also a recognized human carcinogen. Following SM inhalation, DNA damage, apoptosis, and autophagy are observed in the lung, along with increased expression of activated caspases and DNA repair enzymes, biochemical markers of these activities. This is associated with inflammatory cell accumulation in the respiratory tract and increased expression of tumor necrosis factor-a and other pro-inflammatory cytokines, as well as reactive oxygen and nitrogen species. Matrix metalloproteinases are also upregulated in the lung and skin after SM exposure, which are thought to contribute to the detachment of epithelial cells from basement membranes and disruption of the pulmonary epithelial barrier. Findings that production of inflammatory mediators correlates directly with altered lung function suggests that they play a key role in toxicity. Following skin contact with SM, keratinocytes of the stratum basale in the skin appear to be the most sensitive to its cytotoxic actions, and blistering involves the detachment of these cells from the supporting basal lamina of the basement membrane of the epidermal-derma junction. Studies on SM and its analogs in animals suggest that individual or combination therapies using anti-inflammatory agents (e.g., steroids), antioxidants (e.g., tocopherols, melatonin, acetylcysteine, nitric oxide synthase inhibitors), and protease inhibitors (e.g., doxycycline, aprotinin, ilomastat), may be effective in ameliorating the toxicity of SM-induced lung damage in humans. Experimentally, single and multiple infusions of mesenchymal stem cells have reduced SM-induced edema, necrosis, inflammation, and death at 5 weeks post-exposure. In addition to symptomatic and supportive treatment for SM-induced blisters, mechanical dermabrasion and laser debridement (lasablation) have both produced an increased rate of wound healing in animal models and may be of benefit in a clinical context. A rapid test using an antibody for the reliable detection of pure SM on the skin, which gives a result within 10 minutes, has been developed. (Abstract #2557a)

Abstract #

#2557b 9:35 **Sulfur Mustard: History of Use and Features of Exposure.** *A. Vale*. School of Biosciences, University of Birmingham, Birmingham, United Kingdom.

#2558 10:00 **Pathophysiology of Sulfur Mustard-Induced Skin Lesions and Current Therapeutic Options.** P. Rice. Dstl Porton Down, Salisbury, United Kingdom. Sponsor: *A. Vale*.

#2559 10:30 **Sulfur Mustard-Induced Toxic Lung Injury: Mechanisms of Toxicity.** *A. Sciuto*. Research Division, US Army Medical Research Institute of Che, Aberdeen, MD.

#2560 11:00 **Sulfur Mustard-Induced Pulmonary Injury: Current Therapeutic Approaches to Mitigating Toxicity.** *D. Laskin*. Rutgers University, Piscataway, NJ.

#2561 11:30 **Novel Developments and Advanced Molecular Targets for Diagnosis and Treatment of Sulfur Mustard-Induced Cell Damage.** *H. Thiermann*. Bundeswehr Institute of Pharmacology, and Toxicology, Munich, Germany.

12:00 **Panel Discussion/Q&A.**

Wednesday Morning, March 16
9:30 AM to 12:15 PM
CC Room R08

Workshop Session: An Update on Juvenile Animal Testing

Developmental Toxicity: Mechanisms and Evaluation

Chairperson(s): *Gerhard F. Weinbauer, Covance, Muenster, Germany; and Timothy P. Coogan, Janssen Research & Development, LLC, Spring House, PA.*

Endorser(s):
Reproductive and Developmental Toxicology Specialty Section

In recent years, consideration of whether and whenrelative to clinical plansjuvenile animal (JA) testing is needed to support the clinical development of a pharmaceutical has become an important part of the drug development portfolio. An increasing number of these studies are being performed or are planned. The purpose of this scientific session is to present the current scientific and regulatory environment focusing on the "hows" and "whats" of JA testing today, specifically, the perspectives of the pharmaceutical industry, including strategies both internal and through regulatory interaction. In terms of animal models used, these range from rodents to nonhuman primates, with a variety of different study design approaches to evaluate toxicity in JA. Real and hypothetical case study examples are being used to highlight when testing was considered necessary and to illustrate strategies and experiences. Five recognized topical experts will present their perspectives on JA testing: the first presentation provides a state-of-the art overview and update on the ICH S11 (Nonclinical Safety Testing in Support of Development of Pediatric Medicines) status; the second presentation focuses on surprises encountered during JA study conduct; the third presentation highlights the importance of using an integrated approach and involving the toxicologist early in the drug development program; the fourth presentation addresses the impact of different strategies and JA study designs; and the fifth presentation provides a US regulatory perspective and a review of the US FDA study database. (Abstract #2562a)

#2562b 9:35 **Juvenile Animal Testing Today.** P. Baldrick. Covance Laboratories Ltd, Harrogate, United Kingdom. Sponsor: *G. Weinbauer.*

#2563 10:04 **Expect the Unexpected–Learning from the Past.** G.P. Bailey. Janssen Pharmaceutica N.V., Beerse, Belgium. Sponsor: *G. Weinbauer.*

#2564 10:33 **Beyond Juvenile Animal Toxicity Studies: The Toxicologist's Broader Role in Pediatric Drug Development Plans.** *L.L. Morford*. Eli Lilly, and Company, Indianapolis, IN.

Abstract #

#2565 11:02 **Choose Your Own Adventure: Designing Juvenile Animal Toxicity Studies.** *C.J. Bowman*. Pfizer Inc, Groton, CT.

#2566 11:31 **Regulatory Perspectives on the Role of Juvenile Animal Studies in Global Pediatric Product Development.** *T. McGovern*. US FDA, CDER, Silver Spring, MD.

12:00 **Panel Discussion/Q&A.**

Wednesday Morning, March 16
9:30 AM to 12:15 PM
CC Room 220

Workshop Session: Moving Beyond Cancer: Current State of the Science of Noncancer Health Effects of Arsenic

Toxicity of Metals

Chairperson(s): *Danielle J. Carlin, NIEHS, Research Triangle Park, NC; and Janice S. Lee, US Environmental Protection Agency, Research Triangle Park, NC.*

Endorser(s):
Metals Specialty Section
Occupational and Public Health Specialty Section

Inorganic arsenic (iAs) contamination from geologic, anthropogenic, and food origins is an increasing concern for the US and globally. This metalloid is associated with cancers of the bladder, kidney, liver, prostate, skin, lungs, and nasal cavity, as well as noncancer health effects. Moreover, other considerations in studying cancer and noncancer effects include prenatal exposure to iAs, individual variation in arsenic metabolism efficiency, bioavailability, transport, and speciation. This workshop will highlight the current state of research of iAs and its role in noncancer health effects. Discussions will focus on the impact of iAs exposure on cardiovascular disease, increased susceptibility to infectious diseases, alterations on lung development, and interference with reproduction. This workshop will also begin to address the substantial research gaps regarding the mode of action (MOA) by which iAs could induce or exacerbate these health effects. The US EPA Integrated Risk Information System (IRIS) Program is currently developing a new iAs assessment that considers both cancer and noncancer effects from oral, inhalation, and dermal routes of exposure. Discussion will include current research efforts from epidemiological, animal, and *in vitro* studies and will focus on noncancer health effects that are under consideration by the IRIS Program. (Abstract #2567)

#2568 9:35 **Cardiovascular Outcomes Associated with Low-to-Moderate-Dose Arsenic Exposure in Bangladesh.** M. Argos. University of Illinois at Chicago, Chicago, IL. Sponsor: *D.J. Carlin.*

#2569 10:03 **Arsenic and Pulmonary Infections.** *B. Stanton*. Dartmouth College, Hanover, NH.

#2570 10:31 **Health Effects of Early-Life Inhalation Exposure to Arsenic-Containing Dusts.** *R.C. Lantz*. University of Arizona, Tucson, AZ.

#2571 10:59 **The Impacts of Low-Moderate-Level Drinking Water Arsenic Exposure on Reproduction.** M.S. Bloom. University at Albany, State University of New York, Rensselaer, NY. Sponsor: *D.J. Carlin*.

#2572 11:27 **Current Status of the IRIS Arsenic Health Assessment.** *J.S. Lee*. US EPA, Research Triangle Park, NC.

11:55 **Panel Discussion/Q&A.** *J.S. Lee.* US EPA, Research Triangle Park, NC.

Abstract #

Wednesday Morning, March 16
9:30 AM to 12:15 PM
CC Room 208

Workshop Session: Paradigm Change in Toxicology: What Will It Take to Bring Advances in the Science of Toxicology into Regulatory Use?

- **Molecular Toxicology: Mechanistic Insights and Hazard Assessment**
- **Recent Advances in Safety Assessment**

Chairperson(s): *Katherine Tsaioun, Safer Medicines Trust, Cambridge, MA; and John-Michael Sauer, Critical Path Institute, Tucson, AZ.*

Endorser(s):
***In Vitro* and Alternative Methods Specialty Section**
Regulatory and Safety Evaluation Specialty Section
Scientific Liaison Coalition

Most experts agree that current test methods for prediction of hazardous effects are not always adequate to ensure the safety of human subjects/consumers exposed to medicines and other chemicals. Major advancements in the science of mechanistic toxicology have produced a number of technologies that can predict various mechanisms of human toxicity. Although academic groups, large industry users and spun-out companies have made major headway in generating data in promising *in vitro* models, resulting in significant use of the technologies in discovery stages, less progress has been made toward qualification/validation of these models for regulatory use. Until consensus is achieved between all stakeholders on the needed level of qualification/validation, global regulatory authorities will be slow to accept the new methods. Old methods will continue to be required by global regulatory authorities if these technologies are not universally accepted. Hence, there is a missing step between the discovery/lead optimization stage and regulatory and commercial use of these technologies. To address this problem, we have assembled a group of academic and industry experts, and brought them together with nonprofit organizations and regulatory authorities to assess the current state of the field and discuss acceptable paths forward in the adoption of new methods. Validation and case studies of practical use in pharmaceutical, industrial chemicals, and cosmetic industries will be presented, and a panel of experts will offer their opinion on which bodies may be best suited to perform the task of standardization of the adoption process, how this process should be implemented, how these new types of data are incorporated into the assessment process, and how regulators assess these data in replacement of traditional *in vivo* studies to give product approvals. A discussion on key drivers for this process will follow stressing similarities and distinctions between pharmaceuticals, cosmetic, agrochemicals, and biocide safety assessments. A working group of the key stakeholders will be formed with the objective of defining agreed-upon criteria for inclusion of alternative tests into regulatory batteries for different industries. (Abstract #2573a)

#2573b	9:40	**REACH and Predictive Non-Animal Approaches.** D. Knight. European Chemicals Agency, Helsinki, Finland. Sponsor: *K. Tsaioun.*
#2574	10:05	**CDER Acceptance of Alternative Assays.** *A. Jacobs*. US FDA, Washington, DC.
#2575	10:30	**Learnings from Early-Safety Assessment in Pharmaceutical Industry: Pfizer.** *Y. Will.* Pfizer, Groton, CT.
#2576	10:55	**Chemicals and Agrochemicals Perspective on Moving Toward 21st Century Safety Assessment.** *M. Covaro*. Dow Agrosciences, Abingdon, United Kingdom.
#2577	11:20	**Next Challenge for Cosmetic Industry in Europe: Systemic Toxicity Case Study.** G. Ouedraogo. L'Oreal, Paris, France. Sponsor: *K. Tsaioun.*
#2578	11:45	**A Paradigm Shift to Advance the Relevance of Toxicology for Regulatory Policy (Presenter 1).** D. Mandrioli. Cesare Maltoni Cancer Research Center Ramazzini Institute, Bentivoglio (Bologna), Italy. Sponsor: *K. Tsaioun*.

Abstract #

#2579	12:00	**A Paradigm Shift to Advance the Relevance of Toxicology for Regulatory Policy (Presenter 2).** *E. Silbergeld.* Johns Hopkins Bloomberg School of Public Health, Baltimore, MD.

Wednesday Morning, March 16
9:30 AM to 12:15 PM
CC Room 217

Workshop Session: Screening Chemicals for Neurotoxicity Outcomes—Using Large Datasets and Multiple Endpoints to Develop "Toxicity Profiles"

- **Advances in Neurotoxicology**
- **Molecular Toxicology: Mechanistic Insights and Hazard Assessment**

Chairperson(s): *Timothy J. Shafer, US Environmental Protection Agency, Research Triangle Park, NC; and Mamta Behl, NTP/NIEHS, Research Triangle Park, NC.*

Endorser(s):
***In Vitro* and Alternative Methods Specialty Section**
Molecular and Systems Biology Specialty Section
Neurotoxicology Specialty Section

The potential for neurotoxicity in adults and children following exposure to environmental chemicals remains a high public priority because of concerns that recent increases in the prevalence of neurological disorders (e.g., Parkinson's, ADHD, autism) may in part be due to chemical effects. In addition, neurotoxicity is one of the leading reasons for the failure of new drug candidates. Thus, the need for reliable and efficient screening tools to identify, prioritize, and evaluate chemicals for their potential to induce acute neurotoxicity in adults or developmental neurotoxicity (DNT) is well recognized. The past decade has thus seen increased efforts to develop high-throughput, high-content assays that are useful to screen compounds for neurotoxicity or DNT. To date, assay development has focused on relatively small sets (5–20) of compounds. Recently, however several studies have evaluated the comparative neurotoxicity/DNT of larger (30–100) sets of compounds, in some cases using a battery of assays or endpoints. This provides the opportunity to begin examining how such datasets can be used to develop toxicity profiles that better inform decisions regarding the potential neurotoxicity/DNT of chemicals. This workshop will present data from several studies examining larger numbers of compounds, discuss the strengths and limitations of the assays used to generate the data, and provide novel strategies to score relative biological activity across different assays. Attendees will gain a national and international perspective from academia, government, and industry using well-characterized high-throughput, high-content cell-based assays, and alternate animal models, spanning across multiple aspects of development, neurodevelopment, and neural activity to evaluate, compare, and contrast the biological activity in large sets of chemicals. The use of this information to build "toxicity profiles" can help inform decision-making related to neurotoxicity and DNT. The introduction will lay out the agenda of the workshop, including the overall goals, speaker lineup, and the intended outcome. The workshop will commence with an introduction by Tim Shafer, who will introduce the concept of using data from multiple chemicals and endpoints to inform decisions about chemical neurotoxicity, and briefly provide an overview of each presentation. A major liability in drug development and evaluation of chemical toxicity is the development of seizures. Our first speaker will discuss how multiple endpoints extracted from high-content recordings of neural network activity using microelectrode arrays can be used to identify and classify seizurogenic compounds early in the drug development process. The second speaker will discuss how combination of neural network recordings, and plasma and brain metabolome data can be used for early identification of several classes of neurotoxic compounds. The next speaker has used a combination of transcriptomics and toxicity in peripheral sensory (dorsal root ganglion) nerve cells to determine patterns of toxicity responses that can identify different classes of chemicals. The last two speakers will focus on methods to identify and prioritize environmental chemicals with potential for DNT/NT. The fourth speaker will present the approach that the US EPA has used to evaluate a battery of assays to collectively predict DNT and NT associated with unknown compounds. One of the major challenges in comparing results across different assay platforms is the choice of a common metric to assess chemical effect since different assays use disparate approaches to define potency. Using an 80-compound library that was tested for different DNT and NT endpoints by several researchers, the last speaker will present

an approach that provides a uniform and robust metric for comparison of the biological activities across different assays to rank compounds by their toxicity for further hazard characterization *in vivo*. The workshop is designed to provide an overview of the current status and challenges in the DNT field, including the current national and international regulatory guidelines, and novel strategies that are currently being implemented in the field. (Abstract #2580)

	9:30	**Introduction.** *T.J. Shafer*. US EPA, Research Triangle Park, NC.
#2581	9:35	**A Novel High-Throughput *In Vitro* and Multivariate Spike Train Analysis Platform for Drug Neurotoxicity and Method of Action Identification.** *C. Strock*. Cyprotex, Watertown, MA.
#2582	10:02	**Identification of Neurotoxicity Using *In Vitro* and *In Vivo* Metabolomics Data.** H. Kamp. BASF, Ludwigshafen, Germany. Sponsor: *T.J. Shafer.*
#2583	10:29	**Incorporation of Transcriptome Data in Functional Screening Assays of Peripheral Nervous System Toxicity for Improved Compound Grouping and Mechanistic Understanding.** *M. Leist*. University of Konstanz, Konstanz, Germany.
#2584	10:56	**Evaluating the Ability of *In Vitro* Assays Based on Key Events in Neurodevelopment to Predict Developmental Neurotoxicity (DNT).** *W. Mundy*. US EPA, Research Triangle Park, NC.
#2585	11:23	**Using HTS Data for Decision-Making for Further *In Vivo* Testing.** *M. Behl*. NTP/NIEHS, Research Triangle Park, NC.
	11:55	**Panel Discussion/Q&A.**

Wednesday Morning, March 16
9:30 AM to 12:15 PM
CC Room R04

IS

Informational Session: Tox21 Challenge To Build Predictive Models of Nuclear Receptor and Stress Response Pathways As Mediated by Exposure to Environmental Toxicants and Drugs

♦ Molecular Toxicology: Mechanistic Insights and Hazard Assessment

Chairperson(s): *Menghang Xia, NCATS/NIH, Bethesda, MD; and Ruili Huang, NCATS/NIH, Bethesda, MD.*

Endorser(s):
American Association of Chinese in Toxicology Special Interest Group
Biological Modeling Specialty Section
***In Vitro* and Alternative Methods Specialty Section**

The Tox21 program, a collaboration between the National Institute of Environmental Health Sciences (NIEHS)/National Toxicology Program (NTP), the US Environmental Protection Agency's (US EPA) National Center for Computational Toxicology (NCCT), the National Institutes of Health (NIH) National Center for Advancing Translational Sciences (NCATS), and the US Food and Drug Administration (US FDA), has generated quantitative high-throughput screening (qHTS) data (>50 million data points) on a library of 10K compounds, including environmental chemicals and drugs, against a panel of nuclear receptor and stress response pathway assays during its production phase (phase II). NCATS organized a Challenge that asked a "crowd" of researchers to use these data as the training set for this modeling challenge to elucidate the extent to which the interference of biochemical and cellular pathways by compounds can be inferred from chemical structure data. This Challenge represents a groundbreaking new direction for toxicity testing and is intended to help improve the understanding of how chemicals could disrupt biological pathways and result in toxicity. Specifically, the computational models generated from this Challenge can be applied to predict the potential of those environmental chemicals with limited information to disrupt cellular nuclear receptor and stress response pathways. The computational models built within this Challenge are expected to improve the community's ability to prioritize

novel chemicals with respect to potential concern to human health. The first presentation will give an overview of the Tox21 program, including the selection and validation of qHTS assays. The second presentation will summarize the Challenge in terms of participation (378 submissions from 18 different countries worldwide), data sets, the scoring process, and the performance of the computational models. The third to sixth presentations are from the Challenge winners, who will discuss the specific methods they employed to develop the winning models. (Abstract #2586)

	9:35	**Overview of *In Vitro* Assay Selection for the Tox21 HTS Program.** *M. Xia*. NCATS/NIH, Bethesda, MD.
	10:00	**Overview of the Tox21 Phase II Data and the Modeling Challenge.** *R. Huang*. NCATS/NIH, Bethesda, MD.
	10:25	**DeepTox: Toxicity Prediction Using Deep Learning.** G. Klambauer. Institute of Bioinformatics, Johannes Kepler University, Linz, Austria. Sponsor: *M. Xia.*
	10:50	**Consensus Approach for Modeling HTS Assays Using *In Silico* Descriptors.** A.A. Sayed. Technical University of Munich, Munich, Germany. Sponsor: *M. Xia.*
	11:15	**Identifying Biological Pathway-Interrupting Toxins Using Multi-Tree Ensembles.** G. Barta. Budapest University of Technology, and Economics, Budapest, Hungary. Sponsor: *M. Xia*.
	11:40	**Construction of Discrimination Models for Identifying Compounds That Activate Toxicity-Related Proteins Based on the Rigorous Selection of Random Forest Models.** Y. Uesawa, Meiji Pharmaceutical University, Meiji, Japan. Sponsor: *M. Xia*.
	12:05	**Panel Discussion/Q&A.**

Wednesday Morning, March 16
9:30 AM to 12:15 PM
CC Room R06

PL

Platform Session: Effects of Food-Associated Agents on Inflammation, Metabolic Disease and Cancer

♥ Health and Environmental Impacts of Manmade and Naturally Released Toxicants

Chairperson(s): *James M. McKim, IONTOX, Kalamazoo, MI; and Vinicius Venancio, University of São Paulo, Ribeirao Preto, Brazil.*

#2587	9:30	**Safety and Efficacy of a Novel Fenugreek Seed (*Trigonella foenum-graecum*, Fenfuro™) Extract in Patients with Type-2 Diabetes.** *D. Bagchi*. Cepham Inc, Concord, CA. Sponsor: *D. Bagchi.*
#2588	9:50	**Exposure to Imidacloprid Promotes Obesity and Type 2 Diabetes in C57BL/6J Mice.** Q. Sun[2], *X. Xiao*[2], Y. Kim[2], D. Kim[2], *K.S. Yoon*[1], *J.M. Clark*[2], and Y. Park[2]. [1]Southern Illinois University, Edwardsville, IL; and [2]Umass Amherst, Amherst, MA.
#2589	10:10	**Effects of Food Grade Carrageenan on Inflammatory Signaling Pathways in a Human Hepatoma Cell Line (HepG2).** H.M. Baas, and *J.M. McKim*. IONTOX, Kalamazoo, MI.
#2590	10:30	**Influence of Serum Lycopene on Lung Cancer Mortality: An 18-Year Follow-Up Study of a National Cohort.** *E. Afriyie-Gyawu*, S. Akuse, O. Adeyinka, and J. Zhang. Georgia Southern University, Statesboro, GA. Sponsor: *E. Afriyie-Gyawu.*

Abstract #

#2591 10:50 **Metabolism, Mutagenicity, and DNA Adduct Formation of the Naturally Occurring Alkenylbenzene beta-Asarone.** A.T. Cartus, S. Stegmüller, K. Berg, and *D. Schrenk*. University of Kaiserslautern, Kaiserslautern, Germany.

#2592 11:10 ***Ginkgo biloba* Leaf Extract Induces DNA Damage by Inhibiting Topoisomerase II Activity in Human Hepatic Cells.** *N. Mei*, *Z. Zhang*, *S. Chen*, *J. Xuan*, *X. Guo*, *V.N. Dobrovolsky*, and *L. Guo*. US FDA/NCTR, Jefferson, AR.

#2593 11:45 **Chemopreventive Effects of Anthocyanin-Rich Fruit *Chrysobalanus icaco* L. Against *In Vivo* Doxorubicin-Induced Genotoxicity and *In Vitro* TNF-α-Induced Inflammation.** *V.P. Venancio*[2,3], M.R. Almeida[3], A.Z. Mercadante[1], C.M. Marzocchi-Machado[3], M.L.P. Bianchi[3], S. Talcott[2], S.U. Mertens-Talcott[2], and L.M. Antunes[3]. [1]State University of Campinas, Campinas, Brazil; [2]Texas A&M University, College Station, TX; and [3]University of São Paulo, Ribeirao Preto, Brazil.

Wednesday Morning, March 16
9:30 AM to 12:15 PM
CC Room 206

PL

Platform Session: Nrf2 in Redox Biology

Chairperson(s): *Jessica Sapiro, University of Arizona, Tucson, AZ; Wayne State University, Detroit, MI; and Jesus A. Araujo, UCLA School of Medicine, Los Angeles, CA.*

#2594 9:30 **Role of Nrf2 on Expression of Genes for Detoxification and Xenobiotic Metabolism Enzymes (XMEs) in the Liver of Sodium Fluoride-Treated Adult Female Zebrafish (*Danio rerio*).** *D. Mukhopadhyay*, and A. Chattopadhyay. Visva-Bharati University, Santiniketan, India.

#2595 9:45 **An Imaging-Based RNAi Screen Identifies Novel Regulators of Nrf2 Activation.** S. Hiemstra, M. Niemeijer, B. Herpers, S. Wink, and *B. van de Water*. Leiden University, Leiden, Netherlands.

#2596 10:00 **The Development of a Mechanistic Systems Biology Model for Nrf2 and Oxidative Stress to Understand Homeostatic Control and Adaptive Responses to Low Doses of Oxidative Compounds.** S. Cooper[5], *M.E. Andersen*[3], *P.L. Carmichael*[5], K. Castle[5], *R.A. Clewell*[3], C. Courage[5], S. Das[2], S. Glavin[5], G. Jain[4], B.-w. Huang[3], P. Jones[5], A. Middleton[5], N. M K[2], N. R[2], J. Shao[5], K. Subramanian[2], B. van der Water[1], J. Vethamanickam[4], S. Windebank[5], and A. White[5]. [1]Leiden Academic Centre for Drug Research, Leiden, Netherlands; [2]Strand Life Sciences, Bangalore, India; [3]The Hamner Institutes for Health Sciences, Research Triangle Park, NC; [4]Unilever, Bangalore, India; and [5]Unilever, Bedfordshire, United Kingdom.

#2597 10:15 **Alternative Flame Retardants and Related Compounds Activates Oxidative Stress Nrf2 Pathway and Aryl Hydrocarbon Receptor *In Vitro*.** A.K. Rosenmai, *A. Oskarsson*, and *J. Lundqvist*. Swedish University of Agricultural Sciences, Uppsala, Sweden.

Abstract #

#2598 10:30 **The Possible Mechanism of Chemopreventive Action of 4-Methylthio-3-Butenyl Isothiocyanate in Human Esophageal Epithelial Cells.** T. Hirata[2,4], Y.-M. Cho[2], I. Suzuki[2,3], T. Toyoda[2], J.-i. Akagi[2], Y. Nakamura[1], S. Numazawa[4], and *K. Ogawa*[2]. [1]Kyoto Prefectural University, Kyoto, Japan; [2]National Institute of Health Science, Tokyo, Japan; [3]Pathogenetic Veterinary Science, United Graduate School of Veterinary Sciences, Gifu University, Gifu, Japan; and [4]School of Pharmacy, Showa University, Tokyo, Japan.

#2599 10:45 **All-Trans-Retinoic Acid Mediated Stress Protein Induction and Modification Afford Cytoprotection Against Renal Injury.** *J.M. Sapiro*, K.L. Burrell, and *S.S. Lau*. University of Arizona, Tucson, AZ.

#2600 11:00 **Metallothionein as One of Nrf2 Downstream Genes Plays an Important Role in Sulforaphane Prevention of Diabetes-Induced Cardiac Remodeling and Pathogenic Damage.** *Y. Cheng*[1,3], *L. Kong*[1,3], *H. Wu*[2,3], Z. Xu[1], and *L. Cai*[3]. [1]The First Hospital of Jilin University, Changchun, China; [2]The Second Hospital of Jilin University, Changchun, China; and [3]University of Louisville, Louisville, KY. Sponsor: *L. Cai.*

#2601 11:15 **Preventive Effect of Broccoli Sprout Extracts on the Development of DCM in Db/db T2dm Mice Is Associated with the Up-Regulation of Nrf2 Expression and Function.** Z. Xu[1], J. Sun[2], and *L. Cai*[1]. [1]Kosair Children's Hospital Research Institute, Louisville, KY; and [2]The Cardiovascular Center, The First Hospital of Jilin University, Changchun, China.

#2602 11:40 **Sulforaphane Protects Against SO2 Inhalation-Induced Lung Injury by Activation of the Nrf2 Pathway.** *M. Rojo de la Vega Guinea*, G. Luo, B. Chau, S. Tao, C. Lantz, T. Wang, S. Black, E. Chapman, J.G. Garcia, and *D.D. Zhang*. University of Arizona, Tucson, AZ.

Wednesday Morning, March 16
9:30 AM to 12:45 PM
CC Exhibit Hall

PS

Poster Session: Computational and Systems Toxicology I

♠ **Recent Advances in Safety Assessment**

Chairperson(s): *Ally Perlina, Thomson Reuters, Carlsbad, CA; and Moiz Mumtaz, CDC, Atlanta, GA.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *9:30 AM–11:00 AM*

#2603 **Poster Board Number P101**
An Improving *In Silico* Phototoxicity Prediction: It Showed High Concordance Equivalent to the Results of Inter-Laboratory Validation Study for 3T3 NRU-PT. Y. Haranosono, S. Nemoto, *M. Kurata*, and H. Sakaki. Senju Pharmaceutical, Kobe, Hyogo, Japan.

#2604 **Poster Board Number P102**
Computational Models to Estimate *In Vivo* Activity Concentrations from Tox21 HTS Data. *N.S. Sipes*[2], *J.F. Wambaugh*[1], R. Pearce[1], *B.A. Wetmore*[3], *M.J. DeVito*[2], and *S.S. Ferguson*[2]. [1]NCCT/US EPA, Research Triangle Park, NC; [2]NTP/NIEHS, Research Triangle Park, NC; and [3]The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

Abstract #

#2605 **Poster Board Number P103**
The Novartis Translational Study Data Warehouse—A 21st Century View for Our Animal Data. *P. Marc*[1], F. Hahne[1], D. Selinger[2], M. Wilbert[2], J. Boisclair[2], R. Kikkawa[3], E. Skuba[3], R. Stull[3], K. Wuersch[1], T. Brunner[3], J. Demchak[3], R. Galicia[3], B. Huang[2], K. Therrien[2], J. Walker[2], T. Welker[1], and P. Bouchard[2]. [1]Novartis, Basel, Switzerland; [2]Novartis, Cambridge, MA; and [3]Novartis, East-Hanover, NJ.

#2606 **Poster Board Number P104**
Translating Computational Toxicology Data Through Stakeholder Outreach and Engagement. M. Linnenbrink, *R. Thomas*, and *K. Crofton*. US Environmental Protection Agency, Research Triangle Park, NC.

#2607 **Poster Board Number P105**
Identification of Absorption, Distribution, Metabolism, and Excretion (ADME) Genes Relevant to Steatosis Using a Gene Expression Approach. *S.C. Suarez*[1,2], and *H. El-Masri*[2]. [1]Oak Ridge Institute for Science, and Education (ORISE), Oak Ridge, TN; and [2]US Environmental Protection Agency, Research Triangle Park, NC.

#2608 **Poster Board Number P106**
Predicting Dermal Penetration for Toxcast Chemicals Using *In Silico* Estimates for Diffusion in Combination with Physiologically Based Pharmacokinetic (PBPK) Modeling. *M.V. Evans*[2], M.E. Sawyer[1], K. Isaacs[2], and *J. Wambaugh*[2]. [1]University of Southern New Hampshire, Manchester, NH; and [2]US EPA, Research Triangle Park, NC.

#2609 **Poster Board Number P107**
Predicting Rat Chronic Systemic Toxicity Using *In Vitro* Bioactivity Data. J. Liu, and *I. Shah*. NCCT/US EPA, Durham, NC.

#2610 **Poster Board Number P108**
***In Vitro* to *In Vivo* Extrapolation (IVIVE) for Drug-Induced Liver Injury (DILI)—A Genome-Wide Analysis.** Z. Liu, and *W. Tong*. National Center of Toxicological Research (NCTR), US Food and Drug Administration (FDA), Jefferson, AR.

#2611 **Poster Board Number P109**
Systems Toxicology of Chemically Induced Liver and Kidney Injuries: Histopathology-Associated Gene Co-Expression Modules. J.A. Te, and *A. Wallqvist*. DoD Biotechnology HPC Software Applications Institute, Frederick, MD. Sponsor: *A. Wallqvist*.

#2612 **Poster Board Number P110**
Linear Mixed Models Approach to Identify Gender Specific Transcriptional Responses to Polychlorinated Biphenyls (PCBs). A. Espin Perez[1], T.M. de Kok[1], S.A. Kyrtopoulos[2], and J.C. Kleinjans[1]. [1]Maastricht University, Maastricht, Netherlands; and [2]National Hellenic Research Foundation, Institute of Biology, Medicinal Chemistry, and Biotechnology, Division of Organic, and Medicinal Chemistry, Athens, Greece. Sponsor: *H. van Loveren*.

#2613 **Poster Board Number P111**
Percellome Project for Mechanistic Analysis of Chronic Toxicity by a New Concept of Repeated Dose Study. *J. Kanno*, S. Kitajima, and K.-i. Aisaki. National Institute of Health Sciences, Tokyo, Japan.

Abstract #

#2614 **Poster Board Number P112**
Transcriptomic-Based Prediction of Sex-Related Susceptibilities to Drug-Induced Adverse Effects in F344 Rats. *J.C. Fuscoe*, K. Wang, *Q. Shi*, and *V. Vijay*. US Food and Drug Administration, National Center for Toxicological Research, Division of Systems Biology, Jefferson, AR.

#2615 **Poster Board Number P113**
Use of Automated Tools to Facilitate Rapid Chemical Hazard Assessment. *P.J. Beattie*[1], J. Orchard-Hays[1], J.P. Rinkevich[1], M.C. Ruhter[1], C.A. Rudisill[2], and J.L. Tunkel[2]. [1]SciVera LLC, Charlottesville, VA; and [2]SRC Inc, North Syracuse, NY.

#2616 **Poster Board Number P114**
A Gene Expression Biomarker Accurately Predicts Estrogen Receptor α Modulation in a Human Gene Expression Compendium. *N.M. VanDuyn*[2,3], *B.N. Chorley*[3], *R.R. Tice*[1], *R.S. Judson*[3], and *J.C. Corton*[3]. [1]NIEHS, Research Triangle Park, NC; [2]ORISE, Research Triangle Park, NC; and [3]US EPA, Research Triangle Park, NC.

#2617 **Poster Board Number P115**
Toxicity Data Landscape of Food Additives and Ingredients Under US FDA Jurisdiction. P. Volarath[2], L. Holt[2], K. Arvidson[2], and *C. Yang*[1]. [1]Altamira LLC, Columbus, OH; and [2]US FDA, College Park, MD.

#2618 **Poster Board Number P116**
MoA Central: A Search Engine for Mechanism of Action & Toxicity Studies. D.W. Selinger[2], V. Shivashankar[2], A. Ghodssi[2], M. Larbaoui[1], M. Steeves[2], M. Wilbert[2], I. Mendelev[2], S. Litster[2], and *P. Marc*[1]. [1]Novartis Institutes for BioMedical Research, Basel, Switzerland; and [2]Novartis Institutes for BioMedical Research, Cambridge, MA.

#2619 **Poster Board Number P117**
Mechanistic Expert Call Datasets Provide *In Silico* Prediction of Teratogenicity for a Wider Chemical Space. A. Fowkes, J. Plante, A.J. Myden, A. Cayley, and M.B. Surfraz. Lhasa Limited, Leeds, United Kingdom. Sponsor: *C. Barber*.

#2620 **Poster Board Number P118**
A Computational Analysis of the Association of Inorganic Arsenic Exposure and Diabetes. J. Cota, S. Tan, S. Novin, and *D.E. Johnson*. UC Berkeley, Berkeley, CA.

#2621 **Poster Board Number P119**
QSARs for the Fiftieth Anniversary of RD50. *Y. Alarie*. University of Pittsburgh, Bradfordwoods, PA.

#2622 **Poster Board Number P120**
Computational Modeling of a Proposed Mechanism of Toxicity for β-Methylamino-L-Alanine (BMAA)-Induced Amyotrophic Lateral Sclerosis. D. Li, S. Miguel, A. Sun, J. Tran, J. Voong, and *D.E. Johnson*. UC Berkeley, Berkeley, CA.

#2623 **Poster Board Number P121**
Chemical Security Analysis Center: Chemical Prioritization Process for Predictive Toxicology Testing. *J. Moser*[1,2], and R. Jablonski[1,2]. [1]Battelle Memorial Institute, Columbus, OH; and [2]Chemical Security Analysis Center, Department of Homeland Security, Aberdeen Proving Ground, MD.

Abstract #

#2624 **Poster Board Number P122**
Mining a Human Transcriptome Database for Nrf2 Modulators. *J.P. Rooney*[1], and *J.C. Corton*[2]. [1]ORISE, US EPA, Research Triangle Park, NC; and [2]US EPA, Research Triangle Park, NC. Sponsor: *J.-H. Oh*.

#2625 **Poster Board Number P123**
Predictive Model of Systemic Toxicity. *M. Martin*[2], *L. Pham*[2], J. Clouzeau[1], S. Loisel-Joubert[1], D. Blanchet[1], H. Noçairi[1], and *G. Ouedraogo*[1]. [1]L'Oréal, Paris, France; and [2]US EPA, Research Triangle Park, NC. Sponsor: *M. Martin*.

#2626 **Poster Board Number P124**
Profiling and Evaluating Environmental Chemicals That Induce Oral Acute Toxicity Using Mitochondrial Membrane Disruption Assay, Big Data and New Read-Across Strategy. *W. Wang*[3], D. Russo[3], *M. Kim*[3], *R. Huang*[2], *M. Xia*[2], *T. Hartung*[1], and *H. Zhu*[3]. [1]Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD; [2]National Institutes of Health, Rockville, MD; and [3]Rutgers University, Camden, NJ.

#2627 **Poster Board Number P125**
The Influence of Data Curation on QSAR Modeling—Examining Issues of Quality versus Quantity of Data. A.J. Williams, *K. Mansouri*, *A. Richard*, and C. Grulke. US Environmental Protection Agency, Research Triangle Park, NC.

#2628 **Poster Board Number P126**
Quantitative Prediction of Skin Sensitization Potency Based on Structural Alert Spaces. M.L. Chilton, S.J. Canipa, J. Plante, and J.D. Vessey. Lhasa Limited, Leeds, United Kingdom. Sponsor: *C. Barber.*

#2629 **Poster Board Number P127**
Improvements to *In Silico* Skin Sensitization Predictivity After Access to Proprietary Data. D.S. Macmillan[2], S.J. Canipa[2], R.V. Williams[2], *J. Hillegass*[1], and J. Gould[1]. [1]Bristol-Myers Squibb, New Brunswick, NJ; and [2]Lhasa Limited, Leeds, United Kingdom.

Wednesday Morning, March 16
9:30 AM to 12:45 PM
CC Exhibit Hall

PS

Poster Session: Computational and Systems Toxicology II

♠ Recent Advances in Safety Assessment

Chairperson(s): *Richard Judson, US Environmental Protection Agency, Research Triangle Park, NC.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *11:15 AM–12:45 PM*

#2630 **Poster Board Number P128**
Translating from Preclinical In-Life Observations to Human Side Effects (eTOX III). K.A. Briggs[1], and *F. Pognan*[2]. [1]Lhasa Limited, Leeds, United Kingdom; and [2]Novartis Institute For Biomedical Research, Basel, Switzerland.

#2631 **Poster Board Number P129**
Systems Biology Investigation of Endocrine Disruptor Chemicals and Obesity. *P. Ruiz*[1], A. Perlina[3], and A. Feroe[2]. [1]Agency for Toxic Substances, and Disease Registry/CDC, Atlanta, GA; [2]ATSDR/CDC, Atlanta, GA; and [3]Sanford-Burnham Medical Research Institute, La Jolla, CA. Sponsor: *P. Ruiz.*

Abstract #

#2632 **Poster Board Number P130**
A Systematic Review of the Zebrafish Embryological Test as an Alternative to the Mammalian Developmental Test (OECD 414): A Pilot for an Evidence-Based Toxicology Approach. A. Maertens[5], R. Wright[5], *M. Stephens*[5], S. Hoffmann[5], *C. Willett*[4], H. Witters[7], F. Busquet[3], M. Lalu[6], B. Flick[1], *K. Thompson*[2], *T. Hartung*[5], and *K. Tsaioun*[5]. [1]BASF, Ludwigshafen, Germany; [2]Bristol-Myers Squibb, New York, NY; [3]CAAT-EU, Konstanz, Germany; [4]Humane Society, Washington, DC; [5]Johns Hopkins University, Baltimore, MD; [6]Ottawa Hospital, Ottawa, ON, Canada; and [7]Vito, Antwerp, Belgium. Sponsor: *K. Tsaioun.*

#2633 **Poster Board Number P131**
A New Statistical Approach to Characterize Chemical-Elicited Effects in Behavioral Data from High-Throughput Studies of Zebrafish Exposed to Diverse Chemicals. G. Zhang[1], L. Truong[2], *R.L. Tanguay*[2], and *D.M. Reif*[1]. [1]North Carolina State University, Raleigh, NC; and [2]Oregon State University, Corvallis, OR.

#2634 **Poster Board Number P132**
Handling Missing Data in Chemical Prioritization and Bioactivity Profiling Applications Using ToxPi. K. To[1], A. Nguyen[2], *R.C. Fry*[2], and *D.M. Reif*[1]. [1]North Carolina State University, Raleigh, NC; and [2]University of North Carolina at Chapel Hill, Chapel Hill, NC.

#2635 **Poster Board Number P133**
Using "Big Data" to Identify Model Compounds and Develop Adverse Outcome Pathways for Mitochondrial Dysfunction. D. Dreier, *N. Denslow*, and *C. Martyniuk*. University of Florida, Gainesville, FL.

#2636 **Poster Board Number P134**
Zebrafish High-Throughput Data Analysis and Quality Control Pipeline. S. Marvel[1], L. Truong[2], *R.L. Tanguay*[2], and *D.M. Reif*[1]. [1]North Carolina State University, Raleigh, NC; and [2]Oregon State University, Corvallis, OR.

#2637 **Poster Board Number P135**
Modeling Steroidogenesis Disruption Using High-Throughput *In Vitro* Screening Data. *A.L. Karmaus*[1], and *M.T. Martin*[2]. [1]ORISE - US EPA/ORD/NCCT, Durham, NC; and [2]US EPA/ORD/NCCT, Durham, NC.

#2638 **Poster Board Number P136**
Electronic Cigarettes: Users' Flavor Preferences and Associated Health Effects. *M. Hua*, and *P. Talbot*. University of California, Riverside, Riverside, CA.

#2639 **Poster Board Number P137**
Prediction of Clastogen, Aneugen, and Non-Genotoxicant Group Membership Using an *In Vitro* Multiplexed Flow Cytometric Assay and Multinomial Logistic Regression. S. Bryce, D. Bernacki, *J.C. Bemis*, and *S. Dertinger*. Litron Laboratories, Rochester, NY.

#2640 **Poster Board Number P138**
ToxCast Profiling in a Human Stem Cell Assay for Developmental Toxicity. *T. Knudsen*, *P. Kothiya*, and *K. Houck*. US EPA, Research Triangle Park, NC.

Abstract #

#2641 **Poster Board Number P139**
Integrating Animal Data from the Past with Future CDISC-SEND Compliant Data (eTOX VI). M. Cases[1], K. Briggs[3], W. Muster[2], A. Brigo[2], and *P. Marc*[4]. [1]Bayer Pharma AG, Berlin, Germany; [2]F. Hoffmann-La Roche AG, Basel, Switzerland; [3]Lhasa Limited, Leeds, United Kingdom; and [4]Novartis Institutes for BioMedical Research, Basel, Switzerland.

#2642 **Poster Board Number P140**
Why Are Most PLD Active Chemicals Also hERG Active? *R.D. Beger*[1], S. Slavov[1], *R. Huang*[2], and *M. Xia*[2]. [1]NCTR/US FDA, Jefferson, AR; and [2]NIH NCATS, Rockville, MD.

#2643 **Poster Board Number P141**
Chemical Risk Analysis with Bayesian Support (CRABS) in the IVIVE Context. *L. Burgoon*. US Army Engineer Research, and Development Center, APEX, NC.

#2644 **Poster Board Number P142**
Cramer Class Determination and Its Role in the Safety Assessment of Fragrance Materials. *J. Shen*[2], *A.M. Api*[2], D.W. Roberts[1], A. Aptula[4], and T.W. Schultz[3]. [1]Liverpool John Moores University, Liverpool, United Kingdom; [2]Research Institute for Fragrance Materials, Woodcliff Lake, NJ; [3]The University of Tennessee, Knoxville, TN; and [4]Unilever, Bedford, United Kingdom.

#2645 **Poster Board Number P143**
Integration of Tox21 and CTD Data: Elucidating Correlations between High-Throughput Chemical Screening and Curated Literature. G. Collier, *A. Planchart*, *D.M. Reif*, and *C.J. Mattingly*. North Carolina State University, Raleigh, NC.

#2646 **Poster Board Number P144**
Mechanistic Model-Based Approach to Skin Sensitisation Risk Assessment. G. Maxwell[1], R. Cubberley[1], S. Dhadra[1], N. Gellatly[1], J.P. Gosling[2], R. Pendlington[1], J. Pickles[1], J. Reynolds[1], R. Stark[1], D. Tang[1], and C. MacKay[1]. [1]Unilever, Bedford, United Kingdom; and [2]University of Leeds, Leeds, United Kingdom. Sponsor: *P. Carmichael.*

#2647 **Poster Board Number P145**
Cardiosafety *In Silico* Prediction—Validation Results of a Multiscale Simulation Model (eTOX VII). A. Amberg[3], L. Anger[3], H.-P. Spirkl[3], J.-M. Guillon[4], V. Ballet[4], F. Schmidt[3], M. Stolte[3], A. Czich[3], H. Matter[2], J. Gomis-Tena[5], L. Rodriguez[5], J. Saiz[5], and M. Pastor[1]. [1]IMIM, GRIB, Barcelona, Spain; [2]Sanofi, LGCR, Frankfurt, Germany; [3]Sanofi, Preclinical Safety, Frankfurt, Germany; [4]Sanofi, Preclinical Safety, Paris, France; and [5]Universitat Politècnica de València, Ci2B, València, Spain. Sponsor: *D. Keller.*

#2648 **Poster Board Number P146**
Development and Application of a Novel QSAR to Assess Potential Species Differences in Developmental Toxicity. *H.M. Kung*, and *J.E. Foreman*. ExxonMobil Biomedical Sciences, Inc., Annandale, NJ.

#2649 **Poster Board Number P147**
Estimating Compound Potency in Tox21 Phase II Estrogen Receptor Assays Using Weighted Information Gain. K.R. Shockley. NIEHS, Research Triangle Park, NC. Sponsor: *R. Tice.*

Abstract #

#2650 **Poster Board Number P148**
Analysis of the Potential of Chemicals to Induce Anemia Based on Compound Specific Properties. I. Tluczkiewicz[3], M. Batke[3], S.J. Webb[4], R. Garcia-Sterna[1], P. Bento[2], and S.E. Escher[3]. [1]Chemotargets, Barcelona, Spain; [2]European Bioinformatics Institute (EMBL-EBI), Cambridge, United Kingdom; [3]Fraunhofer ITEM, Hannover, Germany; and [4]Lhasa Limited, Leeds, United Kingdom. Sponsor: *C. Dasenbrock.*

#2651 **Poster Board Number P149**
Development and Application of a Reference Database for Androgen Receptor Activity. *N. Kleinstreuer*[2], *P. Ceger*[2], *P. Browne*[1], *D. Allen*[2], *J. Hamm*[2], and *W. Casey*[2]. [1]US EPA/OSCP, Washington, DC; and [2]NIEHS/NICEATM, Durham, NC.

#2652 **Poster Board Number P150**
Virtual Screening for Estrogen Active Chemicals in a Pharmaceutical Database Using a Novel Pharmacophore Paired Docking Search Method. G. Guirard, T. Mitchell, P. Ma, and T. Wiese. Xavier University of Louisiana, New Orleans, LA. Sponsor: *C. Miller.*

#2653 **Poster Board Number P151**
Challenges and Lessons Learned in Developing an AOP for Mutagenic Mode of Action for Hepatocellular Carcinoma (HCC). *M.M. Moore*[3], R. Schoeny[1], and *L.H. Pottenger*[2]. [1]Consultant, Washington, DC; [2]Olin, Midland, MI; and [3]Ramboll Environ, Little Rock, AR.

#2654 **Poster Board Number P152**
A Cross-Study Analysis of Prenatal Exposures to Environmental Contaminants and the Epigenome: Support for Stress-Responsive Transcription Factor Occupancy as a Mediator of Gene-Specific CpG Methylation Patterning. E. Martin, and *R.C. Fry*. University of North Carolina at Chapel Hill, Chapel Hill, NC.

#2655 **Poster Board Number P153**
Gene Expression in Breast Cancer Cells After Treatment with Mammary Carcinogens and Mammary Development Disruptors. J. Ackerman[2], *R. Rudel*[2], J. Yeakley[1], P. Shepard[1], A. Tagmount[3], A. Loguinov[3], and *C. Vulpe*[3]. [1]Bio Spyder, Carlsbad, CA; [2]Silent Spring Institute, Newton, MA; and [3]University of Florida, Gainesville, FL.

#2656 **Poster Board Number P154**
User-Friendly Online Tools for ADMET Predictions Supporting the Risk Assessment of Cosmetics-Related Chemicals. A.N. Richarz[4], P. Alov[1], S.J. Enoch[4], S. Kovarich[5], T. Meinl[3], C. Mellor[4], A. Paini[2], A. Palczewska[6], J.V. Sala Benito[2], F.P. Steinmetz[4], M.T. Cronin[4], and A.P. Worth[2]. [1]Bulgarian Academy of Sciences, Sofia, Bulgaria; [2]European Commission Joint Research Centre, Ispra, Italy; [3]KNIME.com AG, Zurich, Switzerland; [4]Liverpool John Moores University, Liverpool, United Kingdom; [5]S-IN Soluzioni Informatiche SRL, Vicenza, Italy; and [6]University of Bradford, Bradford, United Kingdom. Sponsor: *C. Yang.*

Abstract #

#2657 **Poster Board Number P155**
Assessing Acute Toxicity by Combining Predictions Based on Chemotype Alerts, QSAR, and *In Vitro* and *In Vivo* Biological Assay Data in a Quantitative Weight-of-Evidence Approach. J. Rathman[1,3], T. Magdziarz[2], A. Mostrag-Szlichtyng[1], B. Bienfait[2], O. Sacher[2], and *C. Yang*[1,2]. [1]Altamira LLC, Columbus, OH; [2]Molecular Networks GmbH, Erlangen, Germany; and [3]Ohio State University, Columbus, OH.

#2658 **Poster Board Number P156**
A Correlative Relationship Between Regional Clusters of Permethrin Exposure and Parkinson's Disease. B. Sie, and *D.E. Johnson*. UC Berkeley, Berkeley, CA.

#2659 **Poster Board Number P157**
Evaluation of *In Silico* Predictions of Acute Inhalation Toxicity for GHS Classification. *M. DeLorme*, *C. Owens*, J. Bonk, and *L. Milchak*. 3M, Saint Paul, MN.

#2660 **Poster Board Number P158**
Using *In Vivo* Toxicity Syndromes to Reduce Uncertainty in Chemical Effects. *R. Judson*. US EPA, Research Triangle Park, NC.

Wednesday Morning, March 16
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Risk Assessment 2

Chairperson(s): *Zhongyu (June) Yan, Dow AgroSciences, Indianapolis, IN; and Michael Garry, Exponent, Bellevue, WA.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *9:30 AM–11:00 AM*

#2661 **Poster Board Number P161**
Evaluating the Proposition 65 Health Significance of Formaldehyde Exposures from Chinese Manufactured Laminate Flooring. *P. Sheehan*, *K.T. Bogen*, A. Singhal, and R. Kalmes. Exponent, Oakland, CA.

#2662 **Poster Board Number P162**
Toxicological Review of Hydrogen Sulfide Scavengers and Corrosion Inhibitors in Gas Pipelines. *D. Johnson*, Y. Yang, and *A. Pawlisz*. GHD, Dallas, TX.

#2663 **Poster Board Number P163**
Levels, Sources, and Associated Risks for Inhalable Particulate Matter, Sulfur Dioxide and Polycyclic Aromatic Hydrocarbons in Curaçao. E. Pulster[1,2], *G. Johnson*[2], J. McCluskey[2], D. Hollander[2], and *R. Harbison*[2]. [1]Mote Marine Laboratory, Sarasota, FL; and [2]University of South Florida, Tampa, FL.

#2664 **Poster Board Number P164**
Combined Incremental Lifetime Cancer Risk (ILCR) for Nitrosamines Present in Tobacco Smoke. S.A. Fiebelkorn, *F.H. Cunningham*, and *C. Meredith*. British American Tobacco, Southampton, United Kingdom.

#2665 **Poster Board Number P165**
Comparisons of Isotope Dilution Method/Solid Phase Microextraction and Laboratory Models to Estimate Risk of DDTs from Consumption of Fish from Contaminated Sediments in Palos Verdes, California. *S.L. Coffin*, *G.-b. Xu*, *J. Gan*, and *D. Schlenk*. University of California, Riverside, Riverside, CA.

Abstract #

#2666 **Poster Board Number P166**
Risk Assessment of Even-Carbon-Chain Alkanes (C12-C28) as Extractables from Bioprocessing Bags. *K.L. Li*, and *D. Dolan*. Amgen Inc., Thousand Oaks, CA.

#2667 **Poster Board Number P167**
Assessment of Dietary Exposures to Inorganic Arsenic from Rice and Compliance with California Proposition 65. *L.A. Haighton*, K. Ly, H. Fikree, *T. Jonaitis*, and *J.W. Card*. Intertek Scientific & Regulatory Consultancy, Mississauga, ON, Canada.

#2668 **Poster Board Number P168**
Application of a Weight of Evidence Approach to Evaluating Risks Associated with Subsistence Caribou Consumption Near a Lead/Zinc Mine. *M.R. Garry*[1], S.S. Shock[1], and J.H. Salatas[2]. [1]Exponent, Bellevue, WA; and [2]Teck Cominco, Anchorage, AK.

#2669 **Poster Board Number P169**
Flame-Retardants in Upholstered Furnishings: An Assessment of Health Risk and Fire-Related Deaths in the Era of California Technical Bulletin (TB-117). *L. Gloekler*[1], E. Shay Hynds[2], N. Schmidt[1], N. Haghighat[1], J. Panko[2], *D. Cowan*[1], and *D. Paustenbach*[3]. [1]Cardno ChemRisk, Aliso Viejo, CA; [2]Cardno ChemRisk, Pittsburgh, PA; and [3]Cardno ChemRisk, San Francisco, CA.

#2670 **Poster Board Number P170**
Risk Assessment of Chemical Exposures from Artificial Turf. *M.K. Peterson*[1], *S. Pacheco Shubin*[2], and *T.A. Lewandowski*[2]. [1]Gradient, Leavenworth, WA; and [2]Gradient, Seattle, WA.

#2671 **Poster Board Number P171**
Risk from Breaches in Portable, Consumer Sized Lithium Batteries. *C.Y. Chan*, M. Krause, *B. Kelman*, and *N. Moore*. Veritox Inc, Redmond, WA.

#2672 **Poster Board Number P172**
Potential Tremolite Exposures Associated with Talc-Containing Products. *A.M. Burns*, and B.L. Finley. Cardno, Brooklyn, NY.

#2673 **Poster Board Number P173**
A Hazard and Risk Assessment of Phenoxyethanol in Children's Personal Care Products. K. Zu, J. Lemay, J. Zhang, and *J. Goodman*. Gradient, Cambridge, MA.

#2674 **Poster Board Number P174**
Integrating Toxicokinetic Data into Weight of Evidence Analysis Supports a Threshold-Based Risk Assessment for 1,3-Dichloropropene via Inhalation Exposure. *Z.J. Yan*[1], *S.C. Gehen*[1], *M.M. Bartels*[2], *J.J. Hotchkiss*[2], and *R.J. Rasoulpour*[1]. [1]Dow AgroSciences, Indianapolis, IN; and [2]The Dow Chemical Company, Midland, MI.

#2675 **Poster Board Number P175**
Perfluorinated Compounds at California Hazardous Waste Sites. *K.C. Gettmann*, L. Nakayama Wong, and *M.J. Wade*. Cal/EPA, Sacramento, CA.

#2676 **Poster Board Number P176**
Ion Channel Studies Support the Safety of Triclosan to Cardiovascular and Skeletal Muscle. *D. Urbach-Ross*, *B. Slezak*, and *D. Bagley*. Colgate-Palmolive, Piscataway, NJ.

Abstract #

#2677 **Poster Board Number P177**
Integrating the Threshold of Toxicological Concern (TTC) with High-Throughput Exposure Assessment for Risk-Based Screening of Several Thousand Commodity Chemicals. *R. Becker*[1], *J. Wambaugh*[4], G. Patlewicz[4], *S. Felter*[2], and *T. Simon*[3]. [1]American Chemistry Council, Washington, DC; [2]Procter & Gamble Company, Mason, OH; [3]Ted Simon LLC, Winston, GA; and [4]US EPA, Research Triangle Park, NC.

#2678 **Poster Board Number P178**
Inhalation TTC Values for Compounds Released into the Breathing Circuit of Respiratory Devices. *R. Brown*, A. Deng, C. Cruse, and *K. Riaz Ahmed*. US FDA, Silver Spring, MD.

#2679 **Poster Board Number P179**
Single vs. Multiple Target Organ Identification in Target-Organ-Specific Hazard Index (TOSHI) Chemical Mixture Risk Assessment. *D.M. Pizzurro*, and G.I. Greenberg. Gradient, Cambridge, MA.

#2680 **Poster Board Number P180**
Derivation of Data Derived Extrapolation Factors for the HPPD Inhibitor Mesotrione for Human Health Risk Assessment. *E. Scollon*[1], and *J. Botham*[2]. [1]Syngenta Crop Protection, LLC, Greensboro, NC; and [2]Syngenta Limited, Bracknell, United Kingdom.

#2681 **Poster Board Number P181**
Human Variability in High-Throughput Risk Prioritization of Environmental Chemicals. C.L. Ring[1,2], R.W. Setzer[2], R. Pearce[2], and *J.F. Wambaugh*[2]. [1]Oak Ridge Institute for Science, and Education, Oak Ridge, TN; and [2]US Environmental Protection Agency, Research Triangle Park, NC.

#2682 **Poster Board Number P182**
Uncertainty Factors to Account for Interindividual Pharmacokinetic Variability in Patient Populations for Acceptable Daily Exposure and Cleaning Validation Limit Calculations. *A.J. Streeter*[2], and E.C. Faria[1]. [1]Janssen Research & Development LLC, Johnson & Johnson, Raritan, NJ; and [2]Janssen Research & Development LLC, Johnson & Johnson, Spring House, PA.

#2683 **Poster Board Number P183**
Relationship Between LD50s and LOAELs for Acute, Intermediate, and Chronic Oral Exposures. R.C. Siwakoti[1,2], E. Demchuk[1], A.J. Prussia[1], and C.J. Welsh[1]. [1]Agency for Toxic Substances, and Disease Registry, Atlanta, GA; and [2]Georgia Institute of Technology, Atlanta, GA. Sponsor: *P. Ruiz.*

#2684 **Poster Board Number P184**
Time Extrapolation Factors for Risk Assessment: Are Group Specific Extrapolation Factors Possible? S.E. Escher[2], M. Pastor[4], P. Carrio[4], S. Hoffmann-Doerr[3], T. Steger-Hartmann[1], and I. Mangelsdorf[2]. [1]Bayer HealthCare, Berlin, Germany; [2]Fraunhofer ITEM, Hannover, Germany; [3]Henkel AG & Co, Düsseldorf, Germany; and [4]Universitat Pompeu Fabra, Barcelona, Spain. Sponsor: *C. Dasenbrock.*

Abstract #

#2685 **Poster Board Number P185**
Target Organ Profiles in Toxicity Studies Supporting Human Dosing: Does Severity Progress with Longer Duration of Exposure? *R. Roberts*[1], R. Callander[2], *P. Duffy*[1], *R. Knight*[1], M. Jacobsen[2], and *A. Boobis*[3]. [1]ApconiX, Alderley Edge, United Kingdom; [2]AstraZeneca, Alderley Edge, United Kingdom; and [3]Imperial College, London, United Kingdom.

#2686 **Poster Board Number P186**
Use of the Collaborative Cross Mouse Panel to Assess the Effect of Genetic Variability in the Low-Dose Region of a TCDD-Induced Dose-Response Curve. P. Dornbos[1], M. Warren[2], R. Crawford[1], *N. Kaminski*[1], *D. Threadgill*[2], and *J.J. LaPres*[1]. [1]Michigan State University, East Lansing, MI; and [2]Texas A&M University, College Station, TX.

#2687 **Poster Board Number P187**
Human Inter-Individual Variability Does not Linearize the Low-Dose Region of a TCDD-Induced Dose-Response Curve in Primary B Cells. P. Dornbos, R. Crawford, *N. Kaminski*, and *J.J. LaPres*. Michigan State University, East Lansing, MI.

#2688 **Poster Board Number P188**
Chronic Exposure Induces Adverse Effects or Adaptive Responses? Lessons Learned from Radiotoxicology Studies to Low Doses. Y. Gueguen, K. Tack, and M. Benderitter. IRSN, Fontenay-aux-Roses, France. Sponsor: *M. Pallardy.*

#2689 **Poster Board Number P189**
Development of a Screening Framework for Pesticide Cumulative Risk Assessment. M. Perron, *A. Lowit*, C. Smith, and D. Wilbur. US EPA, Washington, DC.

#2690 **Poster Board Number P190**
Implementation of the Screening Framework for the Cumulative Risk Assessment of Pesticides. *E. Craig*, *M. Perron*, H. Pope-Varsalona, and *A. Lowit*. US EPA, Washington, DC.

#2691 **Poster Board Number P191**
Web-Based Calculator for Vapor Intrusion Screening Levels (VISL). L. Galloway[2], F. Dolislager[2], S. Smith[2], A.M. Frame[1], and L.G. Gaines[1]. [1]US Environmental Protection Agency, Washington, DC; and [2]The University of Tennessee, Knoxville, Knoxville, TN. Sponsor: *C. Bast.*

#2692 **Poster Board Number P192**
Chemical Alternative Assessment: Where Do I Start? *E. Freeman*[2], and J. Nusz[1]. [1]Exponent, Boulder, CO; and [2]Exponent, Pittsburgh, PA.

#2693 **Poster Board Number P193**
Green Jobs: Definition and Method of Appreciation of Chemical and Biological Risks. *J. Zayed*[1,2], E. Cheneval[2], M.-A. Busque[1], C. Ostiguy[1,2], J. Lavoie[1,2], R. Bourbonnais[2], B. Bakhiyi[2], and F. Labrèche[1,2]. [1]Robert-Sauvé Research Institute of Occupational Health, and Safety (IRSST), Montreal, QC, Canada; and [2]University of Montreal, Montreal, QC, Canada.

Wednesday Morning, March 16
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Risk Assessment 3

Chairperson(s): *George M. Woodall, US Environmental Protection Agency, Research Triangle Park, NC; and Mathieu Valcke, Institut National de Santé Publique du Québec, Montréal, QC, Canada.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *11:15 AM–12:45 PM*

#2694 **Poster Board Number P201**
Characterization of Chemical-Induced Asthma Risk: Hazard and Exposure Assessment Approaches. M. Vincent, *A. Maier*, A. Parker, and *B. Gadagbui*. University of Cincinnati College of Medicine, Cincinnati, OH.

#2695 **Poster Board Number P202**
Analysis of the Indirect Genotoxic Effects of Asbestos: Implications for Dose Response Models. *A.K. Madl*, *A. Bernal*, *D.M. Cowan*, M. Liong, N. Boulos, C. Poteete, and *M. Kovochich*. Cardno ChemRisk, Aliso Viejo, CA.

#2696 **Poster Board Number P203**
Smoker's Risk of Lung Cancer from Asbestos Exposure. *N. Moore*, *B. Hardin*, *C. Robbins*, and *B. Kelman*. Veritox, Inc., Redmond, WA.

#2697 **Poster Board Number P204**
Assessment of the *In Vivo* Genotoxicity of CrVI in Target Organs Identified in a Two-Year Cancer Bioassay. *C.M. Thompson*[2], *M. Suh*[3], *D.M. Proctor*[3], *J.E. Rager*[1], *L.C. Haws*[1], and M.A. Harris[2]. [1]ToxStrategies, Austin, TX; [2]ToxStrategies, Katy, TX; and [3]ToxStrategies, Mission Viejo, CA.

#2698 **Poster Board Number P205**
Re-Evaluation and Classification of Duodenal Lesions in B6C3F1 Mice and F344 Rats from Four Studies of Hexavalent Chromium in Drinking Water. J.M. Cullen[2], J.M. Ward[1], and *C.M. Thompson*[3]. [1]Global VetPathology, Montgomery Village, MD; [2]North Carolina State University, Raleigh, NC; and [3]ToxStrategies, Katy, TX.

#2699 **Poster Board Number P206**
Evaluation of the Human Relevance of Bladder Lesions Induced by Dietary 2-Phenylphenol in Male Rats. *P.R. McClure*[1], *K. Zaccaria*[1], M.A. Odin[1], *L.E. Lizarraga*[2], and *Q.J. Zhao*[2]. [1]SRC, Inc., North Syracuse, NY; and [2]US EPA, Cincinnati, OH.

#2700 **Poster Board Number P207**
Comparison of α2u-Globulin Nephropathy Induced by ETBE and Tert-Butanol Using PBPK Modeling. *K.D. Salazar*[2], *J.S. Lee*[2], *C.J. Brinkerhoff*[2], and *W.A. Chiu*[1]. [1]Texas A&M University, College Station, TX; and [2]US EPA, Washington, DC.

#2701 **Poster Board Number P208**
Application of the Adverse Outcome Pathway (AOP) Approach to Inform Mode of Action (MOA): A Case Study with Inorganic Arsenic. *H. Clewell*[3], J. Yager[1], *T. Greene*[2], and *R. Gentry*[2]. [1]Environ Ramboll, Emmeryville, CA; [2]Environ Ramboll, Monroe, LA; and [3]Environ Ramboll, Raleigh, NC.

#2702 **Poster Board Number P209**
Strength of Human Evidence for Bile Duct Cancer in Japanese Printers Exposed to 1,2-Dichloropropane. M.A. Odin[1], *K.J. Zaccaria*[1], *P.R. McClure*[1], and *Q.J. Zhao*[2]. [1]SRC, Inc., North Syracuse, NY; and [2]US EPA, Cincinnati, OH.

#2703 **Poster Board Number P210**
Decamethylcyclopentasiloxane (D5) Risk Assessment (RA): A Quantitative Weight of Evidence Approach (QWoE) for Liver Effects. J. Bridges[2], and *P.A. Jean*[1]. [1]Dow Corning Corporation, Auburn, MI; and [2]University of Surrey, Guildford, United Kingdom.

#2704 **Poster Board Number P211**
Mode of Action and Human Relevance Evaluation of Dibutyl Phthalate (DBP)-Induced Male Reproductive System Toxicity. *X. Arzuaga*[2], T. Walker[2], G. Cooper[2], and *A. Hotchkiss*[1]. [1]US EPA, Research Triangle Park, NC; and [2]US EPA, Washington, DC.

#2705 **Poster Board Number P212**
Evaluation of Butyl Benzyl Phthalate (BBP)-Induced Male Reproductive Effects; Application of a Mode-of-Action (MOA) Framework Developed for Dibutyl Phthalate (DBP). *X. Arzuaga*[2], T.D. Walker[2], G. Cooper[2], and *A. Hotchkiss*[1]. [1]US EPA, Research Triangle Park, NC; and [2]US EPA, Washington, DC.

#2706 **Poster Board Number P213**
Human Relevance of Constitutive Androstane Receptor (CAR)-Mediated Rat Hepatocellular Tumors by Fluxapyroxad. C. Werner[2], M. Goettel[2], N. Honarvar[2], A. Vardy[3], B. Elcombe[3], *C. Elcombe*[3], *A.M. Doi*[1], and I. Fegert[2]. [1]BASF Corporation, Research Triangle Park, NC; [2]BASF SE, Ludwigshafen, Germany; and [3]CXR Biosciences Ltd, Dundee, United Kingdom.

#2707 **Poster Board Number P214**
Evaluation of the Potential for Formaldehyde Inhalation to Cause Nervous System Effects. *A.D. Kraft*, G.S. Cooper, and B.S. Glenn. US Environmental Protection Agency, Washington, DC.

#2708 **Poster Board Number P215**
Application of a Surrogate Analysis Approach to Identify Toxicity Surrogates for N-Heptanal, N-Heptane, and O-Aminophenol. *J. Melia*[1], *H. Carlson-Lynch*[1], M. Odin[1], J. Tunkel[1], *J. Rhoades-Hamacher*[1], and S. Wesselkamper[2]. [1]SRC, Inc., North Syracuse, NY; and [2]US EPA, Cincinnati, OH.

#2709 **Poster Board Number P216**
Read-Across at the Crossroad of Chemoinformatics and Regulatory Science. A. Mostrag-Szlichtyng[1], *I. Boyer*[2], B. Bienfait[3], *B. Heldreth*[2], T. Kleinoder[3], J. Marusczyk[3], A. Tarkhov[3], O. Sacher[3], C. Schwab[3], V. Vitcheva[1], J. Rathman[1,4], and *C. Yang*[1,3]. [1]Altamira LLC, Columbus, OH; [2]Cosmetics Ingredient Review, Washington, DC; [3]Molecular Networks GmbH, Erlangen, Germany; and [4]The Ohio State University, Columbus, OH.

#2710 **Poster Board Number P217**
Evaluation of Chemically Induced Cytotoxicity of Read Across Compounds in Rat and Human Lung Tissue. O. Danov[1], S. Escher[1], K. Schröder[1], J. Koschmann[3], M. Niehof[1], D. Vorgrimmler[2], P. Braubach[4], D. Jonigk[4], T. Hansen[1], A. Braun[1], and K. Sewald[1]. [1]Fraunhofer ITEM, Biomedical Research in Endstage, and Obstructive Lung Disease Hannover (BREATH), Member of the German Centre for Lung Research (DZL), Hannover, Germany; [2]Freiburg Center for Data Analysis, and Modeling (FDM), Freiburg, Germany; [3]geneXplain GmbH, Wolfenbüttel, Germany; and [4]Hannover Medical School, Hannover, Germany. Sponsor: *C. Dasenbrock*.

Abstract #

#2711 **Poster Board Number P218**
Toxicological Categorization of P- and E-Series Glycol Ethers Using High-Content Screening of Human Induced Pluripotent Stem Cell (iPSC)-Derived Cells. *Y. Iwata*[2], *F. Grimm*[2], *M. Wilson*[2], M. Bittner[2], O. Sirenko[1], *J.C. Rowlands*[3], *N. Ball*[3], and *I. Rusyn*[2]. [1]Molecular Devices, LLC, Sunnyvale, CA; [2]Texas A&M University, College Station, TX; and [3]The Dow Chemical Company, Midland, MI.

#2712 **Poster Board Number P219**
Isomer-Specific Toxicity Profiles of Aminophenols. *S. Perumal Kuppusamy*[1], and *J. Lipscomb*[2]. [1]National Institute for Occupational Safety, and Health/Centers for Disease Control, and Prevention, Cincinnati, OH; and [2]US Environmental Protection Agency, Cincinnati, OH.

#2713 **Poster Board Number P220**
Multi-Dimensional Analysis of Mode of Action: Identifying the Critical Factors for Determining Risk. *G.M. Woodall*, A.K. Hotchkiss, and *A.M. Jarabek*. US Environmental Protection Agency, Research Triangle Park, NC.

#2714 **Poster Board Number P221**
Thymomas in Fischer 344/N Rats in the National Toxicology Program Database. G.A. Willson[1], R.R. Moore[1], H. Nagai[2], R.A. Miller[1], *J.F. Hardisty*[1], N. Allison[1], and D.E. Malarkey[2]. [1]Experimental Pathology Laboratories, Inc., Research Triangle Park, NC; and [2]National Institute of Health Sciences, Research Triangle Park, NC. Sponsor: *J. Hardisty.*

#2715 **Poster Board Number P222**
Lung Tumor Incidence and Survival for CD-1 Mice: Comparison of 78 and 104 Week Studies in the Historical Data. *C.M. Lewis*. CalEPA, Sacramento, CA.

#2716 **Poster Board Number P223**
Evaluation of the Magnitude of the Age-Dependant Adjustment Factor (ADAF): A Kinetics-Based Case Study with Trichloroethylene and Vinyl Chloride. *M. Valcke*[2,3], H. Tohon[3], *A. Nong*[1], and *S. Haddad*[3]. [1]Health Canada, Ottawa, ON, Canada; [2]INSPQ, Montréal, QC, Canada; and [3]Université de Montréal, Montreal, QC, Canada.

#2717 **Poster Board Number P224**
An Evaluation of Transplacental Carcinogenesis for Human Health Risk Assessment. B. Foos[4], M. Mabson[2], *J. Rogers*[3], B. Sonawane[4], and *G. Ginsberg*[1]. [1]Connecticut Department of Health, Hartford, CT; [2]Oak Ridge Institute for Science, and Education, Washington, DC; [3]US Environmental Protection Agency, Research Triangle Park, NC; and [4]US Environmental Protection Agency, Washington, DC.

#2718 **Poster Board Number P225**
Interpretation of Fish Biomarker Data for Regulatory Identification, Classification and Testing of Endocrine Disrupting Chemicals. *Z.-C. Dang*, and C. Bodar. RIVM, Bilthoven, Netherlands.

#2719 **Poster Board Number P226**
Dosimetry for Silver Nanoparticle Exposure *In Vitro*. *K. Riaz Ahmed*, *A. Nagy*, S. Malghan, *P. Goering*, and *R. Brown*. CDRH, US FDA, Silver Spring, MD.

Abstract #

Wednesday Morning, March 16
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Biomarkers

Chairperson(s): *Michael Madden, US Environmental Protection Agency, Research Triangle Park, NC.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *9:30 AM–11:00 AM*

#2720 **Poster Board Number P227**
Effect of Aliskiren Nanoformulation on Rat Kidney Function. *D.E. Murrell*[2], H. Oakes[2], J. Coleman[1], A.V. Hanley[2], K.W. Bullins[2], G.A. Hanley[1], and S. Harirforoosh[2]. [1]East Tennessee State University, Johnson City, TN; and [2]Gatton College of Pharmacy East Tennessee State University, Johnson City, TN.

#2721 **Poster Board Number P228**
Increased Tubular Dysfunction and Injury Response Biomarkers in the Absence of Overt Clinical Nephrotoxicity in Cancer Patients Receiving Cisplatin Therapy. *B. George*[1,2], *X. Wen*[2], N. Johnston[3], M. Gomez[3], L. Ellison[3], *M.S. Joy*[3], and *L.M. Aleksunes*[2]. [1]Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ; [2]Rutgers University, Piscataway, NJ; and [3]University of Colorado, Aurora, CO.

#2722 **Poster Board Number P229**
Correlating Molecular Signatures and Histopathology to Identify Region Specific Lesions in Sub-Acute Drug Induced Kidney Injury. S. Dremier[1,3], P. De Ron[3], S. Snelling[2,3], P. Winlow[2,3], S. Glineur[3], and A. Nogueira da Costa[3]. [1]Euroscreen SA, Gosselies, Belgium; [2]Faculty of Biological Sciences, Leeds, United Kingdom; and [3]UCB Biopharma SPRL, Braine L'Alleud, Belgium. Sponsor: *J.-P. Valentin.*

#2723 **Poster Board Number P230**
Evaluation of Kidney Biomarker Luminex Assay Panels Using a Rat Cisplatin Model. T. Erkens, M. Byloos, N. Goeminne, A. Kegels, L. Lammens, and P. Vinken. Janssen R&D, a division of Janssen Pharmaceutica NV, Beerse, Belgium. Sponsor: *W. Coussement.*

#2724 **Poster Board Number P231**
Predictive Biomarkers for Screening the Drug-Induced Nephrotoxicity Using Co-Culture System. E.-H. Lee[1], S.-M. Park[1], M.-S. Dong[2], S. Yoon[1], and J.-H. Oh[1]. [1]Korea Institute of Toxicology, Daejeon, Korea, Republic of; and [2]Korea University, Seoul, Korea, Republic of. Sponsor: *J.-H. Oh.*

#2725 **Poster Board Number P232**
Serum Levels of the Organochlorine (OC) Compound DDE and Its Possible Association with Type 2 Diabetes (T2D) in Mississippians. *E.C. Meek*, J.A. Crow, *L.H. Mangum*, *M.K. Ross*, R.W. Wills, and *J.E. Chambers*. Center for Environmental Health Sciences, College of Veterinary Medicine, Mississippi State University, Mississippi State, MS.

Abstract #

#2726 **Poster Board Number P233**
Metabolomic Evaluation of Methionine and Choline Deficient Diet Induced NASH in Rat Reveals Altered Hepatic NAD Biosynthesis as a Possible Contributor to Disease Progression. D.M. Nelson, S. Stryker, S.-J. Chen, P. Shipkova, M. Reily, V. Bhaskaran, *U. Hanumegowda*, E. Janovitz, and *L.D. Lehman-McKeeman*. Bristol-Myers Squibb, Princeton, NJ.

#2727 **Poster Board Number P234**
Circulating Paracetamol Metabolites Accurately Predict Hepatotoxicity and Represent a New Clinical Toxicokinetic Biomarker Class. A.D. Vliegenthart[1], R. Kimmitt[1], J. Seymour[1], N.Z. Homer[1], M. Eddleston[1], A. Gray[1], *D.J. Antoine*[2], D.J. Webb[1], S.C. Lewis[1], D.N. Bateman[1], and J.W. Dear[1]. [1]University of Edinburgh, Edinburgh, United Kingdom; and [2]University of Liverpool, Liverpool, United Kingdom.

#2728 **Poster Board Number P235**
Fibrosis-Associated Protein and Gene Expression Patterns After Oral Hepatotoxicant Administration. B.C. McDyre[2], M.G. Permenter[1], W.E. Dennis[3], and D.L. Ippolito[3]. [1]Excet, Inc., Fort Detrick, MD; [2]ORISE, Fort Detrick, MD; and [3]United States Army Center for Environmental Health Research, Fort Detrick, MD. Sponsor: *J. Lewis.*

#2729 **Poster Board Number P236**
Genetic Determinants of Metabolism and Liver Weight Gain in a Multi-Strain Panel of Inbred Mice Exposed to Trichloroethylene for Four Weeks. Y.-A. Ahn[1], S. Lee[1], H. Park[1], O. Kosyk[3], D. Kim[1], *I. Rusyn*[2], and *S. Kim*[1]. [1]Seoul National University, Seoul, Korea, Republic of; [2]Texas A&M University, College Station, TX; and [3]University of North Carolina at Chapel Hill, Chapel Hill, NC. Sponsor: *S. Kim.*

#2730 **Poster Board Number P237**
Metabolome-Wide Association Study of Polychlorinated Biphenyls in Humans. S. Banton[2], P. Cirrilo[1], *D.I. Walker*[2], V. Tran[2], W. Hu[2], K.D. Pennell[3], *D.P. Jones*[2], B. Cohn[1], and S. Li[2]. [1]Center for Research on Women, and Children's Health, Berkeley, CA; [2]Emory University, Atlanta, GA; and [3]Tufts University, Medford, MA.

#2731 **Poster Board Number P238**
Drug-Induced Elevations of Plasma Bile Acids in Rats Not Associated with BSEP Inhibition. Y. Li[2], H. Duong[2], *M.J. Hafey*[1], R. Evers[1], *K. Vlasakova*[2], *A. Galijatovic-Idrizbegovic*[2], *F.D. Sistare*[2], and *W.E. Glaab*[2]. [1]Merck, Kenilworth, NJ; and [2]Merck, West Point, PA.

#2732 **Poster Board Number P239**
Thymic Stromal Lymphopoietin Induced by Protein and Chemical Allergens in Cultured Human Keratinocytes: A Potential Biomarker for Immediate-Type Hypersensitivity. Y. Kuroda[1,2], T. Yuki[1], Y. Takahashi[1], H. Sakaguchi[1], and *H. Itagaki*[2]. [1]Kao Corporation, Tochigi, Japan; and [2]Yokohama National University, Yokohama, Japan.

#2733 **Poster Board Number P240**
Adipocykine and Liver Injury Biomarker Assessment in Electronic Waste Recyclers. *K.C. Falkner*[3], *L. Birnbaum*[1], *A. Schecter*[3], *H. Clair*[3], and *M. Cave*[2,3]. [1]National Cancer Institute, Research Triangle Park, NC; [2]Robley Rex Veterans Affairs Medical Center, Louisville, KY; and [3]University of Louisville, Louisville, KY.

Abstract #

#2734 **Poster Board Number P241**
Investigating White Matter Hyperintensities in Pilots Using a Rat Hypobaric Exposure Model. M. Meade[2], A. Hoffmann[1,2], *J.M. Gearhart*[1,2], *N. Reo*[3], and *D.A. Mahle*[2]. [1]Henry M Jackson Foundation, Wright Patterson AFB, OH; [2]United States Air Force, Wright Patterson AFB, OH; and [3]Wright State University, Dayton, OH.

#2735 **Poster Board Number P242**
Influence of Selected Trace Metals on Plasma FSH, LH, E2 and Prolacting Levels in Women with Secondary Infertility Attending University College Hospital, Nigeria. *I.O. Omotosho*, and *O.A. Akinade*. University of Ibadan, Ibadan, Nigeria.

#2736 **Poster Board Number P243**
Skeletal Mn Across the Lifespan: Target and Biomarker. *C. Richardson*[4], S. Peter[3], J. Pacheco[2], S. Fendorf[2], R. Ritchie[1], N. Dave[1], *R. Lucchini*[3], and *D. Smith*[4]. [1]LBNL, Berkeley, CA; [2]Stanford, Palo Alto, CA; [3]University of Brescia, Brescia, Italy; and [4]University of California, Santa Cruz, CA.

#2737 **Poster Board Number P244**
***In Vitro* Bioassays and Chemical Analysis of Drinking Water from Source to Tap.** *J. Lundqvist*, R. Tröger, T. Le Godec, s. Ohlsson-Andersson, A.K. Rosenmai, L. Ahrens, K. Wiberg, and *A. Oskarsson*. Swedish University of Agricultural Sciences, Uppsala, Sweden.

#2738 **Poster Board Number P245**
Effect of Aneugens on Primary Ciliogenesis. K.V. Divi, *M.C. Poirier*, and *O.A. Olivero*. NIH, NCI, Bethesda, MD.

#2739 **Poster Board Number P246**
Influence of Genetic Markers on Exposure Assessment Models. K.Y. Sun, *J.E. French*, J. Boyer, and *L. Nylander-French*. University of North Carolina at Chapel Hill, Chapel Hill, NC. Sponsor: *L. Nylander-French.*

#2740 **Poster Board Number P247**
Antitumoral Monoclonal Antibodies (mAB): Biomarkers for Efficacy and Safety. E. Giannotti, M. Magistrelli, G. Pennella, F. Fiorentini, C. Arrigoni, and *C.I. Bernardi*. Accelera Srl, Nerviano Milano, Italy.

#2741 **Poster Board Number P248**
Anti-Factor Xa: A Surrogate Marker in the Preclinical Assessment of Low Molecular Weight Heparins (LMWHs). F. Mancari, L. Nobili, D. Lamparelli, *C.I. Bernardi*, and C. Arrigoni. Accelera Srl, Nerviano Milano, Italy.

#2742 **Poster Board Number P249**
***N*[6]-Formyllysine as a Biomarker of Formaldehyde Exposure in Non-Human Primates.** B. Edrissi[2], K. Taghizadeh[2], *R. Yu*[3], *B. Moeller*[1], *D. Kracko*[1], *M. Doyle-Eisele*[1], *J.A. Swenberg*[3], and *P.C. Dedon*[2]. [1]Lovelace Respiratory Research Institute, Albuquerque, NM; [2]Massachusetts Institute of Technology, Cambridge, MA; and [3]University of North Carolina, Chapel Hill, NC.

#2743 **Poster Board Number P250**
Dual Regulation of Calcineurin Activity Following Lymphocyte Activation: Involvement of an Endogenous Mechanism and Contribution to Cyclosporine-Induced Toxicity. C. Lena[2], L. Herry[2], C. Tomkiewicz-Raulet[2], *R. Barouki*[1,2], and S. Sanquer[1,2]. [1]Hôpital Necker-Enfants malades, Paris, France; and [2]Paris Descartes University, Paris, France.

Abstract #

#2744 **Poster Board Number P251**
Imposex in *Stramonita haemastoma* from Coastal Sites of Cartagena, Colombia. *L. Sierra-Marquez*, J. Sierra-Marquez, and *J. Olivero-Verbel*. University of Cartagena, Cartagena, Colombia.

#2745 **Poster Board Number P252**
A Highly Sensitive and Stable Biomarker of Oxidative Stress. *T. Shimomoto*, L. Collins, X. Yi, and J. Nakamura. University of North Carolina at Chapel Hill, Chapel Hill, NC.

Wednesday Morning, March 16
9:30 AM to 12:45 PM
CC Exhibit Hall

PS

Poster Session: Pharmacogenetics/Genetic Polymorphisms

♦ Molecular Toxicology: Mechanistic Insights and Hazard Assessment

Chairperson(s): *Baitang Ning, National Center for Toxicological Research, US Food and Drug Administration, Jefferson, AR.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *11:15 AM–12:45 PM*

#2746 **Poster Board Number P301**
The Role of Micrornas in Regulation of Drug Metabolizing Enzymes and Transporters. *B. Ning*[2], D. Yu[2], W. Tolleson[2], B. Knox[2], Y. Guo[1], Y. Jin[1], S. Kadlubar[3], *I. Pogribny*[2], and *J. Fuscoe*[2]. [1]Beijing Children's Hospital, Capital Medical University, Beijing, China; [2]NCTR/US FDA, Jefferson, AR; and [3]University of Arkansas for Medical Sciences, Little Rock, AR. Sponsor: *B. Ning.*

#2747 **Poster Board Number P302**
MicroRNA Hsa-miR-25-3p Suppresses CYP2B6 in Human Liver Cells. D. Yu[2], Y. Jin[1], *W. Tolleson*[2], B. Knox[2], Y. Guo[1], S. Chen[2], *L. Guo*[2], and B. Ning[2]. [1]Beijing Children's Hospital, Beijing, China; and [2]National Center for Toxicological Research, Jefferson, AR. Sponsor: *B. Ning.*

#2748 **Poster Board Number P303**
Polymorphisms and Expressions of GSTM1 and GSTT1 in Human Non Small Cell Lung Cancer. *M. Iscan*[2], M. Kilic[2], A.O. Ada[2], S. Oguztuzun[4], F. Demirag[1], S. Celik[5], and P. Bicakcioglu[3]. [1]Ankara Chest Diseases, and Thoracic Surgery Training, and Research Hospital, Ankara, Turkey; [2]Ankara University, Ankara, Turkey; [3]Ataturk Chest Diseases, and Thoracic Surgery Training, and Research Hospital, Ankara, Turkey; [4]Kirikkale University, Ankara, Turkey; and [5]Yildiz Technical University, Istanbul, Turkey.

#2749 **Poster Board Number P304**
Maternal Genotype for Arsenic (+3 Oxidation State)-Methyltransferase Influences Inorganic Arsenic Metabolism and Newborn Birth Outcomes. *Z. Drobna*[2], E. Martin[2], K.S. Kim[2], M. Ruio-Andrade[1], *G.G. García-Vargas*[1], *M. Stýblo*[2], and *R.C. Fry*[2]. [1]Universidad Juarez del Estado de Durango, Gómez Palacio, Durango, Mexico; and [2]University of North Carolina at Chapel Hill, Chapel Hill, NC. Sponsor: *R. Fry.*

#2750 **Poster Board Number P305**
FDALabel Database: A Rich Resource for Study of Pharmacogenomics Biomarkers in Advancing Drug Safety and Precision Medicine. H. Fang, J. Xu, Z. Liu, Y. Liu, S. Harris, S. Thakkar, G. Zhou, G. Zhang, *P. Howard*, and *W. Tong*. National Center for Toxicological Research, US Food and Drug Administration, Jefferson, AR.

Abstract #

#2751 **Poster Board Number P306**
Quantification and Genetic Components of Synergistic Interactions among Anticancer Drugs in Lymphoblastoid Cell Lines. K.R. Roell[2], T.M. Havener[3], J.R. Jack[2], H.L. McLeod[1], *D.M. Reif*[2], and A.A. Motsinger-Reif[2]. [1]Moffitt Cancer Center, Tampa, FL; [2]North Carolina State University, Raleigh, NC; and [3]University of North Carolina at Chapel Hill, Chapel Hill, NC.

#2752 **Poster Board Number P307**
Deletion of Catalase in C57BL/6 Mice Results in Obese Phenotype and Metabolic and Morphologic Changes. *C. Heit*[1], S. Marshall[2], G. Charkoftaki[2], D. Orlicky[1], *K. Fritz*[1], and *V. Vasiliou*[2]. [1]University of Colorado, Aurora, CO; and [2]Yale University, New Haven, CT.

#2753 **Poster Board Number P308**
Genetic Background Plays a Role in Risk of Zileuton-Induced Liver Injury in Diversity Outbred Mice. *L.E. Lyn-Cook*[2], *D. Gatti*[1], *G. Churchill*[1], and *A. Harrill*[2]. [1]The Jackson Laboratory, Bar Harbor, ME; and [2]University of Ark for Medical Sciences, Little Rock, AR.

#2754 **Poster Board Number P309**
RNA-Seq Reveals Age- and Species- Differences of CAR in Regulating the Drug-Processing Genes in Liver. *S.L. Cheng*. University of Washington, Seattle, WA. Sponsor: *J.Y. Cui.*

Wednesday Morning, March 16
9:30 AM to 12:45 PM
CC Exhibit Hall

PS

Poster Session: Nanotoxicology: *In Vitro*

Chairperson(s): *Jonathan Shannahan, University of Colorado, Aurora, CO.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *9:30 AM–11:00 AM*

#2755 **Poster Board Number P310**
Toxicological Assessment of Multi-Walled Carbon Nanotubes *In Vitro*: Potential Mitochondria Effects on Male Reproductive Cells. *A. Gu.* School of Public Health, Nanjing Medical University, Nanjing, China.

#2756 **Poster Board Number P311**
Unique Nanoparticle Optical Properties Confound Fluorescent Based Assays Widely Employed in Their *In Vitro* Toxicity Screening and Ranking. *K. Dreher*[2], and W. Polk[1]. [1]University of North Carolina at Chapel Hill, Chapel Hill, NC; and [2]US Environmental Protection Agency, Research Triangle Park, NC.

#2757 **Poster Board Number P312**
Toxicity Study of Mycosynthesised Silver Nanoparticles on Pseudomonas Putida. I.R. Gupta[1], A.J. Anderson[3], and M.K. Rai[2]. [1]Institute of Science, Aurangabad, India; [2]S. G.B. Amravati University, Amravati, India; and [3]Utah State University, Logan, UT. Sponsor: *U. Apte.*

#2758 **Poster Board Number P313**
Differential Genotoxicity Mechanisms of Silver Nanoparticles and Silver Ions. *T. Chen*[2], *Y. Li*[2], T. Qin[2], T. Ingle[2], J. Yan[2], W. He[1], and J.-J. Yin[1]. [1]US FDA/CFSAN, College Park, MD; and [2]US FDA/NCTR, Jefferson, AR.

Abstract #

#2759 **Poster Board Number P314**
RBCs as Surrogates for Studying Lysosomal-Nanoparticle Interactions and Nanoparticle Toxicity. L. Fisch. Montana State University, Bozeman, MT. Sponsor: *A. Holian.*

#2760 **Poster Board Number P315**
The Effect of Protein Corona Formation on the Intracellular Uptake Profiles of Gold Nanoparticles in Human Primary Vascular Endothelial Cells. P. Chandran, and *N.A. Monteiro-Riviere*. Kansas State University, Manhattan, KS.

#2761 **Poster Board Number P316**
Investigation on the Toxicity of Bismuth Oxide Nanoparticles in HepG2 Cell Line. E. Öztas, M. Abudayyak, M. Arıcı and *G. Özhan*. Istanbul University, Istanbul, Turkey.

#2762 **Poster Board Number P317**
Silver Nanoparticles Induce Pyroptosis by NLRP3-Inflammasome Dependent Caspase-1 Activation in Macrophages. *A. Mishra*, *G. Kumar*, and *P.L. Goering*. US FDA, Silver Spring, MD.

#2763 **Poster Board Number P318**
Carbon Nanodots Interference with Lactate Dehydrogenase Assay in Human Monocyte THP-1 Cells. P.C. Wright[2], H. Qin[1], M.M. Choi[1], N.H. Chiu[2], and *Z. Jia*[2]. [1]Hong Kong Baptist University, Kowloon Tong, Hong Kong; and [2]University of North Carolina at Greensboro, Greensboro, NC.

#2764 **Poster Board Number P319**
Effect of Acute and Chronic Silver Nanoparticle (AgNP) Exposure on Osteogenic Differentiation of Human Bone Marrow Stromal Cells (HBMSCs). A. Nguyen[2], R. Patel[1], B.J. Casey[3], *P.L. Goering*[3], R. Narayan[2], and *G. Kumar*[3]. [1]UMBC, Baltimore, MD; [2]UNC/NCSU, Raleigh, NC; and [3]US FDA, Silver Spring, MD.

#2765 **Poster Board Number P320**
***In Vitro* Dosimetry of Ag Nanoparticles: ICP-MS, Flow Cytometry and the *In Vitro* Sedimentation, Diffusion and Dosimetry Model (ISDD).** *J.N. Ortenzio*[1,2], L.L. Degn[3], J.R. McGee[3], R.M. Zucker[3], and *W.K. Boyes*[3]. [1]Duke University, Durham, NC; [2]Oak Ridge Institute for Science, and Education, Durham, NC; and [3]US EPA, Research Triangle Park, NC.

#2766 **Poster Board Number P321**
Impact of the Protein Corona on the Blood Compatibility Profile of Gold Nanoparticles. *A. Sasidharan*, and *N.A. Monteiro-Riviere*. Kansas State University, Manhattan, KS.

#2767 **Poster Board Number P322**
The Protein Corona Alters Silver Nanoparticle-Induced Endothelial Cell Endoplasmic Stress. I. Persaud, *J.H. Shannahan*, and *J.M. Brown*. University of Colorado, Denver, CO. Sponsor: *J. Brown.*

#2768 **Poster Board Number P323**
Evidence for Involvement of the NLRP3 Inflammasome in the Dose-Dependent Oxidative DNA Damage Induced by PVP- and BPEI-Coated Silver Nanoparticles in THP-1 Monocytes. *W. Ding*, and L. Lyn-Cook. US FDA/National Center for Toxicological Research, Jefferson, AR.

Abstract #

#2769 **Poster Board Number P324**
Assessment of Nanoparticle Toxicity in the Context of Virus Infection. S. Agnihothram, L. Mullis, *Y. Zhang*, T.A. Townsend, *M. Manjanatha*, and M. Azevedo. National Center for Toxicological Research, Jefferson, AR.

#2770 **Poster Board Number P325**
Cytotoxic Effects Induced by Titanium Dioxide Aerosol Nanoparticles. J.J. Kim. Sungkyunkwan University, Seoul, Korea, Democratic People's Republic of. Sponsor: *D.Y. Shin.*

#2771 **Poster Board Number P326**
Toxicity of Nano- and Ionic Silver to Embryonic Stem Cells—A Comparative Toxicogenomic Study. *X. Gao*, V.D. Topping, Z. Keltner, R.L. Sprando, and *J.J. Yourick*. US Food and Drug Administration, Laurel, MD.

#2772 **Poster Board Number P327**
Assessing Genotoxicity of Iron Oxide Nanoparticles within an *In Vitro* Liver 3D Model. J. de Oliveira Mallia[1,2], N. Singh[2], S. Bohic[1], U.-K. Shah[2], G. Jenkins[2], and S. Doak[2]. [1]Grenoble Institut des Neurosciences, Grenoble, France; and [2]Institute of Life Sciences, Swansea, United Kingdom. Sponsor: *G. Johnson.*

#2773 **Poster Board Number P328**
Genotoxicity of Pristine, Heat-Treated, and Nitrogen-Doped Multi-Walled Carbon Nanotubes at Occupationally Relevant Doses. *K. Siegrist*[1], *S. Reynolds*[1], *R. Mercer*[1], *D. Porter*[1], D. Lowry[1], *L. Cena*[1], M. Kashon[1], J. Salisbury[2], *J. Mastovich*[4], *K. Bunker*[4], *M. Sparrow*[4], *S. Tsuruoka*[5], *M. Endo*[5], M. Terrones[3], M. McCawley[6], and *L. Sargent*[1]. [1]CDC/NIOSH, Morgantown, WV; [2]Mayo Clinic, Rochester, MN; [3]Pennsylvania State University, State College, PA; [4]RJ Lee Group, Monroeville, PA; [5]Shinshu University, Nagano, Japan; and [6]West Virginia University, Morgantown, WV.

#2774 **Poster Board Number P329**
Size and Crystal Structure Dependent Inhibition of Human Mesenchymal Stem Cell Adipogenic Differentiation by Nanoscale Titanium Dioxide. J. Yao[1,2], Y. Jones[2], W. Monroe[2], J. Collins[2], *P. Howard*[2], A.K. Patri[2], and *Y. Zhang*[2]. [1]US FDA Commissioner's Fellowship Program, Jefferson, AR; and [2]NCTR/ORA Nanotechnology Core Facility, Jefferson, AR.

#2775 **Poster Board Number P330**
***In Vitro* Toxicity of Tio2 Nanoparticles Immobilized on Clay to Human Hepatic Cells.** M.J. Bessa[4], J.J. Reinosa[2], J. Fernández[2], M. Bañares[1], J.P. Teixeira[3,4], and C. Costa[3,4]. [1]Catalytic Spectroscopy Laboratory, Instituto de Catálisis y Petroleoquímica, CSIC, Madrid, Spain; [2]Electroceramic Department, Instituto de Cerámica y Vidrio, CSIC, Madrid, Spain; [3]EPIUnit-Institute of Public Health, University of Porto, Porto, Portugal; and [4]Portuguese National Institute of Health, Porto, Portugal. Sponsor: *E. Coskun.*

#2776 **Poster Board Number P331**
Effects of Zinc Oxide Nanomaterials on the Cellular Responses in THP-1 Cells. A. Miyajima-Tabata, T. Kawakami, K. Komoriya, R. Kato, S. Niimi, and K. Isama. National Institute of Health Sciences, Tokyo, Japan. Sponsor: *A. Hirose.*

Abstract #

#2777 **Poster Board Number P332**
Induction of the Epithelial-Mesenchymal Transition by Zinc Oxide Nanoparticles. J.J. Kim. Sungkyunkwan University, Seoul, Korea. Sponsor: *D.Y. Shin*.

#2778 **Poster Board Number P333**
Nanosafety Assessment of TiO2 Nanoparticle-Embedded Cosmeceutical Nanotoxicity on Human Skin and Lung Cells. H. Lee[2], C.-W. Lee[1], *H. Kim*[2], *K. Lee*[3], and *J. Kim*[4]. [1]Boditech Med Inc., Chuncheon, Korea, Republic of; [2]Detroit R&D, Inc, Detroit, MI; [3]Korea Institute of Toxicology, Daejeon, Korea, Republic of; and [4]Northeastern University, Boston, MA. Sponsor: *H. Kim*.

#2779 **Poster Board Number P334**
Evaluating the Cytotoxic Effects of Cellulose Nanocrystals (CNCs) Using Autobioluminescent Yeast and Human Cells. J. Burchett, *T. Xu*, G. Sayler, and *S. Ripp*. The University of Tennessee Knoxville, Knoxville, TN. Sponsor: *S. Ripp*.

#2780 **Poster Board Number P335**
Hydroxyl Radical Generation and Cytotoxicity of Zinc Nanoparticles in RAW 264.7 Cells. A. Morris[1], A. Stefaniak[1], *K. Dunnick*[3], *M. Badding*[2], and S. Leonard[1]. [1]CDC/NIOSH, Morgantown, WV; [2]Exponent, Washington, DC; and [3]The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#2781 **Poster Board Number P336**
ZnO Nanoparticle Ingestion Alters Intestinal Epithelial Function. F. Moreno Olivas[1], E. Tako[2], and *G. Mahler*[1]. [1]Binghamton University, Binghamton, NY; and [2]US Department of Agriculture, Ithaca, NY.

#2782 **Poster Board Number P337**
An Evaluation of Genotoxicity from As-Produced and Post-Production Modification of Multi-Walled Carbon Nanotubes. *K. Siegrist*[1], *S. Reynolds*[1], C. Mitchell[3], D. Lowry[1], M. Kashon[1], L. Bishop[1], *A. Erdely*[1], *J. Bonner*[2], G. Parsons[2], C. McClure[2], and *L. Sargent*[1]. [1]CDC/NIOSH, Morgantown, WV; [2]North Carolina State University, Raleigh, NC; and [3]West Virginia University, Morgantown, WV.

#2783 **Poster Board Number P338**
Nano-Ferric Oxide Induced Neoplastic-Like Transformation in a Human Primary Cell Model: Iron Homeostasis Disruption? *T.A. Stueckle*[2], *D.C. Davidson*[2], R. Derk[2], P. Demokritou[1], T. Kornberg[2], D. Schwegler-Berry[2], and L. Wang[2]. [1]Harvard School of Public Health, Boston, MA; and [2]National Institute for Occupational Safety, and Health, Morgantown, WV.

#2784 **Poster Board Number P339**
Vacuole Formation and Caspase-Dependent Apoptosis in Human Monocytes Caused by Exposure to Titanate Nanosheet. *Y. Nishimura*, D. Yoshioka, S. Lee, N. Kumagai-Takei, H. Matsuzaki, K. Yoshitome, and *T. Otsuki*. Kawasaki Medical School, Kurashiki, Japan.

#2785 **Poster Board Number P340**
Toxicological Evaluation of Cobalt Oxide Nanoparticles on HepG2. *G. Ozhan*, M. Abudayyak, and T. Altincekic Gurkaynak. Istanbul University, Istanbul, Turkey.

Abstract #

#2786 **Poster Board Number P341**
Surface Reactivity and Cell-Particle Bio-Interactions Explain the Precocious Cytotoxicity of Copper Oxide Nanoparticles. E. Moschini, and P. Mantecca. University of Milano Bicocca, Milan, Italy. Sponsor: *K. Savolainen*.

#2787 **Poster Board Number P342**
Carbon Nanoparticles Modulate Viral Infectivity: A Role for Sialic Acid Receptors. S. Hentschel, H. Chen, J. Loeb, J. Lednicky, and *T. Sabo-Attwood*. University of Florida, Gainesville, FL.

#2788 **Poster Board Number P343**
Optimization of an Air-Liquid Interface Exposure System for Assessing Toxicity of Airborne Nanoparticles. S.I. Latvala[4], J. Hedberg[3], L. Möller[1], I. Odnevall Wallinder[3], H.L. Karlsson[2], and K. Elihn[4]. [1]Karolinska Institutet, Huddinge, Sweden; [2]Karolinska Institutet, Stockholm, Sweden; [3]KTH Royal Institute of Technology, Stockholm, Sweden; and [4]Stockholm University, Stockholm, Sweden. Sponsor: *I. Ali*.

#2789 **Poster Board Number P344**
***In Vitro* Percutaneous Penetration of Branched Polyethyleneimine (bPEI) and Polyethylene Glycol (PEG) Coated Silver Nanoparticles (AgNPs) into Human Skin: A Mass Balance Study.** V.D. Topping, Z.M. Keltner, R.L. Sprando, *J.J. Yourick*, and *M.E. Kraeling*. Office of Applied Research, and Safety Assessment, US FDA, Laurel, MD.

#2789a **Poster Board Number P345**
Cerium Oxide Nanoparticles Suppress Differentiation of Murine Neuronal Stem Cells. A.R. Gliga[1], K. Edoff[1], F. Caputo[2], T. Källman[3], H.L. Karlsson[1], L. Ghibelli[2], E. Traversa[2], S. Ceccatelli[1], and *B. Fadeel*[1]. [1]Karolinska Institutet, Stockholm, Sweden; [2]University of Rome Tor Vergata, Rome, Italy; and [3]Uppsala University, Uppsala, Sweden.

Wednesday Morning, March 16
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Nanotoxicology: *In Vivo*

Chairperson(s): *Arno C. Gutleb, Luxembourg Institute of Science and Technology, Esch-sur-Alzette, Luxembourg.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *11:15 AM–12:45 PM*

#2790 **Withdrawn.**

#2791 **Poster Board Number P346**
Brain Inflammation and Blood Brain Barrier Disruption After Sub-Acute Inhalation Exposure to Titanium Dioxide Nanoparticle Aerosol in Aging Rats. C. Disdier[1], M. Chalansonnet[3], F. Gagnaire[3], L. Gate[3], F. Cosnier[3], J. Devoy[3], W. Saba[3], E. Brun[4], *A. Lund*[2], and A. Mabondzo[1]. [1]CEA, Gif sur Yvette, France; [2]Department of Biological Sciences, Texas, TX; [3]INRS, Nancy, France; and [4]Laboratoire de Chimie Physique, UMR 1023, Orsay, France.

Abstract #

#2792 **Poster Board Number P347**
TMAT-AuNP Core Size Is Inversely Correlated to Toxicity in the Zebrafish Embryo. *M.A. Garland*[1], *L. Truong*[1], *T. Zaikova*[3], *J.E. Hutchison*[3], *K. Kim*[2], and *R.L. Tanguay*[1]. [1]Oregon State University, Corvallis, OR; [2]Seoul National University of Science, and Technology, Seoul, Korea, Republic of; and [3]University of Oregon, Eugene, OR.

#2793 **Poster Board Number P348**
Effects of Prenatal Inhalation of Copper Nanoparticles on Murine Dams and Offspring. A. Adamcakova-Dodd, M.M. Monick, L.S. Powers, K.N. Gibson-Corley, and *P.S. Thorne*. University of Iowa, Iowa City, IA.

#2794 **Poster Board Number P401**
Biochemical and Histopathological Evaluation of PEG-Coated and Uncoated Gold Nanoparticles in Sprague-Dawley Rats. *A. Patlolla*, and *P. Tchounwou*. Jackson State University, Jackson, MS.

#2795 **Poster Board Number P402**
Toxic Effects of Oral Exposure to Silver Nanoparticles in Rats. T. Garcia, D. Lafuente, J. Blanco, M. Gómez, D.J. Sánchez, and *J.L. Domingo*. Universitat Rovira i Virgili, Reus, Spain.

#2796 **Poster Board Number P403**
Toxicity Assessment of Model Chemical Mechanical Planarization Slurries Using *Daphnia magna*. S. Karimi, R.-H. Wang, P. Pantano, and *R. Draper*. The University of Texas at Dallas, Richardson, TX.

#2797 **Poster Board Number P404**
Mixture Effects of Titanium Dioxide Nanoparticles and Bisphenol A on Toxicity to Developing Zebrafish. L. Denluck, Z. Klocke, and *S. Harper*. Oregon State University, Corvallis, OR.

#2798 **Poster Board Number P405**
The Role of Inflammasome in Pulmonary Injury Caused by Inhalation Exposure to Tungsten (IV) Oxide (WO_3) Nanoparticles in Golden Syrian Hamsters. M. Prajapati, and *J.M. Cerreta*. St. John's University, Queens, NY.

#2799 **Poster Board Number P406**
Differential Effects of Silver Nanoparticles (AgNP) and Silver Acetate (AgOAc) on the Accumulation, Distribution, and Potential Toxicity of Silver in Rats Following Daily Oral Administration for 13-Weeks. *M.D. Boudreau*[1], M.S. Imam[1], A.M. Paredes[1], M.S. Bryant[1], R.P. Felton[1], C.K. Cunningham[1], M.Y. Jones[1], K.J. Davis[2], and G.R. Olson[2]. [1]National Center for Toxicological Research, US Food and Drug Administration, Jefferson, AR; and [2]Toxicologic Pathology Associates, Jefferson Laboratories, Jefferson, AR. Sponsor: *M. Boudreau.*

#2800 **Poster Board Number P407**
Effects of Pre-Exposure Dispersion Status on Nanoparticle Distribution and Fibrosis in the Lung. *T.M. Sager*[1,2], M. Wolfarth[1], *D.W. Porter*[1], *R. Mercer*[1], *V. Castranova*[3], and *A. Holian*[2]. [1]NIOSH, Morgantown, WV; [2]University of Montana, Missoula, MT; and [3]West Virginia University, Morgantown, WV.

#2801 **Poster Board Number P408**
Inhaled TiO_2 Nanoparticles Induce Morphologic and Biochemical Changes in the Lungs of Golden Syrian Hamsters. O.O. Adebolu, and *J.M. Cerreta*. St. John's University, Queens, NY.

Abstract #

#2802 **Poster Board Number P409**
Effect of Ascorbic Acid Pretreatment on Brain Perivascular Injury Induced by Prenatal Exposure to Carbon Black Nanoparticle in Mice. *A. Onoda*[1,2], *K. Takeda*[2], and *M. Umezawa*[2]. [1]JSPS Research Fellow, Tokyo, Japan; and [2]Tokyo University of Science, Chiba, Japan. Sponsor: *K. Nohara.*

#2803 **Poster Board Number P410**
Exposure to Respirable Biodiesel/Diesel Blend (BD50) Exhaust Particulate Generates Pronounced Aberrations in Male Reproductive System. E.R. Kisin[1], *N. Yanamala*[1], M.T. Farcas[1], D.W. Gutkin[4], M.R. Shurin[4], *V.E. Kagan*[3], A.D. Bugarski[2], and *A.A. Shvedova*[1,5]. [1]NIOSH, Morgantown, WV; [2]NIOSH, Pittsburgh, PA; [3]University of Pittsburgh, Pittsburgh, PA; [4]UPMC, Pittsburgh, PA; and [5]WVU, Morgantown, WV.

#2804 **Poster Board Number P411**
Genotoxic Effects of Cobalt Nanoparticles *In Vivo*. *Y. Mo*[3], R. Wan[1], Y. Zhang[3], A. Gu[2], D. Tollerud[3], and *Q. Zhang*[3]. [1]Fujian Medical University, Fuzhou, China; [2]Nanjing Medical University, Nanjing, China; and [3]University of Louisville, Louisville, KY.

#2805 **Poster Board Number P412**
Effects of Different Sizes of Silver Nanoparticles on *Gammarus fossarum* (Crustacea, Amphipoda): Link Between Physiological and Behavioural Responses. *A.C. Gutleb*[2], K. Mehennaoui[2], A. Georgantzopoulou[2,3], S. Cambier[2], G. Maël[4], J. Andreï[4], V. Felten[4], T. Serchi[2], S. Contal[2], J. Ziebel[2], C. Guignard[2], Y. Balachandran[1], S. Pain-Devin[4], and L. Giambérini[4]. [1]Bharathiar University, Coimbatore, India; [2]Luxembourg Institute of Science, and Technology, Esch-sur-Alzette, Luxembourg; [3]NIVA, Oslo, Norway; and [4]University Lorraine, Metz, France.

#2806 **Poster Board Number P413**
Evaluation of the Adjuvant Effects of Transcutaneously Exposed Silver Nanoparticles with Different Size in Mouse Model. Y.-M. Cho[1], Y. Mizuta[1], T. Toyoda[1], J.-i. Akagi[1], T. Hirata[1,2], R. Adachi[1], Y. Kimura[1], T. Nishimaki-Mogami[1], and *K. Ogawa*[1]. [1]National Institute of Health Sciences, Tokyo, Japan; and [2]School of Pharmacy, Showa University, Tokyo, Japan.

#2807 **Withdrawn.**

#2808 **Poster Board Number P415**
Pulmonary Toxicity and Mortality in Mice After Intratracheal Instillation of ZnO Nanoparticles in Three Laboratories. N.R. Jacobsen[3], T. Stoeger[1], S. van den Brule[5], A.T. Saber[3], A. Beyerle[1], G. Vietti[5], A. Mortensen[4], J. Szarek[7], A. Kermanizadeh[6], A. Banerjee[2], N. Ercal[2], U. Vogel[3], H. Wallin[3], and *P. Møller*[6]. [1]Helmholtz Zentrum München, Munich, Germany; [2]Missouri University of Science, and Technology, Rolla, MO; [3]National Research Centre for the Working Environment, Copenhagen, Denmark; [4]Technical University of Denmark, Søborg, Denmark; [5]Université catholique de Louvain, Brussels, Belgium; [6]University of Copenhagen, Copenhagen, Denmark; and [7]University of Warmia, and Mazury in Olsztyn, Olsztyn, Poland.

Abstract #

#2809 **Poster Board Number P416**
Gene Expression Change in the Frontal Cortex with Perivascular Damage Induced by Prenatal Exposure to Carbon Black Nanoparticle in Mice. M. Umezawa[2], A. Onoda[1,2], and K. Takeda[2]. [1]JSPS Research Fellow, Tokyo, Japan; and [2]Tokyo University of Science, Noda, Chiba, Japan. Sponsor: *K. Nohara.*

#2810 **Poster Board Number P417**
Surface Modifications of Silica Nanoparticles Affect Their Uptake by the Cells and Subsequent Pulmonary Toxicity. S. Vranic[3,4,5], *S. Ichihara*[2], W. Wu[3], E. Watanabe[4], A. Hayashida[4], Y. Osada[4], T. Sakurai[4], S. Boland[6], L. Tran[1], and *G. Ichihara*[3,4]. [1]Institute of Occupational Medicine, Edinburgh, United Kingdom; [2]Mie University, Tsu, Japan; [3]Nagoya University Graduate School of Medicine, Nagoya, Japan; [4]Tokyo University of Science, Noda, Japan; [5]University of Manchester, Manchester, United Kingdom; and [6]University of Paris VII Diderot, Paris, France.

#2811 **Poster Board Number P418**
Single-Walled Carbon Nanotubes Suppress the Pulmonary Immune Response and Increase Viral Infectivity of Exposed Mice. H. Chen, X. Zheng, J. Nicholas, J.C. Loeb, *J.H. Bisesi*, S. Robinson, J.A. Lednicky, and *T. Sabo-Attwood*. University of Florida, Gainesville, FL. Sponsor: *T. Sabo-Attwood.*

#2812 **Poster Board Number P419**
Adverse Effect of Titanium Dioxide Nanoparticle on Testicular Function. *N. Miura*, and K. Ohtani. Japan National Institute of Occupational, and Health, Kawasaki, Japan. Sponsor: *N. Miura.*

#2813 **Poster Board Number P420**
***In Vitro* Cytotoxicity and Genotoxicity Studies of Titanium Dioxide (TiO2) Nanoparticles.** M.A. Karakaya, O.C. Ulker, A. Ustundag, C.O. Yalcin, and Y. Duydu. Ankara University, Faculty of Pharmacy, Ankara, Turkey. Sponsor: *A.E. Karakaya.*

#2814 **Poster Board Number P421**
Toxicity of Differently Charged and Sized Silver Nanoparticles to Human Alveolar Epithelial Cells A549 and Yeast *Saccharomyces cerevisiae* BY4741: Particle-Cell Interactions. K. Kasemets[1,2], A. Kahru[1], and P. Mantecca[2]. [1]National Institute of Chemical Physics, and Biophysics, Tallinn, Estonia; and [2]University of Milano Bicocca, Milano, Italy. Sponsor: *K. Savolainen.*

#2815 **Poster Board Number P422**
Toxicological Response of Healthy and Asthmatic 3D *In Vitro* Airway Model to CuO Particles at the Air-Liquid Interface. I.M. Kooter[1], M. Grollers[2], E. Duistermaat[3], and F. Kuper[2]. [1]TNO, Utrecht, Netherlands; [2]TNO, Zeist, Netherlands; and [3]TNO Triskelion BV, Zeist, Netherlands. Sponsor: *R. Woutersen.*

#2816 **Poster Board Number P423**
Effects of Nano-Sized Titanium Dioxide on the Adhesion of Monocytes to Endothelial Cells. *S. Ichihara*[1], Y. Suzuki[1], E. Watanabe[2], Y. Osada[2], A. Hayashida[2], T. Furutani[1], K. Izuoka[1], and *G. Ichihara*[2]. [1]Mie University, Tsu, Japan; and [2]Tokyo University of Science, Noda, Japan.

Abstract #

#2817 **Poster Board Number P424**
Maternal Engineered Nanomaterial Inhalation During Gestation Alters the Fetal Transcriptome. *C.E. Nichols*, J.M. Hollander, K. Engels, C.R. McBride, J. Yi, D.L. Shepherd, *A.B. Abukabda*, *P.A. Stapleton*, and *T.R. Nurkiewicz*. West Virginia University, Morgantown, WV.

#2818 **Poster Board Number P425**
Instillation of Different Aspect Ratios of Carboxylated MWCNT Yield Similar Vascular Contraction and Relaxation Responses in Male and Female Sprague Dawley Rats. *C.J. Wingard*[1], J. Odom[1], *N.A. Holland*[1], *T.R. Fennell*[2], and J. Volkan[1]. [1]East Carolina University, Greenville, NC; and [2]RTI International, Research Triangle Park, NC.

#2819 **Poster Board Number P426**
Impact of Instilled MWCNT Aspect Ratio on Coronary Artery Responses and Cardiac Ischemia-Reperfusion Injury in Male Sprague Dawley Rats. *N.A. Holland*[1], J. Volkan[1], J. Odom[1], *T.R. Fennell*[2], and *C.J. Wingard*[1]. [1]East Carolina University, Greenville, NC; and [2]RTI International, Research Triangle Park, NC.

#2819a **Poster Board Number P427**
Effect to Titanium Dioxide Food Grade (E171) in a Colorectal Carcinogenesis Murine Model. L.G. Garduño-Balderas, I.M. Urrutia-Ortega, and *Y.I. Chirino*. UNAM, Estado de Mexico, Mexico.

Wednesday Morning, March 16
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Cardiovascular Toxicology

Chairperson(s): *Deidre A. Dalmas, GlaxoSmithKline, Collegeville, PA.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *9:30 AM–11:00 AM*

#2820 **Poster Board Number P431**
Nano-Titanium Dioxide Exposure Differentially Affects Segmental Vascular Reactivity. *A.B. Abukabda*, *P.A. Stapleton*, and *T.R. Nurkiewicz*. West Virginia University, Morgantown, WV.

#2821 **Poster Board Number P432**
Upregulation of Cell Adhesion Molecules by Doxorubicin in Rat H9c2 Myocardial Cells. *Z. Jia*[2], *R. Chitrakar*[2], P. Nallasamy[2], H. Bibi[2], *K. Traore*[1], *H. Zhu*[1], and *Y.R. Li*[1]. [1]Campbell University School of Osteopathic Medicine, Buies Creek, NC; and [2]University of North Carolina at Greensboro, Greensboro, NC.

#2822 **Poster Board Number P433**
Establishment of Cell Based Model for Studying Human Angiotensinogen Gene Regulation After Xenobiotics. C.M. Menezes[1], and *R.A. Ansari*[2]. [1]Federal University of Bahia (UFBA), Tv. Barão de Jeremoabo, Ondina, Salvador, Bahia, Brazil; and [2]Nova Southeastern University, Fort Lauderdale, FL.

#2823 **Poster Board Number P434**
Oleic Acid Exposure of Cultured Endothelial Cells Alters Lipid Mediator Production. *V. Bass*[1], and *M. Madden*[2]. [1]University of North Carolina-Chapel Hill, Chapel Hill, NC; and [2]US Environmental Protection Agency, Chapel Hill, NC.

Abstract #

#2824 **Poster Board Number P435**
Baseline Cardiac Troponin I in Gottingen Minipigs. *S.W. Hulet*[2], N. Vincelli[1], J. Scotto[2], and D.B. Miller[2]. [1]Leidos, Inc., Abingdon, MD; and [2]US Army ECBC, Aberdeen Proving Ground, MD.

#2825 **Poster Board Number P436**
Effect of Vildagliptin on LXR-ABCA1/ABCG1 Cascade in Pravastatin Treated 3T3-L1 Adipocytes. *A.M. Mostafa*[2], N.M. Hamdy[1], H.O. El-Mesallamy[1], and *S.Z. Abdel-Rahman*[2]. [1]Faculty of Pharmacy, Ain-Shams University, Cairo, Egypt; and [2]University of Texas Medical Branch (UTMB), Galveston, TX. Sponsor: *S. Abdel-Rahman.*

#2826 **Poster Board Number P437**
A Kinase Inhibitor (C377) Associated with Significantly Delayed QT Prolongation and Mortality in Dogs: *In Vitro* Characterization. K. Kahlig[2], C. Li[2], J. Limberis[2], *C. Neilan*[1], *M. Wilichinsky*[1], G. Liu[2], S. Rajamani[2], *A. Carey*[1], *C. McMahon*[1], L. Patel[3], *A. Chester*[2], and *L.A. Burns-Naas*[1]. [1]Gilead Sciences, Foster City, CA; [2]Gilead Sciences, Fremont, CA; and [3]Gilead Sciences, Seattle, WA.

#2827 **Poster Board Number P438**
Cardiotoxicity Study of the Aqueous Extract of Corn Silk in Rats. *A.A. Adedapo*, O.S. Babarinsa, *A.A. Oyagbemi*, A.D. Adedapo, and *T.O. Omobowale*. University of Ibadan, Ibadan, Nigeria.

#2828 **Poster Board Number P439**
Clozapine-Associated Myocarditis and Cardiomyopathy in Auckland, New Zealand. *B. Bellissima*[2], A. Vara[1], C. Kenedi[1], F. Garavan[1], and M. Tingle[2]. [1]Auckland District Health Board, Auckland, New Zealand; and [2]University of Auckland, Auckland, New Zealand.

#2829 **Poster Board Number P440**
A Kinase Inhibitor (C377) Associated with Significantly Delayed QT Prolongation and Mortality in Dogs: *In Vivo* Characterization. *C.L. Neilan*[2], *M. Wilichinsky*[2], *A. Carey*[2], K. Kahlig[2], M. Osinski[1], H. Drey[1], *C. McMahon*[2], L. Patel[2], E.I. Lepist[2], *A. Chester*[2], and *L.A. Burns-Naas*[2]. [1]Covance Laboratories, Inc, Madison, WI; and [2]Gilead Sciences, Foster City, CA.

#2830 **Poster Board Number P441**
The Influence of Inhaled Multi-Walled Carbon Nanotubes on Autonomic Nervous System. W. Zheng[1], W. McKinney[1], M. Kashon[1], R. Salmen[1], D. Pan[1], *V. Castranova*[2], and H. Kan[1,2]. [1]NIOSH/HELD, Morgantown, WV; and [2]West Virginia University, Morgantown, WV.

#2831 **Poster Board Number P442**
Subclinical Cardiovascular Effects of Short-Term Ergot Exposure in Beef Cows. V.E. Cowan, T. Grusie, A. Neumann, J. McKinnon, B.R. Blakley, and J. Singh. University of Saskatchewan, Saskatoon, SK, Canada. Sponsor: *L. Weber.*

#2832 **Poster Board Number P443**
Integrated Evaluation of Cardiac Inotropes Using Echocardiography, Telemetry, and Arrhythmia Detection Methods in the Beagle Dog. *S.D. Tichenor*[2], *H. Holzgrefe*[2], D. Regalia[2], *R. Kaiser*[2], S. Hosking[2], and K.M. Hoagland[1]. [1]Amgen inc., Thousand Oaks, CA; and [2]Chales River Laboratories, Reno, NV.

Abstract #

#2833 **Poster Board Number P444**
Resveratrol Protects Heart from Sepsis Likely by Modulating SERCA2a Activity. T. Bai[1,2], S. Wang[2], N. Mellen[2], Y. Zheng[1], J. Kong[1], and *L. Cai*[2]. [1]Departments of Cardiovascular Center, and Geriatric Medicine, Changchun, Jilin Province, China; and [2]Kosair Children's Hospital Research Institute, Louisville, KY. Sponsor: *L. Cai.*

#2834 **Poster Board Number P445**
Dioxin-Like Pollutants Increase Plasma Levels of the Cardiovascular Risk Biomarker TMAO Through Upregulation of Fmo3. *M. Petriello*, A. Morris, *B. Wahlang*, M. Sunkara, J. Hoffman, and *B. Hennig*. University of Kentucky, Lexington, KY.

#2835 **Poster Board Number P446**
Pilot Study Investigating the Pressor Activity of Vasopressin Infused by the Subcutaneously Implanted SMP-200 Microinfusion Pump in the Telemetered Rat. C. Bory, P. Legé, E. Chalencon, *J.-P. Briffaux*, and S. Milano. WIL Research Europe, Lyon, France.

#2836 **Poster Board Number P447**
The Future of Drug Safety Assessments: Artificial Learning Models in the Cardiovascular Sciences. C.A. Northcott[1], D. Vritov[2], J. Steidl-Nichols[1], and D. Eng[1]. [1]Pfizer Global R&D, Groton, CT; and [2]University of Connecticut, Storrs, CT. Sponsor: *T. Brabham.*

#2837 **Poster Board Number P448**
Hemodynamic Effects of Amlodipine Intravenously Infused for 6 Weeks by Implantable SMP-200 Microinfusion Pump in the Spontaneously Hypertensive (SH) Telemetered Rat. E. Chalencon, C. Bory, *J.-P. Briffaux*, and S. Milano. WIL Research Europe, Lyon, France.

#2838 **Poster Board Number P449**
Early-Life Vitamin D Deficiency Exacerbates Arrhythmia and Heart Rate Variability Responses to Smog Inhalation in Mice. *K. Stratford*[1], *N. Haykal-Coates*[2], *N. Kurhanewicz*[1], T. Krantz[2], C. King[2], J. Krug[2], *I. Gilmour*[2], *A. Farraj*[2], and *M. Hazari*[2]. [1]University of North Carolina, Chapel Hill, NC; and [2]US EPA, Research Triangle Park, NC.

#2839 **Poster Board Number P450**
Global Cross-Company Data-Sharing on the Housing of Non-Rodents During the Recording of Cardiovascular Telemetry Data on Toxicology Studies. H. Prior[1], A. Bottomley[1], and J. Cordes[2]. [1]NC3Rs, London, United Kingdom; and [2]Pfizer, Groton, CT. Sponsor: *N. Burden.*

#2840 **Poster Board Number P451**
A Sensitive Method for Measuring ECG and Haemodynamic Parameters in Group Housed Dogs. F. Watts, B. Marshall, L. Hanson, and K. Ashcroft-Hawley. Covance Laboratories, Harrogate, United Kingdom. Sponsor: *M. Holbrook.*

#2841 **Poster Board Number P452**
Comparison of Left Ventricular Contractility to RR Interval Relationship in Freely-Moving Rats, Dogs and Monkeys. A. Ascah[1], M. Pouliot[1], S. Abtout[1], K. Bujold[1], *R. Forster*[1], and *S. Authier*[1,2]. [1]CIToxLAB North America, Laval, QC, Canada; and [2]Faculty of Veterinary Medicine University of Montreal, St-Hyacinthe, QC, Canada.

Abstract #

#2842 **Poster Board Number P453**
Left Ventricular Pressure (LVP) and Contractility in Free-Moving Rats: the Application of Marginal Distribution Analysis.
S. Abtout, K. Bujold, A. Ascah, M. Pouliot, *R. Forster*, E. Troncy, and *S. Authier*. CiToxLAB North America, Laval, QC, Canada.

#2843 **Poster Board Number P454**
DNA Damage-Inducible Transcript 4 (DDIT4) Mediates Methamphetamine-Induced Autophagy and Apoptosis Through mTOR Signaling Pathway in Cardiomyocytes.
H. Wang[4], R. Chen[1,4], L. Chen[4], P. Qiu[4], J. Xu[4], E. Huang[4], C. Liu[2], *Z. Lin*[3], and W. Xie[4]. [1]Guangdong Medical University, Dongguan, China; [2]Guangzhou Forensic Science Institute, Guangzhou, China; [3]Kansas State University, Manhattan, KS; and [4]Southern Medical University, Guangzhou, China.

#2844 **Poster Board Number P455**
The Estrogen Receptor Modulates STAT3/Pim-1 Signaling in a Model of Sex-Specific Pulmonary Arterial Hypertension. Y.-F. Chen[2], *M. Carroll-Turpin*[1], V.Y. Hebert[1], S.P. Korpela[2], and *T.R. Duags*[2]. [1]Louisiana State University Health Sciences Center, Shreveport, LA; and [2]School of Veterinary Medicine, Louisiana State University, Baton Rouge, LA.

