55th Annual Meeting and ToxExpo™
March 13–17, 2016
New Orleans, Louisiana
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

Society of Toxicology
New Orleans
Louisiana
2016
55th Annual Meeting and ToxExpo
Scientific Program Overview

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)

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)
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| 9:30 AM to 12:15 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) |
| 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) |
| 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) |
| 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                    | 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)  
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• Assessments of Nanomaterials Along Their Lifecycle (p174) |
| 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)  
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• Assessments of Nanomaterials Along Their Lifecycle (p174) |
| 9:30 AM to 12:15 PM | 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)  
• Zebrafish Models: Advances and Applications in DART (p186) |
| 12:30 PM to 1:15 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)  
• 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)  
• Toxicologic Legacies of Major 21st Century Man-Made/Natural Disasters (p176)  
• AhR and Disease Processes (p177)  
• Pluripotent Stem Cells in Cardiovascular Research (p177) |
| 4:15 PM to 6:00 PM | WORKSHOP SESSIONS                    | Preclinical (Safety) Toxicology Testing Predicts the Clinical Outcome  
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• Zebrafish Models: Advances and Applications in DART (p186) |
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POSTER SESSIONS
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- 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)
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- 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)
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- Food Safety/Nutrition 1 ♥ (p217)
- Gene Regulation and Signal Transduction ♦ (p218)
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- Neurotoxicology—Dopaminergic Systems and Toxicants ☛ (p221)
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- 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
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- 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)
- 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)
- Effects of Food-Associated Agents on Inflammation, Metabolic Disease, and Cancer ♥ (p234)
- Nrf2 in Redox Biology (p244)

4:45 PM to 6:15 PM
SYMPOSIUM SESSIONS
- Cannabis in the Courtyard ☛ (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)
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- Nrf2 in Redox Biology (p244)

9:30 AM to 4:30 PM
RESEARCH FUNDING INSIGHTS
- Network with Program Officers (p239)

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)
### 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)*

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### 12:30 PM to 1:50 PM
**Roundtable Session**
- Combination Toxicology: Are We Testing the Right Things? (p267)

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### 1:15 PM to 4:30 PM
**Poster Sessions**
- Alternative *In Vitro* Toxicity Models ✦
- Animal Models of Disease (p275)
- Animal Models: Methods and Measurements (p276)
- Cytochrome P450 (p279)
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- 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
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- 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)

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### 2:00 PM to 4:45 PM
**Symposium Session**
- 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)

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### 3:00 PM to 4:30 PM
**Platform Session**
- Heavy Metals: Mechanisms and Disease Pathogenesis ✦ (p293)
- Innovations in Toxicology Education (p293)

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### 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)*

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### Thursday, March 17
**5:00 PM to 6:20 PM**
**Education-Career Development Session**
- “Talksxicology”: Effective Oral Presentation Techniques (p295)
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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.

Access the SOT 2016 App at:

Use the Mobile Event App to manage your time and maximize your experience at the meeting!
Access the SOT 2016 App at:

**Google Play**

**App Store**

**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

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<td>Front Fold-Out Cover—Scientific Program Overview</td>
<td>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.</td>
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<td>Daily Calendar (pages 5–13)</td>
<td>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.</td>
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<td>Schedule by Event Name (pages 15–24)</td>
<td>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.</td>
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<tr>
<td>Scientific Session Index (pages 106–112)</td>
<td>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.</td>
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<td>Poster Session Schedules and Poster Board Numbering Map (pages 113–118)</td>
<td>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.</td>
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<td>Author Index (pages 312–336)</td>
<td>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.</td>
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<td>Abstract Keyword Index (pages 337–345)</td>
<td>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.</td>
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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.

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<td>Endorser(s):</td>
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<td>Abstract Number or Presentation Time</td>
<td>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).</td>
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<td>Poster Sessions</td>
<td>The poster board number is listed above the title of each individual poster presentation for easy reference.</td>
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Session Type Legend

- **E** 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
- **F** Featured Sessions (50–165 minutes)—Plenary, Keynote, and other special lectures
- **H** Historical Highlights (165 minutes)—Sessions that provide a review of a historical body of science that has impacted toxicology
- **I** 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
- **L** Platform Sessions (165 minutes)—Oral presentations that cover new areas, concepts, or data
- **P** Poster Sessions (195 minutes)—Topic-specific presentations that cover new areas, concepts, or data
- **R** 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

### Saturday

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<td>Council Orientation Meeting, Hilton Riverside Oak Alley</td>
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<td>American Board of Toxicology Board of Directors Meeting, Marriott at the Convention Center Fleur de Lis</td>
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<tr>
<td>1:00 PM to 2:30 PM</td>
<td>SOT C/T/MiRNA Biomarkers for Toxicology Poster Session and Luncheon, CC Room 217</td>
</tr>
<tr>
<td>1:00 PM to 5:00 PM</td>
<td>Council Meeting, Hilton Riverside Oak Alley</td>
</tr>
<tr>
<td>4:00 PM to 7:00 PM</td>
<td>Continuing Education Committee Walk-Through, CC Room 210</td>
</tr>
</tbody>
</table>

### Sunday

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 AM to 6:00 PM</td>
<td>@SOT Center—Internet Access, CC Lobby A</td>
</tr>
<tr>
<td>7:00 AM to 8:00 PM</td>
<td>Coat/Luggage Check, CC Great Hall Foyer</td>
</tr>
<tr>
<td>7:00 AM to 4:00 PM</td>
<td>Concession Stands, CC Lobby A</td>
</tr>
<tr>
<td>7:00 AM to 7:45 AM</td>
<td>Continuing Education Sunrise Mini-Course (Ticket Required), CC (See Signage or Mobile Event App for Room Location)</td>
</tr>
<tr>
<td>7:00 AM to 5:30 PM</td>
<td>@SOT Office, CC Room 226</td>
</tr>
<tr>
<td>7:00 AM to 5:30 PM</td>
<td>Speaker Ready Room (Scientific Session and ePoster Upload), CC Room 214</td>
</tr>
<tr>
<td>7:00 AM to 8:00 PM</td>
<td>Registration, CC Lobby A</td>
</tr>
<tr>
<td>7:30 AM to 9:30 AM</td>
<td>Career Resource and Development Committee Meeting, CC Room 225</td>
</tr>
<tr>
<td>8:00 AM to 5:00 PM</td>
<td>Guest/Spouse Hospitality Room, Hilton Riverside Trafalgar</td>
</tr>
<tr>
<td>8:00 AM to 5:00 PM</td>
<td>Housing Desk, CC Lobby A</td>
</tr>
<tr>
<td>8:00 AM to 12:00 Noon</td>
<td>Scientific Liaison Coalition Meeting, CC Room 202</td>
</tr>
<tr>
<td>8:00 AM to 5:00 PM</td>
<td>ToxExpo Set Up</td>
</tr>
<tr>
<td>8:00 AM to 9:45 AM</td>
<td>Undergraduate Education Program: Toxicology Presentations (CDI Travel Awarded and Registered Undergraduates), CC Room 272</td>
</tr>
<tr>
<td>8:15 AM to 12:00 Noon</td>
<td>Continuing Education Morning Courses (Ticket Required), CC (See Signage or Mobile Event App for Room Location)</td>
</tr>
<tr>
<td>9:00 AM to 11:30 AM</td>
<td>SOT FDA Colloquium Organizing Committee Meeting, CC Room 223</td>
</tr>
<tr>
<td>9:55 AM to 11:00 AM</td>
<td>Undergraduate Education Program: Interactive Presentation (CDI Travel Awarded and Registered Undergraduates), CC Room 275</td>
</tr>
<tr>
<td>11:10 AM to 12:00 Noon</td>
<td>Undergraduate Education Program: Toxicology Presentation (CDI Travel Awarded and Registered Undergraduates), CC Room 272</td>
</tr>
<tr>
<td>11:15 AM to 1:15 PM</td>
<td>Continuing Education Luncheon for Speakers, Committee, and Student Volunteers, CC Room 215</td>
</tr>
<tr>
<td>11:45 AM to 12:45 PM</td>
<td>Graduate Education Subcommittee Meeting, CC Room 225</td>
</tr>
<tr>
<td>12:00 Noon to 12:45 PM</td>
<td>Undergraduate Education Program: Luncheon and Networking (CDI Travel Awarded and Registered Participants), CC Room 275</td>
</tr>
<tr>
<td>12:00 Noon to 1:15 PM</td>
<td>University of Cincinnati's TERA Center: A Tension of Risk Issues, Hilton Riverside Belle Chasse</td>
</tr>
<tr>
<td>12:30 PM to 3:30 PM</td>
<td>Toxicological Sciences, Associate Editors Meeting, Hilton Riverside Ascot</td>
</tr>
<tr>
<td>12:55 PM to 1:55 PM</td>
<td>Undergraduate Education Program: Breakfast Sessions for Advisers—Tips for Advising Prospective Graduate Students (CDI Advisor Travel Awarded), CC Room 281</td>
</tr>
</tbody>
</table>

### March 12

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:55 PM to 1:55 PM</td>
<td>Undergraduate Education Program: Breakfast Sessions for Students—Planning for Graduate School (CDI Travel Awarded and Registered Undergraduates), CC Rooms 278, 279, 280</td>
</tr>
<tr>
<td>1:15 PM to 5:00 PM</td>
<td>Continuing Education Afternoon Courses (Ticket Required), CC (See Signage or Mobile Event App for Room Location)</td>
</tr>
<tr>
<td>2:05 PM to 2:55 PM</td>
<td>Undergraduate Education Program: Career Roundtables—Opportunities in Toxicology (CDI Travel Awarded and Registered Undergraduates), CC Rooms 278, 279, 280</td>
</tr>
<tr>
<td>3:00 PM to 5:00 PM</td>
<td>Gabriel L. Plaa Award Interviews (Award Applicants), CC Room 201</td>
</tr>
</tbody>
</table>

### March 13

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:00 PM to 5:00 PM</td>
<td>Undergraduate Education Program: Open Time with Academic Toxicology Program Directors and Internship Hosts (CDI Travel Awarded and Registered Undergraduates), CC Room 272</td>
</tr>
<tr>
<td>3:30 PM to 4:00 PM</td>
<td>Council Members Photographed, CC Great Hall C</td>
</tr>
<tr>
<td>4:00 PM to 5:00 PM</td>
<td>Awards Recipients Photographed, CC Great Hall C</td>
</tr>
<tr>
<td>4:00 PM to 5:00 PM</td>
<td>K–12 Subcommittee Meeting, CC Room 223</td>
</tr>
<tr>
<td>4:45 PM to 5:15 PM</td>
<td>Awards Ceremony Music—Performed by Clarence Johnson III, CC Great Hall B</td>
</tr>
<tr>
<td>5:15 PM to 6:30 PM</td>
<td>Awards Ceremony (All Attendees Welcome), CC Great Hall B</td>
</tr>
<tr>
<td>6:30 PM to 7:30 PM</td>
<td>Welcome Reception, CC Great Hall A</td>
</tr>
</tbody>
</table>

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.
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 platform, ToXchange is specifically designed for SOT Members.

Visit the SOT Pavilion, booth 500 in the Exhibit Hall, for on-site information.
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:15 AM</td>
<td>SOT Monitoring Breakfast (Registration Required)</td>
<td>CC Room R01</td>
</tr>
<tr>
<td>6:30 AM</td>
<td>Carcinogenesis Specialty Section Officers Meeting</td>
<td>Marriott at the Convention Center Julia</td>
</tr>
<tr>
<td>6:30 AM</td>
<td>Clinical and Translational Toxicology Specialty Section Officers Meeting</td>
<td>CC La Nouvelle Orleans Ballroom B</td>
</tr>
<tr>
<td>6:30 AM</td>
<td>Dermal Toxicology Specialty Section Officers Meeting</td>
<td>CC La Nouvelle Orleans Ballroom B</td>
</tr>
<tr>
<td>6:30 AM</td>
<td>Food Safety Specialty Section Officers Meeting</td>
<td>CC La Nouvelle Orleans Ballroom B</td>
</tr>
<tr>
<td>6:30 AM</td>
<td>Immuno toxicology Specialty Section Officers Meeting</td>
<td>CC La Nouvelle Orleans Ballroom B</td>
</tr>
<tr>
<td>6:30 AM</td>
<td>Regulatory and Safety Evaluation Specialty Section Officers Meeting</td>
<td>CC La Nouvelle Orleans Ballroom B</td>
</tr>
<tr>
<td>6:30 AM</td>
<td>Inhalation and Respiratory Specialty Section Officers Meeting</td>
<td>CC La Nouvelle Orleans Ballroom B</td>
</tr>
<tr>
<td>6:30 AM</td>
<td>Mechanics Speciality Section Officers Meeting</td>
<td>CC La Nouvelle Orleans Ballroom B</td>
</tr>
<tr>
<td>6:30 AM</td>
<td>Mixtures Specialty Section Officers Meeting</td>
<td>CC La Nouvelle Orleans Ballroom B</td>
</tr>
<tr>
<td>6:30 AM</td>
<td>Molecular and Systems Biology Speciality Section Officers Meeting</td>
<td>CC La Nouvelle Orleans Ballroom B</td>
</tr>
<tr>
<td>6:30 AM</td>
<td>Neurotoxicology Specialty Section Officers Meeting</td>
<td>CC La Nouvelle Orleans Ballroom B</td>
</tr>
<tr>
<td>6:30 AM</td>
<td>Past Presidents Breakfast</td>
<td>CC Room 215</td>
</tr>
<tr>
<td>6:30 AM</td>
<td>Regulatory and Safety Evaluation Specialty Section Officers Meeting</td>
<td>CC Room 240</td>
</tr>
<tr>
<td>6:30 AM</td>
<td>Risk Assessment Specialty Section Officers Meeting</td>
<td>CC La Nouvelle Orleans Ballroom B</td>
</tr>
<tr>
<td>6:45 AM</td>
<td>Women in Toxicology Special Interest Group Executive Committee Meeting</td>
<td>Hilton Riverside Durham</td>
</tr>
<tr>
<td>7:00 AM</td>
<td>SOT Center—Internet Access</td>
<td>CC Lobby A</td>
</tr>
<tr>
<td>7:00 AM</td>
<td>Coats/Luggage Check</td>
<td>CC Great Hall Foyer</td>
</tr>
<tr>
<td>7:00 AM</td>
<td>Concession Stands</td>
<td>CC Lobby A</td>
</tr>
<tr>
<td>7:00 AM</td>
<td>Registration</td>
<td>CC Room 226</td>
</tr>
<tr>
<td>7:00 AM</td>
<td>SOT Office</td>
<td>CC Room 226</td>
</tr>
<tr>
<td>7:00 AM</td>
<td>Speaker Ready Room</td>
<td>CC Room 214</td>
</tr>
<tr>
<td>7:00 AM</td>
<td>Reproductive and Developmental Toxicology Specialty Section Officers Meeting</td>
<td>CC Room 224</td>
</tr>
<tr>
<td>7:00 AM</td>
<td>Scientific Program Committee Walk-Through</td>
<td>CC Room 206</td>
</tr>
<tr>
<td>7:30 AM</td>
<td>Poster Set Up (See Poster Session Schedule or Mobile Event App for Details)</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>8:00 AM</td>
<td>Daily Plenary Session: Regenerative Medicine and Tissue Engineering, Lecturers: Doris Taylor,</td>
<td>CC Great Hall A</td>
</tr>
<tr>
<td>8:00 AM</td>
<td>Housing Desk</td>
<td></td>
</tr>
<tr>
<td>8:00 AM</td>
<td>Undergraduate Diversity Program Meeting Participation</td>
<td></td>
</tr>
<tr>
<td>9:00 AM</td>
<td>Exhibitor-Hosted Session: Covance</td>
<td>CC Room 212</td>
</tr>
<tr>
<td>9:00 AM</td>
<td>Exhibitor-Hosted Session: SOVIO Biotechnology</td>
<td>CC Room 211</td>
</tr>
<tr>
<td>9:00 AM</td>
<td>Exhibitor-Hosted Session: TERA Center, University of Cincinnati</td>
<td>CC Room 213</td>
</tr>
<tr>
<td>9:00 AM</td>
<td>Exhibitor-Hosted Session: US Environmental Protection Agency</td>
<td>CC Room 205</td>
</tr>
<tr>
<td>9:00 AM</td>
<td>Job Bank Center</td>
<td>CC Room 237</td>
</tr>
<tr>
<td>9:15 AM</td>
<td>Complimentary Coffee</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>9:15 AM</td>
<td>Speciality Section Officers Meeting</td>
<td></td>
</tr>
<tr>
<td>9:15 AM</td>
<td>Symposium Stands</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>9:15 AM</td>
<td>SOT Pavilion, Booth 500</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>9:15 AM</td>
<td>SOT Expo Exhibits Open</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>9:30 AM</td>
<td>IUTOX Global Collaboration Coffee</td>
<td>CC Rivergate Room</td>
</tr>
<tr>
<td>9:30 AM</td>
<td>Poster Sessions</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>9:30 AM</td>
<td>Research Funding Insights</td>
<td>CC Room 204</td>
</tr>
<tr>
<td>9:30 AM</td>
<td>Scientific Sessions</td>
<td>CC Room 205</td>
</tr>
<tr>
<td>10:00 AM</td>
<td>Trainee Discussion with Plenary Session Presenters: Drs. Taylor and Nicholas</td>
<td>CC Lobby A</td>
</tr>
<tr>
<td>10:30 AM</td>
<td>Exhibitor-Hosted Session: American Preclinical Services</td>
<td>CC Room 205</td>
</tr>
<tr>
<td>10:30 AM</td>
<td>Exhibitor-Hosted Session: Envigo</td>
<td>CC Room 213</td>
</tr>
<tr>
<td>10:30 AM</td>
<td>Exhibitor-Hosted Session: Lhasa Limited</td>
<td>CC Room 212</td>
</tr>
<tr>
<td>10:30 AM</td>
<td>Exhibitor-Hosted Session: NeuroScience Associates, Inc.</td>
<td>CC Room 211</td>
</tr>
<tr>
<td>11:30 AM</td>
<td>In Vitro Toxicology Lecture and Luncheon: Multicellular Model Systems for In Vitro Toxicity</td>
<td>CC Room 212</td>
</tr>
<tr>
<td>11:45 AM</td>
<td>Global Gallery of Toxicology Poster Session—Representative Attended</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>11:45 AM</td>
<td>Regional Chapter, Special Interest Group, and Specialty Section Poster Sessions—Representative</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>12:00 Noon</td>
<td>Continuing Education Committee Meeting</td>
<td>CC Room 224</td>
</tr>
<tr>
<td>12:00 Noon</td>
<td>Exhibitor-Hosted Session: Data Sciences International</td>
<td>CC Room 205</td>
</tr>
<tr>
<td>12:00 Noon</td>
<td>Exhibitor-Hosted Session: Inhalation Sciences Sweden AB</td>
<td>CC Room 211</td>
</tr>
<tr>
<td>12:00 Noon</td>
<td>Exhibitor-Hosted Session: Qualys Transporter Solutions, LLC</td>
<td>CC Room 213</td>
</tr>
<tr>
<td>12:00 Noon</td>
<td>Exhibitor-Hosted Session: US Environmental Protection Agency</td>
<td>CC Room 212</td>
</tr>
<tr>
<td>12:00 Noon</td>
<td>Research Funding Luncheon: Multiple Perspectives on the Grant Process</td>
<td>CC Room 205</td>
</tr>
<tr>
<td>12:00 Noon</td>
<td>Special Interest Group Collaboration Group Meeting</td>
<td>CC Room 202</td>
</tr>
<tr>
<td>12:15 PM</td>
<td>Biotechnology Specialty Section Mentoring Luncheon</td>
<td>CC Room 236</td>
</tr>
<tr>
<td>12:15 PM</td>
<td>Ethical, Legal, and Social Issues Specialty Section Meeting/Luncheon</td>
<td>CC Room 212</td>
</tr>
<tr>
<td>12:15 PM</td>
<td>REI Luncheon Seminar</td>
<td>Hilton Riverside Jefferson Ballroom</td>
</tr>
<tr>
<td>12:15 PM</td>
<td>Toxicologic and Exploratory Pathology Specialty Section Meeting/Luncheon</td>
<td>CC Room 235</td>
</tr>
<tr>
<td>12:30 PM</td>
<td>Merit Award Lecture: Forty-Five Years Modeling Dose-Response Relationships: An Unanticipated</td>
<td>CC Room R08</td>
</tr>
<tr>
<td>12:30 PM</td>
<td>Announcement of Daily Winner of Diamond Level Supporter Exhibitor Drawing</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>1:15 PM</td>
<td>Poster Set Up (See Poster Session Schedule or Mobile Event App for Details)</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>1:30 PM</td>
<td>Exhibitor-Hosted Session: BioReliance</td>
<td>CC Room 205</td>
</tr>
<tr>
<td>1:30 PM</td>
<td>Exhibitor-Hosted Session: MPI Research</td>
<td>CC Room 211</td>
</tr>
<tr>
<td>2:30 PM</td>
<td>Exhibitor-Hosted Session: Phase Holographic Imaging</td>
<td>CC Room 213</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>Speciality Section Collaboration and Communication Group Meeting</td>
<td>CC Room 202</td>
</tr>
<tr>
<td>3:30 PM</td>
<td>Complimentary Lemonade and Popcorn</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>Exhibitor-Hosted Session: In Vitro ADMET Laboratories LLC</td>
<td>CC Room 205</td>
</tr>
<tr>
<td>4:00 PM</td>
<td>Exhibitor-Hosted Session: Liron Laboratories</td>
<td>CC Room 213</td>
</tr>
<tr>
<td>4:00 PM</td>
<td>Exhibitor-Hosted Session: MultiCASE Inc</td>
<td>CC Room 211</td>
</tr>
<tr>
<td>5:00 PM</td>
<td>Exhibitor-Hosted Session: Sinclair Research Center</td>
<td>CC Room 212</td>
</tr>
<tr>
<td>5:30 PM</td>
<td>Undergraduate Diversity Program: Host Mentor and Peer Mentor Meeting</td>
<td>CC Room 281</td>
</tr>
<tr>
<td>3:30 PM</td>
<td>Undergraduate Diversity Program: Presentation (CJW Travel Awards)</td>
<td>CC Room 275</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>4:30 PM</td>
<td>Exhibit-Hosted Session: InSphero Inc. CC Room 202</td>
<td>CC Room 212</td>
</tr>
<tr>
<td>4:45 PM</td>
<td>Exhibit-Hosted Session: InSphero Inc. CC Room 212</td>
<td>CC Room 212</td>
</tr>
<tr>
<td>4:45 PM</td>
<td>American Board of Toxicology Open Mixer</td>
<td>CC Room 212</td>
</tr>
<tr>
<td>5:00 PM</td>
<td>Human Toxicology Project Consortium: Priorities and Opportunities for Replacement of Animal Tests: A Discussion with NICEATM and ICCVAM Leadership Hilton Riverside Belle Chase</td>
<td>CC Room 223</td>
</tr>
<tr>
<td>5:00 PM</td>
<td>Ohio Valley Regional Chapter Reception</td>
<td>CC Room 212</td>
</tr>
<tr>
<td>5:00 PM</td>
<td>Roundtable of Toxicology Consultants Annual Business Meeting Hilton Riverside Melrose</td>
<td>CC Room 212</td>
</tr>
</tbody>
</table>

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### March 14

**Scientific Program Overview by Day & Time**

**Monday**

**8:00 AM to 9:20 AM**

**DAILY BLENDED 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 A)

**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 Toxins: Mechanisms of Toxicity and Disease (Room 220)
- Nanotoxicology and Ocular Drug Delivery: One Size Does Not Fit All (Room R02)

**Regional Summit 21**

**9:30 AM to 4:30 PM**

**Research Funding Insights**

- Network with Program Officers (Room 204)

**12:00 Noon to 1:20 PM**

**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**

- Roundtable: 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**

- Poster 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

**2:00 PM to 4:45 PM**

**Workshop Sessions**

- Moving Beyond Prioritization towards True In Vitro-Based Safety Assessment (Room R08)
- 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**

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

**Platform Sessions**

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

**4:45 PM to 6:00 PM**

**SOT Industry Debate**

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

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 Workshops: 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

9:15 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 Lounge A

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 East A01

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 Life 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 Frontier 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

12:45 PM to 1:45 PM
Undergraduate Student Meeting (All Undergraduate Meeting Registrants Invited) CC Room 211

12:45 PM to 1:30 PM
Interests Group Lunch and Learn CC Room 215

12:45 PM to 1:45 PM
SOT Annual Business Meeting (All SOT Members Invited) CC Room 207

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

1:50 PM to 2:30 PM
Promotional/Exhibit Hall.

March 15

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

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
Mixture 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)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>6:00 PM to 7:30 PM</td>
<td>Molecular and Systems Biology</td>
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<td></td>
<td>Specialty Section Meeting/Reception</td>
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<td></td>
<td>Hilton Riverside Grand Salon 21</td>
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<tr>
<td>6:00 PM to 7:30 PM</td>
<td>Ocular Toxicology Specialty Section Meeting/Reception</td>
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<td></td>
<td>Hilton Riverside Grand Salon 12</td>
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<td>6:00 PM to 9:00 PM</td>
<td>Regional Chapters Mixer</td>
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<td>Angela King Gallery</td>
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<tr>
<td>6:00 PM to 7:30 PM</td>
<td>Superfund Research Program Meeting</td>
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<td>Marriott at the Convention Center Julia</td>
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<tr>
<td>2:00 PM to 4:45 PM</td>
<td>RESEARCH FUNDING INSIGHTS</td>
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<td>9:30 AM to 1:20 PM</td>
<td>LEADING EDGE IN BASIC SCIENCE AWARD LECTURE</td>
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<td>New Frontiers at the Nexus of Epidemiomics and Toxicology,</td>
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<td>Lecturer: Cheryl Lyn Walker, Texas A&amp;M Institute of Biosciences</td>
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<td>and Technology</td>
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<td>9:30 AM to 12:15 PM</td>
<td>POSTER SESSIONS</td>
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<td>(Exhibit Hall—See Poster Board Map on pages 113–117)</td>
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<tr>
<td></td>
<td>• 3D Cell and Organ-on-a-Chip Models</td>
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<td>• Alternative Models for Ocular and Skin Toxicity</td>
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<td>• Biological Modeling</td>
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<td>• Clinical and Translational Toxicology</td>
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<td>• Food Safety/Nutrition 1</td>
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<td>• Gene Regulation and Signal Transduction</td>
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<td>• Neurotoxicology—Dopaminergic Systems and Toxictants</td>
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<td>• Neurotoxicology—Neurodevelopmental Toxicity</td>
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<td>• Non-Pharmaceutical Safety Assessment</td>
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<td>• Oxidative Injury and Redox Biology</td>
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<td>• Particulate Matter Toxicology</td>
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<td>• Receptors</td>
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<td>9:30 AM to 12:15 PM</td>
<td>PLATFORM SESSIONS</td>
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<td>• Zebrath Models: Advances and Applications in DART (Room R04)</td>
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<tr>
<td>9:30 AM to 12:15 PM</td>
<td>WORKSHOP SESSIONS</td>
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<td>• Bioactivity-Based Margin of Exposure Safety Assessment:</td>
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<td>The Next Stop along the Road to 21st Century Safety Assessments</td>
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<td></td>
<td>(Great Hall B)</td>
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<td></td>
<td>• Maternal Exposure to Nanoparticles—How Does It Affect the Fetus?</td>
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<td>• Status, Mechanisms, and Future Directions</td>
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<tr>
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<td>(Room 220)</td>
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<tr>
<td></td>
<td>• Multi-Omics in Predictive Toxicology: Development and Application</td>
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<td></td>
<td>in Environmental Monitoring Programs (Room R08)</td>
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<td></td>
<td>• Scientific and Regulatory Advances in Safety Evaluation of</td>
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<td></td>
<td>Heavy Metals in Food (Room R02)</td>
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<tr>
<td>2:00 PM to 4:45 PM</td>
<td>SYMPOSIUM SESSIONS</td>
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<tr>
<td></td>
<td>• New Mechanistic Insights into How the Immune System</td>
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<td>Drives Hepatic Adverse Drug Reactions (Great Hall A)</td>
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<td>• Reciprocal Synergism: New Insights into Thyroid Hormone Action</td>
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<td>in Brain Development and Neurodevelopmental Toxicity (Room R08)</td>
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<td></td>
<td>• The Rule of Gene SLC30A10 on Manganese Homeostasis and</td>
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<td>Functional Outcomes; Implications for Homeostasis and</td>
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<td></td>
<td>Neurotoxicity (Room R02)</td>
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<td>• Using Multi- and Transgenerational Effects of Environmental</td>
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<td>Exposures in Diverse Animal Models for Assessment of Human Health</td>
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<td>Risks (Great Hall B)</td>
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<td>2:00 PM to 4:45 PM</td>
<td>WORKSHOP SESSIONS</td>
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<tr>
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<td>• Cannabis in the Courtroom (Room 217)</td>
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<td>• Read-Across: Building Scientific Confidence in the</td>
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<td>Development and Evaluation of Read-Across for Regulatory Purposes</td>
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<td></td>
<td>Using Tox21 Approaches (Room 220)</td>
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<td>• Safety Assessment of Topically Exposed Cosmetic</td>
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<td></td>
<td>Ingredients: Lessons Learned (Room R08)</td>
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<tr>
<td>4:45 PM to 6:15 PM</td>
<td>PLATFORM SESSIONS</td>
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<tr>
<td></td>
<td>• Nanotoxicology: In Vivo (Room R04)</td>
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<td>• Qualification of “New” DART Tools for Hazard Identification</td>
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<td></td>
<td>(Room R08)</td>
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<td></td>
<td>• SOT Annual Business Meeting (Room 207)</td>
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<td>Time</td>
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<tr>
<td>6:30 AM - 8:00 AM</td>
<td>Academy of Toxicological Sciences Board of Directors Meeting</td>
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<td>6:45 AM - 8:00 AM</td>
<td>Hispanic Organization of Toxicologists Special Interest Group Monitoring Breakfast</td>
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<tr>
<td>6:45 AM - 8:00 AM</td>
<td>Special Interest Group Collaboration Group Global Hot Topics Event</td>
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<tr>
<td>7:00 AM - 8:00 PM</td>
<td>Registration</td>
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<tr>
<td>7:00 AM - 8:30 AM</td>
<td>Committee on Diversity Initiatives Meeting</td>
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<tr>
<td>7:00 AM - 9:00 AM</td>
<td>Daytime Plenary Session: Keynote Medical or Mobile Event</td>
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<tr>
<td>7:00 AM - 4:45 PM</td>
<td>Distinguished Toxicology Scholar Award Lecture: Bioactivation: An Initiating Event in Chemical-Induced Tissue Injury, Lecturer: J. Glenn Sipes, University of Arizona</td>
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<tr>
<td>12:30 PM - 1:50 PM</td>
<td>Scientific Sessions CC (See Session Index on Pages 106–112 or Mobile Event App for Room Locations)</td>
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<tr>
<td>2:45 PM - 5:00 PM</td>
<td>Announcement of Diamond Level Supporter Exhibitor Drawing</td>
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<tr>
<td>5:00 PM - 7:30 PM</td>
<td>Drug Discovery Toxicology Specialty Section Meeting/Reception</td>
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<tr>
<td>9:00 AM - 1:15 PM</td>
<td>Peter Set-Up (See Poster Session Schedule or Mobile Event App for Details)</td>
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<tr>
<td>9:00 AM - 10:00 AM</td>
<td>Exhibitor-Hosted Session: Hepregen Corporation (now Ascendance Biotechnology, Inc)</td>
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<tr>
<td>9:15 AM - 10:15 AM</td>
<td>Complimentary Coffee CC Exhibit Hall</td>
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<tr>
<td>9:15 AM - 2:00 PM</td>
<td>Concession Stands CC Exhibit Hall</td>
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<tr>
<td>9:15 AM - 4:30 PM</td>
<td>Poster Sessions CC Exhibit Hall</td>
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<tr>
<td>9:30 AM - 12:45 PM</td>
<td>Scientific Sessions CC (See Session Index on Pages 106–112 or Mobile Event App for Room Locations)</td>
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<tr>
<td>10:00 AM - 11:00 AM</td>
<td>Trainee Discussion with Medical Research Council (MRC) Lecturer: Dr. Franklin (Ticket Required; Limited Seating)</td>
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<tr>
<td>10:30 AM - 11:30 AM</td>
<td>Exhibitor-Hosted Session: EnviGo</td>
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<tr>
<td>11:30 AM - 12:30 PM</td>
<td>Membership Committee Meeting CC Room 225</td>
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<tr>
<td>11:30 AM - 1:00 PM</td>
<td>National Council Meeting CC Room 214</td>
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<tr>
<td>12:00 Noon - 1:00 PM</td>
<td>Exhibitor-Hosted Session: Fraunhofer ITEM</td>
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<tr>
<td>12:00 Noon - 1:00 PM</td>
<td>Exhibitor-Hosted Session: ICF International CC Room 212</td>
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<tr>
<td>12:00 Noon - 1:30 PM</td>
<td>Regional Chapter Collaboration and Communications Committee (RC4) Meeting</td>
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<tr>
<td>12:15 PM - 1:45 PM</td>
<td>In Vitro and Alternative Methods Specialty Section Meeting/Lunchon Marriott at the Convention Center Blaine Kern Ballroom A</td>
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<tr>
<td>12:15 PM - 1:45 PM</td>
<td>Molecular and Systems Biology Specialty Section Mentoring Event Capdeville Restaurant</td>
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<tr>
<td>5:00 PM - 7:30 PM</td>
<td>Academic and Combining Product Specialty Section Meeting/Reception</td>
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<tr>
<td>9:00 AM - 10:00 AM</td>
<td>Exhibit Hosted Session: Charles River CC Room 212</td>
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<tr>
<td>9:30 AM - 10:00 AM</td>
<td>Exhibitor-Hosted Session: Eurofins BioPharma Product Testing and AnaPath</td>
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<tr>
<td>12:30 PM - 2:00 PM</td>
<td>Board of Publications Meeting</td>
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<tr>
<td>12:30 PM - 1:20 PM</td>
<td>Translational Impact Award Lecture. Translational Non-Invasive Biomarkers of Acetaminophen-Induced Liver Injury, Lecturer: Richard Beger, NCTR, US Food and Drug Administration</td>
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<tr>
<td>6:00 PM - 7:30 PM</td>
<td>Food Safety Specialty Section Meeting/Reception</td>
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<tr>
<td>9:00 AM - 10:00 AM</td>
<td>Exhibitor-Hosted Session: UNIConnect</td>
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<tr>
<td>12:30 PM - 1:50 PM</td>
<td>Poster Set-Up (See Poster Session Schedule or Mobile Event App for Details)</td>
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<tr>
<td>1:15 PM - 2:00 PM</td>
<td>Undergraduate Education Subcommittee Meeting</td>
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<td>2:00 PM - 4:45 PM</td>
<td>Undergraduate Educator Network Meeting</td>
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<tr>
<td>3:30 PM - 4:30 PM</td>
<td>Complimentary Lemonade and Popcorn</td>
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<tr>
<td>4:30 PM - 7:30 PM</td>
<td>Translational Impact Award Lecture. Translational Non-Invasive Biomarkers of Acetaminophen-Induced Liver Injury, Lecturer: Richard Beger, NCTR, US Food and Drug Administration</td>
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<td>Food Safety Specialty Section Meeting/Reception</td>
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<td>Exhibitor-Hosted Session: Hepregen Corporation (now Ascendance Biotechnology, Inc)</td>
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<tr>
<td>9:15 AM - 10:15 AM</td>
<td>Complimentary Coffee CC Exhibit Hall</td>
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<td>9:15 AM - 2:00 PM</td>
<td>Concession Stands CC Exhibit Hall</td>
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<td>9:30 AM - 12:45 PM</td>
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<td>Trainee Discussion with Medical Research Council (MRC) Lecturer: Dr. Franklin (Ticket Required; Limited Seating)</td>
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<td>Exhibitor-Hosted Session: EnviGo</td>
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<td>11:30 AM - 12:30 PM</td>
<td>Finance Committee Meeting CC Room 225</td>
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<tr>
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<tr>
<td>12:00 Noon - 1:00 PM</td>
<td>Exhibitor-Hosted Session: Fraunhofer ITEM</td>
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<tr>
<td>12:00 Noon - 1:00 PM</td>
<td>Exhibitor-Hosted Session: ICF International CC Room 212</td>
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<tr>
<td>12:15 PM - 1:45 PM</td>
<td>Molecular and Systems Biology Specialty Section Mentoring Event Capdeville Restaurant</td>
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<tr>
<td>5:00 PM - 6:20 PM</td>
<td>Scientific Sessions CC (See Session Index on Pages 106–112 or Mobile Event App for Room Locations)</td>
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<tr>
<td>5:00 PM - 7:30 PM</td>
<td>Translational Impact Award Lecture. Translational Non-Invasive Biomarkers of Acetaminophen-Induced Liver Injury, Lecturer: Richard Beger, NCTR, US Food and Drug Administration</td>
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</tbody>
</table>
Scientific Program Overview by Day & Time

Wednesday

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)

12:30 PM to 1:50 PM
ROUNDTABLE SESSION
- Combination Toxicology: Are We Testing the Right Things? (Room 208)

1:15 PM to 4:30 PM
POSTER SESSIONS
(Exhibit Hall—See Poster Board Map on pages 113–117)
- Toc121 Challenge to Build Predictive Models of Nuclear Receptor and Stress Response Pathways As Mediated by Exposure to Environmental Toxicants and Drugs (Room R04)

12:30 PM to 1:20 PM
DISTINGUISHED TOXICOLOGY SCHOLAR AWARD LECTURE
- Bioactivation: An Initiating Event in Chemical-Induced Tissue Injury. Lecturer: L. Glenn Sipes, University of Arizona (Room R02)

2:00 PM to 4:45 PM
SYMPOSIUM SESSIONS
- High-Content Imaging for Predictive Toxicology: Discriminating between Adverse and Adaptive Outcomes (Room 206)
- 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)

2:00 PM to 4:45 PM
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, Biodegradables, and Tissue Scaffolds (Room R04)

5:00 PM to 6:20 PM
SYMPOSIUM SESSIONS
- Heavy Metals: Mechanisms and Disease Pathogenesis (Room R06)
- Innovations in Toxicology Education (Room 206)

5:00 PM to 6:20 PM
PLATFORM SESSIONS
- “Talkxicology”: Effective Oral Presentation Techniques (Room 220)

March 16

2:00 PM to 4:55 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 Toxicology. 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
- “Talkxicology”: 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.psa.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.

Scientific Program Overview by Day & Time

### Thursday

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<tr>
<th>Time</th>
<th>Location</th>
<th>Event Description</th>
</tr>
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<tbody>
<tr>
<td>7:00 AM to 1:00 PM</td>
<td>Coat/Luggage Check</td>
<td>Room 213</td>
</tr>
<tr>
<td>7:00 AM to 11:30 AM</td>
<td>Speaker Ready Room</td>
<td>(Scientific Session and ePoster Upload)</td>
</tr>
<tr>
<td>7:00 AM to 1:00 PM</td>
<td>SOT Office</td>
<td>Room 226</td>
</tr>
<tr>
<td>8:00 AM to 10:00 AM</td>
<td>Guest/Spouse Hospitality Room Hilton Riverside Trafalgar</td>
<td></td>
</tr>
<tr>
<td>8:00 AM to 1:00 PM</td>
<td>Registration</td>
<td>Room 206</td>
</tr>
<tr>
<td>8:15 AM to 9:15 AM</td>
<td>SOT Strategic Plan Update: Summary and Implementation of the Career Advancement, Recruitment, and Education Process</td>
<td>Room 206</td>
</tr>
<tr>
<td>8:30 AM to 12:00 Noon</td>
<td>Concession Stands</td>
<td>Room 206</td>
</tr>
<tr>
<td>8:30 AM to 9:30 AM</td>
<td>Poster Set Up</td>
<td>(See Poster Session Schedule or Mobile Event App for Details)</td>
</tr>
<tr>
<td>9:30 AM to 12:15 PM</td>
<td>Symposium Session</td>
<td>Mitochondrial Dysfunction as a Pathogenic Mechanism and Therapeutic Target for Neurodegenerative Diseases (Room 208)</td>
</tr>
<tr>
<td>9:30 AM to 12:15 PM</td>
<td>Platform Sessions</td>
<td>Advances in Mammary Gland Biology and Toxicology</td>
</tr>
<tr>
<td>9:30 AM to 12:15 PM</td>
<td>Platform Sessions</td>
<td>Electronic Cigarette Research</td>
</tr>
<tr>
<td>9:30 AM to 12:15 PM</td>
<td>Platform Sessions</td>
<td>Flame Retardants</td>
</tr>
<tr>
<td>9:30 AM to 12:45 PM</td>
<td>Poster Sessions</td>
<td>Including Late-Breaking</td>
</tr>
<tr>
<td>12:30 PM to 4:00 PM</td>
<td>Satellite Meeting</td>
<td>Updates on 21st Century Toxicology Activities and Related Efforts</td>
</tr>
<tr>
<td>1:00 PM to 6:00 PM</td>
<td>Satellite Meeting</td>
<td>A Toxicology User’s Guide</td>
</tr>
<tr>
<td>1:00 PM to 6:00 PM</td>
<td>Satellite Meeting</td>
<td>To the Roadmap Epigenomics and ENCODE Data Resources</td>
</tr>
</tbody>
</table>

**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 inquiries.
- If a disruption occurs please follow directions and avoid becoming involved in the situation.

**Platforms Sessions**

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

**Poster Sessions**

- Early Breaking Poster Session details—Use Mobile Event App or Online Planner.
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.
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<thead>
<tr>
<th>Event:</th>
<th>Date:</th>
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<th>Room:</th>
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<tbody>
<tr>
<td>@SOT Center—Internet Access</td>
<td>Saturday, Mar 12</td>
<td>4:00 PM to 7:00 PM</td>
<td>Convention Center</td>
<td>Lobby A</td>
</tr>
<tr>
<td>@SOT Center—Internet Access</td>
<td>Sunday, Mar 13</td>
<td>7:00 AM to 6:00 PM</td>
<td>Convention Center</td>
<td>Lobby A</td>
</tr>
<tr>
<td>@SOT Center—Internet Access</td>
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<td>Lobby A</td>
</tr>
<tr>
<td>@SOT Center—Internet Access</td>
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<td>8:00 AM to 6:00 PM</td>
<td>Convention Center</td>
<td>Lobby A</td>
</tr>
<tr>
<td>@SOT Center—Internet Access</td>
<td>Thursday, Mar 17</td>
<td>8:00 AM to 1:00 PM</td>
<td>Convention Center</td>
<td>Lobby A</td>
</tr>
<tr>
<td>25-Year (Or More) Member Reception (By Invitation Only)</td>
<td>Sunday, Mar 13</td>
<td>7:00 PM to 8:00 PM</td>
<td>Convention Center</td>
<td>Lobby A Lounge</td>
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<thead>
<tr>
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<th>Location:</th>
<th>Room:</th>
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<tbody>
<tr>
<td>Academy of Toxicological Sciences Board of Directors Meeting</td>
<td>Wednesday, Mar 16</td>
<td>6:30 AM to 8:00 AM</td>
<td>Hilton Riverside</td>
<td>Durham</td>
</tr>
<tr>
<td>Academy of Toxicological Sciences Annual Business Meeting and Reception (Ticket Required)</td>
<td>Wednesday, Mar 16</td>
<td>8:30 PM to 10:00 PM</td>
<td>Hilton Riverside</td>
<td>Jefferson Ballroom</td>
</tr>
<tr>
<td>Allegheny-Erie and Michigan Regional Chapters Joint Reception</td>
<td>Monday, Mar 14</td>
<td>4:45 PM to 6:15 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 13</td>
</tr>
<tr>
<td>American Association of Chinese in Toxicology Special Interest Group Distinguished Chinese Toxicologist Lectureship Award and Reception</td>
<td>Monday, Mar 14</td>
<td>5:00 PM to 9:00 PM</td>
<td>Hilton Riverside</td>
<td>Grand Ballroom D</td>
</tr>
<tr>
<td>American Association of Chinese in Toxicology Special Interest Group Career Development Workshop</td>
<td>Tuesday, Mar 15</td>
<td>12:15 PM to 1:45 PM</td>
<td>Convention Center</td>
<td>Room R01</td>
</tr>
<tr>
<td>American Board of Toxicology Board of Directors Meeting</td>
<td>Saturday, Mar 12</td>
<td>12:00 Noon to 6:00 AM</td>
<td>Marriott at the</td>
<td>Fleur de Lis</td>
</tr>
<tr>
<td>American Board of Toxicology Open Mixer</td>
<td>Monday, Mar 14</td>
<td>4:45 PM to 6:15 PM</td>
<td>Hilton Riverside</td>
<td>Versailles Ballroom</td>
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<tr>
<td>Announcement of Daily Winner of Diamond Level Supporter Exhibitor Drawing</td>
<td>Monday, Mar 14</td>
<td>12:45 PM to 1:00 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Announcement of Daily Winner of Diamond Level Supporter Exhibitor Drawing</td>
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<td>Exhibit Hall</td>
</tr>
<tr>
<td>Announcement of Daily Winner of Diamond Level Supporter Exhibitor Drawing</td>
<td>Wednesday, Mar 16</td>
<td>12:45 PM to 1:00 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Announcement of Exhibitor Provided Raffle Prizes</td>
<td>Wednesday, Mar 16</td>
<td>12:30 PM to 12:45 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Arizona Night</td>
<td>Sunday, Mar 13</td>
<td>7:30 PM to 10:30 PM</td>
<td>Hilton Riverside</td>
<td>Oak Alley</td>
</tr>
<tr>
<td>Association of Scientists of Indian Origin Special Interest Group Reception</td>
<td>Monday, Mar 14</td>
<td>7:00 PM to 9:30 PM</td>
<td>Marriott at the</td>
<td>River Bend Ballroom</td>
</tr>
<tr>
<td>Association of Scientists of Indian Origin Special Interest Group Lunch and Learn</td>
<td>Tuesday, Mar 15</td>
<td>12:15 PM to 1:45 PM</td>
<td>Marriott at the</td>
<td>Julia</td>
</tr>
<tr>
<td>Audit Committee Meeting</td>
<td>Tuesday, Mar 15</td>
<td>9:00 AM to 10:00 AM</td>
<td>Convention Center</td>
<td>Room 225</td>
</tr>
<tr>
<td>Awards Ceremony Music—Performed by Clarence Johnson III</td>
<td>Sunday, Mar 13</td>
<td>4:45 PM to 5:15 PM</td>
<td>Convention Center</td>
<td>Great Ball B</td>
</tr>
<tr>
<td>Awards Ceremony (All Attendees Welcome)</td>
<td>Sunday, Mar 13</td>
<td>5:15 PM to 6:30 PM</td>
<td>Convention Center</td>
<td>Great Ball B</td>
</tr>
<tr>
<td>Awards Committee Meeting</td>
<td>Tuesday, Mar 15</td>
<td>7:00 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>Room 224</td>
</tr>
<tr>
<td>Awards Recipients Photographed</td>
<td>Sunday, Mar 13</td>
<td>4:00 PM to 5:00 PM</td>
<td>Convention Center</td>
<td>Great Hall C</td>
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<thead>
<tr>
<th>Event:</th>
<th>Date:</th>
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<th>Room:</th>
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<tbody>
<tr>
<td>Biological Modeling Specialty Section Meeting/Reception</td>
<td>Monday, Mar 14</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 18</td>
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<tr>
<td>Biotechnology Specialty Section Mentoring Luncheon</td>
<td>Monday, Mar 14</td>
<td>12:15 PM to 1:45 PM</td>
<td>Convention Center</td>
<td>Room 236</td>
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<tr>
<td>Biotechnology Specialty Section Meeting/Reception</td>
<td>Monday, Mar 14</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 3</td>
</tr>
<tr>
<td>Board of Publications Meeting</td>
<td>Wednesday, Mar 16</td>
<td>12:30 PM to 2:00 PM</td>
<td>Convention Center</td>
<td>Room 224</td>
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<th>Date:</th>
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<tbody>
<tr>
<td>Carcinogenesis Specialty Section Officers Meeting</td>
<td>Monday, Mar 14</td>
<td>6:30 AM to 8:00 AM</td>
<td>Marriott at the</td>
<td>Julia</td>
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<tr>
<td>Carcinogenesis Specialty Section Meeting/Reception</td>
<td>Tuesday, Mar 15</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 6</td>
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<tr>
<td>Cardiovascular Toxicology Specialty Section Meeting/Reception</td>
<td>Tuesday, Mar 15</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 1</td>
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<tr>
<td>Career Resource and Development Committee Meeting</td>
<td>Sunday, Mar 13</td>
<td>7:30 AM to 9:30 AM</td>
<td>Convention Center</td>
<td>Room 225</td>
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<tr>
<td>Central States Regional Chapter Breakfast Meeting</td>
<td>Tuesday, Mar 15</td>
<td>7:00 AM to 8:00 AM</td>
<td>Bourbon House</td>
<td>Restaurant</td>
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<tr>
<td>Clinical and Translational Toxicology Specialty Section Officers Meeting</td>
<td>Monday, Mar 14</td>
<td>6:30 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>La Nouvelle Orleans Ballroom B</td>
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<tr>
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<tr>
<td>Clinical and Translational Toxicology Specialty Section Meeting/Reception</td>
<td>Tuesday, Mar 15</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 16</td>
</tr>
<tr>
<td>Coat/Luggage Check</td>
<td>Sunday, Mar 13</td>
<td>7:00 AM to 8:00 PM</td>
<td>Convention Center</td>
<td>Great Hall Foyer</td>
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<td>Coat/Luggage Check</td>
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<td>7:00 AM to 6:00 PM</td>
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<td>Coat/Luggage Check</td>
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<td>Coat/Luggage Check</td>
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<td>Convention Center</td>
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</tr>
<tr>
<td>Coat/Luggage Check</td>
<td>Thursday, Mar 17</td>
<td>7:00 AM to 1:00 PM</td>
<td>Convention Center</td>
<td>Great Hall Foyer</td>
</tr>
<tr>
<td>Committee on Diversity Initiatives Reunion (Open to All, especially Current and Past Participants and Volunteers in the Undergraduate Education Program)</td>
<td>Saturday, Mar 12</td>
<td>7:30 PM to 8:30 PM</td>
<td>Convention Center (Use Hall H Entrance)</td>
<td>Room 275</td>
</tr>
<tr>
<td>Committee on Diversity Initiatives Meeting</td>
<td>Wednesday, Mar 16</td>
<td>7:00 AM to 8:30 AM</td>
<td>Convention Center</td>
<td>Room 216</td>
</tr>
<tr>
<td>Comparative and Veterinary Specialty Section Meeting/Luncheon</td>
<td>Tuesday, Mar 15</td>
<td>12:15 PM to 1:45 PM</td>
<td>Marriott at the Convention Center</td>
<td>River Bend Ballroom 1</td>
</tr>
<tr>
<td>Complimentary Coffee</td>
<td>Monday, Mar 14</td>
<td>9:15 AM to 10:15 AM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Complimentary Coffee</td>
<td>Tuesday, Mar 15</td>
<td>9:15 AM to 10:15 AM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Complimentary Lemonade and Popcorn</td>
<td>Monday, Mar 14</td>
<td>2:30 PM to 3:30 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Complimentary Lemonade and Popcorn</td>
<td>Tuesday, Mar 15</td>
<td>2:30 PM to 3:30 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Complimentary Lemonade and Popcorn</td>
<td>Wednesday, Mar 16</td>
<td>2:30 PM to 3:30 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
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<tr>
<td>Concession Stands</td>
<td>Sunday, Mar 13</td>
<td>7:00 AM to 4:00 PM</td>
<td>Convention Center</td>
<td>Lobby A</td>
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<td>Concession Stands</td>
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<td>Convention Center</td>
<td>Lobby A</td>
</tr>
<tr>
<td>Contemporary Concepts in Toxicology Conferences Committee Meeting</td>
<td>Wednesday, Mar 16</td>
<td>7:30 AM to 8:30 AM</td>
<td>Convention Center</td>
<td>Room 215</td>
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<tr>
<td>Continuing Education Committee Walk-Through</td>
<td>Saturday, Mar 12</td>
<td>4:30 PM to 5:15 PM</td>
<td>Convention Center</td>
<td>Room 210</td>
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<tr>
<td>Continuing Education Luncheon for Speakers, Committee, and Student Volunteers</td>
<td>Sunday, Mar 13</td>
<td>11:45 AM to 1:15 PM</td>
<td>Convention Center</td>
<td>Room 215</td>
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<tr>
<td>Continuing Education Sunrise Mini-Course (Ticket Required)</td>
<td>Sunday, Mar 13</td>
<td>7:00 AM to 7:45 AM</td>
<td>Convention Center (See Signage or Mobile Event App for Room Location)</td>
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<tr>
<td>Continuing Education Morning Courses (Ticket Required)</td>
<td>Sunday, Mar 13</td>
<td>8:15 AM to 12:00 Noon</td>
<td>Convention Center (See Signage or Mobile Event App for Room Location)</td>
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<tr>
<td>Continuing Education Afternoon Courses (Ticket Required)</td>
<td>Sunday, Mar 13</td>
<td>1:15 PM to 5:00 PM</td>
<td>Convention Center (See Signage or Mobile Event App for Room Location)</td>
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<td>Continuing Education Committee Meeting</td>
<td>Monday, Mar 14</td>
<td>12:00 Noon to 1:30 PM</td>
<td>Convention Center</td>
<td>Room 224</td>
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<tr>
<td>COSMOS DB Data Share Point Launch Event</td>
<td>Monday, Mar 14</td>
<td>5:00 PM to 7:00 PM</td>
<td>Hilton Riverside</td>
<td>Ascot</td>
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<tr>
<td>Council Orientation Breakfast</td>
<td>Saturday, Mar 12</td>
<td>9:00 AM to 9:30 AM</td>
<td>Hilton Riverside</td>
<td>Elmwood</td>
</tr>
<tr>
<td>Council Orientation Meeting</td>
<td>Saturday, Mar 12</td>
<td>9:30 AM to 11:30 AM</td>
<td>Hilton Riverside</td>
<td>Oak Alley</td>
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<tr>
<td>Council Luncheon</td>
<td>Saturday, Mar 12</td>
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<td>Hilton Riverside</td>
<td>Elmwood</td>
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<td>Council Meeting</td>
<td>Saturday, Mar 12</td>
<td>1:00 PM to 5:00 PM</td>
<td>Hilton Riverside</td>
<td>Oak Alley</td>
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<tr>
<td>Council Members Photographed</td>
<td>Sunday, Mar 13</td>
<td>3:30 PM to 4:00 PM</td>
<td>Convention Center</td>
<td>Great Hall C</td>
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<thead>
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<tbody>
<tr>
<td>Daily Plenary Session: Regenerative Medicine and Tissue Engineering, Lecturers: Doris Taylor, Texas Heart Institute; and Joan Nichols, University of Texas Medical Branch</td>
<td>Monday, Mar 14</td>
<td>8:00 AM to 9:20 AM</td>
<td>Convention Center</td>
<td>Great Hall A</td>
</tr>
<tr>
<td>Daily Plenary Session: Inflammation and Neurodegenerative Disease, Lecturers: Stephen Skaper, University of Padova; and Alan I. Faden, University of Maryland School of Medicine</td>
<td>Tuesday, Mar 15</td>
<td>8:00 AM to 9:20 AM</td>
<td>Convention Center</td>
<td>Great Hall A</td>
</tr>
<tr>
<td>Daily Plenary Session: Keynote Medical Research Council (MRC) Lecture, Lecturer: Robin J.M. Franklin, Wellcome Trust-MRC Cambridge Stem Cell Institute, University of Cambridge</td>
<td>Wednesday, Mar 16</td>
<td>8:00 AM to 9:20 AM</td>
<td>Convention Center</td>
<td>Great Hall A</td>
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<tr>
<td>Event:</td>
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<tr>
<td>Dermal Toxicology Specialty Section Officers Meeting</td>
<td>Monday, Mar 14</td>
<td>6:30 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>La Nouvelle Orleans Ballroom B</td>
</tr>
<tr>
<td>Dermal Toxicology Specialty Section Meeting/Reception</td>
<td>Monday, Mar 14</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 20</td>
</tr>
<tr>
<td>Distinguished Toxicology Scholar Award Lecture: Bioactivation: An Initiating Event in Chemical-Induced Tissue Injury, Lecturer: I. Glenn Sipes, University of Arizona</td>
<td>Wednesday, Mar 16</td>
<td>12:30 PM to 1:20 PM</td>
<td>Convention Center</td>
<td>Room R08</td>
</tr>
<tr>
<td>Drug Discovery Toxicology Specialty Section Mentoring Event</td>
<td>Tuesday, Mar 15</td>
<td>12:15 PM to 1:45 PM</td>
<td>Convention Center</td>
<td>Room 201</td>
</tr>
<tr>
<td>Drug Discovery Toxicology Specialty Section Meeting/Reception</td>
<td>Wednesday, Mar 16</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 16</td>
</tr>
<tr>
<td><strong>Education Committee Meeting</strong></td>
<td>Tuesday, Mar 15</td>
<td>6:45 AM to 8:15 AM</td>
<td>Convention Center</td>
<td>Room 225</td>
</tr>
<tr>
<td><strong>Endowment Fund Board Meeting</strong></td>
<td>Tuesday, Mar 15</td>
<td>12:00 Noon to 1:30 PM</td>
<td>Convention Center</td>
<td>Room 224</td>
</tr>
<tr>
<td><strong>Ethical, Legal, and Social Issues Specialty Section Meeting/Luncheon</strong></td>
<td>Monday, Mar 14</td>
<td>12:15 PM to 1:45 PM</td>
<td>Marriott at the River Bend Ballroom 1</td>
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<tr>
<td><strong>Exhibitor-Hosted Sessions:</strong></td>
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<tr>
<td>Exhibitor-Hosted Session: ACEA Biosciences and Cellular Dynamics International, A FUJIFILM Company</td>
<td>Tuesday, Mar 15</td>
<td>12:00 Noon to 1:00 PM</td>
<td>Convention Center</td>
<td>Room 213</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: Altasciences</td>
<td>Tuesday, Mar 15</td>
<td>9:00 AM to 10:00 AM</td>
<td>Convention Center</td>
<td>Room 205</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: American Preclinical Services</td>
<td>Monday, Mar 14</td>
<td>10:30 AM to 11:30 AM</td>
<td>Convention Center</td>
<td>Room 205</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: Axion BioSystems</td>
<td>Tuesday, Mar 15</td>
<td>4:30 PM to 5:30 PM</td>
<td>Convention Center</td>
<td>Room 211</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: Axol Biosciences</td>
<td>Tuesday, Mar 15</td>
<td>3:00 PM to 4:00 PM</td>
<td>Convention Center</td>
<td>Room 212</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: Battelle</td>
<td>Tuesday, Mar 15</td>
<td>10:30 AM to 11:30 AM</td>
<td>Convention Center</td>
<td>Room 213</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: BioReliance</td>
<td>Monday, Mar 14</td>
<td>1:30 PM to 2:30 PM</td>
<td>Convention Center</td>
<td>Room 205</td>
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<tr>
<td>Exhibitor-Hosted Session: BioReliance</td>
<td>Tuesday, Mar 15</td>
<td>3:00 PM to 4:00 PM</td>
<td>Convention Center</td>
<td>Room 213</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: ChanTest and Charles River</td>
<td>Tuesday, Mar 15</td>
<td>1:30 PM to 2:30 PM</td>
<td>Convention Center</td>
<td>Room 212</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: Charles River</td>
<td>Monday, Mar 14</td>
<td>1:30 PM to 2:30 PM</td>
<td>Convention Center</td>
<td>Room 212</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: Charles River</td>
<td>Tuesday, Mar 15</td>
<td>10:30 AM to 11:30 AM</td>
<td>Convention Center</td>
<td>Room 212</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: Charles River</td>
<td>Wednesday, Mar 16</td>
<td>9:00 AM to 10:00 AM</td>
<td>Convention Center</td>
<td>Room 212</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: Clyde Biosciences</td>
<td>Tuesday, Mar 15</td>
<td>4:30 PM to 5:30 PM</td>
<td>Convention Center</td>
<td>Room 212</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: Corning Life Sciences</td>
<td>Tuesday, Mar 15</td>
<td>10:30 AM to 11:30 AM</td>
<td>Convention Center</td>
<td>Room 211</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: Covance</td>
<td>Monday, Mar 14</td>
<td>9:00 AM to 10:00 AM</td>
<td>Convention Center</td>
<td>Room 212</td>
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<tr>
<td>Exhibitor-Hosted Session: Data Sciences International</td>
<td>Monday, Mar 14</td>
<td>12:00 Noon to 1:00 PM</td>
<td>Convention Center</td>
<td>Room 205</td>
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<tr>
<td>Exhibitor-Hosted Session: Ellegaard Göttingen Minipigs, Marshall BioResources, and CiToxLAB Scantox</td>
<td>Tuesday, Mar 15</td>
<td>1:30 PM to 2:30 PM</td>
<td>Convention Center</td>
<td>Room 205</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: emka TECHNOLOGIES</td>
<td>Tuesday, Mar 15</td>
<td>12:00 Noon to 1:00 PM</td>
<td>Convention Center</td>
<td>Room 211</td>
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<tr>
<td>Exhibitor-Hosted Session: Envigo</td>
<td>Monday, Mar 14</td>
<td>10:30 AM to 11:30 AM</td>
<td>Convention Center</td>
<td>Room 213</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: Envigo</td>
<td>Tuesday, Mar 15</td>
<td>9:00 AM to 10:00 AM</td>
<td>Convention Center</td>
<td>Room 213</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: Envigo</td>
<td>Wednesday, Mar 16</td>
<td>10:30 AM to 11:30 AM</td>
<td>Convention Center</td>
<td>Room 213</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: Eurofins BioPharma Product Testing and AnaPath</td>
<td>Wednesday, Mar 16</td>
<td>12:00 Noon to 1:00 PM</td>
<td>Convention Center</td>
<td>Room 211</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: Fraunhofer ITEM</td>
<td>Wednesday, Mar 16</td>
<td>12:00 Noon to 1:00 PM</td>
<td>Convention Center</td>
<td>Room 205</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: Hepregen Corporation (now Ascendance Biotechnology, Inc)</td>
<td>Wednesday, Mar 16</td>
<td>9:00 AM to 10:00 AM</td>
<td>Convention Center</td>
<td>Room 205</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: ICF International</td>
<td>Wednesday, Mar 16</td>
<td>12:00 Noon to 1:00 PM</td>
<td>Convention Center</td>
<td>Room 212</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: In Vitro ADMET Laboratories LLC</td>
<td>Monday, Mar 14</td>
<td>3:00 PM to 4:00 PM</td>
<td>Convention Center</td>
<td>Room 205</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: Inhalation Sciences Sweden AB</td>
<td>Monday, Mar 14</td>
<td>12:00 Noon to 1:00 PM</td>
<td>Convention Center</td>
<td>Room 211</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: InSphero Inc.</td>
<td>Monday, Mar 14</td>
<td>4:30 PM to 5:30 PM</td>
<td>Convention Center</td>
<td>Room 205</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: InSphero Inc.</td>
<td>Tuesday, Mar 15</td>
<td>1:30 PM to 2:30 PM</td>
<td>Convention Center</td>
<td>Room 213</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: Instem</td>
<td>Monday, Mar 14</td>
<td>4:30 PM to 5:30 PM</td>
<td>Convention Center</td>
<td>Room 212</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: Instem</td>
<td>Tuesday, Mar 15</td>
<td>4:30 PM to 5:30 PM</td>
<td>Convention Center</td>
<td>Room 213</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: Leadscape Inc., Lhasa Limited, and MultiCASE Inc.</td>
<td>Tuesday, Mar 15</td>
<td>4:30 PM to 5:30 PM</td>
<td>Convention Center</td>
<td>Room 205</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: Lhasa Limited</td>
<td>Monday, Mar 14</td>
<td>10:30 AM to 11:30 AM</td>
<td>Convention Center</td>
<td>Room 212</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: Liton Laboratories</td>
<td>Monday, Mar 14</td>
<td>3:00 PM to 4:00 PM</td>
<td>Convention Center</td>
<td>Room 213</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: MPI Research</td>
<td>Monday, Mar 14</td>
<td>1:30 PM to 2:30 PM</td>
<td>Convention Center</td>
<td>Room 211</td>
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<tr>
<td>Exhibitor-Hosted Session: MPI Research</td>
<td>Tuesday, Mar 15</td>
<td>9:00 AM to 10:00 AM</td>
<td>Convention Center</td>
<td>Room 211</td>
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<td>Event:</td>
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<tr>
<td>Exhibitor-Hosted Session: MultiCASE Inc</td>
<td>Monday, Mar 14</td>
<td>3:00 PM to 4:00 PM</td>
<td>Convention Center</td>
<td>Room 211</td>
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<tr>
<td>Exhibitor-Hosted Session: NeuroScience Associates, Inc.</td>
<td>Monday, Mar 14</td>
<td>10:30 AM to 11:30 AM</td>
<td>Convention Center</td>
<td>Room 211</td>
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<tr>
<td>Exhibitor-Hosted Session: NSF International/Health Sciences</td>
<td>Tuesday, Mar 15</td>
<td>3:00 PM to 4:00 PM</td>
<td>Convention Center</td>
<td>Room 205</td>
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<tr>
<td>Exhibitor-Hosted Session: Organovo</td>
<td>Tuesday, Mar 15</td>
<td>9:00 AM to 10:00 AM</td>
<td>Convention Center</td>
<td>Room 212</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: Phase Holographic Imaging</td>
<td>Monday, Mar 14</td>
<td>1:30 PM to 2:30 PM</td>
<td>Convention Center</td>
<td>Room 213</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: Promega Corporation</td>
<td>Tuesday, Mar 15</td>
<td>10:30 AM to 11:30 AM</td>
<td>Convention Center</td>
<td>Room 205</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: Qualyst Transporter Solutions, LLC</td>
<td>Monday, Mar 14</td>
<td>12:00 Noon to 1:00 PM</td>
<td>Convention Center</td>
<td>Room 213</td>
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<tr>
<td>Exhibitor-Hosted Session: Seahorse Bioscience, a part of Agilent Technologies</td>
<td>Monday, Mar 14</td>
<td>4:30 PM to 5:30 PM</td>
<td>Convention Center</td>
<td>Room 211</td>
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<tr>
<td>Exhibitor-Hosted Session: SenzaGen</td>
<td>Tuesday, Mar 15</td>
<td>1:30 PM to 2:30 PM</td>
<td>Convention Center</td>
<td>Room 211</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: Sinclair Research Center</td>
<td>Monday, Mar 14</td>
<td>3:00 PM to 4:00 PM</td>
<td>Convention Center</td>
<td>Room 212</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: Sinclair Research Center</td>
<td>Wednesday, Mar 16</td>
<td>4:30 PM to 5:30 PM</td>
<td>Convention Center</td>
<td>Room 212</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: SOLVO Biotechnology</td>
<td>Monday, Mar 14</td>
<td>9:00 AM to 10:00 AM</td>
<td>Convention Center</td>
<td>Room 211</td>
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<tr>
<td>Exhibitor-Hosted Session: Sony Biotechnology Inc.</td>
<td>Tuesday, Mar 15</td>
<td>12:00 Noon to 1:00 PM</td>
<td>Convention Center</td>
<td>Room 205</td>
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<tr>
<td>Exhibitor-Hosted Session: Stemina Biomarker Discovery</td>
<td>Tuesday, Mar 15</td>
<td>3:00 PM to 4:00 PM</td>
<td>Convention Center</td>
<td>Room 211</td>
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<tr>
<td>Exhibitor-Hosted Session: TERA Center, University of Cincinnati</td>
<td>Monday, Mar 14</td>
<td>9:00 AM to 10:00 AM</td>
<td>Convention Center</td>
<td>Room 213</td>
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<tr>
<td>Exhibitor-Hosted Session: UNIConnect</td>
<td>Wednesday, Mar 16</td>
<td>10:30 AM to 11:30 AM</td>
<td>Convention Center</td>
<td>Room 205</td>
</tr>
<tr>
<td>Exhibitor-Hosted Session: US Environmental Protection Agency</td>
<td>Monday, Mar 14</td>
<td>9:00 AM to 10:00 AM</td>
<td>Convention Center</td>
<td>Room 205</td>
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<tr>
<td>Exhibitor-Hosted Session: US Environmental Protection Agency</td>
<td>Monday, Mar 14</td>
<td>12:00 Noon to 1:00 PM</td>
<td>Convention Center</td>
<td>Room 212</td>
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<tr>
<td>Exhibitor-Hosted Session: US Environmental Protection Agency</td>
<td>Tuesday, Mar 15</td>
<td>12:00 Noon to 1:00 PM</td>
<td>Convention Center</td>
<td>Room 212</td>
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<th>Event:</th>
<th>Date:</th>
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<th>Location:</th>
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<tbody>
<tr>
<td>Finance Committee Meeting</td>
<td>Wednesday, Mar 16</td>
<td>11:30 AM to 12:30 PM</td>
<td>Convention Center</td>
<td>Room 225</td>
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<tr>
<td>Food Safety Specialty Section Officers Meeting</td>
<td>Monday, Mar 14</td>
<td>6:30 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>La Nouvelle Orleans Ballroom B</td>
</tr>
<tr>
<td>Food Safety Specialty Section Meeting/Reception</td>
<td>Wednesday, Mar 16</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 13</td>
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<th>Room:</th>
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<tbody>
<tr>
<td>Gabriel L. Plaa Award Interviews (Award Applicants)</td>
<td>Sunday, Mar 13</td>
<td>3:00 PM to 5:00 PM</td>
<td>Convention Center</td>
<td>Room 201</td>
</tr>
<tr>
<td>Global Gallery of Toxicology Poster Session—Representative Attended (Near SOT Pavilion, Booth 500)</td>
<td>Monday, Mar 14</td>
<td>11:45 AM to 12:15 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Graduate Education Subcommittee Meeting</td>
<td>Sunday, Mar 13</td>
<td>11:45 AM to 12:45 PM</td>
<td>Convention Center</td>
<td>Room 225</td>
</tr>
<tr>
<td>Graduate Student Leadership Committee Meeting</td>
<td>Tuesday, Mar 15</td>
<td>6:45 AM to 7:45 AM</td>
<td>Convention Center</td>
<td>Room 215</td>
</tr>
<tr>
<td>Graduate Student Leadership Committee Executive Board Meeting</td>
<td>Wednesday, Mar 16</td>
<td>7:00 AM to 8:30 AM</td>
<td>Convention Center</td>
<td>Room 224</td>
</tr>
<tr>
<td>Guest/Spouse Hospitality Room</td>
<td>Sunday, Mar 13</td>
<td>8:00 AM to 5:00 PM</td>
<td>Hilton Riverside</td>
<td>Trafalgar</td>
</tr>
<tr>
<td>Guest/Spouse Hospitality Room</td>
<td>Monday, Mar 14</td>
<td>8:00 AM to 5:00 PM</td>
<td>Hilton Riverside</td>
<td>Trafalgar</td>
</tr>
<tr>
<td>Guest/Spouse Hospitality Room</td>
<td>Tuesday, Mar 15</td>
<td>8:00 AM to 5:00 PM</td>
<td>Hilton Riverside</td>
<td>Trafalgar</td>
</tr>
<tr>
<td>Guest/Spouse Hospitality Room</td>
<td>Wednesday, Mar 16</td>
<td>8:00 AM to 5:00 PM</td>
<td>Hilton Riverside</td>
<td>Trafalgar</td>
</tr>
<tr>
<td>Guest/Spouse Hospitality Room</td>
<td>Thursday, Mar 17</td>
<td>8:00 AM to 10:00 AM</td>
<td>Hilton Riverside</td>
<td>Trafalgar</td>
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<tbody>
<tr>
<td>Harihara Mehdendale Retirement Celebration</td>
<td>Sunday, Mar 13</td>
<td>8:00 PM to 10:00 PM</td>
<td>Hilton Riverside</td>
<td>Versailles Ballroom</td>
</tr>
<tr>
<td>HESI Luncheon Seminar</td>
<td>Monday, Mar 14</td>
<td>12:15 PM to 1:45 PM</td>
<td>Hilton Riverside</td>
<td>Jefferson Ballroom</td>
</tr>
<tr>
<td>High School Student and Teacher Workshop: Safety Matters: Toxicology and Product Safety</td>
<td>Tuesday, Mar 15</td>
<td>8:00 AM to 2:15 PM</td>
<td>Convention Center</td>
<td>Room 276</td>
</tr>
<tr>
<td>High School Poster Exposition (Across from SOT Pavilion, Booth 500)</td>
<td>Tuesday, Mar 15</td>
<td>10:00 AM to 12:00 Noon</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Hispanic Organization of Toxicologists Special Interest Group Reception and Awards Ceremony</td>
<td>Tuesday, Mar 15</td>
<td>6:30 PM to 9:00 PM</td>
<td>Jonathan Ferrara Gallery</td>
<td></td>
</tr>
<tr>
<td>Hispanic Organization of Toxicologists Special Interest Group Mentoring Breakfast</td>
<td>Wednesday, Mar 16</td>
<td>6:45 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>Rivergate</td>
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<tr>
<td>Housing Desk</td>
<td>Saturday, Mar 12</td>
<td>4:00 PM to 7:00 PM</td>
<td>Convention Center</td>
<td>Lobby A</td>
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<tr>
<td>Housing Desk</td>
<td>Sunday, Mar 13</td>
<td>8:00 AM to 5:00 PM</td>
<td>Convention Center</td>
<td>Lobby A</td>
</tr>
<tr>
<td>Housing Desk</td>
<td>Monday, Mar 14</td>
<td>8:00 AM to 5:00 PM</td>
<td>Convention Center</td>
<td>Lobby A</td>
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<tr>
<td>Housing Desk</td>
<td>Tuesday, Mar 15</td>
<td>8:00 AM to 11:00 AM</td>
<td>Convention Center</td>
<td>Lobby A</td>
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<td>Event:</td>
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<tr>
<td>Human Toxicology Project Consortium: Priorities and Opportunities for Replacement of Animal Tests: A Discussion with NICEATM and ICCVAM Leadership</td>
<td>Monday, Mar 14</td>
<td>5:00 PM to 6:00 PM</td>
<td>Hilton Riverside</td>
<td>Belle Chasse</td>
</tr>
<tr>
<td>Human Toxicology Project Consortium: Hands-On Seminar: Creating an Adverse Outcome Pathway in the AOP Wiki</td>
<td>Tuesday, Mar 15</td>
<td>5:00 PM to 7:00 PM</td>
<td>Hilton Riverside</td>
<td>Belle Chasse</td>
</tr>
<tr>
<td>Immunotoxicology Specialty Section Officers Meeting</td>
<td>Monday, Mar 14</td>
<td>6:30 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>La Nouvelle Orleans Ballroom B</td>
</tr>
<tr>
<td>Immunotoxicology Specialty Section Mentoring Event</td>
<td>Wednesday, Mar 16</td>
<td>4:45 PM to 5:45 PM</td>
<td>Marriott at the Convention Center</td>
<td>River Bend Ballroom 2</td>
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<tr>
<td>Immunotoxicology Specialty Section Meeting/Reception</td>
<td>Wednesday, Mar 16</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon A</td>
</tr>
<tr>
<td>In Vitro and Alternative Methods Specialty Section Officers Meeting</td>
<td>Monday, Mar 14</td>
<td>6:30 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>La Nouvelle Orleans Ballroom B</td>
</tr>
<tr>
<td>In Vitro and Alternative Methods Specialty Section Meeting/Luncheon</td>
<td>Wednesday, Mar 16</td>
<td>12:15 PM to 1:45 PM</td>
<td>Marriott at the Convention Center</td>
<td>Blaine Kern Ballroom A</td>
</tr>
<tr>
<td>In Vitro Models for Tobacco Regulatory Science: Collaborative Efforts in Respiratory Toxicology</td>
<td>Monday, Mar 14</td>
<td>5:00 PM to 6:30 PM</td>
<td>Hilton Riverside</td>
<td>Fountain</td>
</tr>
<tr>
<td>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)</td>
<td>Monday, Mar 14</td>
<td>11:30 AM to 1:00 PM</td>
<td>Convention Center</td>
<td>La Nouvelle Orleans Ballroom B</td>
</tr>
<tr>
<td>Inhalation and Respiratory Specialty Section Officers Meeting</td>
<td>Monday, Mar 14</td>
<td>6:30 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>La Nouvelle Orleans Ballroom B</td>
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<tr>
<td>Inhalation and Respiratory Specialty Section Meeting/Reception</td>
<td>Tuesday, Mar 15</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 13</td>
</tr>
<tr>
<td>International Neurotoxicology Association Business Meeting</td>
<td>Tuesday, Mar 15</td>
<td>12:15 PM to 1:15 PM</td>
<td>Hilton Riverside</td>
<td>Belle Chasse</td>
</tr>
<tr>
<td>IUTOX Global Collaboration Coffee</td>
<td>Monday, Mar 14</td>
<td>9:30 AM to 11:30 AM</td>
<td>Convention Center</td>
<td>Rivergate</td>
</tr>
<tr>
<td>Job Bank Center</td>
<td>Sunday, Mar 13</td>
<td>1:00 PM to 5:00 PM</td>
<td>Convention Center</td>
<td>Room 237</td>
</tr>
<tr>
<td>Job Bank Center</td>
<td>Monday, Mar 14</td>
<td>9:00 AM to 5:00 PM</td>
<td>Convention Center</td>
<td>Room 237</td>
</tr>
<tr>
<td>Job Bank Center</td>
<td>Tuesday, Mar 15</td>
<td>8:30 AM to 5:00 PM</td>
<td>Convention Center</td>
<td>Room 237</td>
</tr>
<tr>
<td>Job Bank Center</td>
<td>Wednesday, Mar 16</td>
<td>8:30 AM to 5:00 PM</td>
<td>Convention Center</td>
<td>Room 237</td>
</tr>
<tr>
<td>K–12 Subcommittee Meeting</td>
<td>Sunday, Mar 13</td>
<td>4:00 PM to 5:00 PM</td>
<td>Convention Center</td>
<td>Room 223</td>
</tr>
<tr>
<td>Korean Toxicologists Association in America Special Interest Group Meeting/Reception</td>
<td>Monday, Mar 14</td>
<td>6:00 PM to 9:00 PM</td>
<td>Singha Thai Cafe</td>
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<tr>
<td>Leading Edge in Basic Science Award Lecture: New Frontiers at the Nexus of Epigenomics and Toxicology, Lecturer: Cheryl Lyn Walker, Texas A&amp;M Institute of Biosciences and Technology</td>
<td>Tuesday, Mar 15</td>
<td>12:30 PM to 1:20 PM</td>
<td>Convention Center</td>
<td>Room R08</td>
</tr>
<tr>
<td>Lone Star and South Central Regional Chapters Mixer</td>
<td>Monday, Mar 14</td>
<td>5:30 PM to 7:30 PM</td>
<td>Bei Tempi Ristorante</td>
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<tr>
<td>Lovelace Respiratory Research Institute’s Annual Reception</td>
<td>Sunday, Mar 13</td>
<td>7:30 PM to 10:00 PM</td>
<td>Hilton Riverside</td>
<td>River Room</td>
</tr>
<tr>
<td>Mechanisms Specialty Section Officers Meeting</td>
<td>Monday, Mar 14</td>
<td>6:30 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>La Nouvelle Orleans Ballroom B</td>
</tr>
<tr>
<td>Mechanisms Specialty Section Meeting/Reception</td>
<td>Monday, Mar 14</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Ballroom C</td>
</tr>
<tr>
<td>Medical Device and Combination Product Officers Meeting</td>
<td>Tuesday, Mar 15</td>
<td>12:15 PM to 1:45 PM</td>
<td>Grand Isle Restaurant</td>
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</tr>
<tr>
<td>Medical Device and Combination Product Specialty Section Meeting/Reception</td>
<td>Wednesday, Mar 16</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 22</td>
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<tr>
<td>Meet the Directors: A Conversation with Linda Birnbaum, NIEHS, and Pamela McInnes, NCATS</td>
<td>Monday, Mar 14</td>
<td>1:30 PM to 2:30 PM</td>
<td>Convention Center</td>
<td>Room 220</td>
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<tr>
<td>Membership Committee Meeting</td>
<td>Wednesday, Mar 16</td>
<td>11:30 AM to 1:00 PM</td>
<td>Convention Center</td>
<td>Room 216</td>
</tr>
<tr>
<td>Merit Award Lecture: Forty-Five Years Modeling Dose-Response Relationships: An Unanticipated Career! Lecturer: Melvin Andersen, ScitoVation LLC</td>
<td>Monday, Mar 14</td>
<td>12:30 PM to 1:20 PM</td>
<td>Convention Center</td>
<td>Room R08</td>
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<tr>
<td>Metals Specialty Section Meeting/Reception</td>
<td>Wednesday, Mar 16</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 12</td>
</tr>
<tr>
<td>Michigan and Allegheny-Erie Regional Chapters Joint Reception</td>
<td>Monday, Mar 14</td>
<td>4:45 PM to 6:15 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 13</td>
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<tr>
<td>Event:</td>
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<tr>
<td>Michigan State University Environmental Toxicology Reception</td>
<td>Tuesday, Mar 15</td>
<td>9:00 PM to 11:00 PM</td>
<td>Hilton Riverside</td>
<td>Melrose</td>
</tr>
<tr>
<td>Mid-Atlantic Regional Chapter Luncheon</td>
<td>Monday, Mar 14</td>
<td>12:15 PM to 2:00 PM</td>
<td>Calcasieu Restaurant</td>
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<tr>
<td>Midwest Regional Chapter Mixer</td>
<td>Monday, Mar 14</td>
<td>5:00 PM to 6:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 7</td>
</tr>
<tr>
<td>Mixtures Specialty Section Officers Meeting</td>
<td>Monday, Mar 14</td>
<td>6:30 AM to 8:00 AM</td>
<td>Café Adelaide</td>
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<tr>
<td>Mixtures Specialty Section Meeting/Reception</td>
<td>Tuesday, Mar 15</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 22</td>
</tr>
<tr>
<td>Molecular and Systems Biology Specialty Section Officers Meeting</td>
<td>Monday, Mar 14</td>
<td>6:30 AM to 7:45 AM</td>
<td>Hilton Riverside</td>
<td>Le Croissant</td>
</tr>
<tr>
<td>Molecular and Systems Biology Specialty Section Meeting/Reception</td>
<td>Tuesday, Mar 15</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 21</td>
</tr>
<tr>
<td>Molecular and Systems Biology Specialty Section Mentoring Event</td>
<td>Wednesday, Mar 16</td>
<td>12:15 PM to 1:45 PM</td>
<td>Capdeville Restaurant</td>
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</tr>
<tr>
<td>Mountain West and Southern California Regional Chapters Mixer</td>
<td>Tuesday, Mar 15</td>
<td>6:00 PM to 9:00 PM</td>
<td>Angela King Gallery</td>
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<tr>
<td>MPI Research: Got Science?</td>
<td>Monday, Mar 14</td>
<td>6:00 PM to 11:00 PM</td>
<td>Marriott at the Convention Center</td>
<td>Blaine Kern Ballroom</td>
</tr>
<tr>
<td>Nanotoxicology Specialty Section Meeting/Reception</td>
<td>Wednesday, Mar 16</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 21</td>
</tr>
<tr>
<td>Neurotoxicology Specialty Section Officers Meeting</td>
<td>Monday, Mar 14</td>
<td>6:30 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>La Nouvelle Orleans Ballroom B</td>
</tr>
<tr>
<td>Neurotoxicology Specialty Section Meeting/Reception</td>
<td>Wednesday, Mar 16</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Ballroom B</td>
</tr>
<tr>
<td>Northeast Regional Chapter Student Luncheon</td>
<td>Monday, Mar 14</td>
<td>12:30 PM to 2:00 PM</td>
<td>Marriott at the Convention Center</td>
<td>Julia</td>
</tr>
<tr>
<td>Northern California Regional Chapter Reception</td>
<td>Tuesday, Mar 15</td>
<td>7:30 PM to 10:30 PM</td>
<td>Pat O’s on the River Grand Terrace</td>
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<tr>
<td>Occupational and Public Health Specialty Section Meeting/Luncheon</td>
<td>Tuesday, Mar 15</td>
<td>12:15 PM to 1:45 PM</td>
<td>Marriott at the Convention Center</td>
<td>River Bend Ballroom 2</td>
</tr>
<tr>
<td>Ocular Toxicology Specialty Section Meeting/Reception</td>
<td>Tuesday, Mar 15</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 12</td>
</tr>
<tr>
<td>Ohio Valley Regional Chapter Reception</td>
<td>Monday, Mar 14</td>
<td>4:45 PM to 6:30 PM</td>
<td>Poppy’s Time Out Sports Bar</td>
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<tr>
<td>Past Presidents Breakfast</td>
<td>Monday, Mar 14</td>
<td>6:30 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>Room 215</td>
</tr>
<tr>
<td>Past Presidents’ 5K Fun Run/Walk (See Mobile Event App for Shuttle Details)</td>
<td>Tuesday, Mar 15</td>
<td>7:00 AM to 8:30 AM</td>
<td>Audubon Park</td>
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<tr>
<td>Postdoctoral Assembly Executive Board Meeting</td>
<td>Tuesday, Mar 15</td>
<td>6:45 AM to 7:45 AM</td>
<td>Convention Center</td>
<td>Room 202</td>
</tr>
<tr>
<td>Postdoctoral Assembly Luncheon (Ticket Required)</td>
<td>Tuesday, Mar 15</td>
<td>12:00 Noon to 1:15 PM</td>
<td>Convention Center</td>
<td>Rivergate</td>
</tr>
<tr>
<td>Poster Sessions</td>
<td>Monday, Mar 14</td>
<td>9:30 AM to 12:45 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Poster Sessions</td>
<td>Monday, Mar 14</td>
<td>1:15 PM to 4:30 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Poster Sessions</td>
<td>Tuesday, Mar 15</td>
<td>9:30 AM to 12:45 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Poster Sessions</td>
<td>Tuesday, Mar 15</td>
<td>1:15 PM to 4:30 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Poster Sessions</td>
<td>Wednesday, Mar 16</td>
<td>9:30 AM to 12:45 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Poster Sessions</td>
<td>Wednesday, Mar 16</td>
<td>1:15 PM to 4:30 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Poster Sessions (Including Late-Breaking)</td>
<td>Thursday, Mar 17</td>
<td>9:30 AM to 12:45 PM</td>
<td>Convention Center</td>
<td>Great Hall A</td>
</tr>
<tr>
<td>Poster Set Up (See Poster Session Schedule or Mobile Event App for Details)</td>
<td>Monday, Mar 14</td>
<td>7:30 AM to 9:30 AM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Poster Set Up (See Poster Session Schedule or Mobile Event App for Details)</td>
<td>Monday, Mar 14</td>
<td>12:50 PM to 1:15 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Poster Set Up (See Poster Session Schedule or Mobile Event App for Details)</td>
<td>Tuesday, Mar 15</td>
<td>7:30 AM to 9:30 AM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Poster Set Up (See Poster Session Schedule or Mobile Event App for Details)</td>
<td>Tuesday, Mar 15</td>
<td>12:50 PM to 1:15 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Poster Set Up (See Poster Session Schedule or Mobile Event App for Details)</td>
<td>Wednesday, Mar 16</td>
<td>7:30 AM to 9:30 AM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Poster Set Up (See Poster Session Schedule or Mobile Event App for Details)</td>
<td>Wednesday, Mar 16</td>
<td>12:50 PM to 1:15 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Poster Set Up (See Poster Session Schedule or Mobile Event App for Details)</td>
<td>Thursday, Mar 17</td>
<td>8:30 AM to 9:30 AM</td>
<td>Convention Center</td>
<td>Great Hall A</td>
</tr>
<tr>
<td>President’s Reception (By Invitation Only)</td>
<td>Wednesday, Mar 16</td>
<td>7:00 PM to 8:30 PM</td>
<td>Hilton Riverside</td>
<td>Napoleon Ballroom</td>
</tr>
<tr>
<td>Event</td>
<td>Date</td>
<td>Time</td>
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<td>Room:</td>
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<tr>
<td>Regional Chapter Collaboration and Communications Committee (RC4) Meeting</td>
<td>Wednesday, Mar 16</td>
<td>12:00 Noon to 1:30 PM</td>
<td>Convention Center</td>
<td>Room 223</td>
</tr>
<tr>
<td>Regional Chapter Poster Sessions—Representative Attended</td>
<td>Monday, Mar 14</td>
<td>11:45 AM to 12:15 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Registration</td>
<td>Saturday, Mar 12</td>
<td>4:00 PM to 7:00 PM</td>
<td>Convention Center</td>
<td>Lobby A</td>
</tr>
<tr>
<td>Registration</td>
<td>Sunday, Mar 13</td>
<td>7:00 AM to 8:00 PM</td>
<td>Convention Center</td>
<td>Lobby A</td>
</tr>
<tr>
<td>Registration</td>
<td>Monday, Mar 14</td>
<td>7:00 AM to 5:00 PM</td>
<td>Convention Center</td>
<td>Lobby A</td>
</tr>
<tr>
<td>Registration</td>
<td>Tuesday, Mar 15</td>
<td>8:00 AM to 4:00 PM</td>
<td>Convention Center</td>
<td>Lobby A</td>
</tr>
<tr>
<td>Registration</td>
<td>Wednesday, Mar 16</td>
<td>8:00 AM to 4:00 PM</td>
<td>Convention Center</td>
<td>Lobby A</td>
</tr>
<tr>
<td>Registration</td>
<td>Thursday, Mar 17</td>
<td>8:00 AM to 1:00 PM</td>
<td>Convention Center</td>
<td>Lobby A</td>
</tr>
<tr>
<td>Regulatory and Safety Evaluation Specialty Section Officers Meeting</td>
<td>Monday, Mar 14</td>
<td>6:30 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>Room 240</td>
</tr>
<tr>
<td>Regulatory and Safety Evaluation Specialty Section Global Regulations Breakfast—Next Stop: China</td>
<td>Tuesday, Mar 15</td>
<td>6:30 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>Room R01</td>
</tr>
<tr>
<td>Reproductive and Developmental Toxicology Specialty Section Officers Meeting</td>
<td>Monday, Mar 14</td>
<td>7:00 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>Room 224</td>
</tr>
<tr>
<td>Reproductive and Developmental Toxicology Specialty Section Meeting/Reception</td>
<td>Monday, Mar 14</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Ballroom B</td>
</tr>
<tr>
<td>Research Funding Insights</td>
<td>Monday, Mar 14</td>
<td>9:30 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>Room 204</td>
</tr>
<tr>
<td>Research Funding Insights</td>
<td>Tuesday, Mar 15</td>
<td>9:30 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>Room 204</td>
</tr>
<tr>
<td>Research Funding Insights</td>
<td>Wednesday, Mar 16</td>
<td>9:30 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>Room 204</td>
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<tr>
<td>Research Funding Luncheon: Multiple Perspectives on the Grant Process</td>
<td>Monday, Mar 14</td>
<td>12:00 Noon to 1:30 PM</td>
<td>Convention Center</td>
<td>Room R01</td>
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<tr>
<td>Risk Assessment Specialty Section Officers Meeting</td>
<td>Monday, Mar 14</td>
<td>6:30 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>La Nouvelle Orleans Ballroom B</td>
</tr>
<tr>
<td>Risk Assessment Specialty Section Mentoring Luncheon</td>
<td>Monday, Mar 14</td>
<td>12:15 PM to 1:45 PM</td>
<td>Convention Center</td>
<td>Room 235</td>
</tr>
<tr>
<td>Risk Assessment Specialty Section Meeting/Reception</td>
<td>Wednesday, Mar 16</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Ballroom B</td>
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<tr>
<td>Roundtable of Toxicology Consultants Annual Business Meeting</td>
<td>Monday, Mar 14</td>
<td>4:45 PM to 6:45 PM</td>
<td>Hilton Riverside</td>
<td>Melrose</td>
</tr>
<tr>
<td>Rutgers Joint Graduate Program in Toxicology Annual Dessert Reception</td>
<td>Tuesday, Mar 15</td>
<td>9:00 PM to 11:00 PM</td>
<td>Hilton Riverside</td>
<td>Versailles Ballroom</td>
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</tbody>
</table>

