SOT | Program

51st Annual Meeting & ToxExpo™

March 11–15, 2012

San Francisco
CALIFORNIA

SOT | Society of Toxicology

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

www.toxicology.org

Society of Toxicology
San Francisco
California
2012

Dear Colleagues:

I cordially invite you to attend SOT's 51st Annual Meeting, March 11–15, 2012, at the Moscone Convention Center in San Francisco, California. The SOT Annual Meeting is the forum to showcase toxicology's novel discoveries. For the science of toxicology, this five-day event is the culmination of a year's worth of achievements in research and education.

The Annual Meeting also affords attendees the opportunity to learn about the latest scientific achievements from myriad experts in the field of toxicology. The SOT thematic program provides participants with a unique opportunity to deepen their knowledge in topical areas and interact with leaders in their respective disciplines. Opportunities abound for members to meet other scientists they have never met, and to network with friends and colleagues. The Annual Meeting also offers a chance to pause and pay tribute to those scientists who have distinguished themselves in their field of expertise and are the recipients of the Society's most prestigious awards. Finally, SOT attendees can take advantage of the ToxExpo, which is the world's largest exposition of its kind, offering a comprehensive marketplace for product information and cutting-edge technology.

The SOT Annual Meeting is the premier event that the Society hosts every year to meet the needs of the entire toxicology community. More important, the Annual Meeting goes a long way toward fulfilling the SOT strategy of building for the future of toxicology, highlighting the significant scientific achievements, and broadening the awareness of these accomplishments and their potential impact. I urge you to join us for this event. Help us to make the SOT 51st Annual Meeting an event to remember.

Sincerely,

Jon C. Cook

Jon C. Cook, PhD, ATS, DABT

2011–2012 SOT President

Awards Ceremony
(All Attendees Welcome)
Sunday, March 11
5:15 PM–6:30 PM
Room 103

Welcome Reception
(All Attendees Welcome)
Sunday, March 11
6:30 PM–7:30 PM
Exhibit Hall E

25-Year (or More) Member Reception
(By Invitation Only)
Sunday, March 11
7:00 PM–8:00 PM
Room 120

SOT Annual Business Meeting
(All SOT Members Invited)
Tuesday, March 13
4:30 PM–6:00 PM
Room 102

The above events take place in the Moscone Convention Center.

SOT 2012 San Francisco California

51st Annual Meeting and ToxExpo

Scientific Program Overview

A page reference follows the course or session information.

Sunday, March 11

CE TARGET AREAS

Continuing Eduction course titles related to each Target Area are color coded in the listing below. Scientific program themes (at right) applicable to CE courses are presented in their corresponding colors.

Drug Metabolism

Xenobiotic metabolism (e.g., metabolic enzymes and drug transporters) is central to chemical disposition, and this field has made considerable advances in recent years. The application of advanced *in silico* technologies to more accurately predict compound fate, the incorporation of systems biology and 'omics approaches to understand the impact of chemicals in an organism, and the identification of new gene product families that contribute to drug disposition may be presented.

Noncoding RNAs and Their Role in Biology and Toxicology

Small, medium, and long noncoding RNAs have been identified in many species including humans. Their functions are still not fully understood, but they are becoming increasingly recognized as important factors in physiology, xenobiotic sensitivity, and disease. This target area encourages presentations that will provide in-depth instruction on noncoding RNAs, including what they are and how they function, their effects on xenobiotic sensitivity and disposition, their importance in disease risks and phenotypes, and their relevance to toxicological research.

7:00 AM–7:45 AM

SUNRISE CONTINUING EDUCATION COURSE

1. Alternative *In Vitro* Toxicology Testing for the 21st Century (p96)

8:15 AM–12:00 Noon

MORNING CONTINUING EDUCATION COURSES

2. **Applications of Biomarkers in the Assessment of Health and Disease** (p96)
3. Basic Embryology and Developmental Toxicity Testing (p97)
4. **Cutaneous Toxicity: *In Vitro* Methods for Toxicity and Safety Evaluation** (p97)
5. **Frontiers and Applications in Predictive Toxicology: *In Silico* Methods for Risk Assessment, Toxicology, and Metabolism** (p98)
6. **Overview and Application of the WHO/IPCS Harmonized Guidance for Immunotoxicity Risk Assessment for Chemicals** (p98)
7. Stem Cells in Toxicology (p99)

1:15 PM–5:00 PM

AFTERNOON CONTINUING EDUCATION COURSES

8. **Concepts of Green Chemistry and Its Role in the Identification and Design of Safer Chemicals and Products** (p99)
9. Innate Immunity and Its Relevance to Toxicology
10. **MicroRNAs in Biology and Toxicology** (p100)
11. **Regulatory Sciences: Preclinical Drug Development from Small Molecules to Biologics** (p100)
12. Specialized Techniques for Dose-Response Assessment and Risk Assessment of Chemical Mixtures (p101)
13. **The Use of Physiologically-Based Pharmacokinetic Modeling to Inform Early Life Sensitivity to Chemical Toxicity** (p102)

THEMATIC APPROACH

Monday–Thursday session titles related to each theme are color-coded in this Program Overview.

Aberrant Gene Expression in Toxicity and Disease—Epigenetics and microRNAs

Over the past decade, considerable effort has been expended in demonstrating that gene expression is altered in disease states and following exposure to pharmaceuticals and environmental agents. In many cases, the endpoint of interest has been mRNA levels; however, to more fully understand the etiology of disease, especially the timing and the role of toxicity in pathogenesis, it may be important to investigate the mechanisms that govern mRNA expression. Increasing evidence suggests that microRNAs may play a significant role in determining expression patterns, frequently in a highly temporal and tissue-dependent manner. Furthermore, epigenetic variables such as DNA methylation and histone modifications can influence gene expression in an inheritable fashion.

Characterizing Toxic Modes of Action and Pathways to Toxicity

Toxicants induce their effects via interactions with biological targets, triggering a cascade of key events that culminate in adverse health conditions. In keeping with contemporary, post-genome concepts, identification and integration of mechanisms of chemically-induced biological activity to develop more predictive models of *in vivo* biological response are being accomplished by using *in vitro* biochemical and cell-based assays.

Clinical Toxicology from Bedside to the Bench and Back

The overarching aim of clinical toxicology is to provide direction and insight from the clinical setting to drive discoveries in the research laboratory that will have meaningful consequences for the individual patient. Insights from the emergency department or the intensive care unit, for the acutely ill patient, as well as other clinical situations such as poison centers and occupational and environmental medical toxicology clinics, can provide direction for additional and complementary fundamental and translational studies.

Influence of Global Climate Change on Environmental Health Issues

It is expected that climate change will have potentially adverse effects on human health through several mechanisms such as extreme weather events, water level rises, malnutrition increase, ecosystem services impact, and spread of disease. For toxicologists, it will be important to study and predict the nature of adverse effects and the types of pollutants that will have their health effects altered by climate change and the magnitude of those alterations in order to minimize adverse public health effects. Temperature increases may synergize air pollution-mediated increases in deaths due to respiratory and cardiovascular effects. The effect of temperature increases on susceptibility to air and water pollution is a poorly understood area of concern, as are the impacts on ecosystems.

Regulatory Science: Bridging the Gap between Discovery and Product Availability

Recent breakthroughs in science and technology have the potential to transform our ability to prevent, diagnose, and treat disease. These developments will result in moving treatment strategies toward approaches that are tailored or personalized to individual patients, thus maximizing the benefit of treatments while decreasing their safety risks. Green chemistry initiatives are promoting the development of sound scientific screening strategies to support the design of better-performing chemical products and manufacturing processes that minimize the use and generation of hazardous substances and pose lower risks to humans and the environment. Together, these approaches show how regulatory science is providing the pathway for better chemistries and products by developing new tools, standards, and approaches to assess safety, efficacy, and performance.

Monday, March 12

8:00 AM–9:00 AM

PLENARY OPENING LECTURE

Systems Medicine, Systems Toxicology, Transformational Technologies and the Revolution from Reactive to Proactive (P4) Medicine
Lecturer: Leroy Hood, Institute for Systems Biology (p128)

9:15 AM–12:00 Noon

SYMPOSIUM SESSIONS

- Dietary Supplement Adulteration and Impact on Human Health (p129)
- DNA Damage Responses and Repair (p129)
- The Thick and Thin of Nuclear Receptors and Nrf2 in Diabetes and Obesity (p130)
- Toxicological Considerations of Epigenetic Targets in Product Development (p131)

WORKSHOP SESSIONS

- Alternative Approaches to the Safety Assessment of Natural Ingredients and Extracts in Cosmetics (p131)
- High-Throughput *In Vitro* Toxicity Testing: A Midcourse Assessment of Predictive Accuracy for *In Vivo* Endpoints and Use in Decision-Making (p132)
- The Epididymis—The Forgotten Target of Toxicants (p133)
- Therapeutic Immunomodulation and Cancer Risk: Science, Risk Assessment, and Risk Communication (p133)

PLATFORM SESSIONS

- Biological Modeling: Addressing Disease States, Defining Age Differences, and Evaluating Uncertainty (p134)
- Hypersensitivity Methods (p134)
- Mechanisms of Carcinogenesis (p135)
- Nanotoxicology: Nanogold or Nanosilver (p135)

9:30 AM–12:30 PM

POSTER SESSIONS

- Cardiovascular Toxicity I (p160)
- Data Integration and Decision Support Systems (p151)
- Epidemiology: Assessments and Approaches (p159)
- Fukushima Radiation Toxicity and Global Toxicology Issues (p144)
- Inhalants and Cardiopulmonary: Particulates and Chemical Agents (p146)
- Liver (p155)
- Medical Devices (p158)
- Nanotoxicology: Environmental Toxicology, Zebrafish, and Nanoparticles (p152)
- Receptors and Toxicity (p142)
- Risk Assessment: Case-Specific Characterizations (p137)
- Risk Assessment: New Applications and Analyses (p139)
- Safety Evaluation: Nonpharmaceuticals (p148)
- Toxicity of Mixtures (p140)

12:10 PM–1:30 PM

INFORMATIONAL SESSIONS

- Global Health and Environmental Impacts of E-Waste Recycling (p163)
- NIEHS Centers for Nanotechnology Health Implications Research: Building the Scientific Foundation for Evaluating Public Health Impacts of Engineered Nanomaterials (p164)

12:30 PM–1:20 PM

MERIT AWARD LECTURE

Reprogramming the Liver
Lecturer: Curtis D. Klaassen, University of Kansas Medical Center (p164)

1:00 PM–4:30 PM

POSTER SESSIONS

- Alternatives to Mammalian Models II (p176)
- Biological Modeling: Predictive PBPK Dosimetry Structures and Pharmacokinetic Data (p165)
- Biomarkers of Organ Damage by Drugs and Xenobiotics (p171)
- Children's Health and Juvenile Toxicity (p188)
- Computational Toxicology: Sequences, Systems, and Strategies (p191)
- Developmental Basis of Adult Disease (p167)
- DNA Damage and Repair (p179)
- Hypersensitivity and Autoimmunity (p189)
- Inflammation: Biochemical/Molecular Mechanisms (p186)
- Inflammation in Disease (p184)
- Liver and Model Systems (p168)
- Nanotoxicology: Nanoparticles I (p181)
- Pharmaceuticals (p166)
- Skin Toxicology (p174)

2:00 PM–4:45 PM

SYMPOSIUM SESSIONS

- 21st Century Validation Strategies—One Size No Longer Fits All (p193)
- Breast Cancer As a Multifactorial Disease: Interaction of Genetics, Life Stage, and the Environment (p194)
- Evaluation of Ocular Safety in the Development of New Drugs (p195)
- Molecular Basis for Prevention of Cardiotoxicity (p195)
- Nanoparticles for Drug Delivery: Interactions with the Immune System (p196)
- Toxic Cell Death: Signaling Pathways, Cross-Talk, and High-Throughput Analysis (p196)

WORKSHOP SESSION

- Concepts Critical to the Next Generation of Human Health and Ecological Risk Assessment (p197)

REGIONAL INTEREST SESSION

- Bridging the Green Chemistry Gap between Product Discovery and Availability (p197)

PLATFORM SESSIONS

- Ecotoxicology and Sentinel Animals (p198)
- Exposure Assessment: Biological and Probabilistic Approaches to Monitoring, Modeling, and Predictions (p199)
- Inhalants and Cardiopulmonary: Pollutants and Irritants (p199)

4:30 PM–5:50 PM

SOT/EUROTOX DEBATE

Comparative Hazards: Chemicals in the Environment Are the Largest Risk to Human Health (p201)

Tuesday, March 13

7:00 AM–7:50 AM

LEADING EDGE IN BASIC SCIENCE AWARD LECTURE

Inorganic Phosphate: Hidden Signal?
Lecturer: Myung-Haing Cho, Seoul National University (p203)

8:00 AM–9:00 AM

KEYNOTE MEDICAL RESEARCH COUNCIL (MRC) LECTURE

Role of microRNAs in Control of Gene Expression in Human Physiology and Pathology
Lecturer: Witold Filipowicz, Friedrich Miescher Institute for Biomedical Research (p203)

9:00 AM–11:45 AM

SYMPOSIUM SESSIONS

- An Intelligent Reproductive and Developmental Testing Paradigm for the 21st Century (p204)
- Cross-Species Analysis of Toxicogenomics Data: Approaches for Assessing Differences in Sensitivity and Conservation of Mode of Action (p204)
- Development of Biosimilar Products: Overview of Standards and Regulations (p205)
- The Role of Danger Signals in the Development of Chemical Sensitization by Environmental and Occupational Agents (p206)

WORKSHOP SESSIONS

- Assessing the Bioavailability and Risk from Metal-Contaminated Soils and Dusts (p206)
- State of the Science and the Future for the Predictive Power of *In Vitro* and *In Vivo* Models for Nanomaterials Toxicity Testing (p207)
- Sufficient Similarity of Whole Representative Mixtures or a Relative Potency Factor Approach: Polycyclic Aromatic Hydrocarbons As a Case Study (p208)

REGIONAL INTEREST SESSION

- What's the Buzz? Bee Health and California's Agricultural Industry (p208)

PLATFORM SESSIONS

- Acetaminophen Toxicity: Mechanistic and Translational Aspects (p209)
- Cardiovascular Toxicity of Nanoparticles (p209)
- Emerging Methodologies for Genotoxicity Assessment (p210)

9:00 AM–12:30 PM

POSTER SESSIONS

- Disease Prevention and Clinical and Translational Toxicology (p211)
- Ecotoxicology (p222)
- Epigenetics (p234)
- Food Safety and Nutrition II (p223)
- Inhalants and Cardiopulmonary: Chemical Agents (p220)
- Kidney (p231)
- Nanotoxicology: Nanoparticles II (p236)
- Neurodegenerative Disease (p214)
- Neurotoxicity: General (p218)
- Neurotoxicity: Metals (p215)
- 'Omics in Toxicology (p233)
- Oxidative Injury (p229)
- Pharmaceutical Safety Assessment: Methods and Mechanisms (p226)
- Toxicology Education and Policy (p225)

9:00 AM–4:30 PM

RESEARCH FUNDING SESSION

Research Funding Information Room (p239)

12:00 Noon–1:20 PM

ROUNDTABLE SESSIONS

- Evolving the EPA Endocrine Disruptor Screening Program: From Using High-Throughput Screening Assays for Prioritization to Reducing Reliance on Whole-Animal Tests (p241)
- Improving Chemical Safety Assessment through Harmonization: Why, How, and When? (p241)
- Testing of Nanomaterials for Genotoxicity—Necessity or Waste of Time? (p242)

12:00 Noon–1:30 PM

RESEARCH FUNDING SESSION

Strategies for Submitting Successful Grants: Brown Bag Lunch (p240)

12:30 PM–1:20 PM

DISTINGUISHED TOXICOLOGY SCHOLAR AWARD LECTURE

Environmental Chemicals: From Biochemical and Molecular Toxicology to Education and Outreach
Lecturer: Ernest Hodgson, North Carolina State University (p243)

1:00 PM–4:30 PM

POSTER SESSIONS

- Alternatives to Mammalian Models for Dermal Toxicity (p244)
- Alternatives to Mammalian Models for Ocular Toxicity Testing (p243)
- Arsenic Toxicology (p253)
- Biotransformation/Cytochrome P450 (p261)
- Cardiovascular Toxicity II (p258)
- Chemical and Biological Weapons: Agents and Countermeasures (p245)
- Exposure Characterization: New Analytical Sampling Methods, Biomonitoring, and Assessment Applications (p256)
- Immunotoxicity: Evaluation (p263)
- Immunotoxicity: Mechanisms (p268)
- Immunotoxicity: Methods (p265)
- Nanotoxicology: Nanoparticles III (p247)
- Pesticides: Exposure and Hazard Assessment (p252)
- Pesticide: Toxicology (p250)
- Pharmacogenomics/Genetic Polymorphisms (p266)

1:30 PM–4:15 PM

SYMPOSIUM SESSIONS

- Circulating microRNAs: A New Class of Biomarkers for Tissue-Specific Toxicity (p271)
- *In Vitro* and *In Vivo* Alternative Models of Developmental Toxicity of Pharmaceutical Compounds (p271)

WORKSHOP SESSIONS

- Beyond Traditional Monoclonals: New Biologics Formats and Preclinical Challenges (p272)
- Biomarkers and Associated Health Consequences of Pesticide Exposures in Hispanic Populations (p272)
- How Useful Are Liver *In Vitro* Models for Toxicity and Mode-of-Action Prediction? (p273)
- Nonclinical and Clinical Applications of Translational Organ-Based Imaging (p274)
- Novel Topics in Environmental Polycyclic Aromatic Hydrocarbon Metabolism Leading to Carcinogenesis (p274)

EDUCATION-CAREER DEVELOPMENT SESSION

- Career Alternatives and Transitions: New Challenges and Opportunities in Today's Job Market for Toxicologists (p275)

PLATFORM SESSIONS

- Advances in Developmental Neurotoxicity: Stem Cell, High-Throughput, and Alternative Species Approaches (p276)
- miRNA As Biomarkers for Organ Damage (p276)
- New Insights into the Reproductive and Developmental Toxicity of Bisphenol A (p277)
- Risk Assessment Approaches: Data-Derived Extrapolations, QSAR, *In Silico* Strategies, and Surrogates (p278)

4:30 PM–5:50 PM

EDUCATION-CAREER DEVELOPMENT SESSION

- The Art of Negotiation: A Fundamental Skill for Scientists (p279)

4:30 PM–6:00 PM

SPECIAL MEMBER SESSION

SOT Annual Business Meeting (p281)

Wednesday, March 14

7:30 AM–8:50 AM

ROUNDTABLE SESSION

- Placing Bisphenol A Risks in a Human Exposure Context: Is Internal Exposure to Bioactive Bisphenol A in Humans Similar to Levels in Affected Rodent Test Species? (p281)

7:30 AM–8:50 AM

INFORMATIONAL SESSIONS

- Getting Certified As a Toxicologist: Why, When, Where, and How? (p281)
- Good Laboratory Practice (GLP) in China (p282)

9:00 AM–11:45 AM

SPECIAL SYMPOSIUM

Meet the Directors (p282)

SYMPOSIUM SESSIONS

- Epigenetic and miRNA Regulations in Carcinogenesis: Toxicological Implications (p283)
- Nonclinical Safety Assessment of Dual-Targeting Biotherapeutics (p283)
- The Allergenicity and Immunomodulatory Effect of Food Substances (p284)
- The Toxicological Impact of Metals, Crude Oil, and Chemical Dispersants from the Gulf of Mexico Oil Crisis on Human and Wildlife Health (p285)

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WORKSHOP SESSIONS

- Caught in the Act: Free Radical Detection and Implications in Pathways to Toxicity (p286)
- Chelation Therapy: A Focus on the Risks and Benefits (p286)
- Cooperative Epidemiology and Toxicology Research: HEI's National Particle Component Toxicity (NPACT) Initiative (p287)
- Progress in Developing New Biomarkers of Drug-Induced Liver Injury (DILI): What You Don't Know Can Hurt You (p287)

PLATFORM SESSIONS

- Bioinformatics: Signature Applications and Network Analyses (p288)
- Chemical and Biological Weapons: Agents and Countermeasures (p288)
- Nanotoxicology: Carbon Nanotubes and Nanofibers (p289)

9:00 AM–12:30 PM

POSTER SESSIONS

- Alternatives to Mammalian Models I (p290)
- Cell Death Pathways (p307)
- Developmental Neurotoxicity I (p300)
- Developmental Toxicity II (p299)
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- Molecular Basis of Carcinogenesis (p302)
- NrF2 (p315)
- Regulatory Policy: Procedures and Predictions (p293)
- Stem Cell Biology and Toxicology (p309)

9:00 AM–4:30 PM

RESEARCH FUNDING SESSION

Research Funding Information Room (p319)

12:00 Noon–1:20 PM

ROUNDTABLE SESSIONS

- Scientific, Regulatory, and Public Perspectives on the Credibility and Use of Alternative Toxicological Test Methods in a Legislative Framework (p320)
- The Future of Toxicology Education: Outcomes of the Toxicology Educational Summit (p320)

INFORMATIONAL SESSION

- Pregnancy in the Workplace: Managing Occupational Safety for a Unique Subpopulation (p321)

12:30 PM–1:20 PM

TRANSLATIONAL IMPACT AWARD LECTURE

Medical Toxicology Evaluations of the 2008 TVA Fly Ash Spill
Lecturer: John G. Benitez, Vanderbilt University Medical Center, Tennessee Poison Center (p321)

1:00 PM–2:00 PM

TOXEXPO TIME

ToxExpo is an important component of the SOT Annual Meeting. The Scientific Program Committee has therefore allotted this dedicated time for attendees to visit the Exhibit Halls A–C to stay abreast of the latest advances in technology, equipment, and services available to the toxicologist.

1:00 PM–4:30 PM

POSTER SESSIONS

- Animal Models in Pharmaceutical Toxicology (p329)
- Animal Models in Toxicology (p330)
- Biomarkers of Environmental Exposure and Toxicity (p340)
- Developmental Neurotoxicity: Metals and Pesticides (p349)
- Endocrine Toxicity (p322)
- Male Reproductive Toxicology (p333)
- Metals (p342)
- Natural Products (p337)
- Neurotoxicity: Pesticides (p348)
- Persistent Organic Chemicals (p346)
- Pharmaceutical Safety Assessment: Novel Therapeutics and Preclinical Safety Assessment (p325)
- Reproductive Toxicology II (p335)

1:30 PM–4:15 PM

SYMPOSIUM SESSIONS

- New Visions in Toxicology: Lysosomes—Roles in Disease, Toxicity, and Drug Development (p351)
- Off the Beaten Path: Preclinical Approaches to Safety Evaluation of Cells/Gene Therapy, Vaccines, and Adjuvants (p352)
- Trivalent Arsenic Metabolites and Arsenic Toxicity (p352)

WORKSHOP SESSIONS

- Advancing Food Safety in a Global Marketplace (p353)
- Discovering Novel Hypotheses for Mechanisms of Toxicity from High-Content Data Sets (p354)
- Muscle Toxicity—Current Challenges in Translatable Biomarkers (p354)
- Progenitor and Stem Cells As Targets of Environmental Pollutants (p355)
- T-Dependent Antibody Responses in Nonhuman Primates: Challenges and Opportunities (p355)

PLATFORM SESSIONS

- Alternatives to Mammalian Models in Skin Sensitization (p356)
- Computational Toxicology: Predicting Hepatotoxicity (p356)
- Inhalants and Cardiopulmonary: Particulates (p356)
- Risk Analysis: New Derivations and Updated Debates (p358)

4:30 PM–5:50 PM

INFORMATIONAL SESSIONS

- Evolution and Implementation of Combined Chemical Exposure Methods: International Perspectives (p359)
- Proposition 65: Twenty-Five Years of Implementing California's Unique and Far-Reaching Law Regulating Organic and Metallic Carcinogens and Developmental/Reproductive Toxins (p360)

EDUCATION-CAREER DEVELOPMENT SESSION

- Refining Your Science Communication Skills (p360)

Thursday, March 15

7:30 AM–8:50 AM

ISSUES SESSION

Building for the Future: Strategic Initiatives for the SOT Endowment Fund (p362)

8:30 AM–12:00 Noon

POSTER SESSION

- Carcinogenesis (p362)

9:00 AM–11:45 AM

SYMPOSIUM SESSIONS

- Advances in Bridging Nonclinical Cardiovascular Data to the Clinic (p366)
- Emerging Evidence for Novel Noncholinergic Mechanisms of Organophospate-Induced Neurotoxicity (p366)
- Emerging Mechanistic Targets in Lung Injury Induced by Combustion-Generated Particles (p367)
- Realizing the Vision of 21st Century Toxicity Testing: Genetic Approaches to Pathway Analysis (p368)

WORKSHOP SESSIONS

- Challenges and Opportunities in Evaluating Protein Allergenicity across Biotechnology Industries (p368)
- Chemical Standardization of Botanical Medicines for Safe and Effective Use As Therapeutic Agents (p369)

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The Toxicologist on CD-ROM ..... Inside Back Cover

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New this year, SOT has partnered with our abstract and ToxExpo service providers to offer you multiplatform mobile solutions for the SOT Annual Meeting and ToxExpo, provided free of charge to attendees and exhibitors.

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ChirpE Mobile Application for ToxExpo

Access ToxExpo information and browse a real-time ToxExpo floor plan, search for 2012 exhibitors, products, and services, and virtually interact with these exhibitors.

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Job Bank

The SOT Annual Meeting, with over 7,500 attendees including the best toxicologists, early career scientists, and toxicology-related employers, is the best place to make your connection, whether you are looking for a position or searching for the right candidate. To facilitate job searches, the SOT online Job Bank is available at all times, and provides you the opportunity to prepare to take full advantages of the on-site Job Bank Center in San Francisco.

Scan Me!

Late-Breaking Abstract Supplement

Download a PDF of all the accepted Late-Breaking Abstracts being presented on Thursday March 15.

Scan Me!

Mentor Match

The Society of Toxicology recognizes the importance of mentoring in the scientific and professional development of its members. 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.

Scan Me!

Open Table

Make online reservations, read restaurant reviews from diners, and earn points toward free meals. OpenTable is a real-time online reservation network.

Scan Me!

San Francisco Travel Website

Your one-stop website for complete San Francisco area information including where to eat, what to do, and where to shop. Use the website to find transportation information, to purchase tickets to local attractions, and to make restaurant reservations.

Scan Me!

SOT Website

The SOT website is the portal to all SOT information and services.

Scan Me!

ToXchange

Communicate, connect, and collaborate with colleagues via ToXchange, the professional, secure SOT member network. Access the new mobile option.

How to Use This *Program*

The Society of Toxicology's (SOT) 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, the Scientific Session Reference, and Scientific Session Type Legend to assist you. We hope that you find this information useful and welcome your comments.

Program Publication Layout Overview

Section	Description
Front Fold-Out Cover—Scientific Program Overview	This quick reference guide lists the Annual Meeting scientific sessions with corresponding page numbers in the Program Description section. Color-coded presentation titles assist you in identifying sessions within each theme. A brief description for each theme is available as well.
Daily Pocket Calendar (pages 5–13)	This at-a-glance calendar is your guide to the daily activities of the Annual Meeting including special sessions; Regional Chapter, Special Interest Group, Specialty Section, and ancillary functions; and SOT committee meetings. We encourage you to tear out the daily guide for easy reference. Please note that the scientific session details are included at the end of each day's guide.
Schedule by Event Name (pages 15–24)	This is an alphabetical listing of all the functions held during the Annual Meeting. You may use this easy-to-read schedule to quickly locate an event. Please note that for the scientific session details, you must refer to the Scientific Program Overview on the front fold-out cover or Daily Pocket Calendar on pages 5–13.
Scientific Session Index (pages 104–110)	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 Description section.
Poster Session Schedules and Board Surface Maps (pages 111–124)	The Poster Session Schedule and Poster Board Surface Maps are displayed with a mock layout of the ToxExpo Exhibit Hall to assist you in finding poster sessions. Each poster schedule and surface map shows the poster session abstract numbers and the poster surface locations for each poster session time. Posters are displayed in the Exhibit Halls A–C, Monday–Wednesday and Gateway Ballroom on Thursday. Late-Breaking Abstracts will be presented only on Thursday, March 15, in the Gateway Ballroom.
Author Index (pages 375–403)	The numerals following the author's names refer to the abstract numbers referenced in this *Program*, *The Toxicologist,* and the Itinerary Planner online or mobile versions. The asterisk after the abstract number indicates the author is the first presenter.
Abstract Key Word Index (pages 405–419)	This index provides a listing of key words by subject or chemical and the relevant abstract(s) referenced in this *Program*, *The Toxicologist*, and the Itinerary Planner.

Program Description Scientific Session Reference (pages 125–369)

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

Listing	Description
Session Type and Title	Session type and title display in bold type. A brief description for each scientific session type is listed below.
Sponsors or Endorsers	This section lists the sponsors and endorsers from SOT Special Interest Groups, Specialty Sections, Regional Chapters, or SOT Committees. For each scientific session, the sponsor, the group that developed the session, is listed first and followed by the endorsers. The list of endorsers, groups that support the session, is sorted alphabetically.
Abstract Number or Presentation Time	The first number listed is the abstract number, or the SOT final identifying number. For scientific sessions (but not Continuing Education Courses or Poster Presentations), the second number is the presentation time. Individual abstracts can be found using the Itinerary Planner online or mobile versions, on *The Toxicologist* CD-ROM (free to all attendees), and in *The Toxicologist* publication (available for purchase on-site for $20).
Poster Sessions	The poster board surface number is listed above the title of each individual poster presentation for easy reference.

Scientific Session Type Legend

- CE Target Areas (45 or 225 minutes)—Continuing Education courses highlighting specialized areas of interest
- EC Education-Career Development Sessions (80 minutes)—Sessions that provide the tools and resources to toxicologists that will enhance their professional and scientific development
- E Exhibitor Hosted Sessions (60 minutes)—Informative sessions developed by an exhibiting company
- FS Featured Sessions (50–60 minutes)—Keynote and other special lectures
- IS Informational Sessions (80 minutes)—Scientific planning or membership development
- PL Platform Sessions (165 minutes)—Oral presentations that cover new areas, concepts, or data
- PS Poster Sessions (180–210 minutes)—Topic specific presentations that cover new areas, concepts, or data
- RI Regional Interest Session (165 minutes)—Central topics of relevance that describe public health and/or ecological problems of a particular region
- R Roundtable Sessions (80 minutes)—Controversial subjects
- S Symposium Sessions (80 or 165 minutes)—Cutting-edge science; new areas, concepts, or data
- Thematic Sessions (80–210 minutes)—Timely topics of relevance to toxicology
- W Workshop Sessions (165 minutes)—State-of-the-art knowledge in toxicology

Advance Your Science

Be Connected • Be Involved • Be Informed • Be Inspired

SOT Pavilion
Your Place to Connect

Located in the ToxExpo Exhibit Hall, the SOT Pavilion is your place to connect and learn about SOT programs, services, membership benefits, and more. Find out about the SOT Endowment Fund, *Toxicological Sciences*, SOT awards and sponsored awards and fellowships, ToXchange—the SOT member network, educational programs directed across the spectrum from K–12 throughout the toxicology career, and everything taking place at the Annual Meeting. The SOT Pavilion is your place on the exhibit floor for everything SOT and more. It's a great place to connect, network, and discover what's new.

SOT Pavilion Booth #1700

Find out how you can:

- Be an Advocate for Toxicology
- Participate in Your SOT Regional Chapter
- Choose a Special Interest Group
- Join a Specialty Section
- Connect through the SOT Website
- Use the SOT Job Bank—FREE !
- Actively Participate in ToXchange, the Private and Secure SOT Member Network
- Lead an SOT Committee or Activity
- Nominate and Apply for SOT Awards
- Partake in ToxExpo

A schedule of events at the SOT Pavilion can be found on page 54.

Daily Pocket Calendar

Tired of carrying the *Program* during the meeting?
Access the real-time schedule via the mobile or online Itinerary Planner.

For your convenience, please tear out and carry with you. Easily folds to nest within your badge holder.
(Calendar as of January 3; private events are not listed.)

Saturday — March 10

Events are listed alphabetically by the event start time.

Events at the Moscone Convention Center are noted as CC.

8:00 AM to 11:30 AM
Council Orientation Meeting
Marriott Marquis Foothills G1

8:00 AM to 5:00 PM
IUTOX Meetings
CC Rooms 200, 212

8:00 AM to 5:00 PM
ToxExpo Set Up
CC Exhibit Halls A–C

10:30 AM to 4:30 PM
K–12 Outreach Event: What Do Snow White, Romeo and Juliet, and the Madhatter Have in Common?...Toxicology!
The Lawrence Hall of Science
University of California, Berkeley

11:30 AM to 1:00 PM
Council Orientation Luncheon
Marriott Marquis Foothills G2

11:30 AM to 6:00 PM
Johnson & Johnson Toxicology Interest Group Meeting
Marriott Marquis Nob Hill A

1:00 PM to 6:00 PM
American Board of Toxicology Board of Directors Meeting
Marriott Marquis Foothills D

1:00 PM to 5:30 PM
Council Meeting
Marriott Marquis Foothills G1

4:00 PM to 7:00 PM
Email Center
CC South Lobby

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

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

4:00 PM to 7:00 PM
SOT Office
CC Room 222

4:00 PM to 7:00 PM
Speaker Ready Room
CC Room 220

4:00 PM to 7:00 PM
Tour Desk
CC South Lobby

4:15 PM to 5:45 PM
Undergraduate Education Program: Orientation for SOT Hosts, Peer Mentors, and Advisors
Grand Hyatt Room Cypress B

5:00 PM to 5:45 PM
Continuing Education Committee Walk-Through
CC Room 303

5:45 PM to 8:00 PM
Undergraduate Education Program: Opening Event *(By Invitation Only)*
Grand Hyatt Grand Ballroom East

6:00 PM to 9:00 PM
Graduate Student Fellowship—Novartis Award Interviews by Awards Committee
Marriott Marquis Foothills H

8:00 PM to 9:00 PM
CDI Reunion *(Networking and Dessert—Invited: Anyone involved with the SOT Undergraduate Education Program through the years)*
Grand Hyatt Grand Ballroom East

Sunday — March 11

Events are listed alphabetically by the event start time.

Events at the Moscone Convention Center are noted as CC.

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

7:00 AM to 6:00 PM
Email Center
CC South Lobby

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

7:00 AM to 5:30 PM
SOT Office
CC Room 222

7:00 AM to 5:30 PM
Speaker Ready Room
CC Room 220

7:30 AM to 9:30 AM
Career Resource and Development Committee Meeting
CC Room 270

7:30 AM to 2:30 PM
Concession Stands
CC Gateway Ballroom Foyer

8:00 AM to 8:00 PM
Coat/Luggage Check
CC South Lobby

8:00 AM to 5:00 PM
Guest/Spouse Hospitality Room
Marriott Marquis Foothills F

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

8:00 AM to 5:00 PM
IUTOX Meetings
CC Rooms 200, 212

8:00 AM to 5:00 PM
ToxExpo Set Up
CC Exhibit Halls A–C

8:00 AM to 12:00 Noon
Toxicology Education Foundation Annual Trustee Meeting
Marriott Marquis Foothills B

8:00 AM to 11:30 AM
Undergraduate Education Program: Toxicology Lectures *(Registration Required)*
Marriott Marquis Golden Gate Ballroom A

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

9:30 AM to 12:30 PM
Tour Desk
CC South Lobby

11:45 AM to 1:15 PM
Continuing Education Luncheon for Speakers, Committee, and Student Volunteers *(By Invitation Only)*
CC Room 300

11:45 AM to 1:15 PM
Undergraduate Education Program: Lunch and Networking *(Registration Required)*
Marriott Marquis Golden Gate Ballroom B

12:00 Noon to 1:00 PM
Alliance for Risk Assessment: Beyond Science and Decisions-Framework Demonstration/Lunch *(RSVPs to kroner@tera.org for lunch)*
Marriott Marquis Nob Hill A

12:00 Noon to 4:00 PM
Scientific Liaison Coalition Meeting
Marriott Marquis Yerba Buena Salon 6

12:00 Noon to 3:00 PM
Toxicological Sciences Associate Editors Meeting
Marriott Marquis Foothills G

12:45 PM to 1:45 PM
Undergraduate Education Program—Advisors: Tips for Advising Prospective Graduate Students
Marriott Marquis Pacific Suite F

12:45 PM to 1:45 PM
Undergraduate Education Program—Students: Planning for Graduate School
Marriott Marquis Pacific Suites B, C, E

1:00 PM to 4:00 PM
JHU-CAAT & HTP Consortium: Updates on 21st Century and Evidence-Based Toxicology
Marriott Marquis Yerba Buena Salon 1

1:00 PM to 5:00 PM
Job Bank Center
CC Room 272

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

2:00 PM to 6:00 PM
Safety Pharmacology Society Board Meeting
Marriott Marquis Foothills J

2:00 PM to 2:40 PM
Undergraduate Education Program: Career Opportunities in Toxicology, Panel Discussion
Marriott Marquis Golden Gate Ballroom B

3:00 PM to 5:00 PM
Congressional Subcommittee Meeting
CC Room 230

3:00 PM to 3:30 PM
Undergraduate Education Program: Host Mentor and Peer Mentor Meeting
Marriott Marquis Laurel Room

3:00 PM to 5:00 PM
Undergraduate Education Program: Open Time with Academic Program Directors and Internship Sponsors
Marriott Marquis Golden Gate Ballroom C1

4:00 PM to 5:15 PM
Awards Recipients Photographed
CC Room 102

4:45 PM to 5:15 PM
Awards Ceremony Music—Performed by Glenn Staller, Guitarist *(All Attendees Welcome)*
CC Room 103

5:15 PM to 6:30 PM
Awards Ceremony *(All Attendees Welcome)*
CC Room 103

6:30 PM to 7:30 PM
Welcome Reception *(All Attendees Welcome)*
CC Exhibit Hall E

7:00 PM to 8:00 PM
25-Year (Or More) Member Reception *(By Invitation Only)*
CC Room 120

7:30 PM to 10:00 PM
Arizona Night
Marriott Marquis Nob Hill A

7:30 PM to 10:30 PM
Lovelace Respiratory Research Institute Reception
Marriott Marquis Foothills E

7:30 PM to 9:00 PM
Student/Postdoctoral Scholar Mixer *(Ticket Required)*
Marriott Marquis Yerba Buena Salon 9

Tear out page for a convenient daily calendar

Daily Pocket Calendar

For your convenience, please tear out and carry with you. Easily folds to nest within your badge holder. *(Calendar as of January 3; private events are not listed.)*

Scientific Program Overview by Day & Time

Sunday — March 11

7:00 AM–7:45 AM

CONTINUING EDUCATION SUNRISE MINI-COURSE

1. Alternative *In Vitro* Toxicology Testing for the 21st Century

CE courses held on the Esplanade Level. (Pick up a course location flyer upon entering the Convention Center or see signage at the CE booths for room assignments.)

8:15 AM–12:00 Noon

CONTINUING EDUCATION MORNING COURSES

2. Applications of Biomarkers in the Assessment of Health and Disease
3. Basic Embryology and Developmental Toxicity Testing
4. Cutaneous Toxicity: *In Vitro* Methods for Toxicity and Safety Evaluation
5. Frontiers and Applications in Predictive Toxicology: *In Silico* Methods for Risk Assessment, Toxicology, and Metabolism
6. Overview and Application of the WHO/IPCS Harmonized Guidance for Immunotoxicity Risk Assessment for Chemicals
7. Stem Cells in Toxicology

1:15 PM–5:00 PM

CONTINUING EDUCATION AFTERNOON COURSES

8. Concepts of Green Chemistry and Its Role in the Identification and Design of Safer Chemicals and Products
9. Innate Immunity and Its Relevance to Toxicology
10. MicroRNAs in Biology and Toxicology
11. Regulatory Sciences: Preclinical Drug Development from Small Molecules to Biologics
12. Specialized Techniques for Dose-Response Assessment and Risk Assessment of Chemical Mixtures
13. The Use of Physiologically-Based Pharmacokinetic Modeling to Inform Early Life Sensitivity to Chemical Toxicity

SOT | Society of Toxicology
Creating a Safer and Healthier World by Advancing the Science of Toxicology

ToXchange

Home Members Member CVs Blogs Communities

At the heart of ToXchange is an enhanced SOT membership directory that allows you to:

- **Create a customized SOT member My Page that you can update online 24/7**
- **Search for and find other SOT members based on their profile information**
- **Be found by other 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 more!**

Plus, you can pull in content from other social networking systems, making ToXchange your one-stop professional online resource.

Hosted on a safe and secure network platform, ToXchange is specifically designed for SOT members.

Be sure to visit the SOT Pavilion in the Exhibit Hall for on-site information.

ToXchange

It's YOUR Network. Be a part of it.

For online information, go to www.toXchange.org.

(access the new mobile option)

Tear out page for a convenient daily calendar

Daily Pocket Calendar

Tired of carrying the *Program* during the meeting?
Access the real-time schedule via the mobile or online Itinerary Planner.

For your convenience, please tear out and carry with you. Easily folds to nest within your badge holder.
(Calendar as of January 3; private events are not listed.)

Monday March 12

Events are listed alphabetically by the event start time.

Events at the Moscone Convention Center are noted as CC.

6:15 AM to 8:00 AM
Women in Toxicology Special Interest Group Mentoring Breakfast
Marriott Marquis Club Room

6:30 AM to 8:00 AM
Carcinogenesis Specialty Section Officers Meeting
CC Room 256

6:30 AM to 8:00 AM
Clinical and Translational Toxicology Specialty Section Officers Meeting
CC Room 256

6:30 AM to 8:00 AM
Dermal Toxicology Specialty Section Officers Meeting
CC Room 256

6:30 AM to 8:00 AM
Food Safety Specialty Section Officers Meeting
CC Room 256

6:30 AM to 8:00 AM
In Vitro and Alternative Methods Specialty Section Officers Meeting
CC Room 256

6:30 AM to 8:00 AM
Inhalation and Respiratory Specialty Section Officers Meeting
CC Room 256

6:30 AM to 8:00 AM
Mechanisms Specialty Section Officers Meeting
CC Room 256

6:30 AM to 8:00 AM
Medical Device Specialty Section Officers Meeting
CC Room 256

6:30 AM to 8:00 AM
Mixtures Specialty Section Officers Meeting
CC Room 256

6:30 AM to 8:00 AM
Neurotoxicology Specialty Section Officers Meeting
CC Room 256

6:30 AM to 8:00 AM
Past Presidents Breakfast
CC Room 110

6:30 AM to 8:00 AM
Regulatory and Safety Evaluation Specialty Section Officers Meeting
CC Room 228

6:30 AM to 8:00 AM
Risk Assessment Specialty Section Officers Meeting
CC Room 256

6:30 AM to 7:45 AM
Toxicologic and Exploratory Pathology Specialty Section Officers Meeting
CC Room 214

6:45 AM to 7:45 AM
K–12 Subcommittee Meeting
CC Room 212

7:00 AM to 6:00 PM
Coat/Luggage Check
CC South Lobby

7:00 AM to 6:00 PM
Email Center
CC South Lobby

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

7:00 AM to 8:30 AM
Reproductive and Developmental Toxicology Specialty Section Officers Meeting
CC Room 264

7:00 AM to 7:45 AM
Scientific Program Committee Walk-Through
CC Room 301

7:00 AM to 5:00 PM
SOT Office
CC Room 222

7:00 AM to 5:00 PM
Speaker Ready Room
CC Room 220

7:20 AM to 7:50 AM
Undergraduate Education Program: Meeting for Students, Advisors, Peer Mentors, and SOT Hosts
CC Room 113

7:30 AM to 9:30 AM
Concession Stands
CC Gateway Ballroom Foyer

7:30 AM to 9:30 AM
Poster Set Up *(See Poster Board Surface Map on Pages 112–113)*
CC Exhibit Halls A–C

7:45 AM to 8:00 AM
2012 SOT Landmarks Program Presentation
The Ames Test
CC Exhibit Hall E

8:00 AM to 5:00 PM
Guest/Spouse Hospitality Room
Marriott Marquis Foothills F

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

8:00 AM to 9:00 AM
Plenary Opening Lecture: Systems Medicine, Systems Toxicology, Transformational Technologies and the Revolution from Reactive to Proactive (P4) Medicine, *Lecturer: Leroy Hood, Institute for Systems Biology*
CC Exhibit Hall E

9:00 AM to 10:00 AM
Complimentary Coffee
CC Exhibit Halls A–C

9:00 AM to 4:30 PM
Concession Stands
CC Exhibit Halls A–C

9:00 AM to 10:00 AM
Global Collaboration Coffee
CC Room 112

9:00 AM–4:30 PM
"Hoops for the Endowment Fund"
(See Details on Page 83)
CC Exhibit Hall C

9:00 AM to 5:00 PM
Job Bank Center
CC Room 272

9:00 AM to 4:30 PM
SOT Pavilion
CC Exhibit Halls A–C

9:00 AM to 4:30 PM
ToxExpo Exhibits Open
CC Exhibit Halls A–C

9:00 AM to 4:30 PM
Wi-Fi Lounges *(Wireless Internet Access)*
CC Exhibit Halls A–C

9:15 AM to 10:15 AM
Exhibitor Hosted Session: Hepregen, Corp.
CC Room 105

9:15 AM to 10:15 AM
Exhibitor Hosted Session: Huntingdon Life Sciences
CC Room 100

9:15 AM to 10:15 AM
Exhibitor Hosted Session: MPI Research
CC Room 101

9:15 AM to 12:00 Noon
Scientific Sessions
CC *(See Session Index on Pages 104–110 for Room Location)*

9:30 AM to 12:30 PM
Poster Sessions
CC Exhibit Halls A–C

9:30 AM to 12:30 PM
Tour Desk
CC South Lobby

9:30 AM to 10:30 AM
Trainee Discussion with Plenary Speaker: Leroy Hood *(Ticket Required; SOT Student and Postdoctoral members only, limited seating)*
CC Room 111

9:30 AM to 10:50 AM
Undergraduate Education Program: Poster Session for Visiting Students
CC Exhibit Hall C, Poster Surfaces 601–624

10:30 AM to 11:30 AM
Exhibitor Hosted Session: Charles River
CC Room 101

10:30 AM to 11:30 AM
Exhibitor Hosted Session: Harlan Laboratories, Inc.
CC Room 100

10:30 AM to 11:30 AM
Exhibitor Hosted Session: SNBL USA, Ltd.
CC Room 105

11:00 AM to 11:50 AM
Undergraduate Education Program: Wrap Up
Marriott Marquis Golden Gate Ballroom C1

11:30 AM to 2:30 PM
Communications Committee Meeting
CC Room 200

12:00 Noon to 1:30 PM
Comparative and Veterinary Specialty Section Meeting/Luncheon
CC Room 250

12:00 Noon to 1:30 PM
Continuing Education Committee Meeting
CC Room 228

12:00 Noon to 2:00 PM
HESI Lunch Seminar *(Registration Required)*
Marriott Marquis Nob Hill A

12:00 Noon to 1:20 PM
In Vitro Toxicology Lecture and Luncheon for Students *(Ticket Required)*
Lecturer: Timothy J. Shafer, US EPA
Marriott Marquis Golden Gate Ballroom B

12:00 Noon to 1:30 PM
Journal of Toxicology Mechanisms and Methods Editorial Board Meeting
Marriott Marquis Foothills E

12:00 Noon to 1:30 PM
Scientific Liaison Task Force Meeting
CC Room 208

12:00 Noon to 1:00 PM
Special Interest Group Presidents and Officers Meeting
CC Room 300

12:00 Noon to 2:00 PM
Toxicology and Applied Pharmacology Associate Editor Board Meeting
Marriott Marquis Foothills B

12:10 PM to 1:30 PM
Scientific Sessions
CC *(See Session Index on Pages 104–110 for Room Location)*

12:30 PM to 1:20 PM
Merit Award Lecture: Reprogramming the Liver
Lecturer: Curtis D. Klaassen, University of Kansas Medical Center
CC Room 304

12:30 PM to 1:00 PM
Poster Set Up *(See Poster Board Surface Map on Pages 114–115)*
CC Exhibit Halls A–C

1:00 PM to 2:00 PM
Exhibitor Hosted Session: Agilent Technologies
CC Room 105

1:00 PM to 2:00 PM
Exhibitor Hosted Session: Chantest Corporation
CC Room 100

1:00 PM to 2:00 PM
Genentech: Considerations for Carcinogenicity Assessment of Anticancer Molecules
Marriott Marquis Pacific Suite B

1:00 PM to 4:30 PM
Poster Sessions
CC Exhibit Halls A–C

2:00 PM to 4:45 PM
Scientific Sessions
CC *(See Session Index on Pages 104–110 for Room Location)*

2:00 PM to 3:00 PM
ToxExpo Exhibit Hall Council Walk-Through
CC Exhibit Halls A–C

2:00 PM to 3:00 PM
ToxLearn Work Group
CC Room 212

2:15 PM to 3:15 PM
Exhibitor Hosted Session: Singulex
CC Room 100

2:15 PM to 3:15 PM
Exhibitor Hosted Session: Tandem Labs
CC Room 105

2:15 PM to 3:15 PM
Exhibitor Hosted Session: WIL Research
CC Room 101

3:00 PM to 4:00 PM
Specialty Section Collaboration and Communication Group Meeting
CC Room 202

3:30 PM to 4:30 PM
Exhibitor Hosted Session: *In Vitro* ADMET Laboratories
CC Room 101

3:30 PM to 4:30 PM
Exhibitor Hosted Session: Litron Laboratories
CC Room 100

3:30 PM to 4:30 PM
Exhibitor Hosted Session: National Toxicology Program
CC Room 105

4:30 PM to 6:00 PM
American Board of Toxicology Open Mixer
Marriott Marquis Club Room

4:30 PM to 6:30 PM
Korean Toxicologists Association in America Special Interest Group Meeting/Reception
Marriott Marquis Golden Gate Ballroom C2

4:30 PM to 5:30 PM
Regional K–12 Outreach Contacts Meeting
CC Room 208

4:30 PM to 5:50 PM
SOT/EUROTOX Debate: Comparative Hazards: Chemicals in the Environment Are the Largest Risk to Human Health, *SOT Debater: Stephen Safe, Texas A&M University and EUROTOX Debater: David R. Bell, European Chemicals Agency*
CC Room 307

4:30 PM to 6:00 PM
Specialty Section Presidents and Officers Meeting
CC Room 300

5:00 PM to 6:00 PM
American Association of Chinese in Toxicology Special Interest Group Distinguished Chinese Toxicologist Lectureship Award and Seminar: Strategies for the Selection of Biomarks for Cardiotoxicity in Drug Development,
Lecturer: James Kang
Marriott Marquis Pacific Suite I

Continued on next page

Daily Pocket Calendar

Tired of carrying the *Program* during the meeting?
Access the real-time schedule via the mobile or online Itinerary Planner.

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(Calendar as of January 3; private events are not listed.)

Monday *(Continued)* — March 12

5:00 PM to 9:00 PM
CAAT-Europe: Consensus Workshop on Quality Standards for Publications Dealing with *In Vitro* Test Systems
Marriott Marquis Pacific Suite J

5:00 PM to 7:00 PM
Elsevier Editorial Board Member Reception
Marriott Marquis Foothills G

5:00 PM to 6:30 PM
International Neurotoxicology Association Business Meeting
Marriott Marquis Pacific Suite H

5:00 PM to 8:00 PM
Northern California Regional Chapter Reception
Marriott Marquis Nob Hill A

5:00 PM to 8:00 PM
PointCross Life Sciences: FDA SEND Initiative—What It Means for Toxicologists
(By Invitation Only)
Location TBD

5:00 PM to 7:30 PM
Southern California and Mountain West Regional Chapters Joint Reception
ThirstyBear Brewing Company

5:00 PM to 6:30 PM
Toxicologists of African Origin Special Interest Group Meeting/Reception
Marriott Marquis Nob Hill D

5:30 PM to 7:30 PM
National Capital Area Regional Chapter Reception
Marriott Marquis Juniper Room

5:30 PM to 7:00 PM
Purdue University Alumni Reception
Marriott Marquis Foothills J

6:00 PM to 7:30 PM
Biological Modeling Specialty Section Meeting/Reception
Marriott Marquis Yerba Buena Salon 2

6:00 PM to 7:30 PM
Drug Discovery Toxicology Specialty Section Meeting/Reception
Marriott Marquis Yerba Buena Salon 6

6:00 PM to 7:30 PM
Ethical, Legal, and Social Issues Specialty Section Meeting/Reception
Marriott Marquis Yerba Buena Salon 12

6:00 PM to 7:30 PM
Inhalation and Respiratory Specialty Section Meeting/Reception
Marriott Marquis Yerba Buena Salon 4

6:00 PM to 7:30 PM
Mechanisms Specialty Section Meeting/Reception
Marriott Marquis Golden Gate Ballroom C1

6:00 PM to 7:30 PM
Mixtures Specialty Section Meeting/Reception
Marriott Marquis Yerba Buena Salon 10

6:00 PM to 7:30 PM
Regulatory and Safety Evaluation Specialty Section Meeting/Reception
Marriott Marquis Golden Gate Ballroom B

6:30 PM to 9:00 PM
American Association of Chinese in Toxicology Special Interest Group Reception
Canton Dim Sum and Seafood Restaurant

7:00 PM to 9:00 PM
Association of Scientists of Indian Origin Special Interest Group Meeting/Reception
Marriott Marquis Golden Gate Ballroom C3

7:00 PM to 9:00 PM
South Central and Lone Star Regional Chapters Joint Social
ThirstyBear Brewing Company

7:00 PM to 10:00 PM
Pacific Northwest Regional Chapter Reception
Jillian's @ Metreon

7:00 PM to 9:00 PM
Toxicological Sciences/Oxford University Press Appreciation Dinner
(By Invitation Only)
Annabelle's Bar & Bistro

7:30 PM to 9:30 PM
North Carolina State University Alumni Reception
Marriott Marquis Foothills D

8:00 PM to 10:00 PM
Duke University Alumni Reception
Jillian's @ Metreon

Scientific Program Overview by Day & Time

Monday — March 12

8:00 AM–9:00 AM

PLENARY OPENING LECTURE

Systems Medicine, Systems Toxicology, Transformational Technologies and the Revolution from Reactive to Proactive (P4) Medicine
Lecturer: Leroy Hood, Institute for Systems Biology
(Exhibit Hall E)

9:15 AM–12:00 Noon

SYMPOSIUM SESSIONS

- Dietary Supplement Adulteration and Impact on Human Health (Room 304)
- DNA Damage Responses and Repair (Room 307)
- The Thick and Thin of Nuclear Receptors and Nrf2 in Diabetes and Obesity (Room 104)
- Toxicological Considerations of Epigenetic Targets in Product Development (Room 102)

WORKSHOP SESSIONS

- Alternative Approaches to the Safety Assessment of Natural Ingredients and Extracts in Cosmetics (Room 305)
- High-Throughput *In Vitro* Toxicity Testing: A Midcourse Assessment of Predictive Accuracy for *In Vivo* Endpoints and Use in Decision-Making (Room 103)
- The Epididymis—The Forgotten Target of Toxicants (Room 308)
- Therapeutic Immunomodulation and Cancer Risk: Science, Risk Assessment, and Risk Communication (Room 303)

PLATFORM SESSIONS

- Biological Modeling: Addressing Disease States, Defining Age Differences, and Evaluating Uncertainty (Room 310)
- Hypersensitivity Methods (Room 301)
- Mechanisms of Carcinogenesis (Room 302)
- Nanotoxicology: Nanogold or Nanosilver (Room 309)

9:30 AM–12:30 PM

POSTER SESSIONS

(Exhibit Halls A–C—See Poster Board Surface Map on Pages 112–113)

- Cardiovascular Toxicity I
- Data Integration and Decision Support Systems
- Epidemiology: Assessments and Approaches
- Fukushima Radiation Toxicity and Global Toxicology Issues
- Inhalants and Cardiopulmonary: Particulates and Chemical Agents
- Liver
- Medical Devices
- Nanotoxicology: Environmental Toxicology, Zebrafish, and Nanoparticles
- Receptors and Toxicity
- Risk Assessment: Case-Specific Characterizations
- Risk Assessment: New Applications and Analyses
- Safety Evaluation: Nonpharmaceuticals
- Toxicity of Mixtures

12:10 PM–1:30 PM

INFORMATIONAL SESSIONS

- Global Health and Environmental Impacts of E-Waste Recycling (Room 303)
- NIEHS Centers for Nanotechnology Health Implications Research: Building the Scientific Foundation for Evaluating Public Health Impacts of Engineered Nanomaterials (Room 305)

12:30 PM–1:20 PM

MERIT AWARD LECTURE

Reprogramming the Liver
Lecturer: Curtis D. Klaassen, University of Kansas Medical Center (Room 304)

1:00 PM–4:30 PM

POSTER SESSIONS

(Exhibit Halls A–C—See Poster Board Surface Map on Pages 114–115)

- Alternatives to Mammalian Models II
- Biological Modeling: Predictive PBPK Dosimetry Structures and Pharmacokinetic Data
- Biomarkers of Organ Damage by Drugs and Xenobiotics
- Children's Health and Juvenile Toxicity
- Computational Toxicology: Sequences, Systems, and Strategies
- Developmental Basis of Adult Disease
- DNA Damage and Repair
- Hypersensitivity and Autoimmunity
- Inflammation: Biochemical/Molecular Mechanisms
- Inflammation in Disease
- Liver and Model Systems
- Nanotoxicology: Nanoparticles I
- Pharmaceuticals
- Skin Toxicology

2:00 PM–4:45 PM

SYMPOSIUM SESSIONS

- 21st Century Validation Strategies—One Size No Longer Fits All (Room 303)
- Breast Cancer As a Multifactorial Disease: Interaction of Genetics, Life Stage, and the Environment (Room 103)
- Evaluation of Ocular Safety in the Development of New Drugs (Room 305)
- Molecular Basis for Prevention of Cardiotoxicity (Room 104)
- Nanoparticles for Drug Delivery: Interactions with the Immune System (Room 102)
- Toxic Cell Death: Signaling Pathways, Cross-Talk, and High-Throughput Analysis (Room 308)

WORKSHOP SESSION

- Concepts Critical to the Next Generation of Human Health and Ecological Risk Assessment (Room 309)

REGIONAL INTEREST SESSION

- Bridging the Green Chemistry Gap between Product Discovery and Availability (Room 304)

PLATFORM SESSIONS

- Ecotoxicology and Sentinel Animals (Room 302)
- Exposure Assessment: Biological and Probabilistic Approaches to Monitoring, Modeling, and Predictions (Room 301)
- Inhalants and Cardiopulmonary: Pollutants and Irritants (Room 310)

4:30 PM–5:50 PM

SOT/EUROTOX DEBATE

Comparative Hazards: Chemicals in the Environment Are the Largest Risk to Human Health (Room 307)

Daily Pocket Calendar

Tired of carrying the *Program* during the meeting?
Access the real-time schedule via the mobile or online Itinerary Planner.

For your convenience, please tear out and carry with you. Easily folds to nest within your badge holder.
(Calendar as of January 3; private events are not listed.)

Tuesday — March 13

Events are listed alphabetically by the event start time.

Events at the Moscone Convention Center are noted as CC.

6:00 AM to 8:00 AM
Past Presidents Fun Run
(Runners Meet in Lobby of Your SOT Hotel; See Details on Page 84)

6:30 AM to 7:30 AM
Academy of Toxicological Sciences Board of Directors Meeting
Marriott Marquis Foothills J

6:45 AM to 7:45 AM
American Board of Veterinary Toxicology Business Meeting
Marriott Marquis Foothills G

6:45 AM to 7:45 AM
Graduate Student Leadership Committee Meeting
CC Room 206

6:45 AM to 7:45 AM
Postdoctoral Assembly Board Meeting
CC Room 226

7:00 AM to 8:00 AM
Awards Committee Meeting
CC Room 200

7:00 AM to 6:00 PM
Coat/Luggage Check
CC South Lobby

7:00 AM to 8:30 AM
Education Committee Meeting
CC Room 212

7:00 AM to 8:30 AM
Inhalation and Respiratory Specialty Section Technical Committee Meeting
CC Room 230

7:00 AM to 7:50 AM
Leading Edge in Basic Science Award Lecture: Inorganic Phosphate: Hidden Signal?
Lecturer: Myung-Haing Cho, Seoul National University
CC Room 304

7:00 AM to 8:30 AM
Regional Chapter Presidents and Officers Meeting
CC Room 300

7:00 AM to 4:30 PM
SOT Office
CC Room 222

7:00 AM to 4:30 PM
Speaker Ready Room
CC Room 220

7:30 AM to 9:30 AM
Concession Stands
CC Gateway Ballroom Foyer

7:30 AM to 9:00 AM
Food and Chemical Toxicology Editorial Board Meeting
Marriott Marquis Foothills B

7:30 AM to 9:00 AM
Poster Set Up *(See Poster Board Surface Map on Pages 116–117)*
CC Exhibit Halls A–C

7:30 AM to 9:30 AM
Research Funding Committee Meeting
CC Room 228

8:00 AM to 6:00 PM
Email Center
CC South Lobby

8:00 AM to 5:00 PM
Guest/Spouse Hospitality Room
Marriott Marquis Foothills F

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

8:00 AM to 9:00 AM
Journal of Cutaneous and Ocular Toxicology Editorial Board Meeting
Marriott Marquis Foothills A

8:00 AM to 9:00 AM
Keynote Medical Research Council (MRC) Lecture: Role of microRNAs in Control of Gene Expression in Human Physiology and Pathology,
Lecturer: Witold Filipowicz, Friedrich Miescher Institute for Biomedical Research
CC Room 103

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

8:00 AM to 10:00 AM
Tour Desk
CC South Lobby

8:30 AM to 4:30 PM
Concession Stands
CC Exhibit Halls A–C

8:30 AM to 9:30 AM
Exhibitor Hosted Session: MPI Research
CC Room 101

8:30 AM to 9:30 AM
Exhibitor Hosted Session: Promega Corporation
CC Room 105

8:30 AM to 9:30 AM
Exhibitor Hosted Session: Vet Path Services, Inc.
CC Room 100

8:30 AM–4:30 PM
"Hoops for the Endowment Fund"
(See Details on Page 83)
CC Exhibit Hall C

8:30 AM to 5:00 PM
Job Bank Center
CC Room 272

8:30 AM to 4:30 PM
SOT Pavilion
CC Exhibit Halls A–C

8:30 AM to 4:30 PM
ToxExpo Exhibits Open
CC Exhibit Halls A–C

8:30 AM to 4:30 PM
Wi-Fi Lounges *(Wireless Internet Access)*
CC Exhibit Halls A–C

9:00 AM to 10:30 AM
Audit Committee Meeting
CC Room 226

9:00 AM to 10:00 AM
Complimentary Coffee
CC Exhibit Halls A–C

9:00 AM to 12:30 PM
Poster Sessions
CC Exhibit Halls A–C

9:00 AM to 4:30 PM
Research Funding Information Room
CC Room 270

9:00 AM to 11:45 AM
Scientific Sessions
CC *(See Session Index on Pages 104–110 for Room Location)*

9:45 AM to 10:45 AM
Exhibitor Hosted Session: Accelera Srl
CC Room 105

9:45 AM to 10:45 AM
Exhibitor Hosted Session: Charles River
CC Room 101

9:45 AM to 10:45 AM
Exhibitor Hosted Session: Huntingdon Life Sciences
CC Room 100

10:30 AM to 12:00 Noon
Global Strategy Task Force Meeting
CC Room 226

11:00 AM to 12:00 Noon
Exhibitor Hosted Session: Data Sciences International
CC Room 105

11:00 AM to 12:00 Noon
Exhibitor Hosted Session: Fraunhofer ITEM
CC Room 100

11:00 AM to 12:00 Noon
Exhibitor Hosted Session: PointCross Life Sciences, Inc.
CC Room 101

11:45 AM to 1:30 PM
Toxicology Letters Editorial Board Meeting
Marriott Marquis Foothills B

12:00 Noon to 1:30 PM
Association of Scientists of Indian Origin Special Interest Group Student/Postdoc Mentoring Program
Marriott Marquis Foothills G

12:00 Noon to 1:30 PM
Endowment Fund Board Meeting
CC Room 200

12:00 Noon to 1:30 PM
Journal of Immunotoxicology Editorial Board Meeting
Marriott Marquis Pacific Suite A

12:00 Noon to 1:15 PM
Postdoctoral Assembly Luncheon
(Ticket Required)
CC Room 256

12:00 Noon to 1:30 PM
Professional Needs Assessment Task Force Meeting
CC Room 228

12:00 Noon to 1:20 PM
Scientific Sessions
CC *(See Session Index on Pages 104–110 for Room Location)*

12:00 Noon to 1:15 PM
Strategies for Submitting Successful Grants: Brown Bag Lunch
CC Room 206

12:15 PM to 1:15 PM
Exhibitor Hosted Session: CiToxLAB
CC Room 100

12:15 PM to 1:15 PM
Exhibitor Hosted Session: Integrated Laboratory Systems, Inc. (ILS)
CC Room 105

12:15 PM to 1:15 PM
Exhibitor Hosted Session: SAGE Labs
CC Room 101

12:30 PM to 1:20 PM
Distinguished Toxicology Scholar Award Lecture: Environmental Chemicals: From Biochemical and Molecular Toxicology to Education and Outreach, *Lecturer: Ernest Hodgson, North Carolina State University and the North Carolina Agromedicine Institute*
CC Room 304

12:30 PM to 1:30 PM
K–12 Outreach Discussion
CC Room 264

12:30 PM to 2:00 PM
Northeast Regional Chapter Student Luncheon
Marriott Marquis Foothills E

12:30 PM to 1:00 PM
Poster Set Up *(See Poster Board Surface Map on Pages 118–119)*
CC Exhibit Halls A–C

1:00 PM to 4:30 PM
Poster Sessions
CC Exhibit Halls A–C

1:30 PM to 2:30 PM
Exhibitor Hosted Session: emka TECHNOLOGIES, INC.
CC Room 105

1:30 PM to 2:30 PM
Exhibitor Hosted Session: RTC, Research Toxicology Centre S.p.A.
CC Room 101

1:30 PM to 2:30 PM
Exhibitor Hosted Session: STEMCELL Technologies, Inc.
CC Room 100

1:30 PM to 4:15 PM
Scientific Sessions
CC *(See Session Index on Pages 104–110 for Room Location)*

2:45 PM to 3:45 PM
Exhibitor Hosted Session: Agilent Technologies
CC Room 105

2:45 PM to 3:45 PM
Exhibitor Hosted Session: InSphero AG
CC Room 100

2:45 PM to 3:45 PM
Exhibitor Hosted Session: WIL Research
CC Room 101

3:00 PM to 4:15 PM
Undergraduate Educator Network Meeting
CC Room 300

3:00 PM to 4:00 PM
Women in Toxicology Special Interest Group Executive Committee Meeting
CC Room 212

4:30 PM to 5:50 PM
Scientific Sessions (Sunset)
CC *(See Session Index on Pages 104–110 for Room Location)*

4:30 PM to 6:00 PM
SOT Annual Business Meeting
(All SOT Members Invited)
CC Room 102

4:45 PM to 6:00 PM
ToxExpo 2013 Exhibit Space Selection Process
CC Room 101

6:00 PM to 7:00 PM
American Association of Chinese in Toxicology Special Interest Group Student/Postdoc Career Workshop: How to Prepare for a Successful Career
Marriott Marquis Pacific Suite J

6:00 PM to 7:30 PM
Carcinogenesis Specialty Section Meeting/Reception
Marriott Marquis Yerba Buena Salon 6

6:00 PM to 7:30 PM
Cardiovascular Toxicology Specialty Section Meeting/Reception
Marriott Marquis Yerba Buena Salon 3

6:00 PM to 8:30 PM
Cellular Dynamics: Bridging the Gap: Human Stem Cell Solutions for Better Predictivity
InterContinental Grand Ballrooms A & B

6:00 PM to 7:30 PM
Dermal Toxicology Specialty Section Meeting/Reception
Marriott Marquis Juniper Room

6:00 PM to 7:30 PM
Food Safety Specialty Section Meeting/Reception
Marriott Marquis Pacific Suite H

Continued on next page

Tear out page for a convenient daily calendar

Daily Pocket Calendar

For your convenience, please tear out and carry with you. Easily folds to nest within your badge holder.
(Calendar as of January 3; private events are not listed.)

Tuesday *(Continued)* March 13

6:00 PM to 9:00 PM
Hispanic Organization of Toxicologists Special Interest Group Meeting/Reception
Jillian's @ Metreon

6:00 PM to 7:30 PM
Immunotoxicology Specialty Section Meeting/Reception
Marriott Marquis Nob Hill A

6:00 PM to 7:30 PM
Medical Device Specialty Section Meeting/Reception
Marriott Marquis Willow Room

6:00 PM to 7:30 PM
Metals Specialty Section Meeting/Reception
Marriott Marquis Golden Gate Ballroom C2

6:00 PM to 7:30 PM
Molecular Biology Specialty Section Meeting/Reception
Marriott Marquis Yerba Buena Salon 10

6:00 PM to 7:30 PM
Nanotoxicology Specialty Section Meeting/Reception
Marriott Marquis Golden Gate Ballroom C1

6:00 PM to 7:30 PM
Neurotoxicology Specialty Section Meeting/Reception
Marriott Marquis Golden Gate Ballroom B

6:00 PM to 7:30 PM
Occupational and Public Health Specialty Section Meeting/Reception
Marriott Marquis Golden Gate Ballroom C3

6:00 PM to 7:30 PM
Ocular Toxicology Specialty Section Meeting/Reception
Marriott Marquis Pacific Suite I

6:00 PM to 7:30 PM
Risk Assessment Specialty Section Meeting/Reception
Marriott Marquis Golden Gate Ballroom A

6:30 PM to 8:00 PM
Kettering Reception, University of Cincinnati
Marriott Marquis Foothills J

6:30 PM to 10:00 PM
MPI Research Event: Got Science?
Marriott Marquis Yerba Buena Salon 7

7:00 PM to 10:00 PM
University of Rochester Alumni Reception
Marriott Marquis Foothills F

7:30 PM to 9:00 PM
Tox ShowDown
(All Attendees Invited; See Page 85 for Details)
Marriott Marquis Yerba Buena Salon 13

9:00 PM to 11:00 PM
Michigan State University Environmental Toxicology Reception
Marriott Marquis Foothills G1

Scientific Program Overview by Day & Time

Tuesday March 13

7:00 AM–7:50 AM

LEADING EDGE IN BASIC SCIENCE AWARD LECTURE

Inorganic Phosphate: Hidden Signal?
Lecturer: Myung-Haing Cho, Seoul National University (Room 304)

8:00 AM–9:00 AM

KEYNOTE MEDICAL RESEARCH COUNCIL (MRC) LECTURE

Role of microRNAs in Control of Gene Expression in Human Physiology and Pathology
Lecturer: Witold Filipowicz, Friedrich Miescher Institute for Biomedical Research (Room 103)

9:00 AM–11:45 AM

SYMPOSIUM SESSIONS

- An Intelligent Reproductive and Developmental Testing Paradigm for the 21st Century (Room 303)
- Cross-Species Analysis of Toxicogenomics Data: Approaches for Assessing Differences in Sensitivity and Conservation of Mode of Action (Room 104)
- Development of Biosimilar Products: Overview of Standards and Regulations (Room 102)
- The Role of Danger Signals in the Development of Chemical Sensitization by Environmental and Occupational Agents (Room 301)

WORKSHOP SESSIONS

- Assessing the Bioavailability and Risk from Metal-Contaminated Soils and Dusts (Room 305)
- State of the Science and the Future for the Predictive Power of *In Vitro* and *In Vivo* Models for Nanomaterials Toxicity Testing (Room 307)
- Sufficient Similarity of Whole Representative Mixtures or a Relative Potency Factor Approach: Polycyclic Aromatic Hydrocarbons As a Case Study (Room 304)

REGIONAL INTEREST SESSION

- What's the Buzz? Bee Health and California's Agricultural Industry (Room 308)

PLATFORM SESSIONS

- Acetaminophen Toxicity: Mechanistic and Translational Aspects (Room 309)
- Cardiovascular Toxicity of Nanoparticles (Room 310)
- Emerging Methodologies for Genotoxicity Assessment (Room 302)

9:00 AM–12:30 PM

POSTER SESSIONS

(Exhibit Halls A–C—See Poster Board Surface Map on Pages 116–117)

- Disease Prevention and Clinical and Translational Toxicology
- Ecotoxicology
- Epigenetics
- Food Safety and Nutrition II
- Inhalants and Cardiopulmonary: Chemical Agents
- Kidney
- Nanotoxicology: Nanoparticles II
- Neurodegenerative Disease
- Neurotoxicity: General
- Neurotoxicity: Metals
- 'Omics in Toxicology
- Oxidative Injury
- Pharmaceutical Safety Assessment: Methods and Mechanisms
- Toxicology Education and Policy

9:00 AM–4:30 PM

RESEARCH FUNDING SESSION

Research Funding Information Room (Room 270)

12:00 Noon–1:20 PM

ROUNDTABLE SESSIONS

- Evolving the EPA Endocrine Disruptor Screening Program: From Using High-Throughput Screening Assays for Prioritization to Reducing Reliance on Whole-Animal Tests (Room 305)
- Improving Chemical Safety Assessment through Harmonization: Why, How, and When? (Room 307)
- Testing of Nanomaterials for Genotoxicity—Necessity or Waste of Time? (Room 303)

12:00 Noon–1:30 PM

RESEARCH FUNDING SESSION

Strategies for Submitting Successful Grants: Brown Bag Lunch (Room 206)

12:30 PM–1:20 PM

DISTINGUISHED TOXICOLOGY SCHOLAR AWARD LECTURE

Environmental Chemicals: From Biochemical and Molecular Toxicology to Education and Outreach
Lecturer: Ernest Hodgson, North Carolina State University (Room 304)

1:00 PM–4:30 PM

POSTER SESSIONS

(Exhibit Halls A–C—See Poster Board Surface Map on Pages 118–119)

- Alternatives to Mammalian Models for Dermal Toxicity
- Alternatives to Mammalian Models for Ocular Toxicity Testing
- Arsenic Toxicology
- Biotransformation/Cytochrome P450
- Cardiovascular Toxicity II
- Chemical and Biological Weapons: Agents and Countermeasures
- Exposure Characterization: New Analytical Sampling Methods, Biomonitoring, and Assessment Applications
- Immunotoxicity: Evaluation
- Immunotoxicity: Mechanisms
- Immunotoxicity: Methods
- Nanotoxicology: Nanoparticles III
- Pesticides: Exposure and Hazard Assessment
- Pesticide: Toxicology
- Pharmacogenomics/Genetic Polymorphisms

1:30 PM–4:15 PM

SYMPOSIUM SESSIONS

- Circulating microRNAs: A New Class of Biomarkers for Tissue-Specific Toxicity (Room 103)
- *In Vitro* and *In Vivo* Alternative Models of Developmental Toxicity of Pharmaceutical Compounds (Room 303)

WORKSHOP SESSIONS

- Beyond Traditional Monoclonals: New Biologics Formats and Preclinical Challenges (Room 307)
- Biomarkers and Associated Health Consequences of Pesticide Exposures in Hispanic Populations (Room 304)
- How Useful Are Liver *In Vitro* Models for Toxicity and Mode-of-Action Prediction? (Room 102)
- Nonclinical and Clinical Applications of Translational Organ-Based Imaging (Room 104)
- Novel Topics in Environmental Polycyclic Aromatic Hydrocarbon Metabolism Leading to Carcinogenesis (Room 305)

EDUCATION-CAREER DEVELOPMENT SESSION

- Career Alternatives and Transitions: New Challenges and Opportunities in Today's Job Market for Toxicologists (Room 308)

PLATFORM SESSIONS

- Advances in Developmental Neurotoxicity: Stem Cell, High-Throughput, and Alternative Species Approaches (Room 302)
- miRNA As Biomarkers for Organ Damage (Room 309)
- New Insights into the Reproductive and Developmental Toxicity of Bisphenol A (Room 301)
- Risk Assessment Approaches: Data-Derived Extrapolations, QSAR, *In Silico* Strategies, and Surrogates (Room 310)

4:30 PM–5:50 PM

EDUCATION-CAREER DEVELOPMENT SESSION

- The Art of Negotiation: A Fundamental Skill for Scientists (Room 307)

4:30 PM–6:00 PM

SPECIAL MEMBER SESSION

SOT Annual Business Meeting (Room 102)

Daily Pocket Calendar

Tired of carrying the *Program* during the meeting?
Access the real-time schedule via the mobile or online Itinerary Planner.

For your convenience, please tear out and carry with you. Easily folds to nest within your badge holder.
(Calendar as of January 3; private events are not listed.)

Wednesday — March 14

Events are listed alphabetically by the event start time.

Events at the Moscone Convention Center are noted as CC.

7:00 AM to 6:00 PM
Coat/Luggage Check
CC South Lobby

7:00 AM to 8:30 AM
Committee on Diversity Initiatives Meeting
CC Room 200

7:00 AM to 8:00 AM
Contemporary Concepts in Toxicology Conference Committee Meeting
CC Room 214

7:00 AM to 8:00 AM
Critical Reviews in Toxicology Editorial Board Meeting
Marriott Marquis Foothills A

7:00 AM to 8:30 AM
Disease Prevention Task Force Meeting
CC Room 228

7:00 AM to 8:30 AM
Graduate Student Leadership Committee Executive Board Meeting
CC Room 212

7:00 AM to 4:30 PM
SOT Office
CC Room 222

7:00 AM to 4:30 PM
Speaker Ready Room
CC Room 220

7:00 AM to 8:00 AM
Toxicology In Vitro Editorial Board Meeting
Marriott Marquis Foothills B

7:30 AM to 9:30 AM
Concession Stands
CC Gateway Ballroom Foyer

7:30 AM to 8:45 AM
Government Liaison Joint Coffee
CC Room 250

7:30 AM to 9:00 AM
Poster Set Up *(See Poster Board Surface Map on Pages 120–121)*
CC Exhibit Halls A–C

7:30 AM to 8:50 AM
Scientific Sessions (Sunrise)
CC *(See Session Index on Pages 104–110 for Room Location)*

7:30 AM to 8:30 AM
Special Interest Group Collaboration Group Meeting
CC Room 300

8:00 AM to 6:00 PM
Email Center
CC South Lobby

8:00 AM to 5:00 PM
Guest/Spouse Hospitality Room
Marriott Marquis Foothills F

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

8:30 AM to 4:30 PM
Concession Stands
CC Exhibit Halls A–C

8:30 AM to 9:30 AM
Exhibitor Hosted Session: MPI Research
CC Room 101

8:30 AM–4:30 PM
"Hoops for the Endowment Fund"
(See Details on Page 83)
CC Exhibit Hall C

8:30 AM to 5:00 PM
Job Bank Center
CC Room 272

8:30 AM to 4:30 PM
SOT Pavilion
CC Exhibit Halls A–C

8:30 AM to 4:30 PM
ToxExpo Exhibits Open
CC Exhibit Halls A–C

8:30 AM to 4:30 PM
Wi-Fi Lounges *(Wireless Internet Access)*
CC Exhibit Halls A–C

9:00 AM to 10:00 AM
Complimentary Coffee
CC Exhibit Halls A–C

9:00 AM to 12:30 PM
Poster Sessions
CC Exhibit Halls A–C

9:00 AM to 4:30 PM
Research Funding Information Room
CC Room 270

9:00 AM to 11:45 AM
Scientific Sessions
CC *(See Session Index on Pages 104–110 for Room Location)*

9:00 AM to 11:45 AM
Special Symposium: Meet the Directors
(See Page 282 for details)
CC Room 302

9:00 AM to 10:00 AM
Tour Desk
CC South Lobby

9:45 AM to 10:45 AM
Exhibitor Hosted Session: Applied BioPhysics
CC Room 105

9:45 AM to 10:45 AM
Exhibitor Hosted Session: Charles River
CC Room 101

9:45 AM to 10:45 AM
Exhibitor Hosted Session: Huntingdon Life Sciences
CC Room 100

11:30 AM to 1:30 PM
Finance Committee Meeting
CC Room 226

11:30 AM to 1:00 PM
Membership Committee Meeting
CC Room 200

11:45 AM to 12:45 PM
NICHD Government Liaison Group Meeting
CC Room 230

12:00 Noon to 1:30 PM
In Vitro and Alternative Methods Specialty Section Meeting/Luncheon
CC Room 300

12:00 Noon to 1:00 PM
NIEHS Government Liaison Group Meeting
CC Room 214

12:00 Noon to 1:30 PM
Regional Chapter Collaboration and Communications Committee Meeting
CC Room 212

12:00 Noon to 1:20 PM
Scientific Sessions
CC *(See Session Index on Pages 104–110 for Room Location)*

12:00 Noon to 1:30 PM
Toxicologic and Exploratory Pathology Specialty Section Meeting/Luncheon
CC Room 250

12:00 Noon to 2:00 PM
Toxicology Editorial Board Meeting
Marriott Marquis Foothills B

12:30 PM to 1:00 PM
Poster Set Up *(See Poster Board Surface Map on Pages 122–123)*
CC Exhibit Halls A–C

12:30 PM to 1:20 PM
Translational Impact Award Lecture: Medical Toxicology Evaluations of the 2008 TVA Fly Ash Spill, *Lecturer: John G. Benitez, Vanderbilt University Medical Center, Tennessee Poison Center*
CC Room 304

1:00 PM to 3:00 PM
Board of Publications Meeting
CC Room 228

1:00 PM to 4:30 PM
Poster Sessions
CC Exhibit Halls A–C

1:00 PM to 2:00 PM
ToxExpo Time
CC Exhibit Halls A–C

1:15 PM to 2:15 PM
ATSDR Government Liaison Group Meeting
CC Room 214

1:30 PM to 4:15 PM
Scientific Sessions
CC *(See Session Index on Pages 104–110 for Room Location)*

2:00 PM to 4:00 PM
Exhibitor Liaison Working Group
CC Room 200

2:00 PM to 4:00 PM
Tri-Service Toxicology Consortium
Marriott Marquis Foothills G

2:15 PM to 3:15 PM
FDA Government Liaison Group Meeting
CC Room 214

2:45 PM to 3:45 PM
Exhibitor Hosted Session: US EPA
CC Room 100

3:15 PM to 4:15 PM
NIOSH Government Liaison Group Meeting
CC Room 214

4:00 PM to 5:00 PM
Undergraduate Student Meeting
CC Room 212

4:15 PM to 5:15 PM
EPA Government Liaison Group Meeting
CC Room 214

4:30 PM to 5:50 PM
Scientific Sessions (Sunset)
CC *(See Session Index on Pages 104–110 for Room Location)*

4:30 PM to 8:30 PM
ToxExpo Tear Down
CC Exhibit Halls A–C

4:30 PM to 6:00 PM
Women in Toxicology Special Interest Group Meeting/Reception
Marriott Marquis Yerba Buena Salon 7

6:00 PM to 7:30 PM
Biotechnology Specialty Section Meeting/Reception
Marriott Marquis Yerba Buena Salon 2

6:00 PM to 7:30 PM
Clinical and Translational Toxicology Specialty Section Meeting/Reception
Marriott Marquis Walnut Room

6:00 PM to 7:30 PM
Reproductive and Developmental Toxicology Specialty Section Meeting/Reception
Marriott Marquis Nob Hill A

6:00 PM to 7:30 PM
Stem Cells Specialty Section Meeting/Reception
Marriott Marquis Yerba Buena Salon 4

7:00 PM to 8:30 PM
President's Reception *(By Invitation Only)*
Marriott Marquis Golden Gate Ballroom B

8:00 PM to 10:00 PM
Academy of Toxicological Sciences Reception
Marriott Marquis Golden Gate Ballroom C1

Continued on next page

Tear out page for a convenient daily calendar

Daily Pocket Calendar

For your convenience, please tear out and carry with you. Easily folds to nest within your badge holder. *(Calendar as of January 3; private events are not listed.)*

Scientific Program Overview by Day & Time

Wednesday — March 14

7:30 AM–8:50 AM

ROUNDTABLE SESSION

- Placing Bisphenol A Risks in a Human Exposure Context: Is Internal Exposure to Bioactive Bisphenol A in Humans Similar to Levels in Affected Rodent Test Species? (Room 303)

7:30 AM–8:50 AM

INFORMATIONAL SESSIONS

- Getting Certified As a Toxicologist: Why, When, Where, and How? (Room 307)
- Good Laboratory Practice (GLP) in China (Room 305)

9:00 AM–11:45 AM

SPECIAL SYMPOSIUM

Meet the Directors (Room 302)

SYMPOSIUM SESSIONS

- Epigenetic and miRNA Regulations in Carcinogenesis: Toxicological Implications (Room 103)
- Nonclinical Safety Assessment of Dual-Targeting Biotherapeutics (Room 102)
- The Allergenicity and Immunomodulatory Effect of Food Substances (Room 307)
- The Toxicological Impact of Metals, Crude Oil, and Chemical Dispersants from the Gulf of Mexico Oil Crisis on Human and Wildlife Health (Room 308)

WORKSHOP SESSIONS

- Caught in the Act: Free Radical Detection and Implications in Pathways to Toxicity (Room 304)
- Chelation Therapy: A Focus on the Risks and Benefits (Room 305)
- Cooperative Epidemiology and Toxicology Research: HEI's National Particle Component Toxicity (NPACT) Initiative (Room 104)
- Progress in Developing New Biomarkers of Drug-Induced Liver Injury (DILI): What You Don't Know Can Hurt You (Room 303)

PLATFORM SESSIONS

- Bioinformatics: Signature Applications and Network Analyses (Room 301)
- Chemical and Biological Weapons: Agents and Countermeasures (Room 309)
- Nanotoxicology: Carbon Nanotubes and Nanofibers (Room 310)

9:00 AM–12:30 PM

POSTER SESSIONS

(Exhibit Halls A–C—See Poster Board Surface Map on Pages 120–121)

- Alternatives to Mammalian Models I
- Cell Death Pathways
- Developmental Neurotoxicity I
- Developmental Toxicity II
- Developmental Toxicology
- Disposition and Pharmacokinetics
- Exposure Assessment: Case-Specific Characterizations
- Food Safety and Nutrition I
- Gene Regulation and Signal Transduction
- Genotoxicity Testing
- Molecular Basis of Carcinogenesis
- NrF2
- Regulatory Policy: Procedures and Predictions
- Stem Cell Biology and Toxicology

9:00 AM–4:30 PM

RESEARCH FUNDING SESSION

Research Funding Information Room (Room 270)

12:00 Noon–1:20 PM

ROUNDTABLE SESSIONS

- Scientific, Regulatory, and Public Perspectives on the Credibility and Use of Alternative Toxicological Test Methods in a Legislative Framework (Room 307)
- The Future of Toxicology Education: Outcomes of the Toxicology Educational Summit (Room 102)

INFORMATIONAL SESSION

- Pregnancy in the Workplace: Managing Occupational Safety for a Unique Subpopulation (Room 308)

12:30 PM–1:20 PM

TRANSLATIONAL IMPACT AWARD LECTURE

Medical Toxicology Evaluations of the 2008 TVA Fly Ash Spill, *Lecturer: John G. Benitez, Vanderbilt University Medical Center, Tennessee Poison Center* (Room 304)

1:00 PM–2:00 PM

TOXEXPO TIME

(Exhibit Halls A–C)

1:00 PM–4:30 PM

POSTER SESSIONS

(Exhibit Halls A–C—See Poster Board Surface Map on Pages 122–123)

- Animal Models in Pharmaceutical Toxicology
- Animal Models in Toxicology
- Biomarkers of Environmental Exposure and Toxicity
- Developmental Neurotoxicity: Metals and Pesticides
- Endocrine Toxicity
- Male Reproductive Toxicology
- Metals
- Natural Products
- Neurotoxicity: Pesticides
- Persistent Organic Chemicals
- Pharmaceutical Safety Assessment: Novel Therapeutics and Preclinical Safety Assessment
- Reproductive Toxicology II

1:30 PM–4:15 PM

SYMPOSIUM SESSIONS

- New Visions in Toxicology: Lysosomes—Roles in Disease, Toxicity, and Drug Development (Room 103)
- Off the Beaten Path: Preclinical Approaches to Safety Evaluation of Cells/Gene Therapy, Vaccines, and Adjuvants (Room 102)
- Trivalent Arsenic Metabolites and Arsenic Toxicity (Room 304)

WORKSHOP SESSIONS

- Advancing Food Safety in a Global Marketplace (Room 303)
- Discovering Novel Hypotheses for Mechanisms of Toxicity from High-Content Data Sets (Room 104)
- Muscle Toxicity—Current Challenges in Translatable Biomarkers (Room 307)
- Progenitor and Stem Cells As Targets of Environmental Pollutants (Room 305)
- T-Dependent Antibody Responses in Nonhuman Primates: Challenges and Opportunities (Room 308)

PLATFORM SESSIONS

- Alternatives to Mammalian Models in Skin Sensitization (Room 302)
- Computational Toxicology: Predicting Hepatotoxicity (Room 309)
- Inhalants and Cardiopulmonary: Particulates (Room 301)
- Risk Analysis: New Derivations and Updated Debates (Room 310)

4:30 PM–5:50 PM

INFORMATIONAL SESSIONS

- Evolution and Implementation of Combined Chemical Exposure Methods: International Perspectives (Room 303)
- Proposition 65: Twenty-Five Years of Implementing California's Unique and Far-Reaching Law Regulating Organic and Metallic Carcinogens and Developmental/Reproductive Toxins (Room 305)

EDUCATION-CAREER DEVELOPMENT SESSION

- Refining Your Science Communication Skills (Room 307)

Notes

Tear out page for a convenient daily calendar

Daily Pocket Calendar

Tired of carrying the *Program* during the meeting?
Access the real-time schedule via the mobile or online Itinerary Planner.

For your convenience, please tear out and carry with you. Easily folds to nest within your badge holder.
(Calendar as of January 3; private events are not listed.)

Thursday — March 15

Events are listed alphabetically by the event start time.

Events at the Moscone Convention Center are noted as CC.

7:00 AM to 12:00 Noon
Coat/Luggage Check
CC South Lobby

7:00 AM to 8:00 AM
Poster Set Up *(See Poster Board Surface Map on Page 124)*
CC Gateway Ballroom

7:00 AM to 11:30 AM
SOT Office
CC Room 222

7:00 AM to 11:30 AM
Speaker Ready Room
CC Room 220

7:30 AM to 12:00 Noon
Concession Stands
CC Gateway Ballroom Foyer

7:30 AM to 8:50 AM
Issues Session: Building for the Future: Strategic Initiatives for the SOT Endowment Fund
CC Room 301

8:00 AM to 11:30 AM
Email Center
CC South Lobby

8:00 AM to 11:30 AM
Guest/Spouse Hospitality Room
Marriott Marquis Foothills F

8:00 AM to 11:30 AM
Registration
CC South Lobby

8:00 AM to 12:00 Noon
ToxExpo Tear Down
CC Exhibit Halls A–C

8:30 AM to 12:00 Noon
Poster Sessions
CC Gateway Ballroom

9:00 AM to 11:45 AM
Scientific Sessions
CC *(See Session Index on Pages 104–110 for Room Location)*

12:00 Noon to 1:30 PM
Scientific Program Committee Meeting
CC Room 212

Late-Breaking Abstract Supplement

Download a PDF of all the accepted Late-Breaking Abstracts being presented on Thursday March 15.

Scan Me!

Scientific Program Overview by Day & Time

Thursday — March 15

7:30 AM–8:50 AM

ISSUES SESSION

Building for the Future: Strategic Initiatives for the SOT Endowment Fund (Room 301)

8:30 AM–12:00 Noon

POSTER SESSION

(Gateway Ballroom—See Poster Board Surface Map on Page 124)

- Carcinogenesis

9:00 AM–11:45 AM

SYMPOSIUM SESSIONS

- Advances in Bridging Nonclinical Cardiovascular Data to the Clinic (Room 302)
- Emerging Evidence for Novel Noncholinergic Mechanisms of Organophospate-Induced Neurotoxicity (Room 308)
- Emerging Mechanistic Targets in Lung Injury Induced by Combustion-Generated Particles (Room 305)
- Realizing the Vision of 21st Century Toxicity Testing: Genetic Approaches to Pathway Analysis (Room 304)

WORKSHOP SESSIONS

- Challenges and Opportunities in Evaluating Protein Allergenicity across Biotechnology Industries (Room 303)
- Chemical Standardization of Botanical Medicines for Safe and Effective Use As Therapeutic Agents (Room 307)

Late-Breaking Abstracts accepted for presentation were not available for this publication. These abstracts are available through the mobile and online Itinerary Planner and as separate printed supplement.

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ToXchange *It's YOUR Network. Be a part of it.*

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- Reading new blog articles
- Participating in forums
- Downloading new files
- Viewing upcoming events and meetings
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Networking is expanding far beyond face to face events or computer to computer interactions, be the first in the industry to take advantage of our new mobile application and connect via ToXchange anywhere at any time.

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Global Gallery of Toxicology

Celebrate Toxicology Globally

Toxicology-related scientific societies are invited to display a poster showcasing the formation, key accomplishments, strategic initiatives, current and future activities, and more.

Posters will be displayed in Exhibit Halls A–C to the left of the main entrance.

Please see details on page 49.

SOT | Society of Toxicology
Creating a Safer and Healthier World by Advancing the Science of Toxicology

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Visit the SOT Pavilion in the Exhibit Hall…

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(access the new mobile option)

Schedule by Event Name

Tired of carrying the *Program* during the meeting?
Access the real-time schedule via the mobile or online Itinerary Planner.
(Schedule as of January 3; private events are not listed.)

Event:	Date:	Time:	Location:	Room:
2012 SOT Landmarks Program Presentation The Ames Test	Monday, Mar 12	7:45 AM to 8:00 AM	Convention Center	Exhibit Hall E
25-Year (Or More) Member Reception *(By Invitation Only)*	Sunday, Mar 11	7:00 PM to 8:00 PM	Convention Center	Room 120
A				
Academy of Toxicological Sciences Board of Directors Meeting	Tuesday, Mar 13	6:30 AM to 7:30 AM	Marriott Marquis	Foothills J
Academy of Toxicological Sciences Reception	Wednesday, Mar 14	8:00 PM to 10:00 PM	Marriott Marquis	Golden Gate Ballroom C1
Alliance for Risk Assessment: Beyond Science and Decisions-Framework Demonstration/Lunch *(RSVPs to kroner@tera.org for lunch)*	Sunday, Mar 11	12:00 Noon to 1:00 PM	Marriott Marquis	Nob Hill A
American Association of Chinese in Toxicology Special Interest Group Distinguished Chinese Toxicologist Lectureship Award and Seminar: Strategies for the Selection of Biomarks for Cardiotoxicity in Drug Development, *Lecturer: James Kang*	Monday, Mar 12	5:00 PM to 6:00 PM	Marriott Marquis	Pacific Suite I
American Association of Chinese in Toxicology Special Interest Group Reception	Monday, Mar 12	6:30 PM to 9:00 PM	Canton Dim Sum and Seafood Restaurant	
American Association of Chinese in Toxicology Special Interest Group Student/Postdoc Career Workshop: How to Prepare for a Successful Career	Tuesday, Mar 13	6:00 PM to 7:00 PM	Marriott Marquis	Pacific Suite J
American Board of Toxicology Board of Directors Meeting	Saturday, Mar 10	1:00 PM to 6:00 PM	Marriott Marquis	Foothills D
American Board of Toxicology Open Mixer	Monday, Mar 12	4:30 PM to 6:00 PM	Marriott Marquis	Club Room
American Board of Veterinary Toxicology Business Meeting	Tuesday, Mar 13	6:45 AM to 7:45 AM	Marriott Marquis	Foothills G
Arizona Night	Sunday, Mar 11	7:30 PM to 10:00 PM	Marriott Marquis	Nob Hill A
Association of Scientists of Indian Origin Special Interest Group Meeting/Reception	Monday, Mar 12	7:00 PM to 9:00 PM	Marriott Marquis	Golden Gate Ballroom C3
Association of Scientists of Indian Origin Special Interest Group Student/Postdoc Mentoring Program	Tuesday, Mar 13	12:00 Noon to 1:30 PM	Marriott Marquis	Foothills G
ATSDR Government Liaison Group Meeting	Wednesday, Mar 14	1:15 PM to 2:15 PM	Convention Center	Room 214
Audit Committee Meeting	Tuesday, Mar 13	9:00 AM to 10:30 AM	Convention Center	Room 226
Awards Ceremony *(All Attendees Welcome)*	Sunday, Mar 11	5:15 PM to 6:30 PM	Convention Center	Room 103
Awards Ceremony Music—Performed by Glenn Staller, Guitarist *(All Attendees Welcome)*	Sunday, Mar 11	4:45 PM to 5:15 PM	Convention Center	Room 103
Awards Committee Meeting	Tuesday, Mar 13	7:00 AM to 8:00 AM	Convention Center	Room 200
Awards Recipients Photographed	Sunday, Mar 11	4:00 PM to 5:15 PM	Convention Center	Room 102
B				
Biological Modeling Specialty Section Meeting/Reception	Monday, Mar 12	6:00 PM to 7:30 PM	Marriott Marquis	Yerba Buena Salon 2
Biotechnology Specialty Section Meeting/Reception	Wednesday, Mar 14	6:00 PM to 7:30 PM	Marriott Marquis	Yerba Buena Salon 2
Board of Publications Meeting	Wednesday, Mar 14	1:00 PM to 3:00 PM	Convention Center	Room 228
C				
Carcinogenesis Specialty Section Meeting/Reception	Tuesday, Mar 13	6:00 PM to 7:30 PM	Marriott Marquis	Yerba Buena Salon 6
Carcinogenesis Specialty Section Officers Meeting	Monday, Mar 12	6:30 AM to 8:00 AM	Convention Center	Room 256
Cardiovascular Toxicology Specialty Section Meeting/Reception	Tuesday, Mar 13	6:00 PM to 7:30 PM	Marriott Marquis	Yerba Buena Salon 3
Career Resource and Development Committee Meeting	Sunday, Mar 11	7:30 AM to 9:30 AM	Convention Center	Room 270
CDI Reunion *(Networking and Dessert—Invited: Anyone involved with the SOT Undergraduate Education Program through the years)*	Saturday, Mar 10	8:00 PM to 9:00 PM	Grand Hyatt	Grand Ballroom East
Cellular Dynamics: Bridging the Gap: Human Stem Cell Solutions for Better Predictivity	Tuesday, Mar 13	6:00 PM to 8:30 PM	InterContinental	Grand Ballrooms A & B
Clinical and Translational Toxicology Specialty Section Meeting/Reception	Wednesday, Mar 14	6:00 PM to 7:30 PM	Marriott Marquis	Walnut Room

Schedule by Event Name (Continued)

Tired of carrying the *Program* during the meeting?
Access the real-time schedule via the mobile or online Itinerary Planner.
(Schedule as of January 3; private events are not listed.)

Event:	Date:	Time:	Location:	Room:
Clinical and Translational Toxicology Specialty Section Officers Meeting	Monday, Mar 12	6:30 AM to 8:00 AM	Convention Center	Room 256
Coat/Luggage Check	Sunday, Mar 11	8:00 AM to 8:00 PM	Convention Center	South Lobby
Coat/Luggage Check	Monday, Mar 12	7:00 AM to 6:00 PM	Convention Center	South Lobby
Coat/Luggage Check	Tuesday, Mar 13	7:00 AM to 6:00 PM	Convention Center	South Lobby
Coat/Luggage Check	Wednesday, Mar 14	7:00 AM to 6:00 PM	Convention Center	South Lobby
Coat/Luggage Check	Thursday, Mar 15	7:00 AM to 12:00 Noon	Convention Center	South Lobby
Committee on Diversity Initiatives Meeting	Wednesday, Mar 14	7:00 AM to 8:30 AM	Convention Center	Room 200
Communications Committee Meeting	Monday, Mar 12	11:30 AM to 2:30 PM	Convention Center	Room 200
Comparative and Veterinary Specialty Section Meeting/Luncheon	Monday, Mar 12	12:00 Noon to 1:30 PM	Convention Center	Room 250
Complimentary Coffee	Monday, Mar 12	9:00 AM to 10:00 AM	Convention Center	Exhibit Halls A–C
Complimentary Coffee	Tuesday, Mar 13	9:00 AM to 10:00 AM	Convention Center	Exhibit Halls A–C
Complimentary Coffee	Wednesday, Mar 14	9:00 AM to 10:00 AM	Convention Center	Exhibit Halls A–C
Concession Stands	Sunday, Mar 11	7:30 AM to 2:30 PM	Convention Center	Gateway Ballroom Foyer
Concession Stands	Monday, Mar 12	7:30 AM to 9:30 AM	Convention Center	Gateway Ballroom Foyer
Concession Stands	Monday, Mar 12	9:00 AM to 4:30 PM	Convention Center	Exhibit Halls A–C
Concession Stands	Tuesday, Mar 13	7:30 AM to 9:30 AM	Convention Center	Gateway Ballroom Foyer
Concession Stands	Tuesday, Mar 13	8:30 AM to 4:30 PM	Convention Center	Exhibit Halls A–C
Concession Stands	Wednesday, Mar 14	7:30 AM to 9:30 AM	Convention Center	Gateway Ballroom Foyer
Concession Stands	Wednesday, Mar 14	8:30 AM to 4:30 PM	Convention Center	Exhibit Halls A–C
Concession Stands	Thursday, Mar 15	7:30 AM to 12:00 Noon	Convention Center	Gateway Ballroom Foyer
Congressional Subcommittee Meeting	Sunday, Mar 11	3:00 PM to 5:00 PM	Convention Center	Room 230
CAAT-Europe: Consensus Workshop on Quality Standards for Publications Dealing with *In Vitro* Test Systems	Monday, Mar 12	5:00 PM to 9:00 PM	Marriott Marquis	Pacific Suite J
Contemporary Concepts in Toxicology Conference Committee Meeting	Wednesday, Mar 14	7:00 AM to 8:00 AM	Convention Center	Room 214
Continuing Education Sunrise Mini-Course *(Ticket Required)*	Sunday, Mar 11	7:00 AM to 7:45 AM	Convention Center	*(See Signage for Room Location)*
Continuing Education Morning Courses *(Ticket Required)*	Sunday, Mar 11	8:15 AM to 12:00 Noon	Convention Center	*(See Signage for Room Location)*
Continuing Education Afternoon Courses *(Ticket Required)*	Sunday, Mar 11	1:15 PM to 5:00 PM	Convention Center	*(See Signage for Room Location)*
Continuing Education Committee Meeting	Monday, Mar 12	12:00 Noon to 1:30 PM	Convention Center	Room 228
Continuing Education Committee Walk-Through	Saturday, Mar 10	5:00 PM to 5:45 PM	Convention Center	Room 303
Continuing Education Luncheon for Speakers, Committee, and Student Volunteers *(By Invitation Only)*	Sunday, Mar 11	11:45 AM to 1:15 PM	Convention Center	Room 300
Council Meeting	Saturday, Mar 10	1:00 PM to 5:30 PM	Marriott Marquis	Foothills G1
Council Orientation Luncheon	Saturday, Mar 10	11:30 AM to 1:00 PM	Marriott Marquis	Foothills G2
Council Orientation Meeting	Saturday, Mar 10	8:00 AM to 11:30 AM	Marriott Marquis	Foothills G1
Critical Reviews in Toxicology Editorial Board Meeting	Wednesday, Mar 14	7:00 AM to 8:00 AM	Marriott Marquis	Foothills A
D				
Dermal Toxicology Specialty Section Meeting/Reception	Tuesday, Mar 13	6:00 PM to 7:30 PM	Marriott Marquis	Juniper Room
Dermal Toxicology Specialty Section Officers Meeting	Monday, Mar 12	6:30 AM to 8:00 AM	Convention Center	Room 256

Schedule by Event Name (Continued)

Tired of carrying the *Program* during the meeting?
Access the real-time schedule via the mobile or online Itinerary Planner.
(Schedule as of January 3; private events are not listed.)

Event:	Date:	Time:	Location:	Room:
Disease Prevention Task Force Meeting	Wednesday, Mar 14	7:00 AM to 8:30 AM	Convention Center	Room 228
Distinguished Toxicology Scholar Award Lecture: Environmental Chemicals: From Biochemical and Molecular Toxicology to Education and Outreach, *Lecturer: Ernest Hodgson, North Carolina State University and the North Carolina Agromedicine Institute*	Tuesday, Mar 13	12:30 PM to 1:20 PM	Convention Center	Room 304
Drug Discovery Toxicology Specialty Section Meeting/Reception	Monday, Mar 12	6:00 PM to 7:30 PM	Marriott Marquis	Yerba Buena Salon 6
Duke University Alumni Reception	Monday, Mar 12	8:00 PM to 10:00 PM	Jillian's @ Metreon	
E				
Education Committee Meeting	Tuesday, Mar 13	7:00 AM to 8:30 AM	Convention Center	Room 212
Elsevier Editorial Board Member Reception	Monday, Mar 12	5:00 PM to 7:00 PM	Marriott Marquis	Foothills G
Email Center	Saturday, Mar 10	4:00 PM to 7:00 PM	Convention Center	South Lobby
Email Center	Sunday, Mar 11	7:00 AM to 6:00 PM	Convention Center	South Lobby
Email Center	Monday, Mar 12	7:00 AM to 6:00 PM	Convention Center	South Lobby
Email Center	Tuesday, Mar 13	8:00 AM to 6:00 PM	Convention Center	South Lobby
Email Center	Wednesday, Mar 14	8:00 AM to 6:00 PM	Convention Center	South Lobby
Email Center	Thursday, Mar 15	8:00 AM to 11:30 AM	Convention Center	South Lobby
Endowment Fund Board Meeting	Tuesday, Mar 13	12:00 Noon to 1:30 PM	Convention Center	Room 200
EPA Government Liaison Group Meeting	Wednesday, Mar 14	4:15 PM to 5:15 PM	Convention Center	Room 214
Ethical, Legal, and Social Issues Specialty Section Meeting/Reception	Monday, Mar 12	6:00 PM to 7:30 PM	Marriott Marquis	Yerba Buena Salon 12
Exhibitor Hosted Session: Accelera Srl	Tuesday, Mar 13	9:45 AM to 10:45 AM	Convention Center	Room 105
Exhibitor Hosted Session: Agilent Technologies	Monday, Mar 12	1:00 PM to 2:00 PM	Convention Center	Room 105
Exhibitor Hosted Session: Agilent Technologies	Tuesday, Mar 13	2:45 PM to 3:45 PM	Convention Center	Room 105
Exhibitor Hosted Session: Applied BioPhysics	Wednesday, Mar 14	9:45 AM to 10:45 AM	Convention Center	Room 105
Exhibitor Hosted Session: Chantest Corporation	Monday, Mar 12	1:00 PM to 2:00 PM	Convention Center	Room 100
Exhibitor Hosted Session: Charles River	Monday, Mar 12	10:30 AM to 11:30 AM	Convention Center	Room 101
Exhibitor Hosted Session: Charles River	Tuesday, Mar 13	9:45 AM to 10:45 AM	Convention Center	Room 101
Exhibitor Hosted Session: Charles River	Wednesday, Mar 14	9:45 AM to 10:45 AM	Convention Center	Room 101
Exhibitor Hosted Session: CiToxLAB	Tuesday, Mar 13	12:15 PM to 1:15 PM	Convention Center	Room 100
Exhibitor Hosted Session: Data Sciences International	Tuesday, Mar 13	11:00 AM to 12:00 Noon	Convention Center	Room 105
Exhibitor Hosted Session: emka TECHNOLOGIES, INC.	Tuesday, Mar 13	1:30 PM to 2:30 PM	Convention Center	Room 105
Exhibitor Hosted Session: Fraunhofer ITEM	Tuesday, Mar 13	11:00 AM to 12:00 Noon	Convention Center	Room 100
Exhibitor Hosted Session: Harlan Laboratories, Inc.	Monday, Mar 12	10:30 AM to 11:30 AM	Convention Center	Room 100
Exhibitor Hosted Session: Hepregen, Corp.	Monday, Mar 12	9:15 AM to 10:15 AM	Convention Center	Room 105
Exhibitor Hosted Session: Huntingdon Life Sciences	Monday, Mar 12	9:15 AM to 10:15 AM	Convention Center	Room 100
Exhibitor Hosted Session: Huntingdon Life Sciences	Tuesday, Mar 13	9:45 AM to 10:45 AM	Convention Center	Room 100
Exhibitor Hosted Session: Huntingdon Life Sciences	Wednesday, Mar 14	9:45 AM to 10:45 AM	Convention Center	Room 100
Exhibitor Hosted Session: InSphero AG	Tuesday, Mar 13	2:45 PM to 3:45 PM	Convention Center	Room 100
Exhibitor Hosted Session: Integrated Laboratory Systems, Inc. (ILS)	Tuesday, Mar 13	12:15 PM to 1:15 PM	Convention Center	Room 105
Exhibitor Hosted Session: *In Vitro* ADMET Laboratories	Monday, Mar 12	3:30 PM to 4:30 PM	Convention Center	Room 101
Exhibitor Hosted Session: Litron Laboratories	Monday, Mar 12	3:30 PM to 4:30 PM	Convention Center	Room 100
Exhibitor Hosted Session: MPI Research	Monday, Mar 12	9:15 AM to 10:15 AM	Convention Center	Room 101
Exhibitor Hosted Session: MPI Research	Tuesday, Mar 13	8:30 AM to 9:30 AM	Convention Center	Room 101
Exhibitor Hosted Session: MPI Research	Wednesday, Mar 14	8:30 AM to 9:30 AM	Convention Center	Room 101

Schedule by Event Name (Continued)

Tired of carrying the *Program* during the meeting?
Access the real-time schedule via the mobile or online Itinerary Planner.
(Schedule as of January 3; private events are not listed.)

Event:	Date:	Time:	Location:	Room:
Exhibitor Hosted Session: National Toxicology Program	Monday, Mar 12	3:30 PM to 4:30 PM	Convention Center	Room 105
Exhibitor Hosted Session: PointCross Life Sciences, Inc.	Tuesday, Mar 13	11:00 AM to 12:00 Noon	Convention Center	Room 101
Exhibitor Hosted Session: Promega Corporation	Tuesday, Mar 13	8:30 AM to 9:30 AM	Convention Center	Room 105
Exhibitor Hosted Session: RTC, Research Toxicology Centre S.p.A.	Tuesday, Mar 13	1:30 PM to 2:30 PM	Convention Center	Room 101
Exhibitor Hosted Session: SAGE Labs	Tuesday, Mar 13	12:15 PM to 1:15 PM	Convention Center	Room 101
Exhibitor Hosted Session: Singulex	Monday, Mar 12	2:15 PM to 3:15 PM	Convention Center	Room 100
Exhibitor Hosted Session: SNBL USA, Ltd.	Monday, Mar 12	10:30 AM to 11:30 AM	Convention Center	Room 105
Exhibitor Hosted Session: STEMCELL Technologies, Inc.	Tuesday, Mar 13	1:30 PM to 2:30 PM	Convention Center	Room 100
Exhibitor Hosted Session: Tandem Labs	Monday, Mar 12	2:15 PM to 3:15 PM	Convention Center	Room 105
Exhibitor Hosted Session: US EPA	Wednesday, Mar 14	2:45 PM to 3:45 PM	Convention Center	Room 100
Exhibitor Hosted Session: Vet Path Services, Inc.	Tuesday, Mar 13	8:30 AM to 9:30 AM	Convention Center	Room 100
Exhibitor Hosted Session: WIL Research	Monday, Mar 12	2:15 PM to 3:15 PM	Convention Center	Room 101
Exhibitor Hosted Session: WIL Research	Tuesday, Mar 13	2:45 PM to 3:45 PM	Convention Center	Room 101
Exhibitor Liaison Working Group	Wednesday, Mar 14	2:00 PM to 4:00 PM	Convention Center	Room 200
F				
FDA Government Liaison Group Meeting	Wednesday, Mar 14	2:15 PM to 3:15 PM	Convention Center	Room 214
Finance Committee Meeting	Wednesday, Mar 14	11:30 AM to 1:30 PM	Convention Center	Room 226
Food and Chemical Toxicology Editorial Board Meeting	Tuesday, Mar 13	7:30 AM to 9:00 AM	Marriott Marquis	Foothills B
Food Safety Specialty Section Meeting/Reception	Tuesday, Mar 13	6:00 PM to 7:30 PM	Marriott Marquis	Pacific Suite H
Food Safety Specialty Section Officers Meeting	Monday, Mar 12	6:30 AM to 8:00 AM	Convention Center	Room 256
G				
Genentech: Considerations for Carcinogenicity Assessment of Anticancer Molecules	Monday, Mar 12	1:00 PM to 2:00 PM	Marriott Marquis	Pacific Suite B
Global Collaboration Coffee	Monday, Mar 12	9:00 AM to 10:00 AM	Convention Center	Room 112
Global Strategy Task Force Meeting	Tuesday, Mar 13	10:30 AM to 12:00 Noon	Convention Center	Room 226
Government Liaison Joint Coffee	Wednesday, Mar 14	7:30 AM to 8:45 AM	Convention Center	Room 250
Graduate Student Fellowship—Novartis Award Interviews by Awards Committee	Saturday, Mar 10	6:00 PM to 9:00 PM	Marriott Marquis	Foothills H
Graduate Student Leadership Committee Executive Board Meeting	Wednesday, Mar 14	7:00 AM to 8:30 AM	Convention Center	Room 212
Graduate Student Leadership Committee Meeting	Tuesday, Mar 13	6:45 AM to 7:45 AM	Convention Center	Room 206
Guest/Spouse Hospitality Room	Sunday, Mar 11	8:00 AM to 5:00 PM	Marriott Marquis	Foothills F
Guest/Spouse Hospitality Room	Monday, Mar 12	8:00 AM to 5:00 PM	Marriott Marquis	Foothills F
Guest/Spouse Hospitality Room	Tuesday, Mar 13	8:00 AM to 5:00 PM	Marriott Marquis	Foothills F
Guest/Spouse Hospitality Room	Wednesday, Mar 14	8:00 AM to 5:00 PM	Marriott Marquis	Foothills F
Guest/Spouse Hospitality Room	Thursday, Mar 15	8:00 AM to 11:30 AM	Marriott Marquis	Foothills F
H				
HESI Lunch Seminar *(Registration Required)*	Monday, Mar 12	12:00 Noon to 2:00 PM	Marriott Marquis	Nob Hill A
Hispanic Organization of Toxicologists Special Interest Group Meeting/Reception	Tuesday, Mar 13	6:00 PM to 9:00 PM	Jillian's @ Metreon	
"Hoops for the Endowment Fund" *(See Details on Page 83)*	Monday, Mar 12	9:00 AM to 4:30 PM	Convention Center	Exhibit Hall C
"Hoops for the Endowment Fund" *(See Details on Page 83)*	Tuesday, Mar 13	8:30 AM to 4:30 PM	Convention Center	Exhibit Hall C
"Hoops for the Endowment Fund" *(See Details on Page 83)*	Wednesday, Mar 14	8:30 AM to 4:30 PM	Convention Center	Exhibit Hall C
Housing Desk	Saturday, Mar 10	4:00 PM to 7:00 PM	Convention Center	South Lobby
Housing Desk	Sunday, Mar 11	8:00 AM to 5:00 PM	Convention Center	South Lobby

Schedule by Event Name (Continued)

Tired of carrying the *Program* during the meeting?
Access the real-time schedule via the mobile or online Itinerary Planner.
(Schedule as of January 3; private events are not listed.)