#2845 **Poster Board Number P456**
Qt Interval Correction for Drug-Induced Changes in Body Temperature in Dogs. P. Singh, A.-I. El Amrani, F. El Amrani-Callens, S. Loriot, and *R. Forster*. CITOXLAB, Evreux, France.

#2846 **Poster Board Number P457**
PACAP38 Protects Against Mitoxantrone-Induced Lethality in C57/BL6 Mice. M.K. Hughes[1], H. Xia[1], E. McIlwain[1], J.L. Maderdrut[2], and *K.J. Varner*[1]. [1]LSU HSC, New Orleans, LA; and [2]Tulane University, New Orleans, LA.

#2847 **Poster Board Number P458**
Confocal High Content Screening of Cardiac Microtissues for the Improved Prediction of Drug Induced Structural Cardiotoxicity.
S. Ravenscroft[1], C. Dilworth[2], and P. Walker[1]. [1]Cyprotex, Cheshire, United Kingdom; and [2]Cyprotex, Macclesfield, United Kingdom. Sponsor: *C. Strock*.

#2848 **Poster Board Number P459**
Integrative *In Vivo* Model for the Simultaneous Assessment of Neuro-Muscular, Cardiovascular, and Respiratory Toxicities of Oximes: The Case of Pralidoxime (2-PAM).
S. Roof, *R. Hamlin*, and C. del Rio. QTest Labs, Columbus, OH.

#2849 **Poster Board Number P460**
Novel Tissue Collection Techniques for Enhanced Detection of Nonclinical Drug Induced Vascular Injury: Integration with Off-Target Screening, Genomic, and Cardiovascular Risk Assessment Applied in a Case Study. *D. Dalmas*, R. Mirabile, D. Floyd, *H. Thomas*, and *K. French*. GlaxoSmithKline, King of Prussia, PA. Sponsor: *K. French*.

#2850 **Poster Board Number P501**
PACAP38 Protects Against Mitoxantrone-Induced Cardiac Injury in Mice. V. Subramanian[1], G. Chuang[1], H. Xia[1], B. Burn[1], J. Bradley[1], J.L. Maderdrut[2], and *K.J. Varner*[1]. [1]LSU HSC, New Orleans, LA; and [2]Tulane University, New Orleans, LA.

Abstract #

#2851 **Poster Board Number P502**
Functional Integrated Human Cardiac System for Toxicological and Pharmaceutical Studies.
C.J. Long[2], C. Oleaga[2], M. Stancescu[2], P. Molnar[2], C.W. McAleer[2], W. McLamb[2], G. Legters[2], J.-M. Prot[1], and J.J. Hickman[2]. [1]Cornell University, Ithaca, NY; and [2]University of Central Florida, Orlando, FL. Sponsor: *E. Dufour*.

#2852 **Poster Board Number P503**
Comprehensive *In Vitro* Proarrythmic Evaluation of Cardiomyocytes Using a Multi-Electrode Array. M. Renganathan, *Y. Zhao*, A. Cook, M. Donio, and H. Wei. Eurofins Pharma Discovery Services, St. Charles, MO.

#2853 **Poster Board Number P504**
Short-Term Inhibition of P53 Protects from the Development of Diabetic Cardiomyopathy.
J. Gu. University of Louisville, Louisville, KY.

#2854 **Poster Board Number P505**
Assessment of Acrolein-Induced Toxicity Using *In Vitro* Modeling to Evaluate the Role of PARP. K. Harand, *J. Coyle*, *M. Bourgeois*, *G. Johnson*, J. McCluskey, and *R. Harbison*. College of Public Health, Tampa, FL.

#2855 **Poster Board Number P506**
Inhalation Exposure to Traffic-Derived Particulates Diminishes Left Ventricular Performance and Alters Myocardial Protein Expression and Signal Transduction Consistent with Sympathetic Mediation in Rats. *A.P. Carll*[3,5], T.D. da Silva[3,4], B.T. Lima[2,3], M.S. Filho[2,3], R.D. Raimundo[3,4], S.M. Crespo[2,3], D.H. Zati[2,3], V. Chandrasekhar[1], A.L.R. Vitor[3,4], G. Pyrgiotakis[3], E.A. Diaz[3], M.I. Kontaridis[1], and J.J. Godleski[3]. [1]Beth Israel Deaconess Medical Center, Boston, MA; [2]Faculdade de Medicinade Universidade de São Paulo, São Paulo, Brazil; [3]Harvard T.H. Chan School of Public Health, Boston, MA; [4]Universidad Federal de São Paulo, São Paulo, Brazil; and [5]University of Louisville, Louisville, KY.

#2856 **Poster Board Number P507**
Rats Treated with Doxorubicin Had Reduced Cardiac Function Demonstrated by MRI and Echocardiography Measurements. *K. Henderson*[1], A. Bratasz[2], K. Powell[2], *J. Ross*[1], *R.B. Borders*[1], *B.M. Roche*[1], and T. Vinci[1]. [1]Battelle, Columbus, OH; and [2]The Ohio State University, Columbus, OH.

#2857 **Poster Board Number P508**
Drug-Induced Contraction Force Analysis of Cardiomyocyte - Cardiac Fibroblast Co-Cultures Using the "CellDrum" Technology.
M. Gossmann[1], T. Palm[1], E. Kolossov[1], G. Luerman[2], A. Duenbostell[1], M. Torvinen[3], G. Artmann[3], and H. Bohlen[1]. [1]Axiogenesis AG, Cologne, Germany; [2]Axiogenesis Inc, Plymouth Meeting, PA; and [3]Fachochschule Aachen, Jülich, Germany. Sponsor: *E. Clarke*.

#2858 **Poster Board Number P509**
Cardiovascular Toxicity of Nanoparticles to Zebrafish. *J. Gao*, *M.S. Sepúlveda*, and *C. Mahapatra*. Purdue University, West Lafayette, IN.

#2859 **Poster Board Number P510**
Inhaled Toxicity of Titanium Dioxide Nanoparticles Deteriorate ApoE$^{-/-}$ Mice Atherosclerosis. B.-J. Lee[1], M. Kang[1], D.-H. Yoo[1], and K. Lee[1,2]. [1]KIT, Jeonbuk, Korea, Republic of; and [2]University of Science, and Technology, Daejeon, Korea, Republic of. Sponsor: *K. Lee*.

Abstract #

Wednesday Morning, March 16
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Autoimmunity/Hypersensitivity

Chairperson(s): *Susan McKarns, University of Missouri School of Medicine, Columbia, MO; and Emanuela Corsini, Università degli Studi di Milano, Milan, Italy.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *11:15 AM–12:45 PM*

#2860 **Poster Board Number P511**
***In Vitro* Characterization of the Cutaneous Immunotoxicity of Reactive and Disperse Textile Dyes.** D.M. Leme[3], A. Sehr[1], T. Grummt[1], T. Jacomasso[3], S.M. Winnischofer[3], F.G. Arnoldi[3], G.A. Oliveira[2], M.C. Valadares[2], F.B. Potrich[3], C.C. Oliveira[3], D.F. Buchi[3], E.S. Trindade[3], and *D.P. Oliveira*[3]. [1]Umweltbundesamt, Bad Elster, Germany; [2]Universidade Federal de Goiás (UFG), Goiânia, Brazil; and [3]Universidade Federal do Paraná (UFPR), Curitiba, Brazil.

#2861 **Poster Board Number P512**
Development of an *In Vitro* Method to Estimate the Sensitization Induction Level Using Reconstituted Human Epidermis. *E. Corsini*, V. Galbiati, A. Papale, E. Kummer, M. Marinovich, and *C.L. Galli*. Università degli Studi di Milano, Milan, Italy.

#2862 **Poster Board Number P513**
The Immunomodulatory Potential of MicroRNA 210 and Regulatory T Cells in a Murine Model of Chemical Sensitization. *C.M. Long*[1,2], *N. Marshall*[1], E. Lukomska[1], H. Shane[1], *P. Siegel*[1], *B.J. Meade*[1], and *S. Anderson*[1]. [1]CDC-NIOSH-HELD, Morgantown, WV; and [2]West Virginia University, Morgantown, WV.

#2863 **Poster Board Number P514**
THP-1 in Coculture with HaCaT Keratinocytes (COCAT) for an Advanced *In Vitro* Prediction of Sensitization Potential and Potency of Chemicals. *J. Hennen*, and *B. Blömeke*. University Trier, Trier, Germany.

#2864 **Poster Board Number P515**
Evaluation of 4-Methylcyclohexanemethanol in a Combined Irritation and Local Lymph Node Assay in BALB/c Mice. *V.J. Johnson*[1], *S.S. Auerbach*[2], *M.I. Luster*[1], *S. Waidyanatha*[2], S.A. Masten[2], M.S. Wolfe[2], *F.G. Burleson*[1], *G.R. Burleson*[1], and *D.R. Germolec*[2]. [1]Burleson Research Technologies, Inc., Morrisville, NC; and [2]National Toxicology Program, National Institute of Environmental Health Sciences, NIH, Research Triangle Park, NC.

#2865 **Poster Board Number P516**
Integrated Testing Strategy for Skin Sensitization Assessment. A. Del Bufalo[2], C. Piroird[2], H. Nocairi[2], J. Eilstein[2], A. Detroyer[2], C. Gomes[2], T. Pauloin[1], and S. Teissier[2]. [1]L'Oreal, Asnières, France; and [2]L'Oreal, Aulnay sous Bois, France. Sponsor: *E. Dufour.*

#2866 **Poster Board Number P517**
Irritancy and Allergic Responses Induced by Topical Application of Didecyldimethylammonium Chloride. *S.E. Anderson*, H. Shane, *C. Long*, E. Lukomska, B.J. Meade, and *N.B. Marshall*. CDC NIOSH, Morgantown, WV.

Abstract #

#2867 **Poster Board Number P518**
Libby Amphibole-Induced Mesothelial Cell Autoantibodies Bind to Surface Plasminogen and Alter Collagen Matrix Remodeling. R. Hanson, C. Evilia, L. Woods, J. Gilmer, and *J.C. Pfau*. Idaho State University, Pocatello, ID.

#2868 **Poster Board Number P519**
Libby Amphibole-Induced Mesothelial Cell Autoantibodies Promote Collagen Deposition in Mice. J. Gilmer[1], *K. Serve*[2], R. Hanson[1], and *J.C. Pfau*[1]. [1]Idaho State University, Pocatello, ID; and [2]Mars Hill University, Mars Hill, NC.

#2869 **Poster Board Number P520**
Inhibitory Effect of Subchronic Low Dose 2,3,7,8-Tetrachlorodibenzo-p-dioxin in Experimental Autoimmune Encephalomyelitis. *B. Kaplan*, J. Stokes, and E.-J. Yang. Mississippi State University, Mississippi State, MS.

#2870 **Poster Board Number P521**
Autoimmune Potential of Perchloroethylene: Role of Lipid-Derived Reactive Aldehydes. *G. Wang*, J. Wang, *G. Ansari*, and *M.F. Khan*. University of Texas Medical Branch, Galveston, TX.

#2871 **Poster Board Number P522**
Changes of Dopamine and Serotonin Levels in Plasma and Brain of 79 Weeks old Normal and Diet Induced Obese Experimental Autoimmune Encephalomyelitis Mice. M. Hasan[1,3], *J.-E. Seo*[1,3], M.-J. Kang[1,2], B.-H. Jung[1,2], and *O.-S. Kwon*[1,3]. [1]Department of Biological Chemistry, Korea University of Science, and Technology, Daejeon, Korea, Republic of; [2]Molecular Recognition Research Center, Korea Institute of Science, and Technology, Seoul, Korea, Republic of; and [3]Toxicology Lab., Doping Control Center, Korea Institute of Science, and Technology, Seoul, Korea, Republic of.

#2872 **Poster Board Number P523**
Alterations in Lipid and Amino Acid Metabolism on Experimental Autoimmune Encephalomyelitis with Aging Effect Based on Metabolomic and Genomic Approaches. *J.-E. Seo*[2,3], S.H. Lee[1], M. Hasan[2,3], M.-J. Kang[2,3], B.H. Jung[2,3], and *O.-S. Kwon*[2,3]. [1]Kongju National University, Seoul, Korea, Republic of; [2]Korea Institute of Science, and Technology, Seoul, Korea, Republic of; and [3]Korea University of Science, and Technology, Daejeon, Korea, Republic of.

#2873 **Poster Board Number P524**
The Mycotoxin Deoxynivalenol (DON) Facilitates Whey Sensitization in a Murine Food Allergy Model. M. Bol-Schoenmakers[2], S. Braber[2], P. Akbari[2], P. Jeurink[1], P. de Graaff[2], J.J. Smit[2], B. van Esch[2], J. Garssen[1,2], J. Fink-Gremmels[2], and *R.H. Pieters*[2]. [1]Nutricia Research, Utrecht, Netherlands; and [2]Utrecht University, Utrecht, Netherlands.

#2874 **Poster Board Number P525**
Silica-Induced Autoimmunity Is Independent of Caspase-1. R.D. Pawar[2], J. Mayeux[2], A.S. Awad[1], T.K. Cooper[1], D.H. Kono[2], and *K.M. Pollard*[2]. [1]Penn State University, College of Medicine, Hershey, PA; and [2]The Scripps Research Institute, La Jolla, CA. Sponsor: *K.M. Pollard.*

Abstract #

#2875 **Poster Board Number P526**
Broad Spectrum Antibiotic Treatment Enhanced T Cell Mediated Inflammation and Guillain Barré-Associated Antibody Responses to *Campylobacter jejuni* in a Mouse Model. P.T. Brooks, J.A. Bell, A. Malik, and L.S. Mansfield. Michigan State University, East Lansing, MI. Sponsor: *A. Colón-Rodriguez.*

#2877 **Poster Board Number P527**
Transmembrane, But Not Soluble, TNF Impairs CD4 TH17 T Cell Differentiation by Promoting IL-2 Production. P. Miller, M. Bonn, and *S. McKarns*. University of Missouri School of Medicine, Columbia, MO.

#2878 **Poster Board Number P528**
TNFR2 Deficiency Modulates Gut Microbiota to Promote CNS Autoimmune Disease. P. Miller, M. Bonn, and *S. McKarns*. University of Missouri School of Medicine, Columbia, MO.

Wednesday Morning, March 16
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Pesticides

Chairperson(s): *Marco Corvaro, Dow Agrosciences, Abingdon, United Kingdom; and Tanzir Mortuza, University of Georgia, Athens, GA.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *9:30 AM–11:00 AM*

#2879 **Poster Board Number P531**
Inhibition of Connective Tissue Growth Factor Attenuates Paraquat-Induced Lung Fibrosis in a Human MRC-5 Cell Line. *M. Huang*. School of Public Health, Ningxia Medical University, Yinchuan, China.

#2880 **Poster Board Number P532**
Chlorpyrifos Induces NLRP3 Inflammasome and Programmed Cell Death Through Mitochondrial Oxidative Stress in HaCaT, Human Keratinocyte. Y. Jang, and *M.-h. Cho*. Seoul national university, Seoul, Korea, Republic of.

#2881 **Poster Board Number P533**
Physiological Responses in *Caenorhabditis Elegans* Exposed to Deltamethrin. P. Shen[2], Q. Sun[2], Y. Yue[2], Z. Gao[2], J. Yang[1], H. Xiao[2], *J.M. Clark*[2], and Y. Park[2]. [1]Amherst Regional High School, Amherst, MA; and [2]University of Massachusetts-Amherst, Amherst, MA. Sponsor: *Y. Park.*

#2882 **Poster Board Number P534**
Safety Evaluation of Parastar® Plus in Dogs and Assessment of Transferable Residue of Fipronil and Cyphenothrin from Dogs to Humans. Is There a Health Concern? K. Case, N. Vega, *R.C. Gupta*, M. Lasher, and T.D. Canerdy. Murray State University, Murray/Hopkinsville, KY.

#2883 **Poster Board Number P535**
Changes in Gut Microbiota May be Early Signs of Liver Toxicity Induced by Epoxiconazole in Rats. *Q. Liu*, *C. Xu*, and *A. Gu*. Nanjing Medical University, Nanjing, China. Sponsor: *A. Gu.*

#2884 **Poster Board Number P536**
Chlorpyrifos: Neurodevelopment, AChE Inhibition Weight of Evidence. *M. Silva*, and S. Koshlukova. California EPA, Sacramento, CA.

Abstract #

#2885 **Poster Board Number P537**
Changes Induced by Fipronil Sulfone Metabolite in Oxidative Stress Biomarkers in SH-SY5Y Cells and Protective Effect of Tempol. *A. Anadón*, M.A. Martínez, I. Ares, E. Ramos, M. Martínez, V. Castellano, M.R. Martínez-Larrañaga, and A. Romero. Complutense University, Madrid, Spain.

#2886 **Poster Board Number P538**
Esterase Detoxification of Acetylcholinesterase Inhibitors by Human Liver Samples *In Vitro*. *V. Moser*, and S. Padilla. US EPA, Research Triangle Park, NC.

#2887 **Poster Board Number P539**
Proteomic Evaluation of Diisopropylfluorophosphate (DFP) Sub-Acute Non-Cholinergic Effects in Rat Hippocampus. A. Hoffmann[1,2], *D.A. Mahle*[1], M.L. Meade[1], M.K. Makley[1,2], and *J.M. Gearhart*[1,2]. [1]Molecular Bioeffects Branch, Bioeffects Division, Human Effectiveness Directorate; 711th Human Performance Wing, Air Force Research Laboratory, Wright Patterson AFB, Dayton, OH; and [2]The Henry M Jackson Foundation for the Advancement of Military Medicine, Dayton, OH.

#2888 **Poster Board Number P540**
Thiuram Early Life Stage Toxicity Extends into More Detailed Alterations in Older Individuals: A Case for Thyroid Involvement? X. Chen[1], M. Fang[3], M. Chernick[3], F. Wang[1], J. Yang[1], Y. Yu[1], N. Zheng[2], *H. Teraoka*[4], S. Nanba[4], T. Hiraga[4], H.M. Stapleton[3], D.E. Hinton[3], and *W. Dong*[1,3]. [1]Inner Mongolia Provincial Key Laboratory for Toxicants, and Animal Disease/Inner Mongolia University for the Nationalities, Tongliao, China; [2]Key Laboratory of Wetland Ecology, and Environment, Northeast Institute of Geography, and Agricultural Ecology, Chinese Academy of Sciences, Changchun, China; [3]Nicholas School of the Environment, Duke University, Durham, NC; and [4]School of Veterinary Medicine, Rakuno Gakuen University, Ebetsu, Japan. Sponsor: *W. Dong.*

#2889 **Poster Board Number P541**
Exposure to Permethrin Increases Body Fat Mass and Alters Glucose Metabolism in Response to High Fat Diet in Male C57BL/6J Mice. *X. Xiao*[2], Q. Sun[2], Y. Kim[2], D. Kim[2], K.S. Yoon[1], *J. M,. Clark*[2], and Y. Park[2]. [1]Southern Illinois University, Edwardsville, IL; and [2]University of Massachusetts, Amherst, MA.

#2890 **Poster Board Number P542**
Maneb and Mancozeb Induce Senescence via p53, p27 and p15/16 Pathways. M. Metodieva[2], N. Simone[1], J. Seo[2], C. Ta[2], and *S.-Y. Cheng*[2]. [1]Holy Cross High School, Queens, NY; and [2]John Jay College of Criminal Justice, New York, NY.

#2891 **Poster Board Number P543**
Evaluation of Growth and Plasma Membrane H^+-ATPase Inhibition in *Candida albicans* by Selected Sulfur Analogs of Ebselen. *N.N. Orie*[1], M. Pietka-Ottlik[2], and *B. Billack*[1]. [1]St. John's University, Jamaica, NY; and [2]Wrocław University of Technology, Wrocław, Poland.

#2892 **Poster Board Number P544**
Embryonic Exposure to Zinc Dimethyldithiocarbamate Alters Notochord Development in Japanese Medaka. *A.T. Watson*, I.T. Stancil, and *S.W. Kullman*. North Carolina State University, Raleigh, NC.

Abstract #

#2893 **Poster Board Number P545**
Applying the 3R's in Regulatory Testing: Use of the Developmental Toxicity Limit Test to Reduce Animal Use in Development of a Novel Agrochemical, Rinskor™. *S. Papineni*[1], *B.R. Hannas*[2], *L.A. Murphy*[2], *M.P. Bell*[2], *V.A. Marshall*[2], and *R.J. Rasoulpour*[1]. [1]Dow AgroSciences, LLC, Indianapolis, IN; and [2]The Dow Chemical Company, Midland, MI.

#2894 **Poster Board Number P546**
Atrazine's Cytotoxicity in Immortalized Cell Lines. T.S. Blau, B. Narayanan, and *M. Costa*. NYU Langone Medical Center, Tuxedo Park, NY.

#2895 **Poster Board Number P547**
Investigation of Essential Metal Accumulation in Rat After Oral Mancozeb Exposure. *B. Kistinger*, and *D. Hardej*. St. John's University, Queens, NY.

#2896 **Poster Board Number P548**
Epigenetic Regulation of Chlorpyrifos Induced Adipogenesis Using 3T3-L1 *In Vitro* Model. *L. Yin*, T. Mowla, and *X. Yu*. University of Georgia, Athens, GA.

#2897 **Poster Board Number P549**
Quantitation of Cis- and Trans-Permethrin in Rat Plasma Using Gas Chromatography Negative Chemical Ionization Mass Spectrometry (GC-NCI-MS). D. Gullick[3], *J.V. Bruckner*[3], *M.D. Krolski*[1], *D. Gammon*[2], *C.A. White*[3], *B.S. Cummings*[3], and M.G. Bartlett[3]. [1]Bayer Crop Science, Research Triangle Park, NC; [2]FMC CORP, Ewing, NJ; and [3]University of Georgia, Athens, GA.

#2898 **Poster Board Number P550**
Acute Water Column Effects Concentrations (LC50, LC90) for Three Commonly Used Insecticides, Two Neonicotinoids (Acetamiprid and Imidacloprid), and a Recently Registered Phenylpyrazole (Fipronil), Exposed to Common Commercially Cultured Shrimp (*Marsupenaeus japonicus*). *M.A. Ghorab*[2], H. Omar[1], H. Samir[2], M. Khalil[3], and M. Zwiernik[4]. [1]Marine Invertebrates Laboratory, National Institute of Oceanography and Fisheries (NIOF), Alexandria, Egypt; [2]National Institute of Oceanography and Fisheries (NIOF), Alexandria, Egypt; [3]Central Agricultural Pesticides Laboratory, Agriculture Research Center, El-Sabaheya, Alexandria, Egypt; and [4]Wildlife Toxicology Laboratory, Michigan State University, East Lansing, MI.

#2899 **Poster Board Number P551**
Role of the Hepatic Endocannabinoid System in Chlorpyrifos-Induced Lipid Accumulation in McArdle-RH7777 Hepatoma Cells. S. Kondakala, C. Mulligan, J.-H. Lee, M. Ross, and *G.E. Howell*. Mississippi State University, Mississippi State, MS.

#2900 **Poster Board Number P552**
1,3-Dichloropropene: Hazard Identification and Risk Assessment for Occupational and Bystander Inhalation Exposures. A. Rubin, *C. Aldous*, I. Reeve, P. Lohstroh, S. Rinkus, *C. Lewis*, M. Wilbur, *E. Kwok*, S. Koshlukova, S. Beauvais, and M. Verder-Carlos. California Environmental Protection Agency, Sacramento, CA.

Abstract #

#2901 **Poster Board Number P553**
Social Determinants in Household Pesticide Exposure: Development of a Conceptual Underlying Model of Risk Perception in Argentinean Families. P. Kandel Gambarte[1], N. Pereiro[3], M.G. Rovedatti[4], S. Aragone[3], A. Ferloni[3], M.G. Cruz[3], F.A. Vidal[3], *M.J. Wolansky*[2], and B.S. Figar[3]. [1]ARG Ministry of Health/Hospital Italiano de Buenos Aires (HIBA)/University of Buenos Aires (UBA), Buenos Aires, Argentina; [2]ARG NRC/UBA, Buenos Aires, Argentina; [3]HIBA, Buenos Aires, Argentina; and [4]UBA, Buenos Aires, Argentina.

#2902 **Poster Board Number P554**
Pyrethroid Metabolism and Exposure Assessment in Egyptian Agricultural Workers. *M. Himmel*[3], B. McGarrigle[3], R. Singh[3], A. Ismail[1], G. Abdel Rasoul[1], O. Hendy[1], M. Bonner[3], D. Rohlman[2,4], D. Aga[3], and *J. Olson*[3]. [1]Menoufia University, Shebin El-Kom, Egypt; [2]Oregon Health & Science University, Portland, OR; [3]State University of New York, Buffalo, NY; and [4]University of Iowa, Iowa City, IA.

#2903 **Poster Board Number P555**
Effect of Mancozeb and CuCl2 on Metal Deposition and Lipid Peroxidation in the Rat Hippocampus. K.A. McGovern, and *L.D. Trombetta*. St. John's University, Queens, NY.

#2904 **Poster Board Number P556**
Toxicity of Atrazine and Glyphosate Based Formulations on *C. elegans*. *L.P. Tejeda-Benitez*, *M.C. Garcia-Espiñeira*, A. Bustamante, and *J.T. Olivero-Verbel*. University of Cartagena, Cartagena, Colombia.

#2905 **Poster Board Number P557**
A Physiologically Based Pharmacokinetic and Pharmacodynamic (PBPK/PD) Model for Malathion in Rats. *K.T. Bogen*. Exponent, Oakland, CA.

#2906 **Poster Board Number P558**
Fate of Lambda-Cyhalothrin During Tobacco Planting and Processing. L. Chen, H. Cui, J. Cai, L. Pan, X. Wang, M. Fan, Y. Jia, L. Zhao, and H. Liu. Zhengzhou Tobacco Research Institute of CNTC, Zhengzhou, China. Sponsor: *R. Krieger.*

#2907 **Poster Board Number P559**
Flupirtine Protects Against Permethrin/DEET-Induced Brain Injury in a Rat Model for Gulf War Illnesses. *M.B. Abou-Donia*, S. Abdelwahab, S.K. Acheson, and S. Swartzwelder. Duke University Medical Center, Durham, NC. Sponsor: *M.B. Abou-Donia.*

#2908 **Poster Board Number P560**
Age-Dependent Toxicokinetics (TK) of Cis-Permethrin (CIS) in Different Life Stages of Sprague-Dawley (SD) Rats. *T. Mortuza*, J. Pang, *B.S. Cummings*, *J.V. Bruckner*, and *C.A. White*. University of Georgia, Athens, GA.

#2909 **Poster Board Number P601**
Extended One Generation Reproduction Study of Amitraz. *G. Burin*. Technology Sciences Group Inc., Washington, DC.

#2910 **Poster Board Number P602**
Chronic Kidney Disease of Unknown Etiology (CKDu): Association with Blood Level of Organochlorine Pesticides and Associated Mechanism. R. Ghosh, N. Singh, *V. Tyagi*, P. Kare, *B.D. Banerjee*, O.P. Kalra, and A.K. Tripathi. University College of Medical Sciences, and GTB Hospital (University of Delhi), Delhi, India.

Abstract #

#2911 **Poster Board Number P603**
Perinatal Exposure to Mancozeb Followed by Re-Exposure in Adulthood Alters Neurogenesis and Stress Protein Gene Expression in the Hippocampus of Long-Evans Rats. *M. Akhtar*, and *L. Trombetta*. St. John's University, Queens, NY.

#2912 **Poster Board Number P604**
Serum Autoantibodies to Neural-Specific Proteins as Objective Biomarkers for Gulf War Illness. *M.B. Abou-Donia*[2], K. Sullivan[1], L. Conboy[3], and E. Kokkotou[3]. [1]Boston University, Boston, MA; [2]Duke University Medical Center, Durham, NC; and [3]Harvard Medical School, Boston, MA. Sponsor: *M.B. Abou-Donia*.

#2913 **Poster Board Number P605**
Taurine Ameliorated Impairment in Neuromuscular Coordination in Rats administered with Chlorpyrifos. *M.G. Akande*[2], M. Shittu[1], C. Uchendu[1], and L.S. Yaqub[1]. [1]Ahmadu Bello University, Zaria, Nigeria; and [2]University of Abuja, Abuja, Nigeria.

#2914 **Poster Board Number P606**
Toxic Effects of Permethrin on Male Rabbit Fertility and Immunity. K.A. Abdou[3], A.E.A. Khalaf[4], M.A. Abo Norag[2], and N.M. Ibrahim[1]. [1]Animal Health Research Institute, Dokki, Egypt; [2]Animal Health Research Institute, Dokki, Egypt, Egypt; [3]Faculty of Veterinary Medicine Beni Suef University, Beni Suef, Egypt; and [4]Faculty of Veterinary Medicine, Cairo University, Cairo, Egypt. Sponsor: *A.-R. Kadry*.

#2915 **Poster Board Number P607**
Dietary Chlorpyrifos Affects Inhibitory Control and Attention in Human APOE Targeted Replacement Mice. F. Peris-Sampedro[2], P. Basaure[2], I. Reverte[2], M. Cabré[1], *J.L. Domingo*[1], and M.T. Colomina[2]. [1]Universitat Rovira i Virgili, Reus, Spain; and [2]Universitat Rovira i Virgili, Tarragona, Spain.

#2916 **Poster Board Number P608**
The Metabolic Disruptor Role of Chlorpyrifos: Genetic Vulnerability and Hormonal Imbalance. F. Peris-Sampedro[3], P. Basaure[3], M. Cabré[2], T. Neri-Gómez[1], I. Reverte[3], *J.L. Domingo*[2], and M.T. Colomina[3]. [1]Universidad Autónoma de México, México DF, Mexico; [2]Universitat Rovira i Virgili, Reus, Spain; and [3]Universitat Rovira i Virgili, Tarragona, Spain.

#2917 **Poster Board Number P609**
Atrazine and Its Metabolites: Aromatase mRNA and *Ex Vivo* Phosphodiesterase Activity. *K.D. Yi*[1], C.B. Breckenridge[1], and J.W. Simpkins[2]. [1]Syngenta Crop Protection, LLC, Greensboro, NC; and [2]University of West Virginia, Morgantown, WV.

#2918 **Poster Board Number P610**
Organophosphate-Induced Neuroinflammation, with and without Corticosterone Pretreatment, Is Not Due to Acetylcholinesterase Inhibition. *A.R. Locker*, *K.A. Kelly*, *L.T. Michalovicz*, *D.B. Miller*, and *J.P. O'Callaghan*. Centers for Disease Control/National Institute of Occupational Safety, and Health, Morgantown, WV.

Abstract #

Wednesday Morning, March 16
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Ecotoxicology

Chairperson(s): *Jill A. Jenkins, US Geological Survey, Lafayette, LA; and Nancy Denslow, University of Florida, Gainesville, FL.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *11:15 AM–12:45 PM*

#2919 **Poster Board Number P611**
Jatropha Phorbol Ester Enhanced Serum Amylase Activity in Mice, Leading to Weight Loss and Death. *Y. Ishihara*, M. Nakao, and K. Yamauchi. Kurume University, Kurume, Japan.

#2920 **Poster Board Number P612**
Chronic Toxicity of Phorbol Ester, Crude Oil, and Biodiesel Fuel from *Jatropha curcas*. K. Yamauchi, M. Nakao, S. Kinoshita, and *Y. Ishihara*. Kurume University, Kurume, Japan.

#2921 **Poster Board Number P613**
Enzyme-Linked Immunosorbent Assay for Curcin Protein from a Biodiesel Feedstock Plant *Jatropha curcas*. M. Nakao[2], K. Yamauchi[2], H. Zimila[1], and *Y. Ishihara*[2]. [1]Eduardo Mondlane University, Maputo, Mozambique; and [2]Kurume University, Kurume, Japan.

#2922 **Withdrawn.**

#2923 **Poster Board Number P615**
Uncovering the Genetic Mechanisms of Imidacloprid Resistance in *Leptinotarsa decemlineata* in the Central Sands Region of Wisconsin. *J. Clements*, S. Schoville, N. Peterson, Q. Lan, and R. Groves. University of Wisconsin-Madison, Madison, WI.

#2924 **Poster Board Number P616**
Spatial Distribution of Organic Contaminants in Three Rivers of Greater London and SE England. *J. Wilkinson*, P. Hooda, J. Swinden, S. Barton, and J. Barker. Kingston University London, Kingston-upon-Thames, United Kingdom.

#2925 **Poster Board Number P617**
***In Vitro* Fish Hepatic Metabolism: A Ring-Trial to Evaluate Transferability, Intra- and Interlaboratory Reproducibility.** H.M. Peterson[3], M. Embry[7], K. Fay[14], M.J. Bernhard[11], I. Bischof[5], J.W. Davis[1], J. Domoradzki[2], M. Halder[4], *X. Han*[8], J. Hu[1], K.M. Johanning[9], H. Laue[6], D. Nabb[3], J. Nichols[14], C. Schlechtriem[5], H. Segner[13], L. van der Wal[10], and J. Weeks[12]. [1]DOW Chemical, Midland, MI; [2]DOW Corning, Auburn, MI; [3]DuPont, Newark, DE; [4]European Commission, Joint Research Centre, Ispra, Italy; [5]Fraunhofer IME, Schmallenberg, Germany; [6]Givaudan Schweiz AG, Dubendorf, Switzerland; [7]ILSI HESI, Washington, DC; [8]International Flavors, and Fragrances, Union Beach, NJ; [9]KJ Scientific, Georgetown, TX; [10]OECD, Paris, France; [11]P&G, Mason, OH; [12]SC Johnson, Racine, WI; [13]University of Bern, Bern, Switzerland; and [14]US EPA, Duluth, MN.

#2926 **Poster Board Number P618**
Differences in Genotoxicity and DNA Double Strand Break Repair in Whale Cells and Human Cells After Particulate Hexavalent Chromium Exposure. *C.L. Browning*[1,2], and *J.P. Wise*[1,2]. [1]University of Louisville, Louisville, KY; and [2]University of Maine, Orono, ME. Sponsor: *J.P. Wise Sr.*

Abstract #

#2927 **Poster Board Number P619**
The Utility of QSARs in Predicting Acute Fish Toxicity of Pesticide Metabolites: A Retrospective Validation Approach. *N. Burden*[3], S.K. Maynard[4], L. Weltje[1], and J.R. Wheeler[2]. [1]BASF SE, Limburgerhof, Germany; [2]Dow AgroSciences, Abingdon, United Kingdom; [3]NC3Rs, London, United Kingdom; and [4]Syngenta, Bracknell, United Kingdom.

#2928 **Poster Board Number P620**
Application of the High-Throughput Attagene Factorial Platform to Environmental Monitoring: Characterizing Complex, Environmental Mixtures. B.R. Blackwell[1], A. Schroeder[4], *K. Houck*[3], G. Ankley[2], and *D. Villeneuve*[2]. [1]ORISE/US EPA, Duluth, MN; [2]US EPA, Duluth, MN; [3]US EPA, Research Triangle Park, NC; and [4]University of Minnesota, St. Paul, MN. Sponsor: *J. Nichols.*

#2929 **Poster Board Number P621**
Microalgae as Biological Model to Assess the Toxicity of Cartagena Bay Water. M.R. Alvear-Alayon, *M.C. Garcia-Espiñeira*, and *L.P. Tejeda-Benitez*. University of Cartagena, Cartagena, Colombia.

#2930 **Poster Board Number P622**
Liquid or Chewable: Pharmaceuticals and Personal Care Products' Effects on Insects with Two Different Feeding Methods? M.J. Pennington, and J.T. Trumble. University of California, Riverside, CA. Sponsor: *D. Eastmond.*

#2931 **Poster Board Number P623**
Potential Influence of Neonicotinoids on Honeybee Fertility. *J.A. Jenkins*[1], R.O. Draugelis-Dale[1], and B.K. Hopkins[2]. [1]US Geological Survey, Lafayette, LA; and [2]Washington State University, Pullman, WA.

#2932 **Poster Board Number P624**
Mutagenic Potentials of Paraquat in the African Catfish, *Clarias gariepinus*. *I. Ayanda*[2], S. Oniye[1], J. Auta[1], and V. Ajibola[1]. [1]Ahmadu Bello University, Zaria, Nigeria; and [2]Covenant University, Ota, Nigeria. Sponsor: *B. Ogunlana.*

#2933 **Poster Board Number P625**
Effects of Norethindrone and Metabolite Ethynylestradiol on Reproductive Parameters in a Marine Fish. *L.J. Mills*[2], S. Jayaraman[2], G.E. Zaroogian[2], D. Borsay Horowitz[2], T.K. Johnston[1], and *S.C. Laws*[3]. [1]ORISE Fellow, US EPA, ORD, NHEERL, Narragansett, RI; [2]US EPA, ORD, NHEERL, Narragansett, RI; and [3]US EPA, ORD, NHEERL, Research Triangle Park, NC.

#2934 **Poster Board Number P626**
Genome-Wide Transcriptional Responses to Deepwater Horizon Oil in Mahi-Mahi (*Coryhaena hippurus*) Embryos. *G. Xu*[2], E. Mager[3], M. Grosell[3], E. Hazard[1], S. Courtney[1], G. Hardiman[1], and *D. Schlenk*[2]. [1]Medical University of South Carolina, Charleston, SC; [2]University of California, Riverside, Riverside, CA; and [3]University of Miami, Miami, FL. Sponsor: *D. Schlenk.*

#2935 **Poster Board Number P627**
Hepatocellular Lesions and Regeneration of the Liver Associated with Microcystin-LR Exposure in Tilapia, *Oreochromis* Sp. *S.A. James-Yi*[3], L.H. Khoo[1], *B.S. Jortner*[3], *L.A. Murphy*[2], D.D. Kuhn[3], D.P. Taylor[3], and S.A. Smith[3]. [1]Mississippi State University, Stoneville, MS; [2]University of Pennsylvania, Kennett Square, PA; and [3]Virginia Tech, Blacksburg, VA.

Abstract #

#2936 **Poster Board Number P628**
Mitochondrial Electron Transport System Function Is Reduced in Salmon Exposed to Contaminants of Emerging Concern. *A. Yeh*[2], D.J. Marcinek[2], J.P. Meador[1], and *E.P. Gallagher*[2]. [1]Environmental, and Fisheries Sciences Division, Seattle, WA; and [2]University of Washington, Seattle, WA.

#2937 **Poster Board Number P629**
Exploring the Effects of Temperature and Resource Limitation on Mercury Bioaccumulation in *Fundulus heteroclitus* Using Dynamic Energy Budget Modeling. B.W. Clark[3], K. Buckman[1], D. Miller[2], A. Bertrand[3], I. Kirby[3], D. Champlin[3], C. Chen[1], and D. Nacci[3]. [1]Dartmouth College, Hanover, NH; [2]US EPA, Grosse Ile, MI; and [3]US EPA, Narragansett, RI. Sponsor: *L. Mills.*

#2938 **Poster Board Number P630**
PCB and Dioxin Exposure Increase Expression of CytochromeP4501A and the Aryl Hydrocarbon Receptor (AHR)-2 but Not AHR1 in Atlantic and Shortnose Sturgeons. M. DellaTorre[2], I. Wirgin[2], C. Chambers[1], and N. Roy[2]. [1]National Oceanic, and Atmospheric Administration, Highlands, NJ; and [2]New York University, New York, NY. Sponsor: *T. Gordon.*

#2939 **Poster Board Number P631**
Organochlorine Contamination of Fish in Lake Apopka. *N.D. Denslow*[2], V. Dang[2], K.J. Kroll[2], *S. Supowit*[1], and *R.U. Halden*[1]. [1]Arizona State University, Tempe, AZ; and [2]University of Florida, Gainesville, FL.

#2940 **Poster Board Number P632**
Acute Toxicity of Graphene to Water Flea, Brine Shrimp and Zebrafish. S.A. Johari[2], S. Asghari[2], H.J. Ahn[1], E.K. Sohn[1], and *I.J. Yu*[1]. [1]Hoseo University, Asan, Korea, Republic of; and [2]University of Kurdistan, Sanandaj, Iran, Islamic Republic of. Sponsor: *I.J. Yu.*

#2941 **Poster Board Number P633**
The Use of GPER and ER Antagonist to Evaluate the Mechanism of Bifenthrin Exposure in Embryos and Juveniles of Zebrafish (*Danio rerio*). *L.B. Bertotto*, and *D. Schlenk*. University of California, Riverside, Riverside, CA.

#2942 **Poster Board Number P634**
3,4-Dichloroaniline, a Growth Inhibitor of Juvenile Zebrafish (*Danio rerio*). J.R. Rana[1], D. Patel[1], M. Pandya[1], N. Khan[1], C. Callol[1], and *V.J. Piccirillo*[2]. [1]Jai Research Foundation, Valvada, India; and [2]VJP Consulting, Inc., Ashburn, VA. Sponsor: *V. Piccirillo.*

#2943 **Poster Board Number P635**
Effects of Acute Exposure to Natural Estrogen on the Aggressive and Courtship Behaviors in Adult Male Zebrafish (*Danio rerio*). G. Mercado[1], and *L. Glazer*[2]. [1]Grinnell College, Grinnell, IA; and [2]Woods Hole Oceanographic Institution, Woods Hole, MA.

Abstract #

#2944 **Poster Board Number P636**
Assessment of Toxicity of Glufosinate Ammonium Using Early Stages of Zebrafish. *F. Wang*[1], X. Chen[1], D. Yang[1], J. Yang[1], G. Kang[1], B. Zhao[2], N. Zheng[4], M. Chernick[3], D.E. Hinton[3], and *W. Dong*[1,3]. [1]Inner Mongolia Provincial Key Laboratory for Toxicants, and Animal Disease/ Inner Mongolia University for the Nationalities, Tongliao, China; [2]Institute of Pharmacology, and Toxicology, Academy of Military Medical Science, Beijing, China; [3]Nicholas School of the Environment, Duke University, Durham, NC; and [4]Northeast Institute of Geography, and Agricultural Ecology, Chinese Academy of Sciences, Jilin, China. Sponsor: *W. Dong*.

#2945 **Poster Board Number P637**
Functional Characterization of Glutathione-S-Transferases Rho (Gstr1) and Theta 2 (Gstt2) in Zebrafish (*Danio rerio*) and Their Sensitivity to Environmental Toxicants. *B. Glisic*[2], *J. Hrubik*[2], E. Petri[2], A. Tubic[2], R. Zaja[1], T. Smital[1], and R. Kovacevic[2]. [1]Rudjer Boskovic Institute, Zagreb, Croatia; and [2]University of Novi Sad Faculty of Sciences, Novi Sad, Serbia.

#2946 **Poster Board Number P638**
Effects of an Aqueous Coal Dust Extract on Developmental Toxicity and Gene Expression Profiling of Zebrafish (*Danio rerio*). *K. Caballero-Gallardo*[2], *S.E. Wirbisky*[1], *J. Olivero-Verbel*[2], and *J.L. Freeman*[1]. [1]Purdue University, West Lafayette, IN; and [2]University of Cartagena, Cartagena, Colombia.

#2947 **Poster Board Number P639**
Effects of Tris(2-Butoxyethyl) Phosphate (TBEP) on Endocrine Systems and Reproduction in Zebrafish (*Danio rerio*). H. Shin[1], *K. Kim*[1], and K. Ji[2]. [1]Seoul National University of Science, and Technology, Seoul, Korea, Republic of; and [2]Yongin University, Yongin, Korea, Republic of. Sponsor: *K. Kim*.

#2948 **Poster Board Number P640**
Analysis of Toxic Effects Using Differential Gene Expression in the *Danio rerio* Embryo Test. *W.-K. Kim*[1], and J.S. Choi[2]. [1]Korea Institute of Toxicology, Daejeon, Korea, Republic of; and [2]Korea Institute of Toxicology, Jinju, Korea, Republic of.

#2949 **Poster Board Number P641**
Effects of 2- and 6-Hydroxylated Chrysene on the Development of *Danio rerio* Embryos. *G. Diamante*[2], G.A. Müller[1], A.C. Bainy[1], and *D. Schlenk*[2]. [1]Federal University of Santa Catarina (UFSC), Florianópolis, Brazil; and [2]University of California, Riverside, Riverside, CA.

#2950 **Poster Board Number P642**
Copper Pyrithione Induces Abnormal Muscle and Notochord Architecture in Developing Zebrafish Embryos. *K. Almond*, and *L. Trombetta*. St. John's University, Queens, NY.

#2951 **Poster Board Number P643**
Characterization of Cardiac Deformity, CYP Induction, and Developmental Bioenergetics Following PAH Exposures in PAH-Resistant and Non-Resistant *Fundulus heteroclitus*. C.D. Lindberg, N. Jayasundara, J.S. Kozal, and *R.T. Di Giulio*. Duke University, Durham, NC.

Abstract #

#2952 **Poster Board Number P644**
A Multi-Organ Approach for Studying the Impacts of the Polycyclic Aromatic Hydrocarbon Phenanthrene on the Reproductive Axis. J.R. Loughery[2], E. Crowley[2], A. Mercer[2], K.A. Kidd[2], and C. Martyniuk[1]. [1]University of Florida, Gainesville, FL; and [2]University of New Brunswick, Saint John, NB, Canada. Sponsor: *N. Denslow*.

#2953 **Poster Board Number P645**
Benzo[a]pyrene Modulates Changes on Stages of Development and in Genes Related with DNA Methylation in Male Tilapia, *Oreochromis niloticus*. N.A. Albornoz-Abud, O. Zapata-Pérez, and *R.C. Colli-Dula*. Centro de Investigación y Estudios Avanzados del Instituto Politécnico Nacional, Unidad Mérida, Mérida, Mexico.

#2954 **Poster Board Number P646**
Diazinon-Induced Clastogenity and Pathological Changes in Ovaries and Testes of *Clarias gariepinus*. *O.E. Ola Davies*, *A.F. Fagbohun*, B.O. Emikpe, and O.K. Adeyemo. University of Ibadan, Ibadan, Nigeria.

#2955 **Poster Board Number P647**
An Integrated Study on DDT and Its Metabolites in Sediments of Palos Verdes, California (USA): *In Vitro* Bioassessment of Trophic Transfer and Comparisons with Field Monitoring of Residues and Effects in Male Hornyhead Turbot (*Pleuronichthys verticalis*). G. Xu[2], *J. Crago*[2], *A. Kupsco*[2], F. Jia[2], A. Mehinto[1], W. Lao[1], K. Maruya[1], J. Gan[2], and *D. Schlenk*[2]. [1]Southern California Coastal Research Project, Costa Mesa, CA; and [2]University of California, Riverside, Riverside, CA. Sponsor: *D. Schlenk*.

#2956 **Poster Board Number P648**
***In Silico* Interaction Analyses between α-Pinene and Orthologous Cyp6dg1v1 or Cyp6dg1v3 from Bark Beetles *Dendroctonus rhizophagus* and *D. valens* (*Curculionidae: scolytinae*).** M.F. Lopez-Gomez[1], G. Ramirez-Salinas[3], J. Correa-Basurto[3], G. Zuñiga[2], and *A. Albores*[1]. [1]Centro De Investigacion y de Estudios Avanzados del IPN, Mexico City, Mexico; [2]Escuela Nacional de Ciencias Biologicas, IPN, Mexico City, Mexico; and [3]Escuela Superior de Medicina, IPN, Mexico City, Mexico.

Wednesday Morning, March 16
10:00 AM to 11:00 AM
CC Lobby A Lounge
(Ticket Required; Limited Seating)

Trainee Discussion with Medical Research Council (MRC) Lecturer: Dr. Franklin

Chairperson(s): *Kelly M. Almond, St. John's University, Jamaica, NY.*

Lecturer: *Robin J.M. Franklin, Wellcome Trust-MRC Cambridge Stem Cell Institute, University of Cambridge, Cambridge, United Kingdom.*

Dr. Franklin meet informally for discussion with graduate students and postdoctoral scholars after his Keynote MRC Lecture (see page 239). Registration is limited to SOT graduate student and postdoctoral members.

Wednesday Morning, March 16
10:30 AM to 11:30 AM
CC Room 213

Exhibitor-Hosted Session: Key Considerations in the Safety Evaluation of Novel Therapeutic Modalities for Oncology

Presented by:

Envigo

The session will address the development of novel cancer drugs, how the drug development landscape is changing. This educational, interactive forum will highlight recent advances in novel cancer therapies including ADCs. Preclinical and regulatory considerations will be discussed, and case studies shared highlighting developments in the field.

Wednesday Morning, March 16
10:30 AM to 11:30 AM
CC Room 205

Exhibitor-Hosted Session: Software Considerations When Expanding Your Tox Lab to Include PGx Testing

Presented by:

UNIConnect

An overview of the differences between toxicology and pharmacogenomics software systems. Can one system handle both types of tests?

WEDNESDAY AFTERNOON

Wednesday Afternoon, March 16
12:00 Noon to 1:30 PM
CC Room 223

Regional Chapter Collaboration and Communications Committee (RC4) Meeting

Wednesday Afternoon, March 16
12:15 PM to 1:45 PM
Marriott at the Convention Center Blaine Kern Ballroom A

In Vitro and Alternative Methods Specialty Section Meeting/Luncheon

Wednesday Afternoon, March 16
12:00 Noon to 1:00 PM
CC Room 212

Exhibitor-Hosted Session: DRAGON ONLINE: A Web-Based Tool for Systematic Literature Review

Presented by:

ICF International

ICF's DRAGON enables scientists to work collaboratively on literature screening, study quality evaluations, and data extraction for systematic literature reviews. Documenting the data and decisions supporting the review increases transparency and preserves institutional knowledge. ICF's team will demonstrate how the original prototype has grown into DRAGON ONLINE with expanded capabilities.

Wednesday Afternoon, March 16
12:00 Noon to 1:00 PM
CC Room 211

Exhibitor-Hosted Session: Implantation Studies for Medical Devices According to ISO 10993-6—Pitfalls, Diagnostic Problems, Misinterpretations

Presented by:

Eurofins BioPharma Product Testing and AnaPath

Implantation studies evaluating the local tolerance of medical devices and materials are carried out according to ISO 10993-6. The session will focus on pitfalls in implantation studies (case studies) based on diagnostic problems and misinterpretations and new diagnostic tools to overcome such problems will be introduced.

Wednesday Afternoon, March 16
12:00 Noon to 1:00 PM
CC Room 205

Exhibitor-Hosted Session: Testing Approaches Towards Safe Nanoproducts

Presented by:

Fraunhofer ITEM

The session will discuss current strategies for testing and risk assessment of nanomaterials. Emphasis will be placed on specific testing requirements for different types of nanoproducts, e.g. particles, tubes, and nanotherapeutics. Finally, an overview of the current regulatory policy for different product groups will be given.

Wednesday Afternoon, March 16
12:15 PM to 1:45 PM
Capdeville Restaurant

Molecular and Systems Biology Specialty Section Mentoring Event

Wednesday Afternoon, March 16
12:30 PM to 1:20 PM
CC Room R08

Distinguished Toxicology Scholar Award Lecture: Bioactivation: An Initiating Event in Chemical-Induced Tissue Injury

Lecturer: *I. Glenn Sipes, University of Arizona, Tucson, AZ.*

In the early 1970s the role of bioactivation as an initiating event in chemical-induced injury became increasingly apparent. Results of a variety of studies with bromobenzene and chloroform demonstrated that a CYP-450-catalyzed oxidative reaction converted these chemicals to reactive intermediates that covalently bound to hepatic proteins (marker of bioactivation). The degree of binding correlated with the extent of hepatic injury. Subsequently, CCl_4 and the inhalation anesthetic, halothane, were shown to undergo CYP-450-catalyzed reduction to radicals that bound to lipids and proteins. Based on this reductive pathway, the first reproducible animal model of halothane-induced liver injury was developed. Although bioactivation was the critical initiating event for these and other chemicals, it became apparent that subsequent immune-mediated events were required for the progression to necrotic liver injury. Potentiation of CCl_4-induced liver injury by vitamin A pretreatment of rats was shown to result from vitamin An activation of Kupffer cells, the resident macrophage of the liver. Similarly, the inherent sensitivity of F344 rats, as compared to SD rats, to chlorobenzene-induced liver injury results from a more robust oxidative stress in the livers of F344 rats, mediated in part by Kupffer cells. Injury of non-hepatic tissues by chemicals can be caused by reactive metabolites produced *in situ* or by the liver. The unique susceptibility of the mouse ovary to 4-vinylcyclohexene is explained by its enhanced capacity to form (via CYP-450) the more reactive metabolite, vinylcyclohexane diepoxide, and by a reduced capacity to detoxify this diepoxide (via epoxide hydrolase). These are just a few examples of an area of research that has a rich history, is now central to our discipline and has launched many, many scientific careers.

Abstract #

Wednesday Afternoon, March 16
12:30 PM to 1:50 PM
CC Room 208

Roundtable Session: Combination Toxicology: Are We Testing the Right Things?

Chairperson(s): *Leigh Ann Burns Naas, Gilead Sciences, Inc., Foster City, CA; and Helen Haggerty, Bristol-Myers Squibb Company, New Brunswick, NJ.*

Endorser(s):
Biotechnology Specialty Section
Immunotoxicology Specialty Section
Regulatory and Safety Evaluation Specialty Section

Whether it is to increase efficacy by targeting multiple pathways for the same disease or to improve safety by being able to lower doses of one or more drugs, the use of combinations of drugs in clinical development is increasing. Global regulatory guidance has provided a framework for the nonclinical safety evaluation of combination products, which considers the need for testing based on such things as the potential for PK or PD interactions, overlapping toxicology profiles, extent of toxicology characterization of the individual agents and their margins of safety, human experience with the individual agents, stage of development, etc. Notably, combination testing of drugs intended for advanced oncology indications is typically not warranted. Rather, sponsors are encouraged to obtain toxicology-related endpoints from pharmacology studies to inform the need for additional testing. This leaves open the possibility that unexpected adverse events associated with targeted, novel agents could be observed clinically. The objective of this deliberately provocative session is to provide a forum to begin to discuss the possibility that the current testing paradigms may be less useful than originally envisioned or may not be providing sufficient safety evaluation for the clinical assessment of combination drugs. The session will consider examples in which testing under existing guidance has had limited to no clinical impact, as well as examples in which potential safety issues were identified in situations where testing may not have been warranted under existing guidance. A proposal for a rational paradigm on how to address potential safety liabilities of particular drug combinations, and a framework for deciding when and how to interrogate *in vitro* or *in vivo* preclinical models in addressing combination safety will be presented by the third speaker. Examples presented will discuss incorporating safety criteria that will minimize combination toxicities for a particular target, explorating potential synergistic toxicities in the combination of two redundant targets, and developing a preclinical model for dose-limiting clinical combination toxicity and using this model to evaluate whether an alternative target would mitigate the toxicity. The final speaker will provide a regulatory perspective on the adequacy of the current testing for oncology indications including the rationale for existing regulatory guidance. The following questions will be posed during the roundtable to facilitate the initial discussion: Is the current testing paradigm providing the appropriate investigation and adding to our understanding of the potential safety concerns for combination products? What is the most appropriate dose of each agent to test in order to adequately characterize the combination safety and protect patients? Given the limitations often encountered with crossreactivity and different animal models of disease in oncology that may impact the ability to draw concrete conclusions from these efficacy models, should greater consideration be given to evaluating the nonclinical safety of combinations of oncology drugs? If yes, is an otherwise healthy animal the appropriate model? (Abstract #2957)

12:30 **Non-Oncology Indications—What Have We Learned and What Impact Did It Have?** *L.A. Burns Naas*. Gilead Sciences, Inc., Foster City, CA.

12:45 **Combinations in Immuno-Oncology: To Test or Not To Test.** *H. Haggerty*. Bristol-Myers Squibb Company, New Brunswick, NJ.

1:00 **Optimizing for Safe Combinations in the Discovery Space.** *D. Diaz*. Genentech, South San Francisco, CA.

1:15 **Regulatory Perspective on the Adequacy of Current Testing of Anticancer Therapeutic Combinations.** T.R. Palmby. US FDA, Silver Spring, MD. Sponsor: *L.A. Burns Naas.*

1:30 **Panel Discussion/Q&A.**

Abstract #

Wednesday Afternoon, March 16
12:30 PM to 1:50 PM
CC Room 217

Informational Session: Updating FDA's Redbook: The Importance of Stakeholder Involvement

♠ **Recent Advances in Safety Assessment**

Chairperson(s): *Dennis Keefe, US Food and Drug Administration, College Park, MD; and Yu Janet Zang, US Food and Drug Administration, College Park, MD.*

Endorser(s):
Food Safety Specialty Section
Regulatory and Safety Evaluation Specialty Section

The US Food and Drug Administration (US FDA) is updating its guidance titled "Toxicological Principles for the Safety Assessment of Food Ingredients," known less formally as the "Redbook." US FDA proposes to expand the scope of the Redbook to include chemical safety assessments for all products over which US FDA's Center for Food Safety and Applied Nutrition has statutory authority, including regulatory contexts such as food additives, food contact substances, dietary supplement ingredients, food contaminants, and cosmetics. This information session will introduce the proposal and engage the audience in a discussion as to how to best facilitate stakeholder involvement. The introductory presentation will give an overview about the agency's considerations underlying this proposal. With the increase in public awareness of food safety issues, US FDA must ensure its toxicology toolbox keeps pace with advances in science and technology. The time is right for US FDA to ask the question of whether or not the guidance in the Redbook used in the assessment of food ingredient safety represents an articulation and application of the best science to garner an understanding of the toxicity profile of food ingredients. US FDA recognizes the importance of stakeholder involvement in updating the Redbook and will outline its strategies for ensuring transparency and the inclusiveness of all interested parties in this endeavor. The second presentation will discuss the process by which US FDA plans to update the Redbook. The updated project is complex and large in scope. US FDA must ensure that actionable guidance, developed with extensive input from stakeholders, begins to become available as soon as reasonably possible. At the same time, stakeholders must have adequate information to understand the overall direction of the project and the context within which individual sections of the guidance will function. US FDA's plans for a "roadmap" of the overall project in conjunction with prioritization of individual sections for publication will be discussed. The third presentation will emphasize that guidance on methodologies to assess food ingredient safety must include the most up-to-date scientific approaches that will most accurately assess the safety. New knowledge and toxicological approaches have the potential to make risk assessment more mechanistically based. However, whether these new approaches are ready to translate into changes in regulatory policies that govern human risk assessments needs to be thoroughly evaluated. Criteria for when a particular new toxicology method is validated sufficiently that it may be considered for incorporation into guidance will be discussed. The last presentation will share highlights of the International Life Sciences Institute (ILSI) North America's recommendations for Redbook enhancement from a stakeholder's perspective. Based on work undertaken by the ILSI organization, this presentation will discuss components of the Redbook that should receive the highest priority for review, new topics that are currently not addressed and should be considered for incorporation into the Redbook, and aspects of how the Redbook can be updated to more fully support the development and submission of safety assessments for substances introduced into food. As a stakeholder, ILSI believes this transparent and iterative process of the Redbook revision offers an opportunity for the US FDA to demonstrate global leadership and provide a model for global adoption of safety assessment for substances. (Abstract #2958)

12:30 **Why Now for the Redbook?** D. Keefe. US FDA, College Park, MD. Sponsor: *Y. Zang*.

12:40 **Updating FDA's Redbook: The Roadmap.** J. Fasano. US FDA, College Park, MD. Sponsor: *Y. Zang*.

12:55 **Integrating New Emerging Science Into the Risk Assessment Paradigm.** *A.W. Hayes*. Harvard School of Public Health, Andover, MA.

1:10 **Scientific Stakeholder Perspective: ILSI North America.** A. Krester. ILSI North America, Washington, DC. Sponsor: *Y. Zang*.

1:25 **Panel Discussion/Q&A.**

Wednesday Afternoon, March 16
12:30 PM to 1:50 PM
CC Room R02

Informational Session: Why Did the Scientific Program Committee Reject My Proposal? Developing a Good Idea into an Accepted SOT Session

Chairperson(s): *John B. Morris, University of Connecticut, Storrs, CT; and Patricia E. Ganey, Michigan State University, East Lansing, MI.*

Endorser(s):
Scientific Program Committee

The scientific sessions at the Annual Meeting are selected from proposals submitted by the membership. In this way the Scientific Program Committee (SPC) ensures the Annual Meeting Program is responsive to the overall membership needs. Every year, many more proposals for sessions are received than could possibly be scheduled in the Annual Meeting. Thus, less than one-half of the proposals submitted for scientific sessions (symposia, workshops, informational sessions, roundtable sessions, regional interest sessions, and historical highlights) are accepted. Although many of the rejected proposals focus on a highly pertinent topic, they ultimately fail because of weaknesses in critical aspects of the submission. The SPC, which carefully considers input from SOT Specialty Sections, Special Interest Groups, and Committees (i.e., "component groups"), is responsible for selection of the scientific sessions that are presented at the Annual Meeting. This informational session is being hosted by the SPC with the objective to help members develop high-quality proposals for these scientific sessions. Participants will learn about the process by which proposals are selected to gain an appreciation for the value of working with one or more component groups during the development stage. Aspects of proposals that are critical to acceptance (thorough development of abstracts, balance among speakers, etc.), as well as those that can reduce enthusiasm, will be discussed. The session will conclude with a 20-minute question and answer period during which session attendees will be encouraged to address the speakers, all of whom are members of the SPC, in an informal setting. This session supplements the "Best Practices—Proposal Submission and Review" webinar hosted by SOT for component groups at the beginning of March. (Abstract #2959)

12:30 **Introduction: Annual Meeting Goals and the Process for Scientific Session Selection.** *J.B. Morris*. University of Connecticut, Storrs, CT.

12:50 **Another Year, Another Rejection: The Anatomy of a Bad Proposal.** *M.B. Genter*. University of Cincinnati, Cincinnati, OH.

1:10 **Constructing a Competitive Proposal: Increasing the Likelihood of Acceptance.** *B.S. McIntyre*. NIEHS, Research Triangle Park, NC.

1:30 **Panel Discussion.** *L.M. Sweeney*. Navy Medical Research Unit Dayton, Wright-Patterson AFB, OH, and Henry M. Jackson Foundation, Bethesda, MD.

Wednesday Afternoon, March 16
12:30 PM to 1:50 PM
CC Room 220

Education-Career Development Session: The Evolution of the Postdoc: Transitioning from Trainee to Professional in the Modern Era

Chairperson(s): *Karilyn E. Sant, University of Massachusetts, Amherst, MA; and Samantha Snow, US Environmental Protection Agency, Research Triangle Park, NC.*

Endorser(s):
Career and Resource Development Committee
Graduate Student Leadership Committee
Postdoctoral Assembly

The postdoctoral experience has changed considerably over the past decade. The number of postdocs in the United States has been consistently growing, as has the time spent in this transitional position. The average age at which scientists are appointed to their first faculty job and awarded their first NIH grant has been increasing. This "hypercompetitive" culture in biomedical research has resulted in several publications and reports by the National Academies and the National Postdoctoral Association that focused on the best practices needed to improve the quality of the postdoctoral experience. This session is designed to bring leaders from across various research sectors to discuss what it means to currently be a postdoc in an academic, government, and industry setting. Speakers will focus on (1) the modern state of postdocs in their sector; (2) the advantages/disadvantages of pursuing a postdoctoral fellowship in their sector; (3) the postdoc as a mentored position; and (4) how we move forward to produce a high-quality, sustainable workforce. Each speaker will discuss how their sector is addressing the current needs of postdocs and the workforce, and will provide the audience with their thoughts on how to navigate to different career paths. Speakers will also address how a postdoc in their sector may help produce a diversified workforce. This discussion will be highly relevant to all student and postdoctoral attendees, as well as senior scientists currently mentoring trainees. This career development session will inspire toxicologists to think critically about their training and to develop an improved roadmap to navigate to their ideal careers. (Abstract #2960)

12:35 **Challenges, Opportunities, and Future Directions of the Traditional Academic Postdoc in Toxicology.** *I. Jaspers*. University of North Carolina, Chapel Hill, NC.

12:50 **Postdoc Training: Thinking Beyond the Bench.** *L. Birnbaum*. NIEHS, Research Triangle Park, NC.

1:05 **Pfizer's Postdoctoral Program: An Example of an Industry's Approach to Ensuring a High-Quality Postdoctoral Experience.** *J. Cook*. Pfizer, Inc., Groton, CT.

1:20 **Institutional Transformation Strategies for Acceptance of Multiple Career Pathways as Successful Outcomes for Trainees in the Biomedical Research Workforce.** A. Mathur. Wayne State University, Detroit, MI. Sponsor: *K. Sant.*

1:35 **Panel Discussion/Q&A.**

Wednesday Afternoon, March 16
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Epidemiology and Public Health

Chairperson(s): *Tiffany R. Sanchez, Columbia University, New York, NY; and Haiyan Tong, US Environmental Protection Agency, Research Triangle Park, NC.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *1:15 PM–2:45 PM*

#2961 **Poster Board Number P101**
Geographic Variations in Female Breast Cancer Incidence in Association with Emissions of Polycyclic Aromatic Hydrocarbons. C. Large, and *Y. Wei*. Mercer University School of Medicine, Macon, GA.

#2962 **Poster Board Number P102**
Could the Adoption of a Chemical Release Prevention Program Have Prevented the Elk River Chemical Leak? M. Nye, *T.L. Knuckles*, and *M. McCawley*. West Virginia University, Morgantown, WV.

#2963 **Poster Board Number P103**
Birth Outcome Measures and Prenatal Exposure to 4-Tert-Octylphenol Among Chinese Babies. S. Lv[1,2], C. Wu[2], X. Qi[2,3], X. Chang[2], J. Guo[2], and *Z. Zhou*[2]. [1]Sahnghai Center for Disease Control, and Prevention, Shanghai, China; [2]School of Public Health, Fudan University, Shanghai, China; and [3]Zhejiang Center for Disease Control, and Prevention, Hangzhou, Zhejiang Province, China.

Abstract #

#2964 **Poster Board Number P104**
Predicting Propofol Infusion Syndrome (PRIS): A Case-Control Study of Risk Factors and Outcomes. J.H. Diaz. Louisiana State University Health Sciences Center, New Orleans, LA. Sponsor: *M. Trimble.*

#2965 **Poster Board Number P105**
Toluene Diisocyanate and Formaldehyde Specific IgE and IgG Antibodies in Urethane Resin Handling Plant Workers. *M. Tsuji*[2], *T. Isse*[2], *M. Yamamoto*[1], and *T. Kawamoto*[2]. [1]National Institute for Minamata Disease, Minamata, Japan; and [2]University of Occupational, and Environmental Health, Kitakyusyu, Japan.

#2966 **Poster Board Number P106**
Records from the Swedish Poisons Information Center as a Means for Surveillance of Occupational Accidents and Incidents with Chemicals. *L. Schenk*[1], K. Feychting[2], A. Annas[2], and *M. Öberg*[1,3]. [1]Karolinska Institutet, Stockholm, Sweden; [2]The Swedish Poisons Information Centre, Stockholm, Sweden; and [3]The Swedish Toxicology Sciences Research Center (Swetox), Södertälje, Sweden.

#2967 **Poster Board Number P107**
Effects of the Indoor Thermal Environment on Human Food Intake: A Pilot Randomized Controlled Trial. M.C. Bernhard[1], P. Li[1], D.B. Allison[1], and *J.M. Gohlke*[2]. [1]University of Alabama at Birmingham, Birmingham, AL; and [2]Virginia Polytechnic Institute, and State University, Blacksburg, VA.

#2968 **Poster Board Number P108**
Diet and Low Serum Vitamin D Are Associated with Increased Crisis-Related Hospitalization Rates Among Sickle Cell Disease Patients. *M. McCaskill*[2], *O. Ogunsakin*[2], H. Hottor[2], and R. Kruse-Jarres[1]. [1]Puget Sound Blood Center, Seattle, WA; and [2]Tulane University, New Orleans, LA.

#2969 **Poster Board Number P109**
Dietary and Genetic Influence on the Metabolism and Biological Effects of Arsenic Exposure: A Double-Blind, Placebo-Controlled Folic Acid-Supplementation Trial. X. Chen[1], X. Yan[1], P. He[1], J. Zhu[1], J. Nie[1], D. Aga[1], H. Wu[2], X. Guo[2], and *X. Ren*[1]. [1]The State University of New York, Buffalo, NY; and [2]Wenzhou Medical University, Wenzhou, China.

#2970 **Poster Board Number P110**
Spatial Analysis of Environmental Contaminants Found Historically in a Polycythemia Vera Cancer Cluster Area. K. Benson, A. Ragin-Wilson, *J.S. Wheeler*, and E. Irvin-Barnwell. CDC/ATSDR, Atlanta, GA.

#2971 **Poster Board Number P111**
Genetic and Epigenetic Differences by Tobacco Smoking and Quitting Smoking. *M. Yang*. Sookmyung Women's University, Seoul, Korea, Republic of. Sponsor: *M. Yang.*

#2972 **Poster Board Number P112**
Acrolein Metabolites and Diabetes and Insulin Resistance. F. Scinicariello[1], A.G. Feroe[3], and R. Attanasio[2]. [1]ATSDR, Atlanta, GA; [2]ATSDR, Georgia State University, GA; and [3]Bowdoin College, Brunswick, ME. Sponsor: *M. Mumtaz.*

Abstract #

#2973 **Poster Board Number P113**
Sodium Fluoride Induces Apoptosis in H9c2 Cardiomyocytes by Altering Mitochondrial Membrane Potential and Intracellular ROS Level. X. Yan[2], Y. Qiu[2], and *J. Wang*[1]. [1]Shanxi Agricultural University, Taigu, China; and [2]Shanxi Medical University, Taiyuan, China. Sponsor: *X. Ren*.

#2974 **Poster Board Number P114**
Asbestos Exposure and Pharyngeal and Laryngeal Cancer Risk: A Fiber-Type Specific Meta-Analysis. S. Benson[2], S. Batdorf[2], K. Hitchcock[2], D. Galbraith[3], and *B. Finley*[1]. [1]Cardno ChemRisk, Brooklyn, NY; [2]Cardno ChemRisk, Pittsburgh, PA; and [3]Cardno ChemRisk, San Francisco, CA.

#2975 **Poster Board Number P115**
Quantitative Bias Analysis of a Reported Association Between Perfluorooctanoic Acid (PFOA) and Endometriosis. *G. Ngueta*[1,3], *M. Yoon*[2], *H. Clewell*[2,4], *M.E. Andersen*[2,4], *M.P. Longnecker*[4], and *M.-A. Verner*[1,3]. [1]Department of Occupational, and Environmental Health, University of Montreal, Montreal, QC, Canada; [2]Hamner Institutes for Health Sciences, Durham, NC; [3]Public Health Research Institute (IRSPUM), University of Montreal, Montreal, QC, Canada; and [4]Ramboll Environ, Durham, NC.

#2976 **Poster Board Number P116**
Meta-Analysis of Lung Cancer Risk Related to Diesel Exposure by Occupation and Evaluation of Exposure Response. J. Panko, S. Benson, and *M. Kreider*. Cardno ChemRisk, Pittsburgh, PA.

#2977 **Poster Board Number P117**
Placental Cadmium Levels Are Associated with Increased Preeclampsia Risk. *J.E. Laine*, *P. Ray*, W. Bodnar, P.H. Cable, K. Boggess, S. Offenbacher, and *R.C. Fry*. University of North Carolina, Chapel Hill, Chapel Hill, NC.

#2978 **Poster Board Number P118**
Lung Cancer Mutation Profile: Meta-Analysis and Comparison of Never and Ever Smokers. *A.M. Chapman*[1], K.Y. Sun[1], *P. Ruestow*[2], *D.M. Cowan*[1], and *A.K. Madl*[1]. [1]Cardno Chem Risk, Aliso Viejo, CA; and [2]Cardno Chem Risk, Chicago, IL.

#2979 **Poster Board Number P119**
Does Longevity Play an Etiological Role in Pleural Mesothelioma? B.S. Beckerman[3], E.T. Chang[2], G. Mezei[2], and *B.D. Kerger*[1]. [1]Exponent, Irvine, CA; [2]Exponent, Menlo Park, CA; and [3]Exponent, Oakland, CA.

#2980 **Poster Board Number P120**
An Analysis of Toxic Chemical Releases and Cancer Rates in Louisiana Parishes. S. Ponnapakkam, C. Rothenberg, and E. Svendsen. Tulane University, New Orleans, LA. Sponsor: *J. Wickliffe.*

#2981 **Poster Board Number P121**
Metal Biomonitoring in the Navajo Birth Cohort Study: Relationship to Uranium Mine Waste and Other Exposure Sources. *J. Lewis*, J. Hoover, *J. Ong*, and C. Shuey. University of New Mexico, Albuquerque, NM.

#2982 **Poster Board Number P122**
Undergraduate Field Study of Community Arsenic Exposure in Rural Bangladesh. Z. Paquette, C. Stone, and *J. Angermann*. University of Nevada, Reno, NV. Sponsor: *J. Angermann.*

Abstract #

#2983 **Poster Board Number P123**
Gestational Week-Specific Curve for Small-for-Gestational Age (SGA) Risk Attributable to Maternal Tobacco Use. H. Ferdosi[1], *J. Polifka*[3], J. Li[2], and *S. Lamm*[1]. [1]CEOH, LLC., Washington, DC; [2]Johns Hopkins University School of Medicine, Baltimore, MD; and [3]University of Washington School of Medicine, Seattle, WA.

#2984 **Poster Board Number P124**
Role of Metals and Aspects of Socioeconomic Status (SES) in Peripheral Arterial Disease in the US Population. *A.-R.M. Kadry*, *Y.-S. Lin*, *D. Segal*, and *B. Sonawane*. US Environmental Protection Agency, Washington, DC.

#2985 **Poster Board Number P125**
Pathway Analysis of Prenatal Exposure to Phthalates and Child Motor Development. *D.A. Sarigiannis*[1,2], K. Polanska[3], G. Theodoridis[1], and C. Chatziioannou[1]. [1]Aristotle University of Thessaloniki, Thessaloniki, Greece; [2]Institute of Advanced Study, Pavia, Italy; and [3]Nofer Institute of Occupational Medicine, Lodz, Poland. Sponsor: *T. Hartung.*

Wednesday Afternoon, March 16
1:15 PM to 4:45 PM
CC Exhibit Hall

Poster Session: Regulation and Policy

Chairperson(s): *Niklas Andersson, European Chemicals Agency (ECHA), Helsinki, Finland; and Renee Hartsook, Amgen, Thousand Oaks, CA.*

Displayed: *1:15 PM–4:45 PM*

Author Attended: *3:00 PM–4:30 PM*

#2986 **Poster Board Number P126**
Legacy of Lead Water Service Lines: Hazard Assessment, Exposure Modeling and Implications to Public Health, Policy and Outreach. A. Katner, C.-y. Hu, and J. Diaz. LA State University Health Sciences Center, New Orleans, LA. Sponsor: *C. Miller.*

#2987 **Poster Board Number P127**
Limitations of Regulatory Tier I and II Approaches to Demonstrate Equivalence of Generic Biocides. T. Wako[2], K. Ozaki[2], and *J. Pauluhn*[1]. [1]Bayer CropSience, Monheim, Germany; and [2]Sumitomo Chemical Co., Ltd, Tokyo, Japan. Sponsor: *J. Pauluhn.*

#2988 **Poster Board Number P128**
The Read-Across Assessment Framework Under REACH. N. Andersson, D.R. Bell, I. Bichlmaier, G. Cartlidge, K. De Raat, N. Fedtke, A. Kojo, A. Kovari, T. Netzeva, and E. Stilgenbauer. European Chemicals Agency (ECHA), Helsinki, Finland. Sponsor: *K. Savolainen.*

#2989 **Poster Board Number P129**
Surrogate Evaluation and Read Across for Hazard Assessment: Best Practices and Potential Pitfalls. *T.A. Lewandowski*, and *J.M. Cohen*. Gradient, Seattle, WA.

#2990 **Poster Board Number P130**
Retrospective Analysis of Acute Toxicity Tests for Pesticides. M. Paris, *J. Strickland*, *D. Allen*, and *W. Casey*. NIEHS/NICEATM, Durham, NC.

Abstract #

#2991 **Poster Board Number P131**
Optimal Sampling and Extraction Procedures of Ergot Alkaloid Analysis. T. Grusie, V. Cowan, J. McKinnon, and B. Blakley. University of Saskatchewan, Saskatoon, SK, Canada. Sponsor: *L. Weber.*

#2992 **Poster Board Number P132**
Dose Response Curves Derived from Clinical Ozone Exposures Can Inform Public Policy. *S.S. Lange*[2], *G. Tao*[1], *L.R. Rhomberg*[1], *J.E. Goodman*[1], *M.L. Dourson*[3], and *M.E. Honeycutt*[2]. [1]Gradient, Cambridge, MA; [2]Texas Commission on Environmental Quality, Austin, TX; and [3]University of Cincinnati, Cincinnati, OH.

#2993 **Poster Board Number P133**
Exploring the Potential Use of Reach Inhalation Derived No Effect Levels (DNELs) for Workers as a Source of Information to Update OSHA PELs. *M.P. Jackson*[2], *L. Fell*[1,2], and *R. Lemus*[1]. [1]Advanced Testing Laboratory, Cincinnati, OH; and [2]Haley & Aldrich, Inc., Ann Arbor, MI.

#2994 **Poster Board Number P134**
Common Misconception: Rats Receive a 4–5 Times Lower Ozone Tissue Dose Than Humans at the Same Concentration. *D.D. McCant*, *J.T. Haney*, *S. Lange*, and *M.E. Honeycutt*. Texas Commission on Environmental Quality, Austin, TX.

#2995 **Poster Board Number P135**
A Computational Approach to Evaluate NIEHS-Funded Scientific Literature in the Context of the 2012–2017 NIEHS Strategic Plan. *K.J. Chandler*, E. Milliman, *L.S. Birnbaum*, and S.A. Newton. National Institute of Environmental Health Sciences, Research Triangle Park, NC.

#2996 **Poster Board Number P136**
Exposure of Regulated Drinking Water Disinfection Byproducts and Existing Compliance. *S. Parvez*, K. Frost, and M. Sundararajan. Indiana University Fairbanks School of Public Health, Indianapolis, IN.

#2997 **Poster Board Number P137**
Alberta Environmental Public Health Information Network. *N. Wang*[1], E. Ellehoj[2], J. Mayhew[3], and W. Kindzierski[3]. [1]Alberta Health, Edmonton, AB, Canada; [2]Ellehoj Redmond Consulting, Edmonton, AB, Canada; and [3]University of Alberta, Edmonton, AB, Canada.

#2998 **Poster Board Number P138**
Toxicity, Exposure, and Fate of Acrylonitrile in Communities - A Risk Management Perspective. *A. Pawlisz*, and *D. Johnson*. GHD, Dallas, TX.

#2999 **Poster Board Number P139**
"Pressured to Prescribe" Impact of Economic and Regulatory Factors on ED Physicians When Managing Drug Seeking Patients. S. Kelley, *G. Johnson*, J. Wolfson, and *R. Harbison*. College of Public Health, Tampa, FL.

#3000 **Poster Board Number P140**
Assessment of Retractions as a Measure of Scientific Misconduct. *A. Abritis*, *G. Johnson*, and *R. Harbison*. College of Public Health, Tampa, FL.

#3001 **Poster Board Number P141**
Environmentally-Induced Epigenetic Toxicity and Public Health: The Next Challenge for Regulatory Toxicology. E.L. Marczylo, *T.W. Gant*, and M.N. Jacobs. Public Health England, Chilton, United Kingdom.

Abstract #

#3002 **Poster Board Number P142**
Vanadium—What Should Constitute a "Do Not Drink" Warning? *L.J. Bradley*. Haley & Aldrich, Northbridge, MA.

#3003 **Poster Board Number P143**
Regulatory Acceptance of Non-Standard Toxicological Methods through Increased Use of Integrated Approaches to Testing and Assessment (IATA). *C. Willett*. The Humane Society of the United States, Washington, DC.

Wednesday Afternoon, March 16
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Food Safety/Nutrition 2

Chairperson(s): *Rekha Mehta, Health Canada, Ottawa, ON, Canada; and Li-Rong Yu, National Center for Toxicological Research, US Food and Drug Administration, Jefferson, AR.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *1:15 PM–2:45 PM*

#3004 **Poster Board Number P146**
Safety of Carotenoids from Fermentation Using *Yarrowia lipolytica*. J.A. Edwards, P. Beilstein, and J. Schierle. DSM Nutritional Products Ltd, Kaiseraugst, Switzerland. Sponsor: *A. Thiel.*

#3005 **Poster Board Number P147**
Comparative Evaluation of Liver Findings in Safety Studies with Canthaxanthin. J.A. Edwards[2], P. Beilstein[2], and L. Mecklenburg[1]. [1]Covance Preclinical Services GmbH, Münster, Germany; and [2]DSM Nutritional Products Ltd, Kaiseraugst, Switzerland. Sponsor: *A. Thiel.*

#3006 **Poster Board Number P148**
Protective Effect of Oxides Nanoparticle Against Aflatoxicosis in Rats. S. Samir Essa[2], E. El-Saied[1], M. Mahmoud[2], and *O. El-Tawil*[1]. [1]Cairo University, Faculty of Veterinary Medicine, Giza/Cairo, Egypt; and [2]Research Institute for Animal Reproduction, Giza/Cairo, Egypt.

#3007 **Poster Board Number P149**
Toxicological Assessment of Nattokinase Derived from *Bacillus subtilis* var. *natto*. *B. Lampe*, and *J.C. English*. NSF International, Ann Arbor, MI.

#3008 **Poster Board Number P150**
***In Vivo* Toxicity of Moniliformin.** M. Jonsson[1], J. Atosuo[3], M. Jestoi[1], A. Nathanail[1], U.-M. Kokkonen[1], M. Anttila[1], A. Welling[1], P. Koivisto[1], E.-M. Lilius[3], and *K. Peltonen*[2]. [1]Finnish Food Safety Authority, Helsinki, Finland; [2]Finnish Safety, and Chemicals Agency, Helsinki, Finland; and [3]University of Turku, Turku, Finland.

#3009 **Poster Board Number P151**
Carrageenan Does Not Increase Reactive Oxygen Species (ROS) or Toll-Like Receptor 4 (TLR4) Signaling in Human Intestinal Cell Lines. *J.M. McKim*, H.M. Baas, G.P. Rice, and J. Pregenzer. IONTOX, Kalamazoo, MI.

#3010 **Poster Board Number P152**
Linking a Toxic Glucose Metabolite to Glycemic Responses in an Omnivore Compared to a Carnivore. J.M. Briens, K. Desai, and *L. Weber*. University of Saskatchewan, Saskatoon, SK, Canada.

Abstract #

#3011 **Poster Board Number P153**
Toxicologic Evaluation of a Nature-Identical L-(+) Ergothioneine: Mironova EGT+™. *M.R. Bauter*[3], *P.A. Marone*[4], S.M. Weisman[1], D. Merrill[3], L. Koetzner[3], J. Trampota[2], and O. Mendes[3]. [1]Innovative Science Solutions, Morristown, NJ; [2]Mironova Labs Inc., Fairfield, NJ; [3]Product Safety Labs, Dayton, NY; and [4]Toxicology, and Pathology Associates, Virginia Commonwealth University, Richmond, VA.

#3012 **Poster Board Number P154**
Effects of Novasil Plus and Aflatoxin Exposure on Dry Matter Intake, Milk Production, and Milk Composition. C.R. Maki[2], A.D. Thomas[1], *S.E. Elmore*[2], *A.A. Romoser*[2], R.B. Harvey[2,3], H.A. Ramirez-Ramirez[1,2], and *T.D. Phillips*[2]. [1]Tarleton State University, Stephenville, TX; [2]Texas A&M, College Station, TX; and [3]US Department of Agriculture, College Station, TX.

#3013 **Poster Board Number P155**
Characterization of Adipocyte Proteomic Responses to Fructose and/or Glucose. *L.-R. Yu*, Y. Gao, G.T. Nolen, Z. Cao, and V. Varma. National Center for Toxicological Research, US FDA, Jefferson, AR.

#3014 **Poster Board Number P156**
Rice Bran Fermentation Enhances *Lactobacillus*-Mediated Reduction of *Salmonella typhimurium* Growth *In Vitro*. N.J. Nealon, *E.P. Ryan*, and C. Worcester. Colorado State University, Fort Collins, CO.

#3015 **Poster Board Number P157**
Iron Supplements and Magnesium Peroxide: An Example of a Hazardous Combination in Self-Medication. M.F. Vrolijk[1], *A. Opperhuizen*[3], E.H. Jansen[2], A. Bast[1], and G.R. Haenen[1]. [1]Maastricht University, Maastricht, Netherlands; [2]National Institute for Public Health, and the Environment (RIVM), Bilthoven, Netherlands; and [3]Netherlands Food, and Consumer Product Safety Authority (NVWA), Utrecht, Netherlands.

#3016 **Poster Board Number P158**
Changes in Gene Expression of Enzymes Involved in the Metabolism of Neurotransmitter in Rat Progeny from Dams Fed Different Levels of Dietary Vitamin B6. M.R. Almeida[1,2], *V.P. Venancio*[2], C.S. Park[1], C. Crane[1], L. Mabasa[1], M.L.P. Bianchi[2], and L.M. Antunes[2]. [1]North Dakota State University, Fargo, ND; and [2]University of Sao Paulo, Ribeirao Preto, Brazil. Sponsor: *D.P. Oliveira.*

#3017 **Poster Board Number P159**
Assessing Bioactivities and Exposure Profiles of Fruit and Vegetable Juices. *B.A. Wetmore*[3], *M.J. DeVito*[1], *M. Xia*[2], B. Parks[3], *R. Huang*[2], *K. Houck*[4], *R.R. Tice*[1], *R. Judson*[4], *R.S. Thomas*[4], and *M.E. Andersen*[3]. [1]NIEHS, Research Triangle Park, NC; [2]NIH, Rockville, MD; [3]The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and [4]US EPA, Research Triangle Park, NC.

#3018 **Poster Board Number P160**
Metagenomics Analyses of Phylogenetic and Functional Genomic Changes in Rat Gut Microbiota Induced by Green Tea Polyphenols. *J. Wang*[2], *L. Tang*[2], T.C. Glenn[2], C.-L. Shen[1], and *J.-S. Wang*[2]. [1]Texas Tech University Health Science Center, Lubbock, TX; and [2]University of Georgia, Athens, GA.

Abstract #

#3019 **Poster Board Number P161**
Nutritional and Phytochemical Compositions of Fish Feed with Varying Levels of *Ocimum gratissimum* Inclusions. *A.O. Ajiboye*, B.O. Otegbayo, and O.J. Adeyemo. Bowen University, Iwo, Osun State, Nigeria, Iwo, Nigeria. Sponsor: *F. Ajani*.

#3020 **Poster Board Number P162**
Effects of Clays Potentially Used as Food Contact Materials on the mRNA Expression of Selected Genes and Micronucleus Induction in Human Hepatoma Cells. S. Maisanaba[2], M. Jordá-Beneyto[1], A.M. Cameán[2], and A. Jos[2]. [1]ITENE, Valencia, Spain; and [2]University of Sevilla, Sevilla, Spain. Sponsor: *G. Font*.

#3021 **Poster Board Number P163**
Evaluation of Reproductive Parameters in Dairy Cattle Fed Diets Naturally Contaminated with *Fusarium Spp.* and *Zearalenona*. T. Quezada-Tristan[2], H. Rivera-Castillo[2], R. Ortiz-Martinez[2], A. Valdivia-Flores[2], L. Medina-Esparza[1], and C. Cruz-Vazquez[1]. [1]Instituto Tecnologico El Llano, Aguascalientes, Mexico; and [2]Universidad Autonoma de Aguascalientes, Aguascalientes, Mexico. Sponsor: *G. Pallas-Guzman*.

#3022 **Poster Board Number P164**
Combined *In Vivo* Genotoxicity Study of Carvacrol, an Oregano Essential Oil Compound, by the Alkaline Comet and Micronucleus Assays. M. Llana-Ruiz-Cabello, M. Puerto, A.I. Prieto, S. Pichardo, A. Jos, and A.M. Cameán. University of Sevilla, Sevilla, Spain. Sponsor: *G. Font*.

#3023 **Poster Board Number P165**
Safety Assessment of Proallium AP®: 90-Days Oral Subchronic Toxicity Study in Sprague-Dawley Rats. P. Mellado-García, M. Puerto, S. Pichardo, M. Llana-Ruiz-Cabello, A. Jos, and A.M. Cameán. University of Sevilla, Sevilla, Spain. Sponsor: *G. Font*.

#3024 **Poster Board Number P166**
Inactivation of Pathogenic Bacteria on Media Containing Fruit Juices and Spices Using Radiant Catalytic Ionization. B.L. Benjamin[2], A. Babel[2], R. Hardval[2], L. Mummert[2], I. Kuberry[2], L. Schwanke[2], K. Patel[2], R. Patel[2], O. Afolabi[2], D.E. Fulford[2], C.W. Steele[2], C.H. Sommers[1], and *W.J. Mackay*[2]. [1]Eastern Regional Research Center USDA, Wyndmoor, PA; and [2]Edinboro University of Pennsylvania, Edinboro, PA.

#3025 **Poster Board Number P167**
Twelve-Week Safety Assessment Study in Dogs with Proprionibacterium Dry Cultured Premix. *B.C. Sayers*[1], S. Beverly[2], A. Lim[2], and *J. Roper*[1]. [1]Dupont Haskell Global Centers for Health, and Environmental Sciences, Newark, DE; and [2]Dupont Nutrition, and Health, St Louis, MO.

#3026 **Poster Board Number P168**
The Effects of Residual Amounts of Tetracycline on the Permeability of Intestinal Epithelial Cells and Gene Expression Regulating Cell Barrier Function. C. Thomas[2], K. Gokulan[2], K. Williams[2], C. Cerniglia[2], S. Khare[2], and S. Pineiro[1]. [1]College of Veterinary Medicine/US Food and Drug Administration, Rockville, MD; and [2]National Center of Toxicological Research, Jefferson, AR. Sponsor: *M. Manjanatha*.

Abstract #

#3027 **Poster Board Number P169**
Bioavailability of Methylmercury from Commonly Consumed Seafood: An *In Vitro* Investigation of Gastrointestinal and Colonic Digestion. *M.A. Bradley*, M. Siedlikowski, and *N. Basu*. McGill University, Montreal, QC, Canada.

#3028 **Poster Board Number P170**
28-Day Repeated Dose Acute Toxicity of the Food Processing-Induced Chemical 2-Monochloro-1,3-Propanediol (2-MCPD) in F344 Rats. *J. Raju*, J. Roberts, M. Taylor, D. Caldwell, D. Patry, E. Mutzke, J. Eastwood, R. Bronson, G. Cooke, and *R. Mehta*. Health Canada, Ottawa, ON, Canada.

Wednesday Afternoon, March 16
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Tobacco Products

Chairperson(s): *Donald Mattison, Risk Sciences International, Hilton Head Island, SC.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *3:00 PM–4:30 PM*

#3029 **Poster Board Number P171**
Lung Inflammation and Toxicological Assessment in A/J Mice in Response to Chronic Exposure to Mainstream Aerosol from Candidate Modified Risk Tobacco Product and Smoke from Conventional Cigarettes. E.T. Wong[1], K. Luettich[2], K. Trivedi[2], E. Guedj[2], Y. Xiang[2], A. Elamin[2], E. Veljkovic[1], *A.W. Hayes*[3], P. Leroy[2], P. Vanscheeuwijck[2], M. Peitsch[2], and J. Hoeng[2]. [1]Philip Morris International Research Laboratories Pte Ltd, Singapore, Singapore; [2]Philip Morris International, Products S.A., Neuchatel, Switzerland; and [3]Spherix Consulting, Rockville, MD.

#3030 **Poster Board Number P172**
Application of *In Vitro* Cell Stress Assays Using Lung Epithelial Cells for the Assessment of Electronic Cigarettes. M. Taylor, T. Carr, O. Oke, T. Jaunky, F. Lowe, and *M.D. Gaca*. British American Tobacco, Southampton, United Kingdom.

#3031 **Poster Board Number P173**
The Assessment of γH2AX Induction from Conventional and Electronic Cigarette Aerosols. D. Thorne, S. Larard, C. Garcia-Canton, *C. Meredith*, and *M.D. Gaca*. British American Tobacco, Southampton, United Kingdom.

#3032 **Poster Board Number P174**
Design Features That Reduce Tin and Other Metals in Electronic Cigarette Aerosol. *M. Williams*, A. To, K. Bozhilov, and *P. Talbot*. University of California, Riverside, Riverside, CA.

#3033 **Poster Board Number P175**
Evaluation of Elements of Toxicological Interest in the Chemical Characterization of Vapor Products. J.M. Wertman, *J. Strasser*, *W. Xie*, and *E.H. Theophilus*. Reynolds American Inc, Winston-Salem, NC.

#3034 **Poster Board Number P176**
Targeted Aerosol Compound Quantitation: An Important Tool in Chemical Characterization of Vapor Products. *D.T. Szabo*, J. Strasser, *W. Xie*, J. Wertman, J. Griggs, and *E. Theophilus*. RJ Reynolds, Winston Salem, NC.

Abstract #

#3035 **Poster Board Number P177**
Effects on the ApoE$^{-/-}$ Mouse Lung Epigenome of Exposure to a Candidate Modified Risk Tobacco Product, THS 2.2, Compared with Conventional Cigarettes. N. Sierro[2], F. Martin[2], M. Talikka[2], S. Ouadi[2], J. Thomas[2], K. Baumer[2], B. Phillips[1], E. Veljkovic[1], *A.W. Hayes*[2,3], M.C. Peitsch[2], J. Hoeng[2], and N.V. Ivanov[2]. [1]Philip Morris International Singapore, Singapore, Singapore; [2]Philip Morris Products S.A., Neuchatel, Switzerland; and [3]Spherix Consulting, Rockville, MD.

#3036 **Poster Board Number P178**
Xenobiotic Metabolism Responses of Nasal, Oral and Bronchial Organotypic Epithelial Cultures: A Comparison of Tobacco Heating System Aerosol and Combustible Cigarette Smoke. A.R. Iskandar[1], S. Majeed[1], L. Ortega Torres[1], D. Kuehn[1], S. Johne[1], F. Martin[1], Y. Xiang[1], A. Sewer[1], A. Sewer[1], P. Leroy[1], R. Dulize[1], E. Guedj[1], N.V. Ivanov[1], C. Mathis[1], *W.A. Hayes*[2], J. Hoeng[1], and M.C. Peitsch[1]. [1]PMI R&D, Neuchatel, Switzerland; and [2]Spherix Consulting, Rockville, MD.

#3037 **Poster Board Number P179**
Differential Gene Expression Using RNA-Seq Profiling in a Reconstituted Airway Epithelium, Mucilair™, Exposed to Conventional or Electronic Cigarettes Aerosols. A. Banerjee, L.E. Haswell, A. Baxter, A. Parmar, D. Azzopardi, S. Corke, D. Thorne, J. Adamson, *M. Gaca*, and E. Minet. British American Tobacco, Southampton, United Kingdom.

#3038 **Poster Board Number P180**
Aryl Hydrocarbon Receptor 2 Morpholino Knockdown Reduces the Toxicity of Total Particulate Matter from Cigarette Smoke in Zebrafish (*Danio rerio*) Embryos. *A. Massarsky*[1], A.J. Bone[1], *G.L. Prasad*[2], and *R.T. Di Giulio*[1]. [1]Duke University, Durham, NC; and [2]R.J. Reynolds Tobacco Company, Winston-Salem, NC.

#3039 **Poster Board Number P181**
Combined Effects of Cigarette Smoke and SO2 on GM-CSF Release in Human Airway Smooth Muscle Cells. *B.A. Rolls*[2], *L.M. Hallberg*[2], M.A. Thompson[1], Y.S. Prakash[1], and *B.T. Ameredes*[2]. [1]Mayo Clinic, Rochester, MN; and [2]University of Texas Medical Branch, Galveston, TX.

#3040 **Poster Board Number P182**
Can *Ex Vivo* Genotoxic Endpoints Complement Respiratory Tract Pathology Following 3 and 6 Week Cigarette Smoke Exposure? A. Dalrymple[1], P. Ordoñez[3], D. Thorne[1], O. Camacho[1], A. Büttner[2], D. Dillon[1], and *C. Meredith*[1]. [1]British American Tobacco R&D Centre, Southampton, United Kingdom; [2]Histovia GmbH, Overath, Germany; and [3]Vivotecnia Research S.L., Parque Científico de Madrid, Madrid, Spain.

#3041 **Poster Board Number P183**
A Targeted Proteomic Comparison of Human-Induced Sputum from Smokers and Non-Smokers. L.E. Haswell[1], O.M. Camacho[1], W.R. Fields[4], L. Cortes[2], P. Croteau[2], L. McIntosh[2], F. Mohareb[3], D. Chelsky[2], G. Phillips[1], and *M.D. Gaça*[1]. [1]British American Tobacco, Southampton, United Kingdom; [2]Caprion Proteomics, Montréal, QC, Canada; [3]Cranfield University, Bedford, United Kingdom; and [4]R J Reynolds Tobacco, Winston-Salem, NC.

Abstract #

#3042 **Poster Board Number P184**
Efficacy of an Inhaled PDE4 Inhibitor, GSK256066, Delivered by a Novel Dry Powder Pre-Clinical Inhalation Delivery System in the Acute Cigarette Smoke Induced Pulmonary Inflammation Model. S.A. Moore[1], S. Jordan[1], D. Rodgers[1], C. Gutteridge[1], R. Armstrong[1], K. Meecham[1], G. Paul[2], and *D. Mitchell*[1]. [1]Envigo, Huntingdon, United Kingdom; and [2]GlaxoSmithKline, Ware, United Kingdom.

#3043 **Poster Board Number P185**
Obesity Combined with Cigarette Smoke Exposure Dramatically Alters Cytochrome P450 Activity in the Lung and Livers of Mice. N.C. Sadler[2], V. Mikheev[1], *J.G. Pounds*[2], *R.A. Corley*[2], and A.T. Wright[2]. [1]Battelle Memorial Institute, Columbus, OH; and [2]Pacific Northwest National Laboratory, Richland, WA.

#3044 **Poster Board Number P186**
Metformin Prevents Cigarette Smoke-Induced Nrf2 Downregulation and BBB Endothelial Toxicity: A New Therapeutic Use of an Old Drug? *S. Prasad*[2], *R.K. Sajja*[2], and *L. Cucullo*[1,2]. [1]Center for Blood Brain Barrier Research, Amarillo, TX; and [2]Texas Tech University Health Sciences Center, Amarillo, TX.

#3045 **Poster Board Number P187**
N-3 Polyunsaturated Fatty Acids Protect Against Cigarette Smoke-Induced Vascular Dysfunction. *E.F. Wiest*[3], M.T. Walsh[3], M. Rothe[1], W.-H. Schunck[2], and *M.K. Walker*[3]. [1]Lipidomix GmbH, Berlin, Germany; [2]Max-Delbrück Center for Molecular Medicine, Berlin, Germany; and [3]University of New Mexico, Albuquerque, NM.

#3046 **Poster Board Number P188**
Volatile Organic Compound Emissions of Cigarette Smoke of 11 Different Cigarette Brands. C.G. Pauwels[1,2], *F.-J. Van Schooten*[1], A.W. Boots[1], A. Opperhuizen[1,3], and R. Talhout[2]. [1]Maastricht University, Maastricht, Netherlands; [2]National Institute for Public Health, and the Environment (RIVM), Bilthoven, Netherlands; and [3]Netherlands Food, and Consumer Product Safety (NVWA), Utrecht, Netherlands.

#3047 **Poster Board Number P189**
Cigarette Smoke Dampens Anti-Viral Responses by Disrupting the TLR3/IFN Axis in Lung Epithelial Cells. P.F. Duffney, *C.E. McCarthy*, T.H. Thatcher, R.P. Phipps, and P.J. Sime. University of Rochester, Rochester, NY.

#3048 **Poster Board Number P190**
The Effect of Electronic Liquids (E-Liquids) on Human MG-63 Osteoblast-Like Cells. M.M. Brown, and *S.J. Heggland*. The College of Idaho, Caldwell, ID.

Abstract #

Wednesday Afternoon, March 16
1:15 PM to 4:45 PM
CC Exhibit Hall

Poster Session: Alternative *In Vitro* Toxicity Models

Recent Advances in Safety Assessment

Chairperson(s): *Daniel R. Dietrich, University of Konstanz, Konstanz, Germany; and Nancy A. Monteiro-Riviere, Kansas State University, Manhattan, KS.*

Displayed: *1:15 PM–4:45 PM*

Author Attended: *1:15 PM–2:45 PM*

#3049 **Poster Board Number P201**
Evaluation of CYP3A4 Inhibition, Induction and Hepatotoxicity Using DMSO-Treated Human Hepatoma HuH-7 Cells. Y. Liu[2], *T.J. Flynn*[2], *M. Xia*[1], and *P.L. Wiesenfeld*[2]. [1]National Institutes of Health, Bethesda, MD; and [2]US Food and Drug Administration, Laurel, MD.

#3050 **Poster Board Number P202**
Picking Cell Lines for High-Throughput Transcriptomic Toxicity Screening. R.W. Setzer, and *R.S. Thomas*. US Environmental Protection Agency, Research Triangle Park, NC.

#3051 **Poster Board Number P203**
Developing a Mitochondrial Toxicity Pathway-Based Framework for Chemical Safety Assessment: A Case Study of PGC-1α-Mediated Network Perturbation with Doxorubicin. H. Yuan[1], *Q. Zhang*[2], J. Guo[1], T. Zhang[1], J. Li[3], P. Carmichael[3], A. White[3], *C. Westmoreland*[3], J. Zhao[1], and *S. Peng*[1]. [1]Academy of Military Medical Sciences, Beijing, China; [2]Hamner Institute for Health Sciences, Research Triangle Park, NC; and [3]The Unilever Safety, and Environmental Assurance Centre, Sharnbrook, Bedford, United Kingdom.

#3052 **Poster Board Number P204**
Challenges in Alternative Methods: Example of the Steroidogenesis Assay. A. Verlohner, T. Ramirez, V. Strauss, *R. Landsiedel*, and *B. van Ravenzwaay*. BASF SE, Ludwigshafen am Rhein, Germany.

#3053 **Poster Board Number P205**
Characterization of Human Proximal Tubule Cells for Investigating Drug-Induced Nephrotoxicity. *K.C. Wu*, M. Singer, and *M. Otieno*. Janssen R&D, Spring House, PA.

#3054 **Poster Board Number P206**
Mode of Action Differentiation and Elucidation with Metabolomics *In Vitro*. T. Ramirez[1], A. Strigun[2], W. Mellert[1], H.G. Kamp[1], T. Walk[2], and *B. van Ravenzwaay*[1]. [1]BASF SE, Ludwigshafen am Rhein, Germany; and [2]metanomics GmbH, Berlin, Germany.

#3055 **Poster Board Number P207**
Effect of Reactive Oxygen Species Quenchers on *In Vitro* Photosensitization Evaluation. A. Toyoda[1,2], and *H. Itagaki*[2]. [1]POLA Chemical Industries,INC., Yokohama, Japan; and [2]Yokohama National University, Yokohama, Japan.

#3056 **Poster Board Number P208**
Evaluation of Two Routinely Used Cell-Based Screening Assays for Neurotoxicity. A.H. Heussner[2], I. Richter[1,2], and *D.R. Dietrich*[2]. [1]Cawthron Institute, Nelson, New Zealand; and [2]University of Konstanz, Konstanz, Germany.

Abstract #

#3057 **Poster Board Number P209**
Use of Metabolomics *In Vitro* to Estimate an Acceptable Daily Intake Ranking. W. Mellert[1], T. Ramirez[1], *A. Strigun*[2], H.G. Kamp[1], T. Walk[2], and *B. van Ravenzwaay*[1]. [1]BASF SE, Ludwigshafen am Rhein, Germany; and [2]Metanomics GmbH, Berlin, Germany.

#3058 **Poster Board Number P210**
Enabling Chemical Grouping by Applying Metabolomics *In Vitro*. *B. van Ravenzwaay*[1], T. Ramirez[1], A. Strigun[2], W. Mellert[1], H.G. Kamp[1], and T. Walk[2]. [1]BASF SE, Ludwigshafen am Rhein, Germany; and [2]Metanomics GmbH, Berlin, Germany.

#3059 **Poster Board Number P211**
Comparison of Liver Cell Models to Identify Chemically Induced Cytotoxicity. R. Faris[2], Y. Hong[2], J. Liu[2], R. Zuo[1], F. Li[2], M. Andes[1], and C.J. Patten[1]. [1]Corning Inc, Bedford, MA; and [2]Corning Inc, Corning, NY. Sponsor: *C. Crespi.*

#3060 **Poster Board Number P212**
Assessment of an *In Vitro* Human Intestinal Epithelial Cell Model for Evaluation of Protein Cytotoxicity. *C. Zimmermann*[1], B. Hurley[2,3], A. Eaton[3], and *B. Delaney*[1]. [1]DuPont Pioneer, Johnston, IA; [2]Harvard Medical School, Boston, MA; and [3]Massachusetts General Hospital, Boston, MA.

#3061 **Poster Board Number P213**
DILI Prediction Connecting Organ Level Response to Cellular Mechanism. *S. Das*[2], O. Irrechukwu[1], R. Kumar[2], S. Krzyzewski[1], V.R. Zurawski[1], J.K. McGeehan[1], and *K. Subramanian*[2]. [1]Hepregen Corporation, Medford, MA; and [2]Strand Life Sciences Pvt. Ltd, Bangalore, India.

#3062 **Poster Board Number P214**
Human BJ Fibroblasts as an Alternative to Mouse Balb/c 3T3 Fibroblasts *In Vitro* Neutral Red Uptake Assay. T. Heinonen, T. Toimela, and M. Mannerström. University of Tampere, University of Tampere, Finland. Sponsor: *K. Savolainen*.

#3063 **Poster Board Number P215**
Botulinum and Tetanus Neurotoxin-Induced Blockade of Synaptic Transmission in Networked Cultures of Human and Rodent Neurons: Toward a Cell-Based Replacement for the Mouse Lethal Assay. *P.M. McNutt*. USAMRICD, Gunpowder, MD.

#3064 **Poster Board Number P216**
***In Vitro* Model Development for Safety Assessment of Acutely Ingested Proteins.** S. Wezalis[1], J. Yao[1], J. Roper[1], C. Zimmermann[2], B. Delaney[2], and *L.K. Markell*[1]. [1]DuPont Haskell Global Centers, Newark, DE; and [2]DuPont Pioneer, Johnston, IA.

#3065 **Poster Board Number P217**
Crosstalk Between Mitochondrial Function, the Epigenome and Gene Expression with Potential Implications to Environmental Health. *R. Woychik*[1], J.H. Santos[1], O. Lozoya[1], I. Martinez[2], D. Grenet[1], T. Wolfgang[1], T. Wang[1], and N. Chandel[2]. [1]National Institute of Environmental Health Sciences (NIEHS), Research Triangle Park, NC; and [2]Northwestern University Feinberg School of Medicine, Evanston, IL.

Abstract #

#3066 **Poster Board Number P218**
Evaluating the Inflammatory and Genotoxic Effects of Smokeless Tobacco Using a Human Organotypic Model of Oral Epithelium. M. Bachelor, J. Oldach, B. Breyfogle, *P. Hayden*, and M. Klausner. MatTek Corporation, Ashland, MA.

#3067 **Poster Board Number P219**
ROS Generation Produced by HepG2 Cells Exposed to DON, 3-ADON and 15-ADON Individually and Combined. A. Juan-Garcia, R. Cipriano, *G. Font*, and M. Ruiz. University of Valencia, Valencia, Spain. Sponsor: *G. Font*.

#3068 **Poster Board Number P220**
Disruption of Cellular Circadian Rhythm by Neurotoxic Agents Can Be Restored with Antioxidants in Neural Cells *In Vitro*. *M. Fang*[2], Y. Park[1], *H.-G. Kang*[1], S.-A. Juan[2], and *H. Zarbl*[2]. [1]Animal & Plant Quarantine, An-Yang, Korea, Republic of; and [2]School of Public Health, Rutgers, The State University of New Jersey, Piscataway, NJ. Sponsor: *M. Fang*.

#3069 **Poster Board Number P221**
Use of a New Human Small Intestinal Tissue Model to Screen Drug-Induced Gastrointestinal Toxicity. S. Ayehunie[2], M. Wagoner[1], H. Barthlow[1], C. Scott[1], Z. Stevens[2], T. Landry[2], A. Armento[2], M. Klausner[2], and *P. Hayden*[2]. [1]AstraZeneca, Waltham, MA; and [2]MatTek Corporation, Ashland, MA.

#3070 **Poster Board Number P222**
Pre-Validation of *In Vitro-In Vivo* Assays for Vaginal Irritation. S. Ayehunie, T. Landry, *P. Hayden*, and M. Klausner. MatTek Corporation, Ashland, MA.

#3071 **Poster Board Number P223**
Dose Response Studies Supporting *In Vitro*-Based Safety Assessments for Chemicals Inducing Oxidative Stress. *B. Huang*[3], S.M. Ross[3], S. Rowley[3], *A. Efremenko*[3], S. Pendse[3], L. Pluta[3], P. Xue[2], *J. Pi*[1], *P.L. Carmichael*[4], *A. White*[4], and *R.A. Clewell*[3]. [1]China Medical University, Shenyang, China; [2]Fudan University, Shanghai, China; [3]The Hamner Institutes for Health Sciences, Durham, NC; and [4]Unilever, Colworth Science Park, United Kingdom.

#3072 **Poster Board Number P224**
Neutral Red Cytotoxicity Assay As a Screening Method to Aid in the Design of Compounds with Lower Acute Toxicities. D.L. Nabb[1], R.T. Mingoia[1], J. Yao[1], H.M. Peterson[1], *L.K. Markell*[1], and *X. Han*[2]. [1]DuPont Haskell Global Centers for Health, and Environmental Sciences, Newark, DE; and [2]International Flavors, and Fragrances, Union Beach, NJ.

#3073 **Poster Board Number P225**
Early Gene Expression Changes During Mouse Embryonic Stem Cell Differentiation and Effects of Cadmium Sulfate. *X. Chen*[2], T. Han[2], E. Fisher[1], W. Harrouk[1], M. Tassinari[1], G. Merry[2], D. Sloper[2], J. Fuscoe[2], D. Hansen[2], and A. Inselman[2]. [1]US FDA/CDER, Silver Spring, MD; and [2]US FDA/NCTR, Jefferson, AR.

#3074 **Poster Board Number P226**
***In Vitro* Developmental Neurotoxicity Testing Models Using HiPSC-Derived Neural Stem Cells.** H. Yi, Y.-I. Park, J.-Y. Song, and H.-G. Kang. Animal, and Plant Quarantine Agency, Anyangsi, Korea, Republic of. Sponsor: *H.-G. Kang*.

#3075 **Withdrawn.**

Abstract #

#3076 **Poster Board Number P228**
P-450 Activity in Human Pluripotent Stem Cell Derived Astrocytes Is Protective of Neuron Neurite Outgrowth Inhibition When Exposed to Chlorpyrifos. *X. Wu*[2,3], *A. Majumder*[1], and *S. Stice*[1,2,3]. [1]ArunA Biomedical, Inc, Athens, GA; [2]Regenerative Bioscience Center, Athens, GA; and [3]University of Georgia, Athens, GA.

#3077 **Poster Board Number P229**
Rotenone-Induced Mitochondrial and Nuclear DNA Damage Is Reversed During PC12 Cell Differentiation. R. Joglekar, I.T. Ryde, S.K. Murphy, and *J.N. Meyer*. Duke University, Durham, NC.

#3078 **Poster Board Number P230**
Mechanistic Toxicity Assessment of Hexahydroisohumulone in Canine Hepatocytes, Renal Proximal Tubules, and Enterocyte-Like Cells. *K. Choi*[1], J. Koci[1], M.T. Ortega[1], B. Jeffery[2], *J.E. Riviere*[1], and *N.A. Monteiro-Riviere*[1]. [1]Kansas State University, Manhattan, KS; and [2]Mars Global Food Safety Center, Yanqi Economic Development Zone, Huairou, Beijing, China.

#3079 **Poster Board Number P231**
Comparative *In Vitro* Cytotoxicity of 20 Potential Food Ingredients in Canine Liver, Kidney, Bone Marrow-Derived Mesenchymal Stem Cells and Enterocyte-Like Cells. *N.A. Monteiro-Riviere*[1], M.T. Ortega[1], *K. Choi*[1], J. Koci[1], Z. Lin[1], B. Jeffery[2], and *J.E. Riviere*[1]. [1]Kansas State University, Manhattan, KS; and [2]Mars Global Food Safety Center, Yanqi Economic Development Zone, Beijing, China.

#3080 **Poster Board Number P232**
A Synthetic Alternative to Natural Extracellular Matrix Vascular Network Formation Assays. *W.T. Daly*, E.H. Nguyen, D. Belair, N.N. Le, and W.L. Murphy. UW-Madison, Madison, WI.

#3081 **Poster Board Number P233**
Optimizing Clustering Strategies for Chemical Categories: Toxicological Verification of Derived Clusters. A. Bitsch[2], M. Batke[2], U. Gundert-Remy[1], M. Gütlein[3], S. Kramer[3], F. Partosch[1], and M. Seeland[3]. [1]Charité Universitätsmedizin, Berlin, Germany; [2]Fraunhofer Institute for Toxicology, and Experimental Medicine, Hannover, Germany; and [3]Johannes Gutenberg University of Mainz, Mainz, Germany. Sponsor: *C. Dasenbrock*.

Wednesday Afternoon, March 16
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Animal Models of Disease

Chairperson(s): *Alain Stricker-Krongrad, Sinclair Research Center, Auxvasse, MO.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *3:00 PM–4:30 PM*

#3082 **Poster Board Number P236**
Development of a Model of Dermal Inflammation and Irritation (Urticaria) in the Miniature Swine. A. Stricker-Krongrad, M. Zhong, J. Liu, and *G. Bouchard*. Sinclair Research Center, Auxvasse, MO.

Abstract #

#3083 **Poster Board Number P237**
Comparative Safety and Efficacy Assessment of Single and Concurrent Topical Therapeutics in an IMQ-Induced Murine Model of Psoriasis. V. Naageshwaran, T. Jackson, I. Ruiz, and A. Alavi. Absorption Systems, San Diego, CA. Sponsor: *C. Davenport*.

#3084 **Poster Board Number P238**
Prevalence and Incidence of Cataracts in a Population of Yucatan Miniswines After Induction of Type I Diabetes: A Model for Preventative or Therapeutic Cataract Therapies. A. Stricker-Krongrad[2], C. Hanks[2], A. Ingerson[2], M. Freeman[2], S. Schlink[2], L. Delaney[2], J. Liu[2], A. Tellez Cruz[1], J. Wicks[1], S. Rousselle[1], and *G. Bouchard*[2]. [1]Alizee Pathology, Thurmont, MD; and [2]Sinclair Research Center, Auxvasse, MO.

#3085 **Poster Board Number P239**
Therapeutic Effect of Acamprosate Calcium in a Rat Model of Tardive Dyskinesia. *C.S. Godin*[3], S. Bachus[2], G. Gesswein[3], N. Moore[1], and *W. Kerns*[4]. [1]Brains-Online, South San Francisco, CA; [2]George Mason University, Fairfax, VA; [3]Smithers Avanza, Gaithersburg, MD; and [4]Synchroneuron, Inc., Waltham, MA.

#3086 **Poster Board Number P240**
Efficacy and Metabolic Impacts of Risperidone in an Insulin-Resistant Mouse Model of Autistic Behaviors. *V.R. Garbarino*, *M.T. Edwards*, R. Lozano, C.M. Smolik, W.Q. Zhang, L.C. Daws, and *G.G. Gould*. UTHSCSA, San Antonio, TX. Sponsor: *G. Gould.*

#3087 **Poster Board Number P241**
The Cynomolgus Macaque Model of Pneumonic Tularemia. *L. Lanning*[3], P. Sanz[3], L. Wolfraim[3], C. Houchens[1], K. Omland[2], M. Williams[3], J. Hewitt[3], and T. Guina[3]. [1]BARDA, Washington, DC; [2]Mergus Analytics, Jericho, VT; and [3]NIH/NIAID/DMID, Bethesda, MD.

#3088 **Poster Board Number P242**
Comparative Sensitivity and Reliability of a Multi-Analytes Platform and a Multiplex Flow Cytometry in the Quantitation of Circulating Cytokines Level in a Mouse Model of Edotoxemia. A. Stricker-Krongrad, J. Liu, *G. Bouchard*, and M. Zhong. Sinclair Research Center, Auxvasse, MO.

#3089 **Poster Board Number P243**
The Effects of a High Fat (HF) Diet on Male Diversity Outbred (DO) Mice. *M.J. DeVito*[3], *S.J. Borghoff*[4], *L. Zorrilla*[1], K.R. Shockley[2], G. Kissling[2], and G. Travlos[3]. [1]Bayer Crop Science, Research Triangle Park, NC; [2]Biostatistics, and Computational Biology Branch, Research Triangle Park, NC; [3]Division of the National Toxicology Program, Research Triangle Park, NC; and [4]ToxStrategies, Inc., Cary, NC.

#3090 **Poster Board Number P244**
A 52-Week Study of the Long-Term High Sugar High Fat Diet Effects on Cynomolgus Monkeys. *N. Lalayeva*[2], *S. Nechev*[2], *T. Beck*[2], *T. Rogers*[2], *S. Glaza*[2], *P. Franklin*[2], H. Tsusaki[2], K. Fukuzaki[2], and R. Nagata[1]. [1]Shin Nippon Biomedical Laboratories, Ltd., Kagoshima, Japan; and [2]SNBL USA, Ltd., Everett, WA.

Abstract #

#3091 **Poster Board Number P245**
Comparison of Methionine and Choline Deficient (MCD) Diet-Induced Non-Alcoholic Steatohepatitis (NASH) with Methionine and Choline Sufficient (MCS) and Control Diet in Rats. V. Bhaskaran, D.M. Nelson, *E. Janovitz*, Y. Song, B. Lehman, *D. Bounous*, *U. Hanumegowda*, and *L. Lehman-Mckeeman*. Bristol-Myers Squibb, Princeton, NJ. Sponsor: *U. Hanumegowda.*

#3092 **Poster Board Number P246**
Enhanced Susceptibility to Acetaminophen-Induced Liver Injury in C57Bl/6N Compared to C57Bl/6J Mice. L. Duan[2], *B.L. Woolbright*[2], *K. Du*[2], *J. Weemhoff*[2], *M. Bourdi*[1], and *H. Jaeschke*[2]. [1]National Institutes of Health, Bethesda, MD; and [2]University of Kansas Medical Center, Kansas City, KS.

#3093 **Poster Board Number P247**
***In Vivo* Model for Predicting Organophosphate Toxicity using Humanized-Liver TK-NOG Mouse.** H. Suemizu[1], M. Kuronuma[1], K. Kawai[1], N. Murayama[2], M. Nakamura[3], and H. Yamazaki[2]. [1]Central Institute for Experimental Animals, Kawasaki, Japan; [2]Showa Pharmaceutical University, Tokyo, Japan; and [3]Tokai University School of Medicine, Isehara, Japan. Sponsor: *H. Tsutsumi.*

#3094 **Poster Board Number P248**
PPARγ Loss Increases Metastasis of HER2+ Breast Tumors. *E.D. Lightbody*[2], K.M. O'Connell[1], R.E. Rubino[1], A.J. Apostoli[2], M.M. Schneider[2], S.K. SenGupta[2], and *C.J. Nicol*[1,2]. [1]Cancer Research Institute, Kingston, ON, Canada; and [2]Queen's University, Kingston, ON, Canada.

#3095 **Poster Board Number P249**
Full Medical Management Supportive Veterinary Care and Survival Following a Single Dose of Irradiation. *R. Love*[2], *K. Thrall*[2], *R. Manning*[2], *G. De Los Santos*[2], *T. Rogers*[2], *S. Glaza*[2], *T. Beck*[2], H. Tsusaki[2], K. Fukuzaki[2], and R. Nagata[1]. [1]Shin Nippon Biomedical Laboratories, Ltd., Kagoshima, Japan; and [2]SNBL USA, Ltd., Everett, WA.

Wednesday Afternoon, March 16
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Animal Models: Methods and Measurements

Chairperson(s): *Mark A. Morse, Charles River Laboratories, Spencerville, OH.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *1:15 PM–2:45 PM*

#3096 **Poster Board Number P301**
Evaluation of Background Data from CD1 Mice Used in Carcinogenicity Studies. P. Mansell, A. Adamou, and G. Hennig. Charles River, Montreal, QC, Canada. Sponsor: *M. Vezina.*

#3097 **Poster Board Number P302**
Comparison of Historical Control Parameters Derived from Carcinogenicity Studies Conducted in CD®IGS Rats and CD-1®IGS Mice Fed 5002 or 5CR4 Certified Diets. *M.A. Morse*, *B. Jacob*, and A.M. Sargeant. Charles River Laboratories, Spencerville, OH.

Abstract #

#3098 **Poster Board Number P303**
Comparison of Routine Clinical Pathology Parameters of Cynomolgus Monkeys Maintained in Different Housing Conditions. L. Guo, S. McPherson, *C. Zheng*, S. Chou, and M. Chen. Wuxi AppTec, Suzhou, China.

#3099 **Poster Board Number P304**
Repeated Intracerebroventricular Administration via Implanted Cannula with Continuous CSF Collection via Implanted Intrathecal Access Port in Cynomolgus Monkeys. *S. Watanabe*[2], B. Megrath[2], *R. Love*[2], *P. Franklin*[2], G. De Los Santos[2], *T. Rodgers*[2], *S. Glaza*[2], *T. Beck*[2], *K. Fukuzaki*[2], and *R. Nagata*[1]. [1]Shin Nippon Biomedical Laboratories, Ltd., Kagoshima, Japan; and [2]SNBL USA Ltd., Everett, WA.

#3100 **Poster Board Number P305**
Development and Validation of a Bleeding Time Assessment Model in the Non-Human Primate. J. Sheehan. Envigo, East Millstone, NJ. Sponsor: *T. Ramani.*

#3101 **Poster Board Number P306**
Addition of Left Ventricular Pressure Measurement to a Cardio-Respiratory Model, Using Telemetry and Plethysmography in the Conscious Rat. S. Beaudoin, C. Williams, V. Milner, K. Melliti, and K. Meecham. Envigo, Huntingdon, United Kingdom. Sponsor: *D. Mitchell.*

#3102 **Poster Board Number P307**
Short-Term Carcinogenicity Study on C57BL/6J-Tyr[X]-rasH2 (Albino-rasH2) Mice, a Novel Strain for *In Vivo* Tumor Imaging. T. Mizushima[1], *K. Urano*[1], R. Inoue[1], M. Yasuda[1], M. Goto[1], T. Kagawa[1], T. Kadonosono[2], T. Kuchimaru[2], and S. Kizaka-Kondoh[2]. [1]Central Institute for Experimental Animals (CIEA), Kawasaki, Kanagawa, Japan; and [2]Graduate School of Bioscience, and Biotechnology, Tokyo Institute of Technology, Yokohama, Kanagawa, Japan. Sponsor: *K. Urano.*

#3103 **Poster Board Number P308**
Comprehensive Vital Systems Monitoring in the Rabbit. M. Horsmon[2], N. Vincelli[1], and R. Kristovich[2]. [1]EXCET, Gunpowder, MD; and [2]US Army ECBC, Gunpowder, MD. Sponsor: *H. Salem.*

#3104 **Poster Board Number P309**
***Nude* Female Mice Catheterised with the Pinport-in-Tail Cuff System, Allowing Disconnection of Tether (Potential Group Housing) in Intermittent Infusion Studies for up to 108 Days.** H. van Wijk[2], U. Wirnitzer[1], and E. Hartmann[1]. [1]Bayer Pharma, Wupperthal, Germany; and [2]Covance Laboratories, Harrogate, United Kingdom. Sponsor: *A. Jackson.*

#3105 **Poster Board Number P310**
Gastroinstestinal Motility: Motility and Motor Migrating Complex (MMC) Evaluations in Rats, Dogs and Non-Human Primates. R. Kubaszky[1], *S. Authier*[1], H.-M. Tang[2], A. Ascah[1], M. Pouliot[1], S. ABTOUT[1], K. Bujold[1], *R. Forster*[1], E. Troncy[1], and M. Pugsley[1]. [1]CiToxLAB North America, Laval, QC, Canada; and [2]Novartis Pharmaceuticals Corporation, One Health Plaza, East Hanover, NJ.

#3106 **Poster Board Number P311**
An Inhalational Model for the Toxic Industrial Chemical Cyanide in Awake Swine. *M. Perry*, *J. Plahovinsak*, and *M. Brittain*. Battelle, Columbus, OH.

Abstract #

#3107 **Poster Board Number P312**
Serum Chemistry, Hematology, Urinalysis, and Flow Cytometry Evaluation and Characterization in Juvenile and Adult Beagle Dogs. *J. Toot*[3], *R. Tadagavadi*[3], *C. Synan*[2], *P. Tarantino*[1], S. Davis[3], J. England[3], and *J. Figueiredo*[3]. [1]Idera Pharmaceuticals, Inc., Cambridge, MA; [2]Sunovion Pharmaceuticals, Inc., Marlborough, MA; and [3]WIL Research, Ashland, OH.

#3108 **Poster Board Number P313**
Changes in Blood Cholinesterases and Heart Rate Recovery Following Subchronic Pyridostigmine Exposure in Rats. M. Bharadwaj, L.K. Maxwell, M. Davis, and *C.N. Pope*. Oklahoma State University, Stillwater, OK.

Wednesday Afternoon, March 16
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Kidney—Models to Mechanisms and Molecular Biomarkers

Chairperson(s): *Monica Valentovic, Marshall University School of Medicine, Huntington, WV; and Gary Rankin, Marshall University, Huntington, WV.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *3:00 PM–4:30 PM*

#3109 **Poster Board Number P317**
***In Vitro* Renal Cytotoxicity Induced by Putative Metabolites of 3,5-Dichloroaniline.** *C.R. Racine*, D. Ward, C. Tyree, D. Pope, J. Sharp, D. Anestis, and *G.O. Rankin*. Marshall University, Joan C. Edwards School of Medicine, Huntington, WV.

#3110 **Poster Board Number P318**
Nephrotoxicity of Engineered-Nanoparticles: Exposure Effects of Silver Nanoparticles in a Kidney Microphysiological System. *K.P. Van Ness*[2], *E.J. Weber*[2], T. Neumann[1], and *E.J. Kelly*[2]. [1]Nortis, Inc, Seattle, WA; and [2]University of Washington, Seattle, WA.

#3111 **Poster Board Number P319**
A Novel Microfluidic Device to Model Human Kidney Disease and Toxicity. C. Sakolish, M. Chambers, and *G. Mahler*. SUNY Binghamton, Binghamton, NY.

#3112 **Poster Board Number P320**
Investigating the Solute-Dependent Transport of Oxalate Ion and the Kinetics of Calcium Oxalate Monohydrate Crystal Internalization. E. Luttrell-Williams, and *K. McMartin*. LSU Health Sciences Center-Shreveport, Shreveport, LA.