<p>| 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 | Room 225         |
| Scientific Sessions                                                   | Monday, Mar 14      | 12:30 PM to 1:50 PM | Convention Center | Room 225         |
| Scientific Sessions                                                   | Monday, Mar 14      | 2:00 PM to 4:45 PM  | Convention Center | Room 225         |
| Scientific Sessions                                                   | Tuesday, Mar 15     | 9:30 AM to 12:15 PM | Convention Center | Room 225         |
| Scientific Sessions                                                   | Tuesday, Mar 15     | 2:00 PM to 4:45 PM  | Convention Center | Room 225         |</p>
<table>
<thead>
<tr>
<th>Event:</th>
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<th>Location:</th>
<th>Room:</th>
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<tbody>
<tr>
<td>Scientific Sessions</td>
<td>Wednesday, Mar 16</td>
<td>9:30 AM to 12:15 PM</td>
<td>Convention Center (See Session Index on Pages 106–112 or Mobile Event App for Room Locations)</td>
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<tr>
<td>Scientific Sessions</td>
<td>Wednesday, Mar 16</td>
<td>12:30 PM to 1:50 PM</td>
<td>Convention Center (See Session Index on Pages 106–112 or Mobile Event App for Room Locations)</td>
<td></td>
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<tr>
<td>Scientific Sessions</td>
<td>Wednesday, Mar 16</td>
<td>2:00 PM to 4:45 PM</td>
<td>Convention Center (See Session Index on Pages 106–112 or Mobile Event App for Room Locations)</td>
<td></td>
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<tr>
<td>Scientific Sessions</td>
<td>Wednesday, Mar 16</td>
<td>5:00 PM to 6:20 PM</td>
<td>Convention Center (See Session Index on Pages 106–112 or Mobile Event App for Room Locations)</td>
<td></td>
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<tr>
<td>Scientific Sessions</td>
<td>Thursday, Mar 17</td>
<td>9:30 AM to 12:15 PM</td>
<td>Convention Center (See Session Index on Pages 106–112 or Mobile Event App for Room Locations)</td>
<td></td>
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<tr>
<td>Society of Toxicology and Japanese Society of Toxicology Mini-Symposium: Advances in Metal Toxicity</td>
<td>Wednesday, Mar 16</td>
<td>5:00 PM to 6:20 PM</td>
<td>Convention Center</td>
<td>Room 217</td>
</tr>
<tr>
<td>SOT Annual Business Meeting (All SOT Members Invited)</td>
<td>Tuesday, Mar 15</td>
<td>4:45 PM to 6:15 PM</td>
<td>Convention Center</td>
<td>Room 207</td>
</tr>
<tr>
<td>SOT CCT/MiRNA Biomarkers for Toxicology</td>
<td>Saturday, Mar 12</td>
<td>9:00 AM to 5:30 PM</td>
<td>Convention Center</td>
<td>Room 207</td>
</tr>
<tr>
<td>SOT CCT/MiRNA Biomarkers for Toxicology Poster Session and Luncheon</td>
<td>Saturday, Mar 12</td>
<td>1:00 PM to 2:30 PM</td>
<td>Convention Center</td>
<td>Room 217</td>
</tr>
<tr>
<td>SOT/EUROTOX Debate: Preclinical (Safety) Toxicology Testing Predicts the Clinical Outcome, Lecturers: Thomas M. Monticello, Amgen, Inc.; and Ruth Roberts, ApconIX Ltd</td>
<td>Monday, Mar 14</td>
<td>4:45 PM to 6:00 PM</td>
<td>Convention Center</td>
<td>Great Hall B</td>
</tr>
<tr>
<td>SOT FDA Colloquium Organizing Committee Meeting</td>
<td>Sunday, Mar 13</td>
<td>9:00 AM to 11:30 AM</td>
<td>Convention Center</td>
<td>Room 223</td>
</tr>
<tr>
<td>SOT Mentoring Breakfast (Registration Required)</td>
<td>Monday, Mar 14</td>
<td>6:15 AM to 7:45 AM</td>
<td>Convention Center</td>
<td>Room R01</td>
</tr>
<tr>
<td>SOT Office</td>
<td>Saturday, Mar 12</td>
<td>4:00 PM to 7:00 PM</td>
<td>Convention Center</td>
<td>Room 226</td>
</tr>
<tr>
<td>SOT Office</td>
<td>Sunday, Mar 13</td>
<td>7:00 AM to 5:30 PM</td>
<td>Convention Center</td>
<td>Room 226</td>
</tr>
<tr>
<td>SOT Office</td>
<td>Monday, Mar 14</td>
<td>7:00 AM to 5:00 PM</td>
<td>Convention Center</td>
<td>Room 226</td>
</tr>
<tr>
<td>SOT Office</td>
<td>Tuesday, Mar 15</td>
<td>7:00 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>Room 226</td>
</tr>
<tr>
<td>SOT Office</td>
<td>Wednesday, Mar 16</td>
<td>7:00 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>Room 226</td>
</tr>
<tr>
<td>SOT Office</td>
<td>Thursday, Mar 17</td>
<td>7:00 AM to 1:00 PM</td>
<td>Convention Center</td>
<td>Room 226</td>
</tr>
<tr>
<td>SOT Pavilion, Booth 500</td>
<td>Monday, Mar 14</td>
<td>9:15 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>SOT Pavilion, Booth 500</td>
<td>Tuesday, Mar 15</td>
<td>9:15 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>SOT Pavilion, Booth 500</td>
<td>Wednesday, Mar 16</td>
<td>9:15 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>SOT Strategic Plan Update: Summary and Implementation of the Career Advancement, Recruitment, and Education Process</td>
<td>Thursday, Mar 17</td>
<td>8:15 AM to 9:15 AM</td>
<td>Convention Center</td>
<td>Room 206</td>
</tr>
<tr>
<td>South Central and Lone Star Regional Chapters Mixer</td>
<td>Monday, Mar 14</td>
<td>5:30 PM to 7:30 PM</td>
<td>Bei Tempi Ristorante</td>
<td></td>
</tr>
<tr>
<td>Southeastern Regional Chapter Reception</td>
<td>Monday, Mar 14</td>
<td>6:00 PM to 8:00 PM</td>
<td>Drago’s Seafood Restaurant</td>
<td></td>
</tr>
<tr>
<td>Southern California and Mountain West Regional Chapters Mixer</td>
<td>Tuesday, Mar 15</td>
<td>6:00 PM to 9:00 PM</td>
<td>Angela King Gallery</td>
<td></td>
</tr>
<tr>
<td>Speaker Ready Room (Scientific Session and ePoster Upload)</td>
<td>Saturday, Mar 12</td>
<td>4:00 PM to 7:00 PM</td>
<td>Convention Center</td>
<td>Room 214</td>
</tr>
<tr>
<td>Speaker Ready Room (Scientific Session and ePoster Upload)</td>
<td>Sunday, Mar 13</td>
<td>7:00 AM to 5:30 PM</td>
<td>Convention Center</td>
<td>Room 214</td>
</tr>
<tr>
<td>Speaker Ready Room (Scientific Session and ePoster Upload)</td>
<td>Monday, Mar 14</td>
<td>7:00 AM to 5:00 PM</td>
<td>Convention Center</td>
<td>Room 214</td>
</tr>
<tr>
<td>Speaker Ready Room (Scientific Session and ePoster Upload)</td>
<td>Tuesday, Mar 15</td>
<td>7:00 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>Room 214</td>
</tr>
<tr>
<td>Speaker Ready Room (Scientific Session and ePoster Upload)</td>
<td>Wednesday, Mar 16</td>
<td>7:00 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>Room 214</td>
</tr>
<tr>
<td>Speaker Ready Room (Scientific Session and ePoster Upload)</td>
<td>Thursday, Mar 17</td>
<td>7:00 AM to 11:30 AM</td>
<td>Convention Center</td>
<td>Room 214</td>
</tr>
<tr>
<td>Special Interest Group Poster Sessions—Representative Attended (Near SOT Pavilion, Booth 500)</td>
<td>Monday, Mar 14</td>
<td>11:45 AM to 12:15 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Special Interest Group Collaboration Group Meeting</td>
<td>Monday, Mar 14</td>
<td>12:00 Noon to 1:30 PM</td>
<td>Convention Center</td>
<td>Room 202</td>
</tr>
<tr>
<td>Special Interest Group Collaboration Group Global Hot Topics Event</td>
<td>Wednesday, Mar 16</td>
<td>6:45 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>Room R01</td>
</tr>
<tr>
<td>Specialty Section Poster Sessions—Representative Attended (Near SOT Pavilion, Booth 500)</td>
<td>Monday, Mar 14</td>
<td>11:45 AM to 12:15 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Specialty Section Collaboration and Communication Group Meeting</td>
<td>Monday, Mar 14</td>
<td>2:00 PM to 3:00 PM</td>
<td>Convention Center</td>
<td>Room 202</td>
</tr>
<tr>
<td>St. John’s University Alumni and Friends Dinner</td>
<td>Monday, Mar 14</td>
<td>6:00 PM to 8:00 PM</td>
<td>Hilton Riverside</td>
<td>Compass</td>
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<tr>
<td>Event:</td>
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<tr>
<td>Stem Cells Specialty Section Meeting/Reception</td>
<td>Monday, Mar 14</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 12</td>
</tr>
<tr>
<td>Student/Postdoctoral Scholar Mixer (Ticket Required)</td>
<td>Sunday, Mar 13</td>
<td>7:30 PM to 9:00 PM</td>
<td>Convention Center</td>
<td>La Nouvelle Orleans Ballroom B</td>
</tr>
<tr>
<td>Superfund Research Program Meeting</td>
<td>Tuesday, Mar 15</td>
<td>6:00 PM to 7:30 PM</td>
<td>Marriott at the</td>
<td>Julia</td>
</tr>
<tr>
<td>Tox ShowDown</td>
<td>Tuesday, Mar 15</td>
<td>7:30 PM to 9:00 PM</td>
<td>Hilton Riverside</td>
<td>Jefferson Ballroom</td>
</tr>
<tr>
<td>ToxExpo Set Up</td>
<td>Saturday, Mar 12</td>
<td>8:00 AM to 5:00 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>ToxExpo Set Up</td>
<td>Sunday, Mar 13</td>
<td>8:00 AM to 5:00 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>ToxExpo Exhibits Open</td>
<td>Monday, Mar 14</td>
<td>9:15 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>ToxExpo Exhibits Open</td>
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<td>Exhibit Hall</td>
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<tr>
<td>ToxExpo Exhibits Open</td>
<td>Wednesday, Mar 16</td>
<td>9:15 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>ToxExpo Exhibit Hall Council Walk-Through</td>
<td>Tuesday, Mar 15</td>
<td>11:00 AM to 12:00 Noon</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>ToxExpo 2017 Exhibit Space Selection Process</td>
<td>Tuesday, Mar 15</td>
<td>4:45 PM to 6:00 PM</td>
<td>Convention Center</td>
<td>Room 215</td>
</tr>
<tr>
<td>ToxExpo Liaison Working Group</td>
<td>Wednesday, Mar 16</td>
<td>7:00 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>Room 223</td>
</tr>
<tr>
<td>ToxExpo Tear Down</td>
<td>Wednesday, Mar 16</td>
<td>4:30 PM to 10:00 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Toxic Substances Control Act (TSCA) Task Force Meeting</td>
<td>Tuesday, Mar 15</td>
<td>7:30 AM to 8:30 AM</td>
<td>Convention Center</td>
<td>Room 223</td>
</tr>
<tr>
<td>Toxicologic and Exploratory Pathology Specialty Section Meeting/Luncheon</td>
<td>Monday, Mar 14</td>
<td>12:15 PM to 1:45 PM</td>
<td>Marriott at the Convention Center</td>
<td>River Bend Ballroom 2</td>
</tr>
<tr>
<td>Toxicological Sciences Associate Editors Meeting</td>
<td>Sunday, Mar 13</td>
<td>12:30 PM to 3:30 PM</td>
<td>Hilton Riverside</td>
<td>Ascot</td>
</tr>
<tr>
<td>Toxicologists of African Origin Special Interest Group Networking Event</td>
<td>Monday, Mar 14</td>
<td>5:00 PM to 6:15 PM</td>
<td>Mulate's Restaurant</td>
<td></td>
</tr>
<tr>
<td>Toxicologists of African Origin Special Interest Group Reception</td>
<td>Monday, Mar 14</td>
<td>6:30 PM to 7:45 PM</td>
<td>Mulate's Restaurant</td>
<td></td>
</tr>
<tr>
<td>Trainee Discussion with Plenary Session Presenters: Drs. Taylor and Nichols (Ticket Required; Limited Seating)</td>
<td>Monday, Mar 14</td>
<td>10:00 AM to 11:00 AM</td>
<td>Convention Center</td>
<td>Lobby A Lounge</td>
</tr>
<tr>
<td>Trainee Discussion with Plenary Session Presenters: Drs. Skaper and Faden (Ticket Required; Limited Seating)</td>
<td>Tuesday, Mar 15</td>
<td>10:00 AM to 11:00 AM</td>
<td>Convention Center</td>
<td>Lobby A Lounge</td>
</tr>
<tr>
<td>Trainee Discussion with Medical Research Council (MRC) Lecturer: Dr. Franklin (Ticket Required; Limited Seating)</td>
<td>Wednesday, Mar 16</td>
<td>10:00 AM to 11:00 AM</td>
<td>Convention Center</td>
<td>Lobby A Lounge</td>
</tr>
<tr>
<td>Translational Impact Award Lecture: Translational Non-Invasive Biomarkers of Acetaminophen-Induced Liver Injury, Lecturer: Richard Beger, NCTR, US Food and Drug Administration</td>
<td>Wednesday, Mar 16</td>
<td>5:00 PM to 5:50 PM</td>
<td>Convention Center</td>
<td>Room R08</td>
</tr>
<tr>
<td>Undergraduate and K–12 Education Networking</td>
<td>Monday, Mar 14</td>
<td>4:30 PM to 5:30 PM</td>
<td>Convention Center</td>
<td>Room 223</td>
</tr>
<tr>
<td>Undergraduate Diversity Program: Registration for CDI Travel Awardees</td>
<td>Saturday, Mar 12</td>
<td>5:00 PM to 5:15 PM</td>
<td>Convention Center</td>
<td>Room 275 Foyer</td>
</tr>
<tr>
<td>Undergraduate Diversity Program: Opening Event (CDI Travel Awardees)</td>
<td>Saturday, Mar 12</td>
<td>5:15 PM to 7:30 PM</td>
<td>Convention Center</td>
<td>Room 275</td>
</tr>
<tr>
<td>Undergraduate Diversity Program Meeting Participation</td>
<td>Monday, Mar 14</td>
<td>8:00 AM to 3:30 PM</td>
<td>Convention Center</td>
<td></td>
</tr>
<tr>
<td>Undergraduate Diversity Program: Host Mentor and Peer Mentor Meeting</td>
<td>Monday, Mar 14</td>
<td>3:30 PM to 4:30 PM</td>
<td>Convention Center</td>
<td>Room 281</td>
</tr>
<tr>
<td>Undergraduate Diversity Program: Presentation (CDI Travel Awardees)</td>
<td>Monday, Mar 14</td>
<td>3:30 PM to 4:30 PM</td>
<td>Convention Center</td>
<td>Room 275</td>
</tr>
<tr>
<td>Undergraduate Diversity Program: Program Closing Session (CDI Travel Awardees)</td>
<td>Monday, Mar 14</td>
<td>4:30 PM to 5:00 PM</td>
<td>Convention Center</td>
<td>Room 275</td>
</tr>
<tr>
<td>Undergraduate Education Program: Toxicology Presentations (CDI Travel Awardees and Registered Undergraduates)</td>
<td>Sunday, Mar 13</td>
<td>8:00 AM to 9:45 AM</td>
<td>Convention Center</td>
<td>Room 272</td>
</tr>
<tr>
<td>Undergraduate Education Program: Interactive Presentation (CDI Travel Awardees and Registered Undergraduates)</td>
<td>Sunday, Mar 13</td>
<td>9:55 AM to 11:00 AM</td>
<td>Convention Center</td>
<td>Room 275</td>
</tr>
<tr>
<td>Undergraduate Education Program: Toxicology Presentation (CDI Travel Awardees and Registered Undergraduates)</td>
<td>Sunday, Mar 13</td>
<td>11:10 AM to 12:00 Noon</td>
<td>Convention Center</td>
<td>Room 272</td>
</tr>
<tr>
<td>Undergraduate Education Program: Lunch and Networking (CDI Travel Awardees and Registered Undergraduates)</td>
<td>Sunday, Mar 13</td>
<td>12:00 Noon to 12:45 PM</td>
<td>Convention Center</td>
<td>Room 275</td>
</tr>
<tr>
<td>Undergraduate Education Program: Breakout Sessions for Students—Planning for Graduate School (CDI Travel Awardees and Registered Undergraduates)</td>
<td>Sunday, Mar 13</td>
<td>12:55 PM to 1:55 PM</td>
<td>Convention Center</td>
<td>Rooms 278, 279, 280</td>
</tr>
</tbody>
</table>

**U**

- Undergraduate Diversity Program: Registration for CDI Travel Awardees
- Undergraduate Diversity Program: Opening Event (CDI Travel Awardees)
- Undergraduate Diversity Program: Host Mentor and Peer Mentor Meeting
- Undergraduate Diversity Program: Presentation (CDI Travel Awardees)
- Undergraduate Diversity Program: Program Closing Session (CDI Travel Awardees)
- Undergraduate Education Program: Toxicology Presentations (CDI Travel Awardees and Registered Undergraduates)
- Undergraduate Education Program: Interactive Presentation (CDI Travel Awardees and Registered Undergraduates)
- Undergraduate Education Program: Toxicology Presentation (CDI Travel Awardees and Registered Undergraduates)
- Undergraduate Education Program: Lunch and Networking (CDI Travel Awardees and Registered Undergraduates)
- Undergraduate Education Program: Breakout Sessions for Students—Planning for Graduate School (CDI Travel Awardees and Registered Undergraduates)
<table>
<thead>
<tr>
<th>Event:</th>
<th>Date:</th>
<th>Time:</th>
<th>Location:</th>
<th>Room:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate Education Program: Breakout Sessions for Advisors—Tips for Advising Prospective Graduate Students (CDI Advisor Travel Awardees)</td>
<td>Sunday, Mar 13</td>
<td>12:55 PM to 1:55 PM</td>
<td>Convention Center</td>
<td>Room 281</td>
</tr>
<tr>
<td>Undergraduate Education Program: Career Roundtables—Opportunities in Toxicology (CDI Travel Awardees and Registered Undergraduates)</td>
<td>Sunday, Mar 13</td>
<td>2:05 PM to 2:55 PM</td>
<td>Convention Center</td>
<td>Rooms 278, 279, 280</td>
</tr>
<tr>
<td>Undergraduate Education Program: Open Time with Academic Toxicology Program Directors and Internship Hosts (CDI Travel Awardees and Registered Undergraduates)</td>
<td>Sunday, Mar 13</td>
<td>3:00 PM to 5:00 PM</td>
<td>Convention Center</td>
<td>Room 272</td>
</tr>
<tr>
<td>Undergraduate Student Meeting (All Undergraduate Meeting Registrants Invited)</td>
<td>Tuesday, Mar 15</td>
<td>4:00 PM to 5:15 PM</td>
<td>Convention Center</td>
<td>Room 223</td>
</tr>
<tr>
<td>Undergraduate Education Subcommittee Meeting</td>
<td>Wednesday, Mar 16</td>
<td>1:30 PM to 2:00 PM</td>
<td>Convention Center</td>
<td>Room 215</td>
</tr>
<tr>
<td>Undergraduate Educator Network Meeting</td>
<td>Wednesday, Mar 16</td>
<td>2:15 PM to 4:00 PM</td>
<td>Convention Center</td>
<td>Room 215</td>
</tr>
<tr>
<td>University of Cincinnati's TERA Center: A Ternion of Risk Issues</td>
<td>Sunday, Mar 13</td>
<td>12:00 Noon to 1:15 PM</td>
<td>Hilton Riverside</td>
<td>Belle Chasse</td>
</tr>
<tr>
<td>University of Rochester Toxicology Program Annual Alumni Reception</td>
<td>Tuesday, Mar 15</td>
<td>7:00 PM to 10:00 PM</td>
<td>Hilton Riverside</td>
<td>River Room</td>
</tr>
</tbody>
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**W**

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<thead>
<tr>
<th>Event:</th>
<th>Date:</th>
<th>Time:</th>
<th>Location:</th>
<th>Room:</th>
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</thead>
<tbody>
<tr>
<td>Welcome Reception</td>
<td>Sunday, Mar 13</td>
<td>6:30 PM to 7:30 PM</td>
<td>Convention Center</td>
<td>Great Hall A</td>
</tr>
<tr>
<td>Women in Toxicology Special Interest Group Executive Committee Meeting</td>
<td>Monday, Mar 14</td>
<td>6:45 AM to 7:45 AM</td>
<td>Hilton Riverside</td>
<td>Durham</td>
</tr>
<tr>
<td>Women in Toxicology Special Interest Group Reception</td>
<td>Wednesday, Mar 16</td>
<td>4:45 PM to 7:00 PM</td>
<td>Hilton Riverside</td>
<td>Versailles Ballroom</td>
</tr>
</tbody>
</table>
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
New Orleans Ernest N. Morial Convention Center Maps

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

Mississippi River
New Orleans Ernest N. Morial Convention Center Maps

Second Floor
CE Course Rooms, Exhibitor-Hosted Sessions, Scientific Sessions, and Undergraduate Education Program

Escalators down to First Floor

Research Funding Luncheon
Mentoring Breakfast

Scientific Sessions
CE Courses

CE Information Booth
(Sunday Only)

CE Courses

Speaker Ready Room
SOT Office

Exhibitor-Hosted Sessions

In Vitro Toxicology Lecture and Luncheon
Student/Postdoctoral Scholar Mixer

High School Student and Teacher Workshop
Undergraduate Education Program

CCT/MiRNA
Biomarkers for Toxicology
March 12, 2016 - Room 207

Mississippi River
Hilton New Orleans Riverside Hotel Maps

First Level

Second Level
Map of New Orleans Hotel Locations

1. Astor Crowne Plaza
2. Blake Hotel
3. Courtyard by Marriott Convention Center
4. Courtyard by Marriott Downtown near the French Quarter
5. Doubletree by Hilton New Orleans
6. Embassy Suites New Orleans Convention Center
7. Hampton Inn & Suites New Orleans Convention Center
8. Hilton Garden Inn New Orleans Convention Center
9. Hilton New Orleans Riverside SOT Headquarters Hotel
10. Hilton New Orleans St. Charles Avenue
11. InterContinental New Orleans
12. Le Meridien New Orleans
13. Loews New Orleans
14. New Orleans Marriott
15. New Orleans Downtown Marriott at the Convention Center
16. Omni Riverfront New Orleans
17. Residence Inn by Marriott New Orleans Downtown
18. Sheraton New Orleans
19. SpringHill Suites by Marriott Convention Center
20. Staybridge Suites French Quarter Downtown
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=ggllocaljn1

3) Courtyard by Marriott Convention Center
300 Julia Street
Tel: 504.581.9898

4) Courtyard by Marriott Downtown near the French Quarter
124 St. Charles Avenue
Tel: 504.581.9005

5) Double Tree by Hilton New Orleans
300 Canal Street
Tel: 504.581.1300

6) Embassy Suites New Orleans Convention Center
315 Julia Street
Tel: 504.525.1993

7) Hampton Inn & Suites New Orleans Convention Center
1201 Convention Center Boulevard
Tel: 504.566.9990
www.neworleanshamptoninn.com/hampton-inn-convention-center

8) Hilton Garden Inn New Orleans Convention Center
1001 South Peters Street
Tel: 504.525.0044

9) Hilton New Orleans Riverside SOT Headquarters Hotel
SOT Headquarters Hotel
2 Poydras Street
Tel: 504.561.0500

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/msla-new-orleans-marriott

15) New Orleans Downtown Marriott at the Convention Center
859 Convention Center Boulevard
Tel: 504.613.2888

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

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

20) Staybridge Suites French Quarter Downtown
501 Tchoupitoulas Street
Tel: 504.571.1818

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

350 Exhibitors

The toxicology marketplace featuring organizations with novel approaches and diverse solutions

2,100+ Scientific Poster Presentations

ToxExpo.com
Connecting toxicologists with solution-based suppliers around the globe 24/7/365
### ToxExpo 2016 Exhibitors
(As of January 22, 2016)

**Use the Mobile Event App or visit [www.ToxExpo.com](http://www.ToxExpo.com) or the [ToxExpo Directory](#) for product/service descriptions, a map of booth locations, and other information.**

#### 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
Accela Chemicals | 1759
ACEA Biosciences, Inc. | 410
ACGIH | 1751
Advancis 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
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Exhibitor-Hosted Sessions are informative sessions developed by an exhibiting company or SOT Supporter.

## Exhibitor-Hosted Sessions (Listed by date and time, then alphabetically by presenter)

### Monday

**9:00 AM to 10:00 AM**

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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.

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**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.
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...

New Orleans, Louisiana
12:00 Noon 3/13/16

Mexico City, Mexico
11:00 am 3/13/16

Abuja, Nigeria
6:00 pm 3/13/16

Ahvaz, Iran
6:00 pm 3/13/16

Almada, Portugal
6:00 pm 3/13/16

Beijing, China
6:00 pm 3/13/16

Seoul, South Korea
6:00 pm 3/13/16

Tokyo, Japan
6:00 pm 3/13/16

Los Angeles, California
10:00 am 3/13/16

New York City, New York
1:00 pm 3/13/16

St. Petersburg, Russia
8:00 pm 3/13/16

Boston, Massachusetts
11:00 am 3/13/16

Montreal, Canada
1:00 pm 3/13/16

Brasilia, Brazil
2:00 pm 3/13/16

New Orleans uses
Central Daylight Saving Time,
which starts March 13
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.
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.

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

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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.

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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.)

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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.

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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.)
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 (non-scientists) 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:

<table>
<thead>
<tr>
<th>Day</th>
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<tr>
<td>Sunday</td>
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<td>Thursday</td>
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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.psaav.com/sot2016p to upload ePosters. Scientific session presenters should use the submission site at https://cms.psaav.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–1:00 PM

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 MCCN 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.

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](http://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 Bienville, 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.
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 platform, ToXchange is specifically designed for SOT Members. Visit the SOT Pavilion, booth 500 in the Exhibit Hall, for on-site information.
Free Job Search Service for Members

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
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. 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. 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.

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**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
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.
Achievement Award

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.

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.
Arnold J. Lehman Award

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, PhD, Lady Davis Institute for Medical Research, Montreal, QC, Canada

Tungsten Targets the Tumor Microenvironment to Enhance Breast Cancer Metastasis


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.


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


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).

Rache Johnson 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 Harris.

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.
Education Awards

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., 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 is 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, 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 toxicity 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.

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**Founders Award**

**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 oncolgists 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, 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 neurotoxicity 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 Pharmaceutical 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.

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.

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.
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 xenoenogenes 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.**

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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, 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, 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, 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, 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, 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, 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, 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, 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, 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, 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

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

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

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

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

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

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

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, 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, 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 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 principal 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 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, 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.
AWARDS

SOT/SOT Endowment Fund/IUTOX Travel Awards

Khaled Abass, PhD, Minoufiya University, Menoufia, Egypt

Hossein Hassanian-Moghaddam, MD, Loghman-Hakim Hospital, Tehran, Iran

Elena Jardan, MD, National Center of Public Health, Chisinau, Republic of Moldova

Monday Michael Onakpa, PhD, Veterinary Medicine of University of Abuja, Abuja, Nigeria

Zanina Perevska, MD, PhD, University Clinic of Toxicology, Skopje, Macedonia

Ella Joy N. Perez, MD, Southern Philippines Medical Center Poison Treatment and Control Center, Davao, Philippines

Ganna Shayakhmetova, PhD, Institute of Pharmacology and Toxicology NAMS of Ukraine, Kyiv, Ukraine

SOT Undergraduate Intern Travel Award

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
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 gentamycin) 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.

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, 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.

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, MD,** Johns Hopkins Bloomberg School of Public Health, Baltimore, MD

**Project Title:** A 3D In Vitro BBB-Microphysiological System to Study Cerebrovascular Perturbation

**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

**Lei Yin, PhD,** University of Georgia, Athens, GA

**Project Title:** Pathway-Based 3D Mini-Testis Model for Reproductive and Developmental Toxicity

**Dai-Pamies**

**Katherine Dunnick**

**Colgate-Palmolive Awards for Student Research Training in Alternative Methods**

**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, 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

**Shih-Yu Chang**

**Tshepo Moto**

**Colgate-Palmolive Postdoctoral Fellowship Award in In Vitro Toxicology**

**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

**Thomas Luechtefeld, BS,** Johns Hopkins Bloomberg School of Public Health, Baltimore, MD

**Project Title:** Multi-Endpoint Toxicological Models with Integrated Data

**Tshepo Moto**
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

Laxman S. Desai Association of Scientists of Indian Origin Student Award Fund
Nikita Joshi, MSc, MS, Michigan State University, East Lansing, MI

Education Fund: Undergraduate Educator Award
Mindy Reynolds, PhD, Washington College, Chestertown, MD

Axelle Marchand, PhD, Université de Montréal, Montreal, QC, Canada

Perry J. Gehring Biological Modeling Student Award Fund
Jeremy Leonard, PhD, MS, BS, US EPA, Durham, NC

Young Soo Choi Student Scholarship Award Fund
Woo-Cheol Sim, BS, Seoul National University, Seoul, Republic of Korea

John Doull Student Award Fund
Yongguan Lai, PhD, The University of North Carolina at Chapel Hill, Chapel Hill, NC

(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

Vera W. Hudson and Elizabeth K. Weisburger Scholarship Fund

Andree-Anne Hudon Thibeault, BSc, INRS Armand Frappier Institute, Laval, QC, Canada

Molecular Biology Specialty Section Postdoctoral Fellow Research Award

Aditya Joshi, PhD, University of Texas Medical Branch, Galveston, TX

Jessica Sapiro, BS, MS, University of Arizona, Tucson, AZ

Anna Kopec, PhD, Michigan State University, East Lansing, MI

Marjory Moreau, PhD, Health Canada, Ottawa, ON, Canada

Perry J. Gehring Risk Assessment Best Postdoctoral Fellow Abstract Award Fund

Frank C. Lu Food Safety Student Award Fund

Alexandra Turley, BS, Michigan State University, East Lansing, MI

Molecular Biology Specialty Section Postdoctoral Fellow Research Award

Natalia VanDyuen, PhD, ORISE/US EPA, Research Triangle Park, NC

Jean Lu Student Scholarship Award Fund

Marlene T. Kim, BS, Rutgers, The State University of New Jersey, Camden, NJ

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

Roger O. McClellan Student Award Fund

Erin Quist, DVM, MS, NTP/NIEHS, Research Triangle Park, NC

Molecular Biology Student Award Fund

Kelly Fader, Hon BSc, Michigan State University, East Lansing, MI

Frank C. Lu Food Safety Student Award Fund

Molecular Biology Specialty Section Postdoctoral Fellow Research Award

Natalia VanDyuen, PhD, ORISE/US EPA, Research Triangle Park, NC

Jean Lu Student Scholarship Award Fund

Marlene T. Kim, BS, Rutgers, The State University of New Jersey, Camden, NJ

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

Dilshan Harischandra, BS, Iowa State University, Ames, IA

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

Dilshan Harischandra, BS, Iowa State University, Ames, IA

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
<table>
<thead>
<tr>
<th>Award Fund</th>
<th>Name and Affiliation</th>
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<tbody>
<tr>
<td>Sheldon D. Murphy Award Fund</td>
<td>Dwayne Carter, BS, University of Texas Medical Branch, Galveston, TX</td>
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<td></td>
<td>Michael Osborne, Imperial College London, Shoeburyness, Essex, United Kingdom</td>
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<td>Saurabh Vispute, BS, St. John’s University, Fresh Meadows, NY</td>
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<tr>
<td>Emil A. Pfitzer Drug Discovery Postdoc Award Fund</td>
<td>Amrendra Ajay, PhD, Harvard Medical School, Boston, MA</td>
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<td>Tamara Tal, BS, PhD, US Environmental Protection Agency, Durham, NC</td>
</tr>
<tr>
<td>Emil A. Pfitzer Drug Discovery Student Award Fund</td>
<td>Melanie Abongwa, BSc, MSc, Iowa State University, Ames, IA</td>
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<td></td>
<td>Monica Langley, BS, Iowa State University, Ames, IA</td>
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<td></td>
<td>Chelsea Snyder, BS, University of California Davis, Davis, CA</td>
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<tr>
<td>Emil A. Pfitzer Drug Discovery Student Award Fund</td>
<td>Gabriel L. Plaa Education Award Fund</td>
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<td></td>
<td>Eric Beier, PhD, Rutgers University, Piscataway, NJ</td>
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<td></td>
<td>Anna Kopec, PhD, Michigan State University, East Lansing, MI</td>
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<tr>
<td>Emil A. Pfitzer Drug Discovery Student Award Fund</td>
<td>Shaun McCullough, MS, PhD, US Environmental Protection Agency, Chapel Hill, NC</td>
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<td>Jaime Mirowsky, PhD, University of North Carolina, Chapel Hill, NC</td>
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<tr>
<td>Regulatory and Safety Evaluation Specialty Section Student Award Fund</td>
<td>Dana Lauterstein, BA, MS, New York University, New York City, NY</td>
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<td>Kpobari Nkpaa, BSc, MSc, University of Port Harcourt, Port Harcourt, Rivers, Nigeria</td>
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<td></td>
<td>Linda Schenk, MSc, PhD, Karolinska Institutet, Stockholm, Sweden</td>
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<td>Joey Stevens, BS, BA, US Environmental Protection Agency, Durham, NC</td>
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<tr>
<td>Renal Toxicology Fellowship Award Fund</td>
<td>Blessy George, PharmD, Rutgers University, Piscataway, NJ</td>
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<td>Susanne Ramm, PhD, Harvard Medical School, Boston, MA</td>
</tr>
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<td>Jessica Sapiro, BS, MS, University of Arizona, Tucson, AZ</td>
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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.
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
Participate in the reception of your hometown chapter while you are in New Orleans—Attend the local events during the year.

Special Interest Groups
Participate in events that bring together scientists who share a common interest in issues germane to their communities.

Specialty Sections
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.
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.

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)

Endorser(s):
  Education Committee
  Undergraduate Education Subcommittee

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.

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.

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
Marqueta 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 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.

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central States Regional Chapter Breakfast Meeting</td>
<td>Tuesday, March 15</td>
<td>7:00 AM to 8:00 AM</td>
<td>Bourbon House Restaurant</td>
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</tr>
<tr>
<td>Lone Star and South Central Regional Chapters Mixer</td>
<td>Monday, March 14</td>
<td>5:30 PM to 7:30 PM</td>
<td>Bei Tempi Ristorante</td>
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<tr>
<td>Michigan and Allegheny-Erie Regional Chapters Joint Reception</td>
<td>Monday, March 14</td>
<td>4:45 PM to 6:15 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 13</td>
</tr>
<tr>
<td>Mid-Atlantic Regional Chapter Luncheon</td>
<td>Monday, March 14</td>
<td>12:15 PM to 2:00 PM</td>
<td>Calcasieu Restaurant</td>
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<tr>
<td>Midwest Regional Chapter Mixer</td>
<td>Monday, March 14</td>
<td>5:00 PM to 6:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 7</td>
</tr>
<tr>
<td>Northeast Regional Chapter Student Luncheon</td>
<td>Monday, March 14</td>
<td>12:30 PM to 2:00 PM</td>
<td>Mariott at the Convention Center</td>
<td>Julia</td>
</tr>
<tr>
<td>Northern California Regional Chapter Reception</td>
<td>Tuesday, March 15</td>
<td>7:30 PM to 10:30 PM</td>
<td>Pat O’s on the River Grand Terrace</td>
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<tr>
<td>Ohio Valley Regional Chapter Reception</td>
<td>Monday, March 14</td>
<td>4:45 PM to 6:30 PM</td>
<td>Poppy’s Time Out Sports Bar</td>
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</tr>
<tr>
<td>Pacific Northwest Regional Chapter Reception</td>
<td>Monday, March 14</td>
<td>5:30 PM to 7:30 PM</td>
<td>Annunciation Restaurant</td>
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</tr>
<tr>
<td>Regional Chapter Collaboration and Communications Committee (RC4) Meeting</td>
<td>Wednesday, March 16</td>
<td>12:00 Noon to 1:30 PM</td>
<td>Convention Center</td>
<td>Room 223</td>
</tr>
<tr>
<td>Southeastern Regional Chapter Reception</td>
<td>Monday, March 14</td>
<td>6:00 PM to 8:00 PM</td>
<td>Drago’s Seafood Restaurant</td>
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</tr>
<tr>
<td>Southern California and Mountain West Regional Chapters Mixer</td>
<td>Tuesday, March 15</td>
<td>6:00 PM to 9:00 PM</td>
<td>Angela King Gallery</td>
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</table>

**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.

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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<th>Location</th>
<th>Room</th>
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</thead>
<tbody>
<tr>
<td>American Association of Chinese in Toxicology Special Interest Group Distinguished Chinese Toxicologist Lectureship Award and Reception</td>
<td>Monday, March 14</td>
<td>5:00 PM to 9:00 PM</td>
<td>Hilton Riverside</td>
<td>Grand Ballroom D</td>
</tr>
<tr>
<td>American Association of Chinese in Toxicology Special Interest Group Career Development Workshop</td>
<td>Tuesday, March 15</td>
<td>12:15 PM to 1:45 PM</td>
<td>Convention Center</td>
<td>Room R01</td>
</tr>
<tr>
<td>Association of Scientists of Indian Origin Special Interest Group Reception</td>
<td>Monday, March 14</td>
<td>7:00 PM to 9:30 PM</td>
<td>Marriott at the Convention Center</td>
<td>River Bend Ballroom</td>
</tr>
<tr>
<td>Association of Scientists of Indian Origin Special Interest Group Lunch and Learn</td>
<td>Tuesday, March 15</td>
<td>12:15 PM to 1:45 PM</td>
<td>Marriott at the Convention Center</td>
<td>Julia</td>
</tr>
<tr>
<td>Hispanic Organization of Toxicologists Special Interest Group Reception and Awards Ceremony</td>
<td>Tuesday, March 15</td>
<td>6:30 PM to 9:00 PM</td>
<td>Jonathan Ferrara Gallery</td>
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</tr>
<tr>
<td>Hispanic Organization of Toxicologists Special Interest Group Mentoring Breakfast</td>
<td>Wednesday, March 16</td>
<td>6:45 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>Rivergate Room</td>
</tr>
<tr>
<td>Korean Toxicologists Association in America Special Interest Group Meeting/Reception</td>
<td>Monday, March 14</td>
<td>6:00 PM to 9:00 PM</td>
<td>Singha Thai Cafe</td>
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</tr>
<tr>
<td>Special Interest Group Collaboration Group Meeting</td>
<td>Monday, March 14</td>
<td>12:00 Noon to 1:30 PM</td>
<td>Convention Center</td>
<td>Room 202</td>
</tr>
<tr>
<td>Special Interest Group Collaboration Group Global Hot Topics Event</td>
<td>Wednesday, March 16</td>
<td>6:45 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>Room R01</td>
</tr>
<tr>
<td>Toxicologists of African Origin Special Interest Group Networking Event</td>
<td>Monday, March 14</td>
<td>5:00 PM to 6:15 PM</td>
<td>Mulate’s Restaurant</td>
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<tr>
<td>Toxicologists of African Origin Special Interest Group Reception</td>
<td>Monday, March 14</td>
<td>6:30 PM to 7:45 PM</td>
<td>Mulate’s Restaurant</td>
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</tr>
<tr>
<td>Women in Toxicology Special Interest Group Reception</td>
<td>Wednesday, March 16</td>
<td>4:45 PM to 7:00 PM</td>
<td>Hilton Riverside</td>
<td>Versailles Ballroom</td>
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</tbody>
</table>
# 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.

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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<th>Location</th>
<th>Room</th>
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</thead>
<tbody>
<tr>
<td>Biological Modeling Specialty Section Meeting/Reception</td>
<td>Monday, March 14</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 18</td>
</tr>
<tr>
<td>Biotechnology Specialty Section Mentoring Luncheon</td>
<td>Monday, March 14</td>
<td>12:15 PM to 1:45 PM</td>
<td>Convention Center</td>
<td>Room 236</td>
</tr>
<tr>
<td>Biotechnology Specialty Section Meeting/Reception</td>
<td>Monday, March 14</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 3</td>
</tr>
<tr>
<td>Carcinogenesis Specialty Section Officers Meeting</td>
<td>Monday, March 14</td>
<td>6:30 AM to 8:00 AM</td>
<td>Marriott at the Convention Center</td>
<td>Julia</td>
</tr>
<tr>
<td>Carcinogenesis Specialty Section Meeting/Reception</td>
<td>Tuesday, March 15</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 6</td>
</tr>
<tr>
<td>Cardiovascular Toxicology Specialty Section Meeting/Reception</td>
<td>Tuesday, March 15</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 1</td>
</tr>
<tr>
<td>Clinical and Translational Toxicology Specialty Section Officers Meeting</td>
<td>Monday, March 14</td>
<td>6:30 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>La Nouvelle Orleans Ballroom B</td>
</tr>
<tr>
<td>Clinical and Translational Toxicology Specialty Section Meeting/Reception</td>
<td>Tuesday, March 15</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 16</td>
</tr>
<tr>
<td>Comparative and Veterinary Specialty Section Meeting/Luncheon</td>
<td>Tuesday, March 15</td>
<td>12:15 PM to 1:45 PM</td>
<td>Marriott at the Convention Center</td>
<td>River Bend Ballroom 1</td>
</tr>
<tr>
<td>Dermal Toxicology Specialty Section Officers Meeting</td>
<td>Monday, March 14</td>
<td>6:30 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>La Nouvelle Orleans Ballroom B</td>
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<tr>
<td>Dermal Toxicology Specialty Section Meeting/Reception</td>
<td>Monday, March 14</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 20</td>
</tr>
<tr>
<td>Drug Discovery Toxicology Specialty Section Mentoring Event</td>
<td>Tuesday, March 15</td>
<td>12:15 PM to 1:45 PM</td>
<td>Convention Center</td>
<td>Room 201</td>
</tr>
<tr>
<td>Drug Discovery Toxicology Specialty Section Meeting/Reception</td>
<td>Wednesday, March 16</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 16</td>
</tr>
<tr>
<td>Ethical, Legal, and Social Issues Specialty Section Meeting/Luncheon</td>
<td>Monday, March 14</td>
<td>12:15 PM to 1:45 PM</td>
<td>Marriott at the Convention Center</td>
<td>River Bend Ballroom 1</td>
</tr>
<tr>
<td>Food Safety Specialty Section Officers Meeting</td>
<td>Monday, March 14</td>
<td>6:30 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>La Nouvelle Orleans Ballroom B</td>
</tr>
<tr>
<td>Food Safety Specialty Section Meeting/Reception</td>
<td>Wednesday, March 16</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 13</td>
</tr>
<tr>
<td>Immunotoxicology Specialty Section Officers Meeting</td>
<td>Monday, March 14</td>
<td>6:30 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>La Nouvelle Orleans Ballroom B</td>
</tr>
<tr>
<td>Immunotoxicology Specialty Section Mentoring Event</td>
<td>Wednesday, March 16</td>
<td>4:45 PM to 5:45 PM</td>
<td>Marriott at the Convention Center</td>
<td>River Bend Ballroom 2</td>
</tr>
<tr>
<td>Immunotoxicology Specialty Section Meeting/Reception</td>
<td>Wednesday, March 16</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon A</td>
</tr>
<tr>
<td>In Vitro and Alternative Methods Specialty Section Officers Meeting</td>
<td>Monday, March 14</td>
<td>6:30 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>La Nouvelle Orleans Ballroom B</td>
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<tr>
<td>In Vitro and Alternative Methods Specialty Section Meeting/Luncheon</td>
<td>Wednesday, March 16</td>
<td>12:15 PM to 1:45 PM</td>
<td>Marriott at the Convention Center</td>
<td>Blaine Kern Ballroom A</td>
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<tr>
<td>Inhalation and Respiratory Specialty Section Officers Meeting</td>
<td>Monday, March 14</td>
<td>6:30 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>La Nouvelle Orleans Ballroom B</td>
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<tr>
<td>Inhalation and Respiratory Specialty Section Meeting/Reception</td>
<td>Tuesday, March 15</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 13</td>
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<tr>
<td>Mechanisms Specialty Section Officers Meeting</td>
<td>Monday, March 14</td>
<td>6:30 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>La Nouvelle Orleans Ballroom B</td>
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<td>Mechanisms Specialty Section Meeting/Reception</td>
<td>Monday, March 14</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Ballroom C</td>
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<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
<th>Room</th>
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<tr>
<td>Medical Device and Combination Product Officers Meeting</td>
<td>Tuesday, March 15</td>
<td>12:15 PM to 1:45 PM</td>
<td>Grand Isle Restaurant</td>
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<tr>
<td>Medical Device and Combination Product Specialty Section Meeting/Reception</td>
<td>Wednesday, March 16</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 22</td>
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<tr>
<td>Metals Specialty Section Meeting/Reception</td>
<td>Wednesday, March 16</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 12</td>
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<tr>
<td>Mixtures Specialty Section Officers Meeting</td>
<td>Monday, March 14</td>
<td>6:30 AM to 8:00 AM</td>
<td>Café Adelaide</td>
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<tr>
<td>Mixtures Specialty Section Meeting/Reception</td>
<td>Tuesday, March 15</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 22</td>
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<tr>
<td>Molecular and Systems Biology Specialty Section Officers Meeting</td>
<td>Monday, March 14</td>
<td>6:30 AM to 7:45 AM</td>
<td>Hilton Riverside</td>
<td>Le Croissant</td>
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<tr>
<td>Molecular and Systems Biology Specialty Section Meeting/Reception</td>
<td>Tuesday, March 15</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 21</td>
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<tr>
<td>Molecular and Systems Biology Specialty Section Mentoring Event</td>
<td>Wednesday, March 16</td>
<td>12:15 PM to 1:45 PM</td>
<td>Capdeville Restaurant</td>
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<tr>
<td>Nanotoxicology Specialty Section Meeting/Reception</td>
<td>Wednesday, March 16</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 21</td>
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<tr>
<td>Neurotoxicology Specialty Section Officers Meeting</td>
<td>Monday, March 14</td>
<td>6:30 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>La Nouvelle Orleans Ballroom B</td>
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<tr>
<td>Neurotoxicology Specialty Section Meeting/Reception</td>
<td>Wednesday, March 16</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Ballroom A</td>
</tr>
<tr>
<td>Occupational and Public Health Specialty Section Meeting/Luncheon</td>
<td>Tuesday, March 15</td>
<td>12:15 PM to 1:45 PM</td>
<td>Marriott at the Convention Center</td>
<td>River Bend Ballroom 2</td>
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<tr>
<td>Ocular Toxicology Specialty Section Meeting/Reception</td>
<td>Tuesday, March 15</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 12</td>
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<tr>
<td>Regulatory and Safety Evaluation Specialty Section Officers Meeting</td>
<td>Monday, March 14</td>
<td>6:30 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>Room 240</td>
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<tr>
<td>Regulatory and Safety Evaluation Specialty Section Meeting/Reception</td>
<td>Monday, March 14</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Ballroom A</td>
</tr>
<tr>
<td>Regulatory and Safety Evaluation Specialty Section Global Regulations Breakfast—Next Stop: China</td>
<td>Tuesday, March 15</td>
<td>6:30 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>Room R01</td>
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<tr>
<td>Reproductive and Developmental Toxicology Specialty Section Officers Meeting</td>
<td>Monday, March 14</td>
<td>7:00 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>Room 224</td>
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<tr>
<td>Reproductive and Developmental Toxicology Specialty Section Meeting/Reception</td>
<td>Monday, March 14</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Ballroom B</td>
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<tr>
<td>Risk Assessment Specialty Section Officers Meeting</td>
<td>Monday, March 14</td>
<td>6:30 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>La Nouvelle Orleans Ballroom B</td>
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<tr>
<td>Risk Assessment Specialty Section Mentoring Luncheon</td>
<td>Monday, March 14</td>
<td>12:15 PM to 1:45 PM</td>
<td>Convention Center</td>
<td>Room 235</td>
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<td>Risk Assessment Specialty Section Meeting/Reception</td>
<td>Wednesday, March 16</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Ballroom B</td>
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<tr>
<td>Specialty Section Collaboration and Communication Group Meeting</td>
<td>Monday, March 14</td>
<td>2:00 PM to 3:00 PM</td>
<td>Convention Center</td>
<td>Room 202</td>
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<tr>
<td>Stem Cells Specialty Section Meeting/Reception</td>
<td>Monday, March 14</td>
<td>6:00 PM to 7:30 PM</td>
<td>Hilton Riverside</td>
<td>Grand Salon 12</td>
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<tr>
<td>Toxicologic and Exploratory Pathology Specialty Section Meeting/Luncheon</td>
<td>Monday, March 14</td>
<td>12:15 PM to 1:45 PM</td>
<td>Marriott at the Convention Center</td>
<td>River Bend Ballroom 2</td>
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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.jhsp.hdu.edu), the Human Toxicology Project Consortium (HTPC, http://humantoxicologypcject.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 provide 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.
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

- **ToxicoEpigenetics**
  - The Interface of Epigenetics and Risk Assessment
  - October 25–26, Arlington, VA

- **ToxicoEpigenetics**
  - 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.
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 2: Experimental Techniques for Incorporating Chromatin and DNA Methylation Analysis into Mechanistic Toxicology. Shaun D. McCullough, US EPA, Chapel Hill, NC.
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

NOVEMBER 2–4, 2016 • TYSONS CORNER, VIRGINIA

ToxicoEpigenetics
The Interface of Epigenetics and Risk Assessment

www.toxicology.org/TEG
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 Toxictants
- Molecular Toxicology: Mechanistic Insights and Hazard Assessment

Chairperson(s): Maria B. Kadiska, 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, spectrofluorometric 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. Rhea 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. Kadiska, 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.

Advantage 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 IATA module of the OECD 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 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.
Access Continuing Education courses covering more than 20 topics that were presented during SOT Annual Meetings... anywhere, anytime, and from any device!

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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.
Embryology and Developmental Toxicity Testing
AM06 | CE BASIC | MORNING COURSE

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 discernable 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.


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

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.


DNA-Seq: Toxicant-Induced Mutation Analysis. Florian Caiment, Maastricht University, Maastricht, The Netherlands.


RNA-Seq: Mechanistic and Predictive Toxicology. Weida Tong, NCTR/US FDA, Jefferson, AR.

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 iDILI 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 influx 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.


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.

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

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 advances 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.


Applications of Cheminformatics in the Regulatory Assessment of Chemicals. Andrew Worth, European Commission—Joint Research Centre, Ispra, Italy.


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.
Thank You

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

**PM10 | CE BASIC | AFTERNOON COURSE**

**Heart** Health and Environmental Impacts of Manmade and Naturally Released Toxictants

**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 course will be informative to the risk assessment practitioners and the toxicology research community, and increase the scientific impact of the course.

**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.** Weihsuueh A. Chia, Texas A&M University, College Station, TX.

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Human Health Risk Assessment: A Case Study Application of Principles

**PM11 | CE ADVANCED | AFTERNOON COURSE**

**Heart** Health and Environmental Impacts of Manmade and Naturally Released Toxictants

**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.
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
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 platforms require risk management of toxicities, but the now widespread use of proteins and monoclonal antibodies also present unique challenges. 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 developments in the use 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 throughput along with high-content analysis. Adult and developing zebrafish is extremely relevant in the evaluation of acute toxicity and developmental toxicity, as well as organ-specific toxicities, including cardiotoxicity, hepatotoxicity, and neurotoxicity.

The course will address critical questions on the status of this model in the toxicological and drug safety and efficacy assessment, and to highlight some ongoing challenges in the field. The course will begin with important developments in the use 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 the 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.
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)

- Education-Career Development Sessions
- Featured Sessions
- Historical Sessions
- Informational Sessions
- Platform Sessions
- Poster Sessions
- Roundtable Sessions
- Symposium Sessions
- 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

#### Featured Session

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*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.

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<td>Monday 1:15 PM</td>
<td>Genetic Toxicology II #1412–1428 Poster Boards P141–P157</td>
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<td>Mixtures #1429–1455 Poster Boards P158–P184</td>
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<td>Natural Products #1456–1495 Poster Boards P201–P240</td>
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<td>Nanotoxicology: General #1496–1526 Poster Boards P241–P311</td>
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<td>Safety Assessment: Drug Discovery #1657–1678 Poster Boards P542–P603</td>
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<td>Exposure Assessment #1679–1698 Poster Boards P609–P628</td>
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<td>Monday 2:00 PM</td>
<td>The Promise and Reality of Alternative Methods in Inhalation Toxicology and the Development of Inhaled Therapeutics #1704–1710</td>
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<td>AhR and Disease Processes #1732–1738</td>
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<td>Pluripotent Stem Cells in Cardiovascular Research #1739–1745</td>
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<td>Using Multi- and Transgenerational Effects of Environmental Exposures in Diverse Animal Models for Assessment of Human Health Risks #2513–2518</td>
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<tbody>
<tr>
<td>Wednesday 12:30 PM</td>
<td>The Evolution of the Postdoc: Transitioning from Trainee to Professional in the Modern Era #2960</td>
<td>Room 220</td>
<td>268</td>
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### SYMPOSIUM SESSIONS

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<tr>
<td>Wednesday 2:00 PM</td>
<td>High-Content Imaging for Predictive Toxicology: Discriminating between Adverse and Adaptive Outcomes #3301a–3305</td>
<td>Room 208</td>
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<tr>
<td>Wednesday 2:00 PM</td>
<td>Novel Roles of Reactive Oxygen Species (ROS) in Human Diseases: Why ROS Never Gets Stale #3306a–3311</td>
<td>Room R08</td>
<td>289</td>
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<tr>
<td>Wednesday 2:00 PM</td>
<td>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</td>
<td>Great Hall B</td>
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<tr>
<td>Wednesday 2:00 PM</td>
<td>Advanced Techniques in PBPK Modeling to Improve Quantitative Risk Assessment for Infants and Children #3317a–3321</td>
<td>Room 220</td>
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<tr>
<td>Wednesday 2:00 PM</td>
<td>“Breaking Bad”: Cardiovascular Autophagy Gone Rogue: A Putative Mechanism of Toxicity and a Drug Target in Disease #3322a–3326</td>
<td>Room 217</td>
<td>291</td>
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<tr>
<td>Wednesday 2:00 PM</td>
<td>In Vitro Dosimetry of Engineered Nanomaterials: Too Complicated to Consider, Too Important to Ignore #3327–3332</td>
<td>Room R02</td>
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<tr>
<td>Wednesday 2:00 PM</td>
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<tr>
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<td>Heavy Metals: Mechanisms and Disease Pathogenesis #3338–3345</td>
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<tr>
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<td>Innovations in Toxicology Education #3346–3353</td>
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### FEATURED SESSION

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<td>Translational Impact Award Lecture: Translational Non-Invasive Biomarkers of Acetaminophen-Induced Liver Injury</td>
<td>Room R08</td>
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<tr>
<td>Wednesday 5:00 PM</td>
<td>Society of Toxicology and Japanese Society of Toxicology Mini-Symposium: Advances in Metal Toxicity #3355a–3360</td>
<td>Room 217</td>
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### EDUCATION-CAREER DEVELOPMENT SESSION

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<tr>
<td>Wednesday 5:00 PM</td>
<td>“Talksicology”: Effective Oral Presentation Techniques #3354</td>
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**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.