Event:	Date:	Time:	Location:	Room:
Housing Desk	Monday, Mar 12	8:00 AM to 5:00 PM	Convention Center	South Lobby
Housing Desk	Tuesday, Mar 13	8:00 AM to 11:00 AM	Convention Center	South Lobby
I				
Immunotoxicology Specialty Section Meeting/Reception	Tuesday, Mar 13	6:00 PM to 7:30 PM	Marriott Marquis	Nob Hill A
In Vitro and Alternative Methods Specialty Section Meeting/ Luncheon	Wednesday, Mar 14	12:00 Noon to 1:30 PM	Convention Center	Room 300
In Vitro and Alternative Methods Specialty Section Officers Meeting	Monday, Mar 12	6:30 AM to 8:00 AM	Convention Center	Room 256
In Vitro Toxicology Lecture and Luncheon for Students *(Ticket Required) Lecturer: Timothy J. Shafer, US EPA*	Monday, Mar 12	12:00 Noon to 1:20 PM	Marriott Marquis	Golden Gate Ballroom B
Inhalation and Respiratory Specialty Section Meeting/Reception	Monday, Mar 12	6:00 PM to 7:30 PM	Marriott Marquis	Yerba Buena Salon 4
Inhalation and Respiratory Specialty Section Officers Meeting	Monday, Mar 12	6:30 AM to 8:00 AM	Convention Center	Room 256
Inhalation and Respiratory Specialty Section Technical Committee Meeting	Tuesday, Mar 13	7:00 AM to 8:30 AM	Convention Center	Room 230
International Neurotoxicology Association Business Meeting	Monday, Mar 12	5:00 PM to 6:30 PM	Marriott Marquis	Pacific Suite H
Issues Session: Building for the Future: Strategic Initiatives for the SOT Endowment Fund	Thursday, Mar 15	7:30 AM to 8:50 AM	Convention Center	Room 301
IUTOX Meetings	Saturday, Mar 10	8:00 AM to 5:00 PM	Convention Center	Rooms 200, 212
IUTOX Meetings	Sunday, Mar 11	8:00 AM to 5:00 PM	Convention Center	Rooms 200, 212
J				
JHU-CAAT & HTP Consortium: Updates on 21st Century and Evidence-Based Toxicology	Sunday, Mar 11	1:00 PM to 4:00 PM	Marriott Marquis	Yerba Buena Salon 1
Job Bank Center	Sunday, Mar 11	1:00 PM to 5:00 PM	Convention Center	Room 272
Job Bank Center	Monday, Mar 12	9:00 AM to 5:00 PM	Convention Center	Room 272
Job Bank Center	Tuesday, Mar 13	8:30 AM to 5:00 PM	Convention Center	Room 272
Job Bank Center	Wednesday, Mar 14	8:30 AM to 5:00 PM	Convention Center	Room 272
Johnson & Johnson Toxicology Interest Group Meeting	Saturday, Mar 10	11:30 AM to 6:00 PM	Marriott Marquis	Nob Hill A
Journal of Cutaneous and Ocular Toxicology Editorial Board Meeting	Tuesday, Mar 13	8:00 AM to 9:00 AM	Marriott Marquis	Foothills A
Journal of Immunotoxicology Editorial Board Meeting	Tuesday, Mar 13	12:00 Noon to 1:30 PM	Marriott Marquis	Pacific Suite A
Journal of Toxicology Mechanisms and Methods Editorial Board Meeting	Monday, Mar 12	12:00 Noon to 1:30 PM	Marriott Marquis	Foothills E
K				
K–12 Outreach Discussion	Tuesday, Mar 13	12:30 PM to 1:30 PM	Convention Center	Room 264
K–12 Outreach Event: What Do Snow White, Romeo and Juliet, and the Madhatter Have in Common?...Toxicology!	Saturday, Mar 10	10:30 AM to 4:30 PM	The Lawrence Hall of Science	University of California, Berkeley
K–12 Subcommittee Meeting	Monday, Mar 12	6:45 AM to 7:45 AM	Convention Center	Room 212
Kettering Reception, University of Cincinnati	Tuesday, Mar 13	6:30 PM to 8:00 PM	Marriott Marquis	Foothills J
Keynote Medical Research Council (MRC) Lecture: Role of microRNAs in Control of Gene Expression in Human Physiology and Pathology, *Lecturer: Witold Filipowicz, Friedrich Miescher Institute for Biomedical Research*	Tuesday, Mar 13	8:00 AM to 9:00 AM	Convention Center	Room 103
Korean Toxicologists Association in America Special Interest Group Meeting/Reception	Monday, Mar 12	4:30 PM to 6:30 PM	Marriott Marquis	Golden Gate Ballroom C2
L				
Leading Edge in Basic Science Award Lecture: Inorganic Phosphate: Hidden Signal? *Lecturer: Myung-Haing Cho, Seoul National University*	Tuesday, Mar 13	7:00 AM to 7:50 AM	Convention Center	Room 304
Lovelace Respiratory Research Institute Reception	Sunday, Mar 11	7:30 PM to 10:30 PM	Marriott Marquis	Foothills E

Schedule by Event Name (Continued)

Tired of carrying the *Program* during the meeting?
Access the real-time schedule via the mobile or online Itinerary Planner.
(Schedule as of January 3; private events are not listed.)

Event:	Date:	Time:	Location:	Room:
M				
Mechanisms Specialty Section Meeting/Reception	Monday, Mar 12	6:00 PM to 7:30 PM	Marriott Marquis	Golden Gate Ballroom C1
Mechanisms Specialty Section Officers Meeting	Monday, Mar 12	6:30 AM to 8:00 AM	Convention Center	Room 256
Medical Device Specialty Section Meeting/Reception	Tuesday, Mar 13	6:00 PM to 7:30 PM	Marriott Marquis	Willow Room
Medical Device Specialty Section Officers Meeting	Monday, Mar 12	6:30 AM to 8:00 AM	Convention Center	Room 256
Membership Committee Meeting	Wednesday, Mar 14	11:30 AM to 1:00 PM	Convention Center	Room 200
Merit Award Lecture: Reprogramming the Liver *Lecturer: Curtis D. Klaassen, University of Kansas Medical Center*	Monday, Mar 12	12:30 PM to 1:20 PM	Convention Center	Room 304
Metals Specialty Section Meeting/Reception	Tuesday, Mar 13	6:00 PM to 7:30 PM	Marriott Marquis	Golden Gate Ballroom C2
Michigan State University Environmental Toxicology Reception	Tuesday, Mar 13	9:00 PM to 11:00 PM	Marriott Marquis	Foothills G1
Mixtures Specialty Section Meeting/Reception	Monday, Mar 12	6:00 PM to 7:30 PM	Marriott Marquis	Yerba Buena Salon 10
Mixtures Specialty Section Officers Meeting	Monday, Mar 12	6:30 AM to 8:00 AM	Convention Center	Room 256
Molecular Biology Specialty Section Meeting/Reception	Tuesday, Mar 13	6:00 PM to 7:30 PM	Marriott Marquis	Yerba Buena Salon 10
MPI Research Event: Got Science?	Tuesday, Mar 13	6:30 PM to 10:00 PM	Marriott Marquis	Yerba Buena Salon 7
N				
Nanotoxicology Specialty Section Meeting/Reception	Tuesday, Mar 13	6:00 PM to 7:30 PM	Marriott Marquis	Golden Gate Ballroom C1
National Capital Area Regional Chapter Reception	Monday, Mar 12	5:30 PM to 7:30 PM	Marriott Marquis	Juniper Room
Neurotoxicology Specialty Section Meeting/Reception	Tuesday, Mar 13	6:00 PM to 7:30 PM	Marriott Marquis	Golden Gate Ballroom B
Neurotoxicology Specialty Section Officers Meeting	Monday, Mar 12	6:30 AM to 8:00 AM	Convention Center	Room 256
NICHD Government Liaison Group Meeting	Wednesday, Mar 14	11:45 AM to 12:45 PM	Convention Center	Room 230
NIEHS Government Liaison Group Meeting	Wednesday, Mar 14	12:00 Noon to 1:00 PM	Convention Center	Room 214
NIOSH Government Liaison Group Meeting	Wednesday, Mar 14	3:15 PM to 4:15 PM	Convention Center	Room 214
North Carolina State University Alumni Reception	Monday, Mar 12	7:30 PM to 9:30 PM	Marriott Marquis	Foothills D
Northeast Regional Chapter Student Luncheon	Tuesday, Mar 13	12:30 PM to 2:00 PM	Marriott Marquis	Foothills E
Northern California Regional Chapter Reception	Monday, Mar 12	5:00 PM to 8:00 PM	Marriott Marquis	Nob Hill A
O				
Occupational and Public Health Specialty Section Meeting/Reception	Tuesday, Mar 13	6:00 PM to 7:30 PM	Marriott Marquis	Golden Gate Ballroom C3
Ocular Toxicology Specialty Section Meeting/Reception	Tuesday, Mar 13	6:00 PM to 7:30 PM	Marriott Marquis	Pacific Suite I
P				
Pacific Northwest Regional Chapter Reception	Monday, Mar 12	7:00 PM to 10:00 PM	Jillian's @ Metreon	
Past Presidents Breakfast	Monday, Mar 12	6:30 AM to 8:00 AM	Convention Center	Room 110
Past Presidents Fun Run	Tuesday, Mar 13	6:00 AM to 8:00 AM	*Runners Meet in Lobby of Your SOT Hotel*	*See Details on Page 84*
Plenary Opening Lecture: Systems Medicine, Systems Toxicology, Transformational Technologies and the Revolution from Reactive to Proactive (P4) Medicine, *Lecturer: Leroy Hood, Institute for Systems Biology*	Monday, Mar 12	8:00 AM to 9:00 AM	Convention Center	Exhibit Hall E
PointCross Life Sciences: FDA SEND Initiative—What It Means for Toxicologists *(By Invitation Only)*	Monday, Mar 12	5:00 PM to 8:00 PM	Location TBD	
Postdoctoral Assembly Board Meeting	Tuesday, Mar 13	6:45 AM to 7:45 AM	Convention Center	Room 226
Postdoctoral Assembly Luncheon *(Ticket Required)*	Tuesday, Mar 13	12:00 Noon to 1:15 PM	Convention Center	Room 256
Poster Sessions	Monday, Mar 12	9:30 AM to 12:30 PM	Convention Center	Exhibit Halls A–C

Schedule by Event Name (Continued)

Tired of carrying the *Program* during the meeting?
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(Schedule as of January 3; private events are not listed.)

Event:	Date:	Time:	Location:	Room:
Poster Sessions	Monday, Mar 12	1:00 PM to 4:30 PM	Convention Center	Exhibit Halls A–C
Poster Sessions	Tuesday, Mar 13	9:00 AM to 12:30 PM	Convention Center	Exhibit Halls A–C
Poster Sessions	Tuesday, Mar 13	1:00 PM to 4:30 PM	Convention Center	Exhibit Halls A–C
Poster Sessions	Wednesday, Mar 14	9:00 AM to 12:30 PM	Convention Center	Exhibit Halls A–C
Poster Sessions	Wednesday, Mar 14	1:00 PM to 4:30 PM	Convention Center	Exhibit Halls A–C
Poster Sessions	Thursday, Mar 15	8:30 AM to 12:00 Noon	Convention Center	Gateway Ballroom
Poster Set Up *(See Poster Board Surface Map on Pages 112–113)*	Monday, Mar 12	7:30 AM to 9:30 AM	Convention Center	Exhibit Halls A–C
Poster Set Up *(See Poster Board Surface Map on Pages 114–115)*	Monday, Mar 12	12:30 PM to 1:00 PM	Convention Center	Exhibit Halls A–C
Poster Set Up *(See Poster Board Surface Map on Pages 116–117)*	Tuesday, Mar 13	7:30 AM to 9:00 AM	Convention Center	Exhibit Halls A–C
Poster Set Up *(See Poster Board Surface Map on Pages 118–119)*	Tuesday, Mar 13	12:30 PM to 1:00 PM	Convention Center	Exhibit Halls A–C
Poster Set Up *(See Poster Board Surface Map on Pages 120–121)*	Wednesday, Mar 14	7:30 AM to 9:00 AM	Convention Center	Exhibit Halls A–C
Poster Set Up *(See Poster Board Surface Map on Pages 122–123)*	Wednesday, Mar 14	12:30 PM to 1:00 PM	Convention Center	Exhibit Halls A–C
Poster Set Up *(See Poster Board Surface Map on Page 124)*	Thursday, Mar 15	7:00 AM to 8:00 AM	Convention Center	Gateway Ballroom
President's Reception *(By Invitation Only)*	Wednesday, Mar 14	7:00 PM to 8:30 PM	Marriott Marquis	Golden Gate Ballroom B
Professional Needs Assessment Task Force Meeting	Tuesday, Mar 13	12:00 Noon to 1:30 PM	Convention Center	Room 228
Purdue University Alumni Reception	Monday, Mar 12	5:30 PM to 7:00 PM	Marriott Marquis	Foothills J
R				
Regional Chapter Collaboration and Communications Committee Meeting	Wednesday, Mar 14	12:00 Noon to 1:30 PM	Convention Center	Room 212
Regional Chapter Presidents and Officers Meeting	Tuesday, Mar 13	7:00 AM to 8:30 AM	Convention Center	Room 300
Regional K–12 Outreach Contacts Meeting	Monday, Mar 12	4:30 PM to 5:30 PM	Convention Center	Room 208
Registration	Saturday, Mar 10	4:00 PM to 7:00 PM	Convention Center	South Lobby
Registration	Sunday, Mar 11	7:00 AM to 8:00 PM	Convention Center	South Lobby
Registration	Monday, Mar 12	7:00 AM to 5:00 PM	Convention Center	South Lobby
Registration	Tuesday, Mar 13	8:00 AM to 4:00 PM	Convention Center	South Lobby
Registration	Wednesday, Mar 14	8:00 AM to 4:00 PM	Convention Center	South Lobby
Registration	Thursday, Mar 15	8:00 AM to 11:30 AM	Convention Center	South Lobby
Regulatory and Safety Evaluation Specialty Section Meeting/ Reception	Monday, Mar 12	6:00 PM to 7:30 PM	Marriott Marquis	Golden Gate Ballroom B
Regulatory and Safety Evaluation Specialty Section Officers Meeting	Monday, Mar 12	6:30 AM to 8:00 AM	Convention Center	Room 228
Reproductive and Developmental Toxicology Specialty Section Meeting/Reception	Wednesday, Mar 14	6:00 PM to 7:30 PM	Marriott Marquis	Nob Hill A
Reproductive and Developmental Toxicology Specialty Section Officers Meeting	Monday, Mar 12	7:00 AM to 8:30 AM	Convention Center	Room 264
Research Funding Committee Meeting	Tuesday, Mar 13	7:30 AM to 9:30 AM	Convention Center	Room 228
Research Funding Information Room	Tuesday, Mar 13	9:00 AM to 4:30 PM	Convention Center	Room 270
Research Funding Information Room	Wednesday, Mar 14	9:00 AM to 4:30 PM	Convention Center	Room 270
Risk Assessment Specialty Section Meeting/Reception	Tuesday, Mar 13	6:00 PM to 7:30 PM	Marriott Marquis	Golden Gate Ballroom A
Risk Assessment Specialty Section Officers Meeting	Monday, Mar 12	6:30 AM to 8:00 AM	Convention Center	Room 256
S				
Safety Pharmacology Society Board Meeting	Sunday, Mar 11	2:00 PM to 6:00 PM	Marriott Marquis	Foothills J
Scientific Liaison Coalition Meeting	Sunday, Mar 11	12:00 Noon to 4:00 PM	Marriott Marquis	Yerba Buena Salon 6
Scientific Liaison Task Force Meeting	Monday, Mar 12	12:00 Noon to 1:30 PM	Convention Center	Room 208
Scientific Program Committee Meeting	Thursday, Mar 15	12:00 Noon to 1:30 PM	Convention Center	Room 212

Schedule by Event Name (Continued)

Tired of carrying the *Program* during the meeting?
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(Schedule as of January 3; private events are not listed.)

Event:	Date:	Time:	Location:	Room:
Scientific Program Committee Walk-Through	Monday, Mar 12	7:00 AM to 7:45 AM	Convention Center	Room 301
Scientific Sessions	Monday, Mar 12	9:15 AM to 12:00 Noon	Convention Center	*(See Session Index on Pages 104–110 for Room Location)*
Scientific Sessions	Monday, Mar 12	12:10 PM to 1:30 PM	Convention Center	*(See Session Index on Pages 104–110 for Room Location)*
Scientific Sessions	Monday, Mar 12	2:00 PM to 4:45 PM	Convention Center	*(See Session Index on Pages 104–110 for Room Location)*
Scientific Sessions	Tuesday, Mar 13	9:00 AM to 11:45 AM	Convention Center	*(See Session Index on Pages 104–110 for Room Location)*
Scientific Sessions	Tuesday, Mar 13	12:00 Noon to 1:20 PM	Convention Center	*(See Session Index on Pages 104–110 for Room Location)*
Scientific Sessions	Tuesday, Mar 13	1:30 PM to 4:15 PM	Convention Center	*(See Session Index on Pages 104–110 for Room Location)*
Scientific Sessions (Sunset)	Tuesday, Mar 13	4:30 PM to 5:50 PM	Convention Center	*(See Session Index on Pages 104–110 for Room Location)*
Scientific Sessions (Sunrise)	Wednesday, Mar 14	7:30 AM to 8:50 AM	Convention Center	*(See Session Index on Pages 104–110 for Room Location)*
Scientific Sessions	Wednesday, Mar 14	9:00 AM to 11:45 AM	Convention Center	*(See Session Index on Pages 104–110 for Room Location)*
Scientific Sessions	Wednesday, Mar 14	12:00 Noon to 1:20 PM	Convention Center	*(See Session Index on Pages 104–110 for Room Location)*
Scientific Sessions	Wednesday, Mar 14	1:30 PM to 4:15 PM	Convention Center	*(See Session Index on Pages 104–110 for Room Location)*
Scientific Sessions (Sunset)	Wednesday, Mar 14	4:30 PM to 5:50 PM	Convention Center	*(See Session Index on Pages 104–110 for Room Location)*
Scientific Sessions	Thursday, Mar 15	9:00 AM to 11:45 AM	Convention Center	*(See Session Index on Pages 104–110 for Room Location)*
SOT Annual Business Meeting *(All SOT Members Invited)*	Tuesday, Mar 13	4:30 PM to 6:00 PM	Convention Center	Room 102
SOT Office	Saturday, Mar 10	4:00 PM to 7:00 PM	Convention Center	Room 222
SOT Office	Sunday, Mar 11	7:00 AM to 5:30 PM	Convention Center	Room 222
SOT Office	Monday, Mar 12	7:00 AM to 5:00 PM	Convention Center	Room 222
SOT Office	Tuesday, Mar 13	7:00 AM to 4:30 PM	Convention Center	Room 222
SOT Office	Wednesday, Mar 14	7:00 AM to 4:30 PM	Convention Center	Room 222
SOT Office	Thursday, Mar 15	7:00 AM to 11:30 AM	Convention Center	Room 222
SOT Pavilion	Monday, Mar 12	9:00 AM to 4:30 PM	Convention Center	Exhibit Halls A–C
SOT Pavilion	Tuesday, Mar 13	8:30 AM to 4:30 PM	Convention Center	Exhibit Halls A–C
SOT Pavilion	Wednesday, Mar 14	8:30 AM to 4:30 PM	Convention Center	Exhibit Halls A–C
SOT/EUROTOX Debate: Comparative Hazards: Chemicals in the Environment Are the Largest Risk to Human Health, *SOT Debater: Stephen Safe, Texas A&M University and EUROTOX Debater: David R. Bell, European Chemicals Agency*	Monday, Mar 12	4:30 PM to 5:50 PM	Convention Center	Room 307
South Central and Lone Star Regional Chapters Joint Social	Monday, Mar 12	7:00 PM to 9:00 PM	ThirstyBear Brewing Company	

Schedule by Event Name (Continued)

Tired of carrying the *Program* during the meeting?
Access the real-time schedule via the mobile or online Itinerary Planner.
(Schedule as of January 3; private events are not listed.)

Event:	Date:	Time:	Location:	Room:
Southern California and Mountain West Regional Chapters Joint Reception	Monday, Mar 12	5:00 PM to 7:30 PM	ThirstyBear Brewing Company	
Speaker Ready Room	Saturday, Mar 10	4:00 PM to 7:00 PM	Convention Center	Room 220
Speaker Ready Room	Sunday, Mar 11	7:00 AM to 5:30 PM	Convention Center	Room 220
Speaker Ready Room	Monday, Mar 12	7:00 AM to 5:00 PM	Convention Center	Room 220
Speaker Ready Room	Tuesday, Mar 13	7:00 AM to 4:30 PM	Convention Center	Room 220
Speaker Ready Room	Wednesday, Mar 14	7:00 AM to 4:30 PM	Convention Center	Room 220
Speaker Ready Room	Thursday, Mar 15	7:00 AM to 11:30 AM	Convention Center	Room 220
Special Interest Group Collaboration Group Meeting	Wednesday, Mar 14	7:30 AM to 8:30 AM	Convention Center	Room 300
Special Interest Group Presidents and Officers Meeting	Monday, Mar 12	12:00 Noon to 1:00 PM	Convention Center	Room 300
Special Symposium: Meet the Directors *(See Page 282 for details)*	Wednesday, Mar 14	9:00 AM to 11:45 AM	Convention Center	Room 302
Specialty Section Collaboration and Communication Group Meeting	Monday, Mar 12	3:00 PM to 4:00 PM	Convention Center	Room 202
Specialty Section Presidents and Officers Meeting	Monday, Mar 12	4:30 PM to 6:00 PM	Convention Center	Room 300
Stem Cells Specialty Section Meeting/Reception	Wednesday, Mar 14	6:00 PM to 7:30 PM	Marriott Marquis	Yerba Buena Salon 4
Strategies for Submitting Successful Grants: Brown Bag Lunch	Tuesday, Mar 13	12:00 Noon to 1:15 PM	Convention Center	Room 206
Student/Postdoctoral Scholar Mixer *(Ticket Required)*	Sunday, Mar 11	7:30 PM to 9:00 PM	Marriott Marquis	Yerba Buena Salon 9
T				
Tour Desk	Saturday, Mar 10	4:00 PM to 7:00 PM	Convention Center	South Lobby
Tour Desk	Sunday, Mar 11	9:30 AM to 12:30 PM	Convention Center	South Lobby
Tour Desk	Monday, Mar 12	9:30 AM to 12:30 PM	Convention Center	South Lobby
Tour Desk	Tuesday, Mar 13	8:00 AM to 10:00 AM	Convention Center	South Lobby
Tour Desk	Wednesday, Mar 14	9:00 AM to 10:00 AM	Convention Center	South Lobby
ToxExpo 2013 Exhibit Space Selection Process	Tuesday, Mar 13	4:45 PM to 6:00 PM	Convention Center	Room 101
ToxExpo Exhibit Hall Council Walk-Through	Monday, Mar 12	2:00 PM to 3:00 PM	Convention Center	Exhibit Halls A–C
ToxExpo Exhibits Open	Monday, Mar 12	9:00 AM to 4:30 PM	Convention Center	Exhibit Halls A–C
ToxExpo Exhibits Open	Tuesday, Mar 13	8:30 AM to 4:30 PM	Convention Center	Exhibit Halls A–C
ToxExpo Exhibits Open	Wednesday, Mar 14	8:30 AM to 4:30 PM	Convention Center	Exhibit Halls A–C
ToxExpo Set Up	Saturday, Mar 10	8:00 AM to 5:00 PM	Convention Center	Exhibit Halls A–C
ToxExpo Set Up	Sunday, Mar 11	8:00 AM to 5:00 PM	Convention Center	Exhibit Halls A–C
ToxExpo Tear Down	Wednesday, Mar 14	4:30 PM to 8:30 PM	Convention Center	Exhibit Halls A–C
ToxExpo Tear Down	Thursday, Mar 15	8:00 AM to 12:00 Noon	Convention Center	Exhibit Halls A–C
ToxExpo Time	Wednesday, Mar 14	1:00 PM to 2:00 PM	Convention Center	Exhibit Halls A–C
Toxicologic and Exploratory Pathology Specialty Section Meeting/ Luncheon	Wednesday, Mar 14	12:00 Noon to 1:30 PM	Convention Center	Room 250
Toxicologic and Exploratory Pathology Specialty Section Officers Meeting	Monday, Mar 12	6:30 AM to 7:45 AM	Convention Center	Room 214
Toxicological Sciences Associate Editors Meeting	Sunday, Mar 11	12:00 Noon to 3:00 PM	Marriott Marquis	Foothills G
Toxicological Sciences/Oxford University Press Appreciation Dinner *(By Invitation Only)*	Monday, Mar 12	7:00 PM to 9:00 PM	Annabelle's Bar & Bistro	
Toxicologists of African Origin Special Interest Group Meeting/ Reception	Monday, Mar 12	5:00 PM to 6:30 PM	Marriott Marquis	Nob Hill D
Toxicology and Applied Pharmacology Associate Editor Board Meeting	Monday, Mar 12	12:00 Noon to 2:00 PM	Marriott Marquis	Foothills B
Toxicology Editorial Board Meeting	Wednesday, Mar 14	12:00 Noon to 2:00 PM	Marriott Marquis	Foothills B
Toxicology Education Foundation Annual Trustee Meeting	Sunday, Mar 11	8:00 AM to 12:00 Noon	Marriott Marquis	Foothills B

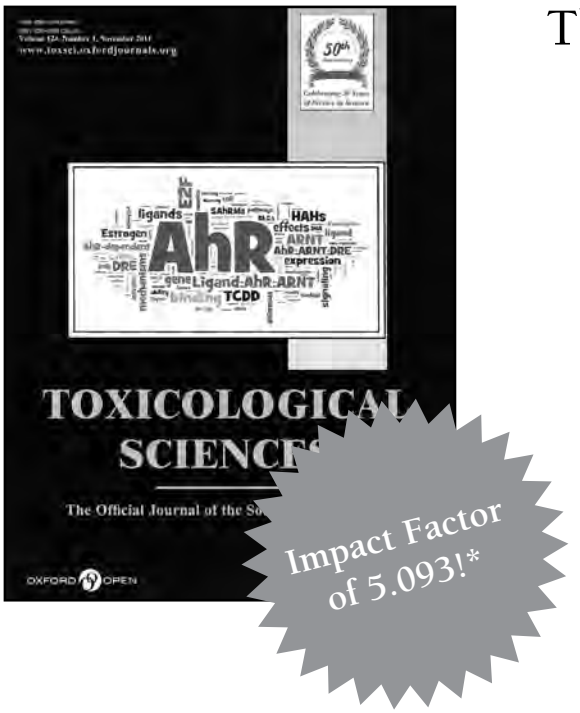
Schedule by Event Name (Continued)

Tired of carrying the *Program* during the meeting?
Access the real-time schedule via the mobile or online Itinerary Planner.
(Schedule as of January 3; private events are not listed.)

Event:	Date:	Time:	Location:	Room:
Toxicology in Vitro Editorial Board Meeting	Wednesday, Mar 14	7:00 AM to 8:00 AM	Marriott Marquis	Foothills B
Toxicology Letters Editorial Board Meeting	Tuesday, Mar 13	11:45 AM to 1:30 PM	Marriott Marquis	Foothills B
ToxLearn Work Group	Monday, Mar 12	2:00 PM to 3:00 PM	Convention Center	Room 212
Tox ShowDown *(All Attendees Invited; See Page 85 for Details)*	Tuesday, Mar 13	7:30 PM to 9:00 PM	Marriott Marquis	Yerba Buena Salon 13
Trainee Discussion with Plenary Speaker: Leroy Hood *(Ticket Required; SOT Student and Postdoctoral members only, limited seating)*	Monday, Mar 12	9:30 AM to 10:30 AM	Convention Center	Room 111
Translational Impact Award Lecture: Medical Toxicology Evaluations of the 2008 TVA Fly Ash Spill, *Lecturer: John G. Benitez, Vanderbilt University Medical Center, Tennessee Poison Center*	Wednesday, Mar 14	12:30 PM to 1:20 PM	Convention Center	Room 304
Tri-Service Toxicology Consortium	Wednesday, Mar 14	2:00 PM to 4:00 PM	Marriott Marquis	Foothills G
U				
Undergraduate Education Program: Orientation for SOT Hosts, Peer Mentors, and Advisors	Saturday, Mar 10	4:15 PM to 5:45 PM	Grand Hyatt	Room Cypress B
Undergraduate Education Program: Opening Event *(By Invitation Only)*	Saturday, Mar 10	5:45 PM to 8:00 PM	Grand Hyatt	Grand Ballroom East
Undergraduate Education Program: Toxicology Lectures *(Registration Required)*	Sunday, Mar 11	8:00 AM to 11:30 AM	Marriott Marquis	Golden Gate Ballroom A
Undergraduate Education Program: Lunch and Networking *(Registration Required)*	Sunday, Mar 11	11:45 AM to 1:15 PM	Marriott Marquis	Golden Gate Ballroom B
Undergraduate Education Program—Advisors: Tips for Advising Prospective Graduate Students	Sunday, Mar 11	12:45 PM to 1:45 PM	Marriott Marquis	Pacific Suite F
Undergraduate Education Program—Students: Planning for Graduate School	Sunday, Mar 11	12:45 PM to 1:45 PM	Marriott Marquis	Pacific Suites B, C, E
Undergraduate Education Program: Career Opportunities in Toxicology, Panel Discussion	Sunday, Mar 11	2:00 PM to 2:40 PM	Marriott Marquis	Golden Gate Ballroom B
Undergraduate Education Program: Open Time with Academic Program Directors and Internship Sponsors	Sunday, Mar 11	3:00 PM to 5:00 PM	Marriott Marquis	Golden Gate Ballroom C1
Undergraduate Education Program: Host Mentor and Peer Mentor Meeting	Sunday, Mar 11	3:00 PM to 3:30 PM	Marriott Marquis	Laurel Room
Undergraduate Education Program: Meeting for Students, Advisors, Peer Mentors, and SOT Hosts	Monday, Mar 12	7:20 AM to 7:50 AM	Convention Center	Room 113
Undergraduate Education Program: Poster Session for Visiting Students	Monday, Mar 12	9:30 AM to 10:50 AM	Convention Center	Exhibit Hall C, Poster Surfaces 601–624
Undergraduate Education Program: Wrap Up	Monday, Mar 12	11:00 AM to 11:50 AM	Marriott Marquis	Golden Gate Ballroom C1
Undergraduate Educator Network Meeting	Tuesday, Mar 13	3:00 PM to 4:15 PM	Convention Center	Room 300
Undergraduate Student Meeting	Wednesday, Mar 14	4:00 PM to 5:00 PM	Convention Center	Room 212
University of Rochester Alumni Reception	Tuesday, Mar 13	7:00 PM to 10:00 PM	Marriott Marquis	Foothills F
W				
Welcome Reception *(All Attendees Welcome)*	Sunday, Mar 11	6:30 PM to 7:30 PM	Convention Center	Exhibit Hall E
Wi-Fi Lounges *(Wireless Internet Access)*	Monday, Mar 12	9:00 AM to 4:30 PM	Convention Center	Exhibit Halls A–C
Wi-Fi Lounges *(Wireless Internet Access)*	Tuesday, Mar 13	8:30 AM to 4:30 PM	Convention Center	Exhibit Halls A–C
Wi-Fi Lounges *(Wireless Internet Access)*	Wednesday, Mar 14	8:30 AM to 4:30 PM	Convention Center	Exhibit Halls A–C
Women in Toxicology Special Interest Group Executive Committee Meeting	Tuesday, Mar 13	3:00 PM to 4:00 PM	Convention Center	Room 212
Women in Toxicology Special Interest Group Meeting/Reception	Wednesday, Mar 14	4:30 PM to 6:00 PM	Marriott Marquis	Yerba Buena Salon 7
Women in Toxicology Special Interest Group Mentoring Breakfast	Monday, Mar 12	6:15 AM to 8:00 AM	Marriott Marquis	Club Room

Congratulations on the Increased Impact Factor of 5.093!*

Toxicological Sciences



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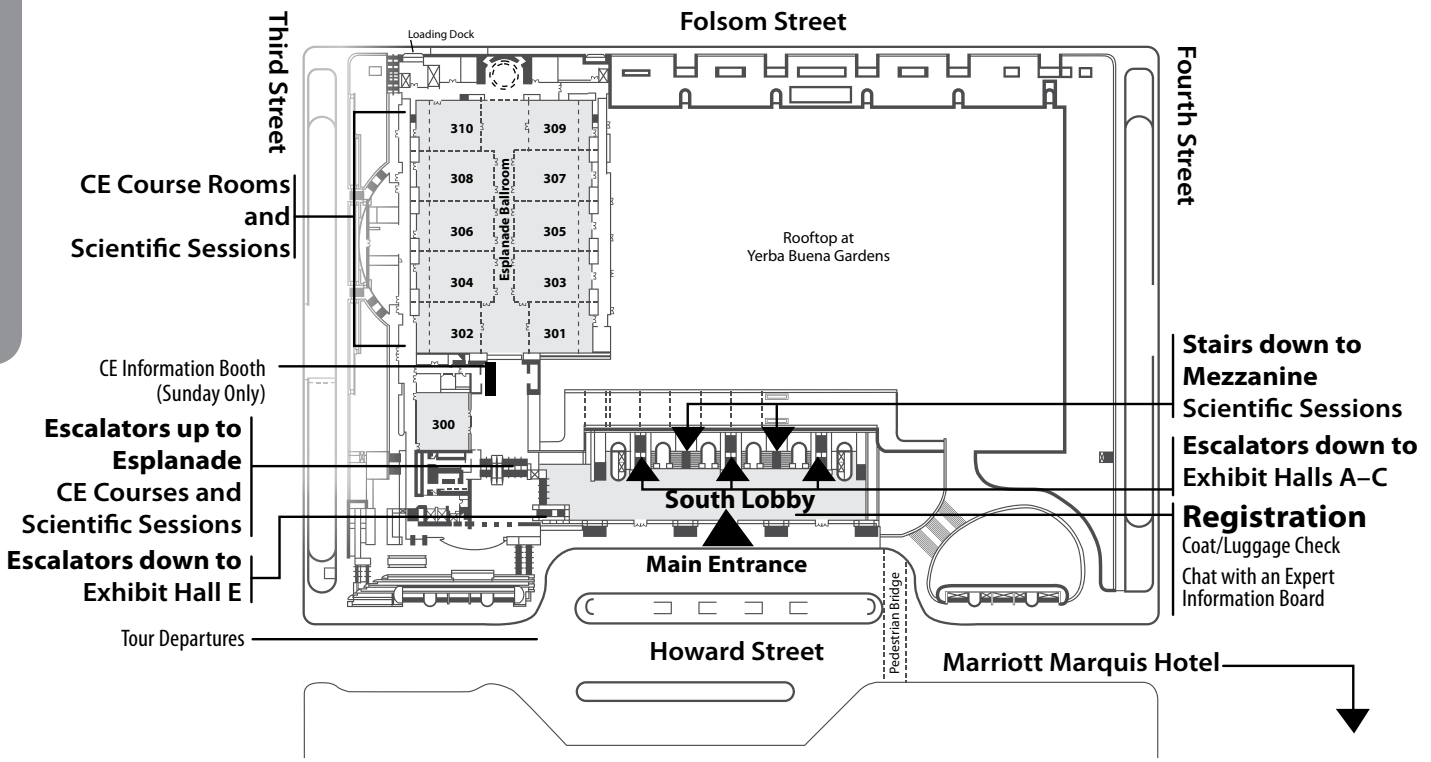
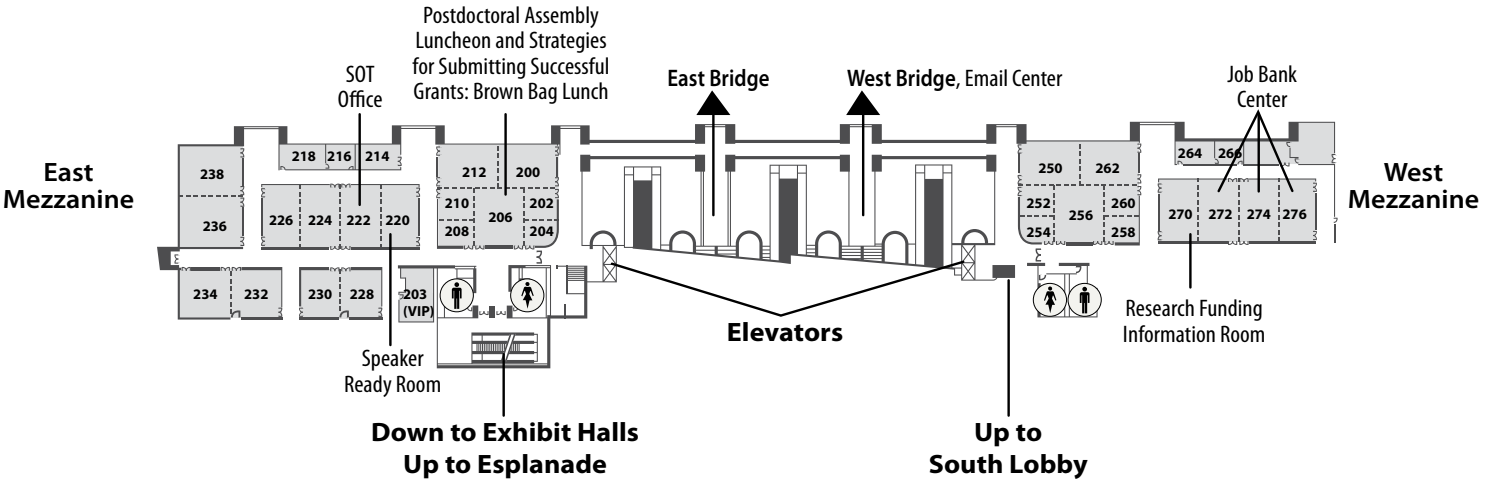
Moscone Convention Center Maps

South Lobby Level (Street)—Esplanade Ballroom is one level up from South Lobby

CE Course Rooms, Registration, and Scientific Sessions



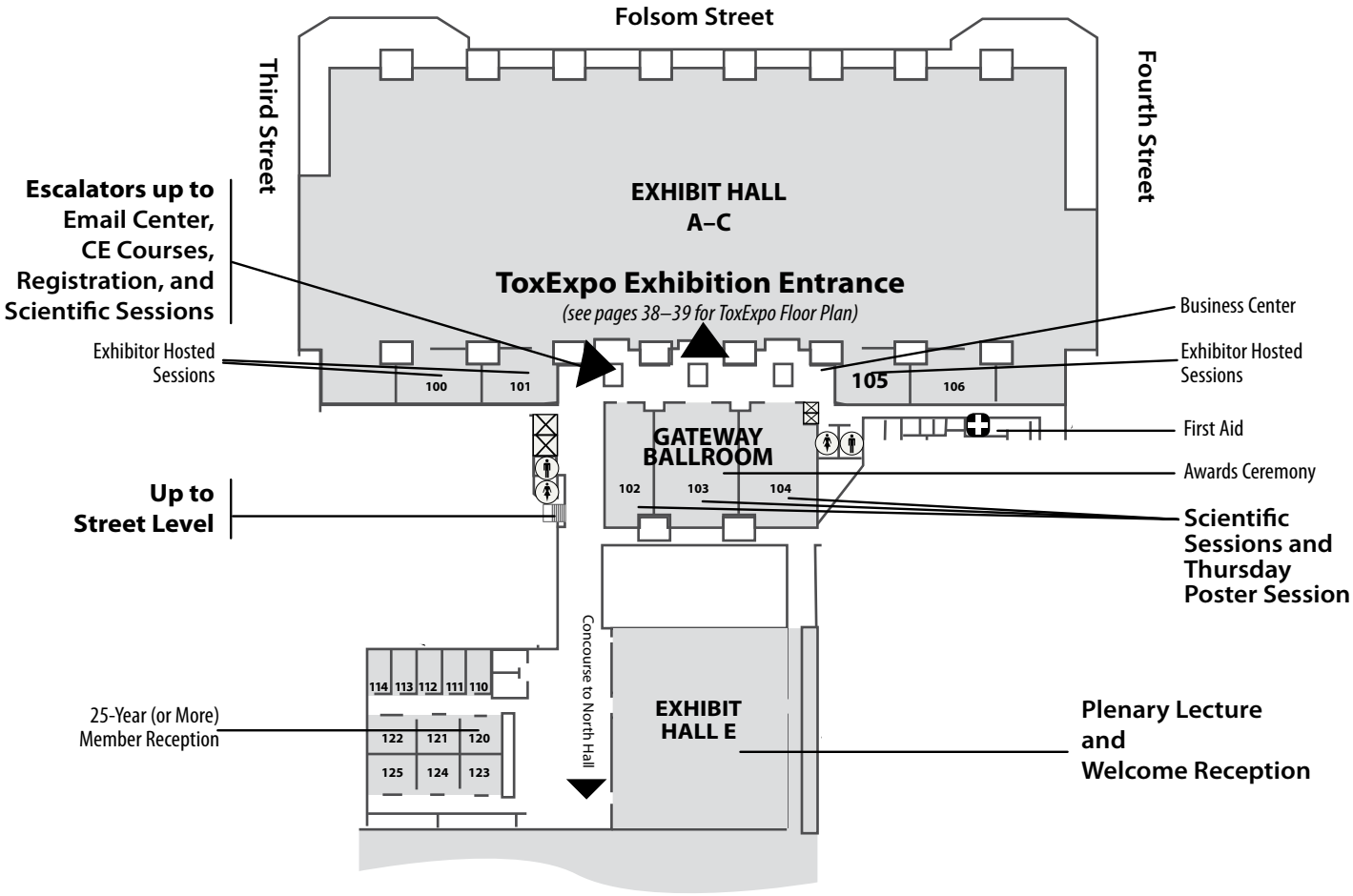
Mezzanine Level—One level down from South Lobby



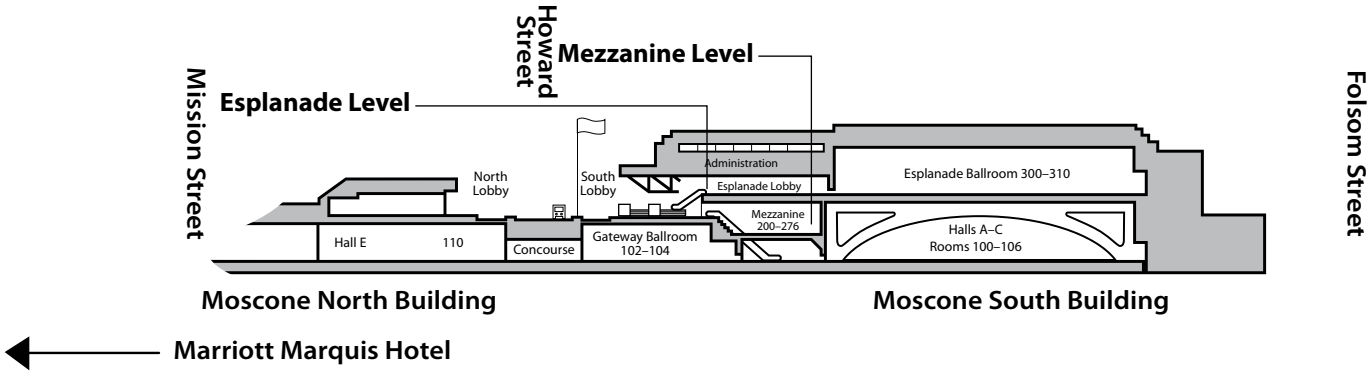
Moscone Convention Center Maps (Continued)

Exhibit Level—Two levels down from South Lobby

Plenary Lecture, Scientific Sessions, ToxExpo, and Welcome Reception



Moscone Convention Center Side View



Marriott Marquis Hotel Maps

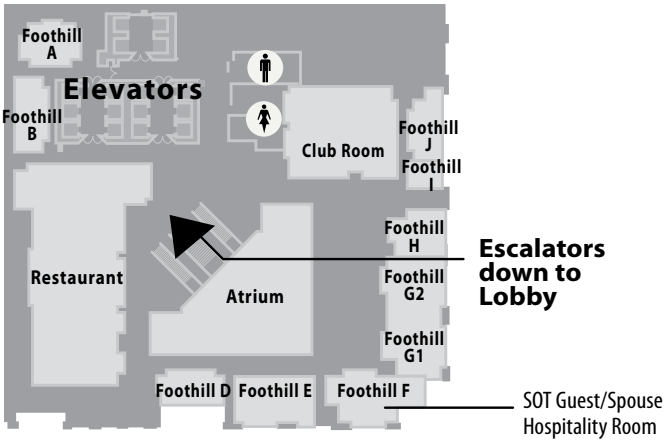
Lower B2 Level
(Two Levels below Lobby)

Ancillary Meetings
(Sunday–Wednesday)

Fourth Street

Yerba Buena Gardens

Foothill Level—Second Floor

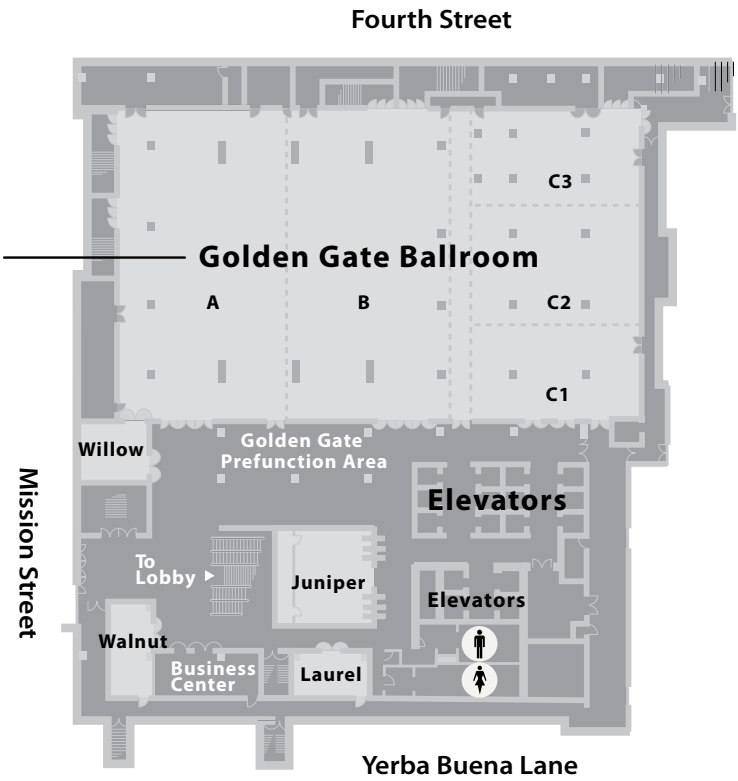


Marriott Marquis Hotel Maps (Continued)

B2 Level
(One Level below Lobby)

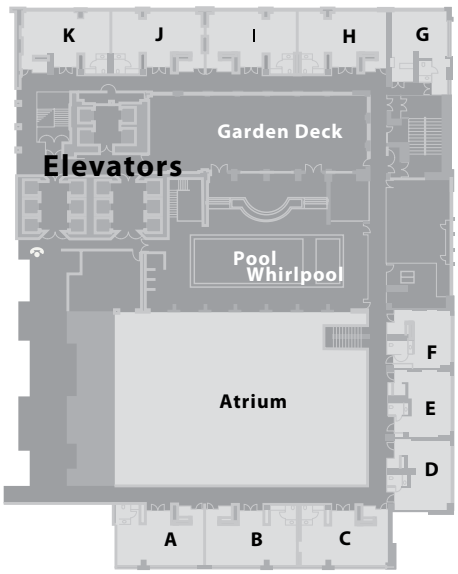
Ancillary Meetings (Sunday–Wednesday)

Student/Postdoctoral Scholar Mixer and *In Vitro* Toxicology Lecture and Luncheon



Pacific Level—Fourth Floor

Sierra Level—Fifth Floor



San Francisco Hotel Accommodations

1) Hotel Abri

$229 single/double
127 Ellis Street
San Francisco, CA 94102
Tel: 415.392.8800
Fax: 415.398.2650
Website: **www.hotel-abri.com**

Club: Stash Rewards Program
Check in: 3:00 PM
Check out: 12:00 Noon
5 blocks from Convention Center
$35/day valet parking
Complimentary wireless Internet in lobby, complimentary wired Internet in guest rooms

2) Courtyard by Marriott Downtown

$229 single/double
299 Second Street
San Francisco, CA 94105
Tel: 415.947.0700
Fax: 415.947.0800
Website: **www.marriott.com/sfocd**

Club: Marriott Rewards
Check in: 3:00 PM
Check out: 12:00 Noon
2 blocks from Convention Center
$51.30/day valet parking
Complimentary wireless Internet in lobby, complimentary wired Internet in guest rooms

3) Grand Hyatt

$239 single/double
345 Stockton Street
San Francisco, CA 94108
Tel: 415.398.1234
Fax: 415.391.1780
Website: **www.grandsanfrancisco.hyatt.com**

Club: Hyatt Gold Passport
Check in: 3:00 PM
Check out: 12:00 Noon
4.5 blocks from Convention Center
$49/day valet parking, $32/day self parking
Wireless Internet in guest rooms is $9.99/day

4) Handlery Union Square

Historic $199
Premiere $239 single/double
351 Geary Street
San Francisco, CA 94102
Tel: 415.781.7800
Fax: 415.781.0269
Website: **www.handlery.com/sf**

Club: Handlery Club
Check in: 3:00 PM
Check out: 12:00 Noon
5.5 blocks from Convention Center
$38/day valet parking
Wireless Internet in guest rooms is $9.99/day

5) Hilton Union Square

$229 single/double
333 O'Farrell Street
San Francisco, CA 94102
Tel: 415.771.1400
Fax: 415.771.6807
Website: **www.sanfrancisco.hilton.com**

Club: Hilton HHonors
Check in: 3:00 PM
Check out: 12:00 Noon
5 blocks from Convention Center
$49/day valet parking, $45/day self parking
Complimentary wireless Internet in lobby, wireless Internet in guest rooms is $12.95/day

6) InterContinental

$259 single/double
888 Howard Street
San Francisco, CA 94103
Tel: 415.616.6500
Fax: 415.616.6581
Website: **www.intercontinentalsanfrancisco.com**

Club: Priority Club Rewards
Check in: 3:00 PM
Check out: 12:00 Noon
1 block from Convention Center
$60/day valet parking
Complimentary wireless Internet in bar area, wireless Internet in guest rooms is $14.95/day

7) Marriott Marquis*

** SOT Headquarters Hotel*

$279 single/double
55 Fourth Street
San Francisco, CA 94103
Tel: 415.442.6029
Fax: 415.486.8101
Website: **www.sfmarriott.com**

Club: Marriott Rewards
Check in: 4:00 PM
Check out: 12:00 Noon
1 block from Convention Center
$58.14/day valet parking
Complimentary wireless Internet in lobby, wireless Internet in guest rooms is $14.95/day

Housing Bureau Information

Contact Experient, the SOT Housing representative for information regarding your hotel room reservations on-site. A convenient SOT Housing Desk is located in the registration area of the Moscone Convention Center Saturday through Tuesday, March 13.

You may also contact Experient directly:

- **Toll-Free: 800.424.5256 (USA)**
  Tel: 847.996.5881 (International)
  Hours of Operation:
  8:00 AM–5:00 PM (CST) Monday–Friday

All hotel accommodations, rates, Internet access, and parking pricing are subject to change. Early departures are subject to penalty fees set by the hotels.

Although we understand that making your reservations outside of the SOT hotel block can sometimes be more economical, it decreases the money available to the Society to carry out its strategic goals and may cause the Society to have to pay attrition fees for unutilized hotel rooms. In addition, the Society is unable to assist you if you have any difficulties with your room reservation, such as the hotel over-booking or misplacing your reservation.

SOT depends on the Annual Meeting revenue (hotel room commissions and rebates) to fund other programs throughout the year and to keep future registration fees low. Please assist the Society by making your hotel room reservation through Experient.

San Francisco Hotel Accommodations (Continued)

8) Marriott Union Square

$259 single/double
480 Sutter Square
San Francisco, CA 94108
Tel: 415.398.8900
Fax: 415.989.8823
Website: **www.marriott.com/sfous**

Club: Marriott Rewards
Check in: 4:00 PM
Check out: 12:00 Noon
5 blocks from Convention Center
$54.72/day valet parking
Complimentary wireless Internet in lobby, wireless Internet in guest rooms is $12.95/day

9) Mosser Hotel

$159 single/double
54 4th Street
San Francisco, CA 94103
Tel: 415.986.4400
Fax: 415.495.7653
Website: **www.themosser.com**

Club: None
Check in: 3:00 PM
Check out: 12:00 Noon
1 block from Convention Center
$43/day valet parking, $32/day self parking
Complimentary wireless Internet in lobby, complimentary wireless Internet in guest rooms
Complimentary Breakfast

10) Palace Hotel

$249 single/double
2 New Montgomery Street
San Francisco, CA 94105
Tel: 415.512.1111
Fax: 415.543.0671
Website: **www.sfpalace.com**

Club: SPG Starwood
Check in: 3:00 PM
Check out: 12:00 Noon
2 blocks from Convention Center
$48/day valet parking
Complimentary wireless Internet in lobby, wireless Internet in guest rooms is $15/day

11) Pickwick Hotel

$169 single/double
85 5th Street
San Francisco, CA 94103
Tel: 415.267.3940
Website: **www.thepickwickhotel.com**

Club: None
Check in: 3:00 PM
Check out: 12:00 Noon
2 blocks from Convention Center
$32/day self parking
Complimentary wireless Internet in lobby, complimentary wireless Internet in guest rooms

12) Villa Florence Hotel

$219 single/double
225 Powell Street
San Francisco, CA 94102
Tel: 415.397.7700
Fax: 415.397.1006
Website: **www.villaflorence.com**

Club: Stash Rewards Program
Check in: 3:00 PM
Check out: 12:00 Noon
6 blocks from Convention Center
$40/day valet parking
Complimentary wireless Internet in lobby, complimentary wireless Internet in guest rooms

13) Westin Market Street

$285 single/double
50 Third Street
San Francisco, CA 94103
Tel: 415.974.6400
Fax: 415.543.8268
Website: **www.westinsf.com**

Club: SPG Starwood
Check in: 3:00 PM
Check out: 12:00 Noon
1.5 blocks from Convention Center
$48/day valet parking
Wireless Internet in guest rooms is $14.95/day

14) Westin St. Francis

$259 single/double
335 Powell Street
San Francisco, CA 94102
Tel: 415.397.7000
Fax: 415.774.0124
Website: **www.westinstfrancis.com**

Club: SPG Starwood
Check in: 3:00 PM
Check out: 12:00 Noon
7 blocks from Convention Center
$57/day valet parking
Complimentary wireless Internet in lobby, wireless Internet in guest rooms is $14.95/day

MAPS

Legend:

	Valet Parking
	Self Parking
	Fitness Center
	Swimming Pool
	Business Center
	In-Room Wireless
	In-Room Safe
	Gift Shop
	Complimentary Breakfast
	Restaurant
	AAA Rating
	Mobile Rating

All hotels have Internet access.
Hotel sales tax is currently 14%

MAPS

Map of San Francisco Hotel Locations

San Francisco Restaurant Listing

Additional information can be found on OpenTable via your smartphone or mobile device.

Restaurants within Seven Blocks of the Convention Center, Listed Alphabetically

$ = Under $12 $$ = $12–$18 $$$ = $18–$30 $$$$ = over $30

21st Amendment Brewery Cafe	563 Second Street	415.369.0900	LD	$$
54 Mint Ristorante	16 Mint Plaza	415.543.5100	LD	$$$
Alexander's Steakhouse	448 Brannan Street	415.495.1111	D	$$$$
Amber India Restaurant	25 Yerba Buena Lane	415.777.0500	LD	$$$
ame	689 Mission Street, The St. Regis	415.284.4040	D	$$$$
Anchor & Hope	83 Minna Street	415.501.9100	LD	$$$
Annabelle's Bar & Bistro	68 Fourth Street	415.777.1200	LD	$$
B44	44 Belden Place	415.986.6287	LD	$$$
Benu	22 Hawthorne Street	415.685.4860	LD	$$$$
Blu Restaurant and Cafe	747 Market Street, Fourth Floor	415.633.3966	BLD	$$$
Bluestem Brasserie	One Yerba Buena Lane	415.547.1111	LD	$$$
Boulevard Restaurant	One Mission Street	415.543.6084	LD	$$$$
Bourbon Steak San Francisco	335 Powell Street, Westin St. Francis	415.397.3003	D	$$$$
Buca di Beppo	855 Howard Street	415.543.POPE (7673)	LD	$$
Butterfly	Pier 33, On the Embarcadero	415.864.8999	LD	$$$
Cable Car City Pub & Cafe	One Hallidie Plaza	415.398.7600	BLD	$$
Café Bastille	22 Belden Place	415.986.5673	LD	$$$
Cafe Mason	320 Mason Street	415.544.0320	BLD	$$$
California Pizza Kitchen	53 Third Street	415.278.0443	LD	$$
Cha-Am Thai Restaurant/Bar & Grill	701 Folsom Street	415.546.9711	LD	$$
Chaya Brasserie	132 The Embarcadero	415.777.8688	LD	$$$$
Chevys Fresh Mex	201 Third Street	415.543.8060	LD	$$
Chez Papa Resto	4 Mint Plaza	415.546.4134	LD	$$$
Cityhouse	55 Cyril Magnin Street, Parc 55 Wyndham San Francisco-Union Square	415.392.8000	BLD	$$$
Coco500	500 Brannan Street	415.543.2222	LD	$$$
Credo	360 Pine Street	415.693.0360	LD	$$$
Daily Grill	347 Geary Street	415.616.5000	BLD	$$$
Del Taco	711 Market Street	415.975.0855	BLD	$
Ducca	50 Third Street, The Westin San Francisco Market Street	415.977.0271	BLD	$$$
E & O Trading Co.	314 Sutter Street	415.693.0303	LD	$$$$
Emporio Rulli Il Caffe at Union Square	225 Stockton Street	415.433.1122		$$
Epic Roasthouse	369 The Embarcadero	415.369.9955	LD	$$$$
Fang Restaurant	660 Howard Street	415.777.8568	LD	$$
Farallon	450 Post Street, Fourth Floor	415.956.6998	LD	$$$$
Farmer Brown	25 Mason Street	415.409.3276	D	$$
Fifth Floor Restaurant	12 Fourth Street, Hotel Palomar	415.348.1555	BD	$$$$

B=Breakfast, L=Lunch, D=Dinner

San Francisco Restaurant Listing (Continued)

Restaurants within Seven Blocks of the Convention Center, Listed Alphabetically *(continued)* $ = Under $12 $$ = $12–$18 $$$ = $18–$30 $$$$ = over $30				
First Crush Restaurant, Wine Bar & Lounge	101 Cyril Magnin	415.982.7874	LD	$$$
Fish & Farm	339 Taylor Street	415.474.3474	BLD	$$$
Fourth Street Bar & Deli	55 Fourth Street, San Francisco Marriott Marquis	415.442.6734	LD	$$
Fringale	570 Fourth Street	415.543.0573	LD	$$$
Gaylord India Restaurant	One Embarcadero Center, Promenade Level	415.397.7775	L	$$$
Gordon Biersch Brewery Restaurant	Two Harrison Street	415.243.8246	LD	$$$
Grand Café	501 Geary Street, Hotel Monaco	415.292.0101	BLD	$$$$
Hana Zen Sushi & Yakitori Bar	115 Cyril Magnin Street	415.421.2101	LD	$$$
Henry's Hunan Restaurant	110 Natoma Street	415.546.4999	LD	$
India Garden Restaurant	1261 Folsom Street	415.626.2798	LD	$$
Infusion Lounge	124 Ellis Street	415.421.8700	D	$$$$
Ironside	680A Second Street	415.896.1127	BLD	$$
Jillian's @ Metreon	101 Fourth Street, Suite 1070	415.369.6100	BLD	$$
Johnny Foley's Irish House	243 O'Farrell Street	415.954.0777	LD	$$
John's Grill	63 Ellis Street	415.986.0069	LD	$$$
Koh Samui & The Monkey Thai Kitchen & Bar	415 Brannan Street	415.369.0007	LD	$$
Kuleto's Italian Restaurant	221 Powell Street	415.397.7720	BLD	$$$
Kyo-ya Japanese Restaurant	2 New Montgomery Sreet, Palace Hotel	415.546.5089	LD	$$$
La Briciola Ristorante Italiano	489 Third Street	415.512.0300	LD	$$$
La Mar Cebichería Peruana	Pier 1 1/2, On the Embarcadero	415.397.8880	LD	$$$
La Scene Café & Bar	490 Geary Street	415.928.7900	BD	$$$
LarkCreekSteak	845 Market Street	415.593.4100	LD	$$$$
Le Central	453 Bush Street	415.391.2233	LD	$$$
Le Charm French Bistro	315 Fifth Street	415.546.6128	LD	$$$
Lefty O'Doul's Restaurant & Lounge	333 Geary Street	415.982.8900	BLD	$
Little Delhi India	83 Eddy Street	415.398.3173	LD	$
Local Kitchen & Wine Merchant	330 First Street	415.777.4200	LD	$$
Lori's Diner	149 Powell Street	415.677.9999	BLD	$
Lori's Diner	500 Sutter Street	415.981.1950	BLD	$
Luce	888 Howard Street	415.616.6566	BLD	$$$$
Luques Restaurant & Bar	433 Powell Street	415.248.2475	BL	$$
MarketBar	One Ferry Building, Suite 36	415.434.1100	BLD	$$
Marlowe	330 Townsend Street, Suite 101	415.974.5599	LD	$$$
Masa's Restaurant	648 Bush Street	415.989.7154	D	$$$$
Maya Restaurant	303 Second Street	415.543.2928	BLD	$$$
Mission Steak	55 Fourth Street, San Francisco Marriott Marquis	415.442.6043	BLD	$$$
Mochica Restaurant - Peruvian Cuisine	937 Harrison Street	415.278.0480	LD	$$$

B=Breakfast, L=Lunch, D=Dinner

San Francisco Restaurant Listing (Continued)

Restaurants within Seven Blocks of the Convention Center, Listed Alphabetically $ = Under $12 $$ = $12–$18 $$$ = $18–$30 $$$$ = over $30				
Morton's, The Steakhouse	400 Post Street	415.986.5830	D	$$$$
New Delhi Restaurant	160 Ellis Street	415.397.8470	LD	$$$
One Market Restaurant	1 Market Street	415.777.5577	LD	$$$$
Oola Restaurant & Bar	860 Folsom Street	415.995.2061	LD	$$$
Osha Thai Restaurant	Four Embarcadero Center	415.788.6742	LD	$$
Osha Thai Restaurant	149 Second Street	415.278.9991	LD	$$
Osha Thai Restaurant & Lounge	311 Third Street	415.896.OSHA (6742)	LD	$$
Ozumo Restaurant	161 Steuart Street	415.882.1333	LD	$$$
Palomino	345 Spear Street, Suite 100	415.512.7400	LD	$$$
Paragon Restaurant and Bar	701 Second Street	415.537.9020	LD	$$
Pazzia Restaurant	337 Third Street	415.512.1693	LD	$$$
Perbacco Ristorante & Bar	230 California Street	415.955.0663	LD	$$$
Perry's on the Embarcadero	155 Steuart Street	415.495.6500	BLD	$$
Pied Piper Bar & Grill	2 New Montgomery Street, Palace Hotel	415.546.5089	LD	$$$
Pinecrest Diner	401 Geary Street	415.885.6407	BLD	$$
Plouf	40 Belden Place	415.986.6491	LD	$$$
Prospect	300 Spear Street	415.247.7770	D	$$$$
Puccini and Pinetti	129 Ellis Street	415.392.5500	BLD	$$$
Radius	1123 Folsom Street	415.525.3676	LD	$$$
Restaurant LuLu	816 Folsom Street	415.495.5775	LD	$$$
RN74	301 Mission Street	415.543.7474	LD	$$$$
Roe Restaurant	651 Howard Street	415.227.0288	LD	$$$
Roy's Hawaiian Fusion	575 Mission Street	415.777.0277	LD	$$$$
Salt House	545 Mission Street	415.543.8900	LD	$$$
Sam's Grill & Seafood Restaurant	374 Bush Street	415.421.0594	LD	$$$
Sanraku	METREON	415.369.6166	LD	$$
Santorini Mediterranean Restaurant and Catering	242 O'Farrell Street	415.402.0060	BLD	$$
Scala's Bistro	432 Powell Street, Sir Francis Drake Hotel	415.395.8555	BLD	$$$
Sears Fine Food	439 Powell Street	415.986.1160	BLD	$$
Sellers Markets	595 Market Street	415.227.9850	BL	$
Sens Restaurant	Four Embarcadero Center, Promenade Level	415.362.0645	LD	$$$
Soup Freaks	667 Mission Street	415.543.SOUP (7687)	BLD	$
Supperclub San Francisco	657 Harrison Street	415.348.0900	D	$$$$
Tad's Steak House	120 Powell Street	415.982.1718	BLD	$$
The Chieftain Irish Pub & Restaurant	198 Fifth Street	415.615.0916	BLD	$
The Cosmopolitan Restaurant Bar	Rincon Center	415.543.4001	LD	$$$

B=Breakfast, L=Lunch, D=Dinner

San Francisco Restaurant Listing (Continued)

Restaurants within Seven Blocks of the Convention Center, Listed Alphabetically *(continued)* $ = Under $12 $$ = $12–$18 $$$ = $18–$30 $$$$ = over $30				
The Garden Court	2 New Montgomery Street, Palace Hotel	415.512.1111	BL	$$$
The Grove on Mission	690 Mission Street	415.957.0558	BLD	$
The Irish Bank Bar and Restaurant	10 Mark Lane	415.788.7152	BLD	$$
The Plant Cafe Organic	Pier 3, Suite 108, On the Embarcadero	415.984.1973	BLD	$$
The Slanted Door	One Ferry Building, Suite 3	415.861.8032	LD	$$$$
Thermidor	8 Mint Plaza	415.896.6500	LD	$$$$
ThirstyBear Brewing Company and Spanish Cuisine	661 Howard Street	415.974.0905	LD	$$
Tian Sing Chinese Restaurant	138 Cyril Magnin	415.398.1338	BLD	$$
Town Hall Restaurant	342 Howard Street	415.908.3900	LD	$$$$
Trace Restaurant	181 Third Street, W San Francisco	415.817.7836	BLD	$$$
Trademark-American Grill & Bar	56 Belden Place	415.397.8800	LD	$$$
Tropisueno Mexican Kitchen	75 Yerba Buena Lane	415.243.0299	LD	$$
Twenty Five Lusk	25 Lusk Street	415.495.LUSK (5875)	LD	$$$
Urban Picnic	125 Kearny Street	415.433.1233	L	$
Urban Tavern	333 O'Farrell Street	415.923.4400	BLD	$$$
Vitrine	125 Third Street, The St. Regis	415.284.4049	BL	$$$$
Waterbar	399 Embarcadero South	415.284.9922	LD	$$$$
Waterfront Restaurant	Embarcadero, Pier 7, cross street Broadway	415.391.2696	LD	$$$
Yank Sing Restaurant	One Rincon Center	415.957.9300	L	$$
Zero Zero	826 Folsom Street	415.348.8800	LD	$$
ZPizza	833 Mission Street, Suite C	415.995.5552	LD	$

B=Breakfast, L=Lunch, D=Dinner

toxexpo

SOT 2012 San Francisco California

Additional information can be found on ToxExpo's mobile app "ChirpE" via your smartphone or mobile device.

You probably know ToxExpo as the exhibition associated with the Society of Toxicology's Annual Meeting—it's that—but it's also a great deal more.

ToxExpo.com is:

- A 24/7 comprehensive online resource, searchable by company name or by product or service.
- A comprehensive approach to organizing the wealth of ideas and insights in cross-disciplinary areas of toxicology.
- The toxicology market place—your source for product information and resources to keep your lab competitive.
- The place where professionals will learn how to explore a rapidly changing science.
- A chance to think outside the box—find out how your work relates to research in other disciplines.
- Up-to-date information on state-of-the-art research equipment, technology, and the latest publications.
- A unique environment to research products and services of exhibiting companies and keep you informed of new cutting-edge science and technology.

Looking for a particular product or service? Check the category listing on www.ToxExpo.com to see which companies offer the best product or service for your needs.

TOXEXPO

ToxExpo Hours:

Monday, March 12	*Tuesday, March 13*	*Wednesday, March 14*
9:00 AM–4:30 PM	*8:30 AM–4:30 PM*	*8:30 AM–4:30 PM*

ToxExpo Prize Drawing $500!

Drawings to take place on Monday, Tuesday, and Wednesday in the Exhibit Hall A–C

$500 American Express Gift card awarded each day

Drop your business cards in the ToxExpo prize drawing boxes found in all Diamond Level Sponsor booths—See ♦ on map, on the following pages.

ToxExpo Time!

Wednesday, March 14
1:00 PM–2:00 PM

In addition to the standard ToxExpo hours and poster presentation times, one hour of dedicated ToxExpo Time has been allotted in the scientific program for attendees to visit with exhibitors.

***ToxExpo Directories* are available at Registration and just inside the entrance of the ToxExpo.**

ToxExpo Floor Plan

Additional information can be found on ToxExpo's mobile app "ChirpE" via your smartphone or mobile device.

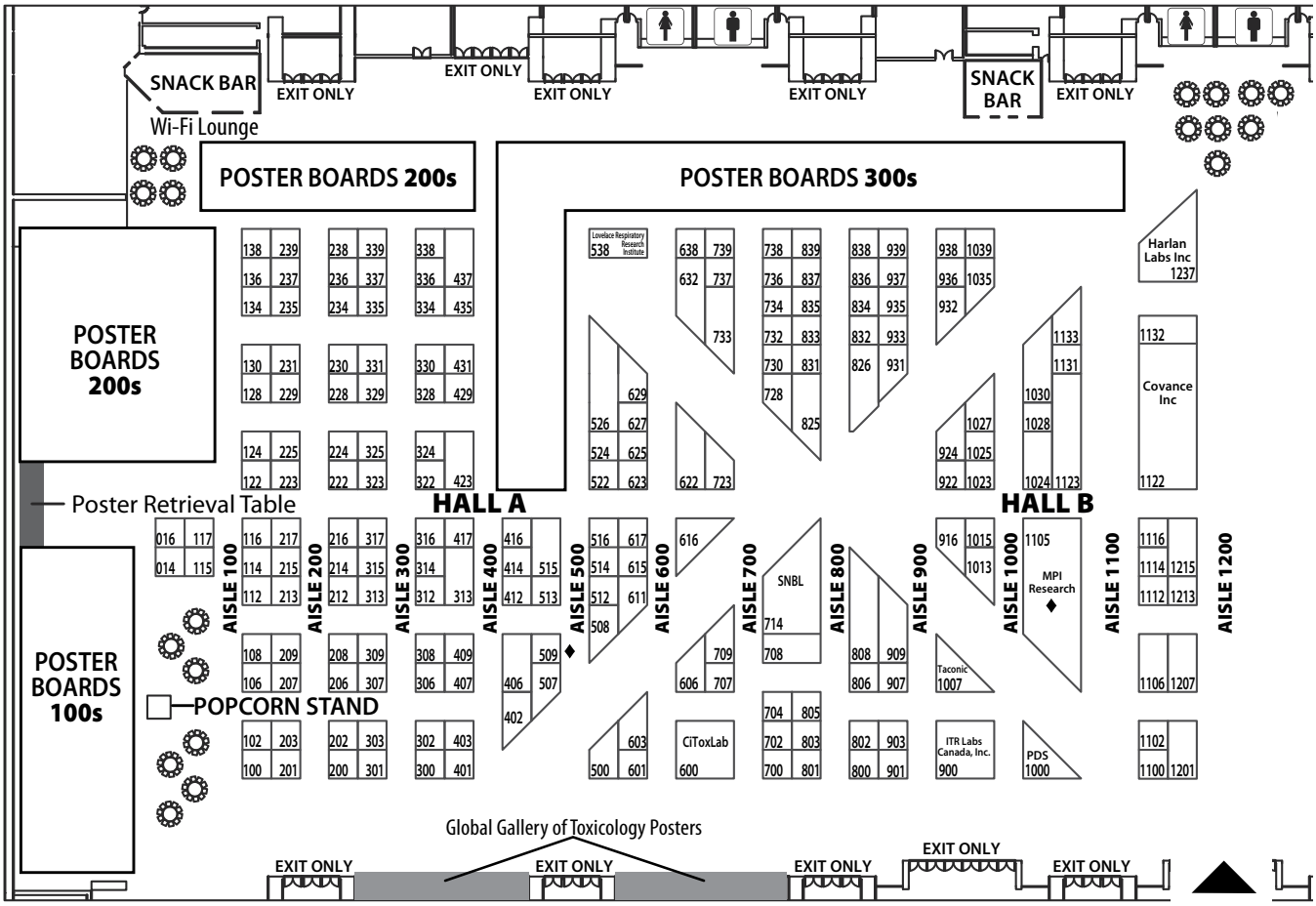
Exhibit Halls A–C • Exhibit Level

ToxExpo Hours:

Monday 9:00 AM–4:30 PM • Tuesday 8:30 AM–4:30 PM • Wednesday 8:30 AM–4:30 PM

ToxExpo Time!

In addition to the standard ToxExpo hours and poster presentation times, one hour of dedicated ToxExpo Time has been allotted in the scientific program for attendees to visit with exhibitors. ToxExpo Time will take place on Wednesday, March 14, from 1:00 pm–2:00 pm.



ToxExpo Prize Drawing Win $500!

Drawings to take place on Monday, Tuesday, and Wednesday in the Exhibit Halls A–C

$500 American Express Gift card awarded each day

Drop your business cards in the ToxExpo prize drawing boxes found in all Diamond Level Sponsor booths, see ♦ on map.
For list of Diamond Sponsors, please see back cover.

***ToxExpo Directories* are available at Registration and just inside the entrance of the ToxExpo.**

ToxExpo Floor Plan (Continued)

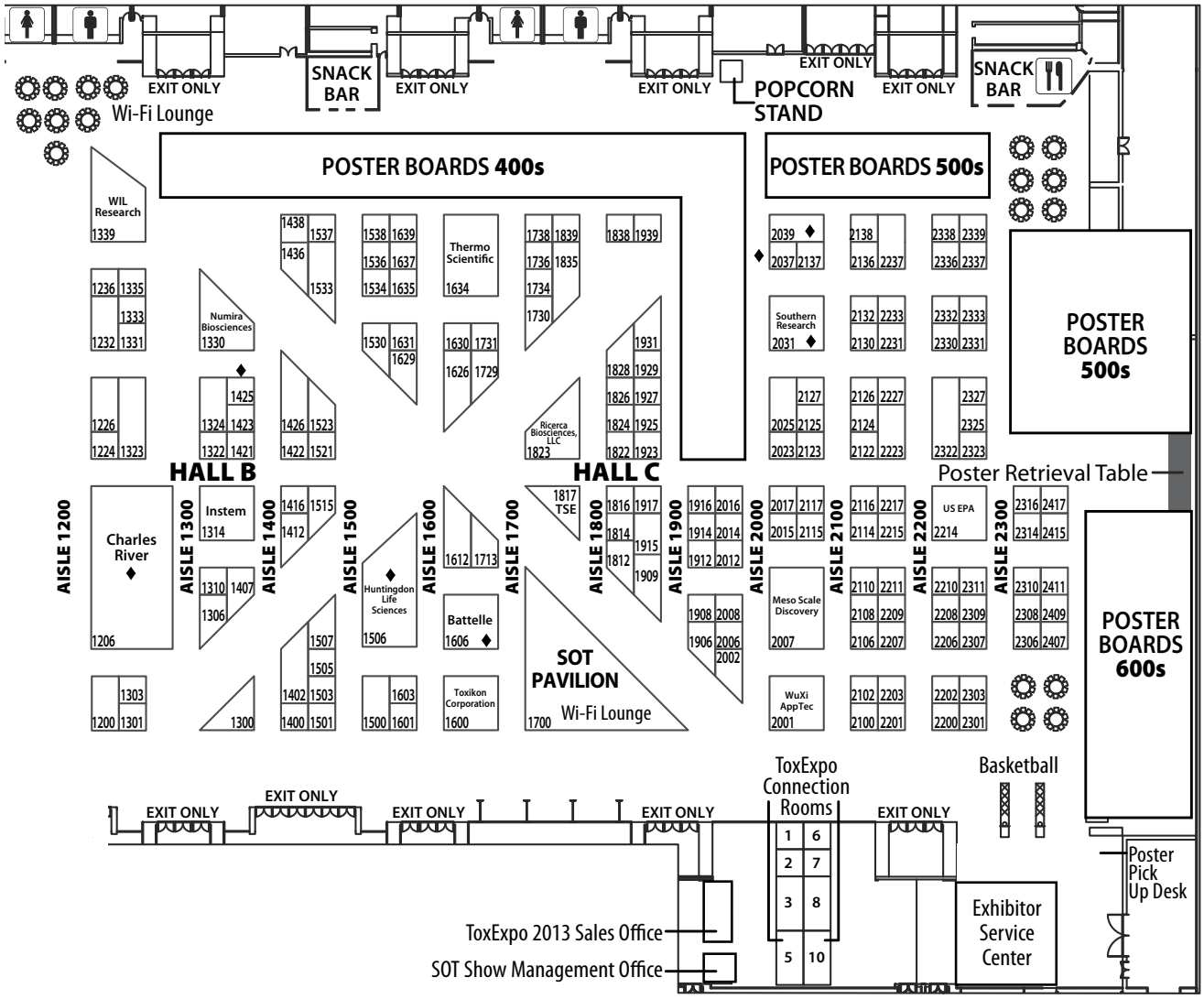
Exhibit Halls A–C • Exhibit Level

ToxExpo 2013 Exhibit Space Selection Process

New this year: Priority Point booth sales for 2013 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 show with their scheduled appointment time. If you did not receive an appointment in advance, please plan to attend the 2013 Sales Meeting on Tuesday, March 13 at 4:45 pm in Room 101, Exhibit Hall Level.

Concession Stand Hours:

Monday..... 9:00 AM–4:30 PM
Tuesday.....8:30 AM–4:30 PM
Wednesday.....8:30 AM–4:30 PM



ToxExpo Directories **are available at Registration and just inside the entrance of the ToxExpo.**

TOXEXPO

ToxExpo 2012 Exhibitors

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(As of January 23, 2012)
*Please access the ToxExpo mobile app ChirpE or visit **www.ToxExpo.com** or the* **ToxExpo Directory** *for product/service descriptions, a map of booth locations, and other information.*

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See listing of complete sponsors on page 448 and Back Cover.

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

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Accelera S.r.l.	808
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Advanced Chemistry Development, Inc.	2124
Advinus Therapeutics Limited	513
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AEgis Technologies Group	1601
Agilent Technologies	200
Alabama Research & Development	623
✯ AllCells, LLC	2008
Almac	736
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Alpha Genesis, Inc.	1835
Alturas Analytics, Inc.	702
American Board of Toxicology (ABT)	800
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✯ **Ani Lytics, Inc.**	**1102**
ANILAB, LLC	1100
Antech Diagnostics	1814
Aperio	413
Applied BioPhysics, Inc.	606
Aptiv Solutions	625
Aquaneering, Inc.	2201
Aragen Bioscience	2017
✯ ArunA Biomedical Inc	222
Aspect Imaging	331
AVANZA Laboratories, LLC	1306
BASF SE	2223
✯ **BASi (Bioanalytical Systems, Inc)**	**1226**
♦ **Battelle**	**1606**
Bio Medic Data Systems, Inc.	**1123**
Bio-Serv, Inc.	1028
Bioagri Pharma	601
BIOBIDE	734
BioChemed Services	834
Bioculture (Mauritius) Ltd	1521
Biological Test Center	**1416**
Biopredic International	524
Biopta Ltd	936
Bioreclamation	2117
✯ **BioReliance Corporation**	**1207**
Biosafety Research Center, Foods, Drugs and Pesticides	514
Biosphere Trading Ltd	1929
BioStat Consultants, Inc.	1635
BioTox Sciences	2015
Biotrial	739
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Burdock Group	802
Buxco Research Systems	**907**
C3-B Alliance	526
Caliper—a PerkinElmer company	329
✯ Calvert Laboratories, Inc.	1626
CARE Research, Inc.	**1501**
Cayman Chemical	2122
CBSET, Inc.	215
CDC NCEH/ATSDR	2409
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CeeTox, Inc.	1909
Cellular Dynamics International, Inc.	1507
Celsis *In Vitro* Technologies	1106
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ChanTest Corp.	515
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EMD Millipore	2322
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EPL Archives, Inc.	1438
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ToxExpo 2012 Exhibitors (Continued)

ToxExpo Directories are available at Registration and just inside the entrance of the ToxExpo.

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H&T Corporation	1838
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Hamilton Thorne	922
Harlan Laboratories, Inc.	**1237**
Hepregen Corporation	2336
Histo-Scientific Research Laboratories (HSRL)	704
HistoTox Labs, Inc.	728
♦ **Huntingdon Life Sciences**	**1506**
ICF International	2123
IDEXX Laboratories, Inc.	803
IIT Research Institute	1612
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Ina Research, Inc.	707
INDIGO Biosciences, Inc.	1906
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ToxExpo 2012 Exhibitors (Continued)

ToxExpo Directories are available at Registration and just inside the entrance of the ToxExpo.

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EXHIBITOR HOSTED SESSIONS

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

Exhibitor Hosted Sessions are informative sessions developed by an exhibiting company.

Monday

Time: 9:15 AM–10:15 AM

Presented by	Topic	Room	Page
Hepregen, Corp.	The Use of Human HepatoPac™, an *In Vitro* Microliver Platform, for Predictive Toxicology	105	136
Huntingdon Life Sciences	Development of a Fully Human Monoclonal Antibody for the Treatment of Inflammatory Disease	100	136
MPI Research	Developmental Toxicity Testing of Preventive Vaccines	101	136

Time: 10:30 AM–11:30 AM

Presented by	Topic	Room	Page
Charles River	Regulated Laboratory Sciences for Toxicologists	101	162
Harlan Laboratories, Inc.	Safeguarding Rodent Toxicology Study Results—Auditing Animal Biosecurity Programs	100	163
SNBL USA, Ltd.	Juvenile Preclinical Safety Evaluations of Biopharmaceuticals: Combining Data from Repeat Dose General and Pre/Postnatal Toxicology Studies	105	162

Time: 1:00 PM–2:00 PM

Presented by	Topic	Room	Page
Agilent Technologies	Transcriptomics Tools for Genotoxicity Testing: Mechanistic Insights	105	193
Chantest Corporation	Enhanced Early Nonclinical Cardiac Risk Assessment	100	193

Time: 2:15 PM– 3:15 PM

Presented by	Topic	Room	Page
Singulex	Application of Ultrasensitive Immunoassay Technology for Preclinical Toxicity Testing	100	200
Tandem Labs	Targeted Protein Biomarker Quantitation by LC-MS/MS	105	200
WIL Research	CNS Characterization and Assessment of Innovative Efficacy Animal Research Models: Parkinson's Disease	101	200

Time: 3:30 PM–4:30 PM

Presented by	Topic	Room	Page
In Vitro ADMET Laboratories	Metabolism-Dependent Toxicity Evaluation Using Human Hepatocytes and IdMOC	101	201
Litron Laboratories	Understanding the New ICH S2(R1) Genotoxicity Guideline and the Advantages of Automated Methods	100	201
National Toxicology Program	An Introduction to the NTP DrugMatrix and ToxFX Toxicogenomic Database and Analysis Tools	105	200

Tuesday

Time: 8:30 AM–9:30 AM

Presented by	Topic	Room	Page
MPI Research	Development Challenges for Antibody Drug Conjugates (ADCs)	101	203
Promega Corporation	Human Induced Pluripotent Stem Cell Technology in Predictive and Mechanism-Based Drug Discovery and Toxicity Testing Using Photometric-Based Assays	105	204
Vet Path Services	Pathology Peer Review: Who, What, When, Where, Why, and How	100	204

Time: 9:45 AM–10:45 AM

Presented by	Topic	Room	Page
Accelera Srl	Experience Results: Lessons Learned Developing New Anticancer Drugs and Biotherapeutics	105	239
Charles River	Current Strategies for Juvenile Toxicity Testing	101	239
Huntingdon Life Sciences	Developing a Novel Gene Therapy Product for the Treatment of Rare X-Linked Disease	100	239

Time: 11:00 AM–12:00 Noon

Presented by	Topic	Room	Page
Data Sciences International	Best Practices for Assessing Functional CV Endpoints in Repeat Dose Tox Studies	105	240
Fraunhofer ITEM	Innovative Models and Techniques for the Investigation of Nanotoxicity	100	240
PointCross Life Sciences, Inc.	Searching for Drug Safety, Efficacy, and Performance: Scientific and Regulatory Perspectives	101	240

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Exhibitor Hosted Session Index (Continued)

Time: 12:15 PM–1:15 PM

Presented by	Topic	Room	Page
CiToxLAB	Dermal Drug Development	100	242
Integrated Laboratory Systems, Inc.	Advancing the Science of Stem Cells in Toxicology	105	242
SAGE Labs	Preliminary Characterization of the Aryl Hydrocarbon Receptor Knockout Rat Shows Significant Cross-Species Differences Compared with the Mouse	101	243

Time: 1:30 PM–2:30 PM

Presented by	Topic	Room	Page
emka TECHNOLOGIES, INC.	New Capabilities of Noninvasive Telemetry Used for Cardiovascular Respiration and CNS Assessments	105	278
RTC, Research Toxicology Centre S.p.A.	The Key Role of Experience in Toxicological Study Design and Data Interpretation	101	278
STEMCELL Technologies, Inc.	Utility of Primary Stem Cell Colony Assays in Drug Development	100	278

Time: 2:45 PM–3:45 PM

Presented by	Topic	Room	Page
Agilent Technologies	Knowledge-Driven Multi-Omics Integration for Pathways of Toxicology (PoT) Research: Policy and Technology Drivers	105	279
InSphero AG	Routine 3D Cell-Based Toxicology Assays for Compound De-Risking	100	279
WIL Research	Modular Approaches for Pharmaceutical Lead Optimization	101	279

Wednesday

Time: 8:30 AM–9:30 AM

Presented by	Topic	Room	Page
MPI Research	Toxicokinetic Evaluation in the Virtual Animal	101	282

Time: 9:45 AM–10:45 AM

Presented by	Topic	Room	Page
Applied BioPhysics	Electric Cell-Substrate Impedance Sensing: A Label Free, Noninvasive Method of Cell Measurement	105	319
Charles River	Beyond Antibodies: Characterization of the Cellular Immune Response to Keyhole Limpet	101	319
Huntingdon Life Sciences	Predicting Safety, Prophylactic, and Therapeutic Efficacy in an African Green Monkey RSV Model Dosed via Continuous Infusion	100	319

Time: 2:45 PM–3:45 PM

Presented by	Topic	Room	Page
US EPA	Nanotechnology: US-EU Cooperative Research Opportunities	100	359

Additional sessions may be scheduled after the printing of this Program. *Please see* ToxExpo Directory *or use one of the mobile apps for the most current schedule.*

TOXEXPO

ToxExpo Prize Drawing $500!

Drawings to take place on Monday, Tuesday, and Wednesday in the Exhibit Halls A–C

$500 American Express Gift card awarded each day

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

As a new member or upgrade to the level of membership that's right for you

Founded in 1961, the Society of Toxicology (SOT) includes more than 7,000 members from nearly 60 countries worldwide. SOT members are drawn from academic institutions, industry, and government service, among others, and are active in myriad related fields and professions. All members partner with SOT in advancing science to enhance human, animal, and environmental health. You may apply to join the SOT at the following membership levels:

Student—enrolled in a graduate degree program related to toxicology.

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

Associate—engaged in continuing professional scientific activities in toxicology.

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

Apply for or upgrade to the level of membership that's right for you! Please see the "Join SOT" section of the SOT website at **www.toxicology.org/ms/join.asp** for further information. Undergraduate students may become SOT Undergraduate Student Affiliates.

As an SOT member you can…

Communicate, Connect, and Collaborate with colleagues via **ToXchange**, the professional, secure SOT member network, and keep current at **www.toxicology.org** with member-only information

Qualify for reduced SOT member rates for the SOT Annual Meeting, Continuing Education Courses, and Current Concepts in Toxicology topical meetings

Receive SOT publications including the official journal of the SOT, *Toxicological Sciences*; *The Toxicologist*; the SOT newsletter, *Communiqué*, and the SOT *Membership Directory*

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Membership Fees:

Full Membership	**$136**
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Membership

www.toxicology.org

*For complete information about membership in the Society of Toxicology, visit the SOT website at **www.toxicology.org** and select Member Information.

51st Annual Meeting & ToxExpo™

San Francisco, California

March 11–15, 2012 • Moscone Convention Center

SOT San Francisco 2012 California

Registration

Annual Meeting Registration Fees

	On-Site
SOT Member	$420
Non-Member	$720
SOT Retired/Emeritus Member	$170
Postdoctoral SOT Member	$185
Postdoctoral Non-Member	$270
Graduate Student SOT Member	$165
Graduate Student Non-Member	$230
Undergraduate Student	$0
SOT Affiliate	$0
Press	$0
Guest (Non-Scientist)	$100

(Guests do not have access to the Scientific Sessions or the ToxExpo.)

Continuing Education Sunrise Mini-Course Fees

(includes continental breakfast)

(Only Annual Meeting Registrants may enroll in CE Courses.)

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

Continuing Education Course Fees

(per morning or afternoon course)

(Only Annual Meeting Registrants may enroll in CE Courses.)

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

Annual Meeting Registration Includes:

- Awards Ceremony, Sunday, March 11 from 5:15 pm–6:30 pm.
- Plenary Opening Lecture, Monday, March 12 from 8:00 am–9:00 am.
- All Scientific Sessions (see Program Description beginning on (page 125) 9:15 am, Monday, March 12 through 12:00 noon, Thursday, March 15 for additional start times.
- ToxExpo Exhibit Halls A–C, 9:00 am–4:30 pm Monday, March 12; 8:30 am–4:30 pm Tuesday, March 13 and Wednesday, March 14.

Participants also are encouraged to register for the Continuing Education Courses. These are available during three time intervals on Sunday, March 11: the Sunrise Mini-Course is from 7:00 am–7:45 am, morning courses are 8:15 am–12:00 noon, and afternoon courses are from 1:15 pm–5:00 pm.

Badges

Annual Meeting attendees who register by January 27, 2012, will receive badges and registration materials in the mail. Attendees who already have their 2012 Annual Meeting badges do not need to wait in the registration line. If you have registered and have NOT received your badge by mail, or need a replacement badge, go to the "BADGE PICK UP ONLY" registration counter to pick up your badge. You will be asked to show a photo ID.

If you have not registered for the meeting before you arrive in San Francisco, please complete the on-site Registration Form found at the kiosks in the registration area and proceed to the appropriate registration line.

For security reasons badges may not be altered. Please go to the SOT on-site Registration Desk to update information on your badge.

Registration Desk

The Registration Desk is located in the South Lobby in the Moscone Convention Center.

Registration Desk 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–11:30 AM

Registration Confirmation

You should receive a registration confirmation/receipt via email regardless of whether you registered online, by mail, or by fax. If you don't receive your confirmation within two weeks, please contact SOT Headquarters at sothq@toxicology.org or call 703.438.3115.

General Information

Accessibility for Persons with Disabilities

The Moscone Convention Center and most of the SOT hotels are accessible to persons with disabilities. If you require special services, please mark the appropriate box on the Annual Meeting Registration Form.

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If you require more information about accessibility, please contact Heidi Prange at SOT Headquarters: 703.438.3115 ext. 1424.

Annual Meeting Materials

All Annual Meeting registrants receive a copy of the *Program* and *The Toxicologist** on CD-ROM, a special issue of *Toxicological Sciences* that includes all meeting abstracts. Special software on the CD, the Itinerary Planner, allows the meeting attendee to search the meeting abstracts and events to create a personalized schedule for the meeting. The Itinerary Planner also is available online and for the first time, as an app for your smartphone or mobile device. Attendees who register prior to January 27, 2012, will receive the Annual Meeting materials via postal mail.

Pre-Registered: When you arrive at the Moscone Convention Center, if you have received the Annual Meeting materials, you only will need to pick up a badge holder and a copy of the *ToxExpo Directory,* which will be available throughout the Center and inside Exhibit Halls A–C. If you have registered, have NOT received your badge by mail, or need a replacement badge, please visit the "BADGE PICK UP ONLY" registration counter located in the South Lobby. Your 2012 Annual Meeting Registration badge must be presented to obtain access to SOT functions.

Should you need to pick up materials on-site, present your badge to an attendant at one of the handout tables and your request will be fulfilled. Please read the information below:

- SOT Members in the United States and Canada received the printed *Program* and *The Toxicologist* on CD-ROM (with Itinerary Planner) prior to the Annual Meeting.
- SOT Members outside of the United States and Canada may pick up the printed *Program* and *The Toxicologist* on CD-ROM at the meeting or may request that these be mailed following the Annual Meeting. Send email requests to jimd@toxicology.org.
- Non-SOT Members in the United States and Canada, who register on or before January 27 received the printed *Program* and *The Toxicologist* on CD-ROM (with Itinerary Planner) prior to the Annual Meeting. All Non-SOT Members who register after January 27 (and non-SOT Members from outside of the United States or Canada) may pick up the printed *Program* and *The Toxicologist* on CD-ROM (with Itinerary Planner) at the meeting.

Those Who Need to Register On-Site: If you have not already registered, please go to the registration counter in the South Lobby of the Moscone Convention Center to complete this process. When you have received your registration badge and event/CE course tickets, simply stop by one of the handout tables and present your badge to obtain the Annual Meeting materials (i.e., *The Toxicologist* on CD-ROM, the *Program*, and other supplementary materials).

The Annual Meeting Itinerary Planner is available via the SOT website and mobile app January–April.

NOTE: Please bring your copy of the* Program *with you to the Annual Meeting.

*Annual Meeting attendees may purchase a printed version of *The Toxicologist* for $20 per copy in the South Lobby of the Moscone Convention Center next to the registration desk. You may preorder using the Registration Form and pick up a copy on-site or wait to purchase a copy on-site (while supplies last). *The Toxicologist* will be available for download (beginning February 2012) free-of-charge on the SOT website.

Attire

The official attire for the Annual Meeting is business casual. No coat or tie is required! We encourage you to bring comfortable clothing and shoes. Because meeting rooms may seem cold, please bring a sweater or jacket and/or dress in layers.

General Information (Continued)

Business Center

T: 415.974.4080
F: 415.974.4065
Email: facilityservices@moscone.com

The Moscone Convention Center Business Center is conveniently located on the lower level adjacent to the entrance of Hall C. The Business Center offers services such as UPS shipping, common office supplies, Internet access, high-quality black and white copying, printing, and uploading documents from a memory stick, or CD.

Business Center hours:

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

Career Resources and Development Services

As part of the Career Resources and Development (CRAD) services, the on-site Job Bank Center is located in the Moscone Convention Center in Rooms 272, 274, and 276 on the Mezzanine Level.

The Job Bank Center hours:

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

Full CRAD services and event details may be found on page 62.

Chat with an Expert Information Board

The Chat with an Expert (CWAE, formerly known as Lunch with an Expert) events are informal gatherings of small groups of students and a Toxicology Expert over a meal or social hour. The Graduate Student Leadership Committee sponsors these events to provide students an opportunity to network with well-established toxicologists while obtaining career advice and meeting new colleagues. The groups are matched by research interests and the Expert for each group identifies a time and place to assemble. The CWAE Information Bulletin Board provides all the details for the group meetings and is located in the registration area. Groups meet at the Board before proceeding to their meal.

Child Care Services

Arrangements for Child Care Services during the Annual Meeting may be made by contacting the concierge desk at your hotel. To ensure safety, children are not permitted in session rooms, ToxExpo, or the poster areas.

Climate

San Francisco has a mild climate. The typical temperature range for March is an average low of 51°F/10°C and an average high of 64°F/17°C. For an up-to-date, detailed weather forecast, visit the National Weather Service Forecast Office at **www.wrh.noaa.gov/mtr**.

Coat/Luggage Check

For your convenience, a coat/luggage check will be available in the South Lobby near Registration. The coat/luggage check will be open Sunday, March 11 through Thursday, March 15. There will be a fee of $3 per item checked. Laptops, cameras, and other electronics will not be accepted.

Hours of operation:

Sunday ..... 8:00 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–12:00 Noon

Coat/Luggage Check hours are subject to change.

Exhibitor Information

Full exhibit information details may be found on pages 37–44.

Exhibit Hall (Hours/Location)

Exhibit hours at the Convention Center:

Monday ..... 9:00 AM–4:30 PM
Tuesday ..... 8:30 AM–4:30 PM
Wednesday ..... 8:30 AM–4:30 PM

The ToxExpo Exhibition is located on the Exhibit Level of the Convention Center South Building. A map of the Exhibit Halls A–C is located on pages 38–39. Exhibitor personnel may enter the hall one hour before the ToxExpo opens with appropriate identification. Poster presenters may enter the hall at the poster set-up times specified on page 111. *ToxExpo Directories* are available at Registration and just inside each entrance of the ToxExpo.

ToxExpo Time!

In addition to the standard ToxExpo hours and poster presentation times, one hour of dedicated ToxExpo Time has been allotted in the scientific program for attendees to visit with exhibitors. ToxExpo Time will take place on Wednesday, March 14 from 1:00 pm–2:00 pm.

ToxExpo 2013 Exhibit Space Selection Process

New this year: Priority Point booth sales for 2013 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 show with their scheduled appointment time. If you did not receive an appointment in advance, please plan to attend the 2013 Sales Meeting on Tuesday, March 13, at 4:45 pm in Room 101 on the Exhibit Level of the Convention Center South Building.

(continued on page 49)

General Information (Continued)

ChirpE Mobile Application for ToxExpo

This new mobile app allows you to access ToxExpo information and browse a real-time ToxExpo floor plan, search for 2012 exhibitors, products, and services, and interact virtually with exhibitors.

Among other things, ChirpE allows you to:

- Access the real-time ToxExpo floor plan and search for products, specials, and exhibitors
- Navigate ToxExpo easily from your mobile device
- Contact Exhibitors

Scan Me!

First Aid and Emergency Services at the Convention Center

If an emergency should occur while at the Moscone Convention Center, proceed directly to the nearest house phone, located throughout the facility and in most meeting rooms, and dial 511 for security. You will be connected directly to the 24-hour manned security department at the Convention Center. From your cell phone, dial 415.974.4021, which will connect directly to security.

A First Aid room is located on the Exhibit Level across from Room 106.

The First Aid Administrator will be on duty:

Sunday ..... 7:00 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–5:00 PM

Please note that in accordance with regulations, the First Aid Administrator is not permitted to dispense any medication.

Food Services

Coffee Breaks

The exhibiting companies are pleased to sponsor complimentary coffee in the Exhibit Halls A–C between 9:00 am–10:00 am Monday–Wednesday. See Exhibit Halls A–C signage for locations.

Concessions

Concession stands are available in the Exhibit Halls A–C Monday 9:00 am–4:30 pm and Tuesday and Wednesday from 8:30 am–4:30 pm. 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 Halls A–C. Please see the map on pages 38–39 for location.

Restaurants

A full restaurant listing may be found on pages 33–36.

Take a Break!

Grab a bite! Check email! Plenty of seating is available in the Wi-Fi Lounges in the Exhibit Halls A–C, where wireless Internet access is available. See map on pages 38–39 for locations.

Global Gallery of Toxicology

Now in its second year, posters showcasing the formation, key accomplishments, strategic initiatives, and current and future activities of societies of toxicology from around the world are prominently displayed during the meeting. SOT and these societies aim to increase the reliance of international decision makers on the science of toxicology to advance human health and disease prevention. The Global Gallery posters are located in the Exhibit Halls A–C to the left of the main entrance, across from aisle 400 and aisle 700. For more information, please contact Katie Moore at katie@toxicology.org.

Going Green

SOT Green Initiatives

SOT practices green initiatives and is committed to providing goods and services that use our global resources wisely.

Recycling Practices

- Copy paper
- Glass, aluminum cans, and plastic
- Computers and printers
- Toner cartridges
- Postmeeting materials such as badge holders and conference publications

Proactive Purchasing Practices

In addition to recycling what we use, we research and utilize philanthropic and innovative tools and services in our day-to-day operations. Our exposition and meeting planners seek out meeting venues that provide green facilities. All signs and banners for the Annual Meeting are produced on recyclable materials. Our administrators significantly reduce the number of face-to-face board and leadership meetings with online meeting services and hosted webinars, reducing travel. Our scientific and education program directors use innovative web-based technologies to communicate and educate more efficiently to an increasing global audience. Our communications team reduces mailing by providing electronic

General Information (Continued)

communications, and purchases from vendors that provide paper originating from sustainable forests and adhere to strict environmental and socio-economic standards.

Green in San Francisco

Named one of the top 10 "green cities" in the United States by *The Green Guide*, and the second greenest United States city according to *Popular Science*, San Francisco was cited as a city that puts transit first and dedicates more than 17 percent of its 47 square miles to parks and open space.

The Moscone Convention Center has been setting the recycling standard for convention centers for more than a decade, diverting nearly two million pounds of materials from landfills each year. The Moscone Convention Center offers high-performance windows and lighting; mechanical systems that exceed Title 24 Energy Efficiency standards; a full-time air quality technician on staff; and one of the nation's largest municipally-owned solar generation installations. The solar component consists of a solar electrical system capable of producing enough power for 550 homes annually. Over the project's lifetime, it will reduce emissions of carbon dioxide by 34,000 tons, or the equivalent of removing 7,000 cars from Bay Area roads for one year.

Over half of San Francisco's taxi fleet is composed of hybrid or compressed natural gas vehicles. Many San Francisco hotels have implemented eco-friendly practices such as the towel and linen reuse program, 100 percent nonsmoking policy, recycling program for guests, use of compact fluorescent lights instead of incandescent bulbs, and the use of eco-friendly cleaning products by housekeeping staff. In addition, many of the hotels compost food waste and have installed devices that power down heating and cooling when guestrooms are not occupied.

Additionally, San Francisco recycles and composts 77 percent of its waste stream, more than any other city in the nation.

ToxExpo Prize Drawing Win $500!

Drawings to take place on Monday, Tuesday, and Wednesday in the Exhibit Halls A–C

$500 American Express Gift card awarded each day

Drop your business cards in the ToxExpo prize drawing boxes found in all Diamond Level Sponsor booths, see ♦ on map. For list of Diamond Sponsors, please see back cover.

Guest/Spouse Hospitality Room

The SOT Guest/Spouse Hospitality Room provides guest participants (non-scientists) with a place to meet and socialize with other guests. To visit the Hospitality Room, guests must register for the Annual Meeting with the person they are accompanying. Guests will not have access to the scientific sessions or ToxExpo. Please remember to wear your badge to all SOT events. The Guest/Spouse Hospitality Room will be located in the Marriott Marquis Hotel, Foothills F.

Guest/Spouse Hospitality Room hours:

Sunday ..... 8:00 AM–5:00 PM
Monday ..... 8:00 AM–5:00 PM
Tuesday ..... 8:00 AM–5:00 PM
Wednesday ..... 8:00 AM–5:00 PM
Thursday ..... 8:00 AM–11:30 AM

Housing Desk

Experient, Inc.

The deadline date for new housing reservations was February 3, 2012. Between February 4 and February 13, hotels download their lists and no changes can be made. After February 13, you may call the hotels directly for any housing requests. For information regarding your hotel reservation on-site, please visit the SOT Housing Desk located in the registration area of Moscone 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.

Internet Access at the Convention Center

SOT knows the importance of staying connected to your daily activities while attending the Annual Meeting and provides several ways for you to access the Internet while at the Moscone Convention Center.

Computers with Internet Access/Email Center

SOT will provide computers you can use to access the Internet. These computers are available to attendees in the Email Center, located in the registration area.

Free Wireless Internet Access

Free wireless Internet access is available through open "Wi-Fi Zones" in designated areas in the Exhibit Halls A–C that are clearly marked for laptop and handheld users.

General Information (Continued)

Free wireless Internet is available in the common areas including the South Lobby, North/South Concourse, and Esplanade Ballroom Foyer. The network name is "*moscone-free-wifi*." You will need to open a web browser and click the login button to be authenticated with the network. This free service is capable of supporting up to 50 users in each public space. Moscone Convention Center does not offer Internet for purchase by the attendee.

Letter of Attendance

Please stop by the SOT Annual Meeting Registration Desk after Tuesday morning if you would like a letter of attendance for your participation in the 2012 SOT Annual Meeting and/or the Continuing Education Course(s).

Lost and Found

Lost and found articles may be taken to the SOT Headquarters Office, Room 222, of the Moscone Convention Center. Any items left in the SOT Headquarters Office after 11:30 am, Thursday, March 15 will be taken back to SOT Headquarters Office. If you do not remove your poster at the end of your session, you will find it on the "Poster Retrieval Tables" located at either end of the Exhibit Halls A–C, between the 100 & 200 Poster sections on the left side of the hall, and between the 500 & 600 poster sections on the right side of the hall. Any posters left behind at 4:30 pm on Wednesday will be taken to SOT Headquarters Office, Room 222, Thursday morning, March 15. All posters not claimed in the SOT Headquarters Office and/or the Gateway Ballroom by 1:00 pm on Thursday, March 15 will be recycled.

Media Support Services

The Society of Toxicology welcomes accredited representatives of media organizations. Journalists receive complimentary registration for all meeting sessions as well as media kits. Interviews can be arranged with SOT Council, members, and speakers. A press room will be available for reporters. For information about the program speakers, and/or sessions, please contact Martha Lindauer at SOT Headquarters: 703.438.3115, ext. 1640 or email her at martha@toxicology.org.

Program

This is the 2012 Annual Meeting *Program*. This publication is made available to all Annual Meeting registrants and SOT members. Physical copies are available on-site in the registration area for anyone with a meeting badge. A PDF version is available on the SOT website.

Instructions for How to Use This *Program* are located on page 3.

Recording, Photography, and Cell Phone Policies

Each year, we welcome more than 7,500 attendees to the Society of Toxicology's Annual Meeting and ToxExpo. With almost 3,000 presentations, this meeting is the largest international forum for toxicological research.

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 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.

Registration Desk Hours

The Annual Meeting Registration Desk is located in the Moscone Convention Center, South Lobby.

Registration Desk 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–11:30 AM

Full registration details may be found on page 46.

Research Funding Information Room

Program and review staff from agencies that fund research, including NIH and the Center for Scientific Review, NIEHS will be available in the Research Funding Information Room (Room 270) for individual conversations. Check the posted schedule at the NIEHS booth (2037) for specific times staff members will be available to answer your questions about scientific review or grant opportunities. The schedule also will be available at the registration area and in Room 206, site of the "Strategies for Submitting Successful Grants: Brown Bag Lunch."

Research Funding Information Room hours:

Tuesday..... 9:00 AM–4:30 PM
Wednesday..... 9:00 AM–4:30 PM

General Information (Continued)

Safety and Security

The possibility of demonstrators is very real given the nature of our conference. Activities 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.
- 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, smart phones, 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.

San Francisco Area Activities

One of the nicest things about visiting San Francisco is that, although the city is "big" in terms of attractions and amenities, it is geographically small—only 49 square miles. Consequently, it is very easy to see and do a great many things in a short period of time.

It also is easy to spend weeks in San Francisco and still not experience everything the city has to offer. Here is a suggested list of the top 10 things not to miss in San Francisco, according to the San Francisco Travel Association:

1. The Golden Gate Bridge, the most famous bridge in the world, manages to impress even the most experienced travelers with its stunning 1.7-mile span. Approximately 120,000 automobiles drive across it every day. A pedestrian walkway also allows the crossing on foot, and bikes are allowed on the western side. The Golden Gate Bridge is said to be one of the most photographed things on Earth.
2. Cable cars have been transporting people around San Francisco since the late 19th century. The cars run on tracks and are moved by an underground cable on three routes. Their familiar bells can be heard ringing from blocks away. Tickets ($5) may be purchased at the cable car turnarounds at the ends of each route. Each one-way ride will provide spectacular views of the city's celebrated hills as well as exhilarating transportation (**www.sfcablecar.com**).
3. Alcatraz, the notorious former prison, is located on an island of the same name in the middle of San Francisco Bay. Some of the United States' most notorious criminals were incarcerated there. Though several tried, no inmate ever made a successful escape from "The Rock." The prison was closed in the 1960s and stories about Alcatraz are legendary. A visit to Alcatraz today is fascinating. Recorded cell-house tours are available, allowing visitors to learn about the prison as they explore the buildings and grounds. To reach the island, take an Alcatraz Cruises ferry from Pier 43. Advance reservations are recommended, 415.981. ROCK (7625) (**www.alcatrazcruises.com**).
4. Fisherman's Wharf is also home to Pier 39, a festive waterfront marketplace that is one of the city's most popular attractions. A community of California sea lions has taken up residence on the floats to the west of the pier and visitors line the nearby railing to watch their antics. From there it's a short walk to the Wax Museum, Ripley's Believe It or Not!, and the famous crab vendors selling walk-away crab and shrimp cocktails (**www.sanfrancisco.travel/neighborhood/fishermans-wharf**).
5. Union Square is the place for serious shoppers. Major department stores and the most exclusive designer boutiques line streets like Post, Sutter, Geary, Grant, Stockton, and Powell. The Westfield San Francisco Centre houses the largest Bloomingdale's outside of New York and the second largest Nordstrom in the United States.

General Information (Continued)

6. North Beach, the city's Italian quarter, isn't a beach at all. It's a neighborhood of romantic European-style sidewalk cafes, restaurants, and shops centered near Washington Square along Columbus and Grant avenues. The beautiful Church of Saints Peter and Paul is a beloved landmark. Coit Tower atop Telegraph Hill offers a splendid vantage point for photos of the bridges and the Bay. Inside the tower, floor-to-ceiling murals painted in the 1930s depict scenes of early San Francisco.
7. The entrance to Chinatown at Grant Avenue and Bush Street is called the "Dragon's Gate." Inside are 24 blocks of hustle and bustle, most of it taking place along Grant Avenue, the oldest street in San Francisco. This city within a city is best explored on foot; exotic shops, renowned restaurants, food markets, temples, and small museums comprise its boundaries. Visitors can buy ancient potions from herb shops, relax and enjoy a dim sum lunch, or witness the making of fortune cookies.
8. Dining in San Francisco is an attraction in itself. Known as America's best restaurant city, San Francisco chefs excel at combining the freshest local ingredients, authentic international flavors, and a touch of creative genius. Choose your cuisine—Chinese, Japanese, French, Italian, Spanish, Moroccan, Indian, Malaysian, Mexican, Greek, Russian, or "fusion," a combination of any or all of these influences. There is a listing of restaurants within seven blocks of the Moscone Convention Center on the SOT Annual Meeting website (**www.toxicology.org/am2012**) also on pages 33–36 or visit TasteSF at **www.sanfrancisco.travel/taste** for a list of San Francisco's hottest restaurants, a calendar listing of food-related news and events, the history of San Francisco's many food firsts, chef profiles, and Foodie 411, a weekly insider's blog by Marcia "the tablehopper" Gagliardi.
9. Nightlife in San Francisco is a constantly changing scene. The "hottest" clubs currently are in the South of Market and Mission districts, with live and recorded rock and Latin music. Jazz, blues, swing, and "oldies" music can be found all over town. For a complete list of nightlife options, visit **www.sanfrancisco.travel**.
10. A visit to San Francisco would not be complete without a cultural experience. The city is home to internationally recognized symphony, opera, and ballet companies. Playwrights such as Sam Shepherd and Tom Stoppard introduce their works in San Francisco and avant-garde theatre and dance companies dot the city. The San Francisco Museum of Modern Art, the Asian Art Museum, the de Young Museum, the Palace of the Legion of Honor, and other museums and galleries are devoted to the finest of classical and contemporary arts. For a complete museum guide, visit **www.sftravel.us/groups/sot.asp**.