#3113 **Poster Board Number P321**
Drug-Induced Kidney Injury in a High-Throughput Microfluidic Culture of Human Renal Cell Line CIPTEC. M.J. Wilmer[2], T. Nieskens[2], J. Vriend[2], C.M. Schophuizen[2], P. Vulto[1], H. Lanz[1], L. Suter-Dick[3], and R. Masereeuw[4]. [1]Mimetas B.V., Leiden, Netherlands; [2]Radboudumc, Nijmegen, Netherlands; [3]University of Applied Sciences Northwestern Switzerland, Muttenz, Switzerland; and [4]Utrecht University, Utrecht, Netherlands. Sponsor: *F. Russel.*

Abstract #

#3114 **Poster Board Number P322**
Kidney Proximal Tubule Cells and Cardiomyocytes as Human Cellular Models to Investigate Statin Exposures for Subsequent Assessments of Nephro- and Cardio- Protection. *A. Atilano-Roque*, and M.S. Joy. University of Colorado, Skaggs School of Pharmacy & Pharmaceutical Sciences, Aurora, CO.

#3115 **Poster Board Number P323**
Developing a More Clinically Relevant Mouse Model of Nephrotoxicity. C. Sharp[2], M. Doll[2], *T. Dupre*[2], P. Shah[2], S. Marimuthu[2], D. Siow[2], J. Megyesi[1], G. Arteel[2], L. Beverly[2], and L. Siskind[2]. [1]University of Arkansas for Medical Sciences, Little Rock, AR; and [2]University of Louisville, Louisville, KY.

#3116 **Poster Board Number P324**
Accumulation and Efflux Characteristics of Diglycolic Acid in Human Proximal Tubule Cells. *C. Robinson*, E. Luttrell-Williams, and *K. McMartin*. LSU Health Sciences Center - Shreveport, Shreveport, LA.

#3117 **Poster Board Number P325**
Establishment and Characterization of Kidney Drug Interaction Models by Stably Expressing hOAT1 in HEK and RPTEC Cell Lines. A. Briley, and C. Zou. ATCC, Gaithersburg, MD. Sponsor: *K. Donato.*

#3118 **Poster Board Number P326**
A Multiplexed Approach to Predict Kidney Toxicity *In Vitro* Using Heme Oxygenase-1 and Quantitative Phenotypic Readouts. *S. Ramm*[1,2], *M. Adler*[1,2], and *V.S. Vaidya*[1,2]. [1]Brigham, and Women's Hospital, Boston, MA; and [2]Harvard Medical School, Boston, MA.

#3119 **Poster Board Number P327**
***Ex Vivo* Induction of Polymyxin-Induced Nephrotoxicity in a 3D Microphysiological Model of a Human Kidney Proximal Tubule.** *E.J. Weber*[4], M. Vaara[2], T. Vaara[2], T. Neumann[3], J. Himmelfarb[1], and *E. Kelly*[4]. [1]Kidney Research Institute, Seattle, WA; [2]Northern Antibiotics Ltd., Helsinki, Finland; [3]Nortis Inc., Seattle, WA; and [4]University of Washington, Seattle, WA.

#3120 **Poster Board Number P328**
Compensatory Hypertrophy and the Transport of Inorganic Mercury in Isolated Perfused Proximal Tubules. *C. Bridges*[2], D.W. Barfuss[1], L. Joshee[2], and *R.K. Zalups*[2]. [1]Georgia State University, Atlanta, GA; and [2]Mercer University School of Medicine, Macon, GA.

#3121 **Poster Board Number P329**
Evaluation of Compound Toxicity in Characterized Human Renal Proximal Tubule Epithelial Cells. *S. Li*. NCATS,NIH, Rockville, MD.

#3122 **Poster Board Number P330**
Effects of Cadmium on Zinc, Copper and Other Essential Metals in Renal Cortex. *W.C. Prozialeck*, P.C. Lamar, and *J.R. Edwards*. Midwestern University, Downers Grove, IL.

Abstract #

#3123 **Poster Board Number P331**
Early, Sensitive and Mechanistic Detection of Drug-Induced Kidney Injury in Humans Using Urinary KIM-1, miR-21, -200c and -423. *M. Pavkovic*[2], A.S. Chua[1], V. Bijol[1], O. Nicoara[1], M. Cárdenas-González[2], *K. Ramachandran*[1], *J. Himmelfarb*[3], S.S. Waikar[1], and *V.S. Vaidya*[1,2]. [1]Brigham, and Women's Hospital, Boston, MA; [2]Harvard Medical School, Boston, MA; and [3]University of Washington, Seattle, WA.

#3124 **Poster Board Number P332**
Inhibition of Cyclosporine A (CsA)-Induced Renal Dysfunction and Fibrosis by Chrysin and Apigenin. *R. Nagavally*, and *S.M. Ford*. St. John's University, Jamaica, NY.

#3125 **Poster Board Number P333**
Zn Prevent the Obesity Induced Kidney Dysfunction by Downregulating P38 MAPK Pathway. M. Luo[1,2], P. Luo[1], L. Miao[1], and *L. Cai*[2]. [1]The Second Hospital of Jilin University, Changchun, China; and [2]University of Louisville, Louisville, KY. Sponsor: *L. Cai.*

#3126 **Poster Board Number P334**
Examination of the Protective Effect of Resveratrol on Mitochondrial Function and Oxidative Stress Following Exposure of HK-2 Cells to Cisplatin. *M. Valentovic*, J.G. Ball, R. Murphy, A.B. Lamyaithong, and A. Schnelle. Marshall University School of Medicine, Huntington, WV.

#3127 **Poster Board Number P335**
Cadherin Expression, Vectorial Active Transport, and Metallothionein Isoform 3 Mediated EMT/MET Responses in Cultured Primary and Immortalized Human Proximal Tubule Cells. *A. Slusser*, C.S. Bathula, *D.A. Sens*, *S. Somji*, *M.A. Sens*, X.D. Zhou, and *S.H. Garrett*. University of North Dakota, Grand Forks, ND.

#3128 **Poster Board Number P336**
Mechanistic Role of Phospholipase D4 in Regulating Kidney Fibrosis. *P. Trivedi*[1], R. Kalyan[1], C. Huber[2], D. Nemazee[2], and *V. Vaidya*[1]. [1]Brigham, and Women's Hospital, Harvard Medical School, Boston, MA; and [2]The Scripps Research Institute, La Jolla, CA.

#3129 **Poster Board Number P337**
Investigating the Mechanistic Basis of Mitochondrial Dysfunction in Adefovir and Tenofovir Cytotoxicity in Novel Human Proximal Tubule Cell Models. A. Tort, A.E. Chadwick, P. Murray, B.K. Park, and *D.J. Antoine*. University of Liverpool, Liverpool, United Kingdom.

#3130 **Poster Board Number P338**
Urinary Micrornas Response in Adults Exposed Chronically to Fluoride in Drinking Water. S. Solis-Angeles[1], *M. d.C. González-Horta*[4], M.I. Jimenez-Córdova[1], *M.d.C. Cárdenas-Gonzalez*[2], E.E. Villarreal-Vega[4], G. Aguilar-Madrid[3], *L.M. Del Razo*[1], and *O.C. Barbier*[1]. [1]Cinvestav-IPN, Mexico, DF, Mexico; [2]Harvard Medical School, Boston, MA; [3]IMSS, Mexico, DF, Mexico; and [4]Universidad Autonoma de Chihuahua, Chihuahua, Mexico. Sponsor: *O. Barbier.*

Abstract #

#3131 **Poster Board Number P339**
Nox-2 Mediated Mir21 Promotes Mesangial Cell Activation and Kidney Inflammation in Environmental Toxin Potentiation of Nonalcoholic Fatty Liver Disease. F. Alhasson. University of South Carolina, Columbia, SC. Sponsor: *S. Chatterjee*

#3132 **Poster Board Number P340**
Effect of Cadmium on the Expression of Stem Cell Markers in Human Proximal Tubular Cells. *S. Shrestha*, *S.H. Garrett*, *D.A. Sens*, and *S. Somji*. University of North Dakota, Grand Forks, ND.

#3133 **Poster Board Number P341**
M2 Macrophages May be Involved in the Aggravation of Renal Tubulointerstitial Fibrosis in Rats with Unilateral Ureteral Obstruction Caused by Fluoride Exposure. T. Kido[2], *M. Tsunoda*[1], C. Sugaya[1], H. Hano[2], and H. Yanagisawa[2]. [1]Kitasato University School of Medicine, Kanagawa, Japan; and [2]The Jikei University School of Medicine, Tokyo, Japan.

#3134 **Poster Board Number P342**
Detection of Kidney Injury in Mexican Children Exposed to Environmental Toxicants. *M. Cardenas Gonzalez*[5], I. Perez Maldonado[2], *O. Barbier*[4], O. Gaspar[3], M. Medeiros[6], V. Sabbisetti[1], and *V. Vaidya*[1,5]. [1]Brigham, and Women's Hospital, Boston, MA; [2]CIACYT, San Luis Potosi, Mexico; [3]CIATEJ, Nuevo Leon, Mexico; [4]CINVESTAV-IPN, Mexico DF, Mexico; [5]Harvard Medical School, Boston, MA; and [6]Hospital Infantil Federico Gomez, Mexico DF, Mexico.

#3135 **Poster Board Number P343**
Bromate-Induced Alterations in the Expression of Cyclin-Dependent Kinase Inhibitors via Epigenetic Mechanisms. *R. Kolli*, *B. Cummings*, and T. Glenn. University of Georgia, Athens, GA.

#3136 **Poster Board Number P344**
Usefulness of Adult Zebrafish for Screening Drug-Induced Kidney Injury: Histopathological Assessment. Y. Kato, *Y. Tonomura*, H. Hanafusa, K. Nishimura, C. Kondo, S. Matsushima, *T. Fukushima*, M. Kaneto, and M. Ueno. Shionogi & CO., LTD., Osaka, Japan.

#3137 **Poster Board Number P345**
Inhalation Exposure to Traffic-Generated Air Pollutants Increases Renal Oxidative Stress, Matrix Metalloproteinase-9 Expression, and Fibrosis, Which Are Mediated Through an Angiotensin II-Dependent Pathway. L. Schneider[2], J. Lucero[2], *J.D. McDonald*[1], and *A. Lund*[2]. [1]Lovelace Respiratory Research Institute, Albuquerque, NM; and [2]University of North Texas, Denton, TX.

#3138 **Poster Board Number P346**
Application of Small RNA Sequencing to Identify MicroRNAs in Acute Kidney Injury and Fibrosis. *C.V. Gerlach*[1,2], K.L. Pellegrini[1], *F.L. Craciun*[1], K. Ramachandran[1], V. Bijol[1], H.T. Kissick[1], and *V.S. Vaidya*[1,2]. [1]Harvard Medical School, Boston, MA; and [2]Harvard T.H. Chan School of Public Health, Boston, MA.

#3139 **Poster Board Number P347**
Effect of Cytochrome P450 Isozyme Inhibitors on 1,2,3-Trichloro-5-Nitrobenzene-Induced Nephrotoxicity *In Vitro*. J. Tate[2], C. Tyree[1], D. Pope[1], D. Anestis[1], and *G. Rankin*[1]. [1]Marshall University, Huntington, WV; and [2]West Virginia Wesleyan College, Buckhannon, WV.

Abstract #

#3140 **Poster Board Number P348**
Identifying Predictive Gene Signature and Signaling Networks Associated with Acute Kidney Injury Using Gene Co-Expression Modules. M.D.M. AbdulHameed[1], *D.L. Ippolito*[2], *J.D. Stallings*[2], and *A. Wallqvist*[1]. [1]Department of Defense Biotechnology High Performance Computing Software Applications Institute, Frederick, MD; and [2]US Army Center for Environmental Health Research, Fort Detrick, MD.

Wednesday Afternoon, March 16
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Cytochrome P450

Chairperson(s): *Laura Van Winkle, University of California, Davis, Davis, CA.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *1:15 PM–2:45 PM*

#3141 **Poster Board Number P401**
Differential Expression of Cytochrome P450 Enzymes in Placenta, Fetal Liver, and Adult Liver. *J.F. Robinson*[4], E.G. Hamilton[4], A.R. Zota[2], J.-S. Park[1], E. Parry[1,3], S.J. Fisher[4], and T.J. Woodruff[4]. [1]California Environmental Protection Agency, Berkeley, CA; [2]George Washington University, Washington, DC; [3]Public Health Institute, Oakland, CA; and [4]University of California, San Francisco, San Francisco, CA.

#3142 **Poster Board Number P402**
Cytochrome P450 1B1: A Key Regulator of the Cellular Oxidative State. *N. Sheibani*[2], *C. Marcus*[1], *C.R. Jefcoate*[2], and C.M. Sorenson[2]. [1]Oregon State University, Corvallis, OR; and [2]University of Wisconsin-Madison, Madison, WI.

#3143 **Poster Board Number P403**
Role of CytochromeP450 (CYP)1A in Hyperoxic Lung Injury: Analysis of the Transcriptome and the Proteome. K. Lingappan, S. Maity, J. Weiwu, L. Wang, *X. Couroucli*, C. Coarfa, and *B. Moorthy*. Baylor College of Medicine, Houston, TX. Sponsor: *B. Moorthy.*

#3144 **Poster Board Number P404**
RNA-Seq Reveals True Quantification of Xenobiotic Processing Genes in Various Sections of the Intestine Compared to Liver of Mice. *Z.D. Fu*, *F.P. Selwyn*, *J.Y. Cui*, and *C.D. Klaassen*. University of Washington, Seattle, WA.

#3145 **Poster Board Number P405**
Prolonged Culturing of Human Hepatocytes in Human Plasma for P450 Induction and *In Vitro* Hepatotoxicity Studies. Q. Yang, U. Doshi, K. Amaral, C. Loretz, and *A.P. Li*. *In Vitro* ADMET Laboratories LLC, Columbia, MD.

#3146 **Poster Board Number P406**
Human Enterocytes: Isolation, Cryopreservation, Characterization, and Application in the Evaluation of Drug-Food Interactions. *A.P. Li*, C. Loretz, Q. Yang, and U. Doshi. *In Vitro* ADMET Laboratories LLC, Columbia, MD.

Abstract #

#3147 **Poster Board Number P407**
Regional Distribution of CYP2A13 and CYP2F1 mRNAs in Human Lung and in the Lungs of CYP2A13/2F1-Humanized Mice. *L.S. Van Winkle*[2], P. Edwards[2], *L. Li*[3], H. Wu[3], N. Kovalchuk[3], Q.-Y. Zhang[3], and *X. Ding*[1]. [1]SUNY Polytechnic Institute, Albany, NY; [2]UC Davis, Davis, CA; and [3]Wadsworth Center, New York State Dept of Health, Albany, NY.

#3148 **Poster Board Number P408**
Stabilized and Enhanced CYP450 Enzyme Activity in Cultured Human Primary Hepatocytes Is Conferred by ReproHP Medium. P.E. Cizdziel[2], M. Inamura[2], *R. Vardaro*[3], *B. Annand*[3], R. Akahira[2], Z.Y.-C. Lin[2], K. Tamura[2], T. Watanabe[2], and T. Kiyono[1]. [1]National Cancer Research Institute, Tokyo, Japan; [2]ReproCELL Inc., Kohoku-ku, Yokohama, Japan; and [3]Stemgent Inc., Boston, MA.

#3149 **Poster Board Number P409**
Separate Assessment of Basal and Induced Cyp1B1 Activity in the Presence of Cyp1A1. Relationship to Cyp1B1 Involvement in Physiological and Toxicity Processes. A.A. Almeldin[2,3], *C.M. Rondelli*[1,3], M. Maguire[3], M.C. Larsen[3], and *C.R. Jefcoate*[1,3]. [1]METC, University of Wisconsin-Madison, Madison, WI; [2]Physiology Department, Tanta Faculty of Medicine, Tanta, Egypt; and [3]School of Medicine, and Public Health, University of Wisconsin-Madison, Madison, WI.

#3150 **Poster Board Number P410**
Evaluation of Xenobiotic Metabolism Inhibition with 23 Polycyclic Aromatic Compounds in Primary Human Hepatocyte Suspensions. *W. Qu*, *M.J. DeVito*, S.S. Fersuson, and *C.V. Rider*. Division of the National Toxicology Program, Research Triangle Park, NC.

#3151 **Poster Board Number P411**
Roles of Cyp1B1 and XPC in the Suppression of Hematopoietic Progenitor Cells by PAHs. *C.M. Rondelli*, M.C. Larsen, A. N'jai, C. Mao, C.J. Czprynski, and *C.R. Jefcoate*. University of Wisconsin-Madison, Madison, WI.

#3152 **Poster Board Number P412**
Attenuation of Hyperoxic Lung Injury in *Cyp1b1*$^{-/-}$ Mice. *A.C. Veith*[1,2], B. Bou Aram[2], W. Jiang[2], L. Wang[2], C. Chu[2], *X.I. Couroucli*[2], and *B. Moorthy*[1,2]. [1]Baylor College of Medicine, Houston, TX; and [2]Baylor College of Medicine & Texas Children's Hospital, Houston, TX.

#3153 **Poster Board Number P413**
Comparison of CYP2B6, 2C8, 2C9, 2C19, 3A4 and 3A5 Induction in 3 Donors of Plated Human Hepatocytes by 15 Compounds. D.M. Stresser[2], R. Patel[2], R.J. Clark[2], T. Ho[2], S.K. Trisdale[2], Y. Fang[1], and J.G. Zhang[2]. [1]Corning Incorporated, Corning, NY; and [2]Corning Life Sciences, Woburn, MA. Sponsor: *C. Crespi.*

#3154 **Poster Board Number P414**
Oral Prenatal Administration of the Cytochrome P450 (CYP)1A/1B Inducer, Beta-Napthoflavone (BNF), Attenuates Hyperoxic Lung Injury in Newborn Mice: Implications for Bronchopulmonary Dysplasia (BPD). *X.I. Couroucli*, Y.W. Liang, K. Lingappan, *A. Veith*, and *B. Moorthy*. Baylor College of Medicine, Houston, TX.

Abstract #

#3155 **Poster Board Number P415**
The Impact of Hepatic Mitochondrial Cyp2e1 Localization in Butadiene-Exposed Mice. *J. Hartman*[2], *G.P. Miller*[2], A.A. Caro[1], W.C. Spear[4], S. Miller[4], *L.M. Hallberg*[4], *B.T. Ameredes*[3], and *G. Boysen*[2]. [1]Hendrix College, Little Rock, AR; [2]University of Arkansas for Medical Sciences, Little Rock, AR; [3]University of Texas for Medical Branch, Galveston, TX; and [4]University of Texas Medical Branch, Galveston, TX.

#3156 **Poster Board Number P416**
Gender Differences in Response to a High Fat Diet in Cyp3a-Null Mice. *R. Kumar*, E.J. Litoff, W.S. Boswell, and *W.S. Baldwin*. Clemson University, Clemson, SC.

#3157 **Poster Board Number P417**
Using Budding Yeast to Assess P450-Dependent Toxicity of Breast Cancer-Associated Chemicals. R.S. Zeidan[4], R. Ma[3], *R. Rudel*[1], J. Ackerman[1], A. Loguinov[4], M. Tagmount[4], *C. Vulpe*[3,4], and *M. Fasulo*[2]. [1]Silent Spring Institute, Newton, MA; [2]State University of New York Polytechnic Institute, Albany, NY; [3]University of California - Berkeley, Berkeley, CA; and [4]University of Florida, Gainesville, FL.

#3158 **Poster Board Number P418**
Role of CYP1A2 in the Regulation of Hepatic and Pulmonary Cytochrome P450 (CYP)1A1 Expression in 3-Methylcholanthrene Treated Mice. *P. Maturu*, W. Jiang, L. Wang, C. Chu, and *B. Moorthy*. Baylor College of Medicine, Houston, TX.

#3159 **Poster Board Number P419**
CYP1 Substrate Docking and Ligand Access Channels. *J.V. Goldstone*[3], P. Urban[1], J.Y. Wilson[2], D. Alsop[2], D. Pompon[1], and *J.J. Stegeman*[3]. [1]Laboratoire Ingénierie des Systèmes Biologiques et des Procédés UMR INSA/CNRS, Toulouse, France; [2]McMaster University, Hamilton, ON, Canada; and [3]Woods Hole Oceanographic Institution, Woods Hole, MA.

#3160 **Poster Board Number P420**
Modulation of Pulmonary Drug Metabolism Enzymes in Cyp1a1/Cyp1a2/Cyp1b1 Triple Knockout Mice. D. Criscoe[1], *A. Veith*[1], *W. Jiang*[2], *L. Wang*[2], and *B. Moorthy*[2]. [1]Baylor College of Medicine, Houston, TX; and [2]Baylor College of Medicine, and Texas Children's Hospital, Houston, TX.

#3161 **Poster Board Number P421**
Cyp1b1 Genotype and PAH Dibenzo[def,p] chrysene Transplacental Exposure: Effects of Wild Type, Null and Transgenic Human CYP1B1 Genotype on Adult On-Set Carcinogenesis in B6129F1 Mice. E. Madeen[2], C. Loehr[2], H. You[2], L. Siddens[2], S. Kreuger[2], F. Gonzalez[1], K. Waters[3], and *D. Williams*[2]. [1]National Cancer Institute, Bethesda, MD; [2]Oregon State University, Corvallis, OR; and [3]Pacific Northwest National Laboratory, Richland, WA.

#3162 **Poster Board Number P422**
Fluoranthene (FLA) Is Cardiotoxic and Induces Cytochrome P450 Type 1A (CYP1A) mRNA Expression in *Xenopus laevis* Embryos. M. Sestak, C. Lamoureux, J. Hall, J. Coburn, and S.L. Whittemore. Keene State College, Keene, NH.

#3163 **Poster Board Number P423**
Cytochrome P450 2J2 and Its Potential Protective Role in ROS-Induced Cardiotoxicity. *E.A. Evangelista*, and *R.A. Totah*. University of Washington, Seattle, WA.

Abstract #

#3164 **Poster Board Number P424**
Establishment of Murine Model for Neurotoxicity of 1-Bromopropane: Role of Cytochrome P450. C. Zong[3,4], *E. Garner*[1], *L. Zhang*[4], C. Huang[3], X. Zhang[3,4], S. Toyokuni[3], T. Sakurai[4], *S. Ichihara*[2], and *G. Ichihara*[4]. [1]Lovelace Respiratory Reseach Institute, Albuquerque, NM; [2]Mie University, Tsu, Japan; [3]Nagoya University Graduate School of Medicine, Nagoya, Japan; and [4]Tokyo University of Science, Noda, Japan.

#3165 **Poster Board Number P425**
Transcriptional Upregulation of Cyp1a1 and Cyp1b1 by Alkylated Polycyclic Aromatic Hydrocarbons Found in Crude Oil in the Human RPTEC/TERT1 Cell Line. B. Simon-Friedt[2], *M. Wilson*[2], E. Overton[1], P. Adhikari[1], and *J. Wickliffe*[2]. [1]Louisiana State University, Baton Rouge, LA; and [2]Tulane University, New Orleans, LA.

Wednesday Afternoon, March 16
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Liver—Translational

Chairperson(s): *Natalie Holman, The Hamner-University of North Carolina Institute for Drug Safety Sciences, Research Triangle Park, NC.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *3:00 PM–4:30 PM*

#3166 **Poster Board Number P431**
Analysis of Micrornas Expression Profiles to Identify Specific Toxicity Signatures of Liver Injury for Drugs Sharing Similar Structure. *Y. Wang*, B. Gong, Z. Liu, and *W. Tong*. National Center for Toxicological Research, Jefferson, AR. Sponsor: *Y. Wang.*

#3167 **Poster Board Number P432**
Open Dump Exposure Destroys Liver of Wistar Rats. P.U. Nwoha[3], G.E. Waritimi[2], F. Onyije[2], A. Antoni[2], and M.O. Ijomone[1]. [1]Cross River University of Technology, Okuku, Nigeria; [2]Niger Delta University, Amassoma, Nigeria; and [3]Obafemi Awolowo University, Ife, Nigeria. Sponsor: *B. Gadagbui.*

#3168 **Poster Board Number P433**
A Comprehensive Annotation for the Risk of Drug-Induced Liver Injury in Humans Based on the US FDA-Approved Drugs Labeling. *M. Chen*[1], A. Suzuki[2], S. Thakkar[1], Y. Ke[1], C. Hu[1], and *W. Tong*[1]. [1]US Food and Drug Administration, Jefferson, AR; and [2]University of Arkansas for Medical Sciences, Little Rock, AR.

#3169 **Poster Board Number P434**
Fluorouracil Sensitizes Hepatocytes to Ischemia/Reperfusion Injury. K. Go, S. Lee, R. U, I. Zendejas, K. Behrns, and *J.-S. Kim*. University of Florida, Gainesville, FL. Sponsor: *J.-S. Kim.*

#3170 **Poster Board Number P435**
Steatohepatitis Biomarkers Reveal Elevated Liver Disease in Polychlorinated Biphenyl-Exposed Cohort. *H.B. Clair*[4], C. Pinkston[4], G. Brock[4], *M. Pavuk*[1], *N. Dutton*[1,2], *K.C. Falkner*[4], R.A. Prough[4], and *M. Cave*[3,4]. [1]Agency for Toxic Substances Disease Registry, Atlanta, GA; [2]ORISE Research Participation Program, Atlanta, GA; [3]Robley Rex Veterans Affairs Medical Center, Louisville, KY; and [4]University of Louisville, Louisville, KY.

Abstract #

#3171 **Poster Board Number P436**
Repeated Administration of Atovastatin Alters the Expression of Genes Related to Inflammation, Bile Acid Metabolism and Circadian Clock in Livers of Mice. W.-K. Li[2], Y.-J. Xu[2], Y.-F. Lu[2], *Z.-D. Fu*[1], and *J. Liu*[2]. [1]University of Washington, Seattle, WA; and [2]Zunyi Medical College, Zunyi, China.

#3172 **Poster Board Number P437**
Use of LC/MS/MS Proteomic Biomarkers for Early Detection of Acetaminophen-Induced Liver Toxicity in Preclinical Pharmaceutical Toxicology Assessment. *A. Licollari*, and Y. Sydorskyy. Nucro-Technics, Scarborough, ON, Canada.

#3173 **Poster Board Number P438**
Induction of Drug-Induced Liver Injury (DILI)-Associated Genes by Hepatotoxic Drugs in Keratinocytes. *R. Fujiwara*, R. Hirashima, and T. Itoh. Kitasato University, Tokyo, Japan.

#3174 **Poster Board Number P439**
Inhibition of PARP Activity Reduces Drug-Induced Toxicity. *K. Haire*, *J. Coyle*, K. Harand, J. McCluskey, *G. Johnson*, *M. Bourgeois*, and *R. Harbison*. College of Public Health, Tampa, FL.

#3175 **Poster Board Number P440**
miR-122 Release in Exosomes Accompanies Tolvaptan-Induced Mitochondrial Dysfunction, Oxidative Stress and Apoptosis in a Micropatterned Primary Human Hepatocyte Coculture Model. *M. Mosedale*[2], J.S. Eaddy[2], *O.J. Trask*[2], *N.S. Holman*[2,3], *K.K. Wolf*[2], *E. LeCluyse*[2], *W.J. Brock*[1], S.E. Roth[1], and *P.B. Watkins*[2,3]. [1]Otsuka PDC, Inc., Rockville, MD; [2]The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and [3]The University of North Carolina at Chapel Hill, Chapel Hill, NC.

#3176 **Poster Board Number P441**
Elevation of Serum Toxicity Biomarkers by Reduced Protein Clearance in the Absence of Organ Injury. *A. Wolf*, and *F. Pognan*. Novartis Institute for Biomedical Research, Basel, Switzerland.

#3177 **Poster Board Number P442**
Relationship of AhR Genotype to DE-71 Tumor Formation in Wistar Han Rats. *B.A. Merrick*[2], T. Maynor[1], A.E. Brix[1], G.E. Kissling[2], *M.J. DeVito*[2], *S. Waidyanatha*[2], and *J.K. Dunnick*[2]. [1]ILS, Inc., Research Triangle Park, NC; and [2]NIEHS, Research Triangle Park, NC.

#3178 **Poster Board Number P443**
The Use of Circulating Plasma Biomarkers to Study Mechanisms of Liver Injury Following Drug Induced Ischemic Hepatitis. *J.L. Weemhoff*[2], *B.L. Woolbright*[2], *M.R. McGill*[2], S.C. Curry[1], D.J. Antoine[3], and *H. Jaeschke*[2]. [1]University of Arizona Banner Good Samaritan Medical Center, Phoenix, AZ; [2]University of Kansas Medical Center, Kansas City, KS; and [3]University of Liverpool MRC Centre for Drug Safety Science, Liverpool, United Kingdom.

#3179 **Poster Board Number P444**
Nonalcoholic Steatohepatitis Alters Cytochrome P450 Activity in Pediatric Patients. *H. Li*[2], *M.J. Canet*[2], *J.D. Clarke*[2], J. Han[2], S.A. Xanthakos[3], J.E. Lavine[1], R.P. Erickson[2], and *N.J. Cherrington*[2]. [1]Columbia University, New York, NY; [2]University of Arizona, Tucson, AZ; and [3]University of Cincinnati, Cincinnati, OH.

Abstract #

#3180 **Poster Board Number P445**
Perfluorinated Compounds Activate Nrf2 via Inhibiting Autophagy in Human and Mouse Liver/Hepatoma Cells. *Y. Le*, and *X. Cheng*. St. John's University, Queens, NY.

#3181 **Poster Board Number P446**
Temporal and Dose-Dependent Increases in Exosomal RNA Precede Hepatocellular Toxicity in Human and Rodent Models of Drug-Induced Liver Injury. *N.S. Holman*[1,2], *M. Mosedale*[1], *K.K. Wolf*[1], J.S. Eaddy[1], *P.B. Watkins*[1,2], and *E.L. LeCluyse*[1,2]. [1]The Hamner-UNC Institute for Drug Safety Sciences, Research Triangle Park, NC; and [2]University of North Carolina at Chapel Hill, Chapel Hill, NC.

#3182 **Poster Board Number P447**
Enhancement of Acetaminophen-Induced Chronic Hepatotoxicity in Restricted Fed Rats: A Nonclinical Approach to Acetaminophen-Induced Chronic Hepatotoxicity in Susceptible Patients. K. Kondo, N. Yamada, Y. Suzuki, K. Toyoda, T. Hashimoto, A. Takahashi, A. Kobayashi, T. Shoda, H. Kuno, and S. Sugai. Toxicology Research Laboratories, Central Pharmaceutical Research Institute, Japan Tobacco Inc., Hadano, Kanagawa, Japan.

#3183 **Poster Board Number P448**
Co-Occurrence of Genetic Variations and Drug Properties Is Associated with Increased Risk of Drug-Induced Liver Injury in Humans. J.M. Ding[1,2], *M. Chen*[1], Z. Liu[1], H. Fang[1], and *W. Tong*[1]. [1]National Center for Toxicological Research, US Food and Drug Administration, Jefferson, AR; and [2]The University of Texas at Austin, Austin, TX.

#3184 **Poster Board Number P449**
The Effects of Polyhexamethylene Biguanide (PHMB) on Rat Liver. A. Chowdhury[4], *L.L. Arnold*[4], *P.R. Dodmane*[4], K.L. Pennington[4], *Z. Wang*[1], *J.E. Klaunig*[1], D. Cros[2], E.E. Creppy[3], and *S.M. Cohen*[4]. [1]Indiana University, Bloomington, IN; [2]Laboratoire Paréva, St-Martin de Crau, France; [3]University of Bordeaux, Bordeaux Cedex, France; and [4]University of Nebraska Medical Center, Omaha, NE.

#3185 **Poster Board Number P450**
Pyrrolizidine Alkaloid-Induced Hepatotoxicity Involved with Binding and Functional Inhibition of ATP Synthase Beta Subunit. Y. Lu, and *G. Lin*. The Chinese University of Hong Kong, Hong Kong, China. Sponsor: *N. Mei*.

#3186 **Poster Board Number P451**
Phenotypic Similarity of Acetaminophen-Induced Hepatotoxicity in a Monkey Model and in Human Patients. S. Tamai[2], T. Iguchi[2], N. Niino[2], K. Mikamoto[2], K. Sakurai[2], A. Sayama[2], H. Shimoda[2], *W. Takasaki*[2], and K. Mori[1]. [1]Daiichi Sankyo Co., LTD., Edison, NJ; and [2]Daiichi Sankyo Co., LTD., Tokyo, Japan.

#3187 **Poster Board Number P452**
Liver Toxicity Knowledge Base (LTKB): A Comprehensive Database to Understand Multiple Dimensions of Drug-Induced Liver Injury. S. Thakkar, M. Chen, H. Fang, Z. Liu, G. Zhou, J. Zhang, and *W. Tong*. National Center for Toxicological Research, Jefferson, AR.

Abstract #

#3188 **Poster Board Number P453**
Prediction of *In Vivo* Hepatotoxicity Effects Using *In Vitro* Transcriptomics Data. *J.A. Franzosa*[1,2], *J. Liu*[1,2], *R.S. Thomas*[2], *J.F. Wambaugh*[2], *K.A. Houck*[2], and *I. Shah*[2]. [1]ORISE, Oak Ridge, TN; and [2]US EPA, Research Triangle Park, NC.

Wednesday Afternoon, March 16
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Epigenetics

♦ Molecular Toxicology: Mechanistic Insights and Hazard Assessment

Chairperson(s): *Narendra P. Singh, University of South Carolina School of Medicine, Columbia, SC; and Kathleen Gilbert, University of Arkansas for Medical Sciences, Little Rock, AR.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *1:15 PM–2:45 PM*

#3189 **Poster Board Number P501**
Epigenetic Changes in a Mouse Model of Alcohol- and Fibrosis-Associated Liver and Kidney Injury. K. Dreval[1], *A. de Conti*[1], S. Furuya[2], *I. Rusyn*[2], and *I.P. Pogribny*[1]. [1]National Center for Toxicological Research, Jefferson, AR; and [2]Texas A&M University, College Station, TX.

#3190 **Poster Board Number P502**
Exposure to the Genotoxic Chemical 1,3-Butadiene Confers Tissue- and Strain-Specific Alterations in MicroRNA Expression. *G. Chappell*[1,2], J. Simon[2], B. Peck[2], K. Eklund[2], T. Furey[2], and *I. Rusyn*[1]. [1]Texas A&M University, College Station, TX; and [2]University of North Carolina, Chapel Hill, NC.

#3191 **Poster Board Number P503**
Altered miRNA Expression Profiles in Aniline-Induced Cell Cycle Regulation in Spleen. J. Wang, *G. Wang*, and *M.F. Khan*. University of Texas Medical Branch, Galveston, TX.

#3192 **Poster Board Number P504**
Heritable Environmental Effects Mediated by Germline Chromatin Alterations. *J.A. Camacho*, N. Gentry, Z. Lundby, L. Hosohama, A. Clark, and *P. Allard*. University of California, Los Angeles, Los Angeles, CA.

#3193 **Poster Board Number P505**
Cytosine DNA-Methylation Response to Aflatoxin B_1 Exposure in Human Liver HepaRG Cells. *V. Tryndyak*[1], S. Burnett[2], F.A. Beland[1], and *I.P. Pogribny*[1]. [1]US FDA National Center for Toxicological Research, Jefferson, AR; and [2]University of Arkansas, Fayetteville, AR.

#3194 **Poster Board Number P506**
DNA Methyltransferase Expressions in Japanese Rice Fish (*Oryzias latipes*) Embryogenesis Is Developmentally Regulated and Modulated by Ethanol and 5-Azacytidine. *A.K. Dasmahapatra*[1,2], and I.A. Khan[1,2]. [1]National Center for Natural Product Research, University, MS; and [2]University of Mississippi, University, MS.

#3195 **Poster Board Number P507**
Between Strain and Tissue Differences Exist in Global Hydroxymethylation After Acute Ozone Exposure. C.N. Miller, *M.C. Schladweiler*, J.A. Dye, *M. Hazari*, *U. Kodavanti*, and *I.M. Gilmour*. US Environmental Protection Agency, Research Triangle Park, NC.

Abstract #

#3196 **Poster Board Number P508**
Effects of Developmental Lead Exposure on the Hippocampal Methylome: Influences of Sex and Timing and Level of Exposure.
J. Schneider[2], G. Voisin[1], F. Lefebvre[1], and *D. Anderson*[2]. [1]Atelerics, Montreal, QC, Canada; and [2]Thomas Jefferson University, Philadelphia, PA.

#3197 **Poster Board Number P509**
Free Radical-Mediated Cytosine C-5 Methylation by Environmental Chemicals. *K. Kawai*, H. Kasai, Y.-S. Li, and M.-F. Song. University of Occupational, and Environmental Health, Kitakyushu, Japan.

#3198 **Poster Board Number P510**
Chronic Exposure to Trichloroethylene Increases Plasticity of *Ifng* Expression and DNA Methylation Variance in CD4$^+$ T Cells. *K. Gilbert*[3], *S. Blossom*[3], S. Erickson[3], *B. Reisfeld*[2], *T. Zurlinden*[2], B. Broadfoot[3], K. West[3], S. Bai[3], and C. Cooney[1]. [1]Central Arkansas Veterans Healthcare System, Little Rock, AR; [2]Colorado State University, Fort Collins, CO; and [3]University of Arkansas for Medical Sciences, Little Rock, AR.

#3199 **Poster Board Number P511**
Epigenetics and Preeclampsia: Defining Functional Epimutations in the Preeclamptic Placenta Related to the TGF-β Pathway. E. Martin, P.D. Ray, L. Smeester, M.R. Grace, K. Boggess, and *R.C. Fry*. University of North Carolina at Chapel Hill, Chapel Hill, NC.

#3200 **Poster Board Number P512**
DNA Methylation and Transcriptional Changes in Smokers During Monocyte Differentiation. N.A. Englert, M. Campbell, C. Crowl, G. Pittman, D. Porter, and *D.A. Bell*. NIEHS, Research Triangle Park, NC.

#3201 **Poster Board Number P513**
Formaldehyde Facilitates Cell Transformation by Compromising Chromatin Assembly. D. Chen[1], H. Li[2], L. Fang[1], J. Liu[1], *K. Lu*[3], and *C. Jin*[1]. [1]NYU School of Medicine, Tuxedo, NY; [2]SUNY Downstate Medical Center, New York, NY; and [3]University of Georgia, Athens, GA.

#3202 **Poster Board Number P514**
Mechanistic Studies on As3+ -Mediated Alteration of Histone Acetyltransferase TIP60. *L.M. Tam*, Q. Cai, and Y. Wong. University of California Riverside, Riverside, CA.

#3203 **Poster Board Number P515**
Longitudinal Effects of Perinatal Bisphenol A Exposure and Variable Diet on Epigenetic Drift in Mice. *J. Kochmanski*[1], M. Savidge[1], *L. Marchlewicz*[1], *C. Faulk*[2], and *D.C. Dolinoy*[1]. [1]University of Michigan, Ann Arbor, MI; and [2]University of Minnesota, St. Paul, MN.

#3204 **Poster Board Number P516**
Integrative Analysis of Epigenetics and Metabolomics Using the ELEMENT Cohort. *J.M. Goodrich*[2], E. Hector[2], L. Tang[2], P.X. Song[2], *D.C. Dolinoy*[2], *E.H. Marchlewicz*[2], A. Mercado-Garcia[1], B. Sanchez[2], H. Hu[3], M.M. Tellez-Rojo[1], and K.E. Peterson[2]. [1]Center for Evaluation Research, and Surveys, National Institute of Public Health, Cuernavaca, Mexico; [2]University of Michigan School of Public Health, Ann Arbor, MI; and [3]University of Toronto, Toronto, ON, Canada.

Abstract #

#3205 **Poster Board Number P517**
Assessment of Global and Gene-Specific DNA Methylation in Rat Liver and Kidney in Response to Non-Genotoxic Carcinogen Exposure. *S. Özden*[3], N. Turgut Kara[4], O.U. Sezerman[1]; İ.M. Durasi[2], *T. Chen*[6], J.K. Chipman[5], and *A. Mally*[7]. [1]Acibadem University, Istanbul, Turkey; [2]Faculty of Engineering, and Natural Sciences, Sabancı University, Istanbul, Turkey; [3]Faculty of Pharmacy, Istanbul University, Istanbul, Turkey; [4]Faculty of Science, Istanbul University, Istanbul, Turkey; [5]School of Biosciences, University of Birmingham, Birmingham, United Kingdom; [6]School of Public Health, Soochow University, Suzhou, China; and [7]University of Wuerzburg, Wuerzburg, Germany.

#3206 **Poster Board Number P518**
Differential Effects of DNA Methylation in Malignant Transformation of BEAS-2B Cells Induced by Radon and Cigarette Smoking. *J. Li*[2], W. Fan[1], and Y. Ji[2]. [1]Hope Industry & Trade Co., Ltd, Tianjin, China; and [2]Soochow University, Suzhou, China.

#3207 **Poster Board Number P519**
Screening for miRNA Regulation of Cytochrome P450 4V2, the Gene Associated with Bietti's Crystalline Dystrophy. *C.M. Lockhart*, and *E.J. Kelly*. University of Washington, Seattle, WA.

#3208 **Poster Board Number P520**
Epigenetic Alterations in Human Liver HepaRG Cells Induced by Aflatoxin B_1 Exposure. S. Burnett[2], *V. Tryndyak*[1], F.A. Beland[1], and *I.P. Pogribny*[1]. [1]US FDA National Center for Toxicological Research, Jefferson, AR; and [2]University of Arkansas, Fayetteville, AR.

#3209 **Poster Board Number P521**
The DNA Methylome of Chronic Doxorubicin Exposure *In Vivo*. *K.K. Nordgren*[2], M. Hampton[1], and *K.B. Wallace*[2]. [1]University of Minnesota Duluth, Duluth, MN; and [2]University of Minnesota Medical School Duluth campus, Duluth, MN.

#3210 **Poster Board Number P522**
Stable Transcriptional Alterations by Nickel Through Epigenetic Reprogramming. *S. Cuddapah*, C. Jose, and L. Jagannathan. New York University School of Medicine, Tuxedo, NY.

#3211 **Poster Board Number P523**
Environmental Contaminants and MicroRNA Regulation: Transcription Factors as Master Regulators of Toxicant-Altered microRNA Expression. *J.J. Sollome*, *E. Martin*, *P. Sethupathy*, and *R.C. Fry*. University of North Carolina, Chapel Hill, NC.

#3212 **Poster Board Number P524**
Epigenetic Regulation of the MicroRNA, mir-21, in Mice Exposed *In Utero* to Second-Hand Smoke and Challenged as Adults with Ovalbumin. H.M. Zaman[2], Z. Perveen[2], R. Xiao[1], and *A. Penn*[2]. [1]College of Physicians, and Surgeons, Columbia University Medical Center, New York, NY; and [2]Louisiana State University, Baton Rouge, LA.

Abstract #

#3213 **Poster Board Number P525**
Diethylstilbestrol (des) Induces Transgenerational Dysregulation in Thymic MicroRNA with Significant and Long-Term Consequences on Immune Functions. *N.P. Singh*, *U.P. Singh*, *M. Nagarkatti*, and *P. Nagarkatti*. University of South Carolina School of Medicine, Columbia, SC.

#3214 **Poster Board Number P526**
Strain Differences in DNA Methylation and Hydroxymethylation Following Prenatal Exposure to Diesel Exhaust Particulate Matter. *K.A. Rychlik*, J.C. Pulczinski, and *N.M. Johnson*. Texas A&M University School of Public Health, College Station, TX.

#3215 **Poster Board Number P527**
Baseline Chromatin Modification Levels May Predict Inter-Individual Variability in Ozone-Induced Pro-Inflammatory and Oxidative Stress Gene Expression. *S.D. McCullough*[2], *E.C. Bowers*[1], D.M. On[2], D.S. Morgan[2], L.A. Dailey[2], *R.N. Hines*[2], *R.B. Devlin*[2], and D. Diaz-Sanchez[2]. [1]University of North Carolina, Chapel Hill, NC; and [2]US EPA, Research Triangle Park, NC.

#3216 **Poster Board Number P528**
***In Vivo* Inhalation Exposures to Jet A and JP-8 Alter Brain miRNA Expression Profiles.** J. Frey[1,3], K. Henderson[1,3], *K. Mumy*[4], C. Gut[2,4], J. Reboulet[2,4], M. Grimm[2,4], and C. Mauzy[1]. [1]Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; [2]CAMRIS International, Wright-Patterson Air Force Base, OH; [3]Henry M. Jackson Foundation, Wright-Patterson Air Force Base, OH; and [4]Naval Medical Research Unit Dayton, Wright-Patterson Air Force Base, OH.

#3217 **Poster Board Number P529**
Changes of Nucleotide Excision Repair (NER) Pathway and Global DNA Methylation Status by Iranian Heavy Crude Oil Exposure: A Toxicological and Epidemiological Study. Y.-H. Kim[4], N. Chatterjee[4], J. Yang[4], M.-S. Park[3], M. Ha[1], H.-K. Cheong[2], and J. Choi[4]. [1]Department of Preventive Medicine, Dankook University, Cheonan, Korea, Republic of; [2]Sungkyunkwan University, Suwon, Korea, Republic of; [3]Taean Institute of Environmental Health Center, Taean, Korea, Republic of; and [4]University of Seoul, Seoul, Korea, Republic of. Sponsor: *B.-H. Lee.*

#3218 **Poster Board Number P530**
ssUVR Induces Global Histone Hypoacetylation in Human Hacat Keratinocytes. X. Zhang[2], T. Kluz[2], L. Gesumaria[2], M. Matsui[1], *M. Costa*[2], and H. Sun[2]. [1]Estee Lauder Companies, Inc, New York City, NY; and [2]New York University School of Medicine, Tuxedo, NY. Sponsor: *M. Costa.*

#3219 **Poster Board Number P531**
Gene-Specific 5′-UTR Methylation vs. Promoter Methylation in Leukocytes from Workers Exposed to Different Levels of VOCs. O.A. Jiménez-Garza[2], L. Reynaga-Ornelas[2], A. Dávalos-Pérez[2], and *A. Albores*[1]. [1]CINVESTAV, México DF, Mexico; and [2]Universidad de Guanajuato Campus León, León, Mexico.

#3220 **Poster Board Number P532**
Epigenetic Modifications Are Indicative of the Magnitude and Duration of Ozone-Responsive Gene Expression. *E. Bowers*[1,2], D. On[2], D. Morgan[2], L. Daily[2], D. Diaz-Sanchez[2], and *S. McCullough*[2]. [1]UNC Chapel Hill, Chapel Hill, NC; and [2]US EPA, Chapel Hill, NC.

Abstract #

Wednesday Afternoon, March 16
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Reproductive Toxicology

Developmental Toxicity: Mechanisms and Evaluation

Chairperson(s): *James Lamb, Exponent, Alexandria, VA; and John Wise, University of Louisville, Louisville, KY.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *3:00 PM–4:30 PM*

#3221 **Poster Board Number P533**
Hydroxychloroquine Attenuates Cigarette Smoke Induced Autophagic Signaling in the Ovary of Mice. *H.C. Furlong*, M.R. Stämpfli, *A.M. Gannon*, and *W.G. Foster*. McMaster University, Hamilton, ON, Canada.

#3222 **Poster Board Number P534**
Hydrogel Based 3-Dimensional (3D) System for Toxicity and High-Throughput (HTP) Analysis for Cultured Murine Ovarian Follicles. *H. Zhou*, M.A. Malik, A. Arab, M.T. Hill, and A. Shikanov. University of Michigan, Ann Arbor, MI.

#3223 **Poster Board Number P535**
Environmentally Relevant Concentrations of Lead Alter the Late Events of Oocyte Maturation. G. Mosqueda-Tapia, *D.G. Acuña-Hernández*, and *I. Hernández-Ochoa*. Cinvestav-IPN, México, DF, Mexico.

#3224 **Poster Board Number P536**
Phthalate Mixture Exposure Reduces Antral Follicle Growth and Hormone Production in Cultured Mouse Follicles. *C. Zhou*, and *J.A. Flaws*. University of Illinois, Urbana, IL.

#3225 **Poster Board Number P537**
Resveratrol Protects the Ovary Against CrVI-Toxicity by Enhancing Endogenous Antioxidant Enzymes and Inhibiting Metabolism of Estradiol. S.K. Banu, J.A. Arosh, and R.C. Burghardt. Texas A&M University, College Station, TX.

#3226 **Poster Board Number P538**
Regulation of Ovarian Multidrug Resistance Protein 1 and P-Glycoprotein by Phosphatidylinositol-3 Kinase Signaling. P.Q. Thomas, and *A. Keating*. Iowa State University, Ames, IA.

#3227 **Poster Board Number P539**
Gene-Environment Interaction and Risk of Preterm Birth with Special Reference to mRNA Expression of IL-4 And IL-10 and Exposure to Orgnochlorine Pesticides. *V. Tyagi*, *B.D. Banerjee*, *T. Sharma*, R.S. Ahmed, and K. Guleria. University College of Medical Sciences, and GTB Hospital, Delhi, India.

#3228 **Poster Board Number P540**
Bisphenol A Decreases Gap Junction Channels and Alters Meiosis in Cumulus Cells-Oocyte Complex. *D.G. Acuña-Hernández*[2], *L. Arreola-Mendoza*[1], R. Santacruz-Márquez[2], S.P. García-Zepeda[2], and *I. Hernández-Ochoa*[2]. [1]CIIEMAD-IPN, México, DF, Mexico; and [2]Cinvestav-IPN, México, DF, Mexico.

Abstract #

#3229 **Poster Board Number P541**
An Environmentally Relevant Dose of Bisphenol A Decreases Gap Junction Intercellular Communication but Does Not Increases Apoptosis Levels in Cumulus Cells. R. Santacruz-Márquez[1], S.P. García-Zepeda[1], C.A. Mendoza-Rodríguez[2], *D.G. Acuña-Hernández*[1], and *I. Hernández-Ochoa*[1]. [1]Cinvestav-IPN, México, DF, Mexico; and [2]Universidad Nacional Autónoma de México, México, DF, Mexico.

#3230 **Poster Board Number P542**
Bisphenol A Alters Oxidative Stress-Related Factors in the Mouse Ovary. *S. Patel*, and *J.A. Flaws*. The University of Illinois, Urbana, IL.

#3231 **Poster Board Number P543**
Aberrant Uterine SIX1 Expression May Promote Uterine Adenocarcinoma Following Neonatal Xenoestrogen Exposure. *A.A. Suen*[1,2], *W.N. Jefferson*[1], E. Padilla-Banks[1], V.L. Bae-Jump[2], and C.J. Williams[1,2]. [1]National Institute of Environmental Health Sciences, Durham, NC; and [2]UNC Chapel Hill, Chapel Hill, NC.

#3232 **Poster Board Number P544**
Differential Regulation of Human Placental Transporters During Hypoxia. L. Gorczyca. Rutgers University, Piscataway, NJ.

#3233 **Poster Board Number P545**
Cholesterol Depletion by Pravastatin Inhibits the Fetoprotective Activity of the Placental Efflux Transporter BCRP. *J.T. Szilagyi*[2], *K.M. Bircsak*[2], *A.M. Vetrano*[1], *J.D. Laskin*[2], and *L.M. Aleksunes*[2]. [1]Robert Wood Johnson Medical School, New Brunswick, NJ; and [2]Rutgers University, Piscataway, NJ.

#3234 **Poster Board Number P546**
Identification of *ABCB1* Promoter Haplotypes and Their Effects on Placental P-gp Expression. *J.T. Speidel*, *M. Xu*, and *S.Z. Abdel-Rahman*. University of Texas Medical Branch, Galveston, TX.

#3235 **Poster Board Number P547**
Interindividual Regulation of the BCRP/ABCG2 Transporter in Human Term Placentas. *K.M. Bircsak*[3], N. Memon[2], B.I. Weiberger[1], *A.M. Vetrano*[2], and *L.M. Aleksunes*[3]. [1]Hofstra North Shore-LIJ School of Medicine, New Hyde Park, NY; [2]Rutgers University, New Brunswick, NJ; and [3]Rutgers University, Piscataway, NJ.

#3236 **Poster Board Number P548**
Gene Expression Profiling of the Effects BDE-47 on Human Primary Cytotrophoblasts. *J.F. Robinson*, M. Kapidzic, E.G. Hamilton, M.J. Gormley, T. Dent, M.T. McMaster, and S.J. Fisher. University of California, San Francisco, San Francisco, CA.

Abstract #

#3237 **Poster Board Number P549**
***In Utero* Diesel Exhaust Exposure Induces Altered Placental Vascularization, Placental Nanoparticles Transfer and Intergenerational Effects.** S.A. Valentino[2,5], A. Tarrade[2,5], J. Aioun[2,5], E. Mourier[2,5], C. Richard[2,5], M. Dahirel[2,5], D. Rousseau-Ralliard[2,5], M.-C. Aubrière[2,5], S. Camous[2,5], M. Guinot[2,5], M.-S. Lallemand[2,5], M. Charlier[2], E. Aujean[2], H. Al Adhami[2,5], P.H. Fokkens[1], L. Agier[3], J.A. Boere[1], F.R. Cassee[1,4], R. Slama[3], and P. Chavatte-Palmer[2,5]. [1]Centre for Sustainability, Environment, and Health, National Institute for Public Health, and the Environment, Bilthoven, Netherlands; [2]INRA, Jouy-en-Josas, France; [3]Inserm, and Univ. Grenoble Alpes, Grenoble, France; [4]Institute of Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands; and [5]PremUp Foundation, Paris, France.

#3238 **Poster Board Number P550**
***In Vivo* Microvascular Implications of Nano-TiO2 Inhalation Throughout Estrous and During Pregnancy.** *P.A. Stapleton*, C.R. McBride, *J. Yi*, and *T.R. Nurkiewicz*. West Virginia University, Morgantown, WV.

#3239 **Poster Board Number P551**
Assessing Systemic Toxicity and Therapeutic Efficacy of Atosiban and Nafarelin in a Rabbit Model of Endometriosis. R. Rajoria, J. Leong, C. Smith, and V. Naageshwaran. Absorption Systems, San Diego, CA. Sponsor: *C. Davenport.*

#3240 **Poster Board Number P552**
Serum from Pregnant Women Induces Xenobiotic Metabolizing Enzymes and Transporters in Cultured Human Intestinal Cells. *J.E. Moscovitz*[2], G. Herrera-Garcia[1], *G.L. Guo*[2], and *L.M. Aleksunes*[2]. [1]Robert Wood Johnson Medical School, New Brunswick, NJ; and [2]Rutgers University, Piscataway, NJ.

#3241 **Poster Board Number P553**
Body Burden and Hepatic Cyp Expression in Rats Following Low Dose Drinking Water Exposure to a VOC Mixture During Pregnancy and Adolescence. *A.J. Filgo*[3], D.M. Chambers[1], *E.M. Quist*[2,3], B.C. Blount[1], and *S.E. Fenton*[3]. [1]Centers for Disease Control, and Prevention, Atlanta, GA; [2]NCSU, Raleigh, NC; and [3]NIEHS, Research Triangle Park, NC.

#3242 **Poster Board Number P554**
Incorporation of Measures for Monitoring an Assessment of the Female Reproductive System in a 52-Week Toxicity Study in the Minipig. *A. Makin*[1], K. Kaaber[1], M.L. Jensen[1], G. Jeppesen[1], U. Westrup[3], S. Dyring Jakobsen[2], and S. Møller Laursen[2]. [1]CiToxLAB Denmark, Lille Skenved, Denmark; [2]LEO Pharma, Ballerup, Denmark; and [3]Westrup Vet. Consulting, Gentofte, Denmark.

#3243 **Poster Board Number P555**
A Qualification Intravenous Infusion Study in Juvenile Sprague-Dawley Rats. R. Tavcar[2], C. Gordon[2], A.S. Galicia[2], M.S. Maghezzi[2], *R. Forster*[1], and *S. Authier*[2]. [1]CiToxLAB France, Evreux, France; and [2]CiToxLAB North America, Laval, QC, Canada.

#3244 **Poster Board Number P556**
The Effects of Oral and Dermal Exposure of 1,4-Dinitrobenzene on Oxidative Stress and Sperm Characteristics Leads to Reproductive Toxicity in Male Wistar Rats. *J.O. Sangodele*, and A.C. Akinmoladun. Federal University of Technology Akure, Akure, Nigeria.

Abstract #

#3245 **Poster Board Number P557**
Quercetin and Vitamin E Attenuate Bonny Light Crude Oil-Induced Alteration in Testicular Apoptosis, Stress Proteins and Steroidogenic Acute Regulatory Protein in Wistar Rats. *A.P. Ebokaiwe*. Federal University Ndufu-Alike Ikwo, Abakaliki, Nigeria.

#3246 **Poster Board Number P558**
Cyp1b1 Is Required for Transplacental Polycyclic Aromatic Hydrocarbon Dibenzo(def,p)chrysene-Induced Testicular Damage. E. Madeen[1], *T. Harper*[1], L. Shorey[1], *J. Lim*[2], C. Loehr[1], *D. Williams*[1], and *U. Luderer*[2]. [1]Oregon State University, Corvallis, OR; and [2]University of California Irvine, Irvine, CA.

#3247 **Poster Board Number P559**
A Novel *In Vitro* Spermatogenesis Model Demonstrates Reproductive Toxicity of Flame Retardants. A.N. Steves[2], D. Clarkson-Townsend[1], J.M. Bradner[1], *W.M. Caudle*[1], and C.A. Easley[2]. [1]Emory University Rollins School of Public Health, Atlanta, GA; and [2]Emory University School of Medicine, Atlanta, GA.

#3248 **Poster Board Number P560**
Relevant Methods of Oral Exposure to E-Waste Leachate and Fracking Fluid Alters Reproductive Sperm Parameters in Male Mice. *P.H. Costa*[2], J. Igbo[1], *J. Blum*[2], M. Sisco[2], *S. Doherty-Lyons*[2], *K. Kaur*[2], *M. McCawley*[3], and *J. Zelikoff*[2]. [1]Dept of Biological Oceanography Nigerian Institute of Oceanography, and Marine Research, Lagos, Nigeria; [2]NYU School of Medicine, New York, NY; and [3]West Virginia U, Morgantown, WV.

#3249 **Poster Board Number P601**
Effects of Ethylene Glycolmonomethyl Ether on the Epigenetic Related Genes in the Testis of Male Rats. T. Fukushima[1], K. Taki[2], K. Masuno[1], C. Kondou[1], M. Ueno[1], T. Yoshida[2], and I. Horii[2]. [1]Shionogi Co & Ltd, Toyonaka, Japan; and [2]Showa University, Hatanodai, Japan. Sponsor: *Y. Tonomura.*

#3250 **Poster Board Number P602**
Body Weights and Fertility of Male Rats Offspring After Prenatal Exposure to Bisphenol A. M. Elobeid, and L. AlSadhan. King Saud University, Riyadh, Saudi Arabia. Sponsor: *P. Goering.*

#3251 **Poster Board Number P603**
Cell-Based High-Content Analysis (HCA) Reveals Differential Effects of BPA and Its Selected Analogues on Spermatogonia Stem Cells. *S. Liang*, *L. Yin*, and *X. Yu*. University of Georgia, Athens, GA.

#3252 **Poster Board Number P604**
High Content Analysis (HCA) of Effects of Low-Dose Cadmium on DNA Damage and Cell Cycle in Spermatogonial Stem Cells. *L. Yin*, *S. Liang*, and *X. Yu*. University of Georgia, Athens, GA.

#3253 **Poster Board Number P605**
Effects of Perfluorinated Compounds on Lipid Metabolism During *In Vitro* Spermatogenesis. D. Clarkson-Townsend[1], A.N. Steves[2], J.M. Bradner[1], *W.M. Caudle*[1], and C.A. Easley[2]. [1]Emory University Rollins School of Public Health, Atlanta, GA; and [2]Emory University School of Medicine, Atlanta, GA.

Abstract #

#3254 **Poster Board Number P606**
Diabetes Upregulates Metastasis-Associated Protein-1 Signaling and Phosphorylation of Histone 2AX in Rat Testis. *N. Kilarkaje*. Kuwait University, Safat, Kuwait.

#3255 **Poster Board Number P607**
Increased Sertoli Cell Expression of Il-6 as a Mechanism for Mono- (2- Ethylhexyl) Phthalate Sensitivity in Pubertal Rats. *A.R. Stermer*, *C.J. Murphy*, and *J.H. Richburg*. University of Texas at Austin, Austin, TX.

#3256 **Poster Board Number P608**
Reproductive Assessment of Peginterferon Lambda-1a in Mice. *L. Sivaraman*[1], J.-J. Liaw[1], *D. Bounous*[1], *K. Brannen*[2], and *M.E. McNerney*[1]. [1]Bristol-Myers Squibb Company, New Brunswick, NJ; and [2]Charles River, Horsham, PA.

#3257 **Poster Board Number P609**
Toxic Hazards Caused by Methanolic Extract of *Euphorbia peplus* in Male Rats. A.H. Abou Hadeed, G.G. Moustafa, A.T. Mohammed, F.H. Kandeel, and A.M. Alkelech. College of Veterinary Medicine, Zagazig University, Zagazig, Egypt. Sponsor: *A.-R. Kadry.*

Wednesday Afternoon, March 16
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Developmental and Juvenile Toxicology

Developmental Toxicity: Mechanisms and Evaluation

Chairperson(s): *Mark Hurtt, Pfizer Inc, Groton, CT; and Georgia K. Roberts, National Toxicology Program, Apex, NC.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *1:15 PM–2:45 PM*

#3258 **Poster Board Number P610**
Prenatal Exposure to Perfluorooctanesulfonic Acid (PFOS) Is Associated with Wheeze in Early Childhood. A. Impinen[1], *U.C. Nygaard*[1], K.C. Lødrup Carlsen[2,3], P. Mowinckel[2], K.-H. Carlsen[3], and *B. Granum*[1]. [1]Norwegian Institute of Public Health, Oslo, Norway; [2]Oslo University Hospital, Oslo, Norway; and [3]University of Oslo, Oslo, Norway. Sponsor: *B. Granum.*

#3259 **Poster Board Number P611**
Comparative Reference Control Data for Embryo/Fetal Development Studies in Sprague-Dawley Rats (Crl CD® IGS BR vs. RjHan:SD) and New Zealand White Rabbits (Crl:KBL vs. INRA A 1077). G. Chevalier, S. Bentz, F. Lesueur, M. Da Silva, *R. Forster*, and F. Spezia. Citoxlab, Evreux, France.

#3260 **Poster Board Number P612**
Oral Embryofetal Toxicity Assessment of the Non-Narcotic Antitussive Benzonatate in Rats and Rabbits. S. Engel[2], *V. Sharper*[1], and *S. Teo*[3]. [1]Charles River Laboratories, Horsham, PA; [2]Pfizer, Groton, CT; and [3]Pfizer, Madison, NJ.

#3261 **Poster Board Number P613**
***In Utero* Exposure to the Dietary Supplement Vinpocetine Is Associated with Rat and Rabbit Embryo-Fetal Toxicity.** *N. Catlin*[1], *P. Foster*[1], *E. Mylchreest*[2], *L. Miller*[2], *H. Cunny*[1], and *B. McIntyre*[1]. [1]National Toxicology Program, Durham, NC; and [2]Southern Research Institute, Birmingham, AL.

Abstract #

#3262 **Poster Board Number P614**
An Evaluation of the Effects of N91115 on Embryo-Fetal Development and Toxicokinetics of Pregnant Rabbits. *D. Colagiovanni*. Nivalis Therapeutics, Boulder, CO.

#3263 **Poster Board Number P615**
Prenatal Administration of Valproic Acid Alters Both the Purkinje Cell Dendrites and the Granule Cell Proliferation in Rat Developing Cerebellum. S. Yoshida[2], N. Hozumi[2], *Y. Fueta*[3], *S. Ueno*[3], and *Y. Sekino*[1]. [1]National Institute of Health Sciences, Tokyo, Japan; [2]Toyohashi University of Technology, Toyohashi, Japan; and [3]University of Occupational, and Environmental Health, Kitakyushu, Japan. Sponsor: *Y. Fueta.*

#3264 **Poster Board Number P616**
Prenatal Single Administration of Tributyltin Alters Developmental Transient of Spontaneous Behaviors and Basic Excitability in the Hippocampal Slices of Immature Rats. *Y. Fueta*[3], Y. Sekino[1], S. Yoshida[2], and S. Ueno[3]. [1]National Institute of Health Sciences, Tokyo, Japan; [2]Toyohashi University of Technology, Toyohashi, Japan; and [3]University of Occupational, and Environmental Health, Kitakyushu, Japan.

#3265 **Poster Board Number P617**
NTE Protein and Encoding Gene in Neurodevelopment and Neurodevelopmental Toxicity. M.A. Sogorb[3], *D. Pamies*[1], J. Estevez[3], E. Del Rio[3], E. Fuster[3], C. Estevan[2], and *E. Vilanova*[3]. [1]Center for Alternatives to Animal Testing (CAAT) at Johns Hopkins Bloomberg, Baltimore, MD; [2]European Chemical Agency, Biocide Unit, European Commission, Helsinki, Finland; and [3]University Miguel Hernandez of Elche, Elche, Spain.

#3266 **Poster Board Number P618**
A Microphysiological Approach to Elucidate Gene-Environment Interactions Involving Hedgehog Signaling and Orofacial Clefting. *B.P. Johnson*, D.M. Fink, D.J. Beebe, and R.J. Lipinski. University of Wisconsin, Madison, WI.

#3267 **Poster Board Number P619**
Mechanism Underlying Offspring Undergrowth Produced by Maternal Exposure to Dioxin: A Study Focusing on Growth Hormone During the Fetal Period. Y. Hattori[1,2], T. Takeda[2], Y. Ishii[2], and *H. Yamada*[2]. [1]Japan Society for the Promotion, and Science, Research Fellowship for Doctoral Course Students, Tokyo, Japan; and [2]Kyushu University, Fukuoka, Japan.

#3268 **Poster Board Number P620**
The TCDD-AHR Axis Targets MAP3K1 Signaling in Embryonic Eyelid Development. M. Mongan, J. Wang, Q. Meng, *A. Puga*, and *Y. Xia*. University of Cincinnati, Cincinnati, OH.

#3269 **Poster Board Number P621**
Neonatal and Juvenile Eyes Development in Sprague-Dawley Rats: A Histomorphological Study. *R. Forster*[1], V. Vrolyk[3], A. Apreutese[2], C. Gordon[2], A. Graham[2], B. Palate[1], and M. Benoît-Biancomano[3]. [1]CiToxLAB France, Evreux cedex, France; [2]CiToxLAB North America, Laval, QC, Canada; and [3]Université de Montréal, Sainte Hyacinthe, QC, Canada.

Abstract #

#3270 **Poster Board Number P622**
Neonatal Activation of the Xenobiotic-Sensor PXR Results in Acute and Permanent Down-Regulation of PPARα-Signaling in Mouse Liver. *C.Y. Li*, *T.K. Bammler*, and *J.Y. Cui*. University of Washington, Seattle, WA.

#3271 **Poster Board Number P623**
Potential Modes of Action for Perfluorooctanoic Acid (PFOA)-Induced Hepatocellular Hypertrophy in Mice. *E. Quist*, *V. Chappell*, *A. Filgo*, Y. Wang, G. Kissling, and *S. Fenton*. NIEHS/NTP, Research Triangle Park, NC.

#3272 **Poster Board Number P624**
RNA-Sequencing Reveals Differential Expression and Enrichment of Human Placental Xenobiotic Transporters Across Gestation. A. Estevez[3,4], *X. Wen*[3], *K. Bircsak*[3], B. Wang[2], J. Landis[1], X. Tao[1], N. Treff[2], T. Rosen[2], and *L.M. Aleksunes*[3]. [1]Foundation for Embryonic Competence, Basking Ridge, NJ; [2]Rutgers University, New Brunswick, NJ; [3]Rutgers University, Piscataway, NJ; and [4]University of Puerto Rico-Rio Piedras, San Juan, PR.

#3273 **Poster Board Number P625**
Exposure to Butyl Paraben During Gestation and Lactation in Harlan Sprague Dawley Rats via Dosed Feed. *G.K. Roberts*[1], *S. Waidyanatha*[1], *B.L. Fletcher*[2], *M.A. Silinski*[2], *T.R. Fennell*[2], *H.C. Cunny*[1], *V. Godfrey Robinson*[1], and *C.R. Blystone*[1]. [1]Division of the National Toxicology Program, Research Triangle Park, NC; and [2]RTI International, Research Triangle Park, NC.

#3274 **Poster Board Number P626**
EU Pediatric Investigation Plans with Juvenile Animal Studies: 2007–2014. *M.E. Hurtt*, and S.M. Engel. Pfizer Inc, Groton, CT.

#3275 **Poster Board Number P627**
Juvenile Development: When Normal Looks Abnormal; Part I. Nervous, Endocrine, and Reproductive Systems. *A.K. Remick*[2], *C.A. Picut*[2], *D.L. Brown*[2], B.E. Walling[1], and *G.A. Parker*[2]. [1]WIL Research, Ashland, OH; and [2]WIL Research, Hillsborough, NC.

#3276 **Poster Board Number P628**
Juvenile Development: When Normal Looks Abnormal; Part II. Respiratory, Digestive, and Excretory Systems. *C.A. Picut*[2], *A.K. Remick*[2], *D.L. Brown*[2], G.D. Coleman[1], M.A. Greeley[1], *M.E. Mattix*[1], J.T. Pike[2], L. Staska[2], B.E. Walling[1], and *G.A. Parker*[2]. [1]WIL Research, Ashland, OH; and [2]WIL Research, Hillsborough, NC.

#3277 **Poster Board Number P629**
NHP Infant ECG and Echocardiography. M.A. Bailey[2], S. Kosaka[2], M. Dabadi[2], L. Hagen[2], T. Massey[2], A. Walker[2], *T. Beck*[2], and *R. Nagata*[1]. [1]Shin Nippon Biomedical Laboratories, Ltd., Tokyo, Japan; and [2]SNBL USA, Everett, WA. Sponsor: *T. Beck.*

#3278 **Poster Board Number P630**
Fetal Cortisol Exposure: Maternal Influences and Developmental Trends in a Nonhuman Primate Model. K.S. Grant[2], J. Worlein[2], J. Meyer[1], M. Novak[1], K. Rosenberg[1], C. Kenney[2], R. Kroeker[2], and T. Burbacher[2]. [1]University of Massachusetts, Amherst, MA; and [2]University of Washington, Seattle, WA. Sponsor: *E. Faustman.*

Abstract #

#3279 **Poster Board Number P631**
Role of Ethanol in Enhancing Fluconazole-Related Teratogenic Effects on *In Vitro* Post-Implantation Rat Embryo Development. F. Di Renzo[2], F. Metruccio[1], M. Battistoni[2], *A. Moretto*[2], and E. Menegola[2]. [1]Luigi Sacco Hospital, Milano, Italy; and [2]University of Milano, Milano, Italy.

#3280 **Poster Board Number P632**
Effects of a Binary Mixture of Azole Fungicides on Post-Implantation Rat Embryo Developed *In Vitro*. F. Metruccio[1], F. Di Renzo[2], M. Battistoni[2], *A. Moretto*[2], and E. Menegola[2]. [1]Luigi Sacco Hospital, Milano, Italy; and [2]University of Milano, Milano, Italy.

Wednesday Afternoon, March 16
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Developmental Toxicology (Non-Rodent)

Developmental Toxicity: Mechanisms and Evaluation

Chairperson(s): *Karilyn E. Sant, University of Massachusetts Amherst, Amherst, MA.*

Displayed: *1:15 PM–4:30 PM*

Author Attended: *3:00 PM–4:30 PM*

#3281 **Withdrawn.**

#3282 **Poster Board Number P634**
Using Zebrafish to Assess Cannabinoid Developmental Toxicity. *D.R. Carty*, *C.E. Thornton*, S.J. Cutler, M.A. ElSohly, I.A. Khan, and *K.L. Willett**. University of Mississippi, University, MS.

#3283 **Poster Board Number P635**
Estradiol Co-Exposure Rescues Certain Benzo[a]pyrene- and Cyp19a1b Knockdown-Mediated Developmental Phenotypes in Zebrafish. *K. Alharthy*, C. Thornton, J. Corrales, and *K.L. Willett*. University of Mississippi, University, MS.

#3284 **Poster Board Number P636**
Transgenerational Mitochondrial Toxicity of Benzo(a)pyrene in *Danio rerio*. J.S. Kozal[1], N. Jayasundara[1], C.D. Lindberg[1], *A. Massarsky*[1], A.N. Oliveri[1,2], *E.D. Levin*[1,2], *J.N. Meyer*[1], and *R.T. Di Giulio*[1]. [1]Duke University, Durham, NC; and [2]Duke University Medical Center, Durham, NC.

#3285 **Poster Board Number P637**
Developmental Toxicity and AHR Activation of Nitrated and Heterocyclic PAHs. A. Chlebowski, *W.H. Bisson*, S. Simonich, and *R. Tanguay*. Oregon State University, Corvallis, OR.

#3286 **Poster Board Number P638**
Harm-Reduction Tobacco Products Interfere with the Differentiation of Craniofacial Bone. *N.R. Sparks*[1], M. Bondesson[2], and N.I. zur Nieden[1]. [1]University of California Riverside, Riverside, CA; and [2]University of Houston, Houston, TX.

#3287 **Poster Board Number P639**
Developmental Toxicity of Polycyclic Aromatic Hydrocarbons in Embryonic and Adult Zebrafish. M.C. Geier, *A.L. Knecht*, and *R.L. Tanguay*. Oregon State University, Corvallis, OR.

Abstract #

#3288 **Poster Board Number P640**
TCDD Dysregulates Osteoblast Differentiation in Multiple Cell Lines, and in Japanese Medaka *In Vivo*. *A.T. Watson*, and *S.W. Kullman*. North Carolina State University, Raleigh, NC.

#3289 **Poster Board Number P641**
Involvement of Dopaminergic System in Spontaneous and Halogenated Flame Retardants-Induced Motor Behaviors in Zebrafish Embryos. *H. Teraoka*, M. Fujiwara, D. Nijoukubo, Y. Tanaka, and T. Kitazawa. Rakuno Gakuen University, Ebetsu, Japan.

#3290 **Poster Board Number P642**
An Adverse Outcome Pathway for the Interaction Between Selenomethionine and Osmotic Stress in Japanese Medaka (*Oryzias latipes*) Embryos. *A. Kupsco*, and *D. Schlenk*. University of California-Riverside, Riverside, CA.

#3291 **Poster Board Number P643**
Perfluorooctanesulfonic Acid (PFOS) Alters Pancreatic Organogenesis and Embryonic Redox Signaling in the Zebrafish, *Danio rerio*. *K.E. Sant*, H. Jacobs, and *A.R. Timme-Laragy*. University of Massachusetts Amherst, Amherst, MA.

#3292 **Poster Board Number P644**
Butyl Paraben Affects Pancreatic Development in Zebrafish (*Danio rerio*) Embryos. S.E. Brown[1], *K.E. Sant*[1], L. Zhao[2], and *A. Timme-Laragy*[1]. [1]University of Massachusetts Amherst, Amherst, MA; and [2]University of Tennessee, Knoxville, TN.

#3293 **Poster Board Number P645**
Role of Nrf1 Paralogs in Regulating the Transcriptional Response to Phthalates in Zebrafish (*Danio rerio*). N. Tran[1], *L.M. Williams*[1], and *A.R. Timme-Laragy*[2]. [1]Bates College, Lewiston, ME; and [2]University of Massachusetts Amherst, Amherst, MA.

#3294 **Poster Board Number P646**
Mono-2-Ethylhexyl Phthalate (MEHP) Alters Embryonic Growth and Pancreatic Organogenesis in Zebrafish. H.M. Jacobs[2], *K.E. Sant*[2], *L.M. Williams*[1], and *A.R. Timme-Laragy*[2]. [1]Bates College, Lewiston, ME; and [2]University of Massachusetts Amherst, Amherst, MA.

#3295 **Poster Board Number P647**
Characterization of Heme Oxygenase and Biliverdin Reductase Expression During Zebrafish Development. *M.J. Jenny*, and *A. Holowiecki*. University of Alabama, Tuscaloosa, AL.

#3296 **Poster Board Number P648**
Sublethal Effects of Amoxicillin on the Development of Zebrafish (*Danio rerio*). G.A. Oliveira[1], L. Brito[1], R. Oliveira[2], L. Rodrigues[1], C. Lisboa[2], B. Ferraz[2], N. Nunes[2], C. Grisolia[2], and M. Valadares[1]. [1]Federal University of Goias, Goiania, Brazil; and [2]University of Brasilia, Brasilia, Brazil. Sponsor: *D. Oliveira.*

#3297 **Poster Board Number P649**
Alterations in Neuro- and Interenal Steroidogenic Responses in the African Sharptooth Catfish (*Clarias gariepinus*) Exposed to Di-(2-Ethylhexyl) Phthalate. *A.O. Adeogun*[2], *O.R. Ibor*[2], *R.A. Omiwole*[2], E.D. Omogbemi[2], and *A. Arukwe*[1]. [1]Norwegian University of Science, and Technology, Trondheim, Norway; and [2]University of Ibadan, Ibadan, Nigeria.

Abstract #

#3298 **Poster Board Number P650**
Evaluation of Reproductive and Endocrine Toxicity of Boric Acid in the African Clawed Frog (Xenopus laevis). *D. Fort*[1], T. Fort[1], M. Mathis[1], and *R.W. Ball*[2]. [1]Fort Environmental Laboratories, Stillwater, OK; and [2]Rio Tinto Minerals, Greenwood Village, CO.

#3299 **Poster Board Number P651**
Combination of a Human Pluripotent Stem Cell and Zebrafish Assay to Predict the Developmental Toxicity of Chemicals. J.A. Palmer[2], C. Quevedo[1], L.A. Egnash[2], I. Irijalba[1], *A. Muriana*[1], and E.L. Donley[2]. [1]BBD BioPhenix-BIOBIDE, San Sebastian, Spain; and [2]Stemina Biomarker Discovery, Madison, WI.

#3300 **Poster Board Number P652**
ToxCast Chemical and Bioactivity Profiles for *In Vitro* Targets in the Retinoid Signaling System. N.C. Baker[2], *S. Hunter*[1], *J.A. Franzosa*[1], *A. Richard*[1], *R. Judson*[1], and *T. Knudsen*[1]. [1]US Environment Protection Agency, Research Triangle Park, NC; and [2]Lockheed Martin, Research Triangle Park, NC.

Wednesday Afternoon, March 16
2:00 PM to 4:45 PM
CC Room 208

Symposium Session: High-Content Imaging for Predictive Toxicology: Discriminating between Adverse and Adaptive Outcomes

♦ Molecular Toxicology: Mechanistic Insights and Hazard Assessment

Chairperson(s): *Imran Shah, US Environmental Protection Agency, Research Triangle Park, NC; and Bob van de Water, Leiden University, Leiden, Netherlands.*

Endorser(s):
***In Vitro* and Alternative Methods Specialty Section**
Risk Assessment Specialty Section
Toxicologic and Exploratory Pathology Specialty Section

High-content imaging (HCI) is a cellular systems approach to cataloguing the biological effects of chemicals. Using multi-parametric analysis, HCI can measure integrated cellular responses following the activation or deactivation of multiple molecular functions at the single cell level. Because HCI measures multiple cytological features of fluorescently labeled cells, it provides unique quantitative insight into their phenotypic state in terms of stress, injury, recovery, and death. With technological advancements in creating fluorescently labeled markers, multiresolution imaging, and intelligent image analysis tools, it is feasible to generate HCI data for thousands of chemical perturbations. These complex and large-scale HCI data streams can be interpreted using new informatics and systems biology-based mathematical modeling tools. This makes HCI a powerful *in vitro* tool for predicting the adverse effects of chemicals, a key need in realizing the vision of toxicity testing in the 21st century. This symposium will bring together cutting-edge concepts on HCI as an alternative testing paradigm for predictive toxicology and will focus on 1) innovative tools for interrogating the molecular and cellular state of cells; 2) evaluating sentinel stress response pathways that can profile the chemical-induced perturbations in cells; 3) using HCI responses to analyze the balance between cellular injury and recovery through homeostatic mechanisms; 4) applying HCI data to predict drug-induced liver injury (DILI); and 5) computational systems-level analysis of HCI data to identify toxicological tipping points. This symposium will address these issues in a series of highly focused presentations on 21st century toxicology using HCI as an innovative tool for risk assessment, and for estimating points of departure for risk assessment. This symposium will be of wide interest to SOT members, including scientists working in the regulatory arena as well as those interested in the application of molecular and systems biology to risk assessment. A key challenge to using *in vitro* data in risk assessment is differentiating between adaptive and adverse cellular responses. To further investigate the balance between adaptation and adversity, we studied the effects of hundreds of chemicals in HepG2 cells using HCI. HCI assays were used to measure dose and time-dependent perturbations in p53, JNK, oxidative stress, cytoskeleton, mitochondria, and cell cycle progression. We analyzed this multidimensional HCI datastream using a novel computational model, which interpreted the dynamic response of the HepG2 system to chemicals as cell-state trajectories. The cell-state trajectories produced by different concentrations chemicals describe a range of rich responses of the HepG2 system in many cases. Further analysis of trajectories identified dose-dependent transitions in system recovery, which we call tipping points. The critical concentration of chemicals that produce tipping points was generally much lower than the concentration that produced cell loss. We believe that HCI can be used to reconstruct cell state trajectories, and provide insight into adaptation and resilience for *in vitro* systems. (Abstract #3301a)

#3301b 2:05 **A HCI Cellular Stress Response GFP-Reporter Platform for Chemical Safety Assessment.** *B. van de Water*. Leiden University, Leiden, Netherlands.

#3302 2:35 **Imaging 3D Human Microtissues to Modernize Toxicity Testing.** *K. Boekelheide.* Brown University, Providence, RI.

#3303 3:05 **Integration of High-Content Imaging for Predicting Drug-Induced Liver Injury.** *W. Tong.* US FDA/NCTR, Jefferson, AR.

#3304 3:35 **Using High-Content Imaging to Analyze Cellular Tipping Points.** *I. Shah*. US EPA/NCCT, Research Triangle Park, NC.

#3305 4:05 **Utilizing High-Content Imaging Tools Toward Pathways-Based Safety Assessments: A Consumer Product Industry Perspective.** *P. Carmichael*. Unilever, Sharnbrook, United Kingdom.

4:35 **Panel Discussion/Q&A.**

Wednesday Afternoon, March 16
2:00 PM to 4:45 PM
CC Room R08

Symposium Session: Novel Roles of Reactive Oxygen Species (ROS) in Human Diseases: Why ROS Never Gets Stale

Chairperson(s): *Bhagavatula Moorthy, Baylor College of Medicine, Houston, TX; and Donna Zhang, University of Arizona, Tucson, AZ.*

Endorser(s):
Clinical and Translational Toxicology Specialty Section
Mechanisms Specialty Section
Molecular and Systems Biology Specialty Section

Oxidative stress mediated by reactive oxygen species (ROS) can have a profound effect on many cellular functions. The major goal of this symposium is to discuss the molecular and cellular mechanisms by which ROS, including free radicals, contribute to oxidative stress and alter various signaling pathways, which could in turn lead to inflammation and cell death in target organs, and ultimately lead to human diseases including chemically induced acute hepatitis, neurodegenerative diseases, and pulmonary diseases such as bronchopulmonary dysplasia (BPD), acute respiratory distress syndrome (ARDS), and cancer. The innovative aspect of the proposed symposium is to discuss the molecular mechanisms of oxidative stress and signaling that leads to inflammation and cell death in a cell- and organ-specific manner, and the mechanisms by which they contribute to target organ toxicities. The recent findings of the novel roles of oxidative stress in multiple human diseases warrant the need for a symposium to discuss the latest mechanistic research in this area and its impact on human health. Specifically, the symposium will discuss (i) molecular signaling pathways that selectively affect SNpc neurons, and how these studies could help unravel the mechanisms underlying selective vulnerability of these neurons in neurodegenerative diseases like Parkinson's disease (PD); (ii) the role of nuclear receptors, ER stress, and oxidative stress in fatty liver disease, and how modulation of FXR activity and the related bile acid metabolism in hepatocytes might be a promising strategy to treat chemically induced acute hepatitis; (iii) the mechanistic role of omega-3 epoxides, which are anti-inflammatory; inhibit angiogenesis, tumor growth, and tumor metastasis induced by TCDD; and, recent studies have suggested, may act as antioxidants; (iv) the molecular role of Nrf2 as master regulator against oxidative stress, its implications for multiple human diseases including cancer, and the discovery of novel

small molecule nrf2 modulators to improve human health; and (v) the novel roles of cytochrome P450 (CYP)1A and 1B1 enzymes in hyperoxic lung injury, in relation to BPD and ARDS. In conclusion, this symposium will discuss the latest developments in oxidative stress, molecular signaling, inflammation, and cell death, and offer new opportunities for clinical and translational research. (Abstract #3306a)

#3306b	2:00	**Introduction.** *B. Moorthy*. Baylor College of Medicine, Houston, TX.
#3307	2:05	**Cell-Specific Activation of Redox-Driven Death Signaling Pathways in Neurodegeneration.** V. Ravindranath. Indian Institute of Science, Bangalore, India. Sponsor: *B. Moorthy.*
#3308	2:34	**Role of Nuclear Receptors, ER Stress, and Oxidative Stress in Fatty Liver Disease.** *F. Gonzalez*. National Cancer Institute, Bethesda, MD.
#3309	3:03	**2,3,7,8-Tetrachlorodibenzo-p-dioxin Markedly Increases the Levels of Highly Bioactive Epoxide Metabolites of Omega-6 and Omega-3 Polyunsaturated Fatty Acids in Many Organs of Mice.** *O. Hankinson*. University of California, Los Angeles, CA.
#3310	3:32	**Nrf2: Tumor Suppressor or Oncogene?** *D. Zhang*. University of Arizona, Tucson, AZ.
#3311	4:01	**Mechanistic Roles of Cytochrome P4501A and 1B Enzymes in Oxidative Stress-Mediated Mechanisms Leading to Hyperoxic Lung Injury: Implications for BPD in Infants and ARDS in Adults.** *B. Moorthy*. Baylor College of Medicine, Houston, TX.
	4:30	**Panel Discussion/Q&A.**

Wednesday Afternoon, March 16
2:00 PM to 4:45 PM
CC Great Hall B

Symposium Session: Use of the Adverse Outcome Pathway (AOP) Concept to Link Epidemiological to Mechanistic Data on the Correlation of Pesticide Exposures and Parkinson's Disease

Advances in Neurotoxicology

Molecular Toxicology: Mechanistic Insights and Hazard Assessment

Chairperson(s): *Marcel Leist, University of Konstanz, Konstanz, Germany; and Susanne Hougaard Bennekou, Danish EPA, Copenhagen, Denmark.*

Endorser(s):
Mechanisms Specialty Section
Neurotoxicology Specialty Section
Risk Assessment Specialty Section

A recent systematic review of epidemiological studies (EFSA External Scientific report, 2013) concluded that the weight of evidence supports an association between exposure to pesticides and increased risk of Parkinson's disease (PD). Analyses of epidemiological and experimental studies by ANSES (the French Agency for Food, Environmental and Occupational Health and Safety) reached a similar conclusion. Such data have attracted significant public attention, but it is unclear whether and how they can be used for risk assessment. It is possible that mixture effects, long-term low-dose exposure, and species differences contribute to effects observed in the human population that have not been predicted from animal experiments. This also has to be balanced against underlying understanding of this type of disease, which has a multifactorial etiology. Therefore, new approaches of data integration from heterogeneous sources (ranging from epidemiology to molecular and animal studies) are required. The goal of the proposed symposium is to use the Adverse Outcome Pathway (AOP) concept as a novel, mechanistically driven approach to assess the biological plausibility of the epidemiological data. This concept represents a shift toward a knowledge-driven approach to toxicological hazard and risk assessment. It relies on a mechanistic understanding of toxicity pathways and attempts to align different types of information to these pathways.

An AOP links information on molecular initiating events (MIE) to a final adverse outcome (AO). It provides a basis for multi-level data integration by defining the intermediate key events (KEs) that link the MIE to the AOP, and providing a scientifically firm rationale for the KE relationships, i.e., processes and their thresholds that lead to the activation of the next KE (considering relevant exposure and internal doses). Thus, AOP provides an ideal basis for a strategy that aims to evaluate the evidence of cause-effect relationships. The potential to combine various AOPs to larger networks allows judgments on mixture effects and complex scenarios, such as the one of pesticide exposure possibly leading to Parkinsonism. During this session, speakers with expertise in epidemiology, regulatory toxicology, and basic science will contribute different perspectives to a large and representative case study in which the AOP format is applied to integrate the epidemiological data with mechanistic research. The ultimate goal is to explore the link between exposure to specific pesticides and the risk of developing PD. Individual pesticides, such as rotenone, paraquat, and organochlorine compounds will be used to demonstrate the basic outline of the strategy. The defined examples will be used to highlight its strengths and challenges. The latter include exposure and toxicokinetics considerations, and, e.g., nonlinear network dynamics resulting from feedback and feedforward loops and pathway intersections. Eventually, the integration of individual AOPs to an AOP network underlying a complex human disease will be illustrated. The session will also include recommendations on how to improve the quality of this information and how to integrate these data into regulatory decision-making. (Abstract #3312a)

#3312b	2:05	**The Risk Assessment of Pesticide-Induced Neurotoxicity (Including Parkinson's Disease) in the Standard Regulatory Framework.** S. Hougaard Bennekou. Danish EPA, Copenhagen, Denmark. Sponsor: *M. Leist*.
#3313	2:35	**An Overall Mechanistic Map of Parkinson's Disease and Interaction Points for Various Pesticides.** *M. Leist*. University of Konstanz, Konstanz, Germany.
#3314	3:05	**AOP Construction Rules and Key Event Relationships: The Cascade of Key Events Initiated by Inhibition of Complex I and Leading to Parkinson's.** A. Price. European Commission Joint Research Center, Ispra, Italy. Sponsor: *M. Leist.*
#3315	3:35	**Experimental Validation of an AOP: Probing Inhibition of Aldehyde Dehydrogenase (ALDH) as the Molecular Initiating Event Linking Exposure to Organochlorine Pesticides and Dithiocarbamate Fungicides to Parkinson's Disease.** *P. Lein*. University of California, Davis, Davis, CA.
#3316	4:05	**Multiple AOP Alignment Case Study: Pathways of Toxicity Induced by Exposure to Paraquat That Cause Symptoms of Parkinson's Disease.** *E. Fritsche*. Leibniz Research Institute for Environmental Medicine, Duesseldorf, Germany.
	4:35	**Panel Discussion/Q&A.**

Abstract #

Wednesday Afternoon, March 16
2:00 PM to 4:45 PM
CC Room 220

Workshop Session: Advanced Techniques in PBPK Modeling to Improve Quantitative Risk Assessment for Infants and Children

Developmental Toxicity: Mechanisms and Evaluation

Recent Advances in Safety Assessment

Chairperson(s): *Susan Felter, Procter & Gamble, Cincinnati, OH; and Jeffrey Fisher, National Center for Toxicological Research,US Food and Drug Administration, Jefferson, AR.*

Endorser(s):
Biological Modeling Specialty Section
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

Methods for quantitative risk assessment most commonly employ uncertainty factors to account for species differences and human heterogeneity, including differences associated with life stages, in both toxicokinetics and toxicodynamics. While this approach is generally considered sufficient to provide protection for more sensitive subpopulations and life stages, it is a very crude approach to risk assessment that does not take into consideration data that are increasingly available to address species differences and population variability. Specifically for life stage-associated differences, it is commonly assumed that infants and children are more sensitive than adults, despite data showing that this is often not true. Further, it is increasingly recognized that differences in sensitivity can change very quickly after the neonatal period such that very young infants might be more sensitive, but older infants and children are less sensitive than adults. Alternatively, for an early-life stage compared to adults, there can be increased sensitivity to one endpoint/target organ while there is decreased sensitivity to another, or the differential sensitivity can be related to dose. These differences are particularly important to understand in pharmaceutical development, where dosing must carefully consider both efficacy and safety over different life stages. The immaturity of key physiological processes associated with the toxicokinetic/toxicodynamic handling of xenobiotics is an important factor contributing to the differential susceptibility associated with early-life exposures; this is made more challenging by the rapid changes that occur in both growth and maturation throughout infancy and childhood. PBPK modeling provides an important tool to describe these key maturational processes such that they are explicitly considered in the risk assessment process. While application of these models generally confirms the adequacy of current default UFs for providing protection for early-life stages, it provides an opportunity to refine this assumption while significantly increasing our confidence in the resulting analysis. (Abstract #3317a)

#3317b	2:05	**Differential Physiology and Sensitivity of Infants and Children.** A. Collier. University of British Columbia, Vancouver, BC, Canada. Sponsor: *S. Felter*.
#3318	2:34	**Age-Specific PBPK Models.** J. Troutman. Procter & Gamble, Cincinnati, OH. Sponsor: *S. Felter.*
#3319	3:03	**Advances in Extrapolation to Help Inform Pharmacokinetics and Pharmacodynamics of Chemicals and Drugs in Infants and Children.** *J. Fisher.* NCTR/US FDA, Jefferson, AR.
#3320	3:32	**Life-Stage Physiologically Based Pharmacokinetic (PBPK) Model Applications to Screen Environmental Hazards.** *H. El-Masri*. US EPA, Research Triangle Park, NC.
#3321	4:01	**PBPK Modeling and Simulation in Drug Development: A Focus on Pediatrics.** A. Edginton. University of Waterloo, Waterloo, ON, Canada. Sponsor: *S. Felter*.
	4:30	**Panel Discussion/Q&A.**

Abstract #

Wednesday Afternoon, March 16
2:00 PM to 4:45 PM
CC Room 217

Workshop Session: "Breaking Bad": Cardiovascular Autophagy Gone Rogue: A Putative Mechanism of Toxicity and a Drug Target in Disease

Accreditation Statement: This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Medical Education (ACCME) through the joint providership of The University of Arkansas for Medical Sciences (UAMS) College of Medicine and the Society of Toxicology (SOT). The UAMS College of Medicine is accredited by the ACCME to provide continuing medical education for physicians.

Designation Statement: The UAMS College of Medicine designates this live activity for a maximum of 2.75 *AMA PRA Category 1 Credit(s)*™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Target Audience: Physicians and other health care providers

Learning Objectives: After the activity, the participant will be able to:(1) Describe cellular autophagy: (2) Discuss cardiovascular autophagy as an emerging therapeutic and toxicological endpoint; (3) Explain how drugs/toxicants promote cardiovascular pathology via autophagic imbalance; (4) Identify drugs that can target cardiovascular autophagy in a way that attenuates cardiovascular pathology.

Chairperson(s): *Leslie C. Thompson, ORISE, US Environmental Protection Agency, Research Triangle Park, NC; and Tammy R. Dugas, Louisiana State University, Baton Rouge, LA.*

The following Specialty Sections recommend this session as being of special interest to its members:
Cardiovascular Toxicology Specialty Section
Mechanisms Specialty Section
Regulatory and Safety Evaluation Specialty Section

Christian de Duve coined the word "autophagy" in 1963 during his studies of the lysosome. In the 1970s autophagy was identified as a toxicological mechanism in acute liver damage caused by dimethylnitrosamine, and in 1983 rubomycin injection was used to generate a model of myocardial insufficiency in rats by impairing autophagic function in the heart. Autophagy is a tightly regulated process within cells that includes 1) molecular marking of damaged or dysfunctional cellular constituents; and 2) degrading/recycling those marked cellular constituents. Essentially autophagy is a waste management system for cells. By cleaning up worn, aged, and damaged cellular constituents, autophagy helps maintain overall cellular health, function, and efficiency. Disruption of autophagy can have adverse effects on cardiovascular function, and impaired autophagy has been implicated in cardiovascular pathologies and toxicity responses to various pharmaceuticals and environmental toxicants. Abnormal autophagic processes have been well documented in cardiovascular disease and are increasingly being targeted for therapeutic approaches. Thus, autophagy in the cardiovascular system is emerging as an important toxicological and therapeutic endpoint. This session will highlight the clinical consequences of impaired autophagy on normal cardiovascular function, discuss emerging evidence linking alterations in autophagy to cardiotoxicity responses to antineoplastic agents, and examine autophagic consequences in vascular endothelial cells following treatment with drugs used to treat HIV. Finally, this session will highlight evidence that proposes targeting autophagy as a therapeutic strategy in different vascular diseases. Namely, evidence will be presented describing targeted increase in autophagy to improve endothelial cell-mediated diabetic vasculopathy and decrease smooth muscle proliferation in conditions of atherosclerosis and restenosis. (Abstract #3322a)

	2:00	**Overview.** *L.C. Thompson.* US EPA, Research Triangle Park, NC.
#3322b	2:05	**Clinical Perspective on Cardiovascular Autophagy.** M.S. Willis. University of North Carolina, Chapel Hill, NC. Sponsor: *L. Thompson*.

Abstract #

#3323 2:37 **Contributions of Mitophagy in Cumulative Doxorubicin-Induced Cardiomyopathy.** *K.B. Wallace*. University of Minnesota, Duluth, MN.

#3324 3:09 **Cycles of Injury and Repair via Mitophagy Associated with Chronic Exposures and Premature Senescence.** *T.R. Dugas.* Louisiana State University, Baton Rouge, LA.

#3325 3:41 **Autophagy as a Drug Target in Diabetic Vascular Disease.** *J.L. Fetterman*. Boston University, Boston, MA.

#3326 4:13 **Verapamil, Autophagy, and Vascular Smooth Muscle Antiproliferation.** *D.J. Conklin*. University of Louisville, Louisville, KY.

Wednesday Afternoon, March 16
2:00 PM to 4:45 PM
CC Room R02

Workshop Session: *In Vitro* Dosimetry of Engineered Nanomaterials: Too Complicated to Consider, Too Important to Ignore

Chairperson(s): *Saber Hussain, US Air Force, WPAFB, OH; and Philip Demokritou, Harvard University, School of Public Health, Cambridge, MA.*

Endorser(s):
Nanotoxicology Specialty Section

Because of the potential public health risk arising from exposure to engineered nanomaterials (ENMs) through consumer applications, a thorough evaluation of their safety is essential. Owing to the fast pace of ENM generation, high-throughput *in vitro* methods for safety assessments are sorely needed, but to date have proven unreliable with limited predictive capabilities extending to *in vivo* models. One major contributor to the discrepancies that exist between these models is a failure to reconcile *in vitro* and *in vivo* dosages. Despite growing evidence of the importance of ENM dosimetry for accurate hazard assessments, few *in vitro* studies take it into consideration. This oversight is likely due to a lack of standardized, easy-to-use, and validated methodologies for dispersion preparation, characterization, and *in vitro* dosimetry estimation. This workshop will highlight recent advancements that strengthen ENM dosimetry, including the development of aerosol lung deposition models, generation of pertinent *in vitro* exposure mechanisms, and integrated approaches for calculating and predicting relevant dosages for both *in vitro* and *in vivo* nanotoxicological examinations. It will also highlight several mature, sophisticated computational tools and experimental methods for obtaining dosimetry information *in vivo* and extrapolating those findings to *in vitro*cellular systems with specific examples related to "real world" ENM exposures. In addition to discussing the current state of the art regarding ENM dosimetry, discussions will center on the need and means for future development of this area. (Abstract #3327)

2:00 **Introduction.** *S. Hussain*. US Air Force, Wright-Patterson AFB, OH.

#3328 2:10 **Emerging Tools and Approaches for Bridging the Gap between Exposure and *In Vitro*/*In Vivo* Dosimetry of Engineered Nanomaterials for Nanosafety Assessment.** P. Demokritou. Harvard, Cambridge, MA. Sponsor: *S. Hussain.*

#3329 2:35 ***In Vitro* Aerosol Exposure Systems: Challenges in Dosimetry and Strategic Solution.** *T. Tilly.* Air Force Research Lab, Wright-Patterson AFB, OH.

#3330 3:00 **Tools, Frameworks, and Approaches for Translation of Nanomaterial Exposure, Doses, and Responses between *In Vitro* and *In Vivo* Systems for Safety Assessment.** *J. Teeguarden*. Pacific Northwest National Laboratory, Richland, WA.

#3331 3:25 **Advanced Computational Modeling for *In Vitro* Nanomaterial Dosimetry.** *G. Deloid*. Harvard, Cambridge, MA.

Abstract #

#3332 3:50 ***In Vitro* Dosimetry Modeling Will Be a Critical Step Toward Efficient Assessment of Engineered Nanomaterials for Environmental Health and Safety Implications.** *W.K. Boyes.* US EPA, Research Triangle Park, NC.

4:15 **Panel Discussion/Q&A.**

Wednesday Afternoon, March 16
2:00 PM to 4:45 PM
CC Room R04

Workshop Session: Medical Device Biomaterials: Challenges in Assessing the Toxicity and Biocompatibility of Nanomaterials, Bioabsorbables, and Tissue Scaffolds

Chairperson(s): *Niranjan S. Goud, Boston Scientific Corporation, Spencer, IN; and Peter L. Goering, CDRH, US Food and Drug Administration, Silver Spring, MD.*

Endorser(s):
Association of Scientists of Indian Origin Special Interest Group
Medical Device and Combination Product Specialty Section
Nanotoxicology Specialty Section

During the last two decades, there has been an increase in the use of medical devices for various diagnostic and treatment conditions in the healthcare sector. To meet this growing demand, more new and novel materials/chemicals involving cutting-edge technologies are being used in developing those devices and advanced biomaterials. The first speaker will begin the discussion on the toxicological impact of such device materials on patient health. Sometimes, while short-term biocompatibility studies utilizing ASTM and ISO 10993 methods may show passing results, the long-term implant studies may fail. Given the complex characteristics of these new medical devices, the host defense system, including inflammation (innate immunity), acquired immunity, and foreign body reactions must be considered in determining biocompatibility (safety) and efficacy (function). Relationship of surface chemistries to reduction or enhancement of adverse response to the activity of macrophages, lymphocytes, and giant cells will be explored. The next talk will focus on how nano particles are being used for localization and treatment of cancer. The role of nanocomposite materials and stem cells in the development of artificial human organs such as trachea, facial organs, coronary grafts, and heart valves will be discussed. The current status on potential cytotoxicity of nanoparticles will be reviewed and how results from testing of ultra-high concentrations (which are in no way related to the actual doses used in clinic) are creating unnecessary alarm in the public. Discrepancies between *in vitro* and *in vivo* results involving nanomaterials will be described along with the need for a unifying protocol for reliable and realistic toxicity studies. The third speaker will provide insights into a fascinating field of 3-D polymer scaffolds for tissue engineering. Experimental data will be presented on the use of stereolithography-based fabrication with polymers (polylactic acid, polypropylene fumarate, and chitosan, etc.) to simulate internal structure of hepatic lobule and liver vasculature for tissue regeneration, wound healing, and personalized medicine. But these technologies have their own unique challenges, such as sterility, presence of contaminants, bioabsorbable polymers, or monomers, and toxicity of photoinitiator compounds. There will be a discussion on how careful optimization of resin formulation can lead to elimination of cytotoxicity without compromising the accuracy and high resolution of fabrication. Next, the focus will be shifted from materials to fully processed and sterilized devices. Examples of how the presence of detergents, metallic ions, or sterilization residues from processing steps during manufacture can result in biocompatibility test failures will be presented. There will be discussion on case studies with anomalous test results involving cytotoxicity, hemocompatibility, and systemic toxicity, and their impact on patient health. Finally, the last speaker from notified body DEKRA will provide an overview of the regulatory approval process for marketing of medical devices in different EU countries and compliance with the Medical Device Directive. The role of European Medicines Agency in the review of devices containing drugs, pharmaceuticals, biologics, or biotechnology products will be presented. This will be followed by a discussion on the recently released guidance by the European Commission's SCENIHR to assess human health risks of medical devices containing nanomaterials. In summary, this workshop will provide an overview of toxicity issues concerning nanomaterials, bioabsorbables, 3-D tissue scaffolds, and synthetic organs, and strategies to overcome them. The role of device chemistry and host defense mechanisms in long-term test failures will be addressed, as well as examples of anomalous biocompatibility test results, with a discussion of their importance in patients'

Abstract #

health, and European guidelines for medical device approvals with special emphasis on devices containing nanomaterials. (Abstract #3333a)

#3333b 2:05 **Biocompatibility and the Foreign Body Reaction to Medical Device Materials.** *J.M. Anderson*. Case Western Reserve University, Cleveland, OH.

#3334 2:35 **Nanomaterials—Their Use in Biomedical Applications Including Development of Artificial Organs: Do the Benefits Outweigh the Risk?** A.M. Seifalian. University College of London, London, United Kingdom. Sponsor: *N. Goud.*

#3335 3:05 **Strategies in Stereolithography-Based Fabrication and Toxicity Evaluation of 3-D Polymer Scaffolds for Tissue Engineering.** *S.A. Skoog*[1], *P.L. Goering*[1], R.J. Narayan[2], *P.E. Petrochenko*[1]. [1]US FDA/CDRH, Silver Spring, MD; and [2]University of North Carolina, Raleigh, NC.

#3336 3:35 **Biocompatibility of Medical Devices—Anomalies in Test Results: Discussion on Their Relevance to Patient Safety.** *N. Goud*. Boston Scientific Corporation, Spencer, IN.

#3337 4:05 **Regulatory Approval of Medical Devices in Europe–Recent Guidelines on Nanomaterials.** R. Scherer. DEKRA Certification B.V., Concord, CA. Sponsor: *N. Goud.*

4:35 **Panel Discussion/Q&A.**

Wednesday Afternoon, March 16
2:00 PM to 4:45 PM
CC Room R06

PL

Platform Session: Heavy Metals: Mechanisms and Disease Pathogenesis

♣ Toxicity of Metals

Chairperson(s): *James Gomes, University of Ottawa, Ottawa, ON, Canada; and Josh Edwards, Midwestern University, Downers Grove, IL.*

#3338 2:00 **Hexavalent Chromium (Cr(VI)) Down-Regulates Acetylation of Histone H4 at Lysine 16 Through Induction of Stressor Protein Nupr1.** D. Chen, X. Zhang, L. Fang, T. Kluz, H. Sun, *C. Jin*, and *M. Costa*. NYU School of Medicine, Tuxedo, NY.

#3339 2:20 **Role of Exosomes Released by Arsenic Transformed Prostate Epithelial Cells in the Recruitment of Stem Cells into an Oncogenic Phenotype.** *N.O. Ngalame*, *E.U. Rivera*, *N. Makia*, and *E.J. Tokar*. NTP, NIEHS, Durham, NC.

#3340 2:40 **Differential MiRNA and mRNA Expression in Immortalized Human Keratinocytes (HaCaT) After Low Arsenic Exposure Suggest Changes in Cell Proliferation, Cell Migration, Cytoskeleton Remodeling and Carcinogenesis Pathways.** *L. Al-Eryani*[2], S. Jenkins[2], S. Waigel[2], V.A. States[2], V. Arumugam[2], S.N. Rai[2], S. Galandiuk[2], A.K. Giri[1], and *J.C. States*[2]. [1]Indian Institute of Chemical Biology, Kolkata, India; and [2]University of Louisville, Louisville, KY.

#3341 3:00 **Mitochondrial Function Links Non-Linear Dose Response of Arsenite to Growth and Survival in Human and Mouse Primary Hepatocytes.** *H.D. Chavan*[2], K. Mickey[2], P. Christudoss[1], J. Lu[2], R. Swerdlow[2], and *P. Krishnamurthy*[2]. [1]Christian Medical College, Tamil Nadu, India; and [2]University of Kansas Medical Center, Kansas City, KS.

Abstract #

#3342 3:20 **Cytoskeleton Remodeling and Epithelial-Mesenchymal Transition in Breast Cancer Cells Upon Treatment with Cadmium.** *Z. Wei*, and *Z.A. Shaikh*. University of Rhode Island, Kingston, RI.

#3343 3:40 **Impaired Glucose Homeostasis in WT and As3MT-KO Mice: Effects of Sex and Arsenic Exposure.** C. Douillet, *M. Huang*, J. Galanko, E. Dover, C. Zhang, and *M. Styblo*. UNC Chapel Hill, Chapel Hill, NC.

#3344 4:00 **Arsenic-Enhanced Atherosclerosis Is Dependent Upon As3MT Expression in Multiple Cell Types.** *L.F. Negro Silva*[2], *M. Lemaire*[2], D. Plourde[2], V. Slavkovich[1], *J.H. Graziano*[1], C.A. Lemarié[2], S. Lehoux[2], and *K.K. Mann*[2]. [1]Columbia University, New York, NY; and [2]McGill University, Montreal, QC, Canada.

#3345 4:20 **Altered Hepatic Transport by Fetal Arsenite Exposure in Diet-Induced Fatty Liver Disease.** *E.J. Ditzel*[1], H. Li[3], C.E. Foy[2], A.B. Perrera[3], P. Parker[3], B.J. Renquist[2], *N.J. Cherrington*[3], and *T.D. Camenisch*[3]. [1]Ecolab, Eagan, MN; [2]The University of Arizona, Tucson, AZ; and [3]The University of Arizona College of Pharmacy, Tucson, AZ.

Wednesday Afternoon, March 16
2:00 PM to 4:45 PM
CC Room 206

PL

Platform Session: Innovations in Toxicology Education

Chairperson(s): *Diane Hardej, St. John's University, Jamaica, NY; and Christine Curran, Northern Kentucky University, Highland Heights, KY.*

#3346 2:00 **Toxicology Mentoring and Skills Development Training Program.** *W.K. Rumbeiha*[1], A. Correia[1], D. Alexander[2], E. Gilbreath[2], P. Leigh[1], and *J.D. Wolt*[1]. [1]Iowa State University, Ames, IA; and [2]Tuskegee University, Tuskegee, AL.

#3347 2:20 **Evaluating Self-Efficacy, Sense of Community, Expectancies, and Science Identity to Increase STEM Persistence in Undergraduate STEM Students.** *R.S. Pollenz*, and D. Findley-Van Nostrand. University of South Florida, Tampa, FL.

#3348 2:40 **Intensive Research Training Improves Undergraduate Student Scientific Competencies During a 10-Week Summer Fellowship.** *S.M. Marco*[3], L.E. Liang[2], R. Riley[1], K. Nakata[1], *D.L. Laskin*[3], and *L.M. Aleksunes*[3]. [1]Center for Environmental Exposure, and Disease, Piscataway, NJ; [2]Center for School, and Community-Based Research, and Education, Piscataway, NJ; and [3]Rutgers University, Piscataway, NJ.

#3349 3:00 **Use of Biological Pathway Databases, Primarily Open Source.** *M.E. Gillespie*. St. John's University, Jamaica, NY.

#3350 3:20 **From the High School Classroom to the Laboratory Bench: Design of a One-Week Toxicology Summer Program.** G.L. Guo, *A. Venosa*, *J. Szilagyi*, *S.M. Marco*, *L.M. Aleksunes*, *A.J. Gow*, and *D.L. Laskin*. Rutgers University, Piscataway, NJ.

#3351 3:40 **Technology Transfer Enabling a Participatory Research Project of a High School Community to Measure Organisms Involved in Dioxin Degradation and Antibiotic Resistance.** *B.L. Upham*[1], M. Fitschen-Brown[1], R. Stedtfeld[1], G. Zylstra[2], and S. Hashsham[1]. [1]Michigan State University, East Lansing, MI; and [2]Rutgers University, New Brunswick, NJ.

Abstract #

#3352 4:00 **Toxic Beauty: Campus-Community Education and Outreach on Cosmetics and Personal Care Products.** *T. Dodd-Butera*[2], and M. Broderick Pritty[1]. [1]California Poison Control System, San Diego, CA; and [2]CSU San Bernardino, San Bernardino, CA.

#3353 4:20 **A Semester-Long, Inquiry-Based, Lab Using the Aryl Hydrocarbon Receptor (Ahr) in an Upper-Level Undergraduate Biology Course.** *L.M. Williams*. Bates College, Lewiston, ME.

Wednesday Afternoon, March 16
2:15 PM to 4:00 PM
CC Room 215

Undergraduate Educator Network Meeting

Chairperson(s): *Joshua Gray, US Coast Guard Academy, New London, CT.*

Hosted by:
Education Committee
Undergraduate Education Subcommittee

The Undergraduate Educator Network Meeting is for all faculty involved in the teaching of toxicology to undergraduates, trainees thinking about teaching, and for those interested in including toxicology at the undergraduate level. Hear an update on initiatives for undergraduate faculty, provide your input, and discuss shared interests. The hour-long meeting is followed with networking time.

Wednesday Afternoon, March 16
4:30 PM to 5:30 PM
CC Room 212

Exhibitor-Hosted Session: Behavioral and Neurological Assessments in the Miniature Swine

Presented by:
Sinclair Research Center

The miniature swine are becoming routinely used in toxicology as a nonrodent species for neurobehavioral and neurotoxicology assessments, as well as a model for human neurological and neurodegenerative diseases. The important behavioral and neurological features of the miniature swine will be presented in the perspective of drug safety evaluations.

Wednesday Afternoon, March 16
4:45 PM to 5:45 PM
Marriott at the Convention Center
River Bend Ballroom 2

Immunotoxicology Specialty Section Mentoring Event

Wednesday Evening, March 16
4:45 PM to 7:00 PM
Hilton Riverside Versailles Ballroom

Women in Toxicology Special Interest Group Reception

WEDNESDAY EVENING

Wednesday Evening, March 16
5:00 PM to 5:50 PM
CC Room R08

Translational Impact Award Lecture: Translational Non-Invasive Biomarkers of Acetaminophen-Induced Liver Injury

Lecturer: *Richard Beger, NCTR, US Food and Drug Administration, Jefferson, AR.*

Acetaminophen (APAP) overdose is both clinically relevant and a good model for the development of new translational biomarkers. APAP is primarily metabolized by CYP2E1 to form the reactive metabolite N-acetyl-p-benzoquinone imine (NAPQI) which can bind to cysteine residues of proteins and form APAP-protein adducts. APAP adducts in humans and rodents have been shown to correlate with ALT levels. 'Omics technologies (microRNA profiling, proteomics and metabolomics) have been employed to discover translational phenotype response biomarkers of APAP-induced liver injury in biofluids from nonclinical studies. These potential translational 'omics biomarkers of liver injury have been evaluated using clinical samples from healthy and APAP overdose patients. Data supporting the use of microRNAs as biomarkers for DILI using APAP will be presented. Metabolomics approaches have been used to discover that long-chain acylcarnitines and bile acids were significantly altered in blood from APAP-treated rodents. Increases in long-chain acylcarnitines may represent mitochondria injury and associated reduced β-oxidation capacity. Data show that glycine- and taurine- conjugated bile acids appear to be sensitive determinants of APAP-induced liver injury. Overall, exciting progress in the development of novel translational 'omics and protein adducts biomarkers of hepatotoxicity has been made using biofluid samples from humans and rodents with APAP-induced liver injury.

Abstract #

Wednesday Evening, March 16
5:00 PM to 6:20 PM
CC Room 220

Education-Career Development Session: "Talksicology": Effective Oral Presentation Techniques

Chairperson(s): *Barbara L.F. Kaplan, Mississippi State University, Mississippi State, MS; and Richard Pollenz, University of South Florida, Tampa, FL.*

Endorser(s):
Career and Resource Development Committee
Education Committee
Postdoctoral Assembly

Effective dissemination of research findings in seminars, interviews, scientific meetings, or to the public has always been a critical skill for toxicologists. While effective oral presentation skills are formally taught in most training programs, gaps in the training exist and many programs do not measure success or offer direct evidence of effectiveness. The main goal of this workshop is to provide attendees with an opportunity to assess effectiveness, and improve their own presentations and oral communication skills. The session is designed to be engaging and interactive. The first part of the workshop will be the analysis of a "flawed" presentation in real time in which the audience will use smart phone-based technology (PollEverywhere) to rate and discuss the presentation. This exercise will be followed by short sessions from three experts from academia and industry who will provide examples and techniques for oral presentations specific to 1) a research seminar, 2) an interview, and 3) a situation in which the scientists must communicate to the media or lay public. Effective oral communication during poster presentations will also be presented. This workshop will be applicable for anyone wishing to enhance oral communication skills and is particularly pertinent to developing scientists who want to improve in this craft. (Abstract #3354)

5:00 **Introduction.** *B.L.F. Kaplan*. Mississippi State University, Mississippi State, MS.

5:05 **How Not to Engage the Audience.** *R. Pollenz*. University of South Florida, Tampa, FL.

5:30 **Make an Impact with Your Research Seminar.** B.*L.F. Kaplan*. Mississippi State University, Mississippi State, MS.

5:45 **Presenting Your Research, Presenting Yourself.** *L. Lehman-McKeeman*. Bristol-Myers Squibb Co., Princeton, NJ.

6:00 **Effectively Delivering Complex Messages to Non-Technical Audiences That Have a Short Attention Span.** *S.J. Hermansky*. ConAgra Foods, Omaha, NE.

Wednesday Evening, March 16
5:00 PM to 6:20 PM
CC Room 217

Featured Session: Society of Toxicology and Japanese Society of Toxicology Mini-Symposium: Advances in Metal Toxicity

Chairperson(s): *John B. Morris, University of Connecticut, Storrs, CT; and Jun Kanno, National Institute of Health Sciences, Tokyo, Japan*

Endorser(s):
Society of Toxicology (SOT)
Japanese Society of Toxicology (JSOT)

The Society of Toxicology (SOT) and the Japanese Society of Toxicology (JSOT) are delighted to jointly sponsor a mini-symposium on a topic of mutual interest: Metal toxicity. Each Society has selected from among its membership a true leader in the field to provide their perspectives on recent advances in this area. The SOT invited speaker, Michael Ashner, will discuss his work on manganese toxicity, and the JSOT invited speaker, Yoshito Kumagai, will discuss his work on methylmercury. Together they will provide state of the art insights into the biochemical/molecular toxicity of these two ubiquitous toxic metals.

Manganese Neurotoxicity: From Worms to Human Neonates. Michael Aschner, Albert Einstein College of Medicine, Bronx, NY.

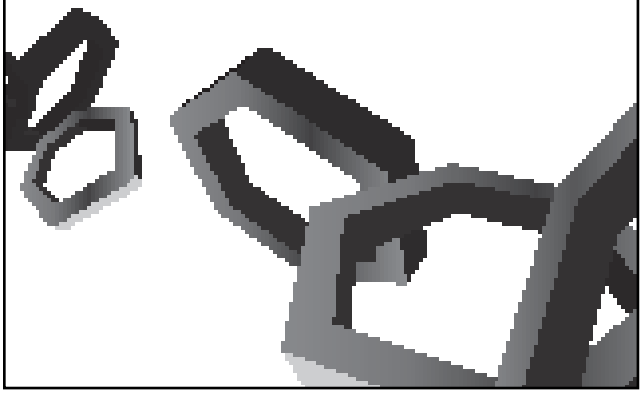
Role of Reactive Sulfur Species in Detoxification of Methylmercury: Phase Zero Reaction for Electrophile Trapping and Detoxification. Yoshito Kumagai, University of Tsukuba, Tsukuba, Japan.

Wednesday Evening, March 16
6:00 PM to 7:30 PM
Hilton Riverside

Specialty Section Meetings/Receptions: Drug Discovery Toxicology (Grand Salon 16,17); Food Safety (Grand Salon 13); Immunotoxicology (Grand Salon A); Medical Device and Combination Product (Grand Salon 22); Metals (Grand Salon 12); Nanotoxicology (Grand Salon 21); Neurotoxicology (Grand Ballroom A); and Risk Assessment (Grand Ballroom B)

Late-Breaking Abstracts Scheduled for Thursday

In December, we invited our colleagues to submit an abstract during the late-breaking abstract submission phase. We are pleased with the number of abstracts received for consideration and that an overwhelming number were accepted for the Annual Meeting. These abstracts are presented on Thursday, March 17, along with several dynamic symposium, workshop, and regular poster sessions already scheduled. You can find the poster sessions in Great Hall A. The PDF supplement of the late-breaking abstracts is available to download via the SOT website in early March. The abstracts are not available in the final *Program* but are fully searchable through the SOT Mobile Event App and Online Planner.



Thursday Morning, March 17
8:15 AM to 9:15 AM
CC Room 206

SOT Strategic Plan Update: Summary and Implementation of the Career Advancement, Recruitment, and Education Process

Thursday Morning, March 17
9:30 AM to 12:15 PM
CC Room 208

Symposium Session: Mitochondrial Dysfunction as a Pathogenic Mechanism and Therapeutic Target for Neurodegenerative Diseases

Advances in Neurotoxicology

Toxicity of Metals

Chairperson(s): *Kim Tieu, Plymouth University, Plymouth, United Kingdom; and Aaron Bowman, Vanderbilt University, Nashville, TN.*

Endorser(s):
Clinical and Translational Toxicology Specialty Section
Metals Specialty Section
Neurotoxicology Specialty Section

Neurodegenerative diseases such as Parkinson's disease, Alzheimer's disease, Huntington's disease, and amyotrophic lateral sclerosis are characterized by a relatively selective loss of one or a few populations of neurons in specific brain regions. Major advances have been made over the past decades toward understanding mechanisms of neurodegeneration. These insights into how neurons die in disease can now be leveraged to develop effective therapeutic strategies. Mitochondrial dysfunction has emerged as a common feature in neurodegenerative disorders. This observation is consistent with the high vulnerability of mitochondria to environmental toxicants (such as herbicides, pesticides, and heavy metals) as well as disease-linked mutation in genes that are functionally associated to mitochondrial biology. This symposium has brought together six leading scientists from industry and academia to discuss the latest information about how various toxicants impair mitochondrial function contributing to neurodegenerative processes and how these experimental models are used for development of novel therapeutic strategies. Although the focus will be on toxicology, latest information about genetic mutations and gene-environment interactions that impact mitochondrial function will also be incorporated in this session. To emphasize how the diverse biology of mitochondria can contribute to disease, several of the talks are focused on a specific disease, Parkinson's disease (PD), to highlight the emerging understanding that mitochondria dysfunction is multifaceted. However, the mechanisms and therapeutic strategies highlighted in this symposium are relevant to other diseases with mitochondrial etiology. Further, speakers will present on the utility of diverse but complementary experimental models. To kick off the session, Ian Reynolds from Teva Pharmaceuticals will provide an overview of mitochondrial biology in neurological diseases, with focus on mitochondria as a therapeutic target. This high-content introduction will establish a common frame of reference for the remaining five talks. Julie Andersen will discuss a novel mechanism by which a strong genetic risk factor for PD, PARK2 (parkin), influences mitochondrial quality control. To highlight potential links of this genetic risk factor with environmental risk, Aaron Bowman will discuss new data suggesting PARK2 mutations increase sensitivity of human neurons to Cu-induced mitochondrial dysfunction and mitochondrial fragmentation. These data support an involvement of mitochondrial fission and fusion imbalances in disease. The therapeutic potential of targeting mitochondrial fission/fusion machinery in PD will be detailed by Kim Tieu in primarily toxicant-induced mammalian cell culture and mouse models. Manganese (Mn) is an established environmental risk factor for PD. Michael Aschner will report on the protective effects of a novel protein, TMEM-135, against Mn-induced oxidative stress and toxicity in the genetic model organism, *C. elegans*. The final speaker, Dean Jones, will conclude the session with a cutting-edge omics approach to gain a broad and comprehensive picture of mitochondrial regulation and signaling in response to toxic insults. In summary, this session is designed to comprehensively cover the complex nature of mitochondria as a pathogenic pathway and therapeutic target for neurodegenerative disease(s) with environmental etiologies. (Abstract #3355a)

Abstract #

#3355b 9:35 **Mitochondrial Neurotherapeutics: Past, Present, and Future.** I. Reynolds. Teva Pharmaceuticals, West Chester, PA. Sponsor: *K. Tieu*.

#3356 10:00 **Parkin-Mediated Mitochondrial Quality Control via the Master Lysosomal Regulatory Factor TFEB Is Disrupted in a Mutant Mouse Model of Parkinson's Disease.** J.K. Andersen. Buck Institute for Research in Aging, Novato, CA. Sponsor: *K. Tieu.*

#3357 10:25 **PARK2 Mutations Alter Vulnerability of Human Neurons to Copper Neurotoxicity.** *A. Bowman*. Vanderbilt University, Nashville, TN.

#3358 10:50 **Targeting Mitochondrial Dynamics as a Potential Therapeutic Strategy for Parkinson's Disease?** *K. Tieu.* Plymouth University, Plymouth, United Kingdom.

#3359 11:15 **Mitochondrial TMEM-135 Decreases Manganese-Induced Dopaminergic Neurodegeneration.** *M. Aschner*. Albert Einstein College of Medicine, Bronx, NY.

#3360 11:40 **Integrated Redox Proteomics, Metabolomics and Transcriptomics: A Holistic View of Mitochondrial Function.** *D. Jones*. Emory University, Atlanta, GA.

Thursday Morning, March 17
9:30 AM to 12:15 PM
CC Room R02

Workshop Session: Beyond Benchmark Dose: Advancing Probabilistic and Bayesian Approaches in Hazard Characterization

♠ Recent Advances in Safety Assessment

Chairperson(s): *Nancy B. Beck, American Chemistry Council, Washington, DC; and Annie M. Jarabek, US Environmental Protection Agency, Research Triangle Park, NC.*

Endorser(s):
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

The National Academies (NRC) and other expert review bodies have frequently recommended that hazard assessments use Bayesian or probabilistic approaches in evaluating uncertainty and/or variability in hazard characterization. Most recently, in a 2014 review of EPA's Integrated Risk Information System (IRIS) program, the NRC reiterated its suggestion to use Bayesian analyses to inform quantitative judgments about hazard and dose response. In this report, unlike other reports on the IRIS program, the NRC provided specific examples illustrating how such approaches could be incorporated. Similarly, the WHO/IPCS has also provided recent advice on using probabilistic approaches to characterize hazards in lieu of point estimates. In addition, computational approaches are progressing that provide for description of key events in a prognostic fashion that can facilitate the application of advances in systems biology as well as meta-analysis and data integration. Such computational approaches offer the promise of network analyses and leveraging of new data streams in a read-across fashion. This workshop session will explore the recent recommendations provided by both NAS and WHO and will illustrate with case studies how these approaches, as well as other probabilistic and Bayesian approaches, can be implemented to inform hazard assessments. (Abstract #3361a)

#3361b 9:35 **Setting the Stage: Recent Advice from the National Academies on Bayesian Analysis in Hazard Assessment.** Y. Zhu. University of South Florida, Tampa, FL. Sponsor: *N. Beck.*

#3362 10:03 **Bayesian Methods for Uncertainty Factor (UF) Application: Proof-of-Concept and Pitfalls.** *T.W. Simon*. Ted Simon LLC, Winston, GA.

Abstract #

#3363 10:31 **Probabilistic Dose-Response Assessment: Basic Principles and General Approach Developed by the WHO/IPCS.** *W.A. Chiu*. Texas A&M University, College Station, TX.

#3364 10:59 **Leveraging High-Dimensional Data to Inform Probabilistic Dose-Response Estimates.** *D.M. Reif.* North Carolina State University, Raleigh, NC.

#3365 11:27 **Consensus Modeling in Support of a Semi-Automated Read-Across Application.** *R. Judson*. US EPA, NCCT, Research Triangle Park, NC.

#3366 11:55 **Facilitated Discussion on Bayesian Approaches in Hazard Assessment.** *A.M. Jarabek*. US EPA, ORD, Research Triangle Park, NC.