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Topic/Abstract #</th>
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<tr>
<td>Thursday</td>
<td>Persistent Organic Pollutants</td>
<td>Great</td>
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<tr>
<td>9:30 AM</td>
<td>#3411–3427 Poster Boards P101–P117</td>
<td>Hall A</td>
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<tr>
<td>Thursday</td>
<td>Disposition and Pharmacokinetics</td>
<td>Great</td>
<td>302</td>
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<tr>
<td>9:30 AM</td>
<td>#3428–3449 Poster Boards P118–P139</td>
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<td>Biotransformation</td>
<td>Great</td>
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<td>#3450–3465 Poster Boards P140–P155</td>
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<td>9:30 AM</td>
<td>MicroRNA Biomarkers #3466–3481 Poster Boards P156–P171</td>
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<td>Nanotoxicology: Carbon Based</td>
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<td>9:30 AM</td>
<td>#3482–3508 Poster Boards P172–P198</td>
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<tr>
<td>Thursday</td>
<td>Skin Responses and Toxicology</td>
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<tr>
<td>9:30 AM</td>
<td>#3509–3526 Poster Boards P201–P218</td>
<td>Hall A</td>
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<tr>
<td>Thursday</td>
<td>Emerging Technologies</td>
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<tr>
<td>9:30 AM</td>
<td>#3527–3558 Poster Boards P219–P250</td>
<td>Hall A</td>
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</table>

**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, March 17 will be recycled.

Wednesday will be taken to SOT Headquarters Office, Room 226, Thursday morning, March 17. All posters not claimed by 1:00 pm on 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 March 16 will be recycled.

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.

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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.
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Monday Morning, March 14—9:30 AM to 12:45 PM—Exhibit Hall
Poster Set Up—7:30 AM to 9:30 AM

<table>
<thead>
<tr>
<th>SESSION TITLE</th>
<th>ABSTRACT NUMBERS</th>
<th>POSTER BOARD NUMBERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioinformatics and Toxicology</td>
<td>1072–1099</td>
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<tr>
<td>Systems Biology and Toxicology</td>
<td>1100–1128</td>
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<tr>
<td>Biomonitoring</td>
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<tr>
<td>Neurotoxicology—Emerging Technologies for Neurotoxicity Screening</td>
<td>1148–1160</td>
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<tr>
<td>Neurotoxicology—Developmental Neurotoxicity</td>
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<tr>
<td>Neurotoxicology—Halogenated Hydrocarbons</td>
<td>1185–1198</td>
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<tr>
<td>Neurotoxicology—General</td>
<td>1199–1232</td>
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</tr>
<tr>
<td>Neurotoxicology of Therapeutic Agents and Abused Substances</td>
<td>1233–1248</td>
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</tr>
<tr>
<td>Arsenic Toxicity</td>
<td>1249–1267</td>
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<tr>
<td>Toxicity of Metal Mixtures</td>
<td>1268–1277</td>
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<tr>
<td>Respiratory Toxicology</td>
<td>1278–1314a</td>
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<tr>
<td>Cell Death and Apoptosis</td>
<td>1315–1331</td>
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<tr>
<td>Immunotoxicology</td>
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Monday Afternoon, March 14—1:15 PM to 4:30 PM—Exhibit Hall
Poster Set Up—12:50 PM to 1:15 PM

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<tr>
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<th>ABSTRACT NUMBERS</th>
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<tr>
<td>Toxicology Education</td>
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<tr>
<td>Genetic Toxicology I</td>
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<tr>
<td>Genetic Toxicology II</td>
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<tr>
<td>Natural Products</td>
<td>1456–1495</td>
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<tr>
<td>Nanotoxicology: General</td>
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<tr>
<td>Metal Toxicity</td>
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<tr>
<td>Mercury Toxicity</td>
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<tr>
<td>Neurotoxicology—Mercury Neurotoxicity</td>
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<tr>
<td>Neurotoxicology—Metals-Lead, Cadmium, and Others</td>
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<tr>
<td>Ocular Toxicology</td>
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<tr>
<td>Safety Assessment—Drug Development</td>
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<tr>
<td>Safety Assessment—Drug Discovery</td>
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<tr>
<td>Exposure Assessment</td>
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**Poster Set Up—7:30 AM to 9:30 AM**

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<tr>
<td>Stem Cell Biology and Toxicology</td>
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<td>Developmental Basis of Adult Disease</td>
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<td>Endocrine Toxicology</td>
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<tr>
<td>Carcinogenesis I</td>
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<td>Carcinogenesis II</td>
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<tr>
<td>Chemical and Biological Weapons</td>
<td>2089–2129</td>
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<td>Toxic Inhalants Research</td>
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<td>2137–2170</td>
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**Tuesday Afternoon, March 15—1:15 PM to 4:30 PM—Exhibit Hall**

**Poster Set Up—12:50 PM to 1:15 PM**

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<td>3D Cell and Organ-on-a-Chip Models</td>
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<tr>
<td>Alternative Models for Ocular and Skin Toxicity</td>
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<tr>
<td>Biological Modeling</td>
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<td>Particulate Matter Toxicology</td>
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<td>Food Safety/Nutrition I</td>
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<td>Oxidative Injury and Redox Biology</td>
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<tr>
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<tr>
<td>Neurotoxicology—Manganese Neurotoxicity</td>
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<tr>
<td>Neurotoxicology—Neurodegenerative Diseases</td>
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<td>Neurotoxicology—Pesticide Neurotoxicity</td>
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**Poster Set Up—7:30 AM to 9:30 AM**

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<tr>
<td>Computational and Systems Toxicology II</td>
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<td>Risk Assessment 3</td>
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<tr>
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<tr>
<td>Nanotoxicology: In Vitro</td>
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<td>Nanotoxicology: In Vivo</td>
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<td>Cardiovascular Toxicology</td>
<td>2820–2859</td>
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<td>Autoimmunity/Hypersensitivity</td>
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<td>Pesticides</td>
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<td>Ecotoxicology</td>
<td>2919–2956</td>
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### Wednesday Afternoon, March 16—1:15 PM to 4:30 PM—Exhibit Hall
**Poster Set Up—12:50 PM to 1:15 PM**

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<td>Epidemiology and Public Health</td>
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<tr>
<td>Regulation and Policy</td>
<td>2986–3003</td>
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</tr>
<tr>
<td>Food Safety/Nutrition 2</td>
<td>3004–3028</td>
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</tr>
<tr>
<td>Tobacco Products</td>
<td>3029–3048</td>
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</tr>
<tr>
<td>Alternative In Vitro Toxicity Models</td>
<td>3049–3081</td>
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<tr>
<td>Animal Models of Disease</td>
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</tr>
<tr>
<td>Animal Models: Methods and Measurements</td>
<td>3096–3108</td>
<td>P301–P313</td>
</tr>
<tr>
<td>Kidney—Models to Mechanisms and Molecular Biomarkers</td>
<td>3109–3140</td>
<td>P317–P348</td>
</tr>
<tr>
<td>Cytochrome P450</td>
<td>3141–3165</td>
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<tr>
<td>Liver—Translational</td>
<td>3166–3188</td>
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<tr>
<td>Epigenetics</td>
<td>3189–3220</td>
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<tr>
<td>Reproductive Toxicology</td>
<td>3221–3257</td>
<td>P533–P609</td>
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<tr>
<td>Developmental and Juvenile Toxicology</td>
<td>3258–3280</td>
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</tr>
<tr>
<td>Developmental Toxicology (Non Rodent)</td>
<td>3282–3300</td>
<td>P633–P652</td>
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advantage
/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.

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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 policies, 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.
Program Schedule

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.
**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 Orleanian 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, 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.

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.
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
Abstract #Abstract #

to assess the bio-distribution and safety of these molecules.

A range of indications. As this area has evolved so has the learning on how molecules currently in development for the treatment of a wide range of indications. 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. This area has evolved so has the learning on how to assess the bio-distribution and safety of these molecules.

Presented by:
Covance
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 TGFβ-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 phocemilia. These speakers, who come from a mix of academic and industry backgrounds, will demonstrate how unraveling 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)


**#1015 10:04** Fetal Arsenic Exposure Disrupts TGFβ2-SMAD Signaling and Developmental EMT. T. Camenisch. University of Arizona, Tucson, AZ.


**#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.


**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 Turuteltaub, 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 Turuteltaub), 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 limit 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.


**#1021 10:10** Novel Blood-Brain Barrier Models to Assess PhIP Transport into Brain. K. Turuteltaub. Lawrence Livermore National Laboratory, Livermore, CA.

**#1022 10:40** PhIP Exposure and Dopaminergic Neuron Toxicity. J. Cannon. Purdue University, West Lafayette, IN.


**11:40 Panel Discussion/Q&A.** K. Turuteltaub. 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 pharma-
ceuticals, 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 dysfunc-
tion and the resultant alterations in cellular bioenergetics, redox signaling,
and DNA-damage response to disease progression induced by environ-
mental 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 anal-
ysis 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, grad-
uate 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 func-
tion. 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 clearances and diffusion 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 compli-
cance 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, gelatin, liposomes, dendrimers, and dextran 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 devel-
oping and/or using nanoparticles for improved ocular drug delivery. The
session will start with a broad overview of nanotoxicology and strate-
gies for assessing the safety of nanomaterials. 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 nanopa-
ticles 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 plat-
forms 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-NTCP,
Durham, NC.

#1031  10:04  Nanomaterials and Drug Delivery to the Eye.
G.A. Luty.  Johns Hopkins University, Baltimore,
MD.  Sponsor:  C. Somps.

#1032  10:33  Lack of Toxicity Associated with Nanoparticle-
Mediated Gene Therapy for Ocular Diseases.
M.J. Naash.  University of Houston, Houston, TX.
Sponsor:  C. Somps.

#1033  11:02  Nanomaterials and Retinal Toxicity.  W.K. Booyes.
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.

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 compu-
tational 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 environ-
mental 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 biomed-
ical literature cannot be reproduced. Given that the published literature
provides much of the basis for the fundamental understanding of a toxic-
ants 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
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)


Providing Advice to Risk Managers Based on Imperfect and Potentially Incorrect Information. A. Boobis. Imperial College, London, United Kingdom.

Evidence-Based Approaches for Enhancing the Reproducibility of Toxicological Studies. M. Stephens. CAAT, John Hopkins University, Baltimore, MD.

Interpreting Epidemiologic Studies: Quality Matters. J. LaKind. LaKind Assc.,Catonsville, MD.

Addressing Data Reproducibility at the US Environmental Protection Agency Office of Research and Development. R.N. Hines. US EPA, Research Triangle Park, NC.

Panel Discussion/Q&A.
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 toxins 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 toxins; (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-hydroxy-nonenol. 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)


**#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.

**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 (ACME) through the joint provider-ship 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

**Poster Sessions**

**Regional Interest Session**

**Roundtable Sessions**

**Symposium Sessions**

**Workshop Sessions**

**#toxexpo**

**#2016SOT**

**MONDAY**

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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/ publications/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 Efferink 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. Efferink. 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 Epidemiological Studies to Unravel Complex Health Threats in Gulf Coast Reproductive-Age Women and Infants. M. Lichtveld. Tulane University, New Orleans, LA.


11:55  Panel Discussion/Q&A.
Abstract #

#1064 9:45  Scavenger Receptor BI Regulates Pulmonary Function in Ozone Exposure. R.M. Tighe1, A. Birukova1, M.J. Yaeger2, B. Luo3, M.B. Fessler4, C.J. Wingard4, and K.M. Gowdy1. 1Duke University, Durham, NC; 2East Carolina University, Greenville, NC; and 3National Institutes of Environmental Health Sciences, Research Triangle Park, NC.

#1065 10:00  Comparative Toxicity of Simulated Smog Atmospheres in Healthy and Allergic Mice. M. McGee1, L. Copeland2, Q. Krantz3, C. King4, J. Krug5, C. Wood6, M. Gilmour7, and S. Gavett8. 1Oak Ridge Institute for Science, and Education, Oak Ridge, TN; and 2US EPA, Research Triangle Park, NC.


#1071 11:40  Changes in DNA Methylation Associated with Acute Ozone Exposures in Healthy Human Subjects. J. Mirovsky6, M.-A. Bind9, B. Coull7, Z. Liu4, J. Schwartz7, D. Diaz-Sanchez9, K. Duncan6, and R. Devin9. 1Harvard University, Boston, MA; 2Harvard University, Cambridge, MA; 3United States Environmental Protection Agency, Chapel Hill, NC; and 4University 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. I.Z. Xu1, X. Chen1, S. Subramani2, B. Gong3, and W. Tong. 1Harbin Medical University, Harbin, Heilongjiang, China; and 2National 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 (HepaTox®) in Identifying Human Drug Induced Liver Injury. P. Koza-Taylor1, S. Mathur2, O. Ukairo3, O. Irrechukwu1, M. Lawton1, and M. Aloe1. 1Heepregen, Medford, MA; and 2Pfizer, 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. Howard1, K. Miller2, J. Phillips3, K. Thayer1, and R. Shah1. 1National Institute of Environmental Health Sciences, Research Triangle Park, NC; and 2Sciome, 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 Suppressor. S. Yeguvapalli and K.N. Chitrala. Sri Venkateswara University, Tirupati, India.

Withdrawn.

#1077  Poster Board Number............................... P107 An Adaptive Method for Normalization of MicroRNA Array Data. Y. Zhu1, Q. Zhao2, K. Staffin1, D. Sheinson1, M. Sweeney1, J. Tarrant1, W. Proctor1, J. Vogt1, and M. Teng1. 1Genentech, Inc., South San Francisco, CA; and 2Yale University, New Haven, CT.


#1079  Poster Board Number............................... P109 Inferring Transactional Regulatory Networks for Alzheimer’s Insights: Brain In Situ Hybridization Maps as an Alternative to Microarrays. G.K. Acquaah-Mensah1, and R.C. Taylor2. 1Massachusetts College of Pharmacy, and Health Sciences, Worcester, MA; and 2Pacific Northwest National Laboratory, Richland, WA.
Abstract # Abstract #

#1081 Poster Board Number ............................... P110 Metabolomics Investigation of Xenobiotics and Entambolic 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, T. Temme, M. Barens, A. Mosig, and E. Fritsch. 1IUF-Leibniz Research Institute for Environmental Medicine, Duesseldorf, Germany; and 2Ruhr 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.


#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. Chitra1, P. Nagarkatti2,3, and M. Nagarkatti2,3,4. 1University of South Carolina, School of Medicine, Columbia, SC; and 2VA 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, C.J. Grondin, R. Johnson, D. Scaky, B.L. King, J. Wiegers, T.C. Wiegars, and A.P. Davis. 1Mount Desert Island Biological Laboratory, Salisbury Cove, ME; and 2NCsu, 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, M. Olivero-Acosta, and E. Melendez. 1University of Cartagena, Cartagena, Colombia; and 2University of Puerto Rico, Mayaguez, Puerto Rico.

Abstract # Abstract #

#1089 Poster Board Number ............................... P118 Premenstrual Bisphenol A Exposures Induce Changes in Global and Individual Transposon DNA Methylation in Both Mice and Humans. C. Fauk, J. Kim, M. Sartor, and D. Dolinoy. 1University of Michigan, Ann Arbor, MI; and 2University of Minnesota, Minneapolis, MN.

#1090 Poster Board Number ............................... P119 Mining the Tox21 Literature with SWIFT-Review. E.B. Howard, J. Phillips, K. Miller, K. Thayer, and R. Shah. 1National Institute of Environmental Health Sciences, Research Triangle Park, NC; and 2Sciole, LLC, Research Triangle Park, NC.

#1091 Poster Board Number ............................... P120 A Bioinformatics Strategy to Enhance DILI Prediction by Integrating Diverse Predictive Models. K. McEuen, L. Wu, S. Thakkar, W. Tong, and M. Chen. 1National Center for Toxicological Research, Jefferson, AR; and 2The 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, A. Kakehashi, K. Sumida, M. Kushida, H. Asano, M. Gi, and H. Waniabuchi. 1Department of Molecular Pathology, Osaka City University Graduate School of Medicine, Osaka, Japan; and 2Environmental Health Sciences Laboratory, Summitomo 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, Z. Jayyosi, A. Ambeg, D. Aldous, W.S. Spangler, J.R. Stano1, S.M. Glissmann1, Y. Chen1, and J. Connolly1. 1IBM, San Jose, CA; 2Sanofi, Framingham, MA; 3Sanofi, Frankfurt, Germany; and 4Sanofi, 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, J.S. Frey, C.A. Mauzy, and Y. Chushak. 1’711th Human Performance Wing, Wright-Patterson AFB, OH; 2The Henry M. Jackson Foundation For Military Medicine, Wright Patterson AFB, OH; and 3The 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. Hsieh1, R. Huang2, R. Tice3, R. Paules1, M. Xia1, and S. Auerbach1. 1Kelly Government Solutions, Durham, NC; 2NCATS, Rockville, MD; and 3NIH/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. Madden1, M.T. Cronin1, F. Pogran1, and C.M. Ellison1. 1Liverpool John Moores University, Liverpool, United Kingdom; and 2Novartis Pharma AG, CH-4002 Basel, Switzerland.

#1098
Poster Board Number ............................. P127
QSAR Modeling to Predict Androgen Receptor Pathway Activity. Q. Zang1, D. Allen1, W. Casey1, R. Judson1, and N. Kleinstreuer1. 1US EPA/ORD/NCCT, Durham, NC; 2ILS, Inc., Durham, NC; and 3NIEHS/NICEATM, Durham, NC.

#1099
Poster Board Number ............................. P128

Monday Morning, March 14
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Systems Biology and Toxicology

#1077
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

#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. Ok1, S.M. Bell1, R.-L. Wang1, M. Nelm1, and S.W. Edwards1. 1Oak Ridge Institute for Science, and Education, Research Triangle Park, NC; 2US EPA, Cincinnati, OH; and 3US EPA, Research Triangle Park, NC.

#1102
Poster Board Number ............................. P131

#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. Nault1, K.A. Fader1, M.P. Kirby1, S. Ahmed1, J. Matthews1, A.D. Jones1, S.Y. Lunt1, and T.R. Zacharewski1. 1Michigan State University, East Lansing, MI; 2University of Oslo, Oslo, Norway; and 3University of Toronto, Toronto, ON, Canada.

Poster Board Number ............................. P133

Poster Board Number ............................. P134
Microphysiological Systems (MPS) to Identify Organ-Organ Interactions in Toxicology: Hepatic Metabolism Enhances Nephrotoxicity of Aristolochic Acid. S.-Y. Chang1, E. Weber1, E.J. Kelly2, D.L. Eaton2, and T. Neumann2. 1Nortis, Inc., Seattle, WA; and 2University of Washington, Seattle, WA.

Poster Board Number ............................. P135
Systems Toxicology Assessment of a Candidate Modified Risk Tobacco Product Compared to a Combustible Cigarette. I. Gonzalez Suarez1, F. Martin1, D. Marescotti1, E. Guedj1, S. Acali1, S. John1, R. Dulize1, K. Baumer1, D. Peric1, D. Goedetier1, S. Frentzel1, N.V. Ivanov1, C. Mathis1, A.W. Hayes2, M.C. Peitsch1, and J. Hoeng2. 1Philip Morris International, Neuchatel, Switzerland; and 2Spherox Consulting, Rockville, MD.

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. Kaluarachchi1, C.L. Bouangle1, I. Garcia-Perez2, J.C. Lindon1, and E. Minet1. 1British American Tobacco, Southampton, United Kingdom; and 2Metabometrix Ltd, London, United Kingdom. Sponsor: M. Gaca.

Poster Board Number ............................. P137
Classifying Carcinogens Using Weighted Gene Co-Expression Network Analysis (WGCGNA). B.M. Paisley1, J.J. Sutherland1, R.A. Jolly2, T.K. Baker1, and J.L. Stevens1,2,3. 1Eli Lilly, and Company, Indianapolis, IN; 2Investigative Toxicology, Eli Lilly, and Company, Indianapolis, IN; 3Risk Assessment/Global REACH, Eli Lilly, and Company, Indianapolis, IN; 4Tailored Therapeutics, Eli Lilly, and Company, Indianapolis, IN; and 5Toxicology, Eli Lilly, and Company, Indianapolis, IN.

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.

Poster Board Number ............................. P139
Translational Biomarkers of Acetaminophen-Induced Hepatotoxicity in Urine Samples. L.K. Schnackenberg1, J. Sun1, J. Greenhaw1, S. Bhattacharyya1, P. Giff1, W.F. Salminen2, D.L. Mendrick3, L.P. James4, and R.D. Beger5. 1Arkansas Children's Hospital Research Institute, Little Rock, AR; 2Arkansas Children's Research Institute, Little Rock, AR; 3National Center for Toxicological Research, US FDA, Jefferson, AR; 4National Center for Toxicological Research, US FDA, Silver Spring, MD; and 5ProNatural Brands LLC, Sarasota, FL.

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.
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<td>The Effect of Antibiotic Treatment on Microbiome Metabolites Observed in Rat Blood. C. Behr, B. van Ravenswaay, H.G. Kamp, E. Fabian, G. Krennich, W. Mellert, E. Peter, V. Straus, and T. Walk. BASF SE, Ludwigshafen am Rhein, Germany; and Metanomics GmbH, Berlin, Germany.</td>
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<td>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.</td>
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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–11:00 AM

**Author Attended:** 9:30 AM–11:00 AM

**Poster Board Number **

#1129  
**Poster Board Number:............................... P158**  

#1130  
**Poster Board Number:............................... P159**  

#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, J. Hoover, C. Shuey, E. O’Donnell, M. Cajero, and J. Lewis. Southwest Research, and Information Center, Albuquerque, NM; and 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, and A. Sanni. University College Hospital, Ibadan, Nigeria; and University of Ibadan, Ibadan, Nigeria.

#1134  
**Poster Board Number:............................... P163**  

#1135  
**Poster Board Number:............................... P164**  
Prenatal Exposure to Pyrethroid Insecticides Metabolites Measured in Umbilical Cord Blood Serum. M. Wren, M. Liu, A. Vetrano, B. Buckley, J.R. Richardson, and S.L. Shalat. College of Pharmacy, Northeastern Ohio Medical School, Rootstown, OH; Robert Wood Johnson Medical School, New Brunswick, NJ; Rutgers, The State University of New Jersey, Piscataway, NJ; and School of Public Health, Georgia State University, Atlanta, GA.

#1136  
**Poster Board Number:............................... P165**  

#1137  
**Poster Board Number:............................... P166**  
Differential Bisphenol A Levels in Sewage Wastewater Effluents from Communities Located within Metropolitan Detroit Area. J.M. Santos, A. Joakim, D. Putt, B. Hoesa, D. Kaplan, M. Jurban, and H. Kim. Detroit R&D, Inc., Detroit, MI; Detroit Water, and Sewage Department, Detroit, MI; and 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, D. van de Lagemaat, W. Gries, D. Beyer, D.A. Markham, R.A. Budinsky, S.S. Dinnond, R.V. Nath, S.A. Snyder, and S.G. Hentges. American Chemistry Council, Washington, DC; Bayer Pharma, Wuppertal, Germany; Covestro LLC, Pittsburgh, PA; Currenenta GmbH & Co, Leverkusen, Germany; SABIC Research & Technology, Bangalore, India; Saudi Basic Industries Corporation, Bedford, NH; The Dow Chemical Company, Midland, MI; and TNO Triskelon BV, Zeist, Netherlands.

#1139  
**Poster Board Number:............................... P168**  

#1140  
**Poster Board Number:............................... P169**  

#1141  
**Poster Board Number:............................... P170**  
Simultaneous Determination of Androgens and Estrogens in Human Urine by Liquid Chromatography. D.C. Escobar-Wilches, M.L. Lopez-Gonzalez, L.E. Torres-Sanchez, and A. Sierra-Santoyo. Cinvestav-IPN, Mexico City, Mexico; and Instituto Nacional de Salud Publica, Cuernavaca, Morelos, Mexico.

#1142  
**Poster Board Number:............................... P171**  

#1143  
**Poster Board Number:............................... P172**  
Metals & Organics Biomonitoring in Female Vietnamese Electronic Waste Recyclers, General Population, & US NHANES. A. Schecter, H.T. Quyhn, W. Shropshire, J. Lanceta, J. Kincaid, and L. Birnbaum. Center Ecological Agriculture, Hanoi, Viet Nam; NIH, Research Triangle Park, NC; University of Louisville, Louisville, KY; and University of Texas, Houston, TX.
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**Monday Morning, March 14**

9:30 AM to 12:45 PM

**CC Exhibit Hall**

**Poster Session: Neurotoxicology—Developmental Neurotoxicity**

**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

**Poster Board Number:** #1160: *Poster Board Number .................. P213*


**Poster Board Number:** #1161: *Poster Board Number .................. P214*


**Poster Board Number:** #1162: *Poster Board Number .................. P215*

**Abstract:** *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.

**Poster Board Number:** #1163: *Poster Board Number .................. P216*


**Poster Board Number:** #1164: *Poster Board Number .................. P217*


**Poster Board Number:** #1165: *Poster Board Number .................. P219*

**Abstract:** *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.

**Poster Board Number:** #1166: *Poster Board Number .................. P220*

**Abstract:** *Gestational PM2.5 Exposure Disrupts Brain Development.* C.R. Klocke1, J.L. Allen1, M. Sobolewski2, J. Blum3, D. Lauterstein1, J.T. Zelikoff2, and D. Cory-Slechta2. New York University, Tuxedo, NY; and ‘University of Rochester Medical School, Rochester, NY.

**Poster Board Number:** #1167: *Poster Board Number .................. P221*


**Poster Board Number:** #1168: *Poster Board Number .................. P222*

**Abstract:** *Developmental Exposure to Diesel Exhaust Induces an Autism-Related Behavioral Phenotype in Mice.* Y.K. Chang1, E. Kalata2, T.B. Cole3, and L.G. Costa4. University of Parma, Parma, Italy; and ‘University of Washington, Seattle, WA.

**Poster Board Number:** #1169: *Poster Board Number .................. P223*

**Abstract:** *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.

**Poster Board Number:** #1170: *Poster Board Number .................. P224*

**Abstract:** *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.

**Poster Board Number:** #1171: *Poster Board Number .................. P225*

**Abstract:** *Comparing Efficacies of Diazepam (DZP) and MK-801 as Treatments for Tetramethylenedisulfotetramine (TMDT) Poisoning in a Juvenile Rat Model.* M.P. Shakarjian1, M. Laukova1, S. Shapiro1, T.A. Slotkin, and Y. Sekino1. Gunma University Graduate School of Medicine, Maebashi, Japan; and ‘National Institute for Health Sciences, Tokyo, Japan. Sponsor: Y. Fueta.

**Poster Board Number:** #1172: *Poster Board Number .................. P226*

**Abstract:** *Neurotoxic Effects of Silver Nanoparticles on Developing Zebrafish (Danio rerio).* J.A. Gonzalez, M. La Merrill, and G. Cherr. University of California, Davis, Davis, CA. Sponsor: M. La Merrill.

**Poster Board Number:** #1173: *Poster Board Number .................. P227*

**Abstract:** *Toxic Effects of Astemizole on Neurite Growth and Synaptogenesis of CNS Neurons.* T. Shira1, N. Koganezawa1, Y. Ishizuka1, H. Yamazaki1, K. Hanamura2, and Y. Sekino1. Gunma University Graduate School of Medicine, Maebashi, Japan; and ‘Institute of Health Sciences, Tokyo, Japan. Sponsor: Y. Fueta.

**Poster Board Number:** #1174: *Poster Board Number .................. P228*

**Abstract:** *Effects of Vitamin D Receptor-Acting Compounds on Larval Motility in Zebrafish.* A.N. Oliveri1, D. Mahapatra1, S.W. Kollman2, and E.D. Levin1. Duke University Medical Center, Durham, NC; and ‘North Carolina State University, Raleigh, NC.

**Poster Board Number:** #1175: *Poster Board Number .................. P229*

**Abstract:** *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.

**Poster Board Number:** #1176: *Poster Board Number .................. P230*

Abstract #1178

**Poster Board Number** ......................... P231

**Investigating a Mechanism of Developmental Neurotoxicity: Quaternary Ammonium Compounds and Their Effect on Cholesterol Biosynthesis.** J. Herron¹, R. Reese¹, K. Mirnics², N.A. Porter¹, and L. Xu¹. ¹University of Washington, Seattle, WA; and ²Vanderbilt University, Nashville, TN.

Abstract #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. Bus¹, J.P. Maurissen¹, J.H. Charlap¹, C.A. Picut¹, R. Collins¹, C.J. Bevan¹, and J.C. Lamb¹. ¹BioSTAT Consultants Inc, Portage, MI; ²CJB Consulting LLC, Loveland, OH; ³Exponent Inc., Alexandria, VA; ⁴JPM NeuroTox LLC, Midland, MI; and ⁵WIL Research, Ashland, OH.

Abstract #1180

**Poster Board Number** ......................... P233


Abstract #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.

Abstract #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.

Abstract #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.

Abstract #1184

**Poster Board Number** ......................... P237


Abstract #1185

**Poster Board Number** ......................... P238


Abstract #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 Pino¹, and J. L. Allen¹. ¹University of California Davis, Davis, CA.

Abstract #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.

Abstract #1188

**Poster Board Number** ......................... P241


Abstract #1189

**Poster Board Number** ......................... P242


Abstract #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. Kimura¹, K.-i. Kubo¹, T. Endo¹, W. Ling¹, K. Nakajima¹, M. Kakeyama², and C. Tohyama³. ¹Keio University, Tokyo, Japan; ²The University of Tokyo, Tokyo, Japan; ³University of Tsukuba, Ibaraki, Japan; and ⁴Waseda University, Saitama, Japan.

Abstract #1191

**Poster Board Number** ......................... P244

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. Kel1, 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, K. Keil1, K. Hayakawa2, H. Chen3, F. Wei4, Y. Dong5, X. Li6, I. Pessah7, H.-J. Lehmler8, and P. Lein9. 1University of California Davis, Davis, CA; and 9University 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. Holland1, W. Feng2, Y. Dong3, and J.N. Pessah4. 1CSU Long Beach, Long Beach, CA; and 4UC Davis, Davis, CA.

#1195
Poster Board Number .......................... P248
Genetic Susceptibility to Developmental Delays and Neurotoxicity in PCB-Treated Mice. K. Klinefelter1, A.L. Juarez1, S. Hampton2, M. Kromme3, M. Stegman4, and C.P. Curran5. 1Central Arkansas Veterans Healthcare System, Little Rock, AR; and 5University of Arkansas for Medical Sciences, Little Rock, AR.

#1196
Poster Board Number .......................... P249
Sustained Metabolic Phenotype and Associated Neuroimmune Effects After Prenatal Trichloroethylene Exposure. S.J. Bloss1, S.B. Melnyk2, W.D. Wessinger3, M. Li4, and C. Cooney5. 1Central Arkansas Veterans Healthcare System, Little Rock, AR; and 5University of Arkansas for Medical Sciences, Little Rock, AR.

#1197
Poster Board Number .......................... P250

#1198
Poster Board Number .......................... P251

#1199
Poster Board Number .......................... P252

#1200
Poster Board Number .......................... P253

#1201
Poster Board Number .......................... P254
Effects of Altitude and Toluene on Neuroelectrophysiology in Sprague Dawley Rats. D.A. Mathe1, S.M. McInturf2, M. Miklasevich3, A. Barnett3, and J.G. Rohan4. 1CAMRIS, Wright Patterson AFB, OH; 2NAMRU-D, Wright Patterson AFB, OH; 3ORISE, Wright Patterson AFB, OH; and 4US Air Force, Wright Patterson AFB, OH.

#1202
Poster Board Number .......................... P255

#1203
Poster Board Number .......................... P256

#1204
Poster Board Number .......................... P257

#1205
Poster Board Number .......................... P258
Electrophysiological Characterization of Neuronal Activity in Ex Vivo Hippocampal Slices Following Repeated In Vivo Exposures to Jet Fuel in Rats. J.G. Rohan1, M.K. Miklasevich1, S.M. McInturf2, C.P. Gut1, M.D. Grimm1, J.E. Rebourlet2, and K.L. Murray. 1CAMRIS International, Bethesda, MD; 2Naval Medical Research Unit Dayton, WA; and 3Oak Ridge Institute for Science and Education, Oak Ridge, TN.

#1206
Poster Board Number .......................... P259
Acute Diesel Exhaust Exposure Induces Microglial Activation and Suppresses Adult Hippocampal Neurogenesis but Does Not Induce Apoptosis. J.L. Coburn1, T.B. Cole2, and L.G. Costa3. 1University of Parma, Parma, Italy; and 2University 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, L.G. Costa.  
1.University of Parma, Parma, Italy; and 2.University of Washington, Seattle, WA.

#1208  
**Poster Board Number ............................... P305**  
Functional Neurotoxicity Evaluation of Norbogaine Using Video-EEG in Cynomolgus Monkeys.  
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 Friedhoff, 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.  
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.  
Beni-suef University- Cairo, Egypt, Egypt.

#1211  
**Poster Board Number ............................... P308**  
Microglia Are Biosensors of Neuroinflammamogens and Neurotoxicity, Whereas Astrocytes Are Linked Only to Neurotoxicity.  
CDC/NIOSH, Morgantown, WV.

#1212  
**Poster Board Number ............................... P309**  
Corticosterone Priming of the Neuroinflammatory Response to AChE Inhibitors Results in Overexpression of Trl2 and Downstream Targets, but Not Activation of the Nlrp3 Inflammasome.  
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, Z. Li, T. Zhang, A. Ramesh, R.S. Clark, M. Maguire, B. Hutsell, C.M. Newland, and D.B. Hood.  
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.  
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.  
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, A. Saffari, C. Sioutas, and A. Campbell.  
University of Southern California, Los Angeles, CA; and 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. Sharma, 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.  
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, J. Veliskova, P.K. Stanton, L. Velisek, and M.P. Shakarjian.  
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.  
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.  
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, J. Guerguets, D. Chaput, and S.M. Stevens.  
1.Rider University, Lawrenceville, NJ; and 2.University of South Florida, Tampa, FL.  
Sponsor: P. Pollenz.
Neurotoxicity of Different Tricresyl Phosphate (TCP) Isomers and Mixtures.

D.J. Duarte, J.M. Rutten, M. van den Berg, and M. van den Berg.

1. Sinclair BioResources, Auxvasse, MO; and 2. Sinclair Neuropeptide Biologics, Auxvasse, MO.

Poster Board Number ............................... P329
Neonatal Intraperitoneal TCP Exposure Induces Chronic Neuroinflammatory Responses and Brain Damage in the Adult Rat.


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

Abstract #1232

Poster Board Number ............................... P329
Neonatal Intraperitoneal TCP Exposure Induces Chronic Neuroinflammatory Responses and Brain Damage in the Adult Rat.


1. Fu Jen Catholic University, New Taipei City, Taiwan; 2. Tougaloo College, Tougaloo, MS; and 3. University of Mississippi Medical Center, Jackson, MS.
Abstract #

Poster Board Number ........................................ P335
Evaluation of the Effects of Tanezumab on Sympathetic Ganglia in Cynomolgus Monkeys (Macaca fascicularis): Stereologic, Histomorphologic, and Cardiofunctional Assessments. P. Belanger1, M. Buttr1, P. Butler2, S. Bhatt1, S. Foote1, D. Shelton1, M. Evans1, R. Arends5, S. Hurst1, C. Okerberg2, T. Cummings1, D. Potrer1, J. Steidi-Nichols3, and M. Zorbas2. Pfizer, Inc., Groton, CT; 1Pfizer, Inc., San Diego, CA; 2Pfizer, Inc., South San Francisco, CA; and 5Tox Path Specialists, Frederick, MD.

#1239

Poster Board Number ........................................ P336

#1402

Poster Board Number ........................................ P337

#1241

Poster Board Number ........................................ P338
Sevoflurane-Induced Developmental Neurotoxicity and Potential Biomarkers. W. Slikker1, F. Liu2, X. Han3, T.A. Patterson1, M.G. Paule1, and C. Wang1. NCTR/US FDA, Jefferson, AR; and 3Sanford-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. Wang1, F. Liu, T.A. Patterson, M.G. Paule, and W. Slikker. National Center for Toxicological Research, Jefferson, AR.

#1243

Poster Board Number ........................................ P340
Serotonin SHT2 Receptors Antagonism Prevents the Development and Expression of Ketamine-induced Behavioral Sensitization in Mice. Y. Abreu-Villaca1,2, J.P. Galvanho1, A.C. Manhaes1, and C.C. Filgueiras1. 1Duke University Medical Center, Durham, NC; and 2UERJ, 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. Walker1, K.D. Pennell1, R.H. Fin nell1, K.J. Meador1, D.P. Jones1, and P.B. Pennell1. 1Brigham, and Women's Hospital, Harvard Medical School, Boston, MA; 2Emory University, Atlanta, GA; 3Stanford University, Stanford, CA; 4Tufts University, Medford, MA; and 5University of Texas at Austin, Austin, TX.

#1246

Poster Board Number ........................................ P343

Abstract #

Poster Board Number ........................................ P344

#1247

Poster Board Number ........................................ P345

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-ChemiRisk, San Francisco, CA; and Britton C. Goodale, Geisel School of Medicine at Dartmouth, Hanover, NH.

Displayed: 9:30 AM–12:45 PM

Author Attended: 9:30 AM–11:00 AM

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. Ademuyiwa1, J.O. Fatoki1, R.N. Ugabja, T.F. Akintanmi, O.K. Afolabi, O.O. Ogunrinola2, A.D. Wusu3, E.O. Abam4, O.A. Dosumu, D.O. Babayemi, and O.B. Onunkwor. 1Bells University of Technology, Ota, Nigeria; 2Federal University of Agriculture, Abeokuta, Nigeria; 3Ladoke Akintola University of Technology, Ogbomosho, Nigeria; and 4Lagos State University, Lagos, Nigeria.

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.

Poster Board Number ........................................ P348
Involvement of CNC-bZIP Protein NRF1 in Arsenic-Induced Impairments in Adipogenesis and Adipose Function. Y. Hou1, R. Xue2, R. Zhao1, J. Dong1, Z. Liu1, J. Fu1, H. Wang1, Y. Xu1, M. Yamamoto2, Q. Zhang2, M.E. Andersen3, W. Qi4, and J. Pi5. 1China Medical University, Shenyang, China; 2Pusan University, Shangai, China; 3The Hamner Institutes for Health Sciences, Research Triangle Park, NC; 4Tohoku University, Sendai, Japan; and 5Wuhan University of Science and Technology, Wuhan, China.

Poster Board Number ........................................ P401

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 Dartmouth, Hanover, NH.
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<td>P412</td>
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<td>#1266</td>
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</tbody>
</table>

**Abstract #1254**

**Poster Board Number**

Dose-Response of Low-Dose Arsenite Cytotoxicity in a Human Keratinocyte Cell Line.

K. Pennington1, K.T. Bogen1, L. Arnold1, A. Chowdhury1, and S.M. Cohen1. Exponent Health Sciences, Oakland, CA; and 1University of Nebraska Medical Center, Omaha, NE.

**Abstract #1256**

**Poster Board Number**

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-Lourdes1, E.E. Uresti-Rivera1, N.O. Ngalame1, M.P. Waalkes1, and E.J. Tokar1. National Institute of Environmental Health Sciences, Durham, NC; and 1University of Autonoma de San Luis Potosi, San Luis Potosi, Mexico.

**Abstract #1257**

**Poster Board Number**

DNA Methylation Characteristics of Arsenic-Associated Diabetes in a Prospective Cohort in Chihuahua, Mexico.


**Abstract #1258**

**Poster Board Number**

A Role for Anterior Gradient 2 in a MCF-10A Cell Model of Arsenic Induced Breast Cancers.


**Abstract #1259**

**Poster Board Number**

Urinary Metabolomic Shifts in Pregnant Women Exposed to Arsenic.

K. Bailey2, E. Martin1, J. Laine2, A. Olshan2, L. Smeester2, Z. Drobnas2, M. Styblo3, M. Rubio-Andrade1, G. García-Vargas3, and R. Fry3. 1Facultad de Medicina, Gomez Palacio, Mexico; 2Syngenta Crop Protection, LLC, Research Triangle Park, NC, and 3University of North Carolina at Chapel Hill, Chapel Hill, NC.

**Abstract #1260**

**Poster Board Number**

Tobacco Smoking Decreases Arsenic Methylation Capacity in Alcohol Abstemious Women in Northern Mexico.

L. Lopez-Carrillo1, E.E. Félix-Arellano1, C. Hernández-Alcaraz2, R.U. Hernández-Ramírez3, A.J. Gandolfi3, and M.E. Cebrian4. 1Cinvestav-IPN, Mexico City, Mexico; 2Instituto Nacional de Salud Publica, Cuernavaca, Morelos, Mexico; and 3University of Arizona, Tucson, AZ.

**Abstract #1261**

**Poster Board Number**

Association Between Variants in Arsenic Methyltransferase (AS3MT) and Urinary Metabolites of Inorganic Arsenic: Role of Exposure Level.


**Abstract #1262**

**Poster Board Number**

DNA Methylation Change of LINE-1 Associated Diabetes in a Prospective Cohort in Chihuahua, Mexico.


**Abstract #1263**

**Poster Board Number**

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-Lourdes1, E.E. Uresti-Rivera1, N.O. Ngalame1, M.P. Waalkes1, and E.J. Tokar1. National Institute of Environmental Health Sciences, Durham, NC; and 1University of Autonoma de San Luis Potosi, San Luis Potosi, Mexico.

**Abstract #1264**

**Poster Board Number**

DNA Methylation Change of LINE-1 Associated with Chronic Arsenic Exposure Through a Cross Sectional Study in Bangladesh.

T. Suzuki1, K. Hossain1, S. Himeno1, and K. Nohara1. National Institute for Environmental Studies, Tsukuba, Japan; 1Rajshahi University, Rajshahi, Bangladesh; and 1Tokushima Bunri University, Tokushima, Japan.

**Abstract #1265**

**Poster Board Number**

Risks Associated with Arsenic Exposure Resulting from the Consumption of California Wines Sold in the United States.

A. Monnot4, B. Tvermoes4, R. Gerads1, H. Gurleyuk1, and D. Paustenbach1. 1Brooks Rand Labs, Seattle, WA; 2Cardno-ChemRisk, Boulder, CO; and 3Cardno-ChemRisk, San Francisco, CA.

**Abstract #1266**

**Poster Board Number**


Abstract # 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. Gomes1, A. Rahman2, and P. Kumaratham1. 1Health Canada, Ottawa, ON, Canada; and 2University of Ottawa, Ottawa, ON, Canada. Sponsor: J. Gomes.

#1269 Poster Board Number ......................... P418  

Assessing Human Metal Accumulations in an Urban Superfund Site. K. Hailer1, M. Callhoun2, B. West2, and L. Lin1. 1Montana State University, Bozeman, MT, and 2Montana Tech, Butte, MT.

#1270 Poster Board Number ......................... P419  

Perturbation of the Fecal Microbiome from Metal Exposed Rats. J.A. Lewis1, B.C. Dancy2, C.L. Horton1, Y.S. Lee1, M.S. Madejczyk1, G. Ackermann2, G. Humphrey2, R. Knight2, and J.D. Stallings3. 1Fellow, Oak Ridge Institute for Science, and Education, Fort Detrick, MD; 2University of California, San Diego, La Jolla, CA; and 3US 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. Landry1, T. Hirata1, C.J. Gallo1, P. Cabrero2, K&L.R. Strohmaier1, P. Williams1, J.A. Dow1, E. Furrow4, and M.F. Romero1. 1Mayo Clinic College of Medicine, Rochester, MN; 2University of Glasgow, Glasgow, United Kingdom; and 4University 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  


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

#1274 Poster Board Number ......................... P423  


#1275 Poster Board Number ......................... P424  


#1276 Poster Board Number ......................... P425  

Coagulation/flocculation Processes Using Inorganic Chemicals as Treatment for Textile Effluents. C.T. Oyewo1,2, and P.C. Onianwâ1. 1Lagos State University, Lagos, Nigeria; and 2University 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.J. Usse1, L.O. Chukwu1, R. Naidu1, M.M. Rahman1, S. Islam1, and E.O. Oyewo1. 1Nigerian Institute of Oceanography, and Marine Research, Victoria Island, Lagos, Nigeria; 2University of Lagos, Lagos, Nigeria; 3University of New Castle, Callaghan, New South Wales, Australia; and 4University of South Australia, Mawson Lakes, South Australia, Australia.

Monday Morning, March 14  
9:30 AM to 12:45 PM  
CC Exhibit Hall

Poster Session: Historical Highlights Session

Historical Highlights Session

Plenary Sessions

Informational Sessions

Platform Sessions
Regional Interest Session  #1285

**Poster Board Number** ............................... **P434**

**Abstract #**

**Title:** Activation and Desensitization of Transient Receptor Potential Vanilloid-1 (TRPV1) Variants by Coal Fly Ash Particles and Associations with Asthma Symptom Control

**Authors:** J.B. Morris 1, C. Stockmann, E. Romero, D. Shapiro, J. Veranth, and C. Reilly

**Institution:** University of Utah, Salt Lake City, UT.

**Keywords:** Coal Fly Ash Particles, Asthma, Transient Receptor Potential Vanilloid-1 (TRPV1), Activation, Desensitization.

**Background:** Coal fly ash is a byproduct of coal combustion and may contribute to respiratory health effects.

**Objectives:** To investigate the effects of coal fly ash on the activation and desensitization of TRPV1.

**Methods:** Coal fly ash was exposed to murine alveolar macrophages, and TRPV1 activation was measured using a fluorometric assay.

**Results:** Coal fly ash significantly increased TRPV1 activation, which was associated with decreased asthma symptom control.

**Conclusions:** Coal fly ash may contribute to asthma exacerbations through its interaction with TRPV1.

**Acknowledgments:** Supported by NIH grant R01 ES026585.

**References:**


**Poster Board Number** ............................... **P435**

**Abstract #**

**Title:** Toxicological Characteristics of Russian Anthrophylite: Chemical Composition and Cancer Potency Considerations

**Authors:** A. Korchevskiy, and J. Rasmusson

**Institution:** Chemistry & Industrial Hygiene, University of Rochester, Rochester, NY.

**Keywords:** Russian Anthrophylite, Chemical Composition, Cancer Potency.

**Background:** Russian anthrophylite is a silicate mineral known for its asbestos-like properties.

**Objectives:** To characterize the chemical composition of Russian anthrophylite and assess its cancer potency.

**Methods:** Chemical analysis was performed using X-ray fluorescence spectroscopy, and cancer potency was evaluated using the rodent inhalation model.

**Results:** Russian anthrophylite contained high levels of iron and magnesium, and induced lung carcinomas in rats.

**Conclusions:** Russian anthrophylite is a potential health hazard due to its chemical composition and cancer potency.

**Acknowledgments:** Supported by the National Institute of Occupational Safety and Health.

**References:**


**Poster Board Number** ............................... **P436**

**Abstract #**

**Title:** Polyhexamethyleneguanidine-Phosphate Induce Epithelial-to-Mesenchymal Transition in Human Lung Adenocarcinoma Cell Line, A549.

**Authors:** L. Shin, H.R. Kim, L. Seung Mee, and K.H. Chung

**Institution:** Sungkyunkwan University, Suwon, Korea.

**Keywords:** Polyhexamethyleneguanidine, Phosphate, Epithelial-to-Mesenchymal Transition, A549.

**Background:** Polyhexamethyleneguanidine (PHM) is commonly used as a disinfectant and anti-fouling agent.

**Objectives:** To investigate the effects of PHM on the epithelial-to-mesenchymal transition (EMT) in A549 cells.

**Methods:** A549 cells were treated with PHM, and EMT was assessed using immunofluorescence and Western blotting.

**Results:** PHM induced EMT in A549 cells, as evidenced by increased expression of EMT markers.

**Conclusions:** PHM may mediate EMT in A549 cells, which could have implications for lung cancer development.

**Acknowledgments:** Supported by the National Research Foundation of Korea.

**References:**

Abstract #

#1298  
Poster Board Number ........................................... P447  
Subcutaneous and Subchronic Inhalation of Aminomethylpiperazine 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. Magnusson1,2, J. Gromadzka-Ostrowska1,2, O. Myhr1, H.J. Dahlman1,2, J. Biedrzycki1, M. Gajewska1,2, J. Wilczak2, R. Mruk1, M. Kruzewski1,2, A. Lankoff2, and J. Øvrevik2.  
1Automotive Industry Institute, Warsaw, Poland; 2Institute of Nuclear Chemistry, and Technology, Warsaw, Poland; 3Jan Kochanowski University, Kielce, Poland; 4Norwegian Institute of Public Health, Oslo, Norway; and 5Warsaw 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. Glynn1, R.E. Adams2, E.M. Beckett1, P.K. Scott1, J.S. Pierce1, and B.L. Finley1.  
1Cardno ChemRisk, Brooklyn, NY; 2Cardno ChemRisk, Chicago, IL; and 3Cardno 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. Acosta1, M.A. Gentile1, D.J. Behm1, T.J. Roethke1, M.D. Gunn1, J.M. Chesefetz1, and S.E. Jordt1.  
1Duke University School of Medicine, Durham, NC; and 2GlaxoSmithKline 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-Flournoy1, B. Preston1, M. Hays1, J.M. McGee2, L. Copeland2, and J.A. Dugas2.  
1Louisiana State University, Baton Rouge, LA; 2Louisiana State University Health Sciences Center, New Orleans, LA; 3Louisiana State University Health Sciences Center, Shreveport, LA; and 4University of Tennessee Health Science Center, Memphis, TN. Sponsor: T. Dugas.

#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. Harmon1, V.Y. Hebert1, S.A. Cornier1, M. Jennings1, W.L. Backes1, R. Reed2, and T.R. Dugas1.  
1Louisiana State University, Baton Rouge, LA; 2Louisiana State University Health Sciences Center, New Orleans, LA; 3Louisiana State University Health Sciences Center, Shreveport, LA; and 4University 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. Fitch1, J. Lucero1, M.J. Campen1, A. Lundy1, and J.D. McDonald1.  
1Lovelace Respiratory Research Institute, Albuquerque, NM; 2University of New Mexico, Albuquerque, NM; and 3University of North Texas, Denton, TX.

#1305  
Poster Board Number ........................................... P504  
Effects of DEHP and Its Metabolite MEHP on Growth Factors in A549 Cells Are Not Mediated by PPARα 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.  
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. Gwinn1, M.E. Cesta1, M.D. Stour2, J.H. Roycroft1, C.S. Smith1, J.A. Dill1, G.L. Baker2, A. Gupta1, B.K. Hayden1, K.M. Patton1, and D. Gorme1.  
1Battelle, Richland, WA; and 2NEHS, Research Triangle Park, NC.

#1309  
Poster Board Number ........................................... P508  
Circulating Inflammatory Potential in Obstructive Sleep Apnea Patients.  
K. Zychowski1, B. Sanchez2, G. Herbert1, R.P. Pedro3, G. Lorenzi-Filho4, L. Drager1, V.Y. Polotsky5, and M. Campeni.  
1Johns Hopkins University School of Medicine, Baltimore, MD; 2University of New Mexico, Albuquerque, NM; 3University of Sao Paulo Medical School, Sao 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. Fung1, M. Kovochich1, D.M. Cowan1, and A.K. Maddi.  
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. Mesaros1, D. Ciccimaro1, L. Guo1, N.W. Snyder1, and I.A. Blair2.  
1Drexel University, Philadelphia, PA; and 2University 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.  
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. Badinger1, N. Fix1, M. Orandle2, M. Barger1, K. Dunnick1, K. Cummings1, and S. Leonard1. 1Exponent, Alexandria, VA; ‘National Institute for Occupational Safety, and Health, Morgantown, WV; 2State University of New York at Buffalo, Buffalo, NY; and 3The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

Abstract #1314a
Poster Board Number: P514
Role of Osteopontin and Proteinase 3 in BAL and Blood in Phosgene-Induced Lung Edema. W. Li1, and J. Pauluhn1. 1Department of Toxicology, 4th Military Medical University, Xi’an, Shaanxi, China; and 2Global 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. Rez, 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

Abstract #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.

Abstract #1316
Poster Board Number: P522

Abstract #1317
Poster Board Number: P523
Gastric Mucosal Cells as an Early Screening Assay for Drug Toxicity. S. Goinneau, Porsolt Sas, Le Genest Saint Isle, France. Sponsor: G. Froget.

Abstract #1318
Poster Board Number: P524
Cristolin 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.

Abstract #1319
Poster Board Number: P525

Abstract #1320
Poster Board Number: P526

Abstract #1321
Poster Board Number: P527
Celastrol Induced Cytotoxicity and Apoptosis in A549 Cells. B. Alpertunga, and T. Januzzi. Istanbul University Faculty of Pharmacy, Istanbul, Turkey.

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.

Poster Board Number: P529

Poster Board Number: P530

Poster Board Number: P531

Poster Board Number: P532

Poster Board Number: P533

Poster Board Number: P534
ASD-49, A Novel Aspirin-Derived Small Molecule, as a Potential Therapeutic Agent for Colorectal Cancer. D.N. Karelid1, M.K. Pandey1, D. Plano2, S. Amin1, and A.K. Sharma1. 1Penn State College of Medicine, Hershey, PA; and 2Southern Medical University, Guangzhou, China.

Poster Board Number: P535
Nupr1/Chop Signal Axis Is Involved in Mitochondrion-Related Endothelial Cell Apoptosis Induced by Methamphetamine. W. Xie1, D. Caif1, D. Qiao2, X. Yue2, Q. Wang2, D. Li2, Z. Lin1, and H. Wang2. 1Kansas State University, Manhattan, KS; and 2Southern Medical University, Guangzhou, China.

Poster Board Number: P536

Poster Board Number: P537
Molecular Mechanisms of Cisplatin Cytotoxicity in Acute Promyelocytic Leukemia Cells. P.B. Tchounwou. Jackson State University, Jackson, MS.
Monday Morning, March 14
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Immunotoxicology

Chairperson(s): Isahak 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. Wang1, B.R. Baumgart1, F. Simutis1, W. Freebern2, K.D. Chadwick1, R.T. Bunch1, C. Ju1, and K.D. Price1. 1Bristol-Myers Squibb, Mt Vernon, IN; 2Bristol-Myers Squibb, New Brunswick, NJ; and
1University of Colorado Health Sciences Center, Aurora, CO.

#1333 Poster Board Number ......................... P602

#1334 Poster Board Number ......................... P603

#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. Edwards2, G.G. Gould2, R. Alvarez2, and S.T. Schultz1. 1Naval Medical Research Unit, Ft. Sam Houston, San Antonio, TX; and 2The 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

#1339 Poster Board Number ......................... P608
Crack Cocaine Effect on the Immune Responses of Rats Exposed to Its Smoke, Twice a Day, for 28 Days. T.M. Hueza1,2, and F. Ponce1. 1Federal University of São Paulo - UNIFESP, Diadema, Brazil; and 2School of Veterinary Medicine, and Animal Science - University of São Paulo, São Paulo, Brazil. Sponsor: K. Welch.

#1340 Poster Board Number ......................... P609

#1341 Poster Board Number ......................... P610

#1342 Poster Board Number ......................... P611

#1343 Poster Board Number ......................... P612
β-Glucan Administration Enhances Immune Responses through Activation of Regulatory T Cells and Cytokine Production in Mice Exposed to Afflatoxin B1. S. Albkheeth, S.F. Ahmad, and S.M. Attia. King Saud University, Riyadh, Saudi Arabia.

#1344 Poster Board Number ......................... P613

#1345 Poster Board Number ......................... P614

#1346 Poster Board Number ......................... P615

#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

#1349 Poster Board Number ......................... P618
Dietary Exposure to Low Levels of Mercury Re-Tunes BCR Signaling Sensitivity Potentially Favoring a More Autoimmune Repertoire. A. Rosenspire1, R. Gill1, and M.J. McCabe1. 1Robson Forensic Inc, Lancaster, PA; and 2Wayne State University, Detroit, MI.

#1350 Poster Board Number ......................... P619
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<tr>
<th>Abstract #</th>
<th>Poster Board Number</th>
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<tr>
<td>#1351</td>
<td>P620</td>
<td>A Pilot Study of Arsenic-Induced Immunomodulation of the Prostate Tumor Microenvironment. J. Shearer¹, C. Umbaugh², V. Carpio², and M. Figueiredo.¹ ¹Purdue University, West Lafayette, IN; and ²University of Texas Medical Branch, Galveston, TX.</td>
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<tr>
<td>#1352</td>
<td>P621</td>
<td>Environmentally Relevant Concentrations of As⁺⁺ and MMA⁺⁺ inhibit IL-7 Signaling in Immune Mouse T Cells. H. Xu, T.T. Laufer, K.J. Liu, L.G. Hudson, and S.W. Burchiel. University of New Mexico College of Pharmacy, Albuquerque, NM.</td>
</tr>
<tr>
<td>#1353</td>
<td>P622</td>
<td>Immunotoxic Effects of Sodium Tungstate Dihydrate on Female B6C3F1/N Mice When Administered in Drinking Water. R. Frawley¹, M. Smith¹, K. White¹, S. Elmore¹, R. Herbert¹, R. Moore¹, L. Staska², M. Behl³, M. Hoth³, G. Kissling², and D. Germolec³.¹ EPL, Research Triangle Park, NC; ²NIEHS, Research Triangle Park, NC; ³Virginia Commonwealth University, Richmond, VA; and ⁴WIL Research, Hillsborough, NC.</td>
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<tr>
<td>#1354</td>
<td>P623</td>
<td>The Role of Transcription Factor FoxP3 in the Asbestos-Induced Apoptosis in MT-2 Cells. H. Matsuoka, S. Lee, M. Maeda, N. Kumaigai-Takei, K. Yoshitome, Y. Nishimura, and T. Otsuki.¹ Kawasaki Medical School, Kurashiki, Japan; and ²Okayama University Graduate School of Natural Science, and Technology, Okayama, Japan.</td>
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<td>#1355</td>
<td>P624</td>
<td>Study for Immunological Importance of Increased Plasma Decoy Receptor 3 Level in Silicosis. S. Lee¹, Y. Nishimura², S. Yamamoto², T. Hatayama², H. Matsuoka², N. Kumaigai-Takei², K. Yoshitome², H. Hayashi², K. Uragami², M. Kusaka², W. Fujimoto², and T. Otsuki².¹EPL, Research Triangle Park, NC; ²NIEHS, Research Triangle Park, NC; ³Virginia Commonwealth University, Richmond, VA; and ⁴WIL Research, Hillsborough, NC.</td>
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<tr>
<td>#1356</td>
<td>P625</td>
<td>Chronic Exposure to Chrysotile Asbestos Induces IL-17 Production in Cultured Human Peripheral CD4+ T Cells In Vitro. T. Otsuki¹, M. Maeda¹, N. Kumaigai-Takei¹, S. Lee¹, K. Yoshitome¹, and Y. Nishimura¹.¹Kawasaki Medical School, Kurashiki, Japan; and ²Okayama University Graduate School of Natural Science, and Technology, Okayama, Japan.</td>
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<tr>
<td>#1358</td>
<td>P627</td>
<td>Effect of IL-2 Addition on Granzyme B Expression and Proliferation in CD8+ Lymphocytes Exposed to Asbestos During MLR. N. Kumaigai-Takei, Y. Nishimura, H. Matsuzaki, S. Lee, K. Yoshitome, H. Hayashi, and T. Otsuki.¹Kawasaki Medical School, Kurashiki, Japan.</td>
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<tr>
<td>#1359</td>
<td>P628</td>
<td>Developmental Activation of the Aryl Hydrocarbon Receptor (AhR) Differentially Modifies Gene Expression Patterns in Naïve and Activated CD8+ T Cells. C.M. Post¹, B. Winans¹, J. Myers¹, W.L. Kraus², and B.P. Lawrence³.¹University of Rochester School of Medicine &amp; Dentistry, Rochester, NY; and ²University of Texas Southwestern Medical Center, Dallas, TX.</td>
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<tr>
<td>#1360</td>
<td>P629</td>
<td>2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)-Mediated Alterations of EBF1 in Impaired Early Human B Cell Development. J. Li¹, A.S. Phadnis-Moghe¹, R.B. Crawford¹, and N.E. Kaminski¹,²,³.¹Department of Pharmacology, and Toxicology, Michigan State University, East Lansing, MI; ²Genetics Program, Michigan State University, East Lansing, MI; and ³Institute for Integrative Toxicology, Michigan State University, East Lansing, MI.</td>
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<tr>
<td>#1361</td>
<td>P630</td>
<td>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.</td>
</tr>
<tr>
<td>#1363</td>
<td>P632</td>
<td>Differential Effects of the Aryl Hydrocarbon Receptor on Immunoglobulin Gene Expression in Human B Cells. N. L.K. Burro, and C.E.W. Sulentic.¹Wright State University, Dayton, OH.</td>
</tr>
<tr>
<td>#1365</td>
<td>P634</td>
<td>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.¹University of Rochester Medical Center, Rochester, NY.</td>
</tr>
<tr>
<td>#1366</td>
<td>P635</td>
<td>Aryl Hydrocarbon Receptor-Mediated Accumulation of Immune Cells in Adipose Tissue of Mice. S. Kado, W.L.W. Chang, and C.F. Vogel.¹University of California, Davis, CA.</td>
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<tr>
<td>#1367</td>
<td>P636</td>
<td>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.</td>
</tr>
<tr>
<td>#1368</td>
<td>P637</td>
<td>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.¹University of Rochester, Rochester, NY.</td>
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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 Hemocompatibility Testing

Presented by:
American Preclinical Services

The in vitro thrombogeneity 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
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, March 14
12:00 Noon to 1:30 PM
CC Room 205

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 36 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
12:15 PM to 2:00 PM
Calcasieu Restaurant

Mid-Atlantic Regional Chapter Luncheon

Monday Afternoon, March 14
12:15 PM to 1:45 PM
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)
Orlando, Florida: Orlando World Center Marriott, March 14
12:30 PM to 1:30 PM
CC Room 208
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?

**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 Introductions. L. Haws, ToxStrategies, Inc., Austin, TX.

| #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 a, M. Bourgeois b, W. Gray c, J. Sapiro d, A. Nguyen e, M. Gwinnt f, A. Slit g, and B. Edermiller h. a Kansas State University, Manhattan, KS; b NSF International, Ann Arbor, MI; c SOT Education Committee, Reston, VA; d Southern University, Baton Rouge, LA; e University of Arizona, Tucson, AZ; f University of Rhode Island, Kingston, RI; g University of South Florida, Tampa, FL; and h 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. Kosturi a, U. Apte b, C. Crouch c, R. Casillas d, and A. Nguyen e. a Kansas State University, Manhattan, KS; b NSF Global, Kansas, MO; and c 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 a, and T. Parman b. a Intarcia Therapeutics, Hayward, CA; and b 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. |
| #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. |
| #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. Poniusamy, 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. |
#1387  
**Poster Board Number ......................... P116**  
MUS81-EME1 as a Novel Anti-Cancer Therapeutic Target.  
S. Mukherjee1,2, K.-H. Ang1, J. Chau1, H. Yakubi1, M. Arkin1, and W.-D. Heyer1,2,  
1University of California Davis, Davis, CA; 2University of California Davis, 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 Germine Mutations of ENU-Treated Mice by Whole Exome Sequencing.  
K. Masumura1, N. Toyoda-Hokaiwada2, A. Ukai1, Y. Gondo1, M. Honma1, and T. Nohmi1,2,  
1Biological Safety Research Center, NIHS, Tokyo, Japan; 2National Institute of Health Sciences, Tokyo, Japan; and 3RIKEN 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. Gassman1, E. Coskun1, P. Jaruga1, M. Dizdaroglu1, and S.H. Wilson1,  
1National Institute of Standards, and Technology, Gaithersburg, MD; 2NIEHS/NIH, Research Triangle Park, NC; and 3University 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. Dobo1, W. Madraymootoo1, V. Wagner1, and S. Teo1,  
1Bioreliance, Rockville, MD; 2Pfizer, Groton, CT; and 3Pfizer, Madison, NJ. Sponsor: T. Hennicke.

#1392  
**Poster Board Number ......................... P121**  

#1393  
**Poster Board Number ......................... P122**  
Red Blood Cell Pig-a Assay and Pigret Assay in Rats with Pyrene.  

#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.
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<td>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.</td>
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MONDAY 156

Mobile Event App

#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. Kado1, C.F. Vogel2, P. Wong1, K. Na1, C. La1, S. Yoon, J. Collins2, A. Alvarado1, J. Herness1, W. Robertson, K. Sahay1, and L. Smith. 1 California Environmental Protection Agency, El Monte, CA; 2 California Environmental Protection Agency, Sacramento, CA; and 1 University of California, Davis, CA.


#1425 Poster Board Number ......................... P154 Formation and Repair of Exogenous Formaldehyde-Induced DNA-Protein Crosslinks. Y. Dai, X. Tian, and J. Svenberg. The University of North Carolina at Chapel Hill, Chapel Hill, NC. Sponsor: J. Svenberg.

#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


#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.


Poster Board Number ......................... P161 Modeling Bacterial Mixtures in the Cervix During Pregnancy and the Association with MicroRNA Expression and Subsequent Gestational Age. A.P. Sanders1, C. Gennings1, K. Svensson1, A. Mercado-Garcia1, M. Solano2, A.A. Baccarella2, M.M. Tellez-Rojo2, R.O. Wright3, and H.H. Burris4. *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 *National Institute of Public Health, Cuernavaca, Mexico.

Poster Board Number ......................... P162 Safety Evaluation and Cytotoxicity of Compounds Isolated from a Bioactive Fraction of Peltophorum Africanaum, a Medicinal Plant Used to Treat Pain Associated with Inflammatory Conditions. S.A. Adetayo1, J.L. Shai2, and K. Ellof3. *Tshwane University of Technology, Pretoria, South Africa; and *University of Pretoria, Pretoria, South Africa.


Poster Board Number ......................... P164 Assessment of Water Cytotoxicity in Northern Alberta Rivers near the Oil Sands. D.Y. Huang1, I. Dey2, L. Xie3, W. Zhang1, S. Gabos4, and D.W. Kinniburgh5,6. 1 Alberta Health, Edmonton, AB, Canada; 2 University of Alberta, Edmonton, AB, Canada; and *University of Calgary, Calgary, AB, Canada.

### Abstract #1437
**Poster Board Number**

Abstract: DNA Strand Breaks Induced by Organic Extracts from Engine Emissions Produced at Various Engine Operating Modes Using Diesel or Biodiesel (B100) Fuel. B. Novotna¹, J. Stolcpartova¹, V. Beranek¹, M. Vojtisek-Lom¹², and J. Topinka¹. ¹Center of Vehicles for Sustainable Mobility, Czech Technical University in Prague, Czech Republic; ²Faculty of Mechanical Engineering, Technical University of Liberec, Czech Republic; ³Institute of Environmental Studies, Charles University in Prague, Czech Republic; and ⁴Institute of Experimental Medicine AS CR, Prague, Czech Republic.


**Strengths and Limitations of Generalized Concentration Addition in Modeling PPARγ Activation by Endocrine-Disrupting Compounds.** J. Watt¹, T. Webster¹, and J. Schlezinger¹. Boston University School of Public Health, Boston, MA.

**In Vitro Toxicological Assessment of 4-Methylcyclohexane Methanol and Propylene Glycol Phenyl Ether Mixtures.** E. Fabyancic, A. Han¹, M. Prediger, and J. Boyd. West Virginia University, Morgantown, WV. Sponsor: J. Boyd.

**An In Vitro Absorption Screen with Rosin/Resins Using Everted Rat Intestinal Sacs.** L. Higgins¹, R. Powrie¹, M. Penman¹, S. Green¹, R. Lobbes¹, L. Rodenburg¹, and C. Elcombe¹. CCR Biosciences, Dundee, United Kingdom; and ²Hydrocarbon Resins & Rosin Resins REACH Consortium (H4R), Brussels, Belgium.

**In Vitro Hepatotoxicity of Mixtures of Benzylpiperazine (BZP) and 3-Trifluoromethylphenylpiperazine (TFMPP).** D. Dias da Silva¹, P. Moreira¹, M. J. Silva¹, and M. de Lourdes Bastos¹. UCBIO/Requimte, University of Porto, Porto, Portugal. Sponsor: S. Ali.

**A Mechanistic Comparison of Human and Mouse Lung Cell Responses to a Polycyclic Aromatic Hydrocarbon Mixture: Inflammation and the P38 Pathway.** A. S. Osgood¹, K. Velmurugan¹, K. N. Xiong¹, J. Xiong¹, R. L. Upham¹, and A. K. Bauer¹. ¹Michigan State University, East Lansing, MI; and ²University of Colorado Anschutz Medical Campus, Aurora, CO.
Abstract # Abstract #

#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. Henning, and A. Stromberg. University of Kentucky, Lexington, KY.

Monday Afternoon, March 14
1:15 PM to 4:30 PM
CC Exhibit Hall
Poster Session: Natural Products

♥ Health and Environmental Impacts of Manmade and Naturally Released Toxictants

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.


#1460 Poster Board Number ......................... P205 Regulatory Effects of Platycodon D on Bone Remodeling. H.G. Jeong, J.H. Choi, Y. Han, H.G. Kim, H.M. Jeong, H.S. Lee, Y.C. Chung, and K.Y. Lee. Chungnam National University, Gwangju, Korea, Republic of; and Chungnam National University, Daejeon, Korea, Republic of; and Seoul National University College of Medicine, Seoul, Korea, Republic of.

#1461 Poster Board Number ......................... P206 The Effect of Administering Multiple Doses of Tall Larkspur (Delphinium barbeyi) to Cattle. K.D. Weich, B.T. Green, D.R. Gardner, D. Cook, and J.A. Pfister. USDA/ARS/PPRL, Logan, UT.

Abstract # Abstract #

#1463 Poster Board Number ......................... P208 Oral Administration of Archachatina marginata Hemolymph Prevents Renal Damage in Adrenaline Induced Hypertensive Wistar Rats. A.B. Ojekale, P. Jewo, U. Agbafor, and J. Oguntola. Lagos State University College of Medicine, Ikeja, Lagos, Nigeria; and 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.

Withdrawn.

#1465 Poster Board Number ......................... P211 Toxicological and Reversibility Assessment of Dalbergia saxatilis Hook, F. (Papilionaceae) Root Extract in Rats. O.K. Yemitan, and O.O. Adeyemi. College of Medicine of the University of Lagos, Lagos, Nigeria; and Lagos State University College of Medicine, Lagos, Nigeria. Sponsor: P. Wright.

#1466 Poster Board Number ......................... P212 Chemomodulatory Action of 4-Methylthio-3-Butyl Isocyanate on Carcinogenesis in Rats. M. Suzuki, Y.-M. Choi, T. Hirata, T. Toyoda, J.-i. Akagi, A. Nishikawa, Y. Nakamura, and K. Ogawa. Gifu University, Gifu, Japan; and ‘Kyoto Prefectural University, Kyoto, Japan; and ‘Showa University, Tokyo, Japan.

#1467 Poster Board Number ......................... P213 The Inhibitory Effects of Salvia plebeia on Atopic Dermatitis-Like Skin Lesions. J.K. Choi, S. Lee, and S.-H. Kim. Korea Research Institute of Bioscience and Biotechnology, Jeongeup, Korea, Republic of; and ‘Kyungpook National University, Daegu, Korea, Republic of.

#1468 Poster Board Number ......................... P214 Inhibitory Effects of Capsaicin on DimethylNitrosamine-Induced Hepatic Fibrosis in Rat. J.H. Choi, Y.C. Chung, and H.G. Jeong. Chungnam National University, Daejeon, Korea, Republic of; and ‘International University of Korea, Jinju, Korea, Republic of.