San Francisco Fun Facts

- Levi's denim jeans were invented in San Francisco—gold miners needed durable clothes.
- Chinese fortune cookies were invented at the Japanese Tea Garden in San Francisco by Makato Hagiwara.
- It is here that the famous Irish coffee was invented.
- Z is for ZigZag—San Francisco is famous for its bendy streets. Vermont Avenue between 22nd and 23rd is "crookedest," and Filbert between Hyde and Leavenworth is steepest at 31.5 degrees, but neither fact discourages tourists from flocking to Lombard Street's seductive curves.
- At Angel Island, the Ellis Island of the West, 175,000 Chinese immigrants and Japanese "picture brides" once waited to enter the country. Poems of hope they carved into the walls are still visible at Immigration Station.
- Alcatraz means pelican in Spanish. The rocky pelican's island was a military fort before it became a prison.
- In 1850, gold seekers abandoned over 600 vessels in the bay. Some became landfill, now lying beneath the Jackson Square Historic District where the city's few surviving nineteenth century commercial buildings include Ghirardelli's first chocolate factory.
- Sutro Baths was an extravagant public bathhouse built by the eccentric former mayor, Adolph Sutro, who is also known for building the Cliff House. The vestiges of Sutro Baths are located at Ocean Beach, where a massive crowd of 7,000 people once gathered on the occasion of its official opening.
- The computer mouse was invented in Silicon Valley and the picture of a rolling hill against a blue sky, which is the default wallpaper in Windows XP, was shot in the Napa Valley.
- In 1909, San Francisco's postal service wanted to make the streets easier to navigate. Starting with 27th Avenue, it was decided that the streets would be designated, alphabetically, by male or female saints, starting with San Antonio and ending with Santa Ynez at 47th Avenue. Unable to find Spanish saints with names beginning with K, Q, W, X, or Z, they chose Ayala for 48th Avenue and La Playa for 49th Avenue.
- Portions of Mount Lassen in Northern California still resemble an active volcano, with boiling mud pots, hot springs, and steam rising from the side of the mountain. Mount Lassen last erupted less than 100 years ago with a seven-mile high plume of ash.
- With more than 3,500 restaurants offering cuisines from around the globe, San Francisco has more restaurants per capita than any other city in the United States.

General Information (Continued)

Scientific Poster Printing Service

SOT is pleased to offer our poster presenters a convenient poster 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 fill out 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 at the "POSTER PICK UP DESK" near the Exhibitor Service Center (2300 Aisle). Shepard will produce the materials for a reasonable price, which will include production, transportation, and storage during the meeting. It's as simple as that! Please call 404.720.8666 or send an email to thand@shepardes.com for more information. More information and the order form can also be found on the SOT website at **www.toxicology.org/ai/meet/am2012/present.asp**.

Scientific Poster Sessions

Poster sessions will take place in the Exhibit Halls A–C on Monday, March 12 from 9:30 am to 12:30 pm, and from 1:00 pm to 4:30 pm; and on Tuesday, March 13 and Wednesday 14, poster sessions will be presented from 9:00 am to 12:30 pm and 1:00 pm to 4:30 pm respectively. On Thursday, March 15 poster sessions will be presented from 8:30 am to 12:00 noon in the Gateway Ballroom. In addition, all Late-Breaking Abstracts will be presented only on Thursday, March 15 in the Gateway Ballroom.

Full Scientific Poster Session details and information about retrieving your poster may be found on page 111.

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.
- Children under the age of 15 are not allowed in the ToxExpo or in scientific sessions unless the session chair gives consent.

These policies will be enforced by the Society. Individuals who do not comply will be 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 222.

If you have any questions regarding these polices, please contact the SOT Headquarters staff at the Registration Desk.

SOT Headquarters Office

The SOT Headquarters Office is located in the Moscone Convention Center Room 222 on the Mezzanine Level. 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 Moscone 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–11:30 AM

SOT Pavilion

Located in the ToxExpo Exhibit Hall, the SOT Pavilion is your place to connect and learn about SOT programs, services, membership benefits, and more. Find out about the SOT Endowment Fund, *Toxicological Sciences*, SOT awards, and sponsored awards and fellowships, ToXchange—the SOT member network, educational programs directed across the spectrum from K–12 throughout the toxicology career, and everything taking place at the Annual Meeting.

All SOT Annual Meeting attendees are welcome to stop by at any time during ToxExpo hours as follows:

Pavilion hours:

Monday..... 9:00 AM–4:30 PM
Tuesday..... 8:30 AM–4:30 PM
Wednesday..... 8:30 AM–4:30 PM

SOT members are invited to visit and receive a copy of the deluxe 50th anniversary publication, the *Society of Toxicology: The First Fifty Years*. The book is a collection of stories written by various members and leaders of the Society and the publication contains sections of photographs that cover the last 50 years. These vignettes and photos are priceless and are yours free-of-charge. The deluxe books are also available at the 25-Year (or More) Member Reception and the SOT Annual Business Meeting.

Be sure to stop by during one of the scheduled events listed on the following page for specific information on these topics, programs, or component groups.

Pavilion Events

Monday, March 12	
10:00 AM–11:00 AM	**ToXchange Tutorial** Getting Started (Introductory)
	Hispanic Organization of Toxicologists—Meet and Greet
11:00 AM–12:00 Noon	**Northland Regional Chapter** Meet and Greet

General Information (Continued)

12:00 Noon–1:00 PM	**Diversity Endowments** (Elaine Knight)
	K–12 Outreach (Maureen Gwinn)
1:00 PM–2:00 PM	**Endowment Fund** (Andy Hays, Esq.)
2:00 PM–3:00 PM	**Endowment Fund** (Andy Hays, Esq.)
	ToXchange Tutorial Join the Discussion (Intermediate)
3:00 PM–4:00 PM	***Tox Sci*: Manuscript Essentials** (Editor/Assoc. Editor)
	Women in Toxicology Special Interest Group—Meet and Greet
Tuesday, March 13	
9:00 AM–10:00 AM	**Graduate Student Leadership Committee** (GSLC Chair/Officer) Meet and Greet
	Contemporary Concepts in Toxicology Meeting Proposal Questions (Deborah Cory-Slechta)
10:00 AM–11:00 AM	**Hispanic Organization of Toxicologists**—Meet and Greet
12:00 Noon–1:00 PM	**ToXchange Tutorial—Building Your Profile Page** (Basic/Intermediate)
1:00 PM–2:00 PM	**Toxicologists of African Origin Special Interest Group—**Meet and Greet
2:00 PM–3:00 PM	**National Capital Area Regional Chapter** Meet and Greet
	Guest Lecturer and Toxicology Scholar Programs (Jennifer Rayner and Teresa Leavens)
3:00 PM–4:00 PM	***Tox Sci*: Manuscript Essentials** (Editor/Assoc. Editor)
	ToXchange Tutorial—Join the Discussion (Intermediate)
Wednesday, March 14	
10:00 AM–11:00 AM	**ToXchange Tutorial—Building Your Profile Page** (Basic/Intermediate)
	Hispanic Organization of Toxicologists—Meet and Greet
2:00 PM–3:00 PM	**ToXchange Tutorial—Join the Discussion** (Intermediate)
3:00 PM–4:00 PM	***Tox Sci*: Manuscript Essentials** (Editor/Assoc. Editor)
	Women in Toxicology Special Interest Group Meet and Greet

Speaker Ready Room

The Speaker Ready Room will be located in Room 220. SOT will provide all confirmed presenters in scientific sessions login credentials to access the submission site to preload your presentations. All presentations should be preloaded in advance of the meeting, but not less than 30 minutes prior to the start of the sessions if loaded in the Speaker Ready Room. Presenters will not be able to upload a presentation in the session room.

Speaker Ready Room hours:

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

Sponsorship

The SOT Annual Meeting is the largest scientific gathering of toxicologists in the world, and our Annual Meeting Sponsors play an integral role in the success of this important event. Becoming an Annual Meeting Sponsor demonstrates your organization's commitment to SOT's vision of "creating a safer and healthier world by advancing the science of toxicology."

Sponsorship also provides an opportunity for better name recognition of your company among SOT members and the Annual Meeting attendees. In addition, your support allows the Society to keep registration fees low, thereby enabling us to attract nearly 7,500 attendees to the Annual Meeting.

There are five levels of sponsorship available:
Diamond ($10,000 or more), Platinum ($5,000–$9,999), Gold ($2,500–$4,999), Silver ($2,000–$2,499), and Contributor ($1,000–$1,999). You will find a complete menu of sponsorships designed to assist your organization in establishing a leadership position at the SOT Annual Meeting on the website at **www.toxicology.org**.

Sponsor names are prominently displayed on the Annual Meeting website, as well as in print materials that are distributed before and during the Annual Meeting. Sponsorship also are recognized through signage displayed throughout the Convention Center during the Annual Meeting.

Annual Meeting sponsorship contributions are tax deductible per IRS regulations. For detailed information about SOT sponsorship opportunities, please contact Liz Kasabian at SOT Headquarters: 703.438.3115 or email: liz@toxicology.org.

For a complete list of our 2012 Annual Meeting Sponsors (as of press time), please see page 448 and the back cover.

The Toxicologist and Annual Meeting *Program*

The Toxicologist*: The Official Record of the 2012 Annual Meeting Abstracts*

The Toxicologist is an important scientific resource, as it is the official compilation of accepted abstracts for the 51st Annual Meeting of the Society of Toxicology. With over 3,000 abstracts for the meeting, this supplementary issue of *Toxicological Sciences* is a critical publication to access the latest findings in toxicology. A full version of *The Toxicologist* is available on the CD-ROM attached to the back of this *Program* and includes the official Itinerary Planner. (This useful planner includes the full abstracts accepted for presentation, and all ancillary meetings, events, receptions; and SOT Committee, Task Force, and Component Group meetings.)

The Program*: The Official Guide to the SOT 2012 Annual Meeting and ToxExpo*

The *Program* is the official guide to all the activities of the 2012 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 sessions, as well as an abstract overview of all the Continuing Education course offerings. The *Program* details the schedule of events by name and a listing of all the special events including 2012 Award Recipients, 2012 Honorary Members, SOT Endowment Fund 2011 Award recipients, recognition and special events; and Regional Chapter, Special Interest Group, and Specialty Section meetings and receptions. In addition, the *Program* includes a general section that highlights tour, travel, hotel, registration, parking, and safety and security information. The complete listing of the ToxExpo exhibitors is provided along with the floor plan for the ToxExpo and a complete listing of Exhibitor Hosted sessions.

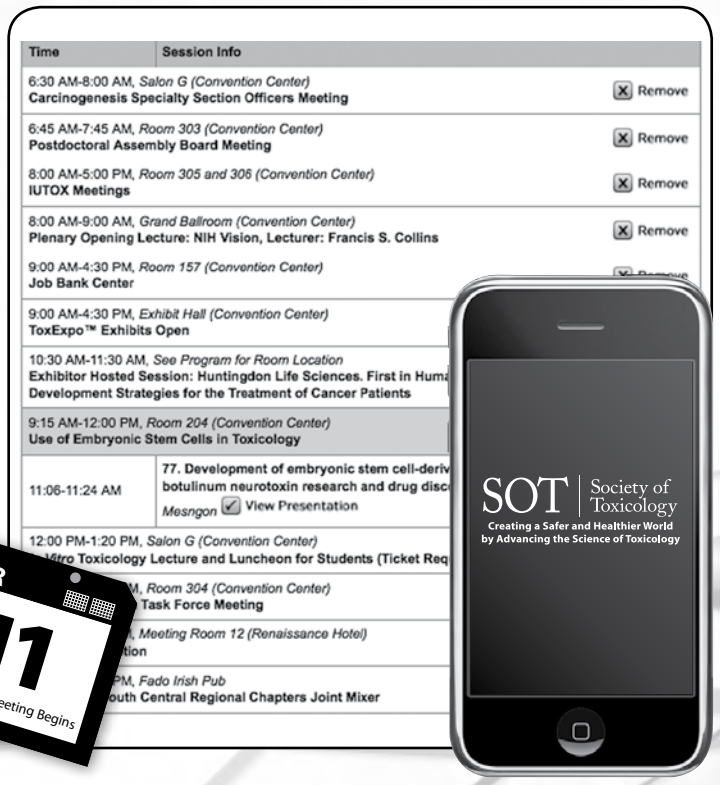
- Copies of the *Program* and *The Toxicologist* on CD-ROM have been mailed to SOT members in the United States and Canada prior to the Annual Meeting.
- Copies of the *Program* and *The Toxicologist* on CD-ROM and Itinerary Planner have been mailed to non-SOT members in the United States and Canada who registered on or before January 27.
- *The Late-Breaking Abstract Supplement* to *The Toxicologist* was not mailed prior to the meeting and copies are available on-site in the registration area and outside of the Gateway Ballroom, where the posters will be presented on March 15.
- For those who did not receive the *Program* and *The Toxicologist* on CD-ROM with the Itinerary Planner in advance, copies may be picked up on-site at the Moscone Convention Center registration area.
- A copy of the printed version of *The Toxicologist* may be preordered via the Registration Form or purchased on-site at registration while supplies last for $20.

Note: Please bring your copy of the *Program* with you to the meeting.

Itinerary Planning Tool Enhancements

SOT is excited about the improved functionality of the online customizable Itinerary Planner. We invite you to use this tool to plan your Annual Meeting experience using iCal technology. New this year, the Itinerary Planner is available via a free mobile application. You'll have all the functionality of the online Itinerary Planner delivered conveniently to your mobile phone, tablet, or iPad.

Choose the presentations, featured lectures, meetings, or special event functions you wish to add to your personal itinerary. After you've selected your schedule of sessions, you'll be able to view or export this information to your default calendar program for reference using iCal. The Itinerary Planner information will contain specific details for these sessions or events such as date, time, and the location with access to detailed abstract information, including authors, institutions, and the full abstract. Late-Breaking Abstracts will be available through the Itinerary Planner (online and mobile versions) in early February.



Look for more information on the SOT website.

General Information (Continued)

Tour Information

For tour information, visit the Tour Desk located in the registration area, South Lobby.

Tour Desk hours:

Saturday..... 4:00 PM–7:00 PM
Sunday .....9:30 AM–12:30 PM
Monday.....9:30 AM–12:30 PM
Tuesday.....8:00 AM–10:00 AM
Wednesday.....9:00 AM–10:00 AM

Tour desk hours are subject to change.

Tour Tickets

Prepurchased ticket holders, as of February 13, should have received an email confirmation. Your email confirmation serves as the ticket for admission. Tickets are sold on a first-come, first-served basis at the Tour Desk. After February 13, call Key Events for availability of tickets at 415.695.8000 or email sot@keyevents.com. No refunds will be made after February 13, 2012.

Tour Departures

Tour departure information will be available at the Tour Desk located in the South Lobby. All tours will leave from the South Lobby entrance of the Moscone Convention Center. Please arrive 15 minutes prior to your scheduled tour departure time.

Transportation

Air Transportation

Special Airfare Discounts

American Airlines
800.433.1790
www.aa.com
SOT Discount Code: 8932AX

American Airlines is offering a seven percent discount off the lowest applicable fare for attendees traveling to San Francisco for the SOT Annual Meeting. The discount is valid March 7–19, 2012. You may book your ticket at **www.aa.com** (no service fee applies); under the promotion code, type 8932AX to receive the discount. You may also book your reservation by calling the AA Meeting Services Desk at 800.433.1790; however a service fee per ticket will apply. International attendees please contact the local AA reservations office and give them the code 8932AX.

Delta Airlines
800.328.1111
www.delta.com
SOT Discount Code: NM7UV

Delta Airlines is offering a two percent to ten percent discount off full/nonrestricted fares to San Francisco from the United States/Canada. The discount is valid March 8–18, 2012. You may make reservations by calling the Meeting Services Desk at 800.328.1111 from anywhere in the United States or Canada and refer to the discount code NM7UV. Delta does not charge a reservation service fee. *No discount applies* if you book your ticket online at **www.delta.com**.

Airport

San Francisco International Airport (SFO) is located in San Francisco, California, 13 miles south of San Francisco, near the junction of Highways 101 and 380. The airport offers nonstop links with more than 31 international points on 30 international carriers. The Bay Area's largest airport connects nonstop with more than 71 cities in the United States on 18 domestic airlines. For up-to-the-minute departure and arrival information, airport maps, and details on shopping, dining, cultural exhibitions, ground transportation, and more, visit **www.flysfo.com**. SFO was voted "North America's Best Airport" by passengers for its outstanding customer service and amenities.

At 2.5 million-square-feet, SFO's International Terminal is equivalent to the size of 35 football fields and is the largest in the United States.

- **Taxicabs:** Depart from designated taxi zones located at the roadway center islands, on the Arrivals/Baggage Claim Level of all terminals.

  Uniformed taxi coordinators are stationed at the taxi zones from 7:00 am to 1:00 am to assist passengers with questions or concerns.

  Ramp accessible taxis are available. Please contact the taxi coordinator to request a ramp accessible taxi, or phone *1191 from any airport courtesy phone.

  Approximate fares to San Francisco Downtown are $37 one way. Metered rates apply to all destinations and most cab companies accept credit cards as a form of payment. A $2 exit surcharge is included in all San Francisco taxicab meter fares for rides originating from San Francisco International Airport. By sharing a ride, up to five people can ride for the price of one person.

- **BART Rapid Rail:** BART is the fast, easy, inexpensive way to get to San Francisco and around the Bay Area. Trains arrive at the SFO International Terminal every 15 minutes and it takes just 30 minutes to downtown San Francisco. A one-way ticket from SFO to downtown is $8.10; find fares from the airport to any station by using the QuickPlanner.

General Information (Continued)

The BART station at SFO is located in the International Terminal. It's a short walk from United Airlines in Terminal 3 and a slightly longer walk from Terminal 1. You can take the free AirTrain from both terminals directly to the BART station. Just follow the signs to AirTrain and board the Red Line train. When you arrive, take the escalator down to the departures level and walk straight ahead to the BART station. Terminals 1, 2, and 3 are approximately a one to three-minute AirTrain ride to the BART station.

International passengers should turn right when leaving customs, walk to the escalator, and go up to the departures level. Walk straight ahead and turn left at the art exhibit and you'll see the station entrance.

To/From Downtown San Francisco

Board the Pittsburg/Bay Point train to one of four downtown San Francisco stations that are an easy walk or short cab ride to most San Francisco hotels. BART shares these stations with San Francisco Municipal Transportation Agency (MUNI), which can also take you throughout the city.

- **Civic Center:** Exit for Upper Market, Van Ness, the Castro, and Civic Center districts. Take the Market/7th Street exit for the Renoir Hotel.
- **Powell Street:** Use the Hallidie Plaza exit for the InterContinental, Parc 55, Hilton, Nikko, and Union Square hotels. Use the 4th Street exit for the Marriott and Moscone West.
- **Montgomery Street:** Financial District and Moscone North/South. Use the Market/3rd Street exit for Moscone Convention Center, W Hotel, Westin, The Palace, and Financial District and South of Market hotels.

Getting Back to San Francisco International Airport

Take any SFO-bound train from any downtown BART station. If you are going to SFO from another city, it may be necessary to transfer to the SFO-bound train, which originates on the Pittsburg/Bay Point line. Check the BART System Map for transfer points.

Upon arriving at SFO, take the AirTrain Red Line from BART to Terminal 1, 2, or 3 for domestic flights. You can walk to Terminal 1 or 3 in five to ten minutes. International Terminal passengers should exit the train and walk to the front of the station. The international flight check-in counters are a very short walk from the BART station main entrance.

For more information about BART, visit their website at **www.bart.gov**.

Airport Ground Transportation

SuperShuttle

SuperShuttle provides ground transportation service between the San Francisco Airport and all major hotels in the downtown area. SOT attendees can receive discounts by going to **www.supershuttle.com/sales/sot_am2012.html**. The SOT discounted one-way cost is $15. The discount is valid online only with travel dates between March 1–18, 2012. You do not have to have an advance reservation to ride SuperShuttle, but without a reservation, you will pay the full fare at the ticket counter.

ShareRide Transfers

- $2 off each way per passenger to/from SFO and downtown San Francisco.
- $3 off each way per passenger to/from Oakland (OAK) Airport and downtown San Francisco.
- $4 off each way per passenger to/from San Jose (SJC) Airport and downtown San Francisco.

Exclusive Vans (accommodates up to nine passengers traveling together) or ExecuCar (town car up to four passengers)

- $5 off each way per vehicle to/from SFO/OAK/SJC and downtown San Francisco.

Parking

As a city-owned facility, the Moscone Convention Center provides information according to the city's traffic management philosophy, which encourages the use of transit first. View the parking map to find a parking garage, or use the list below for reference. Please check with each location for cost information as it is subject to change.

Fifth and Mission Parking Garage

415.982.8522 ext. 18
833 Mission Street (between Fourth and Fifth Streets, adjacent to Moscone West)

Hearst Parking Center

415.989.4000
45 Third Street (entrance on Stevenson, 2 blocks from Moscone South/North)

Moscone Convention Center Garage

415.777.2782 (garage)
415.538.7888 (office)
255 Third Street (Folsom & Howard, across the street from Moscone South's Esplanade Ballroom)

General Information (Continued)

Museum Parc Garage
415.348.0304
300 Third Street (entrance on Third and on Folsom Streets)

Paramount Valet Parking
415.341.1410
680 Mission Street (separate entrance on Jessie Street, off Third, located 2 blocks from Moscone South and North)

Post Montgomery Center Garage
415.393.1500
161 Sutter Street (turn onto Sutter Street from Montgomery)

Sutter/Stockton Garage
415.982.7275
444 Stockton Street (second entrance on Bush between Stockton and Grant)

For hotel parking, please refer to the San Francisco Hotel Accommodations information on pages 30–31 for valet parking rates for your hotel.

SOT Ride Share

SOT offers a Ride Sharing Program in conjunction with the Annual Meeting. For those who live close enough to the San Francisco area or those who do not wish to fly, you may want to consider the Ride Share Program. Avoid airport hassles by driving and make it easier for other scientists to attend by sharing rides. Students, especially, appreciate ways to make the meeting even more economical.

Once you have registered for the Annual Meeting, you can access the Ride Sharing Program. You can indicate whether you want to drive or be a passenger, and then see a list of others who are participating. It will be up to you to match your plans with someone else who is registered, and then to remove your names when you have travel plans in place.

SOT Travel Agent—Carlson Wagonlit

Carlson Wagonlit is the official travel management firm for SOT's 51st Annual Meeting. To take advantage of their services and savings, call toll-free 800.669.6024 Monday through Friday, 9:00 am–5:30 pm (Eastern Standard Time) and ask to speak to anyone on our SOT-dedicated team or email: arlington.us@contactcwt.com. To obtain the maximum discounted fares, call at least 60 days prior to departure. Discounted fares are still obtainable up to 14 days in advance. Please note that Carlson Wagonlit charges a $42 service fee per ticket.

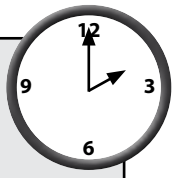
Before calling Carlson Wagonlit, please gather the following information:

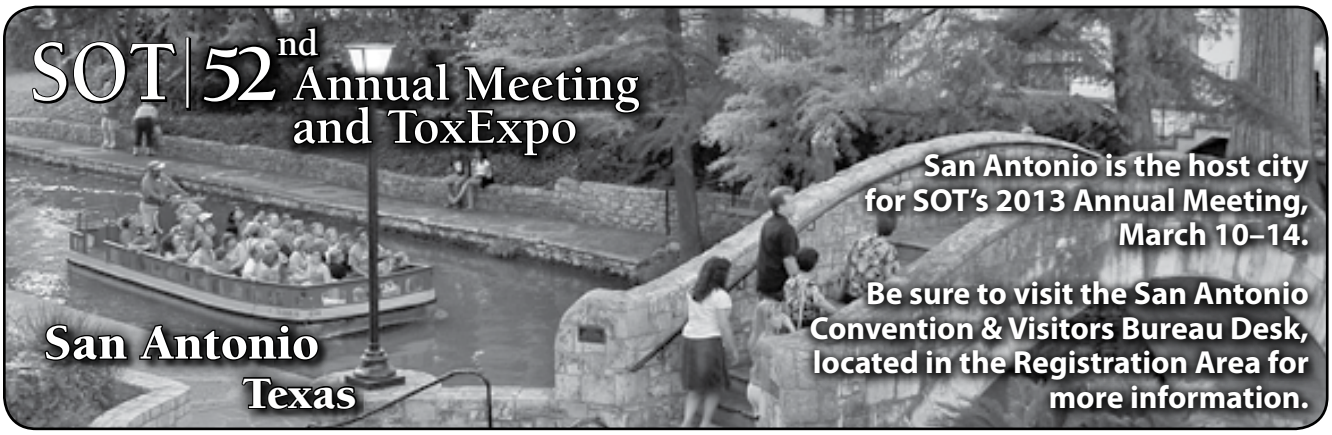
- The desired dates of arrival to and departure from San Francisco
- Your home city or originating airport
- Your approximate time of departure from the originating airport
- The number of persons traveling (adults/children)
- Your method of payment, either credit card or check
- Your airline frequent flyer number(s)
- Your name as it appears on your ID and your date of birth

Identify yourself as a Society of Toxicology attendee. Carlson Wagonlit will find the best fare for you and email you an itinerary.

March 11, 2012

Daylight Saving Time Starts in the United States, Canada, and Mexico





Photos is courtesy of the San Antonio Convention & Visitors Bureau. Photographed by Al Rendon.

Notes

SOT Job Bank

Your Recruitment and Employment Resource

Job Seekers—Jobs Await You in the SOT Job Bank!!!

Employers Are Looking for Candidates through This Service and You Don't Want to Be Left Out

- All SOT members can utilize the SOT Job Bank as a job seeker **free-of-charge**.
- Register and enter your candidate profile; it takes only 15 minutes to complete.
- Post your resume.
- Review the positions posted by major corporations, academic institutions, government agencies, and private research organizations; positions range from junior to senior level.
- Search by geographic location, employer name, salary, and other criteria.
- Find potential matches to your skills and training at any stage of your career.
- Contact employers.
- Gain access to information that will help you plan your near-term and long-term goals and objectives.
- See which sectors are hiring.
- Stay abreast of new and emerging areas.

Employers—Recruit Highly Qualified Candidates through the SOT Job Bank!!!

The SOT Job Bank is the Ideal Place to Streamline Your Recruitment Process and Provides Your Organization with a Valuable Tool

- Search from a pool of distinguished candidates.
- Join the many employers who rely on this cost-effective and efficient database to assist with their employment needs.
- Find the right candidate from among scientists trained in toxicology and the biological sciences with the expertise and right work experience for your position.
- Schedule interviews to hold during the SOT Annual Meeting at the on-site Job Bank Center.
- Reserve interview rooms in advance or on-site.
- SOT Affiliates receive a reduced registration rate in appreciation for supporting the Society in achieving its objectives.

The Online SOT Job Bank is available any time, from any place at www.toxicology.org/jobbank

SOT | Society of Toxicology

Career Resources and Development Services

The Society of Toxicology's Career Resource and Development (CRAD) services include the online Job Bank, special Job Bank activities at the Annual Meeting, career development seminars and resources, and employer ads in SOT's newsletter, the *Communiqué*, which reaches the entire SOT membership and beyond.

Online Mentor Match Program

Career Planning Is Never Over: Lend a Hand or Receive One at Mentor Match!

The Society of Toxicology recognizes the importance of mentoring in the scientific and professional development of its members. The objective of the online mentoring program, Mentor Match, 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 issues. 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 will develop as individuals register, allowing the quantity of profiles to increase to a robust combination of both mentors and mentees. The Mentor Match program is accessible to all active SOT members by visiting **www.toxicology.org/ai/newcrad/mentormatch.asp.**

SOT Online Job Bank

Take Advantage of This Free Member Benefit

SOT Members can register as a job seeker and access the positions posted on the Job Bank at no charge.

The Society's online SOT Job Bank makes it easy for candidates and employers alike to access this resource year-round, any time, any place via the SOT website at **www.toxicology.org/jobbank**.

This forum links job candidates with employment positions in toxicology and related biological sciences. The SOT Job Bank allows you to:

- Register as an employer or candidate
- Post employment positions
- Search the Job Bank database
- Contact candidates or employers

The online Job Bank lists positions available at corporations, academic institutions, government agencies, and private research organizations. Employers rely on this online service to provide them with a robust database of candidates available for career opportunities, ranging from junior- to senior-level positions.

The Job Bank helps streamline the process for candidates and employers. Candidates can gain access to a variety of positions suited to their experience, areas of expertise, and desired geographical location. In addition, job seekers can see which sectors are hiring and stay abreast of new and emerging areas.

Employers can attract potential candidates in a targeted and cost-effective manner through this SOT service. By having access to detailed candidate resumes, employers can determine the right match for a specific position and expedite the recruitment process. **SOT Corporate Affiliates receive a reduced rate for position posting in appreciation for supporting the Society in achieving its objectives.**

Job Seeker Registration for SOT Online Job Bank

Candidate Types	Fees
SOT Member	$ 0
Non-SOT Member	$80
Non-SOT Member—Postdoctoral	$45
Non-SOT Member—Student	$30

Employer Registration for SOT Online Job Bank

Employer Types	Fees
SOT Affiliate	$200
Corporation	$400
University or Government	$110
Nonprofit Organization	$110

SOT | Society of Toxicology

Career Resources and Development Services (Continued)

Annual Meeting On-Site Job Bank Center

Located in the Moscone Convention Center, the on-site Job Bank Center provides Annual Meeting attendees with access to the SOT Job Bank system as well as assistance in facilitating interviews at the SOT Annual Meeting. **All users with current registrations at the time of the Annual Meeting will be permitted to use this service.**

A bank of computers will be available in the SOT Job Bank Center for last-minute updates to your account information or posting, as well as printers for producing paper copies of candidate profiles and position descriptions. **If you are a candidate attending the Annual Meeting, you should bring multiple copies of your personal resume for interested interviewers.** All candidates and positions will be sought online.

Employers recognize and appreciate that the Annual Meeting On-Site Job Bank Center provides a cost-effective and efficient way to interview a distinguished pool of candidates. Employers and candidates may take advantage of the multiple spaces available in Rooms 274 and 276 for interviews. Some rooms were available to be scheduled in advance, and others are on a first-come, first-served basis. To ensure privacy for candidates, the SOT Job Bank Center is located away from the scientific sessions. Also, the Job Bank interview rooms will be fitted with modular hard walls to increase privacy when interviews are conducted.

It is up to the registrants of this service to exercise the confidentiality options that are offered. SOT is not responsible if any information contained in the Job Bank database is released.

Although you are encouraged to pre-register before entering the Job Bank Center, you can register on-site in Room 272.

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

Online Job Bank access will be available—as always—through your personal computer and at the Annual Meeting Email Center. Access to the online Job Bank in the Center is limited to short searches for updates or new information.

For additional information, contact Kelly Martin at SOT Headquarters: 703.438.3115 ext. 1660 or email: kelly@toxicology.org.

Employer Ads in SOT *Communiqué*

The Society's newsletter, the *Communiqué*, is published four times annually. It includes employment position advertisements from corporate, university, governmental, and nonprofit organizations wishing to reach the entire SOT membership and beyond. For more information, contact Marcia Lawson at SOT Headquarters: 703.438.3115 ext. 1446 or email: marcia@toxicology.org.

SOT's Career Development Program Track

To help you develop your near-term and long-term career pathway, plan on attending the Education-Career Development Sessions scheduled this year that will be of special interest to you. Sessions include the following:

- Career Alternatives and Transitions: New Challenges and Opportunities in Today's Job Market for Toxicologists—Tuesday, March 13, 1:30 PM–4:15 PM, Room 308
- The Art of Negotiation: A Fundamental Skill for Scientists—Tuesday, March 13, 4:30 PM–5:50 PM, Room 307
- Refining Your Science Communication Skills—Wednesday, March 14, 4:30 PM–5:50 PM, Room 307

SOT | Society of Toxicology
Creating a Safer and Healthier World by Advancing the Science of Toxicology

SOT Encourages the Recruitment of Undergraduates to Toxicology

Undergraduates can sign up on the SOT website for special status as Undergraduate Student Affiliates

Special Programs for Undergraduates at the SOT Annual Meeting

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

- **Undergraduate Education Program for students from groups underrepresented in the sciences and their advisors**
- **Undergraduate Education Program for students at institutions that receive low federal funding in science, math, engineering, and technology**
- **Sunday–Undergraduate Education Program for any undergraduate student registering for this event with Annual Meeting registration**
- **Pfizer Undergraduate Student Travel Award for outstanding students presenting abstracts**

Support for toxicology career presentations through the ToxScholar and Guest Lecturer Programs

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

SOT Recognizes Undergraduate Educators

The SOT Endowment Fund's
2012 Undergraduate Educator Award
is presented to Sue M. Ford, St. John's University
(Refer to page 73 for more information)

Find more information at
www.toxicology.org

SOT 2012 Award Recipients

Achievement Award

Donna D. Zhang

Donna D. Zhang, PhD, Associate Professor, Department of Pharmacology and Toxicology, College of Pharmacy, University of Arizona, is the recipient of the SOT 2012 Achievement Award.

Dr. Zhang's research program features important, multi-faceted, cutting edge science elucidating the key factors regulating the Nrf2-Keap1 pathway that controls adaptive responses of cells to environmental and endogenous stresses. She was the first to describe the interactions between Keap1 and the Cul3-Rbx1 E3 ubiquitin ligase system that maintains low constitutive levels of Nrf2 through ubiquitination and subsequent proteasomal degradation (*Mol Cell Biol* 2003, 2004, 2007, and 2011; *J Biol Chem,* 2005). She is also characterizing cross-talk between Nrf2-Keap1 and the p53-p21 (Cip1/WAF1) and autophagy (via p62-Keap1) pathways (*Mol Cell* 2009; *Mol Cell Biol* 2010.) Understanding the broad reach of this adaptive response pathway will help define its role as a key susceptibility modifier in toxicological responses.

In addition, Dr. Zhang is examining the effects of Nrf2 signaling in arsenic toxicity. Several of her papers in *Toxicology and Applied Pharmacology* (2007, 2008, and 2009) describe the protective roles of Nrf2 against indices of acute toxicity and cell transformation by arsenic. She is also seeking to identify small molecule activators and inhibitors of the pathway that have applications in the prophylaxis and treatment of chronic degenerative diseases with underlying environmental etiologies (*Proc. Natl. Acad. Sci. USA,* 2011; *Chem. Biol.,* 2010).

Dr. Zhang has made several seminal observations in the Nrf2-Keap1 field that are establishing new paradigms for understanding its roles in toxicology. This work has been supported, in part, through a highly competitive ONES award from NIEHS as well as awards from the National Cancer Institute and the American Cancer Society. Dr. Zhang has also developed an active role within SOT as 2011–2012 President of the Mountain West Chapter of SOT, and as the organizer of a symposium on Nrf2 featuring international experts held as part of the program for the SOT 50th Anniversary Annual Meeting of SOT in 2011. For the significant contributions to toxicology that she has made in the early stages of her career, the Society of Toxicology is pleased to present the SOT 2012 Achievement Award to Dr. Donna D. Zhang.

Arnold J. Lehman Award

Joe L. Mauderly

Joe L. Mauderly, DVM, is presented with the 2012 SOT Arnold J. Lehman Award for his contributions to the application of sound scientific principles to the regulation of airborne materials, and the conduct and management of research that has had special impact on the regulation of airborne materials.

Dr. Mauderly is currently a Senior Scientist Emeritus (in residence) of the Lovelace Respiratory Research Institute and Director of the National Environmental Respiratory Center. Before his recent retirement, he was Principal Investigator of ACES project on health impacts of new technology diesel emissions and the NPACT project on critical components of airborne particulate matter. He was a former Director of Lovelace's Inhalation Toxicology Research Institute and President of the Lovelace Biomedical and Environmental Research Institute.

Internationally recognized for his contributions to the application of sound science in the regulation of airborne materials, he has served on more than 40 national and international committees advising on the science supporting national and international air quality standards and the use of that research in establishing air quality standards. He is author or coauthor of 252 journal articles, chapters and books, and 80 published technical reports. Dr. Mauderly served on Pollutant Specific Panels of the Clean Air Scientific Advisory Committee (CASAC) from 1992 to 2006; and as Chair of CASAC from 1997 to 2000, where he played a key role as a contributor and as a leader of multi-disciplinary panels of scientists and engineers advising on the setting of National Ambient Air Quality Standards (NAAQS) for particulate matter, ozone, lead, nitrogen oxides, sulfur dioxide and carbon monoxide. He is especially known for his research on the hazards of engine emissions, and during his tenure as CASAC Chair, the Committee approved EPA's Hazard Assessment of Diesel Exhaust. Since 1998, he has provided leadership for development of the Lovelace National Environmental Respiratory Center (NERC) multipollutant research program funded jointly by government and industry. The research findings from that program are already providing improved insight into the role of individual constituents and complex mixtures of air contaminants from multiple sources in causing disease. Dr. Mauderly continues to manage the NERC Program and assist other Lovelace research efforts on a part-time basis.

SOT 2012 Award Recipients (Continued)

Dr. Mauderly is a renowned speaker who is able to communicate with audiences of varied backgrounds, ranging from his scientific peers and students to technology developers to policy makers to the general public. He serves as a role model for others and is a wonderful representative of the science of toxicology. In recognition of his contributions to risk assessment and the regulation of chemical agents, the Society of Toxicology is pleased to announce Dr. Joe L. Mauderly as the recipient of the 2012 SOT Arnold J. Lehman Award.

Best Postdoctoral Publication Awards

These awards are presented during the Postdoctoral Assembly Luncheon. The Postdoctoral Assembly recognizes these three recipients for their 2012 awards:

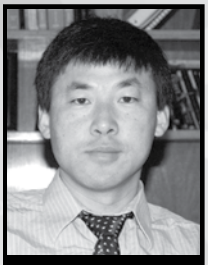
Maryse Lemaire

Maryse Lemaire, PhD, *Lady Davis Institute for Medical Research, Montréal, Québec, Canada*

Lamaire M, Lamrie CA, Molina MF, Schiffrin EL, Lehoux S, and Mann KK

Exposure to Moderate Arsenic Concentrations Increases Atherosclerosis in ApoE-/-Mouse Model

Toxicological Sciences, 2011, 122(1): 211–221



Xuefeng Ren

Xuefeng Ren, PhD, *The State University of New York at Buffalo, Buffalo, NY*

Ren X, Aleshin M, Jo WJ, Dills R, Kalman DA, Vulpe CD, Smith MT, and Zhang L

Involvement of N-6 Adenine-Specific DNA Methyltransferase 1 (N6AMT1) in Arsenic Biomethylation and Its Role in Arsenic-Induced Toxicity

Environmental Health Perspectives, 2011, 119(6): 771–777

Nisha Sipes

Nisha S. Sipes, PhD, *US EPA, Research Triangle Park, NC*

Sipes NS, Martin MT, Reif DM, Kleinstreuer NC, Judson RS, Singh AV, Chandler KJ, Dix DJ, Kavlock RJ, and Knudsen TB

Predictive Models of Prenatal Developmental Toxicity from ToxCast High-Throughput Screening Data

Toxicological Sciences, 2011, 124(1): 109–127

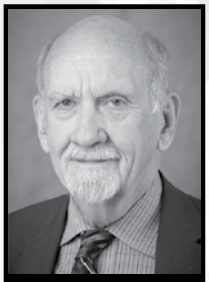
Board of Publications Award for the Best Paper in *Toxicological Sciences*

The Board of Publications has selected the paper entitled "Selective Phthalate Activation of Naturally Occurring Human Constitutive Androstane Receptor Splice Variants and the Pregnane X Receptor" as the best paper published in *Toxicological Sciences* in the past year (*Toxicol. Sci* 2011, 120(2): 381–391). The authors of the paper are Joshua G. DeKeyser, Elizabeth M. Laurenzana, Eric C. Peterson, Tao Chen, and Curtis J. Omiecinski.

In this paper, the authors used transactivation and mammalian two-hybrid assays to demonstrate differential selectivity of endocrine-disrupting chemicals on CAR and PXR variants. These results offer an important insight into the mechanism whereby alternate splicing of receptors results in an enhanced capability of receptors to distinguish among a broad range of xenobiotics that possess similar chemical properties. In this way, variant receptors possess distinct ligand-selective activation profiles.

This paper greatly extends our understanding of a fundamental mystery of toxicology—How are a relatively small number of xenosensing receptors able to identify an enormous number of xenobiotics and respond appropriately? The answer contained here demonstrates that alternately spliced human CAR genes transcripts increase CAR's capacity to serve as a selective xenosensor. Since rodent species appear incapable of producing some receptor splice variants, this finding is crucial to understanding the reasons behind the differences in response to chemical exposures observed for humans and rodents.

Distinguished Toxicology Scholar Award



Ernest Hodgson

Ernest Hodgson, PhD, Distinguished Professor Emeritus, Environmental and Molecular Toxicology, North Carolina State University, Raleigh, is the recipient of the 2012 SOT Distinguished Toxicology Scholar Award.

Dr. Hodgson's current and recent research activities are extremely important to the characterization of the human metabolism of nonpharmaceutical xenobiotics and to the characterization of the flavin-containing monooxygenases (FMOs). He is a recognized leader in the field of human metabolism of agrochemicals

SOT 2012 Award Recipients (Continued)

and also the specific interactions that agrochemicals can have with one another from the standpoint of metabolism, as well as the inhibition of steroid hormone metabolism by organophosphorus compounds (insecticides or their metabolites). Dr. Hodgson's work in this area is a unique and important contribution to our protection of human health. He has made North Carolina State University renowned for research in human metabolism of agrochemicals.

Dr. Hodgson is well known for his scientific leadership in the field of pesticide toxicology and metabolism, and he has competed successfully for substantial federal support for his research. He has published prolifically. He edits the *Journal of Biochemical and Molecular Toxicology*. He also has edited and part-authored two textbooks of toxicology, both now in fourth editions, and contributed to a variety of review books, dictionaries, and electronic databases. He has contributed to the education of numerous toxicologists and has former students and postdocs distributed among a variety of academic, industrial, and government positions. He is frequently called upon to serve on advisory committees and review panels and has received significant recognition at his own institution by being named to one of the prestigious endowed professorships, a William Neal Reynolds Professor.

Dr. Hodgson has been involved in numerous roles in SOT and other professional societies and always garners the respect of those whom he leads or interacts with through both his wisdom and his dry wit. He has a rather unique talent for analyzing situations and developing appropriate conclusions, and delivering those conclusions in an effective and diplomatic way.

In recognition of his seminal scientific achievements that have advanced the science of toxicology and have given additional recognition and prestige to the field, Dr. Ernest Hodgson is presented the 2012 SOT Distinguished Toxicology Scholar Award.

FS **Distinguished Toxicology Scholar Award Lecture: Environmental Chemicals: From Biochemical and Molecular Toxicology to Education and Outreach**
Tuesday, March 13, 12:30 PM–1:20 PM, Room 304

Education Award

John H. Duffus

John H. Duffus, BSc, PhD, DSc, CSci, CChem, FRSC, CBiol, MSB, is recognized as the recipient of the 2012 SOT Education Award. The Director of Heriot Watt University's Edinburgh Centre for Toxicology, Edinburgh, Scotland, since 1989, Professor Duffus has spent a distinguished academic career educating toxicologists. He has held a variety of lectureships there and at other UK universities, and organized and taught numerous toxicology courses over decades. His appointments at the Chulabhorn Research Institute in Bangkok and the Asian Institute of Technology attest to his global influence and keen interest in strengthening training opportunities in developing nations, as do a variety of consultancies he has held to develop toxicology curricula throughout Europe, Asia, and Africa. His programs on chemical safety, the teaching of toxicology, and manpower development have been widely used. In addition, he has organized assorted international courses and workshops in toxicology and ecotoxicology.

Professor Duffus is the author of numerous research articles and technical reports for the World Health Organization, the Royal Society of Chemistry, and other prestigious organizations. He is renowned for his widely used textbooks, *Fundamental Toxicology* and *Concepts in Toxicology,* and for his efforts on behalf of standardizing toxicology nomenclature through the International Union of Pure and Applied Chemistry (IUPAC). He has also made important contributions to publications and training in risk assessment as well as in educating and providing resources for toxicology educators, including his online presentations, *The Science of Chemical Safety: Essential Toxicology*. He also serves as a key member of the Steering Team for ToxLearn, a multi-module tutorial being developed jointly by the Society of Toxicology and the National Library of Medicine.

Professor Duffus' global achievements in the training of toxicologists have been numerous, and praised by his students and followers. He has been responsible, directly in the classroom, or indirectly through his many works, for broadening the intellectual horizons of many hundreds of toxicologists and nurturing those in training. For his dedicated practice and advocacy to the science of toxicology, the Society of Toxicology is pleased to name Dr. John H. Duffus the 2012 SOT Education Award recipient.

SOT 2012 Award Recipients (Continued)

Founders Award

John A. Moore

John A. Moore, DVM, DABT, is presented the 2012 SOT Founders Award in recognition of his outstanding leadership in fostering the role of toxicological sciences in safety decision-making through the development and application of state-of-the-art approaches that elucidate, with a high degree of confidence, the distinctions for humans between safe and unsafe exposures to chemical and physical agents.

Dr. Moore has distinguished himself in various governmental and private positions, holding a number of senior positions in the US government, including Deputy Administrator and Assistant Administrator for Pesticides and Toxic Substances of the US EPA, Deputy Director of the National Toxicology Program (NTP), and Director of Toxicology Research and Testing at the National Institute of Environmental Health Sciences (NIEHS).

He served for ten years as founder and President and CEO of the not-for-profit Institute for Evaluating Health Risks (IEHR) and recently completed a five-year term as principal scientist at the NTP Center for the Evaluation of Risks to Human Reproduction. Dr. Moore has served on several National Research Council committees, including being chair of the Subcommittee on the Toxicity of Diisopropyl Methylphosphonate and a member of the Subcommittee on Reproductive and Developmental Toxicology.

Dr. Moore has also served as the President of the Toxicology Education Foundation. He also reviewed new scientific data and advised the manufacturer on additional studies that characterized the toxicity profile of perfluorinated chemicals such as PFOS. This work led to the quick withdrawal of such compounds from commercial use in an expedient and orderly manner. At IEHR and later for NTP's Center for Evaluating Risks to Human Reproduction (CERHR), he designed and implemented a program to comprehensively review toxicology and exposure data on reproductive and developmental toxicology. This resulted in the strongest documents on this important area of chemical safety. Although retired, Dr. Moore has continued to serve on various panels and boards.

For his contributions to toxicology and to the safety assessment and regulation of chemicals, the Society recognizes Dr. John A. Moore as the 2012 SOT Founders Award recipient.

Global Senior Scholar Exchange Program (New in 2012)

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 is sponsoring 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.

African Region Recipient

Orish Ebere Orisakwe

Orish Ebere Orisakwe, PhD, ERT, ATS, MRSC, Professor of Pharmacology & Toxicology, Professor & Chair, Toxicology Unit, Faculty of Pharmacy, University of Port Harcourt, Rivers State, Nigeria

US University Host:
Judith T. Zelikoff, PhD
New York University School of Medicine
Department of Environmental Medicine

As a fellow of the Academy of Toxicological Sciences and European Registered Toxicologists, Professor Orisakwe has shown sustained leadership and direction in toxicology, especially in Sub-Saharan Africa. His department and toxicology program have been recognized by the World Health Organization (WHO) as a WHO Global Environment Monitoring System (GEMS) that is responsible for food monitoring and assessment. Dr. Orisakwe is a WHO–appointed Adviser, Scientific Expert, and study group coordinator for food additives, lead poisoning, and other toxicology-related issues. To highlight his regional influence, Professor Orisakwe is the African Society for Toxicological Sciences (ASTS) coordinator for Nigeria, an Advisor to the Cameroon Society for Toxicological Sciences (CSTS), President of the West African Society of Toxicology (WASOT), and Coordinator of the Society of Environmental Toxicology and Chemistry (SETAC), West Africa. He is also the Country Correspondent (Nigeria) for the World Library of Toxicology (WLT) and has been instrumental in identifying other Country Correspondents in Africa.

In recent years Professor Orisakwe's toxicology program has shown promising growth in the output of quality research papers, increased the number of participants in conferences,

SOT 2012 Award Recipients (Continued)

and disseminated information in public lectures and awareness campaigns. His current research focus includes: (i) sources, behavior, fate, and effects of metals in the natural and contaminated environments (electronic waste, telephone mast, acid rain, etc.); (ii) environmental justice and disproportionate exposure of communities to environmental pollutants; (iii) environmental/public health problems in the developing countries, especially in the oil rich Niger Delta; and (iv) risk assessment.

The GSSEP will offer Professor Orisakwe the opportunity to interact with world-renowned experts, including his host, Dr. Zelikoff, to develop collaborations, and to identify ways to strengthen his toxicology curriculum, which will be of immediate benefit to his department and program. He also looks forward to using the opportunity to create links that will attract international scholars as Visiting Professors to Nigeria and the surrounding region.

Latin American Region Recipient

Jesus Olivero-Verbel

Jesus Olivero-Verbel, PhD,
PhD Program in Environmental Toxicology (Doctorado en Toxicología Ambiental)
Faculty of Pharmaceutical Sciences, Campus of Zaragocilla, University of Cartagena, Cartagena, Colombia

US University Host:
Miroslav Styblo, PhD
Research Associate Professor
University of North Carolina Chapel Hill

Co-Host:
Michael P. Waalkes, PhD, Chief NTP Laboratory Branch, NIEHS, DNTP

Professor Olivero-Verbel is the recipient of numerous recognitions, including Distinguished Research Professor Ivo Seni Canata, Universidad of Cartagena, 2010; SOT/AstraZeneca/IUTOX Travel Fellowship, 2010; Ten Outstanding Young Citizens of the Year from the Junior Chamber, Colombia, 2003; and the Third World Academy of Sciences (TWAS) Award for Young Scientists from Colombia, 2003. He has authored or co-authored over 50 research papers in peer-reviewed journals, as well as numerous books and book chapters.

The Global Senior Scholar Exchange Program (GSSEP) will assist Dr. Olivero-Verbel in improving and developing his graduate program in environmental toxicology, the first in Colombia. It will allow the formation of a research network with his host, Dr. Miroslav Styblo and co-host, Dr. Michael Waalkes, as well as with other US scientists that will lead to improved understanding, and the formulation of solutions to environmentally derived toxicological problems in Colombia. Through the GSSEP Dr. Olivero-Verbel seeks to decrease the gap between economical and sustainable development in the country, leading to less environmental damage and more possibilities for the future of Colombia and indeed the region. Currently, gold and coal mining are high-priority issues for the national government, but these activities are creating environmental problems that are threatening ecosystems, biodiversity, and human health. Therefore, the PhD Program in Environmental Toxicology at the University of Cartagena (close to the mining region) hopes to develop platforms where economic growth and the protection of human health and ecosystems can take place together, as well as to develop new research strategies to generate data useful to take necessary actions to halt and prevent further environmental pollution and deleterious effects on humans.

Dr. Olivero-Verbel's doctoral students will benefit from the GSSEP program, as they will be able to learn any new tools and strategies related to their research interests gained during his US visit, and perhaps his visit will open opportunities for academic exchanges with US universities. Through the GSSEP, a bridge will be built transferring ideas and science between the United States and Colombia, creating ways of thinking that allow necessary international consensus to promote the protection of the environment, as Colombia struggles to attain sustainable development.

Leading Edge in Basic Science Award

Myung-Haing Cho

Myung-Haing Cho, DVM, PhD, Professor, College of Veterinary Medicine, Seoul National University, Korea, is awarded the 2012 SOT Leading Edge in Basic Science Award for his extensive research on lung toxicity and cancer, toxicity and efficacy of nanoparticles, gene delivery, and stem cells.

Dr. Cho has investigated the health impact of high dietary inorganic phosphate and found that it increases lung tumorigenesis via altering Akt signaling. With respect to the mechanical basis of lung cancer treatment, he found that the apoptosis induced by 4-(N-methylnitrosamino)-1-(3-pyridyl)-butanone occurred initially through Cap-independent protein translation and then changed to Capdependent protein via translation at a later stage. Also, he has reported that aerosol delivery of a complex of glucosylated polyethylenimine/programmed cell death 4 (PDCD4) through a nose-only inhalation facilitates the apoptosis of lungs via regulation of proteins relevant to cell-cycle control and suppression of AP-1 activity, providing a more efficient approach to tumor prevention and treatment.

SOT 2012 Award Recipients (Continued)

Dr. Cho has been very active in the field of nanomaterials toxicology and their systemic toxicity, and has vital experience in studying for the toxic effects of nanomaterials in lungs as well as in immune systems. He also cleared the mechanism of apoptosis induction by nanoparticles using various cell lines including HeLa cell, CT-26 carcinoma cells, JB6 cells, and lung cancer cells, and validated short-term and subchronic inhalation toxicity of silver nanoparticles with amechanistic explanation in a variety of animal models involving AP-1 luciferase reporter mice, K-ras null mice, A/J mice, and monkey. Among his more recent contributions, Dr. Cho has designed a noninvasive aerosol gene delivery system that makes it possible to reach large surface areas through inhalation treatment. Additionally, he has investigated more efficient ways to treat lung cancer and found that repeated aerosol delivery of carboxyl-terminal modulator protein suppresses lung tumors in K-rasLA1 mice.

Dr. Cho's accomplishments have paved the way for toxicologists to identify specific targets and pathways of nanomaterials, leading to new approaches to tumor therapy using nanomaterials.

In recognition of his accomplishments and impact on the field of toxicology, the Society of Toxicology recognizes Dr. Myung-Haing Cho as the 2012 SOT Leading Edge in Basic Science Award.

FS Leading Edge in Basic Science Award Lecture: Inorganic Phosphate: Hidden Signal?
Tuesday, March 13, 7:00 AM–7:50 AM, Room 304

Merit Award

Curtis D. Klaassen

Curtis D. Klaassen, PhD, DABT, ATS, Distinguished Professor, University of Kansas Medical Center (KUMC), is the recipient of the 2012 SOT Merit Award in recognition of his distinguished contributions to toxicology throughout his career.

Dr. Klaassen's reputation in toxicology research and education has drawn students from all over the world to be trained under his mentorship. Since joining the faculty of KUMC in 1968, he has mentored 121 scientists, including 31 students who received their PhDs and 64 postdoctoral fellows. Among these trainees, many have become pillars of the Toxicology and Pharmacology society, and Dr. Klaassen's training and continuous support to all his students have certainly contributed to their success and achievements.

Dr. Klaassen has served as editor of the *Casarett and Doull's Toxicology* textbook for several decades, and inaugural editor of *Toxicological Sciences* and associate editor for the *Journal of Pharmacology and Experimental Therapeutics*, two of the most important journals for the fields of toxicology and pharmacology. He has published more than 600 research articles, reviews, and book chapters, and has been ranked in the Top five Most Highly Cited Pharmacologists/Toxicologists in the world for the last decade.

In addition to his remarkably productive contributions to the scientific literature and education of the next generation of toxicologists, Dr. Klaassen has contributed professionally in many other ways. He has been elected to 27 different positions in professional organizations, including President of the Society of Toxicology (1990–1991) and President of IUTOX (1992–1995); he also has served on 75 national/international committees of prominence and as the Chair for the Department of Pharmacology, Toxicology, and Therapeutics at the KUMC (2002–2011). Dr. Klaassen also has participated on numerous panels, committees, and study sections and has organized several national and international meetings on heavy metal toxicology, including the Midwest Toxicology Course, one of the most respected and important annual training courses for toxicologists preparing for board certification.

In recognition of his scientific accomplishments and his tireless efforts in championing both the science of toxicology and the Society of Toxicology, Dr. Curtis D. Klaassen is presented with the 2012 SOT Merit Award.

FS Merit Award Lecture: Reprogramming the Liver
Monday, March 12, 12:30 PM–1:20 PM, Room 304

Perry J. Gehring Diversity Student Travel Award

This award is presented during the CDI Reunion.

Alba K. Gonzalez Rivera

Alba K. Gonzalez Rivera,
University of Puerto Rico Arecibo, Arecibo, Puerto Rico

Abstract Number: 1021
Poster Board Number: 227

Abstract Title: Effects of Acute Exposure to Methylmercury on the Viability of Primary Cerebellar Granule Cells of Lethargic Mice

SOT 2012 Award Recipients (Continued)

Public Communications Award

Martin A. Philbert

Martin A. Philbert, PhD, ATS, Dean and Professor of Toxicology, University of Michigan School of Public Health, is the recipient of the 2012 SOT Public Communications Award in recognition of his major contributions in broadening public awareness on toxicological issues and disseminating the message of toxicology and its impact in our society.

Dr. Philbert has worked much of his professional career to inform policymakers and key decision makers in government agencies about topical scientific issues and the science of toxicology in general. As an SOT media spokesperson, Dr. Philbert's eloquence and ability to communicate effectively have made him a highly sought-out speaker and ambassador, not only among scientists, but also among numerous circles in the public sector. His impact is best exemplified by appointments to the Institute of Medicine Roundtable on Environmental Health Sciences, Research and the National Academies National Research Council (NRC) Committee for Review of the Federal Strategy to Address Environmental, Health, and Safety Research Needs for Engineered Nanoscale Materials. Dr. Philbert has served on the National Advisory Environmental Health Sciences Council of NIEHS and continues to advise several federal agencies on a variety of issues surrounding emerging nanotechnologies. He is Chair of both the US Food and Drug Administration Science Advisory Board and the US Environmental Protection Agency Board of Scientific Counselors. He also volunteers regularly to speak at elementary and secondary schools in his home state of Michigan to bring his knowledge of toxicology to students. In these capacities, Dr. Philbert has made lasting contributions in our collective efforts to disseminate the impact of toxicology among government officials, educators, health professionals, and private citizens.

At the national level, Dr. Philbert is recognized for his expertise in neurotoxicology and experimental neuropathology. His work has resulted in three important patents with one patent pending. Further testimony to his prodigious accomplishments in communicating the science of toxicology, he is the author of numerous research publications in top peer-reviewed journals, and one book. For his unparalleled commitment to educating public, governmental, and scientific audiences, the Society is pleased to award Dr. Martin A. Philbert the 2012 SOT Public Communications Award.

SOT/AstraZeneca/IUTOX Travel Fellowships

Oladipo Ademuyiwa, PhD, *University of Agriculture, Abeokuta, Nigeria*

Murali Badanthadka, PhD, *Torrent Research Centre, Gandhinagar, India*

Xianju Huang, PhD, *South-Central University for Nationalities, Wuhan City, China*

Zhenlie Huang, MD, PhD, *Guangdong Prevention and Treatment Center for Occupational Diseases, Guangzhou, China*

Guojun Li, PhD, *Beijing Municipal Center for Disease Prevention and Control, Beijing, China*

Maria Samayoa, MTox, *San Carlos University, Guatemala, Guatemala*

Haixue Wang, PhD, *Center for Drug Evaluation, State Food and Drug Evaluation, Beijing, China*

Jingshu Zhang, PhD, *Tianjin Center for Disease Control and Prevention, Tianjin, China*

Xiaofeng Zhang, PhD, *Harbin Medical University, Harbin, P.R. China*

Li Zhou, PhD, *Shanghai Institute of Planned Parenthood Research, Shanghai, China*

SOT Endowment Fund/ IUTOX Travel Fellowships

Sunisa Chaiklieng, PhD, *Department of Environmental Health Science, Muang Khon Kaen, Thailand*

Jianlin Lou, PhD, *Zhejiang Academy of Medical Sciences, Hangzhou, P.R. China*

SOT 2012 Award Recipients (Continued)

Translational Impact Award

John G. Benitez

John G. Benitez, MD, MPH, Associate Professor of Clinical Medicine and Associate Professor of Emergency Medicine, Vanderbilt University, Nashville, Tennessee; Managing Director, Tennessee Poison Control Center, Nashville, Tennessee; and Associate Professor of Clinical Emergency Medicine, University of Rochester, Rochester, New York, is the 2012 SOT Translational Impact Award recipient in recognition of his outstanding contributions to human and public health related to toxicology.

Dr. Benitez's commitment to protecting human and public health from toxic substances was recently demonstrated in the 2008 Tennessee Valley Authority Kingston Fossil Plant fly ash spill. Dr. Benitez, of the Tennessee Poison Control Center, and his colleagues (Drs. Seger and Williams) and Dr. Donna Cragle (Oak Ridege Associated Universities) immediately responded to the needs of the public and local health officials by providing critical information about the nature of the exposure and its potential health effects and instituting a health surveillance program that included clinical laboratory testing for heavy metals for those in the affected community. His quick actions led to findings that allowed health officials to conclude that no significant health effects resulted from the public's exposure to the fly ash.

Dr. Benitez has served in various roles at the state, national, and international level as the director of a regional resource center (regional hospital disaster preparedness) and center for disaster medicine and emergency preparedness (URMC), the director of a regional training center (Advanced Disaster Life Support), the managing director of a state poison control center (NY and TN), medical director of a regional poison center (PA), and the chairperson of the poison plant group of the International Programme on Chemical Safety, WHO. As a recently joined member of the Society of Toxicology and the SOT Occupational and Public Health Specialty Section and the newly created Clinical and Translational Toxicology Specialty Section, he has rapidly become integrated and involved in the activities of the Society and the OPPTS and CTSS sections. He currently serves as the interim secretary of the CTSS. He was an invited speaker at the 2010 SOT Annual Meeting in Salt Lake City, where he gave a timely description of the medical actions ongoing on behalf of those in the area of exposure; and was a past member and invited speaker of the Allegheny-Erie Chapter of the Society of Toxicology.

Based on his exemplary leadership and considerable contributions, the Society recognizes Dr. John G. Benitez as the recipient of the 2012 SOT Translational Impact Award.

FS **Translational Impact Award Lecture: Medical Toxicology Evaluations of the 2008 TVA Fly Ash Spill**
Wednesday, March 14, 12:30 PM–1:20 PM, Room 304

Translational/Bridging Travel Award

Xuemei Huang

Xuemei Huang, MD, PhD, is named the recipient of the 2012 Translational/Bridging Travel Award.

Dr. Huang is Associate Professor, Departments of Neurology, Neurosurgery, Pharmacology, Radiology, Kinesiology, and Bioengineering, Penn State Hershey Medical Center and Penn State University; and Director, Hershey Brain Analysis Research Laboratory for Neurodegenerative Disorders, Penn State Hershey Medical Center, Hershey, Pennsylvania. She is a member of a number of professional groups related to toxicant exposures and, since 2007, serves as a consultant to the National Institute of Environmental Health Sciences (NIEHS/NIH).

Dr. Huang's research is based on structural and functional imaging, both magnetic resonance- and radioligand-based. She is supported by two NIH R01 grants that focus on Parkinson's disease and parkinsonism, including both causes and treatment. Her research into relevant causative or protective environmental factors has led to a focus on the effects of environmental exposure to toxicants that include welding fumes and pesticides. For her achievements as an expert in human studies of disorders with toxicological etiologies, the Society is pleased to present Dr. Xuemei Huang with the inaugural Translational Bridging Travel Award.

SOT 2012 Award Recipients (Continued)

Undergraduate Educator Award

Sue M. Ford

Sue M. Ford, PhD, DABT, Associate Professor, Toxicology, Department of Pharmaceutical Sciences, College of Pharmacy and Allied Health Professions, St. John's University, Jamaica, New York, is the recipient of the 2012 SOT Endowment Fund Undergraduate Educator Award.

After completing her postdoctoral training in 1987, Dr. Ford joined the faculty of the College of Pharmacy and Allied Health Professionals at St. John's University, where she set out to establish a new undergraduate curriculum, and ultimately a degree program, in toxicology. Her efforts and effectiveness have been recognized on numerous occasions by her institution; in 2005 Dr. Ford received the St. John's Award for Excellence in Undergraduate Teaching and in 2007 she was awarded a fellowship that allowed her to develop methods or incorporate new technologies in the classroom to enhance undergraduate instruction. She has continued this trend of teaching excellence through to the present. Her enthusiasm for her students is exemplified in her serving as faculty advisor to the St. John's University Undergraduate Toxicology Club T, and in her chairing the Educational Policy Committee for the undergraduate toxicology program.

Dr. Ford's accomplishments in undergraduate toxicology teaching reach beyond the boundaries of her university and include a highly active record of contributing to the undergraduate education initiative within the Society of Toxicology. She has greatly encouraged her students to participate at the national level as well, from traveling to and participating in the K–12 programs at the Annual Meetings to competing for summer internships through SOT. Therefore, SOT has drawn great benefit from Dr. Ford's years of commitment to undergraduate toxicology education as she has generously, and enthusiastically, contributed to undergraduate education workshops held by SOT and served on an instrumental SOT Focus Group on Undergraduate Education. Her continued leadership in this area is demonstrated by the abstract entitled "Introduction of Undergraduate Students to Toxicology Related Issues Through Journaling," which she presented at the 50th Annual Meeting of SOT in 2011. For her unwavering and steadfast commitment to undergraduate education, the Society of Toxicology is pleased to recognize Dr. Sue M. Ford with the 2012 SOT Endowment Fund Undergraduate Educator Award.

Notes

Sponsored 2012 Award Recipients

AstraZeneca Traveling Lectureship Award

Bhagavatula Moorthy

Bhagavatula Moorthy, PhD, Director, Neonatology Research Program, Department of Pediatrics, Baylor College of Medicine, Houston, Texas, is awarded the 2012 AstraZeneca Travelling Lectureship Award.

Dr. Moorthy teaches principles of toxicology and pharmacology to medical students as part of the Integrated Problem Solving (IPS) Course at Baylor College of Medicine. He has been very active in mentoring research fellows, clinical neonatology fellows, and junior faculty in toxicology. In 2007, he received the Outstanding Research Teacher Award from the Department of Pediatrics at Baylor, and the Fulbright and Jaworski award for excellence in teaching at Baylor College of Medicine. He has been an active member of the Society of Toxicology since 1995, serving as President of the Gulf Coast Chapter of the SOT (2010–2011). He successfully organized the 2010 fall meeting (October 14–15, 2010) at Baylor College of Medicine, has served on the MBSS program committee, and also has developed and chaired a continuing education course on transgenic mouse models in toxicology. His workshop proposal on mechanisms of carcinogenesis by polycyclic aromatic hydrocarbons (PAHs), submitted jointly with the NIEHS, has been accepted by the SOT for presentation at the 2012 SOT Annual Meeting. He has previously served on the editorial board of *Toxicology Letters*, and is currently on the editorial board of *Environmental Health Perspectives, Journal of Chromatography and Separation Techniques,* and *Journal of Carcinogenesis and Mutagenesis*. He also has served on the XNDA (NIH) Study Section (2005–2009), and has reviewed grants for the NIEHS superfund research program, NIEHS Children's center, and numerous other special emphasis panels.

Dr. Moorthy intends that the AstraZeneca Travelling Lectureship will expose him to diverse areas that are relevant and important to his own toxicology research programs in the area of carcinogenesis and BPD. He expects that his proposed visits will bring a new perspective into his research work and will also provide an infusion of new knowledge, ideas, and technologies that will further advance his scholarly productivity. SOT is pleased to announce Dr. Bhagavatula Moorthy as the recipient of the 2012 AstraZeneca Travelling Lectureship Award.

SOT | Society of Toxicology

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

Do you know a toxicologist who deserves to be recognized?

SOT recognizes distinguished toxicologists and students with many prestigious awards each year. In addition to receiving the specific award, recipients are honored at a special Awards Ceremony at the SOT Annual Meeting and their names are listed in SOT publications. Most award nominations and applications are submitted through a quick online process.

Applications for 2013 national SOT awards are due October 9, 2012.

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 for award descriptions, and additional information, and to make nominations.

www.toxicology.org

Sponsored 2012 Award Recipients (Continued)

Colgate-Palmolive Awards for Student Research Training in Alternative Methods

Agnes Forgacs, BSc, *Michigan State University, East Lansing, MI*

Project Title: High-Throughput Assay Development for Steroidogenesis

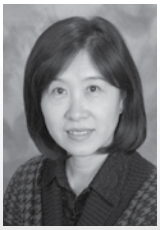
Host Institution: National Center for Computational Toxicology, Environmental Protection Agency, Durham, NC

René Viñas, BS, MS, *University of Texas Medical Branch, Galveston, TX*

Project Title: Development of an Automated High-Throughput Screening Method for the Analysis of the Estrogenic Potential of Polychlorinated and Conjugated Metabolites of Bisphenol-A

Host Institution: University of Texas Medical Branch, Galveston National Laboratory—Assay Development Service Division, Galveston, TX

Colgate-Palmolive Grants for Alternative Research



Mingzhu Fang, PhD, *University of Medicine and Dentistry of New Jersey, Piscataway, NJ*

Project Title: Development of an *In Vitro* Assay for Assessing the Effects of Chemical Exposures on Circadian Rhythm

Jennifer Freeman, PhD, *Purdue University, West Lafayette, IN*

Project Title: Development and Application of an Aged Zebrafish Model to Assess the Role of Environmental Chemicals in Neurodegenerative Disease Pathogenesis

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

Melanie Adler, PhD, *University of Wuerzburg, Wuerzburg, Germany*

Project Title: Development and Evaluation of a High-Throughput Platform for Kidney Toxicity and Therapeutic Efficacy Testing

Host Institution: Harvard Medical School, Boston, MA

Sponsored 2012 Award Recipients (Continued)

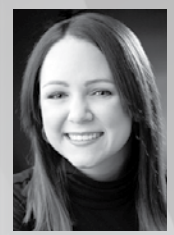
Pfizer Undergraduate Student Travel Awards

Ashley Press, *High Point University, High Point, NC*

Abstract Number: 1612
Poster Board Number: 563

Research conducted at Rutgers, The State University of New Jersey

Abstract Title: Different Sensitivity of Carboxylesterase 1 Genetic Variants to Irreversible Inhibition by Oxon Metabolites of Organophosphate Pesticides



Darien Shapiro, *University of Utah, Salt Lake City, UT*

Abstract Number: 195
Poster Board Number: 262

Abstract Title: Activation of the Irritant Receptor TRPA 1 by Wood Smoke Particulate Material and Associated Chemical Components

Qi Wang, *Rutgers, The State University of New Jersey, North Brunswick, NJ*

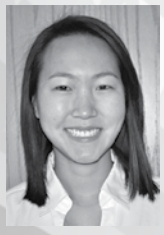
Abstract Number: 1888
Poster Board Number: 221

Abstract Title: Inhibition of Human Breast Cancer Resistant Protein (BCRP) Transporter by Endocrine-Disrupting Chemicals

Brittany Winner, *Sam Houston State University, Huntsville, TX*

Abstract Number: 677
Poster Board Number: 461

Abstract Title: Micellar Encapsulated Sulfur Donors to Combat Cyanide Intoxication



Frances A. Xin, *St. Olaf College, Northfield, MN*

Abstract Number: 1901
Poster Board Number: 234

Research conducted at Louisiana State University

Abstract Title: Direct Exposure to Deepwater Horizon Crude Oil Emulsions Elicits Morphology and Gene Expression Changes in Zebrafish Embryos

Syngenta Fellowship Award in Human Health Applications of New Technologies

Benjamin Moeller, PhD, *University of North Carolina, Chapel Hill, NC*

Abstract: Formaldehyde (FA) is a highly reactive, ubiquitous environmental chemical that is present in many industrial and consumer products. However, it is also endogenously produced and present in all living cells. FA has been classified as a human carcinogen by the National Toxicology Program. FA's mode of action (MOA) is not clear, though the combination of cytotoxicity-induced increases in cell proliferation and genotoxic mutations are likely key events. DNA-Protein-cross-links (DPCs) are genotoxic lesions formed by FA that have been used as biomarkers to determine the dosimetry of FA exposures. It is hypothesized that DPC formation as a result of FA exposure is a critical initial step in the MOA of FA-induced carcinogenesis. To investigate the possible role DPCs have in FA-induced carcinogenesis, several techniques will be utilized to quantitate the formation of DPCs in cell culture, and tissues from rats and primates exposed to stable isotope labeled formaldehyde (Rats: 0.7–15 ppm, Primates: 2, 6 ppm) from inhalation to differentiate between endogenous and exogenous DPCs. These data will provide critical quantitative information on the role of inhaled FA in carcinogenesis to understand what exposures are likely to cause cancer risks in humans.

The following scientist was selected for a fellowship at the 2011 SOT Annual Meeting.

2011 Novartis Graduate Student Fellowship Award

Alexandria Lau, BS, *University of Arizona, Tucson, AZ*

Abstract Number: 2141
Poster Board Number: 565

Abstract Title: Arsenic Induces Chronic NRF2 Activation

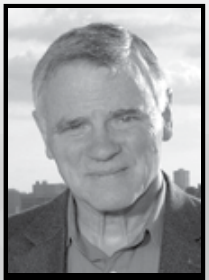
SOT 2012 Honorary Memberships

Honorary membership is awarded by the Society of Toxicology to people who are not members of the Society in recognition of outstanding and sustained contributions to advancing the science and field of toxicology. The 2012 SOT Honorary Members are Dr. Frank J. Gonzalez and Dr. Leroy Hood.

Frank J. Gonzalez

Frank J. Gonzalez, PhD, during the last 30 years, has made major advances that have significantly moved the field of carcinogenesis forward. His interests in drug/chemical carcinogen metabolism led to the identification and characterization of many cytochrome P450s and phase II xenobiotic metabolizing enzymes. This interest ultimately led to his seminal studies elucidating how regulatory transcription factors modulate expression of xenobiotic metabolizing enzymes that contribute to cancer etiology, through the generation and characterization of countless knockout, transgenic, and "humanized" mouse models. Many of the mouse models generated by Dr. Gonzalez during his tenure at the National Cancer Institute have been utilized by countless investigators and have provided invaluable tools to allow for continued progress in the field of carcinogenesis. His most recent research interests have focused on applying metabolomics to bridge the gap in knowledge between genomics and proteomics. Toward this goal, he has established a center for metabolomics where he uses this approach for his own research goals that have made significant advances in our understanding of how xenobiotic metabolism drives carcinogenesis using both rodent and human models.

Dr. Gonzalez has also served as a mentor for many postdoctoral fellows, providing exceptional training that has led to the development of many scientists in the field. He has served on numerous grant peer-review panels, has served as editor/associate editor and editorial boards of many journals, has reviewed thousands of manuscripts for his peers, and has provided hundreds of invited presentations at national and international meetings to share unpublished findings that are of interest to investigators in the field of carcinogenesis. He is among the top ten "most highly cited" authors in the fields of toxicology and pharmacology, and he has held this distinction for at least the last two decades.



Leroy Hood

Leroy Hood, MD, PhD, is a renowned scientist and pioneer in systems biology and medicine. While at Caltech, Dr. Hood, along with his colleagues, developed the DNA sequencer and synthesizer and the protein synthesizer and sequencer—four instruments that paved the way for the successful mapping of the human genome. His accomplishments are many, including the concept of the 4Ps in medicine—Predictive, Preventive, Personalized, and Participatory—which lead to his receipt of this year's prestigious Russ Prize, awarded by the Academy of Engineering (2011).

In addition to his impressive accomplishments, he is a co-founder of the Institute for Systems Biology (ISB) in Seattle, Washington. ISB was established to address the greatest challenge of 21st century science—understanding biological complexity. Since its founding in 2000, ISB has been a pioneering source of new knowledge, innovative technologies and computational tools, and creative ways of understanding, conducting, and communicating science. ISB is catalyzing fundamental paradigm changes in how the life sciences and medicine are practiced globally.

The Society welcomes Dr. Hood back to celebrate our 51st Annual Meeting as the Opening Plenary Lecturer; he delivered the Society's 1998 Medical Research Council (MRC) lecture entitled "Genes and Genomes: Deciphering the Periodic Table of Life."

SOT Endowment Fund 2011 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, International Fund, SOT Priorities Fund, and the 32 Named Funds.

In the SOT 2010–2011 fiscal year, the Education, International Activities, SOT Strategic Priorities, and the Student Travel Endowment Funds, and the Harry W. Hays Memorial Fund contributed funding to three SOT initiatives that addressed one or more of the Society's strategic objectives.

Undergraduate Educator Award

The Undergraduate Educator Award was conferred on Joan B. Tarloff. This award was established to recognize efforts to increase the pipeline of future toxicologists and was funded through the SOT Endowment Education Fund.

SOT/Endowment Fund/IUTOX Travel Fellowship

As part of our effort to strengthen global participation, the International Activities Fund and the SOT Strategic Priorities Fund provided financial assistance for Daam Settachan (Thailand), and Omoniyi Kayode Yemitan (Nigeria) to travel to the 50th Anniversary Annual Meeting in Washington, DC. 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.

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 2011 Annual Meeting, the SOT Priority and Education 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 2011 Award Recipients

Mary Amdur Student Award Fund

Christina Lamb Perez, *University of North Carolina at Chapel Hill, Chapel Hill, NC*

Young Soo Choi Student Scholarship Award Fund

Hee Yeon Kim, BS, *University of Washington, Seattle, WA*

Laxman S. Desai Association of Scientists of Indian Origin Student Award Fund

Senthilkumar Perumal Kuppusamy, PhD, MVSc, BVSc, *University of Iowa, Iowa City, IA*

Aishwarya Sooresh, BTech, MEngg, *Texas A&M University, College Station, TX*

John Doull Student Award Fund

Mathieu Valcke, MSc, *University of Montréal, Montréal, Canada*

Education Fund: Undergraduate Educator Award

Joan B. Tarloff, PhD, *Department of Pharmaceutical Sciences, Philadelphia College of Pharmacy, University of the Sciences in Philadelphia, Philadelphia, PA*

Founders Fund

Joseph F. Borzelleca, PhD, *Virginia Commonwealth University, Richmond, VA*

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ENDOWMENT
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SOT Endowment Fund 2011 Award Recipients (Continued)

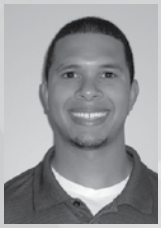
Perry J. Gehring Biological Modeling Student Award Fund

Anne E. Loccisano, BS, PhD, *The Hamner Institutes for Health Sciences, Research Triangle Park, NC*

Perry J. Gehring Diversity Student Travel Award Fund

Eva A. Amouzougan, *Boise State University, Boise, ID*

Perry J. Gehring Risk Assessment Student Award Fund



Corie A. Ellison, PhD, *State University of New York at Buffalo, Buffalo, NY*

Benjamin C. Moeller, PhD, *University of North Carolina at Chapel Hill, Chapel Hill, NC*

Health and Environmental Science Institute Immunotoxicology Young Investigator Student Award Fund

(not pictured)
Naoko Kumagai, PhD, *Kawasaki Medical School, Kurashiki-City, Japan*

SOT Endowment Fund/IUTOX Travel Fellowship

Daam Settachan, PhD, *Laboratory of Environmental Toxicology, Chulabhorn Research Institute, Bangkok, Thailand*

(not pictured)
Omoniyi Kayode Yemitan, *Lagos State University College of Medicine, Lagos, Nigeria*

Vera W. Hudson and Elizabeth K. Weisburger Scholarship Fund

Alexandria Lau, BS, *University of Arizona, Tucson, AZ*

Frank C. Lu Food Safety Student Award Fund

Nicole Mitchell, BS, *Texas A&M University, College Station, TX*

Jean Lu Student Scholarship Award Fund

Alexandria Lau, BS, *University of Arizona, Tucson, AZ*

Roger O. McClellan Student Award Fund

Madhusudan Goravanahally, BVSc, MVSc, PhD, *Kansas State University, Manhattan, KS*

Harihara Mehendale Association of Scientists of Indian Origin Student Award Fund

Mallikarjuna Basavarajappa, BVSc, MVSc, PhD, *University of Illinois at Urbana, Urbana, IL*

(not pictured)
Hariharan Saminathan, BVSc, MVSc, *Iowa State University, Ames, IA*

Metals Specialty Section Student Research Award Fund

(not pictured)
Students:
First Place—***Gunnar Kwakye, BS,*** *Vanderbilt University Medical Center, Nashville, TN*
Second Place—***Shawn Michael Wnek, PhD,*** *Center for Toxicology and Environmental Health, L.L.C., North Little Rock, AR*
Third Place—***Clarisse S. Muenyi, BS, MSc,*** *University of Louisville, Memphis, TN*

Postdoctorals:
First Place
Yang Sun, MD, PhD, *NIEHS-NTP, Research Triangle Park, NC*

(not pictured)
Second Place—***Yuanyuan Xu, PhD, MD,*** *NIEHS-NTP, Durham, NC*
Third Place—***Renee Gardner, PhD,*** *Karolinska Institutet, Stockholm, Sweden*

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ENDOWMENT
Investing in the Future ...

To become an Endowment Fund contributor and enjoy the fulfillment of knowing that you are helping to build for the future of toxicology, please visit the Endowment Fund Section of the SOT website. You can make a difference in the lives of toxicologists by your generous support. Add your name to the Honor Roll of Contributors.

SOT Endowment Fund 2011 Award Recipients (Continued)

Molecular Biology Student Award Fund

Students:
First Place
Katerine Schletz Saili, BA, *Oregon State University, Corvallis, OR*

(not pictured)
Second Place—***Laura MacPherson, BS, MSc,*** *University of Toronto, Toronto, ON, Canada*
Third Place—***Shengzhong Su, BS, MS,*** *Penn State University, University Park, PA*

Postdoctorals:
First Place
Alicia R. Timme-Laragy, BA, PhD, *Woods Hole Oceanographic Institution, Woods Hole, MA*

(not pictured)
Second Place—***Cassandra E. Deering-Rice, PhD,*** *University of Utah, Salt Lake City, UT*

Pacific Northwest Toxicology Development Fund

James S. Woods, PhD, DABT, *University of Washington, Seattle, WA*

Emil A. Pfitzer Drug Discovery Student Award Fund

(not pictured)
Students:
First Place—***Hariharan Saminathan, BVSc, MVSc,*** *Iowa State University, Ames, IA*
Second Place—***Rachel Tanos, BS, MSc, PhD,*** *Penn State University, State College, PA*
Third Place—***Jeremy Larson, BS,*** *University of Wisconsin Milwaukee, Milwaukee, WI*

Postdoctorals:
First Place
Jennifer Cohen, BS, PhD, *Takeda California, San Diego, CA*

(not pictured)
Second Place—***Li Zhan, PhD,*** *University of Louisville School of Medicine, Louisville, KY, and Sichuan University West China Medical School, Chengdu, Sichuan Province, China*
Third Place—***Andaleb Kholmukhamedov, MD,*** *Medical University of South Carolina, Charleston, SC*

Gabriel L. Plaa Education Award Fund

Julia Yue Cui, BS, PhD, *University of Kansas Medical Center, Kansas City, KS*

Renal Toxicology Fellowship Award Fund

Chad Brocker, BA, *University of Colorado Medical Campus, Aurora, CO*

(not pictured)
Dana Hoffman, PhD, *Harvard Institutes of Medicine, Boston, MA*

Robert J. Rubin Student Travel Award Fund

Senthilkumar Perumal Kuppusamy, PhD, MVSc, BVSc, *University of Iowa, Iowa City, IA*

Dharm V. Singh Association of Scientists of Indian Origin Student Award Fund

Saurabh Chatterjee, MSc, PhD, *NIEHS-NIH, Durham, NC*

Indira Jutooru, BVSc, PhD, *Texas A&M, College Station, TX*

Dharm V. Singh Carcinogenesis Award Fund

Jessica Graham, BS, *University of Medicine and Dentistry of New Jersey, Piscataway, NJ*

Carl C. Smith Student Mechanisms Award Fund

Chao Yan, PhD, *University of Colorado Denver School of Pharmacy, Denver, CO*

(not pictured)
Second Place—***Kai Wu, BS, PhD,*** *University of Kansas Medical Center, Kansas City, KS*
Third Place—***Rhiannon N. Hardwick, BS, BA,*** *University of Arizona, Tucson, AZ*

Please refer to the Daily Pocket Calendar, Event Listing, or Program Description for date, time, and location of the Committee on Diversity Initiative, Regional Chapter, Specialty Interest Group, and Specialty Section receptions, where the Endowment Fund Awards are conferred.

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ENDOWMENT
Investing in the Future ...

SOT Endowment Fund

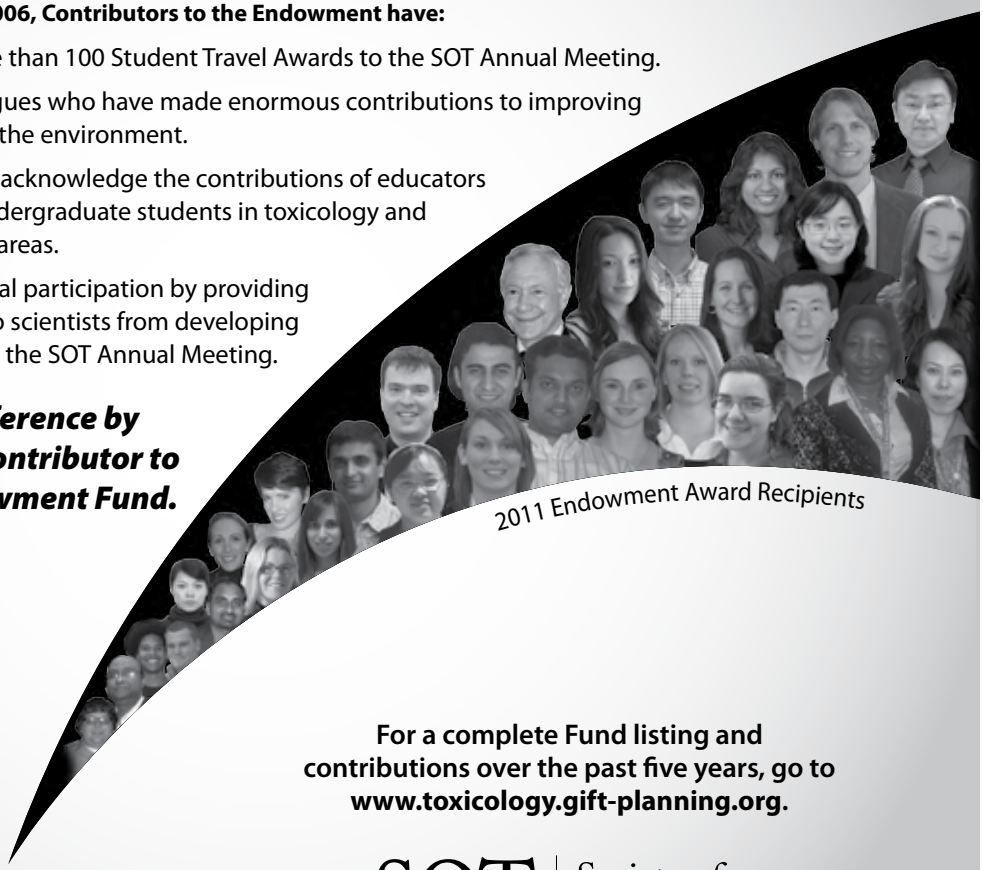
Building for the Future

Contributors to the SOT Endowment Fund are helping to build for the future of toxicology through long-term financial support, which also generates critical resources that enable the Society to fulfill its mission, now and in the years to come.

Since its inception in 2006, Contributors to the Endowment have:

- Underwritten more than 100 Student Travel Awards to the SOT Annual Meeting.
- Recognized colleagues who have made enormous contributions to improving human health and the environment.
- Created funds that acknowledge the contributions of educators in toxicology to undergraduate students in toxicology and toxicology-related areas.
- Strengthened global participation by providing financial support to scientists from developing countries to attend the SOT Annual Meeting.

Make a Difference by Becoming a Contributor to the SOT Endowment Fund.


2011 Endowment Award Recipients

For a complete Fund listing and contributions over the past five years, go to www.toxicology.gift-planning.org.

SOT | Society of Toxicology

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

Please help SOT continue to make a difference by becoming a contributor to the SOT Endowment Fund. For more information, go to www.legacy.vg/toxicology.

Endowment Fund Contribution Donor Form can be found on page 443.

Social Events

All activities will be held at the Moscone Convention Center in San Francisco unless otherwise noted.

Regional Chapter, Special Interest Group, and Specialty Section Receptions

Monday, March 12–Wednesday, March 14, 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 encourage to attend. More information can be found on pages 86–88.

SATURDAY

K–12 Outreach Event: What Do Snow White, Romeo and Juliet, and the Madhatter Have in Common?...Toxicology!

Saturday, March 10, 10:30 AM–4:30 PM
The Lawrence Hall of Science, University of California, Berkeley

Chairperson(s): *Maureen R. Gwinn, K–12 Subcommittee Co-Chair, US EPA, Washington, DC, Joanna M. Matheson, K–12 Subcommittee Co-Chair, US Consumer Product Safety Commission, Bethesda, MD, and Toufan Parman, Event Coordinator, SRI International, Menlo Park, CA.*

Sponsors:
Education Committee
K–12 Subcommittee
Northern California Regional Chapter

The Education Committee K–12 Subcommittee in conjunction with the Northern California Regional Chapter is hosting special activities at the Lawrence Hall of Science on the University of California Berkeley campus to engage visitors in activities related to toxicology and to investigate toxicology careers. Through interactive drama and experiments, families will explore how the dose makes the poison. Toxicologists will share why they think toxicology is a great career. Undergraduate students will assist with the activities.

The Lawrence Hall of Science is a premier science museum for preschoolers on up with fascinating exhibits, an ingenuity lab, live science demonstrations, and a planetarium.

For more information, please visit the Special Events section of the Annual Meeting website.

Committee on Diversity Initiatives Reunion

Saturday, March 10, 8:00 PM–9:00 PM
Grand Hyatt, Grand Ballroom East

Hosted by:
Committee on Diversity Initiatives

The Committee on Diversity Initiatives (CDI) will host the CDI Reunion from 8:00 pm–9:00 pm on Saturday, March 10. Whether as a student, peer mentor, host mentor, speaker, or organizer, anyone who has ever been involved in the SOT Undergraduate Program is invited to attend.

Visit with colleagues who have been involved in the program over the last 23 years, meet with program alums, and greet the undergraduate students who are attending the program this year. The Perry J. Gehring Diversity Student Travel Award will be presented. Enjoy dessert, coffee, and tea. Start off your 51st Annual Meeting by joining with the special people who have contributed to the diversity in SOT through this important activity.

SUNDAY

Awards Ceremony Music

Performed by Glenn Staller
Sunday, March 11, 4:45 PM–5:15 PM
Room 103
(All Attendees Welcome)

Classical guitarist Glenn Staller will perform for SOT Annual Meeting attendees prior to and after the SOT Award Ceremony. Glenn was born in Philadelphia, Pennsylvania, and began studying the guitar at the age of 13. After moving to California, a chance meeting with renowned guitarist Jose Rey de la Torre led to classical guitar studies with Maestro Torres. Glenn later studied with pianist Julian White, jazz guitarist Bill Tapia, flamenco guitarist Chuscales, and guitarist/composer Dusan Bogdanovic at the San Francisco Conservatory of Music. The depth and breadth of his repertoire and his unique ability to integrate musical styles, from classical and contemporary to flamenco, Brazilian, Argentinean, and jazz, are particular features of his work. His repertoire ranges from Scarlatti and Bach to Gershwin, Debussy, Jobim, and Brubeck. He has appeared in equally diverse concert settings such as the Dean Lesher Center, Le Petit Trianon, Valley Forge Convention Center, Kennedy Center, Cowell Theater, and numerous wineries, vineyards, and resorts within the Bay Area, as well as performing on television and radio.

Social Events (Continued)

Awards Ceremony

Sunday, March 11, 5:15 PM–6:30 PM
Room 103
(All Attendees Welcome)

SOT will recognize our prestigious award recipients at the SOT Awards Ceremony (pages 65–76). Please refer to the Awards and Fellowships section of the SOT website for complete details about the award recipients and criteria for the prestigious SOT and sponsored awards. The Society will also recognize two individuals who have significantly and positively influenced the fields of toxicology with Honorary Membership: Dr. Frank J. Gonzalez and Dr. Leroy Hood.

Welcome Reception

Sunday, March 11, 6:30 PM–7:30 PM
Exhibit Hall E
(All Attendees Welcome)

Continue the celebration by attending the Welcome Reception following the Awards Ceremony. The Welcome Reception is a great opportunity to renew old 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 11, 7:00 PM–8:00 PM
Room 120

If you have been a member of the Society of Toxicology for 25 years or more, please join your colleagues to celebrate and recognize the scientists who established the Society. Be sure to wear your 25-year, 35-year, 45-year, or 50-year pin. Members will also receive a complimentary copy of the deluxe 50th Anniversary publication, The Society of Toxicology, the *First Fifty Years*. The book is a collection of stories written by various members and leaders of the Society, and the publication contains sections of photographs that cover the last 50 years. These vignettes and photos are priceless and are yours free-of-charge. The deluxe books are also available at the SOT Pavilion and the Member Business Meeting.

MONDAY

"Hoops for the Endowment Fund" Basketball Free-Throw Competition

Monday, March 12, 9:00 AM–4:30 PM;
Tuesday, March 13, 8:30 AM–4:30 PM;
Wednesday, March 14, 8:30 AM–4:30 PM
(during ToxExpo hours)
Exhibit Hall C

Sponsors:
Toxicologists of African Origin Special Interest Group

This FUN fundraising competition is intended to raise funds for the SOT Endowment Fund. All the Society and Named Funds that make up the SOT Family of Endowment Funds can benefit from your support and participation. All 2012 Annual Meeting attendees are welcome to participate on behalf of your favorite Endowment Fund(s). Basketball hoops will be set up in the exhibit hall so that you may shoot free-throws on site. Stop by the SOT Pavilion (Booth #1700) for sponsorship forms and competition instructions and join in the FUN. Individuals and teams (up to 5 players) welcome!

The "Hoops for the Endowment Fund" fundraising event has two essential components:

1) Individual and team free throw sponsorship opportunities (on your own, before the Annual Meeting) for the purposes of raising money for SOT Endowment Funds. SOT Regional Chapters, Specialty Sections, and Special Interest Groups are especially invited to participate in this fundraising activity. This provides component groups the opportunity to support the Funds with which they have an association. In addition to the Named Funds, groups may wish to use this opportunity to work together to support Society Funds as well.

2) Individual and team free throw play-offs to be held at the Annual Meeting for the purposes of providing an on-site fun activity and raising money for SOT Endowment Funds in an open forum.

   Sponsorships of individual and team participants will be available.

Please note that participation is open to all SOT members and all registered attendees at the 2012 Annual Meeting (e.g., non-member attendees, exhibitors, etc.). Individuals will seek sponsorship for themselves and/or for their team. Teams may be formed with unlimited membership and active participation during the premeeting phase to maximize sponsorship potential.

These "virtual" teams will allow participants to be teammates regardless of where they are geographically located. For the on-site phase, each established team will designate any five

Social Events (Continued)

players to participate. Individuals may hold membership on only one team. SOT Regional Chapters, Specialty Sections, Special Interest Groups, and other groups (such as the Graduate Student Leadership Council and Postdoctoral Assembly) may field as many teams as they see fit for the premeeting phase and comply with the five players rule for the on-site activity.

Prizes—to be awarded at Annual Meeting Playoffs:

- Individual and Team Free-Throw Champions
- Individual and Team with the Most Attempts
- Individual and Team with the Highest Percentage of Free-Throws Made (min. 100 attempts)
- Individual and Team with the Most Donations ($ amount)

"Hoop it up" for the Endowment Fund. Be sure to participate in this FUN event!

Special thanks goes to Calvert Laboratories, Inc. and Charles River for sponsorship of two basketball courts in the ToxExpo hall in San Francisco!

Global Collaboration Coffee

Monday, March 12, 9:00 AM–10:00 AM
Room 112

Sponsor:
Global Strategies Task Force

The SOT Council and Global Strategies Task Force invite scientists representing toxicology societies displaying posters in the Global Gallery of Toxicology, Special Interest Group Presidents, and the recipients of the SOT/AstraZeneca/IUTOX, SOT Endowment Fund Fellowships (senior scientists from developing countries), and 2012 Global Senior Scholar Exchange Program Awardees for a Global Collaboration Coffee. This event offers an opportunity for scientific leaders to meet and make plans for future collaborations. Send RSVP (required) to Katie Moore at katie@toxicology.org.

In Vitro Toxicology Lecture and Luncheon for Students: Can *In Silico* and/or *In Vitro* Testing Be Used for Toxicity Assessment Instead of *In Vivo* Approaches?

Monday, March 12, 12:00 Noon–1:20 PM
Marriott Marquis, Golden Gate Ballroom B
(Ticket Required)

Chairperson(s): *Lorrene Buckley, Education Committee Chair, Eli Lilly & Company, Indianapolis, IN.*

Lecturer: *Timothy J. Shafer, US EPA, Research Triangle Park, NC.*

Sponsor:
Colgate-Palmolive Company

Host:
Education Committee

The goal of the *In Vitro* Toxicology Lecture series is to feature important research using *in vitro* and alternative techniques to study basic mechanisms and to illustrate how these test methods benefit animal welfare by refining, reducing, and replacing animal use whenever it is feasible. Undergraduates, graduate students, postdoctoral scholars, and recipients of Colgate-Palmolive awards are among the guests at the *In Vitro* Toxicology Lecture and Luncheon. Students and postdoctoral scholars register via the Annual Meeting registration, and the $10 deposit will be returned upon entry to the event. Dr. Shafer will present an introduction to the topic, and then participants will discuss related questions and report responses. More information can be found on page 89.

TUESDAY

Past Presidents Fun Run

Tuesday, March 13, 6:00 AM

Sponsor:
Past Presidents

Building on the positive response from last year, the Past Presidents Fun Run returns on the streets of San Francisco. With no registration or sign-up fee and a flexible starting point, this is truly going to be a "Fun Run." Meet your fellow meeting attendees in the lobby of your hotel on Tuesday, March 13 at 6:00 am local time, ask the front desk for the official SOT Past Presidents Fun Run map, and begin! (All hotels in the official SOT housing block will have a copy of this map.)

Not a runner? Not a problem! This event looks to bring together runners or walkers of all levels and paces. The course accommodates everyone with a goal of having fun.

Social Events (Continued)

There will not be run officials, so if you plan to time yourself and would like to share, please email your name, time, and hotel to Katie Moore at katie@toxicology.org and we will post the times to the SOT website. We also welcome photos and a small writeup to be published in the Spring *Communiqué.*

Postdoctoral Assembly Luncheon

Tuesday, March 13, 12:00 Noon–1:15 PM
Room 256
(Ticket Required)

Chairperson(s): *Michele La Merrill, Mount Sinai School of Medicine, New York, NY.*

Sponsor:
Postdoctoral Assembly

Amidst scrambling to attend all of the events at the meeting, this will be time for postdocs to kick back and relax! All postdoctoral scholars are invited to a casual luncheon organized by the Postdoctoral Assembly (PDA). The recipients of the Best Postdoctoral Publication Awards and the postdocs who received awards this year from Regional Chapters, Special Interest Groups, and Specialty Sections will be announced. The PDA Board members will present an overview of accomplishments and future directions for the PDA, and will introduce the new board members for 2012–2013. There will be a drawing for prizes. Postdocs can reserve a ticket for $5 when they register for the Annual Meeting.

Undergraduate Educator Network Meeting

Tuesday, March 13, 3:00 PM–4:15 PM
Room 300

Chairperson(s): *Sue M. Ford, St. John's University, Jamaica, NY.*

Sponsors:
Education Committee
Undergraduate Education Subcommittee

The Education Committee and the Undergraduate Education Subcommittee are hosting the Undergraduate Educator Network Meeting for all faculty involved in the teaching of toxicology to undergraduates, or for those interested in including toxicology at the undergraduate level. Hear an update on initiatives for undergraduate faculty, provide your input, and network.

SOT Annual Business Meeting

Tuesday, March 13, 4:30 PM–6:00 PM
Room 102
(All SOT Members Invited)

Members are invited and encouraged to attend the 51st SOT Annual Business Meeting. The agenda includes discussion of the NEW 2012–2015 SOT Strategic Plan, a financial summary, and a review of the 2011–2012 activities.

Tox ShowDown

Tuesday, March 13, 7:30 PM–9:00 PM
Marriott Marquis, Yerba Buena Salon 13

Chairperson(s): *Sue M. Ford, St. John's University, Jamaica, NY, and Phil Wexler, NIH-NLM, Bethesda, MD.*

Sponsor:
Graduate Student Leadership Committee

Join the Graduate Student Leadership Committee (GSLC) and your peers Tuesday night for the *Tox ShowDown*, an engaging quiz game patterned off the popular long-running show *It's Academic*. Teams of three contestants will compete at answering questions concerning toxicology not only in its scientific context, but as it relates to society, the arts, and culture. Sponsored 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 will provide attendees with a break, albeit still toxicologically oriented, from the more technical business of the meeting.

RC, SIG, and SS Receptions

(as of January 3)

Regional Chapter Meetings/Luncheons or Receptions

Monday, March 12 through Wednesday, March 14, Various Times

Many of the SOT Regional Chapters meet during the SOT Annual Meeting. All current and prospective Regional Chapter members are encourage to attend.

Event	Date	Time	Location	Room
National Capital Area Regional Chapter Reception	Monday, March 12	5:30 PM to 7:30 PM	Marriott Marquis	Juniper Room
Northeast Regional Chapter Student Luncheon	Tuesday, March 13	12:30 PM to 2:00 PM	Marriott Marquis	Foothills E
Northern California Regional Chapter Reception	Monday, March 12	5:00 PM to 8:00 PM	Marriott Marquis	Nob Hill A
Pacific Northwest Regional Chapter Reception	Monday, March 12	7:00 PM to 10:00 PM	Jillian's @ Metreon	
Regional Chapter Collaboration and Communications Committee Meeting	Wednesday, March 14	12:00 Noon to 1:30 PM	Convention Center	Room 212
Regional Chapter Presidents and Officers Meeting	Tuesday, March 13	7:00 AM to 8:30 AM	Convention Center	Room 300
South Central and Lone Star Regional Chapters Joint Social	Monday, March 12	7:00 PM to 9:00 PM	ThirstyBear Brewing Company	
Southern California and Mountain West Regional Chapters Joint Reception	Monday, March 12	5:00 PM to 7:30 PM	ThirstyBear Brewing Company	

Special Interest Group Meetings or Receptions

Monday, March 12 through Wednesday, March 14, Various Times

Each of the six Special Interest Groups will hold a meeting/reception during the 2012 SOT Annual Meeting. All current and prospective SOT Special Interest Group members are encouraged to attend.

Event	Date	Time	Location	Room
American Association of Chinese in Toxicology Special Interest Group Distinguished Chinese Toxicologist Lectureship Award and Seminar: Strategies for the Selection of Biomarks for Cardiotoxicity in Drug Development, *Lecturer: James Kang*	Monday, March 12	5:00 PM to 6:00 PM	Marriott Marquis	Pacific Suite I
American Association of Chinese in Toxicology Special Interest Group Reception	Monday, March 12	6:30 PM to 9:00 PM	Canton Dim Sum and Seafood Restaurant	
American Association of Chinese in Toxicology Special Interest Group Student/Postdoc Career Workshop: How to Prepare for a Successful Career	Tuesday, March 13	6:00 PM to 7:00 PM	Marriott Marquis	Pacific Suite J
Association of Scientists of Indian Origin Special Interest Group Reception	Monday, March 12	7:00 PM to 9:00 PM	Marriott Marquis	Golden Gate Ballroom C3
Association of Scientists of Indian Origin Special Interest Group Student/Postdoc Mentoring Program	Tuesday, March 13	12:00 Noon to 1:30 PM	Marriott Marquis	Foothills G
Hispanic Organization of Toxicologists Special Interest Group Reception	Tuesday, March 13	6:00 PM to 9:00 PM	Jillian's @ Metreon	
Korean Toxicologists Association in America Special Interest Group Meeting/Reception	Monday, March 12	4:30 PM to 6:30 PM	Marriott Marquis	Golden Gate Ballroom C2
Special Interest Group Collaboration Group Meeting	Wednesday, March 14	7:30 AM to 8:30 AM	Convention Center	Room 300
Special Interest Group Presidents and Officers Meeting	Monday, March 12	12:00 Noon to 1:00 PM	Convention Center	Room 300
Toxicologists of African Origin Special Interest Group Meeting/Reception	Monday, March 12	5:00 PM to 6:30 PM	Marriott Marquis	Nob Hill D

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RC, SIG, and SS Receptions (Continued)

(as of January 3)

Special Interest Group Meetings or Receptions (Continued)

Event	Date	Time	Location	Room
Women in Toxicology Special Interest Group Executive Committee Meeting	Tuesday, March 13	3:00 PM to 4:00 PM	Convention Center	Room 212
Women in Toxicology Special Interest Group Meeting/Reception	Wednesday, March 14	4:30 PM to 6:00 PM	Marriott Marquis	Yerba Buena Salon 7
Women in Toxicology Special Interest Group Mentoring Breakfast	Monday, March 12	6:15 AM to 8:00 AM	Marriott Marquis	Club Room

Specialty Section Meetings/Luncheons or Receptions

Monday, March 12 through Wednesday, March 14, Various Times

Each of the 27 SOT Specialty Sections will hold either a luncheon or early evening meeting/reception during the SOT 2012 Annual Meeting. All current and prospective SOT Specialty Section members are encouraged to attend.

Event	Date	Time	Location	Room
Biological Modeling Specialty Section Meeting/Reception	Monday, March 12	6:00 PM to 7:30 PM	Marriott Marquis	Yerba Buena Salon 2
Biotechnology Specialty Section Meeting/Reception	Wednesday, March 14	6:00 PM to 7:30 PM	Marriott Marquis	Yerba Buena Salon 2
Carcinogenesis Specialty Section Meeting/Reception	Tuesday, March 13	6:00 PM to 7:30 PM	Marriott Marquis	Yerba Buena Salon 6
Carcinogenesis Specialty Section Officers Meeting	Monday, March 12	6:30 AM to 8:00 AM	Convention Center	Room 256
Cardiovascular Toxicology Specialty Section Meeting/Reception	Tuesday, March 13	6:00 PM to 7:30 PM	Marriott Marquis	Yerba Buena Salon 3
Clinical and Translational Toxicology Specialty Section Meeting/ Reception	Wednesday, March 14	6:00 PM to 7:30 PM	Marriott Marquis	Walnut Room
Clinical and Translational Toxicology Specialty Section Officers Meeting	Monday, March 12	6:30 AM to 8:00 AM	Convention Center	Room 256
Comparative and Veterinary Specialty Section Meeting/Luncheon	Monday, March 12	12:00 Noon to 1:30 PM	Convention Center	Room 250
Dermal Toxicology Specialty Section Meeting/Reception	Tuesday, March 13	6:00 PM to 7:30 PM	Marriott Marquis	Juniper Room
Dermal Toxicology Specialty Section Officers Meeting	Monday, March 12	6:30 AM to 8:00 AM	Convention Center	Room 256
Drug Discovery Toxicology Specialty Section Meeting/Reception	Monday, March 12	6:00 PM to 7:30 PM	Marriott Marquis	Yerba Buena Salon 6
Ethical, Legal, and Social Issues Specialty Section Meeting/Reception	Monday, March 12	6:00 PM to 7:30 PM	Marriott Marquis	Yerba Buena Salon 12
Food Safety Specialty Section Meeting/Reception	Tuesday, March 13	6:00 PM to 7:30 PM	Marriott Marquis	Pacific Suite H
Food Safety Specialty Section Officers Meeting	Monday, March 12	6:30 AM to 8:00 AM	Convention Center	Room 256
Immunotoxicology Specialty Section Meeting/Reception	Tuesday, March 13	6:00 PM to 7:30 PM	Marriott Marquis	Nob Hill A
In Vitro and Alternative Methods Specialty Section Meeting/ Luncheon	Wednesday, March 14	12:00 Noon to 1:30 PM	Convention Center	Room 300
In Vitro and Alternative Methods Specialty Section Officers Meeting	Monday, March 12	6:30 AM to 8:00 AM	Convention Center	Room 256
Inhalation and Respiratory Specialty Section Meeting/Reception	Monday, March 12	6:00 PM to 7:30 PM	Marriott Marquis	Yerba Buena Salon 4
Inhalation and Respiratory Specialty Section Officers Meeting	Monday, March 12	6:30 AM to 8:00 AM	Convention Center	Room 256

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RC, SIG, and SS Receptions (Continued)

(as of January 3)

Specialty Section Meetings/Luncheons or Receptions (Continued)

Event	Date	Time	Location	Room
Inhalation and Respiratory Specialty Section Technical Committee Meeting	Tuesday, March 13	7:00 AM to 8:30 AM	Convention Center	Room 230
Mechanisms Specialty Section Meeting/Reception	Monday, March 12	6:00 PM to 7:30 PM	Marriott Marquis	Golden Gate Ballroom C1
Mechanisms Specialty Section Officers Meeting	Monday, March 12	6:30 AM to 8:00 AM	Convention Center	Room 256
Medical Device Specialty Section Meeting/Reception	Tuesday, March 13	6:00 PM to 7:30 PM	Marriott Marquis	Willow Room
Medical Device Specialty Section Officers Meeting	Monday, March 12	6:30 AM to 8:00 AM	Convention Center	Room 256
Metals Specialty Section Meeting/Reception	Tuesday, March 13	6:00 PM to 7:30 PM	Marriott Marquis	Golden Gate Ballroom C2
Mixtures Specialty Section Meeting/Reception	Monday, March 12	6:00 PM to 7:30 PM	Marriott Marquis	Yerba Buena Salon 10
Mixtures Specialty Section Officers Meeting	Monday, March 12	6:30 AM to 8:00 AM	Convention Center	Room 256
Molecular Biology Specialty Section Meeting/Reception	Tuesday, March 13	6:00 PM to 7:30 PM	Marriott Marquis	Yerba Buena Salon 10
Nanotoxicology Specialty Section Meeting/Reception	Tuesday, March 13	6:00 PM to 7:30 PM	Marriott Marquis	Golden Gate Ballroom C1
Neurotoxicology Specialty Section Meeting/Reception	Tuesday, March 13	6:00 PM to 7:30 PM	Marriott Marquis	Golden Gate Ballroom B
Neurotoxicology Specialty Section Officers Meeting	Monday, March 12	6:30 AM to 8:00 AM	Convention Center	Room 256
Occupational and Public Health Specialty Section Meeting/Reception	Tuesday, March 13	6:00 PM to 7:30 PM	Marriott Marquis	Golden Gate Ballroom C3
Ocular Toxicology Specialty Section Meeting/Reception	Tuesday, March 13	6:00 PM to 7:30 PM	Marriott Marquis	Pacific Suite I
Regulatory and Safety Evaluation Specialty Section Meeting/ Reception	Monday, March 12	6:00 PM to 7:30 PM	Marriott Marquis	Golden Gate Ballroom B
Regulatory and Safety Evaluation Specialty Section Officers Meeting	Monday, March 12	6:30 AM to 8:00 AM	Convention Center	Room 228
Reproductive and Developmental Toxicology Specialty Section Meeting/Reception	Wednesday, March 14	6:00 PM to 7:30 PM	Marriott Marquis	Nob Hill A
Reproductive and Developmental Toxicology Specialty Section Officers Meeting	Monday, March 12	7:00 AM to 8:30 AM	Convention Center	Room 264
Risk Assessment Specialty Section Meeting/Reception	Tuesday, March 13	6:00 PM to 7:30 PM	Marriott Marquis	Golden Gate Ballroom A
Risk Assessment Specialty Section Officers Meeting	Monday, March 12	6:30 AM to 8:00 AM	Convention Center	Room 256
Specialty Section Collaboration and Communication Group Meeting	Monday, March 12	3:00 PM to 4:00 PM	Convention Center	Room 202
Specialty Section Presidents and Officers Meeting	Monday, March 12	4:30 PM to 6:00 PM	Convention Center	Room 300
Stem Cells Specialty Section Meeting/Reception	Wednesday, March 14	6:00 PM to 7:30 PM	Marriott Marquis	Yerba Buena Salon 4
Toxicologic and Exploratory Pathology Specialty Section Meeting/ Luncheon	Wednesday, March 14	12:00 Noon to 1:30 PM	Convention Center	Room 250
Toxicologic and Exploratory Pathology Specialty Section Officers Meeting	Monday, March 12	6:30 AM to 7:45 AM	Convention Center	Room 214

Student and Postdoctoral Scholar Events

Chat with an Expert

Sunday, March 11–Thursday, March 15, Time Varies by Group
(Meet at the Chat with an Expert Bulletin Board in Registration Area)

Sponsor:
Graduate Student Leadership Committee

The purpose of Chat with an Expert is to provide students and postdoctoral scholars 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 (such as a coffee house or inexpensive restaurant), and the group meets at the Chat with an Expert Bulletin Board before proceeding to the meeting location. This program also includes opportunities for postdocs to host informal meetings with graduate students, and graduate students to hold informal meetings with undergraduate students. Sign up via the Graduate Student section of the SOT website. Details for each group meeting will be sent to participants in advance of the meeting.

Student/Postdoctoral Scholar Mixer

Sunday, March 11, 7:30 PM–9:00 PM
Marriott Marquis, Yerba Buena Salon 9
(Ticket Required)

Sponsor:
Graduate Student Leadership Committee

The Graduate Student Leadership Committee hosts this opportunity for students and postdoctoral scholars to gather, to meet new colleagues, and to reestablish relationships in an informal atmosphere at the beginning of the meeting. Tickets are obtained at no cost by registering for this event on the Annual Meeting Registration Form and are required. Complimentary refreshments and a cash bar will be available.

Poster Tours for Trainees

Monday, March 12–Thursday, March 15
Exhibit Halls A–C *(Meet at SOT Pavilion at Designated Time)*

Sponsor:
Postdoctoral Assembly

New at the 2012 Annual Meeting! Students and postdoctoral scientists have the opportunity to participate in a one-hour guided poster tour with an expert toxicologist. Poster Tours for Trainees will allow trainees to take part in critical evaluation of cutting-edge toxicology methods and research findings, network with an expert, and perhaps even build a long-term relationship with a senior toxicologist. Options to sign up for specific times will be provided on the Annual Meeting website.

Trainee Discussion with Plenary Speaker: Leroy Hood

Monday, March 12, 9:30 AM–10:30 AM
Room 111
(Ticket Required; SOT Student and Postdoctoral members only, limited seating)

Chairperson(s): *Michele La Merrill, Mount Sinai School of Medicine, New York, NY.*

Lecturer: *Leroy Hood, Institute for Systems Biology, Seattle, WA.*

Dr. Hood will meet informally for discussion with graduate students and postdoctoral scholars after his Plenary Opening Lecture. Room size is limited. Participants must register via the Annual Meeting registration.

In Vitro Toxicology Lecture and Luncheon for Students: Can *In Silico* and/or *In Vitro* Testing Be Used for Toxicity Assessment Instead of *In Vivo* Approaches?