Thursday Morning, March 17
9:30 AM to 12:15 PM
CC Room 220

Workshop Session: Bringing More Science into the Process of Risk Assessment for Endogenous Chemicals with Exogenous Exposures

♠ Recent Advances in Safety Assessment

Chairperson(s): *William Farland, Colorado State University, Fort Collins, CO; and Angela Lynch, American Chemistry Council, Washington, DC.*

Endorser(s):
Carcinogenesis Specialty Section
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

The endogenous presence in the body of chemicals that also have exogenous exposures poses a challenge to risk assessment. Endogenous is defined as "produced internally in the body," typically as a result of intermediary metabolic function. In current risk assessment practice, there is not a standard approach for addressing exposure to endogenous levels of chemicals or chemicals with non-anthropogenic background exposures such as those from common, natural dietary sources ("natural background"). Determination of what criteria to consider when evaluating an exogenous chemical with endogenous exposure, and how best to incorporate such information in risk assessment practices is important to all stakeholders. The task of exploring an improved risk assessment approach requires that various disciplines including physiology, toxicology, and risk assessment come together to consider key issues and methodological approaches. The objectives of this workshop include framing important questions to ask when designing and conducting such a risk assessment, assessing what is known about example endogenous chemicals including normal function and homeostatic control, presenting common modes of action (MOAs) where total dose can be considered, and evaluating current risk assessment practices for such chemicals. The workshop will evaluate opportunities for improvement of risk assessment methodology with consideration of more data and improved technologies. The workshop will also engage the toxicology community in a discussion to help define an improved approach to incorporate this knowledge into the risk assessment process for endogenous exposures. (Abstract #3367a)

#3367b 9:35 **Session Overview and Framing the Issue Through Problem Formulation: Risk Assessment Considerations When Assessing Endogenous and Exogenous Exposures to the Same Chemical.** *W. Farland*. Colorado State University, Fort Collins, CO.

#3368 10:03 **What Understanding Loss of Normal Homeostatic Control of Endogenous Toxicants and Their Pathways Tells Us about Risk of Exposure.** *J. Teeguarden.* Pacific Northwest National Laboratory, Richland, WA.

#3369 10:31 **Understanding and Assessing Modes of Action from Endogenous and Exogenous Exposure: DNA Adducts, DNA-Protein Crosslinks and Mutagenicity.** *J. Swenberg*. University of North Carolina at Chapel Hill, Chapel Hill, NC.

Abstract #

#3370	10:59	**The Role of Endogenous Oxidative Stress in Understanding and Assessing the Mode of Action of Exogenous Exposure to Toxic Agents.** *J. Klaunig*. Indiana University, Bloomington, IN.
#3371	11:27	**Factoring Endogenous Exposures Into the Risk Assessment Process: Current Approaches and Future Challenges.** *G. Ginsberg*. CT Department of Public Health, Hartford, CT.
	11:55	**Panel Discussion/Q&A.** *L.H. Pottenger*. The Dow Chemical Company, Midland, MI.

Thursday Morning, March 17
9:30 AM to 12:15 PM
CC Room R08

Workshop Session: Developmental Immunotoxicology—Are We Adequately Evaluating Safety?

Developmental Toxicity: Mechanisms and Evaluation

Chairperson(s): *Laine Peyton Myers, US Food and Drug Administration, Silver Spring, MD; and Gary R. Burleson, BRT, Burleson Research Technologies, Inc, Morrisville, NC.*

Endorser(s):
Biotechnology Specialty Section
Drug Discovery Toxicology Specialty Section
Immunotoxicology Specialty Section

The developing immune system has been shown to be more vulnerable to many xenobiotics, both environmental chemicals and pharmaceutical agents, than the adult immune system. Care must be taken to select different windows of susceptibility with a thorough knowledge of the differences in the stage of critical developmental windows between humans and rodents. Sensitivity differences are critical in evaluating therapeutics to be used for pregnant females as well as for drugs prescribed for juveniles. Knowledge of the critical windows of exposure will allow an evaluation of immunotoxicity assessments important for both developmental and juvenile immunotoxicological testing. Pediatric investigation plans (PIP) are now required for both the European and the US FDA regulatory agencies, and the proposed strategy must be defined in the PIP. While there is no set way to perform a thorough evaluation, assessment of immunotoxicology should consider the known mechanisms of action of the agent, observations in adult studies, and the developmental age of the intended patient population relative to immune system development. (Abstract #3372)

	9:35	**Developmental Immunotoxicology–Introduction.** *L.P. Myers.* US FDA, Silver Spring, MD.
#3373	10:05	**Developmental Immunotoxicology–The Role of the Microbiome.** *R.R. Dietert*. Cornell University, Ithaca, NY.
#3374	10:35	**Regulatory Concerns for Developmental Immunotoxicology.** R. Houghtling. US FDA, Silver Spring, MD. Sponsor: *L.P. Myers*.
#3375	11:05	**Approaches for the Evaluation of Juvenile Toxicology.** *L.A. Burns Naas.* Gilead Sciences Inc, Foster City, CA.
#3376	11:35	**Current Paradigm for Evaluation of Developmental and Juvenile Immunotoxicity Evaluations–Testing and Limitations.** *G.R. Burleson*. BRT, Burleson Research Technologies, Inc, Morrisville, NC.
	12:05	**Panel Discussion/Q&A.**

Thursday Morning, March 17
9:30 AM to 12:15 PM
CC Room R04

Workshop Session: Potential Health and Environmental Effects of Unconventional Hydraulic Fracturing

Recent Advances in Safety Assessment

Accreditation Statement: This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Medical Education (ACCME) through the joint providership of The University of Arkansas for Medical Sciences (UAMS) College of Medicine and the Society of Toxicology (SOT). The UAMS College of Medicine is accredited by the ACCME to provide continuing medical education for physicians.

Designation Statement: The UAMS College of Medicine designates this live activity for a maximum of 2.75 *AMA PRA Category 1 Credit(s)*™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Target Audience: Physicians and other health care providers.

Learning Objectives: After the activity, the participant will be able to: (1) Explain the process of unconventional gas well drilling; (2) Predict potential areas of exposure risk to both workers and the populace; (3) Classify potentially harmful chemical exposures that may require acute clinical care; (4) Describe the regulatory protections that prevent untoward ecological and human health exposures; (5) Formulate air and water exposure risks based on proximity to well development; (6) Differentiate the potential acute toxicity associated with drilling activities with the potential chronic toxicities associated with on-going regional gas well development; (7) Identify critical environmental behaviors and exposure pathways of toxic substances that may be released during the hydraulic fracturing process; (8) Predict possible immune effects in humans following exposure to produced water based on animal immunotoxicological data.

Chairperson(s): *Travis Knuckles, West Virginia University, Morgantown, WV; and Judith Terry Zelikoff, New York University Medical Center, Tuxedo, NY.*

The following Specialty Sections recommend this session as being of special interest to its members:
Ethical, Legal, and Social Issues Specialty Section
Mixtures Specialty Section
Occupational and Public Health Specialty Section

Unconventional gas well development in the Marcellus Shale geological formation has reached an all-time high in recent years. As such, many rural communities and regions are experiencing increased industrial activities and possibly air pollutant exposures from shale gas extraction activities. The burgeoning development of unconventional gas well sites has the potential to contribute to poor outdoor and indoor air and water quality. In particular, concentrations of particulate matter (PM) in the fine (<2.5 um, PM2.5) and ultrafine (<0.1 um, PM0.1) size ranges and volatile organic compounds (VOCs) may be increased in areas surrounding drilling operations. Furthermore, water quality issues have been reported in areas of hydraulic fracturing activity. However, potential exposures to complex mixtures of toxicants and the health effects on workers and on nearby residents are poorly understood. This multi-faceted symposium will begin with a discussion on the basics of hydraulic fracturing and the potential occupational exposures. Next will be a presentation on the regulatory policies and proposals that are currently in place at the state and federal levels. The third presentation will explore the potential mechanisms of exposure to the surrounding communities. A talk on air and water chemistry and the exposome will follow, and the workshop will conclude with relevant findings in animal models on the toxicological impacts of air and water samples collected on/nearby a drilling site. This cutting-edge presentation will provide the audience with a chance to better understand unconventional gas and oil drilling and reach their own conclusions on this topic. (Abstract #3377a)

Abstract #

#3377b 9:35 **Overview of Unconventional Oil and Gas Exploration and Production and Possible Occupational Exposures.** *J. Snawder*. NIOSH, Cincinnati, OH.

#3378 10:04 **Current State and Federal Regulatory Policies and Proposals Regarding Unconventional Natural Gas Drilling, and the Environmental Impacts of Drill Cuttings.** T. Polen. West Virginia Department of Environmental Protection, Charleston, WV. Sponsor: *T. Knuckles.*

#3379 10:33 **An Approach to Studying Potential Acute and Chronic Disease Associated with Unconventional Natural Gas Development Operations.** *M. McCawley.* West Virginia University, Morgantown, WV.

#3380 11:02 **Hydraulic Fracturing, Chemical Constituents, and the Exposome.** B. Yan. Columbia University, Palisades, NY. Sponsor: *T. Knuckles.*

#3381 11:31 **Wide-Ranging Toxicological Effects of Produced Water from Hydraulic Fracturing in a Mouse Model.** *J.T. Zelikoff.* New York University Medical Center, Tuxedo, NY.

12:00 **Panel Discussion/Q&A.** *T. Knuckles*. West Virginia University, Morgantown, WV.

Thursday Morning, March 17
9:30 AM to 12:15 PM
CC Room 217

Workshop Session: Which Human Cell Lines Should I Use? Choosing the Appropriate Biological Systems for High-Throughput Toxicity Testing

♠ Recent Advances in Safety Assessment

Chairperson(s): *Nisha S. Sipes, NTP/NIEHS, Research Triangle Park, NC; and Falgun Shah, Pfizer, Cambridge, MA.*

Endorser(s):
***In Vitro* and Alternative Methods Specialty Section**
Molecular and Systems Biology Specialty Section
Women in Toxicology Special Interest Group

The advent of toxicogenomics, proteomics, and high-throughput screening has provided researchers with massive amounts of information to predict *in vivo* toxicity. Recent examples of such cross-disciplinary initiatives for toxicity prediction include Tox21, ToxCast, QSTAR, and L1000. Retrospectively, to better make sense of *in vitro* to *in vivo* correlation, not only is it important to choose an adequate study design, for example, compound sets and their curated annotations, experimental dose, and time points, but also the choice of suitable cell systems that is relevant to the toxicity phenotypes of interest. Cells have different gene and protein expression patterns, metabolic capabilities, and differential perturbations to compound exposure. Approaches to address the *in vivo* toxicity predictions must address the correct cell type(s) for the problem in question. Ultimately, there is no one universal cell line that is predictive of general or all end-organ toxicities; however, it is important to know which combination is perhaps the most predictive for the given phenotype(s) of interest. The purpose of this workshop is to bring experts from pharmaceutical and biotech industries, academic institutions, and government agencies together to discuss the selection and use of human cell models relevant to specific toxicity predictions. Discussions will encompass a broad range of toxicities (cardiotoxicity, drug-induced liver injury), chemicals (pharmaceuticals, environmental), and cell types (cell lines, primary, stem cells). Speakers will also discuss objectives, approaches, technologies, knowledge gaps, and suggestions for future research. This workshop will be of high interest to a broad audience interested in *in vitro* methods to elucidate and predict toxicological outcomes. (Abstract #3382)

9:30 **Workshop Introduction–Why Do We Need Different Cell Lines?** *F. Shah.* Pfizer, Cambridge, MA.

Abstract #

#3383 9:45 **Strategies for Choosing Biological Diversity for High-Throughput Toxicity Testing.** *N.S. Sipes*. NIEHS, Research Triangle Park, NC.

#3384 10:12 **Selecting Cell Types that Provide Transcriptomic Data Over a Broad Range of Modes of Action.** *G. Daston*. Procter & Gamble, Cincinnati, OH.

#3385 10:39 **Defining Appropriate *In Vitro* Model Systems for Assessing Toxicity in Early-Product Development.** *Y.P. Dragan.* Takeda, Cambridge, MA.

#3386 11:06 **High-Throughput Toxicity Testing–What Do Primary Human Cell-Based Assays Provide?** *E.L. Berg*. BioSeek, a division of DiscoveRx, South San Francisco, CA.

#3387 11:33 **Constructing the LINCS Reference Panel of Cell Types to Characterize Small-Molecule Pleiotropy.** A. Subramanian. Broad Institute, Cambridge, MA. Sponsor: *N.S. Sipes.*

12:00 **Panel Discussion/Q&A.**

Thursday Morning, March 17
9:30 AM to 12:15 PM
CC Room 206

Platform Session: Advances in Mammary Gland Biology and Toxicology

Chairperson(s): *Thomas Sanderson, INRS Institut Armand Frappier, Laval, QC, Canada; and Jason Stanko, National Toxicology Program Laboratory, Research Triangle Park, NC.*

#3388 9:30 **Development of a Robust 3D Extracellular Matrix to Support an Organotypic Model of Human Mammary Ducts.** M.K. Livingston, M.M. Morgan, W.T. Daly, *B.P. Johnson*, K.E. Sung, L.A. Schuler, W.L. Murphy, and D.J. Beebe. University of Wisconsin - Madison, Madison, WI.

#3389 9:55 **Differences in the Rate of *In Situ* Mammary Gland Development of Three Strains of Rat Used in Toxicity Testing Studies: Implications for Timing of Mammary Carcinogen Exposure.** *J.P. Stanko*[2], G.E. Kissling[1], and *S.E. Fenton*[2]. [1]Biostatistics, and Computational Biology Branch, Research Triangle Park, NC; and [2]National Toxicology Program Laboratory, Research Triangle Park, NC.

#3390 10:20 **Perinatal Exposure to Brominated Flame Retardants (BFRs) Suppresses E-Cadherin and THRα in Mammary Glands at Puberty.** M. Lavoie[2], E. Dianati[2], M. Wade[1], B. Hales[3], and *I. Plante*[2]. [1]Health Canada, Ottawa, ON, Canada; [2]INRS Institut Armand Frappier, Laval, QC, Canada; and [3]McGill University, Montreal, QC, Canada. Sponsor: *I. Plante.*

#3391 10:45 **Comparison of Quantitative Estrogen Profiles in Plasmas and Mammary Glands of Women with Those in a Rat Model of Estrogen-Induced Tumorigenesis.** D. Pemp[3], C. Kleider[3], F.J. Möller[1], N. Iva[2], G. Vollmer[1], *H.L. Esch*[3], and *L. Leane*[3]. [1]TU Dresden, Dresden, Germany; [2]University Hospital of Würzburg, Würzburg, Germany; and [3]University of Würzburg, Würzburg, Germany.

#3392 11:10 **Circadian Regulation of PAH Metabolism in Breast Cancer and Mouse Mammary Gland.** E.E. Schmitt, R. Barhoumi Mouneimne, R. Metz, and W. Porter. Texas A&M University, College Station, TX. Sponsor: *S. Safe.*

Abstract #

#3393 11:35 **Neonicotinoids Induce a Promoter-Switch in CYP19 Expression in Breast-Cancer Cells and Alter Aromatase Activity and Hormone Production in a Feto-Placental Co-Culture Model.** *E. Caron-Beaudoin*[1], *M. Denison*[2], and *T. Sanderson*[1]. [1]INRS-Institut Armand-Frappier, Laval, QC, Canada; and [2]University of California in Davis, Davis, CA.

#3394 **Withdrawn.**

Thursday Morning, March 17
9:30 AM to 12:15 PM
CC Room R06

Platform Session: Electronic Cigarette Research

Chairperson(s): *Irfan Rahman, University of Rochester, Rochester, NY; and Sonali Das, Strand Life Sciences Pvt. Ltd, Bangalore, India.*

#3395 9:30 **Qualification of Inhalation Exposure Systems for Conventional and Electronic Cigarettes.** H. Irshad, P. Kuehl, D. Kracko, *B.C. Moeller*, E. Yates, and *J. McDonald*. Lovelace Respiratory Research Institute, Albuquerque, NM.

#3396 9:45 **Molecular Impact of Electronic Cigarette Exposure on Human Bronchial Epithelium *In Vitro*.** E. Moses[1], T. Wang[1], G.R. Jackson[3], E. Drizik[1], C. Perdomo[1], D. Brooks[2], G. O'Connor[1], S. Dubinett[4], *P.J. Hayden*[3], M. Lenburg[1], and A. Spira[1]. [1]Boston University School of Medicine, Boston, MA; [2]Boston University School of Public Health, Boston, MA; [3]MatTek Corporation, Ashland, MA; and [4]UCLA, Los Angeles, CA.

#3397 10:00 **Acute Effects of Electronic Nicotine Delivery Systems (ENDS) on Bronchial Epithelial Cells.** N.J. Leigh, R.I. Lawton, E.M. McConnaghy, P.A. Hershberger, and *M.L. Goniewicz*. Roswell Park Cancer Institute, Buffalo, NY.

#3398 10:15 **Mitochondrial Oxidative Stress Is Associated with Mitophagy in Human Lung Cells Following Direct Exposure to Electronic Cigarette Aerosols.** C.A. Lerner, P. Rutagarama, I. Sundar, and *I. Rahman*. University of Rochester, Rochester, NY.

#3399 10:30 **Electronic and Traditional Tobacco Cigarettes Induce Vascular Endothelial Dysfunction Through Similar Mechanisms.** *M.A. El-Mahdy*[4], O.A. Badary[1,3], Y.A. Alzarie[3,4], C. Hemann[4], M.G. Helal[4], A. Elmahdy[4], R.S. Ismail[2], T.M. Abdelghany[2], A.M. Mansour[2], and J.L. Zweier[4]. [1]Ain Shams University, Cairo, Egypt; [2]Al-Azhar University, Cairo, Egypt; [3]National Organization of Drug Control, and Research, Cairo, Egypt; and [4]The Ohio State University, Columbus, OH. Sponsor: *F. Lowe.*

#3400 10:45 **Toxicological Characterization of the Mentholated Heat-Not-Burn Product THS2.2M in a 90-Day OECD Inhalation Study.** A. Oviedo[2], S. Lebrun[1], G. Rodrigo[1], G. Vuillaume[1], J. Ho[2], P. Vanscheeuwijck[1], *W. Hayes*[3], J. Hoeng[1], and M. Peitsch[1]. [1]Philip Morris International R&D, Neuchâtel, Switzerland; [2]Philip Morris International Research Laboratories, Singapore, Singapore; and [3]Spherix Consulting, Rockville, MD. Sponsor: *W. Hayes.*

Abstract #

#3401 11:00 **Systems Toxicological Evaluation of a Heat-Not-Burn Tobacco Product in a 90-Day OECD Inhalation Study in Comparison to Cigarette Smoke.** U. Kogel[1], Y. Xiang[1], E.T. Wong[2], S. Boue[1], F. Martin[1], E. Guedj[1], *A.W. Hayes*[3], M.C. Peitsch[1], P. Vanscheeuwijck[1], and J. Hoeng[1]. [1]Philip Morris International R&D, Neuchatel, Switzerland; [2]Philip Morris International Research Laboratories, Pte. Ltd., Singapore; and [3]Spherix Consulting, Rockville, MD.

#3402 11:15 **Systems Toxicology Analysis of Cardiovascular and Respiratory Endpoints from Apoe-/- Mice Showed Similar Effects When Switching to a Candidate Modified Risk Tobacco Product, THS2.2 or Ceasing Smoking.** B. Phillips[1], E. Guedj[2], A. Elamin[2], S. Boue[2], G. Vuillaume[2], F. Martin[2], P. Leroy[2], *W. Hayes*[3], E. Veljkovic[1], M. Peitsch[2], and J. Hoeng[2]. [1]Philip Morris International Research Laboratories Pte. Ltd., Singapore, Singapore; [2]Philip Morris International, Philip Morris Products S.A., Neuchatel, Switzerland; and [3]Spherix Consulting, Rockville, MD. Sponsor: *W. Hayes.*

#3403 11:35 **E-Cigarette and Cannabis: Assessment of Passive Exposure.** *A. Berthet*[1], M. De Cesare[2], V. Varlet[4], B. Favrat[3], C. Giroud[4], M. Augsburger[4], N. Concha-Lozano[1], and A. Thomas[4]. [1]Institute for Work, and Health, Epalinges, Switzerland; [2]Unita di Medicina e Psicologia del Traffic, Lugano, Switzerland; [3]University Centre of Legal Med, Lausanne, Switzerland; and [4]University Centre of Legal Medicine, Lausanne, Switzerland.

Thursday Morning, March 17
9:30 AM to 12:15 PM
CC Great Hall B

Platform Session: Flame Retardants

Chairperson(s): *Lynne Haber, TERA Center, University of Cincinnati, Cincinnati, OH; and Daniele Wikoff, ToxStrategies, Austin, TX.*

#3404 9:30 **Polybrominated Diphenyl Ethers (PBDE) and Their Hydroxlyated and Methoxylated Derivatives in Blood from E-Waste Recyclers, Commercial Fisherman and Office Workers in the Puget Sound, Washington Region.** *I. Schultz*, S. Cade, and L.-J. Kuo. Pacific NW National Lab, Sequim, WA.

#3405 9:50 **Monte Carlo Analysis of Children's Risks from Chemicals in House Dust: Focus on Phthalates and Flame Retardants.** *G.L. Ginsberg*[1], B. Toal[1], and G. Belleggia[2]. [1]Connecticut Dept of Public Health, Hartford, CT; and [2]University of Connecticut Health Center, Farmington, CT.

#3406 10:10 **Estimation of Human Percutaneous Uptake for Two Novel Brominated Flame Retardants, 2-Ethylhexyl Tetrabromobenzoate (TBB) and Bis(2-Ethylhexyl) Tetrabromophthalate (TBPH) Using the Parallelogram Method.** *G.A. Knudsen*[1], *M.F. Hughes*[2], *J.M. Sanders*[1], and *L.S. Birnbaum*[1]. [1]National Cancer Institute, Research Triangle Park, NC; and [2]US EPA, Research Triangle Park, NC.

#3407 10:30 **Human Relevance Assessment of Tetrabromobisphenol-A (TBBPA) Induced Uterine Adenocarcinomas: Mode of Action Dependent on High Dose Molecular Initiating Event (MIE).** *D. Wikoff*[1], *S. Borghoff*[2], *J.E. Rager*[1], and *L.C. Haws*[1]. [1]ToxStrategies, Austin, TX; and [2]ToxStrategies, Cary, NC.

Abstract #

#3408 10:50 **Omics Approaches to Evaluate Developmental Neurotoxicity of Organophosphorus Flame-Retardants.** *H.T. Hogberg*[2], R. de Cassia da Silveira e Sa[1,2], M. Bouhifd[2], A. Kleensang[2], A. Maertens[2], O. Cemiloglu Ulker[2,3], L. Smirnova[2], L. Zhao[2], and *T. Hartung*[2]. [1]Federal University of Paraiba, Paraiba, Brazil; [2]Johns Hopkins University, Baltimore, MD; and [3]University of Ankara, Ankara, Turkey.

#3409 11:10 **A Multi-Stage Human Embryonic Stem Cell Differentiation Model for Studying the Effects of PBDEs During Neurogenesis.** *J.F. Robinson*, M.J. Gormley, H. Seifikar, C.J. Fernandez, and S.J. Fisher. University of California, San Francisco, San Francisco, CA.

#3410 11:35 **Beyond Science and Decisions: Lessons and Outcomes for Alternatives Assessment (AA) for Flame Retardants and Development of Adverse Outcome Pathways (AOPs).** *L.T. Haber*[6], O. Kroner[6], *B. Meek*[8], S. Admon[2], *L.H. Pottenger*[3], *H.J. Clewell*[7], *M.M. Moore*[4], *R. Gentry*[5], *R. Schoeny*[1], and *M.L. Dourson*[6]. [1]Consultant, Washington, DC; [2]ICL-Industrial Products, Haifa, Israel; [3]Olin, Midland, MI; [4]Ramboll ENVIRON, Little Rock, AR; [5]Ramboll ENVIRON, Monroe, LA; [6]TERA Center, University of Cincinnati, Cincinnati, OH; [7]The Hamner Institute, Research Triangle Park, NC; and [8]University of Ottawa, Ottawa, ON, Canada.

Thursday Morning, March 17
9:30 AM to 12:45 PM
CC Great Hall A

PS

Poster Session: Persistent Organic Pollutants

Health and Environmental Impacts of Manmade and Naturally Released Toxicants

Chairperson(s): *Lisa M. Kamendulis, Indiana University, Bloomington, IN.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *9:30 AM–11:00 AM*

#3411 **Poster Board Number P101**
Oxidative Biotransformation of Polybrominated Diphenyl Ethers by Polar Bear Liver Microsomes. *S.M. Bandiera*, L.K. Krieger, and A. Szeitz. University of British Columbia, Vancouver, BC, Canada.

#3412 **Poster Board Number P102**
Hepatic Microsomal Metabolism of BDE-47 and BDE-99 by Lesser Snow Geese. L.K. Krieger, A. Szeitz, and *S.M. Bandiera*. University of British Columbia, Vancouver, BC, Canada.

#3413 **Poster Board Number P103**
Specific Interactions of BDE-47 and Its Hydroxylated Metabolite 6-OH-BDE-47 with the Human ABC Transporter Proteins P-gp and BCRP. *S.A. Marchitti*[3], C.S. Mazur[1], C.M. Dillingham[2], S. Rawat[2], A. Sharma[4], J. Zastre[4], and J.F. Kenneke[1]. [1]National Exposure Research Laboratory, Athens, GA; [2]US Environmental Protection Agency, Athens, GA; [3]US Environmental Protection Agency, National Exposure Research Laboratory, Athens, GA; and [4]University of Georgia, Athens, GA.

#3414 **Poster Board Number P104**
Evidence for Promotion of Pancreatic Cancer by Perfluorooctanoic Acid. *L.M. Kamendulis*, and *B.A. Hocevar*. Indiana University, Bloomington, IN.

Abstract #

#3415 **Poster Board Number P105**
Enantioselective Actions of PCB 95 Atropisomers Toward Ryanodine Receptors (RyRs) and Hippocampal Neurons. W. Feng[2], G. Robin[2], Y. Dong[2], T. Nakano[1], and *I.N. Pessah*[2]. [1]Osaka University, Osaka, Japan; and [2]University of California, Davis, CA.

#3416 **Poster Board Number P106**
Evaluation of the Spatial Distribution of Hepatic Metals Following PCB126 Exposure with X-Ray Fluorescence Microscopy. *W.D. Klaren*[2], D. Vine[1], S. Vogt[1], and *L.W. Robertson*[2]. [1]Argonne National Laboratory, Argonne, IL; and [2]University of Iowa, Iowa City, IA.

#3417 **Poster Board Number P107**
Evaluating the Role of the Heart-Liver Axis in Polychlorinated Biphenyl-Induced Toxicity. *B. Wahlang*, J. Perkins, *M. Petriello*, J. Hoffman, and *B. Hennig*. UK Superfund Research Center, University of Kentucky, Lexington, KY.

#3418 **Poster Board Number P108**
Perinatal Exposure to PCBs Alters Cocaine Behavioral Sensitization and Dopamine Transporter (DAT) Expression in the Striatum and Medial Prefrontal Cortex of Long-Evans Rats. *M.M. Miller*, *J.L. Sprowles*, A.E. Meyer, J.N. Voeller, M.A. Calton, and *H.J. Sable*. University of Memphis, Memphis, TN.

#3419 **Poster Board Number P109**
Serum Concentrations of Non-Ortho Polychlorinated Biphenyls (PCBs) in a Residential Cohort from Anniston, Alabama. M. Pavuk[1], N.D. Dutton[5], A. Sjodin[3], R.S. Jones[3], M.D. Lewin[2], and *L.S. Birnbaum*[4]. [1]Agency for Toxic Substances, and Disease Registry (ATSDR), Atlanta, GA; [2]ATSDR, Atlanta, GA; [3]NCEH/CDC, Atlanta, GA; [4]NCI, Research Triangle Park, NC; and [5]ORISE, Atlanta, GA.

#3420 **Poster Board Number P110**
PCB126-Induced Disruption in Gluconeogenesis and Fatty Acid Oxidation Precedes Fatty Liver in Male Rats. *G.S. Gadupudi*[2], *W.D. Klaren*[2], A.K. Oliver[1], A.J. Klingelhutz[2], and *L.W. Robertson*[2]. [1]Mississippi State University, Starkville, MS; and [2]University of Iowa, Iowa City, IA.

#3421 **Poster Board Number P111**
Distinct Metabolomic Axes in Gulf Coast Minnows After Deepwater Horizon Oil Spill. *J.D. Chandler*[1], A. Todor[1], J. Wise[2], *D.P. Jones*[1], R.J. Griffitt[2], and S. Li[1]. [1]Emory University, Atlanta, GA; and [2]University of Southern Mississippi, Ocean Springs, MS.

#3422 **Poster Board Number P112**
Sex Differences in Dichlorodiphenyltrichloroethane (DDT) and Dichlorodiphenyldichoroethylene (DDE) Potency Towards Ryanodine Receptor Type 2. *K.M. Truong*, and *I.N. Pessah*. UC Davis, Davis, CA.

#3423 **Poster Board Number P113**
Transcriptional and Post-Transcriptional Regulations of Acetylcholinesterase Expression by Dioxins. T. Xu, R. Sha, Z. Guo, H. Xu, S.L. Xu, H.Q. Xie, and *B. Zhao*. Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing, China.

Abstract #

#3424 **Poster Board Number P114**
Human Health Concerns of the Levels of Polyaromatic Hydrocarbons (PAHs) Congeners in E-Wastes Contaminated Sediments from Tropical Coastal Ecosystems. *J.K. Igbo*[3], *O.L. Chukwu*[4], E.O. Oyewo[2], and *J.T. Zelikoff*[1]. [1]New York University, New York, NY; [2]Nigeria Institute for Oceanography, and Mariine Research, VI, Lagos, Nigeria; [3]Nigerian Institute for Oceanography, and Marine Research, VI, Lagos, Nigeria; and [4]University of Lagos, Lagos, Nigeria.

#3425 **Poster Board Number P115**
Toxicity Evaluation of Exposure to an Atmospheric Mixture of Polychlorinated Biphenyls by Nose-Only and Whole-Body Inhalation Regimens. *X. Hu*, A. Adamcakova-Dodd, *H.-J. Lehmler*, K.N. Gibson-Corley, and *P.S. Thorne*. University of Iowa, Iowa City, IA.

#3426 **Poster Board Number P116**
Exposure to Organochlorine Pesticide Metabolites Increase *De Novo* Lipogenesis and Free Fatty Acid Accumulation to Promote Hepatic Steatosis *In Vitro*. *G.E. Howell*, C. Mulligan, and W. Gordon. Mississippi State University, Mississippi State, MS.

#3427 **Poster Board Number P117**
Low-Doses Dioxin Subchronic Exposure Promotes Liver Fibrosis Development in Diet-Induced Obese C57BL/6J Mice. C. Duval[2,6], F. Teixeira-Clerc[1,8], A. Leblanc[2,6], M. Guerre-Millo[4,9], *C. Emond*[5], S. Lotersztajn[3,7], *R. Barouki*[2,6], M. Aggerbeck[2,6], and X. Coumoul[2,6]. [1]INSERM U955, Paris, France; [2]INSERM UMR-S 1124, Paris, France; [3]INSERM UMR-S 1149, Paris, France; [4]INSERM UMR-S 872, Paris, France; [5]Montréal University, Montréal, QC, Canada; [6]Paris Descartes University, Paris, France; [7]Paris Diderot University, Paris, France; [8]Paris-Est University, Paris, France; and [9]Pierre et Marie Curie University, Paris, France.

Thursday Morning, March 17
9:30 AM to 12:45 PM
CC Great Hall A

Poster Session: Disposition and Pharmacokinetics

Chairperson(s): *Benjamin C. Moeller, Lovelace Respiratory Research Institute, Albuquerque, NM; and Ronald Baynes, North Carolina State University, Raleigh, NC.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *11:15 AM–12:45 PM*

#3428 **Poster Board Number P118**
Determining the Role of the Gut Microbiome in Altering Drug Metabolism. *M.A. Malfatti*, E.A. Kuhn, N. Hum, D.K. Murugesh, C.J. Jaing, and G.G. Loots. Lawrence Livermore National Laboratory, Livermore, CA.

#3429 **Poster Board Number P119**
Role of Intestinal Microbiota on Pharmacokinetics and Toxicity of Baicalin in Mice. M.J. Kang, M.J. Kong, K. Noh, M.R. Nepal, K.S. Jeong, J. Ahn, and *T.C. Jeong*. Yeungnam University, Gyeongsan, Korea, Republic of.

Abstract #

#3430 **Poster Board Number P120**
The Anti-Oxidant Drug Tempol Promotes Functional Metabolic Changes in the Gut Microbiota. J. Cai[2], *L. Zhang*[2], R.A. Jones[2], J.B. Correll[2], E. Hatzakis[2], P.B. Smith[2], *F.J. Gonzalez*[1], and *A.D. Patterson*[2]. [1]NIH, Bethesda, MD; and [2]Penn State University, University Park, PA. Sponsor: *A. Patterson.*

#3431 **Poster Board Number P121**
Post-Transcriptional Regulation of the ABC Transporters Mrp2, Bcrp and P-gp in Enterocytes During Acute Acetaminophen (APAP) Intoxication in Mice. C.I. Ghanem[1,3], L. Orbea[1], *S. Rudraiah*[5], A.D. Mottino[2], and *J.E. Manautou*[4]. [1]CONICET-UBA, Buenos Aires, Argentina; [2]CONICET-UNR, Buenos Aires, Argentina; [3]Facultad de Farmacia y Bioquímica. UBA., Buenos Aires, Argentina; [4]University of Connecticut, Storrs, CT; and [5]University of Connecticut, Storrs, CT.

#3432 **Poster Board Number P122**
Organic Anion Transporting Polypeptides Mediated Drug Interaction Between Rosuvastatin and Cyclosporin A in Chimeric Mice with Humanized Liver. Y. Tajima[2], M. Uchida[2], M. Kakuni[1], Y. Kageyama[1], T. Okada[1], C. Tateno[1], and R. Hayashi[2]. [1]Phoenixbio Co., Hiroshima, Japan; and [2]Toray Industries, Inc., Kamakura, Japan. Sponsor: *K. Oshida.*

#3433 **Poster Board Number P123**
Inter-Individual Variability in the Relationship Between Toxicokinetics and Toxicodynamics of Tetrachloroethylene. *J.A. Cichocki*, S. Furuya, *A. Venkatratnam*, *G. Chappell*, S. Sweet, T. Wade, T. Knap, *W. Chiu*, D. Threadgill, and *I. Rusyn*. Texas A&M University, College Station, TX.

#3434 **Poster Board Number P124**
Using the Collaborative Cross Mouse Model to Investigate Population-Level Variability in Trichloroethylene Toxicity. *A. Venkatratnam*[1,2], S. Furuya[1], O. Kosyk[2], *V. Soldatow*[2], S. Sweet[1], T. Wade[1], A. Knap[1], A. Gold[2], W. Bodnar[2], *W. Chiu*[1], and *I. Rusyn*[1]. [1]Texas A&M, College Station, TX; and [2]University of North Carolina, Chapel Hill, NC.

#3435 **Poster Board Number P125**
***In Vivo* Skin Absorption of Ortho-Phenylphenol in Metalworking Fluid Formulations.** *E. Nixon*, J. Brooks, and *R. Baynes*. North Carolina State University, Raleigh, NC.

#3436 **Poster Board Number P126**
Assessment of *In Vitro* High-Throughput Pharmacokinetic Data to Predict *In Vivo* Pharmacokinetic Data of Environmental Chemicals. *M.F. Hughes*[3], C.L. Ring[1], *T.R. Fennell*[2], D.K. MacMillan[3], *J.E. Simmons*[3], *R.S. Thomas*[3], and *J.F. Wambaugh*[3]. [1]ORISE, Research Triangle Park, NC; [2]RTI, Research Triangle Park, NC; and [3]US EPA, Research Triangle Park, NC.

#3437 **Poster Board Number P127**
High Throughput Determination of Critical Human Dosing Parameters. *C.I. Nicolas*[2,4], B.L. Ingle[4], M. Bacolod[1], *J. Gilbert*[1], *B.A. Wetmore*[3], C.L. Ring[2,4], *R.W. Setzer*[4], *R. Tornero-Velez*[4], *M.T. Martin*[4], and *J.F. Wambaugh*[4]. [1]Cyprotex US, LLC, Watertown, MA; [2]ORAU, Oak Ridge, TN; [3]The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and [4]United States Environmental Protection Agency, Research Triangle Park, NC.

Abstract #

#3438 **Poster Board Number P128**
Application of a Physiologically-Based Absorption Model to Characterize the Rate and Extent of Release and Absorption of Oral Extended-Release Methylphenidate. *X. Yang*[1], J. Duan[2], A. Jackson[2], and *J. Fisher*[1]. [1]US Food and Drug Administration, Jefferson, AR; and [2]US Food and Drug Administration, Silver Spring, MD.

#3439 **Poster Board Number P129**
Pharmacokinetic Profiles of Perfluorobutane Sulfonate and Activation of Hepatic Genes in Mice. J. Rumpler[1], K. Das[2], C. Wood[2], M. Strynar[2], A. Lindstrom[2], *J. Wambaugh*[2], and *C. Lau*[2]. [1]Oak Ridge Institute for Science, and Education, Research Triangle Park, NC; and [2]US Environmental Protection Agency, Research Triangle Park, NC.

#3440 **Poster Board Number P130**
Acute Rat Inhalation Pharmacokinetic Study to Support Occupational Exposure Limits for Proteins. *J. Gould*[1], B. Attalla[2], I. Carvajal[1], *T. Davidson*[1], *J. Graham*[1], *J. Hillegass*[1], *L. Sivaraman*[1], S. Julien[1], A. Kozhich[1], N. Mathias[1], B. Wang[1], C. Wang[1], and *H. Haggerty*[1]. [1]Bristol-Myers Squibb Co., New Brunswick, NJ; and [2]Charles River Laboratories Preclinical Services Montreal Inc., Senneville, QC, Canada.

#3441 **Poster Board Number P131**
Toxicokinetic and Disposition Studies of Alkylated Naphthalene AN-600 in Sprague-Dawley Rats Following Oral and Dermal Administration. L.K. Low[1], *M.H. Kung*[1], and *C.M. Palermo*[2]. [1]ExxonMobil Biomedical Sciences, Inc., Annandale, NJ; and [2]ExxonMobil Petroleum, and Chemical, Machelen, Belgium.

#3442 **Poster Board Number P132**
An *In Vivo* Toxicokinetic Comparison Study Following Gavage and Dietary Administration of Alpha-Terpineol. A. Patel[2], *V.T. Politano*[1], and *A.M. Api*[2]. [1]Coty, Inc, Morris Plains, NJ; and [2]Research Institute for Fragrance Materials, Woodcliff Lake, NJ. Sponsor: *A.M. Api.*

#3443 **Poster Board Number P133**
Oral and Intravenous Pharmacokinetics of NVN1000, a Nitric Oxide Donating Macromolecule in Miniature Swine. K. Coggan, A. Weston, A. Radwan, J. Goldbaum, B. Privett, C. Geer, N. Stasko, and S. Hollenbach. Novan Therapeutics, Durham, NC. Sponsor: *S. Anderson.*

#3444 **Poster Board Number P134**
Disposition of Ethylene Glycol 2-Ethylhexylether Following Oral Administration and Dermal Application to Harlan Sprague Dawley Rats and B6C3F1/N Mice. *B.C. Moeller*[1], *M. Doyle-Eisele*[1], *J.D. McDonald*[1], C.R. Blystone[2], and *S. Waidyanatha*[2]. [1]Lovelace Respiratory Research Institute, Albuquerque, NM; and [2]NIEHS, Research Triangle Park, NC.

#3445 **Poster Board Number P135**
Tetrabromobisphenol A (TBBPA); Dose- and Time-Dependent Changes in Plasma TBBPA and Its Conjugates Over 28 Days of Administration. *S. Borghoff*[2], *D. Wikoff*[1], *J.E. Rager*[1], and *L.C. Haws*[1]. [1]ToxStrategies, Austin, TX; and [2]ToxStrategies, Cary, NC.

Abstract #

#3446 **Poster Board Number P136**
Intravenous and Oral Toxicokinetics of Domoic Acid in Non-Human Primates. R.L. Petroff[1], J. Jing[1], B. Crouthamel[2], *K. Grant*[1], N. Isoherranen[1], and *T. Burbacher*[1]. [1]University of Washington, Seattle, WA; and [2]Washington National Primate Research Center, Seattle, WA. Sponsor: *T. Burbacher.*

#3447 **Poster Board Number P137**
Determination of Concentration and Free Fraction Dependent Uptake of Deltamethrin (DLM) in Adult Male Sprague-Dawley Rats Using an *In Situ* Brain Perfusion Technique. M. Amaraneni[3], J. Pang[3], *T.G. Osimitz*[2], *D. Gammon*[1], *M.R. Creek*[4], *C.A. White*[3], *B.S. Cummings*[3], and *J.V. Bruckner*[3]. [1]FMC Corporation, Ewing, NJ; [2]Science Strategies, Charlottesville, VA; [3]University of Georgia at Athens, Athens, GA; and [4]Valent U.S.A. Corporation, Dublin, CA.

#3448 **Poster Board Number P138**
Sex-Related Toxicokinetic (TK) Study of CIS-Permethrin in Adult and Weanling Sprague-Dawley (SD) Rats. J. Pang[3], *T.B. Mortuza*[3], S. Muralidhara[3], M. Amaraneni[3], *M.R. Creek*[4], *D. Gammon*[2], *S.S. Anand*[1], *B.S. Cummings*[3], *J.V. Bruckner*[3], and *C.A. White*[3]. [1]Dupont Haskell, Newark, DE; [2]FMC Corporation, Ewing, NJ; [3]University of Georgia, Athens, GA; and [4]Valent U.S.A., Dublin, CA.

#3449 **Poster Board Number P139**
Thifensulfuron-Methyl Dosimetry Assessment for Female Sprague-Dawley Rats During Gestation. *M.W. Himmelstein*[2], L.A. Malley[1], and S.R. Frame[2]. [1]DuPont Crop Protection, Newark, DE; and [2]DuPont Haskell, Newark, DE.

Thursday Morning, March 17
9:30 AM to 12:45 PM
CC Great Hall A

Poster Session: Biotransformation

Chairperson(s): *Jason M. Fritz, US Environmental Protection Agency, Washington, DC.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *9:30 AM–11:00 AM*

#3450 **Poster Board Number P140**
Development of HepG2-Derived Cells Expressing Cytochrome P450s for Assessing Metabolism-Associated Drug-Induced Liver Toxicity. *J. Xuan*, *S. Chen*, *B. Ning*, *W.H. Tolleson*, and *L. Guo*. National Center for Toxicological Research, US Food and Drug Administration, Jefferson, AR.

#3451 **Poster Board Number P141**
NADPH-Cytochrome P450 Reductase-Mediated Denitration Reaction of 2,4,6-Trinitrotoluene to Yield Nitrite in Mammals. Y. Shinkai, T. Kikuchi, and *Y. Kumagai*. University of Tsukuba, Tsukuba, Japan.

#3452 **Poster Board Number P142**
Activation of Immune Modulators, a Novel Mechanism in Pharmacokinetics Drug-Drug Interaction Between Taxol and Irinotecan. *P. Mallick Bandi*, and *R. Ghose*. University of Houston, Houston, TX.

Abstract #

#3453 **Poster Board Number P143**
Metabolism and Disposition of Sulfolane in Male and Female Harlan Sprague Dawley Rats and B6C3F1/N Mice. *T.R. Fennell*[2], S. Black[2], S. Watson[2], P. Patel[2], R. Snyder[2], J. Burgess[2], *C.R. Blystone*[1], and *S. Waidyanatha*[1]. [1]2Division of the National Toxicology Program, Research Triangle Park, NC; and [2]RTI International, Research Triangle Park, NC.

#3454 **Poster Board Number P144**
Free Radical Metabolite of Munition RDX (hexahydro-1,3,5-Trinitro-1,3,5-Triazine) and 1-Nitroso Degradation Product MNX Determined with Spin Trapping and Electron Paramegnetic Resonance (EPR). R.J. Al Suliman[2], K.A. El Sayed[2], A.L. Russell[1], A.J. Bednar[1], and *S.A. Meyer*[2]. [1]US Army Engineer Research, and Development, Vicksburg, MS; and [2]University of Louisiana-Monroe, Monroe, LA.

#3455 **Poster Board Number P145**
Human Sulfotransferases Enhance the Cytotoxicity of Tolvaptan. *J.-L. Fang*, *Y. Wu*, G. Gamboa da Costa, S. Chen, P. Chitranshi, and F.A. Beland. NCTR/US FDA, Jefferson, AR.

#3456 **Poster Board Number P146**
Protein-Protein Interaction of Cytochrome P450 (CYP) 3A4 and UDP-Glucuronosyltransferase (UGT) 1A7: The Involvement of 208th Residue of UGT1A7 in the Functional Interaction and Evidence for the Physical Interaction in Living Cells by Fluorescent Resonance Energy Transfer (FRET) Analysis. N. Egoshi[2], K. Kinoshita[2], H. Koba[2], T. Takeda[2], S.-i. Ikushiro[5], K. Nagata[4], Y. Yamazoe[3], P.I. Mackenzie[1], *H. Yamada*[2], and Y. Ishii[2]. [1]Flinders Medical Centre, Adelaide, Australia; [2]Kyushu University, Fukuoka, Japan; [3]The Cabinet Office, Government of Japan, Tokyo, Japan; [4]Tohoku Pharmaceutical University, Sendai, Japan; and [5]Toyama Prefectural University, Toyama, Japan.

#3457 **Poster Board Number P147**
Cytosolic Sulfotransferase Expression and Regulation in Cell Culture Models of Human Liver Development. K.G. Barrett[2], Z. Duniec-Dmuchowski[2], A. Soto-Gutiérrez[1], *T. Kocarek*[2], and *M. Runge-Morris*[2]. [1]University of Pittsburgh, Pittsburgh, PA; and [2]Wayne State University, Detroit, MI.

#3458 **Poster Board Number P148**
Impact of Hepatic P450-Mediated Biotransformation on Airway Epithelial Repair Following Naphthalene Inhalation. *N. Kovalchuk*[3], *L. Van Winkle*[2], *Q.-Y. Zhang*[3], and *X. Ding*[1]. [1]College of Nanoscale Science, and Engineering, SUNY Polytechnic Institute, Albany, NY; [2]UC Davis, Davis, CA; and [3]Wadsworth Center, New York State Department of Health, and School of Public Health, State University of New York, Albany, NY.

#3459 **Poster Board Number P149**
***In Vitro* Study of Toxic Effects of BDE-99 in a Zebrafish Cell Line, ZFL.** J. Yang, and *K.-M. Chan*. The Chinese University of Hong Kong, Shatin, Hong Kong.

Abstract #

#3460 **Poster Board Number P150**
Pro-Drug Activation and Detoxification in a Dynamic Microfluidic System. J. Kim[1], D.A. Fluri[3], R. Marchan[2], K. Boonen[4], S. Hammad[2], *S. Messner*[3], B. Landuyt[4], J.G. Hengstler[2], J.M. Kelm[3], A. Hierlemann[1], and O. Frey[1]. [1]ETH Zurich, Basel, Switzerland; [2]IFADO Dortmund, Dortmund, Germany; [3]InSphero AG, Schlieren, Switzerland; and [4]KU Leuven, Leuven, Belgium.

#3461 **Poster Board Number P151**
Simultaneous Evaluation of Test Compound Kinetic and Its Transcriptomic Signature in Metabolically-Characterized Primary Human Hepatocytes as a Valuable Tool to Study Drug-Induced Cholestasis Potential Across Individuals. C. Parmentier[2], P. Couttet[3], A. Lukas[1], A. Wolf[3], M. Uteng[3], and *L. Richert*[2]. [1]Emergentec Biodevelopment GmbH, Vienna, Austria; [2]KaLy-Cell, Plobsheim, France; and [3]Novartis Institutes of biomedical Research, Basel, Switzerland.

#3462 **Poster Board Number P152**
***In Vitro* Metabolism of Benzo[a]pyrene-7,8-Dihydrodiol and Dibenzo[def,p] Chrysene-11,12 Diol in Rodent and Human Hepatic Microsomes.** D. Mehinagic[2], *J.N. Smith*[2], *S.R. Crowell*[1], N.C. Sadler[2], A.T. Wright[2], and *R.A. Corley*[2]. [1]Genentech, South San Francisco, CA; and [2]Pacific Northwest National Laboratory, Richland, WA.

#3463 **Poster Board Number P153**
Hepatotoxicity Evaluation of Hydroethanolic Extract of a Medicinal Plant *C. sylvestris* (*salicaceae*), in Rat Liver. A.Z. Ameni[2], G. Schmeda- Hirschmann[3], K.A. Simon[1], and S.L. Gorniak[2]. [1]Federal University of São Paulo, Diadema, Brazil; [2]University of São Paulo, São Paulo, Brazil; and [3]University of Talca, Talca, Chile. Sponsor: *K. Welch*.

#3464 **Poster Board Number P154**
Metabolite Profile Identification Using Alginate Supported 3D Culture of Primary Hepatocytes. *J.M. Pedersen*[1], J. Shim[1], *E.L. LeCluyse*[1], *J.M. Macdonald*[2], *M.E. Andersen*[1], *H.J. Clewell*[1], and *M. Yoon*[1]. [1]The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and [2]The University of North Carolina, Chapel Hill, NC.

#3465 **Poster Board Number P155**
Molecular Mechanism of Regulation of Drug Metabolizing Enzymes/Transporters *In Vivo*: Genomic Profiling and Proteomic Approaches. *G. Taneja*[2], *W. Jiang*[1], *S. Maity*[1], *C. Coarfa*[1], *B. Moorthy*[1], and *R. Ghose*[2]. [1]Baylor College of Medicine, Houston, TX; and [2]University of Houston, Houston, TX.

Abstract #

Thursday Morning, March 17
9:30 AM to 12:45 PM
CC Great Hall A

Poster Session: MicroRNA Biomarkers

♦ Molecular Toxicology: Mechanistic Insights and Hazard Assessment

Chairperson(s): *Karissa Adkins, Pfizer, Groton, CT.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *11:15 AM–12:45 PM*

#3466 **Poster Board Number P156**
Cardiac Micrornas as Biomarkers to Assess Doxorubicin-Induced Cardiotoxicity in Human Cardiomyocytes Derived from Pluripotent Stem Cells. *X. Yang*, W. Wang, and L. Ren. US FDA/NCTR, Jefferson, AR.

#3467 **Poster Board Number P157**
Evaluation of microRNAs 122, 126 and 21 as Potential Biomarkers of Hepatic Microvascular Injury. *P. Rana*, *H. Wu*, L. Nelms, and *K. Adkins*. Pfizer, Groton, CT. Sponsor: *P. Rana.*

#3468 **Poster Board Number P158**
Serum miRNAs as Prognostic Indicators of Toxic Liver Injury. M.G. Permenter[1], B.C. McDyre[2], and D.L. Ippolito[3]. [1]EXCET/US Army Center for Environmental Health Research, Ft. Detrick, MD; [2]ORISE/US Army Center for Environmental Health Research, Ft. Detrick, MD; and [3]US Army Center for Environmental Health Research, Ft. Detrick, MD. Sponsor: *J. Lewis.*

#3469 **Poster Board Number P159**
High-Throughput, Purification-Free, Multiplexed Profiling of Circulating miRNA for Discovery, Validation, and Diagnostics. J.D. Tytell. Abcam, Inc, Cambridge, MA. Sponsor: *R. Church.*

#3470 **Poster Board Number P160**
Serum miRNAs As Biomarkers of Nephrotoxicity in Female and Male Rats Fed a Diet Containing Melamine and Cyanuric Acid. *C.S. Silva*, C.-W. Chang, *G. Gamboa da Costa*, and *L. Camacho*. NCTR/US FDA, Jefferson, AR.

#3471 **Poster Board Number P161**
Impact of Data Normalization and Hemolysis in the Quantification of Serum MicroRNAs. *L. Camacho*, *C.S. Silva*, and C.-W. Chang. US FDA/NCTR, Jefferson, AR.

#3472 **Poster Board Number P162**
Comprehensive MicroRNA Profiling in Acetaminophen Toxicity Identifies Novel Circulating Biomarkers for Human Liver and Kidney Injury. A.D. Vliegenthart[3], J.M. Schaffer[2], J.I. Clarke[4], L.E. Peeters[3], A. Caporali[3], D.N. Bateman[3], D.M. Wood[1], P.I. Dargan[1], N.C. Henderson[3], D.J. Webb[3], J. Sharkey[4], *D.J. Antoine*[4], B.K. Park[4], M.A. Bailey[3], E. Lader[2], K.J. Simpson[3], and J.W. Dear[3]. [1]King's College London, London, United Kingdom; [2]Qiagen, Fredrick, MD; [3]University of Edinburgh, Edinburgh, United Kingdom; and [4]University of Liverpool, Liverpool, United Kingdom.

#3473 **Poster Board Number P163**
Serum MicroRNA Biomarkers of Acute Pancreatic Injury in the Dog. *R. Rouse*, B. Rosenzweig, L. Xu, S. Stewart, A. Chockalingam, A. Knapton, and K. Thompson. US FDA, Silver Spring, MD.

Abstract #

#3474 **Poster Board Number P164**
Integrated mRNA and MicroRNA Sequencing Identifies MicroRNA-mRNA Regulatory Network in a Rat Model of Acute Pancreatic Injury. *R. Rouse*[1], B. Rosenzweig[1], and Z. Li[2]. [1]US FDA, Silver Spring, MD; and [2]US FDA, Silver Spring, MD.

#3475 **Poster Board Number P165**
MicroRNA Profiling of Plasma from B6C3F1 Mice Treated with Doxorubicin. T. Han, C.L. Moland, *V.D. Desai*, and *J.C. Fuscoe*. National Center for Toxicological Research, Jefferson, AR.

#3476 **Poster Board Number P166**
MicroRNA Profiling Identifies Potential Biomarkers of Hepatobiliary Injury Following Exposure to Several Toxicants in the Rat. *R.J. Church*[5], *M. Pavkovic*[2], *M. Otieno*[4], *H. Ellinger-Ziegelbauer*[1], *B. Riefke*[1], *J.E. McDuffie*[3], *B. Singh*[4], *M. Sonee*[4], L. Hall[4], *P.B. Watkins*[5], and *A.H. Harrill*[5,6]. [1]Bayer Pharma AG, Wuppertal, Germany; [2]Harvard Medical School, Boston, MA; [3]Janssen Research & Development, San Diego, CA; [4]Janssen Research & Development, Spring House, PA; [5]The Hamner-UNC Institute for Drug Safety Sciences, Research Triangle Park, NC; and [6]University of Arkansas Medical School, Little Rock, AR.

#3477 **Poster Board Number P167**
Evaluation of miR-217 and miR-375 as Biomarkers of Pancreatic Injury. *M. Tirmenstein*[2], *J. Calvano*[2], C. Hixson[2], G. Edwards[2], *B. Baumgart*[1], *C. Korgaonkar*[1], and *R. Mangipudy*[2]. [1]Bristol-Myers Squibb, Mt. Vernon, IN; and [2]Bristol-Myers Squibb, New Brunswick, NJ.

#3478 **Poster Board Number P168**
Relative Tissue Distribution of miRNAs in the Cynomolgus Monkey. *J. Calvano*, *X. Zhang*, H. Jonassen, *R. Mangipudy*, and *M. Tirmenstein*. Bristol Myers Squibb, New Brunswick, NJ.

#3479 **Poster Board Number P169**
Evaluation of the Liver-Specific MicroRNA, MiR-122, as a Marker of *In Vitro* Hepatocyte Toxicity in Liver Slices and Cultured Rat Hepatocytes. S. Shi[2], *J. Calvano*[2], *X. Zhang*[2], V. Ly[1], *B. Brock*[1], *R. Mangipudy*[2], and *M. Tirmenstein*[2]. [1]Bristol-Myers Squibb, Lawrenceville, NJ; and [2]Bristol-Myers Squibb, New Brunswick, NJ.

#3480 **Poster Board Number P170**
Inotuzumab Ozogamicin-Induced Release of miRNA from Human Liver Sinusoidal Endothelial Cells. *H. Wu*[1], C. Doshna[1], L. Nelms[1], E. Rubitski[1], C. Davis[2], and *K. Adkins*[1]. [1]Pfizer, Groton, CT; and [2]Pfizer, San Diego, CA.

#3481 **Poster Board Number P171**
Development and Qualification of Assays to Detect Circulating miR-122 in Rat and Human Serum to Support Preclinical and Clinical Studies. *W.R. Proctor*, *K.S. Rajapaksa*, J. Vogt, M. Tseng, *J. Tarrant*, D. Sheinson, S. Lewin-Koh, and *D. Misner*. Genentech, Inc., South San Francisco, CA.

Abstract #

Thursday Morning, March 17
9:30 AM to 12:45 PM
CC Great Hall A

Poster Session: Nanotoxicology: Carbon Based

Chairperson(s): *Salik Hussain, NIEHS/NIH, Research Triangle Park, NC.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *9:30 AM–11:00 AM*

#3482 **Poster Board Number P172**
Effects of Fiber Size of Single-Walled Carbon Nanotubes on Pulmonary Toxicity. *K. Fujita*[1,2], M. Fukuda[2], S. Endoh[2], J. Maru[2], H. Kato[1,2], A. Nakamura[1], N. Shinohara[1,2], K. Uchino[2], and K. Honda[1,2]. [1]National Institute of Advanced Industrial Science, and Technology, Tsukuba, Japan; and [2]Technology Research Association for Single Wall Carbon Nanotubes, Tsukuba, Japan.

#3483 **Poster Board Number P173**
Differential Analysis of the Effects Induced by Cellular Exposure to Pristine and Acid Treated Single Walled Carbon Nanotubes. *R. Eldawud*, A. Wagner, C. Dong, *Y. Rojanasakul*, and *C. Dinu*. West Virginia University, Morgantown, WV.

#3484 **Poster Board Number P174**
Detection of Transcriptomic Signature for a Senescence-Associated Secretory Phenotype (SASP) in Human Peritoneal Mesothelial Cells Exposed to Multiwalled Carbon Nanotubes. S.M. Reamon-Buettner, A. Hiemisch, I. Voepel, and C. Ziemann. Fraunhofer-ITEM, Hannover, Germany. Sponsor: *C. Dasenbrock*.

#3485 **Poster Board Number P175**
Functional and Molecular Responses to Inhalation of MWCNT from the Perspective of Occupationally-Relevant Depositions. *V.K. Kodali*[1], *P.C. Zeidler-Erdely*[1], *T. Eye*[1], S. Bilgesu[1], *L. Bishop*[1], S. Tugendreich[2], S. Shah[2], *M. Campen*[3], *M. Aragon*[3], *M.L. Kashon*[1], J.K. Gu[1], L. Battelli[1], J.L. Cumpston[1], A. Cumpston[1], W. McKinney[1], D. Frazer[1], T.-h.B. Chen[1], *V. Castranova*[4], R. Mercer[1], and *A. Erdely*[1]. [1]National Institute for Occupational Safety & Health, Morgantown, WV; [2]QIAGEN, Redwood City, CA; [3]University of New Mexico, Albuquerque, NM; and [4]West Virginia University, Morgantown, WV.

#3486 **Poster Board Number P176**
Toxicity Assessment and Bioaccumulation in Zebrafish Embryos Exposed to Carbon Nanotubes Suspended in Pluronic® F-108. R. Wang[2], *A.N. Meredith*[1], M. Lee[2], D. Deutsch[2], L. Miadzvedskaya[2], E. Braun[2], P. Pantano[2], *S. Harper*[1], and *R. Draper*[2]. [1]Oregon State University, Corvallis, OR; and [2]University of Texas at Dallas, Richardson, TX.

#3487 **Poster Board Number P177**
Lack of Genotoxicity in the Comet and Micronucleus Assays of Graphistrength© C100 Multiwalled Carbon Nanotubes (MWCNT) After a 90-Day Nose-Only Inhalation Exposure of Rats. *J.-F. Régnier*[1], S. Simar[5], F. Nesslany[5], E. Dony[3], D. Pothmann[4], and *V. Shultz*[2]. [1]Arkema France, Colombes, France; [2]Arkema Inc., King of Prussia, PA; [3]Harlan Cytotest Cell Research GmbH, Rossdorf, Germany; [4]Harlan Laboratories Ltd, Itingen, Switzerland; and [5]Institut Pasteur de Lille, Lille, France.

Abstract #

#3488 **Poster Board Number P178**
The Occupational Life Cycle of MWCNT: Toxicity Evaluation from As-Produced to Post-Production Modifications and Composites. *L.M. Bishop*[2], M. Orandle[2], *L. Cena*[2], *V. Kodali*[2], *M. Dahm*[1], *M. Schubauer-Berigan*[1], *T. Sager*[2], J. Scabilloni[2], D. Schwegler-Berry[2], *T. Eye*[2], *L. Battelli*[2], J. Kang[2], G. Casuccio[3], *K. Bunker*[3], *A. Stefaniak*[2], *P.C. Zeidler-Erdely*[2], *L. Sargent*[2], *R.R. Mercer*[2], and *A. Erdely*[2]. [1]National Institute for Occupational Safety, and Health, Cincinnati, OH; [2]National Institute for Occupational Safety, and Health, Morgantown, WV; and [3]RJ Lee Group, Monroeville, PA.

#3489 **Poster Board Number P179**
Pulmonary Effects of Different Sized and Oxidized Forms of Graphene Nanoparticles. J.A. Thompson, J.S. Fedan, T. Sager, and *J.R. Roberts*. National Insitute for Occupational Safety & Health, Morgantown, WV.

#3490 **Poster Board Number P180**
Identification of Biomarkers for Nano-Safety Assessment through Proteomic Analysis of Multi-Walled Carbon Nanotubes Functionalized by Atomic Layer Deposition Coating. *G.M. Hilton*, *A. Taylor*, *E. Dandley*, G. Parsons, *J. Bonner*, and M. Bereman. North Carolina State University, Raleigh, NC. Sponsor: *J. Bonner*.

#3491 **Poster Board Number P181**
Toxicity of Carbon Nanotubes *In Vivo*: Biochemical and Histopathological Parameters. J.J. Guzmán-Mendoza[3], B.E. Sánchez-Ramírez[3], S.L. Montes-Fonseca[2], M. d.C. González-Horta[3], and E. Orrantia-Borunda[1]. [1]Centro de Investigación y Estudios Avanzados, Chihuahua, Chih., Mexico; [2]Tecnologico de Monterrey Campus Chihuahua, Chihuahua, Chih., Mexico; and [3]Universidad Autónoma de Chihuahua, Chihuahua, Chih., Mexico. Sponsor: *L.M. del Razo Jiménez*.

#3492 **Poster Board Number P182**
Multi-Walled Carbon Nanotube (MWCNT)-Induced Fibrogenic Signaling in a Human Lung Epithelial-Fibroblast Co-Culture System. *A.L. Mihalchik*[1,2], J.D. Sisler[1], and Y. Qian[1]. [1]NIOSH, Morgantown, WV; and [2]West Virginia University, Morgantown, WV.

#3493 **Poster Board Number P183**
Thirteen-Week Nose-Only Inhalation Study in Rats of Graphistrength© C100 Multiwalled Carbon Nanotubes (MWCNT) with 13- and 52-Week Recovery Periods. *J.-F. Régnier*[1], D. Pothmann[3], J.-L. Le Net[4], and J. Beausoleil[2]. [1]Arkema France, Colombes, France; [2]Arkema France, Lacq, France; [3]Harlan Laboratories Ltd, Itingen, Switzerland; and [4]Le Net Pathology Consulting, Amboise, France.

#3494 **Poster Board Number P184**
Acute Phase Inflammatory Responses in Mice after Pulmonary Exposure to Carbon Nanotubes Functionalized by Zinc Oxide Thin Film Coating. E.C. Dandley, A.J. Taylor, *K.S. Duke*, *K.A. Shipkowski*, G.N. Parsons, and *J.C. Bonner*. North Carolina State University, Raleigh, NC.

Abstract #

#3495 **Poster Board Number P185**
Utilization of Near Infrared Fluorescence Imaging to Track and Quantify Pulmonary Retention of Single-Walled Carbon Nanotubes in Mice. J.N. Nicholas[2], H. Chen[2], J. Besisi[2], P.L. Ferguson[1], K. Lui[1], D. Bolser[2], and *T. Sabo-Attwood*[2]. [1]Duke University, Durham, NC; and [2]University of Florida, Gainesville, FL.

#3496 **Poster Board Number P186**
Characterization of Lung Toxicity Following Pulmonary Exposure to Graphene Nanoparticles in Different Oxidized Forms. *J.R. Roberts*[2,3], *T. Sager*[2,3], *L. Bishop*[2,3], R.R. Mercer[2], A.B. Stefaniak[2], *N.V. Yanamala*[2], S.S. Leonard[2,3], *K.A. Roach*[2,3], D. Schwegler-Berry[2], *I.S. Chaudhuri*[1], A. Kyrlidis[1], *B.Y. Farris*[2,3], *C.E. McLoughlin*[2], T. Eye[2], *V. Kodali*[2], M. Wolfarth[2], *D.W. Porter*[2,3], *V. Castranova*[3], and *A. Erdely*[2,3]. [1]Cabot Corporation, Billerica, MA; [2]CDC/NIOSH, Morgantown, WV; and [3]West Virginia University, Morgantown, WV.

#3497 **Poster Board Number P187**
Atomic Layer Deposition Coating of Multi-Walled Carbon Nanotubes with Metal Oxides Alters Pro-Fibrogenic Responses in an *In Vitro* Tri-Culture System of the Pulmonary Alveolus. A.J. Taylor, E.C. Dandley, G.N. Parsons, and *J.C. Bonner*. North Carolina State University, Raleigh, NC.

#3498 **Poster Board Number P188**
Hyaluronan Functionalization Reduces Lung Inflammatory and Fibrotic Responses of Multi-Walled Carbon Nanotubes. *S. Hussain*[2], Z. Ji[3], A. Taylor[1], L. Miller-DeGraff[2], M. George[2], J. Marshburn[2], R. Snyder[2], A. Rice[2], *J.C. Bonner*[1], and S. Garantziotis[2]. [1]NC State University, Raleigh, NC; [2]NIEHS/NIH, Research Triangle Park, NC; and [3]UCLA, Los Angeles, CA.

#3499 **Poster Board Number P189**
No Immunohistologically Detectable Genotoxicity or Proliferation Following 90Day Inhalation of Multi-Walled Carbon Nanotubes. D. Schaudien[1], A. Hackbarth[1], H. Ernst[1], S. Rittinghausen[1], A. Leonhardt[2], U. Heinrich[1], and O. Creutzenberg[1]. [1]Fraunhofer ITEM, Hannover, Germany; and [2]Leibniz Institute for Solid State, and Materials Research, Dresden, Germany. Sponsor: *C. Dasenbrock*.

#3500 **Poster Board Number P190**
Adjuvant Effects of Multi-Walled Carbon Nanotube Sensitization with House Dust Mite Allergen Lead to an Exaggerated Asthmatic Phenotype in Mice. *M.D. Ihrie*, *K.S. Duke*, A.J. Taylor, and *J.C. Bonner*. North Carolina State University, Raleigh, NC.

#3501 **Poster Board Number P191**
Epigenetic Alterations in Response to the Inhalation of Different Sized Multi-Walled Carbon Nanotubes. J. Ray[1], V. Kay[2], J.W. Lee[2], E. Cole[2], *A. Holian*[2], and *Y.H. Cho*[2]. [1]Michigan State University, East Lansing, MI; and [2]University of Montana, Missoula, MT.

#3502 **Poster Board Number P192**
Susceptibility of STAT1-Deficient Mice to Pulmonary Fibrosis after Exposure to Tangled vs. Rigid Multi-Walled Carbon Nanotubes. *K.S. Duke*, E.A. Thompson, *K.A. Shipkowski*, *M.D. Ihrie*, A.J. Taylor, and *J.C. Bonner*. North Carolina State University, Raleigh, NC.

Abstract #

#3503 **Poster Board Number P193**
Pulmonary Exposure to Multi-Walled Carbon Nanotubes Causes Unique Immunotoxic mRNA Profiles in the Lungs, Liver, and Spleen of Mice Sensitized to House Dust Mite Allergen. *K.A. Shipkowski*[1], A.J. Taylor[1], *E.A. Thompson*[1], *E.E. Glista-Baker*[1], *B.C. Sayers*[1], *K.S. Duke*[1], *J.H. Shannahan*[2], *J.M. Brown*[2], and *J.C. Bonner*[1]. [1]North Carolina State University, Raleigh, NC; and [2]University of Colorado Anschutz Medical Campus, Aurora, CO.

#3504 **Poster Board Number P194**
Metallic-Doped Carbon Nanotubes Show Minimal Toxicity to Nasal Epithelial Cells. *M.W. Grogg*, V. Gogineni, *L.K. Braydich-Stolle*, S. Ganguli, A.K. Roy, and *S.M. Hussain*. Air Force Research Laboratory, WPAFB, OH.

#3505 **Poster Board Number P195**
Multi-Walled Carbon Nanotubes May Impair Mucociliary Differentiation of Human Bronchial Epithelia and Club Cell Recovery in Oropharyngeally-Exposed Mice. R.J. Snyder[1,2], *S. Hussain*[1], A. Rice[1], L. Degraff-Miller[1], *S.H. Randell*[2], and *S. Garantziotis*[1]. [1]National Institute of Environmental Health Sciences, Durham, NC; and [2]University of North Carolina Chapel Hill, Chapel Hill, NC.

#3506 **Poster Board Number P196**
Development of an *In Vitro* Test to Assess the Inhalation Toxicity of Nanomaterials. *M. Sharma*. PETA International Science Consortium Ltd., London, United Kingdom.

#3507 **Poster Board Number P197**
Inhaled MWCNT at Occupational Levels Reduce Alveolar Macrophage Phagocytosis and Vascular Relaxation. D.M. Walters[1], C.D. Worthington[1], M.J. Yaeger[1], J.S. Morgan[1], *J.S. Bonner*[2], *K.M. Gowdy*[1], and *C.J. Wingard*[1]. [1]East Carolina University, Greenville, NC; and [2]North Carolina State University, Raleigh, NC.

#3508 **Poster Board Number P198**
Multi-Walled Carbon Nanotubes Down-Regulate Estrogen Receptor Alpha Gene Expression in Human Lung Epithelial Cells: A Potential Role for Transforming Growth Factor Beta1. *L.C. Smith*, and *T. Sabo-Attwood*. University of Florida, Gainesville, FL.

Thursday Morning, March 17
9:30 AM to 12:45 PM
CC Great Hall A

Poster Session: Skin Responses and Toxicology

Chairperson(s): *Gretchen Ritacco, Research Institute for Fragrance Materials, Woodcliff Lake, NJ.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *11:15 AM–12:45 PM*

#3509 **Poster Board Number P201**
Effects of Soap-Water Wash on Human Epidermal Penetration. *H. Zhu*, E.-C. Jung, C. Phuong, X. Hui, and *H. Maibach*. UCSF, San Francisco, CA.

#3510 **Poster Board Number P202**
Investigation of Depth-Dependent Stratum Corneum Permeability in Human Skin *In Vitro*. *H. Zhu*[1], J.J.P. Cadavona[2], X. Hui[1], E.-C. Jung[1], and *H. Maibach*[1]. [1]UCSF, San Francisco, CA; and [2]University of Nevada School of Medicine, Las Vegas, NV.

Abstract #

#3511 **Poster Board Number P203**
Modulation of Chemical Dermal Absorption by 14 Natural Products: A Quantitative Structure Permeation (QSPR) Analysis of Components Often Found in Topical Cosmeceuticals. *F. Muhammad*[2], M. Jaberi-Douraki[2], D. de Sousa[1], and *J.E. Riviere*[2]. [1]Federal University of Paraiba, Paraiba, Brazil; and [2]Kansas State University, Manhattan, KS.

#3512 **Poster Board Number P204**
Partition and Diffusion Coefficient Determinations for Twelve Compounds in Isolated Human Skin Layers for *In Silico* Dermal Pen Modeling. J.D. Manwaring[5], C. Obringer[5], N. Hewitt[2], A. Schepky[1], D. Gerstel[1], M. Klaric[1], J. Eilstein[3], S. Gregoire[3], H. Duplan[4], C. Jacques-Jamin[4], R. Cubberley[7], and H. Rothe[6]. [1]Beiersdorf AG, Hamburg, Germany; [2]Cosmetics Europe, Brussels, Belgium; [3]L'Oreal, Aulnay-Sous-Bois, France; [4]Pierre Fabre Dermo-Cosmetique, Toulouse, France; [5]Procter & Gamble, Mason, OH; [6]Procter & Gamble, Schwalbach, Germany; and [7]Unilever, Sharnbrook, United Kingdom. Sponsor: *G. Daston.*

#3513 **Poster Board Number P205**
Characterization of Transdermal Pharmacokinetics of Ketoprofen in Sinclair and GÖttingen Minipigs. A. Stricker-Krongrad[2], M. Zhong[2], H. Leigh[2], Y. Liu[1], Y.-H.A. Fu[1], J. Liu[2], and *G. Bouchard*[2]. [1]KCAS, Shawnee, KS; and [2]Sinclair Research Center, Auxvasse, MO.

#3514 **Poster Board Number P206**
New BPX-01 Formulations Improve *In Vitro* and *In Vivo* Delivery of Minocycline in Minipigs. *D. Lac*, M. Hermsmeier, D. Thomas, N. Yam, X. Chen, A. Yamamoto, S.Y. Huang, K. Chan, and U. Nagavarapu. Biopharmx, Menlo Park, CA.

#3515 **Poster Board Number P207**
Human Skin Permeation *In Vitro* of Glycol Ether Mixtures and Ethanol Amines. *N.B. Hopf*[2], N. Charrière[2], C. Oltramare[2], P. Sping[1], and *A. Berthet*[2]. [1]Centre Hospitalier Universitaire Vaudois, Lausanne, Switzerland; and [2]Institute for Work, and Health, Epalinges, Switzerland.

#3516 **Poster Board Number P208**
A Novel Assay for Evaluating Wound Healing in a Full-Thickness *In Vitro* Human Skin Model. M. Bachelor, A. Armento, J. Oldach, G. Stolper, M. Li, M. Klausner, and *P. Hayden*. MatTek Corporation, Ashland, MA.

#3517 **Poster Board Number P209**
Possible Substrate-Independent Role of N-Acetyltransferase 1 (NAT1) in Human Keratinocytes. J. Lichter, and *B. Blömeke*. University Trier, Trier, Germany.

#3518 **Poster Board Number P210**
Quantitative and Qualitative Assessment of Skin and Eye Phototoxicity in the Rat: Pigmented versus Non-Pigmented Strains. C. Gerbeix, S. Turnock, C. Thirion-Delalande, and *R. Forster*. CITOXLAB, Evreux, France.

#3519 **Poster Board Number P211**
Phototoxicity of Ethyl Vanillin: Comparison of Two *In Vitro* Methods. *G. Ritacco*, and *A.M. Api*. Research Institute for Fragrance Materials, Woodcliff Lake, NJ.

Abstract #

#3520 **Poster Board Number P212**
A Complete Dataset Representing the Adverse Outcome Pathway (AOP) of Skin Sensitization for 20 Fragrance Allergens. R. Parakhia, *D. O'Brien*, *J. Lalko*, and *A.M. Api*. RIFM, Woodcliff Lake, NJ.

#3521 **Poster Board Number P213**
Development of a New Local Lymph Node Assay That Evaluates the Elicitation Response. K. Yamashita[1], S. Shinoda[2], S. Hagiwara[2], and *H. Itagaki*[3]. [1]Daicel Corporation, Himeji, Japan; [2]Drug Safety Testing Center Co., Ltd., Hiki-gun, Japan; and [3]Yokohama National University, Yokohama, Japan.

#3522 **Poster Board Number P214**
Higher Sensitivity of the Abdominal Skin Than the Back Skin to Phototoxicity in Female Sprague-Dawley Rats. K. Kuga, H. Yasuno, Y. Harada, M. Hasegawa, Y. Miyamoto, M. Miyamoto, and K. Sato. Takeda Pharmaceutical Company Limited, Kanagawa, Japan. Sponsor: *M. Friedman.*

#3523 **Poster Board Number P215**
Derivation of a Dermal Sensitization Threshold for Hexavalent Chromium in Textiles. *B. Wang*, and *M.H. Whittaker*. ToxServices LLC, Washington, DC.

#3524 **Poster Board Number P216**
Histological Differences in Skin of Minipigs Related to Age, Sex and Sample Site. J. Løgsted, G. Jeppesen, N. Grand, and *A. Makin*. CiToxLAB Denmark, Lille Skensved, Denmark.

#3525 **Poster Board Number P217**
The Cyanide Blues: Laser Irradiation of the Tattoo Pigment Phthalocyanine Blue Can Cause Formation of Highly Toxic Hydrogen Cyanide in Skin. I. Schreiver[2], C. Hutzler[2], N. Röder[2], P. Laux[2], H.-P. Berlien[1], and A. Luch[2]. [1]Evangelical Elisabeth Hospital, Berlin, Germany; and [2]Federal Institute for Risk Assessment, Berlin, Germany. Sponsor: *A. Haase.*

#3526 **Poster Board Number P218**
Inhibition of CRD-BP to Overcome Resistance to BRAF-Inhibitors in BRAF-Mutant Melanoma. T. Kim, Y.G. Xu, V. Selaturi, and V.S. Spiegelman. University of Wisconsin-Madison, Madison, WI. Sponsor: *C. Bradfield.*

Thursday Morning, March 17
9:30 AM to 12:45 PM
CC Great Hall A

PS

Poster Session: Emerging Technologies

Chairperson(s): *Barbara A. Wetmore, ScitoVation, LLC, Research Triangle Park, NC; and William H. Bisson, Oregon State University, Corvallis, OR.*

Displayed: *9:30 AM–12:45 PM*

Author Attended: *9:30 AM–11:00 AM*

#3527 **Poster Board Number P219**
Assessing Physiological Response to Toxic Industrial Chemical Exposure in Megacities. D.L. Ippolito[2], and B.C. McDyre[1]. [1]ORISE, Ft. Detrick, MD; and [2]US Army Center for Environmental Health Research, Ft. Detrick, MD. Sponsor: *D.A. Jackson*.

#3528 **Withdrawn.**

Abstract #

#3529 **Poster Board Number P221**
Development and Validation of Five GyroMark HT Rat Kidney Toxicity Assays. B. Gilliam, C. Fry, S. Suchyta, J. Mistry, and Q. Xiao. EMD Millipore, Saint Charles, MO. Sponsor: *R. Wiese.*

#3530 **Poster Board Number P222**
Optimization of Intrathecal Administration in the Rat. J. Douville, G. Iacono, C. Foucault, R. St-Jacques, F. Emond, and C. Copeman. Charles River, Montreal, QC, Canada. Sponsor: *M. Vezina.*

#3531 **Poster Board Number P223**
Pilot Evaluation of a Novel Fully-Implantable Digital Telemetry Manometer: Acute *In Vivo* Responsiveness and Characteristics. C.L. del Rio[2], S. Roof[2], E. Ferris[2], A. Keel[2], B. Youngblood[2], J. Burton[1], H. Lan[1], J.-G. Napoléoni[1], and *R.L. Hamlin*[2]. [1]EMKA Technologies, Paris, France; and [2]QTest Labs, Columbus, OH. Sponsor: *R. Hamlin.*

#3532 **Poster Board Number P224**
Toxicokinetic Analysis of Acetaminophen following Liquid Microsampling—Evaluations of Rat and Mouse Plasma and Serum and Impact of Collection Site. *S. Ploch*, L. Geiger, P. Mielke, D. Bilgo, C. Scheuerell, and A. Ledvina. Covance Laboratories, Inc., Madison, WI.

#3533 **Poster Board Number P225**
Automation of Cytokinesis-Block Micronucleus Assay Using ImageStreamX® Imaging Flow Cytometry. C.E. Probst[1], M.A. Rodrigues[1], L.A. Beaton-Green[2], B.C. Kutzner[2], and R.C. Wilkins[2]. [1]EMD Millipore, Seattle, WA; and [2]Health Canada, Ottawa, ON, Canada. Sponsor: *S. Casinghino*

#3534 **Poster Board Number P226**
Utilizing High Throughput Flow to Screen for Compound Immunotoxicity in Peripheral Blood Mononuclear Cells. S. Perschke, Z. Liu, and K. Luu. IntelliCyt Corporation, Albuquerque, NM. Sponsor: *M. Misra.*

#3535 **Poster Board Number P227**
Refinement of a Commercially Available Multiplex Cytokine Kit to Enable Performance for Measurement of GÖttingen and Sinclair Minipig Plasma. *M. Doyle-Eisele*, C. Tudan, L. Herrera, G. Degido, E. Maloy, and J. Wilder. LRRI, Albuquerque, NM.

#3536 **Poster Board Number P228**
Predictivity of *In Vivo* Metabolomics in Rats as Compared to Classical Toxicological Assessments. H.G. Kamp[1], O. Duerr[1], E. Fabian[1], F. Faulhammer[1], M. Freriks[1], M. Herold[2], G. Krennrich[1], G. Montoya[1], R. Looser[2], W. Mellert[1], E. Peters[2], V. Strauss[1], T. Walk[2], and *B. van Ravenzwaay*[1]. [1]BASF SE, Ludwigshafen am Rhein, Germany; and [2]Metanomics GmbH, Berlin, Germany.

#3537 **Poster Board Number P229**
High-Throughput Biomonitoring for Exposome Research. *D.P. Jones*[1], *Y.-M. Go*[1], *D.I. Walker*[1], *K. Uppal*[1], *K. Pennell*[2], and *G.W. Miller*[1]. [1]Emory University, Atlanta, GA; and [2]Tuffs University, Medford, MA.

Abstract #

#3538 **Poster Board Number P230**
Computational Models of the Aryl Hydrocarbon Receptor PAS-B Domain: Successful Applications in Cancer Prevention, Treatment and Predictive Toxicology. W.H. Bisson[1], *G. Perdew*[2], and *R.L. Tanguay*[1]. [1]Oregon State University, Corvallis, OR; and [2]Pennsylvania State University, University Park, State College, PA. Sponsor: *R. Tanguay.*

#3539 **Poster Board Number P231**
Linking High Resolution Mass Spectrometry Data with Exposure and Toxicity Forecasts to Advance High-Throughput Environmental Monitoring. *J.E. Rager*[2], M.J. Strynar[3], S. Liang[2], R. McMahen[2], *A.M. Richard*[3], C.M. Grulke[1], *J.F. Wambaugh*[3], K.K. Isaacs[3], *R. Judson*[3], *A.J. Williams*[3], and *J.R. Sobus*[3]. [1]Lockheed Martin, Research Triangle Park, NC; [2]ORISE, Research Triangle Park, NC; and [3]US EPA, Research Triangle Park, NC.

#3540 **Poster Board Number P232**
Considering Possible Mechanisms of Toxicity for Phthalates on California's Proposition 65 List Using Bioseek Data from ToxCast. N.T. Pham[1], *S. Iyer*[1], *M. Marty*[1], *M. Sandy*[1], *G. Solomon*[2], and *L. Zeise*[1]. [1]Office of Environmental Health, and Hazard Assessment, California Environmental Protection Agency, Sacramento, CA; and [2]Office of Secretary, California Environmental Protection Agency, Sacramento, CA.

#3541 **Poster Board Number P233**
Toxicant Bioavailability When Using Low Volume Polymer Based Organ-on-a-Chip Bioreactors to Study Exposures to Chemical Contaminants. D.A. Markov, P. Fryman, and L.J. McCawley. Vanderbilt University, Nashville, TN. Sponsor: *L. Vernetti.*

#3542 **Poster Board Number P234**
Exposure to 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) Affects Vascular Development in the Zebrafish Eye, Gut, and Trunk. M.S. Yue, M.R. Taylor, *R.E. Peterson*, and *J.S. Plavicki*. University of Wisconsin, Madison, WI. Sponsor: *R. Peterson.*

#3543 **Poster Board Number P235**
Metabolic Competent Expandable Human Upcyte Hepatocytes Enable Metabolism Studies Including CYP2D6 Dependent Pathways. A. Noerenberg[2], W. Schroth[1], M. Thomas[1], T. Mürdter[1], J. Johänning[1], and S. Heinz[2]. [1]Dr. Margarete Fischer-Bosch-Institute of Clinical Pharmacology, and University of Tuebingen, Stuttgart, Germany; and [2]upcyte technologies GmbH, Hamburg, Germany. Sponsor: *P. Hewitt.*

#3544 **Poster Board Number P236**
Toxicity Assessment of Co-Culture Human Systems During Serial Multi-Well Gradient Exposures. M.B. McCartney[1], D.J. Sloan[1], *J. Gordon*[2], and R. McClelland[1]. [1]SciKon Innovation, Chapel Hill, NC; and [2]The Tauri Group, Frederick, MD.

#3545 **Poster Board Number P237**
Quantitative, Label-Free Real-Time Kinetic Monitoring of the Effects of Toxic Compounds in Live Cells by Holographic Imaging Cytometry. K. Alm[2], B. Janicke[2], E. Luther[1], M. Sebesta[2], P. Egelberg[2], and E. Holden[3]. [1]Northeastern University, Boston, MA; [2]Phase Holographic Imaging AB, Lund, Sweden; and [3]SeeCyte Biosciences, Boston, MA. Sponsor: *P. Narayanan.*

Abstract #

#3546 **Poster Board Number P238**
Evaluation of the Performance of the Keratinosens™ Assay with Added Metabolic Capability. *R. Settivari*[2], *N. Visconti*[2], R. Acosta Amado[1], and *S. Gehen*[1]. [1]Dow AgroSciences, Indianapolis, IN; and [2]Dow Chemical, Midland, MI.

#3547 **Poster Board Number P239**
Skin Irritation of Medical Devices: *In Vitro* Assay with Episkin Reconstructed Human Epidermis (RHE). C. Pellevoisin[2], C. Tornier[2], C. Gregoire[2], B. Rollins[1], D. Briotet[3], A. Turley[4], M. Lee[4], Y. Haishima[5], and N. Seyler[2]. [1]Arthrex Laboratory, Naples, FL; [2]EPISKIN Academy, Lyon, France; [3]Namsa, Chasse sur Rhone, France; [4]Nelson Laboratories, Salt Lake City, UT; and [5]NIHS, Tokyo, Japan. Sponsor: *E. Dufour.*

#3548 **Poster Board Number P240**
Development of an Experimental Cell-Based Approach to Evaluate Biological Effects of Aerosols from the Application of Hair-Straightening Products *In Vitro* Using Relevant Product Application and Cell Exposure Conditions. D. Ritter[1], A. Bitsch[1], M. Elend[1], S. Schuchardt[1], T. Hansen[1], C. Brodbeck[2], J. Knebel[1], R. Fautz[3], A. Fuchs[3], and C. Gronewold[3]. [1]Fraunhofer ITEM, Hannover, Germany; [2]Fraunhofer SCAI, Sankt Augustin, Germany; and [3]KAO Germany GmbH, Darmstadt, Germany. Sponsor: *C. Dasenbrock.*

#3549 **Poster Board Number P241**
***In Vitro* Prediction of Antiretroviral Drug-Induced Hepatotoxicity by Using Mitochondrial MiToxView® Screening Platform.** M. Porceddu[2], C. Pertuiset[2], S. Camus[1], C. Chesné[1], N. Buron[2], and A. Borgne-Sanchez[2]. [1]Biopredic International, Saint Grégoire, France; and [2]Mitologics, Romainville, France. Sponsor: *N. Claude.*

#3550 **Poster Board Number P242**
Classifying Modes of Action of Electronic Cigarette Toxicants in Differentiated Cells and Stem Cells Using a Multiplexing Video Bioinformatics Platform. *A. Zahedi*, R. Phandthong, V. On, and *P. Talbot*. University of California Riverside, Riverside, CA.

#3551 **Poster Board Number P243**
Surface Plasmon Resonance Microarray-Based Functional Phenotyping to Measure Toxicant Effects on Hematopoietic Stem Cells. *M.A. Lynes*[2], D.A. Knecht[2], E.F. Guignon[1], and *D.A. Lawrence*[3]. [1]Ciencia, Inc., East Hartford, CT; [2]University of Connecticut, Storrs, CT; and [3]Wadsworth Center, Albany, NY.

#3552 **Poster Board Number P244**
Evaluation of the Stability of Reconstituted Human Bronchial Epithelium, MucilAir™, During 4 Weeks in Culture. *S. Constant*[2], S. Frentzel[3], M. Gaca[1], D. Grandolfo[3], P. Leroy[3], L.E. Haswell[1], J. Hoeng[3], S. Huang[2], K. Luettich[3], E. Minet[1], M. Monachino[2], K. Trivedi[3], and L. Wiszniewski[2]. [1]British American Tobacco R&D, Southampton, United Kingdom; [2]Epithelix, Plan-les-Ouates, Switzerland; and [3]Philip Morris International R&D, Neuchatel, Switzerland.

#3553 **Poster Board Number P245**
Combining a Real-Time *In Vitro* Cell Viability Assay and RNA Extraction from the Same 3D Spheroids. *T. Riss*, S. Duellman, B. Hook, M. Bratz, and S. Lewis. Promega Corporation, Madison, WI.

Abstract #

#3554 **Poster Board Number P246**
High Throughput 3D Spheroid Culture of Corning® HepatoCells and Liver Toxicity Applications. F. Li[1], R. Zuo[1], M. Andes[1], S. Parikh[1], K. Cooper[1], R.A. Faris[2], and C.J. Patten[1]. [1]Corning Incorporated-Life Sciences, Bedford, MA; and [2]Corning Incorporated-Life Sciences, Corning, NY. Sponsor: *C. Crespi.*

#3555 **Poster Board Number P247**
3D Cell Clusters for Predictive Toxicity Analysis. L. Stehno-Bittel, S.J. Williams, and K. Ramachandran. Likarda, LLC, Kansas City, KS. Sponsor: *M. Czerwinski.*

#3556 **Poster Board Number P248**
Substrate-Independent Real-Time Toxicity Screening in 3D Human Tissue Culture Models. *T. Xu*[1,2], H. Lam[2], D. Close[1], G. Sayler[1,2], and *S. Ripp*[1,2]. [1]490 BioTech Inc., Knoxville, TN; and [2]The University of Tennessee, Knoxville, TN.

#3557 **Poster Board Number P249**
Hepatocyte Spheroid Cultures in Galactosylated Cellulosic Sponge for Drug DMPK and Efficacy Testing. A. Ananthanarayanan[2], Y. Qu[2], N. Hari Singh[2], B. Nugraha[1], M. McMillian[2], and H. Yu[3]. [1]Imperial College London, London, United Kingdom, Singapore, Singapore; [2]Invitrocue Pte Ltd, Singapore, Singapore; and [3]National University of Singapore, Singapore, Singapore. Sponsor: *M. Johnson.*

#3558 **Poster Board Number P250**
Validation and Assessment of miRNA122 as a Clinical Biomarker of Hepatotoxicity Utilizing Affymetrix QuantiGene Technology. D. Burt[2], *S. Schomaker*[2], R. Warner[1], K. Johnson[1], and *J. Aubrecht*[2]. [1]Dept. of Pathology, University of Michigan Medical School, Ann Arbor, MI; and [2]Drug Safety R&D, Pfizer Inc., Groton, CT.

THANK YOU

ATTENDEES

On behalf of the 2015–2016 SOT Council, thank you for attending the 2016 SOT Annual Meeting and ToxExpo in New Orleans, Louisiana. Your participation at this event plays a significant role in making the Society of Toxicology the number one scientific not-for-profit organization for toxicologists in the world. See you next year in Baltimore.

The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

Author Index

A

A, M-A ... 1494
Aa, J ... 1953
Aaronson, J A ... 1611
Abafe, O ... 2922
Abam, E O ... 1249, 1527, 1547*, 1568
Abassi, Y ... 1890
Abassi, Y A ... 1740, 1741
Abbott, B D ... 2172
Abd Elmageed, Z Y ... 2333
Abdel Moneim, I ... 1585
Abdel Rasoul, G ... 2401, 2402, 2902
Abdelghany, T M ... 3399
Abdel-Mageed, A B ... 2333
Abdel-Rahman, S Z ... 2825, 3234
Abdelwahab, S ... 2907*
Abdou, K A ... 2914*
AbdulHameed, M D M ... 3140*
Abdullah, S ... 1938
Abelmann, A ... 1689, 1690*, 2140
Abiko, Y ... 1563*, 1582, 2295
Abo, T ... 2193*
Abo Norag, M A ... 2914
Abou Hadeed, A H ... 3257*
Abou-Donia, M B ... 2405, 2907, 2912*
Abplanalp, W ... 1836, 2134*
Abraham, R ... 1667
Abramson, M M ... 2281*
Abreu-Villaca, Y ... 1243*
Abreu-Villaça, Y ... 1164
Abritis, A ... 3000*
Abtout, S ... 2841, 2842*, 3105
Abudayyak, M ... 2761, 2785
Abukabda, A B ... 2817, 2820*
Acali, S ... 1106
Achanta, S ... 1301*
Acheson, S K ... 2907
Acikara, O B ... 1485
Ackerman, J ... 2655, 3157
Ackermann, G ... 1270
Acosta Amado, R ... 2208, 3546
Acquaah-Mensah, G K ... 1080*
Acuña-Hernández, D G ... 3223, 3228*, 3229
Ada, A O ... 2748
Adachi, R ... 2806
Adair, K ... 1315
Adamcakova-Dodd, A ... 2793*, 3425*
Adamou, A ... 1649*, 3096
Adams, R E ... 1300
Adams, T B ... 2279
Adamson, J ... 3037
Adamu, P ... 1462
Adebayo, S A ... 1433*
Adebisi, D O ... 1549*
Adebiyi, O E ... 1557*
Adebolu, O O ... 2801*
Adedapo, A A ... 2827*
Adedapo, A D ... 2827
Adedara, I A ... 1817*
Adeghate, E ... 1896
Adegoke, A M ... 1446
Adeleye, Y ... 1714*
Ademuyiwa, O ... 1248, 1249*, 1527, 1547, 1568
Adeogun, A I ... 1662
Adeogun, A O ... 3297*
Adeyemi, O O ... 1466, 1471
Adeyemo, O J ... 3019
Adeyemo, O K ... 2954
Adeyinka, O ... 2590
Adhikari, P ... 3165
Adkins, K ... 2481, 3467, 3480*
Adler, M ... 3118
Admon, S ... 3410
Adriaens, E ... 1614, 1616
Afolabi, O ... 3024
Afolabi, O K ... 1249, 1527, 1547, 1568
Afriyie-Gyawu, E ... 1685, 2282, 2284, 2590
Afzali, M F ... 1917*
Ag, M-C ... 1494
Aga, D ... 2356, 2902, 2969
Agarwal, C ... 2115, 2126
Agarwal, R ... 2115, 2116, 2121, 2126
Agbafor, U ... 1463
Aggarwal, M ... 2458
Aggerbeck, M ... 2430, 3427
Agier, L ... 3237
Agim, Z S ... 2372*
Agnihothram, S ... 2769*
Aguilar-Madrid, G ... 3130
Ahmad, S F ... 1343
Ahmed, R S ... 3227
Ahmed, S ... 1103
Ahn, H J ... 2940
Ahn, J ... 1424, 2149, 3429
Ahn, Y-A ... 2729*
Aho, J ... 1832*
Ahrens, L ... 2737
Aigbe, F R ... 1471*
Aioun, J ... 3237
Aisaki, K-i ... 2613
Ajibola, V ... 2932
Ajiboye, A O ... 3019*
Akagi, J-i ... 1467, 2598, 2806
Akahira, R ... 3148
Akande, M G ... 2913*
Akanni, G B ... 2922
Akbari, P ... 2873
Akhtar, M ... 2911*
Akinade, O A ... 2735
Akinbode, O A ... 1446
Akinhanmi, T F ... 1248, 1249
Akinmoladun, A C ... 3244
Akinosun, O M ... 1133*
Akinwumi, K A ... 1446, 2081
Akiyama, M ... 1582*, 2033
Akumka, D ... 1462
Akuse, S ... 2590*
Al Adhami, H ... 3237
Al Suliman, R J ... 1439, 3454*
Alam, G ... 2336*
Alam, M N ... 2127
Alarie, Y ... 2621*
Alava, P ... 1543
Alavi, A ... 3083
Albakheet, S ... 1343*
Albelda, S M ... 2047
Albert, I ... 2426, 2434
Albores, A ... 2956, 3219
Albornoz-Abud, N A ... 2953*
Alday, A ... 2456
Aldous, C ... 2900
Aldous, D ... 1093
Aleksunes, L M ... 1969, 2371, 2721, 3233, 3235, 3240, 3272, 3348*, 3350
Aleo, M ... 1073
Aleo, M D ... 2218
Alepee, N ... 1612*, 1613, 1614, 2206
Alépée, N ... 1616, 2534*
Al-Eryani, L ... 3340*
Alexander, D ... 3346
Alexander, P G ... 2178*
Alexander-Scott, M ... 1686
Alexandrie, A-K ... 2142
Alfaheeda, Z J ... 1937*
AlGhananeem, A ... 1315
Alghetaa, H F ... 1292*
Alharthy, K ... 3283*
Alhasson, F ... 1852, 1902, 1920, 1949, 3131*
Ali, M ... 1913
Ali, S ... 2347*
Aliberti, A ... 1835*
Aligo, J ... 1640*
Alimokhtari, S ... 1297
Alkelech, A M ... 3257
Alkhafaf, H ... 1272*
Allan, A M ... 1350
Allard, P ... 1812, 1839*, 2550, 3192
Allen, B ... 2240
Allen, D ... 1098, 2202, 2224, 2651, 2990
Allen, D G ... 1705*
Allen, J L ... 1166*, 1167, 1168, 1188
Allison, D B ... 2967
Allison, N ... 2714
Alm, K ... 3545
Almeida, M R ... 2593, 3016*
Almeldin, A A ... 3149*
Almond, K ... 2950*
Almy, F ... 1671, 1672
Alobaidi, R ... 1227
Alov, P ... 2656
Alpertunga, B ... 1321*, 2220
Alqassim, A Y ... 2058*
AlSadhan, L ... 3250
Alsop, D ... 3159
Altera, K ... 1626
Altincekic Gurkaynak, T ... 2785
Altmann, B ... 1606
Altomare, D ... 1797
Alugubelly, N ... 1170, 2414*
Alund, A ... 2318*
Aluru, N ... 2424
Alvarado, A ... 1423

Interact with Speakers

The Attendee Messaging tool in the Mobile Event App enables you to contact (or interact with) presenters before, during, and after the meeting. You also can use the Mobile Event App or Online Planner to select the presentations you want to attend during the Annual Meeting. You may search speaker and abstract authors by name, affiliation, abstract number, and keyword and use the results to build your schedule to maximize your meeting experience.

Late-Breaking Abstracts Scheduled for Thursday

In December, we invited our colleagues to submit an abstract during the late-breaking abstract submission phase. We are pleased with the number of abstracts received for consideration and that an overwhelming number were accepted for the Annual Meeting. These abstracts are presented on Thursday, March 17, along with several dynamic symposium, workshop, and regular poster sessions already scheduled. You can find the poster sessions in Great Hall A. The PDF supplement of the late-breaking abstracts is available to download via the SOT website in early March. The abstracts are not available in the final *Program* but are fully searchable through the SOT Mobile Event App and Online Planner.

The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

Alvarez, R ... 1335
Alvarez-Ortega, N ... 1548
Alvear-Alayon, M R ... 2929*
Alyea, R ... 2468
Alzarie, Y A ... 3399
Alzualde, A ... 2456
Amaral, K ... 3145
Amaraneni, M ... 3447*, 3448
Amberg, A ... 1093, 2647*
Ambrosio, F ... 1250
Ameni, A Z ... 3463
Ameredes, B T ... 3039, 3155
Amin, R ... 1677, 1677
Amin, S ... 1328
Amin, S G ... 1733
Amiri, L ... 1896
Ammar, D A ... 2115, 2116, 2121
Ammendolia, D A ... 1100, 1118
Amos-Kroohs, R M ... 2368
Amy, O ... 1927
Anadon, A R ... 2278
Anadon, M J ... 2393
Anadón, A ... 2885*
Anand, S S ... 3448
Ananthanarayanan, A ... 1998, 3557*
Anantharam, P ... 1226, 2119, 2120*
Anantharam, V ... 2341, 2350, 2351, 2373, 2374, 2375, 2396
Anastas, P ... 2323, 2324
Andersen, J K ... 3356*
Andersen, M ... 1832, 2005, 2018
Andersen, M E ... 1084, 1119, 1251, 2014, 2038*, 2039, 2188, 2432, 2596, 2975, 3017, 3464
Anderson, A J ... 2757
Anderson, D ... 1513, 2125, 3196
Anderson, J M ... 3333b*
Anderson, K ... 1762b*
Anderson, K B ... 1524*
Anderson, S ... 2862
Anderson, S A ... 1642
Anderson, S E ... 1515, 2866*
Anderson, T M ... 1177
Anderson Daniels, T ... 1324
Andersson, N ... 2988*
Andes, M ... 3059, 3554
Andre, L ... 1148
Andreï, J ... 2805
Andres, D K ... 1323*
Andres, J F ... 1323
Andrew, K ... 2470
Andrew, M E ... 2538
Andrews, A ... 2447
Andrews, B ... 1658
Andrews, D ... 1066, 2135
Andrews, D L ... 1069, 1281
Andric, N ... 2306
Andriolo, J M ... 1507
Anestis, D ... 3109, 3139
Ang, K-H ... 1387
Anger, L ... 2647
Angermann, J ... 1266, 2259*, 2982
Angrish, M ... 1279
Angrish, M M ... 2213*
Ankley, G ... 1778b*, 2214, 2928
Anna, B-P ... 1148
Annalora, A J ... 2438*
Annand, B ... 3148
Annas, A ... 2966
Ansari, G ... 2870
Ansari, R A ... 1933, 2822*
Anson, B ... 2552b*
Anson, B D ... 1745
Antoine, D J ... 1994, 2727, 3129, 3178, 3472
Antoni, A ... 3167
Antonini, J M ... 1289
Antonio, R-U ... 1494*
Anttila, M ... 3008
Antunes, L M ... 1416, 2593, 3016
Antunes dos Santos, A ... 1322*
Apgar, K ... 1790
Api, A M ... 2644, 3442, 3519, 3520
Apostoli, A J ... 2083, 3094
Apreutese, A ... 3269
Apte, U ... 1373, 1952, 1971, 1977
Apte, U M ... 1964
Aptula, A ... 2644
Arıcı, M ... 2761
Arab, A ... 3222
Aragon, M ... 3485
Aragone, S ... 2901
Arantes, L ... 2357, 2358
Arasti, C ... 2470
Araujo, J A ... 1128*
Araújo, A M ... 1967
Are, P ... 1617
Arends, R ... 1238
Ares, I ... 2885
Arezzo, J ... 1208
Argos, M ... 2568*
Arguiri, E ... 2047
Arick, M ... 1806
Arita, A ... 2322
Arkin, M ... 1387
Armento, A ... 3069, 3516*
Armstrong, L ... 1956
Armstrong, R ... 3042
Arno, S G ... 2321
Arnold, L ... 1254
Arnold, L L ... 3184
Arnold, S ... 2226
Arnoldi, F G ... 2860
Aro, A O ... 1495*
Arosh, J A ... 3225
Arreola-Mendoza, L ... 3228
Arrigoni, C ... 2740, 2741
Arteel, G ... 3115
Arteel, G E ... 1984, 2211, 2496
Artik, N ... 1485
Artmann, G ... 2857
Arts, J H ... 2544
Arukwe, A ... 3297
Arumugam, V ... 3340
Arvidson, K ... 2163, 2467*, 2475, 2476, 2617
Arzuaga, X ... 2704*, 2705
Asahi, T ... 1931
Asakura, M ... 1957*
Asano, H ... 1092
Asare, Y ... 1447*
Ascah, A ... 2841*, 2842, 3105
Aschner, M ... 1322, 1580, 1581, 1817, 2357, 2358, 2361, 2362, 2364, 2365, 2379, 2512*, 3359*
Asghari, S ... 2940
Asgharian, B ... 2215
Ashby, C R ... 1916
Ashcroft-Hawley, K ... 2840
Ashikaga, T ... 2196, 2204
Ashmead, S ... 2457*
Ashton, R ... 1184
Aspegren, A ... 1997
Asquith, M ... 1899
Atchison, W ... 1576, 1577
Atchison, W D ... 1573, 1574, 1575, 1578
Atilano-Roque, A ... 3114*
Atosuo, J ... 3008
Atsuda, K ... 1957
Attalla, B ... 3440
Attanasio, R ... 2972
Attene-Ramos, M S ... 1811
Attia, S M ... 1343
Attignon, E ... 2430*
Attreed, S ... 1846
Aubrecht, J ... 2482, 3558
Aubrière, M-C ... 3237
Auerbach, S ... 1095, 1771*
Auerbach, S S ... 1451, 2864, 3528
Augsburger, A-S ... 1607
Augsburger, M ... 3403
Aujean, E ... 3237
Auta, J ... 2932
Authier, S ... 1208*, 2841, 2842, 3105, 3243
Autrey, J J ... 1601
Avalos, J ... 2193
Avlasevich, S ... 1061, 1410
Awad, A S ... 2874
Awad, N E-H Y ... 1210*
Awoufack, M D ... 1495
Awoyemi, O M ... 1430*
Ayanda, I ... 2932*
Ayehunie, S ... 3069*, 3070
Aylor, D L ... 2546*
Azevedo, M ... 2769
Azizi, E ... 2355
Azzopardi, D ... 3037

B

Baas, H M ... 2589*, 3009*
Babarinsa, O S ... 2827
Babayemi, D ... 1248
Babayemi, D O ... 1249, 1568
Babel, A ... 3024
Babica, P ... 2308
Babin, M ... 2103
Babin, M C ... 2093*, 2102, 2404
Babin, P J ... 1806
Babu, S ... 1623, 2314*
Baccarelli, A ... 1723*
Baccarelli, A A ... 1432
Bach, N ... 1450
Bachelor, M ... 3066, 3516
Bachus, S ... 3085
Backes, W L ... 1303
Bacolod, M ... 3437
Badary, O A ... 3399
Badawy, N ... 2387
Badding, M ... 1314*, 2780
Badger, T M ... 1874
Bae-Jump, V L ... 3231
Baer, C E ... 1541
Baer, M R ... 2048
Baertsch, N A ... 1177
Baeyens, W ... 1142
Baeza Terrazas, F ... 1261, 1262
Bagam, P ... 1932*
Bagchi, D ... 2587*
Bagchi, I C ... 1914
Bagchi, M K ... 1914
Bagley, D ... 2676
Bai, S ... 3198
Bai, T ... 2833*
Bailey, G P ... 2563*
Bailey, J ... 1848
Bailey, K ... 1259*, 1262
Bailey, M A ... 3277*, 3472
Bailey, R A ... 2368*
Bainy, A C ... 2949
Baird, C ... 2145
Baird, R ... 2442
Bais, M ... 1732
Bajaj, N ... 2180
Baker, A ... 1883
Baker, A A ... 1969
Baker, E S ... 1136
Baker, G L ... 1308
Baker, N C ... 2547, 3300*
Baker, T ... 2197, 2516*
Baker, T K ... 1108, 1739
Baker, T R ... 1185
Bakhiyi, B ... 2693
Bakke, J P ... 1626
Balachandran, R ... 1230
Balachandran, Y ... 2805
Balagopal, G ... 1454*
Balamurali, G V ... 2212
Balbuena, P ... 1413, 1867, 1871*
Baldrick, P ... 1629*, 2562b*
Baldwin, W S ... 3156
Balestra, A ... 1146
Ball, J G ... 3126
Ball, N ... 2527*, 2711
Ball, N S ... 1426
Ball, R W ... 3298
Ballet, V ... 2647
Ballinas-Casarrubias, L ... 1261, 1262
Balog, R ... 2107
Balogun, E A ... 1527, 1547, 1568, 1662*
Baltzley, S ... 1315
Bam, M ... 1943*
Bammler, T K ... 3270
Ban, I ... 1405, 1428*, 1919
Bañares, M ... 2775
Bandara, S ... 2105*
Bandiera, S M ... 1873, 3411*, 3412
Banducci, A ... 2273
Banerjee, A ... 2808, 3037
Banerjee, B D ... 2910, 3227
Bannish, G ... 1631
Bannuscher, A ... 1518
Banton, M I ... 2036, 2038
Banton, S ... 2319, 2730
Banton, S A ... 1529
Banu, S K ... 3225*
Baptista, P ... 1963
Barbeau, D ... 1146*
Barbier, O ... 3134
Barbier, O C ... 3130
Barchowsky, A ... 1250
Bare, J L ... 1689
Barenys, M ... 1082
Barfuss, D W ... 3120
Barger, M ... 1314, 1496
Barham, R ... 1685
Barhoumi Mouneimne, R ... 3392
Barile, F A ... 1835
Barillo, D ... 2110, 2111*, 2123, 2124
Barker, J ... 2924
Barletta, M ... 2330
Barlow, S ... 2475
Barman Michelsen, V ... 2445
Barnes, A ... 1561
Barnes, E ... 1844
Barnett, A ... 1201
Barnett, H ... 1439
Barney, D L ... 1490
Barouki, R ... 2743, 3427
Barr, D B ... 1529
Barrett, E S ... 1166
Barrett, J ... 2069
Barrett, K G ... 3457*
Barrie, M ... 2520*
Barrios Payán, J ... 1978
Barron, K ... 1261
Barroso, J ... 1616
Barski, A ... 2322
Bartels, M ... 2226
Bartels, M J ... 2458
Bartels, M M ... 2674
Barthlow, H ... 3069
Bartlett, C ... 2137
Bartlett, M G ... 2897
Bartoe, J ... 1605
Barton, H A ... 2218*
Barton, S ... 2924
Barton-Maclaren, T ... 1769*
Barve, S ... 1976
Basaure, P ... 2915, 2916
Bashandy, M ... 1481
Bass, V ... 1067, 2823*
Bassaganya-Riera, J ... 1659
Bassan, A ... 2476
Bassett, S ... 1644
Bast, A ... 3015
Bastos, M D L ... 1967*
Bastos, M L ... 1963
Basu, N ... 3027
Bataille, A ... 2434
Batdorf, S ... 2974
Bateman, D N ... 2727, 3472
Bathula, C S ... 3127
Batke, M ... 2650, 3081
Batra, S ... 1908, 1932, 2290
Battelli, L ... 2538, 3485, 3488
Battelli, L A ... 1199
Battistoni, M ... 3279, 3280
Bauer, A K ... 1444, 1907
Baumer, K ... 1106, 3035
Baumgart, B ... 3477
Baumgart, B R ... 1332*
Baustian, J ... 2459
Bauter, M R ... 3011*
Bautista, A C ... 1197
Bautista, M ... 2283
Baxter, A ... 3037*
Baynes, R ... 3435
Bazany, G ... 1577
Beach, T ... 1290*
Beach, T A ... 1903
Beamer, C A ... 1361, 1367
Beasley, A ... 2226
Beaton-Green, L A ... 3533
Beattie, P J ... 2615*
Beaudin, S ... 1230
Beaudoin, S ... 3101*
Beausoleil, J ... 3493
Beauvais, S ... 2900
Becerra-Romero, W E ... 2325
Becher, R ... 2443, 2444*
Beck, A ... 2442
Beck, B D ... 1692
Beck, N ... 2166
Beck, T ... 3090, 3095, 3099, 3277
Becker, N ... 1745, 1829
Becker, R ... 1768*, 2677*
Becker, R A ... 2468
Beckerman, B S ... 2979*

The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

Beckett, E M 1300, 1689*
Beckler, M 1829
Bednar, A J 3454
Beebe, D J 3266, 3388
Beetsch, N 2155*
Beevers, C 1409*
Beger, R D 1110, 2642*
Beggs, K M 1952*
Begley, C G 1035b*
Behar, R Z 2480*
Behl, M 1013*, 1353, 1609, 2456, 2585*
Behm, D J 1301
Behr, C 1115*
Behrns, K 3169
Behrsing, H P 2175*
Beier, E 2348*
Beier, J I 1984
Beilstein, P 3004*, 3005
Belair, D 3080
Belair, D G 2172*
Beland, F A 1059, 1642, 2037, 2084, 3193, 3208, 3455
Belanger, P 1238*
Beliveau, M 2108*
Bell, D 2307
Bell, D A 1837, 3200
Bell, D R 2988
Bell, J A 2875
Bell, M P 2893
Bell, P D 1920
Bell, S M 1101
Bellary, S 1735
Belleggia, G 3405
Bellés, M 2315
Bellissima, B 2828*
Bello Monroy, O 1978
Belton, K 2417*
Beltran, M 2455
Bemis, J 1060, 1410
Bemis, J C 2639*
Benbrahim-Tallaa, L 2062*
Benderitter, M 2688
Bendt, F 1161
Benjamin, B L 3024*
Bennett, B 1837
Bennett, J A 1837
Beno, O O 1549
Benoît-Biancomano, M 3269
Benson, K 2970*
Benson, S 2974*, 2976
Bento, P 2650
Benton, B 2107
Benton, B J 1323
Bentz, S 3259
Beranek, V 1438
Bereman, M 3490
Béres, E 1457
Berg, C 2374
Berg, E L 3386*
Berg, F 2117
Berg, K 2591
Berger, F 1852
Berger, F I 2043
Bergeron, A B 1990*
Berhanu, A 2108
Berlien, H-P 3525
Bernacki, D 2639
Bernaki, D 1060
Bernal, A 2695
Bernardi, C I 2740, 2741*
Bernhard, M C 2967*
Bernhard, M J 2925
Berthet, A 3403*, 3515
Bertinetti-Lapatki, C 1828
Bertotto, L B 2941*
Bertrand, A 2937
Besisi, J 3495
Bessa, M J 2775
Besselink, H 2431
Betancourt, D 1791
Betancourt-Aldazaba, M L 2325
Bevan, C J 1179
Beverly, L 3115
Beverly, L J 2496
Beverly, S 3025
Beyer, D 1138
Beyer, L A 2270*
Beyerle, A 2808
Bhalli, J 1402
Bhandari, S 1936*
Bharadwaj, M 3108*
Bhardwaj, G 1619
Bhaskaran, V 1668, 2726, 3091*
Bhat, V S 1372*, 2138, 2152, 2155
Bhatnagar, A 1836, 2134, 2250
Bhatt, A J 1232, 2345
Bhatt, S 1238
Bhattacharjee, P 2052
Bhattacharya, S 1119*, 2210
Bhattacharyya, S 1110, 2489
Bhhatarai, B 2191*, 2226
Bhushan, B 1964, 1971*, 1977
Bi, H 1597
Bianchi, M D L 1416
Bianchi, M L P 2593, 3016
Bibi, H 2821
Bicakcioglu, P 2748
Bichell, T J 2379
Bichell, T J V 2382
Bichlmaier, I 2988
Biedrzycki, J 1299
Bienfait, B 2467, 2657, 2709
Biesiada, J 1537
Bigge, K 1627
Bijegaonkar, U 1617
Bijli, K M 2360
Bijol, V 3123, 3138
Bilgesu, S 3485
Bilgo, D 3532
Billack, B 2891
Bind, M-A 1071
Binks, M 2482
Bircsak, K 3272
Bircsak, K M 3233, 3235*
Birkebak, J 1925*
Birnbaum, L 1143, 2733
Birnbaum, L S 1051b*, 2045, 2995, 3406, 3419, 3528
Birukova, A 1064
Biryol, D 1682
Bischof, I 2925
Bisesi, J H 2811
Bishop, L 1701, 2782, 3485, 3496
Bishop, L M 3488*
Bishop, M E 1396
Bissel, P 1659
Bisson, W H 2419, 3285, 3538*
Biswajit, M 2108
Bitragunta, S P 1501*
Bitsch, A 3081*, 3548
Bittner, M 2711
Blaauboer, B 2530*
Black, K 1297
Black, M 2038, 2164, 2422
Black, M B 2039*
Black, S 2602, 3453
Blackburn, M 1874
Blackman, B 2006
Blackwell, B R 2928*
Blain, R 2168
Blair, I 2317
Blair, I A 1312
Blais, J M 1218
Blake, D J 1337*
Blakeman, L 1615
Blakley, B 2991
Blakley, B R 2831
Blanc, E 2430
Blanchet, D 2625
Blanco, J 2795
Blau, T S 2073, 2894*
Bleumink, R 1334
Blömeke, B 2863, 3517
Bloom, M S 2571*
Blossom, S 3198
Blossom, S J 1196*
Blount, B C 3241
Blum, J 1167, 1846, 3248
Blum, J L 1847
Blystone, C R 3273, 3444, 3453
Bobczynski, E M 1875
Bober, M 2000
Bodar, C 2718
Bodnar, W 2086, 2977, 3434
Boekelheide, K 1084, 2174, 3302*
Boere, J A 3237
Boes, K 1659
Boge, L 1941*
Bogen, K T 1254, 2661, 2905*
Boggess, K 2977, 3199
Bohic, S 2772
Bohlen, H 2857
Boisclair, J 2605
Boitel, E 2199
Boland, S 2810
Bolden, A L 1859
Boles, C 1843
Bølling, A K 1450
Bol-Schoenmakers, M 1334, 2873*
Bolser, D 3495
Bolt, A M 1554, 1555*
Bombick, B 1325
Bommegowda, S K 1893*
Bondesson, M 1794, 1807, 3286
Bone, A J 1848, 3038
Bonini, M 1025*
Bonk, J 2659
Bonn, M 2877, 2878
Bonnel, D 1293, 1983
Bonner, J 2782, 3490
Bonner, J C 3494, 3497, 3498, 3500, 3502, 3503
Bonner, J S 1701, 3507
Bonner, M 2902
Bonner, M R 2401, 2402
Bonzo, J 1974, 1987
Bonzo, J A 2493
Boobis, A 1036*, 2475, 2685
Booker, B 1946
Boonen, K 3460
Boor, P J 2177
Boosalis, C A 1229*
Boots, A W 3046
Borders, R B 1625, 2856
Bordner, A 2168
Borges, M 2108
Borges, V R 1875
Borghoff, S 3407, 3445*
Borghoff, S J 3089
Borgne-Sanchez, A 2015, 3549*
Börjel, M 2171
Bornhorst, J 2365
Borrás-Pacheco, T M 1383*
Borsay Horowitz, D 2933
Borude, P 1977*
Borunda, T 1324
Bory, C 2835, 2837
Boss, G 2120
Boswell, W S 3156
Bot, C T 1829*
Botehlo, D 2328
Botham, J 2680
Botta, D 1499
Bottai, M 1944
Bottomley, A 1634, 2839
Bou Aram, B 3152
Bouchard, G 1237, 3082, 3084*, 3088, 3513
Bouchard, M 1144*
Bouchard, P 2605
Boudreau, M 1514
Boudreau, M D 2799*
Boue, S 3401, 3402
Bouhifd, M 1084, 3408
Bouitbir, J 1972
Bouknight, S A 1857
Boulange, C L 1107
Boule, L 1368
Boule, L A 1365*
Boulos, N 2695
Bounous, D 3091, 3256
Bourbonnais, R 2693
Bourdi, M 3092
Bourgeois, M 1372, 1384, 2854, 3174
Bovee, T F 1480
Bowers, E 3220*
Bowers, E C 3215
Bowler, R 1596
Bowman, A 2379, 3357*
Bowman, A B 2339, 2358, 2364, 2365, 2382, 2553*
Bowman, C J 1801, 2551*, 2565*
Boyd, J 1441, 1922*
Boyd, W 2179
Boyd, W A 1811, 2294
Boyer, I 2476, 2709
Boyer, J 2739
Boyer, J A 1733
Boyer, J L 1966
Boyes, W K 1033*, 2765, 3332*
Boylan, M 2465*
Boysen, G 1122*, 3155
Bozhilov, K 3032
Braam, S R 1744, 1830
Braber, S 2873
Bradfield, C 2076
Bradham, K 1543, 2235
Bradley, E 2379
Bradley, E M 2382
Bradley, J 2850
Bradley, J A 1155*, 2495
Bradley, L J 3002*
Bradley, M A 3027*
Bradner, J M 3247, 3253
Brandwein, D 2189
Brannen, K 3256
Bratasz, A 2856
Bratz, M 3553
Braubach, P 2710
Braun, A 2710
Braun, E 3486
Braydich-Stolle, L K 3504
Brayman, T 2011*
Breckenridge, C B 2917
Bredfeldt, T 2158*
Breheny, D 2053*
Brehm, E 1855
Breier, A 2008
Breitenstein, M J 1686
Brennan, M B 1626
Brennan, R J 1093*
Brenner, S 2539
Breton, L 1228, 2007, 2477
Breyfogle, B 3066
Brickel, J A 2154*
Bridge, M F 1811
Bridges, C 3120*
Bridges, J 2703
Bridges, L R 2007, 2477
Briens, J M 3010*
Briffaux, J-P 2835, 2837
Briggs, K 2641
Briggs, K A 2630*
Brigo, A 2641
Briley, A 3117*
Brinchmann, B C 1450
Brinkerhoff, C J 2700
Briotet, D 3547
Brito, L 3296
Brittain, M 3106
Brittain, M K 2102*
Brix, A 2131
Brix, A E 3177
Broadfoot, B 3198
Broberg, K 2509*
Brocato, J 2064, 2072
Brock, B 3479
Brock, G 3170
Brock, G N 2211
Brock, M 1743*
Brock, W J 3175
Brocker, C 1987*
Brocksmith, D 1237
Brodbeck, C 3548
Broderick Pritty, M 3352
Brodie, T 1676
Brodsky, B 2098
Broening, H W 1805
Brohem, C 2474
Bronson, R 3028
Brooks, B 2323, 2324
Brooks, D 3396
Brooks, J 3435
Brooks, P T 2875*
Brooks, S 1533*
Brorby, G 1542*
Brosnan, K 1640
Brower, J 1114, 2261
Brown, A 1685*
Brown, D 2096
Brown, D G 1081*
Brown, D L 3275, 3276
Brown, J 1150*, 1181, 2262
Brown, J M 1502, 1520, 2767, 3503
Brown, K 1382
Brown, L 1162*
Brown, M M 3048
Brown, P 2455
Brown, R 2678*, 2719

The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

Brown, S C ... 2543
Brown, S E ... 3292*
Browne, P ... 1726b*, 2651
Browning, C L ... 2926*
Bruce, S W ... 1398, 2053
Bruckers, L ... 1142
Bruckner, J V ... 2897, 2908, 3447, 3448
Brüggemann, A ... 1829
Brun, E ... 2791
Brunnemann, K D ... 1820, 1821
Brunner, J ... 2541*
Brunner, T ... 2605
Bruno, V ... 1408*
Bruun, D ... 1229, 2409, 2410
Bruun, D A ... 2395*
Bruun, J-A ... 2445
Bryan, M R ... 2379*
Bryant, M S ... 2799
Bryant, S ... 1671
Bryce, S ... 1060*, 2639
Bucher, J R ... 3528*
Buchholz, B A ... 1288
Buchi, D F ... 2860
Bucio, L ... 1973, 1978
Buck, M ... 2051
Buckalew, A R ... 1887*, 1888, 1889
Buckley, B ... 1135, 2242, 2371, 2400
Buckman, K ... 2937
Budinsky, R ... 1736, 2422
Budinsky, R A ... 1138
Bugarski, A D ... 2803
Bugel, S M ... 1121, 1805*
Bujalowski, P ... 2177
Bujold, K ... 2841, 2842, 3105
Bull, T M ... 1875
Bullins, K W ... 2720
Bunch, R T ... 1332
Bunker, K ... 2773, 3488
Buno, K ... 2180
Burbacher, T ... 3278, 3446
Burban, A ... 1970
Burbank, M ... 1970
Burchett, J ... 2779*
Burchiel, S W ... 1350, 1352
Burden, N ... 2927*
Burgess, J ... 3453
Burghardt, R C ... 3225
Burgoon, L ... 2643*
Burim, R V ... 1416
Burin, G ... 2909*
Burleson, F ... 1925
Burleson, F G ... 2864
Burleson, G R ... 2864, 3376*
Burn, B ... 2850
Burn, B R ... 2331*
Burnett, D ... 2459*
Burnett, S ... 3193, 3208*
Burns, A M ... 2672*
Burns, F ... 1124
Burns Naas, L A ... 2957*
Burns-Naas, L A ... 1925, 2826, 2829, 3375*
Buron, N ... 2015, 3549
Burra, N L K ... 1363*
Burrell, K L ... 2599
Burris, D ... 1414*
Burris, H H ... 1432
Bursley, J ... 1346*
Burt, D ... 3558*
Burton, E ... 2377
Burton, J ... 3531
Burwell, S ... 1848
Bus, J S ... 1179*, 2036, 2038
Busbee, P B ... 1900*
Busch, J ... 2478
Buscher, B ... 1138
Buse, J ... 1262
Busque, M-A ... 2693
Busquet, F ... 2632
Bustamante, A ... 2904
Butler, P ... 1238
Butt, M ... 1238, 1641
Büttner, A ... 3040
Buxton, W ... 1862
Buzzo, M L ... 1553
Byloos, M ... 2723