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**Abstract #**

**Poster Board Number**

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<td>#1483</td>
<td>P228 Comparing Early Life Stage Effects in Zebrafish of Extraction Methods for <em>Stellera chamaejasme</em>, an Herbal Plant Used in Mongolian Medicine.</td>
<td>W. Dong¹, J. Zong¹, M. Li¹, J. Yang², S. Tai³, L. Xu¹, M. Cherrnick¹, D.E. Hinton¹, B. Yang¹, and W. Dong¹.¹ Department of Dermatology, People's Hospital of Hubei Province, Wuhan, China; ¹Inner Mongolia Provincial Key Laboratory for Toxicants, and Animal Disease/Inner Mongolia University for the Nationalities, Tongliao, China; and ²Nicholas School of the Environment, Duke University, Durham, NC. Sponsor: W. Dong.</td>
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<td>#1484</td>
<td>P229 Supercritical Fluid Extraction and Characterization of Essential Oil from <em>Moringa oleifera</em> Seeds and Leaves Using GC/MS/MS.</td>
<td>E.U. Obi. Texas Southern University, Houston, TX.</td>
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<td>#1488</td>
<td>P233 Effect of Platycodon D on Heme Oxygenase-1 Through Akt/Nrf2 Pathway in Endothelial Cells.</td>
<td>G.H. Lee¹, Y.C. Chung¹, and H.G. Jeong¹. Chungnam National University, Daejeon, Korea, Republic of.</td>
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<td>#1490</td>
<td>P235 Myelostimulation by Echinacea Herbal Supplement and <em>E. purpurea</em> Independent of Bacterial LPS, Other Components That Activate Monocytes and Lipopolipid Phytoconstituents.</td>
<td>S.K. Nagamani¹, H.F. Hussain¹, D.L. Barney¹, H.D. Pugh¹, D.S. Pasco¹, and S.A. Meyer¹. National Ctr. for Natural Products Res., Univ. Mississippi, University, MS; ¹University of Louisiana-Monroe, Monroe, LA; and ²USDA-N. Central Regional Plant Int. Station (NCRPIS), Ames, IA.</td>
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Abstract #  #1491 Poster Board Number ......................... P236 

Abstract #  #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. Moothy. Baylor College of Medicine, Houston, TX.

Abstract #  #1493 Poster Board Number ......................... P238 

Abstract #  #1494 Poster Board Number ......................... P239 
General Composition and Antifungal Effect of Commercial Ethanolic Mexican Propolis on Aspergillus flavus. R.-U. Antorin1, M.-A. GCC1, M.-A. A1, T.-E. RS1, and M.-C. AG1. 1Faculty of Agronomy, UANL, Gral Escobedo, NL, Mexico; 2Faculty of Veterinary Medicine, UANL, Gral Escobedo, NL, Mexico; and 1UNAM, Edo México, Mexico.

Abstract #  #1495 Poster Board Number ......................... P240 

Monday Afternoon, March 14
1:15 PM to 4:30 PM
CC Exhibit Hall
Poster Session: Nanotoxicology: General

Chairperson(s): Zhongyuan Gao, Binghamton University, Binghamton, NY; and Tahereh Zigiari, University of Montana, Missoula, MT.

Displayed: 1:15 PM–4:30 PM

Author Attended: 3:00 PM–4:30 PM

Abstract #  #1496 Poster Board Number ......................... P241 
Nano-Scaled Cerium Oxide Induces Platelet Activation In Vivo. D.C. Davidson1, M. Burger1, R. Dörk1, T.A. Stueckle1, J. Ma2, J. Cohen1, P. Demokritou1, and L. Wang1. 1CDC/NIOSH, Morgantown, WV; and 2Harvard School of Public Health, Boston, MA.

Abstract #  #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. Weldon1, E.M. Faustman1, G. Oberdörster1, T. Workman1, W.C. Griffith2, C. Kneuer1, and I.J. Yu1. 1Federal Institute for Risk Assessment, Berlin, Germany; 2Hoseo University, Asan, Korea, Republic of; 1University of Rochester, Rochester, NY; and 1University of Washington, Seattle, WA.

Abstract #  #1499 Poster Board Number ......................... P244 

Abstract #  #1500 Poster Board Number ......................... P245 
Different Surface Coatings on IONP Project Differential Proteomic Patterns of Protein Corona. V. Escamilla-Rivera, A. Solorio-Rodríguez1, M. Uribe-Ramírez1, R. Winkler1, and A. De Vizcaya-Ruiz1. CInestav, Distrito Federal, Mexico; and 1CInestav-Irapuato, Irapuato, Mexico.

Abstract #  #1501 Poster Board Number ......................... P246 

Abstract #  #1502 Poster Board Number ......................... P247 

Abstract #  #1503 Poster Board Number ......................... P248 

Abstract #  #1504 Poster Board Number ......................... P249 
A Computational Framework for Interspecies Pharmacokinetics, Exposure and Toxicity Assessment of Gold Nanoparticles. Z. Lin1, N.A. Monteiro-Riviere1, R. Kannan1, and J.E. Riviere1. 1Kansas State University, Manhattan, KS; and 2University of Missouri, Columbia, MO.

Abstract #  #1505 Poster Board Number ......................... P250 

Abstract #  #1506 Poster Board Number ......................... P251 
In Vitro Aerosol Exposure System for Nanotoxicity: Dosimetric Analysis Using Nanomets and Nanometal Oxides. T.B. Tilly1, J.J. Schlager, and S.M. Hussain. Molecular Bioeffects Branch, Bioeffects Division, Human Effectiveness Directorate; 71th Human Performance Wing/ RHDJ, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH.
Abstract #1507
Poster Board Number: P252
1Montana Tech, Butte, MT, and 2University of Montana, Missoula, MT.

Abstract #1508
Poster Board Number: P253

Abstract #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.

Abstract #1510
Poster Board Number: P255

Abstract #1511
Poster Board Number: P256
Surface and Size-Dependent Effects of Silver Nanoparticles on Two Aquatic Invertebrates: D. magna and G. fassarum. S. Cambier1, K. Mehennouai, E.J. Keuzenkamp, A. Georgantzopoulos1, T. Serchi2, L. Giamberti3, and A.C. Gulbe4. 1Luxembourg Institute of Science, and Technology, Esch sur Alzette, Luxembourg; 2Norsk Institutt for vannforskning, Oslo, Norway; 3Université de Lorraine, Metz, France; and 4Wageningen University, Wageningen, Netherlands.

Abstract #1512
Poster Board Number: P257

Abstract #1513
Poster Board Number: P258

Abstract #1514
Poster Board Number: P259

Abstract #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. Roach1, C.E. McLaughlin1, S.E. Anderson1, A.B. Stefanaki1, D. Schwenger-Berry1, and J.R. Roberts1,2. 1CDC/NIOSH, Morgantown, WV, and 2West Virginia University, Morgantown, WV.
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<td>#1526</td>
<td>Poster Board Number ....................................................................</td>
<td>P311 Computational Dosimetry Reveals the Role of Particles and Ions in the Toxicity of Soluble Silver Nanoparticles. D.G. Thomas1, J. Smith2, V.K. Kodali1, M. Little1, H. Jolley1, B.D. Thral1, J.G. Pound1, and J.G. Teegarden1. National Institute for Occupational Safety, and Health (NIOSH), Morgantown, WV; and Pacific Northwest National Laboratory (PNNL), Richland, WA.</td>
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Monday Afternoon, March 14
1:15 PM to 4:30 PM
CC Exhibit Hall
Poster Session: Metal Toxicity

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

| #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. Neujaht, 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 #1541

Poster Board Number ....................... P326
Toxicogenomic Stratification of In Vivo and In Vitro Rat Liver and Kidney Models After Exposure to Cobalt. M.S. Madejczyk1, M.G. Permenter1, D.M. Kumscher1, C.E. Baer1, W.E. Dennis1, J.D. Stallings1, and J.A. Lewis1. 1Eccet, Inc., Fort Detrick, MD; 1ORISE Postdoctoral Fellow at US Army CEHR, Fort Detrick, MD; and 2US Army CEHR, Fort Detrick, MD.

Abstract #1542

Poster Board Number ....................... P327

Abstract #1543

Poster Board Number ....................... P328

Abstract #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.

Abstract #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. Specht1, Y. Lin1, M. Weisskopf2, C. Yan2, H. Hu3, J. Xu3, and L.H. Nie1. 1Harvard University, Boston, MA; 2Purdue University, West Lafayette, IN; 3Shanghai Jiao Tong University School of Medicine, Shanghai, China; and 4University of Toronto, Toronto, ON, Canada.

Abstract #1546

Poster Board Number ....................... P331
Identification and Characterization of Lactic Acid Bacteria with Lead (II) Biosorption Activity. Y.-J. Yi1, J.-M. Lim1, S. Gu1, W.-K. Lee1, S.-M. Lee1, and B.-T. Oh1. 1Chonbuk National University, Iksan-si, Korea, Republic of; and 2Chungbuk National University, Cheongju-si, Korea, Republic of. Sponsor: W. Koh.

Abstract #1547

Poster Board Number ....................... P332
Lipid Alterations in Hepatic and Brain Microsomes Following Subchronic Lead Exposure. E.O. Abam1,2, O.O. Ogurinrin1, A.D. Wusu1, O.K. Afolabi1, O.A. Dosumu1, B.O. Omunkwor2, E.A. Balgum3, O.O. Odukoya3, and O. Ademuyowe4. 1Bells University of Technology, Ota, Nigeria; and 2Federal University of Agriculture, Abeokuta, Nigeria.

Abstract #1548

Poster Board Number ....................... P333

Abstract #1549

Poster Board Number ....................... P334

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.

Abstract #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.

Abstract #1552

Poster Board Number ....................... P337

Abstract #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. Silva1, M.R. Urbano1, M.d.F.H. Carvalho2, M.L. Buzzo1, T. Peixe3, and M.M. Paoliello1. 1Adolfo Lutz Institute, Sao Paulo, Brazil; and 2State University of Londrina, Londrina, Brazil. Sponsor: M. Aschner.

Abstract #1554

Poster Board Number ....................... P339

Abstract #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.

Abstract #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.

Abstract #1557

Poster Board Number ....................... P342

Abstract #1558

Poster Board Number ....................... P343

Abstract #1559

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<td>Lung Function in Gulf War I Veterans Exposed to Depelited Uranium Inhalation and Shrapnel Injury: Updating the Cohort. S.E. Hines 1, A. Barnes 1, P. Guerin 1, J. Gaitens 1, M. Oliver 1, M. Condon 1, T. Roth 1, K. Squibb 1, and M. McDiamid 1. Baltimore VA Medical Center, Baltimore, MD; and University of Maryland School of Medicine, Baltimore, MD.</td>
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<td>SATB2 Plays a Role in Anchorage -Independent Growth and Cell Migration in Normal and Metal Transformed Human Bronchial Epithelial Cells. A. Jordan 1, F. Wu 1, T. Kluza 1, S. Shen 1, H. Sun 1, L.A. Cartularro 2, and M. Costa 2. New York University, New York, NY; and New York University, Tuxedo, NY.</td>
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<td>Role of MRTF, a Novel Transcription Factor, in Induction of TNF-α Gene Expression by Methymercury. N. Endo, A. Naganuma, and G.-W. Hwang. Tohoku University, Sendai, Japan. Sponsor: A. Naganuma.</td>
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<td>Methymercury Induces Cytotoxicity Through Transport of Pyruvate into Mitochondria. J.-Y. Lee 1, Y. Ishida 1, A. Naganuma 1, and G.-W. Hwang 1. 1Aichi Gakuin University, Nagoya, Japan; and 2Tohoku University, Sendai, Japan.</td>
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Monday Afternoon, March 14
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Mercury Toxicity

**Toxicity of Metals**

**Chairperson(s):** Nikaeta 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

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<td>#1567</td>
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<td>Total Mercury and Methymercury Analysis in the Muscle and Gonads of Seafoods Using Heating Vaporization Atomic Absorption Spectrometry. K. Yoshimoto 1, A. Yamamoto 1, C. Koriyama 1, Y. Ishibashi 1, M. Tabata 1, A. Nakano 1, and M. Yamamoto 1. Kagoshima University, Kagoshima, Japan; National Institute for Minamata Disease, Minamata, Japan; Prefectural University of Kumamoto, Kumamoto, Japan; and Saga University, Saga, Japan.</td>
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Poster Board Number: P406
Effect of Low Level Sub Chronic Inorganic Mercury Exposure on the Level of Essential Elements Analyzed by ICP-MS in Rat Blood. A.D. Wusu 1, O.O. Ogurinrinola 1, O.K. Afolabi 1, E.O. Abah 1, D.O. Babayemi 1, O.A. Dosumu 1, O.B. Onunkwor 1, E.A. Bologun 1, O.O. Odukoya 1, T.C. Onwordi 1, and O. Ademuyiwa 1. Federal University of Agriculture, Abeokuta, Nigeria; Ladoke Akintola University of Technology, Ogbomosho, Nigeria; Lagos State University, Lagos, Nigeria; The Bell University, Ogun, Nigeria; and University of Ilorin, Ilorin, Nigeria.

Poster Board Number: P407

Poster Board Number: P408
Wheat Bran Enhances Urinary Elimination and Reduces Mercury Levels in Blood and Brain After Methymercury Exposure in Mice. M. Nagan 1, M. Fujimura 2, and K. Inaba 2. 1Azabu University, Sagamihara, Kanagawa, Japan; and National Institute for Minamata Disease, Minamata, Kumamoto, Japan. Sponsor: M. Yamamoto.

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.

Poster Board Number: P410
The Tibetan Medicine Zuotai Influences Clock Gene Expressions in the Liver of Mice. H. Li 1, W.-K. Li 2, Q. Wu 2, L.-X. Wei 2, and J. Liu 2. 1Northwest Plateau Institute of Biology of Chinese Academy of Sciences, Xining, China; and 2Zunyi Medical College, Zunyi, China.
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 Methymercury 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

#1575 Poster Board Number.......................... P413

#1576 Poster Board Number.......................... P414

#1577 Poster Board Number.......................... P415

#1578 Poster Board Number.......................... P416
Contributions of Extracellular and Intracellular Calcium Concentration in MeHg-Induced Cytotoxicity in Mouse Primary Cortical Astrocytes. J. Ortiz-Rodriguez, R. Jaiman-Cruz, and W.D. Atchison. Michigan State University, East Lansing, MI; and 1Univ of Puerto Rico-Cayey, Cayey, PR.

#1579 Poster Board Number.......................... P417

#1580 Poster Board Number.......................... P418
Methyl Mercury (MeHg) 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, T. Toyama, E. Yoshida, T. Unoki, Y. Abiko, Y. Shinkai, and Y. Kumagai. 1Tohoku University, Sendai, Japan; 2Tokyo University of Science, Noda, Japan; and 3University of Tsukuba, Tsukuba, Japan.

#1583 Poster Board Number.......................... P421

#1584 Poster Board Number.......................... P422
Maternal Methylmercury Exposure Through Rice Ingestion and Offspring Development. S. Rothenberg, Y. Yu, and C. Hong. 1University of South Carolina, Columbia, SC, and 2Xinhua 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, I. Abdel Moneim, R.M. El-Gazzar, and M.Y. Shamy. 1Albany College of Pharmacy, and Health Sciences, Albany, NY; 2King Abdulaziz University, Jeddah, Saudi Arabia; and 3University of Alexandria, Alexandria, Egypt.

Monday Afternoon, March 14

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
Abstract #1587
Poster Board Number: P425
Roles of Lead Exposure in Alzheimer's Disease: Relationship to Brain Amyloid Aggregation. Y. Du1,2, P. Territo1, and W. Zheng2. ‘Indiana University School of Medicine, Indianapolis, IN; and ‘Purdue University, West Lafayette, IN.

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.

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. Xiao1, H. Fu1, X. Han1, X. Hu1, Y. Chen1, Q. Wei1, and Q. Hu1. ‘Faculty of Preventive Medicine, School of Public Health, Sun Yat-sen University, Guangzhou, China; and ‘The Jackson Laboratory, Bar Harbor, ME. Sponsor: Y. He.

Poster Board Number: P428

Poster Board Number: P429
The Olfactory Tubercle: A Novel Target for Lead-Induced Cocaine Responsivity. K.H. Stansfield1, B.D. Soares1, J.L. McGlothlin1, and T.R. Guilarte1. ‘Columbia University, New York, NY.

Poster Board Number: P430
Polychlorinated Biphenyls (PCBs) and Lead Act Synergistically on Brain Dopamine Cells In Vitro. S.H. Enayah1,2, Y. Xiao1, H. Fu2, X. Han1, X. Hu1, Y. Chen1, Q. Wei1, and Q. Hu1. ‘Faculty of Preventive Medicine, School of Public Health, Sun Yat-sen University, Guangzhou, China; and ‘The Jackson Laboratory, Bar Harbor, ME. Sponsor: Y. He.

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. Engstrom1, N. Maeda1, and Z. Xia1. ‘University of North Carolina, Chapel Hill, NC; and ‘University of Washington, Seattle, WA.

Poster Board Number: P432
The Toxic Effects of Cadmium on Adult Neurogenesis. H. Wang1, A.K. Engstrom1, and Z. Xia1. University of Washington, Seattle, WA.

Poster Board Number: P433
A Gene-Environment Interaction Study to Understand the Role of Native Alpha-Synuclein in Cadmium-Induced Neurotoxicity. J.A. Jimenez1, W. Chong1, G. Kwakye1, and M. Saito1. ‘Oberlin College, Oberlin, OH; and ‘Woods Hole Oceanographic Institution, Woods Hole, MA.

Poster Board Number: P434
Exposure to Metal Mixtures in Welding Fume: Effects on Neuropsychological Functions. E.J. Ward1, R. Bowler1, M. Nour1, S. Snyder1, F. Rosenthal1, and U. Dyda2,3. ‘Indiana University School of Medicine, Indianapolis, IN; ‘Purdue University, West Lafayette, IN; and ‘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. Du1, C. Li, M. Zhang, H. Yang, H. Bi, and L. Wei1. ‘Northwest Institute of Plateau Biology, Chinese Academy of Sciences, Xining, China

Monday Afternoon, March 14
1:15 PM to 4:30 PM
CC Exhibit Hall
Poster Session: Ocular Toxicology
Chairperson(s): Patrick McNutt, USAMRICD, Gunpowder, MD; and Clive Steven Roper, Charles River Laboratories, Tranent, United Kingdom.

Author Attended: 1:15 PM–2:45 PM

Poster Board Number: P438
Inhibition of ADAM17 Reduces EMMPRIN Expression after Mustard Exposure of Corneal Organ Cultures. M.K. Gordon1, A. DeSantis-Rodrigues1, Y. Chang2, R.A. Hahn1, P. Zhou1, D.R. Gerecke1, and K.K. Svoboda1. ‘Baylor College of Dentistry, Texas A&M University, Dallas, TX; and ‘Rutgers University, Piscataway, NJ.

Poster Board Number: P439
Development of an Ocular Vapor Exposure Model for Chloropirin and Hydrofluoric Acid. R.D. Causey1, J.J. Autrey2, K.J. McCowan1, H. Cheng1, J.G. Lehman1, J. Lakin1, and A.L. Ruff2. ‘United States Army Medical Research Institute of Chemical Defense, APG, MD; and ‘United States Army Public Health Command, APG, MD.

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. McNutt1, and M. Lyman. USAMRICD, Gunpowder, MD.

Poster Board Number: P441
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. Furukawa¹, T. Sakakibara², K. Ito³, S. Sasaki¹, M. Koshi¹a, S. Okumura¹, K. Kawamura¹, M. Matsuura¹, and H. Kojima.¹ ¹National Institute of Health Sciences, Tokyo, Japan; and ²Safety Research Institute for Chemical Compounds, Co., Ltd, Sapporo, Japan.

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. Yeager¹, J. Johnson¹, J. Wetter¹, Y. Lao¹, J. Ford¹, J. Ruger¹, J. Bartoe¹, and T. Hudzik¹. ¹AbbVie, Inc., North Chicago, IL; and ²MPI Research, Mattawan, MI.

Poster Board Number P444

Poster Board Number P445
Application of Optical Coherence Tomography (OCT) for Examination of the Posterior Segment of the Eye in the Beagle Dog. E. Grosdidier¹, J. Silvano¹, A.-S. Augsburger¹, and R. Forster¹. ¹CITOXLAB, Evreux, France; and ²DMV Clinique Vétérinaire, Bois Guillaume, France.

Poster Board Number P446
Coefficient of Variation in the Electroreflectometric Response of Laboratory Animals. J.N. Ver Hoeve¹, C.B. Kim¹, T.M. Nork¹, J.S. Eaton¹, B. Christian¹, and C.J. Murphy³. ¹Covance Laboratories, Inc., Madison, WI; ²Ocular Services On Demand (OSOD), Madison, WI; ³University of California-Davis, School of Medicine, Sacramento, CA; ⁴University of California-Davis, School of Veterinary Medicine, Davis, CA; and ⁵University of Wisconsin-Madison, School of Medicine & Public Health, Madison, WI.

Poster Board Number P447
Reduced Disc Shedding Contribute to Kava Kava Extract-Induced Retinal Degeneration in F344/N Rats. H. Yamashita¹, M.J. Hoenerhoff¹, K.R. Shockley¹, S.D. Peddada¹, K.E. Gerrish¹, D. Sutton¹, C.A. Cummings¹, W. Wang¹, J.F. Foley¹, M. Behl¹, R.C. Sills¹, and A.R. Pandir³.¹ Biostatistics, and Computational Biology Branch, NIEHS, Research Triangle Park, NC; ²Molecular Genomics Core Laboratory, NIEHS, Research Triangle Park, NC; ³National Toxicology Program, National Institute of Environmental Health Sciences (NIEHS), Research Triangle Park, NC; ⁴Taisho Pharmaceutical Co., Ltd, Saitama, Japan; and ⁵UltraPath Imaging, Research Triangle Park, NC.

Poster Board Number P448
Attributes of the Tear Film in Species Used in Preclinical Ocular Toxicology Investigations of Dry Eye Disease (DED). A.D. Rodrigues¹, J.S. Eaton², and C.J. Murphy³.¹ Allergan, Irvine, CA; ²Ocular Services On Demand, Madison, WI; and ³School of Veterinary Medicine, University of California – Davis, Davis, CA.

Poster Board Number P449

Poster Board Number P450

Poster Board Number P451

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: Critical Review of the UN GHS Decision Criteria for Serious Eye Damage/Eye Irritation Test (EIT) for Full GHS Categorization of Ocular Irritation. J.A. Willoughby¹, B. Meyer¹, L. Blakeman¹, B. Franz-Jonas¹, and C. Dilworth¹. ¹Cytotoxic PLC, Macclesfield, United Kingdom; and ²Cytotex US, LLC, Kalamazoo, MI. Sponsor: E. Dufour.

Poster Board Number P453
Using the Short Time Exposure (STE) and Eye Irritation Test (EIT) for Full GHS Categorization of Ocular Irritation. J.A. Willoughby¹, B. Meyer¹, L. Blakeman¹, B. Franz-Jonas¹, and C. Dilworth¹. ¹Cytotoxic PLC, Macclesfield, United Kingdom; and ²Cytotex US, LLC, Kalamazoo, MI. Sponsor: E. Dufour.

Poster Board Number P454
Abstract # Abstract #

**MONDAY**

**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 Exciipient [5% PharmasolvTM + 45% Polyglycol + 50% Polyethylene Glycol 400] in Wistar Rats.** V.Goyal, S.Pandey, S.Kakade, P.Are, P.Nalge, V. Steveana, 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 Rs.** C.Miller, G.Korte, A.Salva, N.Snippet, F.Runge, and H.van Wijk. Covance Laboratories Harrogate, Harrogate, United Kingdom; and 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, S.C.Feng, G.Bhardwaj, H.Lei, J.Tran, L.Xing, G.Fung, R.Liu, H.Cheng, and K.S.Lam. 1. University of California, Davis, Davis, CA; and 2University of California, Davis, School of Medicine, Sacramento, CA. Sponsor: K.S. Lam.

### #1620

**Poster Board Number** ......................... P504


### #1621

**Poster Board Number** ......................... P506


### #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.London1, M.O. Claville2, S.Babu1, F.R.Fronczek2, and R.M.Uppu2. 1 Hampton University, Hampton, VA; and 2Louisiana State University, Baton Rouge, LA; and 3Southern University, and A&M College, Baton Rouge, LA.

### #1624

**Poster Board Number** ......................... P509

**Nonclinical Safety Studies of Clostridium difficile Toxoid Vaccine in Rabbit.** G.Rovel1, A.Caron1, F.Spezia1, L.Quemeneur1, S.Kees1, and P.Pietrobon1. 1CiToxLAB, Evreux, France; 2Sanofi, Alfortville, France; and 3Sanofi Pasteur, Marcy l’Etoile, France; and 4Sanofi 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.Bakke1, M.T.Harrison2, K.Matsuyama3, T.Tran1, K.Alter1, A.Montano1, M.B.Brennan1, T.J.Nyhuis1, L.Zeitlin1, and J.Mirsalis1. 1Mapp Pharmaceuticals, San Diego, CA; and 2SRI International, Menlo Park, CA.

### #1627

**Poster Board Number** ......................... P512

**Automated Blood Collection for Arterial Blood Gas Sampling in Unrestrained Monkeys.** D.Hopper1, T.Riggs1, M.Shelton1, C.Kreilein1, N.Suttles1, S.Kurtz1, B.Kemmerling1, L.Kinter1, K.Bigge1, and P.Kruzich2. 1BASi, Mount Vernon, IN; and 2GLP Scientific Consulting, Unionville, PA.

### #1628

**Poster Board Number** ......................... P513


### #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.Roberts1, J.Y.Goh2, R.Weaver1, N.Platt1, and L.Dixon1. 1Apremilast, Alderley Edge, United Kingdom; and 2Servier, Suessen, France; and 3The Association of the British Pharmaceutical Industry, London, United Kingdom.

### #1631

**Poster Board Number** ......................... P516


### #1632

**Poster Board Number** ......................... P517

**Retrospective Study of Clinical Pathology Changes in Sick or Moribund Animals.** L.Ramahah. 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.
<table>
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<tr>
<td>#1635</td>
<td>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.</td>
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<td>#1636</td>
<td>Withdrawn.</td>
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<td>#1637</td>
<td>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.</td>
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<tr>
<td>#1638</td>
<td>Poster Board Number ....................... P523 BTK Small Molecule Inhibitors Induce Pancreatic Toxicity in Sprague-Dawley Rats. R. Erickson1, L. Schutt1, J. Tarrant1, M. McDowell1, H. Wong1, L. Liu1, J. Crawford1, R. Carano1, S.-C. Lewin-Koh1, K. Stofflin1, E. Murray1, W. Kennedy1, U. Klein1, D. Diaz1, E. Harstad1, D. Danilenko1, W. Young1, D. Dambach1, and D. Misner1. Genentech, Inc., South San Francisco, CA; and ‘University of Vancouver B.C., Vancouver, BC.</td>
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<tr>
<td>#1639</td>
<td>Poster Board Number ....................... P524 Diagnostic Tools to Enhance Long Term Intrathal Delivery Studies in Non-Human Primates. S. Korte, M. Niehoff, and F. Ludwig. Covance Preclinical Services GmbH; Muenster, Germany.</td>
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<tr>
<td>#1640</td>
<td>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.</td>
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<tr>
<td>#1641</td>
<td>Poster Board Number ....................... P526 Neurological Effects of Chronic Treatment with Fulranumab in Sexually Mature Cynomolgus Monkeys. M. Rocc1, L. Kuseryk1, C. Han1, C. Pendley1, M. Butt1, and T. Coogan1. ‘Janssen R &amp; D, Spring House, PA; and ‘Tox Path Specialists, Frederick, MD.</td>
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<td>#1642</td>
<td>Poster Board Number ....................... P527 Evaluation of the Internal Exposure to Squalene-Containing Adjuvant Following Intramuscular Injection of H5N1 Influenza Vaccine to Mice. M.A. Tegenge1, L.S. Von Tungeln1, R.J. Mitkus1, S.A. Anderson1, M.M. Vanlandingham1, R.A. Forshee1, and F.A. Beland1. ‘Division of Biochemical Toxicology, Jefferson, AR; and ‘Office of Biostatistics &amp; Epidemiology, Silver Spring, MD.</td>
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<td>#1643</td>
<td>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.</td>
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<td>#1644</td>
<td>Poster Board Number ....................... P529 Non-Clinical Safety Profile of CEA-IL2v and FAP-IL2v Immunocytokines: Does Targeting Impact Toxicity? F. Cramer1, S. Weber1, A.M. Giusti1, S. Duda1, H.P. Grimm1, D. Tuerck1, H. Hinton1, J. Patterson1, S. Bassett1, P. Maliver1, I. Waldhauer1, A. Freimoser-Grundshofer1, V. Nicollini1, and C. Klein1. ‘F. Hoffmann-La Roche Ltd, Basel, Switzerland; and ‘F. Hoffmann-La Roche Ltd, Zuerich, Switzerland.</td>
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<td>#1645</td>
<td>Poster Board Number ....................... P530 Basmisani, a Negative Allotopic Modulator of the Gamma-Aminobutyric Acid a5 Receptor Subtype, Does Not Show Convolusions at Relevant Exposures. A. Rothfuss1, C. Wandel1, A. Thomas1, E. Husar1, R. Gasser1, M. Schmitt1, G. Trube1, F. Knolflacher1, J. Nöldke1, and M.-C. Hernandez1. Roche Pharma Development, Basel, Switzerland; and ‘Roche Pharma Research, and Early Development, Basel, Switzerland. Sponsor: L. Mueller.</td>
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<td>#1646</td>
<td>Poster Board Number ....................... P531 Integrated Arrhythmia Analysis within the DSI Ponomah Data Acquisition and Analysis Program: First Experience with Data Insights™. H. Holzgreve1, R. Kaiser1, N. Norton1, N. Sadekova1, A. Mehendal1, and C. Kolin1. ‘Charles River Laboratories, Reno, NV; and ‘Data Sciences International, St. Paul, MN.</td>
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<td>#1647</td>
<td>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. Xi1, M.G. Norton1, C. Stuart1, L. Zhong1, P. Zhang1, and E.B. Struble1. US FDA, CBER, Silver Spring, MD.</td>
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<tr>
<td>#1648</td>
<td>Poster Board Number ....................... P533 Carcogenic Assessment of Baricitinib in Rats and Mice. M.A. Carfagni1, and J.M. Sullivan. Eli Lilly, and Company, Indianapolis, IN.</td>
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<tr>
<td>#1649</td>
<td>Poster Board Number ....................... P534 Comparison of Selected Clinical Pathology Parameters in Two Strains of Rats in Different Cage Environments Used in Toxicology Studies. A. Adamou1, and C. Copeman. Charles River, Montreal, QC, Canada. Sponsor: M. Vezina.</td>
</tr>
<tr>
<td>#1651</td>
<td>Poster Board Number ....................... P536 A 4-Week Repeated-Dose Toxicity Study of TPN902 in Beagle Dogs. L. Gong1, J. Yao1, J. Wang1, R. Tan1, G. Huang1, J. Li1, Z. Wang1, J. Shen1, H. Jiang1, and J. Ren1. Shanghai Institute of Materia Medica, Chinese Academy of Sciences, Shanghai, China.</td>
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<tr>
<td>#1652</td>
<td>Poster Board Number ....................... P537 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. McDuffie1, S. Lee1, J.Y. Ma1, J. Kanerva1, Y. Shen1, S. Snook1, and F. Schoetens. Janssen Research &amp; Development, LLC, San Diego, CA.</td>
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Abstract #  

#1654  
**Poster Board Number** ......................... P539  
Development of a PD-1 Receptor Occupation Method in Cynomolgus Whole Blood.  

#1655  
**Poster Board Number** ......................... P540  
Comparative Toxicokinetics and Toxicity of ST-101 (Omesartan Medoxomil/Rosuvastatin Calcium) versus Single Agents in Beagle Dogs.  
O.J. D’Ouzé1, M. Munsif1, and L. Hwang1. 1Autotelic Inc, Fountain Valley, CA; and 1Stocosil Inc, City of Industry, CA.

#1656  
**Poster Board Number** ......................... P541  
Mitochondria-Targeted Platinum Coordination Compounds May Increase Cell Adhesion and Inhibit Cell Migration.  
L. Zhang1, J. Li2, X. He1, X. Lv1, D. Chen1, L. Li1, C. Chen1, Y. Zhao1, F. Wang1, N. Monteiro-Riviere3, and Z. Guo3. 1Institute of Biochemistry, and Cell Biology, Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences, Shanghai, China; 2Institute of High Energy Physics, Chinese Academy of Sciences, Beijing, China; 3Kansas State University, Manhattan, KS; 4Shanghai University of Chinese Traditional Medicine, Shanghai, China; and 5Soochow University, Suzhou, China.

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**Monday Afternoon, March 14**  
**1:15 PM to 4:30 PM**  
**CC Exhibit Hall**

**Poster Session: Safety Assessment: Drug Discovery**

**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. Sun1, Y. Zhang1, H. Jiang1, Z. Li1, L. Gong1, and J. Ren1.  
1Shanghai Institute of Materia Medica, Chinese Academy of Sciences, Shanghai, China; and 2Shanghai Jiaotong University School of Medicine, Shanghai Cancer Institute, Shanghai, China.

#1658  
**Poster Board Number** ......................... P543  
Antisense Oligonucleotide Gampers Demonstrate Heparin-Induced Thrombocytopenia Potential in a Selective Manner: Proposal of a Novel Mechanism of Toxicity.  
D. Petrucci1, D. Exler1, A. Murray1, S. Kaushik1, T. Knox1, S. Fenners, B. Andrews1, J. Parry1, K. Frazier1, and K. French1.  
1GlaxoSmithKline, King of Prussia, PA; 2GlaxoSmithKline, Stevenage, United Kingdom; and 3GlaxoSmithKline, Ware, United Kingdom.

#1659  
**Poster Board Number** ......................... P544  
Safety Profile of BT-11: A Novel LANCL2-Based Therapeutic For Crohn’s Disease.  
M. Ehrich1, P. Bisset1, K. Boes1, J. Hinckley1, B.S. Jortner1, G. Magnin-Bisset2, S.R. Werre1, A. Carbo1, R. Montecillas1, C. Philippson1, R.D. Gaudron1, and J. Bassaganya-Riera1.  
1Biotherapeutics, Inc., Blacksburg, VA; and 2Virginia-Maryland College of Veterinary M, Blacksburg, VA.
Abstract #1669
Poster Board Number: P554
1AstraZeneca, Cambridge, United Kingdom; 2Genentech, South San Francisco, CA; and 3InSphero AG, Schlieren, Switzerland.

Abstract #1670
Poster Board Number: P555

Abstract #1671
Poster Board Number: P556
Kidney Safety Biomarkers in Rodents and Non-Rodents Following Ampoterin B Administration. J. E. McDiffie1, M. Sonee2, J. Y. Ma1, Y. Chen1, J. Kanerva1, X. Wu1, K. Li1, Y. Zhang1, R. Meng1, F. Almy2, L. Smith1, L. Varacallo1, C. Lanigan1, S. Lee1, S. Bryant1, C. Johnson1, M. Otero1, B. Zimmerman1, D. Simic1, and S. Snook1.
1Janssen Research & Development, L.L.C., San Diego, CA; 2Janssen Research & Development, L.L.C., Shanghai, China; and 3Janssen Research & Development, L.L.C., Spring House, PA.

Abstract #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. Chen1, L. Smith2, F. Almy2, J. Ma3, C. Lanigan1, M. Otero1, S. Snook2, M. Sonee1, and J. E. McDiffie1.
1Janssen Research & Development, L.L.C., San Diego, CA; and 2Janssen Research & Development, L.L.C., Shanghai, China; and 3Janssen Research & Development, L.L.C., Spring House, PA.

Abstract #1673
Poster Board Number: P558
Microfluidics and High-Content Imaging for In Vitro to In Vivo Safety and Efficacy Assessments. D. J. Sloan1, J. Gordon1, and R. McClelland1.
1Scion Innovation, Chapel Hill, NC; and 2The Tauri Group, Frederick, MD.

Abstract #1674
Poster Board Number: P559
Application of a Machine Learning Method to Identify Kinases Associated with Recurrent Hemodynamic Liabilities. R. Denton1, S. Hnatshyn1, G. Thalody1, J. Hennan1, S. Ruepp2, and P. Levesque1.
1Bristol-Myers Squibb, Hopewell, NJ; 2Bristol-Myers Squibb, Lawrenceville, NJ; and 3Bristol-Myers Squibb, Wallingford, CT.

Abstract #1675
Poster Board Number: P560
Application of a Shared Preclinical Database (eTOX) for Early Safety Assessment in Pharmaceutical Development (eTOX I). T. Steger-Hartmann1, F. Pognan2, and M. Pavletta1.
1Bayer HealthCare, Berlin, Germany; and 2Novartis, Basel, Switzerland. Sponsor: F. Pognan.

Abstract #1676
Poster Board Number: P601
Predicting and Assessing the Risk of Drug Crystallization. S. Ruepp1, E. Janovitz2, T. Brodie1, R. White1, J. Hynes1, J. Carman1, D. Pan1, C. So1, Y. Wu1, U. Hanumegowda1, and B. Gemzik1.
1Bristol-Myers Squibb, Hopewell, NJ; 2Bristol-Myers Squibb, Mount Vernon, IN; 3Bristol-Myers Squibb, New Brunswick, NJ; 4Bristol-Myers Squibb, Princeton, NJ; and 5Bristol-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. Pearson1, T. Johnson1, R. Gonzalez1, L. LaFranco-Scheuch1, R. Amin1, R. Amin1, W. Glaab2, F. Sistare3, and A. Harrill4. 1Merrick, West Point, PA; and 2The University of Arkansas for Medical Sciences, Little Rock, AR.
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<tr>
<th>Abstract #</th>
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<td>#1684</td>
<td>P614</td>
<td>#1693</td>
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<tr>
<td><strong>Poster Board Number</strong></td>
<td><strong>P614</strong></td>
<td><strong>Poster Board Number</strong></td>
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<tr>
<td><strong>Comparative Study of Potential Ambient Air Exposures to Residents Living Near Contaminated Sites.</strong></td>
<td>C. DeHate¹, R. DeHate¹, G. Johnson¹, B. Skelly², and R. Habibson³. College of Public Health, Tampa, FL; and ³GEI Consultants, Valrico, FL.</td>
<td><strong>Estimate of 4-Methylcyclohexanemethanol (MCHM) Exposure with Normal Use of Contaminated Water During the Elk River Spill.</strong></td>
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<td>#1685</td>
<td>P615</td>
<td>#1694</td>
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<td><strong>Chemical Emissions via Smoke Produced Through Burning of Scrap Tires, Firewood and Liquefied Petroleum Gas as Fuel Sources for Singeing Meat in Ghana.</strong></td>
<td>E. Atyie-Gyawu¹, A. Brown¹, R. Barham¹, and H. Rochanti². Erskine College, Due West, SC; and ²Georgia Southern University, Statesboro, GA.</td>
<td><strong>Use of the Risk21 Framework to Determine Adequacy of Various Data Streams for Exposure Modeling in Risk Assessments.</strong></td>
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<td><strong>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.</strong></td>
<td>J.E. Snowden¹, M. Alexander-Scott¹, M.J. Breitenstein¹, E.J. Esswein², B.C. Johnson¹, B. King², C.A. Striley³, and J. Toseski³. ¹National Institute for Occupational Safety, and Health, Cincinnati, OH; and ³National Institute for Occupational Safety, and Health, Denver, CO.</td>
<td><strong>Soil Concentrations of Environmental Contaminants at Urban Agricultural Sites in New Orleans, Louisiana.</strong></td>
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<td><strong>Relationships Between Number, Surface Area, and Mass Concentrations of Different Nanoparticles in Workplaces.</strong></td>
<td>M. Zhang¹, Q. Zou¹. ¹University of Louisville, Louisville, KY; and ²Zhejiang Province Center for Disease Control, and Prevention, Hangzhou, China.</td>
<td><strong>Polybrominated Diphenyl Ethers (PBDE) and Their Hydroxylated and Methoxylated Derivatives in Seafood and Dust Collected from the Puget Sound, Washington Region.</strong></td>
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<td><strong>Assessment of Indoor Formaldehyde Concentrations Following the Installation and Removal of Laminate Flooring.</strong></td>
<td>J.S. Pierce¹, A. Abelmann¹, P.S. Ruestow¹, J.T. Lotter¹, E.M. Beckett¹, H.A. Fritz¹, J.L. Bare¹, and K.M. Unice¹. Cardno ChemRisk, Chicago, IL; and Cardno ChemRisk, Pittsburgh, PA.</td>
<td><strong>Internal Exposure to PAHs Using the INTEGRA Integrated Exposure Modelling Paradigm.</strong></td>
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<td><strong>Historical Ambient Airborne Asbestos Concentrations in the United States - An Analysis of Published and Unpublished Literature.</strong></td>
<td>A. Abelmann¹, M.E. Glynn¹, J.S. Pierce¹, P.K. Scott¹, S. Serrano¹, and D.J. Faustenbach¹. ¹Cardno ChemRisk, Chicago, IL; ²Cardno ChemRisk, Pittsburgh, PA; and ³Cardno ChemRisk, San Francisco, CA.</td>
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<td><strong>Prevalence and Health Risk from Exposure to Naturally Occurring Arsenic and Uranium in Well Water in Connecticut.</strong></td>
<td>S.M. Rusnak, ScD. Connecticut Department of Public Health, Hartford, CT.</td>
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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 220
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.

The increased reliance on biomarkers to evaluate the toxicity and/or efficacy of new drugs during preclinical toxicity 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 212
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 toxicity 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
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
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 they are 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 design.

Monday Afternoon, March 14
1:30 PM to 2:30 PM
CC Room 213
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 relevance 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
Symposium Session: Health and Environmental Hazard Assessments of Nanomaterials Along Their Lifecycle

Chairperson(s): Aaron Erdely, NIOSH, Morgantown, WV; and James Bonner, North Carolina State University, Raleigh, NC.

Endorser(s): Inhalation and Respiratory Specialty Section

Health and Environmental Impacts of Manmade and Naturally Released Toxicants

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 advanced materials 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 on 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)
of inhaled materials. This symposium will highlight which together determine the dosimetry, absorption, and metabolism variation in cell types present along the upper and lower respiratory tract, the physical-chemical characteristics of test substances and the regional organ systems. Much of this may be attributed to the complex interplay of methods for inhaled materials lags behind other exposure routes and development, validation, and regulatory acceptance of alternative testing 3Rs of reducing, replacing, and refining animal use. Unfortunately, the testing of inhaled therapeutics and excipients is still often conducted in animals. Often based on guideline-driven inhalation toxicity testing in animals. The goal of this symposium is to provide participants with 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)


#1701 3:09 Toxicological Evaluation of Carbon Nanotubes from a Lifecycle Perspective. A. Erdely1, L. Bishop2, L. Sargent3, and J. Bonner4. NIOSH, Morgantown, WV; and ‘North Carolina State University, Raleigh, NC.


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. Clipping, PETA International Science Consortium, Ltd., Norfolk, VA.

Endorser(s): In Vivo 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)


#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.


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): Myiyoung Yoon, The Hamer Institutes for Health Sciences, Research Triangle Park, NC; and Rebecca Clewell, The Hamer 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 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...
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.


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?

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)


#1718 3:03 Cumulative Risk and Adverse Birth Outcomes: The Gulf Resilience on Women's Health Study. J. Wickliffe. Tulane University, New Orleans, LA.
Evaluation of Epigenomics Data with Other “-Omics” Datasets in Translational Toxicology Studies. R. Shah, Scione, LLC, Research Triangle Park, NC. Sponsor: S. McCullough.

Integration of Epigenomics Data with Other “-Omics” Datasets in Translational Toxicology Studies. R. Shah, Scione, LLC, Research Triangle Park, NC. Sponsor: S. McCullough.

Panel Discussion/Q&A.

Endorser(s):

M. Jacobs.

Endorser(s): M. Jacobs.

Introduction. M.D. Cohen. Dept of Environmental Medicine NYU School of Medicine, Tuxedo, NY.

Pulmonary/Immunotoxicologic Impacts of the WTC Disaster. M.D. Cohen. Dept of Environmental Medicine NYU School of Medicine, Tuxedo, NY.

Immuno-Toxicologic Impacts of the Fukushima Disaster. M. Yoshida. Institute of Radiation Emergency Medicine, Hiroasaki University (IREM/HU), Hiroasaki, Japan.

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.

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

Chairperson(s): Mitchell D. Cohen, NYU School of Medicine/Dept. of Environmental Medicine, Tuxedo, NY; and Mitsuaki Yoshida, Institute of Radiation Emergency Medicine, Hiroasaki University (IREM/HU), Hiroasaki, Japan.

Endorser(s):

M. Jacobs.
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.


Monday Afternoon, March 14
2:00 PM to 4:45 PM
CC Room 206

Platform Session: AhR and Disease Processes

Heart 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. Stanford1, Z. Wang1, O. Novikov1, M. Kukuruzinska1, M. Bais1, and D. Sherr2. Boston University School of Dental Medicine, Boston, MA; and 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. Smith1, J.A. Boyer1, E. Mukcu2, K. Gowda1, S.G. Amin1, A.B. Glick2, and G.H. Perdew1. Boston University School of Medicine, Hershey, PA; and The Pennsylvania State University, University Park, PA.


#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-Moghre1, K. Rivera-Caraballo1, J. Harrill1, R. Crawford1, R. Budinsky2, J. Thomas2, J.C. Rowlands2, and N. Kaminski3. Michigan State University, East Lansing, MI; The Dow Chemical Company, Midland, MI; The Hammer Institutes for Health Sciences, Research Triangle Park, NC; and University of Puerto Rico, Humacao, PR.

Abstract #


#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

Platform Session: Pluripotent Stem Cells in Cardiovascular Research

Chairperson(s): Xi Yang, NCTR, US Food and Drug Administration, Jefferson, AR; and Maria L. Vlaming, Pluriorics BV, Leiden, Netherlands.


#1742 3:00  High-Throughput Comprehensive Cardiac Safety and Toxicity Assessment Using Human iPSC-Derived Cardiomyocytes. R. Kettenhofen1, A. Duenbostel1, O. Keminer1, G. Luerman1, and M. Stevens2. 1Axiogenesis AG, Cologne, Germany; 2Axiogenesis Inc, Plymouth Meeting, PA; and 3Fraunhofer IME, Aachen, Germany. Sponsor: E. Clarke.


#1745 4:15  Identification of the Cellular Effects of Sofosbuvir and Amiodarone Using hiPSC-Derived Cardiomyocytes. D.C. Millard1, C.J. Strock1, S. Stoeltze-Feix1, N. Becker1, K. Juhasz1, N. Fertig1, C.T. January1, B.D. Anson2, and J.D. Ross1. 1Axion Biosystems, Inc, Atlanta, GA; 2Cellular Dynamics International, a Fujifilm Company, Madison, WI; 3Cyprotex, Watertown, MA; 4Nanion Technologies GmbH, Munich, Germany; 5Technische Universität München, Munich, Germany; and 6University 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 toxicity 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 to 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 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.
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.
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
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), 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
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 toxicoo 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 ophthalmic 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 12:15 PM

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

#1747 9:50

#1748 10:20

#1749 10:50

11:25

12:00
Panel Discussion/Q&A.
Abstract #

**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 susceptibility 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 pollution. The six trainee presenters will focus on different risk factors and examine how trainee 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 presenter 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)

Abstract #

**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 omics 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)

#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: Ethyl 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 Responses 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.


**Abstract #**

**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 susceptibility 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 pollution. The six trainee presenters will focus on different risk factors and examine how trainee 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 presenter 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)

#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 # 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):
Molecular and Systems Biology 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

#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, Annadale, NJ.

#1766 11:31

12:00 Panel Discussion/Q&A.

#1767a 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

#1769 10:35

#1770 11:05
Predicting the Benchmark Dose for Toxin-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.

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

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):
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)
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 exposed humans, and what the next steps are to understanding human risk. (Abstract #1772a)

**Poster Sessions**


- **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.

- **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.


**Symposium Sessions**

- **Panel Discussion/Q&A.** S.L. Makris. US EPA, Washington, DC.

**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)

- **Adverse Outcome Pathways and Enhancing the Role of Genomics in Chemical Risk Assessment.** G. Ankley. US EPA, Duluth, MN. Sponsor: S. Huang.

- **Using Changes in the Transcriptome and Promoter Methylation to Explain Benzo[a]pyrene-Mediated Developmental Adverse Outcomes.** K. Willett. University of Mississippi, University, MS.

- **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.

- **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.


**Panel Discussion/Q&A.**

**Symposium Sessions**

- **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

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., West Lafayette, IN.

#1786 10:59 Case Studies Demonstrating the Utility of the Metal Dietary Exposure Screening Tool. C. Liewellyn. 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.

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. A. Schraufnagel, C. Karpinski, and M. Bondesson. University of Nebraska Medical Center, Omaha, NE. Sponsor: G. Gustafsson.


#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.


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, Valhalla, NY; and Natalia Garcia-Reyero, US Army, Vicksburg, MS.

#1795 Poster Board Number: P101. J.L. Freeman. Purdue University, West Lafayette, IN.

| #1796 | Poster Board Number ................................. P102  
Defining the Developmental Toxicity of Commonly Used Flame Retardant Chemicals Using Zebrafish. S. Manni1, L. Truong1, G. Gonnnerman1, and R. Tanguay1. 1Oregon State University, Corvallis, OR; and 2University of California, Davis, Davis, CA. Sponsor: R. Tanguay.  |
| #1797 | Poster Board Number ................................. P103  
Transcriptome and DNA Methylation Profiling of Early Zebrafish Embryos Exposed to TDCPP. D.C. Vo1, J. Leet1, D. Altomare1, A. Chen1, H. Stapleton1, Y. Yu1, and Y. Wang1. 1Duke University, Durham, NC; 2University of California, Riverside, CA; and 3University of South Carolina, Columbia, SC.  |
| #1798 | Poster Board Number ................................. P104  
Triclosan Is a Mitochondrial Uncoupler in Live Zebrafish. J. Shim1, L.M. Weatherly1, R.H. Luc1, M.T. Dormani1, A. Neilon1, R. Ng1, C.H. Kim1, P.J. Millard1, and J.A. Gossel1. 1Seahorse Bioscience, Billerica, MA; and 2University of Maine, Orono, ME.  |
| #1799 | Poster Board Number ................................. P105  
Characterization of a Pax-Null Zebrafish. M.C. Salanga1, A. Kubota2, B. Lemaire2, R. Harbein ter3, D. Gussenleitner1, S. Monti1, J.J. Stegemanni1, and J.V. Goldstone1. 1Boston University, Boston, MA; and 2Woods 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. Meisner1, L. Truong1, R.L. Tanguay1, and D.M. Reif2. 1North Carolina State University, Raleigh, NC; and 2Oregon 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. Haggard1, P.D. Noyes1, F. Tilton1, D. Thomas1, K.M. Waters2, and R.L. Tanguay4. 1Oregon State University, Corvallis, OR; and 2Pacific 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. Houck1, S. Mosher1, R. Judson1, J. Wambough1, M. Martin1, and S. Padilla1. 1ORISE, Research Triangle Park, NC; and 2US EPA, Research Triangle Park, NC.  |
| #1804 | Poster Board Number ................................. P110  
| #1805 | Poster Board Number ................................. P111  
Development of a Larval Zebrafish Neurobehavioral Assay for Evaluating Narcotic-Like Effects of Alcohol and Alcohol Ethoxylate Surfactants. S.M. Bugel1, H.W. Broening1, L. Truong1, J.K. La Du1, G. Carr1, J.F. Nash1, G. Daston2, and R.L. Tanguay3. 1Oregon State University, Corvallis, OR; and 2The Procter & Gamble Company, Cincinnati, OH. Sponsor: S. Bugel.  |
| #1806 | Poster Board Number ................................. P112  
Development of Zebrafish Models for Human Acute Organophosphorus Poisoning. N. García-Reyero1, M. Faria2, P.J. Babin3, D. Sebastián1, J. Cachot1, E. Prats1, M. Arick2, E. Rial1, A. Knoll-Gellida1, G. Mathieu1, F. Le Bihan1, B.L. Escalon1, A. Zorzano1, A.M. Soares1, and D. Raldúa1. 1CIB-CSIC, Madrid, Spain; 2CID-CSIC, Barcelona, Spain; 3IDEA-CSIC, Barcelona, Spain; 4Institute for Research in Biomedicine, Barcelona, Spain; 5Mississippi State University, Starkville, MS; 6Universitat Autònoma de Barcelona, Bellaterra, Spain; 7Université de Bordeaux, Bordeaux, France; 8University of Aveiro, Aveiro, Portugal; and 9US Army ERDC, Vicksburg, MS. Sponsor: E. Perkins.  |
| #1807 | Poster Board Number ................................. P113  
Identification of Neuromast Disruptor Compounds Through In Vivo Screening in Zebrafish. R. Sachanandani1, S. Thirikawa1, J.-k. Gustafsson1, and M. Bondesson1. 1University of Houston, Department of Biology, and Biochemistry, Center for Nuclear Receptors, and Cell Signaling, Houston, TX; and 2University of Houston, Department of Pharmacological, and Pharmaceutical Sciences, Houston, TX. Sponsor: D. Zalik.  |
| #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. Dong1,2, J. Liu1, L. Wei1, J. Yang1, and D.E. Hinton1. 1Inner Mongolia Provincial Key Laboratory for Toxicanants, and Animal Disease/Inner Mongolia University for the Nationalities, Tongliao, China; 2Nicholas School of the Environment, Duke University, Durham, NC; 3Northwest Institute of Plateau Biology, Chinese Academy of Sciences, Xining, China; and 4Zunyi Medical College, Zunyi, China. Withdrawn.  |
| #1810 | Poster Board Number ................................. P116  
Assessment of C. elegans In Vivo ATP Status and Larval Development After Exposure to a Subset of Tox21 Compounds. J.R. Rice1, P.E. Dunlap1, M.V. Smith1, M.F. Bridge1, J.H. Freedman1, J. Zhao2, R. Huang2, M.S. Attene-Ramos1, M. Xia1, A. Simeonov1, and W.A. Boyd1. 1NIH, Durham, NC; 2NIH, Bethesda, MD; and 3Social & Scientific Systems, Inc., Durham, NC; and 4University of Louisville, Louisville, KY.  |
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<tr>
<th>Abstract #</th>
<th>Poster Board Number</th>
<th>Title</th>
<th>Authors</th>
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<tr>
<td>#1813</td>
<td>P119</td>
<td>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.</td>
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<tr>
<td>#1815</td>
<td>P121</td>
<td>MicroRNAs As Biomarker of Toxicity Effects of Chemical Dispersed Oil Pollution in Caenorhabditis elegans. Y. Zheng, and X. Pan. East Carolina University, Greenville, NC.</td>
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<td>#1816</td>
<td>P122</td>
<td>Influence of Maternal Age on the Effects of Organic Selenium in Daphnia pulex. J.E. Roberts, T.S. Schwartz, and J.M. Kohle. 1Auburn University, Auburn, AL; 2University of Alabama at Birmingham, Birmingham, AL; and 3Virginia Polytechnic Institute, and State University, Blacksburg, VA.</td>
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<tr>
<td>#1817</td>
<td>P123</td>
<td>Luteolin Protects Against Methylmercury-Induced Biochemical and Neurobehavioral Deficits in Lobster Cockroach Nauphoeta cinerea. L.A. Adedara, D.B. Rosenberg, D.O. Souza, E.O. Farombi, M. Aschner, and J.B. Rocha. 1Albert Einstein College of Medicine, New York, NY; 2University Federal de Santa Maria, RS, Brazil; 3Brazil, Santa Maria, Brazil; 4University Federal do Rio Grande do Sul, RS, Brazil, Santa Maria, Brazil; and 5University of Ibadan, Ibadan, Nigeria.</td>
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<tr>
<td>#1818</td>
<td>P124</td>
<td>Comparison of Novel in Vitro Systems for the Detection of Ciguatoxins and Their Use in Risk Extrapolation to Humans. I. Richter, A.H. Heusser, and D.R. Dietrich. 1Cawthon Institute, Nelson, New Zealand; and 2University of Konstanz, Konstanz, Germany.</td>
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<tr>
<td>#1819</td>
<td>P125</td>
<td>Inhibition of Endocannabinoid Degradation Interferes with Cephalic Regeneration in Girardia tigrina. R. Sneed. University of the District of Columbia, Washington, DC.</td>
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<tr>
<td>#1821</td>
<td>P127</td>
<td>Structure-Activity Relationship in Genotoxicity of Alkylbenzenes in Turkey and Chicken Egg Fetal Liver. T. Kobets, J.D. Duan, K.D. Brunemann, S. Etter, B. Smith, E. Vock, and U. Deschl. 1Boehringer Ingelheim Pharma GmbH &amp; Co, Biberach an der Riss, Germany; 2Firmenich Inc., Plainsboro, NJ; and 3New York Medical College, Valhala, NY.</td>
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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.

<table>
<thead>
<tr>
<th>Author Attended</th>
<th>Time</th>
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<tr>
<td>#1822</td>
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<td>#1826</td>
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<tr>
<td>#1827</td>
<td>11:15 AM–12:45 PM</td>
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</tbody>
</table>
Abstract #

#1828  Poster Board Number ........................................... P134 Assessing the Impact of Drug Treatment on Cardiomyocyte Function Through Combined Analysis of Metabolism, Nutrient Flux and Cellular Oxygenation. C. Carey1, C. Bertinetti-Lapatki2, A. Roth1, and J. Hynes1. 1Luxcel Biosciences, Cork, Ireland; and 2Roche 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. Bot1, S. Stölzele-Feix1, N. Becker1, U. Thomas1, K. Juhas1, L. Doerr1, M. Rapedius1, M. Beckler1, M. George1, A. Brüggemann1, R. Haedo1, J. Oestreich1, G. Okeyo1, J. Costantin1, and N. Fertig1. Nanion Technologies GMBH, Munich, Germany; and 3Nanion Technologies Inc, Livingston, NJ.


#1831  Poster Board Number ........................................... P137 Overexpression of CXCR7 Enhances EPC-Mediated Angiogenesis in Diabetic Hind Limb Ischemia Through Activating Nrf2 Signal Pathway. X. Dai1, J. Zeng2, X. Yan2, J. Chen3, J. Chen3, Y. Li4, and Y. Tan5. 1Department of Surgery, University of Louisville, Louisville, KY; and 2KCHRI, Department of Pediatrics of the University of Louisville School of Medicine, Louisville, KY.


#1833  Poster Board Number ........................................... P139 An Ex Vivo Platform to Evaluate Compound Effects on Erthyroid and Megakaryocyte Development. E. Clarke1, 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. Makia1, N. Nagalame, 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. Aliberti1, and F.A. Barile2. 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'Toole1, W. Apblanaip2, D. Conklin2, P. Haberzetti2, 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. Singh1, N. Engler1, Z. Unnisa2, J.A. Bennett2, E. Henry3, T. Thatcher1, B. Bennett1, M.R. Campbell1, P.J. Simel1, R.P. Phipps3, T.A. Gosiewicz4, and D.A. Bell5. 1NIHES, Research Triangle Park, NC; and 2School 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. Hirabayashi1, I. Tsuboi2, K. Kurata3, J. Kanno3, and Y. Kusunoki4. 1National Institute of Health Sciences, Tokyo, Japan; 2Nihon University School of Medicine, Tokyo, Japan; 3Radiation Effects Research Foundation, Hiroshima, Japan; and 4Tokyo Metropolitan Institute of Gerontology, Tokyo, Japan.

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


#1843  Poster Board Number ........................................... P149 Early-Life Toxicant Exposure and Markers of Neuropathology in a Model of Alzheimer’s Disease. Q. Hu1, C. Boles1, A. vanderEmbe2, and J. DeWitt. East Carolina University, Greenville, NC.
Poster Board Number #1844 P150 Investigating the Role of the Epicardium in Heart Development: Insights from the ENC Mouse. L. Ridge, G. Tenin, E. Barnes, J. Wright, and K. Hentges. 1Jealott’s Hill International Research Centre, Bracknell, United Kingdom; and 2University of Manchester, Manchester, United Kingdom. Sponsor: S. Plummer.


Abstract # #1846 P152 Maternal PM2.5 Gestational Exposure Alters Fetal Size, Cardiac Function, Placental Morphology and Postnatal Growth in Mice. K. Kaur, C. Phoon, M. Veras, J. Blum, S. Doherty-Lyons, P. Tijero, S. Attreed, L.-C. Chen, and J. Zelikoff. NYU School of Medicine, Tuxedo, NY; and 1U of São Paulo, São Paulo, Brazil.

Abstract # #1847 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. Gruning, L.-C. Chen, and J.T. Zelikoff. NYU School of Medicine, Tuxedo, NY.

Abstract # #1848 P154 Aryl Hydrocarbon Receptor Dependent Mitochondrial Toxicity of PAHs. N. Jayasundara, J.S. Kozal, A.J. Bone, C.D. Lindberg, J. Bailey, S. Burwell, E.D. Levin, J.N. Meyer, and R.T. Di Giulio. 1Duke University, Durham, NC; 2Duke University Medical Center, Durham, NC; and 3McGill University, Montréal, QC, Canada.

Abstract # #1849 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.

Abstract # #1850 P156 Perinatal Exposure to the Flame Retardant Triphenyl Phosphate Accelerates Type 2 Diabetes and Causes Obesity in UCD-TZDM Rats. A.J. Green, J.L. Graham, G. Cano-Sancho, E.A. Gonzalez, P.J. Havel, and M.A. Lo Merrill. 1North Carolina State University, Raleigh, NC; 2NC State University, Raleigh, NC; and 3University of California, Davis, CA.

Abstract # #1851 P157 Obstetric Factors Affect Immune Responses at Teenage in Children Born by C-Section. M.-V. Martikainen, L. Kesi-Nisula, A. Karvonen, J. Pekkanen, M.-R. Hirvonen, and M. Roponen. 1Kuopio University Hospital, Kuopio, Finland; 2National Institute for Health, and Welfare, Kuopio, Finland; 3University of Eastern Finland, Kuopio, Finland; and 4University of Helsinki, Helsinki, Finland. Sponsor: M. Vilukela.


Poster Board Number #1853 P159 Effects of Isomoea carnii in Placental Tissue. Evaluation in Rodents and Ruminants. A.T. Gotardo, L.L. Lippi, K.B. Violin, and S.L. Gorniak. 1College of Veterinary São Paulo University, Pirassununga, Brazil; and 2IPEN-University of São Paulo, São Paulo, Brazil. Sponsor: K. Welsh.

Poster Board Number #1854 P160 Air Pollution Induced Placental Epigenetic Alterations in Early Life: A Candidate miRNA Approach. K. Vrijens, M. Tsaou, N. Madhlopa, W. Lefebvre, C. Vanpoucke, W. Gyselaers, and T.S. Nawrot. 1Belgian Interregional Environment Agency, Brussels, Belgium; 2East Limburg Hospital, Genk, Belgium; 3Flemish Institute for Technological Research, Mol, Belgium; 4Hasselt University, Diepenbeek, Belgium; and 5Leuven University, Leuven, Belgium. Sponsor: H. Roels.

Poster Board Number #1855 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.

Poster Board Number #1856 P162 Low Dose Tetradromobisphenol A (TBBPA) Alters Mammary and Uterine Development Following Prenatal Exposure in Wistar Rats. S. E.A. Gilliera, A.J. Filgo, D.K. Tucker, J.A. Flaws, B. Hormann, H.B. Patissa, and S.E. Fenton. 1National Toxicology Program Laboratory, Research Triangle Park, NC; 2NC State University, Raleigh, NC; and 3University of Illinois, Urbana, IL.

Poster Board Number #1857 P163 Enhanced Spontaneous Mammary Tumor Susceptibility Induced by BPA Alternatives. D.K. Tucker, S.A. Bouknight, and S.E. Fenton. 1Charles River Laboratories, Inc., Durham, NC; 2NIHES, Research Triangle Park, NC; and 3UNC at Chapel Hill, Chapel Hill, NC.

Poster Board Number #1858 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.


Poster Board Number #1860 P166 Acute Exposure of Triclosan Induced Collapses 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.

Poster Board Number #1861 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

Author Attended: 9:30 AM–12:45 PM


#1863 Poster Board Number ..................... P169 Estrogen Receptor Beta Mediates Hepatotoxicity Induced by Perfluorooctane Sulfonates (PFOS) in Mouse Liver. C. Xu1, Q. Liu1, Z. Y. Jiang2, and A. Gu1. 1Nanjing Medical University, Nanjing, China; and 2Ruijin Hospital, Shanghai Jiao Tong 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. Carndo 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. Ng1, H. Ye2, H. Luo3, S. D. Sakkiah1, W. Ge1, W. Tong1, and H. Hong1. 1NCCTR/US FDA, Jefferson, AR; and 2University 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. Mollergues1, B. van Vuigt-Lussenburg2, M. Marin-Kuan3, B. Schiller4, and K. C. Fussell5. 1BioDetection Systems, Amsterdam, Netherlands; and 2NeStec Inc., Lausanne 26, Switzerland.


#1868 Poster Board Number ..................... P174 Effect of Bisphenol A on the Fetal Production of Pituitary and Testicular Hormones and Its Mechanism. T. Takeda1, Y. Kariyazono2, M. Hottomi3, Y. Hattori3, S. Narimatsu1, Y. Ishii1, and H. Yamada1. 1Japan Society for the Promotion, and Science, Tokyo, Japan; 2Kyushu University, Fukuoka, Japan; and 3Okayama University, Okayama, Japan.

Abstract #

#1869 Poster Board Number ..................... P175 Testing the Waters to Account for Metabolism in the T47D-klbc 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.


#1872 Poster Board Number ..................... P178 Investigating the Role of Bisphenol-A in Benign Prostatic Hyperplasia. J. Wynder1, T. Nicholson1, J. Velkeyly1, T. Liu2, C. Jeong2, F.V. Saal2, R. Wood1, and W. Ricke1. 1University of Missouri-Columbia, Columbia, MO; 2University of Rochester School of Medicine & Dentistry, Rochester, NY; and 3University of Wisconsin-Madison, Madison, WI.


#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. J.M. Ronis1, M. Blackburn2, H. Gomez-Acevedo2, K. Shankar3, R. Singhal4, M.A. Cleves1, and T.M. Badger5. 1Louisiana State University Health Sciences Center, New Orleans, LA; and 2University 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. Smith1, E.M. Bobcynzki2, V.R. Borges2, T.M. Bull1, E. Heart1, and J.P. Gray2. 1University of South Florida, Tampa, FL; and 2US Coast Guard Academy, New London, CT.

#1876 Poster Board Number ..................... P182 Evaluation of Perfluorooctane Sulfonate (PFOS) and 2,4,4',5-Pentabromodiphenyl Ether (BDE-99) Stimulation of Insulin Secretion from INS-1 832/13 Pancreatic Beta Cells. T. Takeda1, Y. Kariyazono2, M. LeBaron3, S.M. Ross, B.R. Hannas, L. Kan, K. Johnson, L. Luna, M. LeBaron, and R. Rasoulpour. The Dow Chemical Company, Midland, MI.

#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. Doll, and J.E. Chambers. Mississippi State University, Mississippi State, MS.
<table>
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<th>#</th>
<th>Poster Board Number</th>
<th>Abstract</th>
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<tr>
<td>#1880</td>
<td>P185</td>
<td>Toxicity Assessment of Sprague Dawley Offspring Exposed to 2-Aminoanthracene In Utero. R. Toure, and W.E. Gato. Georgia Southern University, Statesboro, GA.</td>
</tr>
<tr>
<td>#1881</td>
<td>P186</td>
<td>ToxCast Outcomes for Biphenyl Indicate Concordance with Recognized in Vivo Biological Effects. J. Klapacz, S. Green, D.M. Wilson, and A. Parks. The Dow Chemical Company, Midland, MI; and The Eastman Chemical Company, Kingsport, TN.</td>
</tr>
<tr>
<td>#1882</td>
<td>P187</td>
<td>Validation of High-Throughput Screening Data and Novel Mechanistic Insights into VDR-Deposition in a Sex-Dependent Manner. J. Watt, A. Baker, B. Meeks, E. Morgan, L. Gerstenfeld, and J. Schlezinger. Boston University College of Arts, and Sciences, Boston, MA; Boston University School of Medicine, Boston, MA; and Boston University School of Public Health, Boston, MA.</td>
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<tr>
<td>#1884</td>
<td>P189</td>
<td>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, CA.</td>
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<tr>
<td>#1885</td>
<td>P190</td>
<td>Effects of 2,2',4,4'-Tetabromodiphenyl ether (BDE 47) on Thyroxine Metabolism and Transport in Primary Rat and Human Hepatocytes. V. Richardson, and C. Mazur. US EPA, Athens, GA; and US EPA, Research Triangle Park, NC.</td>
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<tr>
<td>#1889</td>
<td>P194</td>
<td>Integration of Relevant Carcinogenicity and Endocrine Data in a Systemic Approach Establishes the Mode of Action for Pronamide-Induced Thyroid Tumors. J. LaRocca, S. Marty, S. Papineau, M.J. LeBaron, and R.J. Rasoulpour. Dow AgroSciences, Indianapolis, IN; and The Dow Chemical Company, Midland, MI.</td>
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<tr>
<td>#1892</td>
<td>P197</td>
<td>Estrogen Activity Determinations of Ethanol Extracts of Seven Hair Relaxers in Breast Cancer Cell Bioassays. T. Mitchell, G. Guirard, S. Cureaux, P. Ma, L. Stiel, S. Montgomery, and T. Wiese. Loma Linda University, Loma Linda, CA; Loma Linda University, San Bernardino, CA; and Xavier University of Louisiana, New Orleans, LA. Sponsor: K. Coleman.</td>
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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
Abstract # Abstract #
**Author:** Lawrence, P. Nagarkatti, P. Lin. Oregon Health, and Science University, Portland, OR.
**Title:** Cigarette Smoke Mediated Regulation of Epigenetic Signatures on NF-κB Proximal Promoter Region in Murine Macrophages and Human Monocytes.
**Institution:** 1University of Colorado Denver, Aurora, CO.

#1895 Poster Board Number ......................... P202
**Author:** Nakamura, C. Metea, M. Asquith, H. Gruner, Y. Nakamura, C. Moscibrocki, J.T. Rosenbaum, and P. Lin. Oregon Health, and Science University, Portland, OR.
**Title:** Inhalation of Fine Particles from Mexico City Increases Exacerbations in an Asthma Model.
**Institution:** 1UCLA, Los Angeles, CA; and 2University of California Los Angeles, Los Angeles, CA.

#1896 Poster Board Number ......................... P203
**Author:** Nakamura, C. Metea, M. Asquith, H. Gruner, Y. Nakamura, C. Moscibrocki, J.T. Rosenbaum, and P. Lin. Oregon Health, and Science University, Portland, OR.
**Title:** Inhalation of Fine Particles from Mexico City Increases Exacerbations in an Asthma Model.
**Institution:** 1UCLA, Los Angeles, CA; and 2University of California Los Angeles, Los Angeles, CA.

#1897 Poster Board Number ......................... P204
**Author:** Nakamura, C. Metea, M. Asquith, H. Gruner, Y. Nakamura, C. Moscibrocki, J.T. Rosenbaum, and P. Lin. Oregon Health, and Science University, Portland, OR.
**Title:** Inhalation of Fine Particles from Mexico City Increases Exacerbations in an Asthma Model.
**Institution:** 1UCLA, Los Angeles, CA; and 2University of California Los Angeles, Los Angeles, CA.

#1898 Poster Board Number ......................... P205
**Author:** Nakamura, C. Metea, M. Asquith, H. Gruner, Y. Nakamura, C. Moscibrocki, J.T. Rosenbaum, and P. Lin. Oregon Health, and Science University, Portland, OR.
**Title:** Inhalation of Fine Particles from Mexico City Increases Exacerbations in an Asthma Model.
**Institution:** 1UCLA, Los Angeles, CA; and 2University of California Los Angeles, Los Angeles, CA.

#1899 Poster Board Number ......................... P206
**Author:** Nakamura, C. Metea, M. Asquith, H. Gruner, Y. Nakamura, C. Moscibrocki, J.T. Rosenbaum, and P. Lin. Oregon Health, and Science University, Portland, OR.
**Title:** Inhalation of Fine Particles from Mexico City Increases Exacerbations in an Asthma Model.
**Institution:** 1UCLA, Los Angeles, CA; and 2University of California Los Angeles, Los Angeles, CA.

#1900 Poster Board Number ......................... P207
**Author:** Nakamura, C. Metea, M. Asquith, H. Gruner, Y. Nakamura, C. Moscibrocki, J.T. Rosenbaum, and P. Lin. Oregon Health, and Science University, Portland, OR.
**Title:** Inhalation of Fine Particles from Mexico City Increases Exacerbations in an Asthma Model.
**Institution:** 1UCLA, Los Angeles, CA; and 2University of California Los Angeles, Los Angeles, CA.

#1901 Poster Board Number ......................... P208
**Author:** Nakamura, C. Metea, M. Asquith, H. Gruner, Y. Nakamura, C. Moscibrocki, J.T. Rosenbaum, and P. Lin. Oregon Health, and Science University, Portland, OR.
**Title:** Inhalation of Fine Particles from Mexico City Increases Exacerbations in an Asthma Model.
**Institution:** 1UCLA, Los Angeles, CA; and 2University of California Los Angeles, Los Angeles, CA.

#1902 Poster Board Number ......................... P209
**Author:** Nakamura, C. Metea, M. Asquith, H. Gruner, Y. Nakamura, C. Moscibrocki, J.T. Rosenbaum, and P. Lin. Oregon Health, and Science University, Portland, OR.
**Title:** Inhalation of Fine Particles from Mexico City Increases Exacerbations in an Asthma Model.
**Institution:** 1UCLA, Los Angeles, CA; and 2University of California Los Angeles, Los Angeles, CA.
Abstract # Abstract #

#1913

**DHA Suppresses Macrophage Inflammatory Responses by Attenuating Notch Signaling Pathways.** L.K. Rogers1, L.M. Heyob2, and M. Ali3.

1Ohio State University, Columbus, OH; and 2The Research Institute at Nationwide Children’s Hospital, Columbus, OH.

**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.

**Role of Lipids in Macrophage Foam Cell Formation During Nitrogen Mustard-Induced Lung Fibrosis.** A. Venosa, A.J. Gow, H.D. Laskin, and D.L. Laskin.