Monday, March 12, 12:00 Noon–1:20 PM
Marriott Marquis, Golden Gate Ballroom B
(Ticket Required)

Chairperson(s): *Lorrene Buckley, Education Committee Chair, Eli Lilly & Company, Indianapolis, IN.*

Lecturer: *Timothy J. Shafer, US EPA, Research Triangle Park, NC.*

Sponsor:
Colgate-Palmolive Company

Host:
Education Committee

The goal of the *In Vitro* Toxicology Lecture series is to feature important research using *in vitro* and alternative techniques to study basic mechanisms and to illustrate how these test methods benefit animal welfare by refining, reducing, and replacing animal use whenever it is feasible. Undergraduates, graduate students, postdoctoral scholars, and recipients of Colgate-Palmolive awards are among the guests at the *In Vitro* Toxicology Lecture and Luncheon. Students and postdoctoral scholars register via the Annual Meeting registration, and the $10 deposit will be returned upon entry to the event. Dr. Shafer will present an introduction to the topic, and then participants will discuss related questions and report responses.

Since publication of the National Academy of Sciences (NAS) paper on *Toxicity Testing in the 21st Century*, there has been an increased emphasis on the development of *in silico* and *in vitro* approaches to toxicity testing. The NAS vision is to replace the current animal-based tests, which are low through-put and often do not predict human responses well, with higher

Student and Postdoctoral Scholar Events (Continued)

throughput toxicity pathway–based approaches that will allow testing of greater numbers of chemicals and be more predictive of toxicity to humans.

In some cases, there has been considerable progress with these approaches such that *in silico* or *in vitro* data can and are being used to make decisions regarding drug or chemical safety. Most cosmetics today tout the fact that they "were not tested in animals" and the European REACH legislation will no longer allow a compound that has been tested in animals to be used in cosmetics. *In silico, in vitro,* and *ex vivo* approaches are now widely accepted and utilized to predict ocular toxicity such that the Draize Eye Test is now used only rarely.

Other attempts to develop *in vitro* approaches have been less successful. For example, the Ames Test successfully predicts only about 70% of rodent carcinogens and by itself has not replaced the two-year cancer bioassay. Replacing *in vivo* tests with *in silico* or *in vitro* data is not a simple task, and doing so requires acceptance from regulators, the regulated community, and ultimately the public. Thus, a variety of factors may contribute to whether and when *in silico/in vitro* testing can replace *in vivo* testing. These may include considerations about the nature of the regulatory decision to be made, the ability of the test to predict *in vivo* and human responses, and public perceptions, among other factors. This talk will briefly summarize the current rationale and approach to *in vitro* testing and provide some examples where *in vitro* tests have, and have not, successfully replaced *in vivo* approaches. This information will be used to stimulate a discussion on what is needed for *in vitro* data to be used in regulatory decision making, and whether *in silico* and *in vitro* approaches ever could (or should) entirely replace *in vivo* approaches.

Students and discussion leaders will be asked to consider the following questions:

- Is it a realistic goal to replace all animal testing?
- What criteria must be fulfilled for an *in vitro* approach to replace an *in vivo* approach?
- Does the context of the decision to be made, or the level of information required, matter?
- What are the challenges to human risk?
- Can an *in vitro* approach be useful if the toxicity pathway is not completely understood?
- If we replace, what are the scientific questions (uncertainties) about which we need to be concerned?
- Would the public accept and be comfortable with decisions made using *in vitro* data? What if the decision were made entirely on the basis of *in vitro* data?

Postdoctoral Assembly Luncheon

Tuesday, March 13, 12:00 Noon–1:15 PM
Room 256
(Ticket Required)

Chairperson(s): *Michele La Merrill, Mount Sinai School of Medicine, New York, NY.*

Sponsor:
Postdoctoral Assembly

Amidst scrambling to attend all of the events at the meeting, this will be time for postdocs to kick back and relax! All postdoctoral scholars are invited to a casual luncheon organized by the Postdoctoral Assembly (PDA). The recipients of the Best Postdoctoral Publication Awards and the postdocs who received awards this year from Specialty Sections and Regional Chapters will be announced. The PDA Board members will present an overview of accomplishments and future directions for the PDA and will introduce the new board members for 2012–2013. There will be a drawing for door prizes.

Postdocs can purchase a ticket for $5 when they register for the Annual Meeting. The ticket charge is not refundable, reserves your place, and defrays some of the expenses for the luncheon. Lunch is served at the beginning of the event and service concludes before the main program begins. Meal service may not be available to guests who arrive after 12:30 pm.

Undergraduate Student Meeting

Wednesday, March 14, 4:00 PM–5:00 PM
Room 212

Chairperson(s): *Sue M. Ford, St. John's University, Jamaica, NY.*

Sponsors:
Education Committee
Undergraduate Education Subcommittee
Toxicology Student Association at University of California Berkeley

Undergraduate students attending the meeting 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.

Education Outreach Activities and Events

K–12 Outreach Event: What Do Snow White, Romeo and Juliet, and the Madhatter Have in Common?...Toxicology!

Saturday, March 10, 10:30 AM–4:30 PM
The Lawrence Hall of Science, University of California, Berkeley

Chairperson(s): *Maureen R. Gwinn, K–12 Subcommittee Co-Chair, US EPA, Washington, DC, Joanna M. Matheson, K–12 Subcommittee Co-Chair, US Consumer Product Safety Commission, Bethesda, MD, and Toufan Parman, Event Coordinator, SRI International, Menlo Park, CA.*

Sponsors:
Education Committee
K–12 Subcommittee
Northern California Regional Chapter

The Education Committee K–12 Subcommittee in conjunction with the Northern California Regional Chapter is hosting special activities at the Lawrence Hall of Science on the University of California Berkeley campus to engage visitors in activities related to toxicology and to investigate toxicology careers. Through interactive drama and experiments, families will explore how the dose makes the poison. Toxicologists will share why they think toxicology is a great career. Undergraduate students will assist with the activities.

The Lawrence Hall of Science is a premier science museum for preschoolers on up with fascinating exhibits, an ingenuity lab, live science demonstrations, and a planetarium.

For more information, please visit the Special Events section of the Annual Meeting website.

Undergraduate Education Program

Saturday, March 10–Monday, March 12

Chairperson(s): *Jennifer L. Rayner, SRI, Inc, Arlington, VA.*

Sponsor:
Committee for Diversity Initiatives (CDI)

Saturday, March 10

Grand Hyatt

This evening event is for undergraduate students and advisors receiving 2012 SOT travel funding and SOT program volunteers.

4:15 PM–5:45 PM	**Orientation for SOT Hosts, Peer Mentors, and Advisors—*(Cypress B)*** ***Organizers:*** *Sudheer Reddy Beedanagari, Bristol-Myers Squibb Company, East Brunswick, NJ; Natalie M. Johnson, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD; and Ofelia A. Olivero, National Cancer Institute, NIH, Bethesda, MD.*
5:15 PM–5:45 PM	**Registration for Undergraduate Students**
5:45 PM–6:15 PM	**Opening Event—*(Grand Ballroom E)*** ***Convener:*** *Jennifer L. Rayner, CDI Chair, SRI, Inc, Arlington, VA.*
6:15 PM–7:00 PM	**Dinner** *(By Invitation Only)*
7:00 PM–7:45 PM	**Introduction to Toxicology—** *Antonio T. Baines, North Carolina Central University, Durham, NC.*
8:00 PM–9:00 PM	**CDI Reunion— *(Grand Ballroom E)*** (Dessert and Networking)—Open to all currently and previously involved with CDI programs Recognition of the 2012 Perry J. Gehring Diversity Student Travel Award Recipient

Sunday, March 11

Marriott Marquis

Open to undergraduates in the travel award program and those who register through the Annual Meeting registration.

Chairperson(s): *Jennifer L. Rayner, SRI, Inc, Arlington, VA, and Nathan J. Cherrington, University of Arizona, Tucson, AZ.*

Introductions and Special Toxicology Lectures
(Golden Gate Ballroom A)

8:00 AM–8:15 AM	**Welcome** *Jon C. Cook, SOT President, Pfizer, Groton, CT.*
8:15 AM–8:55 AM	**Toxicology of the Blood-Cerebrospinal Fluid Barrier—A Comparative Approach** *Alice R. Villalobos, Texas A&M University, College Park, TX.*
9:00 AM–9:45 AM	**Exposure to Cigarette Smoke *In Utero*: Fetal Injury and Life Long Consequences** *Judith A. Zelikoff, New York University School of Medicine, Tuxedo Park, NY.*
10:00 AM–10:40 AM	**Optical Nanotechnologies for Imaging of Cellular Processes and Neurosurgery** *Martin A. Philbert, University of Michigan, Ann Arbor, MI.*
10:45 AM–11:30 AM	**Interactive Presentation: Identifying the Poison: Case Study in Toxicology— *(Golden Gate Ballroom B)*** *Lauren M. Aleksunes, Rutgers University, Piscataway, NJ.*
11:45 AM–12:45 PM	**Lunch and Networking** *(Registration Required)*

Education Outreach Activities and Events (Continued)

Breakout Sessions for Undergraduate Students—*(Pacific Suites, B, C, E)*

12:45 PM–1:45 PM **What Is Graduate School and What Can I Expect?**
How to Get into Graduate School: An Academic Advisor's Perspective—
Academic Advisor Facilitators: *Lauren M. Aleksunes, Rutgers University, Piscataway, NJ; James P. Luyendyk, University of Kansas Medical Center, Kansas City, KS; Angela Slitt, University of Rhode Island, Kinston, RI.*
Graduate Student Facilitators: *Azita K. Cuevas, New York University School of Medicine, Tuxedo, NY; Brandon D. Gaytan, University of California, Berkeley, Berkeley, CA; Vanessa De La Rosa, University of California, Berkeley, Berkeley, CA.*

Breakout Session for Undergraduate Advisors—*(Pacific Suite F)*

12:45 PM–1:45 PM **Tips for Advising Prospective Graduate Students or How to Get Your Students Accepted to Graduate School!!**
Facilitator: *William D. Atchison, Michigan State University, Lansing, MI.*

All Participants—*(Golden Gate Ballroom B)*

2:00 PM–2:50 PM **Career Opportunities in Toxicology—** Panel Discussion
Moderator: *Ebany J. Martinez-Finley, Vanderbilt University Medical Center, Nashville, TN.*
Academia: *Darryl B. Hood, Meharry Medical College, Nashville, TN.*
Government: *Marquea D. King, US Environmental Protection Agency, Washington, DC.*
Industry: *Sudheer Reddy Beedanagari, Bristol-Myers Squibb Company, East Brunswick, NJ.*

For Host Mentors and Peer Mentors—*(Laurel Room)*

3:00 PM–3:30 PM **Host Mentors and Peer Mentors Feedback Session**
Chairperson(s): *Sudheer Reddy Beedanagari, Bristol-Myers Squibb Company, East Brunswick, NJ, and Natalie M. Johnson, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD.*

For Students and Advisors

3:00 PM–5:00 PM **Open Time with Academic Toxicology Program Directors and Internship Sponsors—*(Golden Gate Ballroom C1)***

7:30 PM–9:00 PM **Student/Postdoctoral Scholar Mixer—*(Yerba Buena Salon 9)***

Monday, March 12

Convention Center

Monday events are for undergraduate students and advisors receiving 2012 SOT travel funding and SOT program volunteers.

7:20 AM–8:00 AM **Meeting for Students, Advisors, Peer Mentors, and SOT Hosts—*(Room 113)***
Chairperson(s): *Jennifer L. Rayner, SRI, Inc, Arlington, VA.*

8:00 AM–9:00 AM **Plenary Opening Lecture: Systems Medicine, Systems Toxicology, Transformational Technologies, and the Revolution from Reactive to Proactive (P4) Medicine—**
(Exhibit Hall E)
Lecturer: *Leroy Hood, Institute for Systems Biology, Seattle, WA.*

9:30 AM–10:50 AM **Poster Session for Visiting Students—ToxExpo *(Exhibit Hall C)***
Chairperson(s): *Leslie Recio, Integrated Laboratory Systems, Inc., Research Triangle Park, NC.*

Marriott Marquis

11:00 AM–12:00 Noon **Program Wrap Up—**
(Golden Gate Ballroom C1)
Chairperson(s): *Jennifer L. Rayner, SRI, Inc, Arlington, VA.*

12:00 Noon–1:20 PM ***In Vitro* Toxicology Lecture and Luncheon for Students: Can *In Silico* and/or *In Vitro* Testing Be Used for Toxicity Assessment Instead of *In Vivo* Approaches?—*(Golden Gate Ballroom B)***
(Ticket Required)
Speaker: *Timothy J. Shafer, US EPA, Research Triangle Park, NC.*

High School Research Poster Presentations

Tuesday, March 13 and Wednesday, March 14
10:30 AM–2:30 PM
Exhibit Halls A–C *(Across from SOT Pavilion)*

Chairperson(s): *Daniel E. Arrieta, Chevron Phillips Chemical Company LP, The Woodlands, TX.*

Sponsors:
Education Committee
K–12 Subcommittee

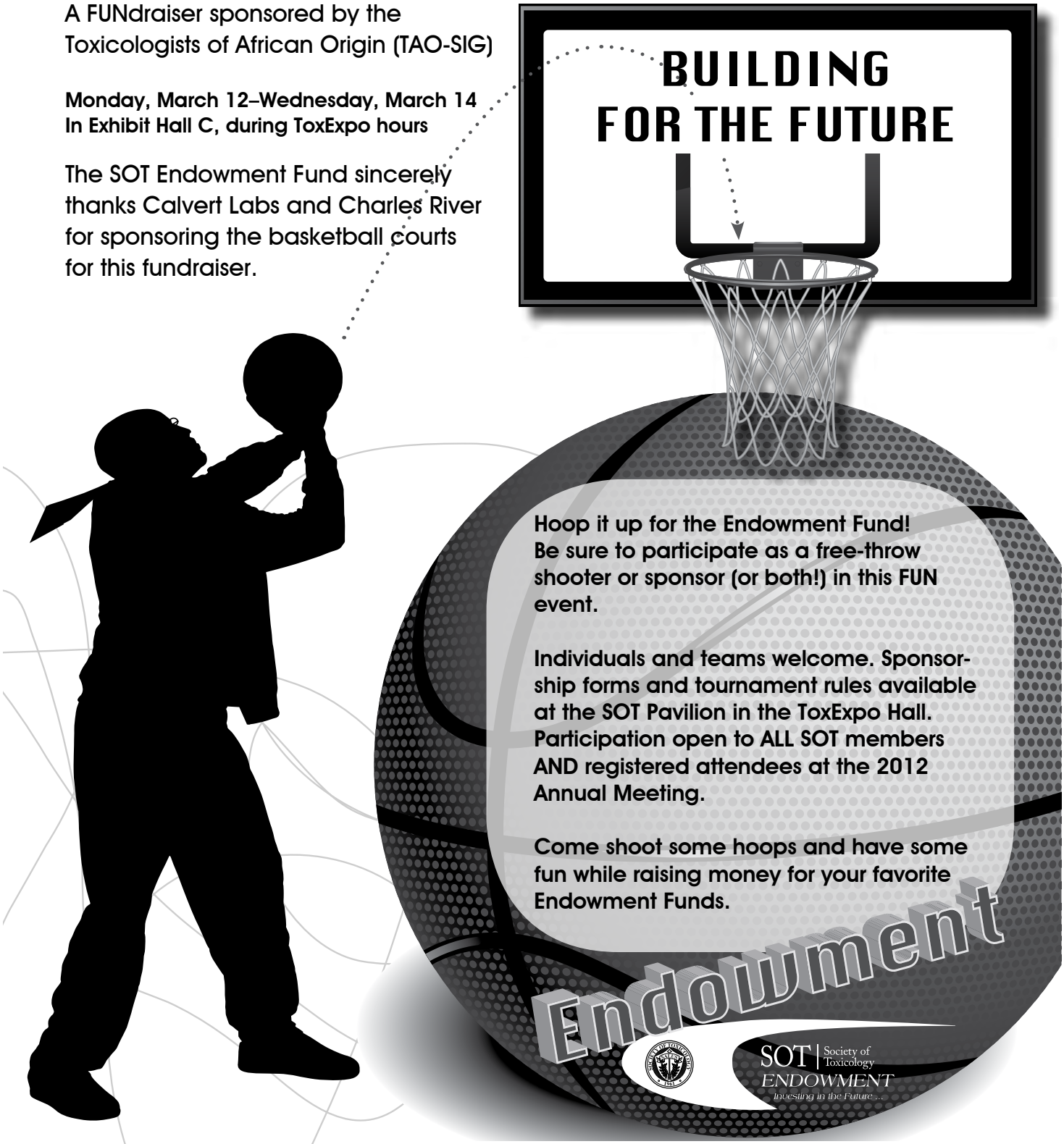
High school student research related to toxicology is featured in an area adjacent to the SOT Pavilion. This display recognizes student effort and provides the high school students who have engaged in research with scientific meeting experience. Meeting attendees are invited to drop by to visit with these outstanding potential future toxicologists. More information is available on the SOT Annual Meeting website.

"Hoops for the Endowment Fund" Basketball Free-Throw Competition

A FUNdraiser sponsored by the Toxicologists of African Origin (TAO-SIG)

Monday, March 12–Wednesday, March 14
In Exhibit Hall C, during ToxExpo hours

The SOT Endowment Fund sincerely thanks Calvert Labs and Charles River for sponsoring the basketball courts for this fundraiser.



Hoop it up for the Endowment Fund! Be sure to participate as a free-throw shooter or sponsor (or both!) in this FUN event.

Individuals and teams welcome. Sponsorship forms and tournament rules available at the SOT Pavilion in the ToxExpo Hall. Participation open to ALL SOT members AND registered attendees at the 2012 Annual Meeting.

Come shoot some hoops and have some fun while raising money for your favorite Endowment Funds.

Advance the Science of Toxicology

Consider Organizing a Contemporary Concepts in Toxicology (CCT) Meeting

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 in contemporary and rapidly progressing areas of toxicological sciences.

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 a SOT CCT. The CCT Conference Committee and the SOT Headquarters staff are prepared to help move your meeting forward.

CCT Meetings focus on a ***wide range of topics*** and future CCTs address the following:

- Building for Better Decisions: Multiscale Intergration of Human Health and Environmental Data—May 8–11, 2012, Research Triangle Park, North Carolina, United States
- PPTOX III: Environmental Stressors in the Developmental Origins of Disease: Evidence and Mechanisms—May 14–16, 2012, Paris, France
- FutureTox: Building the Road for the 21st Century Toxicology and Risk Assessment Practices—October 18–19, 2012, Arlington, Virginia, United States

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 endorsement by the Society of Toxicology.

For additional information, visit the SOT website

www.toxicology.org

Continuing Education

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 will be held on Sunday, March 11, 2012, at the Moscone Convention Center. Please check the signage in the registration area and at the CE Booth for room assignments. Note: Your course materials will be available in the room immediately prior to the course (they will not be 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 Booth at the Convention Center on Sunday. The booth will be open from 6:30 am–5:30 pm.

7:00 AM–7:45 AM Continuing Education Sunrise Mini-Course:

1. Alternative *In Vitro* Toxicology Testing for the 21st Century

8:15 AM–12:00 Noon Continuing Education Morning (AM) Courses:

2. Applications of Biomarkers in the Assessment of Health and Disease
3. Basic Embryology and Developmental Toxicity Testing
4. Cutaneous Toxicity: *In Vitro* Methods for Toxicity and Safety Evaluation
5. Frontiers and Applications in Predictive Toxicology: *In Silico* Methods for Risk Assessment, Toxicology, and Metabolism
6. Overview and Application of the WHO/IPCS Harmonized Guidance for Immunotoxicity Risk Assessment for Chemicals
7. Stem Cells in Toxicology

1:15 PM–5:00 PM Continuing Education Afternoon (PM) Courses:

8. Concepts of Green Chemistry and Its Role in the Identification and Design of Safer Chemicals and Products
9. Innate Immunity and Its Relevance to Toxicology
10. MicroRNAs in Biology and Toxicology
11. Regulatory Sciences: Preclinical Drug Development from Small Molecules to Biologics
12. Specialized Techniques for Dose-Response Assessment and Risk Assessment of Chemical Mixtures
13. The Use of Physiologically-Based Pharmacokinetic Modeling to Inform Early Life Sensitivity to Chemical Toxicity

Registration for the Annual Meeting and a Continuing Education course ticket are required.

Target Areas

The Continuing Education Program offers a wide range of courses that cover established knowledge in toxicology, as well as new developments in toxicology and related disciplines. Continuing Education courses related to these Target Areas appear under each target description. The Target Areas will be identified throughout the *Program* with a . Continuing Education Courses will also be tracked by Scientific Program Theme and identified throughout the *Program* with a . An Overview of the Scientific Thematic Track is located on the Front Fold-Out.

Drug Metabolism

Xenobiotic metabolism and/or handling by gene products such as Cytochrome P450s, Glucuronosyl S-Tranferases, and drug transporters is central to chemical disposition in all organisms. In-depth understanding of how chemicals are modified, how major metabolic products behave, become selectively sequestered, or eliminated from different tissues, and how all of these process relate to determine both the fate of the agent and the responses that transpire as a result of exposure is of paramount significance to basic research scientists involved in safety assessment and drug development and to clinicians. The multidisciplinary field of drug metabolism has made considerable advances in recent years, including new methods to more accurately study and predict compound fate and/or action using advanced *in vitro* and *in silico* technologies, the incorporation of systems biology and 'omics approaches to gain a more comprehensive appreciation of the impact of chemicals in an organism, and the identification of new gene product families that contribute to drug disposition. The CE committee welcomes proposals that will highlight novel approaches to evaluate drug metabolism and its impact on toxicological/safety assessment research, the drug development process, and application to clinical care, including pharmacogenomic considerations. Proposals may focus on teaching specific methodologies such as functional assays for different systems, high-throughput technologies, and/or *in silico* technologies to predict metabolism. Courses may also instruct attendees on regulatory requirements for safety assessment of drugs and metabolites or novel approaches for assessing pharmacodynamic effects. Course proposals under the "Drug Metabolism" target area are expected to be in-depth and focused on a central theme. As therfore, multiple proposals addressing different aspects of this general theme are encouraged to ensure adequate coverage of this rapidly advancing and important field.

Noncoding RNAs and Their Role in Biology and Toxicology

Small, medium, and long noncoding RNAs have been identified in many species, including humans. Their functions are still not fully understood, but they are becoming increasingly recognized as important factors in physiology, xenobiotic sensitivity, and disease. For example, microRNAs (miRs) are small noncoding RNAs that regulate gene expression primarily through base-pair interactions with 3'-untranslated regions of target genes and this results in altered gene expression. It is estimated that miRs regulate up to 30% of all genes in humans: In contrast, larger intergenic noncoding RNAs (lincRs) such as HOTAIR regulate chromatin structure through epigenetic pathways. The number and function of noncoding RNAs being discovered is continually increasing. It is certain that they will play an important role in toxicology and pharmacology. The CE committee is interested in receiving proposals that will provide in-depth instruction on noncoding RNAs, including what they are and how they function, their effects on xenobiotic sensitivity and disposition, their importance in disease risks and phenotypes, and their relevance to toxicological research, including human environment responses, heritable environmentally-induced changes, and the integration of their novel characteristics into studies of xenobiotic mechanisms and the drug development/safety assessment processes. Proposals highlighting vital roles of noncoding RNAs in human diseases, particularly environmentally influenced diseases, and the significance of physiological changes due to noncoding RNAs in the treatment of conditions are also of interest.

CE

CE Target Areas
Thematic Sessions
Continuing Education Courses

Continuing Education (Continued)

2012 Continuing Education Courses

SUNDAY MORNING

Sunday Morning, March 11
7:00 AM to 7:45 AM
Esplanade Level
(See signage at CE Booth for room location)

Continuing Education: Alternative *In Vitro* Toxicology Testing for the 21st Century

SR01 **CE Basic**

Chairperson(s): *Stephen H. Safe, Texas A&M University, College Station, TX.*

Endorsed by:
Risk Assessment Specialty Section

Over the last two decades, alternatives to animal testing were strongly driven by animal welfare considerations. A culture of organotypic cell models, quality assurance, and validation developed, which resulted in a number of novel approaches for regulatory testing. Progress to replace especially the systemic and chronic types of tests has been limited. Novel programs to assess large numbers of substances such as existing chemicals (REACH and the emerging TSCA reauthorization), nanoparticles, or mixtures, as well as new products such as biologicals and cell therapies now add to the need to move to another approach for toxicity testing. Additionally, interest in health effects like endocrine disruption, developmental neurotoxicity, immunotoxicity, obesity, atherosclerosis, or childhood asthma require extensive and new types of testing. This is often referred to as Toxicity Testing for the 21st Century (Tox-21c), after the National Academy of Sciences vision document from 2007, which was made US EPA's toxicity testing strategy in 2009. The central change is moving from apical "black box" animal models to mechanism or pathway of toxicity (PoT). The biotechnology and bioinformatics revolution of recent years has made it possible to develop systems biology, here systems toxicology, approaches. The experiences from the field of alternative methods now prove to be the most important to implement a new regulatory approach. Standardization and validation of cell cultures is crucial for PoT identification as well as the implementation of high-throughput types of tests based on PoT. The first projects to systematically map the entirety of human PoT, the Human Toxome, have started. The validation of these novel tests represents an enormous challenge. It is proposed to follow the role model of evidence-based medicine. For this purpose, the evidence-based toxicology collaboration was started at SOT 2011 and is currently shaping its procedures and governance.

Abstract #

#1 7:00 **ALTERNATIVE *IN VITRO* TOXICOLOGY TESTING FOR THE 21ST CENTURY.** *T. A. Hartung*[2], and *S. H. Safe*[1]. [1]Texas A&M University, College Station, TX, and [2]Center for Alternatives to Animal Testing (CAAT), Baltimore, MD.

Sunday Morning, March 11
8:15 AM to 12:00 Noon
Esplanade Level
(See signage at CE Booth for room location)

Aberrant Gene Expression in Toxicity and Disease—Epigenetics and microRNAs

Continuing Education: Applications of Biomarkers in the Assessment of Health and Disease

AM02 **CE Advanced**

Chairperson(s): *Vishal S. Vaidya, Harvard Medical School, Boston, MA, and Donna L. Mendrick, US FDA, Jefferson, AR.*

Sponsor:
Drug Discovery Toxicology Specialty Section

Endorsed by:
Association of Scientists of Indian Origin Special Interest Group
Disease Prevention Task Force
Risk Assessment Specialty Section

Biomarkers serve as quantitative measures of chemical exposures and biologically effective doses, provide early warning signals of biologic effect, predict outcome in a patient with disease, and identify who will respond to an intervention and whether the intervention is working. The current era of scientific discovery has brought seemingly limitless opportunities for improvements in medical care. Translational biomarkers that can be measured in blood or urine in both experimental animals and man are of particular interest. Given the importance to the clinical, pharmaceutical, and regulatory communities motivated by more specific and timely diagnoses, early intervention, and safer therapies, clinically useful biomarkers have evolved over time, reflecting the scientific and technologic progress made over the centuries. An increasing number of clinically relevant tests and procedures are available to estimate organ injury and guide treatment. The use of molecular signals in the assessment of health and disease is not new; however, the concept of what constitutes a useful biomarker has evolved considerably in the past two to three decades given the advanced enabling technologies, the deeper molecular understanding of disease, and the advent of a regulatory framework for biomarker qualification. Our panel experts will highlight the potential of these molecular signals over a wide variety of applications spanning preclinical–clinical safety and disease monitoring in therapeutic and environmental exposures pertaining to cancer, and lung, heart, and kidney disease. Coordinated efforts at biomarker discovery and

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Toxicology is an ever-changing field. SOT Continuing Education courses are an excellent way to enhance your professional development and learn new techniques. SOT is dedicated to providing such opportunities and resources to the scientific community, and the Continuing Education Committee is excited to offer online CE courses through the SOT website. Currently there are 21 online courses from the past three Annual Meetings, several with English transcripts. Special discounts for members from eligible developing countries. Whether you want a refresher course, or want to expand your knowledge, CEd-Tox offers you a convenient way to stay competitive!

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CE Target Areas
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CE Continuing Education Courses

Continuing Education (Continued)

Abstract #

validation as well as technologies for biomarker measurement will help ensure that the ultimate goal of safer drugs, a cleaner environment, and improved patient outcomes is realized.

#2 8:15 **APPLICATIONS OF BIOMARKERS IN THE ASSESSMENT OF HEALTH AND DISEASE.** *V. S. Vaidya*[1], and *D. L. Mendrick*[2]. [1]Medicine-Renal, Harvard Medical School, Boston, MA, and [2]US FDA, Jefferson, AR.

8:15 **INTRODUCTION.** Donna L. Mendrick

8:30 **DISCOVERING CANCER BIOMARKERS: FROM DIAGNOSIS AND PROGNOSIS THROUGH THERAPY.** Marsha A. Moses

9:15 **ADVANCED MOLECULAR BIOMARKERS IN UNDERSTANDING LUNG EXPOSURE BIOLOGY.** David E. Christiani

10:00 **COFFEE SERVICE.** Course Break

10:30 **BIOMARKERS OF CARDIAC DYSFUNCTION—BEYOND TROPONINS.** James R. Turk

11:15 **KIDNEY SAFETY SIGNAL: FROM IDENTIFICATION TO POINT OF CARE TESTING.** Vishal S. Vaidya

Sunday Morning, March 11
8:15 AM to 12:00 Noon
Esplanade Level
(See signage at CE Booth for room location)

Continuing Education: Basic Embryology and Developmental Toxicity Testing

AM03 **CE Basic**

Chairperson(s): *Christopher J. Bowman, Pfizer, Inc., Groton, CT, and Lori A. Dostal, Exponent, Inc., Brighton, MI.*

Sponsor:
Reproductive and Developmental Toxicology Specialty Section

Endorsed by:
Regulatory and Safety Evaluation Specialty Section

Embryonic and fetal development in mammalian species is a complex process that is sensitive to the effects of maternal and environmental factors. The timing of development of the major organ systems varies between humans and other animal species, but the basic biology of development is similar in all species, thus allowing extrapolation of animal testing results for xenobiotics to humans. The course will begin by providing an overview that highlights developmental biology from fertilization of the gametes to normal maturation of a full-term placenta and fetus, including examples of developmental toxicants and teratogens with known modes of action. Subsequently, applied toxicology concepts for evaluation of the potential for bio/pharmaceuticals and chemicals to affect pregnancy and embryo-fetal development will be discussed. Global regulatory strategies and requirements to minimize health effects on women and unborn children will also be addressed. Finally, key information will be presented to provide for a better understanding of the biological and toxicological basis of prenatal developmental toxicity testing and the impact of various outcomes on drug development, chemical use, environmental impact, and human health risk.

#3 8:15 **BASIC EMBRYOLOGY AND DEVELOPMENTAL TOXICITY TESTING.** *L. A. Dostal*[2], and *C. J. Bowman*[1]. [1]Pfizer Drug Safety Research and Development, Groton, CT, and [2]Center for Toxicology and Mechanistic Biology, Exponent, Inc., Brighton, MI.

8:15 **OVERVIEW OF COURSE.** Lori A. Dostal

Abstract #

8:30 **IMPLANTATION, PLACENTATION, AND EARLY EMBRYONIC DEVELOPMENT.** John M. DeSesso

9:15 **DEMYSTIFYING MAMMALIAN EMBRYOGENESIS.** Kathleen K. Sulik

10:00 **COFFEE SERVICE.** Course Break

10:30 **THE IMPORTANCE OF DEVELOPMENTAL TOXICITY TESTING TO PHARMACEUTICAL DEVELOPMENT.** Kimberley A. Treinen

11:15 **NAVIGATING DEVELOPMENTAL TOXICITY TESTING OF AGRICULTURAL MOLECULES AND INDUSTRIAL CHEMICALS.** Reza J. Rasoulpour

Sunday Morning, March 11
8:15 AM to 12:00 Noon
Esplanade Level
(See signage at CE Booth for room location)

Characterizing Toxic Modes of Action and Pathways to Toxicity

Continuing Education: Cutaneous Toxicity: *In Vitro* Methods for Toxicity and Safety Evaluation

AM04 **CE Advanced**

Chairperson(s): *William G. Reifenrath, Stratacor, Inc., Richmond, CA, and Cynthia A. Ryan, Procter & Gamble Company, Cincinnati, OH.*

Sponsor:
Dermal Toxicology Specialty Section

Endorsed by:
***In Vitro* and Alternative Methods Specialty Section**

Skin is the largest external organ and serves as a living, dynamic protective envelope surrounding the body. As such, it is constantly exposed to environmental hazards, including hazardous compounds; these exposures account for a major portion of all reported industrial illnesses. Skin exposures may also occur from pharmaceuticals or consumer products that are intentionally applied. *In vitro* methods are important as a first step to estimate skin permeation, and the potential of skin irritation and sensitization for compounds or mixtures of compounds that are directly toxic to the skin or systemically toxic. In exploration of these issues we will provide an overview of the current status of *in vitro* models for cutaneous toxicity safety evaluations and the regulatory requirements for establishing the nonclinical safety of dermal drug products. This important topic has relevance to toxicologists involved in safety evaluations and risk assessments for chemicals that contact the skin.

#4 8:15 **CUTANEOUS TOXICITY: *IN VITRO* METHODS FOR TOXICITY AND SAFETY EVALUATION.** *W. G. Reifenrath*[1], and *C. A. Ryan*[2]. [1]Stratacor, Inc., Richmond, CA, and [2]Central Product Safety, Procter & Gamble Company, Cincinnati, OH.

8:15 **USE OF THE EXCISED HUMAN SKIN MODEL FOR PERCUTANEOUS RISK ASSESSMENT.** Thomas J. Franz

9:00 **DIRECT COMPARISON OF *IN VITRO* AND *IN VIVO* DERMAL ABSORPTION OF SEVERAL CHEMICALS.** Jeffrey J. Yourick

9:30 **SPECIALIZED PROCEDURES FOR LIPOPHILIC AND SEMI-VOLATILE COMPOUNDS AND THEIR INFLUENCE ON COMPARATIVE *IN VITRO—IN VIVO* SKIN ABSORPTION.** William G. Reifenrath

CE Target Areas
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Continuing Education (Continued)

Abstract #

10:00 **COFFEE SERVICE.** Course Break

10:30 **SKIN SENSITIZATION: UNDERLYING MECHANISMS, HAZARD IDENTIFICATION, AND A QUANTITATIVE RISK ASSESSMENT APPROACH.** Cynthia A. Ryan

11:00 **SKIN IRRITATION: *IN VITRO* MODELS.** John W. Harbell

11:30 **US REGULATORY REQUIREMENTS FOR ESTABLISHING THE NONCLINICAL SAFETY OF DERMAL DRUG PRODUCTS.** Marian W. Glynn

Sunday Morning, March 11
8:15 AM to 12:00 Noon
Esplanade Level
(See signage at CE Booth for room location)

Regulatory Science: Bridging the Gap between Discovery and Product Availability

Continuing Education: Frontiers and Applications in Predictive Toxicology: *In Silico* Methods for Risk Assessment, Toxicology, and Metabolism

AM05 **CE Basic**

Chairperson(s): *Christopher A. Reilly, University of Utah, Salt Lake City, UT, and Sneha Bhatia, Research Institute for Fragrance Materials, Inc., Woodcliff Lake, NJ.*

Sponsor:
***In Vitro* and Alternative Methods Specialty Section**

Endorsed by:
Food Safety Specialty Section
Molecular Biology Specialty Section
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

With the integration of open source programs, *in silico* tools, and bioinformatics, the role of the computer continues to transform daily activities and work for the modern scientist. Furthermore, the call for reduced animal testing in toxicity evaluation has led to an expansion of *in silico* resources, quantitative structure-activity relationship (QSAR) programs, chemoinformatics systems, and predictive metabolism tools. Regulatory authorities, and the pharmaceutical, chemical, and food industries are actively using such tools in the safety evaluations of novel drug candidates, food additives, environmental contaminants, and consumer products. We will begin by providing a basic introduction to various *in silico* tools, specifically predictive toxicology and metabolism platforms, and how their algorithms compute results and influence the decision process. A composed set of didactic lectures will be used to introduce the basic concepts and activities surrounding the use of *in silico* tools in ADME/Tox and safety studies. In follow-up, participants will be provided with a brief summary of various platforms with practical tutorials of the computational toxicology platforms discussed.

#5 8:15 **FRONTIERS AND APPLICATIONS IN PREDICTIVE TOXICOLOGY: *IN SILICO* METHODS FOR RISK ASSESSMENT, TOXICOLOGY, AND METABOLISM.** *C. A. Reilly*[1], and *S. Bhatia*[2]. [1]University of Utah, Salt Lake City, UT, and [2]Research Institute for Fragrance Materials, Inc., Woodcliff Lake, NJ.

8:15 **INTRODUCTION TO COMPUTATIONAL TOXICOLOGY.** Sneha Bhatia

Abstract #

8:30 **COMPUTATIONAL MODELS FOR PREDICTING HUMAN TOXICITIES.** Sean Ekins

9:00 **COMPUTATIONAL APPROACHES TO THE PREDICTION OF METABOLISM AND THE SIMULATION OF METABOLIC PATHWAYS.** Anthony Long

9:30 **RISK ASSESSMENT USING COMPUTATIONAL TOXICOLOGY: PHARMACEUTICAL AND CONSUMER PRODUCT.** Luis G. Valerio, Jr.

10:00 **COFFEE SERVICE.** Course Break

10:30 **COMPUTATIONAL APPROACHES: LINKING CHEMICAL EXPOSURES AND HUMAN DISEASE.** Dale E. Johnson

11:00 **PREDICTIVE TOXICOLOGY PLATFORMS: TOOLS FOR THE TRADE?** Eugene Ahlborn

Sunday Morning, March 11
8:15 AM to 12:00 Noon
Esplanade Level
(See signage at CE Booth for room location)

Regulatory Science: Bridging the Gap between Discovery and Product Availability

Continuing Education: Overview and Application of the WHO/IPCS Harmonized Guidance for Immunotoxicity Risk Assessment for Chemicals

AM06 **CE Basic**

Chairperson(s): *Andrew A. Rooney, NIEHS, Research Triangle Park, NC, and Henk Van Loveren, National Institute of Public Health and the Environment (RIVM), Bilthoven, Netherlands.*

Sponsor:
Immunotoxicology Specialty Section

Endorsed by:
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

The WHO/IPCS harmonized guidance document is the first compressive guidance document for risk assessment in toxicology. Immunotoxicity risk assessment of chemicals is an evaluation of the potential for unintended effects of chemical exposure on the immune system. These effects manifest as four principal types of immunotoxicity, which are categorized as immuno-suppression and -stimulation, autoimmunity, and sensitization. We will provide an overview of the methods used to detect and characterize immunotoxicity and the potential consequences of unintended immunomodulation. It is well established that xenobiotic-related immunosuppression can lead to reduced resistance to infections and certain neoplastic diseases. Exposure to xenobiotics has been shown to be associated with development or worsening of autoimmune disease. It has been established that xenobiotics can elicit hypersensitivity responses directly as an allergen, or they can enhance the induction or severity of allergic sensitization to pollen or dust mites. The determination of risk associated with immunostimulation may be more difficult, but unexpected stimulation should not be disregarded as it may result in nonspecific inflammation or the skewing of normally protective immune responses to favor induction or exacerbation of autoimmunity and hypersensitivity. The fundamental concepts of risk assessment as they apply to the evaluation of immunotoxicity as well as the application of the guidance will be highlighted. We will begin by reviewing case studies that include data that focus on different areas of immunotoxicity—suppression, sensitization, and autoimmunity. The studies will demonstrate application of the guidance, particularly the development of weight of evidence conclusions from the available data. Finally, we will illustrate that risk assessment for a given chemical should consider

Continuing Education (Continued)

Abstract #

the full range of immune effects for that chemical, and data should be evaluated separately for evidence of suppression, stimulation, autoimmunity, and sensitization.

#6 8:15 **OVERVIEW AND APPLICATION OF THE WHO/IPCS HARMONIZED GUIDANCE FOR IMMUNOTOXICITY RISK ASSESSMENT FOR CHEMICALS.** *A. A. Rooney*[1], and *H. Van Loveren*[2]. [1]NIEHS, Research Triangle Park, NC, and [2]National Institute of Public Health and the Environment, Bilthoven, Netherlands.

8:15 **OVERVIEW: WHO/IPCS HARMONIZED GUIDANCE FOR IMMUNOTOXICITY RISK ASSESSMENT FOR CHEMICALS.** Henk Van Loveren

8:30 **ASSESSMENT OF IMMUNOSUPPRESSION, IMMUNOSTIMULATION, AND AUTOIMMUNITY.** Robert W. Luebke

9:00 **ASSESSMENT OF SENSITIZATION AND ALLERGIC RESPONSE.** Peter Griem

9:30 **IMMUNOTOXICITY RISK ASSESSMENT.** Andrew A. Rooney

10:00 **COFFEE SERVICE.** Course Break

10:30 **CASE STUDY 1: LEAD.** Michael I. Luster

11:00 **CASE STUDY 2: HALOGENATED PLATINUM SALTS.** Peter Griem

11:30 **CASE STUDY 3: MERCURY.** Andrew A. Rooney

Sunday Morning, March 11
8:15 AM to 12:00 Noon
Esplanade Level
(See signage at CE Booth for room location)

Continuing Education: Stem Cells in Toxicology

AM07 **CE Basic**

Chairperson(s): *Michael P. Waalkes, NIEHS, Research Triangle Park, NC, and Erik J. Tokar, NIEHS, Research Triangle Park, NC.*

Sponsor:
Stem Cells Specialty Section

Endorsed by:
Biotechnology Specialty Section
Carcinogenesis Specialty Section
Reproductive and Developmental Toxicology Specialty Section

Stem cells are revolutionizing toxicological research and remain an area with tremendous potential. Recently, research on stem cells has generated tremendous public and professional interest. However, some areas of toxicological research have lagged behind in the integration of stem cells as a concept in toxicant-induced disease etiology. We will describe the utility and suitability of the assorted types of stem cell models (i.e., embryonic, fetal, progenitor, induced pluripotent, and immortalized stem cell lines) for various research purposes, including disease modeling, drug discovery, and toxicity testing in order to describe the potential applications of stem cells in toxicological research. This important overview of stem cells will highlight their nomenclature, properties, and roles in the genesis of various diseases.

#7 8:15 **STEM CELLS IN TOXICOLOGY.** *E. J. Tokar*, and *M. P. Waalkes*. NIEHS, Research Triangle Park, NC.

8:15 **STEM CELLS IN TOXICOLOGY.** Erik J. Tokar

8:30 **THE CONCEPTS AND METHODS FOR STEM CELLS.** Ying Xia

Abstract #

9:15 **STEM CELLS IN CARCINOGENESIS.** Michael P. Waalkes

10:00 **COFFEE SERVICE.** Course Break

10:30 **STEM CELLS AND REGENERATIVE MEDICINE.** R. Clark Lantz

11:15 **STEM CELLS IN SAFETY TESTING.** Kyle L. Kolaja

SUNDAY AFTERNOON

Sunday Afternoon, March 11
1:15 PM to 5:00 PM
Esplanade Level
(See signage at CE Booth for room location)

Regulatory Science: Bridging the Gap between Discovery and Product Availability

Continuing Education: Concepts of Green Chemistry and Its Role in the Identification and Design of Safer Chemicals and Products

PM08 **CE Basic**

Chairperson(s): *Pamela J. Spencer, Dow Chemical Company, Midland, MI, and John Warner, Warner Babcock Institute for Green Chemistry, Wilmington, MA.*

Endorsed by:
Molecular Biology Specialty Section

Hazard identification, dose-response characterization, and exposure potential are the underpinning of product safety assessments. These basic principles help regulatory agencies, manufacturers, and formulators determine the conditions for safe use of chemicals, raw materials, and products for a given application to reduce adverse impacts to human health and the environment. Today, as a part of the growing interest in green chemistry, the pendulum is shifting. The large number of companies engaging in sustainability initiatives, coupled with increased consumer demand for greener products, is driving a new process where impacts of chemical products and processes are included as design criteria. Reducing intrinsic chemical hazards up front is a strategy used in developing safer alternatives to existing chemicals. Thus green chemistry is raising the bar for chemical safety assessments. Our panel of experts will begin with a background of green chemistry, its basic principles, and why it is useful, and highlight key certification programs/tools used to identify safer alternatives, including their methods and criteria with specific emphasis on the Green Screen for Safer Chemicals alternatives assessment tool. There are unique opportunities for toxicologists to assist molecular designers in reducing the intrinsic hazards of their molecules by providing insight into toxicological mechanisms and data that support the application of green chemistry principles in the design of new chemicals and products. To underscore the importance of this issue, we will illustrate how principles of green chemistry are applied in a consumer products and a chemical company. The caveats and challenges will be addressed by using case studies. The exploration of this topical area will provide an understanding of green chemistry, awareness of the tools and programs immediately available and how to access and use them, and an appreciation for some of the practical challenges associated with implementing principles of green chemistry into product development and assessments of safer alternatives.

#8 1:15 **CONCEPTS OF GREEN CHEMISTRY AND ITS ROLE IN THE IDENTIFICATION AND DESIGN OF SAFER CHEMICALS AND PRODUCTS.** *P. J. Spencer*[1], and *J. Warner*[2]. [1]Dow Chemical Company, Midland, MI, and [2]Warner Babcock Institute for Green Chemistry, Wilmington, MA.

CE

CE Target Areas
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Continuing Education (Continued)

Abstract #

1:15 **INTRODUCTION.** Pamela Spencer

1:25 **INTRODUCTION TO THE CONCEPTS OF GREEN CHEMISTRY AND ITS ROLE IN THE IDENTIFICATION AND DESIGN OF SAFER CHEMICALS AND PRODUCTS.** John Warner

2:00 **USING COMPARATIVE HAZARD ASSESSMENTS: GREEN SCREEN FOR SAFER CHEMICALS.** Lauren Heine

2:35 **STRATEGIES AND METHODS FOR INCORPORATING GREEN CHEMISTRY INTO THE DESIGN OF CHEMICALS AND PRODUCTS (PART 1).** Thomas G. Osimitz

3:00 **COFFEE SERVICE.** Course Break

3:30 **STRATEGIES AND METHODS FOR INCORPORATING GREEN CHEMISTRY INTO THE DESIGN OF CHEMICALS AND PRODUCTS (PART 2).** Thomas G. Osimitz

3:50 **APPLICATION OF THE PRINCIPLES OF GREEN CHEMISTRY IN A CHEMICAL COMPANY: OVERVIEW AND CASE STUDIES.** J. Craig Rowlands

4:25 **APPLICATION OF THE PRINCIPLES OF GREEN CHEMISTRY IN A CONSUMERS PRODUCTS COMPANY: OVERVIEW AND CASE STUDIES.** Donald Versteeg

Sunday Afternoon, March 11
1:15 PM to 5:00 PM
Esplanade Level
(See signage at CE Booth for room location)

Continuing Education: Innate Immunity and Its Relevance to Toxicology

PM09 **CE Basic**

Chairperson(s): *Wendy J. Freebern, Bristol-Myers Squibb, North Brunswick, NJ, and Jacintha M. Shenton, MedImmune, Inc., Cambridge, United Kingdom.*

Sponsor:
Immunotoxicology Specialty Section

The innate immune system is the host's first line of defense against infection. Thus, knowing the what, why, how, and when of innate immune function assessment in toxicology evaluations is important. This course will introduce the components of the innate immune system and its role in host defense, discuss clinical observations resulting from inhibition or stimulation of innate immune function in nonclinical species, provide case examples where understanding intentional or inadvertent effects on innate immune function has had utility in toxicity testing, and explain the what and how of innate immune measurements and the gaps in capabilities thereof. Innate immunity assessments to be discussed include bacterial killing assays and an array of macrophage, neutrophil, and natural killer cell activity assessments, which will be described within the context of various target organs, animal models, and toxicology programs. In addition, investigating innate immune function on a molecular level through evaluating cell signaling molecules and regulated expression of antimicrobial peptides, chemokines, and cytokines will be discussed. In closing, the application of innate immunity testing in the clinic and translatability of nonclinical findings to the clinic will be examined. This course should be of broad interest to toxicologists with the desire to learn about the innate immune system and how innate immune evaluations can be applied to toxicology testing. In addition, the course will appeal to scientists who are interested in learning methodologies of innate immune function testing and applicability thereof.

Abstract #

#9 1:15 **INNATE IMMUNITY AND ITS RELEVANCE TO TOXICOLOGY.** *W. J. Freebern*[1], and *J. M. Shenton*[2]. [1]Immunotoxicology, Bristol-Myers Squibb, North Brunswick, NJ, and [2]MedImmune, Inc., Cambridge, United Kingdom.

1:15 **INNATE IMMUNITY AND ITS RELEVANCE TO TOXICOLOGY: AN INTRODUCTION.** Jacintha M. Shenton

1:35 **NOT JUST A PHYSICAL BARRIER: CELLULAR AND MOLECULAR INNATE IMMUNE DEFENSE MECHANISMS OF THE EPIDERMIS.** Jamie J. Bernard

2:10 **THE WHY, WHEN, WHAT AND HOW OF MACROPHAGE AND NEUTROPHIL FUNCTION TESTING IN DRUG DEVELOPMENT.** Wendy J. Freebern

2:45 **ACCESSING NATURAL KILLER CELL ACTIVITY IN NON-CLINICAL TOXICITY STUDIES (PART 1).** Christina Satterwhite

3:00 **COFFEE SERVICE.** Course Break

3:30 **ACCESSING NATURAL KILLER CELL ACTIVITY IN NON-CLINICAL TOXICITY STUDIES (PART 2).** Christina Satterwhite

3:55 **INNATE IMMUNITY IN DRUG-INDUCED LIVER INJURY.** Cynthia Ju

4:30 **TRANSLATING NON-CLINICAL INNATE IMMUNE TESTING INTO THE CLINIC.** Wendy J. Komocsar

Sunday Afternoon, March 11
1:15 PM to 5:00 PM
Esplanade Level
(See signage at CE Booth for room location)

Aberrant Gene Expression in Toxicity and Disease—Epigenetics and microRNAs

Noncoding RNAs and Their Role in Biology and Toxicology

(See signage at CE Booth for room location)

Continuing Education: MicroRNAs in Biology and Toxicology

PM10 **CE Basic**

Chairperson(s): *Neelakanteswar Aluru, Woods Hole Oceanographic Institution, Woods Hole, MA, and Carmen J. Marsit, Dartmouth Medical School, Hanover, NH.*

Sponsor:
Molecular Biology Specialty Section

MicroRNAs (miRNAs) constitute a critically important class of noncoding, small RNAs, which post-transcriptionally regulate gene expression. miRNAs, approximately 18–24 nucleotides (nt) in length, regulate gene expression by binding to 3'untranslated regions (UTR), coding sequences or 5'UTR of target messenger RNAs (mRNAs), and leading to inhibition of translation or mRNA degradation. It is estimated that miRNAs regulate approximately 30% of the human protein-coding genome. miRNAs control the expression of genes involved in several biological processes, including apoptosis, proliferation, differentiation, and metastasis. Given the prominent role miRNAs play in organismal function, it is not surprising that the aberrant expression of miRNAs can lead to a wide range of human diseases and disorders, including cancer, neurodegenerative diseases, diabetes, and a variety of cardiovascular and hepatic disorders. In addition to contributing to the underlying cause of a particular disease, miRNAs can also represent potential therapeutic targets and diagnostic biomarkers. The recently discovered circulating miRNAs are

CE Target Areas
Thematic Sessions
Continuing Education Courses

Continuing Education (Continued)

Abstract #

promising biomarker candidates since they can be detected from readily attainable blood samples. Because of the critical role that miRNAs play in biological function and the diverse range of applications in which miRNA analysis is of value, significant effort has been invested over the past decade to develop new detection methods. We will provide an overview of existing and emerging tools for miRNA analysis, with particular emphasis placed on the current state of the art and important developments in this emerging field.

#10	1:15	**MICRORNAS IN BIOLOGY AND TOXICOLOGY.** *N. Aluru*[1], and C. J. Marsit[2]. [1]Biology, Woods Hole Oceanographic Institution, Woods Hole, MA, and [2]Department of Pharmacology and Toxicology, Dartmouth Medical School, Hanover, NH.
	1:15	**OVERVIEW OF MICRORNA QUANTIFICATION METHODS.** Neelakanteswar Aluru
	1:30	**MICRORNA FUNCTIONS IN STRESS RESPONSES.** Anthony Leung
	2:15	**EVALUATING THE TOXICOLOGICAL ROLE OF MICRORNAS DURING DEVELOPMENT.** Robert L. Tanguay
	3:00	**COFFEE SERVICE.** Course Break
	3:30	**MICRORNAS IN CANCER.** Stephen H. Safe
	4:15	**MICRORNA PROFILING IN POPULATION-BASED STUDIES OF EXPOSURE-RELATED HEALTH OUTCOMES.** Carmen J. Marsit

Sunday Afternoon, March 11
1:15 PM to 5:00 PM
Esplanade Level
(See signage at CE Booth for room location)

Regulatory Science: Bridging the Gap between Discovery and Product Availability

Continuing Education: Regulatory Sciences: Preclinical Drug Development from Small Molecules to Biologics

PM11 **CE Basic**

Chairperson(s): *Tao Wang, Novartis Pharmaceuticals, Emeryville, CA, and W. David McGuinn, US FDA, Silver Spring, MD.*

Sponsor:
Biotechnology Specialty Section

Endorsed by:
Comparative and Veterinary Specialty Section
Immunotoxicology Specialty Section
Regulatory and Safety Evaluation Specialty Section
Women in Toxicology Special Interest Group

Drug development is a highly regulated but science-driven process from early discovery to marketing. Once the drug candidate has been discovered, preclinical safety evaluations are required to ensure the safety of the drug during clinical trials, ultimately bridging the gap between drug discovery and marketing. The preclinical development of four types of drugs, small molecular-weight drugs, biologics, oligonucleotide-based therapeutic drugs, and antibody drug conjugates (ADCs), will be illustrated to emphasize the cross-functional nature of regulatory sciences. In exploration of this important topic, we will begin with a focus on small molecular-weight drug candidates, which require a sliding scale for the degree of development from relatively minimal regulatory requirements for oncology drug development to the much more stringent requirements for the development of drugs for non-life-threatening conditions and chronic treatment. Next the focus will shift to large molecule biologics and will provide illustrations of the unique challenges, in regulatory safety assessment and clinical development that

Abstract #

biologic drug candidates present. Our panel of experts will then focus on oligonucleotide-based therapeutics since many of the overarching oligonucleotide class-based properties have been well established, but unique considerations remain for each subclass of oligonucleotide. This talk will discuss the preclinical development of oligonucleotide-based therapeutic drugs, including antisense, siRNA, and immunostimulatory and aptamer applications. This course will also cover ADCs, which are composed of monoclonal antibodies (biologics) conjugated with drugs or cytotoxins (small molecules). Standard approaches for preclinical safety evaluation of each of the individual components of these conjugates may not always be necessary. The regulatory expectations for this class of therapeutics are continuing to be defined. We will illustrate the safety assessment challenges and development strategies associated with certain ADCs.

#11	1:15	**REGULATORY SCIENCES: PRECLINICAL DRUG DEVELOPMENT FROM SMALL MOLECULES TO BIOLOGICS.** *T. Wang*[1], and *W. McGuinn*[2]. [1]Preclinical Safety, Novartis Pharmaceuticals, Emeryville, CA, and [2]US FDA, Silver Spring, MD.
	1:15	**REGULATORY SCIENCES: PRECLINICAL DRUG DEVELOPMENT FROM SMALL MOLECULES TO BIOLOGICS.** Tao Wang
	1:30	**THE PRECLINICAL DEVELOPMENT OF LOW MOLECULAR WEIGHT DRUGS—COMPARISON OF ONCOLOGY AND NON-ONCOLOGY INDICATIONS.** W. David McGuinn
	2:15	**SAFETY ASSESSMENT AND CLINICAL DEVELOPMENT OF BIOPHARMACEUTICALS.** James D. Green
	3:00	**COFFEE SERVICE.** Course Break
	3:30	**DEVELOPMENT OF OLIGONUCLEOTIDE THERAPEUTICS AND ITS TOXICOLOGICAL CONSIDERATIONS.** Page Bouchard
	4:15	**DEVELOPMENT STRATEGIES AND SAFETY ASSESSMENT OF ANTIBODY DRUG CONJUGATES.** Kimberly A. Stickland

Sunday Afternoon, March 11
1:15 PM to 5:00 PM
Esplanade Level
(See signage at CE Booth for room location)

Continuing Education: Specialized Techniques for Dose-Response Assessment and Risk Assessment of Chemical Mixtures

PM12 **CE Advanced**

Chairperson(s): *Jane Ellen Simmons, US EPA, Research Triangle Park, NC, and Michael J. DeVito, NIEHS, Research Triangle Park, NC.*

Sponsor:
Mixtures Specialty Section

Endorsed by:
Food Safety Specialty Section
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

A variety of methods are available for chemical mixtures risk assessment. A key step is careful consideration of data quantity and quality to guide the type of assessment done. Whole mixture methods will be summarized that, after considering data quality and quantity, do not differ from single chemical methods. The principal uncertainty for "sufficient similarity" is ascertaining that two mixtures are sufficiently similar so that one may be used as a surrogate of another. Two approaches for a group of similar

CE

CE Target Areas
Thematic Sessions
Continuing Education Courses

Continuing Education (Continued)

Abstract #

mixtures will be reviewed, comparative potency and geographic site-specific assessment. The course will focus on component-based methods (toxic equivalency factors, relative potency factors, binary weight of evidence, hazard index, target-organ toxicity hazard index, interaction-based hazard index) as they are the most frequently performed mixtures assessments. They use single-chemical toxicity and exposure data, with possibly some toxicity information on defined mixtures of the chemicals of interest. For each method (whole mixture and component-based), the presenter will describe data requirements, assumptions, and limitations and illustrate the application by example. Upon conclusion, students will be able to navigate the risk assessment flow chart, have an understanding of the assumptions, limitations, and uncertainties underlying the presented approaches, and be able to either apply the presented methods to their own data or consult more knowledgeably with risk assessors. The methods and approaches are applicable to the diverse universe of mixtures, including those found in air, water, soil, and food, and apply to environmental, industrial, pharmaceutical, intentional, and accidental mixtures. The course will be useful to toxicologists in understanding how their data are used to assess risk will enable the design and conduct of more meaningful and useful multipollutant experiments. Additionally, understanding underlying assumptions will foster design and conduct of experiments to replace assumptions with evidence-based understanding.

#12	1:15	**SPECIALIZED TECHNIQUES FOR DOSE-RESPONSE ASSESSMENT AND RISK ASSESSMENT OF CHEMICAL MIXTURES.** *J. Simmons*[1], and *M. J. DeVito*[2]. [1]Experimental Toxicology Division, US EPA, Research Triangle Park, NC, and [2]National Toxicology Program, NIEHS, Research Triangle Park, NC.
	1:15	**RISK ASSESSMENT METHODS FOR WHOLE MIXTURES.** Jane Ellen Simmons
	2:00	**BEYOND RELATIVE POTENCIES: UNCERTAINTIES IN THE APPLICATION OF TEFS IN RISK ASSESSMENT.** Michael J. DeVito
	2:50	**COFFEE SERVICE.** Course Break
	3:20	**USING DOSE ADDITION: HAZARD INDEX, TARGET ORGAN TOXICITY HAZARD INDEX AND THE INTERACTION-WEIGHTED HAZARD INDEX.** Richard C. Hertzberg
	4:10	**THE USE OF BINARY WEIGHT OF EVIDENCE TO CHARACTERIZE CHEMICAL INTERACTIONS FOR RISK ASSESSMENT.** Moiz Mumtaz

Thank You Speakers

On behalf of the SOT Council and the entire membership of the Society of Toxicology (SOT), thank you to all of the speakers who graciously agreed to come to San Francisco, California, to participate in the 2012 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.

Abstract #

Sunday Afternoon, March 11
1:15 PM to 5:00 PM
Esplanade Level
(See signage at CE Booth for room location)

Drug Metabolism

Continuing Education: The Use of Physiologically-Based Pharmacokinetic Modeling to Inform Early Life Sensitivity to Chemical Toxicity

PM13 **CE Advanced**

Chairperson(s): *Harvey J. Clewell, The Hamner Institutes for Health Sciences, Research Triangle Park, NC, and Miyoung Yoon, The Hamner Institutes for Health Sciences, Research Triangle Park, NC.*

Sponsor:
Risk Assessment Specialty Section

Endorsed by:
Biological Modeling Specialty Section
Regulatory and Safety Evaluation Specialty Section

A major challenge in assessing potential susceptibility to environmental chemicals during *in utero* and postnatal development is uncertainty regarding the actual exposure in the target subpopulation. We will demonstrate the value of PBPK modeling in quantitative health risk assessments for infants and children by providing a scientifically sound tool to predict the target tissue dose in the young. A thorough understanding of dynamic changes in physiological and biochemical factors is essential to predict the target tissue exposure during development. Factors that influence the kinetic behavior of chemicals in early life include ontogeny in metabolizing enzymes, changes in transporter expression, maturation of biological barriers such as the blood brain barrier, differential growth of tissues, and distinct exposure patterns compared to adults. PBPK modeling provides a means to integrate these factors in the proper context and thus reduce uncertainty in conducting risk/safety assessment for early life. The presentations will provide an overview of pharmacokinetic factors affecting early life sensitivity and two case studies of PBPK approaches for gestation/lactation and childhood exposures, plus a demonstration of how PBPK modeling of development can be used to evaluate neonatal epidemiological results. The course participants will get an in-depth understanding of the value of PBPK modeling in addressing issues of potential sensitivity in infants and children and the possible application scenarios of this valuable tool.

#13	1:15	**THE USE OF PHYSIOLOGICALLY-BASED PHARMACOKINETIC MODELING TO INFORM EARLY LIFE SENSITIVITY TO CHEMICAL TOXICITY.** *M. Yoon*, and *H. J. Clewell*. The Hamner Institutes for Health Sciences, Research Triangle Park, NC.
	1:15	**PHYSIOLOGICAL AND PHARMACOKINETIC FACTORS AFFECTING EARLY LIFE SENSITIVITY TO CHEMICAL EXPOSURES.** Rebecca A. Clewell
	2:00	**PBPK MODELING OF MANGANESE EXPOSURES DURING GESTATION AND LACTATION.** Miyoung Yoon
	2:50	**COFFEE SERVICE.** Course Break
	3:20	**MODELING OF PYRETHROID EXPOSURES IN EARLY LIFE.** Rogelio Tornero-Velez
	4:10	**USE OF PBPK MODELS OF PERFLUORINATED COMPOUNDS TO EVALUATE WHETHER EPIDEMIOLOGIC ASSOCIATIONS ARE DUE TO REVERSE CAUSALITY.** Matthew P. Longnecker

CE Target Areas
Thematic Sessions
Continuing Education Courses

52nd Annual Meeting & ToxExpo™

Photos courtesy of San Antonio Convention and Visitors Bureau. Some photos by Marks Moore, Richard Nowitz, and Al Rendon.

Deadline for Proposals for SOT 2013 Annual Meeting Sessions: April 30, 2012

Why Submit a Proposal?

1. To present new developments in toxicology.
2. To provide attendees an opportunity to learn about state-of-the art technology and how it applies to toxicological research.
3. To provide attendees an opportunity to learn about 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 Session**—Central topics of relevance that describe public health and/or ecological problems of a particular region

2013 Thematic Approach and Continuing Education Target Areas

Themes

- Application of Systems Biology to Toxicology
- Biomarkers for Exposure Assessment, Safety Evaluation, and Translational Medicine
- Effects of Nanomaterials on Biological Systems
- Molecular Basis of Genetic Variability and Susceptibility to Toxicants
- Regulatory Science: Advancing New Approaches for Hazard Identification and Risk Assessment

Continuing Education Target Areas

- Developmental Origins of Health and Disease (DOHaD)
- Molecular Imaging
- Personalized Toxicology

Submit your proposal online at www.toxicology.org

Scientific Session Index

All sessions will be held at the Moscone Convention Center.

General Scientific Sessions

(Listed by type, then date and time)

- EC Education-Career Development Sessions
- FS Featured Sessions
- IS Informational Sessions
- PL Platform Sessions
- PS Poster Sessions
- RI Regional Interest Session
- RT Roundtable Sessions
- S Symposium Sessions
- Thematic Sessions
- W Workshop Sessions

Exhibitor Hosted Sessions are informative sessions developed by an exhibiting company. The Exhibitor Hosted Session Index is located on pages 43–44.

Monday

SYMPOSIUM SESSIONS S

Date/Time	Topic/Abstract #	Room	Page
Monday 9:15 AM	Dietary Supplement Adulteration and Impact on Human Health #14–18	Room 304	129
Monday 9:15 AM	DNA Damage Responses and Repair #19–24	Room 307	129
Monday 9:15 AM	The Thick and Thin of Nuclear Receptors and Nrf2 in Diabetes and Obesity #25–30	Room 104	130
Monday 9:15 AM	Toxicological Considerations of Epigenetic Targets in Product Development #31–36	Room 102	131

WORKSHOP SESSIONS W

Date/Time	Topic/Abstract #	Room	Page
Monday 9:15 AM	Alternative Approaches to the Safety Assessment of Natural Ingredients and Extracts in Cosmetics #37–42	Room 305	131
Monday 9:15 AM	High-Throughput *In Vitro* Toxicity Testing: A Midcourse Assessment of Predictive Accuracy for *In Vivo* Endpoints and Use in Decision-Making #43–48	Room 103	132
Monday 9:15 AM	The Epididymis—The Forgotten Target of Toxicants #49–54	Room 308	133
Monday 9:15 AM	Therapeutic Immunomodulation and Cancer Risk: Science, Risk Assessment, and Risk Communication #55–59	Room 303	133

PLATFORM SESSIONS PL

Date/Time	Topic/Abstract #	Room	Page
Monday 9:15 AM	Biological Modeling: Addressing Disease States, Defining Age Differences, and Evaluating Uncertainty #60–67	Room 310	134
Monday 9:15 AM	Hypersensitivity Methods #68–74	Room 301	134
Monday 9:15 AM	Mechanisms of Carcinogenesis #75–82	Room 302	135
Monday 9:15 AM	Nanotoxicology: Nanogold or Nanosilver #83–91	Room 309	135

POSTER SESSIONS PS

**Author attended 9:30 am–11:00 am; otherwise author attended 11:00 am–12:30 pm. Poster Board Surface Maps are on pages 112–113.*

Date/Time		Topic/Abstract #	Room	Page
Monday 9:30 AM	*	Risk Assessment: Case-Specific Characterizations #92–126 Poster Boards 101–135	Exhibit Halls A–C	137
Monday 9:30 AM		Risk Assessment: New Applications and Analyses #127–146 Poster Boards 139–158	Exhibit Halls A–C	139
Monday 9:30 AM	*	Toxicity of Mixtures #147–171 Poster Boards 201–225	Exhibit Halls A–C	140
Monday 9:30 AM		Receptors and Toxicity #172–197 Poster Boards 239–264	Exhibit Halls A–C	142
Monday 9:30 AM	*	Fukushima Radiation Toxicity and Global Toxicology Issues #198–221 Poster Boards 267–290	Exhibit Halls A–C	144
Monday 9:30 AM		Inhalants and Cardiopulmonary: Particulates and Chemical Agents #222–241 Poster Boards 301–320	Exhibit Halls A–C	146
Monday 9:30 AM	*	Safety Evaluation: Nonpharmaceuticals #242–281 Poster Boards 329–368	Exhibit Halls A–C	148
Monday 9:30 AM		Data Integration and Decision Support Systems #282–299 Poster Boards 401–418	Exhibit Halls A–C	151
Monday 9:30 AM	*	Nanotoxicology: Environmental Toxicology, Zebrafish, and Nanoparticles #300–339 Poster Boards 429–468	Exhibit Halls A–C	152
Monday 9:30 AM		Liver #340–376 Poster Boards 501–537	Exhibit Halls A–C	155
Monday 9:30 AM	*	Medical Devices #377–387 Poster Boards 539–549	Exhibit Halls A–C	158
Monday 9:30 AM		Epidemiology: Assessments and Approaches #388–402 Poster Boards 551–565	Exhibit Halls A–C	159
Monday 9:30 AM	*	Cardiovascular Toxicity I #403–430 Poster Boards 625–652	Exhibit Halls A–C	160

Scientific Session Index (Continued)

INFORMATIONAL SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Monday 12:10 PM	Global Health and Environmental Impacts of E-Waste Recycling #431	Room 303	163
Monday 12:10 PM	NIEHS Centers for Nanotechnology Health Implications Research: Building the Scientific Foundation for Evaluating Public Health Impacts of Engineered Nanomaterials #432	Room 305	164

POSTER SESSIONS

**Author attended 1:00 pm–2:45 pm; otherwise author attended 2:45 pm–4:30 pm. Poster Board Surface Maps are on pages 114–115.*

Date/Time		Topic/Abstract #	Room	Page
Monday 1:00 PM	*	Biological Modeling: Predictive PBPK Dosimetry Structures and Pharmacokinetic Data #433–450 Poster Boards 101–118	Exhibit Halls A–C	165
Monday 1:00 PM		Pharmaceuticals #451–468 Poster Boards 121–138	Exhibit Halls A–C	166
Monday 1:00 PM	*	Developmental Basis of Adult Disease #469–482 Poster Boards 141–154	Exhibit Halls A–C	167
Monday 1:00 PM		Liver and Model Systems #483–519 Poster Boards 201–237	Exhibit Halls A–C	168
Monday 1:00 PM	*	Biomarkers of Organ Damage by Drugs and Xenobiotics #520–558 Poster Boards 239–277	Exhibit Halls A–C	171
Monday 1:00 PM		Skin Toxicology #559–583 Poster Boards 301–325	Exhibit Halls A–C	174
Monday 1:00 PM	*	Alternatives to Mammalian Models II #584–618 Poster Boards 329–363	Exhibit Halls A–C	176
Monday 1:00 PM		DNA Damage and Repair #619–644 Poster Boards 401–426	Exhibit Halls A–C	179
Monday 1:00 PM	*	Nanotoxicology: Nanoparticles I #645–679 Poster Boards 429–463	Exhibit Halls A–C	181
Monday 1:00 PM		Inflammation: Biochemical/ Molecular Mechanisms #680–705 Poster Boards 501–526	Exhibit Halls A–C	184
Monday 1:00 PM	*	Inflammation in Disease #706–725 Poster Boards 529–548	Exhibit Halls A–C	186
Monday 1:00 PM		Children's Health and Juvenile Toxicity #726–740 Poster Boards 551–565	Exhibit Halls A–C	188
Monday 1:00 PM	*	Hypersensitivity and Autoimmunity #741–763 Poster Boards 601–623	Exhibit Halls A–C	189
Monday 1:00 PM		Computational Toxicology: Sequences, Systems, and Strategies #764–791 Poster Boards 625–652	Exhibit Halls A–C	191

SYMPOSIUM SESSIONS

Date/Time	Topic/Abstract #	Room	Page
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Monday 2:00 PM	Breast Cancer As a Multifactorial Disease: Interaction of Genetics, Life Stage, and the Environment #799–805	Room 103	194
Monday 2:00 PM	Evaluation of Ocular Safety in the Development of New Drugs #806–811	Room 305	195
Monday 2:00 PM	Molecular Basis for Prevention of Cardiotoxicity #812–817	Room 104	195
Monday 2:00 PM	Nanoparticles for Drug Delivery: Interactions with the Immune System #818–823	Room 102	196
Monday 2:00 PM	Toxic Cell Death: Signaling Pathways, Cross-Talk, and High-Throughput Analysis #824–829	Room 308	196

WORKSHOP SESSION

Date/Time	Topic/Abstract #	Room	Page
Monday 2:00 PM	Concepts Critical to the Next Generation of Human Health and Ecological Risk Assessment #830–835	Room 309	197

REGIONAL INTEREST SESSION

Date/Time	Topic/Abstract #	Room	Page
Monday 2:00 PM	Bridging the Green Chemistry Gap between Product Discovery and Availability #836–841	Room 304	197

PLATFORM SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Monday 2:00 PM	Ecotoxicology and Sentinel Animals #842–850	Room 302	198
Monday 2:00 PM	Exposure Assessment: Biological and Probabilistic Approaches to Monitoring, Modeling, and Predictions #851–859	Room 301	199
Monday 2:00 PM	Inhalants and Cardiopulmonary: Pollutants and Irritants #860–868	Room 310	199

Scientific Session Index (Continued)

Tuesday

SYMPOSIUM SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Tuesday 9:00 AM	An Intelligent Reproductive and Developmental Testing Paradigm for The 21st Century #869–874	Room 303	204
Tuesday 9:00 AM	Cross-Species Analysis of Toxicogenomics Data: Approaches for Assessing Differences in Sensitivity and Conservation of Mode of Action #875–880	Room 104	204
Tuesday 9:00 AM	Development of Biosimilar Products: Overview of Standards and Regulations #881–886	Room 102	205
Tuesday 9:00 AM	The Role of Danger Signals in the Development of Chemical Sensitization by Environmental and Occupational Agents #887–891	Room 301	206

WORKSHOP SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Tuesday 9:00 AM	Assessing the Bioavailability and Risk from Metal-Contaminated Soils and Dusts #892–897	Room 305	206
Tuesday 9:00 AM	State of the Science and the Future for the Predictive Power of *In Vitro* and *In Vivo* Models for Nanomaterials Toxicity Testing #898–902	Room 307	207
Tuesday 9:00 AM	Sufficient Similarity of Whole Representative Mixtures or a Relative Potency Factor Approach: Polycyclic Aromatic Hydrocarbons As a Case Study #903–908	Room 304	208

REGIONAL INTEREST SESSION

Date/Time	Topic/Abstract #	Room	Page
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PLATFORM SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Tuesday 9:00 AM	Acetaminophen Toxicity: Mechanistic and Translational Aspects #914–922	Room 309	209
Tuesday 9:00 AM	Cardiovascular Toxicity of Nanoparticles #923–930	Room 310	209
Tuesday 9:00 AM	Emerging Methodologies for Genotoxicity Assessment #931–938	Room 302	210

POSTER SESSIONS

**Author attended 9:00 am–11:00 am; otherwise author attended 11:00 am–12:30 pm. Poster Board Surface Maps are on pages 116–117.*

Date/Time		Topic/Abstract #	Room	Page
Tuesday 9:00 AM	*	Disease Prevention and Clinical and Translational Toxicology #939–975 Poster Boards 101–137	Exhibit Halls A–C	211
Tuesday 9:00 AM		Neurodegenerative Disease #976–994 Poster Boards 140–158	Exhibit Halls A–C	214
Tuesday 9:00 AM	*	Neurotoxicity: Metals #995–1023 Poster Boards 201–229	Exhibit Halls A–C	215
Tuesday 9:00 AM		Neurotoxicity: General #1024–1049 Poster Boards 234–259	Exhibit Halls A–C	218
Tuesday 9:00 AM	*	Inhalants and Cardiopulmonary: Chemical Agents #1050–1073 Poster Boards 267–290	Exhibit Halls A–C	220
Tuesday 9:00 AM		Ecotoxicology #1074–1095 Poster Boards 301–322	Exhibit Halls A–C	222
Tuesday 9:00 AM	*	Food Safety and Nutrition II #1096–1118 Poster Boards 329–351	Exhibit Halls A–C	223
Tuesday 9:00 AM		Toxicology Education and Policy #1119–1135 Poster Boards 356–372	Exhibit Halls A–C	225
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Tuesday 9:00 AM		Oxidative Injury #1173–1202 Poster Boards 439–468	Exhibit Halls A–C	229
Tuesday 9:00 AM	*	Kidney #1203–1223 Poster Boards 501–521	Exhibit Halls A–C	231
Tuesday 9:00 AM		'Omics in Toxicology #1224–1240 Poster Boards 526–542	Exhibit Halls A–C	233
Tuesday 9:00 AM	*	Epigenetics #1241–1263 Poster Boards 547–569	Exhibit Halls A–C	234
Tuesday 9:00 AM		Nanotoxicology: Nanoparticles II #1264–1298 Poster Boards 609–643	Exhibit Halls A–C	236

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ROUNDTABLE SESSIONS

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Tuesday 12:00 Noon	Improving Chemical Safety Assessment through Harmonization: Why, How, and When? #1300	Room 307	241
Tuesday 12:00 Noon	Testing of Nanomaterials for Genotoxicity—Necessity or Waste of Time? #1301	Room 303	242

POSTER SESSIONS

**Author attended 1:00 pm–2:45 pm; otherwise author attended 2:45 pm–4:30 pm. Poster Board Surface Maps are on pages 118–119.*

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Tuesday 1:00 PM	*	Alternatives to Mammalian Models for Ocular Toxicity Testing #1302–1311 Poster Boards 101–110	Exhibit Halls A–C	243
Tuesday 1:00 PM		Alternatives to Mammalian Models for Dermal Toxicity #1312–1327 Poster Boards 111–126	Exhibit Halls A–C	244
Tuesday 1:00 PM	*	Chemical and Biological Weapons: Agents and Countermeasures #1328–1355 Poster Boards 131–158	Exhibit Halls A–C	245
Tuesday 1:00 PM		Nanotoxicology: Nanoparticles III #1356–1393 Poster Boards 201–238	Exhibit Halls A–C	247
Tuesday 1:00 PM	*	Pesticide: Toxicology #1394–1412 Poster Boards 239–257	Exhibit Halls A–C	250
Tuesday 1:00 PM		Pesticides: Exposure and Hazard Assessment #1413–1431 Poster Boards 260–278	Exhibit Halls A–C	252
Tuesday 1:00 PM	*	Arsenic Toxicology #1432–1465 Poster Boards 301–334	Exhibit Halls A–C	253
Tuesday 1:00 PM		Exposure Characterization: New Analytical Sampling Methods, Biomonitoring, and Assessment Applications #1466–1494 Poster Boards 343–371	Exhibit Halls A–C	256
Tuesday 1:00 PM	*	Cardiovascular Toxicity II #1495–1523 Poster Boards 401–429	Exhibit Halls A–C	258
Tuesday 1:00 PM		Biotransformation/Cytochrome P450 #1524–1562 Poster Boards 433–471	Exhibit Halls A–C	261
Tuesday 1:00 PM	*	Immunotoxicity: Evaluation #1563–1583 Poster Boards 501–521	Exhibit Halls A–C	263
Tuesday 1:00 PM		Immunotoxicity: Methods #1584–1599 Poster Boards 529–544	Exhibit Halls A–C	265
Tuesday 1:00 PM	*	Pharmacogenomics/Genetic Polymorphisms #1600–1616 Poster Boards 551–567	Exhibit Halls A–C	266
Tuesday 1:00 PM		Immunotoxicity: Mechanisms #1617–1654 Poster Boards 615–652	Exhibit Halls A–C	268

SYMPOSIUM SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Tuesday 1:30 PM	Circulating microRNAs: A New Class of Biomarkers for Tissue-Specific Toxicity #1655–1660	Room 103	271
Tuesday 1:30 PM	*In Vitro* and *In Vivo* Alternative Models of Developmental Toxicity of Pharmaceutical Compounds #1661–1666	Room 303	271

WORKSHOP SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Tuesday 1:30 PM	Beyond Traditional Monoclonals: New Biologics Formats and Preclinical Challenges #1667–1671	Room 307	272
Tuesday 1:30 PM	Biomarkers and Associated Health Consequences of Pesticide Exposures in Hispanic Populations #1672–1677	Room 304	272
Tuesday 1:30 PM	How Useful Are Liver *In Vitro* Models for Toxicity and Mode-of-Action Prediction? #1678–1683	Room 102	273
Tuesday 1:30 PM	Nonclinical and Clinical Applications of Translational Organ-Based Imaging #1684–1689	Room 104	274
Tuesday 1:30 PM	Novel Topics in Environmental Polycyclic Aromatic Hydrocarbon Metabolism Leading to Carcinogenesis #1690–1695	Room 305	274

EDUCATION-CAREER DEVELOPMENT SESSION

Date/Time	Topic/Abstract #	Room	Page
Tuesday 1:30 PM	Career Alternatives and Transitions: New Challenges and Opportunities in Today's Job Market for Toxicologists #1696–1700	Room 308	275

Scientific Session Index (Continued)

PLATFORM SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Tuesday 1:30 PM	Advances in Developmental Neurotoxicity: Stem Cell, High-Throughput, and Alternative Species Approaches #1701–1709	Room 302	276
Tuesday 1:30 PM	miRNA As Biomarkers for Organ Damage #1710–1716	Room 309	276
Tuesday 1:30 PM	New Insights into the Reproductive and Developmental Toxicity of Bisphenol A #1717–1724	Room 301	277
Tuesday 1:30 PM	Risk Assessment Approaches: Data-Derived Extrapolations, QSAR, *In Silico* Strategies, and Surrogates #1725–1733	Room 310	278

EDUCATION-CAREER DEVELOPMENT SESSION

Date/Time	Topic/Abstract #	Room	Page
Tuesday 4:30 PM	The Art of Negotiation: A Fundamental Skill for Scientists #1734	Room 307	279

Wednesday

ROUNDTABLE SESSION

Date/Time	Topic/Abstract #	Room	Page
Wednesday 7:30 AM	Placing Bisphenol A Risks in a Human Exposure Context: Is Internal Exposure to Bioactive Bisphenol A in Humans Similar to Levels in Affected Rodent Test Species? #1735	Room 303	281

INFORMATIONAL SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Wednesday 7:30 AM	Getting Certified As a Toxicologist: Why, When, Where, and How? #1736	Room 307	281
Wednesday 7:30 AM	Good Laboratory Practice (GLP) in China #1737	Room 305	282

SYMPOSIUM SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Wednesday 9:00 AM	Epigenetic and miRNA Regulations in Carcinogenesis: Toxicological Implications #1738–1743	Room 103	283
Wednesday 9:00 AM	Nonclinical Safety Assessment of Dual-Targeting Biotherapeutics #1744–1750	Room 102	283
Wednesday 9:00 AM	The Allergenicity and Immunomodulatory Effect of Food Substances #1751–1756	Room 307	284
Wednesday 9:00 AM	The Toxicological Impact of Metals, Crude Oil, and Chemical Dispersants from the Gulf of Mexico Oil Crisis on Human and Wildlife Health #1757–1763	Room 308	285

WORKSHOP SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Wednesday 9:00 AM	Caught in the Act: Free Radical Detection and Implications in Pathways to Toxicity #1764–1769	Room 304	286
Wednesday 9:00 AM	Chelation Therapy: A Focus on the Risks and Benefits #1770–1775	Room 305	286
Wednesday 9:00 AM	Cooperative Epidemiology and Toxicology Research: HEI's National Particle Component Toxicity (NPACT) Initiative #1776–1781	Room 104	287
Wednesday 9:00 AM	Progress in Developing New Biomarkers of Drug-Induced Liver Injury (DILI): What You Don't Know Can Hurt You #1782–1787	Room 303	287

PLATFORM SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Wednesday 9:00 AM	Bioinformatics: Signature Applications and Network Analyses #1788–1796	Room 301	288
Wednesday 9:00 AM	Chemical and Biological Weapons: Agents and Countermeasures #1797–1805	Room 309	289
Wednesday 9:00 AM	Nanotoxicology: Carbon Nanotubes and Nanofibers #1806–1814	Room 310	289

POSTER SESSIONS

**Author attended 9:00 am–11:00 am; otherwise author attended 11:00 am–12:30 pm. Poster Board Surface Maps are on pages 120–121.*

Date/Time		Topic/Abstract #	Room	Page
Wednesday 9:00 AM	*	Alternatives to Mammalian Models I #1815–1852 Poster Boards 101–138	Exhibit Halls A–C	290
Wednesday 9:00 AM		Regulatory Policy: Procedures and Predictions #1853–1867 Poster Boards 141–155	Exhibit Halls A–C	293
Wednesday 9:00 AM	*	Disposition and Pharmacokinetics #1868–1895 Poster Boards 201–228	Exhibit Halls A–C	294
Wednesday 9:00 AM		Developmental Toxicology #1896–1926 Poster Boards 229–259	Exhibit Halls A–C	296
Wednesday 9:00 AM	*	Developmental Toxicity II #1927–1944 Poster Boards 260–277	Exhibit Halls A–C	299

Scientific Session Index (Continued)

Wednesday 9:00 AM		Developmental Neurotoxicity I #1945–1969 Poster Boards 301–325	Exhibit Halls A–C	300
Wednesday 9:00 AM	*	Molecular Basis of Carcinogenesis #1970–2008 Poster Boards 329–367	Exhibit Halls A–C	302
Wednesday 9:00 AM		Food Safety and Nutrition I #2009–2031 Poster Boards 401–423	Exhibit Halls A–C	305
Wednesday 9:00 AM	*	Cell Death Pathways #2032–2057 Poster Boards 425–450	Exhibit Halls A–C	307
Wednesday 9:00 AM		Stem Cell Biology and Toxicology #2058–2078 Poster Boards 452–472	Exhibit Halls A–C	309
Wednesday 9:00 AM	*	Genotoxicity Testing #2079–2101 Poster Boards 501–523	Exhibit Halls A–C	311
Wednesday 9:00 AM		Exposure Assessment: Case-Specific Characterizations #2102–2126 Poster Boards 526–550	Exhibit Halls A–C	313
Wednesday 9:00 AM	*	NrF–2 #2127–2146 Poster Boards 551–570	Exhibit Halls A–C	315
Wednesday 9:00 AM		Gene Regulation and Signal Transduction #2147–2182 Poster Boards 617–652	Exhibit Halls A–C	316

ROUNDTABLE SESSION

Date/Time	Topic/Abstract #	Room	Page
Wednesday 12:00 Noon	Scientific, Regulatory, and Public Perspectives on the Credibility and Use of Alternative Toxicological Test Methods in a Legislative Framework #2183	Room 307	320
Wednesday 12:00 Noon	The Future of Toxicology Education: Outcomes of the Toxicology Educational Summit #2184	Room 102	320

INFORMATIONAL SESSION

Date/Time	Topic/Abstract #	Room	Page
Wednesday 12:00 Noon	Pregnancy in the Workplace: Managing Occupational Safety for a Unique Subpopulation #2185	Room 308	321

POSTER SESSIONS

**Author attended 1:00 pm–2:45 pm; otherwise author attended 2:45 pm–4:30 pm. Poster Board Surface Maps are on pages 122–123.*

Date/Time		Topic/Abstract #	Room	Page
Wednesday 1:00 PM	*	Endocrine Toxicity #2186–2236 Poster Boards 101–151	Exhibit Halls A–C	322
Wednesday 1:00 PM		Pharmaceutical Safety Assessment: Novel Therapeutics and Preclinical Safety Assessment #2237–2278 Poster Boards 153–158 and 201–236	Exhibit Halls A–C	325
Wednesday 1:00 PM	*	Animal Models in Pharmaceutical Toxicology #2279–2296 Poster Boards 237–254	Exhibit Halls A–C	329
Wednesday 1:00 PM		Animal Models in Toxicology #2297–2332 Poster Boards 255–290	Exhibit Halls A–C	330
Wednesday 1:00 PM	*	Male Reproductive Toxicology #2333–2364 Poster Boards 301–332	Exhibit Halls A–C	333
Wednesday 1:00 PM		Reproductive Toxicology II #2365–2395 Poster Boards 338–368	Exhibit Halls A–C	335
Wednesday 1:00 PM	*	Natural Products #2396–2433 Poster Boards 401–438	Exhibit Halls A–C	337
Wednesday 1:00 PM		Biomarkers of Environmental Exposure and Toxicity #2434–2461 Poster Boards 441–468	Exhibit Halls A–C	340
Wednesday 1:00 PM	*	Metals #2462–2502 Poster Boards 501–541	Exhibit Halls A–C	342
Wednesday 1:00 PM		Persistent Organic Chemicals #2503–2524 Poster Boards 549–570	Exhibit Halls A–C	346
Wednesday 1:00 PM	*	Neurotoxicity: Pesticides #2525–2549 Poster Boards 601–625	Exhibit Halls A–C	348
Wednesday 1:00 PM		Developmental Neurotoxicity: Metals and Pesticides #2550–2570 Poster Boards 628–648	Exhibit Halls A–C	349

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SYMPOSIUM SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Wednesday 1:30 PM	New Visions in Toxicology: Lysosomes—Roles in Disease, Toxicity, and Drug Development #2571–2576	Room 103	351
Wednesday 1:30 PM	Off the Beaten Path: Preclinical Approaches to Safety Evaluation of Cells/Gene Therapy, Vaccines, and Adjuvants #2577–2582	Room 102	352
Wednesday 1:30 PM	Trivalent Arsenic Metabolites and Arsenic Toxicity #2583–2589	Room 304	352

WORKSHOP SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Wednesday 1:30 PM	Advancing Food Safety in a Global Marketplace #2590–2595	Room 303	353
Wednesday 1:30 PM	Discovering Novel Hypotheses for Mechanisms of Toxicity from High-Content Data Sets #2596–2600	Room 104	354
Wednesday 1:30 PM	Muscle Toxicity—Current Challenges in Translatable Biomarkers #2601–2607	Room 307	354
Wednesday 1:30 PM	Progenitor and Stem Cells As Targets of Environmental Pollutants #2608–2613	Room 305	355
Wednesday 1:30 PM	T-Dependent Antibody Responses in Nonhuman Primates: Challenges and Opportunities #2614–2619	Room 308	356

PLATFORM SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Wednesday 1:30 PM	Alternatives to Mammalian Models in Skin Sensitization #2620–2627	Room 302	356
Wednesday 1:30 PM	Computational Toxicology: Predicting Hepatotoxicity #2628–2635	Room 309	356
Wednesday 1:30 PM	Inhalants and Cardiopulmonary: Particulates #2636–2644	Room 301	356
Wednesday 1:30 PM	Risk Analysis: New Derivations and Updated Debates #2645–2653	Room 310	358

INFORMATIONAL SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Wednesday 4:30 PM	Evolution and Implementation of Combined Chemical Exposure Methods: International Perspectives #2654	Room 303	359
Wednesday 4:30 PM	Proposition 65: Twenty-Five Years of Implementing California's Unique and Far-Reaching Law Regulating Organic and Metallic Carcinogens and Developmental/Reproductive Toxins #2655	Room 305	360

EDUCATION-CAREER DEVELOPMENT SESSION

Date/Time	Topic/Abstract #	Room	Page
Wednesday 4:30 PM	Refining Your Science Communication Skills #2656	Room 307	360

Thursday

POSTER SESSION

**Author attended 8:30 am–12:00 Noon.*
Poster Board Surface Maps are on page 124.

Date/Time		Topic/Abstract #	Room	Page
Thursday 8:30 AM	*	Carcinogenesis #2657–2702 Poster Boards 101–146	Gateway Ballroom	362

SYMPOSIUM SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Thursday 9:00 AM	Advances in Bridging Nonclinical Cardiovascular Data to the Clinic #2703–2707	Room 302	366
Thursday 9:00 AM	Emerging Evidence for Novel Noncholinergic Mechanisms of Organophospate-Induced Neurotoxicity #2708–2714	Room 308	366
Thursday 9:00 AM	Emerging Mechanistic Targets in Lung Injury Induced by Combustion-Generated Particles #2715–2720	Room 305	367
Thursday 9:00 AM	Realizing the Vision of 21st Century Toxicity Testing: Genetic Approaches to Pathway Analysis #2721–2726	Room 304	368

WORKSHOP SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Thursday 9:00 AM	Challenges and Opportunities in Evaluating Protein Allergenicity across Biotechnology Industries #2727–2731	Room 303	368
Thursday 9:00 AM	Chemical Standardization of Botanical Medicines for Safe and Effective Use As Therapeutic Agents #2732–2737	Room 307	369

Poster Session Schedule and Board Surface Maps

Monday, March 12–Wednesday, March 14—Exhibit Halls A–C—Exhibit Level *(See Map below)*

MONDAY

Morning, March 12—9:30 AM to 12:30 PM
Poster Set Up—7:30 AM to 9:30 AM

Afternoon, March 12—1:00 PM to 4:30 PM
Poster Set Up—12:30 PM to 1:00 PM

TUESDAY

Morning, March 13—9:00 AM to 12:30 PM
Poster Set Up—7:30 AM to 9:00 AM

Afternoon, March 13—1:00 PM to 4:30 PM
Poster Set Up—12:30 PM to 1:00 PM

WEDNESDAY

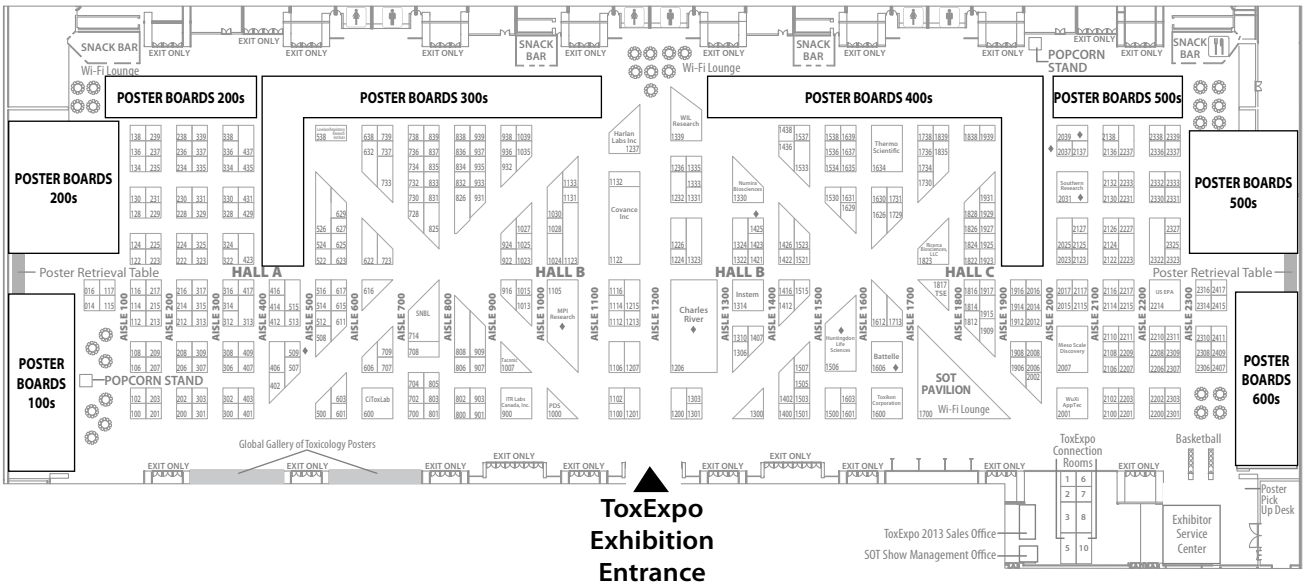
Morning, March 14—9:00 AM to 12:30 PM
Poster Set Up—7:30 AM to 9:00 AM

Afternoon, March 14—1:00 PM to 4:30 PM
Poster Set Up—12:30 PM to 1:00 PM

Thursday, March 15—Gateway Ballroom—Exhibit Level *(See Map on Page 124)*

THURSDAY

Morning, March 15—8:00 AM to 12:00 Noon
Poster Set Up—7:00 AM to 8:00 AM



If you do not remove your poster at the end of your session, you will find it on the "Poster Retrieval Tables" located at either end of the Exhibit Halls A–C, between the 100 & 200 Poster sections on the left side of the hall, and between the 500 & 600 poster sections on the right side of the hall. Any posters left behind at 4:30 pm on Wednesday will be taken to SOT Headquarters Office, Room 222, Thursday morning, March 15. All posters not claimed in the SOT Headquarters Office and/or the Gateway Ballroom, by 1:00 pm on Thursday, March 15 will be recycled.

Photography in the ToxExpo and all poster sessions is prohibited without the consent of exhibitors or poster presenter(s)/author(s). Please respect your colleagues' right to privacy.

The numbers listed refer to the poster location that does not change throughout the week. Presenters should display posters **ONLY** on the date and time communicated in your acceptance notice. A list of poster session dates and times with abstract numbers can be found on pages 111–124. The full map of the Exhibit Halls A–C can be found on pages 38–39 to assist you in finding poster sessions.

Poster Session Schedule and Board Surface Maps (Continued)

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200s

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100s

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Monday Morning, March 12—9:30 AM to 12:30 PM—Exhibit Halls A–C
Poster Set Up 7:30 AM to 9:30 AM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
Risk Assessment: Case-Specific Characterizations	92–126	101–135
Risk Assessment: New Applications and Analyses	127–146	139–158
Toxicity of Mixtures	147–171	201–225
Receptors and Toxicity	172–197	239–264
Fukushima Radiation Toxicity and Global Toxicology Issues	198–221	267–290
Inhalants and Cardiopulmonary: Particulates and Chemical Agents	222–241	301–320
Safety Evaluation: Nonpharmaceuticals	242–281	329–368

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Poster Session Schedule and Board Surface Maps (Continued)

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500s

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Monday Morning, March 12—9:30 AM to 12:30 PM—Exhibit Halls A–C
Poster Set Up 7:30 AM to 9:30 AM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
Data Integration and Decision Support Systems	282–299	401–418
Nanotoxicology: Environmental Toxicology, Zebrafish, and Nanoparticles	300–339	429–468
Liver	340–376	501–537
Medical Devices	377–387	539–549
Epidemiology: Assessments and Approaches	388–402	551–565
Cardiovascular Toxicity I	403–430	625–652
Visiting Student Poster Session	**By Invitation Only**	**601–624**

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Poster Session Schedule and Board Surface Maps (Continued)

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200s

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511-**229**	512-**230**	513-**231**	514-**232**	515-**233**

510-**228**	509-**227**	508-**226**	507-**225**	506-**224**	505-**223**	504-**222**
497-**215**	498-**216**	499-**217**	500-**218**	501-**219**	502-**220**	503-**221**
496-**214**	495-**213**	494-**212**	493-**211**	492-**210**	491-**209**	490-**208**
483-**201**	484-**202**	485-**203**	486-**204**	487-**205**	488-**206**	489-**207**

100s

158	157	156		
481-**153**	482-**154**	155		
480-**152**	479-**151**	478-**150**	477-**149**	
473-**145**	474-**146**	475-**147**	476-**148**	
472-**144**	471-**143**	470-**142**	469-**141**	
467-**137**	468-**138**	139	140	
466-**136**	465-**135**	464-**134**		
461-**131**	462-**132**	463-**133**		
460-**130**	459-**129**	458-**128**	457-**127**	456-**126**
451-**121**	452-**122**	453-**123**	454-**124**	455-**125**
120	119	450-**118**	449-**117**	448-**116**
443-**111**	444-**112**	445-**113**	446-**114**	447-**115**
442-**110**	441-**109**	440-**108**	439-**107**	438-**106**
433-**101**	434-**102**	435-**103**	436-**104**	437-**105**

Monday Afternoon, March 12—1:00 PM to 4:30 PM—Exhibit Halls A–C
Poster Set Up—12:30 PM to 1:00 PM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
Biological Modeling: Predictive PBPK Dosimetry Structures and Pharmacokinetic Data	433–450	101–118
Pharmaceuticals	451–468	121–138
Developmental Basis of Adult Disease	469–482	141–154
Liver and Model Systems	483–519	201–237
Biomarkers of Organ Damage by Drugs and Xenobiotics	520–558	239–277
Skin Toxicology	559–583	301–325
Alternatives to Mammalian Models II	584–618	329–363

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Poster Session Schedule and Board Surface Maps (Continued)

400s

468	465	464	677–**461**	676–**460**	673–**457**	672–**456**	669–**453**	668–**452**	665–**449**	664–**448**	661–**445**	660–**444**	657–**441**	656–**440**	653–**437**	652–**436**	649–**433**	648–**432**	645–**429**	427	644–**426**
467	466	679–**463**	678–**462**	675–**459**	674–**458**	671–**455**	670–**454**	667–**451**	666–**450**	663–**447**	662–**446**	659–**443**	658–**442**	655–**439**	654–**438**	651–**435**	650–**434**	647–**431**	646–**430**	428	643–**425**

642–**424**	641–**423**
639–**421**	640–**422**
638–**420**	637–**419**
635–**417**	636–**418**
634–**416**	633–**415**
631–**413**	632–**414**
630–**412**	629–**411**
627–**409**	628–**410**
626–**408**	625–**407**
623–**405**	624–**406**
622–**404**	621–**403**
619–**401**	620–**402**

500s

569	568	740–**565**	739–**564**	736–**561**	735–**560**	732–**557**	731–**556**	728–**553**	727–**552**
570	567	566	738–**563**	737–**562**	734–**559**	733–**558**	730–**555**	729–**554**	726–**551**

550	549	725–**548**	724–**547**
720–**543**	721–**544**	722–**545**	723–**546**
719–**542**	718–**541**	717–**540**	716–**539**
712–**535**	713–**536**	714–**537**	715–**538**
711–**534**	710–**533**	709–**532**	
706–**529**	707–**530**	708–**531**	

528	527	705–**526**	704–**525**	703–**524**	702–**523**	701–**522**
694–**515**	695–**516**	696–**517**	697–**518**	698–**519**	699–**520**	700–**521**
693–**514**	692–**513**	691–**512**	690–**511**	689–**510**	688–**509**	687–**508**
680–**501**	681–**502**	682–**503**	683–**504**	684–**505**	685–**506**	686–**507**

600s

	791–**652**	790–**651**	789–**650**
	786–**647**	787–**648**	788–**649**
785–**646**	784–**645**	783–**644**	782–**643**
778–**639**	779–**640**	780–**641**	781–**642**
777–**638**	776–**637**	775–**636**	774–**635**
770–**631**	771–**632**	772–**633**	773–**634**
	769–**630**	768–**629**	767–**628**
	764–**625**	765–**626**	766–**627**
624	763–**623**	762–**622**	761–**621**
757–**617**	758–**618**	759–**619**	760–**620**
756–**616**	755–**615**	754–**614**	753–**613**
749–**609**	750–**610**	751–**611**	752–**612**
748–**608**	747–**607**	746–**606**	745–**605**
741–**601**	742–**602**	743–**603**	744–**604**

Monday Afternoon, March 12—1:00 PM to 4:30 PM—Exhibit Halls A–C
Poster Set Up—12:30 PM to 1:00 PM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
DNA Damage and Repair	619–644	401–426
Nanotoxicology: Nanoparticles I	645–679	429–463
Inflammation: Biochemical/Molecular Mechanisms	680–705	501–526
Inflammation in Disease	706–725	529–548
Children's Health and Juvenile Toxicity	726–740	551–565
Hypersensitivity and Autoimmunity	741–763	601–623
Computational Toxicology: Sequences, Systems, and Strategies	764–791	625–652

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Poster Session Schedule and Board Surface Maps (Continued)

300s

328	327	1096–**329**	1099–**332**	1100–**333**	1103–**336**	1104–**337**	1107–**340**	1108–**341**	1111–**344**	1112–**345**	1115–**348**	1116–**349**	352	353	1119–**356**	1120–**357**	1123–**360**	1124–**361**	1127–**364**	1128–**365**	1131–**368**	1132–**369**	1134–**371**	472
325	326	1097–**330**	1098–**331**	1101–**334**	1102–**335**	1105–**338**	1106–**339**	1109–**342**	1110–**343**	1113–**346**	1114–**347**	1117–**350**	1118–**351**	354	355	1121–**358**	1122–**359**	1125–**362**	1126–**363**	1129–**366**	1130–**367**	1133–**370**	1135–**372**	471

324	323
1094–**321**	1095–**322**
1093–**320**	1092–**319**
1090–**317**	1091–**318**
1089–**316**	1088–**315**
1086–**313**	1087–**314**
1085–**312**	1084–**311**
1082–**309**	1083–**310**
1081–**308**	1080–**307**
1078–**305**	1079–**306**
1077–**304**	1076–**303**
1074–**301**	1075–**302**

200s

1073–**290**	1072–**289**	1071–**288**	1070–**287**	1069–**286**	1068–**285**	1067–**284**	1066–**283**	1065–**282**	1064–**281**	1063–**280**	1062–**279**																		
1050–**267**	1051–**268**	1052–**269**	1053–**270**	1054–**271**	1055–**272**	1056–**273**	1057–**274**	1058–**275**	1059–**276**	1060–**277**	1061–**278**																		
				266	265	264	263	262	261	260																			
				1043–**253**	1044–**254**	1045–**255**	1046–**256**	1047–**257**	1048–**258**	1049–**259**																			
				1042–**252**	1041–**251**	1040–**250**	1039–**249**	1038–**248**	1037–**247**	1036–**246**																			
				1029–**239**	1030–**240**	1031–**241**	1032–**242**	1033–**243**	1034–**244**	1035–**245**																			
1028–**238**	1027–**237**	1026–**236**					1025–**235**	1024–**234**																					
1023–**229**	230	231					232	233																					
				1022–**228**	1021–**227**	1020–**226**	1019–**225**	1018–**224**	1017–**223**	1016–**222**																			
				1009–**215**	1010–**216**	1011–**217**	1012–**218**	1013–**219**	1014–**220**	1015–**221**																			
				1008–**214**	1007–**213**	1006–**212**	1005–**211**	1004–**210**	1003–**209**	1002–**208**																			
				995–**201**	996–**202**	997–**203**	998–**204**	999–**205**	1000–**206**	1001–**207**																			

100s

994–**158**	993–**157**	992–**156**		
989–**153**	990–**154**	991–**155**		
988–**152**	987–**151**	986–**150**	985–**149**	
981–**145**	982–**146**	983–**147**	984–**148**	
980–**144**	979–**143**	978–**142**	977–**141**	
975–**137**	138	139	976–**140**	
974–**136**	973–**135**	972–**134**		
969–**131**	970–**132**	971–**133**		
968–**130**	967–**129**	966–**128**	965–**127**	964–**126**
959–**121**	960–**122**	961–**123**	962–**124**	963–**125**
958–**120**	957–**119**	956–**118**	955–**117**	954–**116**
949–**111**	950–**112**	951–**113**	952–**114**	953–**115**
948–**110**	947–**109**	946–**108**	945–**107**	944–**106**
939–**101**	940–**102**	941–**103**	942–**104**	943–**105**

Tuesday Morning, March 13—9:00 AM to 12:30 PM—Exhibit Halls A–C
Poster Set Up—7:30 AM to 9:00 AM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
Disease Prevention and Clinical and Translational Toxicology	939–975	101–137
Neurodegenerative Disease	976–994	140–158
Neurotoxicity: Metals	995–1023	201–229
Neurotoxicity: General	1024–1049	234–259
Inhalants and Cardiopulmonary: Chemical Agents	1050–1073	267–290
Ecotoxicology	1074–1095	301–322
Food Safety and Nutrition II	1096–1118	329–351

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Poster Session Schedule and Board Surface Maps (Continued)

400s

469 | 1202–**468** | 1199–**465** | 1198–**464** | 1195–**461** | 1194–**460** | 1191–**457** | 1190–**456** | 1187–**453** | 1186–**452** | 1183–**449** | 1182–**448** | 1179–**445** | 1178–**444** | 1175–**441** | 1174–**440** | 1172–**437** | 1171–**436** | 1168–**433** | 1167–**432** | 1164–**429** | 1162–**427** | 1161–**426**

470 | 1201–**467** | 1200–**466** | 1197–**463** | 1196–**462** | 1193–**459** | 1192–**458** | 1189–**455** | 1188–**454** | 1185–**451** | 1184–**450** | 1181–**447** | 1180–**446** | 1177–**443** | 1176–**442** | 1173–**439** | 438 | 1170–**435** | 1169–**434** | 1166–**431** | 1165–**430** | 1163–**428** | 1160–**425**

1159–**424** | 1158–**423**
1156–**421** | 1157–**422**

1155–**420** | 1154–**419**
1152–**417** | 1153–**418**

1151–**416** | 1150–**415**
1148–**413** | 1149–**414**

1147–**412** | 1146–**411**
1144–**409** | 1145–**410**

1143–**408** | 1142–**407**
1140–**405** | 1141–**406**

1139–**404** | 1138–**403**
1136–**401** | 1137–**402**

500s

1263–**569** | 1262–**568** | 1259–**565** | 1258–**564** | 1255–**561** | 1254–**560** | 1251–**557** | 1250–**556** | 1247–**553** | 1246–**552**

570 | 1261–**567** | 1260–**566** | 1257–**563** | 1256–**562** | 1253–**559** | 1252–**558** | 1249–**555** | 1248–**554** | 1245–**551**

1244–**550** | 1243–**549** | 1242–**548** | 1241–**547**
543 | 544 | 545 | 546

1240–**542** | 1239–**541** | 1238–**540** | 1237–**539**
1233–**535** | 1234–**536** | 1235–**537** | 1236–**538**

1232–**534** | 1231–**533** | 1230–**532**
1227–**529** | 1228–**530** | 1229–**531**

1226–**528** | 1225–**527** | 1224–**526** | 525 | 524 | 523 | 522
1217–**515** | 1218–**516** | 1219–**517** | 1220–**518** | 1221–**519** | 1222–**520** | 1223–**521**

1216–**514** | 1215–**513** | 1214–**512** | 1213–**511** | 1212–**510** | 1211–**509** | 1210–**508**
1203–**501** | 1204–**502** | 1205–**503** | 1206–**504** | 1207–**505** | 1208–**506** | 1209–**507**

600s

652 | 651 | 650
647 | 648 | 649

646 | 645 | 644 | 1298–**643**
1294–**639** | 1295–**640** | 1296–**641** | 1297–**642**

1293–**638** | 1292–**637** | 1291–**636** | 1290–**635**
1286–**631** | 1287–**632** | 1288–**633** | 1289–**634**

1285–**630** | 1284–**629** | 1283–**628**
1280–**625** | 1281–**626** | 1282–**627**

1279–**624** | 1278–**623** | 1277–**622** | 1276–**621**
1272–**617** | 1273–**618** | 1274–**619** | 1275–**620**

1271–**616** | 1270–**615** | 1269–**614** | 1268–**613**
1264–**609** | 1265–**610** | 1266–**611** | 1267–**612**

608 | 607 | 606 | 605
601 | 602 | 603 | 604

Tuesday Morning, March 13—9:00 AM to 12:30 PM—Exhibit Halls A–C
Poster Set Up—7:30 AM to 9:00 AM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
Toxicology Education and Policy	1119–1135	356–372
Pharmaceutical Safety Assessment: Methods and Mechanisms	1136–1172	401–437
Oxidative Injury	1173–1202	439–468
Kidney	1203–1223	501–521
‘Omics in Toxicology	1224–1240	526–542
Epigenetics	1241–1263	547–569
Nanotoxicology: Nanoparticles II	1264–1298	609–643

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Poster Session Schedule and Board Surface Maps (Continued)

300s

1459–**328**|1458–**327** 1460–**329**|1463–**332** 1464–**333** 336 337 340 341 1467–**344** 1468–**345**|1471–**348** 1472–**349**|1475–**352** 1476–**353**|1479–**356** 1480–**357**|1483–**360** 1484–**361**|1487–**364** 1488–**365**|1491–**368** 1492–**369** 372
1456–**325**|1457–**326** 1461–**330**|1462–**331** 1465–**334** 335 338 339 342 1466–**343** 1469–**346**|1470–**347** 1473–**350**|1474–**351** 1477–**354**|1478–**355** 1481–**358**|1482–**359** 1485–**362**|1486–**363** 1489–**366**|1490–**367** 1493–**370**|1494–**371**

1455–**324**|1454–**323**
1452–**321**|1453–**322**

1451–**320**|1450–**319**
1448–**317**|1449–**318**

1447–**316**|1446–**315**
1444–**313**|1445–**314**

1443–**312**|1442–**311**
1440–**309**|1441–**310**

1439–**308**|1438–**307**
1436–**305**|1437–**306**

1435–**304**|1434–**303**
1432–**301**|1433–**302**

200s

290 289 288 287 286 285 284 283 282 281 280 279
1420–**267**|1421–**268** 1422–**269**|1423–**270** 1424–**271**|1425–**272** 1426–**273**|1427–**274** 1428–**275**|1429–**276** 1430–**277**|1431–**278**

1419–**266**|1418–**265**|1417–**264**|1416–**263**|1415–**262**|1414–**261**|1413–**260**
1408–**253**|1409–**254**|1410–**255**|1411–**256**|1412–**257** 258 259

1407–**252**|1406–**251**|1405–**250**|1404–**249**|1403–**248**|1402–**247**|1401–**246**
1394–**239**|1395–**240**|1396–**241**|1397–**242**|1398–**243**|1399–**244**|1400–**245**

1393–**238**|1392–**237**|1391–**236** 1390–**235**|1389–**234**
1384–**229**|1385–**230**|1386–**231** 1387–**232**|1388–**233**

1383–**228**|1382–**227**|1381–**226**|1380–**225**|1379–**224**|1378–**223**|1377–**222**
1370–**215**|1371–**216**|1372–**217**|1373–**218**|1374–**219**|1375–**220**|1376–**221**

1369–**214**|1368–**213**|1367–**212**|1366–**211**|1365–**210**|1364–**209**|1363–**208**
1356–**201**|1357–**202**|1358–**203**|1359–**204**|1360–**205**|1361–**206**|1362–**207**

100s

1355–**158**|1354–**157**|1353–**156**
1350–**153**|1351–**154**|1352–**155**

1349–**152**|1348–**151**|1347–**150**|1346–**149**
1342–**145**|1343–**146**|1344–**147**|1345–**148**

1341–**144**|1340–**143**|1339–**142**|1338–**141**
1334–**137**|1335–**138**|1336–**139**|1337–**140**

1333–**136**|1332–**135**|1331–**134**
1328–**131**|1329–**132**|1330–**133**

130 129 128 127 1327–**126**
1322–**121**|1323–**122**|1324–**123**|1325–**124**|1326–**125**

1321–**120**|1320–**119**|1319–**118**|1318–**117**|1317–**116**
1312–**111**|1313–**112**|1314–**113**|1315–**114**|1316–**115**

1311–**110**|1310–**109**|1309–**108**|1308–**107**|1307–**106**
1302–**101**|1303–**102**|1304–**103**|1305–**104**|1306–**105**

POSTERS

Tuesday Afternoon, March 13—1:00 PM to 4:30 PM—Exhibit Halls A–C
Poster Set Up—12:30 PM to 1:00 PM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
Alternatives to Mammalian Models for Ocular Toxicity Testing	1302–1311	101–110
Alternatives to Mammalian Models for Dermal Toxicity	1312–1327	111–126
Chemical and Biological Weapons: Agents and Countermeasures	1328–1355	131–158
Nanotoxicology: Nanoparticles III	1356–1393	201–238
Pesticide: Toxicology	1394–1412	239–257
Pesticides: Exposure and Hazard Assessment	1413–1431	260–278
Arsenic Toxicology	1432–1465	301–334

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Poster Session Schedule and Board Surface Maps (Continued)

400s

472	1560–**469**	1559–**468**	1556–**465**	1555–**464**	1552–**461**	1551–**460**	1548–**457**	1547–**456**	1544–**453**	1543–**452**	1540–**449**	1539–**448**	1536–**445**	1535–**444**	1532–**441**	1531–**440**	1528–**437**	1527–**436**	1524–**433**	432	1523–**429**	1521–**427**	1520–**426**
1562–**471**	1561–**470**	1558–**467**	1557–**466**	1554–**463**	1553–**462**	1550–**459**	1549–**458**	1546–**455**	1545–**454**	1542–**451**	1541–**450**	1538–**447**	1537–**446**	1534–**443**	1533–**442**	1530–**439**	1529–**438**	1526–**435**	1525–**434**	431	430	1522–**428**	1519–**425**

1518–**424**	1517–**423**
1515–**421**	1516–**422**
1514–**420**	1513–**419**
1511–**417**	1512–**418**
1510–**416**	1509–**415**
1507–**413**	1508–**414**
1506–**412**	1505–**411**
1503–**409**	1504–**410**
1502–**408**	1501–**407**
1499–**405**	1500–**406**
1498–**404**	1497–**403**
1495–**401**	1496–**402**

500s

569	568	1614–**565**	1613–**564**	1610–**561**	1609–**560**	1606–**557**	1605–**556**	1602–**553**	1601–**552**
570	1616–**567**	1615–**566**	1612–**563**	1611–**562**	1608–**559**	1607–**558**	1604–**555**	1603–**554**	1600–**551**

550	549	548	547
1598–**543**	1599–**544**	545	546
1597–**542**	1596–**541**	1595–**540**	1594–**539**
1590–**535**	1591–**536**	1592–**537**	1593–**538**
1589–**534**	1588–**533**	1587–**532**	
1584–**529**	1585–**530**	1586–**531**	

528	527	526	525	524	523	522
1577–**515**	1578–**516**	1579–**517**	1580–**518**	1581–**519**	1582–**520**	1583–**521**
1576–**514**	1575–**513**	1574–**512**	1573–**511**	1572–**510**	1571–**509**	1570–**508**
1563–**501**	1564–**502**	1565–**503**	1566–**504**	1567–**505**	1568–**506**	1569–**507**

600s

	1654–**652**	1653–**651**	1652–**650**
	1649–**647**	1650–**648**	1651–**649**
1648–**646**	1647–**645**	1646–**644**	1645–**643**
1641–**639**	1642–**640**	1643–**641**	1644–**642**
1640–**638**	1639–**637**	1638–**636**	1637–**635**
1633–**631**	1634–**632**	1635–**633**	1636–**634**
	1632–**630**	1631–**629**	1630–**628**
	1627–**625**	1628–**626**	1629–**627**
1626–**624**	1625–**623**	1624–**622**	1623–**621**
1619–**617**	1620–**618**	1621–**619**	1622–**620**
1618–**616**	1617–**615**	614	613
609	610	611	612
608	607	606	605
601	602	603	604

Tuesday Afternoon, March 13—1:00 PM to 4:30 PM—Exhibit Halls A–C
Poster Set Up—12:30 PM to 1:00 PM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
Exposure Characterization: New Analytical Sampling Methods, Biomonitoring, and Assessment Applications	1466–1494	343–371
Cardiovascular Toxicity II	1495–1523	401–429
Biotransformation/Cytochrome P450	1524–1562	433–471
Immunotoxicity: Evaluation	1563–1583	501–521
Immunotoxicity: Methods	1584–1599	529–544
Pharmacogenomics/Genetic Polymorphisms	1600–1616	551–567
Immunotoxicity: Mechanisms	1617–1654	615–652

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Poster Session Schedule and Board Surface Maps (Continued)

300s

328	327	1970-**329**	1973-**332**	1974-**333**	1977-**336**	1978-**337**	1981-**340**	1982-**341**	1985-**344**	1986-**345**	1989-**348**	1990-**349**	1993-**352**	1994-**353**	1997-**356**	1998-**357**	2001-**360**	2002-**361**	2005-**364**	2006-**365**	368	369	372
1969-**325**	326	1971-**330**	1972-**331**	1975-**334**	1976-**335**	1979-**338**	1980-**339**	1983-**342**	1984-**343**	1987-**346**	1988-**347**	1991-**350**	1992-**351**	1995-**354**	1996-**355**	1999-**358**	2000-**359**	2003-**362**	2004-**363**	2007-**366**	2008-**367**	370	371

1968-**324**	1967-**323**
1965-**321**	1966-**322**
1964-**320**	1963-**319**
1961-**317**	1962-**318**
1960-**316**	1959-**315**
1957-**313**	1958-**314**
1956-**312**	1955-**311**
1953-**309**	1954-**310**
1952-**308**	1951-**307**
1949-**305**	1950-**306**
1948-**304**	1947-**303**
1945-**301**	1946-**302**

200s

290	289	288	287	286	285	284	283	282	281	280	279
1934-**267**	1935-**268**	1936-**269**	1937-**270**	1938-**271**	1939-**272**	1940-**273**	1941-**274**	1942-**275**	1943-**276**	1944-**277**	278

1933-**266**	1932-**265**	1931-**264**	1930-**263**	1929-**262**	1928-**261**	1927-**260**
1920-**253**	1921-**254**	1922-**255**	1923-**256**	1924-**257**	1925-**258**	1926-**259**
1919-**252**	1918-**251**	1917-**250**	1916-**249**	1915-**248**	1914-**247**	1913-**246**
1906-**239**	1907-**240**	1908-**241**	1909-**242**	1910-**243**	1911-**244**	1912-**245**

1905-**238**	1904-**237**	1903-**236**	1902-**235**	1901-**234**
1896-**229**	1897-**230**	1898-**231**	1899-**232**	1900-**233**

1895-**228**	1894-**227**	1893-**226**	1892-**225**	1891-**224**	1890-**223**	1889-**222**
1882-**215**	1883-**216**	1884-**217**	1885-**218**	1886-**219**	1887-**220**	1888-**221**
1881-**214**	1880-**213**	1879-**212**	1878-**211**	1877-**210**	1876-**209**	1875-**208**
1868-**201**	1869-**202**	1870-**203**	1871-**204**	1872-**205**	1873-**206**	1874-**207**

100s

158	157	156
1865-**153**	1866-**154**	1867-**155**

1864-**152**	1863-**151**	1862-**150**	1861-**149**	
1857-**145**	1858-**146**	1859-**147**	1860-**148**	
1856-**144**	1855-**143**	1854-**142**	1853-**141**	
1851-**137**	1852-**138**	139	140	
1850-**136**	1849-**135**	1848-**134**		
1845-**131**	1846-**132**	1847-**133**		
1844-**130**	1843-**129**	1842-**128**	1841-**127**	1840-**126**
1835-**121**	1836-**122**	1837-**123**	1838-**124**	1839-**125**
1834-**120**	1833-**119**	1832-**118**	1831-**117**	1830-**116**
1825-**111**	1826-**112**	1827-**113**	1828-**114**	1829-**115**
1824-**110**	1823-**109**	1822-**108**	1821-**107**	1820-**106**
1815-**101**	1816-**102**	1817-**103**	1818-**104**	1819-**105**

Wednesday Morning, March 14—9:00 AM to 12:30 PM—Exhibit Halls A–C
Poster Set Up—7:30 AM to 9:00 AM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
Alternatives to Mammalian Models I	1815–1852	101–138
Regulatory Policy: Procedures and Predictions	1853–1867	141–155
Disposition and Pharmacokinetics	1868–1895	201–228
Developmental Toxicology	1896–1926	229–259
Developmental Toxicity II	1927–1944	260–277
Developmental Neurotoxicity I	1945–1969	301–325
Molecular Basis of Carcinogenesis	1970–2008	329–367

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The abstract final ID# precedes the poster surface number that is in **bold**. Please display your poster only on the date and time assigned to you. The The full map of the Exhibit Halls A–C can be found on pages 38–39 to assist you in finding poster sessions.