C

Caballero-Gallardo, K ... 1548, 2946*
Cable, P H ... 2977
Cabré, M ... 2915, 2916
Cabrero, P ... 1271
Cachot, J ... 1806
Cadavona, J J P ... 3510
Cade, S ... 1697*, 3404
Cai, D ... 1329
Cai, J ... 2304, 2906, 3430*
Cai, L ... 1879, 2600, 2601, 2833, 3125
Cai, Q ... 3202
Cai, Y ... 1228, 2477
Cain, G ... 1666
Caito, S W ... 1569*
Cajero, M ... 1132
Calderón-Garcidueñas, A L ... 2325
Caldwell, D ... 3028
Calhoun, M ... 1269
Callander, R ... 2685
Callegaro, G ... 2291
Callejas, Y ... 1668
Callol, C ... 2942
Calton, M A ... 3418
Calvano, J ... 3477, 3478*, 3479
Calvo, N S ... 1845
Camacho, J ... 1839
Camacho, J A ... 3192*
Camacho, L ... 3470, 3471*
Camacho, O ... 3040
Camacho, O M ... 2053, 3041
Cambier, S ... 1511*, 2805
Cameán, A M ... 3020, 3022, 3023
Camenisch, T ... 1015*
Camenisch, T D ... 3345
Cameron, E ... 2354
Camous, S ... 3237
Campagnolo, L ... 1773*
Campbell, A ... 1217
Campbell, J ... 2240*
Campbell, J A ... 1407
Campbell, M ... 2307, 3200
Campbell, M E ... 2024
Campbell, M R ... 1837
Campen, M ... 1114*, 1309, 2261, 3485
Campen, M J ... 1304
Camus, S ... 3549
Canales, K K ... 2352
Cananzi, S G ... 2384
Cañas-Carrell, J E ... 1385
Canatsey, R D ... 2082*
Canavez, A D ... 2474*
Canerdy, T D ... 2473, 2882
Canet, M J ... 3179
Canipa, S J ... 1399*, 2628, 2629
Cannon, J ... 1019*, 1022*, 2366, 2376
Cannon, J R ... 2372
Cano-Sancho, G ... 1850
Cantrill, C ... 1635*
Cao, S ... 2054
Cao, Z ... 3013
Caporali, A ... 3472
Cappon, G D ... 1801, 2551
Caputo, F ... 2807
Carano, R ... 1638
Cararo, G A ... 2474
Carbo, A ... 1659
Card, J W ... 2150*, 2151, 2667
Cardenas Gonzalez, M ... 3134*
Cárdenas-Gonzalez, M D C ... 3130
Cárdenas-González, M ... 3123
Carey, A ... 2826, 2829
Carey, C ... 1828
Carfagna, M A ... 1648*
Carlin, D J ... 2567*
Carll, A P ... 2855*
Carlsen, K-H ... 3258
Carlson-Lynch, H ... 1436, 2708
Carman, J ... 1676
Carmany, D ... 2117
Carmichael, P ... 2174, 2212, 3051, 3305*
Carmichael, P L ... 2596, 3071
Carmo, H ... 1443*
Carney, E W ... 2191
Carns, N E ... 2546
Caro, A A ... 3155
Caron, A ... 1624
Caron-Beaudoin, E ... 3393*
Carpio, V ... 1351
Carr, G ... 1805
Carr, R L ... 1170, 2414
Carr, T ... 3030
Carratt, S A ... 1288*
Carreira, V S ... 1296
Carrio, P ... 2684*
Carroll, E E ... 1540*
Carroll-Turpin, M ... 2844
Carson, J ... 1852
Carswell, G ... 1056
Carter, D E ... 2428*
Cartlidge, G ... 2988
Cartron, G ... 2483
Cartularo, L A ... 1562
Cartus, A T ... 2591*
Carty, D R ... 3282*
Carvajal, I ... 3440
Carvalho, A ... 1963
Carvalho, F ... 1963*, 1967
Carvalho, M ... 1967
Carvalho, M D F H ... 1553
Carver, Z A ... 1129, 1130, 1131*
Cascio, W E ... 2263
Case, K ... 2882
Cases, M ... 2641*
Casey, B J ... 2449, 2764
Casey, W ... 1098, 2202, 2224, 2651, 2990
Casillas, R ... 1373
Casillas, R P ... 2097, 2099, 2116, 2121
Casim, E ... 1235
Cassee, F R ... 1772b*, 3237
Casson, L ... 2496
Castellano, V ... 2885
Castle, K ... 2596
Castranova, V ... 2538, 2800, 2830, 3485, 3496
Casuccio, G ... 3488
Catlin, N ... 3261*
Caudle, W M ... 3247, 3253
Cauley, M ... 1164
Causey, R D ... 1601*
Cave, M ... 1962, 2733, 3170
Caverly Rae, J ... 1124
Cawley, M ... 2167*
Cayley, A ... 2619
Cayzac, C ... 1636
Cebrian, M E ... 1260*
Ceccatelli, S ... 2807
Cecil, A ... 1116
Ceger, P ... 2224, 2651
Celestin, N ... 2053
Celik, S ... 2748
Cemiloglu Ulker, O ... 3408
Cena, L ... 2773, 3488
Cercillieux, A ... 1611*
Cerniglia, C ... 1514, 3026
Cerreta, J M ... 2798, 2801
Cervelli, J ... 1910, 2118
Cesta, M ... 2131
Cesta, M F ... 1308
Chadalapaka, G ... 2056
Chadha, P ... 1465
Chadwick, A E ... 3129
Chadwick, K D ... 1332
Chadwick, L H ... 1724*
Chalansonnet, M ... 2791
Chalencon, E ... 2835, 2837
Chambers, C ... 2938
Chambers, D M ... 3241
Chambers, H ... 2090
Chambers, H W ... 2091, 2092, 2109
Chambers, J ... 2090
Chambers, J E ... 1877, 2091, 2092, 2109, 2725
Chambers, M ... 3111
Chambers, W A ... 1034*
Champeil, E ... 1316
Champlin, D ... 2937
Chan, C ... 2277
Chan, C Y ... 2671*
Chan, E ... 2242*
Chan, H M ... 1218
Chan, K ... 3514
Chan, K-M ... 1860, 1861*, 3459
Chan, M ... 1402, 2415*
Chan, S ... 1027*
Chandel, N ... 3065
Chandler, J ... 1125, 2319
Chandler, J D ... 1529, 2326*, 2360, 3421
Chandler, K ... 1822
Chandler, K J ... 2995*
Chandramouli, B ... 1780*
Chandran, P ... 2760*
Chandrasekhar, V ... 2855
Chandrashekaran, V ... 1852*, 1902, 1949
Chang, C-W ... 3470, 3471
Chang, D ... 1009*, 1611, 2221, 2238
Chang, E T ... 2979
Chang, H-Y ... 2112
Chang, J ... 2060, 2450
Chang, J H ... 1643
Chang, J-F ... 1345*
Chang, S-Y ... 1105*
Chang, W L W ... 1366
Chang, X ... 2224*, 2963
Chang, Y ... 1600
Chang, Y R ... 1169*
Chang, Y-C ... 2112*
Chang, Y-J ... 1412*, 2071
Chantry, M ... 2249
Chao, M-W ... 1182, 1345, 1412, 2071, 2383
Chapleau, R R ... 2217
Chapman, A M ... 2978*
Chapman, E ... 2602
Chapman, K ... 1634
Chapman, S ... 2129
Chappell, G ... 3190*, 3433
Chappell, V ... 3271
Chaput, D ... 1223
Charkoftaki, G ... 2752
Charla, S ... 1791, 1822
Charlap, J H ... 1179
Charlebois, M ... 1418
Charles, P ... 1199
Charli, A ... 2341*
Charlier, M ... 3237
Charrière, N ... 3515
Chatfield, R ... 2470
Chatham, L ... 2068, 2436*
Chatterjee, N ... 1512*, 3217
Chatterjee, S ... 1852, 1902, 1920, 1949
Chattopadhyay, A ... 2594
Chatziioannou, C ... 2985
Chau, B ... 2602
Chau, J ... 1387
Chaudhuri, I S ... 3496
Chavan, H D ... 3341*
Chavatte-Palmer, P ... 3237
Chavez-Bautista, M ... 2269
Chawade, A ... 2205
Chebekoue, S ... 1096*
Checkoway, H ... 2352
Cheeseman, M ... 2163
Chege, A W ... 2389*
Cheifetz, I M ... 1301
Cheikhi, A ... 1250*
Chelsky, D ... 3041
Chen, A ... 1797
Chen, B T ... 1497*, 2538
Chen, C ... 1656, 2937
Chen, D ... 1656, 2064, 2072, 3201, 3338*
Chen, F ... 2435
Chen, G ... 1160*
Chen, H ... 1191, 1193, 1197*, 2787, 2811*, 3495
Chen, J ... 1831, 1831, 2304*, 2366
Chen, J D ... 2383
Chen, L ... 1275, 1478, 1993*, 2024, 2029, 2302, 2843, 2906*
Chen, L C ... 1687
Chen, L-C ... 1846, 1847, 2246, 2247, 2254
Chen, M ... 1091, 2479*, 3098, 3168*, 3183, 3187
Chen, P ... 2365*
Chen, Q ... 2064
Chen, Q Y ... 2072, 2075*
Chen, R ... 1084, 1631, 2843
Chen, S ... 2012, 2592, 2747, 3450, 3455
Chen, S-J ... 2726
Chen, T ... 1059, 2037, 2435*, 2758*, 3205
Chen, T-h B ... 1921, 3485
Chen, W ... 1694, 1810, 2029*
Chen, W-Y ... 1976*

The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

Chen, X 1072, 1892, 2051, 2888*, 2944, 2969*, 3073*, 3514
Chen, X-S 2061
Chen, Y 1093, 1189*, 1410, 1589, 1653, 1671, 1672*, 1812*, 2309, 2462*
Chen, Y-F 2844*
Chen, Z 2177*
Cheneval, E 2693
Cheng, H 1601, 1619
Cheng, S L 2754*
Cheng, S-Y 1316, 1377*, 2890
Cheng, W 2210, 2214*
Cheng, W-Y 1102
Cheng, X 1993, 2302, 3180
Cheng, Y 2026*, 2066, 2600*
Chengen, Z 2479
Cheong, H-K 3217
Chepelev, N 2088*
Chernick, M 1483, 2888, 2944
Cherr, G 1174
Cherrington, N J 1985, 3179, 3345
Cherry, S 2409
Chesne, C 2173*
Chesné, C 3549
Chester, A 2826, 2829
Chevalier, G 3259*
Chilton, M L 2628*
Chipman, J K 3205
Chirino, Y I 2790
Chitrakar, R 2821
Chitrala, K N 1076, 1085*
Chitranshi, P 3455
Chiu, J-Y 1182
Chiu, N H 2763*
Chiu, W 3433, 3434
Chiu, W A 2700, 3363*
Chlebowski, A 3285*
Cho, M-H 1464, 2880
Cho, T J 1505
Cho, Y H 3501
Cho, Y-M 1467, 2598, 2806*
Chockalingam, A 3473
Choi, B 1890
Choi, C Y 1470
Choi, H 1910
Choi, H J 1942
Choi, J 1512, 2310, 3217
Choi, J H 1460, 1469*, 1470
Choi, J K 1468, 1517
Choi, J S 2948
Choi, K 3078*, 3079
Choi, M M 2763
Choi, Y-J 1233, 1474
Choksi, N 2202, 2224
Cholanians, A B 1244, 1599*, 2380
Cholger, D 2363*, 2366
Chong, W 1595
Chopra, R 1018*
Chorley, B 1056, 1102
Chorley, B N 1407, 2213, 2616
Chou, C 1666
Chou, C-E 2127
Chou, S 3098
Choudhury, D R 1084
Chowdhury, A 1254, 3184*
Christian, B 1608
Christian, W V 2281
Christofidou-Solomidou, M 2047
Christudoss, P 3341
Chu, C 3152, 3158
Chua, A S 3123
Chuah, J K 3075
Chuang, G 2850
Chuang, Y-C 1182*, 2383
Chukwu, L O 1277
Chukwu, O L 3424
Chumbow, A 2059*
Chun, D S 1735
Chung, A 1904
Chung, H 1873*
Chung, K H 1287, 1306
Chung, Y C 1460, 1469, 1470*, 1488
Church, R J 3476*
Churchill, G 2753
Churchwell, M I 1139*
Chushak, Y 1094
Ciccimaro, D 1312
Cichocki, J A 3433*
Cipriano, R 3067
Cirrilo, P 2730
Cizdziel, P E 3148*
Clair, H 2733
Clair, H B 1962, 3170*
Clapp, P W 1338*
Clark, A 1839, 3192
Clark, B W 2937*
Clark, J M, ... 2889
Clark, J M 2588, 2881
Clark, K 2178
Clark, O C 1323
Clark, R D 1099
Clark, R J 3153
Clark, R S 1213
Clarke, E 1833*
Clarke, J D 1985, 3179
Clarke, J I 3472
Clarkson-Townsend, D 3247, 3253*
Claude, N 1970
Claville, M O 1623, 2314
Clements, J 2923*
Cleves, M A 1874
Clewell, A 1457*, 1458, 1459
Clewell, H 2188, 2240, 2701, 2975
Clewell, H J 1413, 2014, 3410, 3464
Clewell, R 1711*, 1730*, 2005, 2018
Clewell, R A 1413, 1867, 1871, 2432, 2596, 3071
Cline-Fedewa, H 1951, 1954
Clippinger, A J 1710*
Close, D 3556
Cloutier, M M 1295
Clouzeau, J 2625
Coarfa, C 3143, 3465
Coban, T 1485
Coburn, J 2450, 2453, 3162
Coburn, J L 1206*
Cochran, R E 1450
Coecke, S 1715*
Coffin, S L 2665*
Coggan, K 3443*
Cohen, J 1496
Cohen, J M 1508*, 2143, 2989
Cohen, L 2129
Cohen, M 2129, 2247
Cohen, M D 1731*
Cohen, S M 1254, 1787*, 3184
Cohen-Kaminsky, S 1293
Cohn, B 2730
Coker, E S 1452*
Coksari, G 1485
Colagiovanni, D 3262*
Colby, S M 2216*
Cole, A P 1199
Cole, E 3501
Cole, S L 1367*
Cole, T B 1169, 1206
Colegate, S 1992
Coleman, G D 3276
Coleman, J 2720
Collado, M S 2006
Colli-Dula, R C 2953
Collier, A 3317b*
Collier, G 2645*
Collier, R H 2411
Collins, E-M S 2403
Collins, J 1423, 2774
Collins, L 2745
Collins, R 1179
Colomina, M T 2915*, 2916
Colón-Rodriguez, A 1575*
Comba, R W 1928
Composto, G M 2094
Conboy, L 2912
Concha-Lozano, N 3403
Condon, M 1561
Conklin, D 1836, 2134
Conklin, D J 1048*, 2250, 3326*
Conley, J M 2549*, 2550
Connelly, J 1093
Conolly, R 1102, 2210*, 2214
Conrad, K 1188
Conrad, K A 1166
Consevage, K 2021*
Constant, S 1707*, 3552*
Constantinos, M 2032
Contal, S 2805
Contreras, P 1951
Coogan, T 1641
Cook, A 2852
Cook, D 1461
Cook, E 1176*
Cook, R 1735
Cook, T J 2352*
Cooke, G 3028
Cooney, C 1196, 3198
Cooper, G 2704, 2705
Cooper, G S 2707
Cooper, K 3554
Cooper, S 2212, 2596*
Cooper, T K 2874
Copeland, L 1065, 1302
Copeman, C 1649, 3530
Cora, M 2131
Corbett, K 1165
Cordes, J 2839
Coriano, C 2439*
Corke, S 3037
Corley, R A 2144*, 2215, 2216, 2234, 3043, 3462
Cormier, S A 1303, 2245
Coronado, V 2096, 2127
Corrales, J 2323*, 2324, 3283
Correa-Basurto, J 2956
Correia, A 3346
Correll, J B 3430
Corsini, E 2861*
Corteil, G 2249
Cortes, L 3041
Corton, C 1758*
Corton, J C 2616, 2624
Corvaro, M 2208, 2470*
Coryell, M P 1252*
Cory-Slechta, D 1167
Cory-Slechta, D A 1166, 1168, 1188
Coskun, E 1390, 1404, 1417*
Coslo, D M 2435
Cosnier, F 2791
Costa, C 2775
Costa, L G 1169, 1206, 1207
Costa, M 1562, 2064, 2072, 2073, 2075, 2322, 2894, 3218, 3338
Costa, P H 3248*
Costa, V 1963
Costantin, J 1829
Cota, J 2620*
Côté, J 1144
Côté, M-H 1926
Cotelesage, J 1583
Cotovio, J 1612, 1613, 1614, 2007, 2182, 2206, 2477
Cottagiri, M 1974
Cottrez, F 2199
Coull, B 1071
Coulter, S J 2045
Coumoul, X 3427
Courage, C 2596
Couroucli, X 3143
Couroucli, X I 3152, 3154*
Courtney, S 2934
Couttet, P 3461
Covaro, M 2576*
Covington, T 2228
Covington, T R 2217
Cowan, D 2669
Cowan, D M 1310, 2695, 2978
Cowan, V 2991
Cowan, V E 2831*
Cowie, A M 2412
Cowie, D 2018
Cowles, D H 2300*
Cox, K D 2138, 2152, 2153*, 2154
Coyle, J 2854, 3174
Crabtree, M 2327
Craciun, F L 3138
Crago, J 2955
Craig, E 2690*
Crameri, F 1644*
Crane, C 3016
Crawford, J 1638
Crawford, R 1364, 1736, 2686, 2687
Crawford, R B 1118, 1340, 1341, 1342, 1360
Creek, M R 2411, 3447, 3448
Creppy, E E 3184
Crespo, N E 1905*
Crespo, S M 2855
Creutzenberg, O 1510*, 2542, 3499
Crews, S 2096
Crews, S R 2127
Criscoe, D 3160*
Crispe, I N 1940
Croasdell, A 1911*
Crofton, K 2606
Crofton, K M 1886
Cromie, M 1477*
Cronin, M 2163, 2476*
Cronin, M T 1097, 2475, 2656
Cros, D 3184
Crose, L 2074
Croteau, P 3041
Croutch, C 1373
Croutch, C R 2110, 2111, 2116, 2121, 2123, 2124*
Crouthamel, B 3446
Crow, J A 2725
Crowell, S R 2234, 3462
Crowl, C 3200
Crowley, E 2952
Crudu, A 1113*, 2015
Cruikshank, W 2181
Crump, K S 2137
Cruse, C 2678
Cruz, M G 2901
Cruzan, G 2036*, 2038
Cruz-Vazquez, C 3021
Cruz-Vazquez, C R 2271
Csanaky, I L 2316
Cubberley, R 2646, 3512
Cuccia, J 2058
Cucullo, L 1621, 3044
Cuddapah, S 2322, 3210*
Cuevas, E 2347
Cui, H 2906
Cui, J Y 2300, 3144, 3270
Cui, X 2492
Culbreth, M 1580*
Cullen, J M 2698*
Cullen, W R 1478
Culley, T 2110, 2111, 2123*, 2124
Cummings, B 3135
Cummings, B S 2897, 2908, 3447, 3448
Cummings, C A 1609
Cummings, K 1314
Cummings, K J 1558
Cummings, T 1238
Cummings-Lorbetskie, C 1274
Cumpston, A 3485
Cumpston, A M 1199, 1284, 1313
Cumpston, J L 3485
Cunningham, C K 2799
Cunningham, F H 2664*
Cunny, H 3261
Cunny, H C 3273
Cureaux, S 3394
Curley, J L 1158*
Curran, C P 1181, 1195, 1379*, 1382
Currie, H 1922
Currie, R 2455
Currier, J M 1102*
Curry, S 2319, 2491
Curry, S C 3178
Custer, L 1399
Cutler, S J 3282
Cyphert, J M 1281
Czich, A 2647
Czprynski, C J 3151

D

Da Silva, M 3259
da Silva, T D 2855
Dabadi, M 3277
Dach, K 1161*
Dachir, S 2129*
Dadhania, V P 1964*
Dagda, R 1266
Dahirel, M 3237
Dahl, J E 2443, 2444, 2445*
Dahlman, H J 1299
Dahm, M 3488
Dai, X 1831*
Dail, M B 1877, 2109*
Dailey, L A 3215
Daily, L 3220
Dalal, V 2190
Dalmas, D 2849*
Dalrymple, A 3040*
Dalton, C H 2101*
Daly, W T 3080*, 3388
Damale, P 2337

The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

Dambach, D ... 1638
Damodaran, T V ... 2405*
Dancy, B C ... 1270
Dandekar, D S ... 1893
Dandekar, T ... 1116
Dandley, E ... 3490
Dandley, E C ... 3494*, 3497
Dang, V ... 2939
Dang, Z-C ... 2718*
Danilenko, D ... 1638
Danov, O ... 2710*
Dao, T L ... 2095
Dargan, P I ... 3472
Das, K ... 2172, 3439
Das, N ... 2052
Das, S ... 1852, 1902*, 1920, 1949, 2212*, 2596, 3061
Das Banerjee, T ... 1266
Dasari, S ... 1326*
Dasenbrock, C ... 2016
Dash, A ... 2006*
Dasmahapatra, A K ... 1487, 3194*
Daston, G ... 1805, 3384*
Daston, G P ... 1117
Dattaroy, D ... 1852, 1902, 1920, 1949*
Dávalos-Pérez, A ... 3219
Dave, N ... 2736
Davenport, S ... 2551
Davidson, D C ... 1496*, 2783
Davidson, T ... 3440
Davies, D ... 2263
Davis, A P ... 1086
Davis, B A ... 1531*
Davis, C ... 3480
Davis, J ... 1422, 2225
Davis, J W ... 2925
Davis, K J ... 2799
Davis, M ... 3108
Davis, S ... 3107
Davoren, M ... 2128*
Daws, L C ... 3086
Day, B ... 2125
Day, B J ... 1209, 2126, 2406
Day, M ... 1379
Dayton, R D ... 2384
D'Cruz, O J ... 1655*
de Cassia da Silveira e Sa, R ... 3408
De Cesare, M ... 3403
de Conti, A ... 2035, 2084*, 3189
de Gannes, M ... 1737
de Graaff, P ... 2873
de Groot, A ... 1152, 1157
de groot, M W ... 1154*, 1157
de Kok, T M ... 2612
de Korte, T ... 1744*, 1830
De Los Santos, G ... 3095, 3099
De Miranda, B R ... 2377*
de Oliveira, D P ... 1408
de Oliveira Mallia, J ... 2772*
De Raat, K ... 2988
De Ron, P ... 2722
de Sousa, D ... 3511
De Vizcaya-Ruiz, A ... 1216, 1500*, 1906, 2253
Dean, D A ... 2296
Dean, J ... 2164*
Dean, T ... 1791
DeAngelo, A ... 1056
Dear, J W ... 1994, 2727, 3472
Dearfield, K ... 2267
Dearman, R J ... 1939, 1947*, 1948
Dedon, P C ... 2742
Deepe, G S ... 1598
Deering-Rice, C E ... 2244, 2251
DeGeorge, G L ... 2136
Degido, G ... 3535
Degn, L L ... 2765
Degraff-Miller, L ... 3505
Deguchi, J ... 1239, 1979
DeHate, C ... 1684*
DeHate, R ... 1684
Deisenroth, C ... 1867, 2005*, 2018
deKnecht, J ... 2526*
Del Bufalo, A ... 2865*
Del Pino, J ... 1186*, 2393
Del Pozo, J ... 1994
Del Razo, L M ... 1261, 1262, 3130
del Rio, C ... 2848
del Rio, C L ... 3531*
Del Rio, E ... 3265
Delacruz, E ... 2136
DeLaForest, A ... 1832
Delaney, B ... 3060, 3064
Delaney, L ... 3084
Delaney, S ... 1225
Deline, S ... 2452
DellaTorre, M ... 2938*
Deloid, G ... 3331*
DeLoid, G M ... 1508
DeLorme, M ... 2659*
DeLouise, L ... 1503
Delp, J ... 2338*, 2340
DeMarini, D ... 2252, 2266
DeMarini, D M ... 1407, 1448
Demchak, J ... 2605
Demchuk, E ... 2133, 2683*
Demirag, F ... 2748
Demokritou, P ... 1496, 1508, 1700*, 2783, 3328*
den Hartogh, S C ... 1744, 1830
Den Hond, E ... 1142
Deng, A ... 2678
Denison, M ... 3393
Denison, M S ... 2299
Denluck, L ... 2797*
Dennis, K E ... 2339
Dennis, W E ... 1541, 2728
Denslow, N ... 2635
Denslow, N D ... 2939*
Dent, M ... 2174
Dent, T ... 3236
Denton, R ... 1674*
Derk, R ... 1496, 2783
Dertinger, S ... 1060, 1061, 1410*, 2639
Des Marais, T ... 2064
Des Marais, T L ... 2072*
Desai, K ... 3010
Desai, V D ... 3475
DeSantis-Rodrigues, A ... 1600
Desaulniers, D ... 1274*
Deschl, U ... 1820, 1821
Descotes, J ... 1636
Deshmukh, D ... 2070*
Deshmukh, N ... 1459
Detroyer, A ... 2865
Deutsch, D ... 3486
Deveau, M ... 1045*
DeVito, M ... 2179, 2224, 2294
DeVito, M J ... 2604, 3017, 3089*, 3150, 3177, 3528
Devlin, R ... 1071, 2243*
Devlin, R B ... 1429, 3215
Devorak, J ... 1323, 2130
Devosse, R ... 2249
Devoy, J ... 2791
DeWitt, J ... 1843*
DeWitt, J C ... 1842
Dey, I ... 1435
Dezell, S A ... 2092*
Dhadra, S ... 2646
Dhaibar, H A ... 2384
Dhakal, K ... 1191, 2409, 2410
Dharwar, N ... 2212
Di Carlo, M B ... 1235
Di Giulio, R T ... 1848, 2951, 3038, 3284
Di Prima, M A ... 2450, 2453
Di Renzo, F ... 3279, 3280
Dial, S ... 1388
Diamante, G ... 2949*
Dianati, E ... 3390
Dias da Silva, D ... 1443
Diaz, D ... 1638, 1666
Diaz, E A ... 2855
Diaz, J ... 2986
Diaz, J H ... 2964*
Diaz, M J ... 2393
Diaz-Diaz, C J ... 2076*
Diaz-Sanchez, D ... 1071, 2490, 3215, 3220
Dickerson, A ... 2242
Diehl, A M ... 1902, 1920, 1949
Dietert, R R ... 3373*
Dietrich, D R ... 1818*, 3056
DiGiovanni, J ... 2065
Dill, J A ... 1308
Dillingham, C M ... 3413
Dillon, D ... 3040
Dilworth, C ... 1615, 2010, 2847
Dimond, S S ... 1138*
Dinesdurage, H ... 1411
Ding, J ... 2257*
Ding, J M ... 3183*
Ding, L ... 2292
Ding, W ... 2768*
Ding, X ... 1288, 2292, 3147, 3458
Dingemans, M M ... 1152*
Dinis-Oliveira, R ... 1963
Dinu, C ... 3483
Dioquino, C P C ... 2484
Disdier, C ... 2791*
Dishaw, L V ... 1198*
Ditzel, E J ... 3345*
Divi, K V ... 2738
Dixon, L ... 1630
Dizdaroglu, M ... 1390, 1404, 1417
Do, K H ... 1942
Doak, S ... 2772
Dobo, K ... 1391*
Dobrovolsky, V N ... 2592
Dobrzański, T P ... 2024
Dodd, C A ... 1813
Dodd-Butera, T ... 3352*
Dodmane, P R ... 2159*, 3184
Doerge, D R ... 1139, 1140, 2084
Doerr, L ... 1829
Doheny, D L ... 1867
Doherty-Lyons, S ... 1846, 3248
Doi, A M ... 2706
Doi, Y ... 2033
Doig, A ... 1939
Dolan, D ... 2666
Dolan, E ... 1225
Dolde, X ... 1171
Dolin, C E ... 2211
Dolinoy, D ... 1089
Dolinoy, D C ... 1858, 3203, 3204
Dolinsky, P ... 2077
Dolislager, F ... 2691
Doll, M ... 3115
Doll, M A ... 2067, 2496
Domesle, A ... 2267
Dominah, G ... 2391, 2392
Domingo, J L ... 2315*, 2795, 2915, 2916
Domínguez-Pérez, M ... 1973
Domoradzki, J ... 2925
Dong, C ... 3483
Dong, J ... 1251
Dong, M-S ... 2724
Dong, W ... 1483, 1483*, 1809*, 2888, 2944
Dong, X ... 2127
Dong, Y ... 1193, 1194, 3415
Donio, M ... 2852
Donley, E L ... 3299
Donnelly, A ... 2454
Donner, E M ... 2543
Dony, E ... 3487
Dorfmüller, P ... 1293
Dorman, M T ... 1798
Dornbos, P ... 1100, 2686, 2687*
Dorta, D J ... 1127, 1408
Doshi, K A ... 2048*
Doshi, U ... 3145, 3146
Doshna, C ... 3480
DosSantos, G ... 1833
Dosumu, O A ... 1248, 1249, 1547, 1568
Douillet, C ... 3343*
Dourado, D ... 1963
Dourson, M L ... 2992, 3410
Douville, J ... 3530
Dover, E ... 3343
Dover, H ... 1346
Dow, J A ... 1271
Doyle, E ... 2240
Doyle-Eisele, M ... 1114, 2086, 2100, 2261, 2742, 3444, 3535*
Dragan, Y ... 1124
Dragan, Y P ... 3385*
Drager, L ... 1309
Draper, R ... 2796, 3486
Draugelis-Dale, R O ... 2931
Draz, H ... 1481, 2044*
Drechsel, D A ... 2273*
Drega, S ... 1157
Dreher, K ... 2756*
Dreier, D ... 2635*
Dremier, S ... 2722
Dreval, K ... 3189*
Drey, H ... 2829
Dreyfus, C F ... 2370
Driessen, M D ... 1518
Drizik, E ... 3396
Drobna, Z ... 1259, 1261, 1262, 2749*
Drury, S ... 1272, 1550
Dryden, G ... 1901
Du, G ... 2367
Du, K ... 1971, 1981*, 3092
Du, Y ... 1587, 1597
Duags, T R ... 2844
Duan, J ... 1509, 3438
Duan, J D ... 1820, 1821
Duan, L ... 3092*
Duarte, D J ... 1231
Duarte, F V ... 1127
Duarte, J A ... 1963
Duarte-Sustaita, J J ... 1255
Dubé, E M ... 2270
Dubinett, S ... 3396
Dudal, S ... 1644
Duellman, S ... 3553
Duenas, K ... 1230
Duenbostell, A ... 1742, 2857
Duerr, O ... 3536*
Duffney, P F ... 1283, 3047*
Duffy, P ... 2685
Dufva, M ... 1997
Dugas, T R ... 1303, 1439, 3324*
Duistermaat, E ... 2815
Duke, K S ... 3494, 3500, 3502*, 3503
Dulaney, M D ... 2233*
Dulize, R ... 1106, 3036
Dumas, S J ... 1293
Dumont, C ... 1926*
Duncan, K ... 1071
Duniec-Dmuchowski, Z ... 3457
Dunivin, T ... 1346
Dunlap, P E ... 1811, 2294*
Dunlevy, J R ... 1273
Dunnick, J K ... 3177
Dunnick, K ... 1314, 2780
Dunska, M ... 1744, 1830
Duong, H ... 2731
Duplan, H ... 3512
Dupre, T ... 3115
Dupre, T V ... 2496*
Durasi, İ M ... 3205
Durham, D ... 1234
Dusserre, C ... 2431
Dutton, N ... 3170
Dutton, N D ... 3419
Duval, C ... 2430, 3427*
Duverna, R ... 2267
Duydu, Y ... 2813
Dwivedi, A M ... 1282*
Dydak, U ... 1596, 2354*, 2355
Dye, J A ... 1302, 3195
Dykens, J ... 1004*
Dyring Jakobsen, S ... 3242
Dzantor, E K ... 1430
Dzierlenga, A L ... 1985*

E

Eaddy, J S ... 3175, 3181
Easley, C A ... 3247, 3253
Eastwood, J ... 3028
Eaton, A ... 3060
Eaton, D L ... 1105, 2352
Eaton, J S ... 1608*, 1610
Eberle, C S ... 1631*
Ebid, H A ... 2388*
Ebokaiwe, A P ... 3245*
Eckert, P ... 1116, 1449
Eddleston, M ... 2727
Edelman, E R ... 2441, 2442
Edginton, A ... 3321*
Edmondson, D A ... 2354, 2355*
Edoff, K ... 2807
Edrissi, B ... 2742*
Edwards, G ... 3477
Edwards, J ... 1530*, 1634*
Edwards, J A ... 3004, 3005*
Edwards, J R ... 3122
Edwards, M ... 2089
Edwards, M T ... 1335*, 3086
Edwards, P ... 3147
Edwards, S ... 1003*
Edwards, S W ... 1101
Efremenko, A ... 3071
Efremenko, A Y ... 1413*
Egeghy, P ... 1680

The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

Egelberg, P ... 3545
Egnash, L A ... 3299
Egoshi, N ... 3456*
Ehrich, M ... 1659*, 2408
Ehrich, M F ... 1999
Ei, K ... 2193
Eid, A ... 2385*
Eidemiller, B ... 1372
Eilstein, J ... 2865, 3512
Einstein, D R ... 2144, 2216
Ekhator, O ... 2356
Eklund, C ... 2210, 2231
Eklund, K ... 3190
El Amrani, A-I ... 2845
El Amrani-Callens, F ... 2845
El Sayed, K A ... 1491, 3454
Elamin, A ... 3029, 3402
Elango, N ... 1120
El-Ashry, R ... 2387
Elcombe, B ... 2433, 2706
Elcombe, C ... 1442, 2068, 2240, 2433, 2436, 2706
Eldawud, R ... 3483*
Elder, A ... 2539*, 2540
Elend, M ... 3548
El-Fawal, H A ... 1227*, 1585*
Elferink, C ... 2428
Elferink, C J ... 1052*, 2427
El-Gazzar, R M ... 1585
El-ghoneimy, A A ... 1431
Elhalwagy, M E ... 1210
El-Husseiny, M ... 2387
Elias, P D ... 2194
Elihn, K ... 2788
Ellehoj, E ... 2997
Ellinger-Ziegelbauer, H ... 3476
Elliot, D ... 1292
Elliott, J T ... 1522
Ellis-Hutchings, R ... 2063*
Ellison, C M ... 1097
Ellison, L ... 2721
Elmahdy, A ... 3399
El-Mahdy, M A ... 3399*
El-Masri, H ... 2222, 2607, 3320*
El-Mesallamy, H O ... 2825
Elmore, S ... 1353
Elmore, S E ... 2269, 2283*, 3012
Elobeid, M ... 3250*
Eloff, J N ... 1495
Eloff, K ... 1433
Elosegui Rodriguez, P ... 1576*
El-Saied, E ... 3006
Elsass, K E ... 1620*
Elser, B A ... 2042*
ElSohly, M A ... 3282
El-Tawil, O ... 3006*
Ema, M ... 2156
Emami, A ... 1643*
Embry, M ... 2925
Emerick, G L ... 2399
Emery, S ... 2182
Emikpe, B O ... 2954
Emnéus, J ... 1997
Emond, C ... 2227*, 3427
Emond, F ... 3530
Enayah, S H ... 1592*
Endo, M ... 2773
Endo, N ... 1564*
Endo, T ... 1190
Endoh, S ... 3482
Endres, J ... 1457, 1458
Endres, J R ... 1459*
Eng, D ... 2836
Eng, K G ... 3075
Engel, M ... 1060
Engel, S ... 3260*
Engel, S M ... 3274
Engels, K ... 2817
England, J ... 1930, 3107
Englert, N ... 1837
Englert, N A ... 3200*
English, J C ... 2138, 2152*, 2153, 2154, 2155, 3007
Engstrom, A K ... 1593*, 1594
Enoch, S ... 2163
Enoch, S J ... 2656
Enright, H A ... 1153, 2390*
Enriquez Cortina, C ... 1978
Enzenauer, R W ... 2116
Ercal, N ... 2808
Erdei, E ... 1559, 1560*
Erdely, A ... 1289, 1701*, 2782, 3485, 3488, 3496
Erickson, R ... 1638*
Erickson, R P ... 3179
Erickson, S ... 3198
Eriksson, P ... 2394
Erkens, T ... 2723*
Ernst, H ... 2537, 2542, 3499
Ernstgård, L ... 1282, 1944*
Escalon, B L ... 1806
Escamilla-Rivera, V ... 1500
Esch, H ... 1116
Esch, H L ... 1449, 3391*
Escher, C ... 2000
Escher, S ... 2163, 2710
Escher, S E ... 2650, 2684
Escobar-Wilches, D C ... 1141
Escobedo Calvario, O A ... 1978
Escudero-Lourdes, C ... 1256*
Espenschied, S ... 1791
Espey, M G ... 1916
Espin Perez, A ... 2612*
Espinosa-Cotton, M ... 1664
Esposito, E R ... 1315*
Essing, A ... 2293
Esswein, E J ... 1686
Estevan, C ... 3265
Esteves, K ... 1272, 1550
Estevez, A ... 3272*
Estevez, J ... 3265
Estrella, B ... 2069
Ethridge, S E ... 1538*
Eto, K ... 1583
Etter, S ... 1821
Eubig, P ... 1230*
Evangelista, E A ... 3163*
Evanoff, E R ... 1273
Evans, J ... 2240
Evans, M ... 1238
Evans, M V ... 2608*
Evans, N ... 2549
Evers, R ... 2731
Evilia, C ... 2867
Evoy, R ... 2277
Exler, D ... 1658
Eye, T ... 1289, 3485, 3488, 3496
Eyes, T ... 1939*

F

Faber, S C ... 2299*
Fabian, E ... 1115, 2043, 2200, 2223, 2463, 3536
Fabyanic, E ... 1441*, 1922
Fadeel, B ... 2807
Fadel, E ... 1293
Fader, K A ... 1100, 1103, 1118*
Fagbohun, A F ... 2954*
Fahnestock, L A ... 1265*
Fair, M ... 2238
Fajana, O O ... 1535
Falcon-Rodriguez, C I ... 1906*, 2253
Falkner, K C ... 1962, 2733*, 3170
Fallah, S ... 2286*
Famili, A ... 1611
Fan, D ... 1949
Fan, L-W ... 1232, 2345
Fan, M ... 2906
Fan, W ... 3206
Fan, X ... 2292*
Fan, Y ... 1737, 1823
Fang, H ... 1870, 2750*, 3183, 3187
Fang, J-L ... 3455*
Fang, L ... 3201, 3338
Fang, M ... 2888, 3068*
Fang, X ... 1845*
Fang, Y ... 3153
Fantegrossi, W E ... 2347
Farabaugh, C S ... 1394*
Farcas, M T ... 1291, 2803
Faria, E C ... 2682
Faria, M ... 1806
Faris, R ... 3059*
Faris, R A ... 3554
Farland, W ... 3367b*
Farman, C ... 1611
Farombi, E O ... 1817, 1968
Farombi, O E ... 1923
Farraj, A ... 2838
Farraj, A K ... 2252, 2260, 2262*, 2263
Farris, B ... 1289
Farris, B Y ... 1284, 3496
Fasani, R A ... 1084
Fasullo, M ... 1419*
Fasulo, M ... 3157
Fatoki, J O ... 1249
Faulhammer, F ... 3536
Faulk, C ... 1089*, 3203
Faustman, E M ... 1498, 2181
Fausto, N ... 2219*
Fautz, R ... 3548
Favela, K A ... 1682
Favrat, B ... 3403
Favre, N ... 1225
Fay, K ... 2925
Fechner, J H ... 1945*
Fedan, J S ... 1199, 1284*, 1313, 2346, 3489
Fedewa, H C ... 1965
Fedtke, N ... 2988
Fegert, I ... 2068*, 2433, 2706
Feldman, D ... 2105
Felix, S H ... 1153, 2390
Félix-Arellano, E E ... 1260
Fell, L ... 2993
Felten, V ... 2805
Felter, S ... 2677
Felter, S P ... 2475
Felton, R P ... 2799
Felzenszwalb, I ... 2241
Fendorf, S ... 2736
Feng, C ... 1275
Feng, S C ... 1619*
Feng, W ... 1194, 1814, 1901, 1950, 1961, 3415*
Fennell, T R ... 2818, 2819, 3273, 3436, 3453*
Fenner, S ... 1658
Fenner-Crisp, P ... 2478
Fensterheim, R ... 2166
Fenton, M ... 2294
Fenton, S ... 3271
Fenton, S E ... 1856, 1857, 3241, 3389
Ferdosi, H ... 2149, 2983*
Ferency, G ... 1927
Ferguson, P L ... 3495
Ferguson, S ... 2179, 2224, 2297*
Ferguson, S S ... 1451, 2294, 2604
Ferloni, A ... 2901
Fernandes, A S ... 2241
Fernandes, J ... 2360*
Fernandes, L S ... 2399*
Fernandez, C J ... 3409
Fernández, J ... 2775
Fernandez-Metzler, C ... 1790
Feroe, A ... 2631
Feroe, A G ... 2972
Ferraris, E ... 2046*
Ferraz, B ... 3296
Ferraz, E R A ... 2241*
Ferris, E ... 3531
Fersuson, S S ... 3150
Fertig, N ... 1745, 1829
Fessler, M B ... 1064
Fett, D ... 2328
Fetterman, J L ... 3325*
Feychting, K ... 2966
Fiebelkorn, S A ... 2664
Fiedler, R ... 1402
Fiedler, S ... 2077
Fields, P E ... 1934
Fields, W ... 1325
Fields, W R ... 3041
Figar, B S ... 2901
Figler, R ... 2006
Figueiredo, J ... 3107
Figueiredo, M ... 1351
Fikree, H ... 2150, 2151*, 2667
Filgo, A ... 3271
Filgo, A J ... 1856, 3241*
Filgueiras, C C ... 1243
Filho, M S ... 2855
Findley-Van Nostrand, D ... 3347
Fink, D M ... 3266
Finkelstein, J N ... 1290, 1903
Finkelstein, Y ... 2098
Fink-Gremmels, J ... 2873
Finley, B ... 2974
Finley, B L ... 1300, 2139, 2140, 2672
Finnell, R H ... 1245
Fioravanzo, E ... 2163, 2476
Fiorentini, F ... 2740
Fisch, L ... 1513, 2759*
Fischer, N O ... 1153*, 2390
Fishbein, M C ... 1904
Fisher, A ... 1056
Fisher, E ... 3073
Fisher, J ... 2239, 3319*, 3438
Fisher, R L ... 2486
Fisher, S J ... 3141, 3236, 3409
Fitch, M N ... 1304*
Fitschen-Brown, M ... 3351*
Fitz, L ... 2482
Fix, N ... 1314
Flannery, B ... 2275*, 2395
Flaugher, K ... 2415
Flaws, J A ... 1855, 1856, 3224, 3230
Fleck, S C ... 1140*
Fleischer, J ... 2465
Fleming, C R ... 2287*
Fleming, S ... 2356*
Fletcher, B L ... 3273
Flick, B ... 1788*, 2632
Flick, M J ... 1954, 1965
Flockton, H ... 1325
Flor, S ... 1421*
Flores, K M ... 1221*
Flowers, L ... 1436
Floyd, D ... 2849
Fluharty, K L ... 1199
Fluri, D A ... 3460*
Fly, A D ... 1456
Flynn, M R ... 2367
Flynn, N ... 2106
Flynn, T J ... 3049
Fokkens, P H ... 3237
Foley, B ... 1871
Foley, J F ... 1609
Foltz, D ... 2197
Font, G ... 3067
Foos, B ... 2148*, 2717
Foote, S ... 1238
Forbes, K P ... 2492*
Forcelli, P A ... 1247*
Ford, J ... 1605
Ford, K ... 1991
Ford, S ... 1380*
Ford, S M ... 3124
Foreman, J E ... 2648
Formiller, E ... 1573*
Fornace, A ... 1084
Forreryd, A ... 2205
Forshee, R A ... 1642
Forster, R ... 1607, 2841, 2842, 2845, 3105, 3243, 3259, 3269*, 3518
Fort, D ... 3298*
Fort, T ... 3298
Foster, A J ... 1669
Foster, L ... 1409
Foster, P ... 3261
Foster, P M ... 2549, 2550
Foster, W B ... 1668
Foster, W G ... 3221
Foucault, C ... 3530
Fournier, P M ... 1291
Fowkes, A ... 2619*
Fowler, C ... 1077*
Fowler, P ... 2183*
Foy, C E ... 3345
Frame, A M ... 2691
Frame, S R ... 3449
Franchini, A M ... 1362*
Francis, M ... 1910*
Franco, R ... 1024*, 1026*
Franco-Bernardes, M F ... 1408
Frank, E A ... 1296*
Frankel, S ... 1247
Franken, C ... 1142
Franklin, P ... 3090, 3099
Franks, D G ... 2424
Frantz, A M ... 1927*
Franzen, A ... 2166
Franz-Jonas, B ... 1615
Franzosa, J A ... 1882, 3188*, 3300
Frawley, R ... 1353*
Frazer, D ... 3485
Frazer, D G ... 1199, 2346
Frazier, K ... 1658
Fredriksson, A ... 1236
Fredriksson Puigvert, L ... 2000

The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

Freebern, W ... 1332
Freeborn, D L ... 1215*
Freedland, J ... 1419
Freedman, J H ... 1811
Freeman, E ... 1395, 2692*
Freeman, J L ... 1588, 1792, 1793, 2517*, 2946
Freeman, M ... 3084
Freimoser-Grundschober, A ... 1644
Frejo, M T ... 2393
Freke, M ... 1628*
French, J E ... 2739
French, K ... 1658, 2849
Frentzel, S ... 1106, 3552
Freriks, M ... 3536
Freshman, R D ... 1735
Frey, J ... 3216*
Frey, J S ... 1094
Frey, O ... 3460
Frieboes, H B ... 2211
Friedhofff, L T ... 1208
Friedman, M ... 1422
Fritsche, E ... 1082, 1161, 2505*, 3316*
Fritz, G ... 1397*
Fritz, H A ... 1689
Fritz, J M ... 2087*
Fritz, K ... 2752
Fromenty, B ... 1113
Fronczek, F R ... 1623
Frost, K ... 2996
Fruth, D ... 2043*
Fry, C ... 3529*
Fry, R ... 1259, 1261
Fry, R C ... 1262, 1683, 2634, 2654, 2749, 2977, 3199*, 3211
Fryman, P ... 3541
Fu, H ... 1589
Fu, J ... 1251, 1267
Fu, S ... 1551
Fu, X ... 2363, 2366*
Fu, Y-H A ... 3513
Fu, Z D ... 3144*
Fu, Z-D ... 3171
Fuchs, A ... 3548
Fueta, Y ... 3263, 3264*
Fuhrman, K ... 2408
Fujii, H ... 1957
Fujimoto, W ... 1355
Fujimura, M ... 1570, 1579*, 2289
Fujita, K ... 1113, 3482*
Fujiwara, M ... 3289
Fujiwara, R ... 1957, 3173*
Fukuda, M ... 3482
Fukuda, T ... 1539
Fukunaga, S ... 1092*
Fukushima, S ... 2031
Fukushima, T ... 3136, 3249*
Fukuzaki, K ... 3090, 3095, 3099
Fulford, D E ... 3024
Fuller, A ... 1237*
Funabashi, H ... 1239, 1660, 1979
Fung, E S ... 1310*
Fung, G ... 1619
Furey, T ... 3190
Furlong, H C ... 3221*
Furr, J ... 2549
Furrow, E ... 1271
Furtado, K ... 2035
Furue, M K ... 1824
Furukawa, M ... 1604
Furuta, M ... 1476
Furutani, T ... 2816
Furuya, S ... 3189, 3433, 3434
Fuscoe, J ... 1111, 2746, 3073
Fuscoe, J C ... 2614*, 3475
Fussell, K C ... 1866, 2431*
Fuster, E ... 3265

G

Gabos, S ... 1435
Gabriel, S ... 2440*
Gaca, M ... 3037, 3552
Gaca, M D ... 2053, 2188, 3030, 3031
Gaça, M ... 2175
Gaça, M D ... 3041
Gadagbui, B ... 2694
Gadupudi, G S ... 3420*
Gafar, A ... 1481
Gaffrey, M ... 1509
Gagnaire, F ... 2791
Gagné, R ... 2088
Gagné, S ... 1145*
Gaines, L G ... 2691
Gaitens, J ... 1561
Gajewska, M ... 1299
Galandiuk, S ... 3340
Galanko, J ... 3343
Galbiati, V ... 2861
Galbraith, D ... 2974
Galdanes, K ... 2246, 2254
Galicia, A S ... 3243
Galicia, R ... 2605
Galijatovic-Idrizbegovic, A ... 2731
Gallagher, E ... 2323, 2324
Gallagher, E P ... 2936
Galli, C L ... 2861
Gallo, C J ... 1271
Gallo, M ... 2069
Galloway, L ... 2691*
Galvanho, J P ... 1243
Gam, K ... 2257
Gamboa, G ... 2219
Gamboa da Costa, G ... 3455, 3470
Gammon, D ... 2897, 3447, 3448
Gamse, J ... 1016*
Gan, J ... 2665, 2955
Gandolfi, A J ... 1260
Gandour, R D ... 1659
Ganey, P ... 2008, 2502, 2959
Ganguli, S ... 3504
Gannon, A M ... 3221
Gannon, B M ... 2347
Gant, T W ... 3001
Gao, J ... 2858*
Gao, S ... 1810
Gao, T ... 1810
Gao, W ... 1477
Gao, X ... 1499, 1519, 2366, 2771*
Gao, Y ... 3013
Gao, Z ... 2881
Gaou, I ... 1862
Garantziotis, S ... 3498, 3505
Garavan, F ... 2828
Garbarino, V R ... 3086*
Garbow, J ... 2409
Garcia, A J ... 1808*
Garcia, E ... 2100
Garcia, G R ... 2305*
Garcia, J ... 1963
Garcia, J G ... 2602
Garcia, J M ... 2393
Garcia, T ... 2795
Garcia-Alonso, L I ... 2253*
Garcia-Canton, C ... 3031
Garcia-Espiñeira, M C ... 2904, 2929
García-Hernández, H ... 2325
Garcia-Perez, I ... 1107
García-Ramírez, H A ... 1493*
Garcia-Reyero, N ... 1084, 1806*
Garcia-Sterna, R ... 2650
Garcia-Vargas, G ... 1259
García-Vargas, G ... 1261, 1262*
García-Vargas, G G ... 1255, 2749
García-Zepeda, S P ... 3228, 3229
Gardner, D R ... 1461
Garduño-Balderas, L G ... 2790*
Gareau, K ... 2495
Gargas, M L ... 2232*
Garland, M A ... 2792*
Garlick, R ... 2125
Garner, E ... 2060, 3164
Garrett, S H ... 1257, 1258, 1273, 1531, 3127, 3132
Garry, M R ... 2668*
Garssen, J ... 2873
Garza-Lombo, C E ... 1219*
Garzel, B ... 2301*
Gasiewicz, T A ... 1734, 1837
Gasmi, J ... 1481
Gaspar, O ... 3134
Gaspard, M ... 2077
Gasser, R ... 1645
Gassman, N R ... 1390*
Gate, L ... 2791
Gato, W E ... 1521, 1524, 1880, 1895
Gatti, D ... 2753
Gavett, S ... 1065, 1070
Gavett, S H ... 1281*, 1448
Gawdzik, J C ... 1187*
Gbadegesin, M A ... 1446
GCG, M-A ... 1494
Ge, W ... 1865, 1870
Gearhart, J M ... 1094*, 2119, 2217, 2228, 2734, 2887
Gebel, T ... 2541
Geer, C ... 3443
Gehen, S ... 2470, 3546
Gehen, S C ... 2208*, 2674
Gehlhaus, M ... 1436
Gehrke, H ... 2207
Geier, M C ... 3287*
Geiger, L ... 3532
Geiger, P ... 2076
Gelein, R ... 2539
Gellatly, N ... 2646
Gemzik, B ... 1668, 1676
Gennings, C ... 1432
Genter, M B ... 1598
Gentile, M A ... 1301
Gentry, N ... 3192
Gentry, R ... 2166, 2701*, 3410
Georgantzopoulou, A ... 1511, 2805
George, B ... 2721*
George, G N ... 1583
George, M ... 1829, 3498
Geppert, L N ... 1116
Gerads, R ... 1264
Gerbeix, C ... 3518*
Gerber, D A ... 1996
Gerberick, G F ... 2195*, 2466
Gerde, P ... 2171
Gerecke, D ... 2112
Gerecke, D R ... 1600, 2094
Gerlach, C V ... 3138*
Germolec, D ... 1308, 1353, 1451
Germolec, D R ... 2864
Gerrish, K E ... 1609
Gerson, R J ... 1208
Gerstel, D ... 3512
Gerstenfeld, L ... 1883
Gesswein, G ... 3085
Gesumaria, L ... 3218
Gettmann, K C ... 2236*, 2675
Gez, R ... 2129
Ghaisas, S ... 2375*
Ghanem, C I ... 1235*, 3431
Ghibelli, L ... 2807
Ghio, A J ... 1069
Ghodssi, A ... 2618
Ghorab, M A ... 2898*
Ghose, R ... 3452, 3465
Ghosh, R ... 2910*
Ghosh, S ... 1113
Gi, M ... 1092, 2031
Giamberini, L ... 1511
Giambérini, L ... 2805
Giannotti, E ... 2740*
Gibbons, C ... 1044*
Gibbons, J A ... 2107*, 2117
Gibbs-Flournoy, E A ... 1302*
Gibson, C J ... 2371
Gibson-Corley, K N ... 2793, 3425
Giersiefer, S ... 1161
Gilbert, J ... 2495, 3437
Gilbert, K ... 1369, 3198*
Gilbert, M ... 2222, 2504*
Gilbert, S ... 2162
Gilbreath, E ... 1226, 3346
Gill, P ... 1110
Gill, P S ... 2489*
Gill, R ... 1349
Gill, S ... 1569
Gillera, S E A ... 1856*
Gillespie, M E ... 3349*
Gilliam, B ... 3529
Gilmer, J ... 2867, 2868*
Gilmore, R G ... 1893
Gilmour, I ... 2838
Gilmour, I M ... 3195
Gilmour, M ... 1065
Gilmour, M I ... 1448, 2266
Ginsberg, G ... 2717, 3371*
Ginsberg, G L ... 3405*
Gioieli, L ... 2035
Girer, N G ... 2423*
Giri, A ... 2052*
Giri, A K ... 3340
Giroud, C ... 3403
Gitschier, H ... 1988, 2009*
Gitschier, H J ... 1990
Giustarini, G ... 1334*
Giusti, A M ... 1644
Glaab, W ... 1005*, 1677
Glaab, W E ... 2731
Glaros, T ... 2117
Glasscock, A E ... 2384
Glavin, S ... 2212, 2596
Glávits, R ... 1457, 1458, 1459
Glaza, S ... 3090, 3095, 3099
Glazer, L ... 2943
Glendinning, J ... 1750*
Glenn, B S ... 2707
Glenn, T ... 3135
Glenn, T C ... 3018
Glez-Weller, D ... 2278
Glick, A B ... 1733
Gliga, A R ... 2807*
Glineur, S ... 2722
Glisic, B ... 2306, 2945*
Glissmann, S M ... 1093
Glista-Baker, E E ... 3503
Gloekler, L ... 2669*
Glover, K P ... 1124*
Glynn, M E ... 1300, 1690, 2140*
Go, K ... 3169*
Go, Y-M ... 1125*, 1529, 2326, 2360, 3537
Goad, J T ... 2473
Godfrey Robinson, V ... 3273
Godin, C S ... 3085*
Godin-Ethier, J ... 1418
Godleski, J J ... 2855
Goebel, C ... 2197, 2466*
Goedken, M ... 2118
Goel, S ... 1637
Goeminne, N ... 2723
Goerdetier, D ... 1106
Goering, P ... 2719
Goering, P L ... 1776*, 2449, 2450, 2451, 2453, 2762, 2764, 3335
Goettel, M ... 2433, 2706
Gogineni, V ... 3504
Goh, J-Y ... 1630
Gohlke, J M ... 1816, 2967
Goineau, S ... 1317*
Gokulan, K ... 1514, 3026
Gold, A ... 3434
Goldbaum, J ... 3443
Goldberg, A ... 1481, 2044
Golden, T ... 2327*, 2328
Goldsmith, M-R ... 2238
Goldsmith, W T ... 1199, 2346
Goldstein, B ... 1055*
Goldstone, J ... 2122
Goldstone, J V ... 1799, 3159*
Gollapudi, B ... 1395
Golovko, A E ... 2026
Gombar, V K ... 1099*
Gomes, C ... 1113, 2865
Gomes, J ... 1268*
Gomes, K ... 1155
Gomez, G ... 2393
Gomez, M ... 2721
Gómez, M ... 2795*
Gómez Quiroz, L E ... 1973, 1978
Gomez-Acevedo, H ... 1874
Gomis-Tena, J ... 2647
Gondo, Y ... 1389
Gong, B ... 1072, 3166
Gong, L ... 1652*, 1657
Goniewicz, M L ... 3397
Gonnerman, G ... 1796
Gonsebatt, M E ... 1219
Gonzales, C ... 1544
Gonzales, K K ... 2353*
Gonzalez, C ... 2347
Gonzalez, E ... 2453
Gonzalez, E A ... 1174*, 1850
Gonzalez, F ... 1987, 2021, 3161, 3308*
Gonzalez, F J ... 2020, 2024, 3430
Gonzalez, R ... 1677
Gonzalez Suarez, I ... 1106*
Gonzalez-Barranco, P ... 2269, 2283
Gonzalez-Cuyar, L F ... 2352
Gonzalez-Figueroa, E D ... 2256
González-Horta, C ... 1261, 1262
González-Horta, M D C ... 1493, 3130, 3491
Gonzalez-Hunt, C P ... 2369*
Goodale, B C ... 1253*

The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

Gooderham, N J ... 2034
Goodfellow, F T ... 1159*
Goodman, J ... 2673
Goodman, J E ... 2141, 2143, 2992
Goodrich, J M ... 3204*
Goodwin, M R ... 2170
Gopalakrishnan, G ... 1637
Gorczyca, L ... 3232*
Gordon, C ... 3243, 3269
Gordon, C J ... 1068*
Gordon, J ... 1673, 3544
Gordon, M ... 2112
Gordon, M K ... 1600*
Gordon, T ... 1165, 1687, 2246, 2254
Gordon, W ... 3426
Gorelick, D ... 1014b*
Gorham, J M ... 1505
Gormley, M J ... 3236, 3409
Gorniak, S L ... 3463*
Górniak, S L ... 1853
Gosink, M ... 1087*
Gosling, J P ... 2646
Gosse, J A ... 1798, 2332
Gossmann, M ... 2857
Goswami, D G ... 2115*, 2116, 2121, 2126
Gotardo, A T ... 1853*
Goto, M ... 3102
Gotti, A ... 1698, 2472
Goud, N S ... 2447, 3336*
Gould, G G ... 1335, 3086
Gould, J ... 2629, 3440*
Gourzones, C ... 2483
Gouveia, A C ... 2248
Govarts, E ... 1142
Govindarajan, A ... 2122*
Gow, A ... 1297, 2327, 2328
Gow, A J ... 1915, 3350
Gowda, K ... 1733
Gowdy, K M ... 1064*, 3507
Goyak, K O ... 2468*
Goyal, V ... 1617*
Grabovska, O ... 1454
Grace, M R ... 3199
Graham, A ... 3269
Graham, J ... 3440
Graham, J L ... 1850
Graham, O ... 2034*
Graham, S J ... 2101
Graham, U M ... 2540*
Grand, N ... 3524
Grandela, C ... 1744, 1830
Grandidier, M H ... 1612, 1613*, 1614
Grandolfo, D ... 3552
Granitzny, A ... 2016
Grant, K ... 3446
Grant, K S ... 3278*
Granum, B ... 3258
Gray, A ... 2727
Gray, J P ... 1875, 1876
Gray, L E ... 2549, 2550
Gray, W ... 1372, 2059
Graziano, J H ... 3344
Greeley, M A ... 3276
Green, A ... 2069
Green, A J ... 1850*
Green, B T ... 1461
Green, O P ... 2454*
Green, S ... 1442, 1881
Green, S M ... 1445, 1693, 2469*
Greenamyre, J ... 2377
Greenberg, G I ... 2679
Greene, T ... 2166*, 2701
Greenhaw, J ... 1110
Greenhaw, J J ... 1318
Greenwood, J A ... 1804
Gregoire, C ... 3547
Gregoire, S ... 3512
Gregory, H ... 1293*
Grenet, D ... 3065
Grier, A ... 1569
Gries, W ... 1138
Griffith, W ... 2181
Griffith, W C ... 1498
Griffitt, R J ... 3421
Griggs, J ... 3034
Grigsby, C C ... 2228
Grimm, F ... 2711
Grimm, H P ... 1644
Grimm, M ... 3216
Grimm, M D ... 1205
Grisolia, C ... 3296
Grodzki, A-C ... 2416
Grogg, M W ... 3504*
Grollers, M ... 2815
Gromadzka-Ostrowska, J ... 1299
Grondin, C J ... 1086
Gronewold, C ... 3548
Groothuis, G M ... 1997
Grosdidier, E ... 1607*
Grosell, M ... 2934
Grosenbach, D ... 2108
Gröters, S ... 2537
Groux, H ... 2199*
Grove, A ... 1908
Grove, K ... 2452*
Groves, A M ... 1290, 1903*
Groves, R ... 2923
Gruber, P ... 2451
Grulke, C ... 1680, 1682, 2238, 2627
Grulke, C M ... 3539
Grummt, T ... 2860
Grundy, C ... 2003*
Gruner, H ... 1899
Grunig, G ... 1847
Grushka, M ... 1747*
Grusie, T ... 2831, 2991*
Gu, A ... 1863, 2755*, 2804, 2883
Gu, J ... 2853*
Gu, J K ... 3485
Gu, Q ... 2334*, 2335
Gu, S ... 1546
Guariglia, S R ... 2310
Gucer, P ... 1561
Guedes de Pinho, P ... 1967
Guedj, E ... 1106, 3029, 3036, 3401, 3402
Gueguen, Y ... 2688*
Guergues, J ... 1223
Guerre-Millo, M ... 3427
Guerrero-Cazares, H ... 1148
Guguen-Guillouzo, C ... 1970
Guha, N ... 2049
Guignard, C ... 2805
Guignet, M ... 2410*
Guignon, E F ... 3551
Guilarte, T ... 2353
Guilarte, T R ... 1590, 1591, 2310
Guillon, J-M ... 2647
Guillouzo, A ... 1970
Guina, T ... 3087
Guinot, M ... 3237
Guirard, G ... 2652*, 3394
Guleria, K ... 3227
Gullick, D ... 2897*
Gundert-Remy, U ... 3081
Gunn, M D ... 1301
Gunness, P ... 1995*
Guo, C ... 1297
Guo, G ... 1910, 1953
Guo, G L ... 3240, 3350*
Guo, J ... 2963, 3051
Guo, L ... 1312, 2012*, 2592, 2747, 3098*, 3450
Guo, T L ... 1897
Guo, X ... 1228, 1388*, 2592, 2969
Guo, Y ... 2746, 2747
Guo, Z ... 1516*, 1656, 3423
Gupta, A ... 1308
Gupta, I R ... 2757*
Gupta, R C ... 2473*, 2882*
Gurleyuk, H ... 1264
Gusenleitner, D ... 1799
Gustafsson, J-k ... 1794, 1807
Gut, C ... 3216
Gut, C P ... 1205
Gutbier, S ... 2338
Gutherz, S B ... 1247
Gutierrez, A ... 2368
Gutierrez Ruiz, M C ... 1973*, 1978*
Gutierrez-Fernandez, A ... 2278
Gutiérrez-Torres, D ... 1261, 1262
Gutkin, D W ... 1291, 2803
Gutleb, A C ... 1511, 2805*
Gütlein, M ... 3081
Gutman, H ... 2129
Gutteridge, C ... 3042
Guyton, K Z ... 2049*
Guzmán-Mendoza, J J ... 3491*
Gwaltney, S ... 1336
Gwavava, P ... 1320
Gwinn, M ... 1372
Gwinn, M R ... 1777*, 2087
Gwinn, W M ... 1308*
Gyselaers, W ... 1854

H

Ha, M ... 3217
Haase, A ... 1518*
Haase, C ... 2223*
Haber, L ... 2478
Haber, L T ... 3410*
Haberzettl, P ... 1836, 2134, 2250*
Habib, T ... 2228
Hack, C E ... 2217*
Hackbarth, A ... 3499
Hackley, V A ... 1505
Haddad, S ... 2229, 2716
Hadi, M ... 2544
Haedo, R ... 1829
Haenen, G R ... 3015
Hafey, M J ... 2731
Hagen, L ... 3277
Hagey, L R ... 1966
Haggard, D E ... 1802*
Haggerty, H ... 3440
Haghighat, N ... 2669
Hagiwara, A ... 2031
Hagiwara, S ... 3521
Hagstrom, D ... 2403*
Hahn, M E ... 2424*
Hahn, R ... 2112
Hahn, R A ... 1600
Hahne, F ... 2605
Haighton, L A ... 2150, 2151, 2286, 2667*
Hailer, K ... 1269*
Hailer, M K ... 1507
Haines, C ... 2436
Haire, K ... 3174*
Haishima, Y ... 3547
Hajela, R K ... 1575
Hakamata, S ... 1202
Halappanavar, S ... 1291
Halden, R U ... 2939
Halder, M ... 2925
Hales, B ... 1017*, 3390
Hall, B J ... 1164*
Hall, D ... 1150
Hall, J ... 3162
Hall, L ... 2113, 3476
Hall, M ... 1635
Hall, M L ... 1924
Hall, S M ... 2045*
Hallberg, L M ... 3039, 3155
Halley, S ... 2329
Hallgren, S ... 2394
Hallinger, D R ... 1887, 1888, 1889*
Halvorson, K L ... 2186
Hamberg, P ... 2394
Hamdy, N M ... 2825
Hamilton, E G ... 3141*, 3236*
Hamilton, R F ... 1523
Hamilton, T ... 2130
Hamlin, R ... 2848
Hamlin, R L ... 3531
Hamm, G ... 1983
Hamm, J ... 2651
Hammad, S ... 3460
Hammond, S L ... 2337*, 2378
Hampton, J ... 1959
Hampton, M ... 3209
Hampton, S ... 1195
Han, A ... 1441, 1922
Han, C ... 1641
Han, J ... 1810, 3179
Han, T ... 3073, 3475*
Han, X ... 1183, 1241, 1589, 1955, 2925, 3072
Han, Y ... 1460
Hanafusa, H ... 3136
Hanamura, K ... 1172
Handakas, E ... 2472
Haney, J T ... 1536*, 2994
Hanig, J ... 2335
Hanig, J P ... 1840
Hankinson, O ... 3309*
Hanks, C ... 3084
Hanley, A V ... 2720
Hanley, G A ... 2720
Hanna, S K ... 1522*
Hannas, B R ... 1869*, 2549, 2893
Hanneman, W H ... 1917
Hannon, H ... 1573
Hano, H ... 3133
Hansen, D ... 3073
Hansen, T ... 1510, 2016*, 2542, 2710, 3548
Hanson, L ... 2840
Hanson, R ... 2867*, 2868
Hanumegowda, U ... 1676, 2726, 3091
Hao, L ... 1125, 2360
Harada, Y ... 1393, 3522
Harand, K ... 2854*, 3174
Haranosono, Y ... 2603*
Harbeitner, R ... 1799
Harbison, R ... 1684, 2663, 2854, 2999, 3000, 3174
Hardej, D ... 1380, 1381*, 1556, 2895
Hardesty, J E ... 1962*
Hardiman, G ... 2934
Hardin, B ... 2696
Hardisson, A ... 2278
Hardisty, J F ... 2714
Hardval, R ... 3024
Hardwick, R N ... 1959*, 2003
Hargraves, T L ... 2487*
Hari Singh, N ... 1998*, 3557
Harirforoosh, S ... 2720*
Harischandra, D ... 2350*
Harischandra, D S ... 1751b*, 2351
Harishchandra, D S ... 2375
Harkema, J ... 1063
Harkema, J R ... 1100
Harmon, A C ... 1303*
Harney, J ... 2481
Harper, S ... 2797, 3486
Harper, T ... 3246
Harper, T A ... 2079*
Harrill, A ... 1677, 2545, 2753
Harrill, A H ... 3476
Harrill, J ... 1736, 2422*
Harrington, A ... 2246
Harrington, A D ... 2254*
Harris, G ... 2340*
Harris, K L ... 2040*
Harris, M A ... 2237, 2697
Harris, S ... 2750
Harrison, M T ... 1626
Harrouk, W ... 3073
Harstad, E ... 1638
Hart, Z ... 1382
Hartle, J ... 2457
Hartman, J ... 3155*
Hartmann, E ... 3104
Hartson, S ... 2106
Hartung, T ... 1084, 2185, 2338, 2340, 2529*, 2626, 2632, 3408
Hartwell, J ... 1695
Harvey, K ... 1188
Harvey, R B ... 3012
Harvilchuck, J ... 2104*
Harvilchuck, J A ... 2089
Hasan, M ... 2871*, 2872
Hasegawa, M ... 3522
Hasegawa-Baba, Y ... 2028
Hashimoto, T ... 3182
Hashizume, T ... 1393
Hashmi, H N ... 2332
Hashsham, S ... 3351
Hassen, W ... 2483*
Hassoun, E ... 2312*
Haswell, L E ... 2175, 3037, 3041*, 3552
Hatayama, T ... 1355, 1357
Hattori, Y ... 1868, 3267*
Hatzakis, E ... 3430
Haugstetter, J ... 1669
Hauptstein, R ... 1116, 1449
Häußler, S ... 1941
Hautenhauer, G ... 1945
Havel, P J ... 1850
Havener, T M ... 2751
Hawk, M A ... 1622*
Hawkins, B ... 2147*, 2164
Hawkins, B C ... 1320
Haws, L C ... 1371*, 2237, 2697, 3407, 3445
Hayakawa, K ... 1193, 1197, 1892
Hayakawa, K A ... 1884*

The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

Hayashi, H ... 1355, 1358
Hayashi, M ... 2063
Hayashi, R ... 3432
Hayashida, A ... 2810, 2816
Hayden, B K ... 1308
Hayden, P ... 3066, 3069, 3070, 3516
Hayden, P J ... 3396*
Hayes, A W ... 1106, 3029, 3035, 3401
Hayes, M D ... 1947
Hayes, W ... 3400, 3402
Hayes, W A ... 3036
Haykal-Coates, N ... 2262, 2263, 2838
Hays, M ... 1302, 2266
Hays, S M ... 2237
Hazard, E ... 2934
Hazari, M ... 2838, 3195
Hazari, M S ... 1047*, 2252, 2260, 2262, 2263
He, K ... 1162
He, P ... 2969
He, W ... 2758
He, X ... 1656
He, Y ... 1376
Head, A ... 1654
Heart, E ... 1875, 1876*
Hebert, V Y ... 1303, 1439, 2844
Heck, D E ... 2094, 2097, 2099*
Hector, E ... 3204
Hedberg, J ... 2788
Hedge, J M ... 1795*
Hedlin, A ... 2171
Hedrick, E ... 2066*, 2074*, 2418
Heggland, S J ... 3048*
Heidmann, J ... 1743
Heidor, R ... 2035
Heikkinen, P ... 1060
Heilman, J ... 2288*
Hein, D W ... 2067
Heindel, N D ... 2113
Heine, L ... 1114, 2261
Heinonen, T ... 2176*, 3062*
Heinrich, U ... 3499
Heinz, S ... 1980, 3543
Heit, C ... 2752*
Helal, M G ... 3399
Helbing, C ... 1782*
Heldreth, B ... 2476, 2709
Helena, H ... 1148
Hellack, B ... 1518
Helleday, T ... 1417
Hemann, C ... 3399
Hemmann, U ... 1060
Hemmerich, J ... 1788
Hemmingsen, M ... 1997
Hemry, E C ... 1734
Henderson, C E ... 2407
Henderson, K ... 2856*, 3216
Henderson, N C ... 3472
Hendriksen, P J ... 1480
Hendry, D ... 1635
Hendry-Hofer, T ... 2125
Hendy, O ... 2401, 2402, 2902
Hengstler, J G ... 3460
Hennan, J ... 1674
Hennen, J ... 2863*
Hennicke, T ... 1397
Hennig, B ... 1455, 2834, 3417
Hennig, G ... 3096
Hennings, L ... 2025
Henningsen, G ... 2145
Henriquez, A ... 2135
Henriquez, J E ... 1340*, 1341
Henry, E ... 1837
Hentges, K ... 1844
Hentges, S G ... 1138
Hentschel, S ... 2787*
Herbert, G ... 1114, 1309, 2261
Herbert, R ... 1353, 2131
Herckes, P ... 1702
Herman, D A ... 2265*
Hermsmeier, M ... 3514
Hernandes, L C ... 1416*
Hernandez, M ... 2246*
Hernandez, M-C ... 1645
Hernández Cerón, R ... 1261, 1262
Hernández Pando, R ... 1978
Hernández-Alcaraz, C ... 1260
Hernández-Castaños, M R ... 1493
Hernández-Ochoa, I ... 3223, 3228, 3229
Hernández-Ramírez, R U ... 1260
Herner, J ... 1423
Herold, M ... 3536
Herpers, B ... 2595
Herr, D W ... 1215
Herrada, J ... 1625
Herrera, L ... 3535
Herrera-Garcia, G ... 3240
Herring, A H ... 2367
Herrmann, A ... 1606
Herrmann, J E ... 2486
Herron, J ... 1178*
Herry, L ... 2743
Hershberger, P A ... 3397
Hess, S T ... 2332
Hester, S D ... 1056
Heuer, H ... 1161
Heussner, A H ... 1818, 3056*
Hewitt, J ... 3087
Hewitt, N ... 3512
Hewitt, P ... 1222*
Heyer, W-D ... 1387
Heyob, K M ... 1913
Heyward, S ... 2301
Hibatallah, J ... 1616
Hibi, D ... 2050*
Hickman, J J ... 1228, 2007, 2477, 2851*
Hiemisch, A ... 3484
Hiemstra, S ... 1670, 2002, 2595*
Hierlemann, A ... 3460
Higgins, L ... 1442*
Higuchi, M ... 1448, 2263, 2266
Higuchi, M A ... 1429*
Hilberer, A M ... 2175
Hill, M T ... 3222
Hillegass, J ... 2629, 3440
Hilton, G M ... 3490*
Himeno, S ... 1263
Himmel, M ... 2902*
Himmelfarb, J ... 3119, 3123
Himmelstein, M W ... 3449*
Hinckley, J ... 1659, 2408
Hinderliter, P M ... 1694*
Hines, R N ... 1001*, 1039*, 3215
Hines, S E ... 1561*
Hinton, D E ... 1483, 1809, 2888, 2944
Hinton, H ... 1644
Hinton, Z W ... 1842
Hirabayashi, Y ... 1838*
Hiraga, T ... 2888
Hirashima, R ... 3173
Hirata, T ... 1271, 1467, 2598*, 2806
Hirata-Koizumi, M ... 2156
Hirka, G ... 1457, 1458, 1459
Hirokawa, H ... 2403
Hirose, A ... 2156
Hirose, R ... 2295*
Hirota, M ... 2204
Hirsch, S ... 2137
Hirvonen, M-R ... 1851
Hitchcock, K ... 2974
Hitchins, V ... 2453
Hitomi, M ... 1868
Hixon, M L ... 2270
Hixson, C ... 3477
Hnatyshyn, S ... 1674
Ho, J ... 3400
Ho, M ... 2286
Ho, P ... 2352
Ho, T ... 3153
Hoagland, K M ... 2832
Hoard-Fruchey, H ... 2107, 2130
Hobbs, C ... 1422
Hobson, B ... 2409*, 2410
Hocevar, B A ... 3414
Hockenbury, J ... 1382
Hoekstra, J G ... 2352
Hoenerhoff, M J ... 1609
Hoeng, J ... 1106, 3029, 3035, 3036, 3400, 3401, 3402, 3552
Hoffman, G ... 2459
Hoffman, J ... 2834, 3417
Hoffmann, A ... 2026, 2119, 2734, 2887*
Hoffmann, S ... 2632
Hoffmann, V ... 2272
Hoffmann-Doerr, S ... 2684
Hofman-Huether, H ... 2207*
Hofmann, J ... 2085
Hogan, K ... 1436
Hogberg, H ... 2185, 2340
Hogberg, H T ... 3408*
Hok, S ... 1153
Holden, E ... 3545*
Holden, J ... 2356
Holian, A ... 1507, 1513, 1523, 2800, 3501
Holland, E B ... 1194*
Holland, N A ... 2818, 2819*
Hollander, D ... 2663
Hollander, J M ... 2817
Hollanders, K ... 1614
Hollenbach, S ... 3443
Hollnagel, H M ... 2475*
Holman, N S ... 3175, 3181*
Holme, J A ... 1450
Holmes, H ... 2259
Holmes, W ... 2125
Holowiecki, A ... 3295
Holt, L ... 2617
Holzgrefe, H ... 1646*, 2832
Homer, N Z ... 2727
Honarvar, N ... 2200, 2433, 2706
Honda, K ... 3482
Hondebrink, L ... 1157*
Honeycutt, M E ... 2992, 2994
Hong, C ... 1584
Hong, H ... 1079, 1865, 1870*
Hong, S ... 2181
Hong, T ... 2169
Hong, Y ... 3059
Honma, M ... 1389
Hood, D B ... 1213*, 1946
Hooda, P ... 2924
Hook, B ... 3553
Hoopes, M ... 1822
Hooth, M ... 1353
Hoover, J ... 1132, 1560, 2981
Hopf, N B ... 3515*
Hopkins, B K ... 2931
Hopkins, T M ... 1598
Hopper, D ... 1627*
Horii, I ... 3249
Horman, B ... 1856
Horning, K J ... 2364*
Hornung, M W ... 1886
Horsmon, M ... 3103*
Horst, E v d ... 1930
Horton, C L ... 1270
Horton, L ... 2247
Horwath, M C ... 1598
Horwitz, V ... 2129
Horzmann, K A ... 1793*
Hose, D ... 2483
Hosea, B ... 1137
Hosking, S ... 2832
Hosohama, L ... 3192
Hossain, K ... 1263
Hossain, M M ... 2371, 2413*
Hossain, M S ... 2127
Hotchkiss, A ... 2704, 2705
Hotchkiss, A K ... 2713
Hotchkiss, J A ... 1298*, 1704*
Hotchkiss, J J ... 2674
Hottor, H ... 1307, 2968
Hou, Y ... 1251, 1267
Houchens, C ... 3087
Houck, K ... 1151, 1783b*, 1803*, 2640, 2928, 3017
Houck, K A ... 1882, 1886, 3188
Hougaard, K S ... 1774*
Hougaard Bennekou, S ... 3312b*
Houghtling, R ... 3374*
Howard, B E ... 1074*, 1090
Howard, P ... 2750, 2774
Howarth, F C ... 1896
Howell, B ... 2218
Howell, G E ... 2899, 3426*
Hoyte, C ... 2522*
Hozumi, N ... 3263
Hrubik, J ... 2306*, 2945
Hsia, F K ... 2447*
Hsieh, H ... 1598*
Hsieh, J-H ... 1095*, 1451, 2224, 2550
Hsu, E L ... 1735*
Hsu, F-L ... 2117
Hsu, H-W ... 1586
Hsu, W K ... 1735
Hu, C ... 3168
Hu, C-y ... 2986
Hu, H ... 1545, 3204
Hu, J ... 2925
Hu, Q ... 1589*, 1842, 1843
Hu, W ... 2730
Hu, X ... 1589, 2077, 3425
Hua, M ... 2638*
Huang, B ... 2605, 3071*
Huang, B T ... 1316
Huang, B-w ... 2596
Huang, C ... 2060, 3164
Huang, D Y ... 1435*
Huang, E ... 2843
Huang, G ... 1652, 1897*
Huang, J ... 2125, 2406
Huang, M ... 2879*, 3343
Huang, P ... 3075
Huang, R ... 1095, 1811, 2462, 2626, 2642, 3017
Huang, S ... 1347*, 3552
Huang, S Y ... 3514
Huang, S-M ... 2301
Huang, X ... 2367
Huang, Y ... 2370
Huang, Y-C ... 2383
Huang, Z ... 1482
Huaux, F ... 2249*
Hubbard, T D ... 2419*
Hubbs, A F ... 1199*
Huber, C ... 3128
Hübner, J ... 2187
Hudson, L G ... 1275, 1352
Hudson, S V ... 1984, 2211*
Hudzik, T ... 1605
Huebenthal, U ... 1161
Huerta, M ... 2342*
Huestis, J ... 1275*
Hueza, I M ... 1339*
Hughes, B J ... 1298, 2478*
Hughes, M F ... 3406, 3436*
Hughes, M K ... 2846*
Huh, D ... 1709*
Hui, X ... 3509*, 3510
Hulet, S W ... 2824*
Hum, N ... 3428
Humbert, M ... 1293
Hummel, T ... 1748*
Humphrey, G ... 1270
Hunt, L ... 2337
Hunter, D ... 1791
Hunter, D A ... 1521*, 1524, 1895
Hunter, D L ... 1795, 2252
Hunter, E S ... 1822
Hunter, S ... 2547*, 3300
Huppelschoten, S ... 1670, 2293*
Hurley, B ... 3060
Hurley, J ... 1049*
Hurst, S ... 1238
Hurtado, S B ... 1394
Hurtt, M E ... 3274*
Husar, E ... 1645
Hussain, S ... 3327*, 3498*, 3505
Hussain, S M ... 1506, 3504
Hussin, H F ... 1490, 1491*
Huszar, D ... 2048
Hutchinson, J ... 1702
Hutchison, J E ... 2792
Hutsell, B ... 1213
Huttala, O ... 2176
Hutzler, C ... 3525
Hwang, G-W ... 1564, 1566*
Hwang, L ... 1655
Hwang, W-T ... 2047
Hwang, Y P ... 1472
Hyde, J ... 1930
Hynes, J ... 1676, 1828*
Hypes, E ... 2238

I

Iacono, G ... 3530*
Iatropoulos, M J ... 1820
Ibla, J ... 1183
Ibor, O R ... 3297
Ibouraadaten, S ... 2249
Ibrahim, M A ... 1487
Ibrahim, N M ... 2914
Ichihara, G ... 2060*, 2810*, 2816, 3164
Ichihara, S ... 2060, 2810, 2816*, 3164
Ichimura, R ... 1960
Igarashi, I ... 1202
Igbo, J ... 3248
Igbo, J K ... 3424*

The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

Iguchi, T ... 3186
Ihrie, M D ... 3500*, 3502
Ijomone, M O ... 3167
Ikeda, K ... 1660
Ikezumi, M ... 2198
Ikushiro, S-i ... 3456
Ilias, M ... 1487
Imai, N ... 2031, 2198
Imam, M S ... 2799
Imam, S Z ... 2347
Imanirad, P ... 2026
Impinen, A ... 3258*
Inaba, K ... 1570
Inamura, M ... 3148
Infante-Ramírez, R ... 1493
Ingelman-Sundberg, M ... 2000
Ingerson, A ... 3084
Ingle, B L ... 3437
Ingle, T ... 2758
Inoue, K ... 1960
Inoue, R ... 3102
Inselman, A ... 3073
Ippolito, D L ... 2728, 3140, 3468, 3527*
Irfan, M-A ... 2544
Irijalba, I ... 3299
Irrechukwu, O ... 1073, 3061*
Irshad, H ... 2258, 3395*
Irvin-Barnwell, E ... 2970
Isaac, K ... 1681
Isaacs, K ... 1680, 1682, 2222, 2608
Isaacs, K K ... 1679*, 3539
Isama, K ... 2776
Iscan, G S ... 1485*
Iscan, M ... 2748*
Ishibashi, Y ... 1567
Ishida, M ... 1261, 1262
Ishida, Y ... 1566
Ishihara, Y ... 2919*, 2920, 2921
Ishii, Y ... 1868, 2050, 3267, 3456
Ishizuka, Y ... 1172
Iskandar, A R ... 3036*
Islam, S ... 1277
Ismail, A ... 2401, 2902
Ismail, A A ... 2402*
Ismail, R S ... 3399
Isoherranen, N ... 3446
Isse, T ... 2965
Itagaki, H ... 2203, 2313, 2471, 2732, 3055, 3521
Ito, K ... 1604
Itoh, T ... 1957, 3173
Iuliucci, J ... 1650
Iva, N ... 3391
Ivanov, N V ... 1106, 3035, 3036
Iversen, P L ... 2438
Iwata, Y ... 2711*
Iyer, S ... 2030*, 3540
Izquierdo Carerra, X ... 2249
Izumi, M ... 1931
Izuoka, K ... 2816

J

Jaberi-Douraki, M ... 3511
Jablonski, R ... 2623
Jack, J R ... 2751
Jackson, A ... 3438
Jackson, D ... 2235
Jackson, G R ... 3396
Jackson, K L ... 2384*
Jackson, M ... 1228, 2007, 2346, 2477
Jackson, M C ... 1199, 1284, 1313
Jackson, M P ... 2993*
Jackson, T ... 3083
Jackson-Humbles, D N ... 1755*
Jacob, B ... 3097
Jacob, R E ... 2216
Jacob Roy, R ... 2127
Jacobs, A ... 1614, 2202, 2574*
Jacobs, H ... 3291
Jacobs, H M ... 3294*
Jacobs, K ... 2163
Jacobs, M ... 1728*
Jacobs, M N ... 3001
Jacobsen, B ... 1606
Jacobsen, M ... 2685
Jacobsen, N R ... 2808*
Jacomasso, T ... 2860
Jacques-Jamin, C ... 3512
Jacquet, A ... 2372
Jaeschke, H ... 1234, 1971, 1981, 2319, 2491, 3092, 3178
Jagannathan, L ... 2322*, 3210
Jager, S ... 1113
Jaiman-Cruz, R ... 1578
Jain, A K ... 2126*
Jain, G ... 2212, 2596
Jaing, C J ... 3428
Jaligama, S ... 1439, 2245*
James, A K ... 1583*
James, L ... 2489
James, L P ... 1110
James, R A ... 2170
James-Yi, S A ... 2935*
Jan, Y-H ... 2097*, 2099
Janardhan, K ... 2131
Jang, Y ... 2880*
Janicke, B ... 3545
Jannasch, A S ... 1792
Jannuzzi, T ... 1321
Janovitz, E ... 1668, 1676, 2726, 3091
Jansen, E H ... 3015
January, C T ... 1745
Jarabek, A M ... 2713, 3366*
Jarema, K A ... 1795
Järnberg, J ... 2142
Jaruga, P ... 1390, 1404, 1417
Jaskot, R ... 1067, 2266
Jaspers, I ... 1338, 2490, 2960*
Jatana, S ... 1503
Jaunky, T ... 3030
Jaworska, J ... 2195, 2196
Jayaraman, S ... 2933
Jayasundara, N ... 1848*, 2951, 3284
Jayyosi, Z ... 1093
Jean, P A ... 2703*
Jefcoate, C R ... 3142, 3149, 3151
Jeffay, S ... 1822
Jefferson, A M ... 2346
Jefferson, W N ... 3231
Jeffery, B ... 3078, 3079
Jemth, A-S ... 1417
Jenkins, A F ... 1538
Jenkins, G ... 2772
Jenkins, J A ... 2931*
Jenkins, S ... 3340
Jenner, J ... 2101
Jennings, M ... 1303
Jennings, P ... 1713*
Jenny, M J ... 3295*
Jensen, E ... 2445
Jensen, H M ... 1124
Jensen, M L ... 3242
Jenson, A B ... 2496
Jeong, C ... 1872
Jeong, H G ... 1460*, 1469, 1470, 1472, 1473, 1486, 1488, 1489
Jeong, H M ... 1460
Jeong, K S ... 1424, 3429
Jeong, T C ... 1424, 3429
Jeppesen, G ... 3242, 3524
Jessen, B ... 1667
Jessop, F ... 1523*
Jestoi, M ... 3008
Jett, D ... 2103
Jett, D A ... 2093, 2102, 2404
Jeurink, P ... 2873
Jewo, P ... 1463
Ji, J ... 2171
Ji, K ... 2947
Ji, Y ... 3206
Ji, Z ... 1426*, 3498
Jia, F ... 2955
Jia, K ... 2292
Jia, Y ... 2906
Jia, Z ... 2022, 2329*, 2763, 2821
Jiang, H ... 1652, 1657
Jiang, W ... 2366, 3152, 3158, 3160, 3465
Jiang, Z-Y ... 1863
Jiko, H ... 1826
Jimenez, J A ... 1595*
Jimenez-Córdova, M I ... 3130
Jiménez-Garza, O A ... 3219*
Jin, C ... 1890*, 2064, 2072, 3201*, 3338
Jin, G B ... 1362
Jin, G-B ... 1365
Jin, H ... 2341, 2350, 2351, 2373, 2374, 2375, 2396
Jin, S W ... 1470, 1472, 1473*, 1486, 1489
Jin, U ... 2309*
Jin, U H ... 2056
Jin, U-H ... 2066
Jin, Y ... 2746, 2747
Jing, H ... 1810
Jing, J ... 3446
Joakim, A ... 1137*
Joglekar, R ... 3077*
Johanning, K M ... 2925
Johänning, J ... 3543
Johanson, G ... 1282, 1944, 2142*
Johari, S A ... 2940
John, A ... 1896
Johne, S ... 1106, 3036
Johnson, B C ... 1686
Johnson, B P ... 3266*, 3388
Johnson, C ... 1671
Johnson, D ... 2662*, 2998
Johnson, D E ... 2620, 2622, 2658
Johnson, E ... 1808, 1849
Johnson, G ... 1684, 2663, 2854, 2999, 3000, 3174
Johnson, J ... 1605
Johnson, J A ... 2361*
Johnson, J R ... 2461
Johnson, K ... 1120*, 1869, 2482, 3558
Johnson, N M ... 3214
Johnson, R ... 1086
Johnson, T ... 1677
Johnson, V J ... 2864*
Johnston, A S ... 1333*
Johnston, C J ... 1290, 1903
Johnston, N ... 2721
Johnston, T K ... 2933
Johnstone, A F ... 1068, 1200
Jolley, H ... 1526
Jolly, R A ... 1108
Jonaitis, T ... 2667
Jonassen, H ... 3478
Jones, A D ... 1103
Jones, B C ... 2336
Jones, C D ... 2490
Jones, D ... 1763*, 2319, 3360*
Jones, D P ... 1125, 1245, 1529, 2326, 2360, 2730, 3421, 3537*
Jones, K ... 2272
Jones, M Y ... 2799
Jones, P ... 2596
Jones, R A ... 3430
Jones, R S ... 3419
Jones, S W ... 2490
Jones, T K ... 1232
Jones, Y ... 2774
Jonigk, D ... 2710
Jonsson, M ... 3008
Jordá-Beneyto, M ... 3020
Jordan, A ... 1562*
Jordan, S ... 3042
Jordt, S E ... 1046b*, 1301
Jorge, K ... 2408*
Jortner, B S ... 1659, 2935
Jos, A ... 3020*, 3022*, 3023*
Jose, C ... 3210
Jose, C C ... 2322
Joseph, L B ... 2094*
Joseph, P ... 1921*
Joshee, L ... 3120
Joshi, A D ... 2427*
Joshi, K ... 2330*
Joshi, N ... 1951, 1954, 1965*
Joshi-Barve, S ... 1976
Joy, M S ... 2721, 3114
Ju, C ... 1332
Juan, C ... 2276
Juan, S-A ... 3068
Juan-Garcia, A ... 3067
Juarez, A L ... 1195
Juárez Hernández, U ... 1978
Judge, J L ... 1294*
Judson, R ... 1077, 1098, 1803, 2547, 2660*, 3017, 3300, 3365*, 3539
Judson, R S ... 1886, 2161, 2616
Jugloff, D ... 1454
Juhasz, K ... 1745, 1829
Julien, S ... 3440
Junaid, S ... 1164
Jung, B H ... 2872
Jung, B-H ... 2871
Jung, E-C ... 3509, 3510
Jung, G L ... 1215
Jung, R ... 1862
Jung, S H ... 1233*
Jungnickel, H ... 2541
Jurban, M ... 1137
Jüsten, P ... 2268
Jutooru, I ... 2026, 2056

K

Kaaber, K ... 3242
Kabilan, S ... 2144, 2215, 2216
Kadar, T ... 2129
Kadlubar, S ... 2746
Kado, N ... 1423*
Kado, S ... 1366
Kadonosono, T ... 3102
Kadry, A-R M ... 2984*
Kaelin, B R ... 1984
Kagan, V E ... 1291, 2803
Kagawa, T ... 3102
Kageyama, Y ... 3432
Kahle, J S ... 2490
Kahlig, K ... 2826*, 2829
Kahru, A ... 2814
Kai, K ... 1202
Kaina, B ... 1062*
Kaisar, M A ... 1621
Kaiser, J P ... 2159, 2213
Kaiser, R ... 1646, 2832
Kakade, S ... 1617
Kakehashi, A ... 1092, 2031*
Kakeyama, M ... 1190
Kakuni, M ... 3432
Kalata, E ... 1169
Kalidindi, S R ... 2473
Kalkunte, S ... 2032
Källman, T ... 2807
Kallon, S ... 2392
Kalmes, R ... 2661
Kalra, O P ... 2910
Kaluarachichi, M R ... 1107
Kalueff, A V ... 1661
Kalyan, R ... 3128
Kamendulis, L M ... 3414*
Kaminski, N ... 1364, 1736, 2686, 2687
Kaminski, N E ... 1118, 1340, 1341, 1360
Kamisnki, N E ... 1342
Kamp, H ... 2582*
Kamp, H G ... 1115, 2463*, 3054, 3057, 3058, 3536
Kan, H ... 2830*
Kan, L ... 1057, 1869
Kan, R K ... 2095
Kanda, D ... 2284*
Kanda, Y ... 1827*
Kandasamy, K ... 3075
Kandeel, F H ... 3257
Kandel Gambarte, P ... 2901
Kaneko, T ... 1476
Kanerva, J ... 1653, 1671
Kaneto, M ... 3136
Kang, G ... 2944
Kang, H-G ... 3068, 3074
Kang, J ... 3488
Kang, K-W ... 1233
Kang, M ... 2859
Kang, M J ... 1424, 3429*
Kang, M-J ... 2871, 2872
Kang, M-s ... 2272
Kanki, M ... 2001
Kannan, A ... 1735
Kannan, R ... 1504
Kanno, J ... 1838, 2613*
Kant, R ... 2115, 2116, 2121, 2126
Kanthasamy, A ... 2120, 2341, 2350, 2350, 2351, 2373, 2373, 2374, 2374, 2375, 2375, 2396, 2396
Kanthasamy, A G ... 2341, 2351
Kapeles, J ... 2136
Kapidzic, M ... 3236
Kaplan, B ... 2869*
Kaplan, B L ... 1170
Kaplan, B L F ... 3354*
Kaplan, D ... 1137
Karakaya, M A ... 2813*
Karakitsios, S ... 1698, 2472
Karchner, S I ... 2424
Kare, P ... 2910
Karelia, D N ... 1328*
Karimi, S ... 2796*

The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

Kariyazono, Y ... 1868
Kark, A ... 1980*
Karkare, S ... 2356
Karki, K B ... 2056*
Karki, P ... 2361, 2362
Karlsson, H L ... 2788, 2807
Karmaus, A L ... 2637*
Karmous, O ... 2483
Kartashov, A V ... 2322
Karvonen, A ... 1851
Kasai, H ... 3197
Kasemets, K ... 2814*
Kashon, M ... 2773, 2782, 2830
Kashon, M L ... 1199, 1558, 3485
Kasting, G ... 2532*
Kasturi, P ... 1373*
Katavolos, P ... 1666
Katner, A ... 2986*
Kato, H ... 3482
Kato, R ... 2776
Kato, Y ... 3136*
Katoh, H ... 1826
Kauffman, M E ... 2022
Kaur, G ... 1908*, 2008
Kaur, J ... 2254
Kaur, K ... 1846*, 3248
Kaur, M ... 2127
Kaushik, S ... 1658
Kauss, A ... 1743
Kavanagh, T ... 2323, 2324
Kavanagh, T J ... 1499, 2181
Kawabe, M ... 2033
Kawada, T ... 1348
Kawai, K ... 3093, 3197*
Kawakami, T ... 2776
Kawamoto, T ... 2965
Kawamura, K ... 1604
Kawamura, T ... 2156
Kawasaki, T ... 1476
Kay, V ... 3501
Ke, S ... 2304, 2437
Ke, Y ... 3168
Kearsing, L ... 1894
Keating, A ... 3226
Keating, J H ... 2441*
Keebaugh, A ... 2264, 2265
Keech, S ... 1624
Keefe, D ... 1370*, 2958*
Keel, A ... 3531
Keely, A ... 2415
Keene, A ... 2544
Kegels, A ... 2723
Keil, K ... 1191, 1193
Keil, K P ... 1192*
Kelada, S ... 1311*
Keller, D ... 2475
Keller, J ... 2537, 2541
Kelley, K M ... 2457
Kelley, S ... 2999*
Kelly, A D ... 1554
Kelly, E ... 3119
Kelly, E J ... 1105, 1989, 3110, 3207
Kelly, K A ... 1211, 1212, 1214*, 2918
Kelm, J M ... 1669, 2000, 2173, 3460
Kelman, B ... 2277, 2671, 2696
Keltner, Z ... 2771
Keltner, Z M ... 2789
Keminer, O ... 1742
Kemmerling, B ... 1627
Kempa, S ... 2338
Kenedi, C ... 2828
Kennedy, G ... 2076
Kennedy, R T ... 2523*
Kennedy, W ... 1638
Kenneke, J F ... 3413
Kennell, A ... 2539
Kenney, C ... 3278
Kennon-McGill, S ... 1234
Kensler, T ... 1760*
Kenyon, E M ... 2231*
Kerger, B D ... 2979
Kermanizadeh, A ... 2808
Kern, C ... 2457
Kern, P ... 2195
Kerns, W ... 3085
Kerper, L E ... 1692
Keski-Nisula, L ... 1851
Kessler, V ... 2171
Kettenhofen, R ... 1742
Keuzenkamp, E J ... 1511
Key, P ... 2221
Khalaf, A E A ... 2914
Khan, I A ... 1487, 3194, 3282
Khan, M F ... 2870, 3191
Khan, N ... 2942
Khan, S ... 2321
Khaniya, B ... 2493
Khanna, A ... 2212
Khanna, M ... 2333
Khare, S ... 1514, 3026
Khedr, M E ... 2333
Khoo, L H ... 2935
Kiany, A ... 1164
Kidd, K ... 2412
Kidd, K A ... 2952
Kido, T ... 3133*
Kiefer, A ... 2496
Kienesberger, P C ... 2412
Kieper, J ... 1625
Kii, H ... 1824
Kijanska, M ... 1669
Kijima, A ... 2050
Kikkawa, R ... 2605
Kikuchi, T ... 3451
Kilarkaje, N ... 3254*
Kilic, M ... 2748
Killic, O ... 1148
Kim, C B ... 1608
Kim, C H ... 1798
Kim, D ... 1738, 2588, 2729, 2889
Kim, D G ... 1474
Kim, D J ... 2065*
Kim, D-S ... 1226*, 2119, 2120
Kim, H ... 1137, 2778
Kim, H D ... 2094
Kim, H G ... 1460, 1470
Kim, H R ... 1287, 1306*
Kim, H S ... 2027*
Kim, H-J ... 1464*
Kim, J ... 1089, 1942, 2476, 2778, 3460
Kim, J J ... 1306, 1420*, 2770*, 2777*
Kim, J W ... 1191
Kim, J-S ... 3169
Kim, K ... 1738*, 2066, 2792, 2947*
Kim, K S ... 2027, 2749
Kim, M ... 2065, 2626
Kim, M T ... 1400*
Kim, S ... 2729
Kim, S J ... 1470, 1473, 1489*
Kim, S-H ... 1468*, 1517
Kim, T ... 3526*
Kim, W-K ... 2948*
Kim, Y ... 2588, 2889
Kim, Y H ... 1486, 1489, 2266*
Kim, Y-H ... 1512, 3217*
Kimber, I ... 1939, 1947, 1948*
Kimber, M ... 2350
Kimmitt, R ... 2727
Kimura, E ... 1190*
Kimura, M ... 2028
Kimura, Y ... 2806
Kincaid, J ... 1143
Kindrat, I ... 1059, 2037*
Kindzierski, W ... 2997
King, B ... 1686
King, B L ... 1086
King, C ... 1065, 1070, 1448, 2262, 2266, 2838
King, R ... 1790
Kinniburgh, D W ... 1435
Kinoshita, K ... 3456
Kinoshita, S ... 2920
Kinter, L ... 1627
Kipen, H ... 1297*
Kirby, I ... 2937
Kirby, M P ... 1103
Kirk, S A ... 1654*
Kirkley, K ... 2359*
Kirman, C R ... 2237*
Kirsch, T ... 2197
Kisin, E R ... 1291, 2803*
Kiss, L ... 2096, 2127
Kissick, H T ... 3138
Kissling, G ... 1353, 2131, 3089, 3271
Kissling, G E ... 3177, 3389
Kistinger, B ... 1381, 2895*
Kitajima, S ... 2613
Kitano, H ... 1113
Kitazawa, M ... 1586*
Kitazawa, T ... 3289
Kiyono, T ... 3148
Kiyota, Y ... 1824
Kizaka-Kondoh, S ... 3102
Klaassen, C D ... 1934, 1969, 3144
Klapacz, J ... 1881*
Klaren, W D ... 3416*, 3420
Klaric, M ... 1616*, 3512
Klaunig, J ... 2478, 3370*
Klaunig, J E ... 1058, 1456, 2041, 2042, 3184
Klausner, M ... 3066, 3069, 3070, 3516
Kleemann, R ... 1983
Kleensang, A ... 1084, 3408
Kleider, C ... 1116, 1449, 3391
Klein, B ... 2483
Klein, C ... 1644
Klein, C B ... 1165
Klein, D M ... 1985
Klein, R L ... 2384
Klein, U ... 1638
Kleindienst, T E ... 1448
Kleinjans, J ... 1007*
Kleinjans, J C ... 2612
Kleinman, M ... 2264
Kleinman, M T ... 2265
Kleinoder, T ... 2709
Kleinstreuer, N ... 1098, 2202, 2224, 2651*
Kleinstreuer, N C ... 2533*
Klemm, L C ... 1924*
Klinefelter, K ... 1195*
Klingelhutz, A J ... 3420
Klocke, C ... 1166
Klocke, C R ... 1167*, 1188
Klocke, Z ... 2797
Klug-LaForce, M ... 1398
Kluz, T ... 1562, 2064, 2072, 2075, 2322, 3218, 3338
Knap, T ... 3433
Knapp, A ... 3434
Knapton, A ... 3473
Knebel, J ... 1510, 1941, 2016, 3548
Knecht, A L ... 1849*, 3287
Knecht, D A ... 3551
Kneuer, C ... 1498
Knight, D ... 2525*, 2573b*
Knight, R ... 1270, 2685*
Knoflach, F ... 1645
Knolle, P ... 2500*
Knoll-Gellida, A ... 1806
Knox, B ... 2746, 2747
Knox, T ... 1658
Knuckles, T L ... 2962
Knudsen, G A ... 2045, 3406*
Knudsen, T ... 2547, 2640*, 3300
Knudsen, T B ... 1104
Ko, C-I ... 1737*, 1823
Koba, H ... 3456
Kobayashi, A ... 3182
Kobayashi, E ... 2001
Kobayashi, M ... 1348
Kobets, T ... 1820, 1821*
Kocarek, T ... 3457
Kochmanski, J ... 3203*
Koci, J ... 3078, 3079
Kodali, V ... 1289, 1509, 3488, 3496
Kodali, V K ... 1526, 3485*
Kodama, Y ... 1960
Kodavanti, P R S ... 1200*
Kodavanti, U ... 1066, 1067, 3195
Kodavanti, U P ... 1068, 1069, 1281, 2135*
Koehler, M W ... 1426
Koenig, C ... 1395*
Koenig, J A ... 2095*
Koetzner, L ... 3011
Koganezawa, N ... 1172
Kogel, U ... 3401*
Koh, J ... 2412
Koide, F ... 2108
Koivisto, P ... 3008
Kojima, H ... 1604*, 2203, 2471
Kojo, A ... 2988
Kokkonen, U-M ... 3008
Kokkotou, E ... 2912
Kolasa, E ... 2046, 2057*
Kolin, C ... 1646
Kolle, S N ... 2192*, 2200, 2201
Kolli, R ... 3135*
Köllmann, C ... 1116
Kolossov, E ... 2857
Komaki, T ... 1931
Komoriya, K ... 2776
Kondakala, S ... 2899*
Kondo, C ... 3136
Kondo, K ... 3182*
Kondou, C ... 3249
Kondraganti, S ... 1492*
Kondratyev, A ... 1247
Kondru, N ... 2374
Kong, B ... 1910, 1953
Kong, J ... 2833
Kong, L ... 2367, 2600
Kong, M J ... 3429
Kong, Q ... 2061*
Konneker, T ... 2546
Kono, D H ... 2874
Kontaridis, M I ... 2855
Kooter, I M ... 2815*
Kopacz, A ... 2390
Kopec, A K ... 1951, 1954*, 1965
Kopia, G A ... 2442
Koponen, I K ... 2248
Korchevskiy, A ... 1286*
Korgaonkar, C ... 3477
Koriyama, C ... 1567
Kornberg, T ... 2783
Korpela, S ... 1439
Korpela, S P ... 2844
Korrapati, M C ... 1982
Korte, S ... 1618, 1633, 1639*
Kosaka, S ... 3277
Koschmann, J ... 2710
Koschnitzky, J E ... 1177
Koshita, M ... 1604
Koshlukova, S ... 2884, 2900
Kostal, J ... 2323, 2324
Kosyk, O ... 2729, 3434
Kothiya, P ... 2640
Kotora, K ... 2473
Kottmann, R M ... 1294
Kouzuki, H ... 2204
Kovacevic, R ... 2945
Kovalchuk, N ... 3147, 3458*
Kovalova, N ... 1364*
Kovari, A ... 2988
Kovarich, S ... 2656
Kovochich, M ... 1310, 2695
Kozal, J S ... 1848, 2951, 3284*
Koza-Taylor, P ... 1073*
Kozhich, A ... 3440
Kracko, D ... 2086, 2258, 2742, 3395
Kraeling, M E ... 2789
Kraft, A ... 1198
Kraft, A D ... 2707*
Krähenbühl, S ... 1972
Kramer, S ... 3081
Krantz, Q ... 1065, 1070
Krantz, Q T ... 1448, 2266
Krantz, T ... 2838
Krapfl, H ... 1452
Kraus, W L ... 1359
Krause, M ... 2671
Kreider, M ... 2976
Kreider, M L ... 1864*
Kreilein, C ... 1627
Kreiling, R ... 2544
Kreiss, K ... 1278
Kreitinger, J M ... 1361*, 1367
Krennrich, G ... 1115, 2463, 3536
Kreuger, S ... 3161
Krevitz, J A ... 2024
Krieger, L K ... 3411, 3412*
Kringstad, J ... 2446
Krishna, G ... 1637*
Krishnamurthy, P ... 3341
Krishnan, K ... 1096
Kristofco, L ... 2323, 2324
Kristovich, R ... 3103
Kroeker, R ... 3278
Kroll, K J ... 2939
Krolski, M D ... 2897
Kromme, M ... 1195
Krone, P H ... 1583
Kroner, O ... 3410
Krueger, W ... 2013
Krug, J ... 1065, 1070, 1448, 2838
Kruger, O ... 2474
Kruhlak, N ... 1400
Kruijssen, L ... 1334

The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

Kruse-Jarres, R ... 2968
Kruszewski, M ... 1299
Kruzich, P ... 1627
Krygsman, A ... 1893
Krzyzewski, S ... 3061
Kubaszky, R ... 1208, 3105*
Kubátová, A ... 1450
Kuberry, I ... 3024
Kubo, K-i ... 1190
Kubota, A ... 1799
Kuchimaru, T ... 3102
Kuehl, P ... 3395
Kuehl, P J ... 2258*
Kuehn, D ... 3036
Kuga, K ... 3522*
Kuhlbusch, T A ... 1518
Kuhlman, C ... 2146*
Kuhn, D D ... 2935
Kuhn, E A ... 3428
Kukuruzinska, M ... 1732
Kulick, C V ... 1247
Kulkarni, R ... 1395, 1398
Kulkarni, S R ... 1966*
Kulling, S ... 1116, 1449
Kullman, S W ... 1175, 1882, 2892, 3288
Kulp, K ... 1153, 2390
Kumagai, K ... 1063, 1100
Kumagai, Y ... 1563, 1582, 2295, 2298, 3451
Kumagai-Takei, N ... 1354, 1355, 1356, 1357, 1358*, 2784
Kumanchik, L ... 1228, 2007, 2477
Kumar, D ... 2115, 2116, 2121*, 2126
Kumar, G ... 2450*, 2453, 2762, 2764
Kumar, K K ... 2364
Kumar, M ... 1974, 2493*
Kumar, R ... 2212, 3061, 3156*
Kumar Barupal, D ... 2049
Kumarathasan, P ... 1268
Kummer, E ... 2861
Kumpf, S W ... 1801
Kumsher, D M ... 1541
Kundu, R ... 1916
Kung, H M ... 2648*
Kung, M H ... 3441
Kuno, H ... 3182
Kunz, A ... 1222
Kuo, L-J ... 1697, 3404
Kuper, F ... 2815
Kuprat, A P ... 2144, 2215*, 2216
Kupsco, A ... 2955, 3290*
Kurata, K ... 1838
Kurata, M ... 2603
Kurhanewicz, N ... 2260*, 2838
Kuroda, Y ... 2732*
Kuronuma, M ... 3093
Kurtz, S ... 1627
Kusaka, M ... 1355
Kuseryk, L ... 1641
Kushida, M ... 1092
Kusunoki, Y ... 1838
Kutepova, V ... 1392
Kutzner, B C ... 3533
Kuwata, C ... 1202
Kuwata, K ... 1960*
Kwakye, G ... 1595, 2342, 2389, 2391*, 2392
Kwiatkowski, C F ... 1859
Kwok, E ... 2900
Kwon, O-S ... 2871, 2872
Kyrlidis, A ... 3496
Kyrtopoulos, S A ... 2612

L

La, C ... 1423
La, H ... 1666
La Du, J K ... 1805
La Merrill, M ... 1174, 2545
La Merrill, M A ... 1850
Labrèche, F ... 2693
Lac, D ... 1619, 3514*
Lacey, A ... 2418*
Lacey, C J ... 2113
Lacher, S E ... 2307*
Lacy, S ... 1911
Lader, E ... 3472
Lafond, J-F ... 1246
Laforce, M K ... 2053
LaFranco-Scheuch, L ... 1677
Lafuente, D ... 2795
Låg, M ... 1450
Lagadic-Gossmann, D ... 1450
Lai, K ... 2025
Lai, Y ... 1425*
Laine, J ... 1259
Laine, J E ... 2977*
Laing, S ... 1611
Laird, B D ... 2285*
Lakin, J ... 1601
LaKind, J ... 1038*
Lalayeva, N ... 3090*
Lalko, J ... 3520
Lallemand, M-S ... 3237
Lalu, M ... 2632
Lam, H ... 3556
Lam, K S ... 1619
Lamantia, C E ... 1180
Lamar, P C ... 3122
Lamas, N ... 2407
Lamb, J C ... 1179
Lambrechts, N ... 1142*
Lamm, M ... 2209
Lamm, S ... 2149*, 2983
Lammens, L ... 2723
Lamoureux, C ... 3162
Lamparelli, D ... 2741
Lampe, B ... 3007*
Lampe, B J ... 2154
Lampe, J N ... 1952
Lamure, S ... 2483
Lamyaithong, A B ... 3126
Lan, H ... 3531
Lan, Q ... 2923
Lanceta, J ... 1143
Landenberger, B ... 2226
Landis, J ... 3272
Landis, K ... 1625
Landis, M ... 2266
Landolph, J R ... 2081*
Landry, G M ... 1271*
Landry, T ... 3069, 3070*
Landsiedel, R ... 2043, 2192, 2200, 2201, 2223, 2537, 2541, 2544*, 3052
Landuyt, B ... 3460
Laney, J ... 2100
Lang, A L ... 1984*
Lange, S ... 2994
Lange, S S ... 2992*
Langenberg, K ... 1744, 1830
Langer, J ... 1228, 2007, 2477
Langley, M ... 2120
Langley, M R ... 2374*
Lanigan, C ... 1671, 1672
Lankoff, A ... 1299
Lannay, Y ... 1636
Lanning, L ... 3087*
Lansdell, T ... 2008
Lantz, C ... 2602
Lantz, R C ... 2570*
Lantz-McPeak, S M ... 2347
Lanz, H ... 3113
Lao, W ... 2955
Lao, Y ... 1605
LaPres, J J ... 2686*, 2687
Larard, S ... 3031
Larbaoui, M ... 2618
Large, C ... 2961*
LaRocca, J ... 1057, 1891*
Larsen, L ... 1997
Larsen, M C ... 3149, 3151
Lasher, M ... 2882
Lasher, M A ... 2473
Laskin, D ... 1953, 2118, 2560*
Laskin, D L ... 1910, 1915, 2094, 2097, 2099, 2113, 3348, 3350
Laskin, J ... 2118
Laskin, J D ... 1910, 1915, 2094, 2097, 2099, 2113, 3233
Latvala, S I ... 2788*
Lau, C ... 3439*
Lau, S S .. 1244, 1599, 2082, 2380*, 2599
Lau-Cam, C A ... 2330
Laue, H ... 2925
Lauer, F T ... 1350, 1352
Lauerre, V ... 2077
Laukova, M ... 1173, 1220*
Laumbach, R ... 1297
Lauster, R ... 2187
Lauterbach, J H ... 2460*
Lauterstein, D ... 1167, 1847
Lauterstein, D E ... 1165*
Laux, P ... 2541, 3525
Lavado, A ... 1228, 2477*
Lavallée, S ... 1415
Lavell, E ... 1148
Lavine, J E ... 3179
Lavoie, J ... 2693
Lavoie, M ... 3390*
Lavrich, K ... 2210
Lavrich, K S ... 2320*
Lawana, V ... 2396
Lawana, V J ... 2373*
Lawhon, S ... 2437
Lawless, M S ... 1099
Lawrence, B P ... 1359, 1365, 1368
Lawrence, D A ... 1894*, 3551
Lawrence, P ... 1362
Laws, S C ... 1887, 1888, 1889, 2933
Lawson, M ... 2006
Lawton, M ... 1073
Lawton, R I ... 3397
Layko, D ... 2036
Le, G T ... 2082
Le, H ... 1619
Le, N N ... 3080
Le, V ... 1336
Le, X C ... 1478
Le, Y ... 2302, 3180*
Le Bihanic, F ... 1806
le Ferrec, E ... 1450
Le Godec, T ... 2737
Le Net, J-L ... 3493
Leach, C A ... 2091, 2109
Leal, R B ... 2357
Leane, L ... 3391
Leavitt, P ... 1399
LeBaron, M ... 1120, 1869
LeBaron, M J ... 1057*, 1426, 1891
Leblanc, A ... 2430, 3427
Leblanc, V ... 1612, 1613, 1614*
Lebofsky, M ... 1971
Lebrun, A ... 2249
Lebrun, S ... 3400
LeCluyse, E ... 2005, 2018, 3175
LeCluyse, E L ... 1996, 2014, 2432, 3181, 3464
Ledbetter, A ... 1068, 1429, 2260
Ledbetter, A D ... 1069, 2135, 2263
Lednicky, J ... 2787
Lednicky, J A ... 2811
Ledvina, A ... 3532
Lee, B-H ... 1233, 1474
Lee, B-J ... 2859*
Lee, C-W ... 2778
Lee, D Y ... 1812
Lee, E ... 2361, 2362, 2367*
Lee, E-H ... 2724*
Lee, G H ... 1488*
Lee, G I ... 2245
Lee, H ... 2065, 2778*
Lee, H S ... 1460
Lee, J ... 1588*, 2307
Lee, J S ... 2572*, 2700
Lee, J W ... 1232, 2345, 3501
Lee, J-H ... 2899
Lee, J-S ... 2158
Lee, J-Y ... 1528*, 1532, 1534, 1566
Lee, K ... 2778, 2859
Lee, K H ... 2365
Lee, K Y ... 1460
Lee, M ... 3486, 3547
Lee, S ... 1354, 1355*, 1356, 1357, 1358, 1468, 1517*, 1653, 1671, 2019, 2729, 2784, 3169
Lee, S H ... 2872
Lee, S-M ... 1546
Lee, W-K ... 1546
Lee, Y C ... 1470
Lee, Y S ... 1270
Leet, J ... 1797
Lefebvre, F ... 3196
Lefebvre, W ... 1854
Lefevre, M ... 2268
Legare, M E ... 1917
Legé, P ... 2835
Legouffe, R ... 1293
Le-Grand, B ... 2430
Legters, G ... 2007, 2851
Lehman, B ... 3091
Lehman, J G ... 1601
Lehman-McKeeman, L ... 1668, 2498*, 3091
Lehman-McKeeman, L D ... 2726
Lehmann, D M ... 2202
Lehmann, L ... 1116, 1449
Lehmler, H-J ... 1193, 3425
Lehoux, S ... 3344
Leigh, H ... 3513
Leigh, N J ... 3397*
Leigh, P ... 3346
Lein, P ... 1193, 1229, 2105, 2409, 2410, 2506*, 3315*
Lein, P J ... 1191, 1192, 1197, 1884, 1892, 2395, 2416
Leist, M ... 1171, 2338, 2381, 2583*, 3313*
Lemaire, B ... 1799
Lemaire, M ... 3344
Lemarié, C A ... 3344
Lemay, J ... 2673
Leme, D M ... 2860*
Lemkuhl, D ... 2356
Lemus, R ... 2993
Lena, C ... 2743
Lenburg, M ... 3396
Leonard, J ... 2221, 2222*, 2238
Leonard, S ... 1314, 2780
Leonard, S S ... 1558, 3496
Leong, J ... 3239
Leonhardt, A ... 3499
Leon-Rodriguez, R ... 1219
Lepist, E I ... 2829
Lerner, C A ... 3398*
Lerory, J ... 2272
Leroux, F ... 1415
Leroy, P ... 3029, 3036, 3402, 3552
Less, R ... 2004*
Lesueur, F ... 3259
Letzig, L ... 2489
Leung, C-L ... 1861
Leung, M C ... 1104*
Leventhal, M ... 1230
Levesque, P ... 1674
Levin, E D ... 1163, 1164, 1175, 1848, 3284
Levin, I ... 1505
Levoe, S N ... 2395
Levy, G ... 1980
Lewandowski, M ... 1448
Lewandowski, R ... 2130
Lewandowski, R J ... 2303*
Lewandowski, T A ... 2670, 2989*
Lewin, M D ... 3419
Lewine, J ... 2100
Lewin-Koh, S ... 3481
Lewin-Koh, S-C ... 1638
Lewis, B W ... 1935
Lewis, C ... 2900
Lewis, C A ... 2069*
Lewis, C M ... 2715*
Lewis, E ... 1336
Lewis, J ... 1132, 1559, 1560, 1635, 2981*
Lewis, J A ... 1270*, 1541
Lewis, M M ... 2367
Lewis, S ... 3553
Lewis, S C ... 2727
Li, A A ... 2411
Li, A P ... 1995, 3145, 3146*
Li, C ... 1597, 2826
Li, C Y ... 2300, 3270*
Li, D ... 1329, 2304, 2622*
Li, F ... 1961, 3059, 3554*
Li, G J ... 1810*
Li, H ... 1084, 1572, 2407, 2548*, 3179*, 3201, 3345
Li, J ... 1198, 1319*, 1360*, 1652, 1656, 2149, 2983, 3051, 3206*
Li, J Z ... 2022
Li, K ... 1671
Li, K L ... 2666*
Li, L ... 1656, 3147
Li, M ... 1109*, 1196, 1483, 1840, 3516
Li, P ... 2967
Li, Q ... 1348*, 1914*
Li, S ... 1519, 1529, 2319, 2730*, 3121*, 3421*
Li, W-K ... 1572, 3171
Li, X ... 1058, 1193, 1661*, 2041*, 2042, 2080*, 2134
Li, X-F ... 1319, 1478

The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

Li, Y 1109, 1831, 2731*, 2758, 3075
Li, Y R 2022*, 2329, 2821
Li, Y-J 1183
Li, Y-S 3197
Li, Z 1213, 1657, 3474*
Liang, L E 3348
Liang, L-P 1209, 2406*
Liang, S 3251*, 3252, 3539
Liang, Y W 3154
Liaw, J-J 3256
Lichter, J 3517*
Lichti-Kaiser, K 2018
Lichtler, R 1272, 1550*
Lichtveld, M 1054*, 2257
Licollari, A 3172*
Lidberg, K 1989*
Liedtke, W B 1920
Lightbody, E D 3094*
Lilius, E-M 3008
Lim, A 3025
Lim, J 3246
Lim, J-M 1546
Lima, B T 2855
Limbeck, E 2085*
Limberis, J 2826
Limon-Pacheco, J H 1219
Lin, G 3185
Lin, G X 2346
Lin, L 1269
Lin, P 1899
Lin, P-Y 1412, 2071*
Lin, Q 2349*
Lin, S 1232, 2345
Lin, T-M 2055
Lin, Y 1545
Lin, Y-S 2984
Lin, Z 1329, 1504*, 2843, 3079
Lin, Z Y-C 3148
Linardic, C 2074
Linares, V 2315
Lindberg, C D 1848, 2951*, 3284
Lindberg, T 2205
Lindon, J C 1107
Lindstedt, M 2205*
Lindstrom, A 3439
Ling, W 1190
Lingappan, K 3143*, 3154
Linn, S 2356
Linnenbrink, M 2606*
Liong, M 2695
Liou, B 2356
Lipinski, R J 3266
Lippi, L L 1853
Lipscomb, J 2712
Lisboa, C 3296
Liska, D 2457
Liska, R 2451
Lison, D 2249
Litoff, E J 3156
Litster, S 2618
Littke, M 1526
Liu, C 2843
Liu, F 1240*, 1241, 1242
Liu, G 2826
Liu, H 2906
Liu, J 1114, 1237, 1475*, 1479, 1572*, 1678, 1809, 2106, 2161, 2261*, 2609*, 3059, 3082, 3084, 3088, 3171*, 3188, 3201, 3513*
Liu, J-R 1183*
Liu, K 2326
Liu, K H 2319*
Liu, K J 1275, 1352
Liu, L 1638, 1901*, 1950, 1961
Liu, M 1135
Liu, Q 1863, 2883*
Liu, R 1083*, 1619
Liu, S 1840
Liu, T 1872
Liu, X 2132*
Liu, Y 1456*, 1552*, 2064*, 2072, 2750, 3049*, 3513
Liu, Z 1071, 1251, 2610*, 2750, 3166, 3183, 3187, 3534
Livi, C B 1084*
Livingston, M K 3388*
Lizarraga, L E 2160*, 2699
Lizarraga, L L 1244
Llana-Ruiz-Cabello, M 3022, 3023
Llewellyn, C 1786*
Lo Piparo, E 2431
Lo Re, S 2249
Loader, J 2125
Lobach, A R 2268*
Lobbes, R 1442
Locker, A R 1211, 1212, 1214, 2918*
Lockhart, C M 3207*
Lødrup Carlsen, K C 3258
Loeb, J 2787
Loeb, J C 2811
Loehr, C 3161, 3246
Loehr, C V 2186
Loft, S 2248
Logan, A D 2314
Loghin, F 2276
Løgsted, J 3524*
Loguinov, A 2655, 3157
Lohstroh, P 2900
Loisel-Joubert, S 2625
London, B K 1623
Lone, T 1337
Long, C 2866
Long, C J 1228, 2007, 2477, 2851
Long, C M 2862*
Longnecker, M P 2975
Lonneman, W A 1448
Loo, L-H 3075
Loomis, D 1261, 1262, 2049
Looser, R 3536
Loots, G G 3428
Loots, I 1142
López-Amador, N 2325
Lopez-Carrillo, L 1260
Lopez-Gomez, M F 2956*
Lopez-Gonzalez, M L 1141
Lorencini, M 2474
Lorenz, A K 2187
Lorenzi-Filho, G 1309
Loretz, C 3145, 3146
Lorge, E 1060
Lorget, F 1611
Loriot, S 2845
Loseva, O 1417
Lossin, C 2105
Lotersztajn, S 3427
Loth, M K 2310*
Lotter, J T 1689
Loughery, J R 2952*
Louis, E 1020*
Louisse, J 2548
Loukotkova, L 2219
Lourens, N 2454
Love, R 3095*, 3099
Love-Homan, L 1664
Lovejoy, C 2108
Loveless, S 1124
Low, L K 3441*
Lowe, F 3030*
Lowenthal, M S 1417
Lowes, D 2068
Lowit, A 2202, 2689, 2690
Lowry, D 2773, 2782
Lowry, G 1702
Lowry, J 2096, 2127
Lozano, R 3086
Lozoya, O 3065
Lu, E 2334, 2335
Lu, J 2221, 2238*, 3341
Lu, K 3201
Lu, L 2336
Lu, Q 2449
Lu, S 1232*, 1667*, 2345
Lu, Y 3185*
Lu, Y-F 1678*, 3171
Lu, Z 2244, 2251*
Luc, R H 1798
Lucchini, R 2736
Lucchini, R G 2508b*
Lucero, J 1304, 3137
Luch, A 1518, 2541, 3525
Luderer, U 3246
Ludewig, G 1109, 1421
Ludwig, C 1181
Ludwig, F 1633, 1639
Luechtefeld, T 1084
Luerman, G 1225, 1742, 2857*
Luettich, K 3029, 3552
Lui, K 3495
Luis-Gonzalez, G 2278
Lukas, A 3461
Luke, A 1198
Lukomska, E 2862, 2866
Lumen, A 2219
Luna, L 1869, 2208, 2226*
Luna-Serrano, R V 2256*
Lund, A 1304, 2791, 3137*
Lundby, Z 1839, 2550, 3192
Lundqvist, J 2597, 2737*
Lunt, S Y 1100, 1103
Luo, B 1064
Luo, C 2489
Luo, G 2602
Luo, H 1079, 1865, 1870
Luo, J 2374
Luo, M 1879, 3125*
Luo, P 3125
Luo, S 2545
Luster, M I 2864
Luther, E 3545
Luttrell-Williams, E 3112*, 3116
Lutty, G A 1031*
Luu, K 3534
Luyendyk, J P 1951*, 1954, 1965
Luz, A 1403*
Lv, S 2963
Lv, W 2479
Lv, X 1656
Ly, K 2286, 2667
Ly, V 3479
Lydic, T A 1118
Lyman, M 1602*
Lynch, A 1862*
Lynch, B S 1149*
Lynch, H N 1692*
Lyn-Cook, L 2768
Lyn-Cook, L E 2753*
Lynes, M A 1936, 3551*
Lyon, D 2544
Lyons, M 1382*

M

M K, N 2596
Ma, H 1519*
Ma, J 1136, 1496, 1672
Ma, J Y 1653, 1671
Ma, L 1810
Ma, P 2652, 3394
Ma, R 2354, 2355, 3157
Mabasa, L 3016
Mabondzo, A 2791
Mabson, M 2717*
Macdonald, J M 2014, 3464
Machado, A R 1416
Machado, C D S 1416
Machin, A 1790
Mack, C M 1149
Mack, M 1399
MacKay, C 2646
Mackay, W J 3024
MacKenzie, D 1324, 1350, 1559*, 1560
Mackenzie, P I 3456
Mackey, A 2006
MacLachlan, T 1012*
MacLeod, F 2470
MacMillan, D K 3436
Macmillan, D S 1399, 2629*
Madala, H R 2032*
Madden, J 2476
Madden, J C 1097*
Madden, M 1279, 2823
Madeen, E 3161, 3246*
Madejczyk, M S 1270, 1540, 1541*
Maderdrut, J L 2846, 2850
Madhloum, N 1854
Madl, A K 1310, 2695*, 2978
Madnick, S 1084, 2174
Madraymootoo, W 1391
Maeda, M 1354, 1356
Maeda, N 1593
Maejima, T 1202*
Maël, G 2805
Maertens, A 1084, 2632, 3408
Magdziarz, T 2657
Mager, E 2934
Maghezzi, M S 3243
Magistrelli, M 2740
Magnin-Bissel, G 1659
Magnusson, P A 1299*
Magpantay, R 1929*
Maguire, M 1213, 1946, 3149
Mahalingaiah, P K S 2494
Mahama, B 1226, 2119, 2120
Mahapatra, C 2858
Mahapatra, D 1175, 1882*
Mahle, D A 1201*, 2734, 2887
Mahler, G 1516, 2781, 3111
Mahmoud, M 3006
Ma-Hock, L 2537*, 2541
Mahoney, M 1230
Maibach, H 2474, 3509, 3510
Maier, A 2694
Maier, M 2544
Maillet, E L 1661
Mainman, R B 2367
Mainquist, K 2194
Maisanaba, S 3020
Maitre, A 1146
Maity, S 3143, 3465
Maiuri, A 2008*, 2502
Majeed, S 3036
Majewska, A K 1180
Majumder, A 3076
Mak, A 1918*
Maki, C 2283
Maki, C R 3012*
Makia, N 1834*, 3339
Makin, A 3242*, 3524
Makley, M K 2887
Makori, N 1930
Makwana, O 1325*
Malarkey, D E 2714
Malavarca, R 1155
Malaviya, R 2113*, 2118
Malczewska-Toth, B 1452
Maldonado-Rojas, W 1088*
Malek, D 2446, 2448
Malfatti, M A 3428*
Malghan, S 2719
Malik, A 2875
Malik, M A 3222
Malinauskas, R A 2449
Maliver, P 1644
Malley, L A 3449
Mallick Bandi, P 3452*
Mally, A 2085, 3205
Maloy, E 3535
Manautou, J 1221
Manautou, J E 1235, 1295, 2013*, 2316, 3431*
Mancari, F 2741
Mandrioli, D 2578*
Mañes, J 2276
Mangelsdorf, I 2684
Mangipudy, R 3477, 3478, 3479
Mangum, L H 2725
Manhaes, A C 1243
Manikanthan, B 1336
Manjanatha, M 2769
Manjanatha, M G 1396
Manka, D 2006
Manley, M W 1971
Mann, K K 1554, 1555, 3344
Mann, S 1796*
Mannerström, M 3062
Manning, R 3095
Mans, D 1447
Mansell, P 3096*
Mansfield, K 1749*
Mansfield, L S 2875
Manson, L 1930
Mansour, A M 3399
Mansouri, K 2627
Mantecca, P 2786, 2814
Mantell, L L 1909, 1912, 1916
Manwaring, J D 2197, 3512*
Manzano-Leon, N 2253
Mao, C 3151
Mara, K 2402
Marc, P 2605*, 2618, 2641
Marceau, G 1415*, 1418
Marchan, R 3460
Marchitti, S A 3413*
Marchlewicz, E H 1858*, 3204
Marchlewicz, L 3203
Marcinek, D J 2936
Marco, S M 2400*, 3348, 3350
Marcus, C 3142
Marcus, C B 2438
Marcus, S K 2244*