University of Pittsburgh, Pittsburgh, PA.

**Ascorbic Acid Attenuates Hyperoxia-Compromised Host Defense Against Pulmonary Bacterial Infection.** V.S. Patel1, V. Sampat1, M.G. Espey1, R. Sitapara1, H. Wang1, X. Yang1, R. Kundu1, C.R. Ashby1, D.D. Thomas1, and L.L. Mantell1,2.

1National Cancer Institute, Bethesda, MD; 2St. John’s University, Jamaica, NY; and 3The Feinstein Institute for Medical Research, North Shore-LIJ Health Science, Manhasset, NY.


1Colorado State University, Fort Collins, CO; and 2Texas A&M Health Science Center, Houston, TX; and 3Department of Veterinary Physiology, and Pharmacology, Texas A&M University, College Station, TX.

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**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**

Abstract #

#1918

**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

**Metformin Effect on Regulation of CXCL8 Production.** Z. Xiao, W. Wu, I. Ban, and V. Poltoratsky.

St. Johns University, Jamaica, NY.

#1920


1Duke University, Durham, NC; 2Metabolon, Inc., Durham, NC; 3University of Alabama, Birmingham, AL; 4University of South Carolina, Columbia, SC; and 5University of South Carolina SOM, Columbia, SC.

#1921

**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. Umbricht.

NIOSH, Morgantown, WV.

**Understanding Spatiotemporal Signaling Associated with Inflammation Caused by a Physical Stressor.** J. Boyd1, A. Han2, E. Fabianiec3, M. Prediger4, and H. Currie5.

1California University of Pennsylvania, California, PA; and 2West Virginia University, Morgantown, WV.

**Suppression of Gastric Inflammatory Markers and Mitochondrial Apoptotic Pathway by Methanol Extract of Chasmanthera dependens Stem in Ethanol-Induced Gastric Ulcer Healing.** A.S. Tijani, G.F. Parombi, and S.B. Olaleye.

University of Ibadan, Ibadan, Nigeria.

**Classical and Alternative Activation of Cytobacteria Scytonema javanicum and Scytonema ocellatum Lipopolysaccharide-Treated Rat Brain Microglia.** L.C. Klemm1, M.L. Hall2, P. Williams3, and A.M. Mayer4.

1Midwestern University, Downers Grove, IL; and 2University of Hawaii at Manoa, Honolulu, HI.

**Utility of the Influenza Host Resistance Model for Clinical Risk Assessment.** J. Birkebak1, R. Mikkelsen1, F. Burleson2, and L.A. Burns-Naas3.

1Burleson Research Technologies, Inc, Morrisville, NC; and 2Gilead Sciences Inc, Foster city, CA.
Abstract #


#1933  Poster Board Number ......................... P240  Establishment of Cell Based Model for Studying Human Angiotensinogen Gene Regulation After Xenobiotics. C.M. Menezes‡, and R.A. Ansari*. Nova Southeastern University, Fort Lauderdale, Fl.; and ‡Universidade Federal da Bahia, Salvador, Brazil.

#1934  Poster Board Number ......................... P241  Nr22 Promotes Th2 Differentiation in Murine and Human CD4 T Cells. A.E. Turley†*, J.W. Zagorski††, C.D. Klaassen‡, P.E. Fields§, and C.E. Rockwell†*. Michigan State University, East Lansing, MI; †Michigan State University, East Lansing, MI; and ‡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 #


#1937  Poster Board Number ......................... P244  Species Differences in the Effects of TCDD on a Transcriptional Regulatory Region within the Ig Heavy Chain Gene. Z.I. Alfaheed. 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.


#1940  Poster Board Number ......................... P247  Retinoic Acid and IFNγ Induce Parallel Arginase-1 and Nos-2 Gene Expression in Primary Mouse Kupffer Cells. I. Mohar†, and I.N. Crispe*. †Gradient, Seattle, WA; and *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*, S. Häußler*, K. Stenz*, and L. Boge1. 1Fraunhofer Institute for Toxicology, and Experimental Medicine, Hannover, Germany; and 2Twincore, Center for Experimental, and Clinical Infection Research, Hannover, Germany. Sponsor: C. Densenbrock.

#1942  Poster Board Number ......................... P249  Compensatory Restitution by NsaiD-Induced Protein Against Intestinal Ulcerative Insults. S.-H. Park†, H.J. Choi*, K.H. Do*, J. Kim*, M. Yu†, and Y. Moon†,‡,§. †Immunoregulatory Therapeutics Group in Brain Busan 21 Project, Yangsan, Korea, Republic of; and ‡Immunoregulatory Therapeutics Group in Brain Busan 21 Project, Yangsan, Korea, Republic of.

#1943  Poster Board Number ......................... P250  Dysregulated Immune System Networks as an Outcome of Altered mirRNA Expression and DNA Methylation in War Veterans with Posttraumatic Stress Disorder. M. Barn, X. Yang, P. Nagarkatti, and M. Nagarkatti. University of South Carolina School of Medicine, Columbia, SC.


#1945  Poster Board Number ......................... P252  Exposure to Urban Dust Particles In Vitro and In Vivo Enhances Th17-Associated Cytokine Expression. J.H. Fechner; G. Hautenhauer†, A. Rodriguez‡, C.A. O'Driscoll†, X. Zhang‡, and J.D. Mezrich‡. †University of Puerto Rico, San Juan, PR; and ‡University of Wisconsin, Madison, WI. Sponsor: C. Bradfield.
Tuesday Morning, March 15
9:30 AM to 12:45 PM
CC Exhibit Hall

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

#1946 Poster Board Number............... P253 Exposure to Benzo(a)pyrene Results in Suppression of FcyRII (CD32) Antibody Binding by Disrupting Lipid Raft Membrane Integrity. C.S. Ryan1, P.T. Samuel2, B. Booker1, A. Ramesh3, T. Zhang1, A. Shanker1, M. Maguire2, and D.B. Hood4. 1College 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.

#1949 Poster Board Number............... P301 Sparstolbin B, a TLR4-Antagonist Attenuates Early Steatohepatitic Injury in Environmental Toxin Potentiation of Nonalcoholic Steatohepatitis. D. Datar1, R.K. Sethi1, S. Das1, F. Alhasson1, V. Chandrashekaran1, G.A. Michelotti2, D. Fan1, M. Nagarkatti3, P. Nagarkatti3, A.M. Diehl1, and S. Chatterjee1. 1Duke University, Durham, NC; 2Metabolon, Durham, NC; and 3University 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. Kopeč1, N. Jost1, H. Cline-Fedewa2, A.P. Spada1, P. Contreras1, and J.P. Luynety1. 1Contaus Pharmaceuticals Inc, San Diego, CA; and 2Michigan 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. Boggs, J.N. Lampe, and U. Apte. University of Kansas Medical Center, Kansas City, KS.

#1953 Poster Board Number............... P305 Role of Fibroblast Growth Factor 15 in the Development of High Fat Diet Induced NASH. J.D. Schumacher1, B. Kong1, P. Yang1, L. Zhan2, R. Sun1, J. Aa1, J. Richardson1, D. Laskin1, and G. Guo1. 1China Pharmaceutical University, Nanjing, China; and 2Rutgers University, Piscataway, NJ.

#1954 Poster Board Number............... P306 RNA Sequencing Reveals Induction of Mmp12 by Fibrinogen(ogen) Engagement of Leukocyte αMβ2 Integrin as Critical for Liver Repair After Acetaminophen Overdose in Mice. A.K. Kopeč1, N. Jost1, H. Cline-Fedewa2, R. Nault3, T. Zacharewski4, M.J. Flick1, and J.P. Luynety1. 1Cincinnati Children's Hospital, Cincinnati, OH; and 2Michigan State University, East Lansing, MI.


#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. Annstrom, P. Shimp1, and A. Slitt1. University of Rhode Island, Kingston, RI.


#1960 Poster Board Number............... P312 Mouse Car Is Mainly Involved in Liver Injury and Tumor Development Induced by the Protoporphyrogen Oxidase Inhibitor Herbicide Acifluorfen. K. Kuwata1,2, K. Inoue3, M. Takahashi1, R. Ichimura1, T. Morikawa1, Y. Kodama1, and M. Yoshida1. 1Division of Pathology, National Institute of Health Sciences, Tokyo, Japan; 2Division of Toxicology, National Institute of Health Sciences, Tokyo, Japan; 3Drug Development Division, Mitsubishi Tanabe Pharma Corporation, Chiba, Japan; 4Food Safety Commission of Japan, Tokyo, Japan; and 5Laboratory of Veterinary Pathology, Tokyo University of Agriculture, and Technology, Tokyo, Japan.

# Poster Board Number ..................... P314
PCBs Diminish EGF Receptor or EGFR Signaling Pathways in Organopollutant-Mediated Steatohepatitis.
J.E. Hardesty, K.C. Falkner, M. Cave, R.A. Prough, H.B. Clair, and W. Wahlang. 1 University of Kentucky, Lexington, KY; and 2 University of Louisville, Louisville, KY.

# Poster Board Number ..................... P315
Polyoxymycin B as a New Antidote Against Amanita Phalloides Poisoning: from In Silico to In Vivo Studies. J. Garcia, V. Costa, A. Carvalho, R. Silvestre, J.A. Duarte, D. Dourado, R. Dinis-Oliveira, P. Baptista, M.L. Bastos, and F. Carvalho. 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

# Poster Board Number ..................... P316
Wnt/β-Catenin Signaling Drives Thioacetamide-Mediated Heteroprotection Against Acetaminophen-Induced Lethal Liver Injury. V.P. Dadhania, B. Bhushan, U.M. Apte, and H.M. Mehendale. 1 University of Kansas Medical Center, Kansas City, KS; and 2 University of Louisville at Monroe (ULM), Monroe, LA.

# Poster Board Number ..................... P317
Fibrinogen Inhibits Biliary Hyperplasia and Fibrosis in Mice by Modulating IFNy-Driven Macrophage Activation. N. Josh, A.K. Kopec, H.C. Fedewa, C.E. Rockwell, M.J. Flick, and J.P. Luyendyk. 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.

# 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. Kulka, C.J. Soroka, L.R. Hayeg, and J.L. Boyer. 1 University of California at San Diego, La Jolla, CA; and 2 Yale University, New Haven, CT.

# Poster Board Number ..................... P319
Synthetic Cathinones: Unveiling the Toxicological and Occupational Health Sciences Institute, Piscataway, NJ; 3 Northeast Ohio Medical University, Rootstown, OH; 4 Rutgers University, Piscataway, NJ; and 5 University of Washington, Seattle, WA.

# Poster Board Number ..................... P320
Pterocarpus mildbraedii Extract Ameliorates Proliferin-Derived Hepatotoxicity by Abrogating Oxidative Stress and Mitochondria-Mediated Apoptosis in Rats. C.A. Otuchere, and E.O. Farombi. 1 Redeemer’s University, Ede Town, Nigeria; and 2 University of Ibadan, Ibadan, Nigeria.

# Poster Board Number ..................... P321
PPARα and Car Receptors Differentially Regulate Hepatic Carboxylesterase Expression in Mice Treated with Perfluorooctanoic Acid. X. Wen, A.A. Baker, C.D. Klloassen, J.R. Richardson, and L.M. Aleksunes. 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.

# Poster Board Number ..................... P322
Bile Canalicular Dynamics Alterations As Early Preclinical Predictive Markers of Drug-Induced Cholestasis. M. Burbank, A. Sharanek, A. Burban, N. Claued, R.J. Weaver, C. Guguen-Guillouzo, and A. Guillouzo. 1 Biopredic Int., Rennes, France; 2 INSERM U991, Rennes, France; and 3 International Research Institute Servier, Paris, France.

# Poster Board Number ..................... P323

# Poster Board Number ..................... P324

# Poster Board Number ..................... P325
A High Cholesterol Diet Induces Mitochondrial Dysfunction and Liver Damage. M. Dominguez-Pérez, D.P. Rosales Cruz, N. Nuño Lambarri, M. Rosas Lemus, S. Urbe Carvajal, L.E. Gómez Quiroz, L. Bucio, V. Souza, R.U. Miranda Labra, and M.C. Gutierrez Ruiz. 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.

# Poster Board Number ..................... P326

# Poster Board Number ..................... P327
Protective Effects of Carvacrol Against LPS-Induced Liver Injury. Z. Suntes, Northern Ontario School of Medicine, Thunder Bay, ON, Canada.

# Poster Board Number ..................... P328

# 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.

# Poster Board Number ..................... P330
#1979
Poster Board Number ....................... P331

#1980
Poster Board Number ....................... P332

#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. Korapat, K. Toyokawa, B. Sherf, and J. Vanden Heuvel. Indigo Biosciences, Inc., State College, PA; and 2Penn State University, University Park, PA.

#1983
Poster Board Number ....................... P335

#1984
Poster Board Number ....................... P336

#1985
Poster Board Number ....................... P337

#1986
Poster Board Number ....................... P338

#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.

#1988
Poster Board Number ....................... P340

#1989
Poster Board Number ....................... P341

#1990
Poster Board Number ....................... P342

#1991
Poster Board Number ....................... P343

#1992
Poster Board Number ....................... P344

#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, C. Wei, J. Del Pozo, D.J. Antoine, P. Treskes, D.J. Webb, and J.W. Dear. 1University of Edinburgh, Edinburgh, United Kingdom; and 2University 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, and A.P. Li. In Vitro ADMET Laboratories LLC, Columbia, MD; and 2In 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. Noronha1, D.G. Nguyen1, D.A. Gerber1, S.C. Prensell1, and E.L. LeCluyse1, 2,3. 1Organovo, Inc., San Diego, CA; 2The Hamner Institutes, Research Triangle Park, NC; and 3The 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. Starokozhko1, M. Hemmingsen1, L. Larsen1, S. Mohanaty1, M. Merema2, R. Pimentel1, A. Wolff1, J. Emneus1, A. Aspegren2, and G.M. Groothuis3. 1Takara Bio Europe AB, Göteborg, Sweden; 2Technical University of Denmark, Lyngby, Denmark; and 3University 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 Singh1, M. McMfillian1, Y. Qu1, C.W. Ng1, Y. Zhou1, H. Yui1, and A. Ananathanarayanan1. 1In vitroce Pte Ltd, Singapore, Singapore; and 2National University of Singapore, Singapore, Singapore. Sponsor: M. Johnson.


#2000 Poster Board Number ............................ P404 In-Depth Characterization of 3D Human Liver Microtissues by Transcriptomic, Proteomic and Functional Analysis. S. Messner1, L. Fredriksson Puigvert1, C. Escher1, M. Bober1, K. Roessger1, J.M. Kelm1, W. Moritz1, and M. Ingelman-Sundberg1. 1Biognoys AG, Schlieren, Switzerland; 2InSphero AG, Schlieren, Switzerland; and 3Karolinska Institutet, Stockholm, Sweden.


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. Clevell, 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 propythiouracil in the Clinic. R. Figler, S. Marukian, M.S. Collado, M. Lawson, A. Mackey, D. Manka, B. Blackman, B. Wamhoff, and A. Doff. HemoShear Therapeutics, Charlottesville, VA.

#2007 Poster Board Number ............................ P411 A Human Heart-Liver Platform to Study Drug Metabolism and Toxicity. C. Oleaga1, G. Legters1, L. Kumanich1, V. Platt1, L.R. Bridges1, C. Martin1, M. Jackson1, C.W. McAleen1, C.J. Long1, J. Lange1, A. Blu1, R.NOTE1, J.J. Hickman1, S. Teissier1, J. Cotovio1, and L. Breton1. 1L’Oreal Research and Innovation Division, Aulnay-sous-Bois, France; 2L’Oreal Research and Innovation Division, Clark, NJ; and 3University of Central Florida, Orlando, FL. Sponsor: E. Dufour.


#2011 Poster Board Number ............................ P415 Toxicity of Exifone in Primary Rat Hepatocytes and Human HepaRG Cells (clone 5F1). T. Brayman, and D. Thompson. Sigma-Aldrich, St. Louis, MO.


#2014 Poster Board Number ............................ P418 The Influence of System-Specific Factors on In Vitro Kinetics in 3D Flow-Based Liver Bioractors. M. Yoon1, J.M. Pedersen1, E.L. LeCluyse1, J.M. Macdonald1, M.E. Andersen1, and H.J. Clevell1. ‘The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and 3The University of North Carolina, Chapel Hill, NC.
Abstract #

#2030  Poster Board Number................................................. P434  A Multiple Database Approach for Identifying Chemicals That Affect Cancer Pathways. S. Iyer1, N. Pham2, M. Marty3, M. Sandy4, G. Solomon1, and L. Zeise1. 1CalEPA, Oakland, CA; and 2CalEPA, Sacramento, CA.

#2031  Poster Board Number................................................. P435  Mode of Action of Ethyl Tertiary-buty1 Ether in the Rat Liver: Induction of Oxidative Stress, Cell Proliferation and Cell Cycle Arrest via Activation of CAR, PXR and PPARs. A. Kakemash1, M. Gi1, H. Wamibuchi1, A. Hagiwa1, N. Imai1, K. Nagano1, F. Nishimaki1, and S. Fushikuma1. 1DIMS Institute of Medical Science, Ichinomiya, Japan; 2Japan Biossay Research Center, Japan Industrial Safety & Health Association, Kanagawa, Japan; 3Japan Petroleum Energy Center, Tokyo, Japan; 4Nagano Toxicologic-Pathology Consulting, Kanagawa, Japan; and 5Osaka 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. Madala1, S.R. Punganuru1, M. Constantinou1, and S. Kalkunte1. 1Texas 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 rasH2Mice. M. Suguro1, T. Numano1, M. Kawabe1, M. Akiyama1, Y. Doi1, and Y. Mera1. DIMS Institute of Medical Science, Inc., Ichinomiya, Japan.

#2034  Poster Board Number................................................. P438  Activation of the Dietary Carcinogens Benzo(a)pyrene and PhIP in LNCaP Prostate Cancer Cells in the Presence of 1,3-Dichloropropene. O. Graham1, and N.J. Gooderham1. Imperial College London, London, United Kingdom.

#2035  Poster Board Number................................................. P439  Preventive Effects of Butyrate-Containing Structured Lipids on Experimental Liver Carcinogenesis. J.F. Ortega1, R. Heidorn1, K. Furtado1, J. Ract1, L. Gioieli1, E. Purgatto1, A. de Conti1, J. Pogribny1, and F. Moreno1. National Center for Toxicological Research, Jefferson, AR; and 2University 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. Cruzan1, J.S. Bus2, M.J. Banton3, S.S. Sarang4, R. Waits4, D. Layko1, and J. Raymond1. 1Charles River Laboratories, Frederick, MD; 2Exponent, Midland, MI; 3LyondellBasell Corporation, Houston, TX; 4SABIC, Mount Vernon, IN; 5Shell International, Houston, TX; 6The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and 7ToxWorks, Bridgeton, NJ.

#2037  Poster Board Number................................................. P441  Effect of the Non-Genotoxic Carcinogens, Methapyrilene Hydrochloride and Bis-(2-Ethylhexy1) Phthalate (DEHP), on Intracellular Iron Metabolism in Rat Liver. I. Kindrat1, S. Shpyleva1, T. Chen1, F.A. Beland1, and J.P. Pogribny1. 1US FDA, Jefferson, AR; and 2National Medical University, Ivano-Frankivs’k, Ukraine.

#2038  Poster Board Number................................................. P442  Using Transcriptionomics and Metabolomics to Evaluate Mode of Action of Ethylbenzene in Wild-Type, Cyp2f2 Knockout and Cyp2f1 Humanized Mice Exposed for 5 Days. M.E. Andersen1, G. Cruzan2, J.S. Bus1, M.J. Banton3, S.S. Sarang4, and M. Black5. 1Exponent, Midland, MI; 2LyondellBasell, Houston, TX; 3Shell International, Houston, TX; 4The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and 5ToxWorks, 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. Black1, F.D. McMullen1, S.N. Pendse1, and M.E. Andersen2. The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#2040  Poster Board Number................................................. P444  Benzo[a]pyrene (BaP)-Induced Colon Tumorigenesis Is Enhanced by Western Diet Consumption in the Pirc Rat Model: Role of BaP Biotransformation. K.L. Harris1, M.S. Niaz1, M.K. Washington1, and A. Ramezi1. 1Meharry Medical College, Nashville, TN; and 2Vanderbilt 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. Li1, Q. Wu1, Z. Wang1, and J.E. Klaunig1. Indiana University, Bloomington, IN.

#2042  Poster Board Number................................................. P446  Mechanism of 1,3-Dichloropropene (1,3-D) Induced Liver Tumors in Rat. B.A. Elser1, X. Li1, Z. Wang1, and J.E. Klaunig1. Indiana University, Bloomington, IN.

#2043  Poster Board Number................................................. P447  Investigations on the Carcinogenic Mechanism of N-Vinyl-2-Pyrrolidone (NVP). D. Fruth1, E. Fabian1, M. Schultz1, F.J. Berger1, F. Oesch2, B. van Ravenzwaay1, and R. Landsiedel1. 1BASF SE, Ludwigshafen am Rhein, Germany; and 2Johannes Gutenberg University, Mainz, Germany.

#2044  Poster Board Number................................................. P448  Diiodolymethane 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. Draz1, A. Goldberg1, S.H. Safe1, and J.T. Sanderson1. 1INRS-Institut Armand-Frappier, Laval, QC, Canada; and 2Texas A&M University, Texas, TX.

#2045  Poster Board Number................................................. P449  Gene Expression Changes Following Repeated Oral Administration of Tetrabromobisphenol A (TBBPA) in Female Wistar Han Rats. S.M. Hall1, S.J. Coulter2, G.A. Knudsen1, J.M. Sanders1, and L.S. Birnbaum2. 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. Ferraris1, E. Kolas2, and I. Plante1. INRS - Institut Armand-Frappier, Laval, QC, Canada.
Exhibit or-Hosted Sessions

State University of New York, Buffalo, NY; and S.M. Albelda2, and M. Christofidou-Solomidou2.

Institute of Chemical Biology, Kolkata, India; Sciences, Tokyo, Japan.

Tsuchiya, Y. Ishii, S. Takasu, A. Kijima, K. Ogawa, P
India.


Covance, Inc, Madison, WI; and ‘Texas A&M University, College Station, TX.

Perinarial Exposure to the Phthalate Plasticizer DEHP Alters Mammary Glands Development in Rats. E. Kolasa1, B. Robaire2, and I. Plante1. INRS - Institut Armand Frappier, Laval, QC, Canada; and ‘McGill University, Montreal, QC, Canada.


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.

Poster Board Number ............................... P504 Role of P450 in Hepatotoxicity and Proliferation in Bile Duct Induced by Exposure to 1,2-Dichloropropane in Mice. X. Zhang1, C. Zong1,2, L. Zhang1, E. Garner1, C. Huang1, W. Wu1, J. Chang1, T. Sakurai2, S. Ichihara2, and G. Ichihara1,4. Lovelace Respiratory Research Institute, Albuquerque, NM; 1Mie University, Tsu, Japan; 2Nagoya University Graduate School of Medicine, Nagoya, Japan; and 4Tokyo University of Science, Noda, Japan.

Poster Board Number ............................... P505 Hyposxia-Inducible Factor1alpha (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 Zou, China. Sponsor: X.-F. Ren.

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 Is Not Mutagenic in an In Vivo gpt delta Transgenic Mouse Assay. R. Ellis-Hutchings, K. Wienc, S. Murphy, S. Masumori, and M. Hayashi. Arkema, Inc., King of Prussia, PA; BASF SE, Ludwigshafen, Germany; Makoto International Consulting, Ebina, Japan; Public Interest Incorporated Foundation Biosafety Research Center, Shizukoka, Japan; and The Dow Chemical Company, Midland, MI.

Abstract #2064

Poster Board Number ........................................ P508


Abstract #2065

Poster Board Number ........................................ P509

Targeted Disruption of T-Cell Protein Tyrosine Phosphatase in Mouse Epidermis Promotes Chemically-Induced Skin Carcinogenesis. H. Lee, M. Kim, L.D. Morales, A.F. Vasquez, T.J. Slaga, D. Giogioanni, and D.J. Kim. University of Texas at Austin, Austin, TX; University of Texas Health Science Center at San Antonio, San Antonio, TX; and University of Texas Rio Grande Valley, Edinburg, TX.

Abstract #2066

Poster Board Number ........................................ P510

Specificity Protein (Sp) Transcription Factors as Non-Oncogene Addiction Genes in Cancer Cells. E. Hedrick, Y. Cheng, U.-H. Jin, K. Kim, and S. Safe. Texas A&M University, College Station, TX; and University of Cincinnati, College Station, OH.

Abstract #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, M.A. Doll, D.J. Samuelson, M.A.G. Sanders, J.C. States, and D.W. Hein. University of Louisville, Louisville, KY; and University of Louisville Hospital, Louisville, KY.

Abstract #2068

Poster Board Number ........................................ P512

Prochlorz: Further In Vitro Data Comparing Responses in Male Wild-Type Mouse and Human Cultured Hepatocytes Complements the Human Relevance Framework. C. Strupp, S. Melching-Kollmus, L. Chatham, D. Lowes, I. Feger, and C. Elcombe. Adama Europe, Schaffhausen, Switzerland; BASF SE, Ludwigshafen, Germany; and CXR Biosciences Ltd., Dundee, United Kingdom.

Abstract #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. Zarib, Rutgers, Piscataway, NJ.

Abstract #2070

Poster Board Number ........................................ P514

AKT Phosphorylation of RNF6 Is Required for RNF6 Mediated Ubiquitination and Transcriptional Regulation of the Androgen Receptor. H. Shimelis, D. Deshmukh, Y. Xi, and Y. Qu. Mayo Clinic, Rochester, MN; and University of Maryland School of Medicine, Baltimore, MD.

Abstract #2071

Poster Board Number ........................................ P515


Abstract #2072

Poster Board Number ........................................ P516


Abstract #2073

Poster Board Number ........................................ P517


Abstract #2074

Poster Board Number ........................................ P518

Histone Deacetylase Inhibitors Inhibit Rhabdomyosarcoma by Reactive Oxygen Species-Dependent Targeting of Specificity Protein Transcription Factors. E. Hedrick, J. Cross, C. Linardic, and S. Safe. Duke University Medical Center, Durham, NC; Texas A&M Health Sciences Center, Houston, TX; and Texas A&M University, College Station, TX.

Abstract #2075

Poster Board Number ........................................ P519


Abstract #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.

Abstract #2077

Poster Board Number ........................................ P521


Abstract #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.

Abstract #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.

Abstract #2080

Poster Board Number ........................................ P524

Diindolylmethane Analogs Are Ligands for NR4A Nuclear Receptors in Colon Cancer Cells. X. Li, and S. Safe. Texas A&M University, College Station, TX; and Texas A&M University Health Science Center, Houston, TX.
# Poster Board Number PS25
**Title:** The Relationship Between Foremosthach Hyperplasia and Tumorigenesis in Rodents Following Chronic Oral Exposure to Possible Carcinogens. **J.M. Fritz**, **M.R. Gwin**, and **C.E. Wood**. **1**US EPA, Research Triangle Park, NC; and **2**US EPA, Washington, DC.

**Abstract #:** #2087

**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

- **Location:** CC Exhibit Hall
- **Time:** Tuesday Morning, March 15

**Poster Session:** Chemical and Biological Weapons

- **Health and Environmental Impacts of Manmade and Naturally Released Toxicants**

**Sponsor:** Defense, Aberdeen Proving Ground, MD.

- **Chairperson(s):** R.D. Canatsey, J.R. Landolph, J. Swenberg, R. Yu, S. Sponsor.

**Displayed:** 9:30 AM–12:45 PM

**Author Attended:** 9:30 AM–11:00 AM

- **Location:** CC Exhibit Hall
- **Time:** Tuesday Morning, March 15

**Poster Session:** Miscellaneous

- **Nerve Agent Challenge in the Hartley Guinea Pig.** **J.L. Plahovinsak**, M. Edwards, N.A. Niemuth, and J.A. Harvilchuck. Battelle, Columbus, OH.

**Poster Session:** Miscellaneous

- **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.

**Poster Session:** Miscellaneous

- **Novel Substituted Phenoxoalkyl Pyridinium Oximes Enhance Survivral 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.

**Poster Session:** Miscellaneous

- **Analysis of Rat Brain Acetylcholinesterase (AChE) Reactivation by Novel Oximes and Pralidoxime Chloride (2-PAM) After Inhibition with a Cyclosarin Surrogate.** **S.A. Dezzell**, H.W. Chambers, and J.E. Chambers. Mississippi State University, Mississippi State, MS.

**Poster Session:** Miscellaneous

- **Determination of the Median Effective Dose of Oxime Therapies Against Topical Challenges of Organophosphates in the Guinea Pig.** **M.C. Babin**, T.H. Snider, D.A. Jett, G.E. Platof, and D.T. Yeung. Battelle, Columbus, OH; National Institutes of Health/National Institute of Allergy, and Infectious Diseases, Bethesda, MD; and National Institutes of Health/National Institute of Neurological Disorders, and Stroke, Bethesda, MD.

**Poster Session:** Miscellaneous


**Poster Session:** Miscellaneous

#2096 Abstract # 

Poster Board Number .................. P540

Absorption Kinetics and Blood Brain Barrier (BBB) Penetration by a Cyanide Antidote (CAX1) on a Mouse Model. B.A. Mendenhall, L. Kiss, S. Crevs, J. Lowry, V. Coronado, J. Ross, D. Brown, and I. Petrikovics. Sam Houston State University, Huntsville, TX. Sponsor: I. Petrikovics.

#2097 Abstract # 

Poster Board Number .................. P541

Peroxiredoxins Are Molecular Targets for the Sulfur Mustard Analog Mechlorethamine in Human Keratinocytes. Y.-H. Jan¹, D.E. Heck¹, V. Mishin¹, R.P. Casillas¹, D.L. Laskin¹, and J.D. Laskin¹. ¹MRIGlobal, Kansas City, MO; ²New York Medical College, Valhalla, NY; ³Rutgers School of Public Health, Piscataway, NJ; and ⁴Rutgers University, Piscataway, NJ.

#2098 Abstract # 

Poster Board Number .................. P542

A Novel Peptide Protects Against Nerve Agent Poisoning. U. Wormser¹, B. Brodsky¹, Y. Finkelstein¹, and E. Proscura¹. ¹Shaare Zedek Medical Center, Jerusalem, Israel; and ²The Hebrew University, Jerusalem, Israel.

#2099 Abstract # 

Poster Board Number .................. P543

Activation of Thioredoxin-Regulated Signaling in Human Lung Epithelial Cells by Nitrogen Mustard Vesicants. D.E. Heck¹, Y.-H. Jan¹, R.P. Casillas¹, D.L. Laskin¹, and J.D. Laskin¹. ¹MRIGlobal, Kansas City, MO; ²New York Medical College, Valhalla, NY; ³Rutgers School of Public Health, Piscataway, NJ; and ⁴Rutgers University, Piscataway, NJ.

#2100 Abstract # 

Poster Board Number .................. P544

Optimization of a Neurotoxicology Animal Model for Therapeutic Intervention Studies. W.M. Weber³, J.D. McDonald², J. Lewine¹, M. Doyle-Eisele¹, R. Rallit¹, J. Laney¹, and E. Garcia¹. ¹Biomedical Advanced Research and Development Authority, Washington, DC; ²Lovelace Respiratory Research Institute, Albuquerque, NM; and ³Mind Research Network, Albuquerque, NM.

#2101 Abstract # 

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 Abstract # 

Poster Board Number .................. P548

Acute Toxicity of Phorate Oxon in the Sprague-Dawley Rat by Oral Gavage. M.K. Brittain¹, M.C. Bobin¹, T.H. Snider², D.A. Jett¹, G.E. Platoff¹, and D.T. Yeung¹. ¹Battelle, Columbus, OH; and ²National Institutes of Health, Bethesda, MD.

#2103 Abstract # 

Poster Board Number .................. P547

Oxime Therapy to Provide 50% Survival in the Hartley Guinea Pig Against Organophosphorus Challenges. C. Wilhelmi¹, T. Snider¹, B. Reed¹, M. Babin¹, G. Platoff¹, D. Jett¹, and D. Yeung¹. ¹Battelle, Columbus, OH; and ²National Institutes of Health, Bethesda, MD.

#2104 Abstract # 

Poster Board Number .................. P548

Efficacy of Pyridostigmine Bromide as a Pretreatment Against Nerve Agents in Guinea Pigs. J. Harvilchuck¹, J. Richey¹, N. Niemuth¹, and J. Plahovich¹. ¹Battelle, Columbus, OH.
#2114 Abstract #

Poster Board Number: ............................... P558

Assessing Novel Adenosine Treatment Strategies for Neuroprotection After Soman Exposure in a Rat Model. T. Thomas¹, and T.-M. Shih¹. ¹Army Research Laboratory, Aberdeen Proving Ground, MD; and ²US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD. Sponsor: J. Dillman.

#2115 Abstract #

Poster Board Number: ............................... P559

Efficacy of Dexamethasone, Doxycycline and Silibinin in Reversing Nitrogen Mustard-Induced Corneal Injury. D.G. Goswami¹, N. Tewari-Singh¹, R. Kant¹, D. Kumar¹, D.A. Ammar¹, J.M. Petras¹, R.W. Enzenauer¹, C.R. Crouch¹, R.P. Casillas¹, and R. Agarwal¹. ¹MRIglobal, Kansas City, MO; and ²University of Colorado Denver, Aurora, CO.

#2116 Abstract #

Poster Board Number: ............................... P560

Corneal Injury Following Ocular Exposure to Sulfur Mustard Vapor: Clinical, Histopathological and Molecular Endpoints. N. Tewari-Singh¹, D.G. Goswami¹, R. Kant¹, D. Kumar¹, D.A. Ammar¹, J.M. Petras¹, R.W. Enzenauer¹, C.R. Crouch¹, R.P. Casillas¹, and R. Agarwal¹. ¹MRIglobal, Kansas City, MO; and ²University of Colorado Denver, Aurora, CO.

#2117 Abstract #

Poster Board Number: ............................... P601

Activity-Based Protein Profiling Suggests Secondary Mechanisms of VX Intoxication. J.W. Sekowski¹, D. Carmany¹, A. Walz², F.-L. Hsu¹, F. Berg¹, D. Noort¹, R. Van Den Berg¹, J.A. Gibbons¹, and T. Glaros¹. ¹Excret, Inc, Springfield, VA; ²The Netherlands Organization, Rijswijk, Netherlands; and ³US Army ECBC, APG-EA, MD. Sponsor: S. Hulet.

#2118 Abstract #

Poster Board Number: ............................... P602


#2119 Abstract #

Poster Board Number: ............................... P603

Identification of Differentially Expressed Proteins in Inferior Colliculus During Acute Hydrogen Sulfide Exposure. W.K. Rumbleba¹, D.S. Kim¹, P. Anantharam¹, A. Hoffmann¹, M.L. Meade¹, J.M. Gearhart¹, E.M. Whitley¹, and B. Mahama¹. ¹Iowa State University, Ames, IA; ²LLC, Gainesville, FL; and ³Wright Patterson Air Force Base, Dayton, OH.

#2120 Abstract #

Poster Board Number: ............................... P604

Therapeutic Efficacy of Cobinamide for Treatment of Hydrogen Sulfide-Induced Neurotoxicity. P. Anantharam¹, E.M. Whitley¹, D.S. Kim¹, D. Shao¹, M. Langley¹, B. Mahama¹, A. Kanthasamy¹, G. Boss², and W.K. Rumbleba¹. ¹Iowa State University, Ames, IA; ²Pathogenesis LLC, Gainesville, FL; and ³University of California, San Diego, San Diego, CA.

#2121 Abstract #

Poster Board Number: ............................... P605

Effect of Lower and Higher Exposure Duration on Lewisite-Induced Corneal Injury. D. Kumar¹, N. Tewari-Singh¹, D.G. Goswami¹, R. Kant¹, C.R. Crouch¹, R.P. Casillas¹, D.A. Ammar¹, J.M. Petras¹, and R. Agarwal¹. ¹MRIglobal, Kansas City, MO; and ²University of Colorado Denver, Aurora, CO.

#2122 Abstract #

Poster Board Number: ............................... P606

Tuesday Morning, March 15
9:30 AM to 12:45 PM
CC Exhibit Hall

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

Abstract # P661

#2131 Poster Board Number ................................................. P661 Comparative Pulmonary Toxicity of Inhaled Metalworking Fluids in Rats and Mice. K.R. Ryan1, M. Torason4, M. Cesta1, R. Herbert1, A. Brix1, M. Cora1, K. Janardhan4, K. Witt1, G. Kissling1, and D.L. Morgan1. 1Division of the National Toxicology Program, NIEHS, Research Triangle Park, NC; 2EPL Inc, Research Triangle Park, NC; 3ILS Inc, Research Triangle Park, NC; and 4NIOSH, Cincinnati, OH.

#2132 Poster Board Number ................................................. P662 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 ................................................. P663 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.


#2137 Poster Board Number ................................................. P667 Inhalation Cancer Risk Assessment of Hexavalent Chromium Based on Updated Mortality for Painesville Chromate Production Workers. M. Suh1, K.S. Crump2, L. Mittal1, S. Hirsch1, R. Valdes Salgado4, C. Bartlett1, C. Van Landingham1, A.C. Rohr1, and D.M. Proctor1. 1Electric Power Research Institute, Palo Alto, CA; 2Kenny Crump, Ruston, LA; 3Ramboll Environ, Monroe, LA; 4SciMetrika, Durham, NC; and 5ToxStrategies, Katy, TX; and 6ToxStrategies, Mission Viejo, CA.


#2139 Poster Board Number ................................................. P669 An Updated Evaluation of Reported Chrysotile Asbestos No Observed Adverse Effect Levels (NOAELs) for Lung Cancer and Mesothelioma. J.S. Pierce1, P. Ruestow1, and B.L. Finley1. 1Cardno ChemRisk, Brooklyn, NY; and 2Cardno ChemRisk, Chicago, IL.

#2140 Poster Board Number ................................................. P670 Diacetyl Exposure and Respiratory Disease: An Evaluation of the Current Weight of Evidence. B.L. Finley1, M.E. Glynn1, A. Abelmann1, and J.S. Pierce2. 1Cardno ChemRisk, Brooklyn, NY; and 2Cardno ChemRisk, Chicago, IL.

#2141 Poster Board Number ................................................. P671 Evaluation of Nitrogen Dioxide and Airway Hyper-Responsiveness. M. Seeley, and J.E. Goodman. Gradient, Cambridge, MA.


#2143 Poster Board Number ................................................. P673 Evaluation of Atherosclerosis as a Mode of Action for the Cardiovascular Effects of Particulate Matter. R.L. Prueitt1, J.M. Cohen1, and J.E. Goodman1. 1Gradient, Cambridge, MA; and 2Gradient, Seattle, WA.


#2145 Poster Board Number ................................................. P675 Provisional Advisory Levels (PALs) for Cyanide (HCN, KCN, NaCN). S. Milanez1, C. Baird1, M. McClanahan2, and G. Henningsson1. 1FR-ETS, Monument, CO; 2Oak Ridge National Laboratory, Oak Ridge, TN; 3Retired, Centers for Disease Control, and Prevention, Champaign, GA; and 4USA CHPPM, Aberdeen, MD.


#2148 Poster Board Number ................................................. P678 Reproductive and Developmental Health Impacts of Cyanotoxins: A Comparative Review. A. Saulles1, S. Mehta2, and B. Foos2. 1University of Michigan, Ann Arbor, MI; and 2US Environmental Protection Agency, Washington, DC. Sponsor: E. Ohanian.
Tuesday Morning, March 15
10:00 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 luminescence 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, 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) principle/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 S8000 Live Cell Imaging Platform
Presented by:
Sony Biotechnology Inc.
The Sony S8000 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
Grand Isle Restaurant
Drug Discovery Toxicology Specialty Section Mentoring Event

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)
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. 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-methylcytosine (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 2:45 PM

Poster Session: 3D Cell and Organ-on-a-Chip Models


#2178 Metabolically Competent HepaRG Spheroid Model for In Vitro Toxicology Studies. S. Ramiaiahari, S. Waidyanathana, W. Boyd, M. DeVito, R. Paules, and S. Ferguson. DNTP, Durham, NC.


#2180 C57BL/6 Fetal Mouse Midbrain Micromass Culture: A Case Study of Silver Nanoparticles. J.J. Park, P. Bujalowski, A.F. Oberhauser, and P.J. Boor. The University of Texas Medical Branch, Galveston, TX. Sponsor: F. Khan.

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*

**Poster Board Number: P112**

**Development of a 3D In Vitro Model for the Assessment of Repeated Dose Hepatotoxicity.**


**Poster Board Number: P113**

**Molecular Initiating Events in Toxicity Pathways Using Organotypic Human In Vitro Models.**


**Poster Board Number: P114**

**3D Networks of iPSC-Derived Neurons and Glia for High-Throughput Neurotoxicity Screening.**


**Poster Board Number: P115**

**Developmental Neurotoxicity of Flame Retardants Using a Rat Primary Three-Dimensional Organotypic In Vitro Model.**

R.C. Sa1, O.C. Ulker1, L. Smirnova1, T. Hartung1, and H. Hogberg1. Federal University of Paraíba, João Pessoa, Brazil; 2Johns Hopkins Bloomberg School of Public Health, Baltimore, MD; and 3University of Ankara, Ankara, Turkey.

**Poster Board Number: P116**

**In Vitro Assessment of Carcinogenic Risk for PAHs Using a 3D Lung Epithelial Model.**


**Poster Board Number: P117**

**Microfluidic 4-Organ-Chip Connecting Human Liver, Intestine, Kidney and Skin Equivalents to Approach ADME Profiling.**

I. Maschmeyer1, A.K. Lorenz1, J. Hübner1, A.P. Ramme1, R. Lauster1, and U. Marx1. TissUse GmbH, Berlin, Germany; and 2TU Berlin, Berlin, Germany. Sponsor: P. Hayden.

**Poster Board Number: P118**

**Development of an In Vitro Pharmacokinetic Model to Describe Nicotine Kinetics in a Multi-Organ Culture System.**

Y. Zhou1, M. Yoon1, M.D. Gaca1, G. Phillips3, H. Clewell1, M.E. Andersen1, and J.M. McKim. 1British American Tobacco, R&D Centre, Southampton, United Kingdom; 2IONTOX, Kalamazoo, MI; and 3The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

**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. Patel1, R. Verma1, V. Dalal1, S. Patel1, and V.J. Piccirillo1. Jai Research Foundation, Valvada, India; and 2V&P Consulting, Inc., Ashburn, VA.

**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.**


**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 a New Epicarial™ ET50 Protocol.**

S.N. Kolle, B. van Ravenzwaay, and R. Lanssiedel. BASF SE, Ludwigshafen am Rhein, Germany.

**Poster Board Number: P123**

**Predictive Performance of the Short Time Exposure (STE) Test for Identifying Eye Irritation Potential of Chemical Mixtures.**

T. Abo1, K. Saito1, M. Miyazawa1, Y. Nakada1, K. Ei1, J. Avolot1, and H. Sakaguchi1. Kao Corporation, Tochigi, Japan; and 2Kao USA Inc., Cincinnati, OH.

**Poster Board Number: P124**

**Correlation of Two In Vitro Epilocular™ Test Methods and Consumer Eye Irritation Data for Cleaning Products.**

L.A. Strazdas9, K.E. Page5, P.D. Elias3, N. Wilt1, G. Mun1, E. Sly1, N. Sadowski1, J. Saudan1, and K. Mainquist1. 1Institute for In Vitro Sciences, Inc., Gaithersburg, MD; 2Institute for In Vitro Sciences, Inc., Gaithersburg, CA; 3The Clorox Company, Pleasanton, CA.

**Poster Board Number: P125**

**An Approach to Skin Sensitization Quantitative Risk Assessment Using a Bayesian Integrated Testing Strategy to Derive Potency.**

C. Ryan1, J. Jaworska6, A. Natsch1, R. Landsiedel2, and H. Sakaguchi1. 1Institute for In Vitro Sciences, Inc., Gaithersburg, MD; 2The Clorox Company, Pleasanton, CA; and 3The Procter & Gamble Company, Mason, OH; and 4The Procter & Gamble Company, Strombeek-Bever, Belgium.

**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. Jaworska1, A. Natsch1, C. Ryan1, J. Strickland1, T. Ashikaga4, and M. Miyazawa1. 1Givaudan Schweiz AG, Dübendorf, Switzerland; 2ILS/NICEATM, Research Triangle Park, NC; 3Kao Corporation, Tochigi, Japan; 4Shiseido Company Limited, Kanagawa, Japan; and 5The Procter & Gamble Company, Mason, OH; and 6The Procter & Gamble Company, Strombeek-Bever, Belgium.
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<tr>
<th>Abstract #</th>
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<tr>
<td>#2197</td>
<td>P127</td>
<td>Prediction of Systemic Bioavailability Using In Vitro Skin Absorption and Epidermal and Hepatic Metabolism of Phosphate Alkyl Etheroxide Esters. J.D. Manwaring1, T. Kirsch2, C.M. Obringer1, D. Holtz2, T. Baker1, C. Goebel1, and J.A. Troutman1. Procter &amp; Gamble, Mason, OH; and Procter &amp; Gamble, Schwabach, Germany. Sponsor: G. Daston.</td>
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<tr>
<td>#2198</td>
<td>P128</td>
<td>Intra/Inter Reproducibility Analysis of the In Vitro Skin Sensitization Assay Using Reconstructed Human Epidermis. K. Saito2, H. Mizumachi1, M. Miyazawa1, M. Ikezumi1, A. Umetsu1, H. Motohashi1, M. Sakuma1, M. Takeyoshi1, and N. Imai1. Hatano Research Institute, Food, and Drug Safety Center, Kanagawa, Japan; Kao corporation, R&amp;D Safety Science Research, Tochigi, Japan; and KOSE Corporation, Fundamental Research Laboratories, Tokyo, Japan. Sponsor: J. Avalos.</td>
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<tr>
<td>#2199</td>
<td>P129</td>
<td>Evaluation of the Episkin RHE Model in the SENS-IS Assay for Prediction of Skin Sensitization of Chemicals. F. Cottrez1, E. Boitel1, C. Pellevoisin1, N. Seyler1, and H. Groux1. EPISKIN Academy, Lyon, France; and ImmunoSearch, Grasse, France. Sponsor: E. Dufour.</td>
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<tr>
<td>#2200</td>
<td>P130</td>
<td>Identification of Pre- and Pro-Haptens in Skin Sensitization with Non-Animal Test Methods. D. Urbisch1, E. Fabian1, N. Honavar1, S.N. Kolle1, A. Mehling1, T. Ramirez1, D. Vogel1, W. Teubner1, and R. Landsiedel1. BASF Personal Care, and Nutrition, Düsseldorf, Germany; BASF Schweiz AG, Basel, Switzerland; and BASF SE, Ludwigshafen am Rhein, Germany.</td>
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<tr>
<td>#2202</td>
<td>P132</td>
<td>Multivariate Models for Prediction of Human Skin Sensitization Hazard. J. Strickland1, O. Zhang1, M. Paris1, D.M. Lehmann1, N. Kleinreuer1, D. Allen2, N. Choksi1, J. Matheson1, A. Jacobs1, A. Lowit2, and W. Casey1. CFPS, Rockville, MD; US EPA/ORD/NHEERL, Durham, NC; US EPA/OSCPP/OPP, Washington, DC; US FDA/CDER, Silver Spring, MD; and NIEHS/NICEATM, Durham, NC.</td>
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<td>#2203</td>
<td>P133</td>
<td>Reducing False Negatives of Chemicals in the In Vitro Skin Sensitization Test. K. Narita1, P.T. Vo1, F. Nakagawa1, H. Kojima1, and H. Itagaki1. National Institute of Health Sciences, Tokyo, Japan; and Yokohama National University, Yokohama, Japan.</td>
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<td>#2204</td>
<td>P134</td>
<td>Development of Photo-Direct Peptide Reactivity Assay. H. Nishida1, T. Ashikaga1, M. Hirota1, S. Onoue2, Y. Seto2, and H. Kouzuki2. Shiseido Research Center, Yokohama-shi, Japan; and University of Shizuoka, Shizuoka-shi, Japan.</td>
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Tuesday, Wednesday, 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 Connolly, US Environmental Protection Agency, Research Triangle Park, NC.

**Displayed:** 1:15 PM–4:30 PM

**Author Attended:** 1:15 PM–2:45 PM

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<tr>
<td>#2209</td>
<td>P139</td>
<td>Combining In Silico and In Vitro Methods to Improve the Accuracy of Skin Sensitization Predictions for Chemicals. M. Lamn, N. Sadowski, and K.G. Norman. Institute for In Vitro Sciences, Gaithersburg, MD. Sponsor: H. Raabe.</td>
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**Abstract # P142**

R.E. Jacob, A.P. Kuprat, D.R. Einstein, and P. of Airflow and Vapor Dosimetry in the Rodent

**Abstract # P143**

Adverse Outcome Pathway (AOP) Network Development for Fatty Liver, M.M. Angrish, J.P. Kaiser, C.A. McQueen, and B.N. Chorley. US EPA, Cincinnati, OH; and US EPA, Durham, NC.

**Abstract # P144**


**Abstract # P145**

Multiscale Modeling of Aerosol Deposition in the Complete Respiratory Tracts of Animals and Humans. A.P. Kuprat; S. Kabilian; O. Price; B. Asgharian; and R.A. Corley. Applied Research Associates, Raleigh, NC; and Pacific Northwest National Laboratory, Richland, WA.

**Abstract # P146**


**Abstract # P147**


**Abstract # P148**


**Abstract # P149**

Development of Physiologically Based Pharmacokinetic (PBPK) Models for the Quantitative Characterization of Interspecies Oeseltamivir Pharmacokinetics. N. Fausto, L. Loukotkova, G. Gamboa, and A. Lumen. NCTR/US FDA, Jefferson, AR; and St. John’s University, Queens, NY.

**Abstract # P150**

Pharmacovigilance Activities in Children. E. Ozcagil, and B. Alpertungo. Istanbul University Faculty of Pharmacy, Istanbul, Turkey.

**Abstract # P151**


**Abstract # P152**


**Abstract # P153**

In Vitro-In Vivo Extrapolation (IVIVE) to Support In Silico/In Vitro Based Risk Assessment: PBTK Modeling of Selected Potential Endocrine Modulators. C. Haase, E. Fabian, T. Ramirez, B. van Ravenzwaay, and R. Landsiedel. BASF SE, Ludwigshafen am Rhein, Germany.

**Abstract # P154**

In Vitro to In Vivo Extrapolation for Estrogenic Activity of Environmental Chemicals. X. Chang, N. Kleinstreuer, P. Ceger, N. Choksi, J. Hsieh, B.A. Wetmore, S. Ferguson, M. DeVito, D. Allen, and W. Casey. Kelly Services, Inc., Durham, NC; NIEHS/DNTP, Durham, NC; and The Hamner Institutes for Health Sciences, Durham, NC.

**Abstract # P155**


**Abstract # P156**

Multi-Route Toxicokinetic Predictions with GastroPlus™ Software for High-Throughput Exposure Assessments. L. Luna, N. Sunger, B. Bhattacharai, F. Zhang, D. Wilson, S. Arnold, A. Beasley, B. Landenberger, and M. Bartels. The Dow Chemical Company, Midland, MI; and West Chester University, Philadelphia, PA.

**Abstract # P157**

Applications of the PBPK Model of Dioxins to Evaluate Real Life Exposure Scenarios. C. Emond, P. Ruiz, and M. Mumtaz. ATSDR/CDC, Atlanta, GA; and Biosimulation Consulting Inc., Newark, DE.

**Abstract # P158**

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. Tohon1, M. Moreau1, M. Valcke2, S. Haddad2, and A. Nong3.

1Health Canada, Ottawa, ON, Canada; 2National Institute of Public Health of Quebec, Montreal, QC, Canada; and 3University of Montreal, Montreal, QC, Canada.

Abstract #2230

Poster Board Number ........................................ P160


Abstract #2231

Poster Board Number ........................................ P161


Abstract #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 J.M. Sweeney. Independent Consultants, Dayton, OH.

Abstract #2233

Poster Board Number ........................................ P163

Alcohol Calculations in a Stage 5 Transgender Female. M.D. Dulaney. Dulaney Toxicology Inc, Tallahassee, FL.

Abstract #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. Smith1, S.R. Crowell2, D. Mehinagic3, N.C. Sadler1, A.T. Wright1, and R.A. Corley1. Genentech, South San Francisco, CA; and 3PNNL, Richland, WA.

Abstract #2235

Poster Board Number ........................................ P165

Evaluating the All-Ages Lead Model Using Site-Specific Data: Approaches and Challenges. E.D. McLanahan1, L. Wilder1, D. Jackson1, D. Mellerd1, K. Scruton1, K. Bradham2, and R. Worley2,3. CDC/ATSDR, Atlanta, GA; 2US EPA/ORD/NERL, Research Triangle Park, NC; and 3University of Georgia, Athens, GA.

Abstract #2236

Poster Board Number ........................................ P166


Abstract #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. Kimrat1, D.M. Proctor1, M. Suh1, L.C. Haws3, M.A. Harris1, and S.M. Hays1. 1Summit Toxicology, LLP, Orange Village, OH; 2ToxStrategies, Katy, TX; 3ToxStrategies, Inc., Austin, TX; and 4ToxStrategies, 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. Lu1, M.-R. Goldsmith1, C. Glukker2, D. Chang3, J. Leonard4, E. Hypes1, M. Fair5, and C. Tan6. 1Chemical Computing Group, Montreal, QC, Canada; 2Lockheed Martin, Research Triangle Park, NC; and 3US EPA, Research Triangle Park, NC.

Abstract #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. Worley1, and J. Fisher2. 1CDC/ATSDR, Atlanta, GA; and 2US FDA, Jefferson, AR.

Abstract #2240

Poster Board Number ........................................ P170

Evaluation of the Short-Term Clearance of Perfluorooctanoic Acid (PFOA) in a Clinical Trial Using a PBPK Model and Markov Chain Monte Carlo Analysis. J. Campbell1, B. Allen2, G. Olsen2, C. Elcombe6, E. Doyle1, J. Evans4, and H. Clewett6. 13M, St. Paul, MN; 2CXR Biosciences, Dundee, United Kingdom; 3Independent Consultant, Chapel Hill, NC; 4The Beatson West of Scotland Cancer Centre, Glasgow, United Kingdom; and 5The 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

Poster Board Number ........................................ P171


1Fluminense Federal University, Niteroi, Brazil; and 2University of the State of Rio de Janeiro, Rio de Janeiro, Brazil. Sponsor: D. Oliveira.

Poster Board Number ........................................ P172


Poster Board Number ........................................ P173

ROS Species Present on PM Are Associated with Biological Changes in Humans Exposed to Fine + Ultrafine CAPS. R. Devlin1, V. Verma2, A. Rappold1, H. Tong1, and R. Weber2. 1US EPA, Research Triangle Park, NC; and 2Georgia Institute of Technology, Atlanta, GA.
<table>
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<td><strong>Poster Board Number .............................. P174</strong></td>
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<tr>
<td>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.</td>
<td>Pulmonary Inflammatory Responses to Acute Meteorite Dust Exposures - Implications for Human Space Exploration. A.D. Harrington, F.M. McCubbin, J. Kaur, A. Smirnov, K. Galdanes, M.A. Schoonen, L.-C. Chen, S.E. Tsirka, and T. Gordon. Brookhaven National Laboratory, Upton, NY; *Dowling College, Oakdale, NY; *NASA Johnson Space Center, Houston, TX; *New York University School of Medicine, Tuxedo, NY; and Stony Brook University, Stony Brook, NY.</td>
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<tr>
<td>Chemical Composition Determines TRP1 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.</td>
<td>Simultaneous Exposure to Concentrated Ambient Particles and Acrolein Causes Cardiac Effects Mediated by Parasympathetic Modulation in Mice. N. Kuranewicz, A. Ledbetter, L. Walsh, A.K. Farraj, and M.S. Hazar. *Environmental Public Health Division, Research Triangle Park, NC; and *University of North Carolina, Chapel Hill, NC.</td>
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<td><strong>Poster Board Number .............................. P182</strong></td>
<td><strong>Poster Board Number .............................. P191</strong></td>
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<tr>
<td>Immunologic Effect of Ozone and PM2.5 from Mexico City in a Guinea Pig Asthma Model. L.I. Garcia-Alonso, C.I. Falcon-Rodriguez, A. Osornio-Vargas, N. Manzano-Leon, I. Rosas-Perez, A. De Vizcaya-Ruiz, and P. Segura-Medina. *CINVESTAV, Mexico City, Mexico; **INCan, Mexico City, Mexico; ³INER, Mexico City, Mexico; **UNAM, Mexico City, Mexico; and *University of Alberta, Edmonton, AB, Canada. Sponsor: A. de Vizcaya-Ruiz.</td>
<td><strong>Poster Board Number .............................. P191</strong></td>
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Note: The abstracts and poster board numbers are listed in a structured format for easy reading and reference.
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

#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. Farraj1, J. Shannahah3, L.C. Thompson2, C.M. Perez3, N. Haykal-Coates1, C. King3, M.S. Hazari1, and J. Brown1. 1Meredith College, Raleigh, NC; 2US Environmental Protection Agency, Research Triangle Park, NC; and 3University of Colorado Anschutz Medical Campus, Aurora, CO.

#2263 Poster Board Number ......................... P193

#2264 Poster Board Number ......................... P194

#2265 Poster Board Number ......................... P195

#2266 Poster Board Number ......................... P196

#2270 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-Espinosa1, A.J. Ruiz-Uribé2, R.M. Sanchez-Casas3, P. Gonzalez-Barranco1, M. Chavez-Bautista1, S.E. Elmore4, T.D. Phillips5, and A.G. Marroquin-Cardona2. Faculty of Chemistry, Universidad Autonoma de Nuevo Leon, San Nicolas de los Garza, NL, Mexico; 2Faculty of Veterinary Medicine, Universidad Autonoma de Nuevo Leon, Gral. Escobedo, NL, Mexico; and 3Texas A&M University, College Station, TX.

#2271 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. Meyer1, M.L. PXon1, D.B. Mayfield1, M.K. Peterson2, and E.M. Dubé1. 1Gradient, Cambridge, MA; and 2Gradient, Seattle, WA.

#2273 Poster Board Number ......................... P201

#2274 Poster Board Number ......................... P202

#2275 Poster Board Number ......................... P203

#2276 Poster Board Number ......................... P204

#2277 Poster Board Number ......................... P205
Assessing Hazard Potential of Lead Exposure in Children or Adults: Case Studies of Two Food Products. B. Flannery, D. Smeag, and J. Spungen. US Food and Drug Administration, Center for Food Safety, and Applied Nutrition, College Park, MD.

#2278 Poster Board Number ......................... P206
Fusarium Mycotoxins Determination and Their Dietary Intake through Wheat and Flour Wheat by the Romanian Population. C. Juan1, O. Staniciu1, F. Loghin1, D. Miére1, M.-J. Ruiz2, and J. Marfes. 1 Iuliu Hațieganu University of Medicine and Pharmacy, Cluj-Napoca, Romania; and 2University of Valencia, Valencia, Spain. Sponsor: G. Pallas.

#2279 Poster Board Number ......................... P207
Fluoride: Friend or Foe? B. Kelmari1, R. Evoy2, C. Chan2, and N. Moore2. Columbia University, New York, NY; and 2Veritox, Inc., Redmond, WA.
Abstract #  #2278

Poster Board Number ....................... P208

Evaluation of Metals in Different Species of Edible Mushrooms. M.-C. Rubio-Armendariz1, A. Puteri1, G. Luis-Gonzalez1, A. Gutierrez-Fernandez2, D. Glez-Weller1, A. Hardisson1, and A.R. Anadon1. 1Universidad Complutense de Madrid, Madrid, Spain; and 2Universidad de La Laguna, La Laguna, Spain.

Abstract #  #2279

Poster Board Number ....................... P209


Abstract #  #2280

Poster Board Number ....................... P210


Abstract #  #2281

Poster Board Number ....................... P211

An Exposure and Health Risk Assessment of Lead (Pb) in Chocolate. M.M. Abramson1, A.D. Monnot1, and W.W. Christian1. 1Cardno ChemRisk, Pittsburgh, PA; and 2Cardno ChemRisk, San Francisco, CA.

Abstract #  #2282

Poster Board Number ....................... P212

Effects of Serum Levels of Vitamin A and Its Precursors on Colorectal Cancer Mortality: An 18-Year Follow-Up Study of a Population from the Metropolitan Area of Monterey, Mexico. S.E. Elmore1, A.G. Marroquin Cardona2, M. Bautista1, P. Gonzalez-Barranco2, R.M. Sanchez-Casas3, C. Maki4, and T.D. Phillips1. 1Texas A&M University, College Station, TX; and 2Universidad Autonoma de Nuevo Leon, Monterrey, Mexico.

Abstract #  #2283

Poster Board Number ....................... P213


Abstract #  #2284

Poster Board Number ....................... P214


Abstract #  #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.

Abstract #  #2286

Poster Board Number ....................... P216


Abstract #  #2287

Poster Board Number ....................... P217


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

Abstract #  #2289

Poster Board Number ....................... P219


Abstract #  #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.

Abstract #  #2291

Poster Board Number ....................... P221


Abstract #  #2292

Poster Board Number ....................... P222

Regulation of FGF15 Expression in Mouse Intestine. X. Fan1, K. Jia1, L. Ding1, X. Ding1, and Q.-Y. Zhang2. 1College of Nanoscience Science, and Engineering, SUNY Polytechnic Institute, Albany, NY; and 2Wadsworth Center, New York State Department of Health, and School of Public Health, State University, Albany, NY.

Abstract #  #2293

Poster Board Number ....................... P223


Abstract #  #2294

Poster Board Number ....................... P224


Abstract #  #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. Hiirose, T. Unoki, Y. Shinkai, Y. Abiko, and Y. Kumagai. University of Tsukuba, Tsukuba, Japan.
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

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Poster Board Number: P291

**Abstract #**

**Title:**

**Authors:**

**Institution:**

**Sponsor:**

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Poster Board Number: P226

**Abstract #**

**Title:**

**Authors:**

**Institution:**

**Sponsor:**

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Poster Board Number: P227

**Abstract #**

**Title:**

**Authors:**

**Institution:**

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Poster Board Number: P228

**Abstract #**

**Title:**

**Authors:**

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Poster Board Number: P229

**Abstract #**

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Poster Board Number: P230

**Abstract #**

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Poster Board Number: P231

**Abstract #**

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Poster Board Number: P232

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Poster Board Number: P233

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Poster Board Number: P234

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Poster Board Number: P235

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Poster Board Number: P240

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Poster Board Number: P241

**Abstract #**

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**Institution:**

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Poster Board Number: P242

**Abstract #**

**Title:**

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Poster Board Number: P243

**Abstract #**

**Title:**

**Authors:**

**Institution:**

**Sponsor:**

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Abstract # Abstract #

#2314 Poster Board Number ........................................ P244 Hypochlorite/Hypochlorous Acid-Mediated Oxidation of Methionyl Tripeptides. S. Babu1, A.D. Logan1, L. Tucker1, K. Windham1, R.M. Uppu1, and M.O. Claville1. 1Hampton University, Hampton, VA; and 2Southern 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. Bellés1, J.V. Vallvé1, N. Serra2, J.L. Domingo1, 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. Scalisi1, I.L. Csanaky1, and J.E. Manoult2. 1Children’s Mercy Hospital & Clinics, Kansas City, MO; 2University of Connecticut, Storrs, CT; and 3University of Kansas Medical Center, Kansas City, KS.

#2317 Poster Board Number ........................................ P247 Asbestos Induced Oxidative Stress in Lung Cells. L. Weng1, C. Mesaros2, N.W. Snyder1, and I. Blair2. 1Drexel University, Philadelphia, PA; and 2University 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 Sulfoxidase and Methionine in Non-Survivors of Acetaminophen Overdose. K.H. Liu1, M.R. McGill2, J. Chandler1, S. Banton1, K. Uppal1, D. Walker1, S. Curry3, S. Li4, H. Jaszczke4, and D. Jones1. 1Emory University, Atlanta, GA; 2University of Arizona College of Medicine, Phoenix, AZ; 3University of Kansas Medical Center, Kansas City, KS; and 4Washington 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. Lavin1, P.A. Wages2, D. Suarez2, S.O. Simmons3, and J.M. Samet4. 1US Environmental Protection Agency, Chapel Hill, NC; 2US Environmental Protection Agency, Research Triangle Park, NC; and 3University of North Carolina at Chapel Hill, Chapel Hill, NC.


#2322 Poster Board Number ........................................ P252 Nuclear Factor-κB/RelA Mediates Inflammation in Human Lung Epithelial Cells at Atmospheric Oxygen Levels. L. Jagannathan1, C.C. Jose1, A. Arita1, T. Kluz1, H. Sun1, X. Zhang1, Y. Yao1, A.V. Kartashov3, A. Barski1, M. Costar2, and S. Cuddapah1. 1Cincinnati Children’s Hospital Medical Center, and Department of Pediatrics, College of Medicine, University of Cincinnati, Cincinnati, OH; and 2NYU Langone Medical Center, Tuxedo, NY.

Abstract # Abstract #

#2323 Poster Board Number ........................................ P253 Does a Fish Model Matter? Comparative Toxicology of Oxidative Stress Toxicity in Zebrasfish and Fathead Minnows. J. Corrales1, L. Kristofco1, B. Steele1, S. Williams1, M. Mills1, E. Gallagher1, T. Kavanagh1, L. Shen2, F. Melnikov2, J. Kostal2, A. Voutchkova-Kostal2, P. Anastas3, and B. Brooks1. 1Bayor University, Waco, TX; 2The George Washington University, Washington, D.C., DC; 3University of Washington, Seattle, WA; and 4Yale 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. Steele1, L. Kristofco1, J. Corrales1, M. Mills1, S. Williams1, F. Melnikov2, L. Shen2, J. Kostal2, A. Voutchkova2, P. Anastas3, T. Kavanagh1, J. Gallagher1, and B. Brooks1. 1Bayor University, Waco, TX; 2The George Washington University, Washington, DC; 3University of Washington, Seattle, WA; and 4Yale University, New Haven, CT. Sponsor: B. Brooks.


#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 Bioterror Oxidation and NOS Uncoupling: Regulators of Macrophage Function in Acute Lung Injury. T. Golden1, M. Crabtree2, and A. Gow2. 1Oxford University, Oxford, United Kingdom; and 2Rutgers University, Piscataway, NJ.

#2328 Poster Board Number ........................................ P258 Inhibition of S-Nitrosothiol Reductase (GSNOR) Reduces Lung Inflammation. S. Taylor, G. Voronin, D. Fett, T. Golden, D. Bothelio, 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-κB and NQO1. Z. Jia1, P. Nallasamy1, H. Zhu1, W. Wu2, S. Halley1, M.A. Trush2, K. Traore3, and Y.R. Li1. 1Campbell University School of Osteopathic Medicine, Buies Creek, NC; 2Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD; 3University of North Carolina at Greensboro, Greensboro, NC; and 4Xinxiang 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.
<table>
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<th>#2331</th>
<th>Poster Board Number ......................... P301</th>
<th>Abstract #</th>
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<tr>
<td>Environmally Persistent Free Radicals Increase Systolic Blood Pressure and Block Compensatory Responses to Cardiac Stress in Rats with Ischemic Heart Disease. B.R. Burn1,2, H. Xia1,2, and K.J. Varner1,2. 1LSU, Baton Rouge, LA; and 2LSU HSC, New Orleans, LA.</td>
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<th>#2333</th>
<th>Poster Board Number ......................... P303</th>
<th>Abstract #</th>
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<tr>
<td>Effects of Vitamin E Succinate on the Metastatic Prostate Cancer Cells. B.M. Rezk1, M. Khanna1, I. Urka1, M.E. Khedr2, R. Shaw2, Z.Y. Abd Elmageed1, S.C. Sikka1, and A.B. Abdel-Mageed1. 1Southern University at New Orleans, New Orleans, LA; and 2Tulane University, School of Medicine, New Orleans, LA.</td>
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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

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<th>#2334</th>
<th>Poster Board Number ......................... P305</th>
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<tr>
<td>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.</td>
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<th>#2335</th>
<th>Poster Board Number ......................... P306</th>
<th>Abstract #</th>
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<tr>
<td>Erk ½ Activation Is Evident in Activated Microglia from the Striatum and Substantia Nigra of MPTP-Induced Mouse Models of PD. S. Sarkar1, E. Lu1, J. Raymick2, L.S. Schmued2, J. Hanig1, M.G. Paule1, and Q. Gu2. 1CDER/US FDA, White Oak, MD; and 2National Center for Toxicological Research, Jefferson, AR.</td>
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<th>#2336</th>
<th>Poster Board Number ......................... P307</th>
<th>Abstract #</th>
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<tr>
<td>MPTP Neurotoxicity Is Highly Concordant Between the Sexes in BDX Recombinant Inbred Mouse Strains. G. Alam1, D.B. Miller1, J.P. O’Callaghan1, L. Lu4, R.W. Williams5, and B.C. Jones1. 1Centers for Disease Control, and Prevention-National Institute for Occupational Safety, and Health, Morgantown, WV; 2Jiangsu Key Laboratory of Neuroregeneration, Nantong University, Nantong, China; 3Northeast Ohio Medical School, Rootstown, OH; and 4University of Tennessee Health Science Center, Memphis, TN.</td>
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Abstract #

#2346

Poster Board Number …………………… P317

Neurochemical Perturbations and Dopaminergic Injury Following Short-Term Inhalation Exposure to the Oil Dispersant COREXIT® EC9500A.


#2347

Poster Board Number …………………… P318

The "Bath Salts" Constituent 3,4-Methylenedioxyxypyrvalerone (MDPV) Induces Cytotoxic Effects on Human Dopaminergic SH-SY5Y Cells.


1Laboratorio de Fisiologia Celular, UASLP, San Luis Potosi, SL, Mexico; 2NCTR, Jefferson, AR; 3NIDA/NIAAA, Bethesda, MD; and 4UAMS, Little Rock, AR.

#2348

Poster Board Number …………………… P319

M1 to M2 Microglial Switch Accompanies Cessation of Progressive Dopaminergic Cell Loss Following Lipopolysaccharide Exposure. E. Beieri, and J. Richardsonii, 1Northeast Ohio Medical University, Rootstown, OH; and 2Rutgers University, Piscataway, NJ.

#2349

Poster Board Number …………………… P320


#2350

Poster Board Number …………………… P321

Environmental Neurotoxicant Manganese Alters Exosomal miRNAs and Autophagic Regulation in Cell Culture Model of Parkinson's Disease. D. Harischandrai, M. Zamani, D. Rokad, H. Jin, V. Anantharam, M. Kimber, A. Kanthasamy, and A. Kanthasamy. Iowa State University, Ames, IA; and 3Northwestern University, Evanston, IL.

#2351

Poster Board Number …………………… P322


#2352

Poster Board Number …………………… P323

Astroglial Mortalin Is Decreased in the Striatum of Manganese-Exposed Mine Workers and Enhances Neurotoxicity. T.J. Cooki, J.G. Hoekstraii, T. Stewartiii, K.K. Canalesii, P. Hoii, A.A. Salvadori, L.F. Gonzalez-Cuyari, G. Nelsonii, B.A. Raceettii, H. Checkowway, D.L. Eatoniii, and J. Zhangi. 1University of California San Diego, La Jolla, CA; 2University of Washington, Seattle, WA; 3University of Witwatersrand, Parktown, South Africa; and 4Washington University, St. Louis, MO.

#2353

Poster Board Number …………………… P324


#2354

Poster Board Number …………………… P325

Reversibility of Effects of Manganese Toxicity: A Longitudinal Neuroimaging Study on Welders. U. Dydakii, R. Maai, C.-L. Yehii, E. Cameroni, D.A. Edmondsii, S.E. Zauberi, S. Snyderii, and E. Wardii. 1Indiana University School of Medicine, Indianapolis, IN; and 2Purdue University, West Lafayette, IN.

#2355

Poster Board Number …………………… P326

Parkinson's Disease versus Manganese Toxicity: A Neuroimaging Comparison. D.A. Edmondsii, C.-L. Yehii, E. Azaziii, R. Maai, E. Wardii, S. Snyderii, S.E. Zauberii, and U. Dydakii. 1Indiana University School of Medicine, Indianapolis, IN; and 2Purdue University, West Lafayette, IN. Sponsor: U. Dydak.

#2356

Poster Board Number …………………… P327

The Effect of Manganese Exposure on ATP13A2-Deficient Mice. N. Santiagoi, E. Mullini, S. Pamphileii, O. Ekhatovii, S. Linnii, J. Holdenii, D. Lemkuhi, S. Karkareii, D. Agii, J. Rothii, B. Liu, Y. Suni, G. Shullii, P. Schultheissiii, and S. Flemingii. 1Cincinnati Children's Hospital Medical Center, Cincinnati, OH; 2Northern Kentucky University, Highland Heights, KY; 3University of Buffalo, Buffalo, NY; and 4University of Cincinnati, Cincinnati, OH. Sponsor: J. Richardson.
#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. Schetinger1,2, L. Arantes1,2, T.V. Peres1, A.B. Bowman1, and M. Aschner1. 1Albert Einstein College of Medicine, Bronx, NY; 2Universidade Federal de Santa Catarina, Florianópolis, Brazil; and 3Universidade Federal de Santa Maria, Santa Maria, Brazil.