Poster Session Schedule and Board Surface Maps (Continued)

400s

2078–**472** 2075–**469** 2074–**468** 2071–**465** 2070–**464** 2067–**461** 2066–**460** 2063–**457** 2062–**456** 2059–**453** 2058–**452** 2056–**449** 2055–**448** 2052–**445** 2051–**444** 2048–**441** 2047–**440** 2044–**437** 2043–**436** 2040–**433** 2039–**432** 2036–**429** 2034–**427** 2033–**426**
2077–**471** 2076–**470** 2073–**467** 2072–**466** 2069–**463** 2068–**462** 2065–**459** 2064–**458** 2061–**455** 2060–**454** 451 2057–**450** 2054–**447** 2053–**446** 2050–**443** 2049–**442** 2046–**439** 2045–**438** 2042–**435** 2041–**434** 2038–**431** 2037–**430** 2035–**428** 2032–**425**

424 2031–**423**
2029–**421** 2030–**422**

2028–**420** 2027–**419**
2025–**417** 2026–**418**

2024–**416** 2023–**415**
2021–**413** 2022–**414**

2020–**412** 2019–**411**
2017–**409** 2018–**410**

2016–**408** 2015–**407**
2013–**405** 2014–**406**

2012–**404** 2011–**403**
2009–**401** 2010–**402**

500s

2145–**569** 2144–**568** 2141–**565** 2140–**564** 2137–**561** 2136–**560** 2133–**557** 2132–**556** 2129–**553** 2128–**552**
2146–**570** 2143–**567** 2142–**566** 2139–**563** 2138–**562** 2135–**559** 2134–**558** 2131–**555** 2130–**554** 2127–**551**

2126–**550** 2125–**549** 2124–**548** 2123–**547**
2119–**543** 2120–**544** 2121–**545** 2122–**546**

2118–**542** 2117–**541** 2116–**540** 2115–**539**
2111–**535** 2112–**536** 2113–**537** 2114–**538**

2110–**534** 2109–**533** 2108–**532**
2105–**529** 2106–**530** 2107–**531**

2104–**528** 2103–**527** 2102–**526** 525 524 2101–**523** 2100–**522**
2093–**515** 2094–**516** 2095–**517** 2096–**518** 2097–**519** 2098–**520** 2099–**521**

2092–**514** 2091–**513** 2090–**512** 2089–**511** 2088–**510** 2087–**509** 2086–**508**
2079–**501** 2080–**502** 2081–**503** 2082–**504** 2083–**505** 2084–**506** 2085–**507**

600s

2182–**652** 2181–**651** 2180–**650**
2177–**647** 2178–**648** 2179–**649**

2176–**646** 2175–**645** 2174–**644** 2173–**643**
2169–**639** 2170–**640** 2171–**641** 2172–**642**

2168–**638** 2167–**637** 2166–**636** 2165–**635**
2161–**631** 2162–**632** 2163–**633** 2164–**634**

2160–**630** 2159–**629** 2158–**628**
2155–**625** 2156–**626** 2157–**627**

2154–**624** 2153–**623** 2152–**622** 2151–**621**
2147–**617** 2148–**618** 2149–**619** 2150–**620**

616 615 614 613
609 610 611 612

608 607 606 605
601 602 603 604

Wednesday Morning, March 14—9:00 AM to 12:30 PM—Exhibit Halls A–C
Poster Set Up—7:30 AM to 9:00 AM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
Food Safety and Nutrition I	2009–2031	401–423
Cell Death Pathways	2032–2057	425–450
Stem Cell Biology and Toxicology	2058–2078	452–472
Genotoxicity Testing	2079–2101	501–523
Exposure Assessment: Case-Specific Characterizations	2102–2126	526–550
NrF2	2127–2146	551–570
Gene Regulation and Signal Transduction	2147–2182	617–652

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Poster Session Schedule and Board Surface Maps (Continued)

300s

2360–**328** 2359–**327** 2361–**329** 2364–**332** 333 336 337 2367–**340** 2368–**341** 2371–**344** 2372–**345** 2375–**348** 2376–**349** 2379–**352** 2380–**353** 2383–**356** 2384–**357** 2387–**360** 2388–**361** 2391–**364** 2392–**365** 2395–**368** 369 372
2357–**325** 2358–**326** 2362–**330** 2363–**331** 334 335 2365–**338** 2366–**339** 2369–**342** 2370–**343** 2373–**346** 2374–**347** 2377–**350** 2378–**351** 2381–**354** 2382–**355** 2385–**358** 2386–**359** 2389–**362** 2390–**363** 2393–**366** 2394–**367** 370 371

2356–**324** 2355–**323**
2353–**321** 2354–**322**

2352–**320** 2351–**319**
2349–**317** 2350–**318**

2348–**316** 2347–**315**
2345–**313** 2346–**314**

2344–**312** 2343–**311**
2341–**309** 2342–**310**

2340–**308** 2339–**307**
2338–**306** 2337–**305**

2336–**304** 2335–**303**
2333–**301** 2334–**302**

200s

2332–**290** 2331–**289** 2330–**288** 2329–**287** 2328–**286** 2327–**285** 2326–**284** 2325–**283** 2324–**282** 2323–**281** 2322–**280** 2321–**279**
2309–**267** 2310–**268** 2311–**269** 2312–**270** 2313–**271** 2314–**272** 2315–**273** 2316–**274** 2317–**275** 2318–**276** 2319–**277** 2320–**278**

2308–**266** 2307–**265** 2306–**264** 2305–**263** 2304–**262** 2303–**261** 2302–**260**
2295–**253** 2296–**254** 2297–**255** 2298–**256** 2299–**257** 2300–**258** 2301–**259**

2294–**252** 2293–**251** 2292–**250** 2291–**249** 2290–**248** 2289–**247** 2288–**246**
2281–**239** 2282–**240** 2283–**241** 2284–**242** 2285–**243** 2286–**244** 2287–**245**

2280–**238** 2279–**237** 2278–**236** 2277–**235** 2276–**234**
2271–**229** 2272–**230** 2273–**231** 2274–**232** 2275–**233**

2270–**228** 2269–**227** 2268–**226** 2267–**225** 2266–**224** 2265–**223** 2264–**222**
2257–**215** 2258–**216** 2259–**217** 2260–**218** 2261–**219** 2262–**220** 2263–**221**

2256–**214** 2255–**213** 2254–**212** 2253–**211** 2252–**210** 2251–**209** 2250–**208**
2243–**201** 2244–**202** 2245–**203** 2246–**204** 2247–**205** 2248–**206** 2249–**207**

100s

2242–**158** 2241–**157** 2240–**156**
2237–**153** 2238–**154** 2239–**155**

152 2236–**151** 2235–**150** 2234–**149**
2230–**145** 2231–**146** 2232–**147** 2233–**148**

2229–**144** 2228–**143** 2227–**142** 2226–**141**
2222–**137** 2223–**138** 2224–**139** 2225–**140**

2221–**136** 2220–**135** 2219–**134**
2216–**131** 2217–**132** 2218–**133**

2215–**130** 2214–**129** 2213–**128** 2212–**127** 2211–**126**
2206–**121** 2207–**122** 2208–**123** 2209–**124** 2210–**125**

2205–**120** 2204–**119** 2203–**118** 2202–**117** 2201–**116**
2196–**111** 2197–**112** 2198–**113** 2199–**114** 2200–**115**

2195–**110** 2194–**109** 2193–**108** 2192–**107** 2191–**106**
2186–**101** 2187–**102** 2188–**103** 2189–**104** 2190–**105**

Wednesday Afternoon, March 14—1:00 PM to 4:30 PM—Exhibit Halls A–C
Poster Set Up—12:30 PM to 1:00 PM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
Endocrine Toxicity	2186–2236	101–151
Pharmaceutical Safety Assessment: Novel Therapeutics and Preclinical Safety Assessment	2237–2278	153–158 and 201–236
Animal Models in Pharmaceutical Toxicology	2279–2296	237–254
Animal Models in Toxicology	2297–2332	255–290
Male Reproductive Toxicology	2333–2364	301–332
Reproductive Toxicology II	2365–2395	338–368

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Poster Session Schedule and Board Surface Maps (Continued)

400s

472	469	2461–**468**	2458–**465**	2457–**464**	2454–**461**	2453–**460**	2450–**457**	2449–**456**	2446–**453**	2445–**452**	2442–**449**	2441–**448**	2438–**445**	2437–**444**	2434–**441**	440	2432–**437**	2431–**436**	2428–**433**	2427–**432**	2424–**429**	2422–**427**	2421–**426**
471	470	2460–**467**	2459–**466**	2456–**463**	2455–**462**	2452–**459**	2451–**458**	2448–**455**	2447–**454**	2444–**451**	2443–**450**	2440–**447**	2439–**446**	2436–**443**	2435–**442**	439	2433–**438**	2430–**435**	2429–**434**	2426–**431**	2425–**430**	2423–**428**	2420–**425**

2419–**424**	2418–**423**
2416–**421**	2417–**422**
2415–**420**	2414–**419**
2412–**417**	2413–**418**
2411–**416**	2410–**415**
2408–**413**	2409–**414**
2407–**412**	2406–**411**
2404–**409**	2405–**410**
2403–**408**	2402–**407**
2400–**405**	2401–**406**
2399–**404**	2398–**403**
2396–**401**	2397–**402**

500s

2523–**569**	2522–**568**	2519–**565**	2518–**564**	2515–**561**	2514–**560**	2511–**557**	2510–**556**	2507–**553**	2506–**552**
2524–**570**	2521–**567**	2520–**566**	2517–**563**	2516–**562**	2513–**559**	2512–**558**	2509–**555**	2508–**554**	2505–**551**

2504–**550**	2503–**549**	548	547
543	544	545	546

542	2502–**541**	2501–**540**	2500–**539**
2496–**535**	2497–**536**	2498–**537**	2499–**538**

2495–**534**	2494–**533**	2493–**532**
2490–**529**	2491–**530**	2492–**531**

2489–**528**	2488–**527**	2487–**526**	2486–**525**	2485–**524**	2484–**523**	2483–**522**
2476–**515**	2477–**516**	2478–**517**	2479–**518**	2480–**519**	2481–**520**	2482–**521**

2475–**514**	2474–**513**	2473–**512**	2472–**511**	2471–**510**	2470–**509**	2469–**508**
2462–**501**	2463–**502**	2464–**503**	2465–**504**	2466–**505**	2467–**506**	2468–**507**

600s

	652	651	650
2569–**647**	2570–**648**	649

2568–**646**	2567–**645**	2566–**644**	2565–**643**
2561–**639**	2562–**640**	2563–**641**	2564–**642**

2560–**638**	2559–**637**	2558–**636**	2557–**635**
2553–**631**	2554–**632**	2555–**633**	2556–**634**

	2552–**630**	2551–**629**	2550–**628**
	2549–**625**	626	627

2548–**624**	2547–**623**	2546–**622**	2545–**621**
2541–**617**	2542–**618**	2543–**619**	2544–**620**

2540–**616**	2539–**615**	2538–**614**	2537–**613**
2533–**609**	2534–**610**	2535–**611**	2536–**612**

2532–**608**	2531–**607**	2530–**606**	2529–**605**
2525–**601**	2526–**602**	2527–**603**	2528–**604**

Wednesday Afternoon, March 14—1:00 PM to 4:30 PM—Exhibit Halls A–C
Poster Set Up—12:30 PM to 1:00 PM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
Natural Products	2396–2433	401–438
Biomarkers of Environmental Exposure and Toxicity	2434–2461	441–468
Metals	2462–2502	501–541
Persistent Organic Chemicals	2503–2524	549–570
Neurotoxicity: Pesticides	2525–2549	601–625
Developmental Neurotoxicity: Metals and Pesticides	2550–2570	628–648

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Poster Session Schedule and Board Surface Maps (Continued)

Thursday Morning, March 15—8:00 AM to 12:00 NOON—Gateway Ballroom
Poster Set Up—7:00 AM to 8:00 AM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
Carcinogenesis	2657–2702	101–146

ALL Late-Breaking Abstracts will be presented on Thursday in the Gateway Ballroom. Please check the online Itinerary Planner for details.
A printed supplement of these abstracts will be available outside of the ballroom. These abstracts were not printed in the final *Program*.
Subject to change based on the final number of accepted late-breaking submissions. Please see the printed supplemental handout available on-site for the most current information.

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The abstract final ID# precedes the poster surface number that is in **bold**. Please display your poster only on the date and time assigned to you. The full maps of the Moscone Convention Center can be found on pages 26–27 to assist you in finding poster sessions.

205	206	215	216	225	226	235	236	245	246	255	256	265	266	305	306	315	316	335	336	345	346
204	207	214	217	224	227	234	237	244	247	254	257	264	267	304	307	314	317	334	337	344	347
203	208	213	218	223	228	233	238	243	248	253	258	263	268	303	308	313	318	333	338	343	348
202	209	212	219	222	229	232	239	242	249	252	269	262	269	302	309	312	319	322	339	342	349
201	210	211	220	221	230	231	240	241	250	251	260	261	270	301	310	311	320	321	340	341	350

2661–**105**	2662–**106**	2669–**113**	2670–**114**	2677–**121**	2678–**122**	2687–**131**	2688–**132**	2697–**141**	2698–**142**	151	152	161	162	171	172	179	180	187	188	195	196
2660–**104**	2663–**107**	2668–**112**	2671–**115**	2676–**120**	2679–**123**	2686–**130**	2689–**133**	2696–**140**	2699–**143**	150	153	160	163	170	173	178	181	186	189	194	197
2659–**103**	2664–**108**			2675–**119**	2680–**124**	2685–**129**	2690–**134**	2695–**139**	2700–**144**	149	154	159	164	169	174			185	190		
2658–**102**	2665–**109**			2674–**118**	2681–**125**	2684–**128**	2691–**135**	2694–**138**	2701–**145**	148	155	158	165	168	175			184	191		
2657–**101**	2666–**110**	2667–**111**	2672–**116**	2673–**117**	2682–**126**	2683–**127**	2692–**136**	2693–**137**	2702–**146**	147	156	157	166	167	176	177	182	183	192	193	198

POSTERS

Program Description

The Program Description layout is ordered by date and start time. All scientific sessions and special events will be held in the Moscone Convention Center unless otherwise noted.

SOT general events and functions are displayed with a grey background.

Scientific Session Types: *Exhibitor Hosted Sessions are informative sessions developed by an exhibiting company. See pages 43–44 for the Exhibitor Hosted Session Index.*

- EC Education-Career Development Sessions
- I Exhibitor Hosted Sessions
- FS Featured Sessions
- IS Informational Sessions
- PL Platform Sessions
- PS Poster Sessions
- RI Regional Interest Session
- RT Roundtable Sessions
- S Symposium Sessions
- Thematic Sessions
- W Workshop Sessions

SATURDAY MORNING

Saturday Morning, March 10
10:30 AM to 4:30 PM
The Lawrence Hall of Science,
University of California, Berkeley

K–12 Outreach Event: What Do Snow White, Romeo and Juliet, and the Madhatter Have in Common?...Toxicology!

Chairperson(s): *Maureen R. Gwinn, K–12 Subcommittee Co-Chair, US EPA, Washington, DC, Joanna M. Matheson, K–12 Subcommittee Co-Chair, US Consumer Product Safety Commission, Bethesda, MD, and Toufan Parman, Event Coordinator, SRI International, Menlo Park, CA.*

Sponsors:
Education Committee
K–12 Subcommittee
Northern California Regional Chapter

The Education Committee K–12 Subcommittee in conjunction with the Northern California Regional Chapter is hosting special activities at the Lawrence Hall of Science on the University of California Berkeley campus to engage visitors in activities related to toxicology and to investigate toxicology careers. Through interactive drama and experiments, families will explore how the dose makes the poison. Toxicologists will share why they think toxicology is a great career. Undergraduate students from the University of California, Berkeley, Toxicology Student Association will assist with the activities.

The Lawrence Hall of Science is a premier science museum for preschoolers on up with fascinating exhibits, an ingenuity lab, live science demonstrations, and a planetarium.

For more information, please visit the Special Events section of the Annual Meeting website.

SATURDAY AFTERNOON

Saturday Afternoon, March 10
4:15 PM to 5:45 PM
Grand Hyatt, Cypress B

Undergraduate Education Program: Orientation for SOT Hosts, Peer Mentors, and Advisors

Chairperson(s): *Sudheer Reddy Beedanagari, Bristol-Myers Squibb Company, East Brunswick, NJ, Natalie M. Johnson, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, and Ofelia A. Olivero, National Cancer Institute, NIH, Bethesda, MD.*

Sponsor:
Committee for Diversity Initiatives

This event is the orientation for advisors, peer mentors, and mentors assisting with the Undergraduate Program. Full program details are found pages 91–92.

SATURDAY EVENING

Saturday Evening, March 10
5:45 PM to 8:00 PM
Grand Hyatt, Grand Ballroom East
(By Invitation Only)

Undergraduate Education Program Opening Event

Chairperson(s): *Jennifer L. Rayner, SRI, Inc, Arlington, VA.*

Sponsor:
Committee for Diversity Initiatives

This event is for undergraduate students and advisors receiving 2012 SOT travel funding, and SOT program volunteers assisting with the Undergraduate Program. Full program details are found pages 91–92.

Saturday Evening, March 10
8:00 PM to 9:00 PM
Grand Hyatt, Grand Ballroom East

Committee on Diversity Initiatives Reunion

Sponsor:
Committee for Diversity Initiatives (CDI)

Anyone involved with the SOT Undergraduate Education Program through the years is encouraged to attend to greet old and new friends. The 2012 Perry J. Gehring Diversity Student Travel Award recipient will be honored at this event.

Program Description (Continued)

SUNDAY MORNING

Sunday Morning, March 11
7:00 AM to 7:45 AM
Esplanade Level
(Ticket Required; See signage at CE Booth for room location)

Continuing Education Sunrise Mini-Course

Full Continuing Education Course details may be found on pages 95–102.

Sunday Morning and Afternoon, March 11
8:00 AM to 5:00 PM
(See pages 5–13 for room information)

Undergraduate Education Program

Chairperson(s): *Jennifer L. Rayner, SRI, Inc, Arlington, VA, and Nathan J. Cherrington, University of Arizona, Tucson, AZ.*

Sponsor:
Committee for Diversity Initiatives

The Sunday program is open to undergraduate students who register for this event using the Annual Meeting Registration Form, the undergraduate students and advisors receiving SOT travel funding, and SOT program volunteers. Full program details are found pages 91–92.

Sunday Morning, March 11
8:15 AM to 12:00 Noon
Esplanade Level
(Ticket Required; See signage at CE Booth for room location)

Continuing Education Morning Courses

Full Continuing Education details may be found on pages 95–102.

SUNDAY AFTERNOON

Sunday Afternoon, March 11
1:15 PM to 5:00 PM
Esplanade Level
(Ticket Required; See signage at CE Booth for room location)

Continuing Education Afternoon Courses

Full Continuing Education Course details may be found on pages 95–102.

Sunday Afternoon, March 11
3:00 PM to 3:30 PM
Marriott Marquis Laurel Room

Undergraduate Education Program: Host Mentor and Peer Mentor Meeting

Chairperson(s): *Sudheer Reddy Beedanagari, Bristol-Myers Squibb Company, East Brunswick, NJ, and Natalie M. Johnson, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD.*

Host mentors and peer mentors meet to provide feedback on the Undergraduate Education Program.

Sunday Afternoon, March 11
3:00 PM to 5:00 PM
Marriott Marquis Golden Gate Ballroom C1

Undergraduate Education Program: Open Time with Academic Program Directors and Internship Sponsors

Chairperson(s): *Jennifer L. Rayner, SRI, Inc, Arlington, VA.*

Sponsor:
Committee for Diversity Initiatives

The Sunday program is open to undergraduate students who register for this event using the Annual Meeting Registration Form, the undergraduate students and advisors receiving SOT travel funding, and SOT program volunteers. This is the opportunity for academic program directors, internship hosts, undergraduate students, and faculty advisors to meet informally to discuss research and graduate study opportunities. Full program details are found pages 91–92.

Sunday Afternoon, March 11
4:45 PM to 5:15 PM
Room 103
(All Attendees and Registered Guests Welcome)

Awards Ceremony Music

Performed by *Glenn Staller*

Classical guitarist Glenn Staller will perform for SOT Annual Meeting attendees prior to and after the SOT Award Ceremony. Glenn was born in Philadelphia, Pennsylvania, and began studying the guitar at the age of 13. After moving to California, a chance meeting with renowned guitarist Jose Rey de la Torre led to classical guitar studies with Maestro Torres. Glenn later studied with pianist Julian White, jazz guitarist Bill Tapia, flamenco guitarist Chuscales, and guitarist/composer Dusan Bogdanovic at the San Francisco Conservatory of Music. The depth and breadth of his repertoire and his unique ability to integrate musical styles, from classical and contemporary to flamenco, Brazilian, Argentinean, and jazz, are particular features of his work. His repertoire ranges from Scarlatti and Bach to Gershwin, Debussy, Jobim, and Brubeck. He has appeared in equally diverse concert settings such as the Dean Lesher Center, Le Petit Trianon, Valley Forge Convention Center, Kennedy Center, Cowell Theater, and numerous wineries, vineyards, and resorts within the Bay Area, as well as performing on television and radio.

SUNDAY EVENING

Sunday Evening, March 11
5:15 PM to 6:30 PM
Room 103
(All Attendees and Registered Guests Welcome)

Awards Ceremony

Join us as SOT honors our prestigious award winners at the SOT Awards Ceremony (pages 65–76). Please refer to the Awards and Fellowship section of the SOT website for complete details and the nominating information for next year.

Program Description (Continued)

Sunday Evening, March 11
6:30 PM to 7:30 PM
Exhibit Hall E

Welcome Reception

Continue the celebration by attending the Welcome Reception following the Awards Ceremony. The Welcome Reception is a great opportunity to renew old friendships and to make new acquaintances. Please join the Society in this kick-off of the Annual Meeting.

Sunday Evening, March 11
7:00 PM to 8:00 PM
Room 120
(By Invitation Only)

25-Year (Or More) Member Reception

If you have been a member of the Society of Toxicology for 25 years or more, please join your colleagues to celebrate and recognize the scientists who established the Society. Be sure to wear your 25-year, 35-year, 45-year, or 50-year member pin.

Sunday Evening, March 11
7:30 PM to 9:00 PM
Marriott Marquis, Yerba Buena Salon 9
(Ticket Required)

Student/Postdoctoral Scholar Mixer

Sponsor:
Graduate Student Leadership Committee

The Graduate Student Leadership Committee hosts this opportunity for students and postdoctoral scholars to gather, to meet new colleagues, and to reestablish relationships in an informal atmosphere at the beginning of the meeting. Tickets are obtained at no cost by registering for this event on the Annual Meeting Registration Form. Ticket and meeting badge are required. Complimentary refreshments and a cash bar will be available.

Explore Federal Research Funding Opportunities and Strategies with Federal Agency Staff

All meeting attendees invited

Meet with Agency Review Administrators and Program Officers

Research Funding Information Room

9:00 AM–4:30 PM
Tuesday and Wednesday
Room 270

See pages 239 and 319 for more information

Strategies for Submitting Successful Grants: Brown Bag Lunch

12:00 Noon–1:30 PM
Tuesday
Room 206

See page 240 for more information

Program Description (Continued)

MONDAY MORNING

Monday Morning, March 12
6:15 AM to 8:00 AM
Marriott Marquis Club Room

Women in Toxicology Special Interest Group Mentoring Breakfast

Monday Morning, March 12
6:30 AM to 8:00 AM
CC Room 256

Specialty Section Officers Meetings: Carcinogenesis, Clinical and Translational Toxicology, Dermal Toxicology, Food Safety, *In Vitro* and Alternative Methods, Inhalation and Respiratory, Mechanisms, Medical Device, Mixtures, Neurotoxicology, Risk Assessment

Monday Morning, March 12
6:30 AM to 8:00 AM
CC Room 228

Regulatory and Safety Evaluation Specialty Section Officers Meeting

Monday Morning, March 12
6:30 AM to 7:45 AM
CC Room 214

Toxicologic and Exploratory Pathology Specialty Section Officers Meeting

Monday Morning, March 12
7:00 AM to 8:30 AM
CC Room 264

Reproductive and Developmental Toxicology Specialty Section Officers Meeting

Monday Morning, March 12
7:20 AM to 12:00 Noon
(See pages 5–13 for room information)

Undergraduate Education Program

Chairperson(s): *Jennifer L. Rayner, SRI, Inc, Arlington, VA.*

Sponsor:
Committee for Diversity Initiatives

Monday morning activities are for undergraduate students and advisors receiving 2012 SOT travel funding and SOT program volunteers assisting with the Undergraduate Program. Full program details are found pages 91–92.

Monday Morning, March 12
7:45 AM to 8:00 AM
CC Exhibit Hall E

2012 SOT Landmarks Program Presentation
The Ames Test

SOT President Jon C. Cook will present this plaque to Dr. Bruce Ames, who developed and described this test for potential mutagens in a series of papers from the early 1970s. The test revolutionized the field of genetic toxicology and stimulated new directions in cancer research. SOT presents this special recognition from the leadership and the membership of the Society of Toxicology.

Monday Morning, March 12
8:00 AM to 9:00 AM
Exhibit Hall E

FS

Plenary Opening Lecture: Systems Medicine, Systems Toxicology, Transformational Technologies and the Revolution from Reactive to Proactive (P4) Medicine

Lecturer: *Leroy Hood, Institute for Systems Biology, Seattle, WA.*

The challenge for biology in the 21st century is the need to deal with its incredible complexity. One powerful way to think of biology is to view it as an informational science. This view leads to the conclusion that biological information is captured, mined, integrated by biological networks, and finally passed off to molecular machines for execution. Hence the challenge in understanding biological complexity is that of deciphering the operation of dynamic biological networks across the three time scales of life—evolution, development, and physiological responses. Systems approaches to biology are focused on delineating and deciphering dynamic biological networks and their interactions with simple and complex molecular machines.

Dr. Hood's focus will be on our strategies for taking a systems approach to disease—looking at prion disease and liver toxicity in mice. We have published a study on prion disease that has taken more than six years that lays out the principles of a systems approach to disease, including new insights into pathophysiology, and new approaches to diagnosis and therapy, as well as dealing with the striking signal to noise problems of high-throughput biological measurements and biology itself. We have also studied two types of liver toxicity and these studies have also yielded insights similar to those discussed above. We have made blood a window for assessing health and disease through the use of blood organ-specific markers (for both brain and liver).

Dr. Hood will also discuss the emerging technologies (measurement and visualization) that will transform medicine and the analyses of toxicity over the next 10 years—including next generation DNA sequencing, targeted mass spectrometry, microfluidic protein chips, and single-cell analyses.

It appears that systems approaches to disease, together with pioneering changes in technology and the development of powerful new computational and mathematical tools, will transform medicine over the next 5–20 years from its currently reactive state to a mode that is predictive, personalized, preventive, and participatory (P4).

In conclusion, Dr. Hood will describe what P4 medicine will do for the individual patient. He will also consider the societal impact of P4 medicine and how ISB has created global strategic partnerships to bring P4 medicine to patients.

Program Description (Continued)

Monday Morning, March 12
9:00 AM to 10:00 AM
Room 112

Global Collaboration Coffee

The SOT Council and Global Strategies Task Force invite scientists representing toxicology societies displaying posters in the Global Gallery of Toxicology, Special Interest Group Presidents, and the recipients of the SOT/AstraZeneca/IUTOX, SOT Endowment Fund Fellowships (senior scientists from developing countries), and 2012 Global Senior Scholar Exchange Program Awardees for a Global Collaboration Coffee. This event offers an opportunity for scientific leaders to meet and make plans for future collaborations. Send RSVP (required) to Katie Moore at katie@toxicology.org.

Monday Morning, March 12
9:30 AM to 10:50 AM
Exhibit Hall C, Poster Surfaces 601–624

Undergraduate Education Program: Poster Session for Visiting Students

Chairperson(s): *Leslie Recio, Integrated Laboratory Systems Inc., Research Triangle Park, NC.*

Sponsors:
Committee on Diversity Initiatives

This special poster session held within the Exhibit Hall is for is for undergraduate students and advisors receiving 2012 SOT travel funding and SOT program volunteers assisting with the Undergraduate Program. Full program details are found pages 91–92.

Monday Morning, March 12
9:15 AM to 12:00 Noon
Room 304

S

Clinical Toxicology from Bedside to the Bench and Back

Symposium Session: Dietary Supplement Adulteration and Impact on Human Health

Chairperson(s): *James Griffiths, US Pharmacopeia, Rockville, MD, and Scott Jordan, Health Canada, Ottawa, ON, Canada.*

Sponsor:
Clinical and Translational Toxicology Specialty Section
Food Safety Specialty Section

The purposeful adulteration of dietary supplements, and ingredients destined for such products, can cause serious health problems in consumers and presents many challenges to the industry. These problems and challenges extend to the consumer, who would not expect such natural products to contain adulterants such as prescription drugs and who may be at risk of adverse effects; industry members who must be vigilant of their supply chains and product quality; and regulatory authorities, who are required to monitor the market in order to detect signals of potential product adulteration, and to take action if such products are found in their countries. The main product types which are reportedly susceptible to adulteration are those indicated for erectile dysfunction, weight loss, and body building. Instances of adulteration can cause adverse effects in the consumer and will always reflect badly on, and reduce public confidence in, the specific product lines and dietary supplements as a whole. Quality standards that specify criteria suitable to verify the authenticity of dietary supplements and their ingredients are an advantageous and readily usable tool to provide some measure of purity and authenticity to all industry partners throughout the whole supply chain as well as regulators, and ultimately benefit the consumers through increased protection of the risk such adulteration may present.

Abstract #		
#14	9:15	**DIETARY SUPPLEMENT ADULTERATION AND IMPACT ON HUMAN HEALTH.** *J. C. Griffiths*. Global Services, US Pharmacopeia, Rockville, MD.
	9:15	**INTRODUCTION.** James Griffiths
#15	9:22	**DIETARY SUPPLEMENT ADULTERATION—A CLINICIAN'S PERSPECTIVE.** L. Nelson. New York City Poison Center, New York, NY. Sponsor: *J. Griffiths*.
#16	9:59	**DIETARY SUPPLEMENT ADULTERATION: CANADIAN REGULATOR'S PERSPECTIVE.** *S. A. Jordan*, and S. A. Jack. Marketed Health Products Directorate, Health Canada, Ottawa, ON, Canada.
#17	10:36	**US REGULATORY PERSPECTIVES ON THE INTENTIONAL ADULTERATION OF DIETARY SUPPLEMENTS.** D. Fabricant. Center for Food Safety and Applied Nutrition, US FDA, Washington, DC. Sponsor: *J. Griffiths*.
#18	11:13	**QUALITY STANDARDS: SPECIFICATIONS ON PURITY AND AUTHENTICITY.** *J. C. Griffiths*. Global Services, US Pharmacopeia, Rockville, MD.
	11:50	**PANEL DISCUSSION/Q&A.**

Monday Morning, March 12
9:15 AM to 12:00 Noon
Room 307

S

Characterizing Toxic Modes of Action and Pathways to Toxicity

Symposium Session: DNA Damage Responses and Repair

Chairperson(s): *Richard S. Paules, NIEHS, Research Triangle Park, NC, and Leona D. Samson, Massachusetts Institute of Technology, Cambridge, MA.*

Sponsor:
Carcinogenesis Specialty Section

Endorsed by:
Molecular Biology Specialty Section

Exposure to agents that have the potential to damage DNA occurs every day and is in fact a normal part of life. As a consequence, extremely efficient processes have developed that protect the genome from deleterious alterations by recognizing DNA damage in what is referred to as the DNA Damage Response (DDR) and initiating a series of cellular signal transduction pathway responses that lead to a coordination of regulation of cell cycle proliferation and repair of DNA lesions, if possible, or to the initiation of a cell death process, if appropriate repair is not possible. DNA damage can arise from both endogenous and exogenous sources, and, if not repaired properly, may lead to mutations, development of diseases such as cancer, cellular, or tissue toxicity, or ultimately to the death of the organism. Activation of the DDR results in the activation of the DNA damage sensor kinases ATM and ATR, which can then initiate an inhibition of cell cycle progression through the activation of a DNA damage checkpoint, in order to allow time for the repair of DNA lesions and to prevent the transmission of damaged or incompletely replicated genetic material. By repair of the DNA damage and restoration of the integrity of the DNA duplex, genomic stability can be maintained. DNA repair mechanisms that function to maintain genomic stability and to avoid toxicity include base excision repair, nucleotide excision repair, double-strand break repair, as well as translesion DNA synthesis. We will present important updates on the progress made in elucidating the consequences of genetic and pharmacological modulations of the levels and functions of certain DNA damage repair and response gene products on both toxicities of exposures, as well as exciting possible new therapeutic approaches. We will focus on recent advances in understanding the molec-

Program Description (Continued)

Abstract #

ular mechanisms of the DDR and DNA repair, both to provide molecular insight into toxicity and disease processes, and also potentially to provide novel targets for therapeutic strategies for treating individuals with certain diseases such as cancers.

#19	9:15	**DNA DAMAGE RESPONSES AND REPAIR.** *R. S. Paules*[1], and *L. D. Samson*[2]. [1]NIEHS, Research Triangle Park, NC, and [2]Massachusetts Institute of Technology, Cambridge, MA.
	9:15	**INTRODUCTION.** Richard Paules
#20	9:20	**COMPLEX RESPONSES OF MICE TO ALKYLATION AND INFLAMMATION-INDUCED TOXICITY.** *L. D. Samson*. Biological Engineering Department and Biology Department, Center for Environmental Health Sciences, MIT, Cambridge, MA.
#21	9:50	**CELL SIGNALING IN RESPONSE TO PARP INHIBITION AND ALKYLATING AGENT EXPOSURE.** *S. Wilson*, J. Horton, D. Stefanick, M. Heacock, P. Kedar, and M. Carrozza. Laboratory of Structural Biology, NIEHS/NIH, Research Triangle Park, NC.
#22	10:20	**IDENTIFYING TRANSLATIONAL COMPONENTS OF THE DNA DAMAGE RESPONSE.** *T. Begley*[1], J. Aguirre-Ghiso[2], P. Dedon[4], M. Soledad Sosa[2], U. Begley[1], C. Chan[3], M. Dyavaiah[1], Y. Estrada[2], A. Patil[1], A. Avivar-Valderas[2], and K. Taghizadeh[5]. [1]College of NanoScale Science and Engineering, University at Albany, SUNY, Albany, NY, [2]Division of Hematology and Oncology, Mount Sinai School of Medicine, New York, NY, [3]Department of Chemistry, Massachusetts Institute of Technology, Cambridge, MA, [4]Department of Biological Engineering, Massachusetts Institute of Technology, Cambridge, MA, and [5]Center for Environmental Health Sciences, Massachusetts Institute of Technology, Cambridge, MA.
#23	10:50	**DAMAGE-SPECIFIC PATHWAYS FOR THE REGULATION OF POST-REPLICATION REPAIR.** K. A. Cimprich, J. Lin, M. Zeman, and A. Kile. Chemical and Systems Biology, Stanford University, Stanford, CA. Sponsor: *R. Paules*.
#24	11:20	**REDUNDANCY AND CROSS-TALK IN PATHWAYS AND FUNCTIONS IN DNA DAMAGE RESPONSES TO THE HIGHLY TOXIC DNA DOUBLE-STRAND BREAK.** *R. S. Paules*[1], S. S. Palii[1], Y. Cui[1], J. E. Hesse[1], C. L. Innes[1], and B. P. Sleckman[2]. [1]Environmental Stress & Cancer Group, Laboratory of Toxicology & Pharmacology, NIEHS, NIH, Research Triangle Park, NC, and [2]Department of Pathology & Immunology, Washington University School of Medicine, St. Louis, MO.
	11:50	**PANEL DISCUSSION/Q&A.**

Abstract #

Monday Morning, March 12
9:15 AM to 12:00 Noon
Room 104

S

Characterizing Toxic Modes of Action and Pathways to Toxicity

Symposium Session: The Thick and Thin of Nuclear Receptors and Nrf2 in Diabetes and Obesity

Chairperson(s): *Angela Slitt, University of Rhode Island, Kingston, RI, and Lauren M. Aleksunes, Rutgers University, Piscataway, NJ.*

Sponsor:
Molecular Biology Specialty Section

Endorsed by:
Cardiovascular Toxicology Specialty Section
Mechanisms Specialty Section
Molecular Biology Specialty Section

Xenobiotic nuclear receptors, such as CAR, PXR, AHR, FXR, and NRF2 are best known for transcription regulation and induction of Phase I and Phase II biotransformation enzymes, as well as transporters. These receptor pathways are of interest because they are activated by diverse chemicals—drugs, chemicals of environmental exposure, as well as endogenous chemicals such as hormones and bile acids. It is well established that there are chemical-receptor interactions—especially in the liver, which lead to transcriptional upregulation of gene batteries and result in coordinate regulation of metabolism and transport. However, recent evidence points to nuclear receptors and the role for these receptors in diseases related to metabolic syndrome, dyslipidemia, and glucose homeostasis. As the incidence of obesity and obesity-related diseases, which culminate in metabolic syndrome, increase worldwide, understanding the mechanisms of obesity is of high interest for human health. As these receptors are targeted by drugs and environmental chemicals, it is of importance to understand how activators of these xenobiotic receptors affect aspects of adipocyte differentiation, adiposity, and pancreatic function in adults, as well as sensitive populations, specifically pregnant women and children. Our findings will be presented for various receptor-mediated pathways with regard to various obesity and diabetes models. Presentations will cover nuclear receptor-mediated gene induction and research findings related to nuclear receptors with regard to obesity and diabetes. Finally, findings will be presented regarding what is currently known regarding nuclear receptor function in caloric restriction, the practice most recommended to combat obesity and obesity-related disorders. The information presented will be useful to those interested in nuclear receptors, aspects of metabolic syndrome, mouse models of obesity and diabetes, aspects of metabolic syndrome and drug interactions, therapeutic drug targets, and environment-obesogen effects.

#25	9:15	**THE THICK AND THIN OF NUCLEAR RECEPTORS IN DIABETES AND OBESITY.** *A. L. Slitt*. Biomedical and Pharmaceutical Sciences, University of Rhode Island, Kingston, RI.
	9:15	**INTRODUCTION.** Angela Slitt
#26	9:20	**A NOVEL FUNCTION OF THE XENOBIOTIC RECEPTOR CAR IN OBESITY AND TYPE 2 DIABETES.** *W. Xie*. Department of Pharmaceutical Sciences, University of Pittsburgh School of Pharmacy, Pittsburgh, PA.
#27	9:52	**PARADOXICAL ROLES OF NRF2 ACTIVATION IN ARSENIC-INDUCED PANCREATIC β-CELL DYSFUNCTION AND INSULIN RESISTANCE.** *J. Pi*. The Hamner Institute, Research Triangle Park, NC.

Program Description (Continued)

Abstract #

#28 10:24 **BILE ACID AND NUCLEAR RECEPTOR SIGNALING IN DIABETES AND OBESITY.** J. Chiang. Colleges of Medicine and Pharmacy, Northeastern Ohio Universities, Rootstown, OH. Sponsor: *A. Slitt*.

#29 10:56 **HEPATOBILIARY TRANSPORTER REGULATION IN DIABETIC PREGNANCY: INFLUENCE OF NRF2 AND FXR-SHP SIGNALING.** *L. M. Aleksunes*. Department of Pharmacology and Toxicology, Rutgers, Ernest Mario School of Pharmacy, Piscataway, NJ.

#30 11:28 **REVERSING OBESITY AND METABOLIC SYNDROME: DO NUCLEAR RECEPTORS HAVE A ROLE IN WEIGHT LOSS?** *A. L. Slitt*. Biomedical and Pharmaceutical Sciences, University of Rhode Island, Kingston, RI.

Monday Morning, March 12
9:15 AM to 12:00 Noon
Room 102

S

Aberrant Gene Expression in Toxicity and Disease—Epigenetics and microRNAs

Symposium Session: Toxicological Considerations of Epigenetic Targets in Product Development

Chairperson(s): *Melissa Rhodes, GlaxoSmithKline, Research Triangle Park, NC, and Brandon D. Jeffy, Celgene, San Diego, CA.*

Sponsor:
Drug Discovery Toxicology Specialty Section

Endorsed by:
Carcinogenesis Specialty Section
Mechanisms Specialty Section
Molecular Biology Specialty Section
Regulatory and Safety Evaluation Specialty Section
Reproductive and Development Toxicology Specialty Section

In recent years, epigenetic factors have been implicated in the etiology of various diseases including cancers, psychiatric disorders, and diabetes/obesity. As epigenetic mechanisms have become more extensively characterized, new opportunities for therapeutic intervention in these disease areas have been identified. While pharmaceutical inhibitors of epigenetic targets such as histone deacetylases and DNA methyltransferases have recently gained regulatory approval, the field of pharmacoepigenetics is still relatively young. As greater understanding of the epigenome is evolving, previously approved drugs are now serendipitously being found to have epigenetic modulatory properties and are currently under evaluation for new indications. With the rapid emergence of multiple novel epigenetic targets for pharmacological inhibition, new considerations for the field of toxicoepigenetics are becoming apparent as well. In order to address the potential toxicological consequences associated with pharmacological inhibition of potential therapeutic epigenetic targets, toxicologists are addressing the need for new models and endpoints to be considered in the safety assessment of epigenetic targets. These important toxicological issues, which may be unique to epigenetic targets, will be addressed.

#31 9:15 **TOXICOLOGICAL CONSIDERATIONS OF EPIGENETIC TARGETS IN PRODUCT DEVELOPMENT.** *B. D. Jeffy*[1], and *M. Rhodes*[2]. [1]Exploratory Toxicology, Celgene, San Diego, CA, and [2]Safety Assessment Project Development, GlaxoSmithKline, Research Triangle Park, NC.

9:15 **INTRODUCTION.** Brandon D. Jeffy

Abstract #

#32 9:20 **EPIGENETICS MEETS TOXICOLOGY: AN INTEGRATED VIEW OF MECHANISMS CONTROLLING TRANSCRIPTION THAT ARE SUPERIMPOSED ON DNA BASE SEQUENCE.** *J. Goodman*. Pharmacology/Toxicology, Michigan State University, East Lansing, MI.

#33 9:52 **EVALUATION OF POTENTIAL SAFETY RISKS OF PHARMACOLOGICAL INHIBITORS OF EPIGENETIC TARGETS IN DISCOVERY TOXICOLOGY.** *B. D. Jeffy*. Exploratory Toxicology, Celgene, San Diego, CA.

#34 10:24 **EPIGENOMICS—IMPACT FOR DRUG SAFETY SCIENCES.** J. Moggs. Translational Sciences, Novartis, Basel, Switzerland. Sponsor: *M. Rhodes*.

#35 10:56 **INVESTIGATION OF TRANSGENERATIONAL EPIGENETIC INHERITANCE IN PRODUCT SAFETY ASSESSMENT.** *R. J. Rasoulpour*. Developmental and Reproductive Toxicology, The Dow Chemical Company, Midland, MI.

#36 11:28 **CURRENT AND FUTURE EPIGENETIC THERAPIES.** N. Carey. Pfizer, Cambridge, United Kingdom. Sponsor: *M. Rhodes*.

Monday Morning, March 12
9:15 AM to 12:00 Noon
Room 305

W

Workshop Session: Alternative Approaches to the Safety Assessment of Natural Ingredients and Extracts in Cosmetics

Chairperson(s): *Vinayak Srinivasan, L'Oréal, Clark, NJ, and Julie Skare, Procter & Gamble, Cincinnati, OH.*

Sponsor:
Association of Scientists of Indian Origin Special Interest Group

Endorsed by:
Food Safety Specialty Section
***In Vitro* and Alternative Methods Specialty Section**
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

Today, there is a growing consumer demand for naturally-derived ingredients and botanical extracts such as those used as food or as flavoring agents and those in personal care products. The principles used in safety evaluation of foods can be extrapolated to cosmetic ingredients where the primary route of application is dermal versus the oral route. While quality standards exist for certification of organic and natural cosmetics, there are no globally accepted safety assessment standards for these products. Although relatively rare, adverse reactions to cosmetic and personal care products containing traditional synthetic chemicals as well as botanical ingredients have been documented in the literature. The safety assessment of plant materials for which no or only a limited record of human exposure can be established is complex, given that traditional, standard safety testing methods for synthetic chemicals cannot be applied to natural plant ingredients for various reasons. Therefore, chemical grouping, comparative, and read-across approaches as well as the concept of the Threshold of Toxicological Concern (TTC) and other *in silico* based animal alternative methodologies are pragmatic, logical, and reliable tools for the safety assessment of plant-derived cosmetic ingredients.

Program Description (Continued)

Abstract #

#37 9:15 **ALTERNATIVE APPROACHES TO THE SAFETY ASSESSMENT OF NATURAL INGREDIENTS AND EXTRACTS IN COSMETICS.** *V. Srinivasan*[1], *J. Skare*[2], *C. Galli*[3], T. Adams[4], *A.M. Api*[5], K. Arvidson[6], and *T. Re*[7]. [1]L'Oréal, Clark, NJ, [2]Procter & Gamble Company, Cincinnati, OH, [3]University of Milan, Milan, Italy, [4]Flavor and Extract Manufacturers Association, Washington, DC, [5]Research Institute for Fragrance Materials, Inc., Woodcliff Lake, NJ, [6]US FDA, Washington, DC, and [7]L'Oréal, Clark, NJ.

9:15 **INTRODUCTION.** Viny Srinivasan

#38 9:20 **APPLICATION OF THE THRESHOLD OF TOXICOLOGICAL CONCERN (TTC) TO THE SAFETY EVALUATION OF COSMETIC INGREDIENTS.** *C. Galli*. University of Milan, Milan, Italy.

#39 9:52 **ASSESSMENT OF NATURALLY OCCURRING MIXTURES.** T. Adams. Flavor and Extract Manufacturers Association, Washington, DC. Sponsor: *V. Srinivasan*.

#40 10:24 **USE OF THRESHOLD OF TOXICOLOGICAL CONCERN AT THE US FDA, OFFICE OF COSMETICS AND COLORS.** A.M. Api, Research Institute for Fragrance Materials, Inc., Woodcliff Lake, NJ.

#41 10:56 **REGULATORY USE OF COMPUTATIONAL TOXICOLOGY TOOLS AND DATABASES AT THE FDA, OFFICE OF FOOD ADDITIVE SAFETY.** K. Arvidson. US FDA, Washington, DC. Sponsor: *V. Srinivasan*.

#42 11:28 **APPLICATION OF *IN SILICO* APPROACHES IN COSMETICS—JUNIPER BERRY OIL.** *T. Re*. L'Oréal, Clark, NJ.

Monday Morning, March 12
9:15 AM to 12:00 Noon
Room 103

W

Regulatory Science: Bridging the Gap between Discovery and Product Availability

Workshop Session: High-Throughput *In Vitro* Toxicity Testing: A Midcourse Assessment of Predictive Accuracy for *In Vivo* Endpoints and Use in Decision-Making

Chairperson(s): *Russell S. Thomas, The Hamner Institutes for Health Sciences, Research Triangle Park, NC, and William D. Pennie, Pfizer, Inc., Groton, CT.*

Sponsor:
***In Vitro* and Alternative Methods Specialty Section**

Endorsed by:
Drug Discovery Specialty Section
Molecular Biology Specialty Section
Regulatory Safety Evaluation Specialty Section

Over the past five years there has been a broad-based discussion on the future direction of toxicology and how safety testing is performed. This discussion has spawned multiple research efforts looking to use high- and medium-throughput *in vitro* screening data in identifying chemical hazards. For industrial and agricultural chemicals, research efforts in United States and Europe have characterized the *in vitro* biological activity of chemicals using multiple *in vitro* assays and technologies in order to predict *in vivo* toxicity and prioritize compounds for conventional toxicity testing. For pharmaceuticals, high-throughput *in vitro* screening assays have been integrated early into preclinical drug development to identify toxic compounds and guide medicinal chemistry efforts. In both cases, the application of *in vitro* toxicity screening for prioritization and hazard identification relies on its ability to accurately predict the results of *in vivo* laboratory animal studies and humans. The efforts in the United States and Europe are now several years old and a significant amount of data has been collected to provide an evaluation of the strengths and limitations of the using high- and medium-throughput screening for predicting *in vivo* apical responses. This session will be of broad interest to investigators and regulators looking to use *in vitro* assays for toxicological testing and safety assessment of environmental, industrial, and pharmaceutical chemicals.

Abstract #

#43 9:15 **HIGH-THROUGHPUT *IN VITRO* TOXICITY TESTING: A MIDCOURSE ASSESSMENT OF PREDICTIVE ACCURACY FOR *IN VIVO* ENDPOINTS AND USE IN DECISION-MAKING.** *R. S. Thomas*[1], and W. D. Pennie[2]. [1]The Hamner Institutes for Health Sciences, Research Triangle Park, NC, and [2]Pfizer, Inc., Groton, CT.

9:15 **INTRODUCTION.** Russell Thomas

#44 9:20 **A COMPREHENSIVE STATISTICAL ANALYSIS OF THE *IN VITRO*-TO-*IN VIVO* PREDICTIVE CAPACITY OF HIGH-THROUGHPUT TOXICITY SCREENS.** *R. D. Wolfinger*. SAS Institute Inc., Cary, NC.

#45 9:52 **FEASIBILITY OF PREDICTING *IN VIVO* MODE OF ACTION USING PATHWAY-BASED *IN VITRO* SCREENS.** *R. S. Judson*. National Center for Computational Toxicology, US EPA, Research Triangle Park, NC.

#46 10:24 **EVALUATING THE EFFECT OF DOSIMETRY ON THE *IN VITRO*-TO-*IN VIVO* PREDICTIVE CAPACITY AND RELATIVE SENSITIVITY OF THE TOXCAST SCREENS.** *B. A. Wetmore*. The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#47 10:56 **PREDICTING *IN VIVO* TOXICITY USING *IN VITRO* ASSAYS AND CHEMICAL PROPERTIES IN PRECLINICAL DRUG DEVELOPMENT.** W. D. Pennie. Pfizer, Inc., Groton, CT. Sponsor: *R. Thomas*.

#48 11:28 **USING *IN VITRO* MODELS TO PREDICT REPRODUCTIVE AND DEVELOPMENTAL TOXICITY: A MIDCOURSE ASSESSMENT OF THE EUROPEAN REPROTECT PROGRAM.** M. Schwarz. Institute of Experimental and Clinical Pharmacology and Toxicology, University of Tuebingen, Tuebingen, Germany. Sponsor: *R. Thomas*.

Program Description (Continued)

Abstract #

Monday Morning, March 12
9:15 AM to 12:00 Noon
Room 308

Characterizing Toxic Modes of Action and Pathways to Toxicity

Workshop Session: The Epididymis—The Forgotten Target of Toxicants

Chairperson(s): *Daniel G. Cyr, INRS-Institut Armand-Frappier, Laval, QC, Canada, and Robert E. Chapin, Pfizer, Inc., Groton, CT.*

Sponsor:
Reproductive and Developmental Toxicology Specialty Section

Endorsed by:
Toxicologic and Exploratory Pathology Specialty Section

The epididymis is the major component of the testicular excurrent duct system. Testicular input to the tissue is conveyed via the efferent ducts, which anastomose to form a single, highly convoluted epididymal duct. The epididymis can be divided into two main compartments: the epithelium and the lumen. In adults, the lumen contains sperm that are bathed in luminal fluid whose composition varies markedly along the tissue. The blood-epididymis barrier, formed by epithelial principal cells, regulates this luminal environment and distinguishes it from blood. Functional sperm maturation in the epididymis is the result of their exposure to the luminal environment. Thus, the ability of the epididymis to provide the appropriate milieu for sperm maturation is critical. This is created by several processes, most notably the highly absorptive and secretory activities of the epithelial cells that line the duct. Many epididymal functions are either androgen or estrogen-dependent. The critical functions of the epididymis for sperm maturation and its reliance on hormonal regulation make it a prime target for toxic action. Several studies have shown that endocrine-disrupting chemicals, such as phthalates, can alter the development of the epididymis, and, in extreme cases, lead to its absence. Other chemicals, such as dioxins, affect sperm maturation via alterations to epididymal functions. However, epididymal function is frequently ignored in toxicity studies. Yet, posttesticular and idiopathic male infertility represents a significant problem, suggesting that alterations in epididymal sperm maturation may have greater significance than previously thought. This session will provide an overview of epididymal functions and regulation and show examples of how environmental toxicants may alter male fertility by targeting the epididymis.

#49	9:15	**THE EPIDIDYMIS, THE FORGOTTEN TARGET OF TOXICANTS.** *D. Cyr*[1], and *R. E. Chapin*[2]. [1]Institut Armand-Frappier, INRS, Laval, QC, Canada, and [2]Drug and Safety Development, Pfizer, Groton, CT.
	9:15	**INTRODUCTION.** Daniel Cyr
#50	9:20	**THE EPIDIDYMIS: OVERVIEW OF FUNCTIONS AND ROLE OF BASAL CELLS IN PROTECTION AGAINST FREE RADICALS.** L. Hermo[1], C. E. Smith[1], and *D. Cyr*[2,1]. [1]Anatomy and Cell Biology, McGill University, Montreal, QC, Canada, and [2]Institut Armand-Frappier, INRS, Laval, QC, Canada.
#51	9:52	**THE EFFECTS OF ANTIANDROGENS ON EPIDIDYMAL DEVELOPMENT IN THE RAT.** *P. M. Foster*. NIEHS, NTP, Research Triangle Park, NC.
#52	10:24	**THE BLOOD-EPIDIDYMIS BARRIER: A CRITICAL COMPONENT OF BOTH DETOXIFICATION AND SPERM MATURATION.** *D. Cyr*. Institut Armand-Frappier, INRS, Laval, QC, Canada.

Abstract #

#53	10:56	**THE EPIDIDYMIS AS A TARGET ORGAN FOR TOXICANTS.** W. Kempinas. Morphology, University Estadual Paulista, Botucatu, São Paulo, Brazil. Sponsor: *D. Cyr*.
#54	11:28	**CHEMICAL-INDUCED INFLAMMATION AND GRANULOMAS IN THE EPIDIDYMIS.** *R. E. Chapin*. Drug Safety and Development, Pfizer, Groton, CT.

Monday Morning, March 12
9:15 AM to 12:00 Noon
Room 303

Workshop Session: Therapeutic Immunomodulation and Cancer Risk: Science, Risk Assessment, and Risk Communication

Chairperson(s): *Marc Pallardy, Université Paris-Sud - INSERM, Chatenay-Malabry, France, and Shawn Heidel, Eli Lilly and Company, Indianapolis, IN.*

Sponsor:
Immunotoxicology Specialty Section

Endorsed by:
Biotechnology Specialty Section

Therapeutic immunomodulators have evolved from broad-spectrum immune system antagonists used in the treatment of organ transplantation to newly emerging targeted therapeutics treating specific immune-mediated diseases. Whereas broad-acting agents have been implicated with increased cancer risk in chronically-treated patients, the risks associated with targeted immunotherapies can be anticipated to be driven by their mechanism of action. This session will discuss current paradigms around immunomodulation and cancer, available tools for the assessment of cancer risk applied to therapeutic immunomodulators, risk assessment, and views from industry and regulators. The discussions in this presentation coincide with recent international regulatory and industry efforts to update ICH S6(R1), which guides the nonclinical development of large molecule therapeutics.

#55	9:15	**THERAPEUTIC IMMUNOMODULATION AND CANCER RISK: SCIENCE, RISK ASSESSMENT, AND RISK COMMUNICATION.** *M. Pallardy*[2], *R. Ponce*[3], *M. R. Walker*[4], *H. G. Haggerty*[5], D. Mellon[6], and *S. M. Heidel*[1]. [1]Eli Lilly and Company, Indianapolis, IN, [2]University of Paris, Paris, France, [3]Amgen, Thousand Oaks, CA, [4]Centocor, Radnor, PA, [5]Bristol-Myers Squibb, New Brunswick, NJ, and [6]CDER, US FDA, Silver Spring, MD.
	9:15	**INTRODUCTION.** Marc Pallardy
#56	9:25	**IMMUNOMODULATION AND CANCER: AN OVERVIEW.** *R. Ponce*. Amgen, Seattle, WA.
#57	9:55	**EFFECTS OF IMMUNOSUPPRESSIVE DRUGS IN PRECLINICAL MODELS OF NEOPLASIA.** *M. R. Walker*. Biologics Toxicology, Centocor, Radnor, PA.
#58	10:25	**IMMUNOMODULATION AND CANCER: RISK ASSESSMENT AND WEIGHT OF EVIDENCE EVALUATIONS.** *H. G. Haggerty*. Immunotoxicology, Bristol-Myers Squibb, New Brunswick, NJ.
#59	10:55	**IMMUNOMODULATION AND CANCER: A REGULATORY PERSPECTIVE.** D. Mellon. CDER, US FDA, Silver Spring, MD. Sponsor: *S. Heidel*.
	11:25	**PANEL DISCUSSION/Q&A.**

Program Description (Continued)

Abstract #

Monday Morning, March 12
9:15 AM to 12:00 Noon
Room 310

PL

Platform Session: Biological Modeling: Addressing Disease States, Defining Age Differences, and Evaluating Uncertainty

Chairperson(s): *P. Robinan Gentry, ENVIRON International Corporation, Monroe, LA, and John Wambaugh, US EPA, Research Triangle Park, NC.*

#60 9:15 **IMAGING-BASED MULTISCALE MODELS OF THE RESPIRATORY SYSTEM THAT ACCOUNT FOR REGIONAL HETEROGENITY IN HEALTH AND DISEASE.** D. R. Einstein, R. E. Jacob, S. Kabilan, A. P. Kuprat, J. P. Carson, K. R. Minard, and *R. A. Corley*. Pacific Northwest National Laboratory, Richland, WA.

#61 9:36 **AN *IN SILICO* MODEL OF ENDOTOXIC SHOCK MEDIATORS.** M. K. Makley, E. Hack, and *J. M. Gearhart*. 711 HPW/RHPB, Henry M. Jackson Foundation, Wright-Patterson AFB, Dayton, OH.

#62 9:57 **COMPARATIVE EXPOSURE ASSESSMENT: USE OF PBPK MODELING FOR THE ESSENTIAL ELEMENT MANGANESE.** *R. Gentry*[1], *A. Santamaria*[1], S. Sulsky[1], A. Shipp[1], C. Van Landingham[1], W. Fuller[1], K. Fast[2], *M. Taylor*[2], and J. Roper[2]. [1]ENVIRON International Corporation, Monroe, LA, and [2]Afton Chemical Corporation, Richmond, VA.

#63 10:18 **TRANSLATIONAL PHARMACOKINETIC-PHARMACODYNAMIC MODELING OF QTC EFFECTS IN DOG AND MAN.** J. Parkinson[1], P. Jarvis[2], S. Visser[3], C. E. Pollard[1], J. Yates[4], H. Southworth[5], *J. P. Valentin*[1], and L. Ewart[1]. [1]Safety Pharmacology, AstraZeneca, Alderley Park, United Kingdom, [2]Discovery Enabling Capabilities&Sciences, AZ, AP, United Kingdom, [3]Global DMPK Centre of Excellence, AstraZeneca, Södertälje, Sweden, [4]DMPK, AstraZeneca, AP, United Kingdom, and [5]Global Clinical Development, AstraZeneca, AP, United Kingdom.

#64 10:39 **DEVELOPMENT OF A HUMAN GESTATION PHYSIOLOGICALLY-BASED PHARMACOKINETIC(PBPK) MODEL FOR COEXPOSURE OF POLYCHLORINATED BIPHENYLS(PCBs).** M. Ray[3], P. Ruiz[1], S. Li[2], *M. Mumtaz*[1], and *J. Fisher*[4]. [1]Division of Toxicology and Environmental Medicine, CDC ATSDR, Atlanta, GA, [2]Medical College of Georgia, Augusta, GA, [3]University of South Carolina, Columbia, SC, and [4]National Center for Toxicological Research, US FDA, Jefferson, SC.

#65 11:00 **USE OF A VALIDATED PBPK/PD MODEL FOR CHLORPYRIFOS TO CORRELATE *IN VITRO* SUBSTRATE CONCENTRATIONS WITH *IN VIVO* SYSTEMIC EXPOSURES.** *M. Bartels*[1], *T. S. Poet*[2], *P. S. Price*[1], *P. M. Hinderliter*[2], and *D. R. Juberg*[3]. [1]Toxicology, Dow Chemical, Midland, MI, [2]Biological Modeling, PNNL, Richland, WA, and [3]HHA, Dow AgroSciences, Indianapolis, IN.

#66 11:20 **EFFECT OF AGE ON TOXICOKINETICS AMONG HUMAN VOLUNTEERS EXPOSED TO PROPYLENE GLYCOL MONOMETHYL ETHER (PGME).** N. B. Hopf, D. Vernez, A. Berthet, N. Charriere, C. Arnoux, and C. Tomicic. Institute for Work and Health (IST), Lausanne, Switzerland. Sponsor: *M. Bouchard*.

Abstract #

#67 11:40 **THE USE OF BAYESIAN METHODS FOR UNCERTAINTY ANALYSIS AND EVALUATION OF BIOLOGICAL HYPOTHESES IN PBPK MODELS.** J. L. Davis[1], R. Tornero-Velez[2], *J. F. Wambaugh*[1], and *R. W. Setzer*[1]. [1]National Center for Computational Toxicology, ORD, US EPA, Research Triangle Park, NC, and [2]National Exposure Research Laboratory, ORD, US EPA, Research Triangle Park, NC.

Monday Morning, March 12
9:15 AM to 12:00 Noon
Room 301

PL

Platform Session: Hypersensitivity Methods

Chairperson(s): *Darrell Boverhof, Dow Chemical Company, Midland, MI, and David Lehmann, US EPA, Research Triangle Park, NC.*

#68 9:15 **INTERLEUKIN (IL) 8 AND THE IDENTIFICATION OF POTENTIAL SKIN SENSITIZERS.** *I. Kimber*, G. Blunt, L. Beresford, and *R. J. Dearman*. Faculty of Life Sciences, Greater Manchester University, Manchester, United Kingdom.

#69 9:39 **RELATIONSHIP BETWEEN CELL INJURY, CELL DEATH, AND ALLERGEN-INDUCED CYTOKINE EXPRESSION.** *R. J. Dearman*[1], G. Maxwell[2], R. Pendlington[2], and *I. Kimber*[1]. [1]University of Manchester, Manchester, United Kingdom, and [2]Unilever Safety & Environmental Assurance Centre, Bedford, United Kingdom.

#70 10:03 **REACTIVITY PROFILING UPDATE: REACTIONS OF 110 CHEMICALS WITH SINGLE NUCLEOPHILE PEPTIDES.** M. Aleksic, E. Thain, O. Saib, Y. Adeleye, and N. J. Gilmour. Safety & Environmental Assurance Centre, Unilever, Bedford, United Kingdom. Sponsor: *P. Carmichael*.

#71 10:27 **PROTEIN REACTIVITY CORRELATES WITH THE IMPACT OF OXIDATION AND N-ACETYLATION ON SKIN SENSITIZATION BY AROMATIC AMINE HAIR DYES.** C. Goebel[1], *J. A. Troutman*[2], *L. M. Foertsch*[2], and *G. F. Gerberick*[2]. [1]Central Product Safety, Procter & Gamble Service GmbH, Darmstadt, Germany, and [2]Central Product Safety, Procter & Gamble Company, Cincinnati, OH.

#72 10:51 **TOXICOGENOMIC INVESTIGATION INTO FALSE POSITIVE RESPONSES IN THE LOCAL LYMPH NODE ASSAY (LLNA).** *D. Adenuga*[1], *I. Kimber*[2], *R. Dearman*[2], *R. Thomas*[3], *B. B. Gollapudi*[1], *M. R. Woolhiser*[1], and *D. R. Boverhof*[1]. [1]Toxicology and Environmental Research and Consulting, The Dow Chemical Company, Midland, MI, [2]University of Manchester, Manchester, United Kingdom, and [3]The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#73 11:14 **DEVELOPMENT OF A MODIFIED LYMPHOCYTE TRANSFORMATION TEST FOR THE DIAGNOSIS OF DRUG HYPERSENSITIVITY REACTIONS.** M. Ko, Q. Zong, J. Whritenour, T. T. Kawabata, and A. John-Baptiste. Drug Safety, Research & Development, Pfizer, San Diego, CA. Sponsor: *W. Huang*.

Program Description (Continued)

Abstract #

#74 11:37 **DEVELOPMENT OF A DELAYED-TYPE HYPERSENSITIVITY ASSAY TO *CANDIDA ALBICANS* IN JUVENILE RATS: COMPARISON OF *IN VIVO* AND *EX VIVO* METHODS.** M. Thorn, A. W. Hudson, S. J. Davenport, W. S. Nowland, *C. J. Bowman*, and *M. Collinge*. Pfizer, Inc. Drug Safety Research and Development, Groton, CT.

Monday Morning, March 12
9:15 AM to 12:00 Noon
Room 302

PL

Aberrant Gene Expression in Toxicity and Disease—Epigenetics and microRNAs

Platform Session: Mechanisms of Carcinogenesis

Chairperson(s): *Richard Pollenz, University of South Florida, and Mark Miller, Wake Forest Medical Center.*

#75 9:15 **SPECIFICITY PROTEINS LINK ONCOGENIC MICRORNA-ZBTB4 SIGNALING AXIS TO EZH2 REGULATION.** K. Kim, and *S. Safe*. Center for Environmental Health and Genetic Medicine, Texas A&M Health Science Center, Houston, TX.

#76 9:36 **METHYLSELENOCYSTEINE RESETS CIRCADIAN RHYTHM IN MAMMARY EPITHELIAL CELLS BY ENHANCING NAD+-DEPENDENT SIRT1 ACTIVITY.** *M. Fang*, W. Guo, *C. Lewis*, and *H. Zarbl*. Environmental Occupational Medicine, University of Medicine and Dentistry of New Jersey, Piscataway, NJ.

#77 9:57 **EPIGENETIC ALTERATIONS UNDERLIE THE MECHANISM OF N,N-DIETHYLNITROSAMINE AND CARBON TETRACHLORIDE CARCINOGENESIS IN THE MOUSE LIVER.** *T. Uehara*[1], *K. Kutanzi*[2], *I. Koturbash*[2], I. P. Pogribny[2], and *I. Rusyn*[1]. [1]Department of Environmental Sciences and Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC, and [2]Department for Biochemical Toxicology, National Center for Toxicological Research, Jefferson, AR.

#78 10:18 ***N*-ACETYLCYSTEINE INHIBITS LOW-DOSE CT-INDUCED INCREASES IN MURINE LUNG TUMORIGENESIS.** *M. Miller*[1], J. Moore[1], M. Walb[1], N. Kock[1], A. Attia[1], S. Isom[1], J. McBride[1], W. Cecil[1], F. Polat[2], W. Zhao[1], L. Miller[1], A. Townsend[1], K. Wheeler[1], and M. Munley[1]. [1]Wake Forest School of Medicine, Winston-Salem, NC, and [2]Kocaeli University, Kocaeli, Turkey.

#79 10:39 **GENOTYPING FOR INTRACISTERNAL A PARTICLE (IAP) INSERTIONS IDENTIFIES AN INTRON 1 INSERTION IN THE SMAD5 GENE AS A CANDIDATE SUSCEPTIBILITY FACTOR FOR PPAR AGONIST-INDUCED HEMANGIOSARCOMAS IN MICE.** *R. D. Storer*[1], *C. Qin*[1], Z. Wang[1], J. Wright-Bourque[1], Z. Erdos[1], C. Cunningham[1], *W. Glaab*[1], L. Mixson[2], T. Skopek[1], S. Galloway[1], J. DeGeorge[1], and *F. Sistare*[1]. [1]Safety Assessment, Merck Research Laboratories, West Point, PA, and [2]Clinical Biostatistics, Merck Research Laboratories, West Point, PA.

Abstract #

#80 11:00 **EXPRESSION OF PROTO-ONCOGENE CFMS IN LUNG SQUAMOUS CELL CARCINOMA AND ADENOCARCINOMA.** *S. Kakiuchi-Kiyota*[1], C. Heintz[1], *P. Lappin*[2], A. W. Robertson[1], F. Voigt[1], C. Ty[1], R. E. Huynh[1], A. M. Ryan[1], and N. Mathialagan[1]. [1]Drug Safety Research and Development, Pfizer Inc., Groton, CT, and [2]Drug Safety Research and Development, Pfizer Inc., La Jolla, CA.

#81 11:20 **THE ROLE OF PPARγ IN MAMMARY SECRETORY EPITHELIAL CELLS DURING DMBA-INDUCED BREAST TUMOURIGENESIS.** *A. J. Apostoli*[1], *G. Skelhorne-Gross*[1], R. Rubino[1], M. Schneider[1], S. SenGupta[1], and *C. Nicol*[1,2]. [1]Pathology & Molecular Medicine, Queen's University, CRI, Kingston, ON, Canada, and [2]Division Of Cancer Biology & Genetics, Queen's University, CRI, Kingston, ON, Canada.

#82 11:40 **COMPREHENSIVE MAPPING OF TRANSCRIPTIONAL AND EPIGENETIC PERTURBATIONS *IN VIVO* IDENTIFIES NONCODING RNAS AS NOVEL BIOMARKERS FOR LIVER TUMOR PROMOTION.** F. Bolognani[1], H. Lempiainen[1,2], M. Arne[1], C. Philippe[1], V. Dubost[1], R. Luisier[1,2], J. Thomson[2], E. Unterberger[2], F. Hahne[1], S. Brasa[1], T. Zollinger[1], M. Marcellin[1], J. Marlowe[1], E. Oakeley[1], D. Schubeler[1], M. Schwarz[2], R. Meehan[2], *H. Ellinger-Ziegelbauer*[2], R. Wolf[2], D. Theil[1], D. Heard[1], P. Moulin[1], O. Grenet[1], J. Moggs[1,2], and R. Terranova[1]. [1]Novartis Institutes for Biomedical Research, Basel, Switzerland, and [2]IMI MARCAR Consortium, EU, Switzerland.

Monday Morning, March 12
9:15 AM to 12:00 Noon
Room 309

PL

Platform Session: Nanotoxicology: Nanogold or Nanosilver

Chairperson(s): *Amy Wang, US EPA, Research Triangle Park, NC, and Nancy Monteiro-Riviere, North Carolina State University, Raleigh, NC.*

#83 9:15 **NANOMATERIAL (NM) BIOACTIVITY PROFILING BY TOXCAST HIGH-THROUGHPUT SCREENING (HTS).** *A. Wang*[1], E. L. Berg[2], M. Polokoff[2], J. Yang[2], *D. Reif*[1], *N. Kleinstreuer*[1], S. Marinakos[3,4], A. Badireddy[3,4], S. Gangwal[1], C. Matson[3,5], M. Wiesner[3,4], and *K. Houck*[1]. [1]NCCT, US EPA, Research Triangle Park, NC, [2]BioSeek, LLC, San Francisco, CA, [3]CEINT, Duke University, Durham, NC, [4]Civil & Environmental Engineering Department, Duke University, Durham, NC, and [5]Environmental Science, Baylor University, Waco, TX.

#84 9:34 **BIOAVAILABILITY AND TOXICITY OF SILVER NANOPARTICLES AFTER TWENTY-EIGHT DAY ORAL EXPOSURE IN RATS.** M. van der Zande[1], R. J. Peters[1], R. J. Vandebriel[2], P. J. Hendriksen[1], and H. Bouwmeester[1]. [1]RIKILT—Wageningen University & Research Centre, Wageningen, Netherlands, and [2]The National Institute for Public Health and the Environment, Bilthoven, Netherlands. Sponsor: *S. Rangarajan*.

Program Description (Continued)

Abstract #

#85 9:53 **INTRAVENOUS ADMINISTRATION OF SILVER NANOPARTICLES IN MALE MICE ALTERS LEYDIG CELL FUNCTION AND INCREASES SERUM TESTOSTERONE, BUT DOES NOT PERTURB SPERMATOGENESIS.** T. Garcia[1], G. M. Costa[2], L. R. França[2], and *M. Hofmann*[1]. [1]Comparative Biosciences, University of Illinois at Urbana-Champaign, Urbana, IL, and [2]Morphology, Federal University of Minas Gerais, Belo Horizonte, Minas Gerais, Brazil.

#86 10:12 **THE SIZE AND SURFACE COATING OF NANOSILVER DIFFERENTIALLY AFFECTS BIOLOGICAL ACTIVITY IN BLOOD BRAIN BARRIER (RBEC4) CELLS.** *B. Veronesi*[1], S. Mosher[2], S. Simmons[1], W. Ward[3], A. Fisher[3], B. Vallanat[3], and B. Chorley[1]. [1]NHEERL-Integrated Systems Toxicology Division, US EPA, Research Triangle Park, NC, [2]Environmental and Molecular Toxicology Program, North Carolina State University, Raleigh, NC, and [3]NHEERL-Genomics Research Core, US EPA, Research Triangle Park, NC.

#87 10:30 **GOLD NANOPARTICLES DISRUPT ZEBRAFISH EYE DEVELOPMENT AND PIGMENTATION.** *K. Kim*[1], T. Zaikova[2], J. Hutchison[2], and *R. Tanguay*[1]. [1]Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR, and [2]Chemistry, University of Oregon, Eugene, OR.

#88 10:48 ***IN VITRO* BIODISTRIBUTION OF SILVER NANOPARTICLES IN ISOLATED PERFUSED PORCINE SKIN FLAPS.** *T. L. Leavens*[1], *N. A. Monteiro-Riviere*[1], A. O. Inman[1], J. D. Brooks[1], S. J. Oldenburg[2], and *J. E. Riviere*[1]. [1]Center for Chemical Toxicology Research and Pharmacokinetics, North Carolina State University, Raleigh, NC, and [2]nanoComposix, San Diego, CA.

#89 11:06 **PROTEIN ADSORPTION BEHAVIOR OF PEG-COATED GOLD NANOPARTICLES IN HUMAN PLASMA.** P. L. Carpinone[2], K. W. Powers[2], *D. S. Barber*[1], and *S. M. Roberts*[1]. [1]CEHT, University of Florida, Gainesville, FL, and [2]PERC, University of Florida, Gainesville, FL.

#90 11:24 **USE OF AN INTESTINAL CO-CULTURE MODEL TO STUDY THE EFFECTS OF AG AND TIO_2 NANOPARTICLES: MUCUS PROTECTIVE ROLE AND SIZE DEPENDENT EFFECTS.** A. Georgantzopoulou[1], M. Kruszewski[3], A. Lankoff[3], M. Dusinska[4], J. Audinot[2], L. Hoffmann[1], and A. C. Gutleb[1]. [1]EVA, Centre de Recherche Public Gabriel Lippmann, Belvaux, Luxembourg, [2]SAM, Centre de Recherche Public- Gabriel Lippmann, Belvaux, Luxembourg, [3]Centre for Radiobiology and Biological Dosimetry, Warszawa, Poland, and [4]Norwegian Institute for Air Research, Kjeller, Norway. Sponsor: *B. Blömeke*.

#91 11:42 **ACUTE VASCULAR EFFECTS OF NANOPARTICLE INFUSION IN ISOLATED PERFUSED SKIN.** *J. E. Riviere*, *T. L. Leavens*, J. D. Brooks, and *N. A. Monteiro-Riviere*. Center for Chemical Toxicology Research and Pharmacokinetics, North Carolina State University, Raleigh, NC.

Monday Morning, March 12
9:15 AM to 10:15 AM
Room 100

Exhibitor Hosted Session: Development of a Fully Human Monoclonal Antibody for the Treatment of Inflammatory Disease

Presented by:
Huntingdon Life Sciences

Monoclonal antibodies are in development to treat a wide range of diseases. One such therapeutic area is that of inflammatory disease. Performing nonclinical studies to assess the safety of these therapies is a very important aspect of the development program. Studies highlight the need for strong focus upon disease biology.

Monday Morning, March 12
9:15 AM to 10:15 AM
Room 101

Exhibitor Hosted Session: Developmental Toxicity Testing of Preventive Vaccines

Presented by:
MPI Research

Vaccination is the primary means of preventing pandemic disease outbreak. The concern for vaccine safety has received increasing attention from the medical community and the public. Toxicity assessments for preventive vaccines can be conducted either in dedicated stand-alone toxicity studies or combination safety/immunogenicity studies with toxicity.

Monday Morning, March 12
9:15 AM to 10:15 AM
Room 105

Exhibitor Hosted Session: The Use of Human HepatoPac™, an *In Vitro* Microliver Platform, for Predictive Toxicology

Presented by:
Hepregen, Corp.

Current *in vitro* platforms to assess hepatotoxicty have been poor predictors of *in vivo* performance. The use of HepatoPac™, a novel and highly predictive *in vitro* microliver platform that remains functional for several weeks, will be presented for a variety of "extended-horizon" toxicology applications including chornic toxicity and drug-drug interactions.

Monday Morning, March 12
9:30 AM to 10:30 AM
Room 111

(Ticket Required; SOT Student and Postdoctoral members only, limited seating)

Trainee Discussion with Plenary Speaker: Leroy Hood

Chairperson(s): *Michele La Merrill, Mount Sinai School of Medicine, New York, NY.*

Lecturer: *Leroy Hood, Institute for Systems Biology, Seattle, WA.*

Dr. Hood will meet informally for discussion with graduate students and postdoctoral scholars after his Plenary Opening Lecture. Room size is limited. Participants must register for a ticket with their Annual Meeting registration.

Program Description (Continued)

Abstract #

Monday Morning, March 12
9:30 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Risk Assessment: Case-Specific Characterizations

Chairperson(s): *Deborah Proctor, ToxStrategies, Inc., Rancho Santa Margarita, CA, and Virunya Bhat, NSF International, Encinitas, CA.*

Displayed: *9:30 AM–12:30 PM*

Author Attended: *9:30 AM–11:00 AM*

#92 **Poster Board Number 101**
BIOLOGICAL EQUIVALENT-BASED RISK ASSESSMENT—THE CASE OF BPA AND HCHO. *D. A. Sarigiannis*[1,2], and S. P. Karakitsios[1,2]. [1]Chemical Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece, and [2]Chemical Process Engineering Research Institute, Centre for Research and Technology Hellas, Thermi, Greece.

#93 **Poster Board Number 102**
GENOME-WIDE GENE EXPRESSION ANALYSIS OF CR(VI) EFFECTS IN FISHER RAT SMALL INTESTINAL EPITHELIUM. *S. Kim*[1], *A. K. Kopec*[1], *A. L. Forgacs*[1], *C. M. Thompson*[2], and *T. R. Zacharewski*[1]. [1]Biochemistry & Molecular Biology, Center for Integrative Toxicology, Michigan State University, East Lansing, MI, and [2]ToxStrategies, Inc., Katy, TX.

#94 **Poster Board Number 103**
ASSESSMENT OF GENOTOXIC POTENTIAL OF CR(VI) IN THE MOUSE DUODENUM VIA TOXICOGENOMIC PROFILING. *C. M. Thompson*[1], J. G. Hixon[2], *A. K. Kopec*[3], M. A. Harris[1], *D. M. Proctor*[4], and *L. C. Haws*[2]. [1]ToxStrategies, Katy, TX, [2]ToxStrategies, Austin, TX, [3]Michigan State University, East Lansing, MI, and [4]ToxStrategies, Rancho Santa Margarita, CA.

#95 **Poster Board Number 104**
COMPARATIVE TOXICOGENOMIC ANALYSIS OF CR(VI) EFFECTS IN RAT AND MOUSE SMALL INTESTINE. *A. K. Kopec*[1], *A. L. Forgacs*[1], *S. Kim*[1], *C. M. Thompson*[2], and *T. R. Zacharewski*[1]. [1]Biochemistry & Molecular Biology, Center for Integrative Toxicology, Michigan State University, East Lansing, MI, and [2]ToxStrategies, Inc., Katy, TX.

#96 **Poster Board Number 105**
MODE OF ACTION FOR INTESTINAL CARCINOGENESIS OF INGESTED HEXAVALENT CHROMIUM IN MICE. *D. Proctor*[1], *C. M. Thompson*[2], M. Suh[1], *L. C. Haws*[3], and M. A. Harris[2]. [1]ToxStrategies, Inc., Rancho Santa Margarita, CA, [2]ToxStrategies, Inc., Katy, TX, and [3]ToxStrategies, Inc., Austin, TX.

#97 **Poster Board Number 106**
PROVISIONAL ADVISORY LEVEL (PAL) DEVELOPMENT FOR MERCURY AND INORGANIC MERCURY COMPOUNDS. *C. S. Wood*[1], *G. Henningsen*[2], M. McClanahan[3], and *F. Adeshina*[4]. [1]Oak Ridge National Laboratory, Oak Ridge, TN, [2]Front Range Environmental Toxicology, Monument, CO, [3]CDC, Retired, Lilburn, GA, and [4]US EPA, Washington, DC.

Abstract #

#98 **Poster Board Number 107**
DEVELOPMENT OF A UNIT RISK FACTOR FOR NICKEL AND INORGANIC NICKEL COMPOUNDS BASED ON AN UPDATED CARCINOGENIC TOXICITY ASSESSMENT. D. D. McCant[1], J. T. Haney[1], *R. L. Grant*[1], R. L. Sielken[2], and C. Valdez-Flores[2]. [1]Toxicology Division, Texas Commission on Environmental Quality, Austin, TX, and [2]Sielken & Associates Consulting, Inc., Bryan, TX.

#99 **Poster Board Number 108**
THE USE OF SURROGATE DATA AND CHEMICAL ESTIMATION METHODS IN THE DEVELOPMENT OF A UNIT RISK VALUE FOR CUMENE (1-METHYLETHYLBENZENE). J. P. Brown, *A. G. Salmon*, *M. A. Marty*, and *G. V. Alexeeff*. Air Toxicology and Epidemiology, OEHHA/CalEPA, Oakland, CA.

#100 **Poster Board Number 109**
CARCINOGENIC RISK ASSESSMENT FOR THE USE OF METHYLENE BLUE IN DAIRY COWS. *T. Zhou*, *K. Gaido*, J. Qiu, J. Oriani, and K. Ekelman. Center for Veterinary Medicine, US FDA, Rockville, MD.

#101 **Poster Board Number 110**
CONSIDERING MODE OF ACTION IN ESTIMATING AN NSRL FOR 3-MCPD. P. Sheehan[1], *K. Bogen*[1], *G. Brorby*[2], and *S. Holm*[3]. [1]Exponent, Oakland, CA, [2]ToxStrategies, Vallejo, CA, and [3]Georgia Pacific LLC, Atlanta, GA.

#102 **Poster Board Number 111**
DEATH BY CAFFEINE: INTENTIONAL POISONING OF A DOG. *S. N. Tawde*, *B. Puschner*, S. Stump, and R. H. Poppenga. California Animal Health & Food Safety Laboratory, University of California Davis, Davis, CA.

#103 **Poster Board Number 112**
A QUANTITATIVE RISK ASSESSMENT OF 2,3-PENTANEDIONE, BASED ON PRELIMINARY DATA. *D. A. Dankovic*[1], and *D. L. Morgan*[2]. [1]Risk Evaluation Branch, CDC/NIOSH, Cincinnati, OH, and [2]Respiratory Toxicology, NIEHS, Research Triangle Park, NC.

#104 **Poster Board Number 113**
US EPA'S PROPOSED TOXICITY VALUES FOR TCDD: IMPLICATIONS FOR DECISION-MAKING REGARDING THE SAFETY OF FOODS IN THE UNITED STATES. *L. Haws*, L. Fitzgerald, K. Burkhalter, *M. Harris*, and *D. Wikoff*. ToxStrategies, Austin, TX.

#105 **Poster Board Number 114**
ASSESSMENT OF RISKS TO CHILDREN EXPOSED TO HYDROCARBON CONSTITUENTS FROM THE GULF OF MEXICO OIL SPILL. *A. Pawlisz*. CRA, Dallas, TX.

#106 **Poster Board Number 115**
RISK-BENEFIT ASSESSMENT OF FLAME-RETARDANT CHEMICALS. A. Blum[1,2], V. Babrauskas[3], R. Fuoco[2], and *L. Birnbaum*[4]. [1]Chemistry, University of California Berkeley, Berkeley, CA, [2]Green Science Policy Institute, Berkeley, CA, [3]Fire Science and Technology Inc., Issaquah, WA, and [4]National Cancer Institute, National Institute of Environmental Health Sciences, Research Triangle Park, NC.

Program Description (Continued)

Abstract #

#107 **Poster Board Number 116**
ANALYSIS OF HEALTH RISKS TO SURGICAL PATIENTS FROM INSTRUMENTS CONTAMINATED WITH USED HYDRAULIC FLUID. *D. G. Dodge*[1], *B. D. Beck*[2], M. T. BenKinney[3], and P. D. Boehm[3]. [1]Gradient, Bend, OR, [2]Gradient, Cambridge, MA, and [3]Exponent, Maynard, MA.

#108 **Poster Board Number 117**
NATURAL GAS EXPLORATION AND PRODUCTION IN THE BARNETT SHALE: ASSESSMENT OF EXPOSURES TO VOLATILE ORGANIC COMPOUNDS (VOCS). *C. S. Perry*, A. Tachovsky, M. Ke, *J. D. Urban*, and *L. C. Haws*. ToxStrategies, Inc., Austin, TX.

#109 **Poster Board Number 118**
INHALATION TOXICITY OF PARTICULATE MATTER FROM MIDDLE EASTERN BASES IN RATS EXPOSED FOR TWO WEEKS. P. A. Ortiz[1], K. C. Roberts[2], C. U. Parkinson[2], V. Mokashi[1], and *B. A. Wong*[1,2]. [1]Naval Medical Research Unit, Wright-Patterson AFB, Dayton, OH, and [2]The Hamner Institute for Health Sciences, Research Triangle Park, NC.

#110 **Poster Board Number 119**
HEALTH IMPLICATIONS OF COAL TAR AND BITUMEN COATINGS IN CAST IRON WATER MAINS. C. M. de Jongh[1], B. M. van de Ven[2], G. Mesman[1], and M. Blokker[1]. [1]KWR Watercycle Research Institute, Nieuwegein, Netherlands, and [2]National Institute for Public Health and the Environment (RIVM), Bilthoven, Netherlands. Sponsor: *M. Heringa*.

#111 **Poster Board Number 120**
MARGIN OF EXPOSURE BASED RISK ASSESSMENT OF GENOTOXIC AND CARCINOGENIC INGREDIENTS IN PLANT FOOD SUPPLEMENTS. S. van den Berg[1], P. Restani[2], M. Boersma[1], L. Delmulle[3], and I. Rietjens[1]. [1]Division of Toxicology, Wageningen University, Wageningen, Netherlands, [2]Department of Pharmacological Sciences, Università degli Studi di Milano, Milan, Italy, and [3]Proform SA, Troisvierges, Luxembourg. Sponsor: *B. Blaauboer*.

#112 **Poster Board Number 121**
QUANTITATIVE CANCER RISK POSED BY PRENATAL EXPOSURE TO BAP. *S. Iyer*[1], M. Fox[2], D. Tang[1], and F. Perera[1]. [1]Environmental Health Sciences, Columbia University-Mailman School of Public Health, New York, NY, and [2]Health Policy and Management, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD.

#113 **Poster Board Number 122**
POPULATION-BASED TOXICITY ASSESSMENT IMPLICATES MITOCHONDRIAL DYSFUNCTION AS AN EARLY EVENT IN ISONIAZID-INDUCED LIVER INJURY. J. S. Eaddy[1], C. L. Kurtz[1], H. Wu[2], *K. Adkins*[2], *P. B. Watkins*[1], and *A. H. Harrill*[1]. [1]The Hamner Institutes, Research Triangle Park, NC, and [2]Pfizer, Inc., Groton, CT.

#114 **Poster Board Number 123**
HEALTH ASSESSMENT OF METHANOL USED IN HYDRAULIC FRACTURING FLUIDS. *M. R. Garry*[1], T. Saba[2], F. Mohsen[3], and B. Hilbert[4]. [1]Exponent, Bellevue, WA, [2]Exponent, Maynard, MA, [3]Exponent, Cranbury, NJ, and [4]Exponent, Menlo Park, CA.

Abstract #

#115 **Poster Board Number 124**
HEALTH RISK ASSESSMENT ON OCCUPATIONAL HAZARDS EXPOSURE AMONG WORKERS INVOLVED IN JASMINE'S AGRICULTURE. *S. Chaiklieng*[1], P. Suggaravetsiri[2], and L. Charerntanyarak[2]. [1]Environmental Health Science, Faculty of Public Health, Khon Kaen University, Muang Khon Kaen, Thailand, and [2]Epidemiology, Faculty of Public Health, Khon Kaen University, Muang Khon Kaen, Thailand.

#116 **Poster Board Number 125**
PROVISIONAL ADVISORY LEVEL (PAL) DEVELOPMENT FOR METHACRYLONITRILE. C. Bast[1], M. McClanahan[2], *P. McGinnis*[3], and F. Adeshina[4]. [1]Oak Ridge National Laboratory, Oak Ridge, TN, [2]CDC, Retired, Lilburn, GA, [3]Syracuse Research Corporation, N Syracuse, NY, and [4]US EPA, Washington, DC.

#117 **Poster Board Number 126**
ORAL RISK ASSESSMENT OF DIACETONE ALCOHOL: USE OF METHYL ISOBUTYL KETONE DATA TO ADDRESS DATA GAPS. *J. C. English*, *V. S. Bhat*, *G. L. Ball*, and *C. J. McLellan*. NSF International, Ann Arbor, MI.

#118 **Poster Board Number 127**
THE WEIGHT OF EVIDENCE DOES NOT SUPPORT ENDOCRINE DISRUPTION AS THE CRITICAL EFFECT OF BENZOPHENONE. *V. S. Bhat*, *J. C. English*, *G. L. Ball*, and *C. J. McLellan*. NSF International, Ann Arbor, MI.

#119 **Poster Board Number 128**
IS SULFUR DIOXIDE A REPRODUCTIVE AND DEVELOPMENTAL TOXICANT? *M. Seeley*, and *J. E. Goodman*. Gradient, Cambridge, MA.

#120 **Poster Board Number 129**
ACUTE EFFECTS OF EXPOSURE TO VAPORS OF HYDROGEN PEROXIDE IN HUMANS. *L. Ernstgård*, B. Sjögren, and *G. Johanson*. Work Environmental Toxicology, Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden.

#121 **Poster Board Number 130**
DRAFT REFERENCE EXPOSURE LEVELS FOR CARBONYL SULFIDE—A NERVOUS SYSTEM TOXICANT. *J. F. Collins*, and *A. G. Salmon*. OEHHA, Cal/EPA, Oakland, CA.

#122 **Poster Board Number 131**
DERIVATION OF DRAFT CHRONIC REFERENCE EXPOSURE LEVELS FOR BOTH DIOXIN-LIKE AND NONDIOXIN-LIKE PCB CONGENERS. *J. Yang*, *A. G. Salmon*, and *M. A. Marty*. OEHHA, Cal/EPA, Oakland, CA.

#123 **Poster Board Number 132**
PROVISIONAL ADVISORY LEVELS (PALS) FOR CARBON DISULFIDE. *S. Milanez*[1], *D. Dorman*[2], *G. McConnell*[3], and *F. Adeshina*[4]. [1]Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN, [2]College of Veterinary Medicine, North Carolina State University, Raleigh, NC, [3]ToxPath, Inc., Raleigh, NC, and [4]US EPA, Washington, DC.

Program Description (Continued)

Abstract #

#124 **Poster Board Number 133**
INTERSPECIES ADJUSTMENTS TO RODENT-DERIVED DIOXIN TOXIC EQUIVALENCY FACTORS ARE NECESSARY FOR PCBs. *E. Carlson*[1], *C. H. Sutter*[2], and *T. R. Sutter*[2]. [1]General Electric Company, Niskayuna, NY, and [2]University of Memphis, Memphis, TN.

#125 **Poster Board Number 134**
SUBCHRONIC TOXICITY OF BENZYL ACETONE IN RATS. C. Letizia, *V. Politano*, and *A. Api*. Human Health, RIFM, Woodcliff Lake, NJ.

#126 **Poster Board Number 135**
A RAPID PROCESS FOR SETTING TOXICOLOGICAL LIMITS IN SUPPORT OF EQUIPMENT CLEANING IN A CONTRACT DRUG MANUFACTURING FACILITY. *E. Hope*[1], *S. C. Gordon*[1], *A. M. Kore*[1], and L. Harrison[2]. [1]Medical Department, 3M, Saint Paul, MN, and [2]Drug Delivery Systems, 3M, Saint Paul, MN.

Monday Morning, March 12
9:30 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Risk Assessment: New Applications and Analyses

Chairperson(s): *Andy Nong, Health Canada, Ottawa, ON, Canada, and Gunnar Johanson, Karolinska Institute, Stockholm, Sweden.*

Displayed: *9:30 AM–12:30 PM*

Author Attended: *11:00 AM–12:30 PM*

#127 **Poster Board Number 139**
CUMULATIVE RISK ASSESSMENT OF THREE ALDEHYDES PRESENT IN TOBACCO SMOKE: USING MARGIN OF EXPOSURE (MOE) AND MODE-OF-ACTION (MOA) EVALUATIONS. F. H. Cunningham, S. Fiebelkorn, and *C. Meredith*. Group R&D, British American Tobacco, Southampton, United Kingdom.

#128 **Poster Board Number 140**
PRELIMINARY ASSESSMENTS OF *IN VITRO* PHARMACOKINETIC DATA AND EXPOSURE INFORMATION FOR THE TOXCAST PHASE II CHEMICALS. *B. A. Wetmore*[1], M. A. Sochaski[1], S. Ferguson[2], *J. F. Wambaugh*[3], B. Allen[1], K. Freeman[2], K. Cantwell[1], *D. J. Dix*[3], *R. S. Judson*[3], *R. J. Kavlock*[3], *H. J. Clewell*[1], *M. E. Andersen*[1], and *R. S. Thomas*[1]. [1]The Hamner Institutes for Health Sciences, Research Triangle Park, NC, [2]Life Technologies, Corp., Durham, NC, and [3]National Center for Computational Toxicology, US EPA, Research Triangle Park, NC.

#129 **Poster Board Number 141**
USE OF LOW-DOSE CLINICAL PHARMACODYNAMIC (PD) AND PHARMACOKINETIC (PK) DATA TO ESTABLISH WORKPLACE EXPOSURE GUIDELINES FOR DAPAGLIFLOZIN, A POTENT INHIBITOR OF THE RENAL SODIUM GLUCOSE CO-TRANSPORTER 2. *J. Gould*, S. Kasichayanula, D. Shepperly, and D. W. Boulton. Bristol-Myers Squibb, New Brunswick, NJ.

Abstract #

#130 **Poster Board Number 142**
ANALYSIS OF GENOTYPIC AND PHENOTYPIC POLYMORPHISMS OF HUMAN CYTOCHROME P450 2A6 (CYP2A6) AMONG VARIOUS ETHNIC POPULATIONS. *C. Hsieh*, J. Phuong, F. C. Tsai, and *M. S. Sandy*. Cal/EPA, Sacramento, CA.

#131 **Poster Board Number 143**
APPLICATION OF A DATA FUSION FRAMEWORK FOR A CHEMICAL MIXTURE AND CONTAMINATED SITES HEALTH RISK ASSESSMENT AND MANAGEMENT. A. K. Mohapatra[1], R. Sadiq[2], R. Dyck[2], A. Zargar[2], and S. Islam[2]. [1]Environmental Health Program, Health Canada, Calgary, AB, Canada, and [2]Faculty of Engineering, University of British Columbia, Kelowna, BC, Canada. Sponsor: *L. Haber*.

#132 **Poster Board Number 144**
USE OF BIOMARKERS IN THE BENCHMARK DOSE METHOD. C. Van Landingham[1], *R. Gentry*[1], *S. Hays*[2], and *L. Aylward*[3]. [1]ENVIRON International Corporation, Monroe, LA, [2]Summit Toxicology, Lyons, CO, and [3]Summit Toxicology, Falls Church, VA.

#133 **Poster Board Number 145**
APPLYING THE "SCIENCE AND DECISIONS" CONCEPTUAL MODELS (CMS) TO DIOXIN. *T. Simon*[1], *M. Stephens*[2], *Y. Yang*[3], *R. Manning*[4], *J. Rowlands*[5], and *R. A. Budinsky*[5]. [1]Ted Simon LLC, Winston, GA, [2]Johns Hopkins Center for Alternatives to Animal Testing, Baltimore, MD, [3]The Hamner Institute, Research Triangle Park, NC, [4]Georgia Department of Natural Resources, Athens, GA, and [5]The Dow Chemical Company, Midland, MI.

#134 **Poster Board Number 146**
ASSESSING EXPOSURE DOSE EQUIVALENT OF VINYL CHLORIDE IN DRINKING WATER FROM SHOWERING AND BATHING ACTIVITIES USING PHYSIOLOGICALLY-BASED PHARMACOKINETIC MODELING. *A. Nong*[1], P. Hamel[2], R. Charron[2], and M. Deveau[2]. [1]Environmental Health Science and Research Bureau, Health Canada, Ottawa, ON, Canada, and [2]Water, Air, and Climate Change Bureau, Health Canada, Ottawa, ON, Canada.

#135 **Poster Board Number 147**
DISCREPANCIES AMONG ACUTE GUIDELINE VALUES FOR EMERGENCY RESPONSE. M. Öberg, M. Johansson, N. Palmen, and *G. Johanson*. Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden.

#136 **Poster Board Number 148**
COMPARATIVE STUDY ON THE UTILITIES OF ANIMAL EXPERIMENTAL DATA FOR RISK ASSESSMENT OF INHALATION EXPOSURE TO CHEMICALS. *Y. Aoki*[1], Y. Matsumoto[2], and M. Matsumoto[1]. [1]Center for Environmental Risk Research, National Institute for Environmental Studies, Tsukuba, Ibaraki, Japan, and [2]Institute of Statistical Mathematics, Tachikawa, Tokyo, Japan.

Program Description (Continued)

Abstract #

#137 **Poster Board Number 149**
EFFECTS OF ACUTE EXPOSURE OF HUMAN PRECISION-CUT LUNG SLICES TO CHEMICALS. *L. Lauenstein*[1], S. Switalla[1], F. Prenzler[1], C. Förster[2], O. Pfennig[2], E. Corsini[3], N. Krug[1], A. Braun[1], and K. Sewald[1]. [1]Immunologie, Allergologie und Immuntoxikologie, Fraunhofer ITEM, Hanover, Germany, [2]KRH-Klinikum Nordstadt, Hanover, Germany, and [3]Laboratory of Toxicology, University of Milan, Milan, Italy.

#138 **Poster Board Number 150**
ARE OELS AND DNELS THE SAME THING? A QUANTITATIVE COMPARISON OF THE EUROPEAN INDICATIVE OCCUPATIONAL EXPOSURE LIMITS AND THE DERIVED NO-EFFECT LEVELS FOR WORKERS UNDER REACH. *G. Johanson*[1], and L. Schenk[2,1]. [1]Work Environment Toxicology, Karolinska Institute, Stockholm, Sweden, and [2]Division of Philosophy, Royal Institute of Technology, Stockholm, Sweden.

#139 **Poster Board Number 151**
DERIVATION OF SURROGATE ACUTE EMERGENCY GUIDANCE LEVELS (AEGLS) BY STATISTICAL CROSS-EXTRAPOLATION WITHIN AND ACROSS SEVERITY THRESHOLDS. M. T. Chu, C. J. Collar, and E. Demchuk. ATSDR/CDC, Atlanta, GA. Sponsor: *B. Fowler*.

#140 **Poster Board Number 152**
STATISTICAL ANALYSIS OF THE ATSDR DATABASE OF CHEMICAL HEALTH GUIDANCE VALUES (HGVS). E. Demchuk, and Y. Tie. ATSDR/CDC, Atlanta, GA. Sponsor: *B. Fowler*.

#141 **Poster Board Number 153**
MODELING OF FUROSEMIDE IN DILISYM™ REVEALS TESTABLE HYPOTHESES ABOUT HEPATOTOXICITY MECHANISMS. S. Q. Siler[1], *D. J. Antoine*[2], *B. A. Howell*[1], J. L. Woodhead[1], *B. Park*[2], and *P. B. Watkins*[1]. [1]The Hamner-UNC Institute for Drug Safety Sciences, Research Triangle Park, NC, and [2]University of Liverpool Center for Drug Safety Sciences, Liverpool, United Kingdom.

#142 **Poster Board Number 154**
THE AROCLOR 1254 REFERENCE DOSE AS A CASE STUDY FOR THE DEVELOPMENT OF DATA-DERIVED EXTRAPOLATION FACTORS TO REPLACE THE INTERSPECIES UNCERTAINTY FACTOR. *J. D. Schell*[1], *E. Carlson*[2], *J. B. Silkworth*[2], S. Bodreddigari[3], *T. R. Sutter*[3], and *C. H. Sutter*[3]. [1]Exponent, Houston, TX, [2]General Electric Company, Niskayuna, NY, and [3]University of Memphis, Memphis, TN.

#143 **Poster Board Number 155**
DIFFERENTIATING ALCOHOL SOURCES IN A DRAM SHOPPE CASE—A NOVEL MASS-BALANCE MODELING APPROACH. *M. Dulaney*. Dulaney Toxicology Inc., Tallahassee, FL.

Abstract #

#144 **Poster Board Number 156**
ASSESSING THE IMPACT OF CHILD/ADULT DIFFERENCE IN PRESYSTEMIC CLEARANCE ON THE HUMAN KINETIC ADJUSTMENT FACTOR (HKAF) FOR INGESTED TOXICANTS. *M. Valcke*[1,2], and *K. Krishnan*[1]. [1]Santé Environnementale et Santé au Travail, Université de Montréal, Montréal, QC, Canada, and [2]Institut National de Santé Publique du Québec, Montréal, QC, Canada.

#145 **Poster Board Number 157**
A SYSTEMS BIOLOGY ANALYSIS TO INFORM HUMAN HEALTH RISK ASSESSMENT OF BENZENE. *R. Thomas*[1], A. E. Hubbard[1], *C. M. McHale*[1], *L. Zhang*[1], S. M. Rappaport[1], Q. Lan[2], N. Rothman[2], R. Vermeulen[3], *K. Z. Guyton*[4], J. Jinot[4], B. R. Sonawane[4], and *M. T. Smith*[4]. [1]University of California Berkeley, Berkeley, CA, [2]NCI, Bethesda, MD, [3]Utrecht University, Utrecht, Netherlands, and [4]US EPA, Washington, DC.

#146 **Poster Board Number 158**
QUANTITATIVE STRUCTURE-ACTIVITY RELATIONSHIP MODELING OF ANIMAL OCULAR TOXICITY. *H. Zhu*[1,2], and R. L. Solimeo[2]. [1]The Rutgers Center for Computational and Integrative Biology, Rutgers University, Camden, NJ, and [2]Chemistry Department, Rutgers University, Camden, NJ.

Monday Morning, March 12
9:30 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Toxicity of Mixtures

Chairperson(s): *Gunda Reddy, US Army Public Health Command, Army Institute of Public Health, Aberdeen Proving Ground, MD.*

Displayed: *9:30 AM–12:30 PM*

Author Attended: *9:30 AM–11:00 AM*

#147 **Poster Board Number 201**
APPLICATION OF A DECISION TREE TOOL TO THE EVALUATION OF CUMULATIVE RISKS FROM MIXTURES OF POLAR COMPOUNDS MEASURED IN EUROPEAN SURFACE WATERS. *P. S. Price*, and *X. Han*. Toxicology & Environmental Research & Consulting, The Dow Chemical Company, Midland, MI.

#148 **Poster Board Number 202**
DETERMINING THE IMPACT OF UNCERTAINTY IN NONCANCER STANDARDS ON VALUES OF MAXIMUM CUMULATIVE RATIO (A MEASURE OF THE NEED FOR CUMULATIVE RISK ASSESSMENTS). *X. Han*, and *P. S. Price*. TERC, Dow Chemical, Midland, MI.

#149 **Poster Board Number 203**
APPLICATION OF A DECISION TREE METHODOLOGY FOR MULTICONSTITUENT CHEMICAL FORMULATIONS. *M. Heneweer*. Shell Health, Shell International BV, the Hague, Netherlands.

Program Description (Continued)

Abstract #

#150 **Poster Board Number 204**
EVALUATION OF LOW-DOSE SYNERGY IN A BINARY MIXTURE. *R. P. Brown*, N. Ergen, H. Dinesdurage, S. Hamilla, *C. Cochran*, and A. Komiyama. CDRH, US FDA, Silver Spring, MD.

#151 **Poster Board Number 205**
THE IMPACT OF MIXTURE COMPOSITION, MIXING RATIO AND DOSE ON THE INTERACTIONS AMONG THE FOUR TRIHALOMETHANES (THMS) REGULATED IN DRINKING WATER. *J. Simmons*[1], C. A. Dingus[2], L. K. Teuschler[3], G. E. Rice[3], Y. M. Sey[1], and A. McDonald[1]. [1]NHEERL, US EPA, Research Triangle Park, NC, [2]Battelle, Columbus, OH, and [3]NCEA, US EPA, Cincinnati, OH.

#152 **Poster Board Number 206**
***IN VIVO* TOXICOKINETIC INTERACTIONS BETWEEN THREE MEDICINAL DRUGS AND TRICHLOROETHYLENE IN RAT.** M. Cheikh-Rouhou[2], G. Charest-Tardif[1], and *S. Haddad*[1]. [1]Environmental and Occupational Health, IRSPUM, Université de Montréal, Montréal, QC, Canada, and [2]Biological Sciences, TOXEN, UQÀM, Montréal, QC, Canada.

#153 **Poster Board Number 207**
THE OXIDATIVE METABOLITES OF MEHP INHIBIT TESTOSTERONE PRODUCTION IN A RAT TUMOR CELL LINE ASSAY. *J. Campbell*[1], *P. Balbuena*[1], *R. Clewell*[2], *M. Andersen*[2], and *H. Clewell*[1]. [1]Center for Human Health Assessment, The Hamner Institutes, Research Triangle Park, NC, and [2]Institute for Chemical Safety Sciences, The Hamner Institutes, Research Triangle Park, NC.