The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

Marczylo, E L ... 3001*
Marescotti, D ... 1106
Marimuthu, S ... 3115
Marini, C ... 1382
Marin-Kuan, M ... 1866, 2431
Marinovich, M ... 2861
Markell, L K ... 1955*, 3064, 3072
Markham, D A ... 1138
Markham, P M ... 2441, 2442
Markov, D A ... 3541*
Markovic, M ... 2451
Marone, P A ... 3011
Marques, M ... 1146
Marquina Castillo, B ... 1978
Marraffino, S ... 2482
Marroni, D ... 1422
Marroquin Cardona, A G ... 2283
Marroquin-Cardona, A G ... 2269
Marshall, B ... 2840
Marshall, M ... 2247*
Marshall, N ... 2862
Marshall, N B ... 2866
Marshall, S ... 2752
Marshall, V A ... 2893
Marshburn, J ... 3498
Martell, E ... 1956*
Martens, M ... 2130
Martikainen, M-V ... 1851*
Martin, C ... 1228, 2007, 2477
Martin, E ... 1259, 1262, 2654*, 2749, 3199, 3211
Martin, F ... 1106, 3035, 3036, 3401, 3402
Martin, M ... 1075, 1151, 1803, 2625*
Martin, M T ... 2637, 3437
Martinez, I ... 3065
Martinez, S ... 1235
Martínez, M ... 2885
Martínez, M A ... 2885
Martínez-Larrañaga, M R ... 2885
Marty, M ... 2030, 3540
Marty, S ... 1891
Martyniuk, C ... 2635, 2952
Martyniuk, C J ... 2344, 2412*
Maru, J ... 3482
Marukian, S ... 2006
Marumoto, M ... 1583
Marusczyk, J ... 2709
Maruya, K ... 2955
Marvel, S ... 2636*
Marx, T ... 1458*, 1459
Marx, U ... 2187
Marzocchi-Machado, C M ... 2593
Maschmeyer, I ... 2187*
Maser, T P ... 1344
Masereeuw, R ... 3113
Massarsky, A ... 3038*, 3284
Massey, T ... 3277
Massey, V L ... 2211
Masten, S ... 1451
Masten, S A ... 2864
Mastovich, J ... 2773
Masuda-Herrera, M ... 1991*
Masumori, S ... 2063
Masumura, K ... 1389*
Masuno, K ... 3249
Masuoka, H C ... 1958
Mata Espinosa, D ... 1978
Matheson, J ... 2202
Mathias, N ... 3440
Mathieu, G ... 1806
Mathis, C ... 1106, 3036
Mathis, M ... 3298
Mathur, S ... 1073
Matsuda, N ... 1826
Matsui, M ... 3218
Matsumoto, A ... 1393
Matsumoto, N ... 1931
Matsunari, N ... 2471
Matsuoka, Y ... 1113
Matsushima, S ... 3136
Matsuura, M ... 1604
Matsuyama, K ... 1626
Matsuzaki, H ... 1354*, 1355, 1356, 1357, 1358, 2784
Matter, H ... 2647
Mattes, W B ... 1318, 2488*
Matthews, J ... 1103
Mattia, A ... 2279
Mattie, D R ... 1204, 1434*
Mattingly, C J ... 1086*, 1176, 2645
Mattix, M E ... 3276
Maturu, P ... 3158*
Maurissen, J P ... 1179
Mauzy, C ... 3216
Mauzy, C A ... 1094
Mawn, M ... 1124
Maxwell, G ... 2646*
Maxwell, L K ... 3108
Mayer, A M ... 1924
Mayer-Proschel, M ... 1841
Mayes, R S ... 2228
Mayeux, J ... 2874
Mayfield, D B ... 2270
Mayhan, W G ... 2384
Mayhew, J ... 2997
Maynard, S K ... 2927
Maynor, T ... 3177
Mays, C A ... 1521, 1524, 1895*
Mazur, C ... 1885
Mazur, C S ... 3413
Mbemi, A T ... 1327*
McAleer, C W ... 1228, 2007, 2477, 2851
McBride, C R ... 2817, 3238
McCabe, M J ... 1349
McCain, W C ... 1434
McCallister, M M ... 1213
McCanlies, E C ... 1278
McCant, D D ... 2994*
McCarthy, C E ... 1283*, 3047
McCartney, M B ... 3544*
McCaskill, M ... 1307*, 2968*
McCawley, L J ... 3541
McCawley, M ... 2773, 2962, 3248, 3379*
McClain, C ... 1901, 1950, 1976
McClain, C J ... 1961
McClain, S ... 1350
McClanahan, M ... 2145
McClelland, R ... 1673, 3544
McClure, C ... 2782
McClure, P ... 1436
McClure, P R ... 2699*, 2702
McCluskey, J ... 2663, 2854, 3174
McConnaghy, E M ... 3397
McCracken, J ... 2134
McCubbin, F M ... 2254
McCullough, S ... 2489, 3220
McCullough, S D ... 1429, 2490, 3215*
McDaniel, K L ... 1215
McDaniel, L ... 2397
McDermott, T R ... 1252
McDiarmid, M ... 1561
McDonald, J ... 1114, 2258, 2261, 3395
McDonald, J D ... 1304, 2100, 3137, 3444
McDowell, M ... 1638
McDuffie, J E ... 1653*, 1671*, 1672, 3476
McDyre, B C ... 2728*, 3468, 3527
McElroy, C ... 2125*
McElroy, P B ... 1209*, 2406
McEuen, K ... 1091*
McFadden, J ... 2208
McGarrigle, B ... 2902
McGarry, K G ... 2404
McGaw, L J ... 1495
McGee, J ... 1302
McGee, J R ... 2765
McGee, M ... 1065*, 1070, 2135
McGeehan, J K ... 3061
McGill, M ... 2491
McGill, M R ... 1234*, 1971, 2319, 3178
McGlothan, J ... 2353
McGlothan, J L ... 1590, 1591
McGovern, K A ... 2903*
McGovern, T ... 2566*
McGowan, K J ... 1601
McIlwain, E ... 2846
McIntosh, L ... 3041
McInturf, S M ... 1201, 1205
McIntyre, B ... 2550, 3261
McKarns, S ... 2877*, 2878*
McKee, R H ... 1765*
McKenzie, C M ... 1984
McKeon, M ... 1395, 2019
McKernan, L ... 2162
McKim, J M ... 2188, 2589, 3009
McKinney, W ... 1199, 1284, 1313, 1921, 2346, 2538, 2830, 3485
McKinnon, J ... 2831, 2991
McLamb, W ... 2851
McLanahan, E D ... 2235*
McLeod, H L ... 2751
McLoughlin, C E ... 1515, 3496
McMahen, R ... 3539
McMahon, C ... 2826, 2829
McMahon, S ... 1050*
McMartin, K ... 3112, 3116
McMaster, M T ... 3236
McMillian, M ... 1998, 3557
McMinimy, R A ... 2392*
McMullen, P ... 2422
McMullen, P D ... 1084, 2039, 2432*
McNamee, P ... 1616
McNeil, K ... 1402
McNeil, S E ... 1525
McNerney, M E ... 3256
McNutt, P ... 1602
McNutt, P M ... 3063*
McPherson, S ... 2479, 3098
McQueen, C A ... 2213
Meade, B J ... 2862, 2866
Meade, M ... 2734*
Meade, M L ... 2119, 2887
Meador, J P ... 2936
Meador, K J ... 1245
Mecklenburg, L ... 3005
Medeiros, M ... 3134
Medgyesi, D ... 2259
Medina, S ... 1350*
Medina-Esparza, L ... 3021
Medina-Esparza, L E ... 2271
Medvedeva, N ... 1247
Medvedovic, M ... 1537
Meecham, K ... 3042, 3101
Meek, B ... 3410
Meek, E C ... 2091, 2109, 2725*
Meek, M B ... 1011*
Meeks, B ... 1883
Megehee, E ... 1380
Megill, J R ... 1668
Megrath, B ... 3099
Megyesi, J ... 2496, 3115
Mehendale, A ... 1646
Mehendale, H M ... 1964
Mehennaoui, K ... 1511, 2805
Mehinagic, D ... 1136, 2234, 3462*
Mehinto, A ... 2955
Mehling, A ... 2200
Mehrpouya-Bahrami, P ... 1898*
Mehta, J ... 2470
Mehta, R ... 3028*
Mehta, S ... 2148
Mei, N ... 1388, 2592*
Meier, M ... 1448
Meighan, T ... 1289
Meinl, T ... 2656
Meireles, G ... 1408
Meisner, M ... 1800*
Melber, A ... 2107
Melching-Kollmuss, S ... 2068
Melendez, E ... 1088
Melia, J ... 1436, 2708*
Mellado-García, P ... 3023
Mellard, D ... 2235
Mellen, N ... 2833
Mellert, W ... 1115, 2463, 3054, 3057*, 3058, 3536
Melliti, K ... 3101
Mellon, R D ... 1643
Mellor, C ... 2656
Melnikov, F ... 2323, 2324
Melnyk, S B ... 1196
Meloni, M ... 1614
Memon, N ... 3235
Mendelev, I ... 2618
Mendenhall, B A ... 2096*, 2127
Mendes, O ... 3011
Mendez, L B ... 1383, 2255*, 2256
Mendez, M ... 1261*
Mendez, W ... 2168
Mendez-Hernandez, A ... 1255
Mendoza, A ... 1894
Mendoza-Rodríguez, C A ... 3229
Mendrick, D L ... 1110
Menegola, E ... 3279, 3280*
Menezes, C M ... 1933*, 2822
Meng, Q ... 3268
Meng, R ... 1671
Menges, C W ... 2047
Mera, Y ... 2033
Merah, F ... 1415, 1418*
Mercadante, A Z ... 2593
Mercado, G ... 2943*
Mercado-Garcia, A ... 1432, 3204
Mercer, A ... 2412, 2952
Mercer, K ... 2025
Mercer, R ... 2538, 2773, 2800, 3485
Mercer, R R ... 3488, 3496
Merchant, M L ... 2211
Meredith, A N ... 3486
Meredith, C ... 2664, 3031, 3040
Merema, M ... 1997
Merrick, B A ... 3177*
Merrill, D ... 3011
Merrill, E A ... 1204*
Merry, G ... 3073
Mertens, J ... 1930
Mertens-Talcott, S U ... 2593
Merwin, S ... 2407
Mesaros, C ... 1312*, 2317
Messner, S ... 1669, 2000*, 2173, 3460
Metea, C ... 1899
Metodieva, M ... 2890*
Metruccio, F ... 3279, 3280
Metz, R ... 3392
Metz, T O ... 1136
Meulenbelt, J ... 1157
Mewes, K R ... 1616
Meyer, A E ... 3418
Meyer, B ... 1615
Meyer, J ... 1403, 3278
Meyer, J N ... 1028*, 1401, 1848, 2369, 3077, 3284
Meyer, S A ... 1439, 1490, 1491, 3454
Meyerhoefer, B ... 1060
Meyers, J L ... 1368*
Mezaki, M ... 2313
Mezei, G ... 2979
Mezrich, J D ... 1945
Miadzvedskaya, L ... 3486
Miah, M R ... 2357
Miao, L ... 3125
Michail, K ... 2321
Michalovicz, L T ... 1211, 1212*, 1214, 2918
Michel, K ... 2544
Michelotti, G ... 1902
Michelotti, G A ... 1920, 1949
Mickey, K ... 3341
Middleton, A ... 2212, 2596
Mielke, H ... 1544*
Mielke, P ... 3532
Miere, D ... 2276
Miguel, S ... 2622
Mihalchik, A ... 2538
Mihalchik, A L ... 3492*
Mikamoto, K ... 3186
Mikheev, V ... 3043
Mikkelsen, R ... 1925
Miklasevich, M ... 1201
Miklasevich, M K ... 1205
Mikolajczak, H ... 2470
Milanez, S ... 2145*
Milano, S ... 2835*, 2837*
Milchak, L ... 2189*, 2659
Millar, M ... 2455
Millard, D C ... 1745*
Millard, P J ... 1798
Miller, C ... 1559, 1560, 1618*, 2058
Miller, C N ... 3195*
Miller, D ... 1066, 2937
Miller, D B ... 1069*, 1211, 1212, 1214, 2135, 2336, 2824, 2918
Miller, G ... 2105
Miller, G P ... 3155
Miller, G W ... 1191*, 1892, 3537
Miller, J F ... 2473
Miller, K ... 1074, 1090
Miller, L ... 3261
Miller, M ... 1871
Miller, M M ... 1867*, 3418*
Miller, P ... 2877, 2878
Miller, R A ... 2714
Miller, S ... 3155
Miller-DeGraff, L ... 3498
Milliman, E ... 2995
Mills, L J ... 2933*
Mills, M ... 2323, 2324
Milner, V ... 3101

The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

Min, E ... 2125
Minami, T ... 1931
Minarchick, V C ... 1502, 1520*
Minet, E ... 1107*, 3037, 3552
Mingoia, R T ... 3072
Minnema, D J ... 2411
Minnier, B ... 1400
Minso, J ... 2245
Mirabile, R ... 2849
Miranda Labra, R U ... 1973, 1978
Miranda-Castañeda, C A ... 2271
Mirnics, K ... 1178
Mirowsky, J ... 1071*
Mirsalis, J ... 1626*
Misenheimer, J ... 1543
Mishin, V ... 2097
Mishra, A ... 2762*
Mishra, P ... 2489
Misner, D ... 1638, 1669, 1743, 3481
Misra, R S ... 1903
Mistry, J ... 3529
Mitchell, C ... 2782
Mitchell, D ... 3042
Mitchell, S ... 1735
Mitchell, T ... 2652, 3394*
Mitkus, R J ... 1642
Mittal, L ... 1542, 2137
Miura, N ... 2812*
Miyajima-Tabata, A ... 2776*
Miyamoto, M ... 3522
Miyamoto, N ... 1825*
Miyamoto, Y ... 3522
Miyashita, A ... 2001
Miyawaki, I ... 1239
Miyazawa, M ... 2193, 2196, 2198
Mizukami, S ... 2028*
Mizumachi, H ... 2198
Mizushima, T ... 3102*
Mizuta, Y ... 2806
Mo, Y ... 2804
Moe, B ... 1478*
Moeller, B ... 2086, 2742
Moeller, B C ... 3395, 3444*
Moffat, I D ... 1045
Mohamed, W ... 2387
Mohammed, A K ... 1292
Mohammed, A N ... 1170*, 2414
Mohammed, A T ... 3257
Mohanty, S ... 1997
Mohar, I ... 1940*
Mohareb, F ... 3041
Moland, C L ... 3475
Molina, F ... 1636
Moller, K M ... 1695*
Moller, P ... 2248*
Möller, F J ... 3391
Möller, L ... 2788
Møller, P ... 2808
Møller Laursen, S ... 3242
Mollergues, J ... 1866*, 2431
Molnar, P ... 2851
Monachino, M ... 3552
Mondal, T K ... 1894
Mongan, M ... 3268*
Monick, M M ... 2793
Monks, T J ... 1244*, 1599, 2082, 2380
Monnot, A ... 1264*
Monnot, A D ... 2281
Monroe, W ... 2774
Montano, A ... 1626
Montecillas, R ... 1659
Monteiro-Riviere, N ... 1656
Monteiro-Riviere, N A ... 1504, 2760, 2766, 3078, 3079*
Montes-Fonseca, S L ... 3491
Montgomery, S ... 3394
Monti, S ... 1799
Montoro Bustos, A ... 1522
Montoya, G ... 3536
Moon, Y ... 1942*
Moore, C ... 1224*
Moore, J ... 2470
Moore, M ... 1388
Moore, M J ... 1158
Moore, M M ... 2653*, 3410
Moore, N ... 2277*, 2671, 2696*, 3085
Moore, R ... 1353
Moore, R R ... 2714
Moore, R W ... 2055*
Moore, S A ... 3042*
Moorthy, B ... 1492, 3143, 3152, 3154, 3158, 3160, 3306b*, 3311*, 3465
Morales, L D ... 2065
Moran, M ... 2339
Moreau, M ... 2229
Moreaux, J ... 2483
Moreira, P ... 1443
Moreno, F ... 2035
Moreno Olivas, F ... 2781*
Moretto, A ... 3279*, 3280
Morford, L L ... 2564*
Morgan, A G ... 2321*
Morgan, D ... 3220
Morgan, D L ... 2131
Morgan, D S ... 1429, 3215
Morgan, E ... 1883
Morgan, J S ... 3507
Morgan, M M ... 3388
Morgan, P ... 1669
Mori, K ... 3186
Moriguchi, H ... 2001
Morikawa, T ... 1960
Morisbak, E ... 2443
Moritz, W ... 2000
Morpurgo, B ... 2026
Morre, J ... 2079
Morris, A ... 1223*, 2780*, 2834
Morris, A M ... 1558
Morris, J B ... 1295, 2959*
Morris-Schaffer, K ... 1188
Morris-Schaffer, K B ... 1166, 1168*
Morse, M A ... 3097*
Mortensen, A ... 2808
Mortimer, R ... 1409
Mortuza, T ... 2908*
Mortuza, T B ... 3448
Moschini, E ... 2786*
Moscibrocki, C ... 1899
Moscovitz, J E ... 3240*
Mosedale, M ... 3175*, 3181
Moser, J ... 2623*
Moser, V ... 2886*
Moser, V C ... 1215
Moses, E ... 3396
Moses, J ... 1379
Mosher, S ... 1803
Mosig, A ... 1082
Mosley, S ... 2279*
Mosqueda-Tapia, G ... 3223*
Mostafa, A M ... 2825*
Mostafaei, F ... 1552
Mostrag, A ... 2163, 2467
Mostrag-Szlichtyng, A ... 2657, 2709*
Motohashi, H ... 1761*, 2198
Motsinger-Reif, A A ... 2751
Mottino, A D ... 3431
Mourier, E ... 3237
Mousa, S A ... 1227
Moustafa, G G ... 3257
Mowinckel, P ... 3258
Mowla, T ... 2896
Moyano Cires, P V ... 2393*
Moyer, R A ... 2404*
Mruk, R ... 1299
Mueller, L ... 1606*
Mues, S ... 1518
Muhammad, F ... 3511*
Mukerjee, E ... 1153, 2390
Mukerji, P ... 1124
Mukherjee, S ... 1387*
Mukhopadhyay, D ... 2594*
Mukhopadhyay, S ... 2510*
Muku, E ... 1733
Muku, G E ... 2425*
Muldoon Jacobs, K L ... 2475
Müller, G A ... 2949
Müller, M ... 1941
Mulligan, C ... 2899, 3426
Mullin, E ... 2356
Mulliner, D ... 2201
Mullis, L ... 2769
Mummert, L ... 3024
Mummery, C L ... 1830
Mumtaz, M ... 1453*, 2227
Mumy, K ... 3216
Mumy, K L ... 1205, 1434
Mun, G ... 2194
Mundy, W ... 2584*
Mundy, W R ... 1150
Muniz Ortiz, J G ... 2267*
Munoz, A ... 2064, 2072
Munsif, M ... 1655
Muralidhara, S ... 3448
Murayama, N ... 3093
Murbach, T ... 1457
Murdock, N ... 2473
Mürdter, T ... 3543
Muriana, A ... 2456, 3299
Murphy, B ... 1225*
Murphy, C J ... 1608, 1610, 3255
Murphy, K ... 1315
Murphy, L ... 2458*
Murphy, L A ... 2893, 2935
Murphy, R ... 3126
Murphy, S ... 2063
Murphy, S K ... 3077
Murphy, W L ... 3080, 3388
Murr, A S ... 1887, 1888*, 1889
Murrary, E ... 1638
Murray, A ... 1658
Murray, I A ... 2419, 2423, 2425, 2426*
Murray, L ... 1666
Murray, P ... 3129
Murrell, D E ... 2720
Murugesh, D K ... 3428
Musa-Veloso, K ... 2286
Muster, W ... 2641
Mutlu, E ... 1451
Mutzke, E ... 3028
Myden, A J ... 2619
Myers, G J ... 1583
Myers, J ... 1359
Myers, L P ... 3372*
Myhre, O ... 1299
Mylchreest, E ... 3261

N

Na, K ... 1423
Naageshwaran, V ... 3083*, 3239
Naash, M I ... 1032*
Nabb, D ... 2925
Nabb, D L ... 1955, 3072*
Nabekura, T ... 1476*
Nacci, D ... 2937
Naciff, J M ... 1117
Nagai, H ... 2714
Nagai, Y ... 2464
Nagano, K ... 2031
Nagano, M ... 1570*
Naganuma, A ... 1564, 1566
Nagarkatti, M ... 1085, 1292, 1898, 1900, 1902, 1920, 1943, 1949, 3213
Nagarkatti, P ... 1085, 1292, 1898, 1900, 1902, 1920, 1943, 1949, 3213
Nagata, K ... 1156, 3456
Nagata, R ... 1931, 3090, 3095, 3099, 3277
Nagavally, R ... 3124*
Nagavarapu, U ... 3514
Nagumalli, S K ... 1490*, 1491
Nagy, A ... 2719
Nahmias, Y ... 1980
Naidu, R ... 1277
Nair, V ... 1257*
Naisbitt, D ... 2499*
Nakagawa, F ... 2203
Nakagawa, T ... 1979
Nakajima, K ... 1190
Nakamura, A ... 3482
Nakamura, J ... 2745
Nakamura, M ... 1431*, 3093
Nakamura, Y ... 1467, 1899, 2598
Nakamura, Y K ... 1899*
Nakano, A ... 1567
Nakano, T ... 3415
Nakao, M ... 2919, 2920, 2921*
Nakasone, A ... 2077*
Nakata, K ... 3348
Nakayama Wong, L ... 2236, 2675*
Nalge, P ... 1617
Nallasamy, P ... 2329, 2821
Nanba, S ... 2888
Nanduri, B ... 1336
Napoléoni, J-G ... 3531
Narasimha, M K ... 2212
Narasimhan, N ... 1650
Narayan, R ... 2764
Narayan, R J ... 2449, 2451, 3335
Narayanan, B ... 2894
Narayanan, B A ... 2073*
Narayanan, N K ... 2073
Nardelli, L ... 1612, 1613, 1614, 2206
Narimatsu, S ... 1868
Narita, K ... 2203*
Nash, J F ... 1805
Natarajan, K ... 2048
Nath, R V ... 1138
Nathanail, A ... 3008
Natsch, A ... 2196
Nault, R ... 1100, 1103*, 1118, 1954
Nawrot, T ... 1142
Nawrot, T S ... 1854
Nazarenko, D ... 2440
Ndubaku, C ... 1666
Neal, M ... 2374
Nealon, N J ... 3014*
Nechev, S ... 3090
Neely, M ... 1146
Neely, M D ... 2339*
Neft, R E ... 1402*
Negro Silva, L F ... 1555, 3344*
Nehrbass, D ... 2442
Neilan, C ... 2826
Neilan, C L ... 2829*
Neilson, A ... 1798
Nelen, V ... 1142
Nelms, L ... 3467, 3480
Nelms, M ... 1101
Nelson, A ... 1415, 1418
Nelson, A J ... 2332
Nelson, B C ... 1404, 1505, 1522
Nelson, C ... 1543
Nelson, D M ... 2726*, 3091
Nelson, G ... 2352
Nelson, M ... 2273
Nemazee, D ... 3128
Nemoto, S ... 2603
Nepal, M R ... 1424*, 3429
Neri-Gómez, T ... 2916
Neshkova, I ... 1116, 1449
Nesslany, F ... 3487
Netzeva, T ... 2988
Neubauer, N ... 2544
Neujahr, D ... 1529
Neumann, A ... 2831
Neumann, C R ... 2474
Neumann, T ... 1105, 1989, 3110, 3119
Newhouse, K ... 1198
Newland, C M ... 1213
Newton, S A ... 2995
Ng, C W ... 1998
Ng, H ... 1079
Ng, H W ... 1865*, 1870
Ng, R ... 1798
Ngalame, N ... 1834
Ngalame, N O ... 1256, 3339*
Ngozi, U R ... 1549
Ngueta, G ... 2975*
Nguyen, A ... 1372, 1373, 1683, 2450, 2634, 2764*
Nguyen, D ... 1392
Nguyen, D G ... 1959, 1996, 2003
Nguyen, E H ... 3080
Niaz, M S ... 2040
Nicholas, J ... 2811
Nicholas, J N ... 3495*
Nichols, C E ... 2817*
Nichols, H ... 1822
Nichols, J ... 2925
Nichols, R ... 2090*, 2420*, 2426
Nicholson, T ... 1872
Nickel, J ... 2003
Nicoara, O ... 3123
Nicol, C J ... 2083, 3094
Nicolas, C ... 1682
Nicolas, C I ... 3437*
Nicolini, V ... 1644
Nie, J ... 2969
Nie, L ... 1552
Nie, L H ... 1545
Niedzwiecki, A ... 2023
Niehof, M ... 2542, 2710
Niehoff, M ... 1633*, 1639
Niemeijer, M ... 1670, 2291*, 2595
Niemuth, N ... 2104
Niemuth, N A ... 2089
Niermann, S ... 1855
Nieskens, T ... 3113
Niimi, S ... 2776
Niino, N ... 3186

The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

Nijoukubo, D ... 3289
Nimick, M ... 1320
Ning, B ... 2746*, 2747, 3450
Nirogi, R ... 1617
Nishida, H ... 2204*
Nishikawa, A ... 1467
Nishimaki, F ... 2031
Nishimaki-Mogami, T ... 2806
Nishimura, K ... 3136
Nishimura, T ... 2156*
Nishimura, Y ... 1354, 1355, 1356, 1357, 1358, 2784*
Nisr, R B ... 2343*
Nitopi, M ... 1380
Niu, B ... 2434*
Nixon, E ... 3435*
N'jai, A ... 3151
Njenga, M ... 1337
Njoku, D ... 1974
Nkpaa, K W ... 1696*
Nobili, L ... 2741
Nocairi, H ... 2865
Noçairi, H ... 2625
Noel, A ... 1753*
Noerenberg, A ... 1980, 3543*
Nogueira da Costa, A ... 2722*
Noh, K ... 1424, 3429
Nöh, K ... 2338
Nohara, K ... 1263
Nohmi, T ... 1389
Nöldeke, J ... 1645
Nolen, G T ... 3013
Nong, A ... 2229, 2716
Noort, D ... 2117
Nordgren, K K ... 3209*
Norenberg, J ... 1324
Nork, T M ... 1608
Norman, K G ... 2209*
Norona, L M ... 1996*
Northcott, C A ... 2836*
Norton, K ... 1646
Norton, M G ... 1647
Note, R ... 1113, 2007, 2015*, 2182, 2477
Nour, M ... 1596
Novak, M ... 3278
Novick, R ... 2273
Novick, R M ... 1445, 1693*
Novikov, O ... 1732
Novin, S ... 2620
Novotna, B ... 1438
Nowland, W ... 1789*
Nowland, W S ... 1801
Noyes, P D ... 1802
Nugraha, B ... 3557
Nukada, Y ... 2193
Nukaya, M ... 2076
Numano, T ... 2033
Numazawa, S ... 2598
Nunes, N ... 3296
Nuño Lambarri, N ... 1973
Nurkiewicz, T R ... 1520, 2817, 2820, 3238
Nusz, J ... 2692
Nwarache, L N ... 2922*
Nwoha, P U ... 3167*
Nye, M ... 2962*
Nyffeler, J ... 1171*
Nygaard, U C ... 3258
Nyhuis, T J ... 1626
Nylander-French, L ... 2739

O

Oakes, H ... 2720
Oberdörster, G ... 1498
Oberdorster, G ... 1168, 2540
Oberdörster, G ... 2539
Öberg, M ... 2966
Oberhauser, A F ... 2177
Obi, E U ... 1484*
Obis, T ... 2407
Obisesan, A ... 1557
O'Brien, D ... 3520
O'Brien, T ... 1666
Obringer, C ... 3512
Obringer, C M ... 2197
O'Callaghan, J ... 2459
O'Callaghan, J P ... 1211*, 1212, 1214, 2336, 2918
O'Connell, K M ... 3094
O'Connor, G ... 3396
Odawara, A ... 1826
Odin, M ... 2708
Odin, M A ... 2699, 2702*
Odnevall Wallinder, I ... 2788
Odom, J ... 2818, 2819
O'Donald, E ... 1132
O'Donoghue, J L ... 1583
O'Driscoll, C A ... 1945
Odukoya, O O ... 1527, 1547, 1568
Odunola, O A ... 1446*
Odwin-DaCosta, S ... 1084
Oesch, F ... 2043
Oestreich, J ... 1829
Offenbacher, S ... 2977
Ogawa, K ... 1467, 2050, 2598, 2806
Ogimura, E ... 1979*
Ogungbe, V I ... 1327
Ogunleke, T ... 2282*
Ogunrinola, O A ... 1535*
Ogunrinola, O O ... 1249, 1527*, 1535, 1547, 1568
Ogunsakin, O ... 1307, 2968
Oguntola, J ... 1463
Oguztuzun, S ... 2748
Oh, B-T ... 1546
Oh, J-H ... 2724
Oh, S ... 2453
Ohbuchi, M ... 2001
Ohlsson-Andersson, S ... 2737
Ohsawa, T ... 1202
Ohtani, K ... 2812
Ojekale, A B ... 1463*
Okada, A ... 1156
Okada, T ... 3432
Okamura, A ... 1156*
Oke, O ... 2053, 3030
Okerberg, C ... 1238
Okeyo, G ... 1829
Oki, N O ... 1101*
Okoli, C O ... 2282
Okumura, S ... 1604
Ola Davies, O E ... 2954
Oladele, G M ... 2485*
Oladipo, A ... 1549
Olaleye, S B ... 1923
Olavarria, J C ... 1790*
Olayemi, F O ... 1557
Oldach, J ... 3066*, 3516
Olden, K ... 1721b*
Oldendorp, A ... 1928
Oldman, K ... 1669
Oleaga, C ... 2007*, 2477, 2851
Olgun, N S ... 1558*
Oliveira, C C ... 2860
Oliveira, D P ... 2860
Oliveira, G A ... 2860, 3296*
Oliveira, R ... 3296
Oliver, A K ... 3420
Oliver, M ... 1561
Oliveri, A N ... 3284
Olivero, O A ... 2738*
Olivero-Acosta, M ... 1088
Olivero-Verbel, J ... 1548*, 2744, 2946
Olivero-Verbel, J T ... 2904
Olivery, A N ... 1175*
Ollier, K ... 1382
Olopade, J O ... 1557
Olsen, G ... 2240
Olsen, J ... 1927
Olshan, A ... 1259
Olson, G R ... 2799
Olson, J ... 2902
Olson, J R ... 2051, 2401, 2402
Oltramare, C ... 3515
Olugbami, O J ... 1446
Omiecinski, C J ... 2434, 2435
Omiwole, R A ... 3297
Omland, K ... 3087
Omobowale, T O ... 2827
Omogbemi, E D ... 3297
Omotosho, I O ... 2735*
On, D ... 3220
On, D M ... 3215
On, V ... 3550
Onakpa, M M ... 1462*
Ondrušová, K ... 1450
O'Neal, S L ... 1551*
Ong, J ... 1132*, 1559, 1560, 2981
Onianwa, P C ... 1276
Onica, T ... 1454
Oniye, S ... 2932
Ono, A ... 2156
Onoda, A ... 1431, 2802*, 2809
Onoue, S ... 2204
Onunkwor, B O ... 1248, 1547
Onunkwor, O B ... 1249, 1568
Onwordi, C T ... 1276*
Onwordi, T C ... 1568
Onyije, F ... 3167
Opperhuizen, A ... 3015, 3046
Orandle, M ... 1314, 1921, 3488
Orbach, S M ... 1999*
Orbea, L ... 3431
Orchard-Hays, J ... 2615
Ordoñez, P ... 3040
Orie, N N ... 2891*
Orlicky, D ... 2752
Orlicky, D J ... 2126
Orozco-Mercado, H M ... 1383
Orr, M ... 1125, 1529, 2360
Orr, M L ... 2326
Orrantia-Borunda, E ... 3491
Ortega, A ... 1216
Ortega, J F ... 2035*
Ortega, L ... 2401
Ortega, M T ... 3078, 3079
Ortega Torres, L ... 3036
Örtengren, U ... 2445
Ortenzio, J N ... 2765*
Ortiz-Martinez, R ... 2271, 3021
Ortiz-Rodriguez, J ... 1578*
Osada, Y ... 2810, 2816
Osakwue, J A ... 1535
Osborne, C ... 2125
Osgood, R S ... 1444*, 1907
Osimitz, T G ... 3447
Osinski, M ... 2829
Oskarsson, A ... 2597, 2737
Osornio-Vargas, A ... 1906, 2253
Osowski, D B ... 1273*
Ossig, R ... 1518
Ostiguy, C ... 2693
Ostuki, T ... 1356*
Otegbayo, B O ... 3019
Otieno, M ... 1008*, 1668*, 1671, 1672, 1986, 3053, 3476
O'Toole, T ... 1836*, 2134
Otsuki, T ... 1354, 1355, 1357, 1358, 2784
Ott, D K ... 2228
Otuechere, C A ... 1968*
Ouadi, S ... 3035
Ouedraogo, G ... 1113, 2577*, 2625
Overton, E ... 3165
Oviedo, A ... 3400*
Øvrevik, J ... 1299, 1450*
Ovsianikov, A ... 2451
Owens, C ... 2659
Owumi, S E ... 1446
Oyagbemi, A A ... 2827
Oyatorisa, M O ... 1471
Oyewo, E O ... 1277, 3424
Ozaki, K ... 2987
Ozcagli, E ... 2220*
Özden, S ... 3205*
Ozhan, G ... 2785*
Özhan, G ... 2761
Öztas, E ... 2761*

P

Pace, C ... 1266*
Pacheco, B ... 1559, 1560
Pacheco, J ... 2736
Pacheco Shubin, S ... 2670
Packert, G ... 2077
Padilla, S ... 1795, 1803, 2252, 2886
Padilla-Banks, E ... 3231
Padrós, F ... 1806
Paech, F ... 1972*
Page, K E ... 2194*
Pain-Devin, S ... 2805
Paini, A ... 2656
Paisley, B M ... 1108*
Pal, A K ... 1508
Palani, S G ... 1501
Palate, B ... 3269
Palczewska, A ... 2656
Palermo, C M ... 3441
Palm, T ... 2857
Palmai-Pallag, M ... 2249
Palmberg, L ... 1282, 2171*
Palmeira, C M ... 1127
Palmer, B C ... 1503*
Palmer, J A ... 3299*
Pamelard, F ... 1293
Pamies, D ... 1148*, 2340, 3265
Pampohile, S ... 2356
Pan, D ... 1676, 2830
Pan, L ... 2906
Pan, X ... 1815
Panday, A ... 1908
Pandey, M K ... 1328
Pandey, S ... 1617
Pandiri, A R ... 1609
Pandya, M ... 2942
Pang, J ... 2908, 3447, 3448*
Pang, Y ... 1232, 2345
Pangburn, H A ... 2228*
Panko, J ... 2669, 2976*
Panko, J M ... 1864
Panstingel, N ... 1126*, 1938
Pant, K ... 1398*, 2053
Pantano, P ... 2796, 3486
Paoliello, M M ... 1553*
Papale, A ... 2861
Pape, R ... 2381
Papineni, S ... 1891, 2458, 2893*
Paquette, D ... 1208
Paquette, Z ... 2982*
Paradiso, D ... 2125
Parakhia, R ... 3520*
Paredes, A M ... 2799
Parente, C ... 1926
Parfenova, L ... 1392
Parikh, S ... 3554
Paris, M ... 2202, 2990*
Park, B K ... 3129, 3472
Park, C ... 1735
Park, C S ... 3016
Park, H ... 2729
Park, J H ... 2181
Park, J J ... 2181*
Park, J-S ... 2308, 3141
Park, M-S ... 3217
Park, S-H ... 1942
Park, S-M ... 2724
Park, Y ... 2588, 2881, 2889, 3068
Park, Y-I ... 3074
Parker, A ... 2694
Parker, G A ... 3275, 3276
Parker, P ... 3345
Parker, R ... 2459
Parks, A ... 1881
Parks, A K ... 2191
Parks, B ... 2422, 2432, 3017
Parks, J ... 2259
Parman, T ... 1374
Parmar, A ... 3037
Parmentier, C ... 3461
Parry, E ... 3141
Parry, J ... 1658
Parsons, G ... 2782, 3490
Parsons, G N ... 3494, 3497
Partosch, F ... 3081
Parvez, S ... 2996*
Pasco, D S ... 1490
Pasics, I ... 1457, 1458, 1459
Pastor, M ... 2647, 2684
Patel, A ... 3442*
Patel, D ... 1521, 1524, 2942
Patel, K ... 2086, 3024
Patel, L ... 2826, 2829
Patel, M ... 1209, 2406
Patel, M V ... 2190
Patel, N S ... 1643
Patel, P ... 3453
Patel, R ... 2450, 2764, 3024, 3153
Patel, S ... 2190, 3230*
Patel, V ... 1912
Patel, V S ... 1916*
Patisaul, H B ... 1856
Patlewicz, G ... 2161, 2524*, 2528*, 2677
Patlolla, A ... 2794*
Patri, A K ... 2774
Patry, D ... 3028
Patten, C J ... 3059, 3554
Patterson, A ... 2417, 2420
Patterson, A D ... 2426, 2435, 3430
Patterson, J ... 1644

The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

Patterson, T A 1240, 1241, 1242
Patti, M E 2514*
Patton, K M 1308
Paul, G 3042
Paul Friedman, K 1727*
Paule, M G 1240, 1241, 1242, 1840*, 2334, 2335, 2347
Paules, R 1095, 2179
Paules, R R 2456
Paules, R S 3528
Paul-Friedman, K 1886
Pauloin, T 2865
Pauluhn, J 2987
Paustenbach, D 1264, 2669
Paustenbach, D J 1445, 1690, 1693
Pauwels, C G 3046*
Pavkovic, M 3123*, 3476
Pavuk, M 3170, 3419*
Pawar, R D 2874*
Pawlak, E 1754*
Pawlak, E A 1338
Pawletta, M 1675
Pawlisz, A 2662, 2998*
Pearce, G 1409
Pearce, R 2225*, 2604, 2681
Pearson, K 1677*
Peck, B 3190
Peddada, S D 1609
Pedersen, J M 2014*, 3464*
Pedersen, K 2025
Pedrosa, R P 1309
Pedulla, M L 1507
Peeters, L E 3472
Peffer, R 2018
Peffer, R C 2411
Pegram, R A 1407*, 2231
Pehl-DeSilva, A T 2081
Pei, H 2479
Peijnenburg, A A 1480*
Peitsch, M 3029, 3400, 3402
Peitsch, M C 1106, 3035, 3036, 3401
Peixe, T 1553
Pekkanen, J 1851
Pelch, K 2550
Pellegrini, K L 3138
Pellevoisin, C 2199, 3547*
Peltonen, K 3008*
Pemp, D 1116, 1449*, 3391
Pena, M M O 1852
Pendley, C 1641
Pendlington, R 2646
Pendse, S 1084, 3071
Pendse, S N 2039, 2432
Peng, H 1123*
Peng, S 3051
Penman, M 1442
Penn, A 3212
Pennell, K 3537
Pennell, K D 1245, 2730
Pennell, P B 1245
Pennella, G 2740
Penney, R B 1122
Penning, T M 1663
Pennington, K 1254*
Pennington, K L 3184
Pennington, M J 2930*
Pepping, T 1162
Perdew, G 3538
Perdew, G H 1733, 2417, 2419, 2420, 2423, 2425, 2426
Perdomo, C 3396
Pereira, L C 1127*, 1408
Pereiro, N 2901
Peres, T V 2358
Perez, C M 2262
Perez, E J N 2484*
Peréz, M J 1235
Perez Maldonado, I 3134
Pérez-Castro, L 1577*
Peric, D 1106
Perin, O 1113
Peris-Sampedro, F 2915, 2916*
Perkins, J 3417
Perkins, J T 1455*
Perkins, M W 2130
Perkins, R 1870
Perlina, A 2631
Permenter, M G 1541, 2728, 3468*
Perpetua, M 1631
Perrera, A B 3345
Perron, M 2689*, 2690
Perry, M 3106*
Persaud, I 2767*
Perschke, S 3534*
Pertuiset, C 2015, 3549
Perumal Kuppusamy, S 2712*
Perusse, D 1959
Perveen, Z 3212
Pessah, I 1193
Pessah, I N 1194, 3415, 3422
Peter, E 1115
Peter, S 2736
Peters, E 2463, 3536
Peters, J 1720*, 2021
Peters, J M 2020, 2024
Petersen, D 2157*
Petersen, E J 1522
Petersen, S L 1186
Peterson, H M 1955, 2925*, 3072
Peterson, K E 1858, 3204
Peterson, M K 2270, 2670*
Peterson, N 2923
Peterson, R E 1185, 1187, 2055, 3542
Petrash, J M 2115, 2116, 2121
Petri, E 2945
Petriello, M 1455, 2834*, 3417
Petrikovics, I 2096, 2127*
Petrochenko, P E 2451*, 3335
Petroff, R L 3446*
Petrosyan, P 1219
Petrucci, D 1658*
Petry, T 2544
Pfannenbecker, U 1616
Pfau, J C 2867, 2868
Pfister, J A 1461
Pfuhler, S 2535*
Phadnis-Moghe, A 1736*
Phadnis-Moghe, A S 1360
Pham, L 2625
Pham, N 2030
Pham, N T 3540*
Phan, A V 1244
Phan, P 2396
Phandthong, R 3550
Phelka, A D 2138*
Philippot, G 1236*
Philipson, C 1659
Phillip, O 2059
Phillips, B 3035, 3402*
Phillips, G 2188, 3041
Phillips, J 1074, 1090
Phillips, K 1679, 1680*, 1681, 1682
Phillips, P M 1068
Phillips, T D 2269, 2283, 3012
Phipps, R P 1283, 1294, 1837, 1911, 3047
Phoon, C 1846
Phuong, C 3509
Pi, J 1251*, 1267, 3071
Picard, C 1956
Picard De Muller, G 1293
Piccirillo, V J 2190, 2942
Piccotti, J R 1929
Pichardo, S 3022, 3023
Piche, D 1454
Piché, M-S 1926
Pickering, I J 1583
Pickles, J 2646
Picut, C A 1179, 3275, 3276*
Piekos, S 2013
Pieper, A A 2397
Pierce, J S 1300, 1689, 1690, 2139*, 2140
Pieters, R 1334
Pieters, R H 2873
Pietka-Ottlik, M 2891
Pietrobon, P 1624
Pietrofesa, R A 2047*
Pike, J T 3276
Pimentel, R 1997
Pincen, H M 1983
Pineiro, S 3026
Pinkston, C 3170
Piroird, C 2206*, 2865
Pittman, G 3200
Pixley, S K 1598
Pizzurro, D M 2679*
Plahovinsak, J 2104, 3106
Plahovinsak, J L 2089*
Planchart, A 1176, 2645
Plano, D 1328
Plante, I 2046, 2057, 3390
Plante, J 2619, 2628
Platof, G E 2093
Platoff, G 2103
Platoff, G E 2102, 2404
Platt, N 1630
Platt, V 2007
Plavicki, J S 1185*, 1187, 3542
Pleil, J 1279
Ploch, S 3532*
Plourde, D 1554, 1555, 3344
Plummer, S 2455*
Plunkett, J B 2468
Plunkett, L 2521*
Plunkett, L M 2468
Pluta, L 3071
Pognan, F 1097, 1675, 2630, 3176
Pogribny, I 2035, 2084, 2746
Pogribny, I P 1059, 2037, 3189, 3193, 3208
Poindexter, K 2106*
Poirier, M C 2738
Polanska, K 2985
Polen, T 3378*
Polifka, J 2983
Politano, V T 3442
Polk, W 2756
Pollard, K M 2874
Pollenz, R S 3347*
Polli, J E 2301
Polman, C M 1480
Polotsky, V Y 1309
Poltoratsky, V 1405, 1414, 1428, 1919
Pomeroy-Black, M 1378*
Pompon, D 3159
Ponce, F 1339
Ponnapakkam, S 2980*
Ponnusamy, L 1385, 2494*
Pontel, L 2086
Poole, L G 1984, 2211
Pope, C 2106
Pope, C N 3108
Pope, D 3109, 3139
Pope, M 1109
Pope-Varsalona, H 2690
Popichak, K 2337
Popichak, K A 2378*
Popoola, T 1662
Porceddu, M 2015, 3549
Porter, C 2428
Porter, D 2538, 2773, 3200
Porter, D W 2800, 3496
Porter, N A 1178
Porter, W 3392
Posgai, M 2446, 2448
Post, C M 1359*
Poteete, C 2695
Pothmann, D 3487, 3493
Potrich, F B 2860
Pottenger, L H 2653, 3410
Potter, D 1238
Poulin, J 1145
Pouliot, M 1208, 2841, 2842, 3105
Poulsen, R 1845
Pounds, J G 1526, 3043
Powell, E 1544
Powell, K 2856
Powers, L S 2793
Powers, M 1974
Powers, M J 2493
Powrie, R 1442
Prajapati, M 2798*
Prakash, Y S 3039
Pramanik, K 2020
Praminick, K 2021
Prasad, G L 3038
Prasad, P 1904*
Prasad, S 1621, 3044*
Prats, E 1806
Pratt, M 1436*
Prediger, M 1441, 1922
Pregenzer, J 3009
Prell, R 1928
Presnell, S C 1996
Preston, B 1302
Price, A 3314*
Price, K D 1332
Price, O 2215
Price, P 1681*, 1682
Price, P S 1679
Prieto, A I 3022
Prince, L 1565*
Pringle, R B 2091*
Prior, H 2839*
Prissette, M 2407
Privett, B 3443
Probst, C E 3533*
Proctor, D 1040*, 1542
Proctor, D M 2137, 2237, 2697
Proctor, W 1078
Proctor, W R 1669, 3481*
Proffitt, S 1849
Prophete, C 2247
Proscura, E 2098
Prot, J-M 2851
Prough, R A 1962, 3170
Provencher, A 1112
Prows, D R 1296
Prozialeck, W C 3122*
Prueitt, R L 2143*
Pruett, S B 1336
Prussia, A J 2683
Przedborski, S 2407
Przygoda, R T 2446, 2448*
Puchalski, J 1927
Puente-Valenzuela, C O 1255*
Puerto, M 3022, 3023
Puga, A 1537, 1737, 1823, 3268
Pugh, F 2434
Pugh, N D 1490
Pugsley, M 3105
Pulczinski, J C 3214
Pulinilkunnil, T 2412
Pulliam, C 2025*
Pulster, E 2663*
Punganuru, S R 2032
Purgatto, E 2035
Puschner, B 1224, 1892
Puteri, A 2278
Putt, D 1137
Pyrgiotakis, G 2855

Q

Qi, X 2963
Qian, W-J 1509
Qian, Y 2538, 3492
Qiao, D 1329
Qin, H 2763
Qin, S 2495
Qin, T 2758
Qiu, P 2843
Qiu, Y 2070, 2973
Qu, W 1251, 3150*
Qu, Y 1998, 3557
Quemeneur, L 1624
Quevedo, C 2456*, 3299
Quezada-Tristan, T 2271, 3021*
Quinones-Hinojosa, A 1148
Quintanilla-Vega, B 1305
Quist, E 3271*
Quist, E M 3241
Quynh, H T 1143

R

R, N 2596
Raabe, H A 2175
Rabiner, R 2442
Rabinovitz, I 2129
Racette, B A 2352
Racine, C R 3109*
Ract, J 2035
Radwan, A 3443
Rafael-Vázquez, L 1305*
Rafferty, P 1640
Rager, J E 2697, 3407, 3445, 3539*
Ragin-Wilson, A 2970
Rahman, A 1268
Rahman, I 3398
Rahman, M M 1277
Rahmani, K 2296*
Rai, M K 2757
Rai, S N 3340
Raimundo, R D 2855
Rainho, C R 2241
Rajagopal, K 1611
Rajagopalan, P 1999, 2004
Rajagopalan, V 2212
Rajamani, S 2826

The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

Rajapaksa, K S 3481
Rajendran, K 2212
Rajoria, R 3239*
Raju, J 3028
Raldúa, D 1806
Ralph, D H 2020*
Ramachandran, K 3123, 3138, 3555
Ramaiah, L 1632*
Ramaiahgari, S 2179*, 2294, 2297
Raman, D 2212
Ramanathan, G 1128
Ramesh, A 1213, 1946, 2040
Ramirez, J-M 1177
Ramirez, S C 1177
Ramirez, T 1788, 2200, 2223, 3052, 3054*, 3057, 3058
Ramirez-Ramirez, H A 3012
Ramirez-Salinas, G 2956
Ramm, S 3118*
Ramme, A P 2187
Ramos, E 2885
Ramos Robles, B 1978
Ramsey, J D 2106
Rana, J R 2942*
Rana, P 3467*
Rand, M D 1565, 1569
Randell, S H 3505
Randhawa, M 1265
Randle, D 1988, 2009
Randle, D H 1990
Rangel-Muñoz, E J 2271
Ranjan, A 2078*, 2106
Rankin, G 3139*
Rankin, G O 3109
Rao, G 1927
Rapedius, M 1829
Rappold, A 2243
Rasmuson, J 1286
Rasmussen, T 2013
Rasoulpour, R 1120, 1869, 2458, 2518*
Rasoulpour, R J 1057, 1891, 2674, 2893
Rath, M 2023
Rathman, J 2163, 2467, 2476, 2657*, 2709
Rattan, S 1855*
Raufman, J-P 2301
Raulli, R 2100
Rausch, L J 1398
Ravel, G 1624*
Ravenscroft, S 2010, 2847*
Ravindranath, V 3307*
Rawat, S 3413
Rawls, J 1791
Ray, J 3501*
Ray, P 2977
Ray, P D 3199
Ray, R 1323
Raymick, J 2334, 2335
Raymond, J 1120, 2036
Raza, H 1896*
Re, D B 2310, 2407*
Read, R 1702
Read, R 1893
Reamon-Buettner, S M 3484*
Reátegui-Zirena, E 1385
Reboulet, J 3216
Reboulet, J E 1205
Recio, L 1422*, 2088
Reddy, G 1434
Reddy, P 1417
Reed, B 2103
Reed, R 1303
Reese, D H 2462
Reese, R 1178
Reeve, I 2900
Regalia, D 2832
Régnier, J-F 3487, 3493*
Reichard, J 2478
Reid, F 2110*, 2111, 2123, 2124
Reif, D M 1683, 1800, 2633, 2634, 2636, 2645, 2751, 3364*
Reilly, C 1285
Reilly, C A 2244, 2251
Reily, M 2726
Reiner, R 1291
Reinosa, J J 2775
Reinsalu, L A 1117
Reisfeld, B 1369, 3198
Remick, A K 3275*, 3276
Remy, M T 2397
Ren, J 1652, 1657*
Ren, L 3466
Ren, X 2051, 2969
Renard, B 1518
Renfro, J R 1221
Renganathan, M 2852*
Renquist, B J 3345
Renslow, R 1136
Reo, N 2734
Resager, W 1992*
Reverte, I 2915, 2916
Reyes, E S 2285
Reynaga-Ornelas, L 3219
Reynolds, I 3355b*
Reynolds, J 2646
Reynolds, S 2773, 2782*
Rezk, B M 2333*
Rhoades-Hamacher, J 2708
Rhokad, D 2350
Rhomberg, L R 2992
Rial, E 1806
Riaz Ahmed, K 2678, 2719*
Ribeiro, D L 1416
Rice, A 3498, 3505
Rice, C 1285*
Rice, G 1436, 1716b*, 1766*
Rice, G P 3009
Rice, J R 1811*
Rice, K C 2347
Rice, P 2558*
Richard, A 1682, 2627, 3300
Richard, A M 1151, 3539
Richard, C 3237
Richards, J 1066, 1067
Richards, J E 1069, 1200, 2135
Richardson, C 2736
Richardson, J 1953, 2069, 2348, 2400
Richardson, J R 1135, 1969, 2371, 2413, 2554*
Richardson, R J 2398*
Richardson, V 1885*
Richarz, A N 2656
Richburg, J H 3255
Richert, L 3461*
Richey, J 2104
Richman, E 2337
Richter, I 1818, 3056
Ricke, W 1872
Ricles, L 2453*
Rider, C 2294
Rider, C V 1451*, 3150
Ridge, L 1844*
Riebeling, C 1518
Riefke, B 3476
Rieth, S 1198
Rietjens, I M 2548
Riggs, T 1627
Riitano, A 2332
Riley, R 3348
Ring, C L 2681*, 3436, 3437
Rinkevich, J P 2615
Rinkus, S 2900
Rios-Cabanillas, M 1574*
Rioux, J 2125
Ripp, S 2779, 3556
Risby, T 1279
Riss, T 3553*
Ritacco, G 3519*
Ritchie, R 2736
Ritter, D 3548*
Rittinghaus, S 2537
Rittinghausen, S 3499
Riu, A 1113, 1228, 2007, 2015, 2182*, 2477
Rivas-Arancibia, S 2386*
Rivera, E U 3339
Rivera-Caraballo, K 1736
Rivera-Castillo, H 3021
Riviere, J E 1504, 3078, 3079, 3511
Rivina, Y 2128
Rivkees, S A 1845
Rizzo, M 1340
Rizzo, M D 1341*
Roach, K A 1515*, 3496
Roach, M 1155
Robaire, B 2057
Robbins, C 2696
Roberts, D W 2644
Roberts, G K 3273*
Roberts, J 1921, 3028
Roberts, J E 1816*
Roberts, J R 1284, 1289, 1515, 3489, 3496*
Roberts, R 1630*, 2685
Robertson, A 1230
Robertson, L 1109
Robertson, L W 3416, 3420
Robertson, W 1423
Robin, G 3415
Robin, L P 1784*
Robinson, B L 2347
Robinson, C 3116*
Robinson, J F 3141, 3236, 3409*
Robinson, P J 1204
Robinson, S 2811
Rocca, M 1641*
Rocha, J B 1817
Rochani, H 1685
Roche, B M 1625*, 2856
Rochester, J R 1859*
Rochet, J-C 2372
Rockwell, C 1346
Rockwell, C E 1344, 1934, 1965
Rodenburg, L 1442
Röder, N 3525
Rodgers, D 3042
Rodgers, T 3099
Rodridguez, A 1945
Rodrigo, G 3400
Rodrigues, A D 1610*
Rodrigues, L 3296
Rodrigues, M A 3533
Rodriguez, A M 2130
Rodriguez, L 2647
Rodriguez-Martinez, E 2386
Roell, K R 2751*
Roessger, K 2000, 2173
Roethke, T J 1301
Rogawski, M 1229
Rogers, J 2717
Rogers, L K 1913*
Rogers, T 3090, 3095
Rohan, J G 1201, 1205*
Rohlman, D 2902
Rohlman, D S 2401*, 2402
Rohr, A C 2137
Rojanasakul, Y 3483
Rojo de la Vega Guinea, M 2602*
Rokad, D 2351*
Rolle, D 1552
Rollins, B 3547
Rolls, B A 3039*
Rolo, A P 1127
Romero, A 2885
Romero, E 1285
Romero, E G 2244
Romero, M F 1271
Romo, D 1907*
Romoser, A A 3012
Rompion, S 1665*
Rondelli, C M 3149, 3151*
Ronis, M 2025
Ronis, M J 1874*
Ronnekleiv-Kelly, S M 2076
Roof, S 2848*, 3531
Roomi, M W 2023*
Roomi, N W 2023
Rooney, J P 2624*
Roper, C 1614
Roper, C S 1603*
Roper, J 3025, 3064
Roponen, M 1851
Roque, P J 1207*
Rosales Cruz, D P 1973
Rosas Lemus, M 1973
Rosas-Hernandez, H 2347
Rosas-Perez, I 1906, 2253
Roseman, J 2110, 2111, 2123, 2124
Rosemberg, D B 1817
Rosen, M 1822*, 2547
Rosen, T 3272
Rosenbaum, J T 1899
Rosenberg, K 3278
Rosenberg, M 1084
Rosenfeld, M E 1128
Rosengren, R J 1320*
Rosenmai, A K 2597*, 2737
Rosenspire, A 1349*
Rosenthal, F 1596
Rosenzweig, B 3473, 3474
Ross, J 2096, 2856
Ross, J D 1745
Ross, M 2899
Ross, M K 2725
Ross, P 2168*, 2169
Ross, S M 1867, 1871, 3071
Ross, T M 1407
Roth, A 1828
Roth, J 2356
Roth, R 2008, 2497*, 2502*
Roth, S E 3175
Roth, T 1561
Rothe, H 2466, 3512
Rothe, M 3045
Rothemund, S 2477
Rothenberg, C 2980
Rothenberg, S 1584*
Rothen-Rutishauser, B 1708*
Rothfuss, A 1645*
Rothwell, C 2107, 2130
Rouach, H 2430
Roursgaard, M 2248
Rouse, R 3473*, 3474
Rousseau-Ralliard, D 3237
Rousselle, S 3084
Rovedatti, M G 2901
Rowland, D 2409
Rowlands, J C 1736, 1770*, 2422, 2711
Rowley, S 1871, 3071
Roy, A K 3504
Roy, N 2938
Roycroft, J H 1308
Royland, J E 1200
RS, T-E 1494
Rubelli, M 1752*
Rubin, A 2900*
Rubino, R E 2083, 3094
Rubio-Andrade, M 1259
Rubio-Armendariz, M-C 2278*
Rubitski, E 3480
Rudel, R 2655*, 3157
Rudisill, C A 2615
Rudolph, J 1666
Rudraiah, S 2013, 3431
Rudy, M 1841*
Ruepp, S 1674, 1676*
Ruestow, P 2978
Ruestow, P S 1689, 2139
Ruff, A L 1601
Ruger, J 1605
Ruhter, M C 2615
Ruio-Andrade, M 2749
Ruiz, I 3083
Ruiz, M 3067*
Ruiz, M-J 2276*
Ruiz, P 2227, 2631*
Ruiz-Ramos, R 2325*
Ruiz-Uribe, A J 2269
Rukke, H V 2444
Rumbeiha, W K 1226, 2119*, 2120, 3346
Rumpler, J 3439
Runge, F 1618
Runge-Morris, M 3457
Ruppert, M 1060
Rusnak, ScD, S M 1691*
Russ, K A 1284, 1313*
Russell, A L 3454
Russell, P 2183
Russell, R 1395
Russo, D 2626
Rusyn, I 1010*, 2711, 2729, 3189, 3190, 3433, 3434
Ruszkiewicz, J A 1581*
Rutagarama, P 3398
Rutten, J M 1231
Ryan, C 2195, 2196*
Ryan, C S 1946
Ryan, E P 1081, 3014
Ryan, K R 2131*
Rychlik, K A 3214*
Ryde, I T 2369, 3077

The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

S

Sa, R C ... 2185*
Saal, F v ... 1872
Saba, W ... 2791
Sabate, J ... 1265
Sabbisetti, V ... 3134
Saber, A T ... 2808
Sable, H J ... 3418
Sabo-Attwood, T ... 2787, 2811, 3495, 3508
Sabolsky, E M ... 1520
Sachanandani, R ... 1794, 1807*
Sacher, O ... 2657, 2709
Sadekar, N ... 1571*
Sadekova, N ... 1646
Sadler, N C ... 2234, 3043*, 3462
Sadowski, N ... 2194, 2209
Safe, S ... 2056, 2066, 2074, 2080, 2309, 2337, 2418
Safe, S H ... 1917, 2044, 2378
Saffari, A ... 1217
Saforo, D ... 2496
Sager, T ... 3488, 3489, 3496
Sager, T M ... 2800*
Sahay, K ... 1423
Saiduddin, M N ... 2264*
Saini, Y ... 1935*
Saito, K ... 2193, 2198*
Saito, M ... 1595
Saitta, K S ... 2370*
Saiz, J ... 2647
Sajja, R K ... 1621*, 3044
Sakaguchi, H ... 2193, 2732
Sakai, A ... 1931*
Sakai, Y ... 1393
Sakaki, H ... 2603
Sakakibara, T ... 1604
Sakamoto, M ... 1583
Sakamuru, S ... 2462
Sakanishi, K ... 2464
Sakkiah, S D ... 1079, 1865, 1870
Sakolish, C ... 3111*
Sakuma, M ... 2198
Sakurai, K ... 3186
Sakurai, T ... 2060, 2810, 3164
Sala Benito, J V ... 2656
Salama, M ... 2387*
Salanga, M C ... 1799*
Salatas, J H ... 2668
Salazar, K D ... 2700*
Salazar, R ... 1384*
Salinas, E ... 1788
Salisbury, J ... 2773
Salley, J T ... 1439*
Salmen, R ... 1289, 2830
Salminen, W F ... 1110
Salva, A ... 1618
Salvador, A A ... 2352
Salvetat, N ... 1636
Samet, J ... 2210
Samet, J M ... 2320
Samir Essa, S ... 3006
Sampat, V ... 1916
Sampson, D A ... 2079
Samuel, P T ... 1946
Samuelsen, J T ... 2443*, 2444, 2445
Samuelson, D J ... 2067
Sanchez, B ... 1114, 1309, 2261, 3204
Sanchez, B N ... 1858
Sánchez, D J ... 2795
Sanchez-Casas, R M ... 2269, 2283
Sánchez-Martín, F J ... 1537
Sánchez-Ramírez, B ... 1261, 1262
Sánchez-Ramírez, B E ... 1493, 3491
Sanders, A P ... 1432*
Sanders, J M ... 2045, 3406
Sanders, M A G ... 2067
Sanderson, J T ... 2044
Sanderson, T ... 1481*, 3393
Sandy, M ... 2030, 3540
Sanford, J C ... 2481*
Sangodele, J O ... 3244*
Sanni, A ... 1133
Sanoshy, K ... 2457
Sanquer, S ... 2743*
Sant, K E ... 3291*, 3292, 3294
Santacruz-Márquez, R ... 3228, 3229*
Santhanam, N ... 1228*
Santiago, N ... 2356
Santirocco, E ... 1614
Santonen, T ... 2142
Santos, A C ... 2399
Santos, J H ... 3065
Santos, J M ... 1137
Santos, N A G ... 2399
Sanz, P ... 3087
Sapiro, J ... 1372
Sapiro, J M ... 2599*
Sapkota, M ... 1280*
Sappington, D R ... 1122
Sarang, S S ... 2036, 2038
Sareen, P ... 1398
Sargeant, A M ... 3097
Sargent, L ... 1701, 2773, 2782, 3488
Sarigiannis, D ... 1698*, 2472*
Sarigiannis, D A ... 2985*
Sarkar, S ... 2022, 2334, 2335*, 2373
Sarma, S N ... 1218*
Sartor, M ... 1089
Sarty, K ... 2412
Sasaki, S ... 1604
Sasek, T W ... 1491
Sasidharan, A ... 2766*
Sasso, A ... 1041*
Sasson, C ... 2474
Sato, K ... 3522
Sato, R ... 1904
Satoh, M ... 1528, 1532, 1534*
Satterwhite, C M ... 1928*
Saudan, J ... 2194
Sauer, U G ... 2544
Saulles, A ... 2148
Saunders, J ... 1261
Saurabh, K ... 2496
Savich, R D ... 1232, 2345
Savidge, M ... 3203
Sawada, K ... 1825
Sawyer, A ... 2440
Sawyer, M E ... 2608
Sayama, A ... 3186
Sayers, B C ... 3025*, 3503
Sayler, G ... 2779, 3556
Sayre, A L ... 1291
Scabilloni, J ... 3488
Scanlan, L D ... 1404*, 1417
Scazziota, A ... 1235
Schaffer, J M ... 3472
Schallmo, M ... 1735
Schaudien, D ... 2537, 3499*
Schaupp, C M ... 1499
Schecter, A ... 1143*, 2733
Schenk, L ... 2966*
Schepky, A ... 2531*, 3512
Scherer, R ... 3337*
Scherzer, M T ... 2496
Schetinger, M R ... 2358*
Scheuerell, C ... 3532
Schierle, J ... 3004
Schiestl, R ... 1392*, 2128
Schildknecht, S ... 2381*
Schilter, B ... 1866, 2431
Schinaman, R C ... 1117
Schisler, M ... 1057
Schladweiler, M ... 1066
Schladweiler, M C ... 1067*, 1068, 1069, 2135, 3195
Schlager, J J ... 1506
Schlechtriem, C ... 2925
Schlenk, D ... 1781*, 2665, 2934, 2941, 2949, 2955, 3290
Schlezinger, J ... 1440*, 1883
Schlink, S ... 3084
Schlosser, A ... 2085
Schmalbach, K ... 1116*, 1449
Schmeda- Hirschmann, G ... 3463
Schmeink, S ... 1157
Schmidt, F ... 2647
Schmidt, J T ... 2344*
Schmidt, N ... 2669
Schmitt, E E ... 3392*
Schmitt, M ... 1645
Schmuck, M R ... 1082*
Schmued, L S ... 2335
Schnackenberg, L K ... 1110*
Schneckenburger, J ... 1518
Schneider, A J ... 2055
Schneider, J ... 2353, 3196*
Schneider, K ... 2519b*
Schneider, L ... 3137
Schneider, M M ... 3094
Schneider, S ... 1252
Schnelle, A ... 3126
Schnellmann, R G ... 2496
Schnepper, M T ... 1228
Schoeny, R ... 2653, 3410
Schoetens, F ... 1653
Schoeters, G ... 1142
Scholle, S ... 2221
Schomaker, S ... 2482*, 3558
Schoonen, M A ... 2254
Schophuizen, C M ... 3113
Schoville, S ... 2923
Schreiver, I ... 3525*
Schrenk, D ... 2591
Schröder, K ... 2710
Schroeder, A ... 2928
Schroeder, J ... 1454
Schroeder2, A ... 2214
Schroth, W ... 3543
Schubauer-Berigan, M ... 3488
Schuchardt, S ... 1510, 2542, 3548
Schuler, L A ... 3388
Schuler, M ... 1060
Schultheis, P ... 2356
Schultz, I ... 1697, 3404*
Schultz, M ... 1340
Schultz, S T ... 1335
Schultz, T W ... 2644
Schulz, M ... 2043
Schumacher, J D ... 1953*
Schunck, W-H ... 3045
Schutt, L ... 1638
Schutte, M G ... 1152
Schwab, C ... 2476, 2709
Schwanke, L ... 3024
Schwanz, H A ... 2447
Schwartz, J ... 1071
Schwartz, T S ... 1816
Schwarze, P E ... 1450
Schwegler-Berry, D ... 1515, 2783, 3488, 3496
Schwotzer, D ... 2542*
Sciaky, D ... 1086
Scialis, R J ... 2316*
Scialli, A R ... 1006*
Scinicariello, F ... 2972*
Sciuto, A ... 2559*
Sciuto, A M ... 1323, 2130
Scollon, E ... 2680*
Scott, C ... 3069
Scott, P K ... 1300*, 1690, 1693
Scott, S ... 2183
Scotto, J ... 2824
Scoville, D K ... 1499
Scruton, K ... 2235
Searfoss, G H ... 1739*
Seaton, M ... 2162
Seaver, B P ... 1361, 1367
Seawright, A G ... 2274*
Sebastián, D ... 1806
Sebbel, J ... 1222
Sebesta, M ... 3545
Seeland, M ... 3081
Seeley, M ... 1692, 2141*
Seely, J C ... 1893
Segal, D ... 1203*, 2984
Segner, H ... 2925
Segura-Medina, P ... 1906, 2253
Sehgal, N ... 1184*
Sehr, A ... 2860
Seidler, F J ... 1163*
Seifalian, A M ... 3334*
Seifikar, H ... 3409
Seiji, S ... 1862
Seisenbaeva, G ... 2171
Sekino, Y ... 1172, 1827, 3263, 3264
Sekowski, J W ... 2107, 2117*
Selaturi, V ... 3526
Selinger, D ... 2605
Selinger, D W ... 2618*
Selwyn, F P ... 3144
Semiu, B ... 1549
SenGupta, S K ... 3094
Sens, D A ... 1257, 1258, 1273, 1531, 3127, 3132
Sens, M A ... 3127
Seo, J ... 1316*, 2890
Seo, J-E ... 2871, 2872*
Sepulveda, M S ... 1792
Sepúlveda, M S ... 2858
Serchi, T ... 1511, 2805
Serra, N ... 2315
Serrano, S ... 1690
Serve, K ... 2868
Sestak, M ... 3162
Seth, R ... 1902
Seth, R K ... 1920*, 1949
Sethi, S ... 1191, 1192, 1193*
Sethupathy, P ... 3211
Seto, Y ... 2204
Setser, J ... 1930
Settivari, R ... 3546*
Settivari, R S ... 2208
Setzer, P B ... 1338
Setzer, R W ... 2681, 3050*, 3437
Setzer, W ... 2225
Seung Mee, L ... 1287
Sewald, K ... 2710
Sewer, A ... 3036, 3036
Sexton, M ... 1625
Seyler, N ... 2199, 3547
Seymour, J ... 2727
Sezerman, O U ... 3205
Sha, L ... 2298
Sha, R ... 3423
Sha, Y ... 1427*
Shack, A ... 1336
Shafarin, J ... 1896
Shafer, T ... 1150
Shafer, T J ... 1149, 1151, 2580*
Shaffer, J ... 2538
Shah, F ... 3382*
Shah, I ... 2161*, 2609, 3188, 3304*
Shah, P ... 3115
Shah, P P ... 2496
Shah, R ... 1074, 1090*, 1725*
Shah, S ... 3485
Shah, U-K ... 2772
Shaheen, H M ... 1431
Shai, J L ... 1433
Shaikh, Z A ... 3342
Shakarjian, M P ... 1173*, 1220
Shalat, S L ... 1135
Shamy, M Y ... 1585
Shan, Y ... 1117*
Shanahan, J ... 2262
Shane, H ... 2862, 2866
Shankar, K ... 1874
Shanker, A ... 1946
Shannahan, J H ... 1502*, 1520, 2767, 3503
Shanno, L ... 1986
Shao, D ... 2120
Shao, J ... 2596
Shao, K ... 2165*
Shao, T ... 1961*
Shapiro, A ... 2165
Shapiro, D ... 1285
Shapiro, S ... 1173
Sharanek, A ... 1970
Sharkey, J ... 3472
Sharma, A ... 2407, 3413
Sharma, A K ... 1328
Sharma, M ... 3506*
Sharma, S ... 1465*
Sharma, T ... 3227
Sharma, V ... 1402
Sharp, C ... 3115*
Sharp, C N ... 1984, 2496
Sharp, J ... 3109
Sharpe, M ... 2491
Sharper, V ... 3260
Shaw, E ... 1402
Shaw, R ... 2333
Shay Hynds, E ... 2669
Shearer, J ... 1351*
Sheehan, D W ... 2175
Sheehan, J ... 3100*
Sheehan, P ... 2661*
Sheets, L P ... 2411*
Sheibani, N ... 3142*
Sheinson, D ... 1078, 3481
Shelton, D ... 1238
Shelton, M ... 1627
Shelton, S D ... 1396
Shen, C-L ... 3018
Shen, J ... 1652, 2644*
Shen, L ... 2323, 2324
Shen, P ... 2881*
Shen, S ... 1562

The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

Shepard, K ... 1422
Shepard, P ... 2655
Shepherd, D L ... 2817
Shepherd, D M ... 1361, 1367
Sher, R ... 2332
Sherf, B ... 1982
Sherman, H ... 1988*, 2009
Sherman, K P ... 2130
Sherr, D ... 1732
Shevchenko, V ... 2173
Shi, J Y ... 2083*
Shi, Q ... 1318*, 2614
Shi, S ... 3479*
Shi, Y ... 1826
Shibutani, M ... 2028
Shih, T-M ... 2095, 2114
Shikanov, A ... 3222
Shilpa, N ... 1119
Shim, J ... 1798*, 2332, 3464
Shimelis, H ... 2070
Shimoda, H ... 3186
Shimomoto, T ... 2745*
Shimpi, P ... 1956
Shin, D Y ... 1287*, 1306
Shin, H ... 2947
Shin, K ... 1233
Shinkai, Y ... 1431, 1582, 2295, 2298, 3451*
Shinoda, S ... 3521
Shinohara, N ... 3482
Shipkova, P ... 2726
Shipkowski, K A ... 3494, 3502, 3503*
Shirakawa, T ... 1156
Shirao, T ... 1172*
Shittu, M ... 2913
Shivashankar, V ... 2618
Shock, S S ... 2668
Shockley, K ... 1451
Shockley, K R ... 1609, 2649*, 3089
Shoda, L ... 2218
Shoda, T ... 3182
Shoeb, M ... 1289*
Shokunbi, O S ... 1535
Shorey, L ... 3246
Shpyleva, S ... 1059*, 2037
Shrestha, S ... 3132*
Shropshire, W ... 1143
Shu, L ... 1812
Shuey, C ... 1132, 2981
Shuler, M L ... 2477
Shull, G ... 2356
Shultz, V ... 3487*
Shurin, M R ... 2803
Shvedova, A A ... 1291*, 2803
Siapco, G ... 1265
Siddens, L ... 3161
Siddens, L K ... 2186
Sie, B ... 2658*
Siedlikowski, M ... 3027
Siegel, E ... 1122
Siegel, P ... 2862
Siegmann, M ... 1986
Siegrist, K ... 2773*, 2782
Sierra-Marquez, J ... 2744
Sierra-Marquez, L ... 2744*
Sierra-Santoyo, A ... 1141*
Sierro, N ... 3035*
Sievers, C ... 2439
Sikka, S C ... 2333
Silbergeld, E ... 2579*
Siler, S ... 2218
Silinski, M A ... 3273
Sills, R C ... 1609
Silva, A L C ... 1553
Silva, C S ... 3470*, 3471
Silva, M ... 2884*
Silva, M J ... 1443
Silvano, J ... 1607
Silverman, J ... 1229, 2410
Silverstein, H ... 2077
Silvestre, R ... 1963
Sim, W-C ... 1474*
Simar, S ... 3487
Simchick, G ... 1159
Sime, P J ... 1283, 1294, 1837, 1911, 3047
Simeonov, A ... 1811
Simic, D ... 1671, 1986*
Simmons, C S ... 1845
Simmons, J E ... 1764*, 2231, 3436
Simmons, S O ... 1407, 1886*, 1888, 1889, 2320
Simon, J ... 3190
Simon, K A ... 3463
Simon, T ... 2677
Simon, T W ... 3362*
Simone, N ... 2890
Simon-Friedt, B ... 1061, 3165*
Simon-Friedt, B R ... 1695
Simonich, M T ... 1121
Simonich, S ... 3285
Simons, J ... 1323, 2130
Simons-Burnett, A ... 1664
Simpkins, J W ... 2917
Simpson, K J ... 3472
Sims, C M ... 1505*
Simutis, F ... 1332
Singer, M ... 1986, 3053
Singh, B ... 3476
Singh, D P ... 2290*
Singh, J ... 1650*, 2024, 2831
Singh, K P ... 1734, 1837*, 2494
Singh, N ... 2373, 2396*, 2772, 2910
Singh, N P ... 3213*
Singh, P ... 2845*
Singh, R ... 2902
Singh, R R ... 1904
Singh, U P ... 3213
Singh, U S ... 2024
Singha, S K ... 1487*
Singhal, A ... 2230*, 2661
Singhal, R ... 1874
Sioen, I ... 1142
Sioutas, C ... 1217
Siow, D ... 2496, 3115
Sipe, G O ... 1180
Sipes, N S ... 2604*, 3383*
Sirenko, O ... 2711
Sisco, M ... 2247, 3248
Siskind, L ... 3115
Siskind, L J ... 2496
Sisler, J D ... 2538*, 3492
Sistare, F ... 1677
Sistare, F D ... 2731
Sitapara, R ... 1916
Sivaraman, L ... 3256*, 3440
Sivasankar, M P ... 2132
Siwakoti, R C ... 2683
Sjodin, A ... 3419
Sjögren, B ... 1944
Skelly, B ... 1684
Skinner, J L ... 1507
Skoczen, S ... 1525
Skoog, S A ... 2449*, 3335*
Skovmand, A ... 2248
Skuba, E ... 2605
Slade, L ... 2412
Slaga, T J ... 2065
Slama, R ... 3237
Slattery, M ... 2307
Slavkovich, V ... 3344
Slavov, S ... 2642
Slezak, B ... 2676
Slikker, W ... 1240, 1241*, 1242, 1840
Slitt, A ... 1372, 1956
Slitt, A L ... 1876
Sloan, D J ... 1673*, 3544
Sloper, D ... 3073
Slotkin, T A ... 1163
Slusser, A ... 3127*
Slusser-Nore, A ... 1273
Sly, E ... 2194
Sly, E A ... 2175
Smeester, L ... 1259, 1262, 3199
Smegal, D ... 2275
Smirnov, A ... 2254
Smirnova, L ... 2185, 2340, 3408
Smit, J ... 1334
Smit, J J ... 2873
Smital, T ... 2945
Smith, B ... 1821
Smith, C ... 2689, 3239
Smith, C M ... 1875*
Smith, C S ... 1308
Smith, C V ... 1177*
Smith, D ... 2736*
Smith, D R ... 2511*
Smith, G J ... 1295*
Smith, J ... 1526, 2234*
Smith, J N ... 1129, 1130, 1131, 3462
Smith, K ... 2361, 2362*
Smith, K J ... 1733*
Smith, L ... 1423, 1671, 1672
Smith, L C ... 3508*
Smith, L L ... 1401*
Smith, M ... 1353
Smith, M E ... 2452
Smith, M V ... 1811
Smith, P B ... 2420, 3430
Smith, R ... 2003, 2125
Smith, R D ... 1265
Smith, S ... 2691
Smith, S A ... 2935
Smolik, C M ... 3086
Snawder, J ... 3377b*
Snawder, J E ... 1686*
Sneed, R ... 1819*
Snelling, S ... 2722
Snider, T ... 2103
Snider, T H ... 2093, 2102
Snippe, N ... 1618
Snook, S ... 1653, 1671, 1672
Snow, S ... 1067, 2135
Snow, S J ... 1066*, 1068, 1069, 1756*
Snyder, A ... 1938*
Snyder, J S ... 2133*
Snyder, N W ... 1312, 2317
Snyder, R ... 3453, 3498
Snyder, R J ... 3505*
Snyder, S ... 1596, 2354, 2355
Snyder, S A ... 1138
Soares, A M ... 1806
Soares, B D ... 1591
Sobolewski, M ... 1167, 1188*
Sobolewski, M E ... 1166
Sobus, J R ... 3539
Sogorb, M A ... 3265
Sohn, E K ... 2940
Solaimani, P ... 1217*
Solano, M ... 1432
Soldatow, V ... 2018*, 3434
Solis-Angeles, S ... 3130*
Solis-Wheeler, M A ... 3281*
Sollome, J J ... 3211*
Solomon, G ... 2030, 3540
Solorio-Rodriguez, A ... 1500
Somji, S ... 1257, 1258, 1273, 1531, 3127, 3132
Sommerhage, F ... 1228
Sommers, C H ... 3024
Sommerville, D R ... 2170
Son, D-S ... 2361
Sonawane, B ... 2717, 2984
Sonee, M ... 1671, 1672, 3476
Song, J-Y ... 3074
Song, M-F ... 3197
Song, P X ... 3204
Song, Y ... 3091
Sonn, K ... 1735
Soper, C ... 1247
Sorenson, C M ... 3142
Soret, S ... 1265
Soroka, C J ... 1966
Soscia, D ... 2390
Soscia, D A ... 1153
Soshilov, A ... 2299
Sosinski, L K ... 1426
Sosna, W ... 2110, 2111, 2123, 2124
Soto-Gutiérrez, A ... 3457
Soukup, S T ... 1116, 1449
South, J ... 1813*
Souza, D O ... 1817
Souza, V ... 1973, 1978
Sovadinova, I ... 2308
Spackman, P ... 1153
Spada, A P ... 1951
Spangler, W S ... 1093
Sparks, N R ... 2311, 3286*
Sparrow, M ... 2773
Spear, W C ... 3155
Specht, A J ... 1545*
Speidel, J T ... 3234*
Spellman, R ... 1060
Spencer, R M ... 1104
Spezia, F ... 1624, 3259
Spiegelman, V S ... 3526
Sping, P ... 3515
Spira, A ... 3396
Spirkl, H-P ... 2647
Spognardi, A-M ... 2441
Sprando, R L ... 2771, 2789
Springer, S ... 1398
Sprowles, J L ... 3418
Spungen, J ... 2275
Squibb, K ... 1561
Sriram, K ... 1199, 2346*
Sriram, S ... 1120
Srivastava, S ... 2078, 2134
St John, N ... 1419
St Louis, R ... 1789, 1801
Staflin, K ... 1078, 1611, 1638
Stallings, J D ... 1270, 1541, 3140
Stamou, M ... 2416*
Stampfl, J ... 2451
Stämpfli, M R ... 3221
Stanam, A ... 1664*
Stancescu, M ... 2851
Stancil, I T ... 2892*
Stanciu, O ... 2276
Stanford, E ... 1732*
Stanko, J P ... 3389*
Stankunas, K ... 3281
Stanley, J R ... 2441, 2442
Stanoi, I R ... 1093
Stansfield, K ... 2353
Stansfield, K H ... 1590, 1591*
Stanton, B ... 2569*
Stanton, B A ... 1253
Stanton, P K ... 1173, 1220, 1590*
Stapleton, H ... 1797
Stapleton, H M ... 2888
Stapleton, P A ... 1520, 2817, 2820, 3238*
Star, A ... 1291
Stark, R ... 2646
Starokozhko, V ... 1997*
Starr, C R ... 2217
Starr, T ... 2086
Staska, L ... 1353, 3276
Stasko, N ... 3443
States, J C ... 2067, 3340
States, V A ... 3340
Stauber, J ... 1293, 1983
Stavitskaya, L ... 1400
Stebbins, K E ... 1298
Stedman, D ... 1789
Stedman, D B ... 1801*
Stedman, D S ... 2551
Stedtfeld, R ... 3351
Steele, B ... 2323, 2324*
Steele, C W ... 3024
Steeves, M ... 2618
Stefaniak, A ... 2780, 3488
Stefaniak, A B ... 1515, 1558, 3496
Stegelmeier, B ... 1992
Stegeman, J J ... 1799, 2122, 3159
Steger-Hartmann, T ... 1675*, 2163, 2684
Stegman, M ... 1195
Stegmüller, S ... 2591
Stehno-Bittel, L ... 3555*
Steidl-Nichols, J ... 1238, 2836
Steinberg, P ... 2016
Steinmetz, F P ... 2656
Stenman, L ... 1124
Stephens, M ... 1037*, 2632
Stephens, M J ... 2461*
Stephens, T ... 1974
Stepp, M W ... 2067*
Stermer, A R ... 3255*
Stern, S T ... 1525*
Sterner, T R ... 1204, 1434
Stethem, C ... 1789, 2551
Stethem, C M ... 1801
Stevenhagen, F ... 1744, 1830
Stevens, G ... 2551
Stevens, J ... 2252*
Stevens, J L ... 1108, 1958
Stevens, M ... 1742*
Stevens, S M ... 1223
Stevens, Z ... 3069
Steves, A N ... 3247*, 3253
Stewart, N ... 1625
Stewart, S ... 3473
Stewart, T ... 2352
Stewart, PhD, S ... 3281
Sthevaan, V ... 1617
Stice, S ... 1159, 2279, 2280*, 3076
Stieffenhofer, A ... 2189
Stiegel, M ... 1279

The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

Stiel, L ... 3394
Stilgenbauer, E ... 2988
Stine, K E ... 1375*
St-Jacques, R ... 3530
Stockmann, C ... 1285
Stoeger, T ... 2808
Stoelzle-Feix, S ... 1745
Stoker, T E ... 1887, 1888, 1889
Stokes, J ... 2869
Stolcpartova, J ... 1438
Stolper, G ... 3516
Stolte, M ... 2647
Stölzle-Feix, S ... 1829
Stone, C ... 2982
Stoopen, G ... 1480
Stout, M D ... 1308
Strasser, J ... 3033, 3034
Stratford, K ... 2838*
Straus, V ... 1115
Strauss, V ... 2463, 3052, 3536
Strazdas, L A ... 2194
Streeter, A J ... 2682*
Streifel, K ... 2395, 2410
Stresser, D M ... 3153*
Stricker-Krongrad, A ... 1237, 3082, 3084, 3088*, 3513
Strickland, J ... 2196, 2202*, 2990
Strickland, J D ... 1151*
Strigun, A ... 3054, 3057, 3058
Striley, C A ... 1686
Strock, C ... 2581*
Strock, C J ... 1155, 1745, 2495*
Strohmaier, K&L R ... 1271
Stromberg, A ... 1455
Struble, E B ... 1647*
Strupp, C ... 2068
Stryker, S ... 2726
Strynar, M ... 3439
Strynar, M J ... 3539
Stuart, C ... 1647
Stubbs, R J ... 1208
Stueckle, T A ... 1496, 2783*
Stull, R ... 2605
Styblo, M ... 1259, 1261, 1262, 3343
Stýblo, M ... 2749
Su, C ... 1676
Su, R ... 3075
Suarez, D ... 2320
Suarez, S C ... 2607*
Suárez, E ... 1216*
Suarez-Martinez, J E ... 1342*
Subramani, S ... 1072
Subramanian, A ... 3387*
Subramanian, K ... 2212, 2596, 3061
Subramanian, V ... 2850*
Suchyta, S ... 3529
Suda, M ... 1406
Suemizu, H ... 3093*
Suen, A A ... 3231*
Suga, M ... 1824*
Sugai, S ... 3182
Sugaya, C ... 2464, 3133
Sugiura, Y ... 2464
Sugiyama, M ... 2471
Suguro, M ... 2033*
Suh, M ... 1542, 1719*, 2137*, 2237, 2697
Sulentic, C ... 1126, 1938
Sulentic, C E W ... 1363
Sullivan, J M ... 1648
Sullivan, K ... 2912
Sultana, R ... 1935
Sultatos, L G ... 2106
Sumant, A V ... 2449
Sumida, K ... 1092
Summers, C ... 1669
Sun, A ... 2622
Sun, H ... 1562, 2064, 2072, 2075, 2247, 2322, 3218, 3338
Sun, J ... 1110, 1657, 2601
Sun, K Y ... 2739*, 2978
Sun, Q ... 2588*, 2881, 2889
Sun, R ... 1910, 1953
Sun, Y ... 2356
Sundar, I ... 3398
Sundararajan, M ... 2996
Sung, K E ... 3388
Sung, T ... 1667
Sunger, N ... 2226
Sunil, V ... 2113, 2118*
Sunkara, M ... 2834
Sunmola, K T ... 1814*
Sunmonu, T O ... 1662
Suntres, Z ... 1975*
Supowit, S ... 2939
Surfraz, M B ... 2619
Suter-Dick, L ... 3113
Sutherland, J J ... 1108
Sutherland, V ... 2549, 2550*
Sutliff, R L ... 1529*
Sutter, A ... 1060
Sutter, T ... 1759*
Suttles, N ... 1627
Sutton, D ... 1609
Suzuki, A ... 2313*, 3168
Suzuki, I ... 1113, 1467*, 1826*, 2598
Suzuki, T ... 1263*
Suzuki, Y ... 2816, 3182
Svendsen, E ... 2980
Svensson, K ... 1432
Svoboda, K K ... 1600
Swaka, G ... 1612
Swartzwelder, S ... 2907
Sweeney, L M ... 1434, 2170*, 2232
Sweeney, M ... 1078
Sweet, S ... 3433, 3434
Swenberg, J ... 1425, 2086, 3369*
Swenberg, J A ... 2742
Swenson, G J ... 2461
Swenson, S ... 1376*, 1377
Swerdlow, R ... 3341
Swinden, J ... 2924
Swinka, B B ... 2474
Sydorskyy, Y ... 3172
Synan, C ... 3107
Szabo, D T ... 3034*
Szarek, J ... 2808
Szeitz, A ... 3411, 3412
Szilagyi, J ... 3350
Szilagyi, J T ... 3233*

T

Ta, C ... 2890
Tabata, K ... 2001
Tabata, M ... 1567
Tack, K ... 2688
Tadagavadi, R ... 1930*, 3107
Taghizadeh, K ... 2742
Tagmount, A ... 2655
Tagmount, M ... 3157
Tai, S ... 1483
Tajima, Y ... 3432
Takahashi, A ... 3182
Takahashi, M ... 1960
Takahashi, Y ... 2732
Takasaki, W ... 1202, 3186
Takasu, S ... 2050
Takeda, K ... 1431, 2802, 2809
Takeda, T ... 1868*, 3267, 3456
Takeyoshi, M ... 2198
Taki, K ... 3249
Tako, E ... 1516, 2781
Tal, T ... 1791*
Talamás-Rohana, P ... 1493
Talbot, P ... 2480, 2638, 3032, 3550
Talcott, S ... 2593
Talhout, R ... 3046
Talikka, M ... 3035
Talleur, M ... 1613
Tam, L M ... 3202*
Tamai, S ... 3186*
Tamura, K ... 3148
Tan, C ... 2221*, 2222, 2238
Tan, J ... 2178
Tan, R ... 1652
Tan, S ... 2620
Tan, W ... 1336*
Tan, Y ... 1831
Tanaka, Y ... 3289
Tancredi, D ... 2409
Taneja, G ... 3465*
Tang, D ... 2646
Tang, H-M ... 3105
Tang, L ... 1134, 1814, 2272*, 2274, 3018, 3204
Tanguay, R ... 1729*, 1796, 1808, 2550, 3285
Tanguay, R L ... 1121, 1800, 1802, 1804, 1805, 1849, 2633, 2636, 2792, 3287, 3538
Tao, G ... 2992
Tao, S ... 2602
Tao, X ... 3272
Tarantino, P ... 3107
Tarkhov, A ... 2163, 2467, 2709
Tarrade, A ... 3237
Tarrant, J ... 1078, 1638, 3481
Tassinari, M ... 3073
Tasso, M J ... 1408
Tate, J ... 3139
Tateno, C ... 3432
Taurin, S ... 1320
Tavcar, R ... 3243*
Taxell, P ... 2142
Taylor, A ... 3490, 3498
Taylor, A J ... 3494, 3497*, 3500, 3502, 3503
Taylor, D P ... 2935
Taylor, M ... 3028, 3030
Taylor, M R ... 1185, 1187, 3542
Taylor, P ... 2403
Taylor, R C ... 1080
Taylor, S ... 2328*
Tchounwou, H M ... 1330
Tchounwou, P ... 2794
Tchounwou, P B ... 1326, 1327, 1330, 1331*
Te, J A ... 2611*
Tebbe, C ... 1402
Teeguarden, J ... 3330*, 3368*
Teeguarden, J G ... 1136*, 1139, 1140, 1526, 2144
Tegenge, M A ... 1642*
Teissier, S ... 1113, 2007, 2015, 2182, 2477, 2865
Teixeira, J P ... 2775*
Teixeira-Clerc, F ... 3427
Tejeda-Benitez, L P ... 2904*, 2929
Tellez Cruz, A ... 3084
Tellez-Rojo, M M ... 1432, 3204
Temitayo, O ... 1549
Temme, T ... 1082
Tenin, G ... 1844
Tenneson, K ... 1246*
Tentschert, J ... 2541
Teo, S ... 1391, 2019*, 3260
ter Braak, B ... 1670*
Teraoka, H ... 2888, 3289*
Territo, P ... 1587
Terrones, M ... 2773
Tertoolen, L G ... 1830
Testa, J R ... 2047
Tetsuka, K ... 2001*
Teubner, W ... 2200
Teuschler, L ... 1436
Tewari-Singh, N ... 2115, 2116*, 2121, 2126
Thackaberry, E ... 1611
Thakkar, S ... 1091, 2750, 3168, 3187*
Thalody, G ... 1674
Thangirala, S ... 1227
Thatcher, T ... 1837
Thatcher, T H ... 1283, 1911, 3047
Thayer, K ... 1074, 1090
Thebault, S ... 1418
Theodoridis, G ... 2985
Theophilus, E ... 3034
Theophilus, E H ... 3033
Therrien, K ... 2605
Thiede, S N ... 2180*
Thiermann, H ... 2561*
Thirion-Delalande, C ... 3518
Thomas, A ... 1645, 3403
Thomas, A D ... 3012
Thomas, C ... 3026*
Thomas, D ... 1802, 1974*, 3514
Thomas, D D ... 1912, 1916
Thomas, D G ... 1136, 1526*
Thomas, D J ... 1543*
Thomas, H ... 1148, 2849
Thomas, J ... 1736, 3035
Thomas, M ... 3543
Thomas, P Q ... 3226*
Thomas, R ... 1682, 2164, 2422, 2606
Thomas, R S ... 2161, 3017, 3050, 3188, 3436
Thomas, T ... 2114*
Thomas, U ... 1829
Thompson, C ... 1043*, 1542
Thompson, C K ... 2507*
Thompson, C M ... 2697*, 2698
Thompson, D ... 2011, 2017*
Thompson, D E ... 2127
Thompson, E A ... 3502, 3503
Thompson, J ... 1313
Thompson, J A ... 1284, 3489*
Thompson, K ... 1385*, 2632, 3473
Thompson, L C ... 2262, 2263*
Thompson, M A ... 3039
Thompson, T A ... 1324*
Thorne, D ... 3031*, 3037, 3040
Thorne, P S ... 2793, 3425
Thornton, C ... 3283
Thornton, C E ... 3282
Thota, B ... 2212
Thrall, B D ... 1509*, 1526
Thrall, K ... 3095
Thrall, R S ... 1295
Threadgill, D ... 2686, 3433
Thrikawala, S ... 1794*, 1807
Tian, X ... 1425
Tian, Y ... 2304, 2437
Tice, R ... 1095
Tice, R R ... 2456, 2616, 3017
Tichenor, S D ... 2832*
Tidball, A M ... 2379
Tien, L-T ... 1232, 2345*
Tiethof, A ... 2400
Tieu, K ... 2343, 3358*
Tighe, R M ... 1064
Tijani, A S ... 1923*
Tijerina, P ... 1846
Tijerina, P B ... 1847*
Tijernia, P B ... 1165
Tilak, K ... 1738
Tilley, S K ... 1683*
Tillmann, T ... 1510, 2542
Tilly, T ... 3329*
Tilly, T B ... 1506*
Tilton, F ... 1802
Tilton, S C ... 2186*
Timchalk, C ... 1129*, 1130, 1131
Timme-Laragy, A ... 3292
Timme-Laragy, A R ... 3291, 3293, 3294
Tingle, M ... 2828
Tippman, B M ... 2186
Tipps, G ... 2379
Tipps, K G ... 2382*
Tirmenstein, M ... 3477*, 3478, 3479
Titorenko, V ... 1481
Tjalkens, R ... 2337, 2359
Tjalkens, R B ... 2378
Tluczkiewicz, I ... 2163, 2650*
To, A ... 3032
To, K ... 1683, 2634*
Toal, B ... 3405
Tobacyk, J ... 2545*
Todor, A ... 3421
Tohon, H ... 2716
Tohon, H G ... 2229*
Tohyama, C ... 1190
Toimela, T ... 2176, 3062
Tokar, E ... 1451, 2556*
Tokar, E J ... 1256, 1834, 2294, 3339
Tokumoto, M ... 1528, 1532*, 1534
Tollerud, D ... 2804
Tolleson, W ... 2746, 2747
Tolleson, W H ... 3450
Tomkiewicz-Raulet, C ... 2429*, 2743
Tona, A ... 1404, 1417
Toner, F ... 1614
Tong, H ... 1066, 1067, 1070*, 2243
Tong, S-Y ... 2383
Tong, W ... 1072, 1079, 1091, 1865, 1870, 2610, 2750, 3166, 3168, 3183, 3187, 3303*
Tonomura, Y ... 3136
Toot, J ... 3107*
Topinka, J ... 1438*
Topper, L ... 1114, 2261
Topping, V D ... 2771, 2789*
Toraason, M ... 2131
Tornero-Velez, R ... 3437
Tornier, C ... 3547
Torous, D ... 1061, 1410
Torres, C ... 2255
Torres-Rivera, W ... 1383, 2255, 2256
Torres-Sanchez, L E ... 1141
Tort, A ... 3129*

The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

Torvinen, M ... 2857
Toseski, J ... 1686
Totah, R A ... 3163
Totlandsdal, A I ... 1450
Toure, R ... 1880*
Towner, R A ... 1002*
Townsend, T A ... 1396*, 2769
Toyama, T ... 1582
Toyoda, A ... 2471, 3055*
Toyoda, K ... 3182
Toyoda, T ... 1467, 2598, 2806
Toyoda-Hokaiwado, N ... 1389
Toyokawa, K ... 1982
Toyokuni, S ... 3164
Toyooka, T ... 1406
Trampota, J ... 3011
Tran, J ... 1619, 2622
Tran, L ... 2810
Tran, N ... 1785*, 2288, 3293*
Tran, T ... 1626
Tran, V ... 2326, 2730
Trani, D ... 1631
Traore, K ... 2329, 2821
Trask, J ... 2005
Trask, O J ... 3175
Traversa, E ... 2807
Travlos, G ... 3089
Trbojevich, R ... 1514
Treff, N ... 3272
Treskes, P ... 1994
Tressler, J ... 2130
Tressler, J A ... 1323
Treviño-Espinosa, R S ... 2269*
Trindade, E S ... 2860
Trinh, M ... 2108
Tripathi, A K ... 2910
Trippier, P C ... 1663
Trisdale, S K ... 3153
Trivedi, K ... 3029, 3552
Trivedi, P ... 3128*
Tröger, R ... 2737
Trombetta, L ... 2911, 2950
Trombetta, L D ... 1571, 2388, 2903
Tron, A ... 2048
Troncy, E ... 2842, 3105
Troth, K ... 1654
Trout, K L ... 1507*
Troutman, J ... 3318*
Troutman, J A ... 2197*
Trube, G ... 1645
Truman, C C ... 1694
Trumble, J T ... 2930
Truong, K M ... 3422*
Truong, L ... 1121*, 1796, 1800, 1805, 1808, 1849, 2550, 2633, 2636, 2792
Trush, M A ... 2022, 2329
Tryndyak, V ... 2084, 3193*, 3208
Tsaioun, K ... 2632*
Tsamou, M ... 1854
Tseng, C-Y ... 1182, 1345, 1412, 2071, 2383
Tseng, M ... 1078, 3481
Tsirka, S E ... 2254
Tsuboi, I ... 1838
Tsubouchi, T ... 1660
Tsuchiya, T ... 2050
Tsuji, M ... 2965*
Tsukumo, H ... 2471*
Tsunoda, M ... 2464*, 3133
Tsuruoka, S ... 2773
Tsusaki, H ... 3090, 3095
Tuan, R ... 2178
Tubic, A ... 2945
Tucker, D K ... 1856, 1857*
Tucker, L ... 2314
Tudan, C ... 3535
Tuerck, D ... 1644
Tugendreich, S ... 3485
Tunkel, J ... 2708
Tunkel, J L ... 2615
Turesky, R ... 1023*
Turgut Kara, N ... 3205
Turkus, J ... 2008
Turley, A ... 1346, 2168, 3547
Turley, A E ... 1344, 1934*
Turnock, S ... 3518
Turteltaub, K ... 1021*
Tvermoes, B ... 1264, 2273
Twaddle, N C ... 1139
Tyagi, V ... 2910, 3227*
Tyree, C ... 3109, 3139
Tytell, J D ... 3469*
Tzafriri, A R ... 2441

U

U, R ... 3169
Uchendu, C ... 2913
Uchida, M ... 3432*
Uchino, K ... 3482
Ueno, M ... 3136, 3249
Ueno, S ... 3263, 3264
Uetrecht, J ... 1918
Ugbaja, R N ... 1248*, 1249
Uhouse, M A ... 2379
Ukai, A ... 1389
Ukairo, O ... 1073
Ulker, O C ... 2185, 2813
Umbaugh, C ... 1351
Umbright, C ... 1921
Umemura, T ... 2050
Umetsu, A ... 2198
Umezawa, M ... 1431, 2802, 2809*
Umthong, S ... 1346
Unice, K M ... 1689
Unnisa, Z ... 1734*, 1837
Unoki, T ... 1582, 2295, 2298*
Uozumi, T ... 1824
Upham, B L ... 1444, 2308*, 3351
Uppal, K ... 2319, 3537
Uppu, R M ... 1623*, 2314
Uragami, K ... 1355
Urano, K ... 3102
Urbach-Ross, D ... 2676*
Urban, P ... 3159
Urbano, M R ... 1553
Urbisch, D ... 2200*, 2201
Uresti-Rivera, E E ... 1256
Uribe Carvajal, S ... 1973
Uribe-Ramirez, M ... 1500
Urka, I ... 2333
Urrutia-Ortega, I M ... 2790
Usese, A I ... 1277*
Ustundag, A ... 2813
Usuki, F ... 1579, 2289*
Uteng, M ... 3461
Uvsløkk, S ... 2443
Uwai, Y ... 1476
Uwambayinema, F ... 2249

V

Vaara, M ... 3119
Vaara, T ... 3119
Vaidya, V ... 3128, 3134
Vaidya, V S ... 3118, 3123, 3138
Valadares, M ... 3296
Valadares, M C ... 2860
Valcke, M ... 2229, 2716*
Valdes Salgado, R ... 2137
Valdez, C ... 1153
Valdez, J M ... 1200
Valdivia, A G ... 2271*
Valdivia-Flores, A ... 3021
Valdovinos-Flores, C ... 1219
Vale, A ... 2557b*
Valencia, L ... 1514*
Valente, M J ... 1967
Valentine, W M ... 2339
Valentino, S A ... 3237*
Valentovic, M ... 3126*
Valera, I ... 1904
Vallvé, J V ... 2315
van Amsterdam, C ... 1222
van de Lagemaat, D ... 1138
van de Water, B ... 1670, 1757b*, 2002*, 2291, 2293, 2501*, 2595, 3301b*
van den Berg, M ... 1231
Van Den Berg, R ... 2117
van den Brule, S ... 2808
van den Hoek, A ... 1983
Van der Laan, S ... 1636
van der Wal, L ... 2925
van der Water, B ... 2596
van Esch, B ... 2873
Van Gieson, J L ... 1258*
van Kleef, R G ... 1152, 1157
Van Landingham, C ... 2137
Van Ness, K P ... 3110*
van Ravenzwaay, B ... 1115, 1788, 2043, 2192, 2201, 2463, 2537, 2548, 3052, 3054, 3057, 3058*, 3536
van Ravenzwayy, B ... 2223
van Roest, M ... 1334
Van Rompay, A ... 1614
Van Schooten, F-J ... 3046
van Vught, R ... 2184*
van Vugt-Lussenburg, B ... 1866
van Wijk, H ... 1618, 3104*
van Wijngaarden, E ... 1569
Van Winkle, L ... 3458
Van Winkle, L S ... 1288, 3147*
Vanden Heuvel, J ... 1982*
VanDuyn, N M ... 2616*
Vanlandingham, M M ... 1642
Vanosdol, J ... 1402
Vanpoucke, C ... 1854
Vanscheeuwijck, P ... 3029, 3400, 3401
Vanselow, J T ... 2085
Vantangoli, M ... 2174*
Vantangoli, M M ... 1084
Vara, A ... 2828
Varacallo, L ... 1671
Vardaro, R ... 3148
Vardy, A ... 2433*, 2706
Varela, A T I ... 1127
Varghese, A ... 2167, 2169*
Varlet, V ... 3403
Varma, V ... 3013
Varner, K J ... 2331, 2846, 2850
Varsho, B J ... 2136*
Vasiliou, V ... 2752
Vasilyeva, D ... 2077
Vayas, K ... 2113, 2118
Vaysse, P-M ... 1983*
Vazquez, A K ... 2065
Veeramani, B ... 1120
Vega, N ... 2473, 2882
Vega, R ... 1666
Veith, A ... 3154, 3160
Veith, A C ... 3152*
Velalopoulou, A ... 2047
Velisek, L ... 1173, 1220
Veliskova, J ... 1173, 1220
Veljkovic, E ... 3029, 3035, 3402
Vellky, J ... 1872
Velma, V R ... 1326
Velmurugan, K ... 1444
Vemula, S ... 1319
Venancio, V P ... 2593*, 3016
Venkatratnam, A ... 3433, 3434*
Vennemann, A ... 1518
Venosa, A ... 1915*, 2113, 3350
Ver Hoeve, J N ... 1608
Veranth, J ... 1285
Veras, M ... 1846
Verboven, A H ... 1157
Verder-Carlos, M ... 2900
Veress, L ... 2125
Verlohner, A ... 3052*
Verma, K ... 1663*
Verma, R ... 2190*
Verma, V ... 2243
Verner, M-A ... 2975
Vértesi, A ... 1457
Vervoort, J ... 2548
Vessey, J D ... 2628
Vethamanickam, J ... 2596
Vetrano, A ... 1135
Vetrano, A M ... 3233, 3235
Viau, A ... 1628
Viberg, H ... 1236, 2394*
Vickers, A E ... 2486*
Vidal, F A ... 2901
Vieira Peres, T ... 2357*
Vietti, G ... 2808
Vignesh, K S ... 1598
Vigo, M B ... 1235
Vij, P ... 1556*
Vijay, V ... 1111, 2614
Vilanova, E ... 3265*
Vilcassim, M J R ... 1687*
Villarreal-Vega, E E ... 3130
Villeneuve, D ... 2214, 2928
Vimalakanthan, V ... 1518
Vinall, J ... 1614
Vinall, J L ... 1603
Vincelli, N ... 2824, 3103
Vincent, M ... 2694*
Vinci, T ... 2856
Vine, D ... 3416
Viniegra Morales, D ... 1261, 1262
Vinken, P ... 2723
Violin, K B ... 1853
Visconti, N ... 1426, 3546
Visconti, N R ... 2208
Vispute, S G ... 2302*
Vitcheva, V ... 2163, 2467, 2475, 2709
Vitor, A L R ... 2855
Vivanco-Cid, H ... 2325
Vlaming, M L ... 1744, 1830*
Vlasakova, K ... 2731
Vliegenthart, A D ... 1994*, 2727*, 3472*
Vo, P T ... 2203
Vock, E ... 1820, 1821
Voeller, J N ... 3418
Voepel, I ... 3484
Vogel, C F ... 1366*, 1423
Vogel, D ... 2200
Vogel, U ... 2808
Vogl, W ... 1873
Vogt, J ... 1078, 1669, 3481
Vogt, S ... 3416
Voisin, G ... 3196
Vojtisek-Lom, M ... 1438
Volarath, P ... 2467, 2617*
Volkan, J ... 2818, 2819
Vollmer, G ... 3391
Volz, D C ... 1797*
Von Tungeln, L S ... 1642
vonderEmbse, A ... 1842*, 1843
VonHandorf, A ... 1537*
Voong, J ... 2622
Voorhees, J R ... 2397*
Voorspoels, S ... 1142
Vorgrimmler, D ... 2710
Vorhees, C V ... 2368
Vorojeikina, D ... 1569
Voronin, G ... 2328
Voruganti, S ... 1261
Voutchkova, A ... 2324
Voutchkova-Kostal, A ... 2323
Voyer, C ... 1112*
Voytik-Harbin, S ... 2180
Vranic, S ... 2810
Vriend, J ... 3113
Vrijens, K ... 1854*
Vritov, D ... 2836
Vrolijk, M F ... 3015*
Vrolyk, V ... 3269
Vuillaume, G ... 3400, 3402
Vulpe, C ... 2655, 3157
Vulto, P ... 3113

W

Waalkes, M P ... 1256
Wade, M ... 3390
Wade, M J ... 2236, 2675
Wade, T ... 3433, 3434
Wages, P ... 2210
Wages, P A ... 2320
Wagner, A ... 3483
Wagner, V ... 1391
Wagoner, M ... 3069
Wahlang, B ... 1962, 2834, 3417*
Waidyanatha, S ... 1451, 2179, 2294, 2864, 3177, 3273, 3444, 3453
Waigel, S ... 3340
Waikar, S S ... 3123
Waites, R ... 2036
Wako, T ... 2987*
Waldhauer, I ... 1644
Waliszewski, S M ... 2325
Walk, S T ... 1252
Walk, T ... 1115, 2463, 3054, 3057, 3058, 3536
Walker, A ... 3277
Walker, C L ... 1722*
Walker, D ... 2319
Walker, D I ... 1245*, 2730, 3537
Walker, J ... 2605
Walker, L M ... 2311*
Walker, M K ... 3045
Walker, N ... 1767b*
Walker, N J ... 1030b*
Walker, P ... 2010*, 2847

The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

Walker, T ... 2704
Walker, T D ... 2705*
Walker, V ... 2515*
Wallace, K ... 1150
Wallace, K B ... 3209, 3323*
Wallin, H ... 2808
Walling, B E ... 3275, 3276
Wallis, L ... 1519
Wallqvist, A ... 1083, 2611, 3140
Walsh, D M ... 2490*
Walsh, L ... 2260, 2263
Walsh, M T ... 3045
Walter, K M ... 1884, 1892*
Walters, D M ... 3507*
Walz, A ... 2117
Wambaugh, J ... 1679, 1680, 1681, 1682*, 1803, 2225, 2608, 2677, 3439
Wambaugh, J F ... 2604, 2681, 3188, 3436, 3437, 3539
Wamhoff, B ... 2006
Wan, R ... 2804
Wandel, C ... 1645
Wang, B ... 1475, 1479, 3272, 3440, 3523*
Wang, C ... 1240, 1241, 1242*, 1840, 3440
Wang, F ... 1656, 2888, 2944*
Wang, G ... 2304, 2870*, 3191
Wang, H ... 1251, 1267, 1329, 1479, 1479, 1594*, 1916, 2301, 2843
Wang, J ... 1652, 2051, 2870, 2973, 3018*, 3191*, 3268
Wang, J S ... 2274
Wang, J-s ... 1134, 1814, 2272, 3018
Wang, K ... 1111*, 2401, 2402, 2614
Wang, L ... 1496, 2783, 3143, 3152, 3158, 3160
Wang, M ... 1332, 1909*, 1912, 2437*
Wang, N ... 1862, 2997*
Wang, Q ... 1329, 1477, 1737, 1823*
Wang, R ... 3486*
Wang, R-H ... 2796
Wang, R-L ... 1101
Wang, R-S ... 1406*
Wang, S ... 1879*, 2833
Wang, T ... 1746*, 2602, 3065, 3396
Wang, W ... 1482*, 2626*, 3466
Wang, X ... 1117, 1741, 1890, 2307, 2421*, 2906
Wang, Y ... 1228, 1609, 1678, 1797, 2480, 3166*, 3271
Wang, Z ... 1058*, 1456, 1652, 1732, 2041, 2042, 3184
Wang-Hu, J ... 1845
Wanibuchi, H ... 1092, 2031
Ward, A B ... 1877*
Ward, D ... 3109
Ward, E ... 2354, 2355
Ward, E J ... 1596*
Ward, J M ... 2698
Ward, T ... 2181
Ward, W ... 1056
Wareing, B ... 2201*
Warheit, D ... 2544
Warheit, D B ... 2543*
Waritimi, G E ... 3167
Warmka, J ... 2189
Warner, R ... 2482, 3558
Warren, M ... 2686
Warren, S ... 2266
Warren, S H ... 1448
Waseem, S ... 2385
Washington, M K ... 2040
Wassink, B ... 2008
Watanabe, E ... 2810, 2816
Watanabe, K ... 1660*
Watanabe, S ... 3099*
Watanabe, T ... 3148
Waters, K ... 3161
Waters, K M ... 1802
Waters, S M ... 1955
Watford, S ... 1075*
Watkins, A ... 2172
Watkins, P B ... 2218, 3175, 3181, 3476
Watson, A T ... 2892, 3288*
Watson, C Y ... 1508
Watson, G E ... 1583
Watson, S ... 3453
Watt, E D ... 1886
Watt, J ... 1440, 1883*
Watters, G ... 1325
Watts, F ... 2840*
Weatherly, L M ... 1798, 2332*
Weaver, R ... 1630
Weaver, R J ... 1970*
Webb, D J ... 1994, 2727, 3472
Webb, S J ... 2650
Weber, E ... 1105
Weber, E J ... 3110, 3119*
Weber, G J ... 1792
Weber, L ... 3010
Weber, R ... 2243
Weber, S ... 1644
Weber, T J ... 1129, 1130*, 1131
Weber, W M ... 2100*
Webster, T ... 1440
Webster, T F ... 1437*
Weeks, J ... 2925
Weemhoff, J ... 1981, 3092
Weemhoff, J L ... 3178*
Wegwu, M O ... 1696
Wehmas, L C ... 1804*
Wei, C ... 1994
Wei, F ... 1193
Wei, H ... 2852
Wei, L ... 1809
Wei, L-X ... 1572
Wei, Q ... 1589
Wei, X ... 1117
Wei, Y ... 1147*, 2961
Wei, Z ... 3342*
Wei*, L ... 1597*
Weiberger, B I ... 3235
Weihermann, A C ... 2474
Weimer, J ... 1181*
Weiner, J ... 1735
Weinstock, D ... 1640
Weis, H ... 1208
Weisman, S M ... 3011
Weisskopf, M ... 1545
Weissmann, D ... 1636*
Weiwu, J ... 3143
Wek, R C ... 1958
Welch, J B ... 1603
Welch, K D ... 1461*
Weldon, B ... 2181
Weldon, B A ... 1498*
Welker, T ... 2605
Welling, A ... 3008
Wells, E ... 1552
Wells, M M ... 1394
Welsh, C J ... 2683
Weltje, L ... 2927
Wen, X ... 1969*, 2371, 2721, 3272
Wendler, C C ... 1845
Weng, L ... 2317*
Werner, C ... 2706*
Werre, S R ... 1659
Wertman, J ... 3034
Wertman, J M ... 3033*
Wesselkamper, S ... 2164, 2708
Wesselkamper, S C ... 2159
Wessinger, W D ... 1196
West, B ... 1269
West, K ... 3198
Westerhoff, P ... 1702*
Westerink, R H ... 1152, 1154, 1157, 1231*
Westmoreland, C ... 3051
Weston, A ... 1278*, 3443
Westrup, U ... 3242
Wetmore, B A ... 2224, 2604, 3017*, 3437
Wetter, J ... 1605
Wexler, P ... 1386*
Wezalis, S ... 3064*
Wheeler, E K ... 1153, 2390
Wheeler, J R ... 2927
Wheeler, J S ... 2970
Whelan, M P ... 2536*
Whelton, A J ... 1793
White, A ... 2212, 2596, 3051, 3071
White, C ... 2125
White, C A ... 2897, 2908, 3447, 3448
White, C C ... 1499*
White, C W ... 2126
White, H J ... 1164
White, K ... 1324, 1353
White, K M ... 1063*
White, R ... 1676
Whitley, E M ... 1226, 2119, 2120
Whittaker, C ... 2162*
Whittaker, M ... 2465
Whittaker, M H ... 3523
Whittemore, S L ... 3162*
Whitten, D ... 2308
Wiberg, K ... 2737
Wickliffe, J ... 1053*, 1061, 1272, 1447, 1550, 1718*, 3165
Wickliffe, J K ... 1695
Wicks, J ... 3084
Wiegers, J ... 1086
Wiegers, T C ... 1086
Wielecosseles, R ... 2474
Wiemann, M ... 1518
Wiench, K ... 2063, 2544
Wiese, T ... 2652, 3394
Wiesenfeld, P L ... 3049
Wiesner, M ... 1703*
Wiest, E F ... 3045*
Wignall, J ... 2167
Wijeyesakere, S ... 2398
Wijnolts, F M ... 1152, 1154, 1157
Wikoff, D ... 3407*, 3445
Wilbert, M ... 2605, 2618
Wilbur, D ... 2689
Wilbur, M ... 2900
Wilczak, J ... 1299
Wilde, S ... 1060
Wilder, J ... 3535
Wilder, L ... 2235
Wilhelm, C ... 2103*
Wilichinsky, M ... 2826, 2829
Wilke, M ... 2442
Wilkerson, C ... 2308
Wilkey, D W ... 2211
Wilkins, R C ... 3533
Wilkinson, J ... 2924*
Will, Y ... 1029*, 2575*
Willett, C ... 2632, 3003*
Willett, K ... 1779*
Willett, K L ... 2513*, 3283
Willett*, K L ... 3282
Williams, A ... 1682
Williams, A J ... 2627*, 3539
Williams, C ... 3101
Williams, C J ... 3231
Williams, D ... 3161*, 3246
Williams, D E ... 2079
Williams, D P ... 1669*
Williams, G M ... 1820*, 1821
Williams, J P ... 1290, 1294, 1903
Williams, K ... 1514, 3026
Williams, L M ... 3293, 3294, 3353*
Williams, M ... 3032*, 3087
Williams, M T ... 2368
Williams, P ... 1271, 1924
Williams, R V ... 1399, 2629
Williams, R W ... 2336
Williams, S ... 2323, 2324
Williams, S J ... 3555
Willis, M S ... 3322b*
Willoughby, J A ... 1615*
Wills, R W ... 2725
Willson, G A ... 2714*
Willy, J A ... 1739, 1958*
Wilmer, M J ... 3113*
Wilson, D ... 2226
Wilson, D M ... 1706*, 1881, 2191, 2208
Wilson, J Y ... 3159
Wilson, M ... 1061*, 1550, 1695, 2711, 3165
Wilson, S ... 2174
Wilson, S H ... 1390
Wilson, V ... 1635
Wilson, V S ... 2549
Wilt, N ... 2194
Winans, B ... 1359, 1445*, 1693
Winans, B N ... 1368
Winchester, M R ... 1522
Windebank, S ... 2596
Windham, K ... 2314
Wing, C ... 1225
Wingard, C J ... 1064, 2818*, 2819, 3507
Wink, S ... 1670, 2002, 2293, 2595
Winkler, R ... 1500
Winlow, P ... 2722
Winnischofer, S M ... 2860
Winter, M ... 2221
Winters, B R ... 1279*
Wirbisky, S E ... 1792*, 2946
Wirgin, I ... 2938
Wirnitzer, U ... 3104
Wise, C F ... 1539
Wise, J ... 2376*, 3421
Wise, J P ... 1042*, 1539, 2926
Wise, S S ... 1539
Wiszniewski, L ... 3552
Witek, R ... 1974
Witek, R M ... 2493
Witek, R P ... 2493
Witt, K ... 2131
Witters, H ... 2632
Wiwatratana, D ... 1576, 1577
Wnek, S ... 2146
Wohlleben, W ... 1699b*, 2544
Wohlman, I M ... 2094
Woillard, J-B ... 1146
Wolansky, M J ... 2901*
Wolf, A ... 3176*, 3461
Wolf, C J ... 2172
Wolf, K ... 2005
Wolf, K K ... 3175, 3181
Wolfarth, M ... 2538, 2800, 3496
Wolfe, M S ... 2864
Wolff, A ... 1997
Wolfgang, T ... 3065
Wolfraim, L ... 3087
Wolfson, J ... 2999
Wolt, J D ... 3346*
Won, S S ... 1472*
Wong, B ... 2130*
Wong, B A ... 1434
Wong, C ... 1168
Wong, E L ... 1180*
Wong, E T ... 3029*, 3401
Wong, H ... 1638
Wong, P ... 1423
Wong, Y ... 3202
Wongtrakool, C ... 1529
Wood, C ... 1065, 1791, 3439
Wood, C E ... 1056*, 2087
Wood, D M ... 3472
Wood, R ... 1872
Woodall, G M ... 2713*
Woodruff, T J ... 3141
Woods, B ... 1452
Woods, L ... 2867
Woolbright, B ... 2491*
Woolbright, B L ... 3092, 3178
Wooten, K ... 1385
Worcester, C ... 3014
Workman, T ... 1498, 2181
Worlein, J ... 3278
Worley, R ... 2235
Worley, R R ... 2239*
Wormser, U ... 2098*
Worth, A ... 2163, 2476
Worth, A P ... 2475, 2656*
Worthington, C D ... 3507
Woychik, R ... 3065*
Wren, M ... 1135*
Wright, A T ... 2234, 3043, 3462
Wright, J ... 1844, 2455
Wright, P C ... 2763
Wright, R ... 2632
Wright, R O ... 1432
Wronski, S ... 1941
Wrubel, J J ... 1893
Wu, C ... 2963
Wu, F ... 1562, 2064, 2072
Wu, G ... 2437
Wu, H ... 2481, 2600, 2969, 3147, 3467, 3480
Wu, J ... 1521, 1524, 2437
Wu, K C ... 3053*
Wu, L ... 1091
Wu, Q ... 1572, 2041
Wu, T H ... 1554*, 1555
Wu, W ... 1405*, 1919, 2060, 2329, 2810
Wu, X ... 1267, 1671, 3076*
Wu, Y ... 1676, 3455
Wuersch, K ... 2605
Wurpel, J ... 2330
Wusu, A D ... 1249, 1527, 1547, 1568*
Wyatt, T A ... 1280
Wynder, J ... 1872*

The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

X

Xanthakos, S A ... 3179
Xi, B ... 1740, 1741
Xi, S ... 2054*
Xi, Y ... 1647, 2070
Xia, H ... 2331, 2846, 2850
Xia, M ... 1095, 1811, 2462, 2586*, 2626, 2642, 3017, 3049
Xia, Y ... 1737, 3268
Xia, Z ... 1593, 1594
Xian, B ... 1810
Xiang, Y ... 3029, 3036, 3401
Xiao, G-H ... 1274
Xiao, H ... 2881
Xiao, Q ... 3529
Xiao, R ... 3212
Xiao, X ... 2588, 2889*
Xiao, Y ... 1589
Xiao, Y Q ... 1631
Xiao, Z ... 1405, 1919*
Xie, H Q ... 1189, 3423*
Xie, L ... 1435
Xie, W ... 1329*, 2843*, 3033, 3034
Xie, Y ... 1971
Xing, L ... 1619
Xiong, J ... 1444, 1907
Xiong, K-N ... 1444, 1907
Xiong, S ... 3075
Xu, C ... 1863*, 2883
Xu, G ... 2934*, 2955*
Xu, G-b ... 2665
Xu, H ... 1350, 1352*, 3423
Xu, J ... 1545, 2750, 2843
Xu, J Z ... 1072*
Xu, K ... 1479
Xu, L ... 1178, 1455, 1475, 1479*, 1483, 3473
Xu, M ... 3234
Xu, P ... 2061
Xu, S L ... 1189, 3423
Xu, T ... 1189, 2779, 3423, 3556*
Xu, W ... 2439
Xu, X ... 1261, 1890
Xu, Y ... 1251, 1267*, 2177
Xu, Y G ... 3526
Xu, Y-J ... 1678, 3171
Xu, Z ... 2600, 2601*
Xuan, J ... 2592, 3450*
Xue, K ... 1134*
Xue, K S ... 2272
Xue, P ... 1251, 3071

Y

Yabuki, M ... 1979
Yacov, G ... 2129
Yadav, J S ... 1296
Yadav, N ... 2245
Yaeger, M J ... 1064, 3507
Yafune, A ... 2028
Yager, J ... 2701
Yager, J D ... 1084
Yakoub, Y ... 2249
Yakubi, H ... 1387
Yalcin, C O ... 2813
Yam, N ... 3514
Yamada, H ... 1824, 1868, 3267, 3456
Yamada, N ... 3182
Yamada, S ... 1827
Yamada, T ... 2156, 2476
Yamamoto, A ... 1567, 3514
Yamamoto, M ... 1251, 1567*, 2965
Yamamoto, S ... 1355, 1357*
Yamashita, H ... 1609*
Yamashita, K ... 3521*
Yamauchi, K ... 2919, 2920*, 2921
Yamazaki, H ... 1172, 3093
Yamazaki, R ... 1160
Yamazoe, Y ... 3456
Yan, B ... 3380*
Yan, C ... 1545
Yan, J ... 2758
Yan, T ... 1987
Yan, X ... 1831, 2051, 2969, 2973*
Yan, Z J ... 2674*
Yanagiba, Y ... 1406
Yanagisawa, H ... 3133
Yanamala, N ... 1291, 2803
Yanamala, N V ... 3496
Yang, B ... 1483
Yang, C ... 2163*, 2467, 2475, 2476, 2617, 2657, 2709
Yang, D ... 2944
Yang, E-J ... 2869
Yang, F-H ... 2383*
Yang, H ... 1597, 2301
Yang, I ... 2371
Yang, J ... 1483, 1809, 1860*, 1861, 2881, 2888, 2944, 3217, 3459*
Yang, J-H ... 1345
Yang, K ... 1120
Yang, M ... 2971*
Yang, P ... 1953
Yang, Q ... 3145*, 3146
Yang, X ... 1128, 1318, 1812, 1912*, 1916, 1943, 3438*, 3466*
Yang, Y ... 2218, 2662
Yang, Y-H ... 2383
Yao, J ... 1652, 2774*, 3064, 3072
Yao, P-L ... 2024*
Yao, Y ... 2322
Yaqub, L S ... 2913
Yasuda, M ... 3102
Yasuno, H ... 3522
Yasuoka, S ... 1160
Yates, E ... 2258, 3395
Yates, M D ... 1378
Yau, A ... 1682
Yauk, C ... 2088
Yde, C C ... 1124
Ye, H ... 1079*, 1865, 1870
Yeager, R ... 1605*
Yeakley, J ... 2655
Yedjou, C ... 1326, 1327, 1330*
Yeguvapalli, S ... 1076*
Yeh, A ... 2936*
Yeh, C-L ... 2354, 2355
Yemitan, O K ... 1466*
Yeo, H ... 1984
Yette, G ... 3281
Yeung, D ... 2103
Yeung, D T ... 2093, 2102, 2404
Yi, H ... 3074*
Yi, J ... 2817, 3238
Yi, K D ... 1694, 2917*
Yi, X ... 2745
Yi, Y-J ... 1546*
Yilmaz, S ... 1485
Yin, F ... 1128
Yin, J-J ... 2758
Yin, L ... 2896*, 3251, 3252
Yokoo, Y ... 2050
Yoo, D-H ... 2859
Yoo, J W ... 1400
Yoon, K S ... 2588, 2889
Yoon, M ... 1712*, 2014, 2188, 2975, 3464
Yoon, S ... 1423, 2724
Yoshida, E ... 1563, 1582
Yoshida, I ... 1393*
Yoshida, M ... 1960
Yoshida, S ... 3263*, 3264
Yoshida, T ... 2028, 3249
Yoshimoto, K ... 1567
Yoshioka, D ... 2784
Yoshitome, K ... 1354, 1355, 1356, 1357, 1358, 2784
Yoshizawa, Y ... 1239*
Yost, L ... 2166
You, D ... 2371*
You, H ... 3161
Young, J L ... 1539*
Young, R ... 1395
Young, R R ... 1411*
Young, S K ... 1958
Young, W ... 1638
Young, Y K ... 1554
Youngblood, B ... 3531
Yourick, J J ... 2771, 2789
Yourstone, S ... 2490
Yu, D ... 2746, 2747*
Yu, F ... 2479
Yu, H ... 1998, 3557
Yu, I J ... 1498, 2940*
Yu, L-R ... 3013*
Yu, M ... 1942
Yu, R ... 2086*, 2742
Yu, S ... 2178
Yu, X ... 1083, 1584, 2896, 3251, 3252*
Yu, Y ... 1797, 2888
Yuan, C ... 1519
Yuan, H ... 3051
Yue, M S ... 1185, 3542*
Yue, X ... 1329
Yue, Y ... 2881
Yuki, T ... 2732
Yun, C ... 1735
Yun, J ... 1735
Yunomae, K ... 1931

Z

Zaccaria, K ... 2699
Zaccaria, K J ... 2702
Zacharewski, T ... 1954
Zacharewski, T R ... 1100*, 1103, 1118
Zagorski, J ... 1346
Zagorski, J W ... 1344*, 1934
Zahedi, A ... 3550*
Zaikova, T ... 2792
Zaja, R ... 2945
Zaki, A R ... 1210
Zalups, R K ... 3120
Zaman, H M ... 3212*
Zamanian, M ... 2350
Zane, D ... 1374*
Zang, Q ... 1098*, 2202
Zani, B G ... 2442*
Zapata-Pérez, O ... 2953
Zarbl, H ... 2069, 3068
Zaroogian, G E ... 2933
Zasada, C ... 2338
Zastre, J ... 3413
Zati, D H ... 2855
Zauber, S E ... 2354, 2355
Zavala, J ... 1429, 1448*
Zawia, N ... 2385
Zayed, J ... 2693*
Zdawczyk, A ... 2446
Zeidan, R S ... 3157*
Zeidler-Erdely, P C ... 1289, 3485, 3488
Zeise, L ... 1717*, 2030, 3540
Zeiter, S ... 2442
Zeitlin, L ... 1626
Zekic, A ... 1382
Zelikoff, J ... 1846, 2247, 3248
Zelikoff, J T ... 1165, 1167, 1775*, 1847, 3381*, 3424
Zeller, A ... 1060
Zeller, K ... 2205
Zendejas, I ... 3169
Zeng, A ... 2366
Zeng, J ... 1831
Zeng, X ... 2312, 2555*
Zhan, L ... 1953
Zhang, C ... 3343
Zhang, D ... 3310*
Zhang, D D ... 2602
Zhang, F ... 2226
Zhang, G ... 2633*, 2750
Zhang, J ... 1976, 2282, 2284, 2352, 2590, 2673, 3187
Zhang, J G ... 3153
Zhang, L ... 1656*, 1961, 2060, 2301, 2417, 2420, 2426, 2435, 3164, 3430
Zhang, M ... 1597, 1688*, 2548
Zhang, N ... 1810
Zhang, P ... 1647
Zhang, Q ... 1251, 1688, 2214, 2804*, 3051*
Zhang, Q-Y ... 2292, 3147, 3458
Zhang, S ... 2403
Zhang, T ... 1213, 1663, 1946*, 3051
Zhang, W ... 1435
Zhang, W Q ... 3086
Zhang, X ... 1136, 1740*, 1741*, 1840, 1945, 2060, 2064, 2072, 2075, 2322, 3164, 3218*, 3338, 3478, 3479
Zhang, X-I ... 1590
Zhang, Y ... 1657, 1671, 1815*, 2769, 2774, 2804
Zhang, Z ... 2029, 2592
Zhao, B ... 1189, 2944, 3423
Zhao, C ... 1810, 1901, 1950*
Zhao, J ... 1597, 1811, 3051
Zhao, L ... 1084, 2338, 2906, 3292, 3408
Zhao, Q ... 1078, 1159
Zhao, Q J ... 2159, 2160, 2699, 2702
Zhao, R ... 1251
Zhao, Y ... 1128, 1656, 2188*, 2852
Zheng, C ... 3098
Zheng, C f ... 1486*
Zheng, J ... 2449
Zheng, N ... 2888, 2944
Zheng, W ... 1551, 1552, 1587*, 2132, 2363, 2366, 2830
Zheng, X ... 2811
Zheng, Y ... 2833
Zhong, L ... 1647
Zhong, M ... 1237, 3082*, 3088, 3513
Zhong, X ... 2013
Zhong, Y ... 1666*
Zhou, C ... 3224*
Zhou, G ... 1870, 2750, 3187
Zhou, H ... 3222*
Zhou, P ... 1600, 2112
Zhou, X ... 1275
Zhou, X D ... 3127
Zhou, Y ... 1453, 1998, 2446*, 2448
Zhou, Z ... 1860, 2963*
Zhu, B ... 2024
Zhu, H ... 2022, 2329, 2626, 2821*, 3509, 3510*
Zhu, J ... 1147, 2051*, 2969
Zhu, X ... 2029
Zhu, Y ... 1078*, 3361b*
Ziebel, J ... 2805
Ziemann, C ... 3484
Ziglari, T ... 1513*
Zimila, H ... 2921
Zimmerman, B ... 1671
Zimmermann, C ... 3060*, 3064
Zink, D ... 3075*
Zoeller, T R ... 2503b*
Zolkowska, D ... 1229
Zong, C ... 2060, 3164*
Zong, J ... 1483
Zorbas, M ... 1238
Zorrilla, L ... 3089
Zorzano, A ... 1806
Zota, A R ... 3141
Zou, C ... 3117
Zou, H ... 1688
Zu, K ... 2673*
Zucker, R M ... 2765
Zumbrun, E ... 1292
Zuñiga, G ... 2956
Zuo, R ... 3059, 3554
zur Nieden, N I ... 2311, 3286
Zurawski, V R ... 3061
Zurlinden, T ... 1369*, 3198
Zweier, J L ... 3399
Zychowski, K ... 1114, 1309*, 2261
Zylstra, G ... 3351

The numerals following each keyword refer to the relevant abstract number(s).