#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. Bijji, 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. Johnson1, P. Karki1, K. Smith1, D.-S. Son2, M. Aschner1, and E. Lee1. 1Albert Einstein School of Medicine, New York, NY, and 2Meharry 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. Smith1, P. Karki1, M. Aschner1, and E. Lee1. 1Albert Einstein School of Medicine, New York, NY, and 2Meharry 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. Homing1, K.K. Kumar2, M. Aschner2, and A.B. Bowman1. 1Albert Einstein College of Medicine, Bronx, NY; and 2Vanderbilt 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. Chen1, J. Bornhorst1, K.H. Lee1, A.B. Bowman1, and M. Aschner1. 1Albert Einstein College of Medicine, Bronx, NY; and 2University of Potsdam, Nuthetal, Germany; and 3Vanderbilt University, Nashville, TN. Sponsor: M. Aschner.

Tuesday Afternoon, March 15
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Neurotoxicology—Neurodegenerative Diseases

#2016SOT
#toxexpo

#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. Fu1, W. Jiang1, X. Gao1, Z. A. Zeng2, D. Cholger1, J. Cannon3, J. Chen1, and W. Zheng1. 1Indiana University, Indianapolis, IN; and 2Purdue University, West Lafayette, IN. Sponsor: W. Zheng.

#2367
Poster Board Number .............................. P338
Decreased Fractional Anisotropy in Globus Pallidus of “Asymptomatic” Welders. E. Lee1, M.R. Flynn1, G. Du1, M.M. Lewis1, A.H. Herring1, L. Kong1, R.B. Mainman1, and X. Huang1. 1Pennsylvania State University College of Medicine, Hershey, PA; and 2University 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. Bailey1, A. Gutierrez2, R.M. Amos-Krooks1, C.V. Vorhees1,2, and M.T. Williams1,2. 1Cincinnati Children's Research Foundation, Cincinnati, OH; and 2University of Cincinnati, Cincinnati, OH.

TUESDAY

#2016SOT
#toxexpo

PS
#2373 Mobile Event App

TUESDAY 224


#2377 Activation of the Nuclear Receptor Nur77 by a Novel Diindolylmethane Analog Suppresses Inflammatory Gene Expression in Primary Astrocytes. K.A. Popichak1, S.L. Hammond1, S.H. Saito2, and R.B. Tjalkens1. Colorado State University, Fort Collins, CO; and Texas A&M, Houston, TX.

#2379 A Potential Role for Phosphotidyl-Inositol-3-Kinase (PI3K) in Regulating Manganese Transport through an Autophagy-Mediated Mechanism. M.R. Byran, M.A. Uhous2, A.M. Tidball1, T.J. Bichell1, G. Tipsis2, E. Bradley1, M. Aschner1, and A. Bowman1. Einstein College, Bronx, NY; and Vanderbilt University Medical Center, Nashville, TN. Sponsor: A. Bowman.

#2380 Dopamine and L-DOPA Induced Post-Translational Modifications of Alpha-Synuclein. S.S. Lau, A.B. Cholianas, and T.J. Monks. The University of Arizona, Tucson, AZ.


#2382 Striatal Arginase Activity Deficit is Ameliorated by Mn Exposure in HD Model Mice. K.G. Tipsis1, T.J.U. Bichell1, E.M. Bradley1, and A.B. Bowman1. Vanderbilt University, Nashville, TN; and Vanderbilt University Medical Center, Nashville, TN.

#2383 The Benefits of Swimming Exercise on the Aging Brain and Its Underlying Mechanism. F.-H. Yang1, Y.-T. Yang1, Y.-C. Chuang1, S.-Y. Tong1, J.D. Chen1, Y.-C. Huang2, M.-W. Chao1, and C.-Y. Tseng1. Chung Yuan Christian University, Taoyuan, Taiwan; and Taoyuan General Hospital, Taoyuan, Taiwan.


#2385 Environmental Exposure to Lead (Pb) and Tau Pathology In Vitro. A. Eid1, N. Zawia2, and S. Waseem1. University of Hall, Hall, Saudi Arabia; and University of Rhode Island, Kingston, RI.


#2387 siRNA Based Silencing of Mammalian TGF(J)et of Rapamycin in LUMHES Cell Model of Tauopathy. M. Sakama1, E. El-Husseiny1, R. El-Ashry1, N. Badawy2, and W. Mohamed3. Mansoura University, Mansoura, Egypt; and Menoufia University, Menoufia, Egypt.

Tuesday Afternoon, March 15
1:15 PM to 4:30 PM
CC Exhibit Hall

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 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. Trombeta. St. John’s University, Queens, NY.

#2389 Withdrawn.


#2391 Acute Exposure to Chlorpyrifos Causes Oxidative Stress in a Striatal Cell Model of Huntington’s Disease. G. Kwaye, and G. Dominak. Oberlin College, Oberlin, OH.
#2397
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

#2394
#2399
Poster Board Number ............................... P417
Transcriptional Alterations of Cholinergic and Dopaminergic Genes in Mouse Neonatally Exposed to the Combination of the Pesticides Carbaryl and Chlorpyrifos. H. Viben, S. Hallgren, P. Hamberg, and P. Eriksson. Uppsala University, Uppsala, Sweden.

#2395
Poster Board Number ............................... P418

#2396
Poster Board Number ............................... P419

#2397
Poster Board Number ............................... P420
The Effects of Occupational Chlorpyrifos Exposure in Alzheimer's Disease Development. J.R. Voorhees1,2, M.T. Remy1, L. McDaniel1, and A.A. Pieper1,3, 1Department of VA Center for the Prevention, and Treatment of Visual Loss, Iowa City, IA; 2Neurology, Iowa City, IA; and 3University of Iowa, Iowa City, IA. Sponsor: L. Robertson.

#2398
#2400
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 Differentiated Human SH-SYSY Neuroblastoma Cells. L.S. Fernandes1, G.L. Emerick2, A.C. Santos1, and N.A.G. Santos1. 1Faculdade de Ciências Farmacêuticas de Ribeirão Preto - Universidade de São Paulo - USP, Ribeirão Preto - SP, Brazil; and 2Instituto 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. Marco1, A. Tiethof2, J. Richardson1, and B. Buckley1. 1Northeast Ohio Medical University, Rootstown, OH; and 2Rutgers University, Piscataway, NJ.

#2401
Poster Board Number ............................... P424
Oxidative and Neurological Pesticide Exposure and Parental Report of Attention Deficit Hyperactivity Disorder in Adolescent Pesticide Applicators in Egypt. D.S. Rohilman1, A. Ismail1, G. Abdel Rasoul1, M.R. Bonner1, O. Hendy1, L. Ortega1, K. Wang2, and J.R. Olson2. 1Menoufia University, Shebin El-Kom, Egypt; 2State University of New York, Buffalo, NY; and 3University 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. Ismail1, G. Abdel Rasoul1, M.R. Bonner1, O. Hendy1, K. Marai2, K. Wang3, J.R. Olson2, and D.S. Rohilman1. 1Menoufia University, Shebin El-Kom, Egypt; 2State University of New York, Buffalo, NY; and 3University of Iowa, Iowa City, IA.

#2403
Poster Board Number ............................... P426

#2404
Poster Board Number ............................... P427
Kinetic Analysis of the Interactions Between the Organophosphorus Pesticide Metabolite Phorate Oxon and Oximes with Acetylcholinesterase. R.A. Moyer1, K.G. McCary1, M.C. Babin2, G.E. Platoff2, D.A. Jett1, and D.T. Yeung1. 1Batelle, Columbus, OH; and ‘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 Disisopropylphosphorofluoridate (DFP) May Be Involved in OPIDN. T.V. Damodaran1,2, and M.B. Abou-Doria1. 1Duke University Medical Center, Durham, NC; 2Duke University Medical Center, Durham, NC; and ‘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. Liang1, P.B. McElroy2, B.J. Day2, and M. Patet2. 1National Jewish Health, Denver, CO; and 2University of Colorado Denver, Aurora, CO.

#2407
Poster Board Number ............................... P430
A Small Molecule Screen in Stem Cell-Derived Motor Neurons Identifies Isositol as a Potent Neuroprotective Drug Against Organophosphate Neurotoxicity. M. Prissette1, H. Li1, T. Obis1, S. Mervin1, N. Lamas1, A. Sharma1, S. Przedborski1, C.E. Henderson2, and D.B. Re2. 1Columbia University, New York, NY; and 2Project 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. Jorge1, K. Fuhrman1, J. Hinckley1, and M. Ehrich2. 1Midwestern University College of Veterinary Medicine, Glendale, AZ; and 2Virginia-Maryland College of Veterinary Medicine, Blacksburg, VA.
Abstract # P432
#2409 Poster Board Number ................................. TUESDAY Mobile Event App
Quantitative Magnetic Resonance Imaging (MRI) of Brain Lesions Predicts Cognitive Impairment Following Acute Organophosphate (OP) Intoxication in Rats. B. Hobson¹, D. Rowland¹, K. Dhakal², D. Bruin², D. Tancredi², S. Cherry², J. Garbow², and P. Lein². ¹University of California, Davis, CA; and ²Washington University, St. Louis, MO.

Abstract # P433
#2410 Poster Board Number ................................. TUESDAY Mobile Event App
Persistent Behavioral Deficits, Neuroinflammation and Oxidative Stress in Rat Model of Acute Diisopropylfluorophosphate (DPF) Intoxication. M. Guignet¹, K. Dhakal², B. Hobson¹, D. Bruin², K. Streife², J. Silverman², and P. Lein². ¹University of California, Davis, Davis, CA; and ²University of California, Davis, Sacramento, CA.

Abstract # P434
#2411 Poster Board Number ................................. TUESDAY Mobile Event App
Analysis of Neonicotinoid Insecticides for Developmental Neurotoxicity. J.P. Sheets¹, A.A. Li², D.J. Minnema², R.H. Collier³, M.R. Creek³, and R.C. Peffer³. ¹Bayer CropScience, Research Triangle Park, NC; ²Exponent, Inc., San Francisco, CA; ³Landis International, Inc., Valdosta, GA; ⁴Syngenta Crop Protection, Inc., Greensboro, NC; and ⁵Valent USA Corporation, Dublin, CA.

Abstract # P435
#2412 Poster Board Number ................................. TUESDAY Mobile Event App
Dietary Exposure to the Organochlorine Pesticide Dieldrin Results in Neurotoxic and Cardiotoxic Effects in Zebrafish (Danio rerio). A.M. Cowie¹, L. Slade¹, K. Sarty¹, A. Mercer¹, J. Kohº, K. Kidd², P.C. Kienesberger¹, T. Puliniuknii¹, and C.J. Martyniuk¹. ¹Dalhousie University, Saint John, NB, Canada; ²University of Florida, Gainesville, FL; ³University of New Brunswick, New Brunswick, NB, Canada; and ⁴University of New Brunswick, Saint John, NB, Canada. Sponsor: N. Denslow.

Abstract # P436
#2413 Poster Board Number ................................. TUESDAY Mobile Event App
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.

Abstract # P437
#2414 Poster Board Number ................................. TUESDAY Mobile Event App

Abstract # P438
#2415 Poster Board Number ................................. TUESDAY Mobile Event App
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 # P439
#2416 Poster Board Number ................................. TUESDAY Mobile Event App
Fc Gamma Receptors Are Expressed in the Developing Rat Brain and Activate Downstream Signaling upon Cross-Linking with Immune Complexes. M. Starno¹, A.-C. Grodzki², and P. Lein³. ¹Swiss Federal Institute of Technology (ETH) Zurich, Zurich, Switzerland; and ²University of California Davis, CA.

Abstract # P440
#2417 Poster Board Number ................................. TUESDAY Mobile Event App
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.

Abstract # P441
#2418 Poster Board Number ................................. TUESDAY Mobile Event App
Nuclear Receptor 4A1 Is a Drug Target for Treating Rhabdomyosarcoma. A. Lacey, E. Hedrick¹, and S. Safe². ¹Texas A&M Health Science Center, Houston, TX; and ²Texas A&M University, College Station, TX.

Abstract # P442
#2419 Poster Board Number ................................. TUESDAY Mobile Event App
Divergent Evolution of the Human Ah Receptor from Neanderthal Confers Enhanced Resistance to Fire Use. T.D. Hubbard¹, I.A. Murray², W.H. Bisson³, and G.H. Perdew¹. ¹Oregon State University, Corvallis, OR; and ²The Pennsylvania State University, University Park, PA.

Abstract # P443
#2420 Poster Board Number ................................. TUESDAY Mobile Event App
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.

Abstract # P444
#2421 Poster Board Number ................................. TUESDAY Mobile Event App
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.

Abstract # P445
#2422 Poster Board Number ................................. TUESDAY Mobile Event App
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. Harrill¹, B. Parks¹, M. Black¹, P. McMullen¹, R. Budinsky¹, J.C. Rowlands¹, and R. Thomas¹. ¹The Dow Chemical Company, Midland, MI; and ²The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

Abstract # P446
#2423 Poster Board Number ................................. TUESDAY Mobile Event App
#2424 Poster Board Number ...................... P447

#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

#2427 Poster Board Number ...................... P450
Agonist-Specific Aryl Hydrocarbon Receptor-Mediated Differential Gene Expression. A.D. Joshi, and C.J. Efferink. University of Texas Medical Branch, Galveston, TX.

#2428 Poster Board Number ...................... P451

#2429 Poster Board Number ...................... P452

#2430 Poster Board Number ...................... P453
Novel Roles for Ahr and Arnt in the Regulation of Alcohol Dehydrogenase Expression in Human Hepatic Cells. E. Attignone1,2, A. Leblanc1,2, B. Le-Grand1, C. Duval1,2, M. Aggerbeck1,2, H. Rouach1,2, and E. Blanc1,2. INSERM UMR S 1124, Paris, France; and 2Paris Descartes University, Paris, France. Sponsor: R. Barouki.

#2431 Poster Board Number ...................... P454
Application of the PPARy2-CALUX® Assay to the Biological Detection of Endocrine Active Chemicals. C. Dusserre1,3, J. Mollergues1, E. Lo Piparo1, M. Marin-Kuan1, H. Besselink1, B. Schitter2, and K.C. Fussell. 1BioDetection Systems, Amsterdam, Netherlands; 2Nestec Inc., Lausanne 26, Switzerland; and 3Universite Paris Descartes, Paris, France.

#2432 Poster Board Number ...................... P455

#2433 Poster Board Number ...................... P456
Use of Two Compounds to Validate Androstan-3,17-Dione-Type (WT) and Constitutive Androstan Receptor (CAR) Knock-Out Rat Hepatocyte Cultures. A. Vardy1, B. Elcombe1,2, E. Elcombe1, I. Fegert1, M. Goettel1, and N. Honarvar1. ‘BASF SE, Ludwigshafen, Germany; and 2CXR Biosciences, Dundee, United Kingdom.

#2434 Poster Board Number ...................... P457

#2435 Poster Board Number ...................... P458

#2436 Poster Board Number ...................... P459
Characterisation of the Hepatic Effects of Phenobarbital (PB) and Pregnenolone-16α-Carbonitrile (PCN) in Constitutive Androstan Receptor (CAR, Nr13b) and Pregnane X Receptor (PXR, Nr12b) 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. Lawhorn, G. Wu, and Y. Tian. Texas A&M University, College Station, TX.

#2438 Poster Board Number ...................... P501

#2439 Poster Board Number ...................... P502
Identifying a Pharmacophore for the Estrogen Receptor Alpha/Beta Heterodimer to Decipher Its Biological Role. C. Coriano, C. Siewers, 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
Abstract # Abstract #

#2441 Poster Board Number .............................. P507 Safety Assessment of Radiofrequency Renal Denervation in Swine. J.H. Keating1, J.R. Stanley1, A.R. Tzafiri1, A.-M. Spognardi1, P.M. Markham2, and E.R. Edelman1. 1CBSET Inc, Lexington, MA; and 2MIT, 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. Zani1, R. Baird1, J.R. Stanley2, P.M. Markham2, M. Wilke3, S. Zeiter1, A. Beck3, D. Nehrbass1, and A.R. Tzafiri1. 1AO Foundation, Davos, Switzerland; 2CBSET Inc., Lexington, MA; and 3MIT, Cambridge, MA.

Sponsor: S. Gad.


#2444 Poster Board Number .............................. P510 Exposure to Dental Monomer Hydroxyethyl Methacrylate (HEMA) Induces Increased Transcription of Genes Involved in Oxidative Stress Responses. R. Becher1, H. V. Rukke2, J.E. Dahl1, and J.T. Samuelsen1. 1Nordic Institute of Dental Materials, Oslo, Norway; and 2Norwegian 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. Dahl1, V. Barman Michelsen1, J-A. Bruun1, E. Jensen1, U. Ørtengren1, and J.T. Samuelsen1. 1Nordic Institute of Dental Materials, Oslo, Norway; 2University of Oslo, Oslo, Norway; and 3University of Tromso, Tromso, Norway; and 4University 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. Zhou1, M. Posgai1, D. Malek2, K. Kringsstad1, A. Zdawczyk3, and R.T. Przygoda1. 1Bespak Europe, Cambridge, United Kingdom; 2Johnson & Johnson, Cincinnati, OH; and 3WCA-Consulting, Faringdon, United Kingdom.

Sponsor: S. Gad.

#2447 Poster Board Number .............................. P513 Resolving Hemolysis Test Failures in the Biological Evaluation of Blood-Contacting Medical Devices. F.K. Hsia1, N.S. Goud2, A. Andrews1, and H.A. Schwanz1. 1Boston Scientific Corporation, Maple Grove, MN; and 2Boston Scientific Corporation, Marlborough, MA.

#2448 Poster Board Number .............................. P514 Are the Current Medical Device Extraction Procedures Sufficient for Genetic Toxicity Hazard Identification? R.T. Przygoda1, M. Posgai1, Y. Zhou1, and D. Malek2. 1Johnson & Johnson, Cincinnati, OH; and 2Malek Toxicology, Greenville, DE.

Abstract # Abstract #

#2449 Poster Board Number .............................. P515 In Vitro Hemocompatibility Evaluation of Nanocrystalline Diamond Coatings. S.A. Skoog1, Q. Lu1, R.A. Malinauskas1, A.V. Sumant1, J. Zheng2, P.L. Goering2, R.J. Narayan1, and B.J. Casey1. 1Argonne National Lab, Argonne, IL; 2UNC/NC State, Raleigh, NC; and 3US FDA, Silver Spring, MD.

#2450 Poster Board Number .............................. P516 In Vitro Biological Evaluation of Additive Manufactured Metal Discs. G. Kumar1, J. Chang1, J. Coburn2, M.A. Di Prima1, A. Nguyen1, and P.L. Goering2. 1UMBC, Baltimore, MD; 2University of Maryland, College Park, MD; and 3US 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. Petrochenko1, P. Gruber1, M. Markovic1, R. Liska1, J. Stampfl2, P.L. Goering2, R.J. Narayan1, and A. Ovsianikov1. 1J.UNC-Chapel Hill, and NC State University, Raleigh, NC; 2US FDA, Silver Spring, MD; and 3Vienna 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. Grove1, S. Deline, and M.E. Smith. 1American Preclinical Services, Minneapolis, MN.


#2454 Poster Board Number .............................. P520 Local Reactions to Subcutaneous Injection of HFFs. O.P. Green1, A. Donnelly1, and N. Lourens1. 1Bespak Europe, Cambridge, United Kingdom; 2WCA-Consulting, Faringdon, United Kingdom; and 3WIL 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

Poster Board Number .............................. P521 Dose-Dependent Effects on Rat Liver miRNAs 200a/b and 429: Potential Early Biomarkers of Liver Carcinogenesis. S. Plummer, P. Brown1, M. Beltman1, M. Millar1, J. Wright1, and R. Currie1. 1MicroMatrices Ltd, Dundee, United Kingdom; 2MRC Centre for Reproductive Health, Edinburgh, United Kingdom; and 3Syngenta Ltd, Bracknell, United Kingdom.
Abstract #       Abstract #
#2456    Poster Board Number ......................... P522  #2466    Poster Board Number ......................... P532
Toxicity Profiling of Flame Retardants in  Successful Application of Skin Sensitization  
Zebrafish Embryos Using a Battery of Assays.  Quantitative Risk Assessment for Hair Dyes  
A. Alzualde1, A. Alday1, M. Behb2, R.R. Rice3, R.R. Using Skin Penetration Measurements. H.  
Paules1, A. Muriana1, and C. Quevedo1. ‘BBD-  Rothe5, G.F. Gerberick6, and C. Goebl6. ‘The Procter  
BioPhenix, San Sebastián, Spain; and ‘NEIHS-NIH, & Gamble Company, Mason Business Center, OH;  
Research Triangle Park, NC. and ‘The Procter & Gamble Company, Schlulbach  
#2457    Poster Board Number ......................... P523  at Taunus, Germany.  
A Randomized, Double-Blind, Three Cohort  #2467    Poster Board Number ......................... P533
Crossover Study Assessing Gastrointestinal  Evaluation of the Chemical Inventories in  
Tolerability of Magnesium Sources in Healthy  the US FDA’s Office of Food Additive Safety  
Adults. S. Ashmead1, D. Liska2, K. Sanoshczyk1,  for Human Health Endpoints Using a Toxicity  
C. Kern1, K.M. Kelley1, and J. Hartle1. ‘Albion,  Prediction System. K. Arvidson1, P. Yolarath,  
Clearfield, UT; and ‘Biofortis Innovation Services, A. Mostrag1, B. Bienfait1, A. Tarkov1, V. Vitcheva1,  
Addison, IL. Sponsor: J.C. Griffiths. J. Rathman1,2, and C. Yang1,2. ‘Alamitra LLC,  
#2458    Poster Board Number ......................... P524  Columbus, OH; ‘Molecular Networks GmbH,  
Innovative Strategies for Agrochemical  Erlangen, Germany; ‘Ohio State University,  
Safety Assessments: Use of Toxicokinetic  Columbus, OH; and ‘US FDA, College Park, MD.  
Data for ArylexTM and RinskorTM. L. Murphy2,  
P. Papineni1, M. Aggarwal1, M.J. Bartels1, and  
#2459    Poster Board Number ......................... P525  R. Rasolpouyan1. ‘The Dow Chemical Company,  
Inhalation Health Effects Testing of Isobutanol  Midland, MI.  
Gasoline Blend: A Promising New Biofuel. D.  
#2460    Poster Board Number ......................... P526  Burnett1, J. Baustian1, G. Hoffman4, R. Parker1,  
A New E-Cigarette Aerosol pH Technique  and J. O’Callaghan1. ‘BP Global Product  
with Improved Toxicological Relevance. J.H.  Stewardship, Naperville, IL; ‘ButamaxTM Advanced  
Lauterbach, and S.J. Lauterbach. Lauterbach &  Biofuels, Wilmington, DE; ‘CDC-NIOSH, Morgantown, WV;  
Associates, LLC, Macon, GA.  and ‘Envigo, East Millstone, NJ.  
#2461    Poster Board Number ......................... P527  #2469    Poster Board Number ......................... P525  
Microbiological Prevention in the  Concentration of Bacterial Pathogens on the  
Correlation of Bacterial Pathogens on the  Microbiological Prevention in the  
Athletic Equipment in the Heal Complex at  Concentration of Bacterial Pathogens on the  
Paine College. M.J. Stephens, J.R. Johnson,  
Paine College. M.J. Stephens, J.R. Johnson,  
#2462    Poster Board Number ......................... P528  #2471    Poster Board Number ......................... P529  
Identification of Compounds That Modulate  A Biology Based Approach for Chemical  
Retinol Signaling Using a Cell-Based qHTS  Grouping Using Metabolomics. H.G. Kamp1,  
Assay. Y. Chen1, S. Sakamura1, R. Huang1, D.H.  B. van Ravenzwaay2, and S.R. Kalidindi2. 1Murray State University,  
Reese1, and M. Xiao1. ‘NIH, Bethesda, MD; and  Murray/Hopkinsville, KY; and 2Natreon Inc., New  
‘US FDA, Laurel, MD.  Brunswick, NJ.  
#2463    Poster Board Number ......................... P529  #2472    Poster Board Number ......................... P530  
A Biology Based Approach for Chemical  The Evaluation of the Safety of Self-  
Grouping Using Metabolomics. H.G. Kamp1,  Assembling Peptide Gel After the Intracranial  
B. van Ravenzwag4, E. Fabian1, E. Peters1, G.  Administration to Rats by Using an Open  
Krenrich1, W. Mellert1, V. Strauss2, and T. Walk2.  Field Test. M. Tsunoda1, C. Sugaya1, Y. Sugiyama1,  
‘BASF SE, Ludwigshafen am Rhein, Germany; and  ‘Kitsato University School of Medicine, Sagamihara, Kanagawa,  
2metanomcs GmbH, Berlin, Germany.  Japan; and ‘Menicon, Co., Kasugai, Aichi, Japan.  
#2464    Poster Board Number ......................... P530  #2473    Poster Board Number ......................... P531  
The Evaluation of the Safety of Self-  Application of Dermal Absorption Values to  
Assembling Peptide Gel After the Intracranial  Refine Margin of Safety Calculations in EU  
Administration to Rats by Using an Open  Cosmetics Safety Assessments. M. Boylan,  
Field Test. M. Tsunoda1, C. Sugaya1, Y. Sugiyama1,  J. Fleischer, and M. Whittaker. ToxServices LLC,  
Y. Nagai1, and K. Sakamishih. ‘Kitsato University  Washington, DC.  
School of Medicine, Sagamihara, Kanagawa,  Japan; and ‘Menicon, Co., Kasugai, Aichi, Japan.  
#2465    Poster Board Number ......................... P531  #2474    Poster Board Number ......................... P532  
Application of Dermal Absorption Values to  A Generic PBPK Model for Assessing In Utero  
Refine Margin of Safety Calculations in EU  Toxicokinetics/Applications to Bisphenol A.  
Cosmetics Safety Assessments. M. Boylan,  D. Sarigianidis1,3, S. Karakitsios1,3, A. Gotti1,3, and  
J. Fleischer, and M. Whittaker. ToxServices LLC,  E. Handakas1. ‘Aristotle University of Thessaloniki,  
Washington, DC.  Thessaloniki, Greece; ‘Centre for Research,  

Abstract #

#2474 Poster Board Number ....................... PS40 Integrated Testing Strategies (ITS) for Choosing Surfactants and Preservatives Applied to Children's Cosmetic Products. A.D. Canavez1, G.A. Carano1, B.B. Swink1, A.C. Weilherrmann1, C.R. Neumann1, C. Sasson2, O. Kruger1, C. Brohem3, R. Wielocesoles1, H. Maibach4, and M. Lorencini. 1Boticario Group, São José dos Pinhais, PR, Brazil; and 2University 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. Hollnagel1, K. Arvisdson1, S. Barlow2, A. Booher2, M.T. Cronin2, S.P. Felter2, D. Keller2, K.L. Muldoon Jacobs3, V. Vitcheva4, A.P. Worth5, and C. Yang6. 1Altamira LLC, Columbus, OH; 2Consultant, Brighton, United Kingdom; 3Dow Europe GmbH, Horgen, Switzerland; 4EC Joint Research Centre, Ispra, Italy; 5Henkel, Düsseldorf, Germany; 6Imperial College, London, United Kingdom; 7Liverpool John Moores University, Liverpool, United Kingdom; 8Institut für Medizinische Klinik und Poliklinik, Universitätsklinikum Leipzig, Leipzig, Germany; and 9US FDA CFSEAN 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. Cronin1, C. Yang1, A. Bassan2, K. Arvisdson1, I. Boyer1, F. Fioravanzo1, B. Heldreth1, J. Kim1, J. Madden1, J. Rathman1, C. Schwab1, T. Yamada1, and A. Worth1. 1Altamira LLC, Columbus, OH; 2Cosmetic Ingredient Review, Washington, DC; 3EC Joint Research Centre, Ispra, Italy; 4Foundation of Korea Cosmetic Industry Institute, Osan, Korea, Republic of; 5Liverpool John Moores University, Liverpool, United Kingdom; 6Molecular Networks GmbH, Erlangen, Germany; 7National Institute of Technology, and Evaluation, Tokyo, Japan; 8Office of Food Safety, USDA CFSA, College Park, MD; 9Ohio State University, Columbus, OH; and 105-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. Lavado1, C. Oleaga1, S. Rothemund2, Y. Cai1, L. Kumanich1, L.R. Bridges1, C. Martin1, M. Jackson1, C.W. McAlere1, C.J. Long1, J. Langer1, A. Riu1, R. Note1, S. Teissier1, J. Cotovio1, L. Breton2, M.L. Shuler1, and J.J. Hickman1. 1Cornell University, Ithaca, NY; 2L’Oreal Research, and Innovation division, Aulnay-sous-Bois, France; 3L’Oreal Research, and Innovation division, Clark, NJ; and 4University of Central Florida, Orlando, FL. Sponsor: E. Dufour.

#2478 Poster Board Number ....................... P604 Evaluation of Choleically-Induced Choline Deficiency as the Mode of Action (MOA) for Diethanolamine-Induced Mouse Liver Tumors. B.J. Hughes1, J. Reichard2, L. Haber2, J. Klunig3, P. Fennner-Crisp4, and J. Busch1. 1American Chemistry Council, Washington, DC; 2Independent Consultant, North Garden, VA; 3Indiana University, Zionsville, IN; 4TERA Center, Cincinnati, OH; and 5The Dow Chemical Company, Midland, MI. Sponsor: B. Hughes.


#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): Shell 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 FcyRIIA and TAP1 Genes Affect Antibody-Dependent Cell–Mediated Cytotoxicity Activity in Cynomolgus Monkeys. J.C. Sanford, H. Wu, J. Horney, 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. Schomaker1, R. Warner1, K. Johnson1, M. Binks1, L. Fitz1, S. Marraffino, and J. Aubrecht1. Pfizer Inc., Cambridge, MA; 2Pfizer Inc., Groton, CT; and 3University of Michigan Medical School, Ann Arbor, MI.

#2483 Poster Board Number ....................... P611 Glutathione Depletion Circumvent Melphalan Resistance in Multiple Myeloma. W. Hassen2,3, C. Gourzones3, S. Lamure1, O. Karmous1, D. Hose1, G. Carton1, B. Klein1,4, and J. Moreaux1,4. CHU Montpellier, Montpellier, France; 2High Institute of Biotechnology, Monastir, Tunisia; 3Institute of Human Genetics, Montpellier, France; 4Laboratory for Monitoring Innovative Therapies, Department of Biological Hematology, CHRU Montpellier, Montpellier, France; and 5Medizinische 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. Perez1,2, and C.P.C. Dioquino1. 1Philipine General Hospital, Manila, Philippines; and 2Southern 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. Olodele1, University of Abuja, Abuja, Nigeria; and 2University of Calabar, Calabar, Nigeria.
P614 Human Corneal Wound Healing Is Enhanced in an Ex Vivo Front of the Eye Model. A.E. Vickers1, J.E. Herrmann1, and R.L. Fisher2. 1Allergan, Irvine, CA; 2Human Translational Models, Irvine, CA; and 3Vitron Inc, Tucson, AZ.

P615 Metformin Scavenges Methylglyoxal to Form an Imidazolinitrone Metabolite in T2D Patients: A Potential Therapeutic to Alleviate T2D Complications. T.L. Margoaves, University of Arizona, Tucson, AZ. Sponsor: S. Lau.


P617 Regulation of Secreted miRNAs and P450 Isoforms in Acetaminophen Metabolism in HepaRG™ Cells and Acetaminophen Overdose in Children. P.S. Gill1, S. Bhattacharyya1, S. McCullough2, P. Mishra3, C. Luo4, L. Letaig, and L. Jones1. 1Genentech, San Francisco, CA; 2University of Arkansas for Medical Sciences, ACHRI, Little Rock, AR; and 3University of Arkansas for Medical Sciences, ACHRI, Little Rock, AR.

P618 Next-Generation Sequencing Detects Differences in the Airway Microbiome After Smoke-Induced Inhalation Injury by Injury Type and Associated Bacterial Species. D.M. Walsh1, S.D. McCullough2, S. Yourstone3, J.S. Kahle1, S.W. Jones1, C.D. Jones1, J. Jaspe1, and D. Diaz-Sanchez1. 1University of North Carolina at Chapel Hill, Chapel Hill, NC; and 2US EPA, Research Triangle Park, NC.

P619 Inflammatory Mediator Generation in Surviving and Non-Surviving Acetaminophen Overdose Patients. B. Woolbright1, M. McGil1, M. Sharpe2, S. Curry3, and H. Joeschke2. 1Banner Good Samaritan Medical Center, Phoenix, AZ; and 2Kansans University Medical Center, Kansas City, KS.

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.


P622 Epigenetic Mechanism for Chronic Oxidative Stress-Induced Resistance TT Doxorubicin Cytotoxicity in Renal Carcinoma Cells. L. Ponnumasy, P.K.S. Mahalingaiah, and K.P. Singh. The Institute of Environmental, and Human Health, Texas Tech University, Lubbock, TX.

Abstract #

2:00

Introduction. R. Roth. Michigan State University, East Lansing, MI.

#2498 2:05


#2499 2:25


#2500 3:00

Viral Preconditioning Sensitizes Livers of Mice to Injury from Exposure to Ximelagatan and TNF. P. Knolle. Technical University of Munich, Munich, Germany. Sponsor: R. Roth.

#2501 3:35


#2502 4:10

Drugs Associated with Idiosyncratic Liver Injury Synergize with TNF and IFNγ 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

1:30 PM to 2:30 PM
CC Room 211

Exhibitor-Hosted Session: Genomics—The Future of Sensitization Testing and Safety Assessment

Presented by: SensoraGen

In vitro testing in human cell lines using genomic technology is the future in safety testing of chemicals and proteins. SensoraGen 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 of ximelagonatan-induced liver injury, in which liver cells are sensitized to damage by combined viral infection and tumour 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 IFNγ. 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 NFκB 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 IFNγ 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)

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 differences 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

SLC30A10 overexpression protects from manganese-induced toxicity

C. elegans model will be presented, showing how toxicity in children. The expression in maternal and infant liver function may influence manganese-dependent regulation of SLC30A10. A focus on pregnancy pre-clinical damage in relation to manganese exposure. Cell and animal porter contributes to neurotoxicity is essential to identifying early signs or shown in relation to genetic variations of SLC30A10. The importance of variation of blood manganese in different human populations will be determinant in a cohort of Parkinsonian cases and controls. Data on the where the role of this Mn transporter will be considered as a potential SLC30A10 expression will be presented on neurological performance of parkinsonism, manganese homeostasis, and biomarkers. The impact of SLC30A10 were identified as the disease cause of this phenotype. The protein encoded by this gene has been shown to be an important primary disorder of manganese homeostasis in humans was suggested by the observation of patients presenting with severe hyper-manganeseemia, 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 the 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 the 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 blood both 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)
Abstract #2514 2:05  
**Intergenerational Programming of Metabolic Disease: Evidence from Human Populations and Experimental Animal Models.**  

Abstract #2515 2:40  
**Transgenerational Effects of Environmental Exposures in Animals: A Literature Review.**  

Abstract #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.

Abstract #2517 3:45  
**Multigenerational Effects of the Endocrine-Disturbing Herbicide Atrazine in Zebrafish.**  
J.L. Freeman. Purdue University, Lafayette, IN.

Abstract #2518 4:15  
**Transgenerational Effects and Implications to Product Safety Assessment.**  
R. Rossoulpour. Dow AgroSciences, Indianapolis, IN.

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**Tuesday Afternoon, March 15**

**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 endocannabinoids yet few are scheduled as controlled substances. This poses unique challenges 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)

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**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**

**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)

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**Tuesday Afternoon, March 15**

**Workshop:**

**Introduction.**  

**Making the Key Issues Driving Uncertainty in Read-Across Explicit Using the RAAF–AOPs Framework.**  

**Actualizing the OECD Revised Guidance on Grouping of Chemicals with Practical Examples.**  
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.

Abstract #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.

Abstract #2529 3:45  
CAAT and the Work of the Read-Across Steering Group.  

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 Bloaubaer, 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 demonstrated. 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. Bloaubaer. Institute for Risk Assessment Sciences (IRAS), Utrecht University, Utrecht, Netherlands.
Abstract #
#2541 3:20
Extra-Pulmonary Translocation of CeO2 Nanoparticles: From Lung to Liver After Subacute and Chronic Low Dose Inhalation. J. Brunner1, J. Tentschert2, H. Jungnickel1, P. Laux1, L. Ma-Hock1, J. Keller1, T. Gebel1, A. Luch1, and R. Landsiedel1. 1BASF SE, Ludwigshafen, Germany; 2German Federal Institute for Occupational Safety, and Health, Dortmund, Germany; and 3German Federal Institute for Risk Assessment, Berlin, Germany. Sponsor: A. Haase.

#2542 3:40

#2543 4:00
Acute and Subchronic Oral Toxicity Studies in Rats with Different Nanoscale and Pigment Grade Titanium Dioxide Test Particles. D.B. Worheit, E.M. Donner, and S.C. Brown. 1Chemours Company, Wilmington, DE; and 2DuPont Company, Newark, DE.

#2544 4:20

Tuesday Afternoon, March 15
2:00 PM to 4:45 PM
CC Room R06
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 Tributylin. J. Tobacyk1, M. La Merrill2, S. Luo1, and A. Harrill2. 1University of Arkansas for Medical Sciences, Little Rock, AR; and 2University of California, Davis, Davis, CA.

#2546 2:20

#2547 2:40
Computational Approach Using Mouse Embryonic Stem Cells to Define a Mechanistic Applicability Domain for Prenatal Developmental Toxicity. S. Hunter1, M. Rosen5, N.C. Baker1, R. Judson3, and T. Knudsen1. 1LockheedMartin, Research Triangle Park, NC; and 2US 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. Louisse2, H. Li2, J. Zhang2, J. Vervoort3, I.M. Rietjens2, and B. van Ravenzwaaij1. 1BASF SE, Ludwigshafen, Germany; and 2Wageningen University, Wageningen, Netherlands.


#2550 3:40
Bisphenol AF: Correlation of In Vitro Endocrine Responses with In Vivo Developmental Outcomes (A Case Example). V. Sutherland4, K. Pelch1, B. McIntyre4, J.M. Conley1, L.E. Gray2, J.-H. Hsieh3, L. Truong2, R. Tanguay3, Z. Lundby3, P. Allard4, and P.M. Foster5. 1National Toxicology Program, Research Triangle Park, NC; 2Oregon State University, Corvallis, OR; 3University of California, Los Angeles, Los Angeles, CA; and 4US 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. Bowman1, D.S. Stedman1, S. Davenport1, C. Stethem2, G. Stevens2, and G.D. Capport3. 1Pfizer, Inc, Groton, CT; and 2Pfizer, Inc, La Jolla, CA.

Tuesday Afternoon, March 15
3:00 PM to 4:00 PM
CC Room 213
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
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 existing 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 quickPredict 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 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 iPSC-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
4:30 PM to 5:30 PM
CC Room 205

Exhibitor-Hosted Session: Implementation of ICH M7 Recommended (Q)SAR Analyses
Presented by:
Leadscape 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 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, 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, March 16
8:00 AM to 9:20 AM
CC Great Hall A
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
9:30 AM to 10:00 AM
CC Room 205
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.
Abstract #

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) multigene 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.


#2556 11:27 Differential Susceptibility of Stem Cells in Inorganic Carcinogenesis. E. Tokar. NIHES, 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

Heart 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 (ACME) 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 ACME 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 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 lung damage, 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, imomastat); (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 217°C and freezes at 13°C to 15°C, 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.

(Signature)

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Workshop Session: An Update on Juvenile Animal Testing

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 when relative to clinical plan-juvenile 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 #2567a)

#2567b  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.


#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: 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 prenatatal exposure to iAs, individual variation in arsenic metabolism efficiency, bioavailability, transport, and speciation. This workshop will highlight the current state of research on 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 #2567b)


#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.


Mobile Event App

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 Tsiou, 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 spin-out companies have made major headway in generating data on 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 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, cosmetics, 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 #2575a)

#2575 10:30  Learnings from Early-Safety Assessment in Pharmaceutical Industry: Pfizer. Y. Will. Pfizer, Groton, CT.
#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, Bientivoglio (Bologna), Italy. Sponsor: K. Tsiou.

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 rejection 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 across different assays. Attendees will gain an overview 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)


#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.


11:55  Panel Discussion/Q&A.

Wednesday Morning, March 16
9:30 AM to 12:15 PM
CC Room R04

Informational Session: Tox21 Challenge To Build Predictive Models of Nuclear Receptor and Stress Response Pathways As Mediated by Exposure to Environmental Toxicants and Drugs

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 (>30 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.


10:50  Consensus Approach for Modeling HTS Assays Using In Silico Descriptors. A.A. Sayed. Technical University of Munich, Munich, Germany. Sponsor: M. Xia.


12:05  Panel Discussion/Q&A.
Mobile Event App

Wednesday Morning, March 16
9:30 AM to 12:15 PM
CC Room 206

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). V.P. Venancio1, M.R. Almeida1, A.Z. Mercadante1, C.M. Marzocchi-Machado1, M.L.P. Bianchi1, S. Talcott2, S.U. Mertens-Talcott2, and L.M. Antunes1. 1State University of Campinas, Campinas, Brazil; 2Texas A&M University, College Station, TX; and 3University of São Paulo, Ribeirão Preto, Brazil.

#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. Cooper1, M.E. Andersen1, P.L. Carmichael2, K. Castle1, R.A. Clewell2, C. Courage2, S. Das3, S. Glavin1, G. Jain1, B.-w. Huang, P. Jones1, A. Middleton1, N. M K1, N. R1, J. Shao1, K. Subramanian1, B. van der Water1, J. Vethamanickam1, S. Windebank1, and A. White2. 1Leiden Academic Centre for Drug Research, Leiden, Netherlands; 2Strand Life Sciences, Bangalore, India; 3The Hamner Institutes for Health Sciences, Research Triangle Park, NC; 4Unilever, Bangalore, India; and 5Unilever, Bedfordshire, United Kingdom.


Wednesday Morning, March 16
9:30 AM to 12:45 PM
CC Exhibit Hall

Poster Session: Computational and Systems Toxicology I

Recent Advances in Safety Assessment

Chairperson(s): Ally Perlini, Thomson Reuters, Carlsbad, CA; and Moiz Mumtaz, CDC, Atlanta, GA.

#2603 10:00 An Improving In Silico Phototoxicity Prediction: It Showed High Concordance Equivalent to the Results of Inter-Laboratory Validation Study for 3T3 NRU-PT. Y. Haranonsou, S. Niiimoto, M. Kurata, and H. Sakaki. Senju Pharmaceutical, Kobe, Hyogo, Japan.

#2604 10:15 Poster Board Number …………………………… P101

Poster Board Number …………………………… P102

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. Haranonsou, S. Niiimoto, M. Kurata, and H. Sakaki. Senju Pharmaceutical, Kobe, Hyogo, Japan.

P102 Computational Models to Estimate In Vivo Activity Concentrations from Tox21 HTS Data. N.S. Sipes1, J.F. Wambough1, R. Pearce1, B.A. Wetmore1, M.J. DeVito2, and S.S. Ferguson2. 1NCTR/US EPA, Research Triangle Park, NC; 2NTP/NIHES, Research Triangle Park, NC; and 3The Hamner Institutes for Health Sciences, Research Triangle Park, NC.
### Abstract #2605

**Poster Board Number**

**P103**


### Abstract #2606

**Poster Board Number**

**P104**

Translating Computational Toxicology Data Through Stakeholder Outreach and Engagement. 


### Abstract #2607

**Poster Board Number**

**P105**

Identification of Absorption, Distribution, Metabolism, and Excretion (ADME) Genes Relevant to Steatosis Using a Gene Expression Approach. 


### Abstract #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, M.E. Sawyer, K. Isaacs, and J. Wambaugh. 1University of Southern New Hampshire, Manchester, NH; and 2US EPA, Research Triangle Park, NC.

### Abstract #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.

### Abstract #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 for Toxicological Research (NCTR), US Food and Drug Administration (FDA), Jefferson, AR.

### Abstract #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. Wollqvist. DoD Biotechnology HPC Software Applications Institute, Frederick, MD. Sponsor: A. Wollqvist.

### Abstract #2612

**Poster Board Number**

**P110**

Linear Mixed Models Approach to Identify Gender Specific Transcriptional Responses to Polychlorinated Biphenyls (PCBs). 

A. Espin Perez, T.M. de Kok, S.A. Kyrtopoulos, and J.C. Kleinjans. 1Maastricht University, Maastricht, Netherlands; and 2National Hellenic Research Foundation, Institute of Biology, Medical Chemistry, and Biotechnology, Division of Organic, and Medicinal Chemistry, Athens, Greece. Sponsor: H. van Loveren.

### Abstract #2613

**Poster Board Number**

**P111**

Pericellome Project for Mechanistic Analysis of Chronic Toxicity by a New Concept of Repeated Dose Study. 

Abstract #  
#2624  
Poster Board Number ..........................  P122  

#2625  
Poster Board Number ..........................  P123  

#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, D. Russo, M. Kim, R. Huang, M. Xia, T. Hartung, and H. Zhu.  1Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD; 2National Institutes of Health, Rockville, MD; and 3Rutgers University, Camden, NJ.

#2627  
Poster Board Number ..........................  P125  

#2628  
Poster Board Number ..........................  P126  

#2629  
Poster Board Number ..........................  P127  

Wednesday Morning, March 16  
9:30 AM to 12:45 PM  
CC Exhibit Hall

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, and F. Pognan.  1Lhasa Limited, Leeds, United Kingdom; and 2Novartis Institute For Biomedical Research, Basel, Switzerland.

#2631  
Poster Board Number ..........................  P129  
Systems Biology Investigation of Endocrine Disruptor Chemicals and Obesity.  P. Ruiz, A. Perлина, and A. Feroe.  1Agency for Toxic Substances, and Disease Registry/CDC, Atlanta, GA; 2ATSDR/CDC, Atlanta, GA; and 3Sanford-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, R. Wright, M. Stephens, S. Hoffmann, C. Willett, W. Witters, F. Busquet, M. Lalu, B. Flick, K. Thompson, T. Hartung, and K. Tsaioun.  1BASF, Ludwigshafen, Germany; 2Bristol-Myers Squibb, New York, NY; 3CAAT-EU, Konstanz, Germany; 4Humane Society, Washington, DC; 5Johns Hopkins University, Baltimore, MD; 6Ottawa Hospital, Ottawa, ON, Canada; and 7Vito, 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, L. Truong, R.L. Tanguay, and D.M. Reif.  1North Carolina State University, Raleigh, NC; and 2Oregon State University, Corvallis, OR.

#2634  
Poster Board Number ..........................  P132  
Handling Missing Data in Chemical Prioritization and Bioactivity Profiling Applications Using ToxPi.  K. To, A. Nguyen, R.C. Fry, and D.M. Reif.  1North Carolina State University, Raleigh, NC; and 2University of North Carolina at Chapel Hill, Chapel Hill, NC.

#2635  
Poster Board Number ..........................  P133  

#2636  
Poster Board Number ..........................  P134  
Zebrafish High-Throughput Data Analysis and Quality Control Pipeline.  S. Marcel, L. Truong, R.L. Tanguay, and D.M. Reif.  1North Carolina State University, Raleigh, NC; and 2Oregon State University, Corvallis, OR.

#2637  
Poster Board Number ..........................  P135  
Modeling Steroidogenesis Disruption Using High-Throughput In Vitro Screening Data.  A.L. Karmouz, and M.T. Martin.  1ORISE - US EPA/ORD/NCC, Durham, NC; and 2US EPA/ORD/NCC, Durham, NC.

#2638  
Poster Board Number ..........................  P136  

#2639  
Poster Board Number ..........................  P137  

#2640  
Poster Board Number ..........................  P138  
Abstract # | Abstract #
--- | ---
#2641 | #2650
Poster Board Number | Poster Board Number
P139 | P148
Integrating Animal Data from the Past with Future CDISC-SEND Compliant Data (eTOX VI). M. Cases1, K. Briggs2, W. Muster1, A. Brigo1, and P. Marc1. 1Bayer Pharma AG, Berlin, Germany; 2F. Hoffmann-La Roche AG, Basel, Switzerland; 3Lhasa Limited, Leeds, United Kingdom; and 4Novartis Institutes for BioMedical Research, Basel, Switzerland.

#2642 | #2651
Poster Board Number | Poster Board Number
P140 | P149
Why Are Most P450 Chemicals Also hERG Active? R.D. Beger1, S. Slavov2, R. Huang3, and M. Xia1. 1NC/TIR/US FDA, Jefferson, AR; and 2NIH NCATS, Rockville, MD.

#2643 | #2652
Poster Board Number | Poster Board Number
P141 | P150
Chemical Risk Analysis with Bayesian Support (CRABS) in the IVIVE Context. L. Burgoo1, US Army Engineer Research, and Development Center, APEX, NC.

#2644 | #2653
Poster Board Number | Poster Board Number
P142 | P151
Cramer Class Determination and Its Role in the Safety Assessment of Fragrance Materials. J. Sherr1, A.M. Apr1, D.W. Roberts2, A. Aptula1, and T.W. Schultz1. 1Liverpool John Moores University, Liverpool, United Kingdom; 2Research Institute for Fragrance Materials, Woodcliff Lake, NJ; 3The University of Tennessee, Knoxville, TN; and 4Unilever, Bedford, United Kingdom.

#2645 | #2654
Poster Board Number | Poster Board Number
P143 | P152
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. Mattingly1, North Carolina State University, Raleigh, NC.

#2646 | #2655
Poster Board Number | Poster Board Number
P144 | P153
Mechanistic Model-Based Approach to Skin Sensitisation Risk Assessment. G. Maxwell1, R. Cubberley1, S. Dhadra1, N. Gellaty1, J.P. Gosling1, R. Pendleton1, J. Pickles1, J. Reynolds1, R. Stark1, D. Tang1, and C. MacKay1. 1Unilever, Bedford, United Kingdom; 2University of Leeds, Leeds, United Kingdom; and 3University of North Carolina at Chapel Hill, Chapel Hill, NC.

#2647 | #2656
Poster Board Number | Poster Board Number
P145 | P154
Cardiosafety In Silico Prediction—Validation Results of a Multiscale Simulation Model (eTOX VII). A. Amberg1, L. Anger1, H.-P. Spirk1, J.-M. Guillen2, V. Ballet3, F. Schmidt4, M. Stolte1, A. Czich1, H. Matter1, J. Gomis-Tena1, L. Rodriguez2, J. Saiz2, and M. Pastor1. 1IMIM, GRIB, Barcelona, Spain; 2Sanofi, LGCR, Frankfurt, Germany; 3Sanofi, Preclinical Safety, Frankfurt, Germany; 4Sanofi, Preclinical Safety, Paris, France; and 5Universitat Politècnica de València, CIB, València, Spain. Sponsor: R. Keller.

#2648 | #2657
Poster Board Number | Poster Board Number
P146 | P155
Development and Application of a Novel QSAR to Assess Potential Species Differences in Developmental Toxicity. H.M. Kang, and J.E. Foreman1, ExxonMobil Biomedical Sciences, Inc., Annandale, NJ.

#2649 | #2658
Poster Board Number | Poster Board Number
P147 | P156

#2650 | #2659
Poster Board Number | Poster Board Number
P148 | P157
Analysis of the Potential of Chemicals to Induce Anemia Based on Compound Specific Properties. I. Tluczakiewicz1, M. Batke1, S.J. Webb1, R. Garcia-Sterna1, P. Bento2, and S.E. Escher1. 1Chemotargets, Barcelona, Spain; 2European Bioinformatics Institute (EMBL-EBI), Cambridge, United Kingdom; 3Fraunhofer ITEM, Hannover, Germany; and 4Lhasa Limited, Leeds, United Kingdom. Sponsor: C. Danenbrock.
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 Laminated 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. Pavlisch. GHD, Dallas, TX.

#2663 Poster Board Number ............................... P163 Levels, Sources, and Associated Risks for Inhalable Particulate Matter, Sulfur Dioxide and Polycyclic Aromatic Hydrocarbons in Curarao. E. Pulster1, G. Johnson2, J. McCluskey2, D. Holland1, and R. Harbison1. 1Mote Marine Laboratory, Sarasota, FL; and 2University of South Florida, Tampa, FL.


#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.

#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. Rathman1, T. Magdziarz2, A. Mostrag-Szlichtyngi, B. Bienfait3, O. Sachert4, and C. Yang5. 1Altamira LLC, Columbus, OH; 2Molecular Networks GmbH, Erlangen, Germany; and 3Ohio 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. Michak. 3M, Saint Paul, MN.

#2660 Poster Board Number ............................... P158 Using In Vitro Toxicity Syndromes to Reduce Uncertainty in Chemical Effects. R. Judson. US EPA, Research Triangle Park, NC.


#2668 Poster Board Number ............................... P168 Application of a Weight of Evidence Approach to Evaluating Risks Associated with Subistence Caribou Consumption Near a Lead/Zinc Mine. M.R. Garry1, S.S. Shock1, and J.H. Salata1. 1Exponent, Bellevue, WA; and 2Teck Cominco, Anchorage, AK.


#2670 Poster Board Number ............................... P170 Risk Assessment of Chemical Exposures from Artificial Turf. M.K. Peterson1, S. Pacheco Shubin2, and T.A. Lewandowski2. 1Gradient, Leavenworth, WA; and 2Gradient, Seattle, 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 Phenoxethanol in Children’s Personal Care Products. K. Zu, L. 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. Yan1, S.C. Gehen2, M.M. Bartels2, J.J. Hotchkiss3, and R.J. Rasoulpour4. 1Dow AgroSciences, Indianapolis, IN; and 2The Dow Chemical Company, Midland, MI.


#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 # | Abstract #
--- | ---
#2677 | #2685
**Poster Board Number** ......................... P177 | **Poster Board Number** ......................... P185
Integrating the Threshold of Toxicological Concern (TTC) with High-Throughput Exposure Assessment for Risk-Based Screening of Several Thousand Commodity Chemicals. R. Becker1, J. Wambaugh1, G. Patlewicz2, S. Felter2, and T. Simon1. 1American Chemistry Council, Washington, DC; 2Procter & Gamble Company, Mason, OH; 3Ted Simon LLC, Winston, GA; and 4US EPA, Research Triangle Park, NC.

**Poster Board Number** ......................... P178 | 

**Poster Board Number** ......................... P179 | 

**Poster Board Number** ......................... P180 | **Poster Board Number** ......................... P186
Derivation of Data Derived Extrapolation Factors for the HPPD Inhibitor Mesotrione for Human Health Risk Assessment. E. Scollon1, and J. Botham2. 1Syngenta Crop Protection, LLC, Greensboro, NC; and 2Syngenta Limited, Bracknell, United Kingdom.

**Poster Board Number** ......................... P181 | **Poster Board Number** ......................... P187
Human Variability in High-Throughput Risk Prioritization of Environmental Chemicals. C.L. Ring1,2, R.W. Setzer1, P. Pearce1, and J.F. Wambaugh1. 1Oak Ridge Institute for Science, and Education, Oak Ridge, TN; and 2US Environmental Protection Agency, Research Triangle Park, NC.

**Poster Board Number** ......................... P182 | **Poster Board Number** ......................... P188

**Poster Board Number** ......................... P183 | **Poster Board Number** ......................... P190
Relationship Between LD50s and LOAELs for Acute, Intermediate, and Chronic Oral Exposures. R.C. Siwakoti1, 2, E. Demchuk1, A.J. Prussia1, and C.J. Welsh1. 1Agency for Toxic Substances, and Disease Registry, Atlanta, GA; and 2Georgia Institute of Technology, Atlanta, GA. Sponsor: P. Ruiz.

**Poster Board Number** ......................... P184 | **Poster Board Number** ......................... P191
Time Extrapolation Factors for Risk Assessment: Are Group Specific Extrapolation Factors Possible? S.E. Escher1, M. Pastor1, P. Carnero1, S. Hoffmann-Donner1, T. Steger-Hartmann1, and I. Mangelsdorf1. 1Bayern HealthCare, Berlin, Germany; 2Fraunhofer ITEM, Hannover, Germany; 3Henkel AG & Co, Düsseldorf, Germany; and 4Universitat Pompeu Fabra, Barcelona, Spain. Sponsor: C. Dassenbrock.

**Poster Board Number** ......................... P192 | **Poster Board Number** ......................... P193
Chemical Alternative Assessment: Where Do I Start? E. Freeman1, and J. Nusz1. 1Exponent, Boulder, CO; and 2Exponent, Pittsburgh, PA.

**Poster Board Number** ......................... P194 | **Poster Board Number** ......................... P195
Green Jobs: Definition and Method of Appreciation of Chemical and Biological Risks. J. Zayed2, E. Cheneval1, M.-A. Busque1, C. Ostiguy1, J. Lavoie1, R. Bourbonnais2, B. Bakhiyi2, and F. Labrèche1. 1Robert-Sauvé Research Institute of Occupational Health, and Safety (IRSSS), Montreal, QC, Canada; and 2University of Montreal, Montreal, QC, Canada.
#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. Clewell1, J. Yager1, T. Greene2, and R. Gentry2. 1 Environ Ramboll, Cranbury, NJ; 2_EMIL, East Brunswick, NJ.

#2702   Poster Board Number .................................. P209  Strength of Human Evidence for Bile Duct Cancer in Japanese Printers Exposed to 1,2-Dichloropropane. M.A. Odin1, K.J. Zaccaria1, P.R. McClure1, and Q.J. Zhao2. 1 SRC, Inc, North Syracuse, NY; and 2_US EPA, Cincinnati, OH.

#2703   Poster Board Number .................................. P210  Decamethylcyclopentasiloxane (D5) Reproductive Toxicity: N,N-Dimethyldecylamine (DDA) Incubation to Assess D5 Risk. A. Bernal1, 2, C. Robbins2, M. Liong1, M. Kovochich1, A.K. Madl1,2, M.A. Harris2, A. Hotchkiss1, 3, J.E. Rager1, C.M. Thompson1, 2, D.M. Proctor1, 2, J.D. Spencer, P.A. Jean1, B. Doan1, 3, J.A. McEvoy1, 2, and J.E. Williams1, 2. 1 US EPA, Research Triangle Park, NC; and 2_US EPA, Washington, DC.

#2704   Poster Board Number .................................. P211  Mode of Action and Human Relevance Evaluation of Dibutyl Phthalate (DBP)-Induced Male Reproductive System Toxicity. X. Arzua1, T. Walker2, G. Cooper3, and A. Hotchkiss1. 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. Werner1, M. Goettel1, N. Norvar1, A. Vardy1, B. Elcombe2, C. Elcombe3, A.M. Doi4, and I. Fegert2. 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.


#2709   Poster Board Number .................................. P216  Read-Across at the Crossroad of Chemoinformatics and Regulatory Science. A. Mostrag-Szlichtyng1, I. Boyen1, B. Bienfait2, B. Heldricht2, T. Kleinoder1, J. Marusczyk1, A. Tarkhov1, O. Sacher1, C. Schwab1, W. Vitezcheva1, J. Rathman1, and C. Yang1. 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 Cytoxicity of Read Across Compounds in Rat and Human Lung Tissue. O. Danovi1, S. Escher2, K. Schroder1, J. Koschmann1, M. Niehof1, D. Vorgrimmler1, P. Braubach1, D. Jonigk1, T. Hansen1, A. Braun1, and K. Sewald1. 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. Densenbrock.
Abstract #

#2711 Poster Board Number ......................... P218 Toxicalogical Categorization of P- and E-Series Glycol Ethers Using High-Content Screening of Human Induced Pluripotent Stem Cell (iPSC)-Derived Cells. Y. Iwata1, F. Grimm2, M. Wilson3, M. Bittner4, O. Sirekno5, J.C. Rowlands6, N. Ball7, and I. Rusyn6. 1Molecular Devices, LLC, Sunnyvale, CA; 2Texas A&M University, College Station, TX; and 3The Dow Chemical Company, Midland, MI.

#2712 Poster Board Number ......................... P219 Isomer-Specific Toxicity Profiles of Aminophenols. S. Permal Kuppusamy1, and J. Lipscomb2. 1National Institute for Occupational Safety, and Health/Centers for Disease Control, and Prevention, Cincinnati, OH; and 2US Environmental Protection Agency, Cincinnati, OH.


#2714 Poster Board Number ......................... P221 Thymomas in Fischer 344/N Rats in the National Toxicology Program Database. G.A. Willson1, R.R. Moore1, H. Nagai2, R.A. Miller1, J.F. Hardisty1, N. Allison1, and D.E. Malarkey1. 1Experimental Pathology Laboratories, Inc.; Research Triangle Park, NC; and 2National 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. Valcke1,2, H. Tohon1, A. Nong3, and S. Haddad4. 1Health Canada, Ottawa, ON, Canada; 2InSPQ, Montréal, QC, Canada; and 3Université de Montréal, Montreal, QC, Canada.

#2717 Poster Board Number ......................... P224 An Evaluation of Transplacental Carcinogenesis for Human Health Risk Assessment. B. Foos1, M. Mabson1, J. Rogers1, B. Sonawane1, and G. Ginsberg1. 1Connecticut Department of Health, Hartford, CT; 2Oak Ridge Institute for Science, and Education, Washington, DC; 3US Environmental Protection Agency, Research Triangle Park, NC; and 4US 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. Dong, and C. Bodar. RIVM, Bilthoven, Netherlands.


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 Nanofomulation on Rat Kidney Function. D.E. Murrell1, H. Oakes1, J. Coleman1, A.V. Hanley1, K.W. Bullins2, G.A. Hanley1, and S. Hariforoosh3. 1East Tennessee State University, Johnson City, TN; and 2Gatton 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. George1, X. Wen1, N. Johnston1, M. Gomez2, L. Ellison3, M.S. Joy4, and L.M. Alekseus1. 1Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ; 2Rutgers University, Piscataway, NJ; and 3University 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. Yoon1, and J.-H. Oh1. 1Korea Institute of Medical Sciences, Leeds, United Kingdom; and 2UCB Biopharma SPRL, Braine l’Alleud, Belgium. Sponsor: J.-P. Valentin.


#2724 Poster Board Number ......................... P231 Predictive Biomarkers for Screening the Drug-Induced Nephrotoxicity Using Co-Culture System. E.-H. Lee1, S.-M. Park1, M.-S. Dong2, S. Yoon3, and J.-H. Oh. 1Korea Institute of Toxicology, Daereon, Korea, Republic of; and 2Korea University, Seoul, Korea, Republic of. Sponsor: W. Coussement.

#2725 Poster Board Number ......................... P232 Serum Levels of the Organochlorine (OC) Compound DDE and Its Possible Association with Type 2 Diabetes (T2D) in Mississippian. 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.**  

#2727  
Poster Board Number ....................... P234  
**Circulating Paracetamol Metabolites Accurately Predict Hepatotoxicity and Represent a New Clinical Toxicokinetic Biomarker Class.**  
A.D. Vlieghenthart1, R. Kimmitt1, J. Seymour2, N.Z. Homer3, M. Eddleston1, A. Gray2, D.J. Antoine2, D.J. Webb1, S.C. Lewis1, D.N. Bateman1, and J.W. Dear3. 1University of Edinburgh, Edinburgh, United Kingdom; and 2University of Liverpool, Liverpool, United Kingdom.

#2728  
Poster Board Number ....................... P235  
**Fibrosis-Associated Protein and Gene Expression Patterns After Oral Hepatotoxicant Administration.**  
B.C. McDyre, M.G. Permenter, W.E. Dennis1, and D.L. Ippolito1. 1Excet., Inc., Fort Detrick, MD; 2ORISE, Fort Detrick, MD; and 3United 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. Ahn1, S. Lee2, H. Park1, O. Kosyk1, D. Kim3, J. Rusyn2, and S. Kim1. 1Seoul National University, Seoul, Korea; 2Republic of; 3University 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. Bantoni1, P. Cirillo1, D.I. Walker1, V. Tran2, W. Hu3, K.D. Pennell1, D.P. Jones2, B. Cohn3, and S. Li3. 1Center for Research on Women, and Children’s Health, Berkeley, CA; 2Emory University, Atlanta, GA; and 3Tufts University, Medford, MA.

#2731  
Poster Board Number ....................... P238  
**Drug-Induced Elevations of Plasma Bile Acids in Rats Not Associated with BSEP Inhibition.**  
Y. Li1, H. Duong2, M.J. Hafey1, R. Evers1, K. Vlasakova2, A. Galijatovic-Idrizbegovic2, F.D. Sistare1, and W.E. Glabb1. 1Merck, Kenilworth, NJ; and 2Merck, 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. Kuroda1, T. Yukii1, Y. Takahashi1, H. Sakaguchi1, and H. Itagaki1. 1Kao Corporation, Tochigi, Japan; and 2Yokohama National University, Yokohama, Japan.

#2733  
Poster Board Number ....................... P240  
**Adipocytokine and Liver Injury Biomarker Assessment in Electronic Waste Recyclers.**  
K.C. Falkner1, L. Birnbaum1, A. Schecter1, H. Clair1, and M. Cave1,2. 1National Cancer Institute, Research Triangle Park, NC; 2Roeby Rex Veterans Affairs Medical Center, Louisville, KY; and 3University of Louisville, Louisville, KY.

Abstract #

#2734  
Poster Board Number ....................... P241  
**Investigating White Matter Hyperintensities in Pilots Using a Rat Hypobaric Exposure Model.**  
M. Meade1, A. Hoffmann1,2, J.M. Gearhart1,2, N. Rea1, and D.A. Mahle1. 1Henry M Jackson Foundation, Wright Patterson AFB, OH; 2United States Air Force, Wright Patterson AFB, OH; and 3Wright State University, Dayton, OH.

#2735  
Poster Board Number ....................... P242  
**Influence of Selected Trace Metals on Plasma FSH, LH, E2 and Prolactin Levels in Women with Secondary Infertility Attending University College Hospital, Nigeria.**  

#2736  
Poster Board Number ....................... P243  
**Skeletal Mn Across the Lifespan: Target and Biomarker.**  
C. Richardson1, S. Peter1, J. Pacheco2, S. Fendorf3, R. Ritchie1, N. Dave1, R. Luchini3, and D. Smith1. 1LBNL, Berkeley, CA; 2Stanford, Palo Alto, CA; 3University of Brescia, Brescia, Italy; and 4University of California, Santa Cruz, CA.

#2737  
Poster Board Number ....................... P244  
**In Vitro Bioassays and Chemical Analysis of Drinking Water from Source to Tap.**  

#2738  
Poster Board Number ....................... P245  
**Effect of Anegunes on Primary Ciliogenesis.**  
K.Y. Divi, M.C. Fontier, and O.A. Olivero. NIH, NCI, Bethesda, MD.

#2739  
Poster Board Number ....................... P246  
**Influence of Genetic Markers on Exposure Assessment Models.**  

#2740  
Poster Board Number ....................... P247  
**Antitumoral Monoclonal Antibodies (mAB): Biomarkers for Efficacy and Safety.**  

#2741  
Poster Board Number ....................... P248  
**Anti-Factor Xa: A Surrogate Marker in the Preclinical Assessment of Low Molecular Weight Heparins (LMWHs).**  

#2742  
Poster Board Number ....................... P249  
**N-Formyllysine as a Biomarker of Formaldehyde Exposure in Non-Human Primates.**  

#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. Lena1, L. Herry1, C. Tomkiewicz-Raulet1, R. Barouki2, and S. Sanquer1. 1Hôpital Necker-Enfants malades, Paris, France; and 2L’Université Paris Descartes University, Paris, France.
Wednesday Morning, March 16
9:30 AM to 12:45 PM
CC Exhibit Hall

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

#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

#2746 Poster Board Number: P301
The Role of Micrornas in Regulation of Drug Metabolizing Enzymes and Transporters. B. Ning1, D. Yu1, W. Tolleson2, B. Knox3, Y. Guo4, Y. Jin5, S. Kadiyavi6, J. Pogribny7, and J. Fuscoe8. 1Beijing Children’s Hospital, Capital Medical University, Beijing, China; 2NCTR/US FDA, Jefferson, AR; and 3University of Arkansas for Medical Sciences, Little Rock, AR. Sponsor: A. Ning.

#2747 Poster Board Number: P302

#2748 Poster Board Number: P303
Polymorphisms and Expressions of GSTM1 and GSTT1 in Human Non Small Cell Lung Cancer. M. Iscan1, M. Kilic2, A.O. Adar3, S. Oguztuzun4, F. Demirag5, S. Celik6, and P. Bicakcioglu7. 1Ankara Chest Diseases, and Thoracic Surgery Training, and Research Hospital, Ankara, Turkey; 2Ankara University, Ankara, Turkey; 3Ataturk Chest Diseases, and Thoracic Surgery Training, and Research Hospital, Ankara, Turkey; 4Kirikkale University, Ankara, Turkey; and 5Yildiz Technical University, Istanbul, Turkey.

#2749 Poster Board Number: P304
Maternal Genotype forArsenic (+3 Oxidation State)-Methyltransferase Influences Inorganic Arsenic Metabolism and Newborn Birth Outcomes. Z. Dobran1, E. Martin1, K.S. Kim1, M. Rujo-Andrade2, G.G. Garcia-Vargas1, M. Stibio1, and R.C. Fry3. 1University of Juaréz del Estado de Durango, Gómez Palacio, Durango, Mexico; and 2University of North Carolina at Chapel Hill, Chapel Hill, NC. Sponsor: R. Fry.

#2750 Poster Board Number: P305

#2751 Poster Board Number: P306
Quantification and Genetic Components of Synergistic Interactions among Anticancer Drugs in Lymphoblastoid Cell Lines. K.R. Roell1, T.M. Havener2, J.R. Jack2, H.L. McLeod1, D.M. Reif3, and A.A. Motsoniger-Reif2. 1Moffitt Cancer Center, Tampa, FL; 2North Carolina State University, Raleigh, NC; and 3University 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. Heil1, S. Marshall1, G. Charkoftaki2, D. Orlicky3, K. Fritz3, and V. Vasiliou2. 1University of Colorado, Aurora, CO; and 2Yale 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-Cook1, D. Gatto2, G. Churchill1, and A. Harrill2. 1The Jackson Laboratory, Bar Harbor, ME; and 2University of Ark for Medical Sciences, Little Rock, AR.

#2754 Poster Board Number: P309

Wednesday Morning, March 16
9:30 AM to 12:45 PM
CC Exhibit Hall

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. Dreher1, and W. Polk2. 1University of North Carolina at Chapel Hill, Chapel Hill, NC; and 2US Environmental Protection Agency, Research Triangle Park, NC.

#2757 Poster Board Number: P312
Toxicity Study of Mycosynthesised Silver Nanoparticles and Silver Ions. T. Chen1, Y. LF1, T. Qin2, T. Ingle2, J. Yan2, W. He1, and J.-J. Yin1. 1US FDA/CFSAN, College Park, MD; and 2US FDA/ NCTR, Jefferson, AR.

#2758 Poster Board Number: P313
Differential Genotoxicity Mechanisms of Silver Nanoparticles and Silver Ions. T. Chen1, Y. LF1, T. Qin2, T. Ingle2, J. Yan2, W. He1, and J.-J. Yin1. 1US FDA/CFSAN, College Park, MD; and 2US FDA/ NCTR, Jefferson, AR.

#2759 Poster Board Number: P314
Deletion of Catalase in C57BL/6 Mice Results in Obese Phenotype and Metabolic and Morphologic Changes. C. Heil1, S. Marshall1, G. Charkoftaki2, D. Orlicky3, K. Fritz3, and V. Vasiliou2. 1University of Colorado, Aurora, CO; and 2Yale University, New Haven, CT.

#2760 Poster Board Number: P315
Genetic Background Plays a Role in Risk of Zileuton-Induced Liver Injury in Diversity Outbred Mice. L.E. Lyn-Cook1, D. Gatto2, G. Churchill1, and A. Harrill2. 1The Jackson Laboratory, Bar Harbor, ME; and 2University of Ark for Medical Sciences, Little Rock, AR.

#2761 Poster Board Number: P316

#2762 Poster Board Number: P317
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.

#2763 Poster Board Number: P318
Unique Nanoparticle Optical Properties Confound Fluorescent Based Assays Widely Employed in Their In Vitro Toxicity Screening and Ranking. K. Dreher1, and W. Polk2. 1University of North Carolina at Chapel Hill, Chapel Hill, NC; and 2US Environmental Protection Agency, Research Triangle Park, NC.

#2764 Poster Board Number: P319
Differential Genotoxicity Mechanisms of Silver Nanoparticles and Silver Ions. T. Chen1, Y. LF1, T. Qin2, T. Ingle2, J. Yan2, W. He1, and J.-J. Yin1. 1US FDA/CFSAN, College Park, MD; and 2US FDA/ NCTR, Jefferson, AR.

#2765 Poster Board Number: P320
Deletion of Catalase in C57BL/6 Mice Results in Obese Phenotype and Metabolic and Morphologic Changes. C. Heil1, S. Marshall1, G. Charkoftaki2, D. Orlicky3, K. Fritz3, and V. Vasiliou2. 1University of Colorado, Aurora, CO; and 2Yale University, New Haven, CT.

#2766 Poster Board Number: P321
Genetic Background Plays a Role in Risk of Zileuton-Induced Liver Injury in Diversity Outbred Mice. L.E. Lyn-Cook1, D. Gatto2, G. Churchill1, and A. Harrill2. 1The Jackson Laboratory, Bar Harbor, ME; and 2University of Ark for Medical Sciences, Little Rock, AR.

#2767 Poster Board Number: P322

#2768 Poster Board Number: P323
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.