#154 **Poster Board Number 208**
IMPLEMENTATION OF THE HAZARD INDEX APPROACH IN FIELD ASSESSMENT OF CHEMICAL MIXTURES. *M. Mumtaz*[1], P. Bourdillon[1], P. Ruiz[1], and D. Mellard[2]. [1]Division of Toxicology and Environmental Medicine, CDC ATSDR, Atlanta, GA, and [2]Division of Health Assessment and Consultation, CDC/AISDR, Atlanta, GA.

#155 **Poster Board Number 209**
MIXTURES OF ENDOCRINE DISRUPTORS: HOW SIMILAR MUST MECHANISMS BE FOR CONCENTRATION ADDITION TO APPLY? *T. Webster*. Department of Environmental Health, Boston University School of Public Health, Boston, MA.

#156 **Poster Board Number 210**
DISCRIMINATORY POWER OF STANDARD TOXICITY ASSAYS USED TO EVALUATE CIGARETTES. *M. Oldham*[1], *H. Haussmann*[2], W. Gomm[3], L. T. Rimmer[1], M. J. Morton[1], and *W. J. McKinney*[1]. [1]Altria Client Services, Richmond, VA, [2]Toxicology Consultant, Roesrath, Germany, and [3]GommConsult, Roesrath, Germany.

#157 **Poster Board Number 211**
THE PHOSPHORYLATION PATTERN OF HSP27 REVEALS THAT THE TOXICITY PATHWAY OF OKADAIC ACID PREDOMINATES OVER THAT OF PALYTOXIN IN HUMAN CELLS EXPOSED TO THE TOXIN MIXTURE. *G. Rossini*, G. Sala, and M. Bellocci. Scienze Biomediche, Università di Modena e Reggio Emilia, Modena, Italy.

Abstract #

#158 **Poster Board Number 212**
EVALUATION OF MIXTURE EFFECTS AT DOSES RELEVANT FOR HUMAN SAFETY. *M. Heneweer*[2], and T. Ecetoc[1]. [1]Taskforce on Mixture Effects, ECETOC, Brussels, Belgium, and [2]Shell Health, Shell International BV, the Hague, Netherlands.

#159 **Poster Board Number 213**
MOTORCYCLE EXHAUST INDUCES BEHAVIOR TOXICITY IN FEMALE RATS AND OFFSPRING. H. Yu, T. Li, and *T. Ueng*. National Taiwan University, Taipei, Taiwan.

#160 **Poster Board Number 214**
TOXICOLOGICAL ASSESSMENT OF HEAVY STRAIGHT RUN NAPHTHA. *R. H. McKee*[1], *D. Steup*[2], *C. Schreiner*[3], R. White[4], and L. A. Malley[5]. [1]Toxicology and Environmental Sciences, ExxonMobil Biomedical Sciences, Inc., Annandale, NJ, [2]Shell International, Houston, TX, [3]C&C Consulting in Toxicology, Meadowbrook, PA, [4]American Petroleum Institute, Washington, DC, and [5]E.I.du Pont de Nemours and Company, Newark, DE.

#161 **Poster Board Number 215**
ALTERED GENE EXPRESSION IN HEPG2 CELLS EXPOSED TO COAL EXTRACT. *A. Guerrero-Castilla*, B. Arroyo-Salgado, N. Pajaro-Castro, K. Franco-Valencia, N. Coronado-Posada, and *J. Olivero-Verbel*. Environmental and Computational Chemistry Group, University of Cartagena, Cartagena, Bolivar, Colombia.

#162 **Poster Board Number 216**
DETERMINING ASSOCIATIONS AMONG PHTHALATES, NUTRIENTS AND HYPOHDL. *C. Carr*[1], *C. Gennings*[1], and P. Factor-Litvak[2]. [1]Biostatistics, Virginia Commonwealth University, Richmond, VA, and [2]Mailman School of Public Health, Columbia University, New York, NY.

#163 **Poster Board Number 217**
BENZO(A)PYRENE MODULATES FLUORANTHENE CYTOTOXICITY AND METABOLISM IN HT-29 COLON CELLS. K. L. Harris, J. N. Myers, and *A. Ramesh*. Biochemistry & Cancer Biology, Meharry Medical College, Nashville, TN.

#164 **Poster Board Number 218**
COMPARISON OF HUMAN TRACHEAL/ BRONCHIAL EPITHELIAL CELLS AND A549 CELLS EXPOSED TO OZONE OR A PHOTOCHEMICALLY AGED AIR MIXTURE USING THE UNC OUTDOOR SMOG CHAMBER. J. Zavala[1], B. E. O'Brien[1], *K. G. Sexton*[1], W. Vizuete[1], *I. Rusyn*[1], and *I. Jaspers*[1,2]. [1]Environmental Sciences & Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC, and [2]Pediatrics, University of North Carolina at Chapel Hill, Chapel Hill, NC.

#165 **Poster Board Number 219**
TOXICOLOGICAL ASSESSMENT OF PETROLEUM COKE. P. Beatty[1], *R. H. McKee*[2], *D. Herron*[3], R. White[1], and *G. M. Hoffman*[4]. [1]American Petroleum Institute, Washington, DC, [2]ExxonMobil Biomedical Sciences, Inc., Annandale, NJ, [3]West Con Toxicology, Brentwood, TN, and [4]Huntington Life Sciences, East Millstone, NJ.

Program Description (Continued)

Abstract #

#166 **Poster Board Number 220**
ENVIRONMENTAL EXPOSURE TO POLYCYCLIC AROMATIC HYDROCARBONS, BENZENE, LEAD, PM_{10} AND $PM_{2.5}$ AND THEIR IMPLICATIONS IN OXIDATIVE DAMAGE IN MEXICAN CHILDREN. *M. Sánchez-Guerra*[1], L. Hernández-Cadena[2], L. Espinosa-Juarez[1], V. Pérez-Monroy[1,3], I. Alvarado-Cruz[1], N. Pelallo-Martínez[1], V. Mugica[4], A. González-Palomo[5,6], R. Angulo[1,4], A. Barraza-Villarreal[2], F. Díaz-Barriga[6], E. Melgar-Paniagua[1], *A. De Vizcaya-Ruíz*[1], and *B. Quintanilla-Vega*[1]. [1]Toxicology Department, Cinvestav-IPN, Mexico City, Mexico, [2]INSP, Cuernavaca, Mor, Mexico, [3]UBIPI-IPN, Mexico City, Mexico, [4]UAM-Azcapotzalco, Mexico City, Mexico, [5]Faculty of Chemistry Sciences, UASLP, SLP, Mexico, and [6]Faculty of Medicine, UASLP, SLP, Mexico.

#167 **Poster Board Number 221**
THE EXPOSOME APPROACH FOR ASSESSING THE RISK ASSOCIATED TO VOLATILE CONSTITUENTS OF ENVIRONMENTAL TOBACCO SMOKE (ETS). *D. A. Sarigiannis*[1,2], S. P. Karakitsios[1], and A. Gotti[2]. [1]Chemical Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece, and [2]Chemical Process Engineering Research Institute, Centre for Research and Technology Hellas, Thermi, Greece.

#168 **Poster Board Number 222**
ADVERSE EFFECTS OBSERVED IN EMBRYONIC ZEBRAFISH *DANIO RERIO* FROM EXPOSURE TO COMMERCIALLY AVAILABLE SUNSCREEN FORMULATIONS. G. R. Tuttle[1], and *S. L. Harper*[1,2]. [1]Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR, and [2]School of Chemical, Biological and Environmental Engineering, Oregon State University, Corvallis, OR.

#169 **Poster Board Number 223**
CRUDE OIL FROM VARIOUS SOURCES YIELDS DIFFERENT ACUTE TOXICITY OUTCOMES IN RATS: CORRELATION WITH ^{1}H-NMR AND EPR SPECTRA. *S. A. Meyer*[1], *S. Jaligama*[1], and K. A. El Sayed[2]. [1]Toxicology, University of Louisiana at Monroe, Monroe, LA, and [2]Pharmaceutical Sciences, University of Louisiana at Monroe, Monroe, LA.

#170 **Poster Board Number 224**
CYTOTOXICITY PROFILING: A NOVEL METHODOLOGY FOR ENVIRONMENTAL CONTAMINANT ASSESSMENT. D. Y. Huang[1], S. Gabos[2], W. Zhang[3], and D. W. Kinniburgh[1]. [1]Alberta Centre for Toxicology, Calgary, AB, Canada, [2]Office of the Chief Medical Officer of Health, Alberta Health and Wellness, Edmonton, AB, Canada, and [3]Alberta Health and Wellness, Edmonton, AB, Canada. Sponsor: *C. Jin*.

#171 **Poster Board Number 225**
ARE *IN VITRO* EFFECTS OF METAL MIXTURES PREDICTABLE FROM THE RESPONSES TO THE SINGLE COMPONENTS? F. Glahn[1], Q. D. Nguyen[2], J. Wiese[1], *J. G. Hengstler*[3], I. Grosse[2], and *H. W. Foth*[1]. [1]Institute of Environmental Toxicology, Martin Luther University, Halle/Saale, Saxony-Anhalt, Germany, [2]Institute of Computer Science, Martin Luther University, Halle/Saale, Saxony-Anhalt, Germany, and [3]IfADo, Leibniz Research Centre for Working Environment and Human Factors, Technical University, Dortmund, North Rhine-Westphalia, Germany.

Abstract #

Monday Morning, March 12
9:30 AM to 12:30 PM
Exhibit Halls A–C

PS

Characterizing Toxic Modes of Action and Pathways to Toxicity

Poster Session: Receptors and Toxicity

Chairperson(s): *Michael Denison, University of California Davis, Davis, CA.*

Displayed: *9:30 AM–12:30 PM*

Author Attended: *11:00 AM–12:30 PM*

#172 **Poster Board Number 239**
HIGHLY SENSITIVE AND RESPONSIVE SPECIES-SPECIFIC AH RECEPTOR-BASED CALUX CELL LINES FOR HIGH-THROUGHPUT CHEMICAL SCREENING AND SPECIES COMPARISONS. *J. Brennan*[1], *G. He*[1], *T. Tsutsumi*[2], *P. Magiatis*[3], and *M. Denison*[1]. [1]Environmental Toxicology, University of California Davis, Davis, CA, [2]Division of Foods, National Institute of Health Sciences, Tokyo, Japan, and [3]Pharmacy, University of Athens, Athens, Greece.

#173 **Poster Board Number 240**
STABLE REPORTER CELL LINES FOR THE IDENTIFICATION AND CHARACTERIZATION OF SUBTYPE SELECTIVE ESTROGENIC LIGANDS. *E. K. Shanle*, and W. Xu. Oncology, Molecular and Environmental Toxicology, University of Wisconsin, Madison, WI.

#174 **Poster Board Number 241**
RECEPTOR AND LIGAND-DEPENDENT FUNCTIONS OF PPARβ/δ AND PPARγ ON CELL PROLIFERATION IN THE A431 HUMAN CARCINOMA CELL LINE. *M. G. Borland*[1,2], *C. Lee*[2], *P. S. Albrecht*[2], *B. Zhu*[2], *T. S. Lahoti*[2], *F. J. Gonzalez*[3], and *J. M. Peters*[2]. [1]Chemistry and Biochemistry, Bloomsburg University of PA, Bloomsburg, PA, [2]Veterinary and Biomedical Science, Penn State University, University Park, PA, and [3]Laboratory of Metabolism, NCI, Bethesda, MD.

#175 **Poster Board Number 242**
FUNCTION AND EXPRESSION OF TRPA1 IN RESPONSE TO ENVIRONMENTAL IRRITANT EXPOSURE *IN VITRO*. *J. J. Pellman*[1,2], P. E. Kunkler[3,2], J. H. Hurley[3,2], and G. S. Oxford[2,1]. [1]Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN, [2]Stark Neuroscience Research Institute, Indiana University School of Medicine, Indianapolis, IN, and [3]Biochemistry, Indiana University School of Medicine, Indianapolis, IN.

#176 **Poster Board Number 243**
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN-INDUCIBLE POLY(ADP-RIBOSE) POLYMERASE IS A NEGATIVE REGULATOR OF DIOXIN-INDUCED ARYL HYDROCARBON RECEPTOR TRANSACTIVATION AND A MONO-ADP-RIBOSYLTRANSFERASE. *L. M. MacPherson*, L. Tamblyn, P. McPherson, and *J. Matthews*. Pharmacology and Toxicology, University of Toronto, Toronto, ON, Canada.

Program Description (Continued)

Abstract #

#177 **Poster Board Number 244**
ACTIVATION OF THE AH RECEPTOR SIGNALING PATHWAY BY SHEAR STRESS: GENERATION OF ENDOGENOUS LIGANDS AND/OR EXPERIMENTAL ARTIFACT? *M. S. Denison*[1], A. Gojova[3], *J. E. Bohonowych*[1], J. Morgan[3], *G. He*[1], A. Baraket[3], and *B. Zhao*[2]. [1]Department of Environmental Toxicology, University of California Davis, Davis, CA, [2]Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing, China, and [3]Department of Mechanical and Aerospace Engineering, University of California Davis, Davis, CA.

#178 **Poster Board Number 245**
CAN THE BINDING BY STRUCTURALLY DIVERSE AGONISTS ALTER THE NUCLEOTIDE SPECIFICITY OF AH RECEPTOR DNA BINDING? *D. E. DeGroot*, and *M. S. Denison*. Environmental Toxicology, University of California Davis, Davis, CA.

#179 **Poster Board Number 246**
FUNCTIONAL ANALYSIS OF THE SV23, SV24, AND SV25 SPLICE VARIANTS OF HUMAN CONSTITUTIVE ANDROSTANE RECEPTOR (CAR): COMPARISON OF *GINKGO BILOBA* EXTRACT WITH OTHER KNOWN ACTIVATORS OF CAR. *A. Lau*, G. Yang, and *T. K. Chang*. Faculty of Pharmaceutical Sciences, University of British Columbia, Vancouver, BC, Canada.

#180 **Poster Board Number 247**
ANALYSIS OF THE MECHANISMS OF LIGAND-DEPENDENT TRANSFORMATION OF THE AH RECEPTOR INTO ITS DNA BINDING FORM. *A. Soshilov*, and *M. S. Denison*. Environmental Toxicology, University of California Davis, Davis, CA.

#181 **Poster Board Number 248**
TRICLOCARBAN MEDIATES INDUCTION OF XENOBIOTIC METABOLISM THROUGH ACTIVATION OF NUCLEAR RECEPTORS CAR AND ER-ALPHA. M. Yueh[1], T. Li[3], R. M. Evans[3], B. Hammock[4], and *R. H. Tukey*[1,2]. [1]Pharmacology, University of California San Diego, La Jolla, CA, [2]Chemistry & Biochemistry, University of California San Diego, La Jolla, CA, [3]Salk Institute for Biological Studies, La Jolla, CA, and [4]Entomology, University of California Davis, La Jolla, CA.

#182 **Poster Board Number 249**
FICZ IS AN ENDOGENOUS AHR ACTIVATOR WITH HORMONE/VITAMIN-LIKE PROPERTIES. *A. Rannug*[1], and U. Rannug[2]. [1]Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden, and [2]GMT, Stockholm University, Stockholm, Sweden.

#183 **Poster Board Number 250**
POLYPHENOLS DISTURB ARYL HYDROCARBON RECEPTOR (AHR) SIGNALING BY OBSTRUCTING THE TIGHTLY REGULATED TURNOVER OF 6-FORMYLINDOLO[3,2-B]CARBAZOLE (FICZ). A. Mohammadi Bardbori[1], J. Bengtsson[2], E. Wincent[1,2], U. Rannug[2], and *A. Rannug*[1]. [1]Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden, and [2]Department of Genetics, Microbiology and Toxicology, Stockholm University, Stockholm, Sweden.

Abstract #

#184 **Poster Board Number 251**
SCREENING OF ENVIRONMENTAL POLLUTANTS AS LIGANDS OF CONSTITUTIVE ANDROSTANE RECEPTOR USING SURFACE PLASMON RESONANCE ARRAY SYSTEM. P. T. Dau[1], H. Ishibashi[1], E. Kim[2], and *H. Iwata*[1]. [1]Center for Marine Environmental Studies (CMES), Ehime University, Matsuyama, Ehime, Japan, and [2]Department of Life and Nanopharmaceutical Science and Department of Biology, Kyung Hee University, Seoul, Republic of Korea.

#185 **Poster Board Number 252**
ORGANOTIN-INDUCED OSTEOPOROSIS: UNIQUE GENE EXPRESSION PATTERNS INVOLVING MULTIPLE NUCLEAR RECEPTOR PATHWAYS *IN VITRO* AND *IN VIVO*. *J. Schlezinger*[1], *A. Baker*[2], J. Watt[1], B. Meeks[3], D. Salazar[3], and L. Gerstenfeld[3]. [1]Environmental Health, Boston University School of Public Health, Boston, MA, [2]Medicine, Boston University School of Medicine, Boston, MA, and [3]Orthopedic Surgery, Boston University School of Medicine, Boston, MA.

#186 **Poster Board Number 253**
IMPORTANCE OF TRANSACTIVATION IN THE LIGAND-DEPENDENT AND INDEPENDENT DEGRADATION OF THE AH RECEPTOR (AHR). *C. E. Sarah*, and *R. S. Pollenz*. Cell Biology, Microbiology and Molecular Biology, University of South Florida, Tampa, FL.

#187 **Poster Board Number 254**
THE IMPACT OF AH RECEPTOR PROTEIN CONCENTRATION IN NOVEL CELL CULTURE LINES ON LIGAND-MEDIATED GENE REGULATION. *R. S. Pollenz*. Cell Biology, Microbiology and Molecular Biology, University of South Florida, Tampa, FL.

#188 **Poster Board Number 255**
PROTEASOMAL INTERACTION REGULATES THE ACTIVITY OF THE HUMAN CONSTITUTIVE ANDROSTANE RECEPTOR. *T. Chen*, *E. M. Laurenzana*, *D. M. Coslo*, *F. Chen*, and *C. J. Omiecinski*. Center for Molecular Toxicology and Carcinogenesis, the Pennsylvania State University, University Park, PA.

#189 **Poster Board Number 256**
PATHWAY MAPPING OF PRIMARY HUMAN HEPATOCYTES EXPOSED TO PROTOTYPIC CHEMICAL INDUCERS. *K. John*[1,2], *K. M. Goyak*[1], and *C. J. Omiecinski*[1]. [1]Center for Molecular Toxicology and Carcinogenesis, Pennsylvania State University, University Park, PA, and [2]DuPont Haskell Global Centers for Health and Environmental Sciences, Newark, DE.

#190 **Poster Board Number 257**
INTERACTIONS BETWEEN THE ARYL HYDROCARBON RECEPTOR AND ADIPOCYTE REGULATION OF BREAST CANCER CELL GROWTH. T. B. Salisbury[1], R. Jones[1], M. Hodge[1], A. Chaudhry[1], and G. Z. Morris[2]. [1]Pharmacology, Physiology and Toxicology, Joan C Edwards School of Medicine, Marshall University, Huntington, WV, and [2]Science and Mathematics, Glenville State College, Glenville, WV. Sponsor: *M. Valentovic*.

Program Description (Continued)

Abstract #

#191 **Poster Board Number 258**
GNF351 DIMINISHES ARYL HYDROCARBON RECEPTOR OCCUPANCY AT THE IL-6 PROMOTER CONTRIBUTING TO MODULATION OF INFLAMMATORY PHENOTYPE IN HFLS-RA CELLS. *T. S. Lahoti*[1], I. A. Murray[1], *K. John*[2], and *G. H. Perdew*[1]. [1]Veterinary Sciences, Penn State University, University Park, PA, and [2]DuPont Haskell Global Centers for Health and Environmental Sciences, Newark, DE.

#192 **Poster Board Number 259**
CONSTITUTIVE AHR ACTIVATION IN CARDIAC MYOCYTES INDUCES HEART MALFORMATION IN ZEBRAFISH. K. Lanham[1], *R. E. Peterson*[2,3], and *W. Heideman*[1,2,3]. [1]Department of Biomolecular Chemistry, University of Wisconsin-Madison, Madison, WI, [2]Molecular and Environmental Toxicology Center, University of Wisconsin-Madison, Madison, WI, and [3]School of Pharmacy, University of Wisconsin-Madison, Madison, WI.

#193 **Poster Board Number 260**
ROLE OF TRPA1 IN DIESEL EXHAUST PARTICLE-INDUCED PNEUMOTOXICITY. *C. Deering-Rice*, S. Darien, *E. G. Romero*, *J. M. Veranth*, *G. S. Yost*, and *C. A. Reilly*. Pharmacology/Toxicology, University of Utah, Salt Lake City, UT.

#194 **Poster Board Number 261**
EFFECTS OF MUNITIONS AND BREAKDOWN PRODUCTS ON PEROXISOMAL PROLIFERATOR ACTIVATED RECEPTORS (PPAR) AND THE HETERODIMER RETINOID X RECEPTOR ALPHA (RXRα). *D. R. Johnson*[1], C. Ang[2], and *E. J. Perkins*[1]. [1]US Army ERDC, Vicksburg, MS, and [2]Badger Testing Services, Vicksburg, MS.

#195 **Poster Board Number 262**
ACTIVATION OF THE IRRITANT RECEPTOR TRPA1 BY WOOD SMOKE PARTICULATE MATERIAL AND ASSOCIATED CHEMICAL COMPONENTS. D. Shapiro, *C. E. Deering-Rice*, *E. G. Romero*, *G. S. Yost*, *J. M. Veranth*, and *C. A. Reilly*. Pharmacology and Toxicology, University of Utah, Salt Lake, UT.

#196 **Poster Board Number 263**
A NOVEL ROLE OF THE CONSTITUTIVE ANDROSTANE RECEPTOR IN HUMAN HEPATIC DIFFERENTIATION. *F. Chen*, *S. M. Zamule*, *D. M. Coslo*, and *C. J. Omiecinski*. Center for Molecular Toxicology and Carcinogenesis, University Park, PA.

#197 **Poster Board Number 264**
IDENTIFICATION OF STANNIOCALCIN 2 AS A NOVEL TRANSCRIPTIONAL TARGET OF THE ARYL HYDROCARBON RECEPTOR. *T. Harper*, and *C. J. Elferink*. Pharmacology & Toxicology, University of Texas Medical Branch, Galveston, TX.

Abstract #

Monday Morning, March 12
9:30 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Fukushima Radiation Toxicity and Global Toxicology Issues

Chairperson(s): *Anil Jaiswal, University of Maryland School of Medicine, Baltimore, MD, and Jeffrey Fisher, National Center for Toxicological Research, Jefferson, AR.*

Displayed: *9:30 AM–12:30 PM*

Author Attended: *9:30 AM–11:00 AM*

#198 **Poster Board Number 267**
ATMOSPHERIC BEHAVIOR, DEPOSITION, AND BUDGET OF RADIOACTIVE MATERIALS FROM THE FUKUSHIMA DAIICHI NUCLEAR POWER PLANT IN MARCH 2011. Y. Morino, T. Ohara, and M. Nishizawa. National Institute for Environmental Studies, Tsukuba, Japan. Sponsor: *Y. Aoki*.

#199 **Poster Board Number 268**
HUMAN HEALTH RISK ASSESSMENT FOLLOWING THE FUKUSHIMA NUCLEAR POWER PLANT ACCIDENT. *A. Tritscher*, P. Verger, M. Perez, and E. Perkins-van Deventer. World Health Organization, Geneva, Switzerland.

#200 **Poster Board Number 269**
AIRBORNE RADIATION MONITORING IN CALIFORNIA FOLLOWING THE 2011 FUKUSHIMA DISASTER. *S. B. DuTeaux*. Office of Emergency Response, California Air Resources Board, Sacramento, CA.

#201 **Poster Board Number 270**
RISK COMMUNICATION FAILURE ABOUT ENVIRONMENTAL CONTAMINATION BY RADIONUCLIDES AFTER MELTDOWN DISASTER AT FUKUSHIMA DAIICHI NUCLEAR POWER PLANT (FDNP). *F. Kayama*, and M. Ogawa. Environmental Toxicology, Jichi Medical University, Shimotsuke, Tochigi, Japan.

#202 **Poster Board Number 271**
RADIATION SYSTEMS BIOLOGY: A FOCUS ON LOW DOSE. *T. J. Weber*[1], *K. M. Waters*[2], H. Shankaran[2], D. L. Stenoien[1], M. B. Sowa[1], S. M. Varnum[1], D. L. Springer[1], J. H. Miller[3], Q. Zhang[4], and W. F. Morgan[1]. [1]Cell Biology and Biochemistry, Pacific Northwest National Laboratory, Richland, WA, [2]Computational Biology and Bioinformatics Group, Pacific Northwest National Laboratory, Richland, WA, [3]Washington State University, Richland, WA, and [4]EMSL, Pacific Northwest National Laboratory, Richland, WA.

#203 **Poster Board Number 272**
INTEGRATION OF BIOLOGICAL MODELING FOR IMPROVED RADIATION RISK ASSESSMENT. *D. L. Stricklin*, and K. Millage. ARA, Arlington, VA.

Program Description (Continued)

Abstract #

#204 **Poster Board Number 273**
HEMATOPOIETIC STROMA AND NICHES FORM A GENERATION-AGE STRUCTURE, BASED ON STEM/PROGENITOR CELL DIFFERENTIATION, SEPARATED BY HETEROGENEOUS FUNCTIONAL COMPARTMENT. *T. Inoue*[1,2,3], K. Otsuka[4], I. Tsuboi[1], S. Aizawa[1], and *Y. Hirabayashi*[5]. [1]Department of Function & Structural Medicine, Nihon University School of Medicine, Tokyo, Japan, [2]Center for Biological Safety & Research, NIHS, Tokyo, Japan, [3]PMDA, Tokyo, Japan, [4]Radiation Safety Research Center, CRIEPI, Tokyo, Japan, and [5]Division of Cell & Molecular Toxicology, Center for Biological Safety & Research, NIHS, Tokyo, Japan.

#205 **Poster Board Number 274**
ACUTE RADIATION SYNDROME: HEMATOPOIETIC CHARACTERIZATION OF A NONRODENT MODEL. F. Duguay[1], M. Pouliot[1], A. Ascah[1], *R. Forster*[1], E. Troncy[2], and S. Authier[1,2]. [1]CiToxLAB, Laval, QC, Canada, and [2]Faculty of Veterinary Medicine, University of Montreal, Laval, QC, Canada.

#206 **Poster Board Number 275**
RADIATION EXPOSURE EXACERBATES LETHALITY AND LUNG PATHOLOGY FOLLOWING A SUBSEQUENT INFLUENZA A VIRUS INFECTION. *C. M. Manning*[1], *C. J. Johnston*[1,2], *B. Lawrence*[1], J. P. Williams[3], and *J. N. Finkelstein*[1,2,3]. [1]Environmental Medicine, University of Rochester, Rochester, NY, [2]Pediatrics, University of Rochester, Rochester, NY, and [3]Radiation Oncology, University of Rochester, Rochester, NY.

#207 **Poster Board Number 276**
NEONATAL IRRADIATION SENSITIZES MICE TO ADULT PULMONARY INFLUENZA CHALLENGE. *C. J. Johnston*[1,2,4], C. M. Manning[1,2,4], J. P. Williams[4], T. D. Randall[3], J. Rangel-Moreno[3], E. Hernady[4], and *J. N. Finkelstein*[1,2,4]. [1]Pediatrics, University of Rochester, Rochester, NY, [2]Environmental Medicine, University of Rochester, Rochester, NY, [3]Medicine, Allergy/Immunology and Rheumatology, University of Rochester, Rochester, NY, and [4]Radiation Oncology, University of Rochester, Rochester, NY.

#208 **Poster Board Number 277**
FETAL RADIATION EXPOSURE INDUCES TESTICULAR CANCER. G. Shetty[1], P. B. Comish[1], C. C. Weng[1], A. Matin[2], and *M. L. Meistrich*[1]. [1]Experimental Radiation Oncology, University of Texas M.D. Anderson Cancer Center, Houston, TX, and [2]Genetics, University of Texas M.D. Anderson Cancer Center, Houston, TX.

#209 **Poster Board Number 278**
IONIZING RADIATION AND ENVIRONMENTAL TOXICANTS CAN INTERACT DURING BRAIN DEVELOPMENT TO EXACERBATE COGNITIVE DEFECTS IN MICE. *P. Eriksson*[1], B. Stenerlöw[2], A. Fredriksson[1], S. Buratovic[1], *H. Viberg*[1], and S. Sundell-Bergman[3]. [1]Department Environmental Toxicology, Uppsala University, Uppsala, Sweden, [2]Department of Radiology, Oncology and Radiation Science, Uppsala University, Uppsala, Sweden, and [3]Department of Soil and Environment, Swedish University of Agricultural Sciences, Uppsala, Sweden.

Abstract #

#210 **Poster Board Number 279**
LOW-DOSE IONIZING RADIATION ALTERS THE FETAL EPIGENOME OF THE AVY MOUSE. A. Bernal[1], D. Huang[1], *D. C. Dolinoy*[2], and *R. L. Jirtle*[1]. [1]Radiation Oncology, Duke University Medical Center, Durham, NC, and [2]Environmental Health Sciences, University of Michigan School of Public Health, Ann Arbor, MI.

#211 **Poster Board Number 280**
IS NEUROGENESIS ALTERED AFTER CHRONIC INTERNAL CONTAMINATION OF URANIUM DURING BRAIN DEVELOPMENT? C. Dinocourt[1], C. Ibanez[1], N. Florès[2], P. Lestaevel[1], I. Dublineau[1], and P. Gourmelon[1]. [1]DRPH/SRBE/LRTOX, IRSN, Fontenay aux roses, France, and [2]DRPH/SRBE/LRTOX, IRSN, Pierrelatte, France. Sponsor: *M. Pallardy*.

#212 **Poster Board Number 281**
URANIUM OLFACTORY ROUTE: A NASAL INSTILLATION MODEL TO STUDY BIOLOGICAL MECHANISMS INVOLVED IN THE TRANSFER TO THE BRAIN. C. Ibanez[1], P. Lestaevel[1], O. Delissen[2], I. Dublineau[1], and P. Gourmelon[1]. [1]DRPH/SRBE/LRTOX, IRSN, Fontenay aux Roses, France, and [2]DRPH/SRBE/LRTOX, IRSN, Pierrelatte, France. Sponsor: *M. Pallardy*.

#213 **Poster Board Number 282**
GENETIC ALTERATIONS AND FUNCTIONAL CONSEQUENCES OF EMBRYONIC IONIZING RADIATION EXPOSURE IN ZEBRAFISH. *J. L. Freeman*, A. Funk, *S. Peterson*, *G. Weber*, and *L. H. Nie*. Health Sciences, Purdue University, West Lafayette, IN.

#214 **Poster Board Number 283**
IODIDE PROPHYLAXIS FOLLOWING NUCLEAR ACCIDENTS: PROTECTING CHILDREN. *J. Fisher*[1], and C. Harris[2]. [1]US FDA, Jefferson, AR, and [2]University of Georgia, Athens, GA.

#215 **Poster Board Number 284**
LACK OF QUINONE OXIDOREDUCTASES LEADS TO INCREASED SUSCEPTIBILITY TO GAMMA-RADIATION-INDUCED LEUKEMIA AND LYMPHOMA. *A. K. Jaiswal*. Pharmacology, University of Maryland School of Medicine, Baltimore, MD.

#216 **Poster Board Number 285**
LARCH TREE-DERIVED ORAL DIHYDROQUERCETIN (DHQ) SUPPLEMENTATION AS A NATURAL RADIOPROTECTIVE AGENT. *A. G. Schauss*[1], I. Yegorova[2], and J. Endres[3]. [1]Natural and Medicinal Products Research, AIBMR Life Sciences, Puyallup, WA, [2]Inna Consulting Services, Northridge, CA, and [3]AIBMR Life Sciences, Puyallup, WA.

#217 **Poster Board Number 286**
NOVEL THERAPEUTIC COMPOUNDS YEL001 AND YEL002 MITIGATE RADIATION-INDUCED TOXICITY. *R. H. Schiestl*[1,2,3], and *L. Rivina*[1]. [1]Environmental Health Sciences, University of California Los Angeles, Los Angeles, CA, [2]Pathology, University of California Los Angeles, Los Angeles, CA, and [3]Radiation Oncology, University of California Los Angeles, Los Angeles, CA.

Program Description (Continued)

Abstract #

#218 **Poster Board Number 287**
ISMTR-283 PROTECTS HUMAN BONE MARROW PROGENITORS FROM THE LETHAL EFFECTS OF IONIZING RADIATION. *E. Clarke*[1], and A. Traynor-Kaplan[2]. [1]ReachBio LLC, Seattle, WA, and [2]ISM Therapeutics, Inc., Seattle, WA.

#219 **Poster Board Number 288**
METAGENOMIC PROFILING OF ANTIBIOTIC RESISTANCE DETERMINANTS IN PUGET SOUND: IMPLICATIONS FOR ASSESSING HUMAN HEALTH AND OCEANS IMPACTS. J. A. Port, J. Wallace, *W. C. Griffith*, and *E. M. Faustman*. Environmental and Occupational Health Sciences, University of Washington, Seattle, WA.

#220 **Poster Board Number 289**
EXPOSURE TO ARSENIC AND FLUORIDE IN CHIHUAHUA, MÉXICO. M. C. Ishida[1], C. González-Horta[1], J. Saunders[2], D. Gutiérrez-Torres[1], L. Ballinas-Casarrubias[1], B. Sánchez-Ramírez[1], O. L. Zacarías[1], J. Currier[3], *G. García-Vargas*[4], *Z. Drobna*[2], D. Loomis[5], *M. Styblo*[2], and *L. M. Del Razo*[6]. [1]Universidad Autónoma de Chihuahua, Chihuahua, Mexico, [2]Nutrition, University of North Carolina at Chapel Hill, Chapel Hill, NC, [3]University of North Carolina at Chapel Hill, Chapel Hill, NC, [4]Universidad Juárez del Estado de Durango, Durango, Mexico, [5]University of Nebraska Medical Center, Omaha, NE, and [6]Toxicology, Cinvestav-IPN, México City, Distrito Federal, Mexico.

#221 **Poster Board Number 290**
BIOLOGICAL ACTIVITY AND THE SURGING OF BERING GLACIER. J. A. White. Southern University A&M College, Baton Rouge, LA. Sponsor: *W. Gray*.

Monday Morning, March 12
9:30 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Inhalants and Cardiopulmonary: Particulates and Chemical Agents

Chairperson(s): *Flemming Cassee, National Institute for Public Health and the Environment (RIVM), Bilthoven, Netherlands.*

Displayed: *9:30 AM–12:30 PM*

Author Attended: *11:00 AM–12:30 PM*

#222 **Poster Board Number 301**
COMPARATIVE INHALATION TOXICITY OF ORGANIC NANOPARTICLES AND LARGER PARTICLES OF THE SAME CHEMICAL IDENTITY. *K. Wiench*[3], L. Ma-Hock[1], V. Strauss[1], *M. Rey Moreno*[1], W. Wohlleben[2,1], B. van Ravenzwaay[1], and *R. Landsiedel*[1]. [1]Experimental Toxicology and Ecology, BASF SE, Ludwigshafen am Rhein, Germany, [2]Polymer Physics, BASF SE, Ludwigshafen am Rhein, Germany, and [3]Product Safety, BASF SE, Ludwigshafen am Rhein, Germany.

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#223 **Poster Board Number 302**
HUMAN EXPOSURE TO ROADWAY TRAFFIC PARTICLES PRODUCES RESPIRATORY OXIDATIVE STRESS. *H. M. Kipen*[1,2], R. J. Laumbach[1,2], Z. Fan[1,2], P. Ohman-Strickland[1,3], K. Kelly-McNeil[1,2], S. Ko[1,2], C. Cepeda[1,2], and *A. Gow*[1,4]. [1]Environmental & Occupational Health Sciences Institute (EOHSI), Piscataway, NJ, [2]University of Medicine and Dentistry of New Jersey, Robert Wood Johnson Medical School, Piscataway, NJ, [3]University of Medicine and Dentistry of New Jersey-School of Public Health, Piscataway, NJ, and [4]School of Pharmacy, Rutgers University, Piscataway, NJ.

#224 **Poster Board Number 303**
IMBALANCE OF THE RENIN-ANGIOTENSIN AND KALLIKREIN-KININ- SYSTEMS GENE EXPRESSION IN LUNG AND HEART, ITS ASSOCIATION WITH HEART GENE REPROGRAMMING, AFTER EXPOSURE TO PARTICULATE MATTER. O. Aztzatzi-Aguilar[1], M. Uribe-Ramirez[1], J. Olivares-Reyes[2], *M. Kleinman*[3], O. Barbier[1], and *A. De Vizcaya-Ruiz*[1]. [1]Toxicology, Cinvestav-IPN, Mexico City, Mexico, [2]Biochemistry, Cinvestav-IPN, Mexico City, Mexico, and [3]Department of Medicine, University of California Irvine, Irvine, CA.

#225 **Poster Board Number 304**
COMPARISON OF PULMONARY INFLAMMATORY MARKERS FROM DIFFERENT BALF RETRIEVAL METHODS IN CIGARETTE SMOKE-EXPOSED RATS AND MICE. A. Iwanaga[1], H. Tsuji[1], S. Onami[1], H. Fujimoto[1], T. Nishino[1], *M. K. Lee*[2], and H. Yoshimura[1]. [1]Product Science Division R&D Group, Japan Tobacco Inc., Yokohama, Kanagawa, Japan, and [2]Scientific and Regulatory Affairs, Japan Tobacco Inc., Geneva, Switzerland.

#226 **Poster Board Number 305**
STUDY OF PH AND GENOTOXICITY ON PULMONARY FIBROBLASTS AFTER EXPOSURE TO 9-11 WORLD TRADE CENTER PARTICULATE MATTER. A. DiLorenzo, M. Hernandez, B. Soares, S. Choi, and P. Rivera. Biology & Molecular Biology, Montclair State University, Montclair, NJ. Sponsor: *C. Tong*.

#227 **Poster Board Number 306**
ANALYSES OF BIODIESEL AND PETROLEUM DIESEL EXHAUST PARTICLE EXTRACT AND THE EFFECT ON ENDOTHELIAL CELL TOXICITY AND ANTIOXIDANT RESPONSE. *L. Bhavaraju*[1], *M. Madden*[2], *U. Kodavanti*[2], T. Kormos[2], J. Pleil[2], A. Williams[3], and R. McCormick[3]. [1]Toxicology, University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]US EPA, Chapel Hill, NC, and [3]National Renewal Energy Laboratory, Golden, CO.

#228 **Poster Board Number 307**
A NOVEL HYPOXIA STRESS TEST DEMONSTRATES CARDIOVASCULAR AND PULMONARY SUSCEPTIBILITY TO ACROLEIN GAS IN HYPERTENSIVE RATS. *C. M. Perez*[1], A. D. Ledbetter[2], *M. S. Hazari*[2], N. Haykal-Coates[2], *A. P. Carll*[1], D. W. Winsett[2], *D. L. Costa*[3], and *A. K. Farraj*[2]. [1]University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]Environmental Public Health Division, US EPA, Research Triangle Park, NC, and [3]Office of Research and Development, US EPA, Research Triangle Park, NC.

Program Description (Continued)

Abstract #

#229 **Poster Board Number 308**
EFFECTS OF HIGH FRUCTOSE DIET ON NASAL EPITHELIAL AND INFLAMMATORY RESPONSES TO INHALED OZONE AND AMBIENT FINE PARTICLES IN RATS. I. P. Hotchkiss[1,3], *K. Allen*[1,3], *J. G. Wagner*[1,3], M. Morishita[2,3], R. P. Lewandowski[1,3], L. A. Bramble[1,3], J. T. Dvonch[2,3], and *J. R. Harkema*[1,3]. [1]Pathobiology, Michigan State University, East Lansing, MI, [2]School of Public Health, University of Michigan, Ann Arbor, MI, and [3]US EPA Great Lakes Air Center for Integrative Environmental Research, East Lansing, MI.

#230 **Poster Board Number 309**
ONE VERSUS FIVE-DAYS OF EXPOSURE TO VARYING CONCENTRATIONS OF B100 SOYA BIODIESEL EXHAUST REVEALS A THRESHOLD CONCENTRATION FOR INCREASED SENSITIVITY TO ACONITINE-INDUCED ARRHYTHMIA. D. Winsett, T. Krantz, C. King, *D. L. Costa*, *A. K. Farraj*, and *M. S. Hazari*. Environmental Public Health Division, US EPA, Research Triangle Park, NC.

#231 **Poster Board Number 310**
OZONE AND TOBACCO SMOKE EXPOSURES DO NOT PRODUCE SYNERGISTIC TOXICITY AND ANTIOXIDANT ACTIVITY IN RAT LUNGS. *S. Han*[1], V. Bhoopalan[2], and *D. K. Bhalla*[2]. [1]Animal and Food Sciences, University of Kentucky, Lexington, KY, and [2]Pharmaceutical Sciences, Wayne State University, Detroit, MI.

#232 **Poster Board Number 311**
TRANSCRIPTOMICS ANALYSIS OF LUNGS AND PERIPHERAL BLOOD OF SILICA-EXPOSED RATS. *R. Sellamuthu*, C. Umbright, *J. Roberts*, R. Chapman, S. Young, D. Richardson, J. Cumpston, W. McKinney, B. Chen, D. Frazer, S. Li, M. Kashon, and *P. Joseph*. National Institute for Occupational Safety and Health (NIOSH), Morgantown, WV.

#233 **Poster Board Number 312**
EXPOSURES TO EMISSIONS FROM COMBUSTION OF BIODIESEL FUELS (B100/B20) ELICIT DIFFERENTIAL RESPONSES IN REDOX-SENSITIVE PATHWAYS. B. C. Palmer[1], *S. H. Gavett*[3], M. Li[1], E. H. Boykin[3], M. J. Daniels[3], R. H. Jaskot[3], Q. Krantz[3], C. King[3], *M. Gilmour*[3], B. A. Holmén[2], and N. K. Fukagawa[1]. [1]Medicine, University of Vermont, Burlington, VT, [2]Civil and Environmental Engineering, University of Vermont, Burlington, VT, and [3]EPHD, NHEERL, US EPA, Research Triangle Park, NC.

#234 **Poster Board Number 313**
BIOINFORMATICS OF GENE EXPRESSION PROFILING DATA PROVIDE MECHANISTIC UNDERSTANDING OF ACUTE OZONE-INDUCED LUNG INJURY. *W. O. Ward*[1], A. D. Ledbetter[2], M. C. Schladweiler[2], and *U. Kodavanti*[2]. [1]RCU, NHEERL, US EPA, Research Triangle Park, NC, and [2]EPHD, NHEERL, US EPA, Research Triangle Park, NC.

Abstract #

#235 **Poster Board Number 314**
METABOLIC CHANGES FROM HIGH-FRUCTOSE FEEDING ARE ALTERED BY AIR POLLUTANT EXPOSURE. K. Allen[1,2], *A. K. Kopec*[3], *T. R. Zacharewski*[3], *J. G. Wagner*[1,2], M. Morishita[1,4], T. Dvonch[1,4], and *J. R. Harkema*[1,2]. [1]Great Lakes Air Center for Integrative Environmental Research, Michigan State University, East Lansing, MI, [2]Pathobiology, Michigan State University, East Lansing, MI, [3]Biochemistry, Michigan State University, East Lansing, MI, and [4]School of Public Health, University of Michigan, Ann Arbor, MI.

#236 **Poster Board Number 315**
SURFACTANT PROTEIN-D (SPD) REGULATES OZONE-INDUCED INFLAMMATION, MACROPHAGE PHENOTYPE AND LUNG FUNCTION IN ELDERLY MICE. *A. M. Groves*[1], A. J. Gow[1], *J. D. Laskin*[2], and *D. L. Laskin*[1]. [1]Rutgers University, Piscataway, NJ, and [2]University of Medicine and Dentistry of New Jersey-Robert Wood Johnson Medical School, Piscataway, NJ.

#237 **Poster Board Number 316**
ENHANCEMENT OF PLATELET ACTIVITY AND PLASMA HOMOCYSTEINE LEVEL BY INTRATRACHEAL INSTILLATION OF CARBON BLACK. H. Kim[1], S. Kim[2], K. Park[3], and M. Lee[1]. [1]Dongguk University College of Pharmacy, Goyang, Gyeonggi-do, Republic of Korea, [2]Chungnam National University College of Pharmacy, Daejeon, Republic of Korea, and [3]Dongduk Women's University College of Pharmacy, Seoul, Republic of Korea. Sponsor: *J. Chung*.

#238 **Poster Board Number 317**
L-MENTHOL INHIBITS RESPIRATORY IRRITATION BY CIGARETTE SMOKE IRRITANTS TARGETING DIVERSE CHEMOSENSORY RECEPTORS. M. A. Ha[1], B. Liu[2], *S. Jordt*[2], and *J. B. Morris*[1]. [1]Toxicology Program, University of Connecticut, Storrs, CT, and [2]Department of Pharmacology, Yale University School of Medicine, New Haven, CT.

#239 **Poster Board Number 318**
DRY POWDER INHALATION EXPOSURES OF SINGLE RAT LUNGS TO FLUTICASONE FUROATE: CONTROL OF DOSE, SUBSTANCE CONSUMPTION AND PHARMACOKINETICS. E. Selg[2], P. Ewing[3], F. Acevedo[2], C. Sjöberg[4], and *P. Gerde*[1,2]. [1]IMM, Karolinska Institutet, Stockholm, Sweden, [2]Inhalation Sciences Sweden AB, Stockholm, Sweden, [3]AstraZeneca Ltd, Mölndal, Sweden, and [4]Flexura KB, Upplands-Väsby, Sweden.

#240 **Poster Board Number 319**
AGING AND EPISODIC OZONE EXPOSURE IN BROWN NORWAY RATS: EFFECTS ON HEART RATE, CORE TEMPERATURE, PULMONARY FUNCTION, AND EXPRESSION OF SERUM BIOMARKERS. *C. J. Gordon*[1], A. Johnstone[1], C. Aydin[1], K. Jarema[1], J. Lehmann[2], W. Ward[3], J. Schmid[3], M. Schladweiler[2], *U. Kodavanti*[2], and *R. MacPhail*[1]. [1]Toxicity Assessment Division, US EPA, Research Triangle Park, NC, [2]Environmental Public Health Division, US EPA, Research Triangle Park, NC, and [3]Biostatistics and Bioinformatics Research Core, US EPA, Research Triangle Park, NC.

Program Description (Continued)

Abstract #

#241 **Poster Board Number 320**
OVERT AND LATENT CARDIAC EFFECTS OF OZONE INHALATION IN RATS: EVIDENCE FOR AUTONOMIC MODULATION AND INCREASED MYOCARDIAL VULNERABILITY. *A. K. Farraj*[1], *M. S. Hazari*[1], D. W. Winsett[1], A. Kulukulualani[1], *A. P. Carll*[2], N. Haykal-Coates[1], *C. M. Perez*[2], E. Lappi[1], D. Terrell[1], *W. E. Cascio*[1], and *D. L. Costa*[1]. [1]US EPA, Research Triangle Park, NC, and [2]University of North Carolina at Chapel Hill, Chapel Hill, NC.

Monday Morning, March 12
9:30 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Safety Evaluation: Nonpharmaceuticals

Chairperson(s): *Bhagavatula Moorthy, Baylor College of Medicine, Houston, TX.*

Displayed: *9:30 AM–12:30 PM*

Author Attended: *9:30 AM–11:00 AM*

#242 **Poster Board Number 329**
ASSESSMENT OF THE IMMUNOTOXIC POTENTIAL OF NITRAPYRIN, PRONAMIDE AND SULFURYL FLUORIDE UNDER US EPA'S HEALTH EFFECTS TEST GUIDELINE. *D. R. Boverhof*[1], *H. Lu*[2], *S. Gehen*[2], *S. Papineni*[2], and *D. Eisenbrandt*[2]. [1]The Dow Chemical Company, Midland, MI, and [2]Dow AgroSciences, Indianapolis, IN.

#243 **Poster Board Number 330**
THRESHOLD OF TOXICOLOGICAL CONCERN BASED ON PRENATAL DEVELOPMENTAL TOXICITY IN RABBITS. B. Flick, M. Dammann, S. Schneider, and B. van Ravenzwaay. BASF SE, Ludwigshafen, Germany. Sponsor: *R. Landsiedel*.

#244 **Poster Board Number 331**
DEVELOPMENT OF A NEW NONCANCER TTC DATABASE FOR COSMETICS INGREDIENTS: A COLLABORATIVE PROJECT BETWEEN THE EC, COLIPA, AND ILSI EUROPE. K. Jacobs[2], K. Arvidson[2], M. Cronin[3], S. Enoch[3], S. Felter[7], E. Fioravanzo[4], J. Madden[3], M. Pavan[4], A. Richarz[4], R. Safford[8], A. Worth[5], *C. Yang*[1], and G. ILSI Expert[6]. [1]Altamira, LLC, Columbus, OH, [2]US FDA, College Park, MD, [3]Liverpool John Moore Univ., Liverpool, United Kingdom, [4]S-IN, Vicenza, Italy, [5]JRC, Ispra, Italy, [6]ILSI EU, Brussels, Belgium, [7]Procter and Gamble Company, Cincinnati, OH, and [8]Unilever, Colworth, United Kingdom.

Abstract #

#245 **Poster Board Number 332**
COLIPA PROGRAM ON OPTIMIZATION AND VALIDATION OF HPLC BIO-ANALYTICAL ASSAY TO EXPAND APPLICABILITY DOMAIN OF *IN VITRO* EYE IRRITATION RHT TEST METHODS FOR DYES. S. Grégoire[1], N. Alépée[1], S. Bessou-Touya[2], E. Boullay[2], A. De Smedt[3], B. De Wever[4], P. Jones[5], A. Kunkel[6], P. McNamee[7], M. Millet[2], U. Pfannenbecker[6], R. Taalman[8], M. Tailhardat[9], F. Van Goethem[3], and W. Wargniez[1]. [1]ADMET Team, L'Oréal, Aulnay-sous-Bois, France, [2]Pierre Fabre, Castres, France, [3]Janssen Research & Development, Beerse, Belgium, [4]Henkel AG & Co. KGaA, Düsseldorf, Germany, [5]Unilever, Sharnbrook, United Kingdom, [6]Beiersdorf, Hamburg, Germany, [7]Procter & Gamble Company, Egham, United Kingdom, [8]Colipa, Brussels, Belgium, and [9]LVMH Recherche, St. Jean de Braye, France. Sponsor: *G. Nohynek*.

#246 **Poster Board Number 333**
METABOLOMICS *IN VIVO*—APPLICATION FOR FORMING CHEMICAL CATEGORIES. H. Kamp[1], D. Ahlbory-Dieker[2], S. Bade[1], E. Fabian[1], M. Frericks[1], S. Germer[1], M. Herold[2], G. Krennrich[1], R. Looser[2], W. Mellert[1], A. Prokoudine[2], V. Strauss[1], T. Walk[2], J. Wiemer[2], and B. van Ravenzwaay[1]. [1]BASF SE, Ludwigshafen, Germany, and [2]Metanomics GmbH, Berlin, Germany. Sponsor: *R. Landsiedel*.

#247 **Poster Board Number 334**
PHARMACOKINETIC, TISSUE DISTRIBUTION, AND EXCRETION BALANCE OF PARABENS AFTER TOPICAL SKIN APPLICATION IN RATS. N. Aubert, T. Ameller, *R. Forster*, and J. Legrand. CIToxLab France, Evreux, France.

#248 **Poster Board Number 335**
REFINING ACUTE INHALATION TOXICITY TESTING: THE FIXED CONCENTRATION PROCEDURE. S. Creton. NC3Rs, London, United Kingdom. Sponsor: *T. Gant*.

#249 **Poster Board Number 336**
GHS CLASSIFICATION OF OCULAR IRRITATION POTENTIAL FOR INSTITUTIONAL CLEANING PRODUCTS USING *IN VITRO* AND *IN VIVO* TOPICAL APPLICATION ASSAYS. *N. Pechacek*, and *T. O'Brien*. Ecolab, St. Paul, MN.

#250 **Poster Board Number 337**
CORRELATION OF IRRITATION SCORES FROM *IN VITRO* OCULAR TESTING WITH CLINICAL OCULAR ASSESSMENTS OF SHAMPOOS. *P. Kazmi*, *T. Re*, *D. Orak*, *D. Beach*, and *V. Srinivasan*. Safety Evaluation, L'Oréal USA, Clark, NJ.

#251 **Poster Board Number 338**
INFLUENCE OF AGING AMONG WORKERS AND ITS IMPACT ON A CHEMICAL'S ELIMINATION RATE: A PERSPECTIVE OF PREVENTION. *A. Vyskocil*[1], and *C. Emond*[1,2]. [1]DSEST, University of Montréal, Montréal, QC, Canada, and [2]BioSimulation Consulting Inc., Newark, DE.

Program Description (Continued)

Abstract #

#252 **Poster Board Number 339**
THE BIOLOGICAL ASSESSMENT OF A NOVEL TREATMENT, DESIGNED TO REDUCE THE LEVELS OF CERTAIN TOBACCO LEAF CONSTITUENTS. J. Collard, and *C. Meredith*. Group R&D, British American Tobacco, Southampton, United Kingdom.

#253 **Poster Board Number 340**
A DECISION TREE APPROACH FOR THE SAFETY ASSESSMENT OF BOTANICAL COSMETIC INGREDIENTS. *E. Antignac*[1], *T. Re*[2], *R. Persaud*[2], *J. Clouzeau*[1], and *V. Sriniinvasan*[2]. [1]L'Oréal Research and Innovation, Asnières, France, and [2]L'Oréal Research and Innovation, Clark, NJ.

#254 **Poster Board Number 341**
EVALUATION OF SUBACUTE BTAT TOXICITY IN RATS AND *IN VITRO* GENOTOXICITY. *V. H. Adams*[1], L. R. Williams[1], P. A. Beall[2], R. L. Kilby[2], M. L. Thompson[2], and *W. S. Eck*[1]. [1]Toxicology-Health Effects Research Program, Army Institute of Public Health, Aberdeen Proving Ground, MD, and [2]Toxicology-Toxicity Evaluation Program, Army Institute of Public Health, Aberdeen Proving Ground, MD.

#255 **Poster Board Number 342**
MUTAGENICITY AND SUBACUTE TOXICITY TO FEMALE RATS OF GUANIDINIUM 3,4-DINITROPYRAZOLE (GDNP)*. *L. R. Williams*, *V. H. Adams*, M. A. Bazar, and P. A. Beall. Portfolio of Toxicology Health Effects Research Program (MCHB-TS-THE), Army Institute of Public Health (AIPH), US Army Public Health Command (Prov), Aberdeen Proving Ground, MD.

#256 **Poster Board Number 343**
TOXICITY ASSESSMENT OF 4-AMINO-2-NITROTOLUENE. J. Houpt, *G. J. Leach*, *L. R. Williams*, *M. S. Johnson*, and *G. Reddy*. Toxicology Portfolio, US Army Public Health Command, Army Institute of Public Health, Aberdeen Proving Ground, MD.

#257 **Poster Board Number 344**
ACUTE TOXICITY STUDY OF LIPOSOMAL ANTIOXIDANT FORMULATIONS CONTAINING N-ACETLYCYSTEINE, α-TOCOPHEROL, AND γ-TOCOPHEROL IN RATS. *Z. E. Suntres*[1], K. Pucaj[2], M. Alipour[1], and M. Smith[3]. [1]Medical Sciences Division, Northern Ontario School of Medicine, Thunder Bay, ON, Canada, [2]Nucro-Technics, Toronto, ON, Canada, and [3]Amaox Ltd., Melbourne, FL.

#258 **Poster Board Number 345**
PLATELET COUNTING IN ANIMALS—BACK TO BASICS. M. Burgess-Wilson, and M. Smith. Clinical Pathology, Huntingdon Life Sciences, Huntingdon, United Kingdom. Sponsor: *L. Ramaiah*.

#259 **Poster Board Number 346**
FLUOROALKYL METHACRYLATE COPOLYMER AQUEOUS DISPERSION: SUBCHRONIC TOXICITY EVALUATION IN RODENTS. *B. Singh*[1], *S. S. Anand*[1], R. C. Buck[2], J. M. Lewis[1], S. R. Frame[1], *T. L. Serex*[1], G. P. Sykes[1], and *S. E. Loveless*[1]. [1]DuPont Haskell Global Centers for Health and Environmental Sciences, Newark, DE, and [2]DuPont Chemicals and Fluoroproducts, Wilmington, DE.

Abstract #

#260 **Poster Board Number 347**
SUBCHRONIC INHALATION EXPOSURE OF RATS TO LIBBY AMPHIBOLE AND AMOSITE ASBESTOS. *D. E. Dodd*[1], E. W. Tewksbury[1], K. Roberts[1], *A. M. Jarabek*[2], G. A. Willson[3], H. G. Wall[3], and *S. H. Gavett*[2]. [1]Hamner Institutes for Health Sciences, Research Triangle Park, NC, [2]US EPA, Research Triangle Park, NC, and [3]Experimental Pathologies Laboratories, Inc., Research Triangle Park, NC.

#261 **Poster Board Number 348**
UTILIZING A COMPREHENSIVE APPROACH FOR SAFETY ASSESSMENT OF COSMETIC INGREDIENTS: A CASE STUDY. *F. Liu*, *V. Tu*, and M. D. Helman. Revlon Research Center, Edison, NJ.

#262 **Poster Board Number 349**
EVALUATION OF STRAIGHT CHAIN UNSATURATED ALDEHYDES IN A LOCAL LYMPH NODE ASSAY. J. Scognamiglio, *J. Lalko*, and *A. Api*. Research Institute for Fragrance Materials, Woodcliff Lake, NJ.

#263 **Poster Board Number 350**
ESTIMATION OF THE CONSUMER INHALATION RISK OF WATERPROOFING SPRAYS. *C. Dasenbrock*, M. Fischer, W. Koch, and H. Windt. Fraunhofer Institute for Toxicology and Experimental Medicine, Hannover, Germany.

#264 **Poster Board Number 351**
TOXICITY ASSESSMENT OF THE INSECTICIDAL PROTEIN VIP3AA20, PRESENT IN GENETICALLY MODIFIED MIR162 MAIZE PLANTS. A. K. Sauve, B. Harper, *K. Leiner*, L. Seastrum, and L. Shaw. Product Safety, Syngenta Crop Protection, LLC, Greensboro, NC.

#265 **Poster Board Number 352**
TOXICOLOGY ASSESSMENT OF ORTHO-PHTHALALDEHYDE (OPA) FOLLOWING 90 DAYS OF INHALATION EXPOSURE IN MICE AND RATS. *S. A. Thakur*[1], *G. L. Baker*[2], J. H. Roycroft[1], L. M. Staska[2], J. A. Dill[2], *D. B. Rao*[3], G. S. Travlos[1], *D. R. Germolec*[1], and *M. E. Wyde*[1]. [1]Division of National Toxicology Program, NIEHS, NIH, Research Triangle Park, NC, [2]Battelle Toxicology Northwest, Richland, WA, and [3]Integrated Laboratory Systems, Inc., Research Triangle Park, NC.

#266 **Poster Board Number 353**
6:2 FLUOROTELOMER ALCOHOL: FOUR-WEEK INHALATION TOXICITY STUDY. *T. L. Serex*, C. Morris, R. C. Buck, *S. E. Loveless*, and *M. P. DeLorme*. DuPont Haskell Laboratories, Newark, DE.

#267 **Poster Board Number 354**
DIFFERENTIAL HEMOLYTIC POTENTIAL OF POLYSORBATE 80 IN RAT AND HUMAN BLOOD. *S. G. Sawant*, R. Hernandez, and P. Pratikhya. Toxicology Sciences, CBSS, Amgen Inc, Thousand Oaks, CA.

Program Description (Continued)

Abstract #

#268 **Poster Board Number 355**
PRECISE CHARACTERIZATION OF THE CYNOMOLGUS QT-RR RELATIONSHIP EMPLOYING DISTRIBUTION-BASED QT ANALYSIS: IMPACT ON PRECLINICAL SAFETY ASSESSMENTS. *H. Holzgrefe*[1], A. Greiter-Wilke[2], and G. Ferber[2]. [1]Toxicology, Charles River Laboratories, Reno, NV, and [2]Safety Pharmacology, Hoffmann-La Roche, Basel, Switzerland.

#269 **Poster Board Number 356**
TOXICITY POTENTIAL FOR REFINED NAPHTHENIC ACIDS FOLLOWING REPEATED ORAL EXPOSURE. *C. North*[1], *R. McKee*[1], P. Podhasky[2], and A. Kuhl[3]. [1]ExxonMobil Biomedical Sciences, Inc., Annandale, NJ, [2]American Petroleum Institute, Washington, DC, and [3]WIL Research, Ashland, OH.

#270 **Poster Board Number 357**
BROAD SPECTRUM SAFETY OF MERASTIN: A NOVEL WEIGHT MANAGEMENT INGREDIENT. *F. C. Lau*[1], Z. M. Saiyed[1], J. Lugo[1], G. Trimurtulu[2], A. V. Krishnaraju[2], and K. Sengupta[2]. [1]Research and Development, InterHealth Nutraceutical Inc., Benicia, CA, and [2]Research and Development, Laila Nutraceuticals, Vijayawada, AP, India.

#271 **Poster Board Number 358**
SAFETY EVALUATION OF COMMON PRESERVATIVES USED IN CHILD-INTENDED CONSUMER PRODUCTS. M. S. Banach, M. Whitehead, J. L. Doran, *G. Goodfellow*, and *J. Daniels*. Intrinsik Health Sciences Inc., Mississauga, ON, Canada.

#272 **Poster Board Number 359**
GENETIC TOXICOLOGY DATA PLAY AN INTEGRAL ROLE IN THE SAFETY ASSESSMENT OF DIETARY SUPPLEMENTS CONTAINING NEW DIETARY INGREDIENT(S). *N. Anyangwe*[1], D. Levy[2], R. Gudi[2], *A. Abdel-Rahman*[2], *E. Enongene*[2], and D. Fabricant[2]. [1]Oak Ridge Institute for Science and Education Fellowship Program, Division of Dietary Supplement Programs, Center for Food Safety and Applied Nutrition, US FDA, College Park, MD, and [2]Division of Dietary Supplement Programs, Center for Food Safety and Applied Nutrition, US FDA, College Park, MD.

#273 **Poster Board Number 360**
IS DERMAL SENSITIZATION FOR 1,2-BENZISOTHIAZOLIN-3-ONE [BIT] IN CONSUMER PRODUCTS A CAUSE FOR CONCERN? *M. G. Lew*, *R. M. Novick*, *J. J. Keenan*, and *D. J. Paustenbach*. ChemRisk, LLC, San Francisco, CA.

#274 **Poster Board Number 361**
LOCAL TOLERANCE OF SUBCUTANEOUSLY ADMINISTERED 2-HYDROXYPROPYL-β-CYCLODEXTRIN (HPβCD). *B. L. Soldo*[1], B. T. Walker[1], J. Janusz[1], L. Smith[1], *M. Luksic*[2], J. Daniels[2], and K. Peters[1]. [1]Akebia Therapeutics, Cincinnati, OH, and [2]Intrinsik Health Sciences Inc., Mississauga, ON, Canada.

Abstract #

#275 **Poster Board Number 362**
POLYMERIC FLAME RETARDANTS: POSSIBLE LESS HAZARDOUS ALTERNATIVES TO DECABROMODIPHENYL ETHER? *C. Williams*[1], D. Krause[1], and *R. Freeman*[2]. [1]Environ International, Tampa, FL, and [2]RFreeman Consulting, Inc., Tallahassee, FL.

#276 **Poster Board Number 363**
SAFETY ASSESSMENT OF CYTOSOL+™ BOTANICAL METABOLITES AS AN ANTIDIARRHEAL AGENT. *S. B. Patel*[1,2], C. Chen[3], and G. Wu[4]. [1]Product Solutions Research, Davis, CA, [2]Animal Science, University of California Davis, Davis, CA, [3]Animal Technology Institute Taiwan, Miaoli, Taiwan, and [4]LiveLeaf Bioscience Corporation, San Carlos, CA.

#277 **Poster Board Number 364**
EFFECTS OF EXPOSURE TO ETHYL TERTIARY BUTYL ETHER AT LOW CONCENTRATIONS IN ALDH2 KNOCKOUT MICE. R. Wang, K. Ohtani, Z. Weng, and M. Suda. Japan National Institute of Occupational Safety and Health, Kawasaki, Japan. Sponsor: *N. Mei*.

#278 **Poster Board Number 365**
HAZARD EVALUATION OF A SHORT-CHAIN FLUOROROTELOMER ALCOHOL PHOSPHATE MIXTURE. *S. S. Anand*[1], *T. L. Serex*[1], R. A. Hoke[1], R. C. Buck[2], *C. Carpenter*[1], *M. Donner*[1], and *S. E. Loveless*[1]. [1]Haskell, DuPont, Newark, DE, and [2]Chemicals and Fluoroproducts, DuPont, Wilmington, DE.

#279 **Poster Board Number 366**
EFFECTS OF SUBCHRONIC ADMINISTRATION OF THE ETHANOLIC EXTRACT OF CARPOLOBIA ALBA STEM ON SOME HAEMATOLOGICAL AND SERUM LIPID PARAMETERS IN RATS. *E. A. Balogun*, G. A. Gyebi, Y. E. Anifowose, D. Abijogun, and J. O. Adebayo. Biochemistry, University of Ilorin, Ilorin, Kwara, Nigeria.

#280 **Poster Board Number 367**
TOXICOLOGICAL ASSESSMENT OF A PEDIATRIC ORAL REHYDRATION SOLUTION (PEDIAONE™). *S. B. Patel*[1,2], S. Z. Stone[1], D. R. Hattey[3], and K. Shah[4]. [1]Product Solutions Research, Davis, CA, [2]Animal Science, University California Davis, Davis, CA, [3]H:2O Innovations, LLC, Birmingham, MI, and [4]Allergy and Immunology, Pediatrics Division, Mayo Clinic, Rochester, MN.

#281 **Poster Board Number 368**
SUBACUTE EFFECTS OF ORAL LEAD ACETATE ON BLOOD PARAMETERS AND GI MICROBIAL ANTIBIOTIC RESISTANCE IN JUVENILE CHICKENS. *R. M. Gogal*[1], M. Nisanian[1], R. Kerr[1], E. K. Belgin[1], S. D. Holladay[1], C. Tuckfield[2], J. V. McArthur[2], S. Williams[3], and L. Stabler[3]. [1]Department of Anatomy and Radiology, University of Georgia, Athens, GA, [2]Savannah River Ecology Laboratory, University of Georgia, Savannah, GA, and [3]Population Health, Poultry Diagnostic Research Center, University of Georgia, Athens, GA.

Program Description (Continued)

Abstract #

Monday Morning, March 12
9:30 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Data Integration and Decision Support Systems

Chairperson(s): *Janet Moser, Chemical Security Analysis Center, Aberdeen Proving Ground, MD.*

Displayed: *9:30 AM–12:30 PM*

Author Attended: *11:00 AM–12:30 PM*

#282 **Poster Board Number 401**
SOLVING THE DATA INTEGRATION PROBLEM FOR A SUPERFUND RESEARCH PROGRAM CENTER. E. S. Peterson[1], K. A. Hobbie[2], M. L. Barton[2], J. Walker[1], K. A. Anderson[2], and *K. M. Waters*[1]. [1]Pacific Northwest National Laboratory, Richland, WA, and [2]Oregon State University, Corvallis, OR.

#283 **Poster Board Number 402**
CHEMICAL EFFECTS IN BIOLOGICAL SYSTEMS: A TOXICOLOGICAL DATABASE. L. A. Hall[1], H. Gong[2], A. Paleja[2], A. Rashid[2], and J. M. Fostel[1]. [1]DNTP, National Institute of Environmental Health Sciences, Research Triangle Park, NC, and [2]NTP Computer and User Support, Team Vistronix, National Institute of Environmental Health Sciences, Research Triangle Park, NC. Sponsor: *C. Smith*.

#284 **Poster Board Number 403**
USING CTD TO DISCOVER AND PREDICT MOLECULAR CONNECTIONS BETWEEN ENVIRONMENTAL CHEMICALS AND HUMAN HEALTH. C. G. Murphy, A. P. Davis, C. A. Saraceni-Richards, M. C. Rosenstein, T. C. Wiegers, and *C. J. Mattingly*. MDIBL, Salisbury Cove, ME.

#285 **Poster Board Number 404**
TOXML, A COMMON DATA EXCHANGE STANDARD FOR TOXICOLOGY. M. L. Patel[1], M. A. Ali[1], D. Wilkinson[1], P. N. Judson[2], K. P. Cross[3], and D. A. Bower[3]. [1]Lhasa Limited, Leeds, United Kingdom, [2]Judson Consulting Service, Harrogate, United Kingdom, and [3]Leadscope Incorporated, Columbus, OH. Sponsor: *C. Marchant*.

#286 **Poster Board Number 405**
EXTENDING THE DEREK-METEOR WORKFLOW TO PREDICT CHEMICAL-TOXICITY SPACE IMPACTED BY METABOLISM: APPLICATION TO TOXCAST AND TOX21 CHEMICAL INVENTORIES. P. Volarath, *M. Martin*, and A. Richard. US EPA, Research Triangle Park, NC.

#287 **Poster Board Number 406**
REVISITING THE TTC APPROACH FOR CANCER ASSESSMENT: PART OF A ROAD MAP OF COMPUTATIONAL METHODS AT US FDA CFSAN OFAS. J. Aungst[1], K. Arvidson[1], D. Rua[2], D. Hristozov[1], B. Mugabe[1], E. Matthews[1], A. McCarthy[1], *C. Yang*[3], and M. A. Cheeseman[1]. [1]CFSAN/OFAS, US FDA, College Park, MD, [2]CFSAN/OCAC, US FDA, College Park, MD, and [3]Atamira, LLC, Columbus, OH.

Abstract #

#288 **Poster Board Number 407**
CASE ULTRA: A NEW *IN SILICO* TOOL FOR QUANTITATIVE PREDICTION OF BIOLOGICAL ACTIVITY. S. Chakravarti[1], R. D. Saiakhov[1], M. A. Fuller[1], and *G. Klopman*[1,2]. [1]MultiCASE Inc., Beachwood, OH, and [2]Department of Chemistry, Case Western Reserve University, Cleveland, OH.

#289 **Poster Board Number 408**
OPEN SOURCE PLUG'N PLAY PREDICTIVE MODELING METHODS USEFUL IN TOXICOLOGY. L. Carlsson[1], E. Ahlberg[1], M. Eklund[1,2], O. Spjuth[2], and *S. Boyer*[1]. [1]Computational Toxicology, AstraZeneca, Mölndal, Sweden, and [2]Pharmaceutical Biosciences, Uppsala University, Uppsala, Sweden.

#290 **Poster Board Number 409**
IDENTIFICATION OF TESTICULAR TOXICITY-RELATED RISKS IN EARLY DISCOVERY. C. Hasselgren[1], N. Powles-Glover[2], S. Matis-Mitchell[4], M. Clark[4], M. Haywood[3], and *S. Boyer*[1]. [1]Global Safety Assessment, AstraZeneca R&D, Mölndal, Sweden, [2]Global Safety Assessment, AstraZeneca R&D, Alderley Park, United Kingdom, [3]R&D Information, AstraZeneca R&D, Alderley Park, United Kingdom, and [4]R&D Information, AstraZeneca R&D, Boston, MA.

#291 **Poster Board Number 410**
CASE ULTRA: PREDICTIVE PERFORMANCE IN ASSESSING THE POTENTIAL CARCINOGENICITY, GENOTOXICITY, DEVELOPMENTAL TOXICITY, AND ADVERSE EFFECTS OF NEW DRUG CANDIDATES, IMPURITIES, AND METABOLITES. M. A. Fuller, R. D. Saiakhov, S. Chakravarti, and *G. Klopman*. MultiCASE Inc., Beachwood, OH.

#292 **Poster Board Number 411**
PARTNERING PREDICTIVE TOXICOLOGY WITH MEDICINAL CHEMISTRY FOR STRATEGIC DRUG DISCOVERY. *L. J. McIntosh*, and C. Fishburn. Exponent, Inc., Menlo Park, CA.

#293 **Poster Board Number 412**
PERSONAL CHEMICAL EXPOSURE INFORMATICS: CREATION OF A CONSUMER PRODUCTS CHEMICAL INGREDIENT DATABASE. R. Goldsmith[1], C. Grulke[1], T. Transue[4], D. Chang[1], R. Tornero-Velez[1], *C. Dary*[2], K. Holm[1], *Y. Tan*[1], P. Egehgy[1], J. Mitchell-Blackwood[1], *L. Phillips*[3], and *D. Vallero*[1]. [1]US EPA, Research Triangle Park, NC, [2]US EPA, Las Vegas, NV, [3]US EPA, Washington, DC, and [4]Lockheed Martin-IT, Research Triangle Park, NC.

#294 **Poster Board Number 413**
NBI: A KNOWLEDGEBASE OF NANOMATERIAL-BIOLOGICAL INTERACTIONS. K. E. Cleveland[1], B. J. Harper[1], D. Keon[2], B. Steinberg[2], and *S. L. Harper*[1,3,4]. [1]Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR, [2]Northwest Alliance for Computational Science & Engineering, Corvallis, OR, [3]Environmental Health Sciences Center, Oregon State University, Corvallis, OR, and [4]Oregon Nanoscience and Microtechnologies Institute, Corvallis, OR.

Program Description (Continued)

Abstract #

#295 **Poster Board Number 414**
ROCHE NONCLINICAL SAFETY DATA INTEGRATION (SDI) PLATFORM. A. Brigo[1], R. Maloney[2], A. Nanzer[2], *M. Kansy*[1], *T. Weiser*[1], B. Roberts[2], and *T. Singer*[1]. [1]Nonclinical Safety, Hoffmann-La Roche Ltd., Basel, Switzerland, and [2]Nonclinical Safety Informatics, Hoffmann-La Roche Ltd., Basel, Switzerland.

#296 **Poster Board Number 415**
WHERE THE RUBBER MEETS THE ROAD: A PRACTICAL METHODS COMPENDIUM FOR RISK ASSESSORS. O. Kroner, and *L. Haber*. Toxicology Excellence for Risk Assessment (TERA), Cincinnati, OH.

#297 **Poster Board Number 416**
DATA QUALITY MANAGEMENT FOR RISK ASSESSMENT OF A REMEDIAL INVESTIGATION. C. Julias, and *N. Luke*. Camp Dresser & McKee Inc., Edison, NJ.

#298 **Poster Board Number 417**
THE CHEMICAL SECURITY ANALYSIS CENTER: MODELING PUBLIC HEALTH CONSEQUENCES OF RELEASE AND DISSEMINATION OF TOXIC CHEMICALS. *J. Moser*[1,2], R. Jablonski[1], and D. Howell[1,2]. [1]Chemical Security Analysis Center, Aberdeen Proving Ground, MD, and [2]Battelle Memorial Institute, Columbus, OH.

#299 **Poster Board Number 418**
MODELING TOXICITY VALUES USING CHEMICAL STRUCTURE, *IN VITRO* SCREENING, AND *IN VIVO* TOXICITY DATA. J. Wignall[1], A. Sedykh[1], A. Tropsha[1], *T. J. Woodruff*[2], *L. Zeise*[3], *I. Rusyn*[1], V. J. Cogliano[4], W. A. Chiu[4], and *K. Z. Guyton*[4]. [1]University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]University of California San Francisco, San Francisco, CA, [3]California EPA, Oakland, CA, and [4]US EPA, Washington, DC.

Monday Morning, March 12
9:30 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Nanotoxicology: Environmental Toxicology, Zebrafish, and Nanoparticles

Chairperson(s): *Saura Sahu, US FDA, Laurel, MD.*

Displayed: *9:30 AM–12:30 PM*

Author Attended: *9:30 AM–11:00 AM*

#300 **Poster Board Number 429**
NANOMATERIAL TOXICITY SCREENING IN DEVELOPING ZEBRAFISH EMBRYOS. S. L. Frady[1], *K. A. Houck*[1], *A. Wang*[1], and *S. Padilla*[2]. [1]National Center for Computational Toxicology, ORD, US EPA, Research Triangle Park, NC, and [2]National Health Environmental Effects Research Laboratory, ORD, US EPA, Research Triangle Park, NC.

Abstract #

#301 **Poster Board Number 430**
PHOTOTOXICITY OF TITANIUM DIOXIDE NANOPARTICLES (NANO-TIO_2) TO *DAPHNIA MAGNA* IS DEPENDENT ON SOLAR UV SPECTRUM. *H. Ma*, A. Brennan, and S. A. Diamond. Mid-Continent Ecology Division, US EPA, Duluth, MN.

#302 **Poster Board Number 431**
ECOTOXICOLOGY TEST PROTOCOLS FOR REPRESENTATIVE NANOMATERIALS—THE PROSPECT RESULTS FOR ZINC OXIDE. D. Carlander[2], *K. Wiench*[1], R. Tantra[3], T. Galloway[4], and S. Friedrichs[2]. [1]Product Safety, BASF SE, Ludwigshafen, Germany, [2]Nanotechnology Industries Association, Brussels, Belgium, [3]National Physical Laboratory, Teddington, United Kingdom, and [4]University of Exeter, Exeter, United Kingdom.

#303 **Poster Board Number 432**
EMBRYOLARVAL EXPOSURE TO TITANIUM DIOXIDE NANOPARTICLES IN THE PPB RANGE PRODUCES PHOTO-DEPENDENT TOXICITY. *O. Bar-Ilan*[1,2], C. Chuang[1], D. J. Schwahn[1], R. Hamers[2], J. Pedersen[2], *R. E. Peterson*[1,2], and *W. Heideman*[1,2]. [1]Divison of Pharmaceutical Sciences, University of Wisconsin-Madison, Madison, WI, and [2]NSEC, University of Wisconsin-Madison, Madison, WI.

#304 **Poster Board Number 433**
EFFECT OF CITRATE-COATED TIO_2 NANOPARTICLE SIZE ON EMBRYO TOXICITY IN ZEBRAFISH. *M. Kim*[1], K. Louis[2], *J. A. Pedersen*[3], R. J. Hamers[2], *R. E. Peterson*[1], and *W. Heideman*[1]. [1]Pharmacy, University of Wisconsin-Madison, Madison, WI, [2]Chemistry, University of Wisconsin-Madison, Madison, WI, and [3]Molecular Environmental Toxicology Center, University of Wisconsin-Madison, Madison, WI.

#305 **Poster Board Number 434**
CADMIUM AND CDTE-QUANTUM DOT ALTERS DNA REPAIR IN ZEBRAFISH (*DANIO RERIO*) LIVER CELLS. *S. Tang*[1], H. Chibli[2], *Q. Cai*[1], *V. Allagadda*[1], *K. Germ*[1], J. Nadeau[2], and *G. D. Mayer*[1]. [1]The Institute of Environmental and Human Health, Texas Tech University, Lubbock, TX, and [2]Department of Biomedical Engineering, McGill University, Montréal, QC, Canada.

#306 **Poster Board Number 435**
IMPACT OF AMPHIPHILIC FUNCTIONALIZATION ON THE TOXICITY OF TITANIUM DIOXIDE NANOPARTICLES IN ZEBRAFISH EMBRYOS. *S. Yang*[1], K. M. Louis[2], *O. Bar-Ilan*[3], R. J. Hamers[2], *R. E. Peterson*[3,1], *W. Heideman*[3,1], and J. A. Pedersen[4,1]. [1]Molecular and Environmental Toxicology, University of Wisconsin-Madison, Madison, WI, [2]Chemistry, University of Wisconsin-Madison, Madison, WI, [3]School of Pharmacy, University of Wisconsin-Madison, Madison, WI, and [4]Soil Science, University of Wisconsin-Madison, Madison, WI.

#307 **Poster Board Number 436**
UPTAKE OF QUANTUM DOTS IN FATHEAD MINNOWS, *PIMEPHALES PROMELAS*, OVARIAN EXPLANT CULTURES. C. Lavelle[1], M. Hahn[2], K. Siebein[3], *R. Weil*[1], K. Kroll[1], K. Powers[2], and *N. Denslow*[1]. [1]CEHT, University of Florida, Gainesville, FL, [2]PERC, University of Florida, Gainesville, FL, and [3]MAIC, University of Florida, Gainesville, FL.

Program Description (Continued)

Abstract #

#308 **Poster Board Number 437**
MULTIGENERATIONAL IMPACTS OF CARBON NANOMATERIAL EXPOSURE ON THE MODEL ORGANISM *DAPHNIA MAGNA*.
D. A. Arndt, and *R. Klaper*. School of Freshwater Sciences, University of Wisconsin Milwaukee, Milwaukee, WI.

#309 **Poster Board Number 438**
THE BIOLOGICAL RESPONSE OF MULTIWALLED CARBON NANOTUBES IN DIFFERENT DISPERSANTS. H. Haniu[1], N. Saito[2], Y. Matsuda[3], Y. Kim[4], K. Park[1], T. Tsukahara[5], Y. Usui[6], K. Aoki[5], M. Shimizu[5], N. Ogihara[5], K. Hara[5], S. Takanashi[5], M. Okamoto[5], and H. Kato[5]. [1]Institute of Carbon Science and Technology, Shinshu University, Matsumoto, Japan, [2]School of Health Sciences, Shinshu University, Matsumoto, Japan, [3]Clinical Pharmacology Educational Center, Nihon Pharmaceutical University, Ina-machi, Japan, [4]Faculty of Engineering, Shinshu University, Nagano-shi, Japan, [5]School of Medicine, Shinshu University, Matsumoto, Japan, and [6]Research Center for Exotic Nanocarbons, Shinshu University, Matsumoto, Japan. Sponsor: *T. Kadota*.

#310 **Poster Board Number 439**
THE *IN VITRO* EFFECTS OF SILICA NANOPARTICLES ON MOUSE MACROPHAGE MORPHOLOGY AND FUNCTION. S. Bancos, *J. L. Weaver*, and K. M. Tyner. Center for Drug Evaluation and Research, US FDA, Silver Spring, MD.

#311 **Poster Board Number 440**
MODULATION OF IL-8 ACTIVITY UPON LIPID RAFT DISRUPTION AND NANOPARTICLE EXPOSURE. *C. Thach*, and *J. N. Finkelstein*. Environmental Medicine, University of Rochester, Rochester, NY.

#312 **Poster Board Number 441**
EVALUATION OF OXIDATIVE STRESS AND APOPTOSIS IN THE LIVER FOLLOWING A SINGLE INTRATRACHEAL INSTILLATION OF CERIUM OXIDE NANOPARTICLES IN MALE SPRAGUE DAWLEY RATS. S. Nalabotu[1,2], N. Manne[1,2], M. Kolli[1,2], G. Nandyala[2], R. Para[2], *M. Valentovic*[1], *J. Ma*[3], and E. Blough[1,2]. [1]Department of Pharmacology, Physiology & Toxicology, Joan C. Edwards School of Medicine, Marshall University, Huntington, WV, [2]CDN, Marshall University, Huntington, WV, and [3]HELD, NIOSH, Morgantown, WV.

#313 **Poster Board Number 442**
AFTERGLOW ZNS:CU,AG CONJUGATED TO PHOTOSENSITIZE NANOPARTICLES INDUCES CYTOTOXICITY AND DNA DAMAGE ON HUMAN BREAST CANCER CELLS. *X. Zou*, L. Ma, M. Hossu, and W. Chen. Physics, University of Texas at Arlington, Arlington, TX.

Abstract #

#314 **Poster Board Number 443**
PROTEIN EXPRESSION PROFILES OF INTESTINAL EPITHELIAL COCULTURES AFTER LOW-LEVEL EXPOSURE TO FUNCTIONALIZED CARBON NANOTUBES.
X. Lai[1], B. Blazer-Yost[2,1], J. Clack[3], S. Fears[4], S. Mitra[5], S. Addo Ntim[5], H. Ringham[1], and *F. A. Witzmann*[1]. [1]Cellular & Integrative Physiology, Indiana University School of Medicine, Indianapolis, IN, [2]Biology, Indiana University–Purdue University Indianapolis, Indianapolis, IN, [3]Biology, Indiana University–Purdue University Columbus, Columbus, IN, [4]Sensient Bio-Ingredients, Indianapolis, IN, and [5]Chemistry & Environmental Science, New Jersey Institute of Technology, Newark, NJ.

#315 **Poster Board Number 444**
COMPARATIVE STUDY ON ANTIBACTERIAL EFFICIENCY AND CYTOTOXICITY OF VARIOUS TYPES OF ION-DOPED TITANIUM DIOXIDE NANOPARTICLES. *R. Maniratanachote*[1], K. Hinthong[2], K. Kulthong[1], C. Warin[1], D. Waraho[2], K. Viravaidya[2], and P. Kajitvichyanukul[2,3]. [1]National Nanotechnology Center, National Science and Technology Development Agency, Klong Luang, Pathumthani, Thailand, [2]Department of Biological Engineering, King Mongkut's University of Technology Thonburi, Toongkru, Bangkok, Thailand, and [3]Department of Civil Engineering, Naresuan University, Muang, Phitsanulok, Thailand.

#316 **Poster Board Number 445**
DEVELOPMENT AND *IN VITRO* BIOACTIVITY PROFILING OF ALTERNATIVE SUSTAINABLE NANOMATERIALS. S. Gangwal[1], A. Richter[2], *A. Wang*[1], C. Frangville[3], M. Rutkevicuis[3], V. Paunov[3], O. Velev[2], *K. Houck*[1], and E. Cohen Hubal[1]. [1]National Center for Computational Toxicology, US EPA, Research Triangle Park, NC, [2]Chemical and Biomolecular Engineering, North Carolina State University, Raleigh, NC, and [3]Chemistry, University of Hull, Hull, HU6 7RX, United Kingdom.

#317 **Poster Board Number 446**
EFFECTS OF CERIUM OXIDE NANOPARTICLES ON DIESEL EXHAUST PARTICLES—INDUCED PULMONARY RESPONSES. J. Y. Ma[1], R. R. Mercer[1], M. Barger[1], J. K. Ma[2], and *V. Castranova*[1]. [1]NIOSH, Morgantown, WV, and [2]West Virginia University, Morgantown, WV.

#318 **Poster Board Number 447**
COMPARISON OF THE GLOBAL GENE EXPRESSION OF RAT LUNG INHALED MANUFACTURED NANOMATERIALS: ULTRAFINE NICKEL OXIDE, C_{60} FULLERENE, AND CARBON NANOTUBES. *K. Fujita*[1,2], M. Fukuda[2], Y. Morimoto[3], A. Ogami[3], T. Myojo[3], I. Tanaka[3], M. Shimada[4], W. Wang[4], S. Endoh[2], K. Uchida[1], H. Fukui[1], M. Shichiri[1], M. Horie[3], and H. Iwahashi[5]. [1]National Institute of Advanced Industrial Science & Technology, Tsukuba, Japan, [2]Technology Research Association for Singlewall Carbon Nanotubes, Tsukuba, Japan, [3]University of Occupational & Environmental Health, Kitakyushu, Japan, [4]Hiroshima University, Higashi Hiroshima, Japan, and [5]Gifu University, Gifu, Japan.

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#319 **Poster Board Number 448**
LONG-TERM PHARMACOKINETICS AND BIODISTRIBUTION OF SILICA NANOPARTICLES USING ACCELERATOR MASS SPECTROMETRY *IN VIVO*. H. Palko[1,3,4], E. Kuhn[1,4], W. Wang[2,4], S. Retterer[2,4], *K. Turteltaub*[1,4], and *M. Malfatti*[1,4]. [1]Biosciences and Biotechnology Division, Physical and Life Sciences, Lawrence Livermore National Laboratory, Livermore, CA, [2]Oak Ridge National Laboratory, Oak Ridge, TN, [3]Battelle, Columbus, OH, and [4]Battelle Center for Fundamental and Applied Systems Toxicology (B-FAST) Multi-scale Toxicology Initiative, Battelle, Columbus, OH.

#320 **Poster Board Number 449**
TISSUE-SPECIFIC GENOTOXICITY OF TITANIUM DIOXIDE NANOPARTICLES EVALUATED USING THE *IN VIVO* COMET ASSAY. *W. Ding*[1], M. E. Bishop[1], J. Yan[1], G. White[2], J. Bhalli[1], R. Sadiq[1], *Y. Li*[1], and *T. Chen*[1]. [1]Division of Genetic and Molecular Toxicology, US FDA/National Center for Toxicological Research, Jefferson, AR, and [2]Toxicology Pathology Associates, US FDA/National Center for Toxicological Research, Jefferson, AR.

#321 **Poster Board Number 450**
BRAIN ENTRY RATE AND CAPILLARY ENDOTHELIAL CELL ASSOCIATION OF CERIA ENGINEERED NANOPARTICLES. *M. Dan*[1], *M. Tseng*[2], P. Wu[1], J. M. Unrine[1], E. A. Grulke[1], and *R. A. Yokel*[1]. [1]University of Kentucky, Lexington, KY, and [2]University of Louisville, Louisville, KY.

#322 **Poster Board Number 451**
LOW DEVELOPMENTAL TOXICITY OF ZINC OXIDE NANOPARTICLES HOLD PROMISE FOR APPLICATIONS IN NANOMEDICINE. L. Wehmas[1], *L. Truong*[1,2], A. Punnoose[3], and *R. L. Tanguay*[1,2]. [1]Environmental & Molecular Toxicology, Environmental Health Sciences Center, Oregon State University, Corvallis, OR, [2]The Oregon Nanoscience and Microtechnologies Institute and the Safer Nanomaterials and Nanomanufacturing Initiative, Oregon State University, Corvallis, OR, and [3]Physics, Boise State University, Boise, ID.

#323 **Poster Board Number 452**
EFFECTS OF COMBINED EXPOSURE TO DIESEL EXHAUST PARTICLES AND CERIUM OXIDE NANOPARTICLES ON THE RESPONSE TO ENDOTOXIN IN RATS. B. D. Dolash, M. W. Barger, *V. Castranova*, and J. Y. Ma. NIOSH, Morgantown, WV.

#324 **Poster Board Number 453**
RAT OVARIAN STEROIDOGENESIS *EX VIVO* IS STIMULATED DIFFERENTIALLY UPON EXPOSURE TO LOW CONCENTRATIONS OF GOLD NANOPARTICLES. *J. Larson*[1,3], *M. J. Carvan III*[1,2,3], R. Klaper[1,2,3], and *R. J. Hutz*[1,2,3]. [1]Biological Sciences, University of Wisconsin-Milwaukee, Milwaukee, WI, [2]School of Freshwater Sciences, University of Wisconsin-Milwaukee, Milwaukee, WI, and [3]NIEHS Children's Environmental Health Sciences Core Center, University of Wisconsin-Milwaukee and Children's Research Institute, Milwaukee, WI.

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#325 **Poster Board Number 454**
EVALUATION OF THE APPLICABILITY OF STANDARD ASSAYS FOR ASSESSING GENOTOXICITY OF NANOMATERIALS. *T. Chen*[1], *N. Mei*[1], R. S. Woodruff[2], J. Yan[1], *Y. Chen*[1], *W. Ding*[1], J. A. Bhalli[1], R. Sadiq[1], *Y. Li*[1], *P. Rice*[3], *Y. Zhang*[4], A. Biris[5], *P. C. Howard*[4], *T. Zhou*[6], and *M. M. Moore*[1]. [1]Division of Genetic and Molecular Toxicology, National Center for Toxicological Research, US FDA, Jefferson, AR, [2]Division of Microbiology, Arkansas Regional Laboratory, US FDA, Jefferson, AR, [3]Center for Food Safety and Applied Nutrition, US FDA, College Park, MD, [4]Nanotechnology Core Facility, National Center for Toxicological Research, US FDA, Jefferson, AR, [5]Nanotechnology Center, University of Arkansas at Little Rock, Little Rock, AR, and [6]Center for Veterinary Medicine, US FDA, Rockville, MD.

#326 **Poster Board Number 455**
HEMOPEXIN AS BIOMARKERS FOR ANALYZING THE BIOLOGICAL RESPONSES ASSOCIATED WITH EXPOSURE TO SILICA NANOPARTICLES. K. Higashisaka[1], *Y. Yoshioka*[1,2,3], T. Nagano[1], A. Kunieda[1], K. Nagano[3], Y. Abe[3], H. Kamada[2,3], S. Tsunoda[2,3], H. Nabeshi[1,3], *T. Yoshikawa*[1,3], and *Y. Tsutsumi*[1,2,3]. [1]Laboratory of Toxicology and Safety Science, Graduate School of Pharmaceutical Sciences, Osaka University, Suita, Osaka, Japan, [2]The Center for Advanced Medical Engineering and Informatics, Osaka University, Suita, Osaka, Japan, and [3]Laboratory of Biopharmaceutical Research, National Institute of Biomedical Innovation, Ibaraki, Osaka, Japan.

#327 **Poster Board Number 456**
THE EFFECT OF *IN UTERO* EXPOSURE TO AMORPHOUS NANOSILICA PARTICLES ON NEONATAL IMMUNE FUNCTION AND NEUROLOGICAL FUNCTION. Y. Morishita[1,2], *Y. Yoshioka*[1,2,3], K. Takao[4,5], H. Sato[1,2], N. Nojiri[1,2], K. Nagano[2], Y. Abe[2], H. Kamada[2,3], S. Tsunoda[2,3], H. Nabeshi[1,2], *N. Itoh*[1], *T. Yoshikawa*[1,2], T. Miyakawa[4,5], and *Y. Tsutsumi*[1,2,3]. [1]Laboratory of Toxicology and Safety Science, Graduate School of Pharmaceutical Sciences, Osaka University, Suita, Osaka, Japan, [2]Laboratory of Biopharmaceutical Research, National Institute of Biomedical Innovation, Ibaraki, Osaka, Japan, [3]The Center for Advanced Medical Engineering and The Center for Advanced Medical Engineering and Informatics, Osaka University, Suita, Osaka, Japan, [4]Division of Systems Medicine, Institute for Comprehensive Medical Science, Fujita Health University, Toyoake, Aichi, Japan, and [5]Section of Behavior Patterns, Center for Genetic Analysis of Behavior, National Institute for Physiological Sciences, Okazaki, Aichi, Japan.

#328 **Poster Board Number 457**
MICRORNA AS A BIOMARKER FOR THE SAFETY ANALYSIS OF NANOMATERIALS. T. Nagano[1,2], *Y. Yoshioka*[1,2,3], K. Higashisaka[1,2], A. Kunieda[1,2], K. Nagano[2], Y. Abe[2], H. Kamada[2,3], S. Tsunoda[2,3], H. Nabeshi[1,2], *T. Yoshikawa*[1,2], and *Y. Tsutsumi*[1,2,3]. [1]Laboratory of Toxicology and Safety Science, Graduate School of Pharmaceutical Sciences, Osaka University, Suita, Osaka, Japan, [2]Laboratory of Biopharmaceutical Research, National Institute of Biomedical Innovation, Ibaraki, Osaka, Japan, and [3]The Center for Advanced Medical Engineering and Informatics, Osaka University, Ibaraki, Osaka, Japan.

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#329 **Poster Board Number 458**
KINETICS AND TISSUE DISTRIBUTION OF NEUTRON-ACTIVATED ZINC OXIDE NANOPARTICLES AND ZINC IN MICE: EFFECTS OF SIZE AND PARTICULATE NATURE. *P. Lin*[1], T. Yeh[1], J. Chen[1], M. Yang[1,2], C. Yang[1], C. Lin[1], and F. Chou[2]. [1]National Health Research Institutes, Zhunan, Taiwan, and [2]National Tsing Hua University, Hsinchu, Taiwan.

#330 **Poster Board Number 459**
CYTO/GENOTOXIC EFFECT OF CDSE/ZNS QUANTUM DOTS-MEDIATED PHOTODYNAMIC UV THERAPY IN HUMAN LUNG ADENOCARCINOMA CELLS. Y. Choi[1], Y. Kim[1], J. Lee[1], Y. Lee[1], Y. Lim[2], and H. Chung[1]. [1]School of Public Health, Seoul National University, Seoul, Republic of Korea, and [2]Advanced Material Engineering, Yonsei University, Seoul, Republic of Korea. Sponsor: *J. Chung*.

#331 **Poster Board Number 460**
ROLE OF DOSE RATE ON NANOPARTICLE-INDUCED INFLAMMATORY RESPONSES *IN VIVO*. *B. L. Baisch*, N. M. Corson, P. Wade-Mercer, R. Gelein, *G. Oberdörster*, and *A. Elder*. Environmental Medicine, University of Rochester Medical Center, Rochester, NY.

#332 **Poster Board Number 461**
SILVER NANOPARTICLE TOXICITY TO RETINAL PIGMENT EPITHELIAL CELLS *IN VITRO* IS INFLUENCED BY PARTICLE SIZE AND COATING, BUT NOT UVA RADIATION. *W. K. Boyes*, S. Karafas, L. Degn, and R. Zucker. US EPA, Research Triangle Park, NC.

#333 **Poster Board Number 462**
***IN VITRO* MODEL TO MIMIC THE LUNG EPITHELIAL BARRIER FOR NANO-TOXICOLOGY STUDIES.** R. Derk[1], *A. Mishra*[1], T. Stueckle[1], S. Friend[1], *V. Castranova*[1], *Y. Rojanasakul*[2], M. Chen[2], and L. Wang[1]. [1]Pathology and Physiology Research Branch, CDC/NIOSH, Morgantown, WV, and [2]School of Pharmacy, West Virginia University, Morgantown, WV.

#334 **Poster Board Number 463**
GENOTOXIC STRESS RESPONSE GENES ARE DYSREGULATED BY SILVER NANOPARTICLES IN TK6 CELLS. Y. Chen, J. Yan, *M. Moore*, and *T. Chen*. Division of Genetic and Molecular Toxicology, National Center for Toxicological Research, US FDA, Jefferson, AR.

#335 **Poster Board Number 464**
CEREBROVASCULAR TOXICITY OF PCBs BOUND TO NANOPARTICLES IN THE EXPERIMENTAL STROKE MODEL. *B. Zhang*[1,2], L. Chen[2], *B. Hennig*[1,3], and M. Toborek[1,2]. [1]Graduate Center for Nutritional Sciences, University of Kentucky, Lexington, KY, [2]Department of Neurosurgery, University of Kentucky, Lexington, KY, and [3]College of Agriculture, University of Kentucky, Lexington, KY.

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#336 **Poster Board Number 465**
TOXICITY EVALUATION OF MULTIWALL CARBON NANOTUBES IN RATS AFTER TAIL VEIN ADMINISTRATION. N. Kobayashi[1], M. Kawabe[2], F. Furukawa[2], R. Kubota[1], N. Sugimoto[1], T. Nishimura[1], and *A. Hirose*[1]. [1]National Institute of Health Sciences, Tokyo, Japan, and [2]DIMS Institute of Medical Science Inc., Aichi, Japan.

#337 **Poster Board Number 466**
***IN VIVO* GENOTOXICITY STUDY OF NANOSIZED TITANIUM DIOXIDE PARTICLES USING COMET ASSAY FOLLOWING INTRATRACHEAL INSTILLATION IN RATS.** *M. Naya*[1], N. Kobayashi[1], *M. Ema*[1], S. Kasamoto[2], M. Fukumuro[2], S. Takami[2], M. Nakajima[2], M. Hayashi[2], and J. Nakanishi[1]. [1]National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan, and [2]Biosafety Research Center, Foods, Drugs and Pesticides (BSRC), Iwata, Shizuoka, Japan.

#338 **Poster Board Number 467**
DOSE-RESPONSE RELATIONSHIPS FOR ACUTE TOXICITY OF 9 ENGINEERED NANOPARTICLES IN MURINE LUNGS: RESULTS FROM THE ENPRA PROJECT. I. Gosens[1], N. Raun Jacobson[2], T. Stoeger[3], L. Tran[4], V. Stone[5], W. H. de Jong[1], and *F. R. Cassee*[1]. [1]National Institute for Public Health and the Environment (RIVM), Bilthoven, Netherlands, [2]National Research Centre for the Working Environment, Copenhagen, Denmark, [3]Helmholtz Zentrum München, München, Germany, [4]IOM, Edinburgh, United Kingdom, and [5]Heriot-Watt University, Edinburgh, United Kingdom.

#339 **Poster Board Number 468**
LONG, NEEDLE-LIKE CARBON NANOTUBES ARE GENOTOXIC IN MICE. J. Catalán[1,2], H. Järventaus[1], S. Suhonen[1], K. Siivola[1], C. Moreno[2], E. Rossi[1], J. Koivisto[1], E. Vanhala[1], H. Wolf[1], *H. Alenius*[1], *K. Savolainen*[1], and H. Norppa[1]. [1]Finnish Institute of Occupational Health, Helsinki, Finland, and [2]University of Zaragoza, Zaragoza, Spain.

Monday Morning, March 12
9:30 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Liver

Chairperson(s): *Martin Ronis, University of Arkansas for Medical Sciences, Little Rock, AR.*

Displayed: *9:30 AM–12:30 PM*

Author Attended: *11:00 AM–12:30 PM*

#340 **Poster Board Number 501**
GREEN TEA EXTRACT DIFFERENTIALLY AFFECTS ACETAMINOPHEN-INDUCED HEPATOTOXICITY BASED ON THE EXPOSURE PATTERN. A. A. Ali, *X. Yang*, Q. Shi, J. Greenhaw, and *W. F. Salminen*. Division of Systems Biology, US FDA National Center for Toxicological Research, Jefferson, AR.

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#341 **Poster Board Number 502**
A SYSTEMS BIOLOGY APPROACH TO UNRAVEL MECHANISMS OF CYCLOSPORINE A-INDUCED HEPATOTOXICITY. W. Van den Hof[1,4], A. Ruiz-Aracama[2,4], A. Van Summeren[1,4], D. Jennen[1,4], S. Gaj[1,4], W. Wodzig[3,4], J. van Delft[1,4], and J. Kleinjans[1,4]. [1]Department of Toxicogenomics, Maastricht University, Maastricht, Netherlands, [2]RIKILT-Institute of Food Safety, Wageningen University and Research Centre, Wageningen, Netherlands, [3]Department of Clinical Chemistry, Maastricht University Medical Center, Maastricht, Netherlands, and [4]Netherlands Toxicogenomics Centre, Maastricht, Netherlands. Sponsor: *H. van Loveren*.

#342 **Poster Board Number 503**
A STRUCTURE-TOXICITY-RELATIONSHIP INVESTIGATION OF 2-PHENYLAMINOPHENYLACETIC ACID ANALOGS. Y. Pang, M. Go, and *H. Ho*. Pharmacy, National University of Singapore, Singapore, Singapore.

#343 **Poster Board Number 504**
***ACHATINA* C-REACTIVE PROTEIN AMELIORATES LEAD-INDUCED TOXICITY IN RAT HEPATOCYTES.** *S. Agarwal*, S. Mukherjee, S. Chatterjee, S. Sarkar, S. Maitra, and *S. Bhattacharya*. Environmental Toxicology Laboratory, Department of Zoology, Visva Bharati University, Santiniketan, India.

#344 **Poster Board Number 505**
DIETARY FAT IS A PRIMARY SOURCE OF LIPIDS IN TCDD-ELICITED HEPATIC STEATOSIS. *M. M. Angrish*[1,2], A. D. Jones[3], B. D. Mets[3], and *T. R. Zacharewski*[1,2,3]. [1]Genetics, Michigan State University, East Lansing, MI, [2]Center for Integrative Toxicology, Michigan State University, East Lansing, MI, and [3]Biochemistry & Molecular Biology, Michigan State University, East Lansing, MI.

#345 **Poster Board Number 506**
TCDD-ELICITED EFFECTS ON LIVER, SERUM, AND ADIPOSE LIPID COMPOSITION IN *SCD1*$^{+/+}$ AND *SCD1*$^{-/-}$ MICE. C. Y. Dominici[1], *M. M. Angrish*[2,3], A. D. Jones[1], and *T. R. Zacharewski*[1,2,3]. [1]Biochemistry & Molecular Biology, Michigan State University, East Lansing, MI, [2]Genetics, Michigan State University, East Lansing, MI, and [3]Center for Integrative Toxicology, Michigan State University, East Lansing, MI.

#346 **Poster Board Number 507**
A SURVEY OF MECHANISMS FOR DRUG-INDUCED LIVER INJURY. *V. Vijay*, and *W. Tong*. Systems Biology, National Center for Toxicological Research, US FDA, Jefferson, AR.

#347 **Poster Board Number 508**
AN ONTOLOGY-BASED MECHANISTIC STUDY OF DRUG-INDUCED LIVER INJURY USING TOXICOGENOMICS. *Y. Wang*, *V. Vijay*, *M. Chen*, and *W. Tong*. National Center for Toxicological Research, Jefferson, AR.

#348 **Poster Board Number 509**
DRUG-INDEPENDENT STRESS FACTORS AS DETERMINANTS OF IDIOSYNCRATIC LIVER TOXICITY? S. Ramm, and A. Mally. Department of Toxicology, University of Würzburg, Würzburg, Germany. Sponsor: *W. Dekant*.

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#349 **Poster Board Number 510**
INTER-STRAIN DIFFERENCES IN SUSCEPTIBILITY TO LIVER INJURY-INDUCED BY METHYL DEFICIENCY IS ASSOCIATED WITH PPARα EXPRESSION. T. Kobets[1], A. de Conti[2], L. Muskhelishvili[3], *V. Tryndyak*[1], F. A. Beland[1], and I. P. Pogribny[1]. [1]US FDA National Center for Toxicological Research, Jefferson, AR, [2]University of Saõ Paulo, Saõ Paulo, Brazil, and [3]Toxicologic Pathology Associates, US FDA National Center for Toxicological Research, Jefferson, AR.

#350 **Poster Board Number 511**
N-ACETYL-META-AMINOPHENOL, THE ALLEGED NONTOXIC ISOMER OF ACETAMINOPHEN, IS TOXIC IN BOTH RAT AND HUMAN PRECISION-CUT LIVER SLICES. M. Hadi[1], B. Herpers[2], S. Dragovic[3], R. van Swelm[4], *F. Russel*[4], J. Commandeur[3], *B. van de Water*[2], and G. Groothuis[1]. [1]Pharmacokinetics, Toxicology and Targeting, GRIP, University of Groningen, Groningen, Netherlands, [2]Toxicology, LACDR, Leiden University, Leiden, Netherlands, [3]Molecular Toxicology, LACDR, VU Amsterdam, Amsterdam, Netherlands, and [4]Pharmacology and Toxicology, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands.

#351 **Poster Board Number 512**
IDENTIFICATION OF GLUTATHIONE CONJUGATES OF BENZYL AND ETHYL BROMIDE IN MALE SPRAGUE DAWLEY RATS. *T. Jeong*[1], S. Lee[2], M. Kang[1], D. Oh[1], K. Lee[3], and *H. Jeong*[4]. [1]Pharmacy, Yeungnam University, Gyeongsan, Gyeongbuk, Republic of Korea, [2]Pharmacy, Kyungpook National University, Daegu, Republic of Korea, [3]Pharmacy, Chonnam National University, Gwangju, Republic of Korea, and [4]Pharmacy, Chungnam National University, Daejeon, Republic of Korea.

#352 **Poster Board Number 513**
THE ROLE OF COMPLEMENT ACTIVATION IN ACETAMINOPHEN-INDUCED LIVER INJURY IN MICE. *R. Singhal*[1], *P. E. Ganey*[2], and *R. A. Roth*[3]. [1]Pharmacology and Toxicology, Michigan State University, East Lansing, MI, [2]Pharmacology and Toxicology, Michigan State University, East Lansing, MI, and [3]Pharmacology and Toxicology, Michigan State University, East Lansing, MI.

#353 **Poster Board Number 514**
NOVEL PROTECTIVE MECHANISMS OF ACETAMINOPHEN (APAP) HEPATIC TOXICITY BY S-ADENOSYL-L-METHIONINE (SAME). *J. Brown*[1], A. B. Lamyaithong[2], J. G. Ball[1], S. Van Meter[1], M. S. Wright[1], A. Mills[3], and *M. A. Valentovic*[1]. [1]Pharmacology, Physiology and Toxicology, Marshall University School of Medicine, Huntington, WV, [2]Wheeling Jesuit University, Wheeling, WV, and [3]Murray State University, Murray, KY.

#354 **Poster Board Number 515**
PEROXYNITRITE IS CENTRAL TO INCREASED HEPATIC LEPTIN RESISTANCE IN XENOBIOTIC METABOLISM OF CYP2E1-INDUCED NASH. *S. Chatterjee*[1], *E. J. Tokar*[2], *M. Kadiiska*[1], *M. Waalkes*[2], and *R. P. Mason*[1]. [1]Laboratory of Toxicology and Pharmacology, NIEHS, Research Triangle Park, NC, and [2]National Toxicology Program, NIEHS, Research Triangle Park, NC.

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#355 **Poster Board Number 516**
DEVELOPMENT OF A TOXICITY PROFILE FOR THE HEPATOCARCINOGENIC CONAZOLES: CYPROCONAZOLE, EPOXICONAZOLE, AND PROPICONAZOLE. S. Nesnow[2], T. Moore[2], W. Padgett[3], L. Murphy[2], C. Wood[2], and *S. D. Hester*[1]. [1]Systems Biology Branch, US EPA, Durham, NC, [2]Cancer Biology Branch, US EPA, Durham, NC, and [3]Research Cores Unit, US EPA, Durham, NC.

#356 **Poster Board Number 517**
EFFECT OF DIETARY FAT/CARBOHYDRATE RATIO ON PROGRESSION OF ALCOHOLIC LIVER INJURY AND BONE LOSS IN RATS FED VIA TOTAL ENTERAL NUTRITION (TEN). *M. Ronis*[1,2], K. Mercer[1,2], L. Suva[3], J. Badeaux[1], M. Ferguson[1], W. Hogue[3], N. Shama[1], and *T. Badger*[1,4]. [1]Arkansas Children's Nutrition Center, University of Arkansas for Medical Sciences, Little Rock, AR, [2]Pharmacology & Toxicology, University of Arkansas for Medical Sciences, Little Rock, AR, [3]Orthopedic Surgery, University of Arkansas for Medical Sciences, Little Rock, AR, and [4]Physiology & Biophysics, University of Arkansas for Medical Sciences, Little Rock, AR.

#357 **Poster Board Number 518**
THE ROLE OF SERINE/THREONINE KINASE (STK) IN LIVER MACROPHAGE ACTIVATION FOLLOWING ACETAMINOPHEN (APAP) INTOXICATION. *C. R. Gardner*[1], V. Mishin[1], P. Hankey[3], *J. D. Laskin*[2], and *D. L. Laskin*[1]. [1]Rutgers University, Piscataway, NJ, [2]University of Medicine and Dentistry of New Jersey/Robert Wood Johnson Medical School, Piscataway, NJ, and [3]Penn State University, University Park, PA.

#358 **Poster Board Number 519**
INCREASED BILE ACID CONCENTRATIONS BY GRADED CALORIE RESTRICTION: ROLE OF CYP7A1. *Z. Fu*, and *C. D. Klaassen*. Department of Pharmacology and Toxicology, Kansas University Medical Center, Kansas City, KS.

#359 **Poster Board Number 520**
EXACERBATION OF ACETAMINOPHEN-INDUCED HEPATOTOXICITY BY THE ANTHELMENTIC DRUG FENBENDAZOLE. *D. L. Laskin*[1], V. Mishin[1], *J. D. Laskin*[2], and *C. R. Gardner*[1]. [1]Rutgers University, Piscataway, NJ, and [2]University of Medicine and Dentistry of New Jersey, Robert Wood Johnson Medical School, Piscataway, NJ.

#360 **Poster Board Number 521**
AURANOFIN PROTECTS AGAINST COCAINE-INDUCED HEPATIC INJURY THROUGH INDUCTION OF HEME OXYGENASE-1. T. Ashino[1], J. Sugiuchi[1], J. Uehara[1], Y. Naito-Yamamoto[1], S. Kenmotsu[1], Y. Iwakura[2], S. Shioda[3], S. Numazawa[1], and *T. Yoshida*[1]. [1]Biochemical Toxicology, Showa University, Tokyo, Japan, [2]Molecular Pathogenesis, Institute of Medical Science, University of Tokyo, Tokyo, Japan, and [3]Anatomy, Showa University, Tokyo, Japan.

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#361 **Poster Board Number 522**
ROLE OF BMP/SMAD SIGNALING IN ACETAMINOPHEN-INDUCED DOWNREGULATION OF MOUSE LIVER HEPCIDIN EXPRESSION. R. P. van Swelm[1], C. M. Laarakkers[2], L. Blous[1], S. J. Ooms[1], R. Masereeuw[1], and *F. G. Russel*[1]. [1]Pharmacology and Toxicology, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands, and [2]Laboratory Medicine, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands.

#362 **Poster Board Number 523**
EFFECTS OF CARTHAMUS TINCTORIUS ETHANOL EXTRACT AND ISOLATED TERPINEOL ON STEATOGENIC HEPATOTOXICITY. Y. Choi[1], Y. Yoon[1], K. Lee[1], S. Lee[2], and *B. Lee*[1]. [1]College of Pharmacy, Seoul National University, Seoul, Republic of Korea, and [2]College of Pharmacy, Yeungnam University, Gyeongbuk, Republic of Korea.

#363 **Poster Board Number 524**
INCREASED SUSCEPTIBILITY TO DRUG-INDUCED TOXICITY IN NONALCOHOLIC STEATOHEPATITIS. *R. N. Hardwick*, *A. D. Lake*, *M. J. Canet*, *M. D. Merrell*, and *N. J. Cherrington*. Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

#364 **Poster Board Number 525**
L-SERINE ATTENUATES STEATOSIS BY SUPPRESSION OF HYPERHOMOCYSTEINEMIA. W. Sim[1], H. Choi[1], H. Yin[1], H. Kwak[2], S. Kim[2], and *B. Lee*[1]. [1]College of Pharmacy, Seoul National University, Seoul, Republic of Korea, and [2]College of Pharmacy, Chunnam National University, Daejeon, Republic of Korea.