Abstract Keyword Index

Δ9-Tetrahydrocannabinol 1170
β-Methylamino-L-Alanine (BMAA) 2622
1,2,3-Trichloro-5-Nitrobenzene 3139
1,2-Dichloroethane 2033, 2232
1,3-Butadiene 3190
1,3-Dichloropropene ... 2042, 2674, 2900
1,4-Dinitrobenzene 3244
1,4-Naphthoquinone 2295, 2298
1-Bromopropane 1424
1-Hexanol 2154
2-(1,3,5-Dithiazinan-5-Yl) Ethanol 2662
2,3,7,8-Tetrachlorodibenzodioxin ... 3288
2,3,7,8-Tetrachlorodibenzo-P-Dioxin (TCDD) 2055, 3268
2,2′-Thiobisethanol 2662
2,4,6-Trinitrotoluene 3451
2,4-D 1131
2-Deoxy-D-Glucose (2-DG) 1620, 1622
2Dg 1620
2-Hydroxymethacrylate 2445
2-Mcpd, 3-Mcpd 3028
2-Mercaptobenzothiazole 2138
2-Monochloro-1,3-Propanediol 3028
2-PAM 2848
3,3′-Diindolylmethane 2044
3,4-Dichloroaniline 2942
3,5-Dichloroaniline 3109
3D *In Vitro* Model 2186
3D Microtissues 2010, 2847
3D Models 3557
3-Hydroxy-3-Methylglutaryl Coa Reductase 1527
3-Methylcholanthrene 3158, 3160
3Rs 1630
4,4′-Methylenedianiline 3468
4-MCHM, PGPE 1441
4-Methylcyclohexanemethanol 2864, 2962
4-Tert-Octylphenol 2963
5-Aza-2′-Deoxycytidine 2061
5-Fu 3169
9,10-Phenanthraquinone, Endothelial Cell Dysfunction 2329
A-Carotenoids 2282
Abraxane 1202
Acamprosate 3085
Acceptable Daily Exposure 2682
Acetaldehyde 2144, 2216
Acetaminophen 1221, 1234, 1235, 1236, 1295, 1954, 1964, 1974, 1977, 1995, 1999, 2001, 2013, 2489, 3061, 3092, 3172, 3182, 3186, 3431, 3532
Acetaminophen Hepatotoxicity 1971
Acetaminophen, Mito-Tempo 1981
Acetic Acid 2694
Acetylcholinesterase 2095, 2886
Acetylcholinesterase Inhibitors 1212
Acetylcholinesterase, Antidote 2091
Acid Anhydride 2203
Acifluorfen 1960
Acrolein 1282, 1976, 2132, 2135, 2263
Acrylamide 1215, 1422
Acrylonitrile 2998
Activity Related Cytoskeletal (Arc) Associated Protein 1213
Acute Kidney Injury 2496
Acute Myeloid Leukemia (AML) 1663
Adaptive vs. Adverse 2212
Additive Manufacturing 2453
ADHD 1859
Adipogenesis 1555
ADME 2607
Adult Neurogenesis 1206, 2366
Adverse Outcome Pathway 2653, 2701, 3410
Aflatoxin 2653, 3012
Aflatoxin B1 ..... 1072, 1134, 1343, 1814, 1995, 3145
Aflatoxin M1 2271
Aflatoxins 2269, 2271, 2272, 3006
Aflatoxins, Fumonisins 2283
Agents 1223, 1271, 1292, 1446, 1512, 1549, 1682, 1932, 2046, 2093, 2110, 2111, 2123, 2124, 2479, 2672, 2806, 2829, 2894, 2913
Aging 1272, 1456, 1678, 1816, 1838, 1842, 2350, 2383, 2682, 2853, 2890, 3203
AhR 1185, 2428
AHR Repressor 2424
Air Liquid Interface 2815
Air Pollution 1167, 1299, 1450
Akt/S6K1 1475
Alcohol 1961, 1976, 2233
Alcohol Dehydrogenase 2430
Alcohol Ethoxylate Surfactants 1805
Aldehydes 1282
ALI 2788
Aliskiren 2720
Alkanolamine 2478
Alkenylbenzenes 1821
Alkylated Naphthalene AN-600 3441
Alkylating Agents 1062, 1389, 1600, 1915, 1989, 2097, 2099, 2110, 2111, 2112, 2113, 2115, 2123, 2124, 2126, 2128, 2152, 2483, 2496, 2854, 3115
All Trans Retinoic Acid 2599
Allergy 1851
Allyl Alcohol Carbon Tetrachloride . 3527
Alpha Synuclein 1595
Alpha-Cypermethrin, Pyrethroids 2902
Alpha-Synuclein, Parkinson's Disease 2342
Alternative Gene Splicing 2438
Alternatives Assessment 2692, 3410
Alternatives To Animal Testing 1101, 1105, 1121, 1150, 1153, 1154, 1171, 1224, 1399, 1415, 1429, 1506, 1522, 1615, 1630, 1636, 1788, 1789, 1801, 1803, 1810, 1814, 1820, 1821, 1992, 2014, 2030, 2058, 2171, 2172, 2176, 2177, 2178, 2180, 2181, 2182, 2184, 2186, 2187, 2188, 2190, 2190, 2193, 2194, 2195, 2196, 2198, 2199, 2201, 2202, 2203, 2204, 2205, 2208, 2223, 2287, 2446, 2451, 2452, 2456, 2462, 2468, 2470, 2471, 2474, 2550, 2551, 2606, 2623, 2625, 2626, 2628, 2629, 2632, 2646, 2651, 2652, 2656, 2710, 2737, 2772, 2783, 2815, 2822, 2860, 2863, 2891, 2989, 2990, 3017, 3057, 3058, 3060, 3063, 3064, 3066, 3070, 3072, 3074, 3077, 3110, 3111, 3113, 3119, 3151, 3192, 3222, 3266, 3279, 3280, 3388, 3515, 3516, 3540, 3547, 3550, 3557
Alzheimer's Disease 1842, 2397
Amatoxins 1963
Ames Test 2813
Aminophenol 2712
Amiodarone 3061, 3461
Amiodarone, Propylthiouracil 2006
Amitraz 2909
Amlodipine 2837
Amyloid 1587
Amyotrophic Lateral Sclerosis 2622
An Orphan Nuclear Receptor, NR2E3 1738
Androgen Receptro 2070
Anesthetic 1241
Aneuploidy 2738, 2773
Angiogenesis 1831
Aniline 3191
Animal Model 1237, 3087, 3088
Anniston 3419
Anthophyllite 1286
Anthrax 2217
Antibody Drug Conjugate 1619, 1930
Anticancer 1804
Anti-Factor Xa 2741
Antigen-Presenting 1347, 1361, 1362, 1368, 1928
Antimalaria 1662
Antioxidants 1133, 1197, 1210, 1345, 1456, 1484, 1485, 1556, 1557, 1568, 1579, 1581, 1662, 1817, 1923, 1975, 1981, 2047, 2212, 2296, 2314, 2318, 2333, 2395, 2406, 2451, 2587, 2595, 2600, 2602, 2802, 2885, 2891, 2913, 3024, 3225, 3245, 3341, 3430
Antituberculosis Drugs 1978
Antiviral 3549
Apoe -/- (Apolipoprotein E Knockout) 2859
Apoptosis 1102, 1315, 1318, 1320, 1321, 1322, 1323, 1324, 1326, 1328, 1329, 1330, 1354, 1357, 1427, 1483, 1656, 1831, 1951, 1967, 1968, 1976, 1993, 2044, 2048, 2078, 2333, 2334, 2396, 2598, 2761, 2843, 2853, 2854, 2880, 2973, 3229, 3245, 3290, 3545
Aqp4 2802
Aquatic Toxicology 1174, 1185, 1277, 1378, 1511, 1800, 1806, 2412, 2737, 2796, 2898, 2922, 2929, 2933, 2934, 2935, 2936, 2937, 2938, 2941, 2943, 2949, 2952, 2954, 2955, 3162, 3424, 3486
Archachatina Marginata 1463
Aristolochic Acid 1105
Aromatase 3393
Aromatic Amines 1820
Arrhythmia Detection 1646
Arrhythmias 2330
Arsenic 1249, 1250, 1252, 1253, 1254, 1256, 1259, 1260, 1261, 1262, 1263, 1264, 1265, 1266, 1267, 1350, 1352, 1478, 1599, 1691, 1834, 2052, 2149, 2168, 2667, 2749, 2982, 3339, 3340, 3341, 3343, 3344, 3345
Arsenic Biomethylation 2969
Arsenite 1275
Artificial Learning Models 2836
Artificial Turf 2670
Aryl Hydrocarbon Receptor 1185, 3285, 3287
Arylex, Rinskor 2458
As 1255
As3MT 2969, 3344
Asbestos 1281, 1312, 1354, 1356, 1357, 1690, 2047, 2139, 2317, 2695, 2696, 2867, 2868, 2974, 2979
Ascorbic Acid 2802
Aspirin 1328
Assessment 3193
Asthma 1295, 1851, 2694, 3212
Astrocytes 1322, 1580, 2337, 2352, 2377, 2381, 2802
Atherosclerosis 3344
Atopic Dermatitis 1468, 1517
Atosiban 3239
Atovastatin 3171
Atrazine 1792, 2894
Attention Deficit Hyperactivity Disorder 1637
AuNP 2792
Autism 1169
Autoimmune 1559, 1894, 1897, 1899, 1900, 1917, 2867, 2868, 2869, 2871, 2872, 2874, 2875, 2877, 2878, 3083
Autoimmunity 2870
Autonomic Imbalance 2260
Autophagy 1481, 3180
Azole 3280
Azoxymethane 1062
B Cell 1346, 1937
B Cell Development 1554
B16-F10 Melanoma Cells 2022
Baccharin 1663
Bacillus Subtilis, Probiotic 2268
Background 1684
Baicalin 3429
B(A)P-Metabolites 1213
Bark Beetles 2956
Bath Salts 2347
Batteries 2671
BCRP, Placenta 3235
BDE-47, BDE-99 ..... 3411, 3412
BDNF 2370, 2658
Behavior 1166, 1170, 1175, 1229, 1230, 1235, 1237, 1239, 1243, 1247, 1462, 1597, 1661, 1793, 1805, 1848, 1859, 2324, 2356, 2384, 2414, 2915, 2943, 2999, 3086, 3418
Behavioral 1169, 1795, 1808, 2105, 2122, 2374, 3000
Benchmark Dose 2165
Benicar, Crestor 1655
Benign Prostate Hyperplasia 1872
Benzene 2134, 2325
Benzene, Toluene, Ethylbenzene and Xylene (BTEX) 2922
Benzo[A]Pyrene 1213, 1946, 2040, 2953, 3283, 3284, 3392, 3462
Benzonatate 1391, 2019, 3260
Beryllium 1278
Beta-Naphthoflavone 3154
Betulinic Acid 1473
B-Glucan 1343
Bibliometrics 2995
Bifenthrin 2941
Bile Salt Export Pump (BSEP) 2731
Biliary Excretion 1966, 1985
Bioaccumulation 2925
Bioassy 1818
Bioavailability 1442, 1623, 2152, 2548, 2937, 2955, 3027, 3406, 3435, 3441, 3446, 3525
Biocompatibility 2452
Biodiesel 2803
Biodiesel Blend 2803
Bioenergetics 1798
Bioenergy Feedstock 1430
Biofuel 2459

The numerals following each keyword refer to the relevant abstract number(s).

Bioinformatics ... 1072, 1073, 1074, 1075, 1080, 1082, 1084, 1086, 1087, 1088, 1089, 1090, 1091, 1093, 1119, 2039, 2161, 2434, 2605, 2633, 2634, 2636, 2645, 2649, 2660, 2750, 2923, 2995, 3075, 3166, 3168, 3349, 3490, 3550

Biological Modeling 1144, 1204, 1437, 1440, 1504, 1526, 1670, 1872, 2039, 2061, 2144, 2185, 2215, 2217, 2218, 2219, 2222, 2225, 2233, 2234, 2240, 2349, 2441, 2452, 2493, 2607, 2608, 2633, 2646, 2665, 2681, 2716, 2937, 2944, 2979

Biologics 3440

Bioluminescence 2022

Biomagnification 2665

Biomarkers 1081, 1107, 1110, 1134, 1135, 1137, 1145, 1241, 1270, 1278, 1279, 1324, 1432, 1518, 1545, 1552, 1606, 1631, 1632, 1660, 1670, 1671, 1672, 1677, 1815, 1927, 1931, 1935, 2107, 2272, 2283, 2310, 2354, 2355, 2367, 2455, 2482, 2491, 2613, 2616, 2630, 2718, 2721, 2722, 2723, 2724, 2725, 2726, 2728, 2731, 2732, 2733, 2734, 2737, 2739, 2740, 2741, 2742, 2745, 2750, 2753, 2769, 2776, 2824, 2849, 2871, 3012, 3041, 3093, 3123, 3130, 3134, 3141, 3172, 3175, 3176, 3186, 3189, 3211, 3403, 3466, 3470, 3471, 3472, 3473, 3474, 3475, 3476, 3477, 3478, 3480, 3481, 3491, 3529, 3535, 3558

Biomonitoring 1129, 1130, 1135, 1136, 1138, 1139, 1140, 1141, 1142, 1143, 1144, 1145, 1146, 1260, 1646, 2022, 2851, 3141, 3211, 3351, 3556

Biomonitoring, Reverse Dosimetry 2229

Bioprocessing, Image Analysis, TEM, STEM 2540

Bioscavenger 2106

Biosimilar 1629

Biotech 3281

Biotech Products 1619, 1641, 1642, 1647, 1654, 1657, 2287, 2441, 2442, 2666, 3004, 3516, 3527, 3531, 3553

Biotransformation 1105, 1255, 1623, 1995, 1999, 2040, 2043, 2295, 2540, 2591, 2863, 3109, 3139, 3145, 3146, 3150, 3155, 3158, 3226, 3344, 3411, 3412, 3413, 3428, 3429, 3451, 3464, 3517, 3543

Biotransformation and Toxicokinetics 2038, 2197, 2219, 2231, 2727, 2905, 2945, 3273, 3428, 3436, 3438, 3439, 3443, 3444, 3453, 3460, 3461

Biphenyl 1881

Bismuth Oxide 2761

Bisphenol 2431, 2472, 2549

Bisphenol A (BPA) 1137, 1138, 1139, 1390, 1858, 1859, 1868, 1872, 1914, 2472, 3203, 3228, 3250

Bisphenol AF 2550

BLCO 3245

Bleomycin 1092, 2328

Blood Gas 1627

Blood Pressure 2264

Blood-Brain Barrier 2415, 2791

BM Niche Cells 1734

Bone 1552, 1555, 1735, 1883, 2318, 2442, 2736, 3048, 3151, 3288

Bone Marrow Progenitor Cells 3151

Bone Marrow, Monkey 1929

Boric Acid 3298

Botanical Supplements 2286

Botulinum and Tetanus Neurotoxins 3063

BPA 1138

BPA, BPAF, and BPS 1857

Brain 1167

Brain Blood Vessel 2802, 2809

Brain Uptake 3447

Breast Cancer 3342

Breast Cancer Incidence 2961

Brominated Flame Retardants 3390

Bromodichloromethane 1902, 2231

BTBD9 2365

Butyl Benzyl Phthalate 2705

Butyl Paraben 3292

Butyrylcholinesterase 1123, 2090, 2408

C. elegans 1813

C. elegans, Bisphenol A, Bisphenol S 1812

C. elegans, Mitochondrial Membrane Potential 1811

C-Abl Tyrosine Kinase 2373

Cadmium 1446, 1527, 1528, 1530, 1532, 1534, 1594, 1595, 1834, 2342, 2977, 3122, 3342, 3551

Cadmium Sulfate 3073

Caenorhabditis Elegans 1224, 1512, 1810, 1814, 3217

Caerulein 3473, 3474

Caffeic Acid 1402, 1416

Caffeic Acid Phenetyl Ester 1476

Caffeine 1845

Calcium Channels 3415

Cancer Therapy 1417

Cannabidiol, THC, Cannabidiol Oil 3282

Cannabinoid 3282

Cannabinoid Receptor 1342

Cannabinoids 1340, 1341

Cannabis 3403

Canthaxanthin 3005

Capsaicin 1469

Carbamate Pesticides 1348

Carbaryl 2394

Carbendazim 1893

Carbon Nanomaterial 2940

Carbon Monoxide 2170

Carbon Monoxide: Benzene, Tire-Derived Smoke, Scrap Tires 1685

Carbon Nanodots; Interference, Lactate Dehydrogenase Assay 2763

Carbon Nanotubes 3482, 3484, 3486, 3491, 3494, 3497, 3500, 3502

Carbonyl Protein, Superoxide Anion 2312

Carcinogenesis 1056, 1057, 1058, 1059, 1062, 1076, 1256, 1257, 1258, 1267, 1275, 1320, 1392, 1395, 1404, 1418, 1453, 1467, 1562, 1648, 1732, 1891, 1960, 2019, 2020, 2021, 2023, 2024, 2025, 2026, 2028, 2029, 2032, 2034, 2036, 2037, 2040, 2042, 2045, 2046, 2047, 2049, 2050, 2051, 2053, 2055, 2060, 2063, 2064, 2065, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2078, 2080, 2082, 2083, 2084, 2087, 2088, 2139, 2150, 2186, 2421, 2422, 2433, 2436, 2439, 2455, 2494, 2653, 2664, 2674, 2695, 2706, 2715, 2790, 3094, 3102, 3158, 3161, 3191, 3193, 3197, 3201, 3205, 3206, 3208, 3231, 3339, 3340

Cardiopulmonary 1067, 1068, 1070, 1114, 1297, 1309, 1397, 1622, 2135, 2243, 2260, 2261, 2262, 2263, 2330, 2838, 2844, 2848, 2855, 3100, 3103, 3137, 3402, 3507

Cardiotoxicity, miRNA 3475

Cardiovascular System 1114, 1185, 1266, 1325, 1329, 1496, 1520, 1553, 1622, 1625, 1646, 1665, 1666, 1740, 1741, 1742, 1743, 1744, 1829, 1830, 1836, 1844, 1845, 1846, 1879, 2130, 2134, 2143, 2177, 2248, 2261, 2265, 2331, 2449, 2600, 2601, 2647, 2676, 2817, 2818, 2819, 2820, 2822, 2823, 2824, 2826, 2827, 2828, 2831, 2833, 2835, 2836, 2837, 2840, 2841, 2842, 2843, 2845, 2846, 2847, 2849, 2850, 2856, 2857, 2858, 2859, 2973, 3045, 3100, 3101, 3108, 3163, 3209, 3238, 3277, 3399, 3417, 3466, 3531, 3542

Carrageenan 2589, 3009

Carvacrol 1975, 3022

Cataract 1605

Cattle 3021

CdO Nanoparticles 2758

Celastrol 1321

Cell Communication 1520, 2072, 2112, 2308, 2493, 2738, 3228, 3229

Cell Culture 1060, 1127, 1148, 1163, 1172, 1191, 1193, 1273, 1282, 1315, 1320, 1429, 1516, 1565, 1592, 1745, 1884, 1955, 1980, 1997, 2001, 2014, 2016, 2172, 2187, 2194, 2322, 2332, 2347, 2363, 2379, 2444, 2445, 2446, 2451, 2453, 2471, 2589, 2711, 2738, 2760, 2781, 2785, 2860, 3009, 3044, 3048, 3049, 3054, 3060, 3067, 3077, 3111, 3114, 3145, 3148, 3200, 3208, 3397, 3479, 3492, 3545, 3555, 3556

Cell Cycle 1838

Cell Lines, Transfected 1258, 1866, 2013, 2332, 2387, 2431, 2597, 2737, 3117, 3455

Cell Proliferation 1056, 1122, 1305, 1447, 1663, 1737, 1871, 1993, 2041, 2064, 2068, 2077, 2082, 2087, 2418, 2598, 3263, 3534, 3545, 3553

Cell Transformation 2081

Central Nervous System 2791

Cerebellum 1579

Cerebellum, Autism 3263

Cerium Dioxide 2541, 2542

Cerium Oxide 1496

Cerium Oxide Nanoparticles 2807

Cesarean 1851

Chasmanthera Dependens 1923

Checkpoint Inhibitors 1654

Chemical and Biological Weapons 1123, 1153, 1173, 1226, 1229, 1301, 1600, 1601, 1602, 1806, 2089, 2090, 2092, 2093, 2094, 2096, 2097, 2098, 2099, 2100, 2101, 2104, 2105, 2106, 2107, 2109, 2110, 2111, 2112, 2114, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2126, 2127, 2128, 2129, 2136, 2217, 2912, 3063, 3244, 3509, 3510

Chemical Allergy 1503, 1947, 1948, 2195, 2196, 2201, 2202, 2203, 2204, 2205, 2466, 2646, 2861, 2862, 2864, 2866, 2965, 2987, 3521

Chemical Categories 3081

Chemical Mixture 2193

Chemical Oxygen Demand 1276

Chemical Prioritization 2030, 2221

Chemical Toxicity Pre-Screening and Evaluation 1810

Chemical Warfare 1915

Chemokines 1335, 1733, 1924, 1936, 1974

Chemotaxis 1224

Chemotherapy 2048

Chemotypes 2709

Children's Health 1245, 1544, 1791, 2148, 2220, 2277, 2401, 2402, 2717, 2985, 3258, 3278

Chlordane 2159

Chlorine Gas 1301

Chloropicrin 2715

Chloropicrin and Hydrogen Fluoride 1601

Chloroquine 3221

Chlorpromazine 3461

Chlorpyrifos 1795, 2342, 2390, 2394, 2396, 2397, 2880, 2884, 3076

Cholesterol 1178, 1973

Cholinergic System 2405

Choroid Plexus 1221

CHPG 2370

Chromatin 3210, 3215, 3220

Chromium 1289, 1538, 1539, 3338, 3523

Chromium (VI) 2926

Chronic Liver Disease 3427

Chrysene 2058

Cigarette 3046

Cigarette Smoke 1106, 1337, 1837, 3045, 3221

Cigarette Smoke and Phthalates 3001

Cigarette Smoke Exposure 2290

Cinnamaldehyde 2480

Circadian 1230

Circadian Rhythm 3068

Cispaltin 1326

Cis-Permethrin 3448

Cisplatin 1331, 1401, 2496, 2721, 3115, 3126

Citizen Science 3351

Classification 1454

Clastogen 1410, 1422, 1426, 2782

Clastogenesis 1391

Clay Food Packaging 3020

Clinical Pathology 1632

Clinical Toxicology 1484, 1585, 1610, 1645, 1833, 1963, 2233, 2243, 2481, 2482, 2487, 2489, 2491, 2721, 2727, 2753, 2828, 2851, 2964, 3123, 3179, 3199, 3352, 3472, 3558

Clozapine 1333, 2828

CMP Slurries 2796

Coagulation 1276, 1951, 1954

Coal Fly Ash (CFA) 1285, 1430, 2244

Cobalt 1541, 1542

Cobalt Nanoparticles 2804

Cobinamide 2120

Cocaine 3174

Co-Culture System 2724

Co-Exposure 1592

Co-Exposure: Hepatic Toxicity, Cardiovascular Disease 1446

Collagen 2073, 2177

Colorectal Cancer 1328

Combretastatin 2032

Comet 3040

Comet Assay 2813, 3022

Comet in Nasal Tissue 1398

Complex Environmental Mixture 1423

Complex Mixture 1438

Complex Trait Genetics 2546

Computational Toxicology 1075, 1077, 1080, 1087, 1093, 1094, 1097, 1099, 1101, 1104, 1113, 1119, 1369, 1437, 1675, 1683, 1991, 2159, 2161, 2165, 2202, 2211, 2218, 2221, 2225, 2226, 2227, 2228, 2229, 2238, 2239, 2323, 2547, 2548, 2603, 2604, 2605, 2609, 2610, 2611, 2614, 2615, 2617, 2618, 2621, 2624, 2626, 2627, 2628, 2629, 2630, 2633, 2634, 2635, 2636, 2637, 2639, 2643, 2644, 2645, 2647, 2649, 2650, 2651, 2654, 2656, 2657, 2660, 2681, 2683, 2709, 3050, 3051, 3187, 3188, 3300

Conjugate 1653

The numerals following each keyword refer to the relevant abstract number(s).

Connective Tissue Growth Factor ... 2879
Constitutive Androstane Receptor ... 2434, 2435
Consumer Products ... 1679, 1681, 2671
Consumer Products Safety ... 3548
Continuous Infusion ... 1618
Control Banding ... 2693
Cookstoves ... 1302
Copper ... 1274, 1586, 2903
Copper Nanoparticles ... 2793
Copper Oxide ... 2786
Colorectal Cancer ... 2282
Corneal Endothelial Toxicity ... 1602
Cortical Pyramidal Neurons ... 1190
Corticosteroids, Calcinerurin Inhibitors ... 3083
Cortisol ... 3278
Cosmeceuticals ... 2778
Cosmetic Eye Irritation ... 2474
Cosmetics ... 2673
Coumarine-Type ... 1606
Covalent Crosslinker ... 1619
Cr (VI) ... 2075
Cramer Classification ... 2644
CRISPR/Cas9 ... 1801
CRISPR/CAS-9, genome editing ... 3281
Crizotinib; Ceritinib ... 1318
Cross-Contaminant ... 2151
Crotonaldehyde ... 1282
Crude Oil ... 1439
Crude Oil and Dispersant Mixture ... 1815
Cumulative ... 2689
Cumulus Cells-Oocyte Complex ... 3228
Cupperoxide ... 2815
Curcumin ... 2212, 3071
Curcumin and Sulforaphane ... 1492
Curriculum Development ... 1379
Cutaneous/Skin Toxicity ... 1503, 1517, 1538, 1947, 2094, 2101, 2201, 2209, 2454, 2608, 2778, 2789, 2864, 2866, 2880, 3082, 3083, 3340, 3435, 3518, 3519, 3522, 3524, 3526
CXCR7, Endothelial Progenitor Cells ... 1831
Cyanide ... 2127, 2145
Cyanide Antidote ... 2127
Cyanobacterium ... 1924
Cyanotoxins ... 2147
Cyclic Ethyleneamine ... 1298
Cyclophosphamide ... 2854
Cyclosporin A ... 3461
Cyclosporine ... 3124
Cynomolgus Monkey ... 1633, 1639, 3186
Cynomolgus Monkey Infusion ... 1618
CYP19a1b ... 3283
CYP2F2 ... 2036, 2038
CYP3A4 ... 3049, 3146
Cyp3A-Null Mice, High Fat Diet ... 3156
Cyphenothrin ... 2882
Cysteine Adducts, Protein Adducts, Instability ... 1109
Cystic Fibrosis, HMGB1, Pseudomonas Aeruginosa ... 1912
Cytochrome P450 ... 1111, 1419, 1492, 1860, 1873, 1875, 1902, 1920, 1955, 1998, 2002, 2031, 2036, 2038, 2060, 2292, 2304, 2427, 2438, 2489, 2946, 2956, 3036, 3043, 3076, 3131, 3139, 3141, 3142, 3143, 3146, 3147, 3148, 3149, 3151, 3152, 3153, 3154, 3155, 3156, 3157, 3158, 3159, 3160, 3163, 3164, 3165, 3179, 3184, 3207, 3241, 3246, 3270, 3353, 3411, 3412, 3434, 3450, 3451, 3456, 3458, 3459, 3463, 3465, 3479, 3543, 3555
Cytokine ... 1894
Cytokine Signaling ... 1183, 1212, 1253, 1340, 1344, 1352, 1554, 1664, 1902, 1922, 1943, 2290, 2293, 2322, 3009, 3039, 3508
Cytokines ... 1207, 1211, 1214, 1232, 1281, 1282, 1335, 1340, 1343, 1356, 1644, 1851, 1852, 1907, 1917, 1928, 1931, 1934, 1947, 1948, 1959, 2008, 2054, 2345, 2589, 2732, 2740, 2811, 2861, 2874, 2918, 3088, 3398, 3503, 3535
Cytotoxicity ... 1088, 1254, 1316, 1317, 1319, 1325, 1328, 1331, 1416, 1433, 1435, 1441, 1451, 1481, 1493, 1495, 1523, 1539, 1558, 1574, 1577, 1578, 1619, 1621, 1663, 1673, 1739, 1740, 1741, 1828, 1829, 1830, 1942, 1980, 2009, 2011, 2012, 2184, 2255, 2293, 2297, 2312, 2316, 2446, 2450, 2453, 2480, 2756, 2763, 2767, 2770, 2775, 2776, 2780, 2784, 2786, 2813, 2814, 2816, 2854, 2885, 2894, 2973, 3059, 3062, 3072, 3078, 3079, 3121, 3129, 3173, 3184, 3455, 3482, 3483, 3533, 3544, 3554
Daphnia Pulex ... 1816
Database ... 2605
DBP ... 2996
DDT ... 2665, 2955
DE-71 ... 3177
Decamethylcyclopentasiloxane ... 2703
Decision Tree ... 2279, 2280
Decontamination ... 3509
Deltamethrin ... 2414, 2881, 3447
Deltamethrin, Adult Neurogenesis, Learning and Memory ... 2413
Deoxynivalenol ... 2276, 2873
Depleted Uranium ... 1561
Developmental ... 1368
Developmental or Reproductive Outcomes ... 3257
Developmental Toxicity; Post-Natal ... 1186, 1236, 1247, 1483, 1590, 1794, 1809, 1840, 1842, 1857, 1858, 1893, 2362, 2394, 2809, 2838, 2888, 2944, 3086, 3255, 3263, 3264, 3270, 3273, 3275, 3276
Developmental Toxicity; Pre-Natal ... 1082, 1175, 1177, 1182, 1196, 1359, 1589, 1590, 1839, 1843, 1845, 1846, 1850, 1856, 1857, 1868, 1880, 2177, 2472, 2749, 2771, 2817, 2911, 2983, 3194, 3203, 3232, 3258, 3265, 3268, 3271, 3272, 3273, 3290, 3345
Developmental/Teratology ... 1180, 1350, 1487, 1788, 1789, 1791, 1796, 1797, 1801, 1802, 1803, 1844, 1845, 1849, 2176, 2178, 2180, 2311, 2462, 2550, 2551, 2619, 2632, 2640, 2884, 2892, 2893, 2949, 2951, 3038, 3260, 3261, 3262, 3266, 3275, 3276, 3279, 3280, 3281, 3283, 3285, 3286, 3287, 3288, 3293, 3295, 3300
DFP ... 2405
DHA ... 1913
di-(2-Ethylhexyl) Phthalate ... 2057, 3297
Diabetes ... 1251, 1621, 2250, 2587, 2725, 2972
Diacetyl ... 1199, 1300, 2140
Diazinon: Sodium Arsenite, Toxicity, Catfish ... 2954
Dibenzo[Def,P]Chrysene ... 2079
Dibenzo[Def,P]Pyrene ... 3462
Dibromochloromethane ... 1407
Dibutyl Phthalate ... 2704
Dichloromethane ... 2039
Diclofenac ... 1998
Diclofenac Acyl Glucuronide ... 2316
Didecyldimethylammonium Chloride ... 2866
Dieldrin ... 2344, 2389, 2412
Diesel Engine Exhaust ... 2142
Diesel Exhaust ... 1169, 1431, 2251, 2976
Diesel Exhaust Particles ... 1207
Diet ... 1200, 3097
Dietary Fats ... 1080
Dietary Feeding ... 1893
Diethylene Glycol ... 3116
Diethylhexylphthalate ... 2046
Diethylstilbestrol ... 2546, 3213
Diindolylmethane ... 1917, 2080
Diisocyanates ... 2739
Diisopropyl Fluorophosphate ... 1214, 2406, 2409
DILI, Drug Property, Host Factor, Susceptibility ... 3183
Dimethylformamide ... 2190
Dinitrofluorobenzene ... 1503
Dioxin ... 1085, 1100, 1103, 1118, 1119, 1126, 1185, 1186, 1187, 1189, 1360, 1361, 1363, 1364, 1368, 1732, 1733, 1735, 1736, 1823, 1937, 2055, 2227, 2304, 2424, 2427, 2429, 2430, 2686, 2687, 2834, 2869, 2938, 3267, 3423, 3542
Diphenyl Ditelluride ... 1556
Discovery ... 3072
Disinfection By-Products ... 1306, 1319, 1407, 2231, 2866, 2996, 3135
Disposition ... 1678, 3441, 3444, 3452
Dissecting Aortic Aneurysm ... 2177
Diversity Outbred ... 1677, 2753
Diversity Outbred Mice ... 3089
DMBA ... 1874
DMSO ... 3049
DNA Adducts ... 1288, 1316, 1390, 1424, 2027, 2079, 2086, 2591
DNA Damage ... 1427
DNA Methylation ... 1263
DNA Repair ... 1062, 1275, 1387, 1390, 1392, 1397, 1402, 1404, 1405, 1414, 1417, 1425, 1977, 2494, 2926
DNA-Protein Crosslinks ... 1425
DOHaD ... 1792
Domoic Acid ... 3446
Dopamine Receptor Antagonist ... 1637
Dopamine, L-Dopa ... 2380
Dose Response ... 1298, 1300, 1326, 1328, 1424, 1536, 1542, 2039, 2108, 2133, 2138, 2149, 2154, 2155, 2160, 2165, 2166, 2170, 2596, 2649, 2688, 2695, 2700, 2713, 2717, 2730, 2751, 2768, 2976, 2992, 3008, 3014, 3106, 3250, 3514
Dosimetry ... 1508, 2210, 2719, 2765, 2994, 3437, 3485, 3533
Doxorubicin ... 2494, 2821, 2856, 3051, 3209, 3466
Drinking Water ... 2155, 2156, 2277, 2986, 2996
Drinking Water: Public Health ... 2152
Drosophila ... 1271
Drug Candidate Assessment ... 1675
Drug Induced Hepatotoxicity ... 2484
Drug Induced Liver Injury ... 2218
Drug Interaction ... 3432
Drug of Abuse ... 1339
Drug-Induced Liver Injury: Dili Classification; Database ... 3168
Drug-Induced Liver Toxicity ... 3450
Drugs ... 2750
Drugs of Abuse, Vmat2 ... 1244
Dry Eye Disease ... 1610
Dyslipidemia ... 1249
Early B Cell Development ... 1360
Earthworm ... 1501
Ebola Virus ... 1626
Echocardiography ... 2263
E-Cigarette ... 2460
E-Cigarette Liquids ... 1338
E-Cigarette, Tobacco ... 2053, 3030, 3031
E-Cigarettes ... 1165
ECM ... 2177, 2211
Ecotoxicology ... 1501, 1519, 1522, 1696, 2031, 2344, 2635, 2757, 2919, 2920, 2922, 2923, 2926, 2927, 2928, 2929, 2942, 2948, 2951, 2953, 3298
Education ... 1376
Education Outreach Other ... 1272, 1372, 1373, 1374, 1375, 1377, 1379, 1380, 1381, 1382, 1383, 1384, 1385, 1386, 2277, 2606, 2980, 2982, 3000, 3346, 3347, 3348, 3349, 3350, 3351, 3352
EGEHE ... 3444
EGME ... 3249
Eicosane ... 2666
Electroencephalography ... 1660
Electronic Cigarette: Vascular Endothelial Dysfunction, Smoking, Nicotine ... 3399
Electronic Cigarette ... 2480, 2638, 3032, 3048, 3397
Electronic Waste ... 1143
Electrophysiology ... 3264
Elk River Chemical Leak ... 2962
Embryo ... 1182, 2383, 2472, 3260, 3267, 3291, 3292, 3294, 3300
Embryonic Stem Cells ... 1184, 1737, 1741, 1822, 1823, 1829, 1832, 1835, 1839, 2407, 2480, 2640, 2771, 2852, 3073, 3074, 3247, 3409, 3466
Endocrine Disruptors ... 1084, 1089, 1137, 1141, 1161, 1188, 1188, 1268, 1390, 1437, 1792, 1827, 1850, 1855, 1856, 1857, 1858, 1859, 1864, 1867, 1868, 1870, 1892, 1897, 2057, 2069, 2214, 2545, 2619, 2631, 2704, 2705, 2718, 2744, 2904, 2933, 2941, 2947, 2963, 3213, 3230, 3236, 3250, 3283, 3292, 3298, 3343, 3390, 3393, 3394, 3422
Endocrine Estrogen ... 1862
Endocrine Toxicology ... 1089, 1860, 1861, 1862, 1868, 1882, 1884, 1887, 1888, 1889, 1891, 1896, 2174, 2439, 2651, 2916, 2943, 3084, 3089, 3251, 3389, 3393, 3394
Endocrine; Androgens ... 1098, 1188, 1870
Endocrine; Estrogens ... 1116, 1139, 1140, 1449, 1865, 1869, 1870, 1871, 1873, 1914, 2224, 2549, 2616, 2655, 3283, 3391, 3394, 3407, 3445
Endocrine; Other ... 1138, 1530, 1875, 1881, 2223, 2972, 3052, 3089
Endocrine; Receptor ... 1863, 1866, 1882, 1883, 2431, 3392
Endocrine; Thyroid ... 1147, 1162, 1195, 1885, 1886, 1887, 1888, 1889, 1890, 1892, 1893, 2911
Endogenous Activators ... 2299
Endometriosis ... 1914
Endometriosis; Epidemiology; Bias ... 2975
Endothelial Dysfunction ... 2134
Energetics ... 2937

The numerals following each keyword refer to the relevant abstract number(s).

Energy Drinks ... 2273
Engine Exhaust ... 1438
Engineered Nanomaterials ... 3110
Enniatins ... 2276
Enteric Nervous System ... 2375
ENU ... 1389
Environmental Exposures ... 3192, 3250
Environmental Fate ... 2932
Environmental Pollutant Mixtures ... 1429
Environmental Risk Assessment ... 2146
Environmental Toxicology ... 1074, 1079, 1090, 1128, 1265, 1285, 1319, 1352, 1376, 1379, 1403, 1418, 1435, 1441, 1475, 1479, 1501, 1505, 1519, 1562, 1570, 1582, 1593, 1683, 1685, 1691, 1695, 1696, 1807, 1816, 1872, 1905, 1908, 1932, 1949, 1962, 2075, 2214, 2229, 2241, 2244, 2254, 2266, 2290, 2300, 2323, 2324, 2346, 2386, 2456, 2461, 2622, 2663, 2729, 2744, 2779, 2791, 2898, 2928, 2930, 2939, 2946, 2950, 2954, 2956, 2971, 2984, 2992, 3021, 3068, 3131, 3196, 3202, 3210, 3211, 3271, 3284, 3289, 3343, 3404, 3424, 3537
Enzyme ... 1662
Epidemiology ... 1132, 1260, 1268, 1310, 1452, 1553, 2052, 2137, 2149, 2157, 2284, 2590, 2694, 2702, 2901, 2964, 2965, 2967, 2970, 2974, 2976, 2977, 2978, 2979, 2980, 2981, 2982, 2997
Epigenetics ... 1059, 1071, 1192, 1217, 1250, 1262, 1263, 1396, 1416, 1533, 1738, 1797, 1839, 1854, 1943, 2028, 2051, 2061, 2072, 2073, 2079, 2084, 2085, 2341, 2489, 2494, 2654, 2742, 2746, 2747, 2817, 2896, 2953, 2971, 3001, 3035, 3065, 3077, 3135, 3166, 3189, 3190, 3191, 3192, 3193, 3194, 3195, 3196, 3197, 3198, 3199, 3200, 3201, 3203, 3204, 3205, 3206, 3207, 3208, 3209, 3212, 3213, 3214, 3215, 3218, 3219, 3220, 3249, 3281, 3338, 3423, 3501
Epigenetics; Cell Transformation ... 2029
Epithelial to Mesenchymal Transition ... 2021, 3124
Epoxiconazole ... 2883
ER Stress ... 1481, 2767
Erlotinib ... 1972
Erlotinib Resistance ... 1664
Erythropoiesis ... 3295
E-Selectin; Nf-Kb, Are, H9C2 Cardiomyocytes ... 2821
Essential Element ... 1568
Esteroids ... 1141
Esters ... 2197
Estradiol ... 3388
Estradiol Benzoate ... 1873
Estrogen ... 2652
Estrogen Receptor ... 2439
ETBE ... 2700
Ethanol ... 1180, 1307, 1336, 2025, 2318, 3279
Ethanol Amines ... 3515
Ethinyl Estradiol ... 1871
Ethyl Acrylate ... 2063
Ethyl Methanesulfonate ... 1398
Ethyl Nitroso Urea ... 1411
Ethyl Tertiary-Butyl Ether ... 2031
Ethyl Vanillin ... 3519
Ethylbenzene ... 2038
Ethylene Dichloride ... 1179
Ethylene Glycol ... 3112
Ethylene Glycol Ethylhexyl Ether ... 3444
Ethynylestradiol ... 2933
Euphorbia Peplus ... 3257
Even-Carbon-Chain Alkanes ... 2666
E-Waste ... 3248
Excipient ... 1617
Excitotoxicity ... 1210, 1220, 1825, 2114
Exifone ... 2011
Exosomes ... 1136, 2351, 3175, 3181, 3339
Exposure Assessment ... 1129, 1131, 1136, 1139, 1140, 1145, 1249, 1430, 1497, 1508, 1526, 1545, 1548, 1567, 1584, 1596, 1601, 1639, 1642, 1654, 1679, 1681, 1682, 1684, 1686, 1689, 1690, 1692, 1693, 1694, 1695, 1698, 2146, 2156, 2197, 2226, 2234, 2267, 2270, 2272, 2276, 2278, 2283, 2461, 2466, 2663, 2671, 2672, 2673, 2677, 2682, 2693, 2694, 2739, 2741, 2792, 2799, 2917, 2962, 2966, 2998, 3024, 3035, 3037, 3046, 3106, 3155, 3206, 3400, 3403, 3405, 3419, 3440, 3495, 3525, 3539
Exposure Assessment Modeling ... 2281
Exposure, Environmental ... 1070, 1079, 1125, 1130, 1132, 1134, 1137, 1146, 1164, 1205, 1206, 1217, 1262, 1269, 1282, 1304, 1350, 1376, 1423, 1425, 1492, 1535, 1543, 1544, 1557, 1559, 1560, 1568, 1591, 1599, 1680, 1683, 1685, 1687, 1696, 1697, 1698, 1815, 1836, 1846, 1847, 1854, 1856, 1882, 1895, 1984, 2054, 2065, 2145, 2146, 2228, 2229, 2235, 2241, 2250, 2264, 2265, 2271, 2277, 2340, 2350, 2353, 2361, 2364, 2385, 2545, 2612, 2638, 2654, 2661, 2754, 2757, 2818, 2819, 2888, 2901, 2903, 2920, 2928, 2929, 2941, 2961, 2962, 2965, 2967, 2968, 2969, 2970, 2971, 2975, 2981, 2986, 2996, 3021, 3133, 3134, 3167, 3201, 3219, 3224, 3237, 3244, 3247, 3253, 3338, 3404, 3419, 3425, 3537, 3539
Extracellular Matrix ... 3388
Extrapolation Factor ... 2684
Extrapolation Modeling ... 2539
Eye Irritation ... 2193
Fc Gamma Receptor ... 2416
Fcgrii (Cd32) Antibody ... 1946
Fenton Metals ... 2254
Fertility ... 2735, 3221, 3223, 3228, 3238, 3239
Fetal Exposure ... 3278
Fgf21 ... 2302
FGF21, Alcoholic Liver Disease, Lipolysis ... 1950
FGF21, IBD, Signal Transducer and Activator of Transcription-3 ... 1901
Fiber Potency ... 2974
Fibrosis ... 1965
Fipronil ... 2882
Fischer 344 Rat ... 3139
Fish ... 2718, 2934, 2935
Flame Retardants ... 1796, 1797, 2185, 2669, 3247, 3405, 3408
Flavin Monooxygenase ... 2013, 2834
Flow Cytometry ... 1415, 1418, 1631
Fluconazole ... 3279
Fluoride ... 2277, 3130, 3133
Fluorescent Microscopy ... 1418
Food Allergy ... 2873
Food Carcinogen ... 1419
Food-Drug Interactions ... 3146
Food Proteins ... 3064
Food Safety/Nutrition ... 1066, 1264, 1265, 1388, 1480, 1494, 1514, 1814, 1874, 1963, 1992, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2288, 2457, 2467, 2473, 2543, 2589, 2590, 2591, 2592, 2617, 2668, 2781, 2968, 3004, 3005, 3006, 3007, 3008, 3010, 3011, 3012, 3013, 3015, 3016, 3019, 3023, 3024, 3025, 3026, 3027, 3028, 3045, 3078, 3125
Formaldehyde ... 1425, 1689, 2661, 2707, 2742, 3201
FOXO3 ... 2311
Fracking Fluid ... 3248
Fracking Sand Dust ... 1284
Fragrance ... 3520
Fragrance Materials ... 2644
Free Radicals ... 1133, 3454
Fructose/Glucose ... 3013
Fulranumab ... 1641
Fusarium Mycotoxins ... 2276
GABA ... 2354
Gap Junctions ... 1444
Gasoline ... 1133
Gastrointestinal ... 1118, 1304, 1317, 1442, 1476, 1516, 1569, 1659, 1852, 1900, 1961, 1976, 2004, 2032, 2076, 2237, 2292, 2375, 2437, 2543, 2698, 3014, 3026, 3027, 3069, 3105, 3144, 3146, 3240, 3431
Gclm KO Mouse ... 1499
Gender ... 3448
Gene Co-Expression Modules ... 3140
Gene Editing ... 3281
Gene Expression ... 3078
Gene Expression Profiling ... 2724
Gene Expression/Regulation ... 1078, 1080, 1083, 1086, 1117, 1221, 1240, 1363, 1364, 1366, 1521, 1554, 1562, 1636, 1734, 1815, 1837, 1854, 1919, 1938, 1954, 1982, 2038, 2045, 2059, 2164, 2289, 2290, 2298, 2303, 2305, 2306, 2309, 2418, 2423, 2429, 2430, 2492, 2493, 2594, 2655, 2743, 2746, 2822, 2862, 2872, 2915, 3065, 3128, 3140, 3143, 3144, 3153, 3163, 3215, 3235, 3249, 3420, 3427, 3452, 3461, 3465, 3473, 3474, 3484, 3528
General Anesthetics ... 1840
Generalized Linear Model ... 1224
Genetic Polymorphisms ... 1278, 1311, 1364, 1569, 1593, 1800, 2052, 2067, 2481, 2748, 2750, 2751, 3234
Genetic Susceptibility ... 2052
Genetic Toxicology ... 1387, 1391, 1392, 1393, 1394, 1398, 1399, 1402, 1403, 1409, 1410, 1411, 1418, 1422, 1423, 1428, 1438, 1820, 1821, 2053, 2448, 2546, 2639, 2758, 2773, 2782, 3031, 3040, 3190, 3217
Genistein ... 1873, 1897, 2655
Genome ... 1087
Genome-Wide Analysis ... 2739
Genomics ... 1072, 1075, 1118, 1261, 2303, 2739, 2747, 3281, 3469
Genotoxicity ... 1060, 1108, 1274, 1330, 1389, 1395, 1396, 1397, 1400, 1401, 1402, 1406, 1407, 1408, 1410, 1412, 1413, 1414, 1415, 1416, 1420, 1421, 1422, 1425, 1426, 1438, 1480, 1539, 1549, 2138, 2248, 2294, 2592, 2593, 2639, 2695, 2697, 2761, 2768, 2772, 2782, 2804, 2808, 2813, 2914, 2971, 3020, 3022, 3066, 3077, 3157, 3190, 3197, 3213, 3217, 3487
Gfap ... 2802
Ginger ... 1210
Glia ... 1168, 1180, 1206, 1207, 1211, 1235, 1578, 1924, 2310, 2335, 2337, 2370, 2378, 2918, 3076
Global DNA Hypomethylation ... 3217
Glucose ... 1080
Glucuronidation ... 1138, 1998, 3456
Glutathione ... 1122, 1209, 1219, 1499, 1563, 2001, 2317, 2333, 2391, 2443, 2483, 3030, 3182
Glutathion-S-Transferases ... 2945
Glycemic Index ... 3010
Glycol Ethers ... 3515
Gold Nanoparticles ... 1504, 2766, 2794
Grapefruit Juice ... 3146
Graphene ... 2940, 3489
Graphical Analysis ... 2713
GRAS ... 2288
Green Fluorescent Protein ... 1939
Groundwater ... 1538
Guanidine Compounds ... 2157
Gut Microbiota ... 2883
Gymnemic Acid ... 1464
H1N1 ... 2811
H2O2 ... 2494
H9c2 Cells ... 2973
Hair Dyes ... 2466
Hair Relaxers ... 3394
Haloacetates ... 2312
Halobenzoquinone ... 1319
Halogenated Hydrocarbon ... 1179, 1367, 1424, 2060, 2232, 2330, 2454, 3164, 3411, 3412
Haloperidol ... 3085
Harm Reduction Tobacco Products 3286
Hazard Classification ... 2990
Hazardous Air Pollutants (HAPs) ... 1453
Heart Rate Recovery ... 3108
Hebei Spirit Oil Spill Accident ... 3217
Hematopoietic ... 1360, 1490, 1491, 1734, 1833, 1837, 1838
Hematopoietic Acute Radiation Syndrome (h-ARS) ... 3095
Hematotoxicity ... 1333, 1650, 1838, 2452, 2485, 2488, 2766, 3174, 3454, 3558
Hemodynamics ... 1674, 2831
Hemolysis ... 2447
Hemorrhage ... 1904
HepaRG ... 2013
Hepatic ... 1464, 1662, 1673, 1902, 1984, 1989, 1990, 2010, 2182, 2428, 2482, 3061, 3169, 3174, 3185, 3186, 3193, 3417, 3457, 3481, 3527, 3544
Hepatic Fibrosis ... 1996
Hepatic Stellate Cells ... 2493
Hepatitis B Surface Antigen ... 1927
Hepatobiliary ... 1668
Hepatocyte 3D Cell Culture ... 3148
Hepatocyte Spheroids ... 3557
Hepatocytes ... 1073, 1274, 1318, 1443, 1832, 1869, 1933, 1955, 1959, 1970, 1973, 1974, 1978, 1980, 1988, 1990, 1992, 1995, 1998, 2001, 2003, 2005, 2009, 2014, 2018, 2187, 2293, 2294, 2433, 2436, 2484, 2925, 3059, 3061, 3153, 3167, 3173, 3175, 3176, 3341, 3461, 3479, 3543, 3549, 3554
Hepatotoxicity ... 1967, 1968, 2016, 2728, 3049
Hepatotoxicity, Preclinical Safety, LC/MS/MS ... 3172
Herbicide ... 3449
Heterocyclic Amines ... 2372
Hexabromocyclododecane ... 1198
Hexahydro-1,3,5-Triazine-1,3,5-Triyl) Triethanol ... 2662
Hexanal ... 1282
Hexavalent Chromium ... 1536, 2697, 2698, 3225
HIF, Microbiota ... 1961
High Content ... 2596
High Content Analysis ... 1082
High Fat Diet ... 1858
High Throughput ... 2681
High Throughput Assay ... 2779
High Content Imaging ... 3118
High Content Screening ... 2711
High Throughput Screening ... 2161
Histone Acetylation ... 2085

The numerals following each keyword refer to the relevant abstract number(s).

Histone H3.1 2064
Histone Modification, RNA-seq, H3K18 2051
Histones 2072
Histopathology 1202, 1210, 1296, 1462, 1467, 1609, 1617, 1638, 1643, 1853, 1893, 1956, 1973, 2087, 2094, 2115, 2121, 2454, 2698, 2714, 2794, 2827, 3136
HL-60 Cells 1331
HMGB1 1909
Host-Associated Microbiome 1252
Household Insecticides 2987
hTERT(+/-) Knock Out Cell Lines 1512
HuH-7 Cells 3049
Human Adult Stem Cells 2178
Human B Cells 1363
Human Brain Tissue 2352
Human Cytokines 1560
Human Enterocytes 3146
Human Hepatocytes 3145
Human iPSC-Derived Neurons 1154, 1826
Human Mesenchymal Stem Cells (hMSCs) 2774
Human Neuroblastoma Cells 1218
Human Plasma 3145
Human-Induced Pluripotent Stem Cells 2339
Humanized Mice 3093
Huntington's Disease 2364, 2389
Huntington's Disease: Disease-Toxicant Interactions 2392
Huntington's Disease: Gene-Environment, Chlorpyrifos 2391
Hydrogen Cyanide 3106
Hydrogen Fluoride 2671
Hydrogen Peroxide 2210
Hydrogen Sulfide 1226, 2119, 2120
Hydroquinone 1427, 2325
Hydroxyethyl Methacrylate 2444
Hyperoxia, HMGB1 1916
Hyperoxic Lung Injury 3152
Hyperplasia 2087
Hypothalamic Pituitary Gonadal Axis 2735
Hypoxia-Inducible Factor 1α 2061
IATA, AOP 3003
IBM Watson 1093
Ibuprofen 3461
ICH M7 1400
ICV, Intrathecal Area 3099
Illicit Drugs 1157
Imaging 2856
Imatinib 1972
Imidazole 2190
Immune Suppression 1946
Immunocytokine 1644
Immunoglobulin Expression 1363
Immunotoxicity 1196, 1333, 1334, 1339, 1342, 1343, 1346, 1347, 1348, 1349, 1350, 1353, 1354, 1355, 1356, 1358, 1361, 1362, 1369, 1405, 1496, 1499, 1515, 1517, 1631, 1736, 1842, 1843, 1894, 1897, 1903, 1909, 1916, 1918, 1920, 1925, 1929, 1930, 1937, 2199, 2206, 2253, 2313, 2793, 2875, 3006, 3107, 3198, 3500
Immunotoxicology 1063, 1064, 1256, 1332, 1336, 1338, 1339, 1341, 1342, 1344, 1345, 1346, 1348, 1351, 1352, 1357, 1359, 1360, 1368, 1502, 1560, 1640, 1851, 1904, 1905, 1914, 1924, 1925, 1926, 1927, 1928, 1931, 1932, 1933, 1934, 1936, 1938, 1939, 1949, 2175, 2209, 2386, 2686, 2687, 2806, 2860, 2862, 2864, 2865, 2878, 3131, 3149, 3521, 3534, 3546, 3551
Impedance Pneumography 3103
Impressic Acid 1486, 1489
In Utero 1259
In Vitro 1974, 3109, 3215
In Vitro and Alternatives 1060, 1095, 1096, 1106, 1117, 1127, 1131, 1150, 1151, 1158, 1160, 1176, 1222, 1302, 1421, 1435, 1440, 1493, 1502, 1513, 1600, 1603, 1604, 1612, 1613, 1614, 1616, 1621, 1630, 1669, 1745, 1790, 1811, 1818, 1832, 1871, 1886, 1887, 1888, 1889, 1890, 1982, 1989, 1995, 1996, 1999, 2003, 2004, 2006, 2016, 2017, 2030, 2053, 2160, 2173, 2174, 2175, 2183, 2189, 2193, 2198, 2200, 2204, 2206, 2207, 2209, 2210, 2213, 2224, 2449, 2450, 2453, 2474, 2486, 2617, 2655, 2659, 2660, 2687, 2756, 2788, 2807, 2861, 2865, 2896, 2988, 3003, 3030, 3031, 3036, 3049, 3051, 3053, 3055, 3056, 3060, 3061, 3062, 3067, 3068, 3069, 3070, 3071, 3073, 3075, 3078, 3079, 3080, 3118, 3119, 3251, 3252, 3299, 3396, 3467, 3506, 3512, 3519, 3520, 3541, 3548, 3552, 3553, 3554
In Vitro Breast Cancer Model 3388
In Vitro Inhalation 3548
In Vivo Mutation 1411
Induced Pluripotent Stem Cells 1744, 1830
Induction 3049, 3153
Infection 1283, 1307, 1365, 1432, 1495, 1626, 1640, 1909, 1911, 1912, 1916, 1925, 1941, 2437, 2490, 2787, 3047, 3557
Infectivity 2811
Inflammasome 1226, 1523, 2119, 2373, 2880
Inflammation 1209, 1226, 1227, 1229, 1232, 1280, 1281, 1299, 1306, 1309, 1314, 1334, 1335, 1366, 1433, 1444, 1450, 1523, 1664, 1852, 1895, 1898, 1899, 1900, 1901, 1903, 1904, 1908, 1910, 1913, 1917, 1919, 1920, 1921, 1922, 1936, 1942, 1943, 1944, 1945, 1948, 1953, 2020, 2032, 2047, 2076, 2113, 2116, 2118, 2119, 2126, 2129, 2134, 2185, 2198, 2246, 2253, 2262, 2310, 2313, 2314, 2322, 2327, 2328, 2329, 2345, 2348, 2359, 2375, 2538, 2593, 2759, 2762, 2810, 2811, 2874, 2875, 2877, 3030, 3039, 3082, 3088, 3125, 3142, 3215, 3220, 3227
Influenza 2245, 2811
Infusion 2835, 2837, 3104
Inhalants 1065, 1337, 2135, 2330, 2855, 2859, 3034, 3395
Inhalation Toxicology 1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1199, 1281, 1283, 1284, 1287, 1289, 1295, 1297, 1298, 1299, 1300, 1304, 1308, 1313, 1338, 1429, 1431, 1448, 1497, 1506, 1510, 1513, 1628, 1685, 1906, 1921, 2129, 2131, 2133, 2134, 2135, 2136, 2140, 2158, 2171, 2215, 2216, 2247, 2248, 2249, 2250, 2251, 2253, 2254, 2256, 2258, 2261, 2264, 2303, 2320, 2346, 2419, 2459, 2490, 2537, 2538, 2539, 2540, 2541, 2542, 2696, 2793, 2798, 2801, 2815, 2830, 2838, 2859, 2867, 2940, 2992, 2994, 3029, 3031, 3033, 3040, 3042, 3047, 3106, 3137, 3215, 3220, 3395, 3398, 3399, 3400, 3401, 3402, 3482, 3485, 3487, 3493, 3495, 3499, 3506, 3507, 3552
Inhalation 2671, 2791
Inhibition 3049
Innate Immunity 1851
Innovative Animal Model of Cancer 2022
Inorganic Arsenic 2620, 2701
Inorganic Chemicals 1276
Inorganic Mercury 1568
Insecticide 2411
Insecticide Resistance 2923
Insects 2930
Insulin 3086
Insulin Resistance 2972
Intercellular Adhesion Molecule-1 2821
Inter-Individual Variability 3433
Interleukin-1B 1232
Interleukin-17 2877
Interspecies Extrapolation 2994
Intestinal Microbiota 3429
Intestine 3009
Intranasal, Local Tissue 1643
Intrathecal Dose Administration 1633
Intrathecal Drug Delivery 1639
iPS Cells 1825, 1827
iPSC Derived Neuron 1172
Irinotecan 3452
Iron 1446
Ishikawa Cells, Human Endometrial Cells 1871
Isobutanol 2459
Isocyanates 2158
Isoflavones 1116, 1449
Isomer Toxicity 2712
Isoniazid 1918
Jatropha 2919, 2920, 2921
Jet Fuel 1205, 1434
JP-8 1204
Juvenile Dog 3107
Juvenile Toxicity 1142, 1170, 1173, 1637, 1879, 2942, 3243, 3269, 3274, 3275, 3276, 3277
Juvenile Zebrafish (*Danio rerio*) 2942
K–12 Outreach 1385
K–12 Stem Outreach 1372, 1384
Kairomones 2956
Kava Kava Extract 1609
Kidney 1271, 1463, 1531, 1532, 1540, 1571, 1653, 1671, 1672, 1678, 2085, 2599, 2611, 2720, 2722, 2723, 2910, 3028, 3053, 3097, 3109, 3110, 3111, 3112, 3113, 3115, 3116, 3117, 3118, 3119, 3120, 3121, 3122, 3123, 3124, 3125, 3128, 3130, 3132, 3133, 3134, 3135, 3137, 3138, 3139, 3140, 3189, 3297, 3449, 3470, 3471, 3529
Kinase 1666, 1674, 1740, 2048, 2335, 2826
Kinase Regulation 2070, 2306
Knockouts 1801, 1958, 1961, 2065, 2263, 2433, 2436, 3142, 3268, 3281
Knowledgebase 2238
Kola Acuminate 2059
Krebs Cycle Metabolites, Mesothelioma 1312
Kupffer Cells 1959
Label-Free Imaging 3545
Lapatinib 1972
Lambda-Cyhalothrin 2902
Larkspur 1461
Lead 1330, 1446, 1543, 1587, 1588, 1590, 1593, 2235, 2236, 2275, 2281, 2302, 2385, 2986, 3196, 3223
Lead Acetate 1842
Leptin 1530
Lewisite 2121
Life Cycle 3488
Ligand Selectivity 2299
Lindane 2389
Linear Mixed Models 2612
Lipid Rafts 1946
Lipids 1061, 1248, 1249, 1464, 1527, 1547, 1819, 1950, 1953, 1987, 2325, 2428, 2752, 2823, 2825, 2899, 3089, 3426
Lipopolysaccharide 1211, 1959, 2345
Liver 1058, 1073, 1083, 1091, 1110, 1111, 1113, 1128, 1318, 1431, 1527, 1540, 1571, 1572, 1668, 1669, 1670, 1677, 1736, 1820, 1821, 1863, 1877, 1918, 1940, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1957, 1958, 1959, 1960, 1961, 1962, 1964, 1965, 1966, 1969, 1970, 1971, 1972, 1975, 1976, 1977, 1979, 1981, 1982, 1983, 1985, 1986, 1988, 1991, 1993, 1994, 1997, 1999, 2000, 2002, 2003, 2004, 2006, 2007, 2008, 2011, 2013, 2015, 2016, 2017, 2025, 2028, 2037, 2043, 2050, 2084, 2173, 2211, 2213, 2286, 2291, 2302, 2319, 2422, 2432, 2435, 2455, 2491, 2611, 2703, 2726, 2727, 2731, 2733, 2754, 2883, 2935, 3005, 3049, 3054, 3091, 3092, 3145, 3150, 3166, 3167, 3168, 3169, 3170, 3171, 3172, 3177, 3178, 3179, 3180, 3181, 3182, 3184, 3189, 3241, 3460, 3463, 3467, 3468, 3472, 3476, 3480, 3481, 3549
Liver Enzymes 2794
Liver, Metabolic Disruption 3420
LLNA 3521
LMWH 2741
LNC RNA 2304
LOAEL, LD50 2683
Long Non Coding RNA 2026
Low Soluble Particles 1510
LPS 1490, 2348
Luciferase 2022
Lung Cancer 2149, 2976, 3212
Lung Cancer Mortality 2590
Lung Metastasis 2022
Lung Toxicity 1515
Lung; Pulmonary or Respiratory System 1064, 1067, 1106, 1125, 1253, 1279, 1280, 1283, 1284, 1285, 1288, 1294, 1295, 1296, 1300, 1302, 1303, 1307, 1308, 1310, 1311, 1313, 1314, 1323, 1444, 1521, 1529, 1558, 1561, 1627, 1687, 1904, 1908, 1911, 1913, 1915, 1945, 2036, 2140, 2188, 2244, 2245, 2249, 2259, 2317, 2326, 2327, 2328, 2480, 2490, 2602, 2638, 2696, 2715, 2759, 2770, 2783, 2800, 2810, 2868, 2879, 2940, 2978, 3029, 3033, 3035, 3037, 3041, 3147, 3397, 3400, 3401, 3425, 3458, 3488, 3489, 3492, 3493, 3494, 3495, 3496, 3502
Lycopene 2284, 2590
Lysosomes 1667
MAA 2745
Machine Learning 1098
Macrophage 1507, 1523, 1903, 1909, 1910, 1911, 1913, 1915, 1935, 1940, 2113, 2118, 2762, 2780, 3176, 3344, 3507
Magnesium 2457
Malathion ..... 2230 , 2905
Male Rats 3245
Mammary 2655
Mammary Gland 1857
Mammary Gland, Sholl Analysis, Sprague Dawley 3389
Mammary Gland, Uterus 1856
Mancozeb 2895, 2903, 2911
Maneb and Copper Chloride 2388
Manganese 2352, 2353, 2354, 2355, 2356, 2359, 2360, 2362, 2365, 2366, 2368, 2375, 2379, 2736, 2903
Manganese Toxicity 2361
Manganese, Huntington's Disease 2382
Maternal Transfer 3273

The numerals following each keyword refer to the relevant abstract number(s).

Mathematical Modeling 2646
MCHM 1445, 1693, 1793, 2864
MCHR1 1668
Mcl-1, Bcl-2 2334
MCLR 1479
MDMA, Ecstasy 1244
Mechanisms 1124, 1198, 1234, 1240, 1242, 1251, 1291, 1330, 1331, 1388, 1408, 1481, 1610, 1668, 1841, 1848, 1881, 1898, 1921, 1942, 1964, 1965, 1966, 1970, 1979, 2025, 2062, 2158, 2252, 2262, 2289, 2295, 2312, 2340, 2351, 2371, 2469, 2478, 2547, 2588, 2597, 2626, 2688, 2697, 2713, 2758, 2825, 2879, 3038, 3133, 3147, 3169, 3174, 3178, 3180, 3181, 3353, 3420, 3452, 3460, 3550
Mechlorethamine 2097
Medical Devices 2446, 2448, 2678, 2764
Medical Devices, Additive Manufacturing 2450
Medicinal Plant Toxicity 3463
MeHg 1565
MEHP 3294
Melamine 3471
Melamine and Cyanuric Acid 3470
Membrane Biology 2826
Membrane Integrity 1946
Membrane Transporter 2289
Mentoring 3346
Mercury 1349, 1567, 1584, 2285, 2937
Mesothelioma 1286
Metabolic 2135
Metabolic Activation .. 1105, 1250, 1407, 1866, 1869, 2321, 3044, 3090, 3157, 3185, 3546
Metabolic Disruptors 2733
Metabolic Syndrome 2587
Metabolism 1069, 1081, 1103, 1116, 1122, 1141, 1255, 1261, 1449, 1474, 1527, 1635, 1798, 1898, 1969, 2130, 2179, 2221, 2295, 2297, 2360, 2428, 2435, 2469, 2600, 2729, 2752, 2754, 2769, 2872, 2886, 2916, 2925, 2969, 3065, 3090, 3144, 3148, 3159, 3160, 3257, 3392, 3421, 3430, 3433, 3434, 3442, 3451, 3452, 3453, 3454, 3458, 3462, 3464, 3465, 3543
Metabolism, Mammary Gland 3391
Metabolome 1115, 3536
Metabolomics 1081, 1100, 1107, 1110, 1124, 1128, 1245, 1259, 1501, 1858, 2319, 2338, 2360, 2463, 2726, 2730, 2734, 2985, 3014, 3054, 3057, 3058, 3204, 3408, 3430, 3537
Metallothionein 1936
Metals 1125, 1132, 1143, 1249, 1250, 1251, 1252, 1253, 1255, 1256, 1257, 1258, 1259, 1260, 1261, 1262, 1264, 1265, 1266, 1267, 1268, 1269, 1270, 1271, 1272, 1273, 1274, 1276, 1277, 1278, 1314, 1350, 1351, 1353, 1401, 1413, 1446, 1478, 1513, 1528, 1530, 1531, 1532, 1533, 1534, 1535, 1536, 1537, 1538, 1539, 1540, 1541, 1542, 1543, 1545, 1546, 1547, 1548, 1549, 1550, 1553, 1554, 1555, 1558, 1559, 1560, 1561, 1563, 1564, 1565, 1566, 1567, 1568, 1569, 1571, 1572, 1573, 1575, 1576, 1584, 1586, 1587, 1588, 1589, 1595, 1597, 1598, 1599, 1691, 1809, 1834, 1835, 1879, 1883, 1936, 2073, 2075, 2081, 2137, 2237, 2267, 2278, 2281, 2285, 2302, 2315, 2342, 2358, 2359, 2363, 2366, 2368, 2379, 2382, 2388, 2450, 2538, 2620, 2668, 2735, 2736, 2749, 2760, 2765, 2766, 2767, 2788, 2795, 2798, 2799, 2801, 2890, 2950, 2977, 2981, 2984, 2984, 2986, 2993, 3002, 3032, 3033, 3120, 3122, 3127, 3132, 3134, 3196, 3204, 3223, 3225, 3248, 3252, 3290, 3338, 3339, 3342, 3343, 3345, 3416, 3551
Metalworking Fluid 2131
Metformin 2301, 2487
Methanol 1462
Methods/Mechanism 1117, 1455, 1661, 1667, 2012, 2168, 2183, 2400, 2469, 2487, 2653, 3068, 3085, 3092, 3128, 3282, 3530, 3551
Methylation 3209
Methylation Variance 3198
Methylene Chloride 2039
Methylenedioxypyrovalerone 2347
Methylglyoxal 3010
Methyllycaconitine 1461
Methylmercury 1563, 1566, 1569, 1570, 1573, 1574, 1576, 1577, 1578, 1579, 2289, 3027
Methylphenidate 3438
Microfluidic Chip 1810
Micro Rnas 3467, 3479
Microalgae 2929
Microarray 1078, 1092, 1403, 1451, 1541, 1609, 1664, 1802, 2607, 2728, 2809, 2952, 3050, 3143, 3216, 3236, 3340, 3408, 3469, 3484, 3485, 3535
Microbial Metabolites 3014
Microbiome 1115, 1270, 1569, 1791
Microbiome, Metagenomics Analysis 3018
Microbiota 1898, 1900, 2426
Microbes 1851
Microcystin 2147
Microcystin-LR 1475, 2935
Microelectrode Array (MEA) 1150
Microelectrode Array, Human Ips-Derived Neuronal Cells 1156
Microfluidics 3111, 3388
Microglia 1207, 2359
Micronuclei 2782
Micronucleus Assay 3022
Microrna 1432, 2350, 2489, 3138, 3190, 3207, 3211, 3466, 3469, 3470, 3471, 3472, 3473, 3474, 3477, 3480
Microrna, Regulatory T Cell 2862
Microsampling 1634, 3532
Microstructural Changes in Globus Pallidus 2367
Microsuspension Vehicle Emissions Expression Pro-Inflammatory Markers 1423
Microcystins 1224
Miniature Swine 3082, 3084, 3513
miR-122 ..... 3467, 3481
miRNA 2107, 3130, 3212, 3216, 3340, 3558
Mitochondria 1250, 1401, 1403, 1848, 1973, 1981, 2369, 2936, 3271, 3284, 3549
Mitochondrial 3092
Mitochondrial Dysfunction 1828
Mitochondrial Membrane Potential 1577
Mitochondrial Toxicity 1972, 1982, 3051
Mitochondrial Uncoupler 1798, 2332
Mitogen, Iron, Kupffer Cell, Hepatocyte, Endothelial Cell 3184
Mitomycin C 1316
Mitosis 1737
Mitotic Spindle 2773
Mixtures 1434, 1436, 1439, 1441, 1448, 1451, 1453, 1455, 1491, 1815, 2664, 2716, 2737, 2751
Mixtures, Generalized Concentration Addition 1437
MMP 1790
Mn 2367
Mode of Action 1881, 2031, 2068, 2138, 2478
Model 2275
Modified Risk Tobacco Products 1106
Molecular Dynamics 2398
Molecular Models 1369, 1867, 2338, 2381, 2398, 2652, 2956, 3159, 3467, 3538
Moniliformin 3008
Monkey 1931, 3005
Monoclonal AB 2740
Monomethylarsonous Acid 2051
Monosodium Glutamate 1210
Morphine 1239
Morpholino Knockdown 3038
Morus Alba 1458
Motor Dysfunction 1232
MPTP 2334
MRI 2409
MTBITC 1467, 2598
Multi-Electrode Array 1152, 1157, 1231
Multifunctional Acrylate 2152
Multiple Organ Culture 2188
Multiplexing 3553
Multiwalled Carbon Nanotubes 3487, 3493
Multi-Walled Carbon Nanotubes (MWCNT) 2773, 2782, 3485, 3488, 3498, 3505
Muscle Toxicity 1474, 1565, 2676
Mustard 1600
Mutagen 1409, 1423, 1426, 2063, 2932
Mutagenesis 1056, 1061, 1388, 1391, 1399, 1400, 1405, 1408, 1412, 1414, 1430, 1448, 2050, 2071, 2593
Mutation 1389, 1393
MWCNTs 3506
Mycotoxin 2272, 2831, 2991, 3008
Myocarditis 2828
N-(2-Aminoethyl) Ethanolamine 2177
N6AMT1 2969
N6-Formyllysine 2742
N7-Propyl Guanine 1424
Nafarelin 3239
NAFLD 3345
Nano Titanium Dioxide 2820
Nanocellulose 1291
Nano-Crystalline Cellulose 1291
Nanomaterials 2544, 2776
Nanoparticles 1167, 1168, 1174, 1296, 1313, 1497, 1498, 1500, 1502, 1507, 1510, 1511, 1518, 2171, 2249, 2539, 2540, 2541, 2542, 2543, 2755, 2756, 2759, 2761, 2764, 2770, 2772, 2774, 2777, 2778, 2780, 2783, 2784, 2786, 2787, 2788, 2789, 2790, 2791, 2793, 2794, 2796, 2798, 2799, 2800, 2801, 2802, 2804, 2809, 2811, 2814, 2815, 2818, 2819, 2820, 2830, 2858, 2940, 3006, 3110, 3482, 3483, 3486, 3487, 3488, 3490, 3491, 3492, 3493, 3494, 3496, 3497, 3498, 3499, 3500, 3501, 3502, 3503, 3504, 3505, 3508
Nanoporous Silica 1517
Nanosized Titanium Dioxide 2813
Nanotechnology 1291, 1496, 1499, 1501, 1503, 1504, 1505, 1506, 1507, 1508, 1509, 1512, 1514, 1515, 1516, 1517, 1519, 1520, 1521, 1522, 1524, 1525, 1526, 1688, 2449, 2537, 2719, 2720, 2757, 2758, 2760, 2762, 2763, 2764, 2765, 2766, 2767, 2768, 2769, 2771, 2773, 2774, 2775, 2779, 2781, 2784, 2785, 2792, 2795, 2796, 2797, 2805, 2806, 2808, 2810, 2812, 2816, 2820, 2858, 3238, 3281, 3486, 3489, 3494, 3496, 3497, 3498, 3500, 3502, 3505, 3506
Nanotitanium Dioxide 3238
Nanotoxicity 3495
Nanotoxicology 3496
Naphthalene 1288, 3147, 3458
NASH 1958, 3091
Nattokinase 3007
Natural Products 1085, 1088, 1297, 1315, 1327, 1433, 1447, 1456, 1457, 1458, 1459, 1460, 1461, 1462, 1463, 1464, 1465, 1467, 1468, 1469, 1470, 1472, 1473, 1476, 1477, 1478, 1480, 1481, 1482, 1483, 1484, 1485, 1486, 1487, 1488, 1489, 1490, 1491, 1492, 1493, 1494, 1495, 1557, 1662, 1663, 1818, 1853, 1968, 2023, 2035, 2044, 2056, 2148, 2271, 2276, 2473, 2485, 2587, 2589, 2592, 2827, 2919, 2921, 2968, 3009, 3017, 3018, 3019, 3021, 3056, 3080, 3126, 3257, 3261, 3429, 3511
Nematodes 2904
Neonicotinoid 2411, 2931
Nephrotoxicity 2724
Nerve Agent 2095, 2117
Nerve-On-A-Chip 1158
Nervous System 1069, 1149, 1151, 1165, 1184, 1199, 1205, 1230, 1233, 1242, 1244, 1461, 1579, 1645, 1652, 1661, 1808, 1950, 2100, 2315, 2366, 2376, 2387, 2408, 2415, 2416, 2464, 2707, 3085, 3108
Neurite Outgrowth 1222
Neuro2A 3056
Neuroblastoma 2024
Neurodegeneration 2341
Neurodegenerative Disease 1189, 2378, 2385, 2386
Neurodevelopment 1162
Neuroinflammation 1211, 1212, 1214
Neuromuscular Coordination 2913
Neurotoxicity 1224, 2346
Neurotoxicity; Developmental 1082, 1148, 1150, 1159, 1161, 1163, 1164, 1165, 1167, 1168, 1169, 1170, 1171, 1172, 1174, 1176, 1177, 1178, 1180, 1181, 1184, 1185, 1186, 1188, 1191, 1194, 1195, 1197, 1203, 1208, 1228, 1232, 1240, 1241, 1242, 1245, 1247, 1591, 1793, 1824, 1849, 1859, 1884, 1892, 1894, 2122, 2185, 2345, 2362, 2365, 2368, 2411, 2414, 2416, 2802, 2807, 3016, 3074, 3263, 3264, 3278, 3282, 3408, 3409

The numerals following each keyword refer to the relevant abstract number(s).

Neurotoxicity; Metals 1322, 1548, 1551, 1552, 1574, 1575, 1577, 1578, 1579, 1580, 1581, 1583, 1584, 1585, 1586, 1587, 1588, 1590, 1591, 1593, 1594, 1596, 1841, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2375, 2379, 2903

Neurotoxicity; Pesticides 1149, 1152, 1795, 2336, 2339, 2343, 2344, 2373, 2376, 2377, 2388, 2389, 2390, 2391, 2393, 2395, 2396, 2403, 2404, 2405, 2406, 2407, 2408, 2411, 2412, 2413, 2414, 2882, 2887, 2897, 2907, 3076

Neurotoxicology 1149, 1151, 1154, 1155, 1156, 1157, 1158, 1159, 1160, 1166, 1167, 1175, 1181, 1187, 1189, 1190, 1192, 1193, 1196, 1198, 1200, 1201, 1202, 1203, 1204, 1205, 1206, 1207, 1208, 1209, 1210, 1211, 1212, 1214, 1215, 1215, 1216, 1217, 1218, 1220, 1221, 1222, 1225, 1226, 1227, 1228, 1231, 1234, 1235, 1236, 1237, 1238, 1239, 1243, 1246, 1248, 1573, 1574, 1575, 1576, 1585, 1586, 1589, 1594, 1595, 1598, 1641, 1660, 1805, 1808, 1817, 1818, 1826, 1840, 1843, 2105, 2106, 2114, 2119, 2120, 2181, 2184, 2334, 2337, 2338, 2340, 2341, 2342, 2346, 2347, 2348, 2353, 2358, 2361, 2365, 2369, 2370, 2371, 2372, 2374, 2377, 2378, 2380, 2381, 2384, 2389, 2392, 2394, 2399, 2400, 2405, 2409, 2459, 2464, 2707, 2791, 2912, 3056, 3063, 3099, 3164, 3216, 3265, 3278, 3418, 3530

Neurotransmitter 1181, 1210, 1233, 1243, 2347, 2354, 2355, 2871

Neutrophil Infiltrations 1923

Neutrophils and Monocytes 1334

Nevirapine 1918

Next Generation Sequencing 2817

NHANES III 2282, 2284, 2590

Nickel 2073, 3210

Nicotine 1163, 2188, 3395, 3397

Nitric Oxide 3443

Nitrogen Dioxide 1070, 2141

Nitrogen Mustard 2099, 2113, 2115

Nitrosamines 2664

NK activity 1348

Non-Genotoxic . 1058, 1395, 2018, 2031, 2037, 2068, 2085, 2150, 2478, 3205

Nonhuman Primate 1840

Non-Mammalian Species 1187, 1419, 1588, 1792, 1793, 1796, 1797, 1799, 1804, 1813, 1817, 1819, 1994, 2357, 2424, 2931, 2933, 2935, 3038, 3136, 3162, 3542

Nonylphenol 2155

Norethindrone 2933

Noribogaine 1661

Nose 1288, 1298, 1643, 2144, 2216

Novelty Stress 1661

Nrf2 ..... 1344, 1934, 2594, 2597, 2598, 2602

Nrf2 signaling 2595

Nrf2, Autophagy 1482

NRU 2813

NSAID 1942, 1998, 2321

Nuclear Export 2296

Nuclear Receptors 1058

Nucleoside Analogs 1982, 2738

Nucleotide Excision Repair 3217

Nutraceutical 1447

OAT1 3117

Obesity 1061, 1464, 2588

Obesity, Diabetes 2889

Obesogens 2545

Obstetric Factors 1851

Occupational Exposure Limits 2142

Occupational Health 2966

Occupational Toxicology 1686

Occupationally Relevant Nano-Toxicity 3485

Ochratoxin A 2085

Ocular Irritation 2191

Ocular Toxicity 1601, 1602, 1603, 1604, 1605, 1606, 1607, 1608, 1609, 1610, 1611, 1612, 1613, 1614, 1615, 1616, 2115, 2116, 2121, 2189, 2190, 2192, 2486, 3142, 3207, 3269

OECD TG No. 453 2541

Oil Dispersants 2346

Olea Europaea 1457

Oleic Acid 2823

Olfactory 1598

Olfactory Bulb 2366

Olfactory Tubercle 1591

Olmesartan Medoxomil, Rosuvastatin Calcium 1655

Omeprazole 3145

Oncogene 2044, 2048, 2061, 2296

Ontogeny and Aging 1678

Optineurin 2376

Oral Carcinogenicity 1536

Organochlorine 2725

Organochlorine Pesticides 2910, 3227

Organometallics 1274

Organ-on-a-Chip 1148, 3541

Organophosphates 1123, 1212, 1465, 1850, 2090, 2091, 2092, 2093, 2095, 2100, 2101, 2102, 2103, 2104, 2106, 2107, 2109, 2117, 2279, 2390, 2392, 2393, 2397, 2398, 2400, 2401, 2402, 2403, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2456, 2848, 2887, 2899, 2905, 2912, 2913, 2918, 2947, 3093, 3265

Organosulfur 2891

Organotypic Cell Model 3408

Organotypic Culture, Fusion 2172

Organs-On-Chip 2187

Ortho-Phenylphenol 3435

Oseltamivir 2219

OSHA 2993

Osteoarthritis in Dogs 2473

Ototoxicity 1204, 1234, 1246

OVA 2471

Ovary 1327, 1855, 2070, 3221, 3222, 3224, 3226

Oxidative Injury 1102, 1200, 1219, 1266, 1289, 1303, 1326, 1337, 1428, 1466, 1798, 1809, 1967, 1972, 1974, 1981, 2027, 2097, 2125, 2212, 2243, 2246, 2265, 2311, 2313, 2314, 2315, 2318, 2319, 2320, 2323, 2324, 2325, 2327, 2328, 2329, 2343, 2383, 2386, 2391, 2443, 2444, 2445, 2483, 2595, 2599, 2745, 2803, 2804, 2821, 2870, 2910, 3015, 3067, 3071, 3126, 3152, 3154, 3254, 3286, 3295, 3398, 3399

Oxidative Potential 2256

Oxidative Stress 1210, 1518, 1923, 2317, 2360, 2594, 2808

Oxidative Stress, Hormesis 3341

Oxides Nanoparticle 3006

Oximes 2103

Ozone 1066, 1069, 1070, 1071, 1200, 2253, 2992, 2994, 3220

Ozone, Fish Oil, Olive Oil 1067

P47PHOX, TLR4 1852

p53 ..... 1316, 1413, 1977, 2024, 2099, 2853

PAH 1436, 2186, 2297, 2934

PAHs 1698, 2663, 3151

Pancreas 1638, 1650, 1875, 1877, 2972, 3291, 3292, 3294, 3414, 3473, 3474, 3477

Parabens 3273

Paracetamol 2484

Parallelogram Method 3406

Paraquat ... 2343, 2344, 2345, 2371, 2879

Parkinsonism 2355

Parkinson's, Synuclein 2380

Particle-Cell Interactions 2814

Particulate Matter 1216, 1217, 1846, 2143, 2246, 2265

Particulate Matter 2.5 2257

Particulates 1114, 1166, 1289, 1299, 1308, 1431, 1452, 1687, 1847, 1906, 1945, 2136, 2215, 2242, 2244, 2245, 2250, 2251, 2252, 2254, 2255, 2256, 2259, 2262, 2263, 2785, 2979, 3214

Pb 1544

PBDE 1197, 1408, 3141, 3236, 3409

PBIT 1223

PBPK Model (Rat) 2905

PBPK Modeling 1504

PCB126 3420

PCBs, Quinone 1109

PDE4 inhibitor 3042

Pediatric, NASH, VDRs 3179

Peginterferon Lambda-1A 3256

Peltophorum Africanum 1433

Perchloroethylene 2870

Percutaneous Absorption 2466, 3406, 3435, 3444, 3511, 3512, 3515

Percutaneous Penetration 3510

Perfluorinated Alkyl Substances 3258

Perfluorobutane Sulfonate 3439

Perfluorohexanoic Acid 1862

Perfluoronated Agents 1692, 1862, 1863, 1876, 1952, 1956, 1969, 2041, 2240, 2675, 2924, 2975, 3180, 3253, 3258, 3271, 3291, 3414, 3439

Perfluorooctanesulfonic Acid (PFOS) 1956, 3180

Peripheral Blood Mononuclear Cells 3534

Peripheral Neuropathy 1215

Permethrin 2414, 2658, 2889, 2897

Permitted Daily Exposure 2150

Persistent Organic Chemicals 1127, 1143, 1197, 1198, 1697, 1862, 1876, 2239, 2430, 2665, 2669, 2725, 2744, 2924, 3170, 3289, 3390, 3404, 3406, 3413, 3419, 3422, 3426, 3439

Persistent Organic Pollutants 1892

Pesticide Chemistry and Toxicology 2898

Pesticides 1057, 1130, 1131, 1135, 1144, 1147, 1171, 1173, 1323, 1348, 1465, 1694, 1792, 1806, 1877, 1891, 1960, 1968, 2049, 2102, 2117, 2192, 2341, 2342, 2344, 2371, 2373,2388, 2389, 2394, 2395, 2399, 2404, 2412, 2470, 2588, 2658, 2680, 2689, 2690, 2699, 2706, 2879, 2880, 2881, 2882, 2883, 2884, 2885, 2886, 2888, 2889, 2890, 2891, 2892, 2893, 2894, 2895, 2896, 2897, 2898, 2899, 2900, 2901, 2902, 2903, 2904, 2905, 2906, 2907, 2907, 2908, 2909, 2910, 2911, 2914, 2915, 2916, 2917, 2927, 2931, 2932, 2939, 2954, 2955, 3227, 3280, 3426, 3447, 3509, 3510, 3546

Petroleum 1686

Petroleum Hydrocarbons 1454

PFOA 1952, 2239, 3271

PFOS 1952, 3291

PFOS, PFOA 2675, 3253

Pharmaceuticals 1202, 1222, 1227, 1295, 1312, 1324, 1327, 1331, 1333, 1401, 1482, 1606, 1619, 1623, 1625, 1626, 1630, 1634, 1635, 1638, 1648, 1652, 1653, 1655, 1658, 1659, 1668, 1676, 1677, 1790, 1840, 1896, 1986, 2019, 2108, 2128, 2151, 2218, 2220, 2309, 2321, 2349, 2484, 2487, 2488, 2603, 2630, 2685, 2720, 2825, 2829, 2835, 2837, 2924, 2930, 2936, 2964, 2999, 3069, 3083, 3096, 3104, 3233, 3274, 3279, 3296, 3514

Pharmacogenomics and Drug Label 2750

Pharmacokinetics 1525, 1543, 1642, 2108, 2144, 2210, 2221, 2224, 2608, 2682, 3116, 3428, 3429, 3432, 3434, 3438, 3440, 3443, 3446, 3447, 3449, 3462, 3464, 3510, 3513, 3557

Phase Ii Metabolism 1885, 1979, 2598, 2945, 3445, 3456, 3517

Phenanthrene 2952

Phenobarbital 3145

Phenols 2279

Phenoxyethanol 2673

Phenylpyrazole Insecticide 2885

PhIP 2372

PHMB 3184

Phorate 2404

Phorbol 12-Myristate 13-Acetate (PMA) 2077

Phosphine 1323, 2130, 2303

Phosphoprotein, Signalling 1922

Photoageing 3218

Photosensitization 3055

Phototoxicity 2603

Phthalates 1142, 1182, 1305, 1345, 1412, 1440, 1855, 2046, 2057, 2071, 2704, 2705, 2985, 3224, 3255, 3293, 3294, 3297, 3405, 3540

Phthalocyanine 3525

Physiologically-Based Pharmacokinetics 1096, 1129, 1504, 1826, 2219, 2222, 2227, 2228, 2230, 2231, 2232, 2235, 2238, 2239, 2240, 2472, 2548, 2700, 2716, 3438

Picrotoxin 1220

Pig-A 1393, 1402, 1422

Pigment Decomposition 3525

Pioglitazone 1918

Piperazine Drugs of Abuse 1443

PKCδ 2373

Placenta 3236, 3237

Placenta, BCRP 3233

Plant Extracts 1493

Plasticizers 2924

Platelets 1496

Platycodin D 1460, 1488

Platycodon Grandiflorum 1470

Pneumocyte 1305

Poly Brominated Diphenyl Ethers ... 3177

Poly I:C, LPS 2175

Polyaromatic Hydrocarbon 1419

Polybrominated Diphenyl Ethers 3411, 3412

Polychlorinated Biphenyls 1109, 1191, 1192, 1193, 1194, 1195, 1421, 1592, 1962, 2612, 2730, 2834, 2938, 3170, 3289, 3415, 3415, 3416, 3417, 3418, 3419, 3420, 3425

Polycyclic Aromatic Hydrocarbons 1213, 1218, 1347, 1347, 1382, 1436, 1438, 1444, 1450, 1451, 1477, 1537, 1686, 1698, 1848, 1849, 1874, 1880, 1907, 1946, 2027, 2040, 2058, 2079, 2186, 2234, 2252, 2294, 2297, 2308, 2320, 2419, 2934, 2949, 2951, 2952, 2953, 2961, 2980, 3043, 3150, 3160, 3161, 3162, 3165, 3221, 3245, 3246, 3285, 3287, 3288, 3392, 3424, 3462

The numerals following each keyword refer to the relevant abstract number(s).

Polyethylene Glycol 1653
Polymorphisms 2969
Polymyxin 3119
Polyploidization 1421
Ponatinib 1650
POPs 2631
PPAR 1987
PP2A 1475
Pravastatin 3233
Precision-Cut Liver Slices 1997
Predictive Toxicology 1083, 1091, 1099, 1113, 1120, 1158, 1194, 1225, 1443, 1454, 1614, 1615, 1636, 1653, 1669, 1674, 1675, 1676, 1742, 1803, 1828, 1865, 1881, 2006, 2017, 2030, 2049, 2163, 2172, 2176, 2180, 2188, 2191, 2194, 2196, 2203, 2222, 2238, 2280, 2467, 2475, 2476, 2486, 2495, 2549, 2603, 2604, 2610, 2615, 2618, 2619, 2623, 2624, 2625, 2627, 2628, 2629, 2637, 2642, 2647, 2650, 2653, 2657, 2677, 2849, 2988, 3059, 3073, 3075, 3080, 3081, 3113, 3118, 3121, 3129, 3168, 3173, 3188, 3264, 3436, 3497, 3539, 3540, 3541, 3549
Pregnancy 3240
Prenatal Exposure 1135, 2793, 2963
Preservatives 2474
Preterm Birth 3227
Proallium, Active Food Packaging .. 3023
Prochloraz 2068
Proliferation 2018
Pro-Oxidants 3295
Propargite 1395
Propofol 2964
Propolis 1210, 1494
Proposition 65 ..... 2661, 2667
Propylene Glycol 2638
Prostate 1256
Prostate Cancer 2059, 2284, 2333
Protein Allergy 2471, 2732
Protein Corona 2760, 2766
Protein Phosphatase 1224
Protein Structure 2398, 3538
Proteome 1109
Proteomics 1092, 1109, 1123, 1417, 1500, 1518, 1524, 1657, 1790, 2000, 2211, 2308, 2380, 2445, 2728, 2734, 2887, 3013, 3041, 3172, 3490
Proteomics, Cardiac 2412
Proteomics Phenomics 1501
Proteostasis 1199
Psuedomonas Putida Biosensor 2757
PTSD 1943
Pulmonary Fibrosis 1092
Punicic, Jacaric, Lithocholic Acid 1481
PXR 2437
Pyrethroid Insecticides 1135
Pyrethroids 2415, 2987
Pyridostigmine Bromide 2104, 3108
Pyridoxine 3016
Pyrrolizidine Alkaloids 1992
Pyrrolizidine Alkaloids (PAs), Hepatic Nonparenchymal Cells 3185
Pyruvate 1566
QSAR 1096, 1097, 1098, 1099, 1400, 1445, 1680, 1865, 1886, 1991, 2159, 2161, 2191, 2226, 2615, 2618, 2621, 2625, 2627, 2648, 2650, 2652, 2659, 2708, 3415, 3511
Quantum Dots 1499
Quaternary Ammonium Compounds 1178
Quercetin 3245
Rabbit 2914
Radiation, Anthracycline 1397
Radiotoxicology 2688
Radon, Cigarette Smoking 3206
rasH2 3102
rasH2 mice 2033
RD50 2621
Reactive Intermediate 2011, 2312, 2316, 2321, 2380, 3433, 3454
Reactive Oxygen Species 1481
Reactive Oxygen Species; Isomer Effects 1319
Reactive Sulfur Species 2298
Reactivity 2820
Read-Across 2709, 2988
Receptor 1336, 1987, 2024, 2041, 2416, 2418, 2421, 2434, 2435, 2481, 2492, 3086, 3415, 3422
Receptor; Aryl Hydrocarbon 1176, 1189, 1190, 1359, 1365, 1366, 1367, 1450, 1732, 1733, 1734, 1737, 1738, 1823, 1837, 1937, 2058, 2076, 2299, 2304, 2305, 2309, 2417, 2419, 2420, 2422, 2423, 2424, 2425, 2426, 2427, 2429, 2597, 3177, 3200, 3353, 3423, 3427, 3459, 3538
Receptor; G-Protein Coupled 1342
Receptor; Nuclear Hormone 1077, 1799, 2020, 2433, 2436, 2437, 2438, 2439, 3240, 3457, 3508
Recombinant Inbred Mice, Sex Differences, QTL 2336
Reconstructed Human Airway 2175
Reconstructed Human Epidermis (RHE): Skin Irritation 3547
Recovery 2340
Recycling 1143
Red Mercuric Sulfide 1571
Redox Proteomics 1125
Regulatory, Dose-Response 2719
Regulatory/Policy 1510, 1536, 1538, 1616, 1689, 1692, 2133, 2148, 2156, 2157, 2162, 2166, 2275, 2288, 2448, 2460, 2468, 2470, 2632, 2641, 2643, 2677, 2683, 2685, 2689, 2692, 2717, 2974, 2986, 2987, 2988, 2989, 2991, 2993, 2994, 2995, 2996, 2997, 2998, 3000, 3001, 3002, 3003, 3034, 3058
Renal 1650, 2496, 2700, 2721, 3114, 3117, 3126, 3127, 3129, 3136
Repeated-Dose Toxicity 2650
Reporter Assay 2058
Reproductive and Developmental Toxicology 1121, 1177, 1179, 1487, 1624, 1789, 1796, 1814, 1816, 1844, 1847, 1851, 1853, 2270, 2411, 2547, 2550, 2648, 2735, 2755, 2909, 2942, 2963, 2977, 3192, 3194, 3225, 3231, 3232, 3233, 3236, 3239, 3247, 3248, 3253, 3255, 3256, 3259, 3260, 3261, 3262, 3266, 3282, 3284, 3299, 3390, 3449
Reproductive System 1812, 1874, 2023, 2147, 2284, 2635, 2914, 3239, 3242, 3250, 3257
Reproductive Toxicity 3298
Reproductive Tract; Female . 1432, 1914, 2546, 2549, 3070, 3199, 3228, 3541
Reproductive Tract; Male 1104, 1546, 2055, 2174, 2704, 2705, 2803, 3244, 3245, 3246, 3251, 3252, 3254, 3255, 3442
Respiratory 1063, 1068, 1284, 1309, 1452, 1628, 1665, 1907, 1978, 2131, 2141, 2245, 2255, 2257, 2259, 3042, 3047
Respiratory Sensitization 2694, 3214, 3503
Respiratory Toxicology 1063, 1065, 1279, 1280, 1290, 1291, 1292, 1293, 1301, 1303, 1307, 1311, 1338, 1362, 1411, 1627, 1628, 1684, 1906, 2125, 2130, 2132, 2139, 2142, 2175, 2246, 2258, 2542, 2659, 2710, 2787, 2800, 2823, 2900, 3039, 3042, 3101, 3154, 3161, 3395, 3396, 3489, 3498, 3505, 3552
Resveratrol 1292, 2833, 3225
Retina 1608
Retinoic Acid 3300
Retinol Signaling 2462
Retractions 3000
Retrorsine 3185
Reversibility 2354
Rheumatoid Arthritis 1917
Rhus Trilobata 1493
Rifampicin 3153
Rifampin 3145
Risk Assessment 1087, 1203, 1264, 1277, 1286, 1310, 1398, 1436, 1441, 1453, 1454, 1596, 1603, 1640, 1674, 1679, 1682, 1684, 1690, 1691, 1693, 1694, 1695, 1743, 1800, 1825, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2145, 2147, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2159, 2160, 2162, 2163, 2164, 2165, 2167, 2168, 2169, 2170, 2183, 2195, 2197, 2214, 2227, 2232, 2233, 2236, 2270, 2278, 2281, 2287, 2288, 2458, 2468, 2475, 2476, 2631, 2634, 2636, 2641, 2643, 2648, 2657, 2661, 2662, 2663, 2664, 2665, 2666, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2678, 2679, 2680, 2681, 2683, 2684, 2689, 2690, 2691, 2692, 2693, 2696, 2697, 2698, 2699, 2701, 2702, 2703, 2704, 2705, 2706, 2707, 2708, 2709, 2710, 2712, 2713, 2715, 2716, 2718, 2719, 2742, 2857, 2884, 2900, 2944, 2962, 2963, 2974, 2984, 2997, 2998, 3002, 3015, 3034, 3051, 3071, 3081, 3093, 3095, 3183, 3405, 3410, 3523, 3528, 3533
Risk Perception 2901
Risperidone 3086
RLS 2365
RNA-seq 1072, 3037, 3144
Rodent Cage Environment 1649
Rofecoxib 2032
Romania 2276
ROS 1357
ROS, NF-kB 2329
Rosin 1442
Rostral Migratory Stream 2366
Rotenone 2340, 2373, 2376, 2377
RT-PCR 1078, 1273, 1302, 1356, 1592, 1860, 2059, 2109, 2492, 3016, 3130, 3132, 3227
Rutaecarpine 1472
RyR2 3422
Safety Assessments 1867
Safety Evaluation 1179, 1396, 1398, 1411, 1434, 1457, 1458, 1459, 1471, 1604, 1612, 1613, 1617, 1618, 1620, 1621, 1624, 1629, 1637, 1641, 1645, 1647, 1648, 1649, 1652, 1655, 1665, 1671, 1672, 1675, 1743, 1745, 1804, 1927, 2008, 2146, 2163, 2189, 2199, 2206, 2207, 2258, 2273, 2274, 2279, 2280, 2440, 2441, 2442, 2447, 2448, 2459, 2461, 2463, 2464, 2465, 2467, 2474, 2475, 2476, 2488, 2539, 2544, 2587, 2614, 2638, 2662, 2666, 2667, 2669, 2673, 2679, 2685, 2703, 2709, 2723, 2832, 2836, 2865, 2987, 2989, 2991, 3004, 3005, 3011, 3019, 3025, 3057, 3079, 3087, 3096, 3098, 3262, 3274, 3471, 3519, 3520, 3528, 3547
Safety Pharmacology 1112, 1172, 1241, 1466, 1494, 1608, 1622, 1625, 1627, 1634, 1646, 1659, 1660, 1673, 1742, 1744, 1826, 1830, 1988, 2007, 2009, 2220, 2477, 2778, 2832, 2835, 2836, 2837, 2839, 2840, 2842, 2857, 2878, 2999, 3100, 3101, 3514, 3531, 3544
Salicylates 1909
Saliva 1130
Salvia Plebeia 1468
Schizophrenia 1652
Seahorse Bioscience 1798
SEB 1292
Second Hand Smoke 3212
Selected Reproductive Hormones 2735
Selected Trace Metals 2735
Selenium 3290
Seleno-L-Methionine 1816
Senescence 1550
Sensitivity 3255
Sensory Neurons 1224
Sepsis, Heart Failure, Serca2A 2833
Sewage Water 1137
Sickle Cell 2968
Signal Transduction 1219, 1251, 1336, 1349, 1482, 1563, 1739, 1827, 1919, 1922, 1940, 2000, 2078, 2081, 2291, 2296, 2298, 2299, 2306, 2308, 2334, 2351, 2396, 2444, 2855, 3094, 3165, 3268
Silica 1284, 1313, 1921, 2759, 2874
Silver 1174, 1511, 2765, 2771, 2788, 2799
Silver Nanoparticles 2181, 2757, 2767, 2789, 2806, 2814
Single-Walled Carbon Nanotubes 2811, 3495
SiO2 2540
SiO2, SLGO 1512
SIRC Cell Line 2193
SiRNA 2289, 2387, 2595, 2879
Sirt1, Cholestasis 1966
Skin 1267, 2628, 2629
Skin Lesions, Skin Cancer 2052
Skin Penetration 2789
Skin Sensitization 2198, 2208, 3523
Skin Sensitization Potency 2863
Skin Sensitization, Allergy 3520
Skin Wound Repair 2112
Skin, Microvesication, Silibinin 2126
SM 2112
Small for Gestational Age 2983
Smoke 1837, 3041
Smokeless Tobacco 3066
Smoking, Asbestos 1310
SNPs 1285, 2052, 2481, 2749, 3177, 3234
Socioeconomic Status (SES) 2984
Sodium Fluoride 2594, 2973
Sodium Fluoride 2973
Sodium Tungstate Dihydrate 1353
Soy Isoflavones 1140
Soy Protein Isolate 1874
Sparstolonin B 1949
Spatial Discrimination Reversal Task 1213
Sperm 1546, 2069, 2812, 2931, 3248
Spheroids 1995
Squamous Metaplasia 1298
SR141716bA 1898
Stable Isotope Dilution, Drug Release Method 1525
Stably Expressed Genes 1111
Steatohepatitis 1953, 3170

The numerals following each keyword refer to the relevant abstract number(s).

Steatosis ... 2005
STE ... 2193
STEM ... 1380
Stem Cells ... 1267, 1351, 1834, 2374, 2764, 3076, 3339
STEM Education ... 3347
Steroid Hormones ... 1255
Steroidogenesis ... 2637
Steroidogenic Enzymes, Brain, Clarias Gariepinus ... 3297
Striga Hermonthica, Rats, Toxicity ... 1462
Styrene ... 2036
Substituted Phenoxyalkyl Pyridinium Oxime ... 2109
Subventricular Zone ... 1551, 2366
Sulfation ... 3455, 3457
Sulfolane ... 3453
Sulfonylurea ... 3449
Sulfur Dioxide ... 2602
Sulfur Mustard ... 1602, 2116, 2125
Sunitinib ... 1972
Super-Resolution Microscopy ... 2332
Supravital ... 1418
Surface Plasmon Resonance ... 3551
Surfactants ... 2474
Susceptibility Exposure Paradigm ... 1213
Swine ... 3106
Sympathetic ... 2855
Synaptic Neurotransmission ... 3063
Synergy, Lung Cancer, Threshold ... 1310
Synthetic Cathinones ... 1967
Synthetic Ecm ... 3388
Synthetic Pyrethroids ... 2914
Synucleinopathy, Parkinson's ... 1599
System Biology ... 2631
Systematic Review ... 2166, 2632
Systems and Integrative Toxicology ... 1069, 1084, 1086, 1100, 1102, 1103, 1106, 1107, 1115, 1234, 1439, 1572, 1954, 2325, 2631, 2640, 2641, 2712, 2939, 3003, 3013, 3036, 3091, 3171, 3402
Systems Biology ... 1066, 1077, 1094, 1101, 1104, 1108, 1116, 1120, 1121, 1124, 1252, 1419, 2081, 2212, 2213, 2440, 2495, 2832, 2985, 3037, 3043, 3171, 3349, 3401, 3527
T Cell ... 1356
Tamiflu ... 2219
Tanezumab ... 1238
Taurine ... 1181
Taurine, Chlorpyrifos ... 2913
TBB, TBPH ... 3406
TBBPA ... 2045, 3407, 3445
TBEP ... 2947
tBHQ ... 1344, 1346
TCDD ... 1360, 1366, 1937, 2227, 2422, 2424, 3427, 3542
TCPOBOP ... 2435
TDAR ... 1926
TDCPP ... 1797, 1813
TDI ... 2862
Tear Film ... 1610
Tecovirimat ... 2108
Telemetry ... 2839
Tellurium Tetrachloride ... 1556
Telomeres ... 1272, 1512
Tempol ... 3430
Terminalia Chebula Extract ... 2473
Terpineol ... 3442
Tert-Butanol ... 2700
Testis ... 1873, 2803, 3249, 3254, 3298
Tetrabromobisphenol A ... 1856, 2045
Tetrachloroethylene ... 3433
Tetracycline ... 3026
Tetramethylenedisulfotetramine ... 1173, 1220
TETS, DFP ... 2105
Textile Dye ... 2860
Theacrine ... 1459
Theophylline ... 1665
Three-Dimensional Cell Culture ... 2179
Threshold of Toxicological Concern ... 2163
Thrombocytopenia ... 1657
Thrombogenesis ... 2440
Thymoma ... 2714
Thyroid Hormone ... 1892
Thyroid Peroxidase Inhibition ... 2222
TiO2 (Titanium Dioxide) ... 2778, 2791,2859
TiO2 Nanoparticles ... 1501
Titanium ... 2784
Titanium Dioxide ... 1519, 2543, 2801
TLR ... 1851
TMPD ... 1904
TNP ... 2160
Tobacco ... 1107, 1163, 2311, 2971, 3040, 3395
Tobacco Products ... 3396
Tobacco Smoke ... 2696, 3200
Tobacco Use ... 2983
Toluene ... 1201, 2229
Tolvaptan ... 3175, 3455
Topical Therapies ... 3083
Total Dissolved Solidsfenton's Reagent ... 1276
Total Particulate Matter, Cigarette Smoke ... 3038
Total Petroleum Hydrocarbon ... 1696
Tox21 ... 1095, 2604
Toxcast ... 2608, 2640, 3300
Toxic Load Model ... 2170
Toxicant Screening Platform ... 3388
Toxicarnival ... 1381
Toxicity; Acute ... 1112, 1246, 1430, 1439, 1471, 1541, 1576, 1626, 1632, 1657, 1666, 1795, 1798, 1963, 1975, 1986, 1994, 2015, 2192, 2460, 2470, 2484, 2485, 2794, 2808, 2848, 2927, 2966, 2990, 3007, 3008, 3028, 3062, 3064, 3072, 3138, 3185, 3186, 3397, 3431, 3491
Toxicity; Chronic ... 1079, 1225, 1267, 1290, 1466, 1471, 1511, 1544, 1547, 1620, 1632, 1633, 1649, 1676, 1744, 1896, 1965, 2015, 2019, 2173, 2182, 2247, 2331, 2367, 2401, 2402, 2537, 2613, 2679, 2688, 2795, 2846, 2850, 2883, 2926, 3007, 3081, 3096, 3097, 3138, 3182, 3209, 3284, 3427
Toxicogenomics ... 1072, 1108, 1119, 1120, 1165, 1270, 1480, 1802, 2088, 2164, 2393, 2432, 2455, 2546, 2607, 2610, 2612, 2613, 2614, 2616, 2686, 2729, 2771, 2807, 2934, 2946, 3018, 3029, 3050, 3140, 3175, 3188, 3409, 3468, 3484
Toxicokinetics ... 1146, 1454, 1461, 1620, 1634, 1655, 2043, 2216, 2223, 2225, 2237, 2458, 2541, 2656, 2674, 2893, 2908, 3112, 3403, 3433, 3437, 3441, 3442, 3446, 3448, 3532
Toxicomethylomics ... 3219
Toxicoproteomics ... 3490
Toxprint ... 2709
TPN902 ... 1652
Traffic-Related Air Pollution ... 1382
Transcription Factors ... 1257, 1537, 1564, 1738, 1739, 1958, 2054, 2066, 2074, 2292, 2298, 2299, 2301, 2307, 2311, 2335, 2357, 2423, 2438, 2601, 2624, 3017, 3270
Transcriptome ... 2247
Transcutaneous Exposure ... 2806
Transforming Growth Factor β1 ... 2879
Transgender ... 2233
Transgenic Models ... 1587, 1799, 1939, 2033, 2063, 2356, 2374, 2904, 3094, 3102, 3104
Transient Receptor Potential ... 1285, 2244
Transport ... 3120
Transporters ... 1635, 2371
Trastuzamab ... 2481
Travel Abroad ... 1687
Tremolite ... 2672
Tributyltin ... 1883, 2545, 3264
Trichloroethylene ... 1196, 2729, 3198, 3434
Triclosan ... 1058, 1798, 1802, 2153, 2332, 2676
Tricresyl Phosphate ... 1231
Triethylene Glycol ... 2270
Triphenyl Phosphate ... 1850
Triptolide ... 1482
Troglitazone ... 1073, 1918, 1995, 1999
Troponin ... 2824
Trovafloxacin ... 1334
TRP Channels ... 1573
TRPA1 ... 2251
TRPV4 antagonists ... 1301
Trypan Blue Staining ... 2763
Tryptophan Catabolite, Endogenous Agonist, Rna Seq ... 2427
TTC ... 2475
Tuberculosis ... 1495, 1978
Tumor Necrosis Factor Alpha ... 2878
Tungsten ... 1554, 1555
Tungsten Oxide ... 2798
Tympanotonus Fuscatus ... 1277
Type 2 Diabetes ... 1850, 2487
Type 2 Diabetes Mellitus ... 2620
Tyrosine Kinase Inhibitor ... 1650, 2488
Ultrafine Particles ... 1168
Undergraduate Student ... 1383, 1447, 1524, 1550, 1697, 1813, 1880, 1895, 2059, 2256, 2257, 2982, 3293, 3348, 3501
Unfolded Protein Response ... 2291
Unilateral Ureteral Obstruction ... 3133
Uranium ... 1560, 1691
Vaccine ... 1624
Valproate ... 3263
Valproic Acid ... 2003
Vanadium ... 1557, 3002
Vapor Intrusion ... 2691
Vascular Adhesion Molecule-1 ... 2821
Vascular Dysfunction ... 2247
Vascular Injury ... 2849
Vascular Smooth Muscle Cells, ... 2177
Vasopressin ... 2835
VDR ... 1882
Vernonia Amygdalina ... 1327
Vesicants ... 1600
Vietnamese Women ... 1143
Vincristine ... 2151
Viral ... 2811
Virtual Screening ... 2652
Vitamin A ... 2282
Vitamin D ... 1307, 1882, 2968
Vitamin E ... 3245
Vitamin E Succinate ... 2333
Volatile Organic Compounds ... 1199, 1201, 1204, 1406, 1453, 1686, 1689, 1984, 2132, 2460, 2621, 2661, 2678, 2691, 2702, 2972, 2993, 3046, 3198, 3216, 3219, 3241
VX ... 2101, 2107, 2117
Weight of Evidence ... 2668, 2703, 2709, 2884
Welding Fume ... 1289
Wheat ... 2276
Whole-Body and Nose-Only Inhalation ... 3425
Wildfire ... 2266
Wine ... 1264
Wnt/β-catenin ... 1964
Wnt-Beta Catenin Signaling ... 2025
Women in Science ... 1380
Women with Secondary Infertility ... 2735
World Trade Center ... 2247
Wound Healing ... 3516
Xenobiotic Metabolism ... 2294
Xenobiotic Metabolizing Enzymes ... 2594
Xenobiotic Processing Genes ... 3144
Xenobiotic Transporters ... 1221, 1476, 1635, 1822, 1885, 1985, 2316, 2731, 3053, 3112, 3114, 3116, 3226, 3232, 3233, 3234, 3240, 3272, 3345, 3413, 3431, 3432
XRF ... 1545
Yarrowia Lipolytica ... 3004
Zearalenone ... 1140, 2276, 3021
Zeaxanthin ... 3004
Zebrafish ... 1175, 1185, 1239, 1588, 1793, 1795, 1798, 1802, 1805, 2095, 2456, 2947, 2950, 3136, 3296
Zebrafish Liver ... 2594
Zebrafish, Neuromast, Metastasis ... 1807
Zebrafish, Skeleton ... 1794
Zidovudine ... 1621
Zinc ... 1102, 1274, 1598, 2903, 3125, 3223
Zinc Dimethyldithiocarbamate (Ziram) ... 2892
Zinc Sulfate ... 2948
Ziram ... 2339
ZMapp ... 1626
Zuotai ... 1572

2015–2016 Council

PETER L. GOERING

President
2015–2016

T: 301.796.0253
petergoering.tox@gmail.com

- Board of Publications, Member
- Endowment Fund Board, *Ex-Officio* Member
- Finance Committee, Member
- ICT 2019 Organizing Committee, Member, Contact
- IUTOX Councilor, Member

JOHN B. MORRIS

Vice President
2015–2016

T: 860.486.3590
john.morris@uconn.edu

- Board of Publications, *ad hoc* Member, Contact
- Finance Committee, Member
- Nominating Committee for Honorary Members, Member
- Scientific Program Committee, Chair, Contact
- Subcommittee:
  - *Global Collaboration and Initiatives Subcommittee, Co-Chair*

PATRICIA E. GANEY

Vice President-Elect
2015–2016

T: 517.432.1761
ganey@msu.edu

- Scientific Program Committee, Co-Chair
- Subcommittee:
  - *Career Advancement, Recruitment and Education (CARE) Council Subcommittee, Chair*

LEIGH ANN BURNS NAAS

Secretary
2014–2016

T: 650.577.7866
leighann.burns@gilead.com

- Historian, Contact
- Issues Statement Review (ISR) Task Force, Contact
- Newsletter Editor
- Specialty Sections, Contact
- Toxic Substances Control Act (TSCA) Task Force, Contact
- Subcommittee:
  - *Career Advancement, Recruitment and Education (CARE) Council Subcommittee, Member*

RUTH A. ROBERTS

Secretary-Elect
2015–2016

T: 44 77 33 01 43 96
ruth.roberts@apconix.com

- Career Resource and Development Committee, Contact
- Contemporary Concepts in Toxicology (CCT) Conferences Committee, Co-Contact
- Specialty Section, Co-Contact
- Subcommittee:
  - *Career Advancement, Recruitment and Education (CARE) Council Subcommittee, Member*
  - *Global Collaboration and Initiatives Subcommittee, Member*

GEORGE P. DASTON

Treasurer
2015–2017

T: 513.622.3081
daston.gp@pg.com

- Contemporary Concepts in Toxicology (CCT) Organizing Committee for FutureTox III: Bridges for Translation, Contact
- Endowment Fund Board, *Ex-Officio* Member
- Finance Committee, Chair, Contact
- ToxExpo Liaison Working Group, Contact
- Subcommittee:
  - *Non-SOT Meeting Funding Subcommittee, Chair, Contact*

NORBERT E. KAMINSKI

Past President
2015–2016

T: 517.353.3786
kamins11@msu.edu

- Audit Committee, Contact
- Endowment Fund Board, Member, Contact
- IUTOX Councilors, Member, Contact
- Long Term Continuing Education (CE) Planning Task Force, Member
- Nominating Committee, Contact
- Nominating Committee for Honorary Members, Chair, Contact
- SOT FDA Colloquium Committee, Contact

AARON BARCHOWSKY

Councilor
2014–2017

T: 412.624.8864
aab20@pitt.edu

- Membership Committee, Co-Contact
- NIEHS 50th Anniversary Task Force, Contact
- Postdoctoral Assembly Executive Board, Contact
- Regional Chapters, Co-Contact
- Subcommittees:
  - *Career Advancement, Recruitment and Education (CARE) Council Subcommittee, Member*
  - *Global Collaboration and Initiatives Subcommittee, Member*
  - *Non-SOT Meeting Funding Subcommittee, Member*

ROSONALD R. BELL

Councilor
2015–2018

T: 860.686.9435
rosonald.r.bell@pfizer.com

- Awards Committee, Contact
- Regional Chapter, Co-Contact
- Scientific Liaison Coalition, Contact
- Subcommittee:
  - *Career Advancement, Recruitment and Education (CARE) Council Subcommittee, Member*
  - *Non-SOT Meeting Funding Subcommittee, Member*

MYRTLE A. DAVIS

Councilor
2013–2016

T: 240.276.5915
myrtledavis@sprintmail.com

- Committee on Diversity Initiatives, Contact
- Education Committee, Contact
- Subcommittees:
  - *Graduate Education Subcommittee, Contact*
  - *K–12 Subcommittee, Contact*
  - *K–12 Regional Chapter Contacts, Contact*
  - *Non-SOT Meeting Funding, Member*
  - *Undergraduate Education Subcommittee, Contact*

OFELIA A. OLIVERO

Councilor
2014–2017

T: 301.435.7843
oliveroo@exchange.nih.gov

- Committee on Diversity Initiatives, Co-Contact
- Education Committee, Co-Contact
- Special Interest Groups, Co-Contact
- Subcommittees:
  - *Global Collaboration and Initiatives Subcommittee, Co-Chair*
  - *Graduate Education Subcommittee, Co-Contact*
  - *K–12 Subcommittee, Co-Contact*
  - *K–12 Regional Chapter Contacts, Co-Contact*
  - *Undergraduate Education Subcommittee, Co-Contact*

TAO WANG

Councilor
2015–2018

T: 206.321.9871
tao.wang@novartis.com

- Continuing Education Committee, Co-Contact
- Clinician-Scientist Engagement (CSE) Task Force, Co-Contact
- Graduate Student Leadership Committee (GSLC), Contact
- Long Term Continuing Education (CE) Planning Task Force, Member
- Special Interest Groups, Co-Contact

JOHN A. WISLER

Councilor
2013–2016

T: 805.701.2250
jwisler@dartneuroscience.com

- Continuing Education Committee, Co-Contact
- Contemporary Concepts in Toxicology (CCT) Conferences Committee, Co-Contact
- Clinician-Scientist Engagement (CSE) Task Force, Contact
- Issues Statement Review (ISR) Task Force, Chair
- Long Term Continuing Education (CE) Planning Task Force, Chair, Contact
- Membership Committee, Contact

CLARISSA RUSSELL

Executive Director

T: 703.438.3115
clarissa@toxicology.org

- Audit Committee, Staff Liaison
- Contemporary Concepts in Toxicology (CCT) Conferences Committee, Staff Liaison
- Endowment Fund Board, *Ex-Officio* Member
- Finance Committee, Staff Liaison
- ICT 2019 Organizing Committee, Staff Liaison
- IUTOX Councilors, Staff Liaison
- NIEHS 50th Anniversary Task Force, Staff Liaison
- Nominating Committee, Staff Liaison

Past Presidents

1961–1962	**Harold C. Hodge***	1979–1980	**Tom S. Miya**	1997–1998	**R. Michael McClain**
1962–1963	**C. Boyd Shaffer***	1980–1981	**Perry J. Gehring***	1998–1999	**Steven D. Cohen**
1963–1964	**Paul S. Larson***	1981–1982	**Robert B. Forney***	1999–2000	**Jay I. Goodman**
1964–1965	**Harry W. Hays***	1982–1983	**Robert L. Dixon***	2000–2001	**Daniel Acosta Jr.**
1965–1966	**Frederick Coulston***	1983–1984	**Gabriel L. Plaa***	2001–2002	**David L. Eaton**
1966–1967	**Verald K. Rowe***	1984–1985	**Frederick W. Oehme**	2002–2003	**William F. Greenlee**
1967–1968	**John A. Zapp Jr.***	1985–1986	**Emil A. Pfitzer***	2003–2004	**Marion F. Ehrich**
1968–1969	**Carrol S. Weil***	1986–1987	**John Doull**	2004–2005	**Linda S. Birnbaum**
1969–1970	**Ted A. Loomis**	1987–1988	**Jerry B. Hook**	2005–2006	**Kendall B. Wallace**
1970–1971	**Robert L. Roudabush***	1988–1989	**James E. Gibson**	2006–2007	**James A. Popp**
1971–1972	**Wayland J. Hayes Jr.***	1989–1990	**Roger O. McClellan**	2007–2008	**George B. Corcoran**
1972–1973	**Victor A. Drill***	1990–1991	**Curtis D. Klaassen**	2008–2009	**Kenneth S. Ramos**
1973–1974	**Joseph F. Borzelleca**	1991–1992	**Donald J. Reed**	2009–2010	**Cheryl Lyn Walker**
1974–1975	**Sheldon D. Murphy***	1992–1993	**John L. Emmerson***	2010–2011	**Michael P. Holsapple**
1975–1976	**Seymour L. Friess***	1993–1994	**I. Glenn Sipes**	2011–2012	**Jon C. Cook**
1976–1977	**Robert A. Scala**	1994–1995	**Meryl H. Karol**	2012–2013	**William Slikker Jr.**
1977–1978	**Harold M. Peck***	1995–1996	**Jack H. Dean**	2013–2014	**Lois D. Lehman-McKeeman**
1978–1979	**Leon Golberg***	1996–1997	**James S. Bus**	2014–2015	**Norbert E. Kaminski**

*Deceased

Elected and Appointed Committees

Elected Committees

Awards Committee
Rory B. Conolly, Chair (2015–2016), Member (2014–2016)
Elaine M. Faustman, Co-Chair (2015–2016), Member (2015–2017)
Michael Aschner, Member (2014–2016)
Matthew J. Campen, Member (2015–2017)
Nathan J. Cherrington, Member (2015–2017)
Andrij Holian, Member (2014–2016)
Raymond G. York, Member (2015–2017)
Rosonald R. Bell*
Raul A. Suarez**