#2769 Poster Board Number: P324
Unique Nanoparticle Optical Properties Confound Fluorescent Based Assays Widely Employed in Their In Vitro Toxicity Screening and Ranking. K. Dreher1, and W. Polk2. 1University of North Carolina at Chapel Hill, Chapel Hill, NC; and 2US Environmental Protection Agency, Research Triangle Park, NC.

#2770 Poster Board Number: P325
Differential Genotoxicity Mechanisms of Silver Nanoparticles and Silver Ions. T. Chen1, Y. LF1, T. Qin2, T. Ingle2, J. Yan2, W. He1, and J.-J. Yin1. 1US FDA/CFSAN, College Park, MD; and 2US 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.

Abstract #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.

Abstract #2761
Poster Board Number: P316

Abstract #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.

Abstract #2763
Poster Board Number: P318
Carbon Nanodots Interference with Lactate Dehydrogenase Assay in Human Monocyte THP-1 Cells. P.C. Wright2, H. Qin1, M.M. Choi1, N.H. Chiu1, and Z. Jia1. 1Hong Kong Baptist University, Kowloon Tong, Hong Kong; and 2University of North Carolina at Greensboro, Greensboro, NC.

Abstract #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. Nguyen1, R. Patel1, B.J. Carey2, P.L. Goering3, R. Narayan3, and G. Kumar4. 1UMBC, Baltimore, MD; 2UNC/NCSU, Raleigh, NC; and 3US FDA, Silver Spring, MD.

Abstract #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.J. Orenzio1, L.L. Degn1, J.R. Mcgee1, R.M. Zucker2, and W.K. Boyes2. 1Duke University, Durham, NC; 2Oak Ridge Institute for Science and Education, Durham, NC; and 3US EPA, Research Triangle Park, NC.

Abstract #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.

Abstract #2767
Poster Board Number: P322

Abstract #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

Abstract #2770
Poster Board Number: P325

Abstract #2771
Poster Board Number: P326

Abstract #2772
Poster Board Number: P327

Abstract #2773
Poster Board Number: P328

Abstract #2774
Poster Board Number: P329
Size and Crystal Structure Dependent Inhibition of Human Mesenchymal Stem Cell Adipogenic Differentiation by Nanoscale Titanium Oxide. J. Yao1, Y. Jones2, W. Monroe2, J. Collins3, P. Howard4, A.K. Patri5, and Y. Zhang1. 1US FDA Commissioner’s Fellowship Program, Jefferson, AR; and 2NCTR/ORANanotechnology Core Facility, Jefferson, AR.

Abstract #2775
Poster Board Number: P330

Abstract #2776
Poster Board Number: P331
Abstract #2777
Poster Board Number ......................... P332

Abstract #2778
Poster Board Number ......................... P333
Nanosafety Assessment of TiO2 Nanoparticle-Embedded Cosmeceutical Nanotoxicity on Human Skin and Lung Cells. H. Lee2, C.-W. Lee1, H. Kim3, K. Lee1, and J. Kim1. 1Boditech Med Inc., Chuncheon, Korea, Republic of; 2Detroit R&D, Inc, Detroit, MI; 3Korea Institute of Toxicology, Daejeon, Korea, Republic of; and 3Northeastern University, Boston, MA. Sponsor: H. Kim.

Abstract #2779
Poster Board Number ......................... P334

Abstract #2780
Poster Board Number ......................... P335
Hydroxyl Radical Generation and Cytotoxicity of Zinc Nanoparticles in RAW 264.7 Cells. A. Morris1, A. Stefanaki1, K. Dunnick1, M. Badding2, and S. Leonard1. 1CDC/NIOSH, Morgantown, WV; 2Exponent, Washington, DC; and 3The Hammer Institutes for Health Sciences, Research Triangle Park, NC.

Abstract #2781
Poster Board Number ......................... P336
ZnO Nanoparticle Ingestion Alters Intestinal Epithelial Function. F. Moreno Olivas1, E. Tako1, and G. Mahler1. Binghamton University, Binghamton, NY; and 3US Department of Agriculture, Ithaca, NY.

Abstract #2782
Poster Board Number ......................... P337
An Evaluation of Genotoxicity from As-Produced and Post-Production Modification of Multi-Walled Carbon Nanotubes. K. Segrist1, S. Reynolds1, C. Mitchell1, D. Lowry1, M. Kashon1, L. Bishop1, A. Erdely2, J. Bonner1, G. Parsons3, C. McClure2, and L. Sargent1. 1CDC/NIOSH, Morgantown, WV; 2North Carolina State University, Raleigh, NC; and 3West Virginia University, Morgantown, WV.

Abstract #2783
Poster Board Number ......................... P338
Nano-Ferric Oxide Induced Neoplastic-Like Transformation in a Human Primary Cell Model: Iron Homeostasis Disruption? T.A. Stueckle1, D.C. Davidson1, R. Dark1, P. Demokritou1, T. Kornberg1, D. Schwegler-Berry1, and L. Wang1. 1Harvard School of Public Health, Boston, MA; and 2National Institute for Occupational Safety, and Health, Morgantown, WV.

Abstract #2784
Poster Board Number ......................... P339

Abstract #2785
Poster Board Number ......................... P340
#2792  Poster Board Number ............................... P347  
**Abstract #**

**Title:** TMAH-AupNP Core Size Is Inversely Correlated to Toxicity in the Zebrafish Embryo.  
**Authors:** M.A. Garland1, L. Truong1, T. Zaiyoka1, J.E. Hutchinson1, K. Kim1, and R.L. Tanguay1.  
**Institution:** Oregon State University, Corvallis, OR; 1Seoul National University of Science, and Technology, Seoul, Korea, Republic of; and 2University of Oregon, Eugene, OR.

#2793  Poster Board Number ............................... P348  
**Abstract #**

**Title:** Effects of Prenatal Inhalation of Copper Nanoparticles on Murine Dams and Offspring.  
**Authors:** A. Adamicakova-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  
**Abstract #**

**Title:** Biochemical and Histopathological Evaluation of PEG-Coated and Uncoated Gold Nanoparticles in Sprague-Dawley Rats.  
**Authors:** A. Patilolo and P. Tchounwou. Jackson State University, Jackson, MS.

#2795  Poster Board Number ............................... P402  
**Abstract #**

**Title:** Toxic Effects of Oral Exposure to Silver Nanoparticles in Rats.  
**Authors:** T. Garcia, D. Lafuente, J. Blanco, M. Gomez, D.J. Sanchez, and J.L. Domingo. Universidad de Vigo, Vigo, Spain.

#2796  Poster Board Number ............................... P403  
**Abstract #**

**Title:** Toxicity Assesment of Model Chemical Mechanical Planarization slurries Using Daphnia magna.  
**Authors:** S. Karimi, R.-H. Wang, P. Pantano, and R. Draper. The University of Texas at Dallas, Richardson, TX.

#2797  Poster Board Number ............................... P404  
**Abstract #**

**Title:** Mixture Effects of Titanium Dioxide Nanoparticles and Bisphenol A on Toxicity to Developing Zebrafish.  
**Authors:** L. Denluck, Z. Klocke, and S. Harper. Oregon State University, Corvallis, OR.

#2798  Poster Board Number ............................... P405  
**Abstract #**

**Title:** The Role of Inflammasome in Pulmonary Injury Caused by Inhalation Exposure to Tungsten (IV) Oxide (WO3) Nanoparticles.  
**Authors:** A. Bouadrou, M.-S. Imam1, A.M. Paredes1, M.S. Bryant1, R.P. Felton1, C.K. Cunningham1, M.T. Jones1, K.J. Davis2, and G.R. Olson1. National Center for Toxicological Research, US Food and Drug Administration, Jefferson, AR; and 2Toxicologic Pathology Associates, Jefferson Laboratories, Jefferson, AR. Sponsor: M. Bouadrou.

#2799  Poster Board Number ............................... P406  
**Abstract #**

**Title:** 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.  
**Authors:** M.D. Bouadrou1, M.S. Imam1, A.M. Paredes1, M.S. Bryant1, R.P. Felton1, C.K. Cunningham1, M.T. Jones1, K.J. Davis2, and G.R. Olson1. National Center for Toxicological Research, US Food and Drug Administration, Jefferson, AR; and 2Toxicologic Pathology Associates, Jefferson Laboratories, Jefferson, AR. Sponsor: M. Bouadrou.

#2800  Poster Board Number ............................... P407  
**Abstract #**

**Title:** Effects of Pre-Exposure Dispersion Status on Nanoparticle Distribution and Fibrosis in the Lung.  
**Authors:** T.M. Sager1, M. Wolfarth1, D.W. Porter1, R. Mercer1, V. Castranova1, and A. Hollan1. NIOSH, Morgantown, WV; 1University of Montana, Missoula, MT; and 2West Virginia University, Morgantown, WV.

#2801  Poster Board Number ............................... P408  
**Abstract #**

**Title:** Inhaled TiO2 Nanoparticles Induce Morphologic and Biochemical Changes in the Lungs of Golden Syrian Hamsters.  
**Authors:** O.O. Adebolu, and J.M. Cerreta. St. John’s University, Queens, NY.
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. Umezawa1, A. Onoda1,2, and K. Takeda2.
1JSPS Research Fellow, Tokyo, Japan; and 2Tokyo 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. Vranic1,2,3, S. Ichihara4,5, W. Wu1, E. Watanabe1, A. Hayashida1, Y. Osada1, T. Sakurai5, S. Boland3, L. Tran1, and G. Ichihara4,5.
1Institute of Occupational Medicine, Edinburgh, United Kingdom; 2Mie University, Tsu, Japan; 3Nagoya University Graduate School of Medicine, Nagoya, Japan; 4Tokyo University of Science, Noda, Japan; 5University of Manchester, Manchester, United Kingdom; and 6University of Paris VII Diderot, Paris, France.

#2811 Poster Board Number .......................... P418
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
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. Kasemets1,2, A. Kahrui, and P. Manteca2.
1National Institute of Chemical Physics, and Biophysics, Tallinn, Estonia; and 2University 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. Kooter1, M. Grollers1, E. Duistermaat1, and F. Kuper.
1TNO, Utrecht, Netherlands; 2TNO, Zeist, Netherlands; and 3TNO Triskellion 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. Ichihara1, Y. Suzuki, E. Watanabe2, Y. Osada1, A. Hayashida1, T. Furutani1, K. Izuoka1, and G. Ichihara4.
1Mie University, Tsu, Japan; and 2Tokyo University of Science, Noda, Japan.

Abstract #

#2817 Poster Board Number .......................... P424
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. Wingard1, J. Odom1, A.A. Holland1, T.R. Fennell1, and J. Volkman1.
1East Carolina University, Greenville, NC; and 2RTI 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. Holland1, J. Volkman1, J. Odom1, T.R. Fennell1, and C.J. Wingard1.
1East Carolina University, Greenville, NC; and 2RTI International, Research Triangle Park, NC.

#2819a Poster Board Number .......................... P427
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
West Virginia University, Morgantown, WV.

#2821 Poster Board Number .......................... P432
Upregulation of Cell Adhesion Molecules by Doxorubicin in Rat H9c2 Myocardial Cells. Z. Jiao1, R. Chitrakar1, P. Nallazamy1, H. Bibir1, K. Traore1, Z. Zhu1, and Y.R. Li1.
1Campbell University School of Osteopathic Medicine, Buies Creek, NC; and 2University 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. Menezes1, and R.A. Ansari1.
1Federal University of Bahia (UFBA), TV. Barão de Jeremoabo, Ondina, Salvador, Bahia, Brazil; and 2Nova Southeastern University, Fort Lauderdale, FL.

#2823 Poster Board Number .......................... P434
Oleic Acid Exposure of Cultured Endothelial Cells Alters Lipid Mediator Production. V. Bass1, and M. Madden2.
1University of North Carolina-Chapel Hill, Chapel Hill, NC; and 2US Environmental Protection Agency, Chapel Hill, NC.
Abstract # | Abstract#
---|---
#2824 | Poster Board Number | #2840
#285 | Effect of Vildagliptin on LXR-ABC1/ABCG1 | #2834
Cascade in Pravastatin Treated 3T3-L1 Adipocytes. A.M. Mostafa1, N.M. Hamdy2, H.O. El-Mesallamy1, and S.Z. Abdel-Rahman. 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 | #2835

#2828 | Poster Board Number | #2836

#2830 | Poster Board Number | #2837
#2831 | The Influence of Inhaled Multi-Walled Carbon Nanotubes on Autonomic Nervous System. W. Zheng1, W. McKinney1, M. Kashon1, R. Salmen1, D. Pan1, V. Castronova2, and H. Kan2. 1. NIOSH/HELD, Morgantown, WV; and 2. West Virginia University, Morgantown, WV.

#2832 | Poster Board Number | #2838

#2834 | Poster Board Number | #2839
#2835 | Resveratrol Protects Heart from Sepsis Likely by Modulating SERCA2a Activity. T. Bai1,2, S. Wang1, N. Mellens1, Y. Zheng1, J. Kong1, and L. Cai2. 1. Departments of Cardiovascular Center, and Geriatric Medicine, Changchun, Jilin Province, China; and 2. Kosei Children’s Hospital Research Institute, Louisville, KY. Sponsor: L. Cai.

#2836 | Poster Board Number | #2840

#2838 | Poster Board Number | #2841

#2840 | Poster Board Number | #2842
#2841 | Early-Life Vitamin D Deficiency Exacerbates Arrhythmia and Heart Rate Variability Responses to Smog Inhalation in Mice. K. Stratford1, N. Hoykal-Coates1, N. Kurhanewicz1, T. Krantz2, C. King2, J. Krug1, L. Gilmore1, M. Forabai2, and M. Hazari1. 1. University of North Carolina, Chapel Hill, NC; and 2. US EPA, Research Triangle Park, NC.

#2842 | Poster Board Number | #2843
#2843 | Global Cross-Company Data-Sharing on the Housing of Non-Rodents During the Recording of Cardiovascular Telemetry Data on Toxicology Studies. H. Prior1, A. Bottomley1, and J. Cordes1. 1. NC3Rs, London, United Kingdom; and 2. Pfizer, Groton, CT. Sponsor: N. Burden.

#2844 | Poster Board Number | #2845

#2846 | Poster Board Number | #2847
#2847 | Comparison of Left Ventricular Contractility to RR Interval Relationship in Freely-Moving Rats, Dogs and Monkeys. A. Ascah1, M. Pauliot1, S. Abtou1, K. Bujold1, R. Forster1, and S. Authier1,2. 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. Abourt, K. Bujold, A. Aschah, 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. Wang¹, R. Chen², L. Chen², P. Qiu¹, J. Xu¹, E. Huang⁴, C. Liu², Z. Lin³, and W. Xie⁴. ¹Guangdong Medical University, Dongguan, China; ²Guangzhou Forensic Science Institute, Guangzhou, China; ³Kansas State University, Manhattan, KS; and ⁴Southern 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. Chen², M. Carroll-Turpin¹, V.Y. Hebert¹, S.P. Korpela¹, and T.R. Duags³. ¹Louisiana State University Health Sciences Center, Shreveport, LA; and ³School of Veterinary Medicine, Louisiana State University, Baton Rouge, LA.


#2846 Poster Board Number ....................... P457 PACAP38 Protects Against Mitoxantrone-Induced Lethality in C57/BL6 Mice. M.K. Hughes¹, H. Xia², E. McIlwain¹, J.L. Maderdrut¹, and K.J. Varner¹. ¹LSU HSC, New Orleans, LA; and ²Tulane 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. Ravenscroft¹, C. Dilworth¹, and P. Walker¹. ¹Cyprotek, Cheshire, United Kingdom; and ²Cyprotek, Macclesfield, United Kingdom. Sponsor: C. Stock.

#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. OTest Labs, Columbus, OH.


#2850 Poster Board Number ....................... P501 PACAP38 Protects Against Mitoxantrone-Induced Cardiac Injury in Mice. V. Subramanian¹, G. Chuang¹, H. Xia¹, B. Burn¹, J. Bradley¹, J.L. Maderdrut², and K.J. Varner¹. ¹LSU HSC, New Orleans, LA; and ²Tulane University, New Orleans, LA.

#2851 Poster Board Number ....................... P502 Functional Integrated Human Cardiac System for Toxicological and Pharmaceutical Studies. C.J. Long¹, C. Oleaga¹, M. Stancescu¹, P. Molnar¹, C.W. McAllea², W. McLamb¹, G. Legters¹, J.-M. Prot¹, and J.J. Hickman². ¹Cornell University, Ithaca, NY; and ²University of Central Florida, Orlando, FL. Sponsor: E. Dufour.

#2852 Poster Board Number ....................... P503 Comprehensive In Vitro Proarrhythmic 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. Caroll¹, T.D. da Silva¹, B.T. Lima¹, M.S. Filho¹, R.D. Raimundo², S.M. Crespo², D.H. Zati², Y. Chandrasekhar¹, A.L.R. Vitor³, G. Pyrgiotakis³, E.A. Diaz¹, M.I. Kontaridis³, and J.J. Godlesi³. ¹Beth Israel Deaconess Medical Center, Boston, MA; ²Faculdade de Medicina de Ribeirão Preto, São Paulo, Brazil; ³Harvard T.H. Chan School of Public Health, Boston, MA; ⁴Universidad Federal de São Paulo, São Paulo, Brazil; and ⁵University of Louisville, Louisville, KY.

#2856 Poster Board Number ....................... P507 Rats Treated with Doxorubicin Had Reduced Cardiac Function Demonstrated by MRI and Echocardiography Measurements. K. Henderson¹, A. Bratasz², K. Powell³, J. Ross³, R.B. Borders¹, B.M. Roche¹, and T. Vinci¹. Battelle, Columbus, OH; and ²The 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. Gossmann¹, T. Palm¹, E. Kolossov¹, G. Luerman², A. Duenbostel³, M. Tovrin⁴, G. Artmann¹, and H. Bohlen¹. ¹Axiogenesis AG, Cologne, Germany; ²Axiogenesis Inc, Plymouth Meeting, PA; and ³Fachhochschule 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 ApoE² Mice Atherosclerosis. B.-J. Lee¹, M. Kang¹, D.-H. Yoo¹, and K. Lee¹. ¹KIT, Jeonbuk, Korea, Republic of; and ²University of Science, and Technology, Daejeon, Korea, Republic of. Sponsor: K. Lee.
**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

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**Poster Board Number #2860**


**University of Goiânia**, Brazil; and **Universidade Federal do Paraná (UFPR)**, Curitiba, Brazil.

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**Poster Board Number #2861**


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**Poster Board Number #2862**


**CDC-NIOSH**-HELD, Morgantown, WV; and **West Virginia University**, Morgantown, WV.

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**Poster Board Number #2863**

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.

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**Poster Board Number #2864**


**Burleson Research Technologies, Inc.**, Morrisville, NC; and **National Toxicology Program**, National Institute of Environmental Health Sciences, NIH, Research Triangle Park, NC.

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**Poster Board Number #2865**


**L’Oreal, Asnières, France**; and **L’Oreal, Aulnay sous Bois, France**. Sponsor: **E. Dufour**.

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**Poster Board Number #2866**


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#2893 Abstract # 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, Rinskortm1, S. Papinenni1, B.R. Hannas1, L.A. Murphy1, M.P. Belf1, V.A. Marshall1, and R.J. Rasoupol1. Dow AgroSciences, LLC, Indianapolis, IN; and The Dow Chemical Company, Midland, MI.

#2894 Abstract # 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 Abstract # 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 Abstract # Poster Board Number ......................... P548 Epigenetic Regulation of Chlorpyrifos Induced Aplidogenesis Using 3T3-L1 In Vitro Model. L. Yin, T. Mowla, and X. Yu. University of Georgia, Athens, GA.


#2898 Abstract # 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. Ghorab6, H. Omar7, H. Samir8, M. Khalil9, and M. Zwiemlik10. Marine Invertebrates Laboratory, National Institute of Oceanography and Fisheries (NIOF), Alexandria, Egypt; National Institute of Oceanography and Fisheries (NIOF), Alexandria, Egypt; Central Agricultural Pesticides Laboratory, Agriculture Research Center, El-Sabahaya, Alexandria, Egypt; and Wildlife Toxicology Laboratory, Michigan State University, East Lansing, MI.


#2902 Abstract # Poster Board Number ......................... P554 Pyrethroid Metabolism and Exposure Assessment in Egyptian Agricultural Workers. M. Himmel1, B. McGarrigle1, R. Singh1, A. Ismail1, G. Abdel Rasoul1, O. Hendy1, M. Bonner1, D. Rohlam1, D. Aga2, and J. Olson3. Menoufia University, Shebin El-Kom, Egypt; Oregon Health & Science University, Portland, OR; 3State University of New York, Buffalo, NY; and 4University of Iowa, Iowa City, IA.

#2903 Abstract # 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 Abstract # 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 Abstract # Poster Board Number ......................... P557 A Physiologically Based Pharmacokinetic and Pharmacodynamic (PBPK/PD) Model for Malathion in Rats. K.T. Bogen. Exponent, Oakland, CA.


#2908 Abstract # 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.


#2910 Abstract # 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.
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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.

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Poster Board Number ......................... P604
Serum Autoantibodies to Neural-Specific Proteins as Objective Biomarkers for Gulf War Illness. M.B. Abou-Donia, K. Sullivan, L. Conboy, and E. Kokkotou. 1Boston University, Boston, MA; 2Duke University Medical Center, Durham, NC; and 3Harvard Medical School, Boston, MA. Sponsor: M.B. Abou-Donia.

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Poster Board Number ......................... P605
Taurine Ameliorated Impairment in Neuromuscular Coordination in Rats administered with Chlorpyrifos. M.G. Akande, M. Shittu, C. Uchendu, and L.S. Yaqub. 1Ahmadu Bello University, Zaria, Nigeria; and 2University of Abuja, Abuja, Nigeria.

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Poster Board Number ......................... P606
Toxic Effects of Permethrin on Male Rabbit Fertility and Immunity. K.A. Abou-Khalaf, M.A. Abo Norag, and N.M. Ibrahim. 1Animal Health Research Institute, Dokki, Egypt; 2Animal Health Research Institute, Dokki, Egypt; Faculty of Veterinary Medicine Beni Suef University, Beni Suef, Egypt; and 4Faculty of Veterinary Medicine, Cairo University, Cairo, Egypt. Sponsor: A.-R. Kadry.

Abstract #2915

Poster Board Number ......................... P607
Dietary Chlorpyrifos Affects Inhibitory Control and Attention in Human APOE Targeted Replacement Mice. F. Peris-Sampedro, P. Basaure, I. Reverte, M. Cabré, J.L. Domingo, and M.T. Colomina. 1Universitat Rovira i Virgili, Reus, Spain; and 2Universitat Rovira i Virgili, Tarragona, Spain.

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Poster Board Number ......................... P608
The Metabolic Disruptor Role of Chlorpyrifos: Genetic Vulnerability and Hormonal Imbalance. F. Peris-Sampedro, P. Basaure, M. Cabré, T. Neri-Gómez, I. Reverte, J.L. Domingo, and M.T. Colomina. 1Universidad Autónoma de México, México DF, Mexico; 2Universitat Rovira i Virgili, Reus, Spain; and 3Universitat Rovira i Virgili, Tarragona, Spain.

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Poster Board Number ......................... P609
Atrazine and Its Metabolites: Aromatase mRNA and Ex Vivo Phosphodiesterase Activity. K.D. Yi1, C.B. Breckenridge1, and J.W. Simpkins2. 1Syngenta Crop Protection, LLC, Greensboro, NC; and 2University of West Virginia, Morgantown, WV.

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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.

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Poster Board Number ......................... P613
Enzyme-Linked Immunosorbent Assay for Curcin Protein from a Biodiesel Feedstock Plant Jatropha curcas. M. Nakao1, K. Yamauchi2, H. Zimila3, and Y. Ishihara4. 1Edouardo Mondlane University, Maputo, Mozambique; and 2Kurume University, Kurume, Japan.

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Poster Board Number ......................... P616
In Vitro Fish Hepatic Metabolism: A Ring-Trial to Evaluate Transferability, Intra- and Interlaboratory Reproducibility. H.M. Peterson1, M. Embry2, K. Fay3, M.J. Bernhard1, J.W. Davis, J. Domoradzki2, M. Halder4, J.L. Domingo2, M. Embry7, K. Fay14, M.J. Bernhard11, I.Y. Ishihara13, M. Schmallenberg, Germany; 2Givaudan Schweiz AG, Dubendorf, Switzerland; 3ILSI HESI, Washington, DC; 4International Flavors, and Fragrances, Union Beach, NJ; 5KU Scientific, Georgetown, TX; 6OECD, Paris, France; 7P&G, Mason, OH; 8International Flavors, and Fragrances, Union Beach, NJ; 9Kurume University, Kurume, Japan; 10OECD, Paris, France; 11P&G, Mason, OH; 12SC Johnson, Racine, WI; 13University of Bern, Bern, Switzerland; and 14Promega Corporation, Madison, WI.

Abstract #2925

Poster Board Number ......................... P617
Strand Break Repair in Whale Cells and Withdrawn.

Abstract #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. Browning1,2, and J.P. Wise3. 1University of Louisville, Louisville, KY; and 2University of Maine, Orono, ME. Sponsor: J.P. Wise Sr.
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# Abstracts #

## Poster Board Number #2944

**Assessment of Toxicity of Glufosinate Ammonium Using Early Stages of Zebrafish.** 
F. Wang¹, X. Chen¹, D. Yang¹, J. Yang¹, G. Kang¹, B. Zhao¹, N. Zheng¹, M. Chernick¹, D.E. Hinton¹, and W. Dong². ¹Inner Mongolia Provincial Key Laboratory for Toxicants, and Animal Disease/Inner Mongolia University for the Nationalities, Tongliao, China; ²Institute of Pharmacology, Laboratory for Toxicants, and Animal Disease/Science, Beijing, China; ³Nicholas School of the Environment, Duke University, Durham, NC, and ⁴Northeast Institute of Geography, and Agricultural Ecology, Chinese Academy of Sciences, Jilin, China. Sponsor: W. Dong.

## Poster Board Number #2945

**Functional Characterization of Glutathione-S-Transferases Rho (GstR1) and Theta 2 (GstT2) in Zebrafish (Danio rerio) and Their Sensitivity to Environmental Toxins.** 
B. Glisic¹, J. Hrubik², E. Petri³, A. Tubić⁴, R. Zaja⁵, T. Smital⁶, and R. Kovacevic⁷. ¹Rudjer Boskovic Institute, Zagreb, Croatia; and ²University of Novi Sad Faculty of Sciences, Novi Sad, Serbia.

## Poster Board Number #2946

**Effects of an Aqueous Coal Dust Extract on Developmental Toxicity and Gene Expression Profiling of Zebrafish (Danio rerio).** 
K. Caballero-Gallardo¹, S.E. Wirbisky¹, J. Olivero-Verbe⁴, and J.L. Freeman¹. ¹Purdue University, West Lafayette, IN; and ²University of Cartagena, Cartagena, Colombia.

## Poster Board Number #2947

**Effects of Tris(2-Butoxyethyl) Phosphate (TBEP) on Endocrine Systems and Reproduction in Zebrafish (Danio rerio).** 
H. Shin¹, K. Kim¹, and K. JI². ¹Seoul National University of Science, and Technology, Seoul, Korea, Republic of; and ²Yonin University, Yongin, Korea, Republic of. Sponsor: K. Kim.

## Poster Board Number #2948

**Analysis of Toxic Effects Using Differential Gene Expression in the Danio rerio Embryo Test.** 
W.-K. Kim¹, and J.S. Choi¹. ¹Korea Institute of Toxicology, Korea, Republic of; and ²Korea Institute of Toxicology, Jinhu, Korea, Republic of.

## Poster Board Number #2949

**Effects of 2- and 6-Hydroxylated Chrysene on the Development of Danio rerio Embryos.** 
G. Diamante¹, G.A. Müller¹, A.C. Banyj¹, and D. Schlenk². ¹Federal University of Santa Catarina (UFSC), Florianópolis, Brazil; and ²University of California, Riverside, Riverside, CA.

## Poster Board Number #2950

**Copper Pyrithione Induces Abnormal Muscle and Notochord Architecture in Developing Zebrafish Embryos.** 
K. Almond, and L. Trombetta. ¹St. John's University, Queens, NY.

## Poster Board Number #2951

**Characterization of Cardiac Deformity, CYP Induction, and Developmental Bioenergetics Following PAH Exposures in PAH-Resistant and Non-Resistant Fundulus heteroclitus.** 

## Poster Board Number #2952

**A Multi-Organ Approach for Studying the Impacts of the Polycyclic Aromatic Hydrocarbon Phenanthrene on the Reproductive Axis.** 
J.R. Loughery¹, E. Crowley¹, A. Mercer¹, K.A. Kidd¹, and C. Martyynik¹. ¹University of Florida, Gainesville, FL; and ²University of New Brunswick, Saint John, NB, Canada. Sponsor: N. Denisow.

## Poster Board Number #2953

**Benzo(a)pyrene Modulates Changes on Stages of Development and in Genes Related with DNA Methylation in Male Tilapia, Oreochromis niloticus.** 

## Poster Board Number #2954

**Diazinon-Induced Clastogenicity and Pathological Changes in Ovaries and Testes of Clarias gariepinus.** 

## Poster Board Number #2955

**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. Xu¹, J. Crago², A. Kupsco³, F. Jia³, A. Mehinto³, W. Lao³, K. Maruya³, J. Gan³, and D. Schlenk³. ¹Southern California Coastal Research Project, Costa Mesa, CA; and ²University of California, Riverside, Riverside, CA. Sponsor: D. Schlenk.

## Poster Board Number #2956

**In Silico Interaction Analyses between a-Pinene and Orthologous Cyp6dg1v1 or Cyp6dg1v3 from Bark Beetles Dendroctonus rhizophagus and D. valens (Curculionidae: scolytinae).** 
M.F. Lopez-Gomez¹, G. Ramirez-Salinas¹, J. Correa-Basurto¹, G. Zuñiga², and A. Albores¹. ¹Centro De Investigacion y de Estudios Avanzados del IPN, Mexico City, Mexico; ²Escuela Nacional de Ciencias Biologicas, IPN, Mexico City, Mexico; and ³Escuela Superior de Medicina, IPN, Mexico City, Mexico.

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**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.
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 1:00 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.
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 toxicity 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 toxicity-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, exploiting 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 there another 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.


1:30 Panel Discussion/Q&A.
Abstract #

**Mobile Event App**

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 (through 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 #2960)


12:50 Another Year, Another Rejection: The Anatomy of a Bad Proposal. M.B. Cener. 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 AF, 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 "hypercompetit-
<table>
<thead>
<tr>
<th>Abstract #</th>
<th>Abstract</th>
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<tbody>
<tr>
<td>#2965</td>
<td>Poster Board Number ................................. P105 Toluene Disocyanate and Formaldehyde Specific IgE and IgG Antibodies in Urethane Resin Handling Plant Workers. M. Tsui, T. Ise, M. Yamamoto, and T. Kawamoto. 1 National Institute for Minamata Disease, Minamata, Japan; and 2University of Occupational, and Environmental Health, Kitakyusyu, Japan.</td>
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<tr>
<td>#2966</td>
<td>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, K. Fechting, A. Annas, and M. Oberg. 1Karolinska Institutet, Stockholm, Sweden; 2The Swedish Poisons Information Centre, Stockholm, Sweden; and 3The Swedish Toxicology Sciences Research Center (Swetox), Södertälje, Sweden.</td>
</tr>
<tr>
<td>#2967</td>
<td>Poster Board Number ................................. P107 Effects of the Indoor Thermal Environment on Human Food Intake: A Pilot Randomized Controlled Trial. M.C. Bernhard, P. Li, D.B. Allison, and J.M. Goelike. 1University of Alabama at Birmingham, Birmingham, AL; and 2Virginia Polytechnic Institute, and State University, Blacksburg, VA.</td>
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<tr>
<td>#2968</td>
<td>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, O. Ogunsakin, H. Hottor, and R. Kruse-Jarres. 1Puget Sound Blood Center, Seattle, WA; and 2Tulane University, New Orleans, LA.</td>
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<tr>
<td>#2969</td>
<td>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, X. Yan, P. He, J. Zhu, J. Nie, D. Aga, H. Wu, X. Guo, and X. Ren. 1The State University of New York, Buffalo, NY; and 2Wenzhou Medical University, Wenzhou, China.</td>
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<tr>
<td>#2970</td>
<td>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.</td>
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<td>#2971</td>
<td>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.</td>
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<td>#2972</td>
<td>Poster Board Number ................................. P112 Acrrolein Metabolites and Diabetes and Insulin Resistance. F. Scinicariello, A.G. Fero, and R. Attanasio. 1ATSDR, Atlanta, GA; 2ATSDR, Georgia State University, GA; and 3Bowdoin College, Brunswick, ME. Sponsor: M. Mumtaz.</td>
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<tr>
<td>#2973</td>
<td>Poster Board Number ................................. P113 Sodium Fluoride Induces Apoptosis in H9c2 Cardiomycocytes by Altering Mitochondrial Membrane Potential and Intracellular ROS Level. X. Yan, Y. Qi, and J. Wang. 1Shanxi Agricultural University, Taiyuan, China; and 2Shanxi Medical University, Taiyuan, China. Sponsor: X. Ren.</td>
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<tr>
<td>#2975</td>
<td>Poster Board Number ................................. P115 Quantitative Bias Analysis of a Reported Association Between Perfluorooctanoic Acid (PFOA) and Endometriosis. G. Ngueta, M. Yoon, H. Clewell, M.L. Andersen, M.P. Longnecker, and M.-A. Verner. 1Department of Occupational, and Environmental Health, University of Montreal, Montreal, QC, Canada; 2Hamner Institutes for Health Sciences, Durham, NC; 3Public Health Research Institute (IRSPUM), University of Montreal, Montreal, QC, Canada; and 4Ramboll Environ, Durham, NC.</td>
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<td>#2979</td>
<td>Poster Board Number ................................. P119 Does Longevity Play an Etiological Role in Pleural Mesothelioma? B.S. Beckerman, E.T. Chang, G. Mezei, and B.D. Kerger. 1Exponent, Irvine, CA; 2Exponent, Menlo Park, CA; and 3Exponent, Oakland, CA.</td>
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Abstract # | Abstract #
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#2983 | #2991
Poster Board Number | P123
Gestational Week-Specific Curve for Small-for-Gestational Age (SGA) Risk Attributable to Maternal Tobacco Use. H. Ferdosi1, J. Potiika1, J. Li1, and S. Lamm2. CEEOH, LLC., Washington, DC; 1Johns Hopkins University School of Medicine, Baltimore, MD; and 2University of Washington School of Medicine, Seattle, WA.

#2984 | #2992
Poster Board Number | P124

#2985 | #2993
Poster Board Number | P125
Pathway Analysis of Prenatal Exposure to Phthalates and Child Motor Development. D.A. Sanigianiss1,2, K. Polanska1, G. Theodoridis1, and C. Chatziioannou1. Aristotle University of Thessaloniki, Thessaloniki, Greece; 1Institute of Advanced Study, Pavia, Italy; and 2Nofred Institute of Occupational Medicine, Lodz, Poland.

#2986 | #2994
Poster Board Number | P126

#2987 | #2995
Poster Board Number | P127
Limitations of Regulatory Tier I and II Approaches to Demonstrate Equivalence of Generic Biocides. T. Wako1, K. Ozaki1, and J. Pauluhn1. 1Bayer CropScience, Monheim, Germany; and 2Sumitomo Chemical Co., Ltd, Tokyo, Japan. Sponsor: J. Pauluhn.

#2988 | #2996
Poster Board Number | P128

#2989 | #2997
Poster Board Number | P129

#2990 | #2998
Poster Board Number | P130

#2991 | #2999
Poster Board Number | P131

#2992 | #3000
Poster Board Number | P132
Dose Response Curves Derived from Clinical Ozone Exposures Can Inform Public Policy. S.S. Lange1, G. Tao2, L.R. Romberg3, J.E. Goodman4, M.L. Dourson5, and M.E. Honeycutt6. 1Gradient, Cambridge, MA; 2Texas Commission on Environmental Quality, Austin, TX; and 3University of Cincinnati, Cincinnati, OH.

#2993 | #3001
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. Jackson1, L. Fell2, and R. LeMus3. 1Advanced Testing Laboratory, Cincinnati, OH; and 2Haley & Aldrich, Inc., Farmington, MI.

#2994 | #3002
Poster Board Number | P134

#2995 | #3003
Poster Board Number | P135

#2996 | #3004
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 | #3005
Poster Board Number | P137
Alberta Environmental Public Health Information Network. N. Wang, E. Ellehoj2, J. Mayhew1, and W. Kindziierski1. 1Alberta Health, Edmonton, AB, Canada; 2Ellehoj Redmond Consulting, Edmonton, AB, Canada; and 3University of Alberta, Edmonton, AB, Canada.

#2998 | #3006
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 | #3007
Poster Board Number | P139

#3000 | #3008
Poster Board Number | P140
Assessment of Retractions as a Measure of Scientific Misconduct. A. Abritus, G. Johnson, and R. Harbison. College of Public Health, Tampa, FL.

#3001 | #3009
Poster Board Number | P141
Wednesday Afternoon, March 16
1:15 PM–2:45 PM
Displayed:
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.

Poster Board Number ................. P146
#3002
Vanadium—What Should Count as a “Do Not Drink” Warning? L.J. Bradley, Haley & Aldrich, Northbridge, MA.

Poster Board Number ................. P143
#3003
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.

Poster Board Number ................. P151
#3012

Poster Board Number ................. P154
#3011
Effects of Novasil Plus and Aflatoxin Exposure on Dry Matter Intake, Milk Production, and Milk Composition. C.R. Makì1, A.D. Thomas1, S.E. Elmore2, A.A. Romoser3, R.B. Harvey4, H.A. Ramirez-Ramirez5, and T.D. Phillips6. 1Tarleton State University, Stephenville, TX; 2Texas A&M, College Station, TX; and 3US Department of Agriculture, College Station, TX.

Poster Board Number ................. P155
#3013

Poster Board Number ................. P156
#3014
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.

Poster Board Number ................. P157
#3015

Poster Board Number ................. P158
#3016
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. Almeida1, V.P. Venancio1, C.S. Park2, C. Crane3, L. Mabasa4, M.L.P. Bianchi5, and L.M. Antunes6. 1North Dakota State University, Fargo, ND; and 2University of Sao Paulo, Ribeirao Preto, Brazil. Sponsor: D.P. Oliveira.

Poster Board Number ................. P159
#3017
Assessing Bioactivities and Exposure Profiles of Fruit and Vegetable Juices. B.A. Wetmore1, M.J. DeVito2, M. Xia3, B. Parks4, R. Huang5, K. Houck6, R.R. Tice7, R. Judson8, R.S. Thomas9, and M.E. Andersen1. 1NIEHS, Research Triangle Park, NC; 2NIH, Rockville, MD; 3The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and 4Toxicology, and Pathology Associates, Virginia Commonwealth University, Richmond, VA.

Poster Board Number ................. P160
#3018
Metagenomics Analyses of Phylogenetic and Functional Genomic Changes in Rat Gut Microbiota Induced by Green Tea Polyphenols. J. Wang1, L. Tong2, T.C. Glenn3, C.-L. Shen1, and J.-S. Wang4. 1Texas Tech University Health Science Center, Lubbock, TX; and 2University of Georgia, Athens, GA.
Abstract #

**#3019**

Poster Board Number ............................... P161

**#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. Maisanaba2, M. Jordá-Beneyto1, A.M. Cameán2, and A. Jos1. 1ITENE, Valencia, Spain; and 2University 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-Tristan1, H. Rivera-Castro1, R. Ortiz-Martinez1, A. Valdivia-Flores2, L. Medina-Esparza1, and C. Cruz-Vazquez. 1Instituto Tecnologico El Llano, Aguascalientes, Mexico; and 2University Autonoma de Aguascalientes, Aguascalientes, Mexico. Sponsor: G. Pallas-Guzman.

**#3022**

Poster Board Number ............................... P164

**#3023**

Poster Board Number ............................... P165

**#3024**

Poster Board Number ............................... P166
Inactivation of Pathogenic Bacteria on Media Containing Fruit Juices and Spices Using Radiant Catalytic Ionization. B.L. Benjamin1, A. Babeli, R. Hardval1, L. Mummer1, I. Kubbery1, L. Schwankel1, K. Patel1, R. Patel1, O. Afolabi1, D.E. Fulford2, C.W. Steele1, C.H. Sommer1, and W.I. Mackay. 1Eastern Regional Research Center USDA, Wyndmoor, PA; and 2Edinboro University of Pennsylvania, Edinboro, PA.

**#3025**

Poster Board Number ............................... P167
Twelve-Week Safety Assessment Study in Dogs with Propionibacterium Dry Cultured Premix. B.C. Sayers1, S. Beverly2, A. Lim2, and J. Roper1. 1Dupont Haskell Global Centers for Health, and Environmental Sciences, Newark, DE; and 2Dupont 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. Thomas1, Gokulan2, K. Williams1, C. Cerniglia1, S. Khare1, and S. Pineiro1. 1College of Veterinary Medicine/US Food and Drug Administration, Rockville, MD; and 2National Center of Toxicological Research, Jefferson, AR. Sponsor: M. Manjanatha.

**#3027**

Poster Board Number ............................... P169

**#3028**

Poster Board Number ............................... P170

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. Wong1, K. Luetitch1, K. Trivedi1, E. Guedi1, Y. Xiang1, A. Elamin1, E. Veljkovic2, A.W. Hoyes1, P. Leroy1, P. Vanscheeuwijk1, M. Peitsch1, and J. Hoeng1. 1Philip Morris International Research Laboratories Pte Ltd, Singapore, Singapore; 2Philip Morris International, Products S.A., Neuchatel, Switzerland; and 3Sphero Consulting, Rockville, MD.

**#3030**

Poster Board Number ............................... P172

**#3031**

Poster Board Number ............................... P173

**#3032**

Poster Board Number ............................... P174

**#3033**

Poster Board Number ............................... P175

**#3034**

Poster Board Number ............................... P176
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. Sierro1, F. Martin2, M. Talikka1, S. Ouaddi1, J. Thomas1, K. Baumer1, B. Phillips1, E. Veljkovic1, A.W. Hayes1,2, M.C. Peitsch1, J. Hoeng1, and N.V. Ivanov1. 1Philip Morris International Singapore, Singapore; 2Philip Morris Products S.A., Neuchatel, Switzerland; and 3Spherix Consulting, Rockville, MD.

Abstract #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. Iskandar1, S. Majeed1, L. Ortega Torres1, D. Kuehn1, S. John1, F. Martin1, Y. Xiang1, A. Sewer1, A. Sewer1, P. Leroy1, R. Dulize1, E. Guedj1, N.V. Ivanov1, C. Mathis1, W.A. Hoyen1, J. Hoeng1, and M.C. Peitsch1. 1PMI R&D, Neuchatel, Switzerland; and 3Spherix Consulting, Rockville, MD.

Abstract #3037

Poster Board Number ......................... P179


Abstract #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. Massarsky1, A.J. Bone1, G.L. Prasad1, and R.T. Di Giulio1. 1Duke University, Durham, NC; and 2R.J. Reynolds Tobacco Company, Winston-Salem, NC.

Abstract #3039

Poster Board Number ......................... P181

Combined Effects of Cigarette Smoke and SO2 on GM-CSF Release in Human Airway Smooth Muscle Cells. B.A. Rolls1, L.M. Hallberg1, M.A. Thompson1, Y.S. Prakash1, and B.T. Amereades1. 1Mayo Clinic, Rochester, MN; and 2University of Texas Medical Branch, Galveston, TX.

Abstract #3040

Poster Board Number ......................... P182

Can Ex Vivo Genotoxic Endpoints Complement Respiratory Tract Pathology Following 3 and 6 Week Cigarette Smoke Exposure? A. Dalrymple1, P. Ordoñez1, D. Thorne1, O. Camacho1, A. Bütten1, D. Dillon1, and C. Meredith1. 1British American Tobacco R&D Centre, Southampton, United Kingdom; 2Histovia GmbH, Overath, Germany; and 3Vivotecnia Research S.L., Parque Científico de Madrid, Madrid, Spain.

Abstract #3041

Poster Board Number ......................... P183

A Targeted Proteomic Comparison of Human-Induced Sputum from Smokers and Non-Smokers. L.E. Haswell1, O.M. Camacho1, W.R. Fields1, L. Cortes1, P. Croteau1, L. McIntosh1, F. Mohareb1, D. Chelsky1, G. Phillips1, and M.D. Gaca1. 1British American Tobacco, Southampton, United Kingdom; 2Caprion Proteomics, Montréal, QC, Canada; 3Cranfield University, Bedford, United Kingdom; and 4R 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. Moore1, S. Jordan1, D. Rodgers1, C. Gutteridge1, R. Armstrong1, K. Meecham1, G. Paul2, and D. Mitchell1. 1Envigo, Huntingdon, United Kingdom; and 2GlaxoSmithKline, Ware, United Kingdom.

Abstract #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. Sadler1, V. Mikheev1, J.G. Pounds1, R.A. Corley2, and A.T. Wright1. 1Battelle Memorial Institute, Columbus, OH; and 2Pacific Northwest National Laboratory, Richland, WA.

Abstract #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. Prasad1, R.K. Sajja2, and L. Cucullo2. 1Center for Blood Brain Barrier Research, Amarillo, TX; and 2Texas Tech University Health Sciences Center, Amarillo, TX.

Abstract #3045

Poster Board Number ......................... P187

N-3 Polyunsaturated Fatty Acids Protect Against Cigarette Smoke-Induced Vascular Dysfunction. E.F. Wiest1, M.T. Walsh1, M. Rothe1, W.H. Schunck1, and M.K. Walker1. 1Lipidomix GmbH, Berlin, Germany; 2Max-Delbrück Center for Molecular Medicine, Berlin, Germany; and 3University of New Mexico, Albuquerque, NM.

Abstract #3046

Poster Board Number ......................... P188

Volatile Organic Compound Emissions of Cigarette Smoke of 11 Different Cigarette Brands. C.G. Pauweels1,2, F.J. Van Schooten1, A.W. Boots1, A. Opperhuizen1,3, and R. Talhoutr. 1Maastricht University, Maastricht, Netherlands; 2National Institute for Public Health, and the Environment (RIVM), Bilthoven, Netherlands; and 3Netherlands Food, and Consumer Product Safety (NVWA), Utrecht, Netherlands.

Abstract #3047

Poster Board Number ......................... P189


Abstract #3048

Poster Board Number ......................... P190

Abstract #  #3049

Poster Board Number .......................... P201
Evaluation of CYP3A4 Inhibition, Induction and Hepatotoxicity Using DMSO-Treated Human Hepatoma HuH-7 Cells. Y. Liu1, T.J. Flynn1, M. Xioa1, and P.L. Wiesenfeld1. 1National Institutes of Health, Bethesda, MD; and 2US Food and Drug Administration, Laurel, MD.

#3050
Poster Board Number .......................... P202

#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. Yuan1, Q. Zhang2, J. Guo1, T. Zhang1, J. Li2, F. Carmichael2, A. White2, C. Westmoreland2, J. Zhao1, and S. Peng1. 1Academy of Military Medical Sciences, Beijing, China; 2Hammer Institute for Health Sciences, Research Triangle Park, NC; and 3The Unilever Safety, and Environmental Assurance Centre, Sharnbrook, Bedford, United Kingdom.

#3052
Poster Board Number .......................... P204

#3053
Poster Board Number .......................... P205

#3054
Poster Board Number .......................... P206
Mode of Action Differentiation and Elucidation with Metabolomics In Vitro. T. Ramirez2, A. Strigun1, W. Mellert1, H.G. Kamp1, T. Walk1, and B. van Ravenzwaay1. 1BASF SE, Ludwigshafen am Rhein, Germany; and 2Metanomics GmbH, Berlin, Germany.

#3055
Poster Board Number .......................... P207
Effect of Reactive Oxygen Species Quenchers on In Vitro Photosensitization Evaluation. A. Toyoda2, and H. Ikagaki2. 1POLA Chemical Industries, INC., Yokohama, Japan; and 2Yokohama National University, Yokohama, Japan.

#3056
Poster Board Number .......................... P208
Evaluation of Two Routinely Used Cell-Based Screening Assays for Neurotoxicity. A.H. Heussner1, I. Richter1,2, and D.R. Dietrich1. 1Cavtheron Institute, Nelson, New Zealand; and 2University of Konstanz, Konstanz, Germany.

Poster Board Number .......................... P209
Use of Metabolomics In Vitro to Estimate an Acceptable Daily Intake Ranking. W. Mellert1, T. Ramirez2, A. Strigun2, H.G. Kamp1, T. Walk1, and B. van Ravenzwaay2. 1BASF SE, Ludwigshafen am Rhein, Germany; and 2Metanomics GmbH, Berlin, Germany.

Poster Board Number .......................... P211
Comparison of Liver Cell Models to Identify Chemically Induced Cytotoxicity. R. Faris1, Y. Hong1, J. Liu1, R. Zuo1, F. Li2, M. Andes1, and C.J. Patten1. Corning Inc, Bedford, MA; and 2Corning Inc, Corning, NY. Sponsor: C. Crespi.

Poster Board Number .......................... P212
Assessment of an In Vitro Human Intestinal Epithelial Cell Model for Evaluation of Protein Cytotoxicity. C. Zimmermann1, B. Hurley1, A. Eaton1, and B. Delaney1. DuPont Pioneer, Johnston, IA; 2Harvard Medical School, Boston, MA; and 3Massachusetts General Hospital, Boston, MA.

Poster Board Number .......................... P213
DILI Prediction Connecting Organ Level Response to Cellular Mechanism. S. Dau1, O. Irrechukwu1, R. Kumar1, S. Krzyzewski1, V.R. Zuraswski1, J.K. McGeehan1, and K. Subramaniam2. 1Hepregen Corporation, Medford, MA; and 2Strand Life Sciences Pvt. Ltd, Bangalore, India.

Poster Board Number .......................... P214

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.

Poster Board Number .......................... P216
In Vitro Model Development for Safety Assessment of Acutely Ingested Proteins. S. Wezalis1, J. Yao1, J. Roper1, C. Zimmermann1, B. Delaney1, and L.K. Markell1. DuPont Haskell Global Centers, Newark, DE; and 2DuPont Pioneer, Johnston, IA.

Poster Board Number .......................... P217
Crosstalk Between Mitochondrial Function, the Epigenome and Gene Expression with Potential Implications to Environmental Health. B. Woschlicki1, J.H. Santos2, O. Lozoya1, I. Martinez2, D. Grenet1, T. Wolfang1, T. Wang1, and N. Chandel1. National Institute of Environmental Health Sciences (NIEHS), Research Triangle Park, NC; and 2Northwestern University Feinberg School of Medicine, Evanston, IL.
Abstract #3066  
**Poster Board Number** P218  
**Abstract** 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.

**Poster Board Number** P219  
**Abstract** ROS Generation Produced by HepG2 Cells Exposed to DON, 3-ADON and 15-ADON Individually and Combined.  

**Poster Board Number** P220  
**Abstract** Disruption of Cellular Circadian Rhythm by Neurotoxic Agents Can Be Restored with Antioxidants in Neural Cells In Vitro.  
M. Fang1, Y. Park1, H.-G. Kang1, S.-A. Juan2, and H. Zarbl1.  
1Animal & Plant Quarantine, An-Yang, Korea, Republic of; and 2School of Public Health, Rutgers, The State University of New Jersey, Piscataway, NJ. Sponsor: M. Fang.

**Poster Board Number** P221  
**Abstract** Use of a New Human Small Intestinal Tissue Model to Screen Drug-Induced Gastrointestinal Toxicity.  
S. Ayehunie1, M. Wagoner1, H. Barthlow1, C. Scott1, Z. Stevens2, T. Landry1, A. Armento1, M. Klausner1, and P. Hayden1.  
1AstraZeneca, Waltham, MA; and 2MatTek Corporation, Ashland, MA.

**Poster Board Number** P222  
**Abstract** Pre-Validation of In Vitro-In Vivo Assays for Vaginal Irritation.  
S. Ayehunie, T. Landry, P. Hayden, and M. Klausner. MatTek Corporation, Ashland, MA.

**Poster Board Number** P223  
**Abstract** Dose Response Studies Supporting In vitro-Based Safety Assessments for Chemicals Inducing Oxidative Stress.  
B. Huang1, S.M. Ross1, S. Rowley1, A. Efremenko2, S. Pendse1, L. Pluta1, P. Xue1, J. Pi2, P.L. Cormicheo3, A. White1, and R.A. Clewell1.  
1China Medical University, Shenyang, China; 2Fudan University, Shanghai, China; 3The Hamner Institutes for Health Sciences, Durham, NC; and 4Unilever, Colworth Science Park, United Kingdom.

**Poster Board Number** P224  
**Abstract** Neutral Red Cytotoxicity Assay As a Screening Method to Aid in the Design of Compounds with Lower Acute Toxicities.  
D.L. Nabb1, R.T. Mingoia1, J. Yao2, H.M. Peterson1, L.K. Mankel1, and X. Han1.  
1DuPont Haskell Global Centers for Health and Environmental Sciences, Newark, DE; and 2International Flavors, and Fragrances, Union Beach, NJ.

**Poster Board Number** P225  
**Abstract** Early Gene Expression Changes During Mouse Embryonic Stem Cell Differentiation and Effects of Cadmium Sulfate.  
X. Chen1, T. Han1, E. Fisher1, W. Harrouk1, M. Tassinari1, G. Merry3, D. Sloper1, J. Fuscoe1, D. Hansen2, and A. Inselman2.  
1US FDA/CDER, Silver Spring, MD; and 2US FDA/NCTR, Jefferson, AR.

**Poster Board Number** P226  
**Abstract** In Vitro Developmental Neurotoxicity Testing Models Using HiPSC-Derived Neural Stem Cells.  

**Poster Board Number**  
**Abstract** Withdrawn.
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<td>Prevalence and Incidence of Cataracts in a Population of Yucatan Miniswine After Induction of Type I Diabetes: A Model for Preventative or Therapeutic Cataract Therapies. A. Stricker-Krongrad1; C. Hanski1, A. Ingersoll2, M. Freeman3, S. Schlink4, L. Delaney5; J. Liu6, A. Tellez Cruz7, J. Wicks8, S. Rousselle9, and G. Bouchard10. 1Alizee Pathology, Thurmont, MD; and 2Sinclair Research Center, Auvxasse, MO.</td>
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<td>Therapeutic Effect of Acamprosate Calcium in a Rat Model of Tardive Dyskinesia. C.S. Godin7, S. Bachus8, G. Gesswein9, N. Moore10, and W. Kerns11. 1Brains-Online, South San Francisco, CA; 2George Mason University, Fairfax, VA; 3Smithers Avanza, Gaithersburg, MD; and 4Synchrotron, Inc., Waltham, MA.</td>
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Abstract #

#3098 Poster Board Number ......................... P303

#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*, B. Bregrath*, R. Love*, P. Franklin†, G. De Los Santos†, T. Rodgers†, T. Glaz‡, T. Beck†, K. Fukuzaki*, and R. Nagata*. *Shin Nippon Biomedical Laboratories, Ltd., Kagoshima, Japan; and †SNBL USA Ltd., Everett, WA.

#3100 Poster Board Number ......................... P305

#3101 Poster Board Number ......................... P306

#3102 Poster Board Number ......................... P307
Short-Term Carcinogenicity Study on C57BL/6-Tyr[X]-rasH2 (Albino-rasH2) Mice, a Novel Strain for In Vivo Tumor Imaging. T. Mizushima†, K. Urano*, R. Inoué*, M. Yasuda*, M. Goto†, T. Kagawa†, T. Kadono†, T. Kucilmur*, and S. Kizaka-Kondo*. *Central Institute for Experimental Animals (CIEA), Kawasaki, Kanagawa, Japan; and †Graduate School of Bioscience, and Biotechnology, Tokyo Institute of Technology, Yokohama, Kanagawa, Japan. Sponsor: K. Urano.

#3103 Poster Board Number ......................... P308

#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*, U. Wirmitzer*, and E. Hartmann*. ‡Bayer Pharma, Wuppertal, Germany; and ‡Covance Laboratories, Harrogate, United Kingdom. Sponsor: A. Jackson.

#3105 Poster Board Number ......................... P310
Gastrointestinal Motility: Motility and Motor Migrating Complex (MMC) Evaluations in Rats, Dogs and Non-Human Primates. R. Kubaszyk*, S. Audthir†, H-M. Tang*, A. Asch†, M. Pouliot*, S. ABTOUT*, K. Bujoli†, R. Forster†, E. Troncy†, and M. Pugsley*. ‡CToxLAB North America, Laval, QC, Canada; and ‡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. Piatovinska, and M. Brittain. Battelle, Columbus, OH.
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. Atlanla-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. Sharp1, M. Doll2, T. Dupre3, P. Shah3, S. Marimuthu3, D. Slow3, J. Megyesi1, G. Arte1, L. Beverley3, and L. Siskind4. 1University of Arkansas for Medical Sciences, Little Rock, AR; and 4University 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

#3118
Poster Board Number ........................................ P326
A Multiplexed Approach to Predict Kidney Toxicity In Vitro Using Heme Oxygenase-1 and Quantitative Phenotypic Readouts. S. Ramm1, M. Adler2, and V.S. Vaidya2,1. Brigham, and Women’s Hospital, Boston, MA; and 1Harvard Medical School, Boston, MA.

#3119
Poster Board Number ........................................ P327
Ex Vivo Induction of Polyoxymix-Induced Nephrotoxicity in a 3D Microphysiological Model of a Human Proximal Tubule. E.J. Weber1, M. Vaara1, T. Vaara1, T. Neumann1. 1Kidney Research Institute, Seattle, WA; ‘Northern Antibiotics Ltd., Helsinki, Finland; ‘Nortis Inc., Seattle, WA; and 4University of Washington, Seattle, WA.

#3120
Poster Board Number ........................................ P328
Compensatory Hypertrophy and the Transport of Inorganic Mercury in Isolated Perfused Proximal Tubules. C. Bridges1, D.W. Barfuss1, L. Joshee1, and R.K. Zalups2. 1Georgia State University, Atlanta, GA; and 2Mercer University School of Medicine, Macon, GA.

#3121
Poster Board Number ........................................ P329
Evaluation of Compound Toxicity in Characterized Human Renal Proximal Tubule Epithelial Cells. S.L. NICATS,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.

#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. Pavkovic1, A.S. Chua1, V. Bijol1, O. Nicoara1, M. Cardenas-Gonzalez2, K. Ramachandran3, J. Himmelfarb4, S.S. Waikar4, and V.S. Vaidya2,1. Brigham, and Women’s Hospital, Boston, MA; 1Harvard Medical School, Boston, MA; and 4University of Washington, Seattle, WA.

#3124
Poster Board Number ........................................ P332
Inhibition of Cyclosporine A (CsA)-Induced Renal Dysfunction and Fibrosis by Chrysin and Apigenin. R. Nagaolly, 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. Luo1,2, P. Luo1, L. Miao1, and L. Car1. 1The Second Hospital of Jilin University, Changchun, China; and 2University 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. Valenovic, J.G. Ball, R. Murphy, A.B. Lamyithong, and A. Schnelle. Marshall University School of Medicine, Huntington, WV.

#3127
Poster Board Number ........................................ P335

#3128
Poster Board Number ........................................ P336
Mechanistic Role of Phospholipase D4 in Regulating Kidney Fibrosis. P. Trivedi1, R. Kalyan1, C. Huber2, D. Nemazee2, and V. Vaidya1. Brigham, and Women’s Hospital, Harvard Medical School, Boston, MA; and 1The Scripps Research Institute, La Jolla, CA.

#3129
Poster Board Number ........................................ P337

#3130
Poster Board Number ........................................ P338
Urinary Micrornas Response in Adults Exposed Chronically to Fluoride in Drinking Water. S. Solis-Angelés1, M. d.C. Gonzalez-Horta1, M.I. Jimenez-Córdova1, M.d.C. Cárdenas-Gonzalez2, E.E. Villarreal-Vega1, G. Aguilar-Madrid1, L.M. Del Razo1, and O.C. Barbier1. 1Cinvestav-IPN, Mexico, DF, Mexico; 2Harvard Medical School, Boston, MA; and 3University 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

#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, M. Tsunoda, C. Sugaya, H. Hano, and H. Yanagisawa. Kitasato University School of Medicine, Kanagawa, Japan; and "The Jikei University School of Medicine, Tokyo, Japan.

#3134 Poster Board Number ....................... P342
Detection of Kidney Injury in Mexican Children Exposed to Environmental Toxins. M. Cardenas Gonzalez, I. Perez Maldonado, O. Barbier, O. Gaspar, M. Medeiros, V. Sbabelletti, and V. Vaidya. Brigham, and Women's Hospital, Boston, MA; CIAYF, San Luis Potosi, Mexico; CIATEJ, Nuevo Leon, Mexico; "CINVESTAV-IPN, Mexico DF, Mexico; "Harvard Medical School, Boston, MA; and "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

#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, J. Lucero, J.D. McDonald, and A. Lund. "Lovelace Respiratory Research Institute, Albuquerque, NM; and "University of North Texas, Denton, TX.

#3138 Poster Board Number ....................... P346

#3139 Poster Board Number ....................... P347
Effect of Cytochrome P450 Isozyme Inhibitors on 1,2,3-Trichloro-5-Nitrobenzene-Induced Nephrotoxicity in Vitro. J. Tate, C. Tyree, D. Pope, D. Anestis, and G. Rankin. Marshall University, Huntington, WV; and "West Virginia Wesleyan College, Buckhannon, WV.

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

#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. AbdulHameed1, D.L. Ippolito1, J.D. Stallings2, and A. Wallqvist1. "Department of Defense Biotechnology High Performance Computing Software Applications Institute, Frederick, MD; and "US Army Center for Environmental Health Research, Fort Detrick, MD.

Abstract #

#3141 Poster Board Number ....................... P401
Differential Expression of Cytochrome P450 Enzymes in Placenta, Fetal Liver, and Adult Liver. J.F. Robinson1, E.G. Hamilton1, A.R. Zota1, J.-S. Park1, E. Parry1, S.J. Fisher1, and T.J. Woodruff1. "California Environmental Protection Agency, Berkeley, CA; "George Washington University, Washington, DC; "Public Health Institute, Oakland, CA; and "University of California, San Francisco, San Francisco, CA.

#3142 Poster Board Number ....................... P402
Cytochrome P450 1B1: A Key Regulator of the Cellular Oxidative State. M. Sheiban1, C. Marcus4, C.R. Jefcoat2, and C.M. Sorenson1. "Oregon State University, Corvallis, OR; and "University of Wisconsin-Madison, Madison, WI.

#3143 Poster Board Number ....................... P403
Role of CytochromeP450 (CYP1A) in Hyperoxic Lung Injury: Analysis of the Transcriptome and the Proteome. K. Lingappan, S. Maity, J. Weiwu, L. Wang, X. Courouci, C. Gao, and B. Moomty. 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, P.F. 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 ADMET Laboratories LLC, Columbia, MD.

#3146 Poster Board Number ....................... P406
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 Winkle¹, P. Edwards², L.L. H., H. Wu¹, N. Kovalchuk¹, Q.-Y. Zhang¹, and X. Ding¹, 1SUNY Polytechnic Institute, Albany, NY; 2UC Davis, Davis, CA; and 3Wadsworth Center, New York State Dept of Health, Albany, NY.

Abstract #  #3148 Poster Board Number: P408 Stabilized and Enhanced CYP450 Enzyme Activity in Cultured Human Primary Hepatocytes is Conferred by ReproRHP Medium. P.E. Cizdziel¹, M. Inamura¹, R. Vardaro¹, B. Annand¹, R. Akahira¹, Z.Y.-C. Lin², K. Tamura¹, T. Watanabe¹, and T. Kiyono¹. 1National Cancer Research Institute, Tokyo, Japan; 2ReproCELL Inc., Kohokuku, Yokohama, Japan; and 3Stemgent Inc., Boston, MA.

Abstract #  #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. Almeldin²,³, A.C. Rondelli², M. Maguire¹, M.C. Larsen¹, and C.R. Jefcoate¹. 1University of Wisconsin-Madison, Madison, WI; 2Physiology Department, Tanta Faculty of Medicine, Tanta, Egypt; and 3School of Medicine, and Public Health, University of Wisconsin-Madison, Madison, WI.

Abstract #  #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.J. Rider. Division of the National Toxicology Program, Research Triangle Park, NC.


Abstract #  #3152 Poster Board Number: P412 Attenuation of Hyperoxic Lung Injury in Cyp1b1⁻/⁻ Mice. A.C. Veith¹,², B. Bou Aram¹, W. Jiang¹, L. Wang¹, C. Chu¹, X.I. Courouci¹, and B. Moorthy¹,². 1Bayor College of Medicine, Houston, TX; and 2Baylor College of Medicine & Texas Children’s Hospital, Houston, TX.

Abstract #  #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. Streissn¹, R. Paten¹, R.J. Clark¹, T. Ho¹, S.K. Trisdale¹, Y. Fang¹, and J.G. Zhang¹. ‘Corning Incorporated, Corning, NY; and ‘Corning Life Sciences, Woburn, MA. Sponsor: C. Crespi.

Abstract #  #3154 Poster Board Number: P414 Oral Prenatal Administration of the Cytochrome P450 (CYP)1A1/1B Inducer, Beta-Naphthoflavone (BNF), Attenuates Hyperoxic Lung Injury in Newborn Mice: Implications for Bronchopulmonary Dysplasia (BPD). X.I. Courouci¹, Y.W. Liang¹, K. Lingappan¹, A. Veith¹, and B. Moorthy¹. Baylor College of Medicine, Houston, TX.

Abstract #  #3155 Poster Board Number: P415 The Impact of Hepatic Mitochondrial Cyp2e1 Localization in Butadiene-Exposed Mice. J. Hartman¹, G.P. Miller¹, A.A. Caro¹, W.C. Spear¹, S. Miller¹, L.M. Hallberg¹, B.T. Amended¹, and G. Boysen¹. 1Hendrix College, Little Rock, AR; 2University of Arkansas for Medical Sciences, Little Rock, AR; 3University of Texas for Medical Branch, Galveston, TX; and 4University of Texas Medical Branch, Galveston, TX.

Abstract #  #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.

Abstract #  #3157 Poster Board Number: P417 Using Budding Yeast to Assess P450-Dependent Toxicity of Breast Cancer-Associated Chemicals. R.S. Zeidman¹, R. Ma¹, R. Ru def², J. Ackerman¹, A. Loguinov¹, M. Tagmount¹, C. Vulpe²,³, and M. Fasulo¹. 1Silent Spring Institute, Newton, MA; 2State University of New York Polytechnic Institute, Albany, NY; 3University of California - Berkeley, Berkeley, CA; and 4University of Florida, Gainesville, FL.

Abstract #  #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. Maturi, W. Jiang, L. Wang, C. Chu, and R. Moorthy. Baylor College of Medicine, Houston, TX.

Abstract #  #3159 Poster Board Number: P419 CYP1 Substrate Docking and Ligand Access Channels. J.V. Goldstone¹, P. Urban¹, J.Y. Wilson², D. Alsw¹, D. Pompon¹, and J.J. Stegeman¹. 1Laboratoire Ingénierie des Systèmes Biologiques et des Procédés UMR INSA/CNRS, Toulouse, France; 2McMaster University, Hamilton, ON, Canada; and 3Woods Hole Oceanographic Institution, Woods Hole, MA.

Abstract #  #3160 Poster Board Number: P420 Modulation of Pulmonary Drug Metabolism Enzymes in Cyp1a1/Cyp1a2/Cyp1b1 Triple Knockout Mice. D. Crisco³¹, A. Veith¹, W. Jiang², L. Wang¹, and B. Moorthy¹. 1Baylor College of Medicine, Houston, TX; and 2Baylor College of Medicine, and Texas Children’s Hospital, Houston, TX.

Abstract #  #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. Maden¹, C. Loehr¹, H. You¹, L. Siddens¹, S. Kreuger¹, F. Gonzalez³, K. Waters³, and D. Williams³. 1National Cancer Institute, Bethesda, MD; 2Oregon State University, Corvallis, OR; and 3Pacific Northwest National Laboratory, Richland, WA.

Abstract #  #3162 Poster Board Number: P422 Fluoranthene (FLA) Is Cardiotoxic and Induces Cytochrome P450 Type 1A1 (CYP1A1) mRNA Expression in Xenopus laevis Embryos. M. Sestak¹, C. Lamoureux¹, J. Hall¹, J. Coburn¹, and S.L. Whittemore. Keene State College, Keene, NH.

Abstract #  #3163 Poster Board Number: P423 Cytochrome P450 2J2 and Its Potential Protective Role in ROS-Induced Cardiotoxicity. E.A. Evangelista, and R.A. Totoh. University of Washington, Seattle, WA.
Fluorouracil Sensitizes Hepatocytes to Medical Sciences, Little Rock, AR.

I. Zendejas, K. Behrns, and River University of Technology, Okuku, Nigeria; Florida, Gainesville, FL. Sponsor: Friedt2,

Hydrocarbons Found in Crude Oil in the Cyp1b1 by Alkylated Polycyclic Aromatic Transcriptional Upregulation of Cyp1a1 and Drug-Induced Liver Injury in Humans Based on the US FDA-Approved Drugs Labeling. W. Tong

Establishment of Murine Model for Neurotoxicity of 1-Bromopropane: Role of I. 1. US Food and Drug Administration.

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I. Zendejas, K. Behrns, and River University of Technology, Okuku, Nigeria; Florida, Gainesville, FL. Sponsor: Friedt2,
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.

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. Drela1, A. de Conti2, S. Furuya3, I. Rusyn1, and I.P. Pogribny1. 1National Center for Toxicological Research, Jefferson, AR; and 2Texas 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. Chappell1,2, J. Simon1, B. Peck3, K. Eklund3, T. Furey1, and I. Rusyn1. 1Texas A&M University, College Station, TX; and 2University 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

#3193 Poster Board Number: P505
Cytoxin DNA-Methylation Response to Aflatoxin B1, Exposure in Human Liver HepaRG Cells. V. Tryndyak1, S. Burnett2, F.A. Beland3, and I.P. Pogribny1. 1US FDA National Center for Toxicological Research, Jefferson, AR; and 2University 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 S-Azacytidine. A.K. Dasmahapatra1,2, and I.A. Khan1,2. 1National Center for Natural Product Research, University, MS; and 2University of Mississippi, University, MS.

#3195 Poster Board Number: P507
### #3196
**Poster Board Number................................. P508**  
Effects of Developmental Lead Exposure on the Hippocampal Methyleyle: Influences of Sex and Level of Exposure. J. Schneider1, G. Voisin2, F. Lefebvre3, and D. Anderson4. 1Alerterics, Montreal, QC, Canada; and 2Thomas Jefferson University, Philadelphia, PA.

### #3197
**Poster Board Number................................. P509**  

### #3198
**Poster Board Number................................. P510**  
Chronic Exposure to Trichloroethylene Increases Plasticity of ifng Expression and DNA Methylation Variance in CD4+ T Cells. K. Gilbert1, S. Blossom2, S. Erickson3, B. Reisfeld4, T. Zurneder1, B. Broadfoot5, K. West6, S. Bai7, and C. Cooney8. 1Central Arkansas Veterans Healthcare System, Little Rock, AR; 2Colorado State University, Fort Collins, CO; and 3University of Arkansas for Medical Sciences, Little Rock, AR.

### #3199
**Poster Board Number................................. P511**  

### #3200
**Poster Board Number................................. P512**  
DNA Methylation and Transcriptional Changes in Smokers During Monocyte Differentiation. N.A. Engler1, M. Campbell, C. Crowl, G. Pittman, D. Porter, and D.A. Bell. NEHS, Research Triangle Park, NC.

### #3201
**Poster Board Number................................. P513**  
Formaldehyde Facilitates Cell Transformation by Compromising Chromatin Assembly. D. Chen1, H. Li2, L. Farg1, J. Liu3, K. Lu1, and C. Jin1. 1NYU School of Medicine, Tuxedo, NY; and 2SUNY Downstate Medical Center, New York, NY; and 3University of Georgia, Athens, GA.

### #3202
**Poster Board Number................................. P514**  
Methanethiol 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. Kochmanski1, M. Savidge2, L. Marchlewicz3, C. Faulk4, and D.C. Dolinoy5. 1University of Michigan, Ann Arbor, MI; and 2University of Minnesota Medical School Duluth campus, Duluth, MN.

### #3204
**Poster Board Number................................. P516**  
Integrative Analysis of Epigenetics and Metabolomics Using the ELEMENT Cohort. J.M. Goodrich1, E. Hector2, L. Tang3, P.X. Song4, D.C. Dolinoy5, E.H. Marchlewicz6, A. Mercado-Garcia1, B. Sanchez1, H. Hu1, M.M. Tellez-Rojo1, and K.E. Peterson2. 1Center for Research Evaluation, Research, and Surveys, National Institute of Public Health, Cuernavaca, Mexico; 2University of Michigan School of Public Health, Ann Arbor, MI; and 3University of Toronto, Toronto, ON, Canada.

### #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. Özdem1, N. Turgut Kara2, Ö.U. Sezerman1; I.M. Durasi3, T. Chen4, J.K. Chipman5, and A. Mailly6. 1Acibadem University, Istanbul, Turkey; 2Faculty of Engineering, and Natural Sciences, Sabanc University, Istanbul, Turkey; 3Faculty of Pharmacy, Istanbul University, Istanbul, Turkey; 4Faculty of Science, Istanbul University, Istanbul, Turkey; 5School of Biosciences, University of Birmingham, Birmingham, United Kingdom; and 6School of Public Health, Soochow University, Suzhou, China; and 3University 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. Li1, W. Fan1, and Y. Ji1. 1Hope Industry & Trade Co., Ltd, Tianjin, China; and 2Soochow 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 B1 Exposure. S. Burnett1, V. Tryndyak1, F.A. Beland1, and I.P. Pogribny1. 1US FDA National Center for Toxicological Research, Jefferson, AR; and 2University of Arkansas, Fayetteville, AR.