#365 **Poster Board Number 526**
LYSOSOMAL DIVALENT METAL TRANSPORTER 1 (DMT-1)-MEDIATED IRON RELEASE CONTRIBUTES TO ISCHEMIA REPERFUSION INJURY IN RAT HEPATOCYTES. *X. Zhang*, J. Schwartz, and *J. J. Lemasters*. Center for Cell Death, Injury & Regeneration, Department of Pharmaceutical Sciences, Medical University of South Carolina, Charleston, SC.

#366 **Poster Board Number 527**
INTERSTRAIN DIFFERENCES IN OXIDATIVE STRESS-INDUCED BY A LIPOTROPE METHYL-DEFICIENT DIET IN MICE. *I. Koturbash*[1], S. Melnyk[2], B. Montgomery[1], S. Shymonyak[3], L. Collins[3], *I. Rusyn*[3], *F. A. Beland*[1], and I. P. Pogribny[1]. [1]Biochemical Toxicology, National Center for Toxicological Research, Jefferson, AR, [2]University of Arkansas for Medical Sciences, Little Rock, AR, and [3]University of North Carolina at Chapel Hill, Chapel Hill, NC.

#367 **Poster Board Number 528**
SULFORAPHANE PREVENTS LIVER INJURY CAUSED BY HIGH-FAT DIET AND OLANZAPINE. R. Schmidt[1,2], M. Tan[1,2], X. Ding[1,2], H. Zhong[1,2], and G. Arteel[1,2]. [1]Pharmacology & Toxicology, University of Louisville, Louisville, KY, and [2]Alcohol Research Center, University of Louisville, Louisville, KY. Sponsor: *C. States*.

Program Description (Continued)

Abstract #

#368 **Poster Board Number 529**
POLYCHLORINATED BIPHENYL 153 WORSENS NONALCOHOLIC FATTY LIVER DISEASE IN C57BL/6 MICE. B. Wahlang[1], *K. Falkner*[1], D. Conklin[1], *C. McClain*[1,2], and *M. Cave*[1,2]. [1]Department of Medicine/GI, University of Louisville, Louisville, KY, and [2]Louisville VAMC, Louisville, KY.

#369 **Poster Board Number 530**
INVESTIGATION OF DRUG-DRUG INTERACTIONS CAUSED BY HUMAN PREGNANE X RECEPTOR-MEDIATED INDUCTION OF CYTOCHROME P450 3A4 AND 2C SUBFAMILIES IN PXB-MICE. M. Kakuni[1], M. Hasegawa[2], H. Tahara[2], R. Inoue[1], J. Ushiki[2], and C. Tateno[1]. [1]PhoenixBio Co., Ltd., Higashi-Hiroshima, 739-0046, Japan, and [2]Kyowa Hakko Kirin Co., Ltd., Nagaizumi-cho, 411-8731, Japan. Sponsor: *T. Yokoi*.

#370 **Poster Board Number 531**
ISOFORM-SPECIFIC ALT MEASUREMENT CAN DISTINGUISH HEPATIC FROM EXTRA-HEPATIC INJURY IN HUMANS. B. Glinghammar, I. Rafter, I. Schuppe-Koistinen, and *I. Cotgreave*. AstraZeneca, Safety Assessment, Sodertalje, Sweden.

#371 **Poster Board Number 532**
HCV CORE PROTEIN EXPRESSION AND ACETAMINOPHEN-INDUCED LIVER INJURY. *A. Ramachandran*, M. Lebofsky, S. A. Weinman, and *H. Jaeschke*. Pharmacology, Toxicology &Therapeutics, University of Kansas Medical Center, Kansas City, KS.

#372 **Poster Board Number 533**
EFFECT OF AGE ON PLASMA ACETAMINOPHEN-PROTEIN ADDUCT CONCENTRATIONS IN MICE. S. F. Cook[1], H. R. Kim[1], A. Parker[1], L. Hathaway[1], G. J. Murray[1], L. D. McGill[2], *M. R. Franklin*[1], D. G. Wilkins[1], and D. E. Rollins[1]. [1]Pharmacology and Toxicology, University of Utah, Salt Lake City, UT, and [2]Associated Regional and University Pathologists, Inc., Salt Lake City, UT.

#373 **Poster Board Number 534**
L-FABP MEDIATES IMPAIRED LIPID UPTAKE AND TRAFFICKING IN A RODENT MODEL OF EARLY ALCOHOLIC LIVER DISEASE. *R. L. Smathers*[1], *J. J. Galligan*[1], K. N. Maclean[2], *C. T. Shearn*[1], K. S. Fritz[1], and *D. R. Petersen*[1]. [1]Skaggs School of Pharmacy and Pharmaceutical Sciences, University of Colorado Anschutz Medical Campus, Aurora, CO, and [2]Pediatrics, University of Colorado Anschutz Medical Campus, Aurora, CO.

#374 **Poster Board Number 535**
EVALUATION OF HEPATIC FLAVIN-CONTAINING MONOOXYGENASE 3 (FMO3) GENE REGULATION, PROTEIN EXPRESSION, AND FUNCTIONAL ACTIVITY IN RESPONSE TO ACETAMINOPHEN TOXICITY. *S. Rudraiah*, and *J. E. Manautou*. University of Connecticut, Storrs, CT.

Abstract #

#375 **Poster Board Number 536**
PROTECTION AGAINST ACETAMINOPHEN CYTOTOXICITY BY PPARα AND RXR AGONISTS: DETERMINING THE ROLE OF CHANGES IN VANIN-1 MRNA EXPRESSION. *D. W. Ferreira*[1], K. Flores-Saez[2], and *J. E. Manautou*[1]. [1]Department of Pharmaceutical Sciences, University of Connecticut, Storrs, CT, and [2]Department of Biology, University of Puerto Rico, Mayaguez, Puerto Rico.

#376 **Poster Board Number 537**
LYSOSOMAL IRON RELEASE PROMOTES HEMORRHAGE/RESUSCITATION-INDUCED LIVER INJURY. *A. Kholmukhamedov*[1], *X. Zhang*[1], *J. Schwartz*[1], and *J. J. Lemasters*[1,2]. [1]Pharmaceutical and Biomedical Sciences, Medical University of South Carolina, Charleston, SC, and [2]Biochemistry & Molecular Biology, Medical University of South Carolina, Charleston, SC.

Monday Morning, March 12
9:30 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Medical Devices

Chairperson(s): *Lori Moilanen, 3M Company, St. Paul, MN.*

Displayed: *9:30 AM–12:30 PM*

Author Attended: *9:30 AM–11:00 AM*

#377 **Poster Board Number 539**
CYTOTOXICITY STUDIES IN A549 CELLS CULTURED ON 2-METHACRYLOYLOXYETHYL PHOSPHORYLCHOLINE POLYMERS. A. Miyajima-Tabata, R. Kato, K. Sakai, E. Okada, and A. Matsuoka. Division of Medical Devices, National Institute of Health Sciences, Tokyo, Japan. Sponsor: *A. Hirose*.

#378 **Poster Board Number 540**
BIOCOMPATIBILITY EVALUATION OF A SILICONE-COATED SURGICAL NEEDLE COMPOSED OF A NOVEL TUNGSTEN-RHENIUM ALLOY. *K. George*[1], *T. Builee*[1], *T. A. Barbolt*[2], and *J. W. Oldham*[1]. [1]Preclinical Research, Ethicon, Inc., Somerville, NJ, and [2]T.A.B. Consulting, Alamogordo, NM.

#379 **Poster Board Number 541**
CHALLENGES IN CONDUCTING SAFETY ASSESSMENTS OF COLORANTS USED IN MEDICAL DEVICES. *F. K. Hsia*, and H. J. Beckord. Corporate Toxicology and Biocompatibility Services, Boston Scientific, Maple Grove, MN.

#380 **Poster Board Number 542**
APPLICATION OF A NEW *IN VITRO* SENSITIZATION ASSAY FOR THE EVALUATION OF MEDICAL DEVICE EXTRACTS. *J. M. McKim*[1], D. J. Keller[1], *J. R. Gorski*[2], and *L. H. Moilanen*[3]. [1]CeeTox, Kalamazoo, MI, [2]NAMSA, Northwood, OH, and [3]3M, St. Paul, MN.

Program Description (Continued)

Abstract #

#381 **Poster Board Number 543**
VALIDATION AND USE OF THE IPRECIO® MICRO-INFUSION PUMP ON GLP STUDIES. J. Perron, V. Frenette, and C. Copeman. Toxicology, Charles River Preclinical Services, Senneville, QC, Canada. Sponsor: *M. Vézina*.

#382 **Poster Board Number 544**
EVALUATION OF AN *IN VITRO* HUMAN SKIN IRRITATION TEST FOR USE WITH MEDICAL DEVICE EXTRACTS. *K. Coleman*[1], J. Casas[1], G. Lewerenz[1], E. Rankin[1], J. Willoughby[2], L. Blakeman[2], and *J. McKim*[2]. [1]Medtronic, Inc., Minneapolis, MN, and [2]CeeTox, Inc., Kalamazoo, MI.

#383 **Poster Board Number 545**
APPLICATION OF ISO 10993-18 IN THE BIOLOGICAL EVALUATION OF A COLORANT IN A PERMANENT TISSUE/ BONE-CONTACTING IMPLANT DEVICE. H. Beckord, L. Woodhull, and *A. Hood*. Boston Scientific Corporation, Natick, MA.

#384 **Poster Board Number 546**
RISK ASSESSMENT OF BISPHENOL A FROM BISGMA-BASED COMPOSITE DENTAL MATERIALS. J. K. Dahms[1], and *L. H. Moilanen*[2]. [1]3M ESPE Dental Products, 3M, St. Paul, MN, and [2]Medical Department, 3M, St. Paul, MN.

#385 **Poster Board Number 547**
MEDICAL SURVEILLANCE OPTIONS FOR PERSONS WITH ELEVATED COBALT-CHROMIUM LEVELS FROM HIP IMPLANTS. *M. Fedoruk*[1,2], *S. Hong*[2], L. Israel[1], and S. Hardy[1]. [1]University of California Irvine, Irvine, CA, and [2]Exponent, Irvine, CA.

#386 **Poster Board Number 548**
***IN SILICO* MUTAGENICITY PREDICTION FOR LEACHABLE COMPONENTS OF DENTAL DEVICES.** *B. D. Bagley*[1], P. A. Kulkarni[2], N. A. Kueshner[2], *R. P. Brown*[2], and *L. H. Moilanen*[1]. [1]Medical Department, 3M, St. Paul, MN, and [2]CDRH, US FDA, Silver Spring, MD.

#387 **Poster Board Number 549**
APPLICATION OF THE THRESHOLD OF TOXICOLOGICAL CONCERN APPROACH TO EVALUATION OF LEACHABLE COMPONENTS FROM POLYMERIC DENTAL DEVICES. *L. H. Moilanen*, and *B. D. Bagley*. Medical Department, 3M, St. Paul, MN.

Abstract #

Monday Morning, March 12
9:30 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Epidemiology: Assessments and Approaches

Chairperson(s): *Denis Sarigiannis, Aristotle University of Thessaloniki, Thessaloniki, Greece, and Alan Weinrich, US EPA, Cincinnati, OH.*

Displayed: *9:30 AM–12:30 PM*

Author Attended: *11:00 AM–12:30 PM*

#388 **Poster Board Number 551**
ASSOCIATION BETWEEN PAH EMISSION AND LUNG CANCER RATES AROUND THE WORLD. O. Motorykin[1], J. Molitor[2], and *S. Simonich*[1,3]. [1]Department of Chemistry, Oregon State University, Corvallis, OR, [2]College of Health and Human Sciences, Oregon State University, Corvallis, OR, and [3]Department of Environmental Molecular and Toxicology, Oregon State University, Corvallis, OR.

#389 **Poster Board Number 552**
INFLUENCE OF TRAFFIC-RELATED AIR POLLUTION ON EXHALED NITRIC OXIDE IN HEALTHY ADULTS: A SEASONAL FOLLOW-UP. S. De Prins[1,2], G. Koppen[1], B. Cox[3], V. Nelen[4], F. Fierens[5], K. Constandt[6], T. Nawrot[3], and G. Schoeters[1,2]. [1]Environmental Risk and Health Unit, Flemish Institute for Technological Research (VITO), Mol, Belgium, [2]Faculty of Pharmaceutical, Biomedical and Veterinary Sciences, Antwerp University, Antwerp, Belgium, [3]Centre for Environmental Sciences, Hasselt University, Diepenbeek, Belgium, [4]Environment and Health Unit, Provincial Institute of Hygiene, Antwerp, Belgium, [5]Belgian Interregional Environment Agency (IRCEL), Brussels, Belgium, and [6]Environment & Health Unit, Department of Environment Nature & Energy, Flemish Government, Brussels, Belgium. Sponsor: *P. Hoet*.

#390 **Poster Board Number 553**
CUMULATIVE RISK MODEL FOR PM AMD O3 IN AMBIENT AIR. *D. A. Sarigiannis*[1,2], A. Gotti[2], and S. P. Karakitsios[1]. [1]Chemical Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece, and [2]Chemical Process Engineering Research Institute, Centre for Research and Technology Hellas, Thermi, Greece.

#391 **Poster Board Number 554**
USING WORKER EPIDEMIOLOGICAL DATA TO ASSESS CANCER RISK FROM INHALATION OF 2-MERCAPTOBENZOTHIAZOLE. A. Weinrich, and J. Jinot. National Center for Environmental Assessment, US EPA, Cincinnati, OH. Sponsor: *D. Petersen*.

#392 **Poster Board Number 555**
ORGANOCHLORINES AND THYROID HORMONES IN CHILDREN. S. Koifman, C. Freire, R. J. Koifman, A. S. Rosa, and P. Sarcinelli. Epidemiology, National School of Public Health, Oswaldo Cruz Foundation (FIOCRUZ), Rio de Janeiro, RJ, Brazil. Sponsor: *E. Silbergeld*.

Program Description (Continued)

Abstract #

#393 **Poster Board Number 556**
NEUROBEHAVIORAL EXPOSURE-EFFECT GRADIENT IN SCHOOLCHILDREN CHRONICALLY EXPOSED TO PESTICIDES. F. Yoram[1], A. Ophir[1,2], E. Doitsch[1], *U. Wormser*[2], *M. Aschner*[3], and E. D. Richter[4]. [1]Neurology and Toxicology Service and Unit, Shaare Zedek Medical Center, Jerusalem, Israel, [2]Institute of Drug Research, School of Pharmacy, Hebrew University, Jerusalem, Israel, [3]Pediatrics, Vanderbilt University Medical Center, Nashville, TN, and [4]Department of Occupational and Environmental Medicine, Faculty of Medicine, Hebrew University, Jerusalem, Israel.

#394 **Poster Board Number 557**
PERFLUOROOCTANOATE, PERFLUOROOCTANESULFONATE, AND CHRONIC KIDNEY DISEASE: CLEARANCE COMES BEFORE CAUSATION. *J. L. Butenhoff*, *G. W. Olsen*, and L. R. Zobel. Medical Department, 3M Company, St. Paul, MN.

#395 **Poster Board Number 558**
A LONGITUDINAL OCCUPATIONAL ASSESSMENT OF THE POTENTIAL ASSOCIATION OF CHANGES BETWEEN SERUM CONCENTRATIONS OF PERFLUOROOCTANOATE AND PERFLUOROOCTANESULFONATE AND NONHIGH-DENISITY-LIPOPROTEIN CHOLESTEROL. *D. J. Ehresman*, *J. L. Butenhoff*, *S. Chang*, and *G. W. Olsen*. Medical Department, 3M Company, St. Paul, MN.

#396 **Poster Board Number 559**
NEGATIVE ASSOCIATION OF ENVIRONMENTAL EXPOSURE OF BLOOD LEAD AND BLOOD CADMIUM WITH DIABETES IN THE NHANES 1999–2006. F. Scinicariello[1], and K. A. Thayer[2]. [1]Division of Toxicology and Environmental Medicine, CDC ATSDR, Atlanta, GA, and [2]Office of Health Assessment and Translation, NIEHS/NTP, Morrisville, NC. Sponsor: *M. Mumtaz*.

#397 **Poster Board Number 560**
EXPOSURE-BASED ESTIMATION OF THE GLOBAL FOODBORNE BURDEN OF DISEASE FROM CADMIUM EXPOSURE. *Y. Zang*, *C. D. Carrington*, and *P. Bolger*. Center for Food Safety and Applied Nutrition, US FDA, College Park, MD.

#398 **Poster Board Number 561**
IS SSRI ANTIDEPRESSANT USE IN PREGNANCY PROTECTIVE FOR RISKY ALCOHOL CONSUMPTION? H. S. Feldman[1], K. L. Jones[1], and C. Chambers[1,2]. [1]Pediatrics, University of California San Diego, La Jolla, CA, and [2]Family and Preventative Medicine, University of California San Diego, La Jolla, CA. Sponsor: *S. Harris*.

#399 **Poster Board Number 562**
DRINKING WATER ARSENIC LEVELS PREDICT PLASMA LEVELS OF OXIDIZED LDL CHOLESTEROL (OXLDL) IN NAVAJO POPULATIONS EXPOSED TO URANIUM-CONTAMINATED MINING SITES. M. Harmon, *M. Campen*, C. Miller, C. Shuey, M. Cajero, B. Pacheco, E. Erdei, J. DeGroat, G. Stark, S. Ramone, S. Henio-Adeky, T. Nez, and *J. Lewis*. Pharmaceutical Sciences, University of New Mexico, Albuquerque, NM.

Abstract #

#400 **Poster Board Number 563**
INCREASED LEVEL OF URINARY 8-HYDROXYDEOXYGUANOSINE RELATED TO ALDH2 POLYMORPHISMS IN WORKERS OCCUPATIONALLY EXPOSED TO STYRENE. Z. Weng[1,5], D. Guan[2], X. Zhang[4], P. Zhao[3], Y. Zheng[4], and R. Wang[1]. [1]Japan National Institute of Occupational Safety and Health, Kawasaki, Japan, [2]Beijing Fengtai Health Inspection Institute, Beijing, China, [3]Beijing Guoji Zhongyi Hospital, Beijing, China, [4]4National Institute of Occupational Health and Poison Control, Beijing, China, and [5]Division of Biochemical Toxicology, National Center for Toxicological Research, Jefferson, AR. Sponsor: *M. Lan*.

#401 **Poster Board Number 564**
PULMONARY FUNCTION TESTING IN UTILITY WORKERS. S. C. Harbison, *G. T. Johnson*, *J. D. McCluskey*, P. Xu, J. White, S. Mohammed, J. Wolfson, and *R. D. Harbison*. Environmental and Occupational Health, University of South Florida-College of Public Health, Tampa, FL.

#402 **Poster Board Number 565**
ENVIRONMENTAL FACTORS ASSOCIATED WITH THE DEVELOPMENT OF BREAST AND CERVICAL CANCER IN WOMEN FROM NAYARIT, MEXICO. L. Ortega[1], *E. A. Rojas*[1], M. L. Robledo[1], B. Barrón[1], I. Girón[1], F. López[2], A. Carrillo[2], A. Rodríguez[2], A. Jauregui[3], and *I. M. Medina*[1]. [1]Secretaría de Investigación y Posgrado, Universidad Autónoma de Nayarit, Tepic, Nayarit, Mexico, [2]Centro Estatal de Cancerología de Nayarit, Secretaria de Salud, Tepic, Nayarit, Mexico, and [3]Hospital Civil Antonio González Guevara, Secretaria de Salud, Tepic, Nayarit, Mexico.

Monday Morning, March 12
9:30 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Cardiovascular Toxicity I

Chairperson(s): *Kim Henderson, Battelle Memorial Institute, Columbus, OH.*

Displayed: *9:30 AM–12:30 PM*

Author Attended: *9:30 AM–11:00 AM*

#403 **Poster Board Number 625**
HEART RATE VARIABILITY (HRV)-BASED ASSESSMENT OF AUTONOMIC FUNCTION DISTURBANCES USING A RODENT TELEMETRY MODEL. M. R. Metea[1], T. J. Vidmar[2], and *P. R. Atterson*[1]. [1]WIL Research Laboratories, Ashland, OH, and [2]BioSTAT Consultants, Portage, MI.

#404 **Poster Board Number 626**
STUDIES OF THE QT PROLONGATION RELATIONSHIP IN GUINEA PIG, RABBIT, AND BEAGLE DOG IN THE QTC ASSESSMENT. *R. Dai*, *C. Zhang*, S. Xie, Y. Tan, and J. Deng. Zhongshan PharmaSS Corporation and South China University of Technology, Zhongshan, Guangdong, China.

Program Description (Continued)

Abstract #

#405 **Poster Board Number 627**
QT CORRECTION METHODS: CAN WE FURTHER OPTIMIZE METHODS IN CYNOMOLGUS MONKEYS, BEAGLE DOGS AND GÖTTINGEN MINIPIGS? A. Stein[1], S. Authier[2,3], A. Ascah[2], M. Pouliot[2], *R. Forster*[2], and E. Troncy[3]. [1]Stein Consulting, LLC, San Diego, CA, [2]CiToxLAB, Laval, QC, Canada, and [3]Faculty of Veterinary Medicine, University of Montreal, St-Hyacinthe, QC, Canada.

#406 **Poster Board Number 628**
RELIABILITY OF QT MEASUREMENTS COLLECTED FROM ROUTINE 28-DAY REPEAT-DOSE TOXICITY STUDIES. R. Irwin, E. N. Luea, K. Willard, *B. S. Wahle*, and *D. S. Dandekar*. Xenometrics, LLC, Stilwell, KS.

#407 **Poster Board Number 629**
OPTIONS FOR BLOOD PRESSURE DETERMINATION IN EITHER DRF, MTD, OR REPEATED-DOSE TOXICITY STUDIES IN CYNOMOLGUS MONKEYS. B. Niggemann, and M. Niehoff. Covance Laboratories GmbH, Muenster, Germany. Sponsor: *F. Vogel*.

#408 **Poster Board Number 630**
JACKETED EXTERNAL TELEMETRY IN GUINEA PIGS: A SCREENING TOOL FOR EVALUATION OF CARDIO-RESPIRATORY FUNCTION IN EARLY DRUG DEVELOPMENT. A. El Amrani, J. Legrand, A. Bétat, S. Loriot, and *R. Forster*. CiToxLab France, Evreux, France.

#409 **Poster Board Number 631**
METHOD VALIDATION OF CARDIOVASCULAR AND RESPIRATORY SAFETY ASSESSMENT IN CYNOMOLGUS MONKEYS AND BEAGLE DOGS. Q. Cai, N. Niu, and L. Sun. Pharmaron Inc., Beijing, China. Sponsor: *R. Marler*.

#410 **Poster Board Number 632**
IMPACT OF A NOVEL DENOISING ALGORITHM ON ECG ANALYSIS. M. Miyamoto[1], and M. Brockway[2,3]. [1]Huntingdon Life Sciences, E. Millstone, NJ, [2]VivaQuant, St. Paul, MN, and [3]University of Minnesota, St. Paul, MN. Sponsor: *R. Hamlin*.

#411 **Poster Board Number 633**
STATISTICAL SIMULATION FOR SENSITIVITY OF THE JACKETED EXTERNAL TELEMETRY ASSAY FOR DETECTING CHANGES IN ELECTROCARDIOGRAM AND BLOOD PRESSURE. M. Marker, K. Soper, M. Santora, *V. Dhulipala*, and H. Miyazaki. Merck & Co., West Point, PA.

#412 **Poster Board Number 634**
ASSESSMENT OF BOVINE SERUM ALBUMIN ADDED TO MODIFIED KREBS HENSELIET BUFFER EFFECTS ON ECG, LEFT VENTRICULAR MECHANICS, AND CORONARY BLOOD FLOW IN THE GUINEA PIG ISOLATED HEART. R. Borders, *K. Henderson*, J. Ross, S. Armentrout, B. Wood, T. Vinci, and B. Roche. Battelle, Columbus, OH.

Abstract #

#413 **Poster Board Number 635**
THE TELL TALE HEART: WHAT CAN THE ISOLATED HEART TELL US ABOUT DRUG-INDUCED CARDIAC INJURY? *K. A. Henderson*[1], B. R. Borders[1], J. B. Ross[1], H. Theresa[3], J. Amir[4], E. Gonzalez[2], S. Armentrout[2], and R. Brian[2]. [1]Science and Technology, Battelle Memorial Institute, Columbus, OH, [2]Safety Pharmacology, Battelle Memorial Institute, Columbus, OH, [3]Battelle Eastern Science and Technology Center, Battelle Memorial Institute, Aberdeen, MD, and [4]Medicine, Ohio State University, Columbus, OH.

#414 **Poster Board Number 636**
REVERSE EXTRAPOLATION: USING PBPK MODELS TO DETERMINE CLINICALLY RELEVANT DOSES FOR LATENT CARDIOTOXICITY ASSESSMENT IN THE LANGENDORFF RAT-ISOLATED HEART MODEL. J. B. Ross, *K. A. Henderson*, B. R. Borders, *P. S. Hong*, and B. M. Roche. Battelle Memorial Institute, Columbus, OH.

#415 **Poster Board Number 637**
UNDERESTIMATION OF THE IMPACT OF THE SODIUM CHANNEL BLOCKADE IN THE EVALUATION OF THE PROARRHYTHMIC RISK IN TRADITIONAL S7B *IN VITRO* STUDIES. S. Goineau, L. Barrais, E. Gascoin, L. Hautefeuille, and *G. Froget*. Porsolt, Boulogne, France.

#416 **Poster Board Number 638**
PREDICTIVE ASSAYS FOR HIGH-THROUGHPUT ASSESSMENT OF CARDIAC TOXICITY AND DRUG SAFETY. E. F. Cromwell[1], O. Sirenko[1], C. Crittenden[1], B. Anson[2], J. Hesley[1], Y. Chen[1], C. Funes[1], and D. Yamane[1]. [1]Research, Molecular Devices, Sunnyvale, CA, and [2]Cellular Dynamics, Madison, WI. Sponsor: *I. Rusyn*.

#417 **Poster Board Number 639**
INFLUENCE OF TEMPERATURE ON SENSITIVITY OF THE HERG CHANNEL ASSAY. *G. Froget*, C. Legrand, M. Maujeul, and S. Goineau. Porsolt, Boulogne, France.

#418 **Poster Board Number 640**
HUMAN AND RAT RESPONSES TO DRUG-INDUCED CARDIAC INJURY USING A HEART SLICE MODEL. J. Herrmann[1], J. T. Heale[1], R. L. Fisher[2], and *A. Vickers*[1]. [1]Drug Safety Evaluation, Allergan, Inc., Irvine, CA, and [2]Vitron, Inc., Tucson, AZ.

#419 **Poster Board Number 641**
MULTIPLEX BIOMARKER APPROACH FOR DETERMINING DRUG-INDUCED VASCULAR INJURY (DIVI) IN RAT. L. Goretzki, J. Mistry, and W. Zheng. R&D, Immunoassay, EMD Millipore, San Diego, CA. Sponsor: *P. Hewitt*.

#420 **Poster Board Number 642**
CHARACTERIZATION AND UTILIZATION OF INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES IN IDENTIFYING NOVEL MECHANISMS OF CARDIOTOXICITY. *D. Puppala*[1], V. Bonato[1], *Y. Will*[1], B. Anson[2], *M. Pletcher*[1], and S. Engle[1]. [1]PGRD, Pfizer Inc., Groton, CT, and [2]Cellular Dynamics International, Madison, WI.

Program Description (Continued)

Abstract #

#421 **Poster Board Number 643**
MURINE-SPECIFIC VASCULAR TOXICITY OF A VITRONECTIN RECEPTOR ANTAGONIST: MECHANISTIC STUDIES. *D. A. Dalmas*[1,2], *M. S. Scicchitano*[2], and D. W. Morel[1]. [1]Department of Pharmaceutical Sciences, University of the Sciences in Philadelphia, Philadelphia, PA, and [2]Safety Assessment, GlaxoSmithKline, King of Prussia, PA.

#422 **Poster Board Number 644**
COENZYME Q10 RESCUES ENDOTHELIAL CELLS FROM NRTI-INDUCED MITOCHONDRIAL DAMAGE AND MITOPHAGY. V. Y. Hebert, S. Xue, and *T. Dugas*. Pharmacology, Toxicology, and Neuroscience, Louisiana State University Health Sciences Center in Shreveport, Shreveport, LA.

#423 **Poster Board Number 645**
TEMPOL AND TEMPOL-H PROTECT CARDIOMYOCYTES FROM NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITOR (NRTI)-INDUCED MITOCHONDRIAL TOXICITY. Y. Liu[1], P. Nguyen[1], A. Gibbons[1], J. B. Mitchell[2], and *M. C. Poirier*[1]. [1]Carcinogen-DNA Interactions Section, National Cancer Institute, Bethesda, MD, and [2]Tumor Biology Section, RBB, National Cancer Institute, Bethesda, MD.

#424 **Poster Board Number 646**
OVEREXPRESSION OF CAVEOLIN-1 PROMOTES ATHEROSCLEROSIS THROUGH INCREASED VASCULAR CELL ADHESION MOLECULE-1 EXPRESSION IN PRIMARY VASCULAR ENDOTHELIAL CELLS. M. C. Petriello[1], and *B. Hennig*[2,1]. [1]Toxicology, University of Kentucky, Lexington, KY, and [2]Nutritional Sciences, University of Kentucky, Lexington, KY.

#425 **Poster Board Number 647**
TYROSINE KINASE INHIBITOR, SUNITINIB, INDUCED CARDIAC HYPERTROPHIC GENES THROUGH MITOGEN-ACTIVATED PROTEIN KINASE-DEPENDENT PATHWAY IN H9C2 CELLS. H. A. Al-Suwayeh, S. A. Al-Bakheet, and H. M. Korashy. Department of Pharmacology & Toxicology, College of Pharmacy, King Saud University, Riyadh, Saudi Arabia. Sponsor: *A. El-Kadi*.

#426 **Poster Board Number 648**
SUNITINIB, TYROSINE KINASE INHIBITOR, INDUCES CYTOCHROME P450 1A1 GENE EXPRESSION IN RAT CARDIOMYOCYTE H9C2 CELLS: A POSSIBLE MECHANISM OF CARDIOTOXICITY. Z. H. Maayah, and H. M. Korashy. Pharmacology & Toxicology, College of Pharmacy, King Saud University, Riyadh, Saudi Arabia. Sponsor: *A. El-Kadi*.

#427 **Poster Board Number 649**
EFFECT OF ARSENIC AND ARSENIC METABOLITES ON LTCC AND BK_{CA} CHANNEL EXPRESSION AND ACTIVITIES IN VASCULAR SMOOTH MUSCLE. K. McPherson, R. Khalili, C. Pace, and J. E. Angermann. School of Community Health Sciences, University of Nevada, Reno, Reno, NV. Sponsor: *F. Matsumura*.

Abstract #

#428 **Poster Board Number 650**
SDF-1β PROTECTS PALMITATE-INDUCED FIBROTIC RESPONSE IN CARDIAC CELLS VIA ACTIVATION OF AMPK AND P38 MAPK-MEDIATED IL-6 EXCRETION. Y. Zhao[1,2], L. Dong[1], J. Dai[2], C. Liu[1], *Y. Tan*[2], *L. Cai*[2,1], and W. Li[1]. [1]Cancer Center, First Bethune Hospital of Jilin University, Changchun, Jilin Province, China, and [2]KCHRI at the Department of Pediatrics, University of Louisville, Louisville, KY.

#429 **Poster Board Number 651**
***IN VITRO* CHARACTERIZATION OF DRUG-INDUCED CARDIOTOXICITY.** Z. Lin, and *Y. Will*. Compound Safety Prediction, Pfizer Global Research & Development, Groton, CT.

#430 **Poster Board Number 652**
INVOLVEMENT OF THE ARYL HYDROCARBON RECEPTOR IN CARDIOGENESIS AND ENVIRONMENTAL CARDIOTOXICITY. C. Ko, and *A. Puga*. Environmental Health, University of Cincinnati, Cincinnati, OH.

Monday Morning, March 12
10:30 AM to 11:30 AM
Room 105

E

Exhibitor Hosted Session: Juvenile Preclinical Safety Evaluations of Biopharmaceuticals: Combining Data from Repeat Dose General and Pre/Postnatal Toxicology Studies

Presented by:
SNBL USA, Ltd.

To maximize data use and minimize additional animal experiments, preclinical/clinical data may be re-evaluated for pediatric testing proposals. The challenge is identifying relevant data from different studies. This presentation discusses how to determine which data are relevant to the experimental goals with focus on nonhuman primate (NHP) study data.

Monday Morning, March 12
10:30 AM to 11:30 AM
Room 101

E

Exhibitor Hosted Session: Regulated Laboratory Sciences for Toxicologists

Presented by:
Charles River

Successful GLP-compliant toxicology programs are reliant upon appropriate and well-timed communication. Toxicologists and Study Directors often work with scientists from multiple laboratory-based disciplines. This session is designed to provide a brief overview of Laboratory Sciences and focus on the unique regulatory and logistical requirements of each discipline.

Program Description (Continued)

Monday Morning, March 12
10:30 AM to 11:30 AM
Room 100

Exhibitor Hosted Session: Safeguarding Rodent Toxicology Study Results—Auditing Animal Biosecurity Programs

Presented by:
Harlan Laboratories, Inc.

Periodic review of an animal biosecurity program will help minimize the chance of a microbial pathogen outbreak and subsequent alteration of study results. After auditing our United States rodent production sites, lessons were learned about the biosecurity auditing process that can help other institutions review their own programs.

MONDAY AFTERNOON

Monday Afternoon, March 12
12:00 Noon to 1:20 PM
Marriott Marquis, Golden Gate Ballroom B
(Ticket Required)

In Vitro Toxicology Lecture and Luncheon for Students: Can *In Silico* and/or *In Vitro* Testing Be Used for Toxicity Assessment Instead of *In Vivo* Approaches?

Chairperson(s): *Lorrene Buckley, Education Committee Chair, Eli Lilly & Company, Indianapolis, IN.*

Lecturer: *Timothy J. Shafer, US EPA, Research Triangle Park, NC.*

Sponsor:
Colgate-Palmolive Company

Host:
Education Committee

The goal of the *In Vitro* Toxicology Lecture series is to feature important research using *in vitro* and alternative techniques to study basic mechanisms and to illustrate how these test methods benefit animal welfare by refining, reducing, and replacing animal use whenever it is feasible. Undergraduates, graduate students, postdoctoral scholars, and recipients of Colgate-Palmolive awards are among the guests at the *In Vitro* Toxicology Lecture and Luncheon. Students and postdoctoral scholars register via the Annual Meeting registration, and the $10 deposit will be returned upon entry to the event. Dr. Shafer will present an introduction to the topic, and then participants will discuss related questions and report responses. More information can be found on page 89.

Abstract #

Monday Afternoon, March 12
12:00 Noon to 1:00 PM
CC Room 300

Special Interest Group Presidents and Officers Meeting

Monday Afternoon, March 12
12:00 Noon to 1:30 PM
CC Room 250

Comparative and Veterinary Specialty Section Meeting/ Luncheon

Monday Afternoon, March 12
12:10 PM to 1:30 PM
Room 303

Informational Session: Global Health and Environmental Impacts of E-Waste Recycling

Chairperson(s): *Erica L. Dahl, Exponent, Alexandria, VA, and Bruce Fowler, ICF International, Fairfax, VA.*

Sponsor:
Disease Prevention Task Force

Endorsed by:
Ethical, Legal, and Social Issues Specialty Section
Global Strategy Task Force

Communicating electronically is considered inherently green because it reduces paper waste and its associated transit. Rapid innovation has produced a constantly growing inventory of outdated electronic equipment that is eventually disposed of as electronic waste, or e-waste. Concerns about contamination from e-waste have led to bans from local landfills and the development of a new e-waste recycling industry to reclaim valuable metals and ideally manage the release of hazardous materials. The current production of e-waste overwhelms local recycling sites and e-waste is sometimes exported along with donations of usable electronics to developing countries, where workers often lack the technology and training to dispose safely of e-waste. Informal recycling releases heavy metals and persistent organic pollutants into the soil, water, and air. Global efforts to reduce damage caused by e-waste include the Basel Treaty, which aims to reduce exports of e-waste to developing countries. Efforts to quantify the hazardous components of e-waste are underway in California, where high levels of brominated flame retardants have been found in residents and wildlife. Although the toxicology of many e-waste components is well characterized, some newer materials, such as gallium and indium arsenides found in newer semiconductors, are less well understood. Their incorporation into nanomaterials may increase bioavailability in unanticipated ways. Developing children and fetuses may be particularly vulnerable to toxins found in e-waste, and early epidemiological studies near informal e-waste recycling sites indicate potential developmental neurotoxicity. Understanding the hazards of e-waste, the impacts of its disposal, and the dangers of informal or careless recycling will help reduce or prevent disease outcomes associated with exposure to e-waste components.

#431 12:10 **GLOBAL HEALTH AND ENVIRONMENTAL IMPACTS OF E-WASTE RECYCLING.** *E. Dahl*[1], *S. Areola*[4], M. Petreas[2], *B. Fowler*[5], and A. Chen[3]. [1]Exponent, Alexandria, VA, [2]California Department of Toxic Substances Control, Berkeley, CA, [3]University of Cincinnati College of Medicine, Cincinnati, OH, [4]Nashville Metro Public Health Department, Nashville, TN, and [5]ICF International, Fairfax, VA.

MONDAY

Poster Sessions
Regional Interest Session
Roundtable Sessions
Symposium Sessions
Thematic Sessions
Workshop Sessions

Program Description (Continued)

Abstract #

12:10 **GLOBAL HEALTH AND ENVIRONMENTAL IMPACTS OF E-WASTE RECYCLING.** Erica L. Dahl

12:15 **THE SCOPE OF THE PROBLEM—INTERNATIONAL REGULATION AND THE BASEL TREATY.** Oluwasanmi O. Areola

12:30 **REGULATED AND UNREGULATED CONTAMINANTS IN CALIFORNIA WASTE STREAMS.** Myrto Petreas

12:45 **MECHANISMS OF III–IV SEMICONCUCTOR TOXICITY—PROSPECTS FOR THE FUTURE OF E-WASTE DISEASE PREVENTION.** Bruce Fowler

1:00 **E-WASTE RECYCLING IN DEVELOPING COUNTRIES: CONCERNS OF DEVELOPMENTAL TOXICITY.** Aimin Chen

1:15 **Q&A.** Panel Discussion

Monday Afternoon, March 12
12:10 PM to 1:30 PM
Room 305

IS

Informational Session: NIEHS Centers for Nanotechnology Health Implications Research: Building the Scientific Foundation for Evaluating Public Health Impacts of Engineered Nanomaterials

Chairperson(s): *Srikanth Nadadur, NIEHS, Research Triangle Park, NC, and Richard Woychik, NIEHS, Research Triangle Park, NC.*

Sponsor:
Nanotoxicology Specialty Section

Endorsed by:
Cardiovascular Toxicology Specialty Section
Inhalation and Respiratory Specialty Section

The NIEHS established the NIEHS Centers for Nanotechnology Health Implications Research (NCNHIR) consortium to gain a comprehensive understanding of how physical and chemical characteristics of engineered nanomaterials (ENMs) influence their molecular interactions with biological matrices and elicit biological responses. This consortium includes eight centers funded in 2010 through a multi-project cooperative agreement (U19) and research grant (UO1) mechanisms, along with additional investigators supported by Nano-EHS research program at NIEHS. Together, the consortium and individual investigators are exploring a library of engineered nanomaterials selected by NCNHIR with an overarching research focus that integrates physical and chemical characteristics of ENMs with biological effects. The research projects at these centers are investigating how the physical and chemical characteristics of ENMs dictate biological interactions at the molecular and cellular level. This knowledge can be translated to predict biological responses *in vivo* such as absorption, distribution, metabolism, and elimination (ADME) as well as physiological and pathobiological events in target and secondary organs, using appropriate routes of exposure and dose metrics. This information can be used to develop and apply predictive models in hazard characterization and assessment due to accidental or incidental exposure to ENMs. This session will highlight some of the recent findings and efforts of the consortium and provide scientific leads for a better understanding of the potential adverse health effects associated with ENM exposure.

Abstract #

#432 12:10 **NIEHS CENTERS FOR NANOTECHNOLOGY HEALTH IMPLICATIONS RESEARCH: BUILDING SCIENTIFIC FOUNDATION FOR EVALUATING PUBLIC HEALTH IMPACTS OF ENGINEERED NANOMATERIALS.** *J. G. Teeguarden*[6], *M. Philbert*[5], *S. S. Nadadur*[1], R. Woychik[1], *A. Nel*[2], *T. J. Kavanagh*[3], and *T. R. Fennell*[4]. [1]Extramural Research & Training, NIEHS, Research Triangle Park, NC, [2]Medicine, University of California Los Angeles, Los Angeles, CA, [3]Environmental and Occupational Health Sciences, University of Washington, Seattle, WA, [4]Pharmacokinetics, RTI International, Research Triangle Park, NC, [5]Environmental Health Sciences, University of Michigan, Ann Arbor, MI, and [6]Biological Modeling & Monitoring, Pacific North West National Laboratory, Richland, WA.

12:10 **INTRODUCTION.** Richard Woychik

12:13 **NIEHS CENTERS FOR NANOTECHNOLOGY HEALTH IMPLICATIONS RESEARCH.** Srikanth Nadadur

12:25 **HIGH-CONTENT AND HIGH-THROUGHPUT APPROACHES FOR ENM HAZARD RANKING AND BUILDING PREDICTIVE MODELS FOR INHALATION TOXICOLOGY.** Andre Nel

12:37 **USING SYSTEMS GENETICS TO ELUCIDATE QUANTUM DOT NANOPARTICLE TOXICITY.** Terrance J. Kavanagh

12:49 **INFLUENCE OF LIFE STAGE AND ASSOCIATED PHYSIOLOGY ON CARBON ENM KINETICS AND EFFECTS.** Timothy Fennell

1:01 **MODULATION OF ENM INTERACTIONS: CONTRIBUTIONS OF GUT MICRO FLORA.** Martin A. Philbert

1:13 **PREDICTIVE MODELING EFFORTS FOR ENMS TOXICITY ASSESSMENT.** Justin G. Teeguarden

1:25 **Q&A.** Panel Discussion

Monday Afternoon, March 12
12:30 PM to 1:20 PM
Room 304

FS

Merit Award Lecture: Reprogramming the Liver

Lecturer: *Curtis D. Klaassen, University of Kansas Medical Center, Kansas City, KS.*

Program Description (Continued)

Abstract #

Monday Afternoon, March 12
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Biological Modeling: Predictive PBPK Dosimetry Structures and Pharmacokinetic Data

Chairperson(s): *Claude Emond, University of Montreal, Montreal, QC, Canada, and Miyoung Yoon, The Hamner Institutes for Health Sciences, Research Triangle Park, NC.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *1:00 PM–2:45 PM*

#433 **Poster Board Number 101**
PHYSIOLOGICALLY-BASED PHARMACOKINETIC MODEL FOR MICE, RATS, AND HUMANS ORALLY-EXPOSED TO CHROMIUM. C. R. Kirman[1], *S. M. Hays*[1], *L. L. Aylward*[1], *M. Suh*[2], and *D. Proctor*[2]. [1]Summit Toxicology LLP, Orange, OH, and [2]ToxStrategies, Rancho Santa Margarita, CA.

#434 **Poster Board Number 102**
GASTRIC REDUCTION OF CR(VI) IN MICE, RATS AND HUMANS. *S. M. Hays*[1], C. Kirman[1], *L. Aylward*[1], M. Suh[2], and *D. Proctor*[2]. [1]Summit Toxicology, Lyons, CO, and [2]ToxStrategies, Rancho Santa Margarita, CA.

#435 **Poster Board Number 103**
PHYSIOLOGICALLY-BASED PHARMACOKINETIC MODELING OF POLYETHYLENE GLYCOL-COATED POLYACRYLAMIDE NANOPARTICLE IN RATS. D. Li[1], *C. Emond*[2,3], *G. Johanson*[4], and O. Jolliet[1]. [1]Environmental Health Science, University of Michigan, Ann Arbor, MI, [2]Environmental and Occupational Health, University of Montreal, Montreal, QC, Canada, [3]BioSimulation Consulting Inc., Newark, DE, and [4]Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden.

#436 **Poster Board Number 104**
ASSESSING THE RELATIVE POTENCY OF REACTIVE ALDEHYDES IN CIGARETTE SMOKE USING TRANSIENT CFD/PBPK MODELS OF THE RESPIRATORY SYSTEM. *R. A. Corley*, S. Kabilan, A. P. Kuprat, J. E. Carson, R. Jacob, K. R. Minard, *J. G. Teeguarden*, D. R. Einstein, and *C. Timchalk*. Pacific Northwest National Laboratory, Richland, WA.

#437 **Poster Board Number 105**
EXPOSURE VERSUS INTERNAL DOSE: RESPIRATORY TRACT DEPOSITION MODELING OF INHALED ASBESTOS FIBERS IN RATS AND HUMANS. *B. Asgharian*[1], O. T. Price[1], *S. H. Gavett*[2], and *A. M. Jarabek*[2]. [1]ARA, Raleigh, NC, and [2]US EPA, Research Triangle Park, NC.

#438 **Poster Board Number 106**
COMPUTATIONAL COMPARISON OF ASBESTOS FIBERS: DOSIMETRY MODEL SIMULATIONS TO CHARACTERIZE VARIABILITY AND POTENCY. *A. M. Jarabek*[1], O. T. Price[2], *S. H. Gavett*[1], and *B. Asgharian*[2]. [1]US EPA, Research Triangle Park, NC, and [2]Applied Research Associates, Inc., Raleigh, NC.

Abstract #

#439 **Poster Board Number 107**
A BBDR-HPT AXIS MODEL FOR PREGNANT WOMAN AND FETUS: EVALUATION OF IODIDE DEFICIENCY, PERCHLORATE EXPOSURE AND THEIR INTERACTIONS. A. Lumen[1], *D. R. Mattie*[2], and *J. W. Fisher*[1]. [1]FDA/NCTR, Jefferson, AR, and [2]AFRL/711 HPW/RHPBA, Wright-Patterson AFB, Dayton, OH.

#440 **Poster Board Number 108**
AN ASSESSMENT OF DIOXIN EXPOSURE ACROSS MULTIPLE GESTATIONAL AND LACTATIONAL STAGES USING A PBPK MODEL AND NEW DATA POINTS FROM SEVESO. *C. Emond*[1], *M. DeVito*[2], M. Warner[3], B. Eskenazi[3], P. Mocarelli[4], and *L. S. Birnbaum*[5]. [1]BioSimulation Consulting Inc., Newark, DE, [2]NIEHS, NTP, Research Triangle Park, NC, [3]School of Public Health, University of California Berkeley, Berkeley, CA, [4]Department of Laboratory Medicine, University of Milano-Bicocca, School of Medicine, Milano, Desio, Italy, and [5]National Cancer Institute and NIEHS, Research Triangle Park, NC.

#441 **Poster Board Number 109**
PHYSIOLOGICALLY-BASED PHARMACOKINETIC (PBPK) MODELING TO EXPLORE POTENTIAL METABOLIC PATHWAYS OF BROMOCHLOROMETHANE IN RATS. *M. V. Evans*[1], W. S. Cuello[2], T. A. Janes[2], J. M. Jessee[2], M. A. Venecek[2], M. E. Sawyer[3], and C. R. Eklund[1]. [1]Pharmacokinetics Branch, US EPA, ORD, NHEERL, ISTD, Research Triangle Park, NC, [2]Math Department, Research Experience for Undergraduates (2011), North Carolina State University, Raleigh, NC, and [3]Math Department, North Carolina State University, Raleigh, NC.

#442 **Poster Board Number 110**
WHEN TO SAMPLE AND HOW TO INTERPRET BLOOD LEVELS IN THE OCCUPATIONAL SETTING: THE EXAMPLE OF STYRENE. *M. Verner*[1], R. McDougall[2], and *G. Johanson*[1]. [1]Institute of Environmental Medicine, Karolinska Institute, Stockholm, Sweden, and [2]Ontario Institute of Technology, Oshawa, ON, Canada.

#443 **Poster Board Number 111**
ABSOLUTE AND RELATIVE ORGAN WEIGHT DISTRIBUTIONS FOR FISCHER 344 RATS. *D. J. Marino*. Conestoga-Rovers & Associates, Rochester, NY.

#444 **Poster Board Number 112**
VIRTUAL LIVER: AN *IN SILICO* FRAMEWORK FOR ANALYZING CHEMICAL-INDUCED HEPATOTOXICITY. *I. Shah*[1], J. Jack[1], *J. Wambaugh*[1], *W. Setzer*[1], *C. Corton*[2], and *T. Knudsen*[1]. [1]National Center for Computational Toxicology, US EPA, Durham, NC, and [2]National Health and Environmental Effects Lab, US EPA, Durham, NC.

#445 **Poster Board Number 113**
ROLE OF THE ASIALOGLYCOPROTEIN RECEPTOR IN EXTRAPOLATING THE SYSTEMIC CLEARANCE OF ENB-0040 ACROSS SPECIES. P. Poulin[1], T. Tolomeo[2], I. Lemire[3], P. Leonard[3], J. Marier[2], and *M. Beliveau*[2]. [1]Consultant, Quebec, Canada, [2]Consulting Services, Pharsight Corporation, Montreal, QC, Canada, and [3]Enobia Pharma, Montreal, QC, Canada.

Program Description (Continued)

Abstract #

#446 **Poster Board Number 114**
US EPA BIOFUELS RESEARCH: PROGRESS ON PBPK MODEL DEVELOPMENT FOR ETHANOL AND GASOLINE IN RATS. *S. A. Martin*[1], W. M. Oshiro[1], P. A. Evansky[2], A. Ledbetter[2], Q. Krantz[2], J. Ford[3], *H. El-Masri*[4], *W. R. LeFew*[4], L. L. Degn[1], T. E. Beasley[1], D. MacMillan[3], *D. W. Herr*[1], *W. K. Boyes*[1], *P. J. Bushnell*[1], *K. Choi*[5], *H. J. Clewell*[5], *J. L. Campbell*[5], and *E. D. McLanahan*[6]. [1]TAD, Research Triangle Park, NC, [2]EPHD, Research Triangle Park, NC, [3]RCU, Research Triangle Park, NC, [4]ISTD, NHEERL, ORD, US EPA, Research Triangle Park, NC, [5]The Hamner Institutes, Research Triangle Park, NC, and [6]NCEA, ORD, US EPA, Research Triangle Park, NC.

#447 **Poster Board Number 115**
QUANTIFICATION, OPTIMIZATION, AND VALIDATION OF CORTISOL LEVELS AS A MEASURE OF PRENATAL STRESS. M. Smith[1], W. C. Griffith[1], S. Beresford[2], B. Thompson[3], M. Vredevoodg[1], E. Vigoren[1], and *E. Faustman*[1]. [1]Environmental and Occupational Health Sciences, University of Washington, Seattle, WA, [2]Epidemiology, University of Washington, Seattle, WA, and [3]Fred Hutchinson Cancer Research Center, Seattle, WA.

#448 **Poster Board Number 116**
DEVELOPMENT OF A PBPK MODEL FOR C60 FULLERENE DISPOSITION DURING GESTATION AND LACTATION IN THE RAT. *M. Yoon*[1], *Y. Yang*[1], *S. J. Sumner*[2], R. W. Snyder[2], J. Pitzer[3], *J. M. Brown*[3], *T. R. Fennell*[2], and *H. J. Clewell*[1]. [1]The Hamner Institutes for Health Sciences, Research Triangle Park, NC, [2]RTI International, Research Triangle Park, NC, and [3]East Carolina University, Greenville, NC.

#449 **Poster Board Number 117**
PHARMACOKINETICS OF DIBENZO(DEF,P) CHRYSENE IN PREGNANT AND NONPREGNANT MICE. *S. R. Crowell*[1], J. Soelberg[1], M. Graham[1], A. Hjerpe[1], A. K. Sharma[2], S. Amin[2], *D. E. Williams*[3], and *R. A. Corley*[1]. [1]Biological Monitoring & Modeling, Pacific Northwest National Laboratory, Richland, WA, [2]Penn State University, Hershey, PA, and [3]Oregon State University, Corvallis, OR.

#450 **Poster Board Number 118**
USE OF PBPK MODELS TO EVALUATE ASSOCIATIONS IN EPIDEMIOLOGIC STUDIES OF REPRODUCTIVE OUTCOMES WITH PFOA AND PFOS CONCENTRATIONS. *A. E. Loccisano*[1], M. P. Longnecker[2], *J. L. Campbell*[1], *J. L. Butenhoff*[3], *M. E. Andersen*[1], and *H. J. Clewell*[1]. [1]The Hamner Institutes for Health Sciences, Research Triangle Park, NC, [2]National Institute of Environmental Health Sciences, NIH, Research Triangle Park, NC, and [3]3M Medical Department, Corporate Toxicology, St. Paul, MN.

Abstract #

Monday Afternoon, March 12
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Pharmaceuticals

Chairperson(s): *Aron Stein, Stein Consulting, LLC, San Diego, CA.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *2:45 PM–4:30 PM*

#451 **Poster Board Number 121**
INVESTIGATION OF THE HEPATIC EFFECTS OF THE BENZOFURAN CORE MOIETY. *M. J. Liguori*, *J. M. Maher*, R. Wagner, *A. C. Ditewig*, J. Lai-Zhang, W. Buck, and E. A. Blomme. Cellular & Molecular Toxicology, Abbott Laboratories, Abbott Park, IL.

#452 **Poster Board Number 122**
TENOFOVIR DISOPROXIL FUMARATE: TOXICITY, TOXICOKINETICS AND GENE EXPRESSION ANALYSIS AFTER 13 WEEKS OF ORAL ADMINISTRATION IN MICE. *H. H. Ng*, *L. Rausch*, D. I. Bunin, A. Wang, S. Brill, J. Gow, and *J. C. Mirsalis*. BioSciences, SRI International, Menlo Park, CA.

#453 **Poster Board Number 123**
REDUCED ACETAMINOPHEN-INDUCED INJURY IN LPR MICE IS DEPENDENT ON INCREASED GLUTATHIONE SYNTHESIS AND ENHANCED DETOXIFICATION OF OXIDANT STRESS. *C. D. Williams*, *M. R. McGill*, H. Yan, and *H. Jaeschke*. KUMC, Kansas City, KS.

#454 **Poster Board Number 124**
TOLERANCE OF ROBENACOXIB INJECTABLE AND TABLETS IN 4 TO 5-MONTH OLD KITTENS. *K. VanLare*[1], *B. Marable*[1], and E. Reagan[2]. [1]Novartis Animal Health US, Inc., Greensboro, NC, and [2]Liberty Research, Inc., Waverly, NY.

#455 **Poster Board Number 125**
ACETAMINOPHEN METABOLITES MODULATE CENTRAL SEROTONIN TRANSMISSION AND SOCIAL BEHAVIOR VIA CANNABINOID RECEPTORS. C. Smolik[1], K. Treat[2], T. Gu[2], J. G. Hensler[2], A. Seillier[2], A. Giuffrida[2], M. DeSilva[1], S. T. Schultz[2], and *G. G. Gould*[2]. [1]University of Texas San Antonio, San Antonio, TX, and [2]University of Texas Health Science Center at San Antonio, San Antonio, TX.

#456 **Poster Board Number 126**
STUDY OF PHARMACOKINETICS AND TISSUE DISTRIBUTION ON A NEW POTASSIUM CHANNEL OPENER QO58 IN RATS. Q. Jia[1], C. Liu[1,2], and J. Qi[1]. [1]Department of Pharmacology, Hebei Medical University, Shijiazhuang, China, and [2]Department of Pharmacy, Xingtai Medical School, Xingtai, China. Sponsor: *M. Liao*.

Program Description (Continued)

Abstract #

#457 **Poster Board Number 127**
GDK-100017, A NOVEL SMALL MOLECULE INHIBITOR OF WNT/β-CATENIN SIGNAL PATHWAY INDUCES CELL CYCLE ARREST IN NONSMALL LUNG CANCER CELL LINES BUT NOT NORMAL LUNG CELLS. S. Lee[1], Y. Gong[2], and M. Dong[1]. [1]School Lifesciences and Biotechnology, Korea University, Seoul, Republic of Korea, and [2]Department of Chemistry, Dongguk University, Seoul, Republic of Korea. Sponsor: *B. Lee*.

#458 **Poster Board Number 128**
ORALLY-DOSED POLYETHYLENE GLYCOL 400 INDUCES GASTRIC MUCOSAL CHANGES IN RATS. T. Aoshima, Y. Ueda, M. Tsuboi, Y. Ota, M. Makita, M. Nakajima, I. Narama, and M. Hayashi. Biosafety Research Center, Foods, Drugs and Pesticides (BSRC), Iwata, Japan. Sponsor: *M. Naya*.

#459 **Poster Board Number 129**
IMPLEMENTATION OF SCREENING AND MECHANISTIC ASSAYS FOR THE DETECTION OF MITOCHONDRIAL TOXICITY VIA INHIBITION OF THE ELECTRON TRANSPORT CHAIN. H. J. Garside, M. P. Burnham, D. Jones, E. Low, *J. Valentin*, and J. Bowes. Safety Pharmacology, AstraZeneca, Macclesfield, Cheshire, United Kingdom.

#460 **Poster Board Number 130**
DEVELOPMENT AND IMPLEMENTATION OF T-CELL RESPONSE ASSAYS IN CYNOMOLGUS MONKEYS. *L. Dong*[1], N. Ecklof[1], J. Penraat[1], C. DeMaio[1], *K. Hershman*[1], L. Dill Morton[2], and *K. Henson*[1]. [1]Preclinical Safety, Novartis Institutes for Biomedical Research, East Hanover, NJ, and [2]Preclinical Safety, Novartis Institutes for Biomedical Research, Cambridge, MA.

#461 **Poster Board Number 131**
MODULATION OF PROLACTIN IN RAT FOLLOWING TREATMENT WITH MOLINDONE. *S. Goel*, P. Baroldi, and *G. Krishna*. Clinical, Supernus Pharmaceuticals, Inc., Rockville, MD.

#462 **Poster Board Number 132**
MECHANISTIC INVESTIGATION OF LEFLUNOMIDE AND TERIFLUNOMIDE HEPATOTOXICITY—POTENTIAL INVOLVEMENT OF MITOCHONDRIA. E. M. Poulton, T. Ackerson, J. Dwyer, T. Tang, L. Wang, *L. Davenport*, and *Z. Jayyosi*. sanofi aventis, Bridgewater, NJ.

#463 **Poster Board Number 133**
PHARMACOKINETIC COMPARISON OF A NOVEL ENGINEERED PARTICLE FORMULATION OF INSULIN WITH EXUBERA. P. Kuehl[1], *M. Reed*[1], D. Dobry[2], D. Vodak[2], D. Friesen[2], D. Lyon[2], A. Cherington[3], and D. Edgerton[3]. [1]Lovelace, Albuqueruque, NM, [2]Vanderbilt, Nashville, TN, and [3]BRI, Bend, OR.

#464 **Poster Board Number 134**
9-MONTH STUDY OF A LATANOPROST-CONTAINING SUBCONJUNCTIVAL DEVICE IN DUTCH-BELTED RABBITS. *B. Jessen*[1], H. Kaur[2], P. Miller[3], R. Leedle[2], and M. Evans[1]. [1]Drug safety, Pfizer, San Diego, CA, [2]Covance, Madison, WI, and [3]CORL, Madison, WI.

Abstract #

#465 **Poster Board Number 135**
LACK OF NEPHROTOXICITY AND MYELOSUPPRESSION FOLLOWING CMX001 ADMINISTRATION IN HUMANS, RODENTS, AND MONKEYS. *L. C. Trost*, *R. S. Verhoeven*, A. T. Robertson, H. Mommeja-Marin, G. R. Painter, and W. Painter. Chimerix Inc., Durham, NC.

#466 **Poster Board Number 136**
A SPECTROPHOTOMETRIC ASSAY TO AID IN PREVENTING DIETHYLENE GLYCOL CONTAMINATION OF PHARMACEUTICALS. M. L. Arwood, and *M. A. Vance*. Pharmaceutical Sciences, Butler University College of Pharmacy and Health Sciences, Indianapolis, IN.

#467 **Poster Board Number 137**
EFFECTS OF PAN-FGFR INHIBITORS ON *IN VITRO* MODELS OF TISSUE MINERALIZATION PATHWAYS. J. D. Jamieson, A. Vitsky, E. R. Blasi, *B. A. Jessen*, and G. M. Yanochko. DSRD, Investigative Toxicology, Pfizer, Inc., San Diego, CA.

#468 **Poster Board Number 138**
A PRECLINICAL MODEL FOR MEK INHIBITOR-INDUCED RETINOPATHY. *S. Spence*[1], C. Bigelow[2], *K. Hershman*[3], *J. Marlowe*[4], *L. Mc Lean*[5], S. Voytek[4], *J. Moggs*[6], and P. End[7]. [1]Preclinical Safety Assessment, Novartis Institutes of Biomedical Research, Cambridge, MA, [2]Ophthamology, Novartis Institutes of Biomedical Research, Cambridge, MA, [3]Toxicology, Novartis Pharmaceuticals, East Hanover, NJ, [4]Investigative Toxicology, Novartis Institutes of Biomedical Research, Cambridge, MA, [5]Investigative Toxicology, Novartis Pharmaceuticals, East Hanover, NJ, [6]Investigative Toxicology, Novartis Pharmaceuticals, Basel, Switzerland, and [7]Drug Metabolism, Novartis Pharmaceuticals, Basel, Switzerland.

Monday Afternoon, March 12
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Developmental Basis of Adult Disease

Chairperson(s): *Robert Gogal, University of Georgia, Athens, GA.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *1:00 PM–2:45 PM*

#469 **Poster Board Number 141**
***IN UTERO* EXPOSURE TO SECOND-HAND SMOKE MODULATES PHYSIOLOGICAL AND TRANSCRIPTOME RESPONSES IN ADULT MOUSE LUNGS.** *R. Xiao*[1], Z. Perveen[1], D. Paulsen[2], *R. Rouse*[3], and *A. Penn*[1]. [1]CBS, Louisiana State University School of Veterinary Medicine, Baton Rouge, LA, [2]PBS, Louisiana State University School of Veterinary Medicine, Baton Rouge, LA, and [3]US FDA, Silver Spring, MD.

#470 **Poster Board Number 142**
EARLY LIFE INHALATION OF AMBIENT PARTICLES AND OZONE MIXTURES SENSITIZES THE LUNG TO LATER LIFE CHALLENGES. *C. J. Johnston*[1,2], R. Gelein[2], *D. A. Cory-Slechta*[2], *J. N. Finkelstein*[1,2], and *G. Oberdorster*[2]. [1]Pediatrics, University of Rochester, Rochester, NY, and [2]Environmental Medicine, University of Rochester, Rochester, NY.

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Program Description (Continued)

Abstract #

#471 **Poster Board Number 143**
LONG-TERM EFFECTS OF PRENATAL ATRAZINE EXPOSURE ON PHYSIOLOGY, BODY COMPOSITION, AND STRESS REACTIVITY IN RATS. C. E. Grace[1], C. Aydin[2], A. F. Johnstone[1], *C. J. Gordon*[1], and *J. M. Rogers*[1]. [1]US EPA, Toxicity Assessment Division, Research Triangle Park, NC, and [2]Department of Physiology, University of Uludag, Bursa, Turkey.

#472 **Poster Board Number 144**
HUMAN FETAL TESTIS XENOGRAFTS ARE NOT SENSITIVE TO PHTHALATE-INDUCED ENDOCRINE DISRUPTION. *N. Heger*[1], S. J. Hall[1], M. A. Sandrof[1], E. V. McDonnell[1], E. N. McDowell[3], K. A. Martin[3], J. B. Hensley[2], *K. W. Gaido*[4], *K. J. Johnson*[3], and *K. Boekelheide*[1]. [1]Pathology and Laboratory Medicine, Brown University, Providence, RI, [2]The Hamner Institutes for Health Sciences, Research Triangle Park, NC, [3]AI duPont Hospital for Children, Wilmington, DE, and [4]US FDA, Rockville, MD.

#473 **Poster Board Number 145**
THE EFFECTS OF ENDOCRINE DISRUPTION ON THE DEVELOPING HUMAN FETAL PROSTATE. *C. Saffarini*, S. J. Hall, and *K. Boekelheide*. Pathology and Laboratory Medicine, Brown University, Providence, RI.

#474 **Poster Board Number 146**
GLUTAMATE CYSTEINE LIGASE MODIFIER SUBUNIT (*GCLM*) NULL MALE MICE ARE MORE SENSITIVE TO THE REPRODUCTIVE TOXICITY OF PRENATAL BENZO(A) PYRENE. R. Patel[1], L. Ortiz[1], B. Nakamura[1], *Y. Hoang*[1], M. Cortes[1], *I. Mohar*[2], L. McConnachie[2], *T. Kavanagh*[2], and *U. Luderer*[1]. [1]Medicine, University of California Irvine, Irvine, CA, and [2]Environmental and Occupational Health Sciences, University of Washington, Seattle, WA.

#475 **Poster Board Number 147**
EFFECTS OF THE SMOKELESS TOBACCO PRODUCT, GUTKHA, ON REPRODUCTIVE AND DEVELOPMENTAL PARAMETERS IN PREGNANT MICE. *S. P. Doherty-Lyons*[1], C. Hoffman[1], F. Ganey[2], and *J. T. Zelikoff*[1]. [1]Environmental Medicine, New York University School of Medicine, Tuxedo, NY, and [2]Memorial Sloan-Kettering Cancer Center, New York, NY.

#476 **Poster Board Number 148**
ALZHEIMER'S DISEASE: TAU AND EARLY LIFE EXPOSURE TO PB IN PRIMATES. *S. W. Bihaqi*, and *N. H. Zawia*. Biomedical and Pharmaceutical Sciences, University of Rhode island, Kingston, RI.

#477 **Poster Board Number 149**
NEONATAL INFLAMMATION CONTRIBUTES TO FIBROTIC LUNG DISEASE IN ADULT MICE. *L. K. Rogers*, R. D. Britt, K. M. Heyob, T. E. Tipple, and M. Velten. Center for Perinatal Research, The Research Institute at Nationwide Children's Hospital, Ohio State University, Columbus, OH.

Abstract #

#478 **Poster Board Number 150**
ALTERATIONS IN NEUROBEHAVIOR AND HIPPOCAMPAL MORPHOLOGY FOLLOWING DEVELOPMENTAL EXPOSURE TO 3, 3', 4, 4'-TETRACHLOROAZOBENZENE IN SPRAGUE DAWLEY RATS. *M. Behl*[1], *G. J. Harry*[2], *M. Vallant*[2], *G. S. Travlos*[2], J. L. Howard[3], P. R. Mouton[4], C. J. Price[5], and *M. J. Hooth*[2]. [1]Contractor, NTP/NIEHS, Research Triangle Park, NC, [2]NTP, NIEHS, Research Triangle Park, NC, [3]Howard Associates, Research Triangle Park, NC, [4]SRC, Chester, MD, and [5]RTI International, Research Triangle Park, NC.

#479 **Poster Board Number 151**
A TRANSCRIPTOMICS APPROACH USING HBCD TO PRIORITIZE CHEMICALS AND MIXTURES FOR DEVELOPMENTAL NEUROTOXICITY RISK ASSESSMENT. *D. T. Szabo*[1], *R. R. Shah*[2], and *L. S. Birnbaum*[3]. [1]US EPA/ORISE, Washington, DC, [2]SRA, Research Triangle Park, NC, and [3]NIEHS, Research Triangle Park, NC.

#480 **Poster Board Number 152**
PRENATAL CIGARETTE SMOKE EXPOSURE REPRODUCES FEATURES OF ADHD. *C. Yochum*[1], *S. Doherty-Lyon*[2], *J. T. Zelikoff*[2], C. Hoffman[2], and *J. R. Richardson*[1]. [1]Environmental and Occupational Medicine, Robert Wood Johnson Medical School, Piscataway, NJ, and [2]Nelson Institute of Environmental Medicine, New York University, Tuxedo, NY.

#481 **Poster Board Number 153**
PRENATAL TCDD AND POSTNATAL LUPUS IN EARLY GERIATRIC C57BL/6 MICE. S. D. Holladay, A. Mustafa, E. Karpuzoglu, and *R. M. Gogal*. Department of Anatomy and Radiology, University of Georgia, Athens, GA.

#482 **Poster Board Number 154**
IMPACT OF EARLY LIFE BPA ON MURINE CARDIAC STRUCTURE/FUNCTION. *L. Chalifour*, and B. Patel. Lady Davis Institute, Montreal, QC, Canada.

Monday Afternoon, March 12
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Liver and Model Systems

Chairperson(s): *Salmaan Inayat-Hussain, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *2:45 PM–4:30 PM*

#483 **Poster Board Number 201**
PREDICTION OF DRUG-INDUCED LIVER INJURY BY HIGH-CONTENT ANALYSIS SYSTEM USING HEPG2 CELLS: DETECTION OF REACTIVE OXYGEN SPECIES. K. Yoshikawa, M. Ando, C. Aruga, and Y. Iwase. Safety Research Laboratories, Mitsubishi Tanabe Pharma Corporation, Kisarazu, Chiba, Japan. Sponsor: *J. Shinozuka*.

Program Description (Continued)

Abstract #

#484 **Poster Board Number 202**
ENHANCEMENT OF PROLIFERATION IN A RAT HEPATOCYTE COCULTURE MODEL AFTER MITOGENIC STIMULATION. *S. D. Hester*[1], M. A. McVay[2], O. Adefuye[3], A. Tennant[4], and S. Khetani[5]. [1]Systems Biology Branch, US EPA, Durham, NC, [2]Research Development, Hepregen Corp., Boston, MA, [3]Systems Biology Branch, US EPA, Durham, NC, [4]Genetic & Cellular Toxicology Branch, US EPA, Durham, NC, and [5]Research Development, Hepregen Corp., Boston, MA.

#485 **Poster Board Number 203**
USE OF THE HEPARG CELL LINE TO ASSESS POTENTIAL HUMAN HEPATOTOXICITY OF TOXCAST CHEMICALS. G. Nelson[1], *M. Mennecozzi*[2], G. Harris[2], H. Ren[1], W. Ward[1], *I. Shah*[1], J. Allen[1], *M. Whelan*[2], and *C. Corton*[1]. [1]US EPA, Research Triangle Park, NC, and [2]JRC, Ispra, Italy.

#486 **Poster Board Number 204**
A MULTIPLEX, AUTOMATED APPROACH TO SCREEN FOR MITOTOXICITY IN HUMAN HEPATOCYTES AND HEPG2 CELLS. T. Moeller[1], T. Worzella[2], and B. Larson[3]. [1]Celsis In Vitro Technologies, Halethorpe, MD, [2]Promega Corporation, Madison, WI, and [3]Biotek, Winooski, VT. Sponsor: *M. Xia*.

#487 **Poster Board Number 205**
AN IMAGING-BASED RNA-INTERFERENCE SCREEN IDENTIFIES MODULATORS OF TNF-MEDIATED NF-κB SIGNALING IN DRUG-INDUCED LIVER INJURY. *B. van de Water*, B. Herpers, L. Fredriksson, G. Benedetti, Z. Di, M. de Graauw, and J. Meerman. Leiden/Amsterdam Center for Drug Research, Leiden University, Leiden, Netherlands.

#488 **Poster Board Number 206**
A RNA INTERFERENCE-BASED SCREENING IDENTIFIES THE SIGNALING NETWORK THAT DETERMINES DICLOFENAC-INDUCED LIVER CELL DEATH. G. Benedetti, L. Fredriksson, B. Herpers, H. de Bont, M. de Graauw, and *B. van de Water*. Toxicology, Leiden University, Leiden/Amsterdam Center for Drug Research, Leiden, Netherlands.

#489 **Poster Board Number 207**
A HIGH-CONTENT IMAGING-BASED *IN VITRO* 3D MODEL FOR ASSESSMENT OF DRUG-INDUCED LIVER INJURY. S. Ramaiahgari[1], B. Herpers[1], J. Commandeur[2], *B. Van de Water*[1], and L. Price[1]. [1]Department of Toxicology, Leiden University, Leiden, Netherlands, and [2]Department of Molecular Toxicology, Vrije University, Amsterdam, Netherlands.

#490 **Poster Board Number 208**
TOXICITY PATHWAY ANALYSIS OF HEPATOXIC COMPOUNDS IN PRIMARY HUMAN HEPATOCYTES IN 2D AND 3D-CULTURE. S. Messner[1], P. Walker[4], E. Lorbach[3], H. Woodhouse[4], H. Gill[4], J. Kelm[1], J. Lichtenberg[1], H. Hartmann[3], W. Moritz[1], and *K. Tsaioun*[3,2]. [1]InSphero, Zurich, Switzerland, [2]Apredica, Watertown, MA, [3]Lonza, Cologne, Germany, and [4]Cyprotex, Macclesfield, United Kingdom.

Abstract #

#491 **Poster Board Number 209**
ASSESSMENT OF LIVER TOXICITY USING HIGH-CONTENT HISTOLOGY OF ZEBRAFISH LARVAE. H. Diekmann, A. Dodd, A. Cracknell, O. Murphy, M. Jones, and *A. Hill*. Evotec, Abingdon, United Kingdom.

#492 **Poster Board Number 210**
TOXICOGENOMICS STUDY OF THE HEPATOXICITY OF DOGS IN RESPONSE TO 4- WEEK REPEATED EXPOSURE TO ACETAMINOPHEN AND DICLOFENAC. H. Han[1], J. Cho[1], B. Lee[1], S. Park[1], H. Park[1], Y. Kim[1], S. Park[2], M. J. Kim[2], S. Cha[1], M. Kwon[1], and S. Yoon[1]. [1]Korea Institute of Toxocology, Daejeon, Republic of Korea, and [2]PWG Genetics Pte Ltd, Singapore, Singapore. Sponsor: *W. Koh*.

#493 **Poster Board Number 211**
ASSESSMENT OF A MICROPATTERNED HEPATOCYTE COCULTURE SYSTEM TO DETECT COMPOUNDS THAT CAUSE DRUG-INDUCED LIVER INJURY IN HUMANS. S. Khetani[2], C. Kanchagar[2], *M. Aleo*[1], and *Y. Will*[1]. [1]Compound Safety Prediction, Pfizer Global Research & Development, Groton, CT, and [2]Hepregen Corporation, Medford, MA.

#494 **Poster Board Number 212**
THE EFFECT OF TAURINE ON ETHANOL-INDUCED OXIDATIVE STRESS IN THE PRESENCE AND ABSENCE OF INHIBITORS OF ETHANOL METABOLISM. *M. C. Parikh*, and C. A. Lau-Cam. Pharmaceutical Sciences, St. John's University, Jamaica, NY.

#495 **Poster Board Number 213**
INHIBITION OF THE HEPATIC BILE ACID TRANSPORTER MRP4: A POTENTIAL RISK FACTOR FOR CHOLESTATIC DRUG-INDUCED LIVER INJURY. K. Koeck, *B. C. Ferslew*, K. Yang, and K. L. Brouwer. Eshelman School of Pharmacy, University of North Carolina at Chapel Hill, Chapel Hill, NC.

#496 **Poster Board Number 214**
POTENTIAL ROLE OF FASL EXPRESSION AND SIGNALING IN THE INDUCTION OF HEPATOTOXICITY BY AZT. H. Donde[1], S. Ghare[1], W. Chen[1], S. Joshi-Barve[1], *C. McClain*[1,2,3], and *S. Barve*[1,2]. [1]Department of Medicine/GI, University of Louisville, Louisville, KY, [2]Pharmacology and Toxicology, University of Louisville, Louisville, KY, and [3]Louisville VAMC, Louisville, KY.

#497 **Poster Board Number 215**
ACCELERATED ETHANOL CLEARANCE AND RESISTANCE TO ALCOHOL-INDUCED STEATOSIS IN GLUTATHIONE-DEFICIENT MICE. *Y. Chen*[1], *S. Singh*[1], *A. Matsumoto*[1], *H. G. Shertzer*[2], and *V. K. Vasiliou*[1]. [1]Department of Pharmaceutical Sciences, University of Colorado AMC, Aurora, CO, and [2]Department of Environmental Health, University of Cincinnati Medical Center, Cincinnati, OH.

Program Description (Continued)

Abstract #

#498 **Poster Board Number 216**
HEPATIC BILE ACID COMPOSITION IN PROGRESSIVE HUMAN NONALCOHOLIC FATTY LIVER DISEASE. *A. D. Lake*[1], P. Shipkova[2], N. Aranibar[2], *D. Robertson*[2], M. D. Reily[2], P. Novak[1], *L. D. Lehman-McKeeman*[2], and *N. J. Cherrington*[1]. [1]Pharmacology & Toxicology, University of Arizona, Tucson, AZ, and [2]Bristol-Myers Squibb, New York, NY.

#499 **Poster Board Number 217**
TRANSPLACENTAL ARSENIC EXPOSURE INDUCES GENDER-SPECIFIC GENE EXPRESSION CHANGES IN FATTY ACID METABOLISM IN C57BL/6 MOUSE LIVER. P. Carlson[1], A. E. Dalrymple[2], and R. J. Van Beneden[1,2,3]. [1]Graduate School of Biomedical Sciences, University of Maine, Orono, ME, [2]Department of Molecular and Biomedical Sciences, University of Maine, Orono, ME, and [3]School of Marine Sciences, University of Maine, Orono, ME. Sponsor: *J. Gosse*.

#500 **Poster Board Number 218**
ACETALDEHYDE DEHYDROGENASE 2 (ALDH2) ACTIVATION PROTECTS HEPATOCYTES FROM MITOCHONDRIAL DAMAGE AND DEATH CAUSED BY 4-HYDROXYNONENAL. K. Baldauf[1,2], J. Jokinen[1,2], K. Falkner[2], J. I. Beier[1,2], and G. E. Arteel[1,2]. [1]Pharmacology and Toxicology, University of Louisville, Louisville, KY, and [2]Alcohol Research Center, University of Louisville, Louisville, KY. Sponsor: *J. States*.

#501 **Poster Board Number 219**
MOLECULAR MARKERS OF MOUSE HEPATOCELLULAR CARCINOMA THAT IDENTIFY THE INITIATING ONCOGENE(S). *L. Pham*, and *E. P. Sandgren*. Molecular and Enviromental Toxicology, University of Wisconsin-Madison, Madison, WI.

#502 **Poster Board Number 220**
ACTIVATION OF SIRTUIN 1 PATHWAY TO REVERSE DRUG TRANSPORTER AND NUCLEAR RECEPTOR PATHWAYS IN FATTY LIVER. *S. R. Kulkarni*, *A. C. Donepudi*, and *A. L. Slitt*. Biomedical and Pharmaceutical Sciences, University of Rhode Island, Kingston, RI.

#503 **Poster Board Number 221**
HTS FOR SMALL MOLECULES CAPABLE OF MODULATING THE CELLULAR PHENOTYPES OF HUMAN IPSC-DERIVED HEPATOCYTES. B. Leonard[1], S. Kameoka[1], J. Babiarz[1], V. Ott[3], *T. Singer*[2,1], *T. Weiser*[2,1], *K. L. Kolaja*[1,2], and E. Chiao[1]. [1]Nonclinical Safety, Hoffmann-LaRoche, Nutley, NJ, [2]Nonclinical Safety, Hoffmann-La Roche, Basel, Switzerland, and [3]Cellular Dynamics International, Madison, WI.

Abstract #

#504 **Poster Board Number 222**
PHYSIOLOGICAL HEMODYNAMIC FLOW AND TRANSPORT ARE NECESSARY FOR RETENTION OF PRIMARY HEPATOCYTE DRUG METABOLISM AND TOXICITY INDICES. A. Dash[1], S. B. Michael[1], T. Deering[1], D. Berry[1], *E. L. LeCluyse*[4], T. L. Pruett[3], B. R. Blackman[2], and B. R. Wamhoff[2]. [1]HemoShear, Charlottesville, VA, [2]Biomedical Engineering, University of Virginia, Charlottesville, VA, [3]Department of Surgery, University of Minnesota, Minneapolis, MN, and [4]The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#505 **Poster Board Number 223**
HEPATIC TOXICITY OF VINCLOZOLIN IN ADULT MALE RATS. D. C. Escobar-Wilches[1], L. M. Lopez-Gonzalez[1], M. G. Moreno[2], P. Muriel[2], and *A. Sierra-Santoyo*[1]. [1]Toxicology, Cinvestav-IPN, Mexico City, D.F., Mexico, and [2]Pharmacology, Cinvestav-IPN, Mexico City, D.F., Mexico.

#506 **Poster Board Number 224**
A PROVISIONAL REGULATORY NETWORK OF PPARα-MEDIATED TRANSCRIPTION IN PRIMARY HUMAN HEPATOCYTES. *S. Bhattacharya*[1,2], *C. G. Woods*[2], K. M. Yarborough[2], A. Efremenko[2], *L. Pluta*[2], P. Lu[2], J. Dong[2], *J. Pi*[2], and *M. E. Andersen*[1,2]. [1]Division of Computational Biology, The Hamner Institutes for Health Sciences, Research Triangle Park, NC, and [2]Institute for Chemical Safety Sciences, The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#507 **Poster Board Number 225**
INHALATION OF LEAD ACETATE AND LIVER DAMAGE: MORPHOFUNCTIONAL STUDY IN A MOUSE MODEL. E. S. González Rendón[1], G. Gutierrez Cano[1], A. González-Villalva[1], R. Jimenez-Martinez[1], V. Rodriguez-Lara[1], B. Patricia[1], *L. Colin-Barenque*[2], and *T. Fortoul*[1]. [1]Biología Celular y Tisular, Facultad de Medicina, UNAM, Méxi D. F., Distrito Federal, Mexico, and [2]Fes-Iztacala, UNAM, Cd. de México, Edo de México, Mexico.

#508 **Poster Board Number 226**
DNA-PROTEIN CROSSLINKING MEDIATED BY DEHYDROMONOCROTALINE *IN VITRO*. *S. Shen*[1], and *J. Zheng*[1,2]. [1]Center for Developmental Therapeutics, Seattle Children's Research Institute, Seattle, WA, and [2]Department of Pediatrics, University of Washington, Seattle, WA.

#509 **Poster Board Number 227**
LACK OF ORGANIC ANION TRANSPORTING POLYPEPTIDE 1A1 EXACERBATES CHOLESTATIC LIVER INJURY IN MICE. *Y. Zhang*[1], *I. L. Csanaky*[1], *L. D. Lehman-McKeeman*[2], and *C. D. Klaassen*[1]. [1]University of Kansas Medical Center, Kansas City, KS, and [2]Bristol-Myers Squibb Co., Princeton, NJ.

#510 **Poster Board Number 228**
BILE ACID REGULATION OF GENE EXPRESSION IN HUMAN PRIMARY HEPATOCYTE CULTURES. *J. Liu*[1], *H. Lu*[1], Y. Lu[1], L. Lei[1], S. C. Strom[2], and *C. D. Klaassen*[1]. [1]Pharmacology and Toxicology, University of Kansas Medical Center, Kansas City, KS, and [2]Pathology, University of Pittsburgh Medical Center, Pittsburgh, PA.

Program Description (Continued)

Abstract #

#511 **Poster Board Number 229**
COMPARISON OF NOVEL LUCIFERIN-1A2 SUBSTRATE AND PHENACETIN FOR MEASURING CYP1A2 INDUCTION IN HUMAN HEPATOCYTES. T. Moeller[1], D. Ma[2], S. Dennel[1], and J. Cali[2]. [1]Celsis *In Vitro* Technologies, Halethorpe, MD, and [2]Promega Corp, Madison, WI. Sponsor: *M. Xia*.

#512 **Poster Board Number 230**
ALTERATION OF GENE EXPRESSION OF HEPATIC PHASE 1 ENZYMES INVOLVED IN THE BIOTRANSFORMATION OF PESTICIDES DURING GESTATION IN A MURINE MODEL OF TYPE 1 DIABETES. *M. C. Fortin*[1], *L. M. Aleksunes*[2], and *J. R. Richardson*[1]. [1]Environmental and Occupational Medicine, Environmental and Occupational Health Sciences Institute, Piscataway, NJ, and [2]Pharmacology and Toxicology, Rutgers University, Piscataway, NJ.

#513 **Poster Board Number 231**
COMPARISON OF METABOLIC STABILITIES FOR XENOBIOTICS IN CONTACT WITH HEPATIC AND CUTANEOUS SUBCELLULAR FRACTIONS. J. Eilstein, E. Daronnat, J. Meunier, A. Garrigues-Mazert, and D. Duche. L'Oréal Research & Innovation—Advanced Research, Aulnay-sous-Bois, France. Sponsor: *G. Nohynek*.

#514 **Poster Board Number 232**
REGULATION OF HEPATIC CYTHOCHROME P450 BY VINCLOZOLIN IN PREGNANT RATS. G. F. Garcia-Montes de Oca, L. M. Lopez-Gonzalez, and *A. Sierra-Santoyo*. Toxicology, Cinvestav-IPN, Mexico City, D.F., Mexico.

#515 **Poster Board Number 233**
COMPARATIVE ASSESSMENT OF AUTOMATED ANALYSIS USING COMPUTER ASSISTED PATHOLOGY (CAPS™) HISTOPATH™ SOFTWARE. *R. Long*[1], R. LoBosco[1], L. Chouinard[2], E. Meierhenry[3], A. Usborne[5], M. Lee[1], J. Schwartz[3], H. Boubekeur[2], D. Shur[1], B. Ziegler[1], L. Siler[1], N. Gillett[4], and *S. K. Durham*[3]. [1]Charles River Laboratories, Seattle, WA, [2]Charles River Laboratories, Montreal, QC, Canada, [3]Charles River Laboratories, Reno, NV, [4]Charles River Laboratories, Wilmington, MA, and [5]Eli Lilly and Company, Indianapolis, IN.

#516 **Poster Board Number 234**
CHRONIC TOXICITY OF ENVIRONMENTAL CONTAMINANTS IN HUMAN HEPARG HEPATOCYTES. C. Lambert[1,2], S. Martinais[1,2], J. Cassecuel[1,2], F. Morel[1,2], and M. Robin[1,2]. [1]UMR991, INSERM, Rennes, France, and [2]University Rennes 1, Rennes, France. Sponsor: *M. Pallardy*.

#517 **Poster Board Number 235**
CYCLOSPORINE A AND PALMITATE TREATMENT SYNERGISTICALLY INDUCE CYTOTOXICITY IN HEPG2 CELLS. Y. Luo, P. M. Rana, and *Y. Will*. Compound Safety Prediction, Pfizer Global Research & Development, Groton, CT.

Abstract #

#518 **Poster Board Number 236**
COMPARISON OF RAT AND DOG HEPATOCYTE-KUPFFER CELL COCULTURES AS A MODEL OF DRUG-INDUCED HEPATIC MICROGRANULOMA. F. Boess[2], R. Kemper[1], S. Kustermann[2], T. Zabka[1], C. Lawson[1], *T. Singer*[2,1], A. B. Roth[1], *K. L. Kolaja*[1,2], and *T. Weiser*[2,1]. [1]Nonclinical Safety, Hoffmann-LaRoche, Nutley, NJ, and [2]Nonclinical Safety, Hoffmann-La Roche, Basel, Switzerland.

#519 **Poster Board Number 237**
COMPARISON OF TWO CELL MODEL SYSTEMS, PRIMARY HUMAN HEPATOCYTES AND HIPSC-DERIVED HEPATOCYTES, TO DETERMINE THE HEPATOTOXICITY OF THREE CANDIDATE DRUGS DEVELOPED FOR RHEUMATOID ARTHRITIS. S. Kameoka[1], T. Zabka[1], V. Ott[2], *T. Singer*[3,1], *T. Weiser*[3,1], *K. L. Kolaja*[1,3], and E. Chiao[1]. [1]Nonclinical Safety, Hoffmann-LaRoche, Nutley, NJ, [2]Cellular Dynamics International, Madison, WI, and [3]Nonclinical Safety, Hoffmann-La Roche, Basel, Switzerland.

Monday Afternoon, March 12
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Characterizing Toxic Modes of Action and Pathways to Toxicity

Poster Session: Biomarkers of Organ Damage by Drugs and Xenobiotics

Chairperson(s): *Hank Lin, Pfizer, Inc., Andover, MA.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *1:00 PM–2:45 PM*

#520 **Poster Board Number 239**
URINARY BIOMARKERS DETECT RENAL DAMAGE IN HYPERTENSIVE AND OBESE RATS. *Q. Zhang*[1], K. J. Davis[2], *D. Hoffmann*[3], *V. S. Vaidya*[3], *R. P. Brown*[1], and *P. L. Goering*[1]. [1]CDRH, US FDA, Silver Spring, MD, [2]NCTR, US FDA, Jefferson, AR, and [3]Harvard Medical School, Boston, MA.

#521 **Poster Board Number 240**
AGE-DEPENDENT VARIATIONS IN BASELINE SERUM CARDIAC TROPONIN I LEVELS: A CROSS-SPECIES COMPARISON. A. Knapton[1], E. T. Rosen[1], M. C. Poirier[2], Y. Liu[2], S. E. Lipshultz[3], J. Todd[4], A. Lu[4], J. Estis[4], J. Zhang[1], and *E. H. Herman*[1]. [1]US FDA, Silver Spring, MD, [2]NCI, NIH, Bethesda, MD, [3]University of Miami Miller School of Medicine, Miami, FL, and [4]Singulex, Inc., Alameda, CA.

#522 **Poster Board Number 241**
TRANSCRIPTOME AND METABOLOME ANALYSIS REVEALS MECHANISM-LINKED BIOMARKER CANDIDATES IN CARBON TETRACHLORIDE-INDUCED HEPATOTOXICITY. Y. Ando[1,2], J. Sun[1], *L. K. Schnackenberg*[1], *X. Yang*[1], J. Greenhaw[1], L. M. Pence[1], T. C. Schmitt[1], S. Bhattacharyya[1], *W. F. Salminen*[1], *D. L. Mendrick*[1], and *R. D. Beger*[1]. [1]Division of Systems Biology, National Center for Toxicological Research, Jefferson, AR, and [2]Medicinal Safety Research Laboratories, Daiichi Sankyo Co., Ltd., Tokyo, Japan.

Program Description (Continued)

Abstract #

#523 **Poster Board Number 242**
ACUTE KIDNEY INJURY AND AGING INFLUENCE DIAGNOSTIC VALUE OF URINARY BIOMARKER-TO-CREATININE RATIO IN RATS. Y. Tonomura[1,2], T. Uehara[1], E. Yamamoto[1], M. Torii[1], and M. Matsubara[2]. [1]Drug Developmental Research Laboratories, Shionogi & Co., Ltd., Toyonaka, Osaka, Japan, and [2]Division of Molecular Medicine, Tohoku University School of Medicine, Sendai, Miyagi, Japan. Sponsor: *K. Nakamura*.

#524 **Poster Board Number 243**
PROTEIN BIOMARKER PROFILES DISCRIMINATE BETWEEN SENSITIZING AND IRRITATING CHEMICALS IN CELL-BASED ASSAYS. P. Budde[1], S. Selzer[1], S. Koncarevic[1], E. Schofield[2], K. Kuhn[1], H. Johansson[3], M. Lindstedt[3], C. A. Borrebaeck[3], H. Zucht[1], and *E. Roggen*[4]. [1]Proteome Sciences R&D GmbH & Co. KG, Frankfurt am Main, Germany, [2]Proteome Sciences plc, Cobham, United Kingdom, [3]Department of Immunotechnology, Lund University, Lund, Sweden, and [4]3Rs Management and Consultancy, Kgs. Lyngby, Denmark.

#525 **Poster Board Number 244**
QUANTATIVE ASSESSMENT OF ACETYL-CARNITINE EFFECTS ON ANESTHETIC-INDUCED NEURONAL DEATH BY MICROPET/CT IMAGING. X. Zhang[1], G. D. Newport[1], *M. G. Paule*[1], *F. Liu*[1], S. Liu[1], M. S. Berridge[2], S. M. Apana[2], *W. Slikker*[1], and *C. Wang*[1]. [1]NTOX, NCTR/FDA, Jefferson, AR, and [2]3D Imaging, LLC, Little Rock, AR.

#526 **Poster Board Number 245**
METABOLOMIC ANALYSIS OF ARGININE METABOLISM IN RAT PLASMA FOR AN INDICATOR OF HEPATIC INJURY. W. Saito, S. Yamauchi, K. Watanabe, T. Matsuyama, K. Kumagai, N. Kiyosawa, K. Mori, and A. Sanbuissho. Medicinal Safety Research Laboratories, DAIICHI SANKYO CO., LTD., Fukuroi, Shizuoka, Japan. Sponsor: *M. Teranishi*.

#527 **Poster Board Number 246**
CHANGING PARADIGMS IN ACETAMINOPHEN TOXICITY: PLASMA PROTEIN ADDUCTS AND LIVER GLUTATHIONE LEVELS IN MICE. *M. R. McGill*[1], M. Lebofsky[1], G. J. Murray[2], D. E. Rollins[2], *C. D. Williams*[1], and *H. Jaeschke*[1]. [1]Pharmacology, Toxicology, and Therapeutics, University of Kansas Medical Center, Kansas City, KS, and [2]Center for Human Toxicology, University of Utah, Salt Lake City, UT.

#528 **Poster Board Number 247**
MULTIPLEX-BASED NEPHROTOXICITY BIOMARKERS AND NMR-BASED METABOLOMICS IN A MODEL OF GLOMERULAR NEPHRITIS IN RATS. B. Riefke[1], I. Groeticke[2], A. Frisk[3], S. Gruendemann[4], M. Raschke[1], M. Pavkovic[5], *H. Ellinger-Ziegelbauer*[5], H. Schaecke[2], and F. McDonald[2]. [1]Investigational Toxicology, Bayer Pharmacology, Berlin, Germany, [2]Common Mechanism Research, Bayer Pharmacology, Berlin, Germany, [3]Research Pathology, Bayer Pharmacology, Berlin, Germany, [4]MedChem Technologies VI, Bayer Pharmacology, Berlin, Germany, and [5]Investigational Toxicology, Bayer Pharmacology, Wuppertal, Germany.

Abstract #

#529 **Poster Board Number 248**
A TOXICODYNAMIC RENAL BIOMARKER PROFILE OF ETHYLENE GLYCOL-INDUCED ACUTE KIDNEY INJURY. *L. Besenhofer*[1,2], M. C. Cain[2], *L. B. Kinter*[1], *D. Brott*[1], *P. Bentley*[1], *J. Fikes*[1], and *K. E. McMartin*[2]. [1]Safety Assessment US, AstraZeneca, Waltham, MA, and [2]Department of Pharmacology, Toxicology and Neuroscience, Louisiana State University Health Sciences Center Shreveport, Shreveport, LA.

#530 **Poster Board Number 249**
INVESTIGATION OF SERUM MICRORNAS AS BIOMARKERS OF LIVER INJURY IN RATS. A. T. Smith[1], D. Hamlin[1], H. Qian[2], *C. Thomas*[1], and G. Searfoss[1]. [1]Investigative Toxicology, Eli Lilly and Company, Indianapolis, IN, and [2]Statistics-Discovery/Development, Eli Lilly and Company, Indianapolis, IN.

#531 **Poster Board Number 250**
RAPID BIOMARKER ASSAY DEVELOPMENT ON THE GYROS IMMUNOASSAY PLATFORM FOR RAT NGAL AND TIMP-1: SENSITIVE FLUORESCENT IMMUNOASSAYS FOR SAFETY ASSESSMENT. M. J. Cameron[1], K. Lich[1], D. Hamlin[2], V. Hughes[2], and *H. W. Smith*[2]. [1]Immunology, MPI Research, Mattawan, MI, and [2]Investigative Toxicology, Eli Lilly and Company, Indianapolis, IN.

#532 **Poster Board Number 251**
LYSOSOMAL AND URINARY PROFILES OF BIS-MONOACYLGLYCEROPHOSPHATES (BMPS) IN FLUOXETINE-TREATED RATS. L. LeCureux[1], P. Shipkova[2], *D. Robertson*[1], M. Reily[3], and *L. Lehman-McKeeman*[1]. [1]Discovery Toxicology, Bristol-Myers Squibb, Princeton, NJ, [2]MS - Hopewell, Bristol-Myers Squibb, Hopewell, NJ, and [3]NMR, Bristol-Myers Squibb, Princeton, NJ.

#533 **Poster Board Number 252**
EVALUATION OF URINARY KIDNEY INJURY BIOMARKERS AND PHARMACOLOGICALLY-ACTIVE RENAL THERAPEUTIC DRUGS. *M. Wagoner*, L. R. Cheatham, F. McGrath, P. Bentley, E. DeJesus, L. Foster-Brown, *D. A. Brott*, *J. D. Fikes*, *Y. Dragan*, and *L. B. Kinter*. Safety Assessment, AstraZeneca Pharmaceuticals, Waltham, MA.

#534 **Poster Board Number 253**
ASSESSMENT OF CARDIAC BIOMARKERS IN NONHUMAN PRIMATES (NHP). *J. C. Mirsalis*, N. Chini, D. Vuong, J. Gahagen, M. Patrick, B. Schneider, K. Tinajero, K. Lopez, and *T. Parman*. Preclinical Development, SRI International, Menlo Park, CA.

#535 **Poster Board Number 254**
COMBINING URINARY BIOMARKERS, TRANSCRIPTOMIC AND METABONOMIC TOOLS FOR EARLY DETECTION OF NEPHROTOXICITY IN THE RAT. A. Licznar[1], F. Goldfain-Blanc[1], H. Bertheux[1], B. Chachay[1], V. Croixmarie[2], A. Liegeois[2], C. Boursier-Neyret[2], R. Gauchet[1], A. Beamonte[1], R. J. Weaver[1], and *N. Claude*[1]. [1]Drug Safety, Servier, Gidy, France, and [2]Metabolism Department, Servier, Orléans, France.

Program Description (Continued)

Abstract #

#536 **Poster Board Number 255**
HIGH CORRELATION OF NOVEL SKELETAL MUSCLE INJURY BIOMARKERS TO CREATINE KINASE ACTIVITY IN HUMAN VOLUNTEERS AFTER PROLONGED EXERCISE. *J. E. Sidaway*[1], L. Bate[1], M. Mattson[3], B. Glinghammar[2], and C. J. Betts[1]. [1]Safety Assessment UK, AstraZeneca, Macclesfield, Cheshire, United Kingdom, [2]Safety Assessment Sweden, AstraZeneca, Södertälje, Sweden, and [3]Åstrand Laboratory of Work Physiology, The Swedish School of Sport and Health Sciences and Karolinska Institute, Stockholm, Sweden.

#537 **Poster Board Number 256**
THE INTERPRETATION OF STRIATED MUSCLE TOXICITY BIOMARKERS IN NONCLINICAL SPECIES: A CASE SERIES. J. Wright, C. Davies, and P. Mistry. Syngenta, Bracknell, United Kingdom. Sponsor: *R. peffer*.

#538 **Poster Board Number 257**
INDIVIDUAL BILE ACID CHANGES ASSOCIATED WITH BILE DUCT HYPERPLASIA IN PRECLINICAL MODELS. L. Luo, *S. J. Schomaker*, and *J. L. Colangelo*. Drug Safety R&D, Pfizer Inc., Groton, CT.

#539 **Poster Board Number 258**
EVALUATION OF CALCINEURIN ACTIVITY AS A BIOMARKER OF IMMUNOSUPPRESSION IN LUNG TRANSPLANT PATIENTS. S. Sanquer[1], C. Amrein[2], *R. Barouki*[1], and M. Stern[3]. [1]Hôpital Necker-Enfants Malades, Paris, France, [2]HEGP, Paris, France, and [3]Hôpital Foch, Suresnes, France.

#540 **Poster Board Number 259**
BIOMARKERS FOR STEATOHEPATITIS (ASH, NASH, TASH). *M. Cave*[1,3], H. Shah[1], B. Wheeler[1], Y. Mannery[1], *K. Falkner*[1], B. Wahlong[1], and *C. McClain*[1,2,3]. [1]Department of Medicine/GI, University of Louisville, Louisville, KY, [2]Pharmacology and Toxicology, University of Louisville, Louisville, KY, and [3]Louisville VAMC, Louisville, KY.

#541 **Poster Board Number 260**
MASS SPECTROMETRY ASSAYS FOR STEROIDS IN TOXICITY ASSESSMENTS. K. Navetta, D. Wolford, R. Drago, and *J. Colangelo*. Drug Safety Research and Development, Pfizer, Groton, CT.

#542 **Poster Board Number 261**
NT-PROANP, CTNI, AND ECHOCARDIOGRAPHY ARE EARLY MARKERS OF MINOXIDIL-INDUCED STRUCTURAL AND FUNCTIONAL CHANGES OF THE LEFT VENTRICLE IN RATS. M. E. Dunn[1], M. Sanders[1], D. Coluccio[1], R. Nicklaus[1], I. Mikaelian[1], T. S. Zabka[1], W. Geng[1], M. Reddy[1], L. Doessegger[2], *T. Singer*[2], and G. Hirkaler[1]. [1]Nonclinical Safety, Hoffmann-La Roche, Inc., Nutley, NJ, and [2]Nonclinical Safety, Hoffmann-La Roche, Inc., Basel, Switzerland.

Abstract #

#543 **Poster Board Number 262**
URINARY MITOCHONDRIAL DNA AS A NOVEL BIOMARKER OF ACUTE KIDNEY INJURY. L. J. Stallons[1], J. J. Rahn[1], J. L. Blakely[1], J. A. Funk[1], S. S. Chan[1], J. M. Arthur[2,3], and *R. G. Schnellmann*[1,3]. [1]Pharmaceutical and Biomedical Sciences, Medical University of South Carolina, Charleston, SC, [2]Department of Medicine, Division of Nephrology, Medical University of South Carolina, Charleston, SC, and [3]Ralph H. Johnson Veterans Administration Medical Center, Charleston, SC.

#544 **Poster Board Number 263**
EARLY DETECTION OF KAINIC ACID NEUROTOXICITY IN RATS USING NONINVASIVE *IN VIVO* MAGNETIC RESONANCE IMAGING. *S. Liachenko*[1], J. Ramu[1], *M. G. Paule*[1], L. Schmued[1], and *J. Hanig*[2]. [1]Neurotoxicology, US FDA/NCTR, Jefferson, AR, and [2]Office of Testing & Research, CDER/US FDA, White Oak, MD.

#545 **Poster Board Number 264**
CIRCADIAN VARIATIONS IN NEUROMETABOLITES IN THE RAT BRAIN MEASURED USING NONINVASIVE MAGNETIC RESONANCE SPECTROSCOPY. J. Ramu, and *S. Liachenko*. Neurotoxicology, US FDA/NCTR, Jefferson, AR.

#546 **Poster Board Number 265**
PHOSPHOLIPIDOSIS: VALIDATION OF AN INTEGRATED TESTING STRATEGY FROM *IN SILICO* MODELS TO *IN VITRO* ASSAYS TO *IN VIVO* BIOMARKERS. A. Amberg[1], M. Dorau[1], A. Thierjung[1], M. Stolte[1], H. Matter[2], A. Dietrich[2], A. Evers[2], S. Franck[2], F. Schmidt[2], J. Karl[5], H. Schaefer[3], M. Kurz[4], and A. Czich[1]. [1]Preclinical Safety, sanofi-aventis, Frankfurt, Germany, [2]Structure Design & Informatics, sanofi-aventis, Frankfurt, Germany, [3]Diabetes Division, sanofi-aventis, Frankfurt, Germany, [4]Analytical Sciences, sanofi-aventis, Frankfurt, Germany, and [5]University, Frankfurt, Germany. Sponsor: *M. Bonnefoi*.

#547 **Poster Board Number 266**
BIOMARKER DISCOVERY FOR HEPATOTOXICITY-INDUCED BY ACETAMINOPHEN USING URINARY 1H NMR SPECTRAL DATA IN HUMANS. *K. Kim*[1], J. Kim[2], H. Jo[2], S. Kim[3], J. Seo[4], J. Cha[4], H. Lee[4], M. Lim[4], S. Seong[4], S. Kim[3], and Y. Yoon[4]. [1]Pharmacy, Inje University, Gimhae, Gyungnam, Republic of Korea, [2]Smart Foods & Drugs, Inje University, Gimhae, Gyungnam, Republic of Korea, [3]Chemistry and Chemistry Institute for Functional Materials, Pusan National University, Busan, Republic of Korea, and [4]Molecular Medicine and Clinical Trial Center, Kyungpook National University School of Medicine and Hospital, Daegu, Republic of Korea.

#548 **Poster Board Number 267**
CALPROTECTIN AND LACTOFERRIN: NOVEL FECAL BIOMARKERS FOR GASTRO-INTESTINAL INFLAMMATION IN NONHUMAN PRIMATES. *A. Banerjee*[1], Y. Chen[2], J. Anwer[2], Y. Yu[1], and *A. Lyubimov*[1]. [1]Toxicology Research Laboratory, University of Illinois at Chicago, Chicago, IL, and [2]Center for Biomedical Testing, Chicago, IL.

Program Description (Continued)

Abstract #

#549 **Poster Board Number 268**
URINARY BIOMARKERS IDENTIFICATION USING METABOLOMICS FOR KIDNEY TOXICITY IN SPRAGUE DAWLEY RATS. A. Won[1], T. Kim[1], Y. Lee[1], Y. Shin[1], J. Wang[1], *B. Lee*[2], S. Kim[3], and *H. KIM*[1]. [1]College of Pharmacy, Pusan National University, Pusan, Republic of Korea, [2]College of Pharmacy, Sungkyunkwan University, Suwon, Republic of Korea, and [3]Department of Chemistry, Pusan National University, Pusan, Republic of Korea.

#550 **Poster Board Number 269**
LOW-DOSE 3-IODOTHYRONAMINE INCREASES ACUTE LIPOLYSIS FOLLOWED BY PROTEIN CATABOLISM DETECTABLE BY BREATH AND SERUM BIOMARKERS. *J. A. Haviland*[1], H. Reiland[3], D. E. Butz[1], M. Tonelli[2], W. P. Porter[1], D. T. Haughey[3], R. Zucchi[4], T. S. Scanlan[5], G. Chiellini[3,4], and F. M. Assadi-Porter[2,3]. [1]Zoology, University of Wisconsin-Madison, Madison, WI, [2]NMRFAM, University of Wisconsin-Madison, Madison, WI, [3]Biochemistry, University of Wisconsin-Madison, Madison, WI, [4]Dipartimento di Scienze dell'Uomo e dell'Ambiente, Università di Pisa, Pisa, Italy, and [5]Department of Physiology & Pharmacology and Cell & Developmental Biology, Oregon Health & Science University, Portland, OR.

#551 **Poster Board Number 270**
HEPATIC AND PLASMA MIRNAS—SENSITIVE BIOMARKERS OF LIVER INJURY INDUCED BY A METHYL-DEFICIENT DIET IN MICE. *V. Tryndyak*, J. R. Latendresse, F. A. Beland, and I. P. Pogribny. FDA National Center for Toxicological Research, Jefferson, AR.

#552 **Poster Board Number 271**
MICRORNAS IN PLASMA AND URINE AS NEW SAFETY BIOMARKERS FOR DRUG-INDUCED TISSUE INJURY IN RATS. M. Pavkovic[1], B. Riefke[2], and *H. Ellinger-Ziegelbauer*[1]. [1]Investigational Toxicology, Bayer HealthCare, Wuppertal, Germany, and [2]Investigational Toxicology, Bayer HealthCare, Berlin, Germany.

#553 **Poster Board Number 272**
MIRNA BIOMARKERS OF OCULAR TOXICITY. Q. Peng, *W. Huang*, W. Collette, and A. John-Baptiste. Drug Safety Research and Development, Pfizer, La Jolla, CA.

#554 **Poster Board Number 273**
EVALUATION OF BLOOD AND URINARY MIRNAS IN GENTAMICIN-INDUCED NEPHROTOXICITY. L. T. Rosini-Marthaler[1,3], *L. D. Lehman-Mckeeman*[2], M. R. Kuchka[3], and *W. E. Achanzar*[1]. [1]Drug Safety Evaluation, Bristol-Myers Squibb, New Brunswick, NJ, [2]Discovery Toxicology, Bristol-Myers Squibb, Lawrenceville, NJ, and [3]Biological Sciences, Lehigh University, Bethlehem, PA.

#555 **Poster Board Number 274**
THE SERUM MICRORNA PROFILE IS NOT ALTERED IN RATS AFTER 14 OR 28 DAYS OF DOSING WITH ROSIGLITAZONE OR 3,3',5-TRIIODO-L-THYRONINE. I. Mikaelian[1], M. Dunn[1], D. Coluccio[1], D. Knapp[1], R. Nicklaus[1], G. Hirkaler[1], W. Deng[1], M. Reddy[1], L. Doessegger[2], *T. Singer*[2], G. Kourteva[1], and H. Hilton[1]. [1]Hoffmann-La Roche, Inc., Nutley, NJ, and [2]Hoffmann-La Roche, Inc., Basel, Switzerland.

Abstract #

#556 **Poster Board Number 275**
NOVEL DIAGNOSTICS OF TOXICANT-INDUCED METABOLIC DYSFUNCTION DETECTED IN BREATH AND PLASMA BY SELECTIVE ISOTOPE-ASSISTED LABELING (SIAL). *J. A. Haviland*[1], M. Tonelli[2], D. T. Haughey[3], W. P. Porter[1], and F. M. Assadi-Porter[2,3]. [1]Zoology, University of Wisconsin-Madison, Madison, WI, [2]NMRFAM, University of Wisconsin-Madison, Madison, WI, and [3]Biochemistry, University of Wisconsin-Madison, Madison, WI.

#557 **Poster Board Number 276**
CYP2B10 INDUCTION AS A BIOMARKER FOR A CAR-MEDIATED, RODENT-SPECIFIC, MECHANISM OF LIVER FOCI FORMATION AND CARCINOGENESIS DEVOID OF HUMAN RELEVANCE: EVIDENCE FROM 4-WEEK TO 2-YEAR GLP STUDIES. J. Hoflack, *L. Mueller*, N. Flint, A. Braendli-Baiocco, S. Fowler, O. Kuhlmann, U. Niederhauser, *T. Weiser*, *T. Singer*, and *A. B. Roth*. Hoffmann-La Roche, Basel, Switzerland.

#558 **Poster Board Number 277**
RETROSPECTIVE ANALYSIS OF THE EFFECT OF MULTIPLE COMMONLY USED TOXICOLOGY FORMULATIONS ON URINARY BIOMARKERS OF RENAL TOXICITY (MICROALBUMIN, LIPOCALIN-2, OSTEOPONTIN, AND KIM-1) IN RATS. J. Lai-Zhang[1], K. Kowalkowski[1], A. Lisowski[1], S. Riendl[2], W. Buck[1], E. Blomme[2], and *Y. Yang*[2]. [1]Cell, Molecular and Exploratory Toxicology, Global Pharmaceutical R&D, Abbott Labs, Abbott Park, IL, and [2]Investigative Toxicology and Pathology, Global Preclinical Safety, Abbott Labs, Abbott Park, IL.

Monday Afternoon, March 12
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Skin Toxicology

Chairperson(s): *Michael Cunningham, NIEHS, Research Triangle Park, NC.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *2:45 PM–4:30 PM*

#559 **Poster Board Number 301**
DERMAL CARCINOGENESIS STUDY OF THE α,β-UNSATURATED KETONE METHYL TRANS-STYRYL KETONE IN MALE AND FEMALE F344/N RATS AND B6C3F1 MICE. *M. L. Cunningham*[1], *C. D. Hébert*[2], and M. F. Cesta[1]. [1]NTP, NIH/NIEHS, Research Triangle Park, NC, and [2]Toxicology, Southern Research Institute, Birmingham, AL.

#560 **Poster Board Number 302**
DOES THE ANTIBACTERIAL TRICLOCARBAN (TCC) FORM REACTIVE METABOLITES IN THE SKIN? N. H. Schebb[1,3], B. A. Buchholz[2], *B. D. Hammock*[3], and R. H. Rice[4]. [1]Toxicology and Chemical Analysis, University of Veterinary Medicine, Hannover, Germany, [2]Center for AMS, LLNL, Livermore, CA, [3]Entomology, University of California Davis, Davis, CA, and [4]Environmental Toxicology, University of California Davis, Davis, CA.

Program Description (Continued)

Abstract #

#561 **Poster Board Number 303**
THE ARYL HYDROCARBON RECEPTOR (AHR) IS A MODULATOR OF ULTRAVIOLET B (UVB)-INDUCED PROLIFERATION AND APOPTOSIS IN HUMAN KERATINOCYTES.
K. Frauenstein, J. Abel, *E. Fritsche*, J. Krutmann, and *T. Haarmann-Stemmann*. Leibniz Research Institute for Environmental Medicine, Duesseldorf, Germany.

#562 **Poster Board Number 304**
TLR3 IS CRITICAL FOR THE INFLAMMATORY CYTOKINE SUNBURN RESPONSE BY DETECTING ULTRAVIOLET LIGHT DAMAGE TO A NONCODING RNA.
J. J. Bernard[1,2,3], *J. D. Laskin*[2,3], B. D. Yu[1], and R. L. Gallo[1]. [1]Dermatology, University of California San Diego, San Diego, CA, [2]Toxicology, Rutgers The State University of New Jersey, Piscataway, NJ, and [3]University of Medicine and Dentistry of New Jersey, Robert Wood Johnson Medical School, Piscataway, NJ.

#563 **Poster Board Number 305**
DIFFERENTIAL GENE EXPRESSION RESPONSES DISTINGUISH BETWEEN DERMAL AND RESPIRATORY SENSITIZERS AND NONSENSITIZING IRRITANTS IN THE LLNA. *M. R. Woolhiser*, *D. Adenuga*, *B. B. Gollapudi*, and *D. R. Boverhof*. Toxicology and Environmental Research and Consulting, The Dow Chemical Company, Midland, MI.

#564 **Poster Board Number 306**
***IN VITRO* SKIN ABSORPTION OF ACETYL HEXAPEPTIDE-8 FROM A COSMETIC FORMULATION.** O. Ogunsola[1], W. Zhou[2], P. G. Wang[2], and *M. E. Kraeling*[1]. [1]Office of Applied Research and Safety Assessment, CFSAN, US FDA, Laurel, MD, and [2]Office of Regulatory Science, CFSAN, US FDA, College Park, MD.