Membership Committee
William Mark Valentine, Chair (2015–2016), Member (2013–2016)
Rebecca A. Clewell, Co-Chair (2015–2016), Member (2014–2017)
Michael D. Aleo, Member (2014–2017)
Silvia B. M. Barros, Member (2015–2018)
Kathleen Gabrielson, Member (2013–2016)
Laine Peyton Myers, Member (2015–2018)
Martin Luther Stephens, Member (2015–2018)
Teresa Palacios-Hernandez, Postdoctoral Representative (2015–2016)
Rui Zhang, Student Representative (2015–2016)
John A. Wisler*
Aaron Barchowsky*
Kim von Brook**

Nominating Committee
Lois D. Lehman-McKeeman, Chair (2015–2016), Member (2014–2016)
Kim Boekelheide, Member (2014–2016)
Hanan N. Ghantous, Member (2014–2016)
Angela J. Harris, Member (2015–2017)
Michael P. Holsapple, Member (2015–2017)
B. Paige Lawrence, Member (2014–2016)
Jean F. Regal, Member (2014–2016)
Lynette K. Rogers, Member (2015–2017)
Sharmilee P. Sawant, Member (2015–2017)
Norbert E. Kaminski*
Clarissa L. Russell**

Appointed Committees

Audit Committee
Kim Boekelheide, Chair (2015–2016), Member (2013–2016)
Susan J. Borghoff, Co-Chair (2015–2016), Member (2015–2018)
Lawrence R. Curtis, Member (2014–2017)
Norbert E. Kaminski*
Clarissa L. Russell**

Board of Publications
Matthew J. Campen, Chair (2015–2016), Member (2012–2016)
Rory B. Conolly, Co-Chair (2015–2016), Member (2014–2017)
Robert E. Chapin, Member (2015–2018)
Dana C. Dolinoy, Member (2015–2019)
Peter L. Goering, Member (2015–2016)
Gary W. Miller, *Ad Hoc* Member (2013–2016), Editor-in-Chief (2013–2016)
John B. Morris*, *Ad Hoc* Member (2015–2016)
Wei Zheng, *Ad Hoc* Member (2015–2016), Member (2016–2020)
Marcia G. Lawson**

Career Advancement, Recruitment and Education (CARE) Council Subcommittee
Patricia E. Ganey, Chair (2015–2016), Member (2015–2016)
Aaron Barchowsky, Member (2015–2016)
Rosonald R. Bell, Member (2015–2016)
Leigh Ann Burns Naas, Member (2015–2016)
Ruth A. Roberts, Member (2015–2016)
Tonia Masson**

Career Resource and Development Committee
Erica D. Bruce, Chair (2015–2016), Member (2013–2016)
Bryan Delaney, Co-Chair (2015–2016), Member (2014–2017)
Diana J. Auyeung-Kim, Member (2014–2017)
Ambuja S. Bale, Member (2013–2016)
Qin M. Chen, Member (2015–2018)
Marie C. Fortin, Member (2015–2018)
Maria E. Gonsebatt Bonaparte, Member (2015–2018)
Betina J. Lew, Member (2013–2016)
Wilson Kiiza Rumbeiha, Member (2014–2017)
Alexandra Noel, Postdoctoral Representative (2015–2016)
Melanie Abongwa, Student Representative (2015–2016)
Ruth A. Roberts*
Kevin Merritt**

Committee on Diversity Initiatives
Jorge M. Naciff, Chair (2015–2016), Member (2013–2016)
Judith T. Zelikoff, Co-Chair (2015–2016), Member (2014–2017)
Tiffini K. Brabham, Member (2015–2017)
Sakina Elzebair Eltom, Member (2013–2016)
Aimen K. Farraj, Member (2014–2017)
Umesh M. Hanumegowda, Member (2013–2016)
Kimberly C. Hodge-Bell, Member (2015–2018)
Marquea D. King, Member (2015–2018)
Jose E. Manautou, *Ad Hoc* Member (2011–2016)
Ebany J. Martinez-Finley, Member (2015–2018)
Yasmeen M. Nkrumah-Elie, Postdoctoral Representative (2015–2016)
Federico Leonardo Sinche Chele, Student Representative (2015–2016)
Myrtle A. Davis*
Ofelia A. Olivero*
Rachel Woodson**

Contemporary Concepts in Toxicology (CCT) Conferences Committee
Elaina M. Kenyon, Chair (2015–2016), Member (2013–2016)
Eric B. Harstad, Co-Chair (2015–2016), Member (2013–2017)
Alison C. P. Elder, Member (2015–2018)
Michael A. Gallo, Member (2014–2017)
Alison Harrill, Member (2014–2017)
Michael P. Lawton, Member (2015–2018)
Donna L. Mendrick, Member (2013–2016)
Igor Pogribny, Member (2015–2017)
J. Craig Rowlands, Member (2015–2018)
Ruth A. Roberts*
John A. Wisler*
Clarissa L. Russell**

* Council Contact
** Staff Liaison
TBD=To be determined

Contemporary Concepts in Toxicology (CCT) Organizing Committee for FutureTox III: Bridges for Translation
Daland R. Juberg, Chair (2014–2016), Member (2014–2016)
Thomas B. Knudsen, Co-Chair (2014–2016), Member (2014–2016)
Richard A. Becker, Member (2014–2016)
Elaine M. Faustman, Member (2014–2016)
Suzanne Compton Fitzpatrick, Member (2014–2016)
John "Jack" R. Fowle III, Member (2014–2016)
Alison Harrill, CCT Committee Liaison (2014–2016)
Thomas Hartung, Member (2014–2016)
Ronald N. Hines, Member (2014–2016)
Douglas A. Keller, Member (2014–2016)
Emmanuel Lemazurier, Member (2014–2016)
John C. Lipscomb, Member (2014–2016)
Donna L. Mendrick, Member (2014–2016)
Raymond R. Tice, Member (2014–2016)
David Watson, Member (2014–2016)
George P. Daston*
Marcia G. Lawson**

Contemporary Concepts in Toxicology (CCT) Organizing Committee for miRNA Biomarkers for Toxicology
Alison Harrill, Chair (2015–2016), Member (2015–2016)
Warren E. Glaab, Co-Chair (2015–2016), Member (2015–2016)
Brian Chorley, Member (2015–2016)
Heidrun C. Ellinger-Ziegelbauer, Member (2015–2016)
Jean-Charles Gautier, Member (2015–2016)
Michael P. Lawton, Member (2015–2016)
James E. McDuffie, Member (2015–2016)
Rounak Nassirpour, Member (2015–2016)
Igor Pogribny, Member (2015–2016)
Karol L. Thompson, Member (2015–2016)
Kevin Merritt**
Clarissa L. Russell**

Contemporary Concepts in Toxicology (CCT) Organizing Committee for Ocular Toxicology, Pharmacology and Drug Delivery: An Eye on the Future
Chris John Somps, Chair (2015–2016), Member (2015–2016)
Evan A. Thackaberry, Chair (2015–2016), Member (2015–2016)
Vladimir Bantseev, Member (2015–2016)
Edward Chow, Member (2015–2016)
Brian J. Christian, Member (2015–2016)
Donald A. Fox, Member (2015–2016)
Alan C. Katz, Member (2015–2016)
Ronald K. Newton, Member (2015–2016)
James Arthur Render, Member (2015–2016)
Melva N. Rios Blanco, Member (2015–2016)
JoAnn C. L. Schuh, Member (2015–2016)
Kevin Merritt**
Clarissa L. Russell**

Contemporary Concepts in Toxicology (CCT) Organizing Committee for The Use of Cardiomyocytes for the Assessment of Proarrhythmic Risk
Douglas Keller, Chair (2015–2016), Member (2015–2016)
Jane Bai, Chair (2015–2016), Member (2015–2016)
Yvonne Will, Chair (2015–2016), Member (2015–2016)
Gary Gintant, Member (2015–2016)
Brian Guth, Member (2015–2016)
Jose Jalife, Member (2015–2016)
Jennifer B. Pierson, Member (2015–2016)
Ajay Pillai, Member (2015–2016)
Norman Stockbridge, Member (2015–2016)
York Tomita, Member (2015–2016)
Ruth Roberts *
Clarissa L. Russell **

Contemporary Concepts in Toxicology (CCT) Organizing Committee for Toxicoepigenetics: The Interface between the Environment and Human Health
Shaun D. McCullough, Chair (2015–2016), Member (2015–2016)
Dana C. Dolinoy, Chair (2015–2016), Member (2015–2016)
Andrea Baccarelli, Member (2015–2016)
Marie Fortin, Member (2015–2016)
Rebecca Fry, Member (2015–2016)
Jay Goodman, Member (2015–2016)
Ronald N. Hines, Member (2015–2016)
Jessica LaRocca, Member (2015–2016)
Igor Pogribny, Member (2015–2016)
Ken Ramos, Member (2015–2016)
J. Craig Rowlands, Member (2015–2016)
Ruth Roberts*
Clarissa L. Russell**

Continuing Education (CE) Committee
Gary O. Rankin, Chair (2015–2016), Member (2013–2016)
Kimberly A. Henderson, Co-Chair (2015–2016), Member (2014–2017)
Niranjan S. Goud, Member (2015–2018)
Michael F. Hughes, Member (2014–2017)
Saber M. Hussain, Member (2013–2016)
Bette Meek, Member (2015–2018)
Monicah A. Otieno, Member (2013–2016)
Cynthia V. Rider, Member (2015–2018)
James G. Wagner, Member (2014–2017)
Senthilkumar Perumal Kuppusamy, Postdoctoral Representative (2015–2016)
Kevin Trout, Student Representative (2015–2016)
John A. Wisler*
Tao Wang*
Rachel Frohberg**

Clinician-Scientist Engagement (CSE) Task Force
Richard Y. Wang, Chair (2015–2016), Member (2015–2018)
John G. Benitez, Member (2015–2018)
Jeffrey Brent, Member (2015–2018)
Robert Steven Hoffman, Member (2015–2018)
Michael J. Kosnett, Member (2015–2018)
Melissa A. McDiarmid, Member (2015–2018)
Kenneth E. McMartin, Member (2015–2018)
Kenneth S. Ramos, Member (2015–2018)
William D. Atchison, (SPC Liaison 2015–2016)
John A. Wisler*
Tao Wang*
David Rossé**

Council Subcommittee for Non-SOT Meeting Funding
George P. Daston*, Chair (2015–2016), Member (2014–2017)
Aaron Barchowsky, Member (2014–2016)
Rosonald R. Bell, Member (2015–2016)
Myrtle A. Davis, Member (2013–2016)
Kevin Merritt**

Deepwater Horizon Oil Spill Issue Statement Writing Team
Sol M. Bobst, Chair (2015–2016), Member (2015–2016)
William H. Benson, Member (2015–2016)
Richard Thomas Di Giulio, Member (2015–2016)
Mark E. Hahn, Member (2015–2016)
Don W. Korte, Member (2015–2016)
Andrew Maier, Member (2015–2016)
Kristine L. Willett, Member (2015–2016)
Matthew S. Bogdanffy, ISR Task Force Liaison (2015-2016)
Michelle Werts**

* Council Contact
** Staff Liaison
TBD=To be determined

Education Committee
Vicente Santa Cruz, Chair (2015–2016), Member (2013–2016)
Barbara L. F. Kaplan, Co-Chair (2015–2016), Member (2014–2017)
Patrick Allard, Member (2014–2017)
Aaron B. Bowman, Member (2015–2018)
Azita K. Cuevas, Member (2015–2018)
Maureen R. Gwinn, Member (2014–2017)
Thomas A. Lewandowski, *Ad Hoc* Member (2014–2016)
James P. Luyendyk, Member (2013–2016)
Thu Annelise Nguyen, Member (2013–2016)
Michael K. Peterson, Member (2015–2018)
Mindy F. Reynolds, Member (2015–2018)
Daniel James Spade, Postdoctoral Representative (2014–2016)
Benjamin R. Kistinger, Student Representative (2015–2016)
Myrtle A. Davis*
Ofelia A. Olivero*
Betty Eidemiller**

Education Subcommittee: Graduate Education
James P. Luyendyk, Chair (2013–2016), Member (2013–2016)
Barbara L. F. Kaplan, Co-Chair (2014–2016), Member (2014–2017)
Karissa Adkins, Member (2014–2017)
Diana J. Auyeung–Kim, Member (2014–2017)
Aaron B. Bowman, Member (2015–2018)
Andrij Holian, Member (2015–2018)
Cecile M. Krejsa, Member (2014–2017)
B. Paige Lawrence, Member (2015–2018)
Emily G. Notch, Member (2013–2016)
Benjamin R. Kistinger, Student Representative (2015–2016)
Myrtle A. Davis*
Ofelia A. Olivero*
Betty Eidemiller**

Education Subcommittee: K–12
Virunya S. Bhat, Chair (2015–2016), Member (2013–2016)
Christine Perdan Curran, Co-Chair (2015–2016), Member (2014–2017)
Marie Meagher Bourgeois, Member (2013–2016)
Wesley G. N. Gray, Member (2015–2018)
David R. Johnson, Member (2013–2016)
Courtney L. McGinnis, Member (2014–2017)
Paramita Mookherjee, Member (2015–2018)
Thu Annelise Nguyen, Education Committee Liaison (2014–2016)
Maureen R. Gwinn, Education Committee Co–Liaison (2014–2016)
Angela Slitt, *Ad Hoc* Member (2015–2016)
Myrtle A. Davis*
Ofelia A. Olivero*
Betty Eidemiller**

Education Subcommittee: K–12 Regional Chapter Contacts
Southeastern: Marie Meagher Bourgeois, Chair (2013–2016), Member (2013–2016)
Allegheny-Erie: William James Mackay (2014–2016)
Central States: Partha C. Kasturi (2014–2017)
Lake Ontario: Mark Kordinski (2015–2017)
Lone Star: Jeffrey L. Larson, (2012–2016)
Michigan: John Philip Buchweitz, (2014–2016)
Mid-Atlantic: Diane Hardej (2011–2016)
Midwest: Paul A. Eubig (2015–2017)
Mountain West: Marie Elise Legare (2015–2016)
National Capital Area: Gladys Erives (2015–2016)
North Carolina: Rebecca R. Boyles (2015–2016)
Northern California: Doris Tham Zane (2015–2017)
Northeast: Courtney L. McGinnis (2014–2016)
Northland: Therese K. Fick (2011–2016)
Ohio Valley: Christina Inhof (2015–2016)
Pacific Northwest: Paramita Mookherjee (2015–2016)
South Central: Wesley G. N. Gray (2014–2017)
Southern California: Diana Johnson (2015–2017)
Virunya S. Bhat, K–12 Subcommittee Chair (2015–2016)
Thu Annelise Nguyen, Education Committee Liaison (2014–2016)
Maureen R. Gwinn, Education Committee Co–Liaison (2015–2016)
Myrtle A. Davis*
Ofelia A. Olivero*
Betty Eidemiller**

Education Subcommittee: Undergraduate Education
Joshua P. Gray, Chair (2015–2016), Member (2012–2016)
Kristine L. Willett, Co-Chair (2015–2016), Member (2013–2017)
Shu–Yuan Cheng, Member (2013–2016)
Deadre J. Johnson, Member (2014–2017)
Deborah E. Keil, Member (2014–2017)
Wade H. Powell, Member (2015–2018)
Karen E. Stine, Member (2014–2017)
Larissa Williams, Member (2015–2018)
Mindy F. Reynolds, Education Committee Liaison (2015–2018)
Aaron B. Bowman, Education Committee Co-Liaison (2015–2018)
Myrtle A. Davis*
Ofelia A. Olivero*
Betty Eidemiller**

Endowment Fund Board
Matthew S. Bogdanffy, Chair (2015–2016), Member (2013–2016)
A. Jay Gandolfi, Co-Chair (2015–2016), Member (2014–2018)
Daniel Acosta Jr, Member (2014–2017)
Laura Andrews, Member (2013–2016)
David L. Eaton, Member (2015–2018)
Jeff Handler, Member (2011–2017)
Norbert E. Kaminski*, Member (2015–2017)
Lois D. Lehman-McKeeman, Member (2014–2016)
Dennis James Paustenbach, Member (2015–2018)
Denise Robinson Gravatt, Member (2014–2017)
George P. Daston, *Ex-Officio* Member (2014–2016)
Peter L. Goering, *Ex-Officio* Member (2015–2016)
Clarissa L. Russell, *Ex-Officio* Member (2015–2017)
Tonia Masson**

Finance Committee
George P. Daston*, Chair (2015–2017), Member (2014–2017)
Carol S. Auletta, Member (2015–2018)
Jack H. Dean, Member (2013–2017)
Peter L. Goering, Member (2014–2016)
John B. Morris, Member (2015–2016)
John P. Wise Sr, Member (2013–2016)
Clarissa L. Russell**

Global Collaboration and Initiatives Subcommittee
John B. Morris, Co-Chair (2014–2016), Member (2014–2016)
Ofelia A. Olivero, Co-Chair (2014–2016), Member (2014–2016)
Aaron Barchowsky, Member (2014–2016)
Silvia B. M. Barros, Member (2014–2016)
Emanuela Corsini, Member (2014–2016)
Peter N. Di Marco, Member (2014–2016)
Jun Kanno, Member (2014–2016)
Betzabet Quintanilla-Vega, Member (2014–2016)
Ruth A. Roberts, Member (2014–2016)
Denise Robinson Gravatt, Member (2014–2016)
Ivan Rusyn, Member (2014–2016)
Heather M. Wallace, Member (2014–2016)
Andrew Winkley, Member (2014–2016)
Judith T. Zelikoff, Member (2014–2016)
Kevin Merritt**
Clarissa L. Russell**

Graduate Student Leadership Committee (GSLC) Executive Board
Kelly Michelle Almond, Chair (2015–2016), Member (2013–2016)
Joanna Kreitinger, Secretary (2015–2016)
Suzanne Nicole Martos, Programming Subcommittee Chair (2015–2016)
Desinia B. Miller, Professional Development Subcommittee Chair (2015–2016)
Todd James Zurlinden, Communications Subcommittee Chair (2015–2016)
Tao Wang*
Rachel Frohberg**

* Council Contact
** Staff Liaison
TBD=To be determined

Graduate Student Leadership Committee (GSLC)

Regional Chapter Representatives

Allegheny-Erie: Cody E. Nichols (2015–2016)
Lake Ontario: Michelle Deveau (2015–2016)
Lone Star: Meghan Marie Cromie (2015–2016)
Michigan: Nikita Joshi (2015–2016)
Mid-Atlantic: Pamella B. Tijerina (2015–2016)
Midwest: Kirsten Sue Eckstrum (2015–2016)
Mountain West: Bryan Harder (2015–2016)
National Capital Area: Georgina Harris (2015–2016)
North Carolina: Charisse Nicole Holmes (2015–2016)
Northeast: Elissa Li-Yee Wong, Communications Subcommittee Secretary (2015–2016)
Northern California: Rui Zhang (2015–2016)
Northland: Bethany A. Davis (2015–2016)
Ohio Valley: Evan Frank (2015–2016)
Pacific Northwest: David K. Scoville (2015–2016)
South Central: Vivekkumar P. Dadhania (2015–2016)
Southern California: Jessica Aimee Camacho (2015–2016)

Special Interest Group Representatives

American Association of Chinese in Toxicology: Jinpeng Li (2015–2016)
Association of Scientists of Indian Origin: Prathap Kumar (2015–2016)
Hispanic Organization of Toxicologists: Federico Leonardo Sinche Chele (2015–2016)
Korean Toxicologists Association in America: Dahea (Diana) You (2015–2016)
Women in Toxicology: Jessica M. Sapiro, Professional Development Subcommittee Secretary (2015–2016)

Specialty Section Representatives

Biological Modeling: Rachel Worley (2015–2016)
Biotechnology: Adhithiya Charli Manohar Charle (2015–2016)
Carcinogenesis: Elizabeth Dawn Lightbody (2015–2016)
Cardiovascular Toxicology: Nathan Andrew Holland (2015–2016)
Clinical and Translational Toxicology: Corie Nicole Robinson (2015–2016)
Comparative and Veterinary: Joanna Kreitinger (2015–2016)
Dermal Toxicology: Carrie Mae Long (2015–2016)
Drug Discovery Toxicology: Melanie Abongwa (2015–2016)
Ethical, Legal, and Social Issues: Benjamin R. Kistinger (2015–2016)
Food Safety: Jalissa Wynder (2015–2016)
Immunotoxicology: Aimee E. Hillegas (2015–2016)
In Vitro and Alternative Methods: Troy David Hubbard (2015–2016)
Inhalation and Respiratory: Michelle Hernandez (2015–2016)
Mechanisms: Dwayne Edwin Carter (2015–2016)
Medical Device and Combination Product: Kevin Trout (2014–2016)
Metals: Stefanie Lynn O'Neal (2015–2016)
Mixtures: Axelle Marchand (2015–2016)
Molecular and Systems Biology: Ley Cody Smith (2015–2016)
Nanotoxicology: Katherine Dunnick (2015–2016)
Neurotoxicology: Megan Elizabeth Culbreth (2015–2016)
Occupational and Public Health: Melissa Bates (2015–2016)
Ocular Toxicology: Manlong Xu (2015–2016)
Regulatory and Safety Evaluation: Forrest C. Jessop (2015–2016)
Reproductive and Developmental Toxicology: Kristin Bircsak (2015–2016)
Risk Assessment: Allison C. Franzen, Programming Subcommittee Secretary (2014–2016)
Stem Cells: Joseph Shearer (2015–2016)
Toxicologic and Exploratory Pathology: Douglas B. Snider (2014–2016)

Historian

Marion F. Ehrich, Member (2015–2017)
Leigh Ann Burns Naas*
Tonia Masson**

ICT 2019 Organizing Committee

William Slikker Jr, Chair (2013–2019), Member (2013–2019)
Daniel Acosta Jr, Member (2014–2019)
Lorrene A. Buckley, Member (2013–2019)
Dori R. Germolec, Member (2013–2019)
Peter L. Goering*, Member (2013–2019)
Denise Robinson Gravatt, Member (2013–2019)
Ivan Rusyn, Member (2013–2019)
Judith T. Zelikoff, Member (2013–2019)
Clarissa L. Russell**

Issue Statement Review (ISR) Task Force

John A. Wisler, Chair (2015–2016), Member (2013–2016)
Lorrene A. Buckley, Member (2013–2016)
Matthew S. Bogdanffy, Member (2013–2016)
John C. Lipscomb, Member (2013–2016)
Judith T. Zelikoff, Member (2013–2016)
Leigh Ann Burns Naas*
Michelle Werts**

IUTOX Councilors

Peter L. Goering, Member (2013–2016)
Norbert E. Kaminski*, Member (2013–2016)
Lois D. Lehman-McKeeman, Member (2013–2016)
Kenneth E. McMartin, Member (2013–2016)
Timothy P. Pastoor, Member (2013–2016)
Clarissa L. Russell**

Long Term Continuing Education (CE) Planning Task Force

John A. Wisler*, Chair (2014–2016), Member (2014–2016)
Norbert E. Kaminski, Member (2014–2016)
Gary O. Rankin, Member (2014–2016)
Tao Wang, Member (2015–2016)
Rachel Frohberg**

NIEHS 50th Anniversary Task Force

Cynthia V. Rider, Chair (2015–2016), Member (2015–2016)
Aaron Barchowsky*, Member (2015–2016)
James Christopher Bonner, Member (2015–2016)
Mamta V. Behl, Member (2015–2016)
Danielle J. Carlin, Member (2015–2016)
Jamie C. DeWitt, Member (2015–2016)
Mark F. Miller, Member (2015–2016)
Kristen R. Ryan, Postdoctoral Representative (2015–2016)
Clarissa L. Russell**

Nominating Committee for Honorary Members

Norbert E. Kaminski*, Chair (2015–2016), Member (2015–2017)
Lois D. Lehman-McKeeman, Member (2014–2016)
John B. Morris, Member (2015–2016)
Raul A. Suarez**

Postdoctoral Assembly (PDA) Executive Board

Caitlin Jean Murphy, Chair (2015–2016), Member (2014–2016)
Gabriel A. Knudsen, Vice Chair (2015–2016), Member (2015–2017)
Eugene A. Gibbs–Flournoy, Councilor (2015–2016)
Karilyn E. Sant, Councilor (2015–2016)
Samantha Jean Snow, Treasurer (2015–2016)
Tongde Wu, Secretary (2015–2017)
Aaron Barchowsky*
Rachel Woodson**

* Council Contact
** Staff Liaison
TBD=To be determined

Postdoctoral Assembly (PDA) Representatives

Regional Chapters Representatives

Allegheny-Erie: Kevin Beezhold (2013–2016)
Lone Star: Abimbola Farinde (2015–2016)
Michigan: Anna K. Kopec (2015–2016)
Mid-Atlantic: Eric Edward Beier (2015–2016)
Midwest: Shuo Xiao (2015–2016)
National Capital Area: Shelby Skoog (2015–2016)
North Carolina: Erin M. Quist (2014–2016)
Northeast: Priscilla Cristine Encarnacao (2014–2016)
Northern California: Hanjiang Zhu (2015–2016)
Northland: Sarah Elizabeth Lacher (2014–2016)
Ohio Valley: Xue Fu (2015–2016)
Pacific Northwest: Pamela J. Roque (2015–2016)
South Central: Alexandra Noel (2015–2016)
Southeastern: Guoqing Qian (2014–2016)
Southern California: Parrisa C. Solaimani (2014–2016)

Special Interest Group Representatives

American Association of Chinese in Toxicology: Qiangen Wu (2014–2016)
Hispanic Organization of Toxicologists: Teresa De Jesus Palacios-Hernandez (2014–2016)
Korean Toxicologists Association in America: Hae-Ryung Park (2015–2016)
Toxicologists of African Origin: Yasmeen M. Nkrumah–Elie (2014–2016)
Women in Toxicology: Jaime Elizabeth Mirowsky (2015–2016)

Specialty Sections Representatives

Biological Modeling: Christopher Ruark (2015–2016)
Biotechnology: Amy M. Sharma (2015–2016)
Carcinogenesis: Sanket Gadhia (2015–2016)
Cardiovascular Toxicology: Leslie Charles Thompson (2014–2016)
Clinical and Translational Toxicology: Mitchell R. McGill (2015–2016)
Comparative and Veterinary: Satyanarayana Achanta (2015–2016)
Dermal Toxicology: Shuxi Qiao (2015–2016)
Food Safety: Murphy L. Y. Wan (2015–2016)
Immunotoxicology: Ashwini S. Phadnis–Moghe (2014–2016)
In Vitro and Alternative Methods: David Pamies (2015–2016)
Inhalation and Respiratory: Jonathan Henry Shannahan (2015–2016)
Mechanisms: Tod A Harper Jr (2015–2016)
Medical Device and Combination Product: Sandra Chang (2015–2016)
Metals: Hemantkumar Dilip Chavan (2015–2016)
Mixtures: Julia E. Rager (2015–2016)
Molecular and Systems Biology: Susie Shih Yin Huang (2015–2016)
Nanotoxicology: Anurag Mishra (2015–2016)
Neurotoxicology: Kiran Dhakal (2015–2016)
Occupational and Public Health: Melissa Ann Badding (2015–2016)
Regulatory and Safety Evaluation: Senthilkumar Perumal Kuppusamy (2015–2016)
Reproductive and Developmental Toxicology: Natasha Rene Catlin (2015–2016)
Risk Assessment: Kausar Begam Riaz Ahmed (2015–2016)
Stem Cells: Joshua F. Robinson (2015–2016)
Toxicologic and Exploratory Pathology: Mili Mandal (2015–2016)

Scientific Program Committee (SPC)

John B. Morris*, Chair (2015–2016), Member (2014–2016)
Patricia E. Ganey, Co-Chair (2015–2016), Member (2015–2017)
William D. Atchison, Member (2014–2018)
Jeanine L. Bussiere, Member (2013–2017)
Brian J. Day, Member (2014–2018)
Jennifer L. Freeman, Member (2015–2019)
Mary Beth Genter, Member (2012–2016)
Paul C. Howard, Member (2012–2016)
Matthew J. LeBaron, Member (2015–2019)
Donald R. Mattison, Member (2012–2016)
Barry S. McIntyre, Member (2013–2017)
Sean E. Ottinger, Member (2015–2018)
Lisa M. Sweeney, Member (2013–2017)
Vishal S. Vaidya, Member (2015–2019)
David Rossé**

SOT FDA Colloquium Organizing Committee

Ivan Rusyn, Chair (2015–2016), Member (2014–2016)
Timothy K. Adams, Member (2015–2016)
Jason Aungst, Member (2015–2016)
Ronald Chanderbhan, Member (2014–2016)
Suzanne Compton Fitzpatrick, Member (2014–2016)
Bryan Delaney, Member (2014–2016)
Kristi Jacobs, Member (2014–2016)
Ji-Eun Lee, Member (2014–2016)
Dan D. Levy, Member (2015–2016)
James J. Pestka, Member (2014–2016)
Allen Rudman, Member (2014–2016)
Catherine Whiteside, Member (2014–2016)
Norbert E. Kaminski*
Betty Eidemiller**

ToxExpo Liaison Working Group

Mariko Austin, Member (2014–2016)
Jessica Janiak, Member (2014–2016)
George P. Daston*
Laura Helm**

Toxic Substances Control Act (TSCA) Task Force

William H. Farland, Chair (2015–2017), Member (2010–2017)
Susan J. Borghoff, Member (2013–2017)
Deborah A. Cory-Slechta, Member (2013–2017)
Ronald S. Filler, Member (2010–2017)
George M. Gray, Member (2010–2017)
Daland R. Juberg, Member (2010–2017)
Mark Lafranconi, Member (2010–2017)
James C. Lamb IV, Member (2010–2017)
Moiz Mumtaz, Member (2013–2017)
Ruthann A. Rudel, Member (2013–2017)
Robert S. Skoglund, Member (2010–2017)
Leigh Ann Burns Naas*
Marcia G. Lawson**

* Council Contact
** Staff Liaison
TBD=To be determined

Regional Chapter Officers

Allegheny-Erie (85×)
Phoebe Stapleton, President
James M. Antonini, President-Elect
Vincent Castranova, Vice President
Robin E. Gandley, Secretary
William James Mackay, Treasurer
Patti C. Zeidler-Erdely, Past President, Councilor
James P. Fabisiak, Councilor
James Francis Scabilloni Jr, Councilor
Elaine L. Freeman, Councilor
Timothy R. Nurkiewicz, Councilor
Todd A. Stueckle, Councilor
Mark Weisberg, Councilor
Kevin Beezhold, Postdoctoral Representative
Cody E. Nichols, Student Representative

Central States (72×)
Udayan M. Apte, President
Hans-Joachim Lehmler, Secretary/Treasurer
Claire Redman Croutch, Past President
Partha C. Kasturi, Councilor
James Sacco, Councilor

Lake Ontario (29×)
James Gomes, President
Mark Korchinski, Vice President
Warren G. Foster, Past President, Councilor
Alison C. P. Elder, Councilor
Michelle Deveau, Student Representative

Lone Star (124×)
David R. Steup, President
Laura M. Plunkett, Vice President
Erica D. Bruce, Vice President-Elect
Somshuvra Mukhopadhyay, Secretary
Matthew Cooper White, Treasurer
Casey Wright, Past President, Councilor
Hua Shen, Councilor
Abimbola Farinde, Postdoctoral Representative
Meghan Marie Cromie, Senior Student Representative
Jennifer Gueldner, Junior Student Representative

Michigan (142×)
Andrew Gottfried, President
Roseann L. Vorce, President-Elect
Raja S. Settivari, Secretary/Treasurer
James G. Wagner, Past President, Councilor
Jay C. Albretsen, Councilor
Jon A. Hotchkiss, Councilor
Anna K. Kopec, Postdoctoral Representative
Nikita Joshi, Student Representative

Mid-Atlantic (406×)
George DeGeorge, President
Richard W. Hutchinson, Vice President
Norman J. Barlow, Vice President-Elect
Kathryn Ang, Secretary
Jennifer L. Ingram-Ross, Treasurer
Conney Will Berger Jr, Past President, Councilor
Lauren M. Aleksunes, Councilor
Todd L. Davidson, Councilor
John C. Kozlosky, Councilor
Eric Edward Beier, Postdoctoral Representative
Kristin Bircsak, Senior Student Representative
Pamella B. Tijerina, Junior Student Representative

Midwest (179×)
Ronnie L. Yeager, President
William M. Bracken, President-Elect
Jennifer Olsen, Secretary
Yi Yang, Treasurer
Michael L. Biehl, Past President, Councilor
Lauren Marie Besenhofer, Councilor
Tracy A. Henriques, Councilor
Niraj Tripathi, Councilor
Shua Xiao, Postdoctoral Representative
Kirsten Sue Eckstrum, Student Representative

Mountain West (101×)
Yin Chen, President
Jared M. Brown, Vice President
TBD, Vice President Elect
Karen L. Cooper, Secretary/Treasurer
Todd A. Thompson, Past President, Councilor
Jeff Angermann, Councilor
Bryan Harder, Senior Student Representative
Cameron McElroy, Junior Student Representative

National Capital Area (216×)
Pedro L. Del Valle, President
Erik R. Janus, Vice President
Kelly A. Brant, Secretary
Nancy B. Beck, Treasurer
Mark F. Miller, Past President/Councilor
Gertrude-Emilia Costin, Councilor
Gladys V. Erives, Councilor
Susan A. Laessig, Councilor
David Taylor Szabo, Councilor
Shelby Skoog, Postdoctoral Representative
Georgina Harris, Student Representative

North Carolina (372×)
MaryJane K. Selgrade, President
Danielle Jessica Carlin, Vice President
Erik J. Tokar, Vice President-Elect
Leah M. Zorrilla, Secretary/Treasurer
Christie M. Sayes, Past President/Councilor
Chad R. Blystone, Councilor
Rebecca R. Boyles, Councilor
Erin M. Quist, Postdoctoral Representative
Georgia Kate Roberts, Postdoctoral Representative-Elect
Charisse Nicole Holmes, Student Representative
Katherine Duke, Student Representative-Elect

Northeast (300×)
Ebru Caba, President
Alexandros Papanikolaou, Vice President
Courtney L. McGinnis, Secretary/Treasurer
Rosonald R. Bell, Past President, Councilor
Patricia A. Escobar, Councilor
Kimberly A. Stickland, Councilor
Priscilla Cristine Encarnacao, Postdoctoral Representative
Gregory James Smith, Senior Student Representative
Elissa Li-Yee Wong, Junior Student Representative

× Membership totals as printed in the most recent *Membership Directory*

Northern California (491×)
Eric B. Harstad, President
Toufan Parman, Vice President
Doris Tham Zane, Vice President-Elect
Howard Stock, Secretary
Julie E. Rider, Treasurer
Pamela J. Lein, Past President, Councilor
Joanne Birkebak, Councilor
Lolita Boyd, Councilor
Hanjiang Zhu, Postdoctoral Representative
Rui Zhang, Student Representative

Northland (89×)
Nicole V. Soucy, President
Robert Roy, President-Elect
Nathan R. Pechacek, Secretary/Treasurer
Brent R. Kobielush, Past President
Esther F. Hope, Councilor
Stephen H. Le Master, Councilor
Kendra Nordgren, Councilor
Sarah Elizabeth Lacher, Postdoctoral Representative
Bethany A. Davis, Student Representative

Ohio Valley (161×)
Christine Perdan Curran, President
Daniel David Petersen, Vice President
Jennifer L. Freeman, Vice President-Elect
Barbara A. Hocevar, Secretary
Mark A. Morse, Treasurer
Jeffrey D. Moehlenkamp, Past President, Councilor
Jacquelyn M. Cearfoss, Councilor
Paul R. Hanlon, Councilor
Kristin H. Horn, Councilor
Xue Fu, Postdoctoral Representative
Evan Frank, Student Representative

Pacific Northwest (150×)
Russell J. Eyre, President
Michael V. Templin, Vice President
Susan C. Tilton, Vice President-Elect
Linda L. Carlock, Secretary/Treasurer
Katie Sprugel, Past President
Nadia Moore, Councilor
Barbara J. Mounho-Zamora, Councilor
Pamela J. Roque, Postdoctoral Representative
David K. Scoville, Student Representative
Anna K. Engstrom, Student Representative-Elect

South Central (92×)
Martin J. Ronis, President
Baitang Ning, Vice President
Nan Mei, Vice President-Elect
Lei Guo, Secretary
Igor Koturbash, Treasurer
Yunfeng Zhao, Past President
Xiaoqing Guo, Councilor
David Robert Wallace, Councilor
Alexandra Noel, Postdoctoral Representative
Vivekkumar P. Dadhania, Student Representative

Southeastern (103×)
Marie Meagher Bourgeois, President
Xiaoqin Ye, President-Elect
Celia A. Dodd, Secretary/Treasurer
Ronald T. Riley, Past President
W. Eric Gato, Councilor
Peter Van den Hurk, Councilor
Guoqing Qian, Postdoctoral Representative
Rachel Worley, Student Representative

Southern California (529×)
Lisa D. Beilke, President
Arezoo G. Campbell, Vice President
Brandon D. Jeffy, Vice President Elect
Beth A. Hinkle, Secretary
Helen Jeannine McBride, Treasurer
Jacob Jabbour, Past President, Councilor
Eileen Regina Blasi, Councilor
Cynthia J. Davenport, Councilor
Niel C. Hoglen, Councilor
Parrisa C. Solaimani, Postdoctoral Representative
Jessica A. Camacho, Student Representative

Regional Chapter Collaboration and Communication Committee
David R. Steup, Chair
Marie Meagher Bourgeois, Co-Chair
Jeanne Y. Domoradzki, Member
James Gomes, Member
Nicole V. Soucy, Member
Todd A. Thompson, Member
Aaron Barchowsky*
Rosonald R. Bell*
Ashley Pomper**

Regional Chapter Collaboration and Communication Liaisons
Norman Barlow, Member
Arezoo G. Campbell, Member
Danielle Jessica Carlin, Member
Claire Redman Croutch, Member
Russell J. Eyre, Member
Erik R. Janus, Member
Daniel David Petersen, Member
Martin J. Ronis, Member
Todd A. Stueckle, Member
Jeffrey S. Tepper, Member
Ronnie L. Yeager, Member
Ashley Pomper**

× Membership totals as printed in the most recent *Membership Directory*

Special Interest Group Officers

American Association of Chinese in Toxicology (240×)
Ching-Hung Hsu, President
Hanna Hongchin Ng, President-Elect
Xuefeng Ren, Secretary
Victoria C. Tu, Treasurer
Yi Jin, Past President
Jinze Li, Councilor
Zemin Wang, Councilor
Qiangen Wu, Postdoctoral Representative
Jinpeng Li, Student Representative

Association of Scientists of Indian Origin (217×)
Sudheer Beedanagari, President
Mamta V. Behl, Vice President
Mayur S. Mitra, Vice President-Elect
Sainath Babu, Secretary/Treasurer
Sachin S. Devi, Past President
Sachin Bhusari, Councilor
Saurabh Chatterjee, Councilor
Prathap Kumar S. Mahalingaiah, Student Representative

Hispanic Organization of ToxicoLOGISTS (166×)
Minerva Mercado Feliciano, President
Elena Estela Hernandez Ramon, Vice President
Robert P. Casillas, Vice President-Elect
Veronica Ramirez Alcantara, Secretary
Ranulfo Lemus Olalde, Treasurer
Linval R. DePass, Past President
Silvia B. M. Barros, Councilor
Azita K. Cuevas, Councilor
Enrique Fuentes-Mattei, Councilor
Marcelo J. Wolansky, Councilor
Teresa De Jesus Palacios-Hernandez, Postdoctoral Representative
Federico Leonardo Sinche Chele, Student Representative

Korean Toxicologists Association in America (59×)
Christopher J. Choi, President
Yong Joo Chung, Vice President
Yong Ho Kim, Secretary/Treasurer
James H. Kim, Past President, Councilor
Myung-Haing Cho, Councilor
Hae-Ryung Park, Postdoctoral Representative
Dahea (Diana) You, Student Representative

Toxicologists of African Origin (137×)
Christopher W. Stewart, President
Mohamed B. Abou-Donia, Vice President
Elena K. Braithwaite, Secretary/Treasurer
Kimberly C. Hodge-Bell, Past President
Sidney Green, Councilor
Darryl B. Hood, Councilor
Yasmeen M. Nkrumah-Elie, Postdoctoral Representative
Samantha McNeal, Student Representative

Women in Toxicology (686×)
Tao Wang, President
Sharmilee P. Sawant, President-Elect
Laurie C. Haws, Vice President
Courtney D. Horvath, Secretary/Treasurer
Brenda Faiola, Past President, Councilor
Alexandria Lau, Councilor
Marie C. Fortin, Junior Councilor
Jaime Elizabeth Mirowsky, Postdoctoral Representative
Jessica Sapiro, Student Representative

Special Interest Group Collaboration Group
Sudheer Beedanagari, Chair
Brenda Faiola, Co-Chair
Yong Joo Chung, Member
Elena Estela Hernandez Ramon, Member
Darryl B. Hood, Member
Yong Ho Kim, Member
Minerva Mercado Feliciano, Member
Mayur S. Mitra, Member
Hanna Hongchin Ng, Member
Sharmilee P. Sawant, Member
Christopher W. Stewart, Member
Zemin Wang, Member
Ofelia A. Olivero*
Tao Wang*
Ashley Pomper**

× Membership totals as printed in the most recent *Membership Directory*

Specialty Section Officers

Biological Modeling (161×)
Paul Hinderliter, President
Eva D. McLanahan, Vice President
Jeffery M. Gearhart, Vice President-Elect
Stephen W. Edwards, Secretary/Treasurer
Harvey J. Clewell III, Past President, Councilor
Annie Lumen, Councilor
Qiang Zhang, Councilor
Christopher Ruark, Postdoctoral Representative
Rachel Worley, Student Representative

Biotechnology (200×)
Mary Jane Masson Hinrichs, President
Tom Getzleichter, Vice President
Janice A. Lansita, Vice President-Elect
Diann L. Blanset, Secretary/Treasurer
Robert V. House, Past President, Councilor
Joseph Francisco, Councilor
Timothy Scott Manetz, Councilor
Amy M. Sharma, Postdoctoral Representative
Adhithiya Charli Manohar Charle, Student Representative

Carcinogenesis (250×)
James E. Klaunig, President
Robert H. Schiestl, Vice President
John DiGiovanni, Vice President-Elect
Joseph Richard Landolph Jr, Secretary/Treasurer
Elaine M. Faustman, Past President, Councilor
Leslie Recio, Councilor
Sandra S. Wise, Councilor
Sanket Gadhia, Postdoctoral Representative
Elizabeth Dawn Lightbody, Student Representative
Logeswari Ponnusamy, Vice Student Representative

Cardiovascular Toxicology (164×)
Hong Wang, President
Tammy R. Dugas, Vice President
James G. Wagner, Vice President-Elect
Amy H. Kim, Secretary
John J. Kremer, Treasurer
Aimen K. Farraj, Past President, Councilor
Anthony Bahinski, Councilor
Petra Haberzettl, Councilor
Lynette K. Rogers, Councilor
Christopher Wingard, Councilor
Leslie Charles Thompson, Postdoctoral Representative
Nathan Andrew Holland, Student Representative

Clinical and Translational Toxicology (131×)
Horst Thiermann, President
Jiri Aubrecht, Vice President
Donna L. Mendrick, Vice President-Elect
Tao Wang, Secretary/Treasurer
Kenneth E. McMartin, Past President, Councilor
Sally Marie Bradberry, Councilor
Charles Lindamood III, Councilor
Mitchell R. McGill, Postdoctoral Representative
Corie Nicole Robinson, Student Representative

Comparative and Veterinary (95×)
Jeffrey Glen Sherman, President
Vijayapal R. Reddy, Vice President
Jacqueline Kinyamu-Akunda, Vice President-Elect
John Michael Mitchell, Secretary/Treasurer
Uford A. Madden, Past President, Councilor
Jennifer M. Duringer, Councilor
Marion F. Ehrich, Councilor
Satyanarayana Achanta, Postdoctoral Representative
Joanna Kreitinger, Student Representative

Dermal Toxicology (169×)
Jeffrey J. Yourick, President
Douglas B. Learn, Vice President
Zbigniew W. Wojcinski, Vice President-Elect
Jill A. Harvilchuck, Secretary/Treasurer
Jens Thing Mortensen, Past President, Councilor
Margaret E. K. Kraeling, Junior Councilor
Neera Tewari-Singh, Senior Councilor
Shuxi Qiao, Postdoctoral Representative
Carrie Mae Long, Student Representative
Laila Al-Eryani, Vice Student Representative

Drug Discovery Toxicology (384×)
Daniel C. Kemp, President
Raymond A. Kemper Jr, Vice President
Pete Newham, Vice President-Elect
Dinah Lee Misner, Secretary/Treasurer
Andrew J. Olaharski, Past President, Councilor
Leanne L. Bedard, Councilor
Jonathan A. Phillips, Councilor
Melanie Abongwa, Student Representative

Ethical, Legal, and Social Issues (86×)
Lynne T. Haber, President
Suzette M. Long, Vice President
Daniele Staskal Wikoff, Vice President-Elect
Tamara R. House-Knight, Secretary/Treasurer
Paul H. Zigas, Past President, Councilor
Esther M. Haugabrooks, Councilor
Robert G. Tardiff, Councilor
Benjamin R. Kistinger, Student Representative

Food Safety (228×)
Brent R. Kobielush, President
Laurie Carpenter Dolan, Vice President
Yu Janet Zang, Vice President-Elect
Ruixin Hao, Secretary/Treasurer
Nicola Stagg, Past President, Councilor
Brenna Flannery, Councilor
Mansi Krishan, Councilor
Brinda Mahadevan, Councilor
Xiao Pan, Councilor
Murphy L. Y. Wan, Postdoctoral Representative
Jalissa Wynder, Student Representative

Immunotoxicology (400×)
Rafael A. Ponce Jr, President
Laine Peyton Myers, Vice President
Victor J. Johnson, Vice President-Elect
Kristen A. Mitchell, Secretary/Treasurer
Danuta J. Herzyk, Past President, Councilor
Cheryl E. Rockwell, Senior Councilor
Haley Neff-LaFord, Junior Councilor
Ashwini S. Phadnis-Moghe, Postdoctoral Representative
Aimee E. Hillegas, Student Representative

× Membership totals as printed in the most recent *Membership Directory*

In Vitro and Alternative Methods (424×)
John "Jack" R. Fowle III, President
Amy J. Clippinger, Vice President
Barbara Anne Wetmore, Vice President-Elect
Abigail C. Jacobs, Secretary/Treasurer
Hans Antony Raabe, Past President, Councilor
Haitian Lu, Councilor
Catherine E. Willett, Councilor
David Pamies, Postdoctoral Representative
Troy David Hubbard, Student Representative
Georgina Harris, Vice Student Representative

Inhalation and Respiratory (322×)
Jacob D. McDonald, President
Flemming R. Cassee, Vice President
Jon A. Hotchkiss, Vice President-Elect
Laura S. Van Winkle, Secretary/Treasurer
Urmila P. Kodavanti, Past President, Councilor
Daniel J. Conklin, Councilor
Mehdi Saeed Hazari, Councilor
Matthew D. Reed, Councilor
Patti C. Zeidler-Erdely, Councilor
Jonathan Henry Shannahan, Postdoctoral Representative
Michelle Hernandez, Student Representative

Mechanisms (360×)
Richard R. Vaillancourt, President
Angela Slitt, Vice President
Brian S. Cummings, Vice President-Elect
Rhiannon N. Hardwick, Secretary/Treasurer
Vasilis Vasiliou, Past President, Councilor
James R. Roede, Senior Councilor
Daniel David Petersen, Junior Councilor
Tod A. Harper Jr, Postdoctoral Representative
Dwayne Edwin Carter, Student Representative

Medical Device and Combination Product (153×)
Alan M. Hood, President
Kelly P. Coleman, Vice President
Barbara J. Henry, Vice President-Elect
James John Kleinedler III, Secretary/Treasurer
Gregory L. Erexson, Past President, Councilor
Xiaomin Deng, Councilor
Sherry P. Parker, Councilor
Sandra Chang, Postdoctoral Representative
Kevin Trout, Student Representative

Metals (225×)
Walter T. Klimecki, President
R. Clark Lantz, Vice President
Rebecca C. Fry, Vice President-Elect
Koren K. Mann, Secretary/Treasurer
John P. Wise, Sr, Past President, Councilor
Diane Hardej, Senior Councilor
Sandra S. Wise, Junior Councilor
Hemantkumar Dilip Chavan, Postdoctoral Representative
Stefanie Lynn O'Neal, Student Representative

Mixtures (123×)
David W. Herr, President
Margaret H. Whittaker, Vice President
Cynthia V. Rider, Vice President-Elect
Erin P. Hines, Secretary/Treasurer
Bruce A. Fowler, Past President, Councilor
Vickie S. Wilson, Senior Councilor
Nigel J. Walker, Junior Councilor
Julia E. Rager, Postdoctoral Representative
Axelle Marchand, Student Representative

Molecular and Systems Biology (213×)
Kristine L. Willett, President
Bhagavatula Moorthy, Vice President
Marc E. Gillespie, Vice President-Elect
Robert S. DeWoskin, Secretary/Treasurer
J. Craig Rowlands, Past President, Councilor
Alison Harrill, Senior Councilor
Richard S. Paules, Junior Councilor
Susie Shih Yin Huang, Postdoctoral Representative
Ley Cody Smith, Senior Student Representative
Derik Evan Haggard, Junior Student Representative

Nanotoxicology (288×)
James Christopher Bonner, President
Robert L. Tanguay, Vice President
Timothy R. Nurkiewicz, Vice President-Elect
Brian D. Thrall, Secretary/Treasurer
Saber M. Hussain, Past President, Councilor
Jared M. Brown, Councilor
Tara Sabo-Attwood, Councilor
Anurag Mishra, Postdoctoral Representative
Katherine Dunnick, Student Representative
David Harold Ellis, Vice Student Representative

Neurotoxicology (356×)
William K. Boyes, President
Abby A. Li, Vice President
Mary E. Gilbert, Vice President-Elect
Ronald B. Tjalkens, Secretary/Treasurer
Aaron B. Bowman, Past President, Councilor
Mamta V. Behl, Councilor
Michelle L. Block, Councilor
Kiran Dhakal, Postdoctoral Representative
Megan Elizabeth Culbreth, Student Representative

Occupational and Public Health (267×)
Mary Ann Smith, President
Joel P. Bercu, Vice President
Robin DeLoss Smith, Vice President-Elect
Leslie A. Beyer, Secretary/Treasurer
Jenny R. Roberts, Past President, Councilor
Marie Meagher Bourgeois, Councilor
Natalie M. Johnson, Councilor
Melissa Ann Badding, Postdoctoral Representative

Ocular Toxicology (99×)
Evan A. Thackaberry, President
Chris John Somps, Vice President
Mercedes Salvador-Silva, Vice President-Elect
Leandro B. C. Teixeira, Communications Officer
Jon Popke, Treasurer
Edward Chow, Past President, Councilor
Russell J. Eyre, Councilor
Brian C. Gilger, Councilor

Regulatory and Safety Evaluation (840×)
Suzanne Compton Fitzpatrick, President
Michael L. Dourson, Vice President
Edward V. Ohanian, Vice President-Elect
Hilary V. Sheevers, Secretary/Treasurer
Kenneth L. Hastings, Past President, Councilor
Annette Koerner, Senior Councilor
Amy L. Roe, Junior Councilor
Senthilkumar Perumal Kuppusamy, Postdoctoral Representative
Forrest C. Jessop, Student Representative

× Membership totals as printed in the most recent *Membership Directory*

Reproductive and Developmental Toxicology (399×)
Jeffrey S. Moffit, President
Christopher J. Bowman, Vice President
Kary E. Thompson, Vice President-Elect
Chad R. Blystone, Secretary/Treasurer
Raymond G. York, Past President, Councilor
Judith T. Zelikoff, Senior Councilor
Sarah Campion, Junior Councilor
Aileen F. Keating, Councilor
Natasha Rene Catlin, Postdoctoral Representative
Kristin Bircsak, Student Representative

Risk Assessment (821×)
Hugh A. Barton, President
Sean M. Hays, Vice President
Elaina M. Kenyon, Vice President-Elect
Daniele Staskal Wikoff, Secretary/Treasurer
John M. DeSesso, Past President, Councilor
Michael H. Lumpkin, Councilor
John Norman, Councilor
Kausar Begam Riaz Ahmed, Postdoctoral Representative
Allison C. Franzen, Student Representative

Stem Cells (98×)
Bruce Alex Merrick, President
Erik J. Tokar, Vice President
Harry Salem, Vice President-Elect
Colleen Cosgrove Hegg, Secretary/Treasurer
Jingbo Pi, Past President, Councilor
Anna M. Vetrano, Senior Councilor
Chidozie Joshua Amuzie, Junior Councilor
Joshua F. Robinson, Postdoctoral Representative
Joseph Shearer, Student Representative

Toxicologic and Exploratory Pathology (153×)
Kathleen Gabrielson, President
Shashi K. Ramaiah, Vice President
Angela Wilcox, Vice President-Elect
Tomas F. Magee, Secretary/Treasurer
David L. Hutto, Past President, Councilor
Christopher Gibson, Councilor
Daniel C. Kemp, Councilor
Mili Mandal, Postdoctoral Representative
Douglas B. Snider, Student Representative

Specialty Section Collaboration and Communication Group
Kenneth L. Hastings, Chair
Jeffrey S. Moffit, Co-Chair
Aaron B. Bowman, Member
Kathleen Gabrielson, Member
Lynne T. Haber, Member
James E. Klaunig, Member
Andrew Olaharski, Member
Rafael A. Ponce Jr, Member
Jenny R. Roberts, Member
Kristine L. Willett, Member
Leigh Ann Burns Naas*
Ruth A. Roberts*
Raul A. Suarez**

× Membership totals as printed in the most recent *Membership Directory*

Notes

Society of Toxicology Awards and Honors

SOT Honor Descriptions

Honorary Membership

The Society of Toxicology recognizes nonmembers who embody outstanding and sustained achievements in the field of toxicology with Honorary Membership. Candidates are nominated by two Full or Associate members of the Society. Seconding letters and information regarding career achievements in toxicology should accompany the nomination. A two-thirds vote of Council determines recipients, with not more than two Honorary Members elected during any one term of Council. Nominations should be sent to SOT Headquarters by October 9.

Inductees

1962 Eugene M. K. Geiling*
1962 W. F. Von Oettingen*
1962 Torald H. Sollman*
1963 Ethel Browning*
1966 R. Tecwyn Williams*
1976 Norton Nelson*
1982 George H. Hitchings*
1986 Bernard B. Brodie*
1986 Herbert Remmer*
1991 Hyman J. Zimmerman*
1994 Ronald W. Estabrook*
1994 Wendell W. Weber
1995 Gertrude B. Elion*
1995 Charles S. Lieber*
1996 Sten G. Orrenius
1996 Dennis Parke*
1997 John E. Casida
1997 Roger W. Russell*
1998 Jud Coon
1998 Michel Mercier
1999 William O. Robertson
1999 Takashi Sugimura
2000 Findlay Russell*
2001 Herbert L. Needleman
2007 Mario Molina
2008 Lee Hartwell
2008 H. Robert Horvitz
2009 Gilbert S. Omenn
2009 Sir John E. Walker
2010 Sir Philip Cohen
2010 Ferid Murad
2011 William C. Hays
2011 Frances Oldham Kelsey*
2012 Frank J. Gonzalez
2012 Leroy Hood
2013 Bruce A. Beutler
2013 Jeremy K. Nicholson
2014 Sir John B. Gurdon
2014 Donald E. Ingber
2015 Shawn Douglas Lamb
2016 Raymond B. Nagle

Awards Descriptions

Achievement Award

The Achievement Award is presented to a member of the Society of Toxicology who has fewer than 15 years of experience since obtaining his/her highest earned degree (in the year of the SOT Annual Meeting) and has made significant contributions to toxicology. This award consists of a plaque and a monetary stipend.

Award Recipients

1967 Gabriel L. Plaa*
1968 Allan H. Conney*
1969 Samuel S. Epstein
1970 Sheldon D. Murphy*
1971 Yves Alarie
1972 Robert L. Dixon*
1974 Morris F. Cranmer
1975 Ian C. Munro*
1976 Curtis D. Klaassen
1977 James E. Gibson
1978 Raymond D. Harbison
1979 Michael R. Boyd
1980 Philip G. Watanabe*
1982 Frederick P. Guengerich
1984 Melvin E. Andersen
1985 Alan R. Buckpitt
1986 Sam Kacew
1987 James S. Bus
1988 Jeanne M. Manson
1989 James P. Kehrer
1990 Michael P. Waalkes
1991 Debra Lynn Laskin
1992 Michael P. Holsapple
1993 David L. Eaton
1994 James L. Stevens
1995 Lucio G. Costa
1996 Kenneth S. Ramos
1997 Kevin E. Driscoll
1998 Rick G. Schnellmann
1999 Michel Charbonneau*
2000 Christopher Bradfield
2001 Martin A. Philbert
2002 Ruth A. Roberts
2003 Lois D. Lehman-McKeeman
2004 David C. Dorman
2006 José E. Manautou
2007 Jeffrey M. Peters
2008 Ivan Rusyn
2009 Russell S. Thomas
2010 Gary W. Miller
2011 Nathan Cherrington
2012 Donna D. Zhang
2013 Wei Xu
2014 Matthew J. Campen
2015 Vishal S. Vaidya
2016 Lauren Aleksunes

Indicates SOT Awards

**Deceased*

Arnold J. Lehman Award

The Arnold J. Lehman Award is presented to recognize an individual who has made a major contribution to risk assessment and/or the regulation of chemical agents, including pharmaceuticals. The contribution may have resulted from the application of sound scientific principles to regulation and/or from research activities that have significantly influenced the regulatory process. The nominee may be employed in academia, government, or industry and must be an SOT member. This award consists of a plaque and a monetary stipend.

Award Recipients

1980 Allan H. Conney*
1981 Gabriel L. Plaa*
1982 Gary M. Williams
1983 David P. Rall*
1984 Tibor Balasz*
1985 Frederick Coulston*
1986 Gerrit Johannes Van Esch
1987 John P. Frawley*
1988 Kundan S. Khera*
1989 Richard H. Adamson
1990 Harold C. Grice
1991 Bernard A. Schwetz
1992 Roger O. McClellan
1993 Thomas W. Clarkson
1994 Bruce N. Ames
1995 Emil A. Pfitzer*
1996 John F. Rosen*
1998 Helmut Alfred Greim
2000 Carole A. Kimmel, Janardan K. Reddy
2001 Samuel M. Cohen
2002 Dennis Paustenbach
2003 Michael L. Dourson
2004 Melvin E. Andersen
2005 Rory B. Conolly
2006 Kathryn R. Mahaffey*
2007 Harvey J. Clewell
2008 Vicki Dellarco
2009 Michael Bolger
2010 Edward V. Ohanian
2011 Bette Meek
2012 Joe L. Mauderly
2013 Moiz Mumtaz
2014 B. Bhaskar Gollapudi
2015 Richard A. Becker
2016 Alan Boobis

Best Postdoctoral Publication Awards

The Best Postdoctoral Publication Awards recognize talented postdoctoral researchers who have recently published exceptional papers in the field of toxicology. Applications are reviewed by the Postdoctoral Assembly Board and outside reviewers with appropriate scientific expertise. The research reported in the paper must have been conducted while the applicant was engaged in a postdoctoral research position. The applicant will be the first author on a peer-reviewed paper published online or in print, or in press, in the preceding interval of October 1 to September 30. Review articles will not be accepted unless they contain meta-analyses, and/or decision analyses. Co-first authored papers will be accepted, with clear delineation of applicant's effort. The review process follows NIH conflict of interest, confidentiality, and nondisclosure rules.

Award Recipients

2007 Nadine Dragin, Kristen Mitchell, Drobna Zuzana
2008 Joshua P. Gray, Christie M. Sayes, Khristy J. Thompson
2009 Jeffrey W. Card, Kembra Howdeshell, Lewis Zhichang Shi
2010 Bret F. Bessac, Manabu Nukaya, Nicholas Radio
2011 Dieldrich S. Bermudez , Joshua A. Harrill, Jordan Ned Smith
2012 Maryse Lemaire, Xuefeng Ren, Nisha S. Sipes
2013 Petra Haberzettl, Anne Loccisano, Yuanyuan Xu
2014 Annie Lumen, Gul Mehnaz Mustafa, Phoebe A. Stapleton
2015 John Clarke, Yong Ho Kim, Christina Powers
2016 Alicia Bolt, Pamela Noyes, Pei-Li Yao

Board of Publications for the Best Paper in *Toxicological Sciences* Award

The Board of Publications Award for the Best Paper in *Toxicological Sciences* is presented to the author(s) of the best paper published in this official SOT publication during a 12-month period, terminating with the June issue of the calendar year preceding the Annual Meeting at which the award is presented. The author(s) need not be a member of the Society of Toxicology. Submissions should include a one-page summary of the paper's contribution to the science of toxicology and a copy of the article for which the nomination is being made. Any member of the Society may submit one title for consideration. In addition, the titles of no more than six papers to be considered are submitted by the editor of *Toxicological Sciences*. All papers submitted will be evaluated by the Board of Publications. This award consists of a plaque and a monetary stipend. (This award was formerly known as the Frank R. Blood Award from 1974–1994.)

Best Paper in *Toxicological Sciences*

Award Recipients

1995 J. L. Larson, D. C. Wolf, B. E. Butterworth
1995 M. I. Luster, C. Portier, D. G. Pait, G. J. Rosenthal, D. R. Germolec, E. Corsini, B. L. Blaylock, P. Pollock, Y. Kouchi, W. Craig, K. L. White, A. E. Munson, C. E. Comment
1996 B. C. Allen, R. J. Kavlock, C. A. Kimmel, E. M. Faustman
1997 F. L. Fort, H. Ando, T. Suzuki, M. Yamamoto, T. Hamashima, S. Sato, T. Kitazaki, M. C. Matony, G. D. Hodgen
1998 D. D. Parrish, M. J. Schlosser, J. C. Kapeghian, V. M. Traina
1999 C. A. Franklin, M. J. Inskip, C. L. Baccanale, C. M. Edwards, W. I. Manton, E. Edwards, E. J. O'Flaherty
2000 H. A. Boulares, C. Giardina, C. L. Navarro, E. A. Khairallah*, S. D. Cohen
2001 J. Chen, Y. Li, J. A. Lavigne, M. A. Trush, J. D. Yager
2002 M. J. Bajt, J. A. Lawson, S. L. Vonderfecht, J. S. Gujral, H. Jaeschke
2003 S. Haddad, M. Beliveau, R. Tardif, K. Krishnan
2004 A. Nyska, C. Moyer, A. Ledbetter, D. Christiani, M. Schlasweiler, D. Costa, R. Hauser, U. Kodavanti
2005 N. V. Soucy, M. A. Ihnat, L. Hess, C. D. Kamat, A. Barchowsky, M. J. Post, L. R. Klei, C. Clark
2006 H. Sawada, K. Takami, S. Ashai
2007 T. Green, R. Lee, S. Lloyd, J. Noakes, T. Pastoor, R. Peffer, M. Robinson, P. Rose, A. Toghill, F. Waechter, E. Weber
2008 S. Snykers, T. Vanhaecke, P. Papelue, A. Luttun, Y. Jiang, Y. V. Heyden, C. Verfaillie, V. Rogiers
2009 Q. Yang, T. Nagano, Y. Shah, C. Cheung, S. Ito, F. J. Gonzalez
2010 R. L. M. Dobson, S. Motlagh, M. Quijano, R. T. Cambron, T. R. Baker, A. M. Pullen, B.T. Regg, A. S. Bigalow-Kern, T. Vennard, A. Fix, R. Reimschuessel, G. Overmann, Y. Shan, G. P. Daston
2011 K. Lu, L. B. Collins, H. Ru, E. Bermudez, J. A. Swenberg
2012 J. G. DeKeyser, E. M. Laurenzana, E. C. Peterson, T. Chen, C. J. Omiecinski
2013 R. Sellamuthu, C. Umbright, J.R. Roberts, R. Chapman, S-H Young, D. Richardson, H. Leonard, W. McKinney, B. Chen, D. Frazer, S. Li, M. Kashon, P. Joseph
2014 A. Schinwald, F. A. Murphy, A. Prina-Mello, C. A. Poland, F. Byrne, D. Movia, J. R. Glass, J. C. Dickerson, D. A. Schultz, C. E. Jeffree, W. MacNee, K. Donaldson
2015 R. S. Thomas, S. C. Wesselkamper, Nina Ching Y. Wang, Q. J. Zhao, D. D. Petersen, J. C. Lambert, I. Cote, L. Yang, E. Healy, M. B. Black, H. J. Clewell III, B. C. Allen, M. E. Andersen
2016 R. J. Church, H. Wu, M. Mosedale, S. J. Sumner, W. Pathmasiri, C. L. Kurtz, M. T. Pletcher, J. S. Eaddy, K. Pandher, M. Singer, A. Batheja, P. B. Watkins, K. Adkins, A. H. Harrill

Frank R. Blood Award

Presented 1974–1994

Recipients of the Frank R. Blood Award no longer offered may be found on the SOT website at **www.toxicology.org.**

Congressional Science Leadership Award

Presented 2009–2014

Recipients of the Congressional Science Leadership Award no longer offered may be found on the SOT website at **www.toxicology.org**.

Contributions to Public Awareness of the Importance of Animals in Toxicology Research Award

Presented 2000–2006

Recipients of the Contributions to Public Awareness of the Importance of Animals in Toxicology Research Award no longer offered may be found on the SOT website at **www.toxicology.org.**

Distinguished Toxicology Scholar Award

The Distinguished Toxicology Scholar Award is presented to a member of SOT who has made substantial and seminal scientific contributions to our understanding of the science of toxicology. Nominees should be active scientists involved in toxicological research. The prime consideration for this award is scientific accomplishments. This award consists of a plaque and a monetary stipend. The recipient delivers the Distinguished Toxicology Scholar Award Lecture at the SOT Annual Meeting. (This award was presented in 2001 as the Scientific Achievement Award.)

Award Recipients

2001 James E. Troska
2003 Henry C. Pitot
2004 Gerald N. Wogan
2005 Daniel Nebert
2006 Sten G. Orrenius
2007 Stephen H. Safe
2008 Toshio Narahashi*
2009 Lance R. Pohl
2010 Harihara M. Mehendale
2011 Oliver Hankinson
2012 Ernest Hodgson
2013 John J. Lemasters
2014 Richard E. Peterson
2015 Ian Kimber
2016 I. Glenn Sipes

Education Award

The Education Award is presented to an individual who is distinguished by the teaching and training of toxicologists and who has made significant contributions to education in the broad field of toxicology. This award consists of a plaque and a monetary stipend.

Award Recipients

1975 Harold C. Hodge*
1976 Ted A. Loomis
1977 Robert B. Forney*
1979 Sheldon D. Murphy*
1980 Herbert H. Cornish*
1981 Frederick Sperling*
1982 Lloyd W. Hazleton*
1983 Julius M. Coon*
1984 Frank Guthrie, Ernest Hodgson
1985 William B. Buck
1986 Robert I. Krieger
1987 Gabriel L. Plaa*
1988 John Autian*
1989 Tom S. Miya
1990 Charles H. Hine
1991 Hanspeter R. Witschi
1992 Dean E. Carter*
1993 Curtis D. Klaassen
1994 Robert A. Neal*
1995 William Carlton
1996 Robert Snyder
1997 Albert E. Munson
1998 David J. Holbrook
1999 Jules Brodeur
2000 Gary Carlson
2001 Harihara Mehendale
2002 Joseph Borzelleca
2003 Frederick W. Oehme
2004 A. Jay Gandolfi
2005 Nobuyuki Ito
2006 Robert A. Schatz
2007 Torbjörn Malmfors
2008 Steven Cohen
2009 Janice E. Chambers, Serrine S. Lau
2010 Tetsuo Satoh
2011 Michael Gallo
2012 John H. Duffus
2013 Rick G. Schnellmann
2014 Herman N. Autrup
2015 Theodore A. Slotkin
2016 Kenneth Reuhl, John Wise Sr.

Enhancement of Animal Welfare Award

The Enhancement of Animal Welfare Award is presented annually to a member of the Society in recognition of a contribution made to the advancement of toxicological science through the development and application of methods that replace, refine, or reduce the need for experimental animals. The achievement recognized may be either a seminal piece of work or a long-term contribution to toxicological science and animal welfare. This award consists of a plaque and a monetary stipend.

Award Recipients

2000 Yves Alarie
2001 Alan Goldberg
2002 Gary Williams
2003 G. Frank Gerberick, Ian Kimber
2005 Daniel Acosta
2006 William S. Stokes
2007 Thomas Hartung
2009 Sally Robinson
2010 Leonard M. Schechtman
2013 Martin L. Stephens
2014 Marcel Leist
2016 Warren Casey

Founders Award

The SOT Founders Award is presented to a Full, Emeritus Full, or Retired Full member of the Society of Toxicology who has demonstrated outstanding leadership in fostering the role of toxicological sciences in safety decision-making through the development and/or application of state-of-the-art approaches that elucidate, with a high degree of confidence, the distinctions for humans between safe and unsafe levels of exposures to chemical and physical agents. This award consists of a plaque and a monetary stipend.

Award Recipients

2008 John Doull
2009 Roger O. McClellan
2010 James S. Bus
2011 Joseph F. Borzelleca
2012 John A. Moore
2013 William Alfred Suk
2014 John A. Thomas
2016 Richard Adamson

Global Senior Scholar Exchange Program

The Society of Toxicology Global Senior Scholar Exchange Program (GSSEP) aims to increase the global impact of toxicology on human health and safety by working to strengthen toxicology programs and capacity in universities in developing countries. Through this novel program, SOT will sponsor specific collaborations between universities in the United States and in developing countries. The program enables an exchange visit of senior scientists between the partnered universities to address identified gaps in the developing country university's core toxicology curriculum; supports courses or symposia on toxicology topics of high priority in the developing country; and funds the senior scholars' attendance at the SOT Annual Meeting as an opportunity to present research and establish networking opportunities.

Award Recipients

2012 Scholar: Jesus Olivero-Verbel (Colombia)
Hosts: Michael P. Waalkes and Miroslav Styblo (USA),
Scholar: Orish Ebere Orisakwe (Nigeria)
Host: Judith T. Zelikoff (USA)
2013 Scholar: Sri Noegrohati (Indonesia)
Hosts: Michael Dourson and Bernard K. Gadagbui (USA),
Scholar: Mohamed Mosaad Salama (Egypt)
Host: Mohamed B. Abou-Donia (USA)
2014 Scholar: Gonzalo J. Diaz (Colombia)
Host: Wilson K. Rumbeiha (USA)
Scholar: Ebenezer O. Farombi (Nigeria)
Host: James E. Klaunig (USA)
2015 Scholar: Sunisa Chaiklieng (Thailand)
Host: Norbert E. Kaminski (USA)
Scholar: Deepak Dhakal (Nepal)
Host: Aaron Barchowsky (USA)
2016 Scholar: Oladipo Ademuyiwa (Nigeria)
Host: Weimin Gao (USA)
Scholar: Wafa Hassen (Tunisia)
Host: Mohamed B. Abou-Donia (USA)

Graduate Student Travel Support

Graduate Student Travel Support defrays expenses for doctoral students presenting platform talks or posters at the SOT Annual Meeting. To be eligible, the student must be an SOT member (or have submitted a membership application) who has not previously received SOT Graduate Student Travel Support. Funding priority is based on seniority in graduate school.

Leading Edge in Basic Science Award

The Leading Edge in Basic Science Award is presented to a scientist who, based on his/her research, has made a recent (within the past five years), seminal basic scientific contribution to understanding fundamental mechanisms of toxicity. The recipient may be a respected basic scientist, member or nonmember, including toxicologists as well as other scientists who may not identify themselves with the discipline of toxicology but whose research findings are likely to have a pervasive impact on the field of toxicology. The recipient delivers the Leading Edge in Basic Science Award Lecture at the SOT Annual Meeting. This award consists of a plaque and a monetary stipend.

Award Recipients

2009 John Katzenellenbogen
2010 Richard S. Paules
2011 Masayuki Yamamoto
2012 Myung-Haing Cho
2013 Donald E. Ingber
2014 Vishal S. Vaidya
2016 Cheryl Lyn Walker

Merit Award

The Merit Award is presented to a member of the Society of Toxicology in recognition of distinguished contributions to toxicology throughout an entire career in areas such as research, teaching, regulatory activities, consulting, and service to the Society. This award consists of a plaque and a monetary stipend. The recipient delivers the Merit Awardee Lecture at the SOT Annual Meeting.

Award Recipients

1966 Henry F. Smyth Jr.*
1967 Arnold J. Lehman*
1968 R. T. Williams*
1969 Harold C. Hodge*
1970 Don D. Irish
1971 Kenneth P. DuBois*
1972 O. Garth Fitzhugh*
1973 Herbert E. Stokinger*
1974 William B. Deichmann*
1975 Frederick Coulston*
1976 Verald K. Rowe*
1977 Harry W. Hays*
1978 Julius M. Coon*
1979 David W. Fassett*
1980 Bernard L. Oser*
1981 John H. Weisburger*
1982 Harold M. Peck*
1983 Perry J. Gehring*
1984 Tom S. Miya
1985 Carrol S. Weil*
1986 Ted A. Loomis
1987 Bo Holmstedt
1988 Seymour L. Friess*
1989 Wayland J. Hayes Jr.*
1990 Sheldon D. Murphy*
1991 Toshio Narahashi*
1992 W. Norman Aldridge
1993 John Doull
1994 Ernest Hodgson
1995 Robert A. Scala
1996 Gabriel L. Plaa*
1997 Mary O. Amdur*
1998 John A. Thomas
1999 Thomas Clarkson
2000 Philippe Shubik*
2001 Donald Reed
2002 Bernard Schwetz
2003 M. W. Anders
2004 Robert Goyer
2005 Roger O. McClellan
2006 A. Wallace Hayes
2007 James A. Swenberg
2008 Hanspeter Witschi
2009 Gary M. Williams
2010 Marion F. Ehrich
2011 Michael Aschner
2012 Curtis D. Klaassen
2013 Frederick Peter Guengerich
2014 Jay I. Goodman
2015 Günter Oberdörster
2016 Melvin Andersen

Outstanding Graduate Student Leadership Awards

The Outstanding Graduate Student Leadership Award is presented by the SOT Graduate Student Leadership Committee in recognition of graduate student representatives who have contributed to the Society in a significant manner beyond the routine duties of a representative of a Regional Chapter, Specialty Section, or Special Interest Group.

Award Recipients

2009 Enrique Fuentes-Mattei, Sheppard A. Martin
2010 Haitian Lu, Erica N. Rogers, Prasad Krishnan
2011 Heather Bolstad, Michael Borland
2012 Chad Brocker, Azita Cuevas
2013 Shirisha Chittiboyina, Hannah Pope-Varsalona
2014 Brittany Baisch, Christin Grabinski, Alessandro Venosa
2015 Sanket Gadhia, Jessica M. Sapiro

Perry J. Gehring Diversity Student Travel Award

The Perry J. Gehring Diversity Student Travel Award recognizes a student who was selected to participate in a previous SOT Undergraduate Program, is from an ethnic group underrepresented in toxicology (African American, Hispanic, Native American, or Pacific Islander), and is presenting a paper at the upcoming SOT meeting. The award recipient is selected by the Committee on Diversity Initiatives.

The Gehring Student Travel Award is provided through the Society of Toxicology Endowment Fund. This award recognizes Dr. Perry J. Gehring, who served as SOT President in 1980–1981 and made important scientific contributions, especially in biological modeling and evidence-based assessment. Dr. Gehring had a strong interest in encouraging individuals from ethnic groups underrepresented in the sciences to enter biomedical sciences and toxicology.

Award Recipients

2009 Vanessa De La Rosa
2010 Nygerma L. Dangleben
2011 Eva A. Amouzougan
2012 Alba K. Gonzalez Rivera
2013 Alexandra Colón-Rodríguez
2014 Pamella B. Tijerina
2015 Latisha T. Pryor
2016 Lizbeth Perez-Castro

Pfizer SOT Undergraduate Student Travel Awards

Pfizer SOT Undergraduate Student Travel Awards are presented through the Society of Toxicology to foster an interest in graduate studies in the field of toxicology by bringing promising undergraduate students to the SOT Annual Meetings. Pfizer, Inc., will provide up to five awards per year to undergraduate students presenting research at the Annual Meeting. SOT supports additional awards. Awardees will be selected by the Education Committee based on the quality of the submitted abstract and the advisor's supporting recommendation. Those selected will receive travel assistance for the meeting, a plaque presented at the annual Awards Ceremony, and recognition at a special Pfizer function. Awardees will be matched with a graduate student and a Pfizer scientist to mentor them during the Annual Meeting, and will have the opportunity to attend the Society of Toxicology Undergraduate Education Program on the Sunday of the Annual Meeting.

Award Recipients

2006 Shawntay Chaney, Theresa M. Eagle, Natalie Malek, Adeliada Segarra, Ryan Vaughan
2007 Kay Gonsalves, Lisa Koselke, Basharat Sanni, Sonia Talathi, Anna Zimmerman
2008 Amy DeMicco, Tharu Fernando, Yamel Perdomo, Amy Yi Hsan Saik, Kelly Sullivan
2009 Sherine Crawford, Trish T. Hoang, Kelly Krcmarik, Cory M. Mathias, P. Sean McGrath
2010 Annie L. Carlton, Alisha Chitrakar, Megan E. Culbreth, Chang Woo Lee, Sharon Ochs

2011 Brandon Haghverdian, Jessica H. Hartman, Camila Odio, Viviana Vidal Anaya, Phillip Alan Wages
2012 Ashley Press, Darien Shapiro, Qi Wang, Brittany Winner, Frances A. Xin
2013 Amy Ashworth, Naing Bajaj, Adrienne R. Klinger, Anna Lang, Douglas J. Saforo
2014 Wesley Cai, Cory V. Gerlach, Lukas Gora, Elaine Kuo, Virginia Mitchell, Kia Z. Perez-Vale, Ricardo Rivera-Soto, Bradley Rowland, Kelly Schlotman, Jennette Shoots, Kelly VanDenBerg
2015 Weelic Chong, Zuania Ideliz Cordero Badillo, Emily A. Daniel, Gifty Aboagye Dominah, Scott H. Freeburg, Kathryn E. Fulda, Samantha Hall, Alexander Jones, Megan M. Koenecke, Sloane Kathryn Miller, Latisha T. Pryor, Yssa Rodriguez, Nicole A. Sidebotham, Anna V. Wojcicki
2016 Sarah Delena Burnett, James M. Ding, Benjamin Alan Elser, Emily B. Fabyanic, Laura Fisch, Eduardo Aztlán González, Mina M. Huerta, Haydee M. Jacobs, Rachael A. McMinimy, Chimwemwe Mwase, Danyelle B. Osowski, Lizbeth Perez-Castro, Jiwon Seo, Carolyn Anne Smith, Stephanie N. Thiede, Nancy Ly Tran, Jamie Lee Weimer

Public Communications Award

The Public Communications Award is presented by the Society of Toxicology to an individual who has made a major contribution to broadening the awareness of the general public on toxicological issues through any aspect of public communications. The award should reflect accomplishments made over a significant period of time. Examples of qualifying media in which the nominated communication may appear are as follows: books, brochures, continuing education courses, databases, extension bulletins, magazines, newspapers (local or national), outreach, public presentations, public forums, radio and television scripts, and workshops. This award consists of a plaque and a monetary stipend.

Award Recipients

1994 Michael A. Kamrin
1995 Philip Abelson*
1996 Bruce N. Ames
1997 Audrey Gotsch
1999 Ann de Peyster
2001 Anna Shvedova
2002 Sam Kacew
2003 Charlene A. McQueen
2004 Kenneth Olden
2005 Robert Kreiger
2007 Linda S. Birnbaum
2010 Philip Wexler
2012 Martin A. Philbert
2013 Marti Lindsey
2014 David L. Eaton
2015 Andrew D. Maynard
2016 Steven Gilbert, Gary Ginsberg

SOT/SOT Endowment Fund/IUTOX Travel Award

(formerly known as SOT/AstraZeneca/IUTOX Travel Fellowships)

The Society of Toxicology sponsors travel awards administered by IUTOX and supported by the Society of Toxicology, and the SOT Endowment Fund. Awards are available to junior and senior scientists from a country where toxicology is underrepresented to assist with travel to attend the Society of Toxicology Annual Meeting.

Award Recipients

2002 Christophor Dishovsky (Bulgaria), Zoltan Gregus (Hungary), Maritza Rojas Martini (Venezuela), Choon-Nam Ong (Singapore), W. Wasowicz (Poland), Ping-kun Zhou (China)
2003 Jian-Hui Liang (China), Marjan G. Vracko (Slovenia), Eman A. Seif (Egypt)
2004 Cristina Bolaton (Philippines), P.K. Gupta (India), Salmaan Inayat-Hussain (Malaysia), Xianping Ying (China)
2005 Diana B. Apostolova (Bulgaria), Marite Arija Bake (Latvia), Teresa I. Fortoul (Mexico), Mary Gulumian (South Africa), He Jiliang (China), Khalidya Khamidulina (Russia), Livinus Orish Ebere Orisakwe (Nigeria), Songsak Srianujata (Thailand), Sinan Suzen (Turkey)
2006 Olanike Adeyemo (Nigeria), Deepak Argwal (India), Carlos Colangelo (Argentina), Sandra Demichelis (Argentina), Mumtaz Iscan (Turkey), Karolina Lyubomirova (Bulgaria), Osman Aly Osman (Egypt), Shuang-Qing Peng (China), Julia Radenkova-Saeva (Bulgaria)
2007 Hatem Ahmed (Egypt), Jiri Bajgar (Czech Republic), Ismet Çok (Turkey), Carlos Garcia (Peru), Wenceslao Kiat (Philippines), Calivarathan Latchoumycandane (Singapore), Fateheya Metwally (Egypt), Hilmi Orhan (Turkey), Nwoha Umunna (Nigeria)
2008 Jin-Ho Chung (Korea), Lyndy McGaw (South Africa), Kemal Buyukguzel (Turkey), Hande Gurer-Orhan (Turkey), Phillip Burcham (Australia), Sayed Bakry (Egypt), Zdravko Paskalev (Bulgaria), Gafer Rageh Ahmed (Egypt)
2009 Sema Burgaz (Turkey), Estefania G. Moreira (Brazil), Kolawole V. Olorunshola (Nigeria), Kelly P.K. Olympio (Brazil), Betzabet Quintanilla-Vega (Mexico), Jalila Ben Salah (Tunisia), Suleeporn Sangrajang (Thailand)
2010 Asongalem Emmanuel Acha (Cameroon), Ayse Basak Engin (Turkey), Ronnie A. D. Frazer-Williams (Sierra Leone), Yan Li (China), Jesus T. Olivero-Verbel (Colombia), Suresh V. S. Rana (India), Ganna Shayakhmetova (Ukraine), Vanessa Steenkamp (South Africa), Marcelo J. Wolansky (Argentina), Motao Zhu (China)
2011 Sonali Das (India), Rawiwan Maniratanachote (Thailand), Anoka A. Njan (Nigeria), Daam Settachan (Thailand), Osman S. Shaik (India), Songsak Srianujata (Thailand), Omoniyi Kayode Yemitan (Nigeria), Qinli Zhang (China), Bin Zhao (China)
2012 Oladipo Ademuyiwa (Nigeria), Murali Badanthadka (India), Sunisa Chaiklieng (Thailand), Xianju Huang (China), Zhenlie Huang (China), Guojun Li (China), Jianlin Lou (China), Maria Samayoa (Guatemala), Haixue Wang (China), Jingshu Zhang (China), Xiaofeng Zhang (China), Li Zhou (China)
2013 John I. Anetor (Nigeria), Kailen Boodhia (South Africa), Karina R. Caballero-Gallardo (Colombia), Osama S. El-Tawil (Egypt), Miriam Carolina Guzmán Quilo (Guatemala), Wafa Hassen (Tunisia), Saleem Khan (India), Wenceslao A. Kiat Jr. (Philippines), Ravinesh Mishra (India), Olubanke O. Ogunlana (Nigeria)
2014 Samir Abbès (Tunisia), Wafa Hassen (Tunisia), Gopabandhu Jena (India), Sameeh A. Mansour (Egypt), Siti N. Mubarokah (Indonesia), Olufunke E. Ola-Davies (Nigeria), Iyekhoetin M. Omoruyi (Nigeria), Ishiaq Omotosho (Nigeria), Muneeb U. Rehman (India), Yang Song (China), Jing Zhang (China)

2015 Khaled Abdou (Egypt),
Amos O. Abolaji (Nigeria),
Motunrayo G. Akande (Nigeria),
Huawei Duan (China),
Patient Guedenon (Benin),
Jin Hongtao (China),
Carine J. Marks (South Africa),
Davaadorj Rendoo (Mongolia),
Palanisamy Sankar (India),
Tawit Suriyo (Thailand)
2016 Khaled Abass (Egypt)
Hossein Hassanian-Moghaddam (Iran)
Elena Jardan (Republic of Moldova)
Monday Michael Onakpa (Nigeria)
Zanina Perevska (Macedonia)
Ella Joy N. Perez (Philippines)
Ganna Shayakhmetova (Ukraine)

SOT Regional Chapter Awards

Most SOT Regional Chapters provide awards to recognize outstanding students, postdoctoral scholars, or scientists throughout their career. Application requirements and deadlines vary. For more details refer to the award descriptions on the SOT website at **www.toxicology.org**, under Regional Chapters or the Awards and Fellowships section.

SOT Special Interest Group Awards

SOT Special Interest Groups provide awards to recognize outstanding students, postdoctoral scholars, or scientists throughout their career. Application requirements and deadlines vary. For more details refer to the award descriptions on the SOT website at **www.toxicology.org**, under Special Interest Groups or the Awards and Fellowships section.

SOT Specialty Section Student Awards

Most SOT Specialty Sections provide awards to recognize outstanding students, postdoctoral scholars, or scientists throughout their career at the SOT Annual Meeting. Application requirements and deadlines vary. For more details refer to the award descriptions on the SOT website at **www.toxicology.org**, under Specialty Sections or the Awards and Fellowships section.

SOT Undergraduate Intern Travel Award

Each year SOT funds several undergraduates for summer research projects in toxicology. To encourage these students to continue to pursue toxicology, SOT provides travel support for eligible students to present the work they completed during the summer at the next Annual Meeting.

Award Recipients

2015 Hillary K. Markey, Royce Harrison Nichols
2016 Jessica Ray

Toxicology Landmarks Program

Presented 2012–2013

Recipients of the Toxicology Landmarks Program Award no longer offered may be found on the SOT Website at **www.toxicology.org**.

Translational Impact Award

The Translational Impact Award is presented to a scientist whose recent (in the past 10 years) outstanding clinical, environmental health, or translational research has improved human and/or public health in an area of toxicological concern. Scientists who are leaders in multidisciplinary team efforts who have contributed to alleviating toxicity-related health problems are particularly attractive candidates. The nominee may be a member or nonmember from any background (toxicologists, clinicians, basic scientists, epidemiologists, engineers, etc.). This award consists of a plaque and a monetary stipend. The recipient delivers the Translational Impact Award Lecture at the SOT Annual Meeting.

Award Recipients

2009 Thomas W. Kensler
2010 Kenneth E. McMartin
2011 Weida Tong
2012 John G. Benitez
2014 Timothy D. Phillips
2015 Jefferey Burgess
2016 Richard D. Beger

Translational/Bridging Travel Award

Two awards will be given annually to assist with travel to the SOT Annual Meeting. The SOT Awards Committee will confer two awards annually to either a mid- or senior-level scientist or clinician with at least ten years of postdoctoral research or clinical practice experience and who has an active research program, or currently is active in the practice of clinical toxicology, medical toxicology, disease prevention, or in the application of transitional toxicology. This award consists of a monetary stipend and a complimentary registration for the SOT Annual Meeting.

Award Recipient

2012 Xuemei Huang
2013 M. Shane Hutson
2016 Mohamed Salama

Undergraduate Diversity Student and Advisor Awards

The Undergraduate Diversity Program Student and Advisor Awards provide support for awardees from a diversity of backgrounds to participate in the Undergraduate Education Program at the SOT Annual Meeting. Recipients of the Undergraduate Diversity Student and Advisor Awards may be found on the SOT website at **www.toxicology.org**.

Undergraduate Educator Award

The Undergraduate Educator Award, supported by the Endowment Fund, is presented to an SOT member who is distinguished by outstanding contributions to the teaching of undergraduate students in toxicology and toxicology-related areas, and whose efforts support SOT's strategic efforts to "Build for the Future of Toxicology." Members of the Society of Toxicology who have made significant contributions to undergraduate education in toxicology may be nominated and should have a faculty appointment with primary responsibilities in the teaching of undergraduates and demonstrate a distinguished undergraduate teaching record. This award consists of a plaque and a monetary stipend.

Award Recipients

2011 Joan B. Tarloff*
2012 Sue M. Ford
2013 Sidhartha Ray
2014 William D. Atchison
2015 Mindy F. Reynolds
2016 Antonio T. Baines

Supported Award Descriptions

AstraZeneca Traveling Lectureship Awards

Presented 1990–2012

Recipients of the AstraZeneca Traveling Lectureship Award no longer offered may be found on the SOT website at **www.toxicology.org**.

Colgate-Palmolive Awards for Student Research Training in Alternative Methods

The purpose of the Colgate-Palmolive Awards for Student Research Training in Alternative Methods is to enhance student research training using *in vitro* methods or alternative techniques to reduce, replace, or refine use of animals in toxicological research. The Awards Committee will present the awards to graduate students. Two or more awards, up to $3,750 each, are available annually. Awards will defray travel, per diem, and training expenses.

The award is for expenses for training consistent with the goal of this award program. The training may include, but is not limited to, use of *in vitro* and *ex vivo* procedures, use of nonmammalian animal models, computer modeling, and structure-activity relationships. Graduate students may propose to develop expertise in relevant methodologies at (1) a laboratory away from their home institution; (2) a laboratory at their home institution that would not be available to them otherwise; or (3) approved workshops, symposia, or continuing education programs where hands-on training will be received. The training should help toxicology graduate students enhance their thesis or dissertation research.

Award Recipients

2000 Jason Gross
2001 Jason Biggs, Victoria Richards
2002 Kartik Shankar, Chad M. Vezina, Ryan L. Williams
2003 Sachin Devi, Midhun Korrapati, Pallavi Limaye
2004 Jaya Chilakapati, Marc A. Nascarella
2005 Vishaka Bhave, Ankur Dnyanmote, Jonathan Maher
2006 Mary Hassani, Prajakta Palkar
2007 Renee Gardner, Prajakta Palkar, Rohit Singhal, René Viñas
2008 Kimberly A. Hays, Haitian Lu
2009 Jennifer Cole, Katie Beth Paul, Samuel Peterson
2010 Maxwell C. K. Leung, David T. Szabo, Natalia M. VanDuyn
2011 Vijay More
2012 Agnes Forgacs, René Viñas
2013 Aaron Lulla, Jamie Moscovitz, Alexandra Munoz
2014 Laura E. Armstrong, Christin M. Grabinski
2015 Prajakta Shimpi
2016 Shih-Yu Chang, Tshepo Moto

Colgate-Palmolive Grants for Alternative Research

The Colgate-Palmolive Grants for Alternative Research will identify and support efforts that promote, develop, refine, or validate scientifically acceptable animal alternative methods to facilitate the safety assessment of new chemicals and formulations. Scientists at any stage of career progression may submit a proposal. High priority will be given to projects that use *in vitro* or nonanimal models, reproductive and developmental toxicology, neurotoxicology, systemic toxicology, sensitization, and acute toxicity. The maximum award is $40,000, made as a single lump payment. Awardees can re-apply for funding in subsequent years.

Award Recipients

2006 Rola Barhoumi, Abby Benninghoff, Jodie Flaws, Courtney Sulentic, Xiaouzhong Yu
2007 Rita L. Caruso, Daniel R. Cerven, Anne R. Greenlee, Glenn M. Walker
2008 Daniel R. Ceven, Duncan C. Ferguson, Shashi K. Ramiah
2009 Qin M. Chen, Timothy J. Shafer, Mehmet Uzumcu
2010 Patrick Allard, Duncan C. Ferguson, Mehmet Uzumcu
2011 Patrick Allard, Hao Zhu
2012 Mingzhu Fang, Jennifer Freeman
2013 Lei Li Kerr, Hao Zhu
2014 Patricia E. Ganey, Matthew Troese
2015 Alfredo Miranda de Goes, Lei Li Kerr
2016 David Pamies, Lei Yin

Colgate-Palmolive Postdoctoral Fellowship Award in *In Vitro* Toxicology

The Colgate-Palmolive Company sponsors the Colgate-Palmolive Postdoctoral Fellowship Award in *In Vitro* Toxicology through the Society of Toxicology to advance the development of alternatives to animal testing in toxicological research. The award is given annually and includes stipend and research-related costs up to $44,000 for one year (including funding to attend the SOT Annual Meeting to present this research). The award is available to postdoctoral trainees employed by academic institutions, federal/national laboratories, or research institutes worldwide. Preference will be given to applicants in their first year of postdoctoral study.

Award Recipients

1988 Ernest Bloom
1989 Gin Hsieh
1990 Dennis E. Chapman
1991 Anne Walsh
1992 Qin Chen
1993 Erika Cretton
1994 William Chan
1995 Bob Van de Water
1997 Alan Parrish
1999 Russell Thomas
2001 Kevin Kerzee, Christopher Reilly
2002 Kevin Kerzee
2003 Kimberly Miller
2004 Kimberly Miller
2005 Francis Tukov
2007 Aaron Rowland
2008 Aaron Rowland
2009 Ankur Dnyanmote
2010 Ankur Dnyanmote
2011 Cassandra Deering-Rice
2012 Melanie Adler
2013 Melanie Adler
2014 Jonathan H. Shannahan
2015 Fabian A. Grimm
2016 Katherine Dunnick

Colgate-Palmolive Traveling Lectureship in Alternative Methods in Toxicology Award

Presented 1996–2008

Recipients of the Colgate-Palmolive Traveling Lectureship in Alternative Methods in Toxicology Award no longer offered may be found on the SOT Website at **www.toxicology.org**.

Novartis Graduate Student Fellowship Award

Presented 1989–2012

Recipients of the Novartis Graduate Student Fellowship Award no longer offered may be found on the SOT website at **www.toxicology.org**.

Syngenta Fellowship Award in Human Health Applications of New Technologies

The Syngenta Fellowship Award in Human Health Applications of New Technologies is presented to either a third-year (or later) graduate student or a postdoctoral trainee. Funding in the amount of $15,000 is to support mode-of-action research aimed at characterizing dose-dependent effects of xenobiotics on mammalian systems in such a way that the causal sequence of key events underlying toxicity is elucidated. The work should permit a quantitative basis for extrapolation of the results from animal bioassays or animal models (*in silico, in vitro*) to humans at relevant human doses. The awardee will receive funding to travel to the SOT Annual Meeting to accept the award and for travel to a Syngenta facility to present the results.

Award Recipients

2010 Haitian Lu
2011 Michelle C. DeSimone
2012 Benjamin Moeller
2013 Julia E. Rager
2014 Dilshan S. Harischandra
2015 Alok Ranjan
2016 Thomas Luechtefeld

Endowment Fund Honor Roll of Contributors

The SOT Endowment Fund Board, on behalf of the entire membership of the Society of Toxicology, gratefully acknowledges the generosity of the many donors who made contributions to the SOT Endowment Fund from January 1, 2015 to December 31, 2015.

2015 Honor Roll of Contributors

—LIFETIME *PARACELSUS* CIRCLE VISIONARY—

$50,000 or more

• Jerry B. Hook • Jacqueline H. Smith •

—LIFETIME *PARACELSUS* CIRCLE FUTURIST—

$25,000–$49,999

• Daniel and Patricia Acosta • Barbara Gehring and Family •
• Roger O. and Kathleen M. McClellan • Dharm V. Singh • Elizabeth K. Weisburger •

—LIFETIME *PARACELSUS* CIRCLE LEADER—

$10,000–$24,999

• Mary and Joseph F. Borzelleca • Young Soo Choi • Lax Desai • John and Vera Doull • William C. Hays •
• Rudolph E. and Susan Jaeger • Shawn Douglas Lamb • Joe and Teri LeBeau • Lois D. Lehman-McKeeman • Frank C. Lu and Family •
• Harihara M. and Rekha Mehendale • Mark R. Montgomery • Dennis J. Paustenbach • James A. and Gloria Jean Popp • K. S. Rao •

—LIFETIME CONTRIBUTION BENEFACTORS—

$5,000–$9,999

• Linda S. and David Birnbaum • Matthew S. and Renee Bogdanffy • Brad Bolon • Balbir S. Brar •
• Dennis J. and Leigh Ann Burns Naas • Steven D. and Elaine S. Cohen • David L. Eaton • Marion F. Ehrich •
• The Family of Donald E. Gardner • Paul W. and Grace Ferguson • Bruce A. Fowler • Peter L. Goering • Jeff Handler • Eileen P. Hayes •
• Charles H. Hobbs • David Kepler • Curtis and Cherry Klaassen • James E. and Lisa Klaunig • Frank and Sally Kotsonis •
• Kannan Krishnan • Gary L. Lage • Robert E. Larson • John B. Morris • Gilbert S. Omenn •
• Robert E. and Ursula Osterberg • Martin A. Philbert • Ivan Rusyn • Rick G. Schnellmann • I. Glenn Sipes • Robert J. Staab •
• Thomas R. Sutter • Robert G. Tardiff • John E. Whalan • James S. Woods •

2015 Honor Roll of Contributors

Individual Contributors

—LIFETIME *PARACELSUS* CIRCLE MEMBERS—

An initial contribution of $500 or more and a commitment to make cumulative contributions of $5,000 or more within a 10-year period.

• Kim Boekelheide and Janet Austin • Jon C. and Judith R. Cook • George B. and Anna Karen Corcoran • Joan M. Cranmer • • Julia Yue Cui • Jack H. and Suellen Dean • Angelo and Christine Furgiuele • Michael A. Gallo • Donald E. and Elly Gardner • • Bernard D. Goldstein and Russellyn Carruth • Jay I. Goodman • Jack R. Harkema • Renee Hartsook • Bob and Diane Higginbotham • • Ronald N. Hines and D. Gail McCarver • Michael and Mona Holsapple • Ijaz S. Jamall • • Norbert and Beth Kaminski • Anumantha G. Kanthasamy • Elaine Valerie Knight • Robert H. Ku • Pamela J. Lein • Jose E. Manautou • • Gary and Patti Miller • Jeffrey S. Moffit • Nancy A. Monteiro-Riviere • Jay Murray • Adrian Nanez • Kenneth S. Ramos • • Donald J. Reed • Charles F. Reinhardt • Jason R. Richardson • Denise Robinson Gravatt • Clarissa L. Russell • • Robert A. Scala • William and Cristine Slikker • Cheryl Lyn Walker • Kendall B. and Gail A. Wallace • Helmut Zarbl •

—*PARACELSUS* CIRCLE CONTRIBUTORS—

$500 or more in 2015

• Karen A. Augustine • Norman J. and Valerie G. Barlow • William and Ann Breslin • Lorrene A. Buckley • • Editors of *Neurotoxicology and Teratology* • The Family of Edward W. Carney • Kristina D. Chadwick • Janice E. Chambers • • Bob Chapin • George and Maryellen Daston • Matthew Z. Dieter • Lori A. Dostal • Betty J. Eidemiller • Wendy Halpern • • Jack and Laurie Harkema • Stephen B. Harris • Kristina M. Hatlelid • Mark and Robin Henning • Bart A. Jessen • • Thomas B. Knudsen • Robert I. Krieger • Ernest Eugene McConnell • Sharon A. Meyer • Richard Nass • M. Margaret Pratt • • Prathibha Rao and Raja Mangipudy • Jennifer L. Rayner • Donald J. Reed • Jim and Mary Reif • Linda and Doug Roberts • • Bob Roth and Patti Ganey • Anne and Sten Wallin • Patricia Wells • Ronald K. and Mary C. Wolff •

—GOLD ENDOWMENT CONTRIBUTORS—

$250–$499 in 2015

• Dozie Amuzie • S. Satheesh Anand • Betina J. Lew • Abby A. Li and Pui-Yan Kwok • Susan Makris • Tonia Masson • • Curtis J. Omiecinski • Tetsuo Satoh • Melissa S. Tassinari • Jeff Tepper • James G. Wagner • Kristine L. Willett •

—SILVER ENDOWMENT CONTRIBUTORS—

$100–$249 in 2015

• Arthur A. Bickford • William K. Boyes • Sachin S. Devi • Monaem El-Hawari • Brenda Faiola • Elaine M. Faustman • • Suzanne E. Fenton • Gregory L. Finch • Jodi Anne Flaws • Vernetta and Rick Fluegeman • Sidney Green • • Kembra L. Howdeshell • William Irwin • Jeff and Delinda Johnson • Frank O. Johnson • Debra Kirchner • Mayur S. Mitra • • John O'Neil • Kathryn E. Page • Richard W. Pfeifer • MaryJane K. Selgrade • Weiyi Su • John A. Thomas • Stephen Thomas • • Tao Wang • Peter G. Wells • Frank Welsch • Raymond G. York •

—BRONZE ENDOWMENT CONTRIBUTORS—

$40–$99 in 2015

• Bruce K. Beyer • Christopher J. Bowman • Richard Thomas Di Giulio • Karen A. Heise-Gentile • Carole A. Kimmel • • Michael T. Koeferl • Galen William Miller • Kristen R. Ryan • Ainsley Weston •

2015 Honor Roll of Contributors

Institutional Contributors

—DIAMOND CONTRIBUTOR—
$10,000 or more
None

—PLATINUM CONTRIBUTOR—
$5,000–$9,999
None

—GOLD CONTRIBUTOR—
$2,500–$4,999
• Gradient •

—SILVER CONTRIBUTOR—
$1,000–$2,499
• Scialli Consulting LLC •

—EMPLOYER'S MATCHING CONTRIBUTIONS—
• Amgen Foundation on behalf of Adrian Nanez •
• Bristol-Myers Squibb Foundation on behalf of Kristina Dam Chadwick •
• Chevron Matching Employee Funds on behalf of Linda Roberts •
• Kimberly Clark Foundation on behalf of Sharmilee P. Sawant •
• Pfizer Foundation on behalf of Robert E. Chapin •
• Pfizer Foundation on behalf of Lori Dostal •
• Pfizer Foundation on behalf of Denise Robinson Gravatt •
• The Clorox Company on behalf of Kathryn E. Page •

Details about SOT 2015 Endowment Fund Award Recipients can be found on pages 74–77. For more information about the Award Recipients and the Endowment Fund, please visit ***www.toxicology.org/endowment.***

Endowment Fund Donor Contribution Form

SOT Endowment Family of Funds

The individual Funds that make up the SOT Endowment Fund are briefly described below. All are, or intend to become, Permanently Restricted Net Asset Funds, with their assets invested so their Funds will be continued in perpetuity with proceeds used for the purpose(s) identified by their original donor or those who provided leadership for creating each specific Fund.

Society Funds

- **Education**—Proceeds from this Fund support a margin of excellence in SOT Educational Activities.
- **Global Activities**—Proceeds from this Fund will be used to promote the involvement of the SOT in international activities such as those of the International Union of Toxicology.
- **SOT Strategic Priorities**—Proceeds from this Fund support the highest priority needs of the Society as determined by the SOT Council.

The Society of Toxicology is matching 1-to-1 dollar contributions to all permanently restricted funds (donations to temporarily restricted funds match will be vested once the fund has reached the required threshold for permanent status). The 1-to-1 match is effective for contributions made until June 30, 2016, or the $100,000 available for matching is expended.

Named Funds

These Funds match the interests of the donors with the future financial needs of SOT, its Specialty Sections (SS), Special Interest Groups (SIG), and Regional Chapters (RC). The SOT Awards Committee, Regional Chapters (RC), Special Interest Groups (SIG), and Specialty Sections (SS) administer these Fund award(s) as noted.

- **Daniel and Patricia Acosta Diversity Student Fund**—SOT Education Fund
- **Mary Amdur Student Award**—Inhalation and Respiratory SS
- **Edward W. Carney Trainee Award Fund**—Reproductive and Developmental Toxicology SS
- **Celebrating Women in Toxicology Award Fund**—Women in Toxicology SIG
- **Young Soo Choi Student Scholarship Award**—Korean Toxicologists Association in America SIG
- **Laxman S. Desai ASIO Student Award**—Association of Scientists of Indian Origin SIG
- **Diversity Initiatives**—Committee on Diversity Initiatives
- **John Doull Student Award**—Risk Assessment SS
- **Environmental Carcinogenesis Research Fellowship Fund**—Carcinogenesis SS
- **Founders Fund**—Founders Fund recipient selected by Awards Committee
- **Donald E. Gardner Inhalation Toxicology Education Award**—Inhalation and Respiratory SS
- **Perry J. Gehring Biological Modeling Student Award**—Biological Modeling SS
- **Perry J. Gehring Diversity Student Travel Award**—Committee on Diversity Initiatives
- **Perry J. Gehring Risk Assessment Student Award**—Risk Assessment SS
- **Harry W. Hays Memorial**—SOT Education and/or Strategic Priorities
- **Health and Environmental Science Institute Immunotoxicology Young Investigator Student Award**—Immunotoxicology SS
- **Vera W. Hudson and Elizabeth K. Weisburger Scholarship**—Women in Toxicology SIG
- **Frank C. Lu Food Safety Student Award**—Food Safety SS
- **Jean Lu Student Scholarship Award**—American Association of Chinese in Toxicology SIG
- **Roger O. McClellan Student Award**—Comparative and Veterinary SS and Toxicologic and Exploratory Pathology SS
- **Harihara Mehendale ASIO Student Award**—Association of Scientists of Indian Origin SIG
- **Metals Specialty Section Student Research Award**—Metals SS
- **Molecular and Systems Biology Student Award**—Molecular and Systems Biology SS
- **Sheldon D. Murphy Memorial Fund**—SOT Education and/or Student Travel
- **Toshio Narahashi Neurotoxicology Fellowship Award**—Neurotoxicology SS
- **Pacific Northwest Toxicology Development**—Pacific Northwest RC
- **Emil A. Pfitzer Drug Discovery Student Award**—Drug Discovery Toxicology SS
- **Gabriel L. Plaa Education Award**—Mechanisms SS
- **Renal Toxicology Fellowship Award**—Mechanisms SS
- **Robert J. Rubin Student Travel Award**—Mechanisms SS and Risk Assessment SS
- **Dharm V. Singh ASIO Student Award**—Association of Scientists of Indian Origin SIG
- **Dharm V. Singh Carcinogenesis Award**—Carcinogenesis SS
- **Carl C. Smith Student Mechanisms Award**—Mechanisms SS
- **Ronald G. Thurman Student Travel Award**—Mechanisms SS
- **Toxikon, A Preclinical Toxicology Organization, and Dr. Dharm Singh Association of Scientists of Indian Origin Award Fund**—Association of Scientists of Indian Origin SIG

Recognition Levels

Individual Recognition
(Based on July–June Fiscal Year Giving)

- ***Paracelsus* Circle**—$500 or more
- **Gold**—$250–$499 or more
- **Silver**—$100–$249 or more
- **Bronze**—$40–$99 in a given year

Individual Recognition
(Cumulative Contributions)

- **Lifetime *Paracelsus* Circle Visionary**—$50,000 or more
- **Lifetime *Paracelsus* Circle Futurist**—$25,000–$49,999
- **Lifetime *Paracelsus* Circle Leader**—$10,000–$24,999
- **Lifetime *Paracelsus* Circle Benefactor**—$5,000–$9,999
- **Lifetime *Paracelsus* Circle Member**—$5,000 Commitment

Corporate/Institutional Recognition information can be found on the SOT website under contributions.

Donors who give $40 or more will be identified by name on the SOT Endowment Fund website and other Fund literature unless they wish to remain anonymous. In the case of couples who are both members of the SOT, the Recognition Level is based on the contribution of each individual. Thus, a $500 joint contribution from a couple who are both members of the SOT is recognized at the Gold Level and a $1,000 joint contribution is recognized at the *Paracelsus* Circle Level.

501(c)3 Charitable Organization

The SOT Endowment Fund is part of the Society of Toxicology, a charitable, nonprofit, 501(c)3 organization under the Internal Revenue Code. The SOT Tax Identification Number is 52-605-7050. Contributions to the SOT Endowment Fund typically will be considered tax-deductible contributions. The Society of Toxicology will provide written acknowledgment of all contributions made to the SOT Endowment Fund.

SOT | Society of Toxicology
ENDOWMENT
Investing in the Future ...

Donor Contribution Form

The SOT Endowment Fund is a family of Funds created to match the interests of Donors with the future financial needs of the SOT, its Specialty Sections, Special Interest Groups, and Regional Chapters. The individual Funds and Recognition Levels are briefly described on the proceeding page.

Contribution Information

☐ I wish to be identified by name as an Endowment Fund Donor by Recognition Level, as shown on the proceeding page. Name for acknowledgment:

_____

☐ I do not want to be publicly identified as a Donor; I wish to remain anonymous.

☐ I intend to contribute $5,000 or more within ten years in order to be recognized as a **Lifetime *Paracelsus* Circle Member**.
(For budget purpose only—not legally enforceable.)

☐ My employer will match my contribution.
(Please enclose your employer's Matching Gift Form)

Employer _____

Please contact me concerning the following:

☐ To assist in arranging a Corporate Gift/Stock or other assets.

☐ Naming the SOT Endowment Fund in my Will or Trust.

☐ Purchasing a Charitable Gift Annuity.

☐ Establishing a new Fund.

☐ Contributing securities, property, etc.

☐ Other _____

☐ I am giving my gift ($500 minimum):

In memory of _____

In honor of _____

Mail or Fax to:

Society of Toxicology Endowment Fund
1821 Michael Faraday Drive, Suite 300
Reston, VA 20190

Fax: 703.438.3113

Donor Information

Name			
Affiliation			
Address			
City		State/Region	
Country		Zip	
Telephone		Fax	
Email			

Contributions of $500 or greater may be allocated to one or more funds in increments of $250 per fund.

General Purpose Funds

Education	$
Global Activities	$
SOT Strategic Priorities	$

Named Funds

(Listed on the proceeding page)

	$
	$
	$
	$
	$
	$
TOTAL	$

Payment

☐ Enclosed is a check for $ _____ Check # _____
(Payable to "Society of Toxicology")

☐ AMEX ☐ Discover ☐ Diners ☐ MasterCard ☐ Visa

Credit Card #		Exp Date	
Name on Card			
Signature			
Date			

Individuals who are interested in making a donation to create a specific purpose Fund or individuals from a Specialty Section or other formal/informal group who are interested in providing leadership for creating a specific purpose Fund are encouraged to contact Tonia Masson at SOT Headquarters by telephone: 703.438.3115 or email: tonia@toxicology.org.

Notes

Notes

Notes

Notes

Notes

Notes

Notes

Notes

SOT Global Partners

The Society of Toxicology has established a special category for private, public, and not-for-profit organizations that wish to contribute to the success of SOT toward "creating a safer and healthier world by advancing the science and increasing the impact of toxicology." These organizations provide support for activities aligned with the prediction and prevention of toxicity and disease.

AbbVie
Abbott Park, Illinois

American Petroleum Institute
Washington, DC

AstraZeneca
Mecclesfield, United Kingdom

Bristol-Myers Squibb Company
Princeton, New Jersey

Celgene Corporation
Summit, New Jersey

Charles River
Wilmington, Massachusetts

Chevron Corporation
San Ramon, California

The Coca-Cola Company
Atlanta, Georgia

Colgate-Palmolive Company
Piscataway, New Jersey

Covance
Madison, Wisconsin

CRC Press/Taylor & Francis Group
Boca Raton, Florida

Dow Chemical Company
Midland, Michigan

Dow Corning Corporation
Midland, Michigan

The DuPont Haskell Global Centers for Health and Environmental Sciences
Newark, Delaware

Eli Lilly and Company
Indianapolis, Indiana

Envigo
East Millstone, New Jersey

ExxonMobil Biomedical Sciences, Inc.
Annandale, New Jersey

Genentech, Inc.
South San Francisco, California

Gilead Sciences, Inc.
Foster City, California

Honeywell International, Inc.
Morristown, New Jersey

Janssen Pharmaceutical Companies of Johnson & Johnson
Raritan, New Jersey

MPI Research
Mattawan, Michigan

Organovo, Inc.
San Diego, California

Oxford University Press
Oxford, United Kingdom

Pfizer, Inc.
Groton, Connecticut

Procter & Gamble Company
Cincinnati, Ohio

Regeneron Pharmaceuticals, Inc.
Tarrytown, New York

Sanofi
Bridgewater, New Jersey

SNBL USA, Ltd.
Everett, Washington

Syngenta Crop Protection, Inc.
Greensboro, North Carolina

Takeda Pharmaceutical Company Limited
Cambridge, Massachusetts

TERA Center, University of Cincinnati
Cincinnati, Ohio

Western Slope Laboratory, LLC
Troy, Michigan

WIL Research Laboratories, LLC
Ashland, Ohio

WuXi AppTec
Saint Paul, Minnesota

XRpro Sciences, Inc.
Cambridge, Massachusetts

If your organization is interested in participating in the SOT Global Partner program, please contact marcia@toxicology.org.

Headquarters Staff

Society of Toxicology Headquarters
1821 Michael Faraday Drive, Suite 300, Reston, Virginia 20190
Tel: 703.438.3115 • Fax: 703.438.3113 • Email: sothq@toxicology.org • Website: **www.toxicology.org**

Questions? Tel: 703.438.3115 | SOT Headquarters Staff Contacts

Executive Director
Clarissa L. Russell — Extension 1455
clarissa@toxicology.org

Deputy Executive Director
Tonia Masson — Extension 1433
tonia@toxicology.org

Awards and Fellowships
Raul Suarez — Extension 1461
raul@toxicology.org

Career Resource and Development
Kevin Merritt — Extension 1601
kevin@toxicology.org

Continuing Education
Rachel Frohberg — Extension 1435
rachel@toxicology.org

Education and K–12 Activities
Betty Eidemiller — Extension 1430
bettye@toxicology.org

Exhibits
Tonja Morrow — Extension 1454
tmorrow@toxicology.org

Endowment
Jim Dailey — Extension 1428
jimd@toxicology.org

Global Gallery of Toxicology
Kevin Merritt — Extension 1601
kevin@toxicology.org

Marketing and Advertising Opportunities
Tonja Morrow — Extension 1454
tmorrow@toxicology.org

Media
Michelle Werts — Extension 1640
michelle@toxicology.org

Meetings and Housing
Heidi Prange — Extension 1424
heidi@toxicology.org

Membership
Rosibel Alvarenga — Extension 1432
rosibel@toxicology.org

Kimberly von Brook — Extension 1600
kimberly@toxicology.org

Zoë Weinstein — Extension 1607
zoe@toxicology.org

Past Presidents' 5K Fun Run/Walk
Amy Willis — Extension 1607
amy@toxicology.org

Regional Chapters
Ashley Pomper — Extension 1402
ashley@toxicology.org

Registration
Jim Dailey — Extension 1428
jimd@toxicology.org

Satellite and Ancillary Meetings
Amy Willis — Extension 1406
amy@toxicology.org

Scientific Program
David Rossé — Extension 1438
davidr@toxicology.org

SOT Global Partners
Marcia Lawson — Extension 1446
marcia@toxicology.org

Special Interest Groups
Ashley Pomper — Extension 1402
ashley@toxicology.org

Specialty Sections
Raul Suarez — Extension 1461
raul@toxicology.org

Support Opportunities
Laura Helm — Extension 1403
laura@toxicology.org

Volunteer Information
Rosibel Alvarenga — Extension 1432
rosibel@toxicology.org

Support SOT

Support Opportunities

Supporting the SOT Annual Meeting demonstrates an organization's commitment to the Society's mission of "creating a safer and healthier wold by advancing the science and increasing the impact of toxicology." Organizations that support the SOT Annual Meeting receive acknowledgement in publications, scientific sessions, and on-site via signage. But in addition, SOT supporting organizations gain an increase in awareness of their services and programs from SOT members and Annual Meeting attendees.

Opportunities to support the Society exist year-round at many levels. If you are interested in supporting the Society, contact Laura Helm at laura@toxicology.org. Please see **www.toxicology.org** for additional details.

Five levels of support are available:

- Diamond ($10,000 or more)
- Platinum ($5,000–$9,999)
- Gold ($2,500–$4,999)
- Silver ($2,000–$2,499)
- Contributor ($1,000–$1,999)

Please see **www.toxicology.org** for more details.

Marketing and Advertising Opportunities

Being present at the SOT Annual Meeting and ToxExpo allows your organization to connect with thousands of individuals. Maximize your organization's presence by reaching out to attendees with a wide variety of marketing opportunities that deliver your organization's message.

Put your logo on pens or notepads that will be available to attendees in registration, Continuing Education courses and committee meetings. Place an advertisement on the SOT Mobile App or on the Mobile Charging Stations. Provide attendees with a custom conference tote bag imprinted with your company logo or position your organization's message on the escalators located in the heart of the convention center. Invest in your presence at the premier event for industry leaders. Visit **www.toxexpo.com** for complete details.

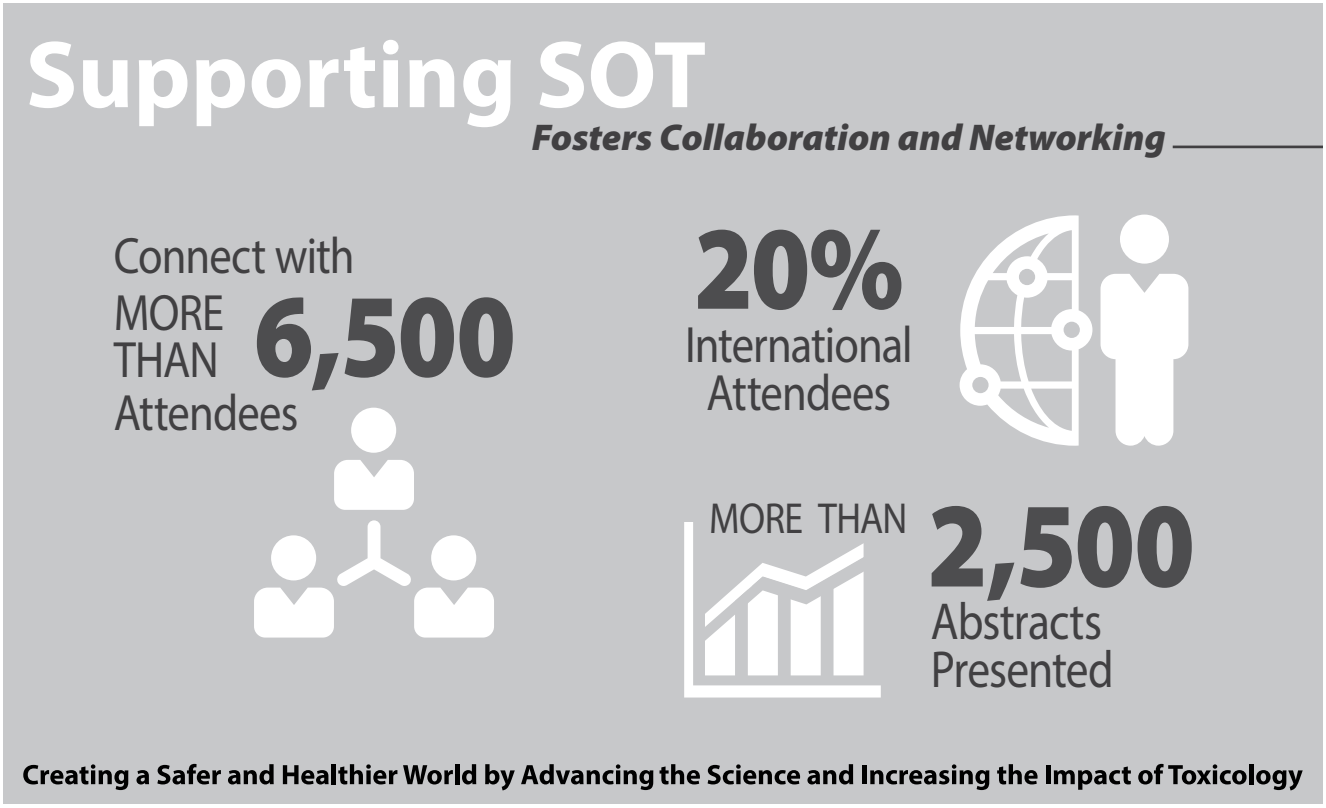
Special Mention and Thank You

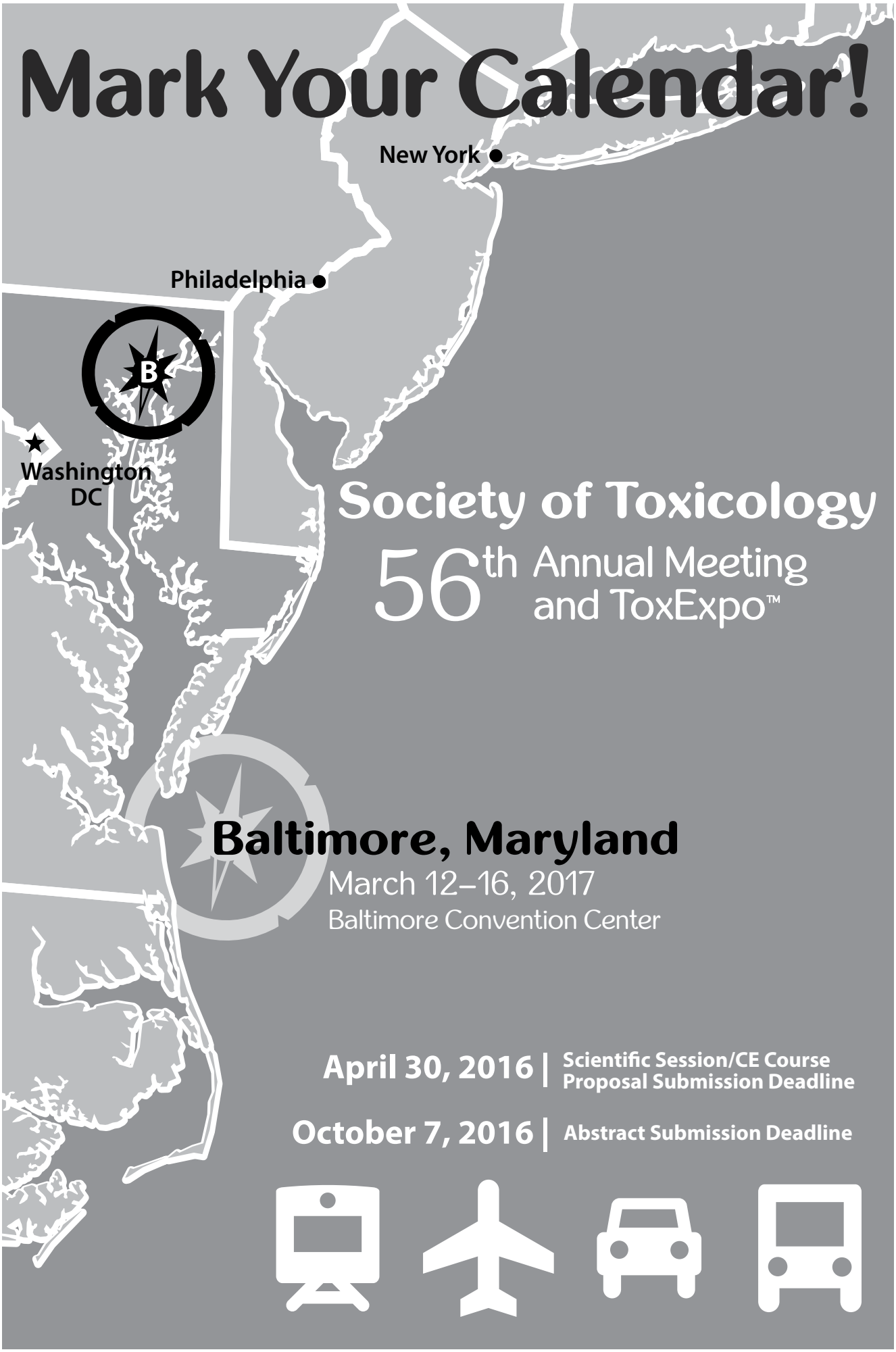
CiToxLAB—Attendee Bags

MilliporeSigma (BioReliance/EMD Millipore)—Lanyards

PreLabs—Hotel Room Keycards

ToxServices LLC—Notepads




Mark Your Calendar!
New York
Philadelphia
B
Washington DC
Society of Toxicology
56th Annual Meeting and ToxExpo™
Baltimore, Maryland
March 12–16, 2017
Baltimore Convention Center
April 30, 2016 | Scientific Session/CE Course Proposal Submission Deadline
October 7, 2016 | Abstract Submission Deadline

The Society of Toxicology appreciates the generous contributions of the 55th Annual Meeting Supporters

Platinum
($5,000–$9,999)

BioReliance
Janssen Pharmaceutical Companies of Johnson & Johnson
Lilly USA, LLC
Takeda
ToxServices LLC
US Food and Drug Administration

Gold
($2,500–$4,999)

AbbVie
ACS Publications
Allergan Foundation, The
CiToxLAB
DuPont Haskell Global Centers for Health and Environmental Sciences
Eastman Charitable Foundation
EUROTOX 2016
ExxonMobil Biomedical Sciences, Inc.
Genentech, Inc.
Gilead Sciences, Inc.
Gradient
LikardaBio
NSF International
TERA Center, University of Cincinnati

Silver
($2,000–$2,499)

Academy of Toxicological Sciences (ATS)
American College of Toxicology (ACT)
Battelle
Calvert Labs
Environmental Mutagenesis and Genomics Society (EMGS)
Human Toxicology Project Consortium (HTPC)
MRIGlobal
Research Institute for Fragrance Materials, Inc.
Safety Pharmacology Society (SPS)
Society of Toxicologic Pathology (STP)
Teratology Society (TS)
WIL Research

Contributor
($1,000–$1,999)

Eisai, Inc.
IDEXX BioResearch
MilliporeSigma
PepsiCo

The Society of Toxicology appreciates the generous contributions of the 55th Annual Meeting Supporters

(as of January 22, 2016)

Diamond

($10,000 or more)

Boehringer Ingelheim Pharmaceuticals, Inc.

Bristol-Myers Squibb

Charles River

Colgate-Palmolive Company

National Institute of Environmental Health Sciences (NIEHS)

Novartis

Pfizer Inc

Roche, Inc.

Sanofi

SOT Endowment Fund

Syngenta

WuXi AppTec

55th Annual Meeting and ToxExpo™

Society of Toxicology

1821 Michael Faraday Drive, Suite 300 • Reston, VA 20190

T: 703.438.3115 • F: 703.438.3113 • Email: sothq@toxicology.org

www.toxicology.org

FSC Mixed Sources

Product group from well-managed forests, controlled sources and recycled wood or fiber

Cert no. XXX-XXX-XXXX

www.fsc.org

© 1996 Forest Stewardship Council

We are proud to print this publication entirely on Forest Stewardship Council certified paper. FSC® certification ensures that the paper in this publication contains fiber from well-managed and responsibly harvested forests that meet strict environmental and socio-economic standards.