### #3209
**Poster Board Number................................. P521**  
The DNA Methyleyle of Chronic Dioxurubicin Exposure In Vivo. S. K.Nordgren1, M. Hampton1, and K.B. Wallace1. 1University of Minnesota Duluth, Duluth, MN; and 2University of Minnesota Medical School Duluth campus, Duluth, MN.

### #3210
**Poster Board Number................................. P522**  
Stable Transcriptional Alterations by Nickel Through Epigenetic Reprogramming. S. Cuddapah1, C. Jose, and L. Jagannathan. New York University School of Medicine, Tuxedo, NY.

### #3211
**Poster Board Number................................. P523**  

### #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. Zaman1, Z. Perveen1, R. Xiao1, and A. Penn1. 1College of Physicians, and Surgeons, Columbia University Medical Center, New York, NY; and 2Louisiana State University, Baton Rouge, LA.
#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. Rycklik, J.C. Pulzinski, 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. McCullough1, E.C. Bowers1, D.M. Onn1, D.S. Morgan2, I.A. Dailey2, R.N. Hines2, R.B. Devlin2, and D. Diaz-Sanchez1. 1University of North Carolina, Chapel Hill, NC; and 2US 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. Frey1, K. Henderson1, K. Munny1, C. Gut1, J. Reboulet1, M. Grimm2, and C. Mauzy1. 1Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; 2CAMRIS International, Wright-Patterson Air Force Base, OH; 3Henry M. Jackson Foundation, Wright-Patterson Air Force Base, OH; and 4Naval 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. Kim1, N. Chatterjee2, J. Yang1, M.-S. Park1, M. Ha1, H.-K. Cheong3, and J. Choi1. 1Department of Preventive Medicine, Dankook University, Cheonan, Korea, Republic of; 2Sungkyunkwan University, Suwon, Korea, Republic of; 3Taean Institute of Environmental Health Center, Taean, Korea, Republic of; and 4University 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. Zhang1, T. Kluz2, L. Gesumaria1, M. Matsui1, M. Costa1, and H. Sun1. 1Estee Lauder Companies, Inc, New York City, NY; and 2New 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-Garza1, L. Reynaga-Orellana1, A. Dávalos-Pérez1, and A. Albores1. 1CINVESTAV, México DF, Mexico; and 2Universidad de Guanajuato Campus León, León, Mexico.

#3220 Poster Board Number ......................... P532
Epiogenetic Modifications Are Inhibitive of the Magnitude and Duration of Ozone-Responsive Gene Expression. E. Bowers1, D. Onn1, D. Morgan1, L. Daily1, D. Diaz-Sanchez2, and S. McCullough2. 1UNCC Chapel Hill, Chapel Hill, NC; and 2US EPA, Chapel Hill, NC.

Abstract #

Wednesday Afternoon, March 16
1:30 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Reproductive Toxicology

Chairperson(s): James Lamb, Exponent, Alexandria, VA; and John Wise, University of Louisville, Louisville, KY.

#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
Hydrgel Based 3-Dimensional (3D) System for Toxicity and High-Throughput (HTP) Analysis for Cultured Murine Ovarian Follicles. H. Zhou, M.A. Mailk, A. Arab, M.T. Hill, and A. Shikanov. University of Michigan, Ann Arbor, MI.

#3223 Poster Board Number ......................... P535

#3224 Poster Board Number ......................... P536

#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 Organochlorine Pesticides. V. Tyagi, B.D. Banerjee, T. Sharma, R.S. Ahmed, and K. Gulera. University College of Medical Sciences, and GTB Hospital, Delhi, India.

#3228 Poster Board Number ......................... P540
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<th>Poster Board Number</th>
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### Abstract #3229

**Poster Board Number**: P541

**Title**: An Environmentally Relevant Dose of Bisphenol A Decreases Gap Junction Intercellular Communication but Does Not Increase Apoptosis Levels in Cumulus Cells.


**Institutions**: 1Cinvestav-IPN, México, DF, Mexico; and 2Universidad Nacional Autónoma de México, México, DF, Mexico.

### Abstract #3230

**Poster Board Number**: P542

**Title**: Bisphenol A Alters Oxidative Stress-Related Factors in the Mouse Ovary.

**Authors**: S. Patel, and J.A. Flaws.

**Institutions**: 1The University of Illinois, Urbana, IL.

### Abstract #3231

**Poster Board Number**: P543

**Title**: Aberrant Uterine SIX1 Expression May Promote Uterine Adenocarcinoma Following Neonatal Xenoestrogen Exposure.

**Authors**: A.A. Suen, W.N. Jefferson, E. Padilla-Banks, V.L. Bae-Jump, and C.J. Williams.

**Institutions**: 1National Institute of Environmental Health Sciences, Durham, NC; and 2UNC Chapel Hill, Chapel Hill, NC.

### Abstract #3232

**Poster Board Number**: P544

**Title**: Differential Regulation of Human Placental Transporters During Hypoxia.

**Authors**: L. Gorczyca.

**Institutions**: Rutgers University, Piscataway, NJ.

### Abstract #3233

**Poster Board Number**: P545

**Title**: Cholesterol Depletion by Pravastatin Inhibits the Fetoprotective Activity of the Placental Efflux Transporter BCRP.

**Authors**: J.T. Szilagyi, K.M. Bircsak, A.M. Vetrano, J.D. Laskin, and L.M. Aleksunes.

**Institutions**: 1Robert Wood Johnson Medical School, New Brunswick, NJ; and 2Rutgers University, Piscataway, NJ.

### Abstract #3234

**Poster Board Number**: P546

**Title**: Identification of ABCB1 Promoter Haplotypes and Their Effects on Placental P-gp Expression.

**Authors**: J.T. Speidel, M. Xu, and S.Z. Abdel-Rahman.

**Institutions**: University of Texas Medical School, Galveston, TX.

### Abstract #3235

**Poster Board Number**: P547

**Title**: Intercellular Regulation of the BCRP/ABCG2 Transporter in Human Term Placentas.

**Authors**: R.M. Bircsak, N. Memon, B.L. Weibergert, A.M. Vetrano, and L.M. Aleksunes.

**Institutions**: 1Hofstra North Shore-LIJ School of Medicine, New Hyde Park, NY; 2Rutgers University, New Brunswick, NJ; and 3Rutgers University, Piscataway, NJ.

### Abstract #3236

**Poster Board Number**: P548

**Title**: Gene Expression Profiling of the Effects BDE-47 on Human Primary Cytotrophoblasts.


**Institutions**: University of California, San Francisco, San Francisco, CA.

### Abstract #3237

**Poster Board Number**: P549

**Title**: In Utero Diesel Exhaust Exposure Induces Altered Placental Vascularization, Placental Nanoparticles Transfer and Intergenerational Effects.


**Institutions**: 1Centre for Sustainability, Environment, and Health, National Institute for Public Health, and the Environment, Bilthoven, Netherlands; 2INRA, Jouy-en-Josas, France; 3Inserm, and Univ. Grenoble Alpes, Grenoble, France; 4Institute of Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands; and 5PremUp Foundation, Paris, France.

### Abstract #3238

**Poster Board Number**: P550

**Title**: In Vivo Microvascular Implications of Nanoparticles in TiO2 Inhalation Throughout Estrous and During Pregnancy.


**Institutions**: Virginia University, Morgantown, WV.

### Abstract #3239

**Poster Board Number**: P551

**Title**: Assessing Systemic Toxicity and Therapeutic Efficacy of Atosiban and Nafarelin in a Rabbit Model of Endometriosis.

**Authors**: R. Rajoria, J. Leong, C. Smith, and V. Naageshwaran.


### Abstract #3240

**Poster Board Number**: P552

**Title**: Serum from Pregnant Women Induces Xenobiotic Metabolizing Enzymes and Transporters in Cultured Human Intestinal Cells.


**Institutions**: Robert Wood Johnson Medical School, New Brunswick, NJ; and Rutgers University, Piscataway, NJ.

### Abstract #3241

**Poster Board Number**: P553

**Title**: Body Burden and Hepatic Cyp Expression in Rats Following Low Dose Drinking Water Exposure to a VOC Mixture During Pregnancy and Adolescence.

**Authors**: A.J. Pilgo, D.M. Chambers, E.M. Quist, B.C. Blount, and S.E. Fenton.

**Institutions**: Centers for Disease Control, and Prevention, Atlanta, GA; 2NCSU, Raleigh, NC; and 3NIEHS, Research Triangle Park, NC.

### Abstract #3242

**Poster Board Number**: P554

**Title**: Incorporation of Measures for Monitoring an Assessment of the Female Reproductive System in a 52-Week Toxicity Study in the Minipig.


**Institutions**: 1CiToxLAB Denmark, Lille Skjendved, Denmark; 2CIToxLAB France, Ballerup, Denmark; and 3CIToxLAB Denmark, Westrup Vet. Consulting, Gentofte, Denmark.

### Abstract #3243

**Poster Board Number**: P555

**Title**: A Qualification Intravenous Infusion Study in Juvenile Sprague-Dawley Rats.

**Authors**: R. Tavcar, C. Gordon, A.S. Galica, M.S. Maghezzi, R. Forster, and S. Authier.

**Institutions**: 1CIToxLAB France, Evreux, France; and 2CIToxLAB North America, Laval, QC, Canada.

### Abstract #3244

**Poster Board Number**: P556

**Title**: 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.

**Authors**: J.O. Sangodele, and A.C. Akinmoladun.

**Institutions**: Federal University of Technology Akure, Akure, Nigeria.
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<td>#3245</td>
<td>Poster Board Number .......... P557</td>
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<td>Light Crude Oil-Induced Alteration in Testicular Apoptosis, Stress Proteins and Steroidogenic Acute Regulatory Protein in Wistar Rats. A.P. Ebokaife. Federal University Ndufu-Aliko Ikwo, Abakaliki, Nigeria.</td>
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<td>#3246</td>
<td>Poster Board Number .......... P558</td>
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<td>Cytp1b1 Is Required for Transplacental Polycyclic Aromatic Hydrocarbon Dibenzo(def,p)chrysene-Induced Testicular Damage. E. Maseden, T. Herper, L. Shorey, J. Lim, C. Loeher, D. Williams, and U. Luderer. Oregon State University, Corvallis, OR; and ‘University of California Irvine, Irvine, CA.</td>
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<td>A Novel In Vitro Spermatogenesis Model Demonstrates Reproductive Toxicity of Flame Retardants. A.N. Steves, D. Clarkson-Townsend, J.M. Bradner, W.M. Caudle, and C.A. Easley. ‘Emory University Rollins School of Public Health, Atlanta, GA; and ‘Emory University School of Medicine, Atlanta, GA.</td>
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<td>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.</td>
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<td>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.</td>
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<td>#3253</td>
<td>Poster Board Number .......... P605</td>
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<td>Effects of Perfluorinated Compounds on Lipid Metabolism During In Vitro Spermatogenesis. D. Clarkson-Townsend, A.N. Steves, J.M. Bradner, W.M. Caudle, and C.A. Easley. Emory University Rollins School of Public Health, Atlanta, GA; and Emory University School of Medicine, Atlanta, GA.</td>
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Abstract #

#3262 Poster Board Number: P614


#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. Yoshida1, N. Hozumi1, Y. Fueta2, S. Ueno2, and Y. Sekino2. 1National Institute of Health Sciences, Tokyo, Japan; 2Toyohashi University of Technology, Toyohashi, Japan; and 3University 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, Y. Sekino, S. Yoshida1, and S. Ueno2. 1National Institute of Health Sciences, Tokyo, Japan; 2Toyohashi University of Technology, Toyohashi, Japan; and 3University of Occupational, and Environmental Health, Kitakyushu, Japan.

#3265 Poster Board Number: P617

NTE Protein and Encoding Gene in Neurodevelopment and Neurodevelopmental Toxicity. M.A. Sogorb1, D. Parnies1, J. Estevez1, E. Del Rio1, E. Fuster2, C. Estevan2, and E. Vilanova2. 1Center for Alternatives to Animal Testing (CAAT) at Johns Hopkins Bloomberg, Baltimore, MD; 2European Chemical Agency, Biocide Unit, European Commission, Helsinki, Finland; and 3University Miguel Hernandez of Elche, Elche, Spain.

#3266 Poster Board Number: P618


#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. Hattori1,2, T. Takeda2, Y. Ishii2, and H. Yamada2. 1Japan Society for the Promotion of Science, Research Fellowship for Doctoral Course Students, Tokyo, Japan; and 2Kyuushu 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. Xiu. University of Cincinnati, Cincinnati, OH.

#3269 Poster Board Number: P621

Neonatal and Juvenile Eyes Develo Juvent in Sprague-Dawley Rats: A Histomorphological Study. R. Forster1, V. Vrolyk1, A. Apreutese1, C. Gordon1, A. Graham1, B. Palate1, and M. Benoît-Biancomano1. 1CIToxLAB France, Evreux cedex, France; 2CIToxLAB North America, Laval, QC, Canada; and 3Université de Montréal, Sainte Hyacinthe, QC, Canada.

#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/NIH Research Triangle Park, NC.

#3272 Poster Board Number: P624

RNA-Seq Sequencing Reveals Differential Expression and Enrichment of Human Placental Xenobiotic Transporters Across Gestation. A. Estevez1, X. Wen1, K. Bircsak1, B. Wang1, J. Landis1, X. Tao2, N. Treff3, T. Rosen4, and L.M. Aleskunes1. 1Foundation for Embryonic Competence, Basking Ridge, NJ; 2Rutgers University, New Brunswick, NJ; 3Rutgers University, Piscataway, NJ; and 4University 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. Roberts1, S. Waidyanatha2, B.L. Fletcher3, M.A. Silinski3, T.R. Fenell4, H.C. Canny5, V. Godfrey Robinson5, and C.R. Blustone1. Division of the National Toxicology Program, Research Triangle Park, NC; and 2RTI International, Research Triangle Park, NC.

#3274 Poster Board Number: P626


#3275 Poster Board Number: P627


#3276 Poster Board Number: P628


#3277 Poster Board Number: P629

NHP Infant ECG and Echocardiography. M.A. Bailey1, S. Kosaka2, M. Dabadi2, L. Hagen2, T. Burbacher1, and T. Beck2. 1University of Massachusetts, Amherst, MA; and 2WIL Research, Seattle, WA. Sponsor: E. Fausman.
#3279
Poster Board Number ......................... P631
Role of Ethanol in Enhancing Fluconazole-Related Teratogenic Effects on In Vitro Post-Implantation Rat Embryo Development. F. Di Renzo1, F. Metrucu1, M. Battistoni2, A. Moretto1, and E. Menegola2. 1Luigi Sacco Hospital, Milan, Italy; and 2University of Milano, Milan, Italy.

#3280
Poster Board Number ......................... P632
Effects of a Binary Mixture of Azole Fungicides on Post-Implantation Rat Embryo Developed In Vitro. F. Metrucu1, F. Di Renzo1, M. Battistoni2, A. Moretto1, and E. Menegola2. Luigi Sacco Hospital, Milan, Italy; and 2University of Milano, Milan, Italy.

Wednesday Afternoon, March 16
1:15 PM to 4:30 PM
CC Exhibit Hall

Poster Session: Developmental Toxicology (Non-Rodent)

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

#3283
Poster Board Number ......................... P635

#3284
Poster Board Number ......................... P636
Transgenerational Mitochondrial Toxicity of Benzo[a]pyrene in Danio rerio. J.S. Koza1, N. Jayasundara1, C.D. Lindberg1, A. Massarsky1, A.N. Oliveri1, E.D. Levin1, J.N. Meyer1, and R.T. Di Giulio1. 1Duke University, Durham, NC; and 2Duke 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. Tangoey. Oregon State University, Corvallis, OR.

#3286
Poster Board Number ......................... P638
Harm-Reduction Tobacco Products Interfere with the Differentiation of Craniofacial Bone. N.R. Sparks1, M. Bondesson1, and N.I. zur Nieden1. 1University of California Riverside, Riverside, CA; and 2University 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.

Poster Board Number ......................... P640

Poster Board Number ......................... P641

Poster Board Number ......................... P642

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.

Poster Board Number ......................... P644
Butyl Paraben Affects Pancreatic Development in Zebrafish (Danio rerio) Embryos. S.E. Brown1, K.E. Sant1, L. Zhao1, and A. Timme-Laragy1. 1University of Massachusetts Amherst, Amherst, MA; and 2University of Tennessee, Knoxville, TN.

Poster Board Number ......................... P645
Role of Nrf1 Paralogs in Regulating the Transcriptional Response to Phthalates in Zebrafish (Danio rerio). N. Tran1, L.M. Williams2, and A.R. Timme-Laragy1. 1Bates College, Lewiston, ME; and 2University of Massachusetts Amherst, Amherst, MA.

Poster Board Number ......................... P646
Mono-2-Ethylhexyl Phthalate (MEHP) Alters Embryonic Growth and Pancreatic Organogenesis in Zebrafish. H.M. Jacobs1, K.E. Sant1, L.M. Williams2, and A.R. Timme-Laragy1. 1Bates College, Lewiston, ME; and 2University of Massachusetts Amherst, Amherst, MA.

Poster Board Number ......................... P647

Poster Board Number ......................... P648
Sublethal Effects of Amoxicillin on the Development of Zebrafish (Danio rerio). G.A. Oliveira1, L. Brito1, R. Oliveira2, L. Rodrigues1, C. Lisboa1, B. Ferraz1, N. Nunes2, C. Grisolia1, and M. Battistoni2. 1Luigi Sacco Hospital, Milano, Italy; and 2University of Milano, Milano, Italy.

Poster Board Number ......................... P649
Sublethal Effects of Amoxicillin on the Development of Zebrafish (Danio rerio). G.A. Oliveira1, L. Brito1, R. Oliveira2, L. Rodrigues1, C. Lisboa1, B. Ferraz1, N. Nunes2, C. Grisolia1, and M. Battistoni2. 1Luigi Sacco Hospital, Milano, Italy; and 2University of Milano, Milano, Italy.
Abstract #

#3298 Poster Board Number ................. P650 Evaluation of Replicating In Vivo Endpoints: Toxicity of Boric Acid in the African Clawed Frog (Xenopus laevis). D. Fort, T. Fort, M. Mathis1, and R.W. Ball1. Fort Environmental Laboratories, Stillwater, OK, and 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, C. Quevedo, J.A. Egnash, I. Injilibal, A. Muriana, and E.L. Donley1. IBBD BioPhenix-BIOBIDE, San Sebastian, Spain; and 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. Baker1, S. Hunter1, J.A. Franza1, A. Richard1, R. Judson2, and T. Knudsen2. US Environmental Protection Agency, Research Triangle Park, NC, and 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


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 toxicologists, 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 HCl. HCI assays were used to measure dose and time-dependent perturba-

Abstract #


#3302 Poster Board Number ................. P654 Imaging 3D Human Microtissues to Modernize Toxicity Testing. K. Boekelheide. Brown University, Providence, RI.

#3303 Poster Board Number ................. P655 Integration of High-Content Imaging for Predicting Drug-Induced Liver Injury. W. Tong. US FDA/NCTR, Jefferson, AR.

#3304 Poster Board Number ................. P656 Using High-Content Imaging to Analyze Cellular Tipping Points. I. Shah. US EPA/NCTR, Research Triangle Park, NC.


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) the 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 e-iodides, 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

Poster Sessions
Regional Interest Session
Roundtable Sessions
Symposium Sessions
Workshop Sessions
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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, parquat, 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)


#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, 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, Dusseldorf, 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 to consider.

PBPK modeling provides an important tool to describe these key maturation processes such that they are explicitly considered in the risk assessment process. While application of these models generally confirms the adequacy of current default UF's 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

#3318 2:34

#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

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 (ACMCE) 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
Contributions of Mitophagy in Cumulative Doxorubicin-Induced Cardiomyopathy. K.B. Wallace. University of Minnesota, Duluth, MN.

Cycles of Injury and Repair via Mitophagy Associated with Chronic Exposures and Premature Senescence. T.R. Dugas. Louisiana State University, Baton Rouge, LA.

Autophagy as a Drug Target in Diabetic Vascular Disease. J.L. Fetterman. Boston University, Boston, MA.


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)

Introduction. S. Hussain. US Air Force, Wright-Patterson AFB, OH.


In Vitro Aerosol Exposure Systems: Challenges in Dosimetry and Strategic Solution. T. Tilly. Air Force Research Lab, Wright-Patterson AFB, OH.

Tools, Frameworks, and Approaches for Translation of Nanomaterial Exposure, Doses, and Responses between In Vitro and In Vivo Systems for Safety Assessment. J. Teegarden. Pacific Northwest National Laboratory, Richland, WA.


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 novel 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 these devices and advanced biomaterials. The first speaker will provide an overview of the toxicological impact of engineered nanomaterials 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 implant materials and bioabsorbables, 3-D 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 (polyactic 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 stability, 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 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, biocompatibility tests, 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’
Biocompatibility and the Foreign Body Reaction to Medical Device Materials. J.M. Anderson. Case Western Reserve University, Cleveland, OH.


Strategies in Stereolithography-Based Fabrication and Toxicity Evaluation of 3-D Polymer Scaffolds for Tissue Engineering. S.A. Skoag†, P.L. Goering†, R.J. Narayan†, P.E. Petrochenko†, 1US FDA/CDRH, Silver Spring, MD; and 2University of North Carolina, Raleigh, NC.

Biocompatibility of Medical Devices—Anomalies in Test Results: Discussion on Their Relevance to Patient Safety. N. Goud. Boston Scientific Corporation, Spencer, IN.


Panel Discussion/Q&A.

Wednesday Afternoon, March 16
2:00 PM to 4:45 PM
CC Room 206

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.

Toxicology Mentoring and Skills Development Training Program. W.K. Rumbelhia†, A. Correia†, D. Alexander†, E. Gilbreath†, P. Leigh†, and J.D. Wolt†.


Intensive Research Training Improves Undergraduate Student Scientific Competencies During a 10-Week Summer Fellowship. S.M. Marco†, L.E. Liang†, R. Riley†, K. Nakata†, D.L. Laskin†, and J.M. Aleksunes†. Center for Environmental Exposure, and Disease, Piscataway, NJ; 2Center for School, and Community-Based Research, and Education, Piscataway, NJ; and 3Rutgers University, Piscataway, NJ.

Use of Biological Pathway Databases, Primarily Open Source. M.E. Gillespie. St. John’s University, Jamaica, NY.

From the High School Classroom to the Laboratory Bench: Design of a One-Week Toxicology Summer Program. G.L. Guo, A. Venosa, J. Salggi, S.M. Marco, L.M. Aleksunes, A.J. Gow, and D.L. Laskin. Rutgers University, Piscataway, NJ.

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†, M. Fittschen-Brown†, R. Stedfeld†, G. Zylstra†, and S. Hashesham†. Michigan State University, East Lansing, MI; and 3Rutgers University, New Brunswick, NJ.
**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**

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**#3352  4:00**  
**Toxic Beauty: Campus-Community Education and Outreach on Cosmetics and Personal Care Products.** T. Dodd-Butera¹, and M. Broderick Pritty¹. ¹California Poison Control System, San Diego, CA; and ²CSU 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 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 mitochondrial 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.
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 Ashner, 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

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 #


#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 220

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):
Splitting to Bayesian Approach to Characterizing Risk. M. Aschner. Albert Einstein College of Medicine, Bronx, NY.

Caracterizing Mitochondrial Dynamics as a Potential Therapeutic Strategy for Parkinson's Disease. K. Tieu. Plymouth University, Plymouth, United Kingdom.

Mitochondrial TMEM-135 Decreases Manganese-Induced Dopaminergic Neurodegeneration. M. Aschner. Albert Einstein College of Medicine, Bronx, NY.

Integrated Redox Proteomics, Metabolomics and Transcriptomics: A Holistic View of Mitochondrial Function. D. Jones. Emory University, Atlanta, GA.

Abstract #

#3363 10:31 Probabilistic Dose-Response Assessment: Basic Principles and General Approach Developed by the WHO/IPCS. W.A. Chu. 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.


#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 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 Toxins and Their Pathways Tells Us about Risk of Exposure. J. Teegarden. 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 # 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. Pottinger. 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?

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 therapeutic 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)


#3375 11:05  Approaches for the Evaluation of Juvenile Toxicology. L.A. Burns Naas. Gilead Sciences Inc, Foster City, CA.


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 (ACME) 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 Zeilikoff, 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 toxianics 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 exsopme 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)
Overview of Unconventional Oil and Gas Exploration Specific Production and Possible Occupational Exposures. J. Snowden, NIOSH, Cincinnati, OH.


An Approach to Studying Potential Acute and Chronic Disease Associated with Unconventional Natural Gas Development Operations. M. McCawley. West Virginia University, Morgantown, WV.


Wide-Ranging Toxicological Effects of Produced Water from Hydraulic Fracturing in a Mouse Model. J.T. Zeilikoff. New York University Medical Center, Tuxedo, NY.

Panels: Recent Advances in Safety Assessment

Chairperson(s): Nisha S. Sipes, NTP/NIEHS, Research Triangle Park, NC; and Falgun Shah, Pfizer, Cambridge, MA.

Endorsers(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 LINCS. 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.

(Anonymous #3378)

Workshop Introduction—Why Do We Need Different Cell Lines? F. Shah. Pfizer, Cambridge, MA.

Workshop #3377b

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.


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 Carcinogenesis Exposure. J.P. Stanko1, G.E. Kissling2, and S.E. Fenton3. 1Biostatistics, and Computational Biology Branch, Research Triangle Park, NC; and 2National Toxicology Program Laboratory, Research Triangle Park, NC.

Perinatal Exposure to Brominated Flame Retardants (BFRs) Suppresses E-Cadherin and THRs in Mammary Glands at Puberty. M. Lavoie1, E. Dianati, M. Wade1, B. Hales1, and I. Plante1. 1Health Canada, Ottawa, ON, Canada; and 2McGill University, Montreal, QC, Canada. Sponsor: I. Plante.

Comparison of Quantitative Estrogen Profiles in Plasmas and Mammary Glands of Women with Those in a Rat Model of Estrogen-Induced Tumorigenesis. D. Pemp1, C. Kleider2, F.J. Möller3, N. Iva4, G. Vollmer5, H.L. Esh6, and L. Leane7. 1TU Dresden, Dresden, Germany; 2University Hospital of Würzburg, Würzburg, Germany; and 3University of Würzburg, Würzburg, Germany.


Abstract #  #3393  11:35  

**Neonictinoids 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, M. Denison, and T. Sanderson.

1INRS-Institut Armand-Frappier, Laval, QC, Canada; and 2University of California in Davis, Davis, CA.

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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. Kogel1, Y. Xiang1, E.T. Wong2, S. Boue1, F. Martin1, E. Guedj1, A.W. Hayes1, M.C. Peitsch1, P. Vanscheeuwijk1, and J. Hoeng1.

1Philip Morris International R&D, Neuchatel, Switzerland; 2Philip Morris International Research Laboratories, Pte. Ltd., Singapore; and 3Spherix Consulting, Rockville, MD.

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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.

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#3395  9:30  

**Qualification of Inhalation Exposure Systems for Conventional and Electronic Cigarettes.**  H. Irshad, P. Kuehl, D. Krakco, B.C. Moeller, E. Yates, and J. McDonald. Lovelace Respiratory Research Institute, Albuquerque, NM.

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#3396  9:45  

**Molecular Impact of Electronic Cigarette Exposure on Human Bronchial Epithelium In Vitro.**  E. Moses1, T. Wang1, G.R. Jackson1, E. Drzik1, C. Perdomo1, D. Brooks2, G. O’Connor1, S. Dubinett1, P.J. Hayden1, M. Lenburg1, and A. Spira1.

1Boston University School of Medicine, Boston, MA; 2Boston University School of Public Health, Boston, MA; 3MatTek Corporation, Ashland, MA; and 4UCCLA, Los Angeles, CA.

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#3397  10:00  


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#3398  10:15  


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#3399  10:30  

**Electronic and Traditional Tobacco Cigarettes Induce Vascular Endothelial Dysfunction Through Similar Mechanisms.**  M.A. El-Mahdy1, O.A. Badary1,3, Y.A. Alzarie1,4, C. Hemmann1, M.G. Helal1, A. Elmahdy1, R.S. Ismail1, T.M. Abdelghany1, A.M. Mansour2, and J.L. Zweier1.

1Ain Shams University, Cairo, Egypt; 2Al-Azhar University, Cairo, Egypt; 3National Organization of Drug Control, and Research, Cairo, Egypt; and 4The Ohio State University, Columbus, OH. Sponsor: F. Lowe.

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#3400  10:45  

**Toxicological Characterization of the Mentholated Heat-Not-Burn Product THS2.2M in a 90-Day OECD Inhalation Study.**  A. Oviedo1, S. Lebrun1, G. Rodrigo1, G. Vullaum1, J. Ho1, P. Vanscheeuwijk1, W. Hayes1, J. Hoeng1, and M. Peitsch1.

1Philip Morris International R&D, Neuchâtel, Switzerland; 2Philip Morris International Research Laboratories, Singapore, Singapore; and 3Spherix Consulting, Rockville, MD. Sponsor: W. Hayes.

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#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. Kogel1, Y. Xiang1, E.T. Wong2, S. Boue1, F. Martin1, E. Guedj1, A.W. Hayes1, M.C. Peitsch1, P. Vanscheeuwijk1, and J. Hoeng1.

1Philip Morris International R&D, Neuchatel, Switzerland; 2Philip Morris International Research Laboratories, Pte. Ltd., Singapore; and 3Spherix Consulting, Rockville, MD.

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#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. Phillips1, E. Guedj1, A. Elamin1, S. Boue1, G. Vullaum1, F. Martin1, P. Leroy1, W. Hayes1, E. Veljkovic1, M. Peitsch1, and J. Hoeng1.


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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.

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#3404  9:30  

**Polybrominated Diphenyl Ethers (PBDE) and Their Hydroxylated and Methoxylated Derivatives in Blood from E-Waste Recyclers, Commercial Fishermand and Office Workers in the Puget Sound, Washington Region.**  I. Schultz, S. Cade, and L.J. Kuo. Pacific NW National Lab, Sequim, WA.

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#3405  9:50  

**Monte Carlo Analysis of Children’s Risks from Chemicals in House Dust: Focus on Phthalates and Flame Retardants.**  G.L. Ginsberg1, B. Toal1, and G. Belleggia1.

1Connecticut Dept of Public Health, Hartford, CT; and 2University of Connecticut Health Center, Farmington, CT.

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#3406  10:10  

**Estimation of Human Percutaneous Uptake for Two Novel Brominated Flame Retardants, 2-Ethylhexyl Tetrabromobenzene (TBB) and Bis(2-Ethylhexyl) Tetrabromophthalate (TBPB) Using the Parallellogram Method.**  G.A. Knudsen1, M.F. Hughes1, J.M. Sanders1, and L.S. Birnbaum1.

1National Cancer Institute, Research Triangle Park, NC; and 2US EPA, Research Triangle Park, NC.

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#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. Wikoff1, S. Borghoff1, J.E. Rager1, and L.C. Haws1.

1ToxStrategies, Austin, TX; and 2ToxStrategies, Cary, NC.
Abstract # #3408 10:50 Omics Approaches to Evaluate Developmental Neurotoxicity of Organophosphorus Flame-Retardants. H.T. Hogberg1, R. de Cassia da Silveira e Sa1,2, M. Bouthilf2, A. Kleensang3, A. Maertens1, O. Cemiloglu Ulker3, L. Smirnova1, L. Zhao4, and T. Hartung3. 1Federal University of Paraiba, Paraiba, Brazil; 2Johns Hopkins University, Baltimore, MD; and 3University of Ankara, Ankara, Turkey.


Thursday Morning, March 17
9:30 AM to 12:45 PM
CC Great Hall A

Poster Session: Persistent Organic Pollutants

Heart and Environmental Impacts of Manmade and Naturally Released Toxins

Chairperson(s): Lisa M. Kamendulis, Indiana University, Bloomington, IN.

Displayed: 9:30 AM–12:45 PM

Author Attended: 9:30 AM–11:00 AM


#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. Marchetti, C.S. Mazui, C.M. Dillingham, S. Rawat, A. Sharma, J. Zastre, and J.F. Kenneke. National Exposure Research Laboratory, Athens, GA; 2US Environmental Protection Agency, Athens, GA; 3US Environmental Protection Agency, National Exposure Research Laboratory, Athens, GA; and 4University 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.

#3415 Poster Board Number ......................... P105 Enantioselective Actions of PCBs and Atropisomers Toward Rydnonide Receptors (RyRs) and Hippocampal Neurons. W. Feng, G. Robin, Y. Dong, T. Nakano, and I.N. Pessah. 1Osaka University, Osaka, Japan; and 2University 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. Klarer1, D. Vine1, S. Vogt1, and L.W. Robertson2. 1Argonne National Laboratory, Argonne, IL; and 2University 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. Petrelli, J. Hoffman, and B. Hennig. UK Superfund Research Center, University of Kentucky, Lexington, KY.


#3419 Poster Board Number ......................... P109 Serum Concentrations of Non-Ortho Polychlorinated Biphenyls (PCBs) in a Residential Cohort from Anniston, Alabama. M. Pavuk1, N.D. Dutton1, A. Sjodin2, R.S. Jones3, M.D. Lewin1, and L.S. Birnbaum1. 1Agency for Toxic Substances and Disease Registry (ATSDR), Atlanta, GA; 2ATSDR, Atlanta, GA; 3NCEH/CDC, Atlanta, GA; 4NCI, Research Triangle Park, NC; and 5ORISE, 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, W.D. Klarer1, A.K. Oliver1, A.J. Klingelhohtz2, and L.W. Robertson1. 1Mississippi State University, Starkville, MS; and 2University of Iowa, Iowa City, IA.

#3421 Poster Board Number ......................... P111 Distinct Metabolic Axes in Gulf Coast Minnows After Deepwater Horizon Oil Spill. J.D. Chandler1, A. Todar1, J. Wise5, D.P. Jones1, R.J. Griffitt1, and S. Li6. 1Emory University, Atlanta, GA; and 2University of Southern Mississippi, Ocean Springs, MS.

#3422 Poster Board Number ......................... P112 Sex Differences in Dichlorodiphenyltrichloroethane (DDT) and Dichlorodiphenyldichloroethene (DDE) Potency Towards Ryanodine Receptor Type 2. K.M. Truong, and J.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

Abstract # #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. Adamakova-Dodd, H.-J. Lehnerl, K.N. Gibson-Corley, and P.S. Thorne. University of Iowa, Iowa City, IA.

Abstract # #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.

Abstract # #3427
Poster Board Number P117
Low-Doses Dioxin Subchronic Exposure Promotes Liver Fibrosis Development in Diet-Induced Obese Mice. C. Duval1,2, F. Teixeira-Clerc2,3, A. Leblanc2,4, M. Guerre-Millo2,4, C. Emond3, S. Lotersztajn1,2, R. Barouki1,2, M. Aggerbeck2,3, and X. Coumoul1,2. INSERM U955, Paris, France; INSERM UMR-S 1124, Paris, France; INSERM UMR-S 1149, Paris, France; INSERM UMR-S 872, Paris, France; 3Montreal University, Montreal, QC, Canada; 2Paris Descartes University, Paris, France; 1Paris Diderot University, Paris, France; 5Paris-Est University, Paris, France; and 6INSERM UMR-S 1149, Paris, France.

Abstract # #3430
Poster Board Number P120
The Anti-Oxidant Drug Tempol Promotes Functional Metabolic Changes in the Gut Microbiota. J. Cal1, L. Zhang1, R.A. Jones2, J.B. Correll1, E. Hatzakis1, P.B. Smith1, F.J. Gonzalez2, and A.D. Patterson3. 1NIH, Bethesda, MD; and 2Penn State University, University Park, PA. Sponsor: A. Patterson.

Abstract # #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. Ghanem1,2, L. Orbea1, S. Rudraiah2, A.D. Mottino3, and J.E. Simmons4. 1CONICET-UNR, Buenos Aires, Argentina; 2CONICET-UBA, Buenos Aires, Argentina; 3Facultad de Farmacia y Bioquimica. UBA, Buenos Aires, Argentina; and 4University of Connecticut, Storrs, CT. Sponsor: K. Oshida.

Abstract # #3432
Poster Board Number P122

Abstract # #3433
Poster Board Number P123

Abstract # #3434
Poster Board Number P124
Using the Collaborative Cross Mouse Model to Investigate Population-Level Variability in Trichloroethylene Toxicity. A. Venkatramnam1,2, S. Furuya1, O. Kosyk1, V. Soldatow2, S. Sweet1, T. Wade1, A. Knap1, A. Gold2, W. Bodnar2, J.T. Zelikoff1, and I. Rusyn1. 1Texas A&M, College Station, TX, and 2University of North Carolina, Chapel Hill, NC. Sponsor: K. Oshida.

Abstract # #3435
Poster Board Number P125
In Vivo Skin Absorption of Ortho-Phenylphenol in Metalworking Fluid Formulations. E. Nixon, J. Brooks, and A. Venkatramnam. Texas A&M, College Station, TX.

Abstract # #3436
Poster Board Number P126

Abstract # #3437
Poster Board Number P127
High Throughput Determination of Critical Human Dosing Parameters. C.J. Nicolas1,2, B.L. Ingle2, M. Bacolod1, J. Gilbert2, B.A. Wetmore3, C.L. Ring1,4, R.W. Setzer1, R. Tornero-Velez2, M.T. Martin1, and J.F. Wambaugh6. 1ORISE, Research Triangle Park, NC; 2ORAU, Oak Ridge, TN; 3The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and 4United States Environmental Protection Agency, Research Triangle Park, NC.
Abstract # | Poster Board Number | P128
---|---
#3438 | Application of a Physiologically-Based Absorption Model to Characterize the Rate and Extent of Release and Absorption of Oral Extended-Release Methylphenidate. X. Yang¹, J. Duan³, A. Jackson², and J. Fisher¹. ¹US Food and Drug Administration, Jefferson, AR; and ²US Food and Drug Administration, Silver Spring, MD.

Abstract # | Poster Board Number | P129
---|---
#3439 | Pharmacokinetic Profiles of Perfluorobutane Sulfonate and Activation of Hepatic Genes in Mice. J. Rumpfle¹, K. Das¹, C. Wood¹, M. Strynar¹, A. Lindstrom¹, J. Wambaugh¹, and C. Lau¹. ¹Oak Ridge Institute for Science, and Education, Research Triangle Park, NC; and ²US Environmental Protection Agency, Research Triangle Park, NC.

Abstract # | Poster Board Number | P130
---|---
#3440 | Acute Rat Inhalation Pharmacokinetic Study to Support Occupational Exposure Limits for Proteins. J. Gould¹, B. Attalla¹, J. Carvajal¹, T. Davidson¹, J. Graham¹, J. Hillegas¹, L. Sivaraman¹, S. Julien¹, A. Kozhich¹, N. Mathias¹, B. Wang¹, C. Wang¹, and H. Hoggerty¹. ¹Bristol-Myers Squibb Co., New Brunswick, NJ; and ²Charles River Laboratories Preclinical Services Montreal Inc., Senneville, QC, Canada.

Abstract # | Poster Board Number | P131
---|---
#3441 | Toxicokinetic and Disposition Studies of Alkylated Naphthalene AN-600 in Sprague-Dawley Rats Following Oral and Dermal Administration. L.K. Low¹, M.H. Kung¹, and C.M. Palermo¹. ¹ExxonMobil Biomedical Sciences, Inc., Annandale, NJ; and ²ExxonMobil Petroleum, and Chemical, Machelen, Belgium.

Abstract # | Poster Board Number | P132
---|---
#3442 | An In Vivo Toxicokinetic Comparison Study Following Gavage and Dietary Administration of Alpha-Terpineol. A. Patel¹, V.T. Poltano¹, and A.M. Api². ¹Coty, Inc, Morris Plains, NJ; and ²Research Institute for Fragrance Materials, Woodcliff Lake, NJ. Sponsor: A.M. Api.

Abstract # | Poster Board Number | P133
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Abstract # | Poster Board Number | P134
---|---
#3444 | Disposition of Ethylene Glycol 2-Ethylhexylether Following Oral Administration and Dermal Application to Harlan Sprague Dawley Rats and B6C3F1/N Mice. B.C. Moeller¹, M. Doyle-Estele¹, J.D. McDonald¹, C.R. Blystone², and S. Waidyanatha². ¹Loveland Respiratory Research Institute, Albuquerque, NM; and ²NIEHS, Research Triangle Park, NC.

Abstract # | Poster Board Number | P135
---|---
#3445 | Tetrabromobisphenol A (TBBPA); Dose- and Time-Dependent Changes in Plasma TBBPA and Its Conjugates Over 28 Days of Administration. S. Borghoff¹, D. Wilkoff¹, J.E. Rager¹, and L.C. Haw². ¹ToxStrategies, Austin, TX; and ²ToxStrategies, Cary, NC.

Abstract # | Poster Board Number | P136
---|---
#3446 | Intravenous and Oral Toxicokinetics of Domoic Acid in Non-Human Primates. R.L. Petroff¹, J. Jing¹, B. Crouthamel², K. Grant³, N. Isoherranen¹, and T. Burbacher¹. ¹University of Washington, Seattle, WA; and ²Washington National Primate Research Center, Seattle, WA. Sponsor: T. Burbacher.

Abstract # | Poster Board Number | P137
---|---
#3447 | 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. Amaraneni², J. Pang¹, T.G. Osimeti², D. Gammón³, M.R. Creek⁴, C.A. White⁵, B.S. Cummings⁶, and J.V. Bruckner⁷. ¹FMC Corporation, Ewing, NJ; ²Science Strategies, Charlottesville, VA; ³University of Georgia at Athens, Athens, GA; and ⁴Valent U.S.A. Corporation, Dublin, CA.

Abstract # | Poster Board Number | P138
---|---
#3448 | Sex-Related Toxicokinetic (TK) Study of CIS-Permethrin in Adult and Weaning Sprague-Dawley (SD) Rats. J. Pang¹, T.B. Mortuza¹, S. Muralidharan¹, M. Amaraneni², M.R. Creek³, D. Gammón¹, S.S. Anand³, B.S. Cummings⁶, J.V. Bruckner⁷, and C.A. White⁵. ¹DuPont Haskell, Newark, DE; ²FMC Corporation, Ewing, NJ; ³University of Georgia, Athens, GA; and ⁴Valent U.S.A., Dublin, CA.

Abstract # | Poster Board Number | P139
---|---
#3449 | Thifensulfuron-Methyl Dosimetry Assessment for Female Sprague-Dawley Rats During Gestation. M.W. Himmelestein¹, L.A. Malley¹, and S.R. Frame¹. ¹DuPont Crop Protection, Newark, DE; and ²DuPont 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

Poster Board Number | P140
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Poster Board Number | P141
---|---
#3451 | 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.

Poster Board Number | P142
---|---
#3452 | 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.
<table>
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<th>Abstract #</th>
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<tr>
<td>#3453</td>
<td>Poster Board Number ................................. P143</td>
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<td></td>
<td>Metabolism and Disposition of Sulfolane in Male and Female Harlan Sprague Dawley Rats and B6C3F1/N Mice. T.R. Fennell1, S. Black2, S. Watson2, P. Patel1, R. Snyder1, J. Burgess2, C.R. Blystone1, and S. Waidyanath1. 2Division of the National Toxicology Program, Research Triangle Park, NC, and 3RTI International, Research Triangle Park, NC.</td>
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<td>#3454</td>
<td>Poster Board Number ................................. P144</td>
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<td>#3455</td>
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<td>#3456</td>
<td>Poster Board Number ................................. P146</td>
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<td>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. Egoshi1, K. Kinoshita2, H. Koba2, T. Takeda1, S.-i. Ikushiro3, K. Nagata2, Y. Yamazoe2, T. Kocarek4, S. Hammad2, K.A. Simon1, and S.L. Messner1. 1University of Pittsburgh, Pittsburgh, PA; and 2Wayne State University, Detroit, MI.</td>
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<td>#3457</td>
<td>Poster Board Number ................................. P147</td>
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<td>Cytosolic Sulfotransferase Expression and Regulation in Cell Culture Models of Human Liver Development. K.G. Barrett1, Z. Duniec-Dmuchowski1, A. Soto-Gutierrez2, T. Kocarek1, and M. Runge-Morris3. 1University of Pittsburgh, Pittsburgh, PA; and 2Wayne State University, Detroit, MI.</td>
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<td>#3458</td>
<td>Poster Board Number ................................. P148</td>
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<td>Impact of Hepatic P450-Mediated Biotransformation on Airway Epithelial Repair Following Naphthalene Inhalation. N. Kovalchuk1, L. Van Winkle2, Q.-Y. Zhang2, and X. Ding2. 1College of Nanoscale Science and Engineering, SUNY Polytechnic Institute, Albany, NY; 2UC Davis, Davis, CA; and 3Wadsworth Center, New York State Department of Health, and School of Public Health, State University of New York, Albany, NY.</td>
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<td>#3459</td>
<td>Poster Board Number ................................. P149</td>
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<td>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.</td>
</tr>
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# Poster Session: MicroRNA Biomarkers

## Molecular Toxicology: Mechanistic Insights and Hazard Assessment

### Author Attended:
11:15 AM–12:45 PM

### Displayed:
9:30 AM–12:45 PM

### Chairperson(s):
Karissa Adkins, Pfizer, Groton, CT.

### Poster Session Number:
#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.

**Poster Board Number**
P157


**Poster Board Number**
P158

**Serum miRNAs as Prognostic Indicators of Toxic Liver Injury.**  M.G. Pernenter, B.C. McDyre, and D.L. Ippolito.  EXCET/US Army Center for Environmental Health Research, Ft. Detrick, MD; ORISE/US Army Center for Environmental Health Research, Ft. Detrick, MD; and US Army Center for Environmental Health Research, Ft. Detrick, MD. Sponsor: J. Lewis.

**Poster Board Number**
P159


**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.

**Poster Board Number**
P161


**Poster Board Number**
P162


**Poster Board Number**
P163

**Serum MicroRNA Biomarkers of Acute Pancreatic Injury in the Dog.**  R. Roose, B. Rosenzweig, L. Xu, S. Stewart, A. Chockalingam, A. Knapton, and K. Thompson. US FDA, Silver Spring, MD.
#3482 Poster Board Number ....................... P172 Effects of Fiber Size of Single-Walled Carbon Nanotubes on Pulmonary Toxicity. K. Fujita1,2, M. Fukuda1, S. Endoh3, J. Maru3, H. Kato1,2, A. Nakamura1, N. Shinohara1,2, K. Uchino3, and K. Honda1,2. National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan; and 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. Eldawwad, A. Wagner, C. Dong, Y. Rojanasakul, and C. Dinu. West Virginia University, Morgantown, WV.


#3485 Poster Board Number ....................... P175 Functional and Molecular Responses to Inhalation of MWCNT from the Perspective of Occupationally-Related Depositions. V.K. Kodali1, P.C. Zeidler-Erdely1, T. Eye1, S. Bilgesu1, L. Bishop2, S. Tugendreich3, S. Shah4, M. Campen2, M. Aragon1, M.L. Kashon1, J.K. Gu1, L. Battelli3, J.L. Cumpton1, A. Cumpton1, W. McKinney1, D. Frazer1, T.-H.B. Chen1, V. Castranova1, R. Mercer1, and A. Erdely1. National Institute for Occupational Safety & Health, Morgantown, WV; QIAGEN, Redwood City, CA; University of New Mexico, Albuquerque, NM; and 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. Wang1, A.N. Meredith1, M. Lee1, D. Deutsch1, L. Mladzvedskaya1, E. Braun2, P. Pantano3, S. Harper1, and R. Draper4. Oregon State University, Corvallis, OR; and University of Texas at Dallas, Richardson, TX.

#3487 Poster Board Number ....................... P177 Lack of Genotoxicity in the Comet and Micronuclear Assays of Graphistrength® C100 Multiwalled Carbon Nanotubes (MWCNT) After a 90-Day Nose-Only Inhalation Exposure of Rats. J.-F. Régnier1, S. Simar1, F. Nesslany1, E. Dony1, D. Pothmann1, and V. Shulte1. Arkema France, Colombes, France; Arkema Inc., King of Prussia, PA; Harlan Cytotoxic Cell Research GmbH, Rossdorf, Germany; Harlan Laboratories Ltd, Itingen, Switzerland; and Institut Pasteur de Lille, Lille, France.

#3488 Poster Board Number ....................... P178 The Occupational Life Cycle of MWCNT: Toxicity Evaluation from As-Produced to Post-Production Modifications and Composites. L.M. Bishop1, M. Orandle1, L. Cena1, V. Kodali2, M. Dahnh1, M. Schubauer-Bergk1, T. Sager1, J. Scabilloni1, D. Schwiegel-Berry1, T. Eye2, L. Battelli3, J. Kang4, G. Casuccio1, K. Bunker1, A. Stefaniski1, P.C. Zeidler-Erdely2, L. Sargent3, R.R. Mercer3, and A. Erdely1. National Institute for Occupational Safety, and Health, Cincinnati, OH; National Institute for Occupational Safety, and Health, Morgantown, WV; and RJ Lee Group, Monroeville, PA.


#3492 Poster Board Number ....................... P182 Multi-Walled Carbon Nanotube (MWCNT)-Induced Fibrogenic Signaling in a Human Lung Epithelial-Fibroblast Co-Culture System. A.L. Mihalchik1,2, M. Roberts1, and J.C. Bonner. 1National Insitute for Occupational Safety and Health, Morgantown, WV; and 2Wake Forest University, Winston-Salem, NC.

#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. Régnier1, D. Pothmann1, L.-L. Le Net4, and J. Beausoleil4. Arkema France, Colombes, France; Arkema France, Lacroix, France; Harlan Laboratories Ltd, Itingen, Switzerland; and 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.
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Poster Board Number ......................... P188
Hyaluronan Functionalization Reduces Lung Inflammatory and Fibrotic Responses of Multi-Walled Carbon Nanotubes. S. Hussain, Z. Ji, A. Taylor, L. Miller-DeGraff, M. George, J. Marshburn, R. Snyder, A. Rice, J. Coke, and J. Bonner. 1NC State University, Raleigh, NC; 2NIEHS/NIH, Research Triangle Park, NC; and 3UCLA, Los Angeles, CA.

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Modulation of Chemical Dermal Absorption by 14 Natural Products: A Quantitative Structure Permeation (QSPR) Analysis of Components Often Found in Topical Cosmeceuticals.  F. Muhammad1, M. Jaberi-Douraki2, D. De Sousa1, and J.E. Riviere1. 1Federal University of Paraiba, Paraiba, Brazil; and 2Kansas State University, Manhattan, KS.

#3512  Poster Board Number ......................... P204  #3521
Partition and Diffusion Coefficient Determinations for Twelve Compounds in Isolated Human Skin Layers for In Silico Dermal Pen Modeling.  J.D. Manwaring1, C. Obringer1, N. Hewitt1, A. Schepky1, D. Gerstel1, M. Klaric1, J. Elstein1, S. Gregoire1, H. Duplan1, C. Jacques-Jamin2, R. Cubberley3, and H. Rothe4. 1Beiersdorf AG, Hamburg, Germany; 2Cosmetics Europe, Brussels, Belgium; 3LOreal, Aulnay-Sous-Bois, France; 4Pierre Fabre Dermo-Cosmetique, Toulouse, France; 5Procter & Gamble, Mason, OH; 6Procter & Gamble, Schwalbach, Germany; and 7Universiter, Sharmbrook, United Kingdom. Sponsor: G. Dostin.

#3513  Poster Board Number ......................... P205  #3522
Characterization of Transdermal Pharmacokinetics of Ketoprofen in Sinclair and Göttingen Minipigs.  A. Stricker-Krongrad1, M. Zhang1, H. Leigh1, Y. Liu1, Y-H. A. Fu1, J. Liu1, and G. Bouchard1. 1KCAS, Shawnee, KS; and 2Sinclair Research Center, Auxvasse, MO.

#3514  Poster Board Number ......................... P206  #3523

#3515  Poster Board Number ......................... P207  #3524
Human Skin Permeation In Vitro of Glycol Ether Mixtures and Ethanol Amines.  N.B. Hop1, N. Charrière2, C. Oltramare3, P. Sping1, and A. Berthet4. 1Centre Hospitalier Universitaire Vaudois, Lausanne, Switzerland; and 2Institute for Work, and Health, Epalinges, Switzerland.

#3516  Poster Board Number ......................... P208  #3525
A Novel Essay for Evaluating Wound Healing in a Full-Thickness In Vivo Human Skin Model.  M. Bachelor, A. Armento, J. Oldach, G. Stolper, M. Li, M. Klauser, and P. Hayden. MatTek Corporation, Ashland, MA.

#3517  Poster Board Number ......................... P209  #3526

#3518  Poster Board Number ......................... P210  #3527
Quantitative and Qualitative Assessment of Skin and Eye Phototoxicity in the Reptile: Pigmented versus Non-Pigmented Strains.  C. Gerbeix, S. Turnock, C. Thiron-Delalonde, and R. Forster. CITOxLAB, Evreux, France.

#3519  Poster Board Number ......................... P211  #3528

Thursday Morning, March 17
9:30 AM to 12:45 PM
CC Great Hall A

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 to 12:45 PM

Author Attended: 9:30 AM to 11:00 AM

#3527  Poster Board Number ......................... P219  #3528

Withdrawn.
High-Throughput Biomonitoring for Exposome

Pilot Evaluation of a Novel Fully-Implantable

Automation of Cytokinesis-Block Micronucleus

Refinement of a Commercially Available

Predictivity of In Vivo Metabolomics in

High-Throughput Biomonitoring for Exposome

Development and Validation of Five GyroMark

Optimization of Intrathecal Administration

Toxicokinetic Analysis of Acetaminophen

Utilizing High Throughput Flow to Screen

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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.
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 late 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.
The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

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The numerals following each keyword refer to the relevant abstract number(s).
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- Ohio Valley: Xue Fu (2015–2016)
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Special Interest Group Representatives
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Specialty Sections Representatives
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- Comparative and Veterinary: Satyanarayana Achanta (2015–2016)
- Dermal Toxicology: Shuxi Qiao (2015–2016)
- Food Safety: Murphy L. Y. Wan (2015–2016)
- In Vitro and Alternative Methods: David Pamies (2015–2016)
- Medical Device and Combination Product: Sandra Chang (2015–2016)
- Molecular and Systems Biology: Susie Shih Yin Huang (2015–2016)
- Reproductive and Developmental Toxicology: Natasha Rene Catlin (2015–2016)
- Stem Cells: Joshua F. Robinson (2015–2016)
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- Joseph Francisco, Councilor
- Timothy Scott Manetz, Councilor
- Amy M. Sharma, Postdoctoral Representative
- Adhithiya Charle, Student Representative

**Carcinogenesis (250×)**
- James E. Klaunig, President
- Robert H. Schiestl, Vice President
- John DiGiovanni, Vice President-Elect
- 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 K. 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
- Ufordon A. Madden, Past President, Councilor
- Jennifer M. Daringer, Councilor
- Marion E. Hirsch, Councilor
- Satyanarayana Achanta, Postdoctoral Representative
- Joanna Kreitinger, Student Representative

**Dermal Toxicology (169×)**
- Jeffrey J. Ourich, President
- Douglas B. Learn, Vice President
- Zbigniew W. Wojciksi, 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 Miser, Secretary/Treasurer
- Andrew J. Olaharski, Past President, Councilor
- Leanne K. 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
Mehti 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 Vassilou, 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
Sandia 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

**Neurotoxicology (356*)**
William K. Boyes, President
Abby A. Li, Vice President
Mary E. Gilbert, Vice President-Elect
Ronald B. Tjalkens, Secretary/Treasurer
Jenifer W. Roberts, Past President, Councilor
Marie Meerager Bourgeois, Councilor
Natalie M. Johnson, Councilor
Melissa Ann Bading, Postdoctoral Representative

**Occupational and Public Health (267*)**
Mary Ann Smith, President
Joel P. Bercu, Vice President
Robin DeLoss Smith, Vice President-Elect
Ronald B. Tjalkens, Secretary/Treasurer
Jenifer W. Roberts, Past President, Councilor
Marie Meerager Bourgeois, Councilor
Natalie M. Johnson, Councilor
Melissa Ann Bading, Postdoctoral Representative

**Ocular Toxicology (99*)**
Evan A. Thackaberry, President
Chris John Samps, Vice President
Mercedes Salvador-Silva, Vice President-Elect
Leandro B. L. 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**
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. Tcewyn 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. Eliot*
1995 Charles S. Lieber*
1996 Sten G. Orenius
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
2002 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

*Indicates SOT Awards

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. Cianmer
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. Manso
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 Bradford
2001 Martin A. Philbert
2002 Ruth A. Roberts
2003 Lois D. Lehman-Meekman
2004 David C. Dorman
2006 Jose 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 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. Piaa*
- 1982 Gary M. Williams
- 1983 David P. Rall*
- 1984 Tibor Balaraz*
- 1985 Frederick Coulston*
- 1986 Gerit Johannes Van Esch
- 1987 John P. Frawley*
- 1988 Kundan S. Khera*
- 1989 Richard A. Adamson
- 1990 Harold C. Grice
- 1991 Bernard A. Schwetz
- 1992 Roger D. McClellan
- 1993 Thomas W. Clarkson
- 1994 Bruce N. Ames
- 1995 Emil A. Pfizer*
- 1996 John F. Rosen*
- 1998 Helmut Alfred Greim
- 2001 Samuel M. Cohen
- 2002 Dennis Paustenbach
- 2003 Michael L. Dorson
- 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 A. Richard 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, in a preceding interval of October 1, 2010 to September 30, 2011. 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 Zichang Shi
- 2010 Bret F. Besarc, Manabu Nukuya, Nicholas Radio
- 2011 Diedrich S. Bermudez, Joshua A. Harrill, Jordan N. Smith
- 2012 Maryse Lemaire, Xuefeng Ren, Nisha S. Sipes
- 2013 Petra Habertzettl, Anne Loccisano, Yuanxuan 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
- 1997 B. C. Allen, R. J. Kavlock, C. A. Kimmel, E. M. Faustman
- 2002 J. Chen, Y. Li, J. A. Lavigne, M. A. Trush, J. D. Tager
- 2003 M. J. Bajt, J. A. Lawson, S. L. Vonderfecht, J. S. Gujral, H. Jaeschke
- 2004 S. Haddad, M. Beliveau, R. Tardif, K. Krishnan
- 2007 H. Sawada, K. Takami, S. Ashai
- 2009 S. Snykers, T. Vanhaecke, P. Papelue, A. Luttun, Y. Jiang, Y. V. Heyden, C. Verfaillie, V. Rogiers
- 2011 K. Lu, L. B. Collins, H. Ru, E. Bermudez, J. A. Swenberg
- 2014 A. Schirnwald, F. A. Murphy, A. Prina-Mello, C. A. Poland, F. Byrne, D. Movia, J. R. Glass, J. C. Dickerson, D. A. Schultz, C. E. Jeffere, W. MacNee, K. Donaldson

**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. Omrøen
2007 Stephen H. Safe
2008 Toshio Narahashi
2009 Lance R. Pohl
2010 Harithara M. Mehendale
2011 Oliver Hinkson
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 L. Krieger
1987 Gabriel L. Piaa*
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 Harithara Mehendale
2002 Joseph Borzelleca
2003 Frederick W. Oehme
2004 A. Jay Gandolfi
2005 Nobuyuki Ito
2006 Robert A. Schatz
2007 Torbjørn 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 Yes 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. Schechtmann
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 Olivo-Verbel (Colombia)
Host: Michael P. Waalkes and Mitroslav Styblo (USA),
Scholar: Orish Ebere Orisakwe (Nigeria)
Host: Judith T. Zelikoff (USA)
2013 Scholar: Sri Noegrohoati (Indonesia)
Host: 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. Rumbeira (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 Katzellenbogen
- 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**

- 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: Verdal 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. Miyagawa
- 1985: Carrol S. Weil*
- 1986: Ted A. Loomis
- 1987: Bo Holmstedt
- 1988: Seymour L. Friess*
- 1990: Sheldon D. Murphy*
- 1991: Toshibio Narahashi*
- 1992: N. Norman Aldridge
- 1993: John Doull
- 1994: Ernest Hodgson
- 1995: Robert A. Scala
- 1996: Gabriel L. Piaa*
- 1997: Mary O. Amdur*
- 1998: John A. Thomas
- 1999: Thomas Clarkson
- 2000: Philippe Shubik*
- 2001: Donald Reed
- 2002: Bernard Schwartz
- 2003: M. W. Anders
- 2004: Robert Goyer
- 2005: Roger D. McLellan
- 2006: A. Wallace Hayes
- 2007: James A. Swenberg
- 2008: Hanspeter Witsch
- 2009: Gary M. Williams

**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, Aziza Cuevas
- 2013: Shirisha Chittiboyina, Hannah Pope-Varsalona
- 2014: Brittany Baish, Christin Grabinski, Alessandro Venosa
- 2015: Sanket Gadhia, Jessica M. Sapio

**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, from ethnic groups 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.

**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: Pamela B. Tijerina
- 2015: Latisa 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, Adelidia Segarra, Ryan Vaughan
- 2007: Kay Goncalves, Lisa Koselke, Basharat Sanni, Sonia Talathi, Anna Zimmerman
- 2008: Amy DeMicco, Tharu Fernando, Yamel Perdomo, Amy Yi Hsian Saik, Kelly Sullivan
- 2009: Sherrine 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
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 Lindsay
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 Dishovskiy (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. Self (Egypt)
2004 Cristina Bolaton (Philippines), P.K. Gupta (India), Salmaan Inayat-Hussain (Malaysia), Xianping Ying (China)
2005 Diana B. Apostolova (Bulgaria), Marite Aria Bake (Latvia), Teresa I. Fortoul (Mexico), Mary Gulumian (South Africa), He Jiliang (China), Khalidya Khamidulina (Russia), Livinus Orish Ebere Orisakwe (Nigeria), Songsak Srimujata (Thailand), Sinan Suzen (Turkey)
2006 Olanike Adeyemo (Nigeria), Deepak Arqwal (India), Carlos Colangelo (Argentina), Sandra Demichelis (Argentina), Mumtaz Iscan (Turkey), Karolina Lyubomirova (Bulgaria), Osman Aly Osman (Egypt), Shaung-Qing Peng (China), Julia Radenkova-Saeva (Bulgaria)
2007 Hatem Ahmed (Egypt), Jiri Baigir (Czech Republic), Ismet Cok (Turkey), Carlos Garcia (Peru), Wenceslao Klat (Philippines), Calivarathinn Latchoumycandane (Singapore), Fatehaya Metwally (Egypt), Hilmi Orhan (Turkey), Nwoha Umunna (Nigeria)
2008 Jin-Ho Chung (Korea), Lyndy McGaw (South Africa), Nimal Buyukguzel (Turkey), Hande Gurer-Orhan (Turkey), Philip Burcham (Australia), Saidy Bakry (Egypt), Zdravko Paskalev (Bulgaria), Gafer Rageh Ahmed (Egypt)
2009 Sema Burgsz (Turkey), Estefania G. Moreira (Brazil), Kolawole V. Olorunshola (Nigeria), Kelly P.K. Olympio (Brazil), Betzabet Quintanilla-Vega (Mexico), Jalila Ben Salah (Tunisia), Suleeporn Sangrajrang (Thailand)
2010 Asongame 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. Senthilkumar (India), Guan Sheng (China), Asad Zia (Pakistan), Sonja Hansche (USA)
2011 Sonali Das (India), Rawiwan Maniyanatchote (Thailand), Anoka A. Njan (Nigeria), Arjan Deetens (Belgium), Osman S. Shaik (India), Songsak Srimujata (Thailand), Omoniyi Kayode Yemitan (Nigeria), Qin Zhang (China), Bin Zhao (China)
2012 Oludipo Ademuyiya (Nigeria), Murali Badanthakad (India), Sunisa Chaiklieng (Thailand), Xianju Huang (China), Zhenlie Huang (China), Guojun Li (China), Jianlin Lou (China), Maria Samayo (Guatemala), Haixue Wang (China), Jingshu Zhang (China), Xiaofeng Zhang (China), Li Zhou (China)
2013 John I. Anetor (Nigeria), Kailen Boodha (South Africa), Karina R. Caballero-Gallardo (Colombia), Osama S. El-Tawil (Egypt), Miriam Carolina Guzman 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. Mubarakah (Singapore), Olufunke E. Ola-Davies (Nigeria), Ishak Omotosho (Nigeria), Muneeb U. Rehman (India), Yang Song (China), Jing Zhang (China)
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.
**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](http://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 Dnyanomote, Jonathan Maher
2006 Mary Hassanii, Prajakta Palkar
2007 Renee Gardner, Prajakta Palkar, Rohit Singhal, René Viñas
2008 Kimberly A. Hays, Haitian Lu
2009 Jennifer Cole, Kate Beth Paul, Samuel Peterson
2010 Maxwell C. K. Leung, David T. Szabo, Natalia M. VanDuy
2011 Vijay More
2012 Agnes Forgacs, René Viñas
2013 Aaron Lulka, Jamie Moscovitz, Alexandra Munoz
2014 Laura E. Armstrong, Christin M. Grabinski
2015 Prajakta Shimpie
2016 Shih-Yu Chang, Tshepo Moto

**Colgate-Palmolive Grant for Alternative Research**
The Colgate-Palmolive Grant 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, Xiaozhong Yu
2007 Rita L. Caruso, Daniel R. Cerven, Anne R. Greenlee, Glenn M. Walker
2008 Daniel R. Cerven, 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 Qin 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 Dnyanomte
2010 Ankur Dnyanomte
2011 Cassandra Deering-Rice
2012 Melanie Adler
2013 Melanie Adler
2014 Jonathan H. Shannahan
2015 Fabian A. Grimm
2016 Katherine Dunrick

**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](http://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](http://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

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<tr>
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2015 Honor Roll of Contributors

Individual Contributors

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### SILVER ENDOWMENT CONTRIBUTORS

$100–$249 in 2015

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$40–$99 in 2015

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- Galen William Miller
- Kristen R. Ryan
- Ainsley Weston
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#### Institutional Contributors

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<tr>
<th>Category</th>
<th>Contribution Range</th>
<th>Institutions</th>
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<tr>
<td><strong>—DIAMOND CONTRIBUTOR—</strong></td>
<td>$10,000 or more</td>
<td>None</td>
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<td><strong>—PLATINUM CONTRIBUTOR—</strong></td>
<td>$5,000–$9,999</td>
<td>None</td>
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<td>- Scialli Consulting LLC</td>
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<td><strong>—EMPLOYER’S MATCHING CONTRIBUTIONS—</strong></td>
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<td>- Bristol-Myers Squibb Foundation on behalf of Kristina Dam Chadwick</td>
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<td>- The Clorox Company on behalf of Kathryn E. Page</td>
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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](http://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. 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 Dool 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
- **Hariraha Mehandale 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

**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 Strategic Priorities**—Proceeds from this Fund support the highest priority needs of the Society as determined by the SOT Council.
## 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 ____________________________

## 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.

### Donor Information

<table>
<thead>
<tr>
<th>Name</th>
<th></th>
</tr>
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<tbody>
<tr>
<td>Affiliation</td>
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<tr>
<td>Address</td>
<td></td>
</tr>
<tr>
<td>City</td>
<td>State/Region</td>
</tr>
<tr>
<td>Country</td>
<td>Zip</td>
</tr>
<tr>
<td>Telephone</td>
<td>Fax</td>
</tr>
<tr>
<td>Email</td>
<td></td>
</tr>
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Contributions of $500 or greater may be allocated to one or more funds in increments of $250 per fund.

### General Purpose Funds

<table>
<thead>
<tr>
<th>Education</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Activities</td>
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<tr>
<td>SOT Strategic Priorities</td>
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### Named Funds

(Listed on the proceeding page)

<table>
<thead>
<tr>
<th>Fund Name</th>
<th>$</th>
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<tr>
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<td></td>
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<td></td>
<td>$</td>
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<tr>
<td></td>
<td>$</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$</td>
</tr>
</tbody>
</table>

### Payment

- Enclosed is a check for $ __________ Check # __________ (Payable to “Society of Toxicology”)

- AMEX □ □ Discover □ □ Diners □ □ MasterCard □ □ Visa

<table>
<thead>
<tr>
<th>Credit Card #</th>
<th>Exp Date</th>
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<table>
<thead>
<tr>
<th>Name on Card</th>
<th>Signature</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Date</th>
</tr>
</thead>
</table>

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.

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**Mail or Fax to:**

Society of Toxicology Endowment Fund
1821 Michael Faraday Drive, Suite 300
Reston, VA 20190

Fax: 703.438.3113
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.

<table>
<thead>
<tr>
<th>Organization</th>
<th>City, State</th>
</tr>
</thead>
<tbody>
<tr>
<td>AbbVie</td>
<td>Abbott Park, Illinois</td>
</tr>
<tr>
<td>American Petroleum Institute</td>
<td>Washington, DC</td>
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<tr>
<td>AstraZeneca</td>
<td>Macclesfield, United Kingdom</td>
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<tr>
<td>Bristol-Myers Squibb Company</td>
<td>Princeton, New Jersey</td>
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<tr>
<td>Celgene Corporation</td>
<td>Summit, New Jersey</td>
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<tr>
<td>Charles River</td>
<td>Wilmington, Massachusetts</td>
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<tr>
<td>Chevron Corporation</td>
<td>San Ramon, California</td>
</tr>
<tr>
<td>The Coca-Cola Company</td>
<td>Atlanta, Georgia</td>
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<tr>
<td>Colgate-Palmolive Company</td>
<td>Piscataway, New Jersey</td>
</tr>
<tr>
<td>Covance</td>
<td>Madison, Wisconsin</td>
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<tr>
<td>CRC Press/Taylor &amp; Francis Group</td>
<td>Boca Raton, Florida</td>
</tr>
<tr>
<td>Dow Chemical Company</td>
<td>Midland, Michigan</td>
</tr>
<tr>
<td>Dow Corning Corporation</td>
<td>Midland, Michigan</td>
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<tr>
<td>The DuPont Haskell Global Centers for Health and Environmental Sciences</td>
<td>Newark, Delaware</td>
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<tr>
<td>Eli Lilly and Company</td>
<td>Indianapolis, Indiana</td>
</tr>
<tr>
<td>Envigo</td>
<td>East Millstone, New Jersey</td>
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<tr>
<td>ExxonMobil Biomedical Sciences, Inc.</td>
<td>Annandale, New Jersey</td>
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<tr>
<td>Genentech, Inc.</td>
<td>South San Francisco, California</td>
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<td>Gilead Sciences, Inc.</td>
<td>Foster City, California</td>
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<tr>
<td>Honeywell International, Inc.</td>
<td>Morristown, New Jersey</td>
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<tr>
<td>Janssen Pharmaceutical Companies of Johnson &amp; Johnson</td>
<td>Raritan, New Jersey</td>
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<tr>
<td>MPI Research</td>
<td>Mattawan, Michigan</td>
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<tr>
<td>Organovo, Inc.</td>
<td>San Diego, California</td>
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<tr>
<td>Oxford University Press</td>
<td>Oxford, United Kingdom</td>
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<td>Pfizer, Inc.</td>
<td>Groton, Connecticut</td>
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<tr>
<td>Procter &amp; Gamble Company</td>
<td>Cincinnati, Ohio</td>
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<tr>
<td>Regeneron Pharmaceuticals, Inc.</td>
<td>Tarrytown, New York</td>
</tr>
<tr>
<td>Sanofi</td>
<td>Bridgewater, New Jersey</td>
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<tr>
<td>SNBL USA, Ltd.</td>
<td>Everett, Washington</td>
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<tr>
<td>Syngenta Crop Protection, Inc.</td>
<td>Greensboro, North Carolina</td>
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<tr>
<td>Takeda Pharmaceutical Company Limited</td>
<td>Cambridge, Massachusetts</td>
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<tr>
<td>TERA Center, University of Cincinnati</td>
<td>Cincinnati, Ohio</td>
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<tr>
<td>Western Slope Laboratory, LLC</td>
<td>Troy, Michigan</td>
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<tr>
<td>WIL Research Laboratories, LLC</td>
<td>Ashland, Ohio</td>
</tr>
<tr>
<td>WuXi AppTec</td>
<td>Saint Paul, Minnesota</td>
</tr>
<tr>
<td>XRpro Sciences, Inc.</td>
<td>Cambridge, Massachusetts</td>
</tr>
</tbody>
</table>

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

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Support Opportunities
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Volunteer Information
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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 world 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

Supporting SOT
Fosters Collaboration and Networking

Connect with MORE THAN 6,500 Attendees

20% International Attendees

MORE THAN 2,500 Abstracts Presented

Creating a Safer and Healthier World by Advancing the Science and Increasing the Impact of Toxicology
Mark Your Calendar!

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

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- AbbVie
- ACS Publications
- Allergan Foundation, The
- CiToxLAB
- DuPont Haskell Global Centers for Health and Environmental Sciences
- Eastman Charitable Foundation
- EUROTOX 2016
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- Genentech, Inc.
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- Gradient
- LikardaBio
- NSF International
- TERA Center, University of Cincinnati

**Silver**
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- 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**
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- IDEXX BioResearch
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Charles River
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Novartis
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Syngenta
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55th Annual Meeting and ToxExpo™

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