#565 **Poster Board Number 307**
SCREENING OF TOXIC INDUSTRIAL COMPOUNDS FOR CUTANEOUS INJURY.
D. Pfefferle[1], *J. Plahovinsak*[1], J. Rhone[1], *F. Reid*[1], and *J. Dillman*[2]. [1]Battelle, Columbus, OH, and [2]USAMRICD, Aberdeen Proving Ground, MD.

#566 **Poster Board Number 308**
SYSTEMIC AND TOPICAL ANTI-INFLAMMATORY DRUG EFFICACY IN TREATING CUTANEOUS SULFUR MUSTARD LESIONS. *J. Plahovinsak*[1], D. Pfefferle[1], J. Rhone[1], *F. Reid*[1], and *J. Dillman*[2]. [1]Battelle, Columbus, OH, and [2]USAMRICD, Aberdeen Proving Ground, MD.

#567 **Poster Board Number 309**
***IN VITRO* DERMAL ABSORPTION OF A METALWORKING FLUID ADDITIVE: DICYCLOHEXYLAMINE (DCHA).** *A. Linthicum*, E. Koivisto, J. D. Brooks, and *R. E. Baynes*. Center for Chemical Toxicology Research and Pharmacokinetics, North Carolina State University, Raleigh, NC.

Abstract #

#568 **Poster Board Number 310**
A SCREENING METHOD TO ESTIMATE DERMAL ABSORPTION *IN VITRO*. E. Fabian[1], K. Guth[3,1], A. Mehling[2], C. Goth[1], B. van Ravenzwaay[1], and *R. Landsiedel*[1]. [1]Experimental Toxicology and Ecology, BASF SE, Ludwigshafen am Rhein, Germany, [2]BASF Personal Care and Nutrition GmbH, Düsseldorf, Germany, and [3]Center for Chemical Toxicology Research and Pharmacokinetics, North Carolina State University, Raleigh, NC.

#569 **Poster Board Number 311**
VEHICLE EFFECTS ON THE ABSORPTION OF FINITE AND INFINITE SATURATED DOSES OF CAFFEINE, MANNITOL, AND TESTOSTERONE IN PORCINE SKIN. *D. Karadzovska*, *J. D. Brooks*, and *J. E. Riviere*. Center for Chemical Toxicology Research and Pharmacokinetics, North Carolina State University, Raleigh, NC.

#570 **Poster Board Number 312**
DERMAL VEHICLE EVALUATION OF 2-ETHYLHEXYL P-METHOXYCINNAMATE.
K. L. Aillon[1], S. P. Kerns[1], C. C. Dillon[1], B. D. Sitzmann[1], A. J. Gutierrez[1], R. K. Harris[1], J. Algaier[1], B. J. Collins[2], *B. S. McIntyre*[2], and *C. S. Smith*[2]. [1]MRIGlobal, Kansas City, MO, and [2]National Toxicology Program, DNTP, NIEHS, Research Triangle Park, NC.

#571 **Poster Board Number 313**
XENOBIOTIC METABOLISM CAPACITIES OF HUMAN SKIN IN COMPARISON TO 3D-EPIDERMIS MODELS AND KERATINOCYTE-BASED CELL CULTURE AS *IN VITRO* ALTERNATIVES FOR CHEMICAL TESTING: PHASE I AND II. J. Tigges[1], C. Goetz[1], R. Pfeiffer[1], U. Huebenthal[1], H. F. Merk[2], J. Krutmann[1], C. Pease[3], C. Goebel[4], N. Hewitt[5], and *E. Fritsche*[1,2]. [1]Leibniz Research Institute for Environmental Medicine, Duesseldorf, NRW, Germany, [2]Dermatology and Allergology, RWTH, Aachen, Germany, [3]Safety & Environmental Assurance Centre, Unilever, Sharnbrook, Bedford, United Kingdom, [4]Procter and Gamble, Darmstadt, Germany, and [5]Nicky Hewitt Scientific Writing Services, Erzhausen, Germany.

#572 **Poster Board Number 314**
MAP KINASES REGULATE NITROGEN MUSTARD-INDUCED ACTIVATION OF DAMAGE-ASSOCIATED MOLECULAR PATTERNS IN MURINE KERATINOCYTES. *H. Kim*[1], Z. Paras[1], *M. P. Skakarjian*[1], *J. D. Laskin*[2], and *D. E. Heck*[1]. [1]Environmental Health Science, New York Medical College, Valhalla, NY, and [2]Environmental and Occupational Medicine, University of Medicine and Dentistry of New Jersey, Robert Wood Johnson Medical School, Piscataway, NJ.

#573 **Poster Board Number 315**
ASSESSMENT OF HUMAN SKIN PENETRATION OF TWO IRRITANT HERBICIDES. A. Berthet[1], N. B. Hopf[1], P. Spring[2], A. Miles[2], L. Forel[2], A. Garrigou[3], I. Baldi[3], and D. Vernez[1]. [1]Institute for Work and Health, Lausanne, Switzerland, [2]Centre Hospitalier Universitaire Vaudois, Lausanne, Switzerland, and [3]Université de Bordeaux, Gradignan, France. Sponsor: *M. Bouchard*.

Program Description (Continued)

Abstract #

#574 **Poster Board Number 316**
THE USE OF EXCISED HUMAN SKIN IN THE *IN VITRO* PREDICTION OF DERMAL CHEMICAL IRRITATION. *C. A. Stewart*[1,2], R. B. Turner[2], M. B. Brown[1,2], and M. J. Traynor[1]. [1]School of Pharmacy, University of Hertfordshire, Hatfield, United Kingdom, and [2]MedPharm Ltd, Guildford, United Kingdom.

#575 **Poster Board Number 317**
SKIN METABOLISM OF CINNAMIC ALCOHOL AND CINNAMALDEHYDE: ITS ROLE IN CONTACT DERMATITIS. D. Duche, J. Eilstein, G. Lereaux, and J. Meunier. Advanced Research, L'Oréal Research & Innovation, Aulnay-sous-Bois, France. Sponsor: *G. Nohynek*.

#576 **Poster Board Number 318**
COMPARISON OF XENOBIOTIC METABOLIZING ENZYME ACTIVITIES IN NORMAL HUMAN SKIN AND RECONSTRUCTED HUMAN SKIN MODELS FROM SKINETHIC™ LABORATORIES. G. Léreaux, J. Eilstein, J. Meunier, and D. Duché. L'Oréal Research & Innovation—Advanced Research, Aulnay-sous-Bois, France. Sponsor: *G. Nohynek*.

#577 **Poster Board Number 319**
SKIN SUBSTITUTE TISSUE BIOENGINEERED TO INHIBIT EXCESSIVE PROTEASE ACTIVITY IN CHRONIC CUTANEOUS WOUNDS. C. Rasmussen[1,2], C. Thomas-Virnig[1,2], B. Steiglitz[1], N. Simon[1], S. Sisson[1], S. Schlosser[2], T. Cleven[2], M. Taylor[2], and *L. Allen-Hoffmann*[1,2]. [1]Stratatech Corporation, Madison, WI, and [2]University of Wisconsin-Madison, Madison, WI.

#578 **Poster Board Number 320**
***IN VITRO* DERMAL UPTAKE OF DILUTE AQUEOUS ORGANIC CHEMICALS IS UNDERESTIMATED ~10-FOLD BY MODELS BASED ON *IN VITRO* DATA.** *K. T. Bogen.* Exponent Health & Environmental, Oakland, CA.

#579 **Poster Board Number 321**
CUTANEOUS ABSORPTION ON RHE: GUIDANCE TO THE CHOICE OF SOLVENT FOR TOPICAL APPLICATION. A. Garrigues-Mazert, S. Grégoire, C. Patouillet, D. Lelievre, and J. Meunier. Advanced Research, L'Oréal, Aulnay-sous-Bois, France. Sponsor: *G. Nohynek*.

#580 **Poster Board Number 322**
AN *IN VITRO* SKIN MODEL OF HUMAN NEOPLASIA. M. Hoffmann[1], C. Rasmussen[1,2], N. Peters[1], K. Behrend[1], M. Taylor[1], and *L. Allen-Hoffmann*[1,2]. [1]University of Wisconsin-Madison, Madison, WI, and [2]Stratatech Corporation, Madison, WI.

#581 **Poster Board Number 323**
TCDD ENHANCES LIPID METABOLISM, CORNEOCYTE EXPRESSION, AND REACTIVE OXYGEN SPECIES, ACCELERATING KERATINOCYTE DIFFERENTIATION: AN INTEGRATED GENOMIC/METABOLOMIC APPROACH. L. Kennedy[1], Q. T. Tran[2], S. Bodreddigari[2], E. Kensicki[3], R. Mohney[3], *C. H. Sutter*[2], and *T. R. Sutter*[1,2]. [1]Chemistry, University of Memphis, Memphis, TN, [2]Biological Sciences, University of Memphis, Memphis, TN, and [3]Metabolon, Inc., Durham, NC.

Abstract #

#582 **Poster Board Number 324**
PERCUTANEOUS ABSORPTION OF ^{14}C-AMINOETHYLETHANOLAMINE, *IN VITRO*, USING THE FRANZ FINITE DOSE MODEL WITH HUMAN AND RAT SKIN. *R. Krishnaraj*[1], P. A. Lehman[2], S. G. Raney[2], N. Moore[3], R. J. Papciak[4], and R. J. Parod[5]. [1]Akzonobel, Chicago, IL, [2]Cetero Research, Fargo, ND, [3]Dow Europe GMBH, Horgen, Switzerland, [4]Hunstman Corporation, The Woodlands, TX, and [5]BASF Corporation, Wyandotte, MI.

#583 **Poster Board Number 325**
STRATAGRAFT® SKIN TISSUE AS AN ALTERNATIVE TO AUTOGRAFTING IN PROMOTING HEALING OF DEEP PARTIAL-THICKNESS BURNS. A. Comer, M. Lokuta, K. Van Winkle, C. Thomas-Virnig, and *L. Allen-Hoffmann*. Stratatech Corporation, Madison, WI.

Monday Afternoon, March 12
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Alternatives to Mammalian Models II

Chairperson(s): *Daniel Dietrich, University of Konstanz, Konstanz, Germany, and Alan Jeffrey, New York Medical College, Valhalla, NY.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *1:00 PM–2:45 PM*

#584 **Poster Board Number 329**
AN INTEGRATIVE APPROACH FOR THE PREDICTION OF ACUTE SYSTEMIC TOXICITY: VALIDATION OF THE MODEL COMBINING CELL TOXICITY, AND PHARMACOLOGICAL AND PHYSICO-CHEMICAL PROPERTIES. R. R. Note[1], H. Noçairi[1], M. Thomas[1], L. Bourouf[1], *J. McKim*[2], G. Ouédraogo[1], and J. Meunier[1]. [1]Safety Research, L'Oréal, Aulnay-sous Bois, France, and [2]Ceetox, Kalamazoo, MI.

#585 **Poster Board Number 330**
METHODS FOR COMPARING COMPOUND SETS BASED ON THEIR PRECLINICAL *IN VIVO* STUDY OUTCOMES. *N. Greene*, *A. Enayetallah*, S. Louise-May, and X. Wang. Pfizer Inc., Groton, CT.

#586 **Poster Board Number 331**
CRYOPRESERVED HUMAN SPLENOCYTES AS AN *IN VITRO* MODEL FOR HUMAN IMMUNOTOXICITY. H. Swaminathan[1], M. Xia[2], J. Zhao[2], and *A. P. Li*[1]. [1]*In Vitro* ADMET Laboratories, Advanced Pharmaceutical Sciences, Columbia, MD, and [2]National Institutes of Health Chemical Genomics Center, Rockville, MD.

#587 **Poster Board Number 332**
ZEBRAFISH AS A MODEL FOR QUANTITATIVE ASSESSMENT OF HUMAN DEVELOPMENTAL TOXICITY. C. R. Fleming[1], and *J. C. Lambert*[2]. [1]Oak Ridge Institute for Science and Education, Cincinnati, OH, and [2]US EPA, Cincinnati, OH.

Program Description (Continued)

Abstract #

#588 **Poster Board Number 333**
ACTIVITY OF US EPA'S TOXCAST COMPOUNDS USING A *C. ELEGANS* GROWTH SCREEN. *W. A. Boyd*[1], M. V. Smith[2], J. R. Rice[1], and *J. H. Freedman*[1,3]. [1]BSB, NTP, Research Triangle Park, NC, [2]SRA International, Research Triangle Park, NC, and [3]LTP, NIEHS, Research Triangle Park, NC.

#589 **Poster Board Number 334**
PROLIFERATION AS A KEY EVENT IN DEVELOPMENTAL TOXICITY: CHEMICAL SCREENING IN HUMAN NEURAL STEM CELLS USING HIGH-CONTENT IMAGING. M. Culbreth[1], T. Freudenrich[2], *T. Shafer*[2], and *W. Mundy*[2]. [1]Student Contractor, US EPA, Research Triangle Park, NC, and [2]ISTD, US EPA, Research Triangle Park, NC.

#590 **Poster Board Number 335**
DEVELOPMENTAL EXPOSURE TO PFOS OR PFOA INDUCES SIMILAR BEHAVIORAL ALTERATIONS IN ZEBRAFISH AND IN MICE. S. Spulber[1], W. Wan Ibrahim[1], M. Ul Haq[2], L. Norrgren[2], and *S. Ceccatelli*[1]. [1]Department of Neuroscience, Karolinska Institutet, Stockholm, Sweden, and [2]Department of Pathology, Swedish University of Agricultural Sciences, Uppsala, Sweden.

#591 **Poster Board Number 336**
INVESTIGATION OF ZEBRAFISH YOLK SAC INJECTION. *C. Doshna*, H. Pisharath, and *M. Aleo*. Pfizer, Groton, CT.

#592 **Poster Board Number 337**
BEHAVIORAL AND BINDING PROPERTIES OF DECYNIUM-22 IN ZEBRAFISH AND MICE. *G. G. Gould*, R. E. Horton, J. C. Groh, W. A. Owens, and L. C. Daws. Physiology, University of Texas Health Science Center at San Antonio, San Antonio, TX.

#593 **Poster Board Number 338**
COMPARATIVE EVALUATION OF THE CONVENTIONAL RADIOACTIVE LOCAL LYMPH NODE ASSAY AND NONRADIOACITVE ALTERNATIVES. *J. Wieland*[1], A. Poth[1], and C. Spohr[2]. [1]Genetic and Atlernative Toxicology, Harlan Cytotest Cell Research GmbH, Rossdorf, Germany, and [2]Technical University Darmstadt, Darmstadt, Germany.

#594 **Poster Board Number 339**
ANIMAL STRAINS IMPACT THE LLNA-BRDU RESULT. D. Hayashi[1,3], Y. Nozaki[2], *H. Takagi*[2], *T. Satoh*[1,4], R. Guest[5], and *T. Anzai*[1,3]. [1]Harlan Laboratories Co., Ltd., Tokyo, Japan, [2]Japan SLC, Inc., Hamamatsu, Japan, [3]Department of Legal Medicine, Showa University School of Medicine, Tokyo, Japan, [4]HAB Research Institute, Chiba, Japan, and [5]Harlan Laboratories Ltd., Shardlow, United Kingdom.

#595 **Poster Board Number 340**
ROLE OF METABOLISM BY INTESTINAL MICROFLORA ISOLATED FROM FAECES IN GENIPOSIDE-INDUCED TOXICITY IN HEPG2 CELL. T. Khanal[1], H. Kim[1], D. Truong[1], T. Phuong[1], H. Yeo[2], *T. Jeong*[3], D. Kim[2], and *H. Jeong*[1]. [1]Pharmacy, Chungnam National University, Daejeon, Republic of Korea, [2]Pharmacy, Kyung Hee University, Seoul, Republic of Korea, and [3]Pharmacy, Yeungnam University, Gyeongsan, Republic of Korea.

Abstract #

#596 **Poster Board Number 341**
A WEIGHT-OF-EVIDENCE APPROACH FOR THE SAFETY EVALUATION OF KOMBUCHA EXTRACT IN COSMETIC PRODUCTS. *R. Persaud*, *T. Re*, and *V. Srinivasan*. Safety Evaluation, L'Oréal R & I, Clark, NJ.

#597 **Poster Board Number 342**
A WEIGHT-OF-EVIDENCE-BASED APPROACH FOR THE SAFETY ASSESSMENT OF JUNIPERUS COMMUNIS BERRY EXTRACTS IN PERSONAL CARE PRODUCTS. *V. Srinivasan*[1], *T. Re*[1], *E. Antignac*[2], and *R. Persaud*[1]. [1]Safety Evaluation, L'Oréal R & I, Clark, NJ, and [2]L'Oréal R & I, Asnieres, France.

#598 **Poster Board Number 343**
***IN VITRO* KINETICS OF CHLORPROMAZINE IN CYTOTOXICITY ASSAYS WITH CACO-2, BALB/C 3T3 AND HEPARG CELLS.** J. Broeders, N. Timmer, J. Hermens, and *B. Blaauboer*. Toxicology, Institute for Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands.

#599 **Poster Board Number 344**
INTRA- AND INTER-LABORATORY VALIDATION STUDY ON REACTIVE OXYGEN SPECIES (ROS) ASSAY FOR PHOTOSAFETY EVALUATION OF PHARMACEUTICALS. T. Yamamoto[1], S. Onoue[2], Y. Seto[2], S. Wakuri[3], Y. Iwase[1], T. Toda[4], H. Takagi[5], N. Osaki[5], S. Kawakami[6], Y. Matsumoto[7], K. Hosoi[8], *K. Nakamura*[4], and *H. Kojima*[9]. [1]Mitsubishi Tanabe Pharma Corporation, Saitama/Chiba, Japan, [2]University of Shizuoka, Sizuoka, Japan, [3]Hatano Research Institute, Food and Drug Safety Center, Kanagawa, Japan, [4]Shionogi & Co., Ltd., Osaka/Tokyo, Japan, [5]Taisho Pharmaceutical Co., Ltd., Saitama, Japan, [6]Asahi Kasei Pharma Corporation, Shizuoka, Japan, [7]Aska Pharmaceutical Co., Ltd., Kanagawa, Japan, [8]Santen Pharmaceutical Co., Ltd., Nara, Japan, and [9]National Institute of Health Sciences, Tokyo, Japan.

#600 **Poster Board Number 345**
USE OF READ-ACROSS AND COMPUTER-BASED PREDICTIVE ANALYSIS FOR THE SAFETY ASSESSMENT OF PEG COCAMINES. *J. Skare*[1], *T. Re*[2], *L. Loretz*[3], *K. Blackburn*[1], D. Duche[4], S. Ringeissen[4], *V. Srinivasan*[2], and S. Wu[1]. [1]Procter & Gamble Company, Cincinnati, OH, [2]L'Oréal Research & Innovation, Clark, NJ, [3]Personal Care Products Council, Washington, DC, and [4]L'Oréal Research & Innovation, Aulnay-sous-Bois, France.

#601 **Poster Board Number 346**
CYP3A INDUCTION IN CYNOMOLGUS MONKEY AND HUMAN HEPATOCYTES. U. Doshi, Y. LaForge, Q. Yang, and *A. P. Li*. *In Vitro* ADMET Laboratories, Advanced Pharmaceutical Sciences, Columbia, MD.

#602 **Poster Board Number 347**
RESTORATION AND PROLONGED MAINTENANCE OF CYP3A4 ACTIVITY IN CULTURED HUMAN HEPATOCYTES. *A. P. Li*, U. Doshi, and Q. Yang. In Vitro ADMET Laboratories, Advanced Pharmaceutical Sciences, Columbia, MD.

Program Description (Continued)

Abstract #

#603 **Poster Board Number 348**
VALIDATION OF THE DATACHIP/METACHIP FOR METABOLISM-INDUCED TOXICITY. *M. Lee*[1], S. Brooks[1], D. Lee[2], S. Jeon[2], B. Ku[2], and *Y. Will*[3]. [1]Solidus Biosciences, Inc., San Francisco, CA, [2]Central R & D Institute, Samsung Electro-Mechanics Co, Suwon, Republic of Korea, and [3]Compound Safety Prediction-WWMC, Pfizer Inc., Groton, CT.

#604 **Poster Board Number 349**
TEAMCHIP FOR HIGH-THROUGHPUT GENE TRANSFECTION AND METABOLISM-INDUCED TOXICITY SCREENING. *M. Lee*[4], S. Kwon[1], D. Lee[2], D. Shah[1], B. Ku[2], D. S. Clark[3], and J. S. Dordick[1]. [1]Chemical and Biological Engineering, Rensselaer Polytechnic Institute, Troy, NY, [2]Central R & D Institute, Samsung Electro-Mechanics Co, Suwon, Republic of Korea, [3]Chemical and Biomolecular Engineering, University of California Berkeley, Berkeley, CA, and [4]Solidus Biosciences, Inc., San Francisco, CA.

#605 **Poster Board Number 350**
SELECTING GENES FOR USE IN A HIGH-THROUGHPUT MECHANISM-BASED TOXICITY SCREEN USING *C. ELEGANS*. R. B. Goldsmith[1], J. R. Pirone[2], *W. A. Boyd*[1], M. V. Smith[2], and *J. H. Freedman*[1]. [1]DNTP, NIEHS, Research Triangle Park, NC, and [2]SRA International, Durham, NC.

#606 **Poster Board Number 351**
UTILITY OF *IN VITRO* BIOASSAY AND CLINICAL DATA FOR MODELING DRUG-DRUG/CHEMICAL INTERACTIONS (DDCIS) MEDIATED BY CYTOCHROME P450 3A4. Y. Tie, and E. Demchuk. ATSDR/CDC, Atlanta, GA. Sponsor: *B. Fowler*.

#607 **Poster Board Number 352**
USE OF PHYSIOLOGICALLY-BASED PHARMACOKINETIC MODELING (PBPK) IN CONJUNCTION WITH CELLCIPHR™ TO PREDICT COMPOUND SAFETY THRESHOLDS AND IMPROVE LEAD OPTIMIZATION. C. J. Strock[2,3], S. Qin[2,3], H. Luithardt[2,3], J. Gilbert[2,3], *K. Tsaioun*[2,3], P. Metcalfe[2,3], S. Thomas[2,3], *M. Aleo*[4], and *Y. Will*[1]. [1]Compound Safety Prediction, Pfizer Global Research & Development, Groton, CT, [2]Apredica, Watertown, MA, [3]Cyprotex, Macclesfield, United Kingdom, and [4]Drug Safety and Development, Pfizer, Groton, CT.

#608 **Poster Board Number 353**
DEVELOPMENT OF ORGANOTYPIC *IN VITRO* HUMAN MODELS WITH ENGINEERED GENE KNOCKDOWN OR TOXICOLOGIC REPORTER FUNCTIONS. *P. J. Hayden*[1], G. R. Jackson[1], P. Lei[2], J. Bolmarcich[1], J. Oldach[1], A. Armento[1], S. Andreadis[2], and M. Klausner[1]. [1]MatTek Corp., Ashland, MA, and [2]State University of New York, Buffalo, NY.

#609 **Poster Board Number 354**
INCORPORATING THE THREE R'S INTO CONSUMER AND HEALTH PRODUCTS SAFETY TESTING. A. M. Laura, R. A. Lewis, D. M. Miller, B. A. Samson, M. L. Pietila, and *J. R. Haskins*. LSR—Cellomics, Thermo Fisher Scientific, Pittsburgh, PA.

Abstract #

#610 **Poster Board Number 355**
IDENTIFICATION OF A CELL AMOUNT INDICATOR TO NORMALIZE *IN VITRO* METABOLOMICS DATA. T. Walk[1], T. Ramirez[2], D. Ahlbory-Dieker[1], E. Fux[1], R. Looser[1], H. Kamp[2], and B. van Ravenzwaay[2]. [1]metanomics GmbH, Berlin, Germany, and [2]BASF SE, Ludwigshafen, Germany. Sponsor: *R. Landsiedel*.

#611 **Poster Board Number 356**
HARNESSING CHEMILUMINESCENCE TO DELIVER MECHANISTICALLY-INFORMATIVE *IN VITRO* ASSAYS FOR TOXICOLOGICAL SCREENING. C. A. Morris[1], G. El-Hiti[1], S. Woodhead[2], K. Smith[1], I. Weeks[1], and P. Kille[1]. [1]Cardiff University, Cardiff, United Kingdom, and [2]Invitron, Monmouth, United Kingdom. Sponsor: *T. Gant*.

#612 **Poster Board Number 357**
A SYSTEMATIC APPROACH FOR STUDYING THE MITOCHONDRIAL TOXICITY OF ENVIRONMENTAL CHEMICALS. *M. S. Attene-Ramos*[1], R. Huang[1], S. Sakamuru[1], *K. Witt*[2], G. Beeson[3], L. Shou[1], C. Beeson[3], *R. Tice*[2], C. Austin[1], and *M. Xia*[1]. [1]NCGC, NIH/NHGRI, Rockville, MD, [2]Division National Toxicology Program, NIEHS, Research Triangle Park, NC, and [3]Department of Pharmaceutical & Biomedical Sciences, Medical University of South Carolina, Charleston, SC.

#613 **Poster Board Number 358**
THE TOX21 NOVEL ROBOTIC PLATFORM FOR QUANTITATIVE HIGH-THROUGHPUT TOXICOLOGICAL SCREENING. N. R. Miller[1], *M. S. Attene-Ramos*[1], S. Michael[1], R. Huang[1], A. Simeonov[1], *R. R. Tice*[2], *C. P. Austin*[1], and *M. Xia*[1]. [1]NCGC, NIH, Rockville, MD, and [2]NTP, NIEHS, Research Triangle Park, NC.

#614 **Poster Board Number 359**
CHARACTERIZING CHANGES IN POLYUNSATURATED FATTY ACID PROFILES IN *C. ELEGANS* IN RESPONSE TO DEVELOPMENTAL STAGE, FOOD, AND CADMIUM EXPOSURE. *K. L. Haas*, *B. E. Tvermoes*, and *J. H. Freedman*. LTP, NIEHS, Research Triangle Park, NC.

#615 **Poster Board Number 360**
IDENTIFICATION OF BIOMARKERS OF CARDIOTOXICITY USING METABOLOMICS OF HUMAN PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES. R. E. Burrier[1], J. A. Palmer[1], A. M. Smith[1], P. R. West[1], K. R. Conard[1], E. R. Donley[1], and G. G. Cezar[1,2]. [1]Stemina Biomarker Discovery, Inc., Madison, WI, and [2]Animal Science, University of Wisconsin-Madison, Madison, WI. Sponsor: *T. Knudsen*.

#616 **Poster Board Number 361**
***IN VITRO* PHOTOTOXICITY SCREENING ASSAY FOR SYSTEMICALLY ADMINISTERED PHARMACEUTICALS USING A NORMAL HUMAN 3-DIMENSIONAL (NHU-3D) RECONSTRUCTED SKIN MODEL.** Y. Kaluzhny[1], L. d'Argembeau-Thornton[1], M. Kinuthia[1], *H. Kandarova*[2], and *M. Klausner*[1]. [1]MatTek Corporation, Ashland, MA, and [2]MatTek *In Vitro* Life Science Laboratories, Bratislava, Slovakia.

Program Description (Continued)

Abstract #

#617 **Poster Board Number 362**
INCREASED OXYGEN CONSUMPTION ASSOCIATED WITH ALTERATIONS IN CARDIAC FUNCTION IN ADULT ZEBRAFISH AFTER ACUTE AQUEOUS EXPOSURE TO BETA-NAPHTHOFLAVONE. *L. P. Weber*[1,2], and C. Gerger[2]. [1]Veterinary Biomedical Sciences, University of Saskatchewan, Saskatoon, SK, Canada, and [2]Toxicology Program, University of Saskatchewan, Saskatoon, SK, Canada.

#618 **Poster Board Number 363**
DEVELOPMENT OF PROTOCOLS FOR INVESTIGATING THE BURN WOUND HEALING PROCESS IN EPIDERM FULL THICKNESS (EFT-400) *IN VITRO* SKIN CULTURES. *M. S. Sachdeva*[1], P. P. Shah[1], A. Armento[2], and *P. Hayden*[2]. [1]College of Pharmacy & Pharmaceutical Sciences, Florida A&M University, Tallahassee, FL, and [2]MatTek Corporation, Ashland, MA.

Monday Afternoon, March 12
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: DNA Damage and Repair

Chairperson(s): *Gopala Krishna, Supernus Pharmaceutical, Rockville, MD.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *2:45 PM–4:30 PM*

#619 **Poster Board Number 401**
IDENTIFICATION OF THE ARYL HYDROCARBON RECEPTOR (AHR) AS A NEGATIVE REGULATOR OF NUCLEOTIDE EXCISION REPAIR (NER). *T. Haarmann-Stemmann*[1], K. Frauenstein[1], T. Douki[2], J. Tigges[1], M. Majora[1], C. Esser[1], J. Abel[1], *E. Fritsche*[1], and J. Krutmann[1]. [1]Leibniz Research Institute for Environmental Medicine, Duesseldorf, Germany, and [2]Laboratoire Lésions des Acides Nucléiques, Service de Chimie Inorganique et Biologique, CEA/DSM/INAC, Grenoble, France.

#620 **Poster Board Number 402**
INVESTIGATION OF THE ASSOCIATION OF BODY MASS INDEX AND POLYMORPHISMS OF GENES RESPONSIBLE FOR ESTROGEN DISPOSITION WITH THE BACKGROUND LEVELS OF ABASIC SITES IN WHITE BLOOD CELLS DERIVED FROM BREAST CANCER PATIENTS. *P. Lin*, C. Guan-Jie, R. Chang-Sin, G. Mao-Huei, L. Che, and L. Chin-Chen. Environmental Engineering, National Chung Hsing University, Taichung, Taiwan.

#621 **Poster Board Number 403**
SPONTANEOUS POINT MUTATIONS AND DELETIONS ACCUMULATE IN A DIFFERENT MANNER WITH AGING OF *GPT* DELTA TRANSGENIC MICE. K. Masumura[1], N. Osugi[2], N. Toyoda-Hokaiwado[1], and T. Nohmi[1]. [1]Division of Genetics and Mutagenesis, National Institute of Health Sciences, Tokyo, Japan, and [2]Japan SLC, Inc., Shizuoka, Japan. Sponsor: *A. Nishikawa*.

Abstract #

#622 **Poster Board Number 404**
SITE-SPECIFIC *IN VIVO* ANALYSIS: POSSIBLE INVOLVEMENT OF GENOTOXIC MECHANISMS IN THE MODES OF ACTION FOR OCHRATOXIN A (OTA)-INDUCED RENAL CARCINOGENESIS. D. Hibi[1], Y. Suzuki[1], Y. Ishii[1], M. Jin[1], Y. Sugita-Konishi[3], T. Nohmi[2], K. Ogawa[1], *A. Nishikawa*[4], and T. Umemura[1]. [1]Division of Pathology, National Institute of Health Sciences, Setagaya-ku, Tokyo, Japan, [2]Division of Genetics and Mutagenesis, National Institute of Health Sciences, Setagaya-ku, Tokyo, Japan, [3]Division of Microbiology, National Institute of Health Sciences, Setagaya-ku, Tokyo, Japan, and [4]Biological Safety Research Center, National Institute of Health Sciences, Setagaya-ku, Tokyo, Japan.

#623 **Poster Board Number 405**
MAPPING DNA DAMAGE RESPONSE IN PLURIPOTENT STEM CELLS THROUGH INTEGRATION OF RNAI SCREEN WITH GLOBAL TRANSCRIPTOMICS AND PHOSPHOPROTEOMICS. E. Danen[1], J. Puigvert[1], L. von Stechow[1], R. Siddappa[1], A. Pines[2], J. Olsen[3], H. Vrieling[2], L. Mullenders[2], and *B. van de Water*[1]. [1]Toxicology, Leiden University, Leiden, Netherlands, [2]Toxicogenetics, University Hospital, Leiden, Netherlands, and [3]Proteomics, University of Copenhagen, Copenhagen, Denmark.

#624 **Poster Board Number 406**
PARP-1 ACTIVATION IN ANILINE-INDUCED DNA DAMAGE: PROTECTIVE EFFECT OF ANTIOXIDANTS. H. Ma, J. Wang, G. Wang, and *M. Khan*. Pathology, University of Texas Medical Branch, Galveston, TX.

#625 **Poster Board Number 407**
ANTIOXIDANT DYSFUNCTION COMPROMISES UVB-INDUCED DNA DAMAGE REPAIR. W. Han[1], M. Ming[1], R. Zhao[2,3], *J. Pi*[2], and *Y. He*[1]. [1]Medicine/Dermatology, University of Chicago, Chicago, IL, [2]The Institute for Chemical Safety Sciences, The Hamner Institutes for Health Sciences, Research Triangle Park, NC, and [3]School of Forensic Medicine, China Medical University, Shenyang, Liaoning, China.

#626 **Poster Board Number 408**
***CAENORHABDITIS ELEGANS* POLQ PLAYS A ROLE IN MEIOTIC CELL REPAIR.** A. Liu[1,2], *E. K. Braithwaite*[3], *J. Hall*[1], *W. A. Boyd*[1], *S. E. Hunter*[4], *J. N. Meyer*[4], and *J. H. Freedman*[1,3]. [1]DNTP, Research Triangle Park, NC, [2]Huazhong University of Science and Technology, Wuhan, China, [3]NIEHS, Research Triangle Park, NC, and [4]Duke University, Durham, NC.

#627 **Poster Board Number 409**
C/EBPα CONTROLS P21 PROTEIN LEVELS IN RESPONSE TO UVB-INDUCED DNA DAMAGE AND DURING G1/S CELL CYCLE PROGRESSION. *J. Hall*, and *R. C. Smart*. Environmental and Molecular Toxicology, North Carolina State University, Raleigh, NC.

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#628 **Poster Board Number 410**
EARLY LIFE EXPOSURE TO MITOCHONDRIAL GENOTOXICANTS REDUCES ATP LEVEL AND MITOCHONDRIAL DNA COPY NUMBER IN JUVENILE AND ADULT *CAENORHABDITIS ELEGANS*. *M. Leung*, J. P. Rooney, A. S. Bess, I. T. Ryde, and *J. N. Meyer*. Duke University, Durham, NC.

#629 **Poster Board Number 411**
MICRORNA EXPRESSION WAS DYSREGULATED BY RIDDELLIINE IN RAT LIVER. J. Yan[1], *Z. Li*[1], *X. Yang*[2], *W. Salminen*[2], and *T. Chen*[1]. [1]Division of Genetic and Molecular Toxicology, National Center for Toxicological Research, US FDA, Jefferson, AR, and [2]Division of Systems Biology, National Center for Toxicological Research, US FDA, Jefferson, AR.

#630 **Poster Board Number 412**
REGULATORY ROLES OF MIR-34A IN MUTAGENESIS IN HUMAN LYMPHOBLAST CELLS. *X. Chen*[1], *Y. Zhang*[2], J. Yan[1], R. Sadiq[1], and *T. Chen*[1]. [1]DGMT, US FDA/NCTR, Jefferson, AR, and [2]Office of Scientific Coordination, US FDA/NCTR, Jefferson, AR.

#631 **Poster Board Number 413**
CHANGE OF DNA LIGASE I PHOSPHORYLATION INCREASES DNA DAMAGE, DELAYS CELL CYCLE, AND LEADS TO SENESCENCE. *Z. Peng*, and A. Tomkinson. Internal Medicine, University of New Mexico, Albuquerque, NM.

#632 **Poster Board Number 414**
ATR DEPLETION IN ATM-DEFICIENT HUMAN MAMMARY EPITHELIAL CELLS CAUSES SIGNIFICANTLY ATTENUATED G2 CHECKPOINT AND SYNERGISTIC LETHALITY TO DOUBLE STRAND BREAKS AND DNA-DAMAGING AGENTS. *Y. Cui*, C. L. Innes, and *R. S. Paules*. Environmental Stress and Cancer Group, Laboratory of Toxicology and Pharmacology, NIEHS, NIH, Research Triangle Park, NC.

#633 **Poster Board Number 415**
DIFFERENTIAL P53 DNA DAMAGE DOSE-RESPONSE IN HUMAN FIBROSARCOMA HT1080 AND LYMPHOBLAST AHH-1 CELLS. *B. Sun*[1], S. Ross[1], A. Thomas[1], *J. Trask*[1], *M. E. Andersen*[1], *P. Carmichael*[2], *A. White*[2], and *R. Clewell*[1]. [1]The Hamner Institute, Durham, NC, and [2]SEAC, Unilever INC., Bedfordshire, United Kingdom.

#634 **Poster Board Number 416**
MODULATION OF O6MG REPAIR ACTIVITY BY MGMT SINGLE NUCLEOTIDE POLYMORPHISMS. C. Troll, *D. L. Alexander*, and M. Camps. Microbiology & Environmental Toxicology, University of California Santa Cruz, Santa Cruz, CA.

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#635 **Poster Board Number 417**
INCREASED NUCLEOTIDE EXCISION REPAIR ACTIVITY OF AFLATOXIN-B_1-N^7-GUANINE ADDUCTS IN LUNGS AND LIVERS OF MICE EXPOSED CHRONICALLY TO AFLATOXIN B_1 *J. E. Mulder*[1], *R. Mehta*[2], *G. S. Bondy*[2], and *T. E. Massey*[1]. [1]Pharmacology and Toxicology, Queens University, Kingston, ON, Canada, and [2]Toxicology Research Division, Health Canada, Ottawa, ON, Canada.

#636 **Poster Board Number 418**
DNA DAMAGING MECHANISMS OF TRICHLOROETHYLENE RENAL TOXICITY. *V. De La Rosa*, J. Asafa, D. Corvaglia, and *C. Vulpe*. Nutritional Sciences and Molecular Toxicology, University of California, Berkeley, Berkeley, CA.

#637 **Poster Board Number 419**
DNA REPAIR CAPACITY IS MODULATED BY XPC HAPLOTYPES. *C. M. Rondelli*[1], C. J. Etzel[2], and *S. Z. Abdel-Rahman*[1]. [1]University of Texas Medical Branch, Galveston, TX, and [2]MD Anderson, Houston, TX.

#638 **Poster Board Number 420**
IDENTIFYING MECHANISMS OF TRICHLOROETHYLENE TOXICITY. J. B. Asfaha[1], *V. De La Rosa*[1], D. Corvaglia[2], and *C. Vulpe*[1]. [1]Nutritional Science and Toxicology, University of California Berkeley, Berkeley, CA, and [2]University of California Merced, Merced, CA.

#639 **Poster Board Number 421**
COREXIT 9500 AND BENZO(A)PYRENE (BAP) COEXPOSURE ALTERS DNA DAMAGE RESPONSE COMPARED WITH BAP ALONE. K. E. Germ, and *G. D. Mayer*. Environmental Toxicology, Texas Tech University, Lubbock, TX.

#640 **Poster Board Number 422**
THE RELATIONSHIP BETWEEN ERCC6 AND XPA GENE POLYMORPHISM AND RISK OF ARSENICOSIS CAUSED BY BURNING COAL IN GUIZHOU PROVINCE, CHINA. A. Zhang[1], X. Xu[1], G. Yang[1], and X. Huang[2]. [1]School of Public Health, Guiyang Medical University, Guiyang, China, and [2]44th Hospital of People's Liberation Army, Guiyang, China. Sponsor: *P. Zhou*.

#641 **Poster Board Number 423**
THE RELATIONSHIP BETWEEN HYPERMETHYLATION,MRNA TRANSCRIPTION AND PROTEIN EXPRESSION OF GLUTATHIONE-S-TRANSFERASES-P1 GENE AND ARSENICOSIS. T. Yang[1], A. Zhang[1], X. Pan[1], X. Huang[2], and X. Han[1]. [1]School of Public Health, Guiyang Medical University, Guiyang, China, and [2]44th Hospital of People's Liberation Army, Guiyang, China. Sponsor: *P. Zhou*.

#642 **Poster Board Number 424**
MOLECULAR BASIS OF DNA DAMAGE TRANSCRIPTION PROCESSING BY RNA POLYMERASE II. *D. Wang*. Skaggs School of Pharmacy & Pharmaceutical Sciences, University of California San Diego, La Jolla, CA.

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#643 **Poster Board Number 425**
ACTIVATION OF THE MYCOTOXIN PATULIN BY REACTION WITH GLUTATHIONE: A PUTATIVE MECHANISM OF ADDUCT FORMATION WITH ADENINE. *L. Lehmann*, C. Pfenning, and *H. L. Esch*. Insitute of Pharmacy and Food Chemistry, University of Wüerzburg, Wüerzburg, Germany.

#644 **Poster Board Number 426**
SMOKING IS ASSOCIATED WITH A DIMINISHED DNA REPAIR AND INCREASED BREAST CANCER RISK. *J. L. Matta*, C. Alvarez-Garriga, L. Morales, W. Vargas, and M. Bayona. Pharmacology, Physiology & Toxicology, School of Public Health, Ponce School of Medicine and Health Sciences, Ponce, US, Puerto Rico.

Monday Afternoon, March 12
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Nanotoxicology: Nanoparticles I

Chairperson(s): *Laura Braydich-Stolle, AFRL/RHPB, Wright-Patterson AFB, Dayton, OH.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *1:00 PM–2:45 PM*

#645 **Poster Board Number 429**
NANOPARTICLES FOR DRUG DELIVERY: HOW TO ASSESS DANGER FOR MITOCHONDRIA? B. H. Rihn, H. Eidi, O. Joubert, and A. Le Faou. Faculté de Pharmacie/CITHEFOR, Université de Lorraine, Nancy, France. Sponsor: *N. Claude*.

#646 **Poster Board Number 430**
SIZE-DEPENDENT AGGRAVATING-EFFECT OF AMORPHOUS SILICA NANOPARTICLES ON ATOPIC DERMATITIS. T. Hirai[1,2], *T. Yoshikawa*[1,2], T. Yoshida[1,2], S. Tochigi[1,2], M. Uji[1,2], K. Ichihashi[1,2], N. Itoh[1], H. Nabeshi[1,2], *Y. Yoshioka*[1,2,3], and *Y. Tsutsumi*[1,2,3]. [1]Laboratory of Toxicology and Safety Science, Graduate School of Pharmaceutical Sciences, Osaka University, Osaka, Japan, [2]Laboratory of Biopharmaceutical Research, National Institute of Biomedical Innovation, Osaka, Japan, and [3]The Center for Advanced Medical Engineering and Informatics, Osaka University, Osaka, Japan.

#647 **Poster Board Number 431**
MICRONUCLEI IN TK6 CELLS ARE INCREASED BY SILVER NANOPARTICLES IN A DOSE, SIZE, AND SURFACE COATING-DEPENDENT MANNER. *Y. Li*, J. Yan, *J. A. Bhalli*, R. Sadiq, *W. Ding*, and *T. Chen*. Division of Genetic and Molecular Toxicology, US FDA/National Center for Toxicological Research, Jefferson, AR.

#648 **Poster Board Number 432**
***IN VITRO* PULMONARY TOXICITY OF METAL OXIDE NANOPARTICLES.** D. Cupi[1], and *K. Dreher*[2]. [1]Technical University of Denmark, Kongens Lyngby, Denmark, and [2]US EPA, Research Triangle Park, NC.

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#649 **Poster Board Number 433**
THE ROLE OF ROS AND NFκB ON CYTOTOXIC AND PRO-INFLAMMATORY EFFECTS OF BLACK TONER POWDER. V. Mersch-Sundermann[1], A. Weiss[1], M. Koenczoel[1], C. Gruendemann[1], I. Merfort[2], and R. Gminski[1]. [1]University Medical Center Freiburg, Freiburg, Germany, and [2]Department of Pharmaceutical Biology and Biotechnology, University of Freiburg, Freiburg, Germany. Sponsor: *D. DeMarini*.

#650 **Poster Board Number 434**
THE INDUCTION OF METALLOTHIONEINS BY SILVER NANOPARTICLES AS A NOVEL PUTATIVE IMMUNOMODULATORY MECHANISM IN T CELLS. J. Shao, A. A. Peijnenburg, H. Bouwmeester, and O. L. Volger. RIKILT—Institute of Food Safety, Wageningen University and Research Centre, Wageningen, Netherlands. Sponsor: *S. Rangarajan*.

#651 **Poster Board Number 435**
PULMONARY TOXICITY FOLLOWING REPEATED INTRATRACHEAL INSTILLATION OF DISPERSED SILVER NANOPARTICLES IN RATS. *J. R. Roberts*[1], A. Kenyon[1], *S. Young*[1], D. Schwegler-Berry[1], V. A. Hackley[2], R. I. MacCuspie[2], A. B. Stefaniak[1], M. L. Kashon[1], B. T. Chen[1], and *J. M. Antonini*[1]. [1]NIOSH, Morgantown, WV, and [2]NIST, Gaithersburg, MD.

#652 **Poster Board Number 436**
PULMONARY TOXICITY ASSOCIATED WITH DIFFERENT ASPECT RATIO SILVER NANOWIRES AFTER INTRATRACHEAL INSTILLATION IN RATS. A. Kenyon[1], *J. M. Antonini*[1], R. R. Mercer[1], D. Schwegler-Berry[1], N. M. Schaeublin[2], *S. M. Hussain*[2], S. J. Oldenburg[3], and *J. R. Roberts*[1]. [1]NIOSH, Morgantown, WV, [2]711HPW/RHPB, Air Force Research Labs, Wright-Patterson AFB, Dayton, OH, and [3]nanoComposix, Inc., San Diego, CA.

#653 **Poster Board Number 437**
ADDRESSING THE TOXICOLOGICAL IMPACTS OF POLYSTYRENE AND METAL OXIDE NANOPARTICLES AS CARRIERS OF ENVIRONMENTAL POLLUTANTS. B. J. Newsome[1,3], T. Dziubla[2], *B. Hennig*[3], and L. Bachas[4]. [1]Chemistry, University of Kentucky, Lexington, KY, [2]Chemical and Materials Engineering, University of Kentucky, Lexington, KY, [3]Graduate Center for Nutritional Sciences, University of Kentucky, Lexington, KY, and [4]Chemistry, University of Miami, Coral Gables, FL.

#654 **Poster Board Number 438**
COMPARISON OF SYSTEMIC INFLAMMATION BETWEEN INTRAVENOUSLY DELIVERED MULTIWALLED CARBON NANOTUBES AND GRAPHENE NANOSHEETS. *X. Wang*, R. Podila, E. E. Mann, and *J. M. Brown*. Pharmacology & Toxicology, East Carolina University, Greenville, NC.

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#655 **Poster Board Number 439**
***IN VITRO* CYTOTOXICITY OF SILVER NANOMATERIALS IN MURINE MACROPHAGES.** *T. D. Green*[1], A. E. Badawy[2], T. Tolaymat[3], and *D. J. Thomas*[1]. [1]ISTD, US EPA, Research Triangle Park, NC, [2]Department Civil & Environmental Engineering, University of Cincinnati, Cincinnati, OH, and [3]LRPCD, US EPA, Cincinnati, OH.

#656 **Poster Board Number 440**
HYPERTHERMIA-INDUCED CANCER CELL DEATH BY TARGETED MAGNETIC NANOPARTICLES. F. Mohammad[1,2], *A. C. Raghavamenon*[1], C. Kumar[2], and *R. M. Uppu*[1]. [1]Environmental Toxicology, Southern University, Baton Rouge, LA, and [2]CAMD, Louisiana State University, Baton Rouge, LA.

#657 **Poster Board Number 441**
GRAPHENE PHYTOTOXICITY IN THE SEEDLING STAGE OF CABBAGE, TOMATO, RED SPINACH, AND LETTUCE. P. Begum, R. Ikhtiari, and B. Fugetsu. Hokkaido University, Sapporo, Hokkaido, Japan. Sponsor: *B. Fugetsu*.

#658 **Poster Board Number 442**
SUBACUTE AND SUBCHRONIC INHALATION TOXICITY AND DERMAL ABSORPTION OF THE NANOSCALED ZINC OXIDE Z-COTE® HP1 IN THE RAT. O. H. Creutzenberg[1], C. Ziemann[1], T. Hansen[1], H. Ernst[2], D. Schaudien[2], S. Schuchardt[1], K. Wiench[3], and B. Bellmann[1]. [1]Inhalation Toxicology, Fraunhofer ITEM, Hannover, Lower Saxony, Germany, [2]Histopathology, Fraunhofer ITEM, Hannover, Lower Saxony, Germany, and [3]Regulatory Toxicology Chemicals, BASF SE, Ludwigshafen, Rhineland-Palatinate, Germany. Sponsor: *C. Dasenbrock*.

#659 **Poster Board Number 443**
INVESTIGATION OF NANOZEOLITES CYTOTOXICITY. D. H. Napierska[1], L. C. Thomassen[2], D. Dinsdale[3], *D. Lison*[4], C. E. Kirschhock[2], J. A. Martens[2], and *P. H. Hoet*[1]. [1]Unit for Lung Toxicology, K.U.Leuven, Leuven, Belgium, [2]Center for Surface Chemistry & Catalysis, K.U.Leuven, Leuven, Belgium, [3]Toxicology Unit, MRC, Leicester, United Kingdom, and [4]Louvain Centre for Toxicology and Applied Pharmacology, Catholic University of Louvain, Brussels, Belgium.

#660 **Poster Board Number 444**
MEASUREMENT OF DIAMETER OF DIFFERENT NANOPARTICLE AGGLOMERATES AFTER CONTACT WITH A549 CELLS REVEALED DIFFERENT SIZE BEHAVIOR. D. Schaudien, J. Knebel, S. Rittinghausen, and O. Creutzenberg. Fraunhofer Institute for Toxicology and Experimental Medicine, Hannover, Germany. Sponsor: *C. Dasenbrock*.

#661 **Poster Board Number 445**
SUSPENSION OF MWCNT FOR TOXICOLOGICAL *IN VIVO* AND *IN VITRO* STUDIES. U. Heinrich[1], A. Schlichting[1], C. Ziemann[1], S. Seyock[1], D. Haase[2], A. Leonhardt[2], and B. Bellmann[1]. [1]Fraunhofer Institute for Toxicology and Experimental Medicine, Hannover, Germany, and [2]Leibniz Institute for Solid State and Materials Research Dresden, Dresden, Germany. Sponsor: *C. Dasenbrock*.

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#662 **Poster Board Number 446**
A DYNAMIC COCULTURE MODEL RESEMBLING THE ALVEOLO-CAPILLARY BARRIER TO STUDY TOXICITY AND TRANSLOCATION OF NANOPARTICLES. K. Luyts, B. Nemery, and *P. H. Hoet*. Unit for Lung Toxicology, K.U.Leuven, Leuven, Belgium.

#663 **Poster Board Number 447**
DETERMINATION OF ENDOTOXIN CONCENTRATION BY DIFFERENT TEST METHODS: INFLUENCE OF SAMPLE PREPARATION AND PARTICLE INTERFERENCE ON TEST RELIABILITY. S. Smulders[1], J. Kaiser[2], P. Wick[2], and *P. Hoet*[1]. [1]Research Unit for Lung Toxicology, K.U.Leuven, Leuven, Belgium, and [2]Empa, Swiss Federal Laboratories for Materials-Biology Interactions, St. Gallen, Switzerland.

#664 **Poster Board Number 448**
ENDOTHELIAL CELL CYTOTOXICITY AND ACTIVATION BY C60, MULTIWALLED CARBON NANOTUBES AND GRAPHENE NANOSHEETS. *J. M. Brown*[1], A. Vidanapathirana[2], J. E. Pitzer[1], R. Podila[1], R. W. Snyder[3], *S. J. Sumner*[3], A. H. Lewin[3], L. Han[3], *C. J. Wingard*[2], X. Lai[4], *F. A. Witzmann*[4], and *T. R. Fennell*[3]. [1]Pharmacology & Toxicology, East Carolina University, Greenville, NC, [2]Physiology, East Carolina University, Greenville, NC, [3]Discovery Sciences, Research Triangle Institute, Research Triangle Park, NC, and [4]Cellular and Integrative Physiology, Indiana University School of Medicine, Indianapolis, IN.

#665 **Poster Board Number 449**
CELLULAR EFFECTS OF NANOSILVER IN HUMAN MACROPHAGES: UPTAKE, OXIDATIVE STRESS, LIPID ALTERATIONS AND FUNCTIONAL IMPAIRMENT. A. Haase[1], J. Tentschert[1], P. Graf[2], A. Mantion[3], F. Draude[4], H. Jungnickel[1], S. Galla[4], J. Plendl[5], H. F. Arlinghaus[4], A. F. Thünemann[3], A. Taubert[6], and A. Luch[1]. [1]German Federal Institute for Risk Assessment (BfR), Berlin, Germany, [2]Department of Chemistry, University of Basel, Basel, Switzerland, [3]Federal Institute for Materials Research and Testing (BAM), Berlin, Germany, [4]Institute of Physics, University of Münster, Münster, Germany, [5]Department of Veterinary Medicine, Free University of Berlin, Berlin, Germany, and [6]Institute of Chemistry, University of Potsdam, Potsdam, Germany. Sponsor: *M. Pallardy*.

#666 **Poster Board Number 450**
PHARMACOKINETICS AND DISTRIBUTION OF FULLERENE C60 IN FEMALE RATS AND MICE. *S. C. Sumner*[1], R. W. Snyder[1], A. H. Lewin[1], *J. A. Brown*[2], *C. J. Wingard*[3], and *T. R. Fennell*[1]. [1]Discovery Sciences, RTI International, Research Triangle Park, NC, [2]Physiology, East Carolina University, Greenville, NC, and [3]Pharmacology and Toxicology, East Carolina University, Greenville, NC.

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#667 **Poster Board Number 451**
ACTIVATION OF THE NLRP3 INFLAMMASOME CORRELATES WITH THE PULMONARY BIOACTIVITY OF MULTIWALLED CARBON NANOTUBES.
T. M. Sager[1,2], M. Wolfarth[1], *D. Porter*[1], N. Wu[3], R. Hamilton[2], *A. Holian*[1], and *V. Castranova*[1]. [1]Pathology and Physiology Research Branch, NIOSH, Morgantown, WV, [2]Center for Environmental Health Sciences, University of Montana, Missoula, MT, and [3]Department of Mechanical and Aerospace Engineering, West Virginia University, Morgantown, WV.

#668 **Poster Board Number 452**
CARBOXYLATED CARBON NANOTUBES INDUCE AUTOPHAGY AND APOPTOSIS IN ENDOTHELIAL CELLS. M. Orecna[1], S. Lacerda[1], K. Holada[2], and J. Simak[1]. [1]FDA, CBER, Bethesda, MD, and [2]First Faculty of Medicine, Charles University of Prague, Institute of Immunology and Microbiology, Prague, Czech Republic. Sponsor: *R. Mitkus*.

#669 **Poster Board Number 453**
PULMONARY EXPOSURE TO GRAPHENE OXIDE AND FULLERENES CAUSES INFLAMMATION AND MODIFIES THE IMMUNE RESPONSE. S. C. Stanley[1,2], A. V. Tkach[1], M. R. Shurin[5], G. V. Shurin[5], E. Kisin[1], A. R. Murray[1,2], S. Pareso[1,2], S. Leonard[1], S. H. Young[1], B. Fadeel[3], S. Mathur[4], A. Star[5], G. P. Kotchey[5], *V. Castranova*[1], *V. E. Kagan*[5], and *A. A. Shvedova*[1,2]. [1]Physiology, National Institute of Occupational Safety and Health, Morgantown, WV, [2]Physiology, West Virginia University, Morgantown, WV, [3]Karolinska Institutet, Stockholm, Sweden, [4]University of Cologne, Cologne, Germany, and [5]University of Pittsburgh, Pittsburgh, PA.

#670 **Poster Board Number 454**
INCREASE IN LUNG NEUTROPHIL AND MACROPHAGE LEVELS IN RATS EXPOSED TO INHALED AGGLOMERATED TIO2 NANOPARTICLES. *A. Noel*[1], Y. Cloutier[2], *M. Charbonneau*[3], G. Truchon[2], and *R. Tardif*[1]. [1]Environmental and Occupational Health, University of Montreal, Montreal, QC, Canada, [2]Institut de Recherche Robert-Sauvé en santé et en sécurité du travail, Montreal, QC, Canada, and [3]INRS-Institut Armand-Frappier, Université du Québec, Laval, QC, Canada.

#671 **Poster Board Number 455**
ORAL BIOAVAILABILITY OF GOLD NANOPARTICLES IN MICE: PEG-COATED VS. UNCOATED GOLD NANOPARTICLES. *G. K. Hinkley*[1], P. L. Carpinone[2], K. W. Powers[2], and *S. M. Roberts*[1]. [1]Center for Environmental and Human Toxicology, University of Florida, Gainesville, FL, and [2]Particle Engineering Research Center, University of Florida, Gainesville, FL.

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#672 **Poster Board Number 456**
TOXICITY ASSESSMENT OF EIGHT NANOPARTICLES IN HUMAN EPIDERMAL KERATINOCYTES. *N. A. Monteiro-Riviere*[1], A. O. Inman[1], S. Mathur[2], M. Muhammed[3], *B. Fadeel*[4], and *J. E. Riviere*[1]. [1]Center for Chemical Toxicology Research and Pharmacokinetics, North Carolina State University, Raleigh, NC, [2]Institute of Inorganic Chemistry, University of Cologne, Cologne, Germany, [3]Department of Materials Science and Engineering, Royal Institute of Technology, Stockholm, Sweden, and [4]Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden.

#673 **Poster Board Number 457**
TOXICITY ASSESSMENT OF CITRATE BIOPURE SILVER AND SILICA-COATED SILVER IN HUMAN SKIN CELLS. A. O. Inman[1], *J. E. Riviere*[1], S. J. Oldenburg[2], and *N. A. Monteiro-Riviere*[1]. [1]Center for Chemical Toxicology Research and Pharmacokinetics, North Carolina State University, Raleigh, NC, and [2]nanoComposix, San Diego, CA.

#674 **Poster Board Number 458**
BIOCHEMICAL AND HISTOPATHOLOGICAL EVALUATION OF FUNCTIONALIZED SINGLE-WALLED CARBON NANOTUBES IN SWISS-WEBSTER MICE. *A. Patlolla*[1], B. McGinnis[2], and *P. Tchounwou*[1]. [1]Jackson State University, Jackson, MS, and [2]Dillard University, New Orleans, LA.

#675 **Poster Board Number 459**
THE COMPARISON OF MESOPOROUS SILICA NANOPARTICLES AND COLLOIDAL SILICA ON INFLAMMATION AND APOPTOSIS. *S. Lee*[1], H. Yun[2], and *S. Kim*[1]. [1]Pharmacology, School of Medicine, Kyungpook National University, Daegu, Republic of Korea, and [2]Engineering Ceramics Research Group, Functional Materials Division, Korea Institute of Materials Science (KIMS), Changwon, Republic of Korea.

#676 **Poster Board Number 460**
THE CYTOTOXIC EFFECT OF ETOPOSIDE AND DEXAMETHASONE INDIVIDUALLY AND IN COMBINATION WITH SILVER, GOLD AND SINGLEWALLED CARBON NANOTUBES ON CANCER CELLS. *D. A. Casciano*[1], M. Mahmood[2], Y. Xu[3], and A. S. Biris[4]. [1]Applied Sciences, University of Arkansas at Little Rock, Little Rock, AR, [2]Applied Science, University of Arkansas at Little Rock, Little Rock, AR, [3]University of Arkansas at Little Rock, Little Rock, AR, and [4]University of Arkansas at Little Rock, Little Rock, AR.

#677 **Poster Board Number 461**
MICELLAR ENCAPSULATED SULFUR DONORS TO COMBAT CYANIDE INTOXICATION. B. Winner[1], P. Ngo[1], M. Negrito[1], K. Kovacs[1,2], P. Furedi[2], *I. Petrikovics*[1], and *G. Rockwood*[3]. [1]Department of Chemistry, Sam Houston State University, Huntsville, TX, [2]Department of Pharmaceutics, Semmelweis University, Budapest, Hungary, and [3]US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD.

Program Description (Continued)

Abstract #

#678 **Poster Board Number 462**
THE RESPONSES TO DIFFERENT PARTICLES OF ALUMINIUM OXIDE IN A549 AND THP-1 CELL. T. Hirano, Y. Deguchi, and S. Kawamura. Sumitomo Chemical Co., Ltd., Osaka, Japan. Sponsor: *T. Yamada*.

#679 **Poster Board Number 463**
90-DAY INHALATION TOXICITY STUDY IN RATS WITH CARBON NANOFIBERS: CELL PROLIFERATION AND HISTOPATHOLOGY ASSESSMENTS DEMONSTRATE LUNG PARENCHYMAL BUT NOT PLEURAL OR MESOTHELIAL EFFECTS. K. L. Reed[1], Y. Muro[2], S. R. Frame[1], *M. P. DeLorme*[1], and *D. B. Warheit*[1]. [1]DuPont Haskell Lab., Newark, DE, and [2]Showa Denko K.K., Tokyo, Japan.

Monday Afternoon, March 12
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Inflammation: Biochemical/Molecular Mechanisms

Chairperson(s): *Gabriele Grunig, New York University Medical Center, Tuxedo, NY.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *2:45 PM–4:30 PM*

#680 **Poster Board Number 501**
INDOLES ALLEVIATE THE DEVELOPMENT OF EXPERIMENTAL AUTOIMMUNE ENCEPHALOMYELITIS (EAE) BY ACTIVATION OF ARYL HYDROCARBON AND ESTROGEN RECEPTORS LEADING TO ALTERED MICRO-RNA REGULATION AND SUPPRESSION OF TH17 ACTIVATION. M. Rouse, *M. Nagarkatti*, and *P. Nagarkatti*. University of South Carolina, Columbia, SC.

#681 **Poster Board Number 502**
VITAMIN-C RESCUES HYPEROXIA-COMPROMISED MACROPHAGE PHAGOCYTIC FUNCTION BY INHIBITING HMGB1 RELEASE. V. Sampat[1], and *D. Mantell*[1,2]. [1]St Johns University, Jamaica, NY, and [2]The Feinstein Institute for Medical Research, North Shore-LIJ Health Science, Manhasset, NY.

#682 **Poster Board Number 503**
INHIBITION OF PLATELET AGGREGATION WITH A SPLEEN TYROSINE KINASE (SYK) INHIBITOR. *D. D. Baker*, *B. Jeffy*, *K. Ghoreishi*, *D. Misner*, R. Magpantay, and *M. Breider*. Exploratory Toxicology, Celgene, Inc., San Diego, CA.

#683 **Poster Board Number 504**
SELENIUM DEFICIENCY PROMOTES PROINFLAMMATORY RESPONSES TO BACTERIAL ENDOTOXIN. *W. Watson*[1], T. Burke[1], and *C. McClain*[1,2,3]. [1]Department of Medicine/GI, University of Louisville, Louisville, KY, [2]Pharmacology and Toxicology, University of Louisville, Louisville, KY, and [3]Louisville VA Medical Center, Louisville, KY.

Abstract #

#684 **Poster Board Number 505**
INHIBITION OF OSTEOBLASTIC DIFFERENTIATION BY BROMOPROPANES. H. Jeong[2], Y. Goo[2], *H. Jeong*[1], *T. Jeong*[3], and K. Lee[2]. [1]Pharmacy, Chungnam National University, Daejeon, Republic of Korea, [2]Pharmacy, Chonnam National University, Gwangju, Republic of Korea, and [3]Pharmacy, Yeungnam University, Gyeongsan, Republic of Korea.

#685 **Poster Board Number 506**
POSITIVE REGULATION OF MUCOSAL MICROSOMAL PROSTAGLANDIN E SYNTHASE 1 BY ACTIVATED ONCOGENE RHOA GTPASE IN EPITHELIAL INFLAMMATION AND CARCINOGENESIS. K. Do, H. Choi, and *Y. Moon*. Laboratory of Systems Mucosal Biomodulation, Department of Microbiology and Immunology, Pusan National University School of Medicine and Medical Research Institute, Yangsan, Republic of Korea.

#686 **Poster Board Number 507**
ACTIVATION OF MUCOSAL EPIDERMAL GROWTH FACTOR RECEPTOR-LINKED SIGNALS BY INDOOR INFLAMMAGEN *PSEUDOMONAS FLUORESCENS*. H. Choi, and *Y. Moon*. Laboratory of Systems Mucosal Biomodulation, Department of Microbiology and Immunology, Pusan National University School of Medicine and Medical Research Institute, Yangsan, Republic of Korea.

#687 **Poster Board Number 508**
1-BROMOPROPANE INDUCES CYCLOOXYGENASE-2 GENE EXPRESSION IN MURINE MACROPHAGE RAW 264.7 CELLS. J. Yang[1], E. Han[1], H. Kim[1], J. Choi[1], K. Lee[2], *T. Jeong*[3], and *H. Jeong*[1]. [1]Pharmacy, Chungnam National University, Daejeon, Republic of Korea, [2]Pharmacy, Chonnam National University, Gwangju, Republic of Korea, and [3]Pharmacy, Yeungnam University, Kyungsan, Republic of Korea.

#688 **Poster Board Number 509**
ACTIVATION OF NICOTINIC PATHWAY INHIBITS HYPEROXIA-INDUCED HMGB1 RELEASE AND RESCUES MACROPHAGE PHAGOCYTIC FUNCTION. *R. A. Sitapara*[1], and *L. L. Mantell*[1,2]. [1]Department of Pharmaceutical Sciences, St. John's University, Fresh Meadows, NY, and [2]The Feinstein Institute for Medical Research, North Shore-LIJ Health Science, Manhhaset, NY.

#689 **Poster Board Number 510**
THE ROLE OF NO AND OXIDATIVE STRESS IN THE INTRATRACHEAL BLEOMYCIN MODEL OF LUNG INJURY AND INFLAMMATION. T. Golden[1,2], J. Shi[4], *C. Guo*[2], *C. B. Massa*[1], P. Scott[2], S. Tu[3], M. Lee[3], *A. J. Gow*[2], and C. S. Yang[3]. [1]Toxicology, Rutgers University, Piscataway, NJ, [2]Pharmacology, Rutgers University, Piscataway, NJ, [3]Chemical Biology, Rutgers University, Piscataway, NJ, and [4]Respiratory Medicine, Fudan University, Shanghai, China.

#690 **Poster Board Number 511**
MECHANISM OF ANTHRAX LETHAL TOXIN-INDUCED PULMONARY EDEMA. *U. Kayyali*, T. Liu, R. Warburton, M. J. Weiner, and J. Wurm. Medicine/Pulmonary & CC, Tufts Medical Center, Boston, MA.

Program Description (Continued)

Abstract #

#691 **Poster Board Number 512**
THE ROLE OF COREPRESSOR SPLICE-VARIANTS IN REGULATING LUNG INFLAMMATION. *C. A. Snyder*, and M. L. Privalsky. University of California Davis, Davis, CA.

#692 **Poster Board Number 513**
LC-MS/MS QUANTIFICATION OF PROSTAGLANDIN D2, E2 AND F2 IN MURINE MACROPHAGE CELL CULTURE SUPERNATANTS FOLLOWING EXPOSURE TO LIPOPOLYSACCHARIDE, *PSEUDOMONAS AERUGINOSA*, TOLFENAMIC ACID, BETULINIC ACID, CDODA-ME, 3-DIINDOLYMETHANE 5-DIINDOLYMETHANE, OR 12-DIINDOLYMETHANE. J. Berkbigler[1], M. F. Afzali[1], G. P. Dooley[1], R. A. Slayden[2], and *W. H. Hanneman*[1]. [1]Department of Environmental and Radiological Health Sciences, Colorado State University, Fort Collins, CO, and [2]Department of Microbiology, Immunology and Pathology, Colorado State University, Fort Collins, CO.

#693 **Poster Board Number 514**
IDENTIFICATION OF AN OLEATE-SENSITIVE INTERACTION BETWEEN MITOCHONDRIAL UNCOUPLING PROTEIN-3 (UCP3) AND Δ3,5Δ2,4 DIENOYL-COA ISOMERASE. C. Dao[1], A. Kenaston[1], K. Hirasaka[2], and *E. Mills*[1]. [1]Pharmacy, Division of Pharmacology/Toxicology, University of Texas at Austin College of Pharmacy, Austin, TX, and [2]Nutritional Physiology, University of Tokushimi, Tokushimi, Japan.

#694 **Poster Board Number 515**
LIPOPOLYSACCHARIDE ACTIVATES MICROGLIA THROUGH NA+ CHANNEL- AND NA+/H+ EXCHANGER-DEPENDENT MECHANISMS. *M. M. Hossain*, and *J. R. Richardson*. Department of Environmental and Occupational Medicine, Robert Wood Johnson Medical School, University of Medicine and Dentistry of New Jersey, Piscataway, NJ.

#695 **Poster Board Number 516**
AMELIORATION OF LIPOPOLYSACCHARIDE/D-GALACTOSAMINE-INDUCED ACUTE LIVER TOXICITY BY 3,3 DIINDOLYLMETHANE, A PLANT-DERIVED AHR LIGAND. S. Tomar, *P. Nagarkatti*, and *M. Nagarkatti*. Pathology, Microbiology and Immunology, School of Medicine, University of South Carolina, Columbia, SC.

#696 **Poster Board Number 517**
THE REGULATION OF ENDOGENOUS ALKALINE PHOSPHATASE LEVELS IN HEPARG. N. Kramer[1], V. C. Huijgen[1], R. Brands[1,2], W. Seinen[1,2], and *B. J. Blaauboer*[1]. [1]Institute for Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands, and [2]Alloksys Life Sciences BV, Bunnik, Netherlands.

Abstract #

#697 **Poster Board Number 518**
SULFORAPHANE RESTORES HISTONE DEACETYLASE ACTIVITY IN HUMAN EPITHELIAL CELLS EXPOSED TO CIGARETTE SMOKE RESULTING IN DECREASED CYTOKINE PRODUCTION. P. Charley, and *D. J. Blake*. Biology, Fort Lewis College, Durango, CO.

#698 **Poster Board Number 519**
PERFLUOROOCTANOIC ACID INDUCES MAST CELL-MEDIATED ALLERGIC INFLAMMATION: RELEASE OF HISTAMINE, INVOLVEMENT OF CALCIUM, CASPASE-1, COX-2, AND NUCLEAR FACTOR-κB. T. Singh, and *S. Kim*. Pharmacology, School of Medicine, Kyungpook National University, Daegu, Republic of Korea.

#699 **Poster Board Number 520**
TCDD EXACERBATES CONCANAVALIN A-INDUCED LIVER INJURY AND REVEALS A CRITICAL ROLE FOR NK CELLS IN A MODEL OF IMMUNE-MEDIATED LIVER INJURY. *A. M. Fullerton*, *R. A. Roth*, and *P. E. Ganey*. Pharmacology & Toxicology, Center for Integrative Toxicology, Michigan State University, East Lansing, MI.

#700 **Poster Board Number 521**
REGULATION OF CLASSICAL AND ALTERNATIVE MACROPHAGE ACTIVATION BY GALECTIN-3 (GAL-3) FOLLOWING ACETAMINOPHEN (APAP) INTOXICATION. *A. Dragomir*[1], R. Sun[1], *J. D. Laskin*[2], and *D. L. Laskin*[1]. [1]Pharmacology and Toxicology, Rutgers University, Piscataway, NJ, and [2]University of Medicine and Dentistry of New Jersey/Robert Wood Johnson Medical School, Piscataway, NJ.

#701 **Poster Board Number 522**
EFFECT OF BACTERIAL-INDUCED PROSTATIC INFLAMMATION ON CHANGES IN EXTRACELLULAR MATRIX. *L. Wong*[1,2], and W. Bushman[2,1]. [1]Molecular and Environmental Toxicology, University of Wisconsin-Madison, Madison, WI, and [2]Urology, University of Wisconsin-Madison, Madison, WI.

#702 **Poster Board Number 523**
ATTENUATION OF THE ANGIOGENIC PROPERTIES OF ENDOTHELIAL CELLS BY INFLAMMATORY CYTOKINES. *T. L. Palenski*[1], C. M. Sorenson[2], and N. Sheibani[1,3]. [1]Ophthalmology & Visual Sciences, University of Wisconsin-Madison, Madison, WI, [2]Pediatrics, University of Wisconsin-Madison, Madison, WI, and [3]Pharmacology, University of Wisconsin-Madison, Madison, WI.

#703 **Poster Board Number 524**
PARTICLE EXPOSURES, DEVELOPMENT OF TH2 IMMUNITY, AND MACROPHAGE SUBSETS IN LUNG FIBROSIS. *C. T. Migliaccio*, E. Kobos, V. Porter, and *A. Holian*. Center for Environmental Health Sciences, University of Montana, Missoula, MT.

Program Description (Continued)

Abstract #

#704 **Poster Board Number 525**
TUMOR NECROSIS FACTOR-ALPHA POTENTIATES THE CYTOTOXICITY OF AMIODARONE IN HEPA1C1C7 CELLS: ROLES OF CASPASE ACTIVATION AND OXIDATIVE STRESS. *J. Lu*[1,3], *R. A. Roth*[2,3], and *P. E. Ganey*[2,3]. [1]Biochemistry and Molecular Biology, Michigan State University, East Lansing, MI, [2]Pharmacology and Toxicology, Michigan State University, East Lansing, MI, and [3]Center for Integrative Toxicology, Michigan State University, East Lansing, MI.

#705 **Poster Board Number 526**
MOLECULAR MARKERS AND EVALUATION OF PHENOTYPIC RESPONSES IN RAW 264.7 MACROPHAGES. M. Govindraj[1], D. Santiago[2,1], C. Guo[1], and *A. Gow*[1]. [1]Pharmacology and Toxicology, Rutgers University, New Brunswick, NJ, and [2]Chemistry, Universidad de Puerto Rico, Rio Piedras, Puerto Rico.

Monday Afternoon, March 12
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Inflammation in Disease

Chairperson(s): *Muhammad Hossain, Environmental and Occupational Health Sciences Institute, Piscataway, NJ.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *1:00 PM–2:45 PM*

#706 **Poster Board Number 529**
COMPARISON OF *IN VITRO* AND *IN VIVO* CYTOKINE RESPONSE IN CYNOMOLGUS MONKEYS AFTER TREATMENT WITH AN ANTI-CD3 MAB. S. Lavallee, J. Fontaine, R. Falvo, I. Veillette, Y. Tremblay, M. Piche, and *L. LeSauteur*. Immunology, Charles River Laboratories, Senneville (Montreal), QC, Canada.

#707 **Poster Board Number 530**
A SMALL MOLECULE INHIBITOR OF THE TGF-β TYPE I RECEPTOR SUPPRESSES UVB-INDUCED MOUSE SKIN CARCINOGENESIS. *A. Ravindran*, J. Mohammed, A. Gunderson, and A. B. Glick. Molecular Toxicology and Carcinogenesis, The Pennsylvania State University, State College, PA.

#708 **Poster Board Number 531**
EXTRACT OF RIPE FRUITS OF *RUBUS COREANUS* INHIBITS MAST CELL-MEDIATED ALLERGIC INFLAMMATION. H. Kim, and *S. Kim*. Department of Pharmacology, School of Medicine, Kyungpook National University, Daegu, Republic of Korea.

#709 **Poster Board Number 532**
WHOLE-MOUNT IMAGE CAPTURE AND ANALYSIS OF IDIOPATHIC PULMONARY FIBROSIS IN BLEOMYCIN-INDUCED MOUSE MODELS USING MICRO-COMPUTED TOMOGRAPHY AND VIRTUAL HISTOLOGY. S. X. Vasquez, O. Uitto, B. Schimpf, M. Masner, N. Shah, Y. Liang, B. Johnston, D. Weinstein, and D. Small. Numira Biosciences, Salt Lake City, UT. Sponsor: *W. Morton*.

Abstract #

#710 **Poster Board Number 533**
HEPATIC METALLOTHIONEIN INCREASES AFTER EXPERIMENTAL SURGERY: ROLE OF SOME CYTOKINES AND STRESS HORMONES. *E. M. Brambila*, R. Hernández, H. Scott, P. Aguilar-Alonso, and B. León-Chavez. Department of Chemical Sciences, Benemerita Universidad Autonoma de Puebla, Puebla, Mexico.

#711 **Poster Board Number 534**
PLUM POLYPHENOLICS AMELIORATE INFLAMMATION AND METABOLIC ALTERATIONS IN OBESE ZUCKER RATS. *G. D. Noratto*[2,1], S. Y. Simbo[3], D. Byrne[4], and S. Mertens-Talcott[2,1]. [1]Veterinary Physiology and Pharmacy, Texas A&M University, College Station, TX, [2]Nutrition and Food Science, Texas A&M University, College Station, TX, [3]Health and Kinesiology, Texas A&M University, College Station, TX, and [4]Horticulture Sciences, Texas A&M University, College Station, TX.

#712 **Poster Board Number 535**
ODSH ENHANCES BACTERIAL CLEARANCE IN *PSEUDOMONAS AERUGINOSA* PNEUMONIA. J. Wu[1], L. Sharma[1], R. Sitapara[1], V. Patel[1], T. P. Kennedy[3], and *L. L. Mantell*[1,2]. [1]Phamaceutical Science, St. John's University, Jamaica, NY, [2]The Feinstein Institute for Medical Research, North Shore-LIJ Health Science, Manhaset, NY, and [3]Pulmonary/Critical Care Medicine, Georgia Health Sciences University, Augusta, GA.

#713 **Poster Board Number 536**
ODSH IMPROVES *PSEUDOMONAS AEURUGINOSA*-INDUCED LUNG INJURY BY DECREASING INFILTRATION OF INFLAMMATORY CELLS. L. K. Sharma[1], J. Wu[1], R. Sitapara[1], V. Patel[1], T. Kennedy[3], and *L. Mantell*[1,2]. [1]Department of Pharmaceutical Sciences, St. John's University, Jamaica, NY, [2]The Feinstein Institute for Medical Research, North Shore-LIJ Health Science, Manhhaset, NY, and [3]Pulmonary/Critical Care Medicine, Georgia Health Sciences University, Augusta, GA.

#714 **Poster Board Number 537**
CYANOBACTERIAL LIPOPOLYSACCHARIDES (LPS) ELICIT RELEASE OF SUPEROXIDE ANION, THROMBOXANE B_2, AND TUMOR NECROSIS-α FROM RAT BRAIN MICROGLIA. J. Murphy[1], M. L. Hall[1], D. Fehrer[2], P. Williams[2], and *A. M. Mayer*[1]. [1]Pharmacology, Midwestern University, Downers Grove, IL, and [2]Chemistry and Biochemistry, University of Hawaii at Manoa, Honolulu, HI.

#715 **Poster Board Number 538**
DOES AFGHANISTAN SAND DUST INHALATION INFLUENCE MILD BLAST-INDUCED IMMUNE AND COGNITIVE RESPONSES? *P. Gunasekar*, S. Prues, D. Stoffregen, A. James, S. McInturf, and A. Osterburg. Naval Medical Research Unit, Wright-Patterson AFB, Dayton, OH.

Program Description (Continued)

Abstract #

#716 **Poster Board Number 539**
DEFICIENCY IN CD44S ENHANCES DEXTRAN SODIUM SULPHATE (DSS)-INDUCED COLITIS AND INFLAMMATORY TOXICITY IN THE COLON. I. Altamemi, *M. Nagarkatti*, and *P. Nagarkatti*. Pathology, Microbiology and Immunology, University of South Carolina, School of Medicine, Columbia, SC.

#717 **Poster Board Number 540**
PULMONARY PATHOGENICITY OF AMBIENT PARTICULATE DUST FROM IRAQ MILITARY FIELDS. N. R. Fix[1], D. L. Pack[1], L. A. Battelli[1], M. W. Barger[1], A. J. Kenyon[1], T. G. Meighan[1], J. A. Lewis[2], *D. A. Jackson*[2], *V. Castranova*[1], and S. S. Leonard[1]. [1]National Institute of Occupational Safety and Health (NIOSH)/CDC, Morgantown, WV, and [2]US Army Center for Environmental Health Research, Fort Detrick, MD.

#718 **Poster Board Number 541**
ASIAN SAND DUST ENHANCES MURINE LUNG INFLAMMATION CAUSED BY *KLEBSIELLA PNEUMONIAE*. M. He[1,4], T. Ichinose[1], S. Yoshida[1], S. Yamamoto[2], K. Inoue[2], H. Takano[2], R. Yanagisawa[2], M. Nishikawa[3], I. Mori[3], G. Sun[4], and T. Shibamoto[5]. [1]Department of Health Sciences, Oita University of Nursing and Health Sciences, Oita, Japan, [2]Pathophysiology Research Team, National Institute for Environmental Studies, Tsukuba, Ibaraki, Japan, [3]Environmental Chemistry Division, National Institute for Environmental Studies, Tsukuba, Ibaraki, Japan, [4]Department of Environmental and Occupational Health, College of Public Health, China Medical University, Shenyang, Liaoning, China, and [5]Department of Environmental Toxicology, University of California Davis, Davis, CA. Sponsor: *Y. Sun*.

#719 **Poster Board Number 542**
INCREASED INFLAMMASOME ACTIVATION IN ABSENCE OF MARCO. *R. Biswas*, R. F. Hamilton, and *A. Holian*. CEHS/BMED, University of Montana, Missoula, MT.

#720 **Poster Board Number 543**
TRANSGENIC MICE CONSTITUTIVELY EXPRESSING H2A HISTONE FRAGMENT ARE RESISTANT TO CHEMICAL-INDUCED BOWEL INFLAMMATION. *U. Wormser*[1], *M. Aschner*[2], Y. Finkelstein[3], E. Proscura[1], A. Erlanger-Rosengarten[1], E. Shapira[1], and B. Brodsky[1]. [1]Institute of Drug Research, Hebrew University, Jerusalem, Israel, [2]Department of Pediatrics, Vanderbilt University, Nashville, TN, and [3]Neurology and Toxicology Service and Unit, Shaare Zedek Medical Center, Jerusalem, Israel.

#721 **Poster Board Number 544**
ROLE OF ENDOCANNABINOIDS DURING IMMUNE CELL ACTIVATION AND INFLAMMATORY LIVER INJURY. J. M. Sido, *P. Nagarkatti*, and *M. Nagarkatti*. Pathology, Immunology & Microbiology, University of South Carolina School of Medicine, Columbia, SC.

Abstract #

#722 **Poster Board Number 545**
LUNG INFLAMMATION PLAYS A KEY ROLE IN CARBON NANOPARTICLE-INDUCED ADJUVANT ACTIVITY. U. Sydlik[1], M. Kroker[1], H. Weighardt[2], and K. Unfried[1]. [1]Molecular Toxicology, IUF Leibniz-Research Institute for Environmental Medicine, Duesseldorf, Germany, and [2]Molecular Immunology, IUF Leibniz-Research Institute for Environmental Medicine, Duesseldorf, Germany. Sponsor: *T. Haarmann-Stemmann*.

#723 **Poster Board Number 546**
MODERATE HYPEROXIA TREATMENT INCREASES AIRWAY RESISTANCE DURING DIRECT LPS-INDUCED LUNG INJURY IN MICE. *R. D. Britt*[1,2], M. Velten[1], and *L. K. Rogers*[1]. [1]Center for Perinatal Research, The Research Institute at Nationwide Children's Hospital, Columbus, OH, and [2]Integrated Biomedical Graduate Program, The Ohio State University, Columbus, OH.

#724 **Poster Board Number 547**
BETA2-ADRENERGIC RECEPTOR ENGAGEMENT ON A B CELL REGULATES THE LEVEL OF IGE VIA CD23 CLEAVAGE BY ADAM10 ON B CELL-DERIVED EXOSOMES. C. J. Padro[1], and *V. M. Sanders*[2]. [1]Integrated Biomedical Science Graduate Program, The Ohio State University, Columbus, OH, and [2]Molecular Virology, Immunology, and Medical Genetics, The Ohio State University, Columbus, OH.

#725 **Poster Board Number 548**
INCREASED PHOSPHODIESTERASE 4B (PDE4B) AND DECREASED CELLULAR CAMP REGULATE LPS-INDUCIBLE TNF-α IN GLUCOSE-PRIMED MONOCYTES. E. Chambers[1], L. Gobejishvili[1], S. Ghare[1], *C. McClain*[1,2,3], and *S. Barve*[1,2]. [1]Department of Medicine/GI, University of Louisville, Louisville, KY, [2]Pharmacology and Toxicology, University of Louisville, Louisville, KY, and [3]Louisville VAMC, Louisville, KY.

Program Description (Continued)

Abstract #

Monday Afternoon, March 12
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Children's Health and Juvenile Toxicity

Chairperson(s): *Christopher J. Bowman, Pfizer Drug Safety Research and Development, Groton, CT, and Merle G. Paule, US FDA, Little Rock, AR.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *2:45 PM–4:30 PM*

#726 **Poster Board Number 551**
FOUR CASES OF NEUROPSYCHOLOGICAL ABNORMAL FINDING IN CHILDREN WITH HIGH BLOOD METHYL-MERCURY CONCENTRATION. Y. S. Hong[1], Y. M. Kim[1], D. S. Kim[2], S. H. Kim[3], J. K. Kim[4], J. H. Yu[5], and J. H. Jung[6]. [1]Preventive Medicine, Dong-A University, Busan, Republic of Korea, [2]Environmental Epidemiology, National Institute of Environmental Research, Incheon, Republic of Korea, [3]Deparment of Psychology, Dong-A University, Busan, Republic of Korea, [4]Department of Neurology, Dong-A University, Busan, Republic of Korea, [5]Department of Pediatrics, Dong-A University, Busan, Republic of Korea, and [6]Deparment of Occupational and Environmental Medicine, Dong-A University, Busan, Republic of Korea. Sponsor: *J. Jung*.

#727 **Poster Board Number 552**
A FEASIBILITY ASSESSMENT OF CONTINUOUS BLOOD PRESSURE AND HEART RATE ASSESSMENTS IN JUVENILE RATS. K. Norton, R. Matheson, Y. Trudel, and S. Caron. Toxicology, Charles River Preclinical Services, Senneville, QC, Canada. Sponsor: *M. Vézina*.

#728 **Poster Board Number 553**
PRECLINICAL DEVELOPMENT OF ALLOPREGNANOLONE (ALLO) FOR TREATMENT OF NIEMANN-PICK TYPE-C, A RARE NEONATAL AND PEDIATRIC DISEASE. *L. Rausch*[1], J. Gow[1], C. McFarlane[1], J. M. Brune[1], D. G. Fairchild[1], M. Patrick[1], M. Claros[1], S. H. Mellon[2], and *K. L. Steinmetz*[1]. [1]Biosciences Division, SRI International, Menlo Park, CA, and [2]Department of Obstetrics and Gynecology, University of California San Francisco, San Francisco, CA.

#729 **Poster Board Number 554**
MITOCHONDRIAL BASIS OF ADVERSE PERINATAL OUTCOME IN HIV-TREATED PREGNANT WOMEN. G. Garrabou[1], A. S. Hernandez[1,2], C. Morén[1], M. Catalan[1], E. Tobias[1], M. López[2], Ò. Coll[2], F. Cardellach[1], E. Gratacós[2], and Ò. Miró[1]. [1]Mitochondrial Research Laboratory, IDIBAPS-University of Barcelona, Internal Medicine Department, Hospital Clínic of Barcelona (Barcelona, Spain) and Centro de Investigación Biomédica en Red de Enfermedades Raras (CIBERER, Valencia, Spain), Barcelona, Spain, and [2]Materno-Fetal Medical Services, Hospital Clínic of Barcelona, Barcelona, Spain. Sponsor: *J. Domingo*.

Abstract #

#730 **Poster Board Number 555**
TOBACCO-INDUCED MITOCHONDRIAL TOXICITY IN REDUCED INTRAUTERINE GROWTH. F. Cardellach[1], G. Garrabou[1], S. Córdoba[1], A. S. Hernandez[1,2], C. Morén[1], E. Tobías[1], M. Catalan[1], M. López[2], Ò. Coll[2], and Ò. Miró[1]. [1]Mitchondrial Research Laboratory, IDIBAPS-UB, IMD, Hospital Clínic of Barcelona, Barcelona, Spain and CIBERER, Valencia, Spain, Barcelona, Spain, and [2]Materno-Fetal Medical Services, Hospital Clínic of Barcelona, Barcelona, Spain. Sponsor: *J. Domingo*.

#731 **Poster Board Number 556**
LONGITUDINAL STUDY OF MITOCHONDRIAL TOXICITY IN HIV-INFECTED CHILDREN RECEIVING MILD OR STRONG NUCLEOSIDE ANALOGUES. C. Morén[1], A. Noguera-Julian[2], G. Garrabou[1], M. Catalán[1], N. Rovira[2], E. Tobías[1], F. Cardellach[1], Ò. Miró[1], and C. Fortuny[2]. [1]Mitchondrial Research Laboratory, Internal Medicine Department, Hospital Clínic of Barcelona, IDIBAPS and CIBERER, Barcelona, Spain, and [2]Infectious Disease Unit, Pediatrics Department, Hospital Sant Joan de Déu, University of Barcelona, Barcelona, Spain. Sponsor: *J. Domingo*.

#732 **Poster Board Number 557**
***IN VIVO* LONGITUDINAL CT STUDY OF BENT LONG BONES IN THE RAT DURING POSTNATAL DEVELOPMENT.** L. M. De Schaepdrijver[1], P. Delille[1], B. Descamps[2], F. De Vos[3], and C. Vanhove[2]. [1]Toxicology/Pathology, Janssen R&D, Beerse, Belgium, [2]Department of Medical Image and Signal Processing, University Ghent, Gent, Belgium, and [3]Laboratory of Radiopharmacy, University Ghent, Gent, Belgium. Sponsor: *T. Coogan*.

#733 **Poster Board Number 558**
METAL-INDUCED DYSREGULATION OF THE NF-KB PATHWAY IN A DETROIT, MICHIGAN CHILDREN'S COHORT. R. Patel[1], J. Gallagher[3], J. Rigdon[2], S. Edwards[3], and *R. C. Fry*[1]. [1]Department of Environmental Sciences and Engineering, Gillings School of Global Public Health, University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]Department of Biostatistics, Gillings School of Global Public Health, University of North Carolina at Chapel Hill, Chapel Hill, NC, and [3]National Health and Environmental Effects Research Laboratory, US EPA, Research Triangle Park, NC.

#734 **Poster Board Number 559**
NONCLINICAL SAFETY ASSESSMENT SUPPORTING PEDIATRIC USE OF VORICONAZOLE AND ANIDULAFUNGIN IN COMBINATION. *C. J. Bowman*[1], G. Chmielewski[1], *E. M. Lewis*[2], L. Liu[1], M. S. Modesitt[3], S. L. Ripp[1], C. Sawaryn[1], and D. M. Cross[4]. [1]Pfizer, Groton, CT, [2]Charles River Laboratories Inc., Horsham, PA, [3]PPD Inc., Richmond, VA, and [4]Pfizer Ltd., Sandwich, Kent, United Kingdom.

#735 **Poster Board Number 560**
INFLAMMATORY CYTOKINES IN THE EXHALED BREATH CONDENSATE OF ASTHMATIC CHILDREN LIVING IN WOOD STOVE HOMES. *M. L. McNamara*, T. J. Ward, and C. W. Noonan. CEHS/BMED, University of Montana, Missoula, MT.

Program Description (Continued)

Abstract #

#736 **Poster Board Number 561**
LEAD EXPOSURE AND OBESITY ARE COMORBIDITY FACTORS FOR OSTEOPOROSIS THROUGH A COMMON MECHANISM OF INHIBITING WNT/BETA-CATENIN SIGNALING. *E. E. Beier*[1,2], T. Sheu[2], *M. H. Kung*[1,2], J. D. Holz[1,2], R. A. Mooney[2], and *J. Puzas*[1,2]. [1]Environmental Medicine, University of Rochester, Rochester, NY, and [2]Orthopedics, University of Rochester, Rochester, NY.

#737 **Poster Board Number 562**
POLYMORPHISMS OF PHASE I AND II XENOBIOTIC ENZYMES INVOLVED IN ASTHMA CONDITION IN CHILDREN EXPOSED TO TOBACCO SMOKE. *B. Munoz*[1], A. Hernandez-Lopez[1], *B. Barrón-Vivanco*[3], V. M. Dávila-Borja[2], *A. Albores*[1], and E. Juárez-Pérez[1]. [1]Department of Toxicology, Cinvestav-IPN, Mexico City, D.F., Mexico, [2]Department of Genetics and Toxicology, National Pediatrics Institute, Mexico City, D.F., Mexico, and [3]Universidad Autonoma de Nayarit, Tepic, Nayarit, Mexico.

#738 **Poster Board Number 563**
LUNG FUNCTION IN CHILDREN CHRONICALLY EXPOSED TO ARSENIC IN DRINKING WATER. R. Recio-Vega, E. Olivas-Calderón, T. González-Cortés, C. González-De Alba, and G. Ocampo-Gomez. Environmental Health, University of Coahuila, Coahuila, Mexico. Sponsor: *C. Lantz*.

#739 **Poster Board Number 564**
GENETIC AND EPIGENETIC BIOMARKERS OF SUSCEPTIBILITY TO OP PESTICIDES AND OBESITY IN CHILDREN. K. Huen, K. Harley, A. Bradman, L. Barcellos, K. Pratt, and N. Holland. CERCH, SPH, University of California Berkeley, Berkeley, CA. Sponsor: *M. Poirier*.

#740 **Poster Board Number 565**
FUNCTIONAL DEVELOPMENT IN YOUNG RATS: BASIC DATA FOR THE PERFORMANCE OF JUVENILE ANIMAL STUDIES. J. Buschmann, and G. Lewin. Fraunhofer ITEM, Hannover, Germany. Sponsor: *C. Dasenbrock*.

Monday Afternoon, March 12
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Hypersensitivity and Autoimmunity

Chairperson(s): *Marija Popovic, Eli Lilly & Company, Indianapolis, IN*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *1:00 PM–2:45 PM*

#741 **Poster Board Number 601**
SKIN-SENSITIZING POTENCY OF HALOGENATED PLATINUM SALTS. *D. M. Lehmann*[1], W. Williams[1], C. Copeland[1], E. Boykin[1], and *M. Selgrade*[2]. [1]National Health Environmental Effects Research Laboratory, US EPA, Research Triangle Park, NC, and [2]ICF International, Durham, NC.

Abstract #

#742 **Poster Board Number 602**
THE EFFECT OF ACTIVATING AND DEACTIVATING SUBSTITUENTS ON THE ALLERGENICITY OF BENZOQUINONE AND BENZOQUINONE DERIVATIVES. W. Mbiya[1], *I. Chipinda*[2], R. H. Simoyi[1], and *P. D. Siegel*[2]. [1]Chemistry, Portland State University, Portland, OR, and [2]HELD, CDC/NIOSH, Morgantown, WV.

#743 **Poster Board Number 603**
REACTIVITY PROFILE OF CONTACT AND RESPIRATORY LOW MOLECULAR WEIGHT ALLERGENS IN A COMPETITIVE PEPTIDE REACTIVITY ASSAY. J. F. Lalko[1,2], *I. Kimber*[1], *R. J. Dearman*[1], *G. Gerberick*[3], *A. Api*[2], and *L. W. Smith*[2]. [1]University of Manchester, Manchester, United Kingdom, [2]Research Institute for Fragrance Materials Inc., Woodcliff Lake, NJ, and [3]Procter & Gamble Company, Cincinnati, OH.

#744 **Poster Board Number 604**
CHANGES IN THE FREQUENCY OF B220⁺ LYMPHOCYTES FOLLOWING TOPICAL EXPOSURE TO LINALOOL. L. Beresford[2], *R. J. Dearman*[2], *I. Kimber*[2], *A. Api*[1], and J. F. Lalko[1,2]. [1]Research Institute for Fragrance Materials Inc., Woodcliff Lake, NJ, and [2]University of Manchester, Manchester, United Kingdom.

#745 **Poster Board Number 605**
THE CONTRIBUTION OF PEANUT PROTEINS ARA H1, 2, 3 AND 6 IN PEANUT ALLERGY. J. Smit[1,2], M. Pennings[2,3], M. van Roest[1], *G. Houben*[4], E. van Hoffen[2], and *R. Pieters*[1]. [1]Toxicology, Instituite for Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands, [2]Utrecht Centre for Food Allergy, Utrecht, Netherlands, [3]Dermatology, Utrecht University Medical Center, Utrecht, Netherlands, and [4]TNO, Zeist, Netherlands.

#746 **Poster Board Number 606**
CHARACTERIZATION OF THE ALLERGENICITY OF DIFFERENT FORMS OF LACTOFERRIN. R. J. Almond[1], B. F. Flanagan[2], *I. Kimber*[1], and *R. J. Dearman*[1]. [1]Manchester University, Manchester, United Kingdom, and [2]University of Liverpool, Liverpool, United Kingdom.

#747 **Poster Board Number 607**
EXPOSURE TO TRICLOSAN AND BISPHENOL A AUGMENT ALLERGIC RESPONSES IN A MURINE MODEL OF ASTHMA. *S. E. Anderson*, E. Lukomska, K. Anderson, and *B. J. Meade*. CDC/NIOSH, Morgantown, WV.

#748 **Poster Board Number 608**
IMPACT OF DOSING FREQUENCY ON ANAPHYLAXIS IN CYNOMOLGUS MONKEYS ADMINISTERED TRU-015, AN ANTI-CD20 SMIP™ THERAPEUTIC. *C. M. Rohde*[1], *V. Markiewicz*[2], S. Thibault[3], *E. Besteman*[2], *D. W. Clarke*[4], R. Perry[2], and *M. W. Leach*[1]. [1]Drug Safety Research and Development (DSRD), Pfizer, Andover, MA, [2]DSRD, Pfizer, Groton, CT, [3]DSRD, Pfizer, La Jolla, CA, and [4]DSRD, Pfizer, Pearl River, NY.

Program Description (Continued)

Abstract #

#749 **Poster Board Number 609**
A CUTANEOUS HYPERSENSITIVITY REACTION TO A THYROID HORMONE SUPPLEMENT IN A DOG. *S. N. Lavergne*[1], P. Kennedy[2], and K. R. Refsal[3]. [1]Comparative Biosciences, University of Illinois at Urbana-Champaign, Urbana, IL, [2]Private Practice, Northern Illinois Animal & Bird Hospital, Cary, IL, and [3]Diagnostic Center for Population and Animal Health, Michigan State University, Cary, MI.

#750 **Poster Board Number 610**
THE ROLE OF THE TRANSCRIPTIONAL FACTOR NRF2 IN CONTACT HYPERSENSITIVITY. Z. El Ali[1], C. Gerbeix[2], P. Esser[3], P. Robert[4], J. Legrand[2], S. Martin[3], *M. Pallardy*[1], and S. Kerdine-Römer[1]. [1]INSERM UMR-996, Faculté de Pharmacie, University Paris-Sud, Châtenay-Malabry, France, [2]Toxicologie, CITOX–Safety and Health Research Laboratories, EVREUX, France, [3]Allergy Research Group, Department of Dermatology, University Medical Center Freiburg, Freiburg, Germany, and [4]Plateforme Animalerie et Exploration Fonctionnelle-IPSIT, University Paris Sud, Châtenay-Malabry, France.

#751 **Poster Board Number 611**
A PROTEOMICS APPROACH TO ELUCIDATE THE ROLE OF THE KEAP1/NRF2 PATHWAY IN THP-1 CELLS UPON TREATMENT WITH CHEMICAL CONTACT ALLERGENS. F. Mussotter[1], A. Haase[1], Z. El Ali[2], S. Kerdine- Römer[2], C. Wruck[3], M. E. Goetz[1], *M. Pallardy*[2], and A. Luch[1]. [1]German Federal Institute for Risk Assessment (BfR), Berlin, Germany, [2]Faculté de Pharmacie, INSERM UMR 996, University of Paris- Sud, Paris, France, and [3]Institute of Anatomy and Cell Biology, University Hospital of Aachen, Aachen, Germany.

#752 **Poster Board Number 612**
DEVELOPMENT OF THE "U937-PGE2 ASSAY:" TEST CRITERIA AND EVALUATION OF THE PERFORMANCES. A. Del Bufalo, C. Gomes, S. Teissier, F. Tourneix, C. Piroird, F. Rousset, and J. Meunier. L'Oréal, Aulnay-sous-Bois, France. Sponsor: *H. Toutain*.

#753 **Poster Board Number 613**
TOWARD AN INTEGRATED TESTING STRATEGY FOR SKIN SENSITIZATION: STATISTICAL APPROACH FOR THE COMBINATION OF NONANIMAL METHODS. C. Gomes, M. Thomas, H. Nocairi, S. Ringeissen, S. Grégoire, A. Detroyer, S. Crochet, J. Eilstein, C. Piroird, D. Blanchet, S. Teissier, N. Ade, J. Meunier, and P. Berthe. L'Oréal, Aulnay-sous-Bois, France. Sponsor: *H. Toutain*.

#754 **Poster Board Number 614**
EVALUATION OF SENS-IS®, AN EPISKIN®-BASED MODEL FOR IDENTIFYING CHEMICAL SENSITIZERS. S. Teissier[1], F. Tourneix[1], A. Del Bufalo[1], C. Gomes[1], F. Cottrez[2], H. Groux[2], and J. Meunier[1]. [1]L'Oréal, Aulnay-sous-Bois, France, and [2]Immunosearch, Grasse, France. Sponsor: *H. Toutain*.

Abstract #

#755 **Poster Board Number 615**
INDIVIDUAL PREDICTIVE CAPACITIES OF *IN SILICO* AND *IN VITRO* METHODS FOR THE ALTERNATIVE ASSESSMENT OF SKIN SENSITIZATION: A COMPARATIVE STUDY ON A COMMON CHEMICAL SET. C. Piroird, S. Ringeissen, J. Eilstein, L. Baux, A. Del Bufalo, M. Thomas, H. Nocairi, C. Gomes, N. Ade, S. Teissier, P. Berthe, and J. Meunier. L'Oréal, Aulnay-sous-Bois, France. Sponsor: *H. Toutain*.

#756 **Poster Board Number 616**
RUTIN SUPPRESSES HOUSE DUST MITE EXTRACT AND 2, 4-DINITROCHLOROBENZENE-INDUCED ATOPIC DERMATITIS. J. Choi, and *S. Kim*. Pharmacology, School of Medicine, Kyungpook National University, Daegu, Republic of Korea.

#757 **Poster Board Number 617**
CONTINUOUS ACTIVATION OF RESPONDER T CELLS AND REGULATORY T CELLS CAUSED BY SILICA EXPOSURE INDUCE DYSREGULATION OF AUTOIMMUNITY. *T. Otsuki*[1], H. Hayashi[2], S. Lee[1], M. Maeda[3,1], N. Kumagai-Takei[1], H. Matsuzaki[1], M. Kuasaka[4], K. Urakami[5], and Y. Nishimura[1]. [1]Hygiene, Kawasaki Medical School, Kurashiki, Japan, [2]Dermatology, Kawasaki Medical School, Kurashiki, Japan, [3]Biofunctional Chemistry, Graduate School of Natural Science and Technology, Okayama University, Okayama, Japan, [4]Internal Medicine, Kusaka Hospital, Bizen, Japan, and [5]Hinase Urakami Iin, Bizen, Japan.

#758 **Poster Board Number 618**
EFFECTS OF LIBBY AMPHIBOLE EXPOSURE ON THE DEVELOPMENT OF AUTOIMMUNITY IN THE RAT. *K. D. Salazar*, C. B. Copeland, and *R. W. Luebke*. US EPA, Research Triangle Park, NC.

#759 **Poster Board Number 619**
TRICHLOROETHENE-INDUCED NITROSATIVE STRESS: PROTEOMIC IDENTIFICATION OF NITRATED PROTEINS IN THE LIVER OF MRL+/+ MICE. G. Wang[1], X. Fan[1], X. Luo[2], and *M. Khan*[1]. [1]Pathology, University of Texas Medical Branch, Galveston, TX, and [2]Biomolecular Resource Facility, University of Texas Medical Branch, Galveston, TX.

#760 **Poster Board Number 620**
INTERRELATIONSHIPS OF PEROXIDATION AND IMMUNOGENICITY OF CARDIOLIPIN: AN OXIDATIVE LIPIDOMICS APPROACH. J. Frostegård[2], V. Tyurin[1], *Y. Tyurina*[1], A. Amoscato[1], J. Su[2], K. Balasubramanian[1], A. Maeda[1], *B. Fadeel*[2], J. Greenberger[1], R. Mallampali[1], B. Pitt[1], and *V. Kagan*[1]. [1]EOH, University of Pittsburgh, Pittsburgh, PA, and [2]Karolinska Institutet, Institute of Environmental Medicine, Stockholm, Sweden.

#761 **Poster Board Number 621**
COMPARISON OF SERUM AUTOANTIBODY PREVALENCE IN ASBESTOS-EXPOSED POPULATIONS. E. C. Birch, *K. M. Serve*, and *J. C. Pfau*. Biological Sciences, Idaho State University, Pocatello, ID.

Program Description (Continued)

Abstract #

#762 **Poster Board Number 622**
ASBESTOS-INDUCED MESOTHELIAL CELL AUTOANTIBODIES PROMOTE COLLAGEN MATRIX FORMATION. K. Serve, R. Crouch, and *J. C. Pfau*. Biological Sciences, Idaho State University, Pocatello, ID.

#763 **Poster Board Number 623**
USE OF *IN VITRO* AND *IN VIVO* METHODS TO ASSESS THE SENSITIZATION POTENTIAL OF NOVEL AMINO ALCOHOLS. *B. J. Hughes*, *D. M. Wilson*, N. Ball, D. I. McCready, R. R. Hunziker, and *D. R. Boverhof*. TERC, The Dow Chemical Company, Midland, MI.

Monday Afternoon, March 12
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Computational Toxicology: Sequences, Systems, and Strategies

Chairperson(s): *Ruchir Shah, SRA International, Durham, NC.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *2:45 PM–4:30 PM*

#764 **Poster Board Number 625**
DRUG TOXICITIES ASSOCIATED WITH PHARMACOLOGICAL ACTIVITY: USING HARMONISED DATA TO MAKE THE KNOWN VISIBLE. *J. Sidaway*[1], M. Rolf[1], S. Roberts[1], R. Huby[1], T. Noeske[1], A. Nicholson[2], J. Pemberton[2], M. South[2], O. Engkvist[3], P. Bradley[4], and J. Reed[4]. [1]Safety Assessment, AstraZeneca, Macclesfield, United Kingdom, [2]Discovery Sciences, AstraZeneca, Macclesfield, United Kingdom, [3]Discovery Sciences, AstraZeneca, Mölndal, Sweden, and [4]BioWisdom Ltd, Cambridge, United Kingdom.

#765 **Poster Board Number 626**
THE 1000 GENOMES TOXICITY SCREENING PROJECT: UTILIZING THE POWER OF HUMAN GENOME VARIATION FOR POPULATION-SCALE *IN VITRO* TESTING. N. Abdo[1], *M. Xia*[2], O. Kosyk[1], R. Huang[2], S. Sakamuru[2], *C. P. Austin*[2], *R. R. Tice*[3], F. A. Wright[1], and *I. Rusyn*[1]. [1]University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]NIH Chemical Genomics Center, Rockville, MD, and [3]Division of the National Toxicology Program, NIEHS/NIH, Research Triangle Park, NC.

#766 **Poster Board Number 627**
A MAPPING BASED ON PHYSICO-CHEMICAL FEATURES: LESSONS LEARNED. G. Ouédraogo[1], A. Detroyer[1], L. Bourouf[1], H. Nocairi[1], S. Loisel[1], C. Chettaoui[1], R. Note[1], S. Ringeissen[1], J. Meunier[1], P. Berthe[1], D. Reif[2], M. Martin[2], A. Richard[2], R. Judson[2], *D. Dix*[2], and *R. Kavlock*[2]. [1]L'Oréal, Aulnay-sous Bois, France, and [2]NCCT/ORD, Raleigh, NC.

Abstract #

#767 **Poster Board Number 628**
PREDICTION OF CYTOCHROME P450 PROFILES OF ENVIRONMENTAL CHEMICALS WITH QSAR MODELS BUILT FROM DRUG-LIKE MOLECULES. *M. Xia*[1], H. Sun[1], H. Veith[1], *C. P. Austin*[1], *R. R. Tice*[3], *R. J. Kavlock*[2], and R. Huang[1]. [1]NIH Chemical Genomics Center, Bethesda, MD, [2]US EPA, Research Triangle Park, NC, and [3]Division of the National Toxicology Program, National Institute of Environmental Health Science, Research Triangle Park, NC.

#768 **Poster Board Number 629**
QSAR MODELING OF HUMAN PLASMA PROTEIN BINDING. X. Zhu[1,2], A. Sedykh[2], H. Zhu[2], A. Golbraikh[2], F. Denis[2], S. Liu[1], and *A. Tropsha*[2]. [1]Tongji University, Shanghai, China, and [2]University of North Carolina at Chapel Hill, Chapel Hill, NC.

#769 **Poster Board Number 630**
QUANTITATIVE STRUCTURE-ACTIVITY RELATIONSHIPS FOR CYCLODIENE INSECTICIDES INHIBITING GAMMA-AMINOBUTYRIC ACID RECEPTOR SUBTYPE A. C. Hack, C. D. Ruark, P. J. Robinson, and *J. M. Gearhart*. AFRL/HJF, Wright-Patterson AFB, Dayton, OH.

#770 **Poster Board Number 631**
DEVELOPMENT OF STRUCTURE-ACTIVITY RELATIONSHIP (SAR) ALERTS FOR THE PREDICTION OF PHOTOTOXICITY: MYTH OR REALITY? L. Coquin, and R. Williams. Lhasa Limited, Leeds, United Kingdom. Sponsor: *C. Marchant*.

#771 **Poster Board Number 632**
HIGH-THROUGHPUT ASSESSMENTS OF CONVENTIONAL AND ALTERNATIVE COMPOUNDS. *D. J. Dix*, *K. Houck*, *R. Judson*, N. Kleinstreuer, T. Knudsen, M. Martin, D. Reif, A. Richard, N. Sipes, and *R. Kavlock*. ORD/NCCT, US EPA, Research Triangle Park, NC.

#772 **Poster Board Number 633**
USING RNA-SEQ TO DEFINE GENE EXPRESSION RESPONSES FOLLOWING GOLD NANOPARTICLES (AUNPS) EXPOSURES IN EMBRYONIC ZEBRAFISH. *L. Truong*[1,2], *S. C. Tilton*[3], T. Zaikova[2,4], *K. M. Waters*[3], J. Hutchison[2,4], and *R. L. Tanguay*[1,2]. [1]Environmental & Molecular Toxicology, Environmental Health Sciences Center, Oregon State University, Corvallis, OR, [2]Oregon Nanoscience and Microtechnologies Institute and the Safer Nanomaterials and Nanomanufacturing Initative, Corvallis, OR, [3]Computational Biology and Bioinformatics Group, Pacific Northwest National Laboratory, Richland, WA, and [4]Chemistry, University of Oregon, Eugene, OR.

#773 **Poster Board Number 634**
DISCOVERY OF NOVEL RAT MICRORNAS USING NEXT-GENERATION SEQUENCING. *F. Meng*[1], M. Hackenberg[2], *Z. Li*[1], J. Yan[1], and *T. Chen*[1]. [1]Division of Genetic and Molecular Toxicology, National Center for Toxicological Research/FDA, Jefferson, AR, and [2]Genetics Department, Facultad de Ciencias, Universidad de Granada, Granada, Spain.

Program Description (Continued)

Abstract #

#774 **Poster Board Number 635**
GENE LOCI ASSOCIATED WITH METABOLISM OF INORGANIC ARSENIC IN MICE. T. Agusa[1], H. Komori[2], Y. Soga[2], M. Nose[2], S. Mori[3], R. Kubota[4], S. Tanabe[1], and *H. Iwata*[1]. [1]Center for Marine Environmental Studies (CMES), Ehime University, Matsuyama, Japan, [2]Department of Pathology, Ehime University Graduate School of Medicine, Toon, Japan, [3]Department of Oral Medicine and Surgery, Tohoku University Graduate School of Dentistry, Sendai, Japan, and [4]National Institute of Health Sciences, Tokyo, Japan.

#775 **Poster Board Number 636**
THE FUNCTION OF ETHYLENE IN SYNECHOCYSTIS SP. PCC 6803. J. L. Wynder[1], D. Binder[3], and R. F. Lacey[2]. [1]Chemistry, Southern University and A&M College, Baton Rouge, LA, [2]Biochemistry and Cellular & Molecular Biology, University of Tennessee, Knoxville, LA, and [3]REU Sensing and Signaling and Biochemistry and Cellular & Molecular Biology, University of Tennessee, Knoxville, LA. Sponsor: *D. Wesley*.

#776 **Poster Board Number 637**
IMPROVEMENT OF TOXICOGENOMICS PROFILE COMPARISON TO PREDICT PROTEIN-PROTEIN INTERACTIONS. Y. Igarashi[1], N. Nakatsu[1], H. Yamada[1], A. Ono[2], Y. Ohno[2], and *T. Urushidani*[1,3]. [1]National Institute for Biomedical Innovation, Ibaraki-City, Osaka, Japan, [2]National Institute of Health Sciences, Tokyo, Japan, and [3]Doshisha Women's College of Liberal Arts, Kyoutanabe, Kyoto, Japan.

#777 **Poster Board Number 638**
HIGH-DIMENSIONAL PROFILING OF TRANSCRIPTION FACTOR ACTIVITY DIFFERENTIATES TOXCAST CHEMICAL GROUPS. A. Wilson[1,2], *M. Martin*[1], A. Frame[1], P. Kothiya[1], *R. Judson*[1], *A. Richard*[1], A. Medvedev[3], S. Makarov[3], *K. Houck*[1], and *D. Reif*[1]. [1]NCCT, US EPA, Raleigh, NC, [2]Department of Statistics, North Carolina State University, Raleigh, NC, and [3]Attagene Inc., Research Triangle Park, NC.

#778 **Poster Board Number 639**
DOSE-RESPONSE MODELING OF P53 OSCILLATION IN RESPONSE TO DNA DOUBLE STRAND BREAKS. *Z. Li*, *Q. Zhang*, and *M. E. Andersen*. Institute for Chemical Safety Sciences, The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#779 **Poster Board Number 640**
USING POPULATION-BASED DOSE-RESPONSE CYTOTOXICITY DATA FOR *IN SILICO* PREDICTION OF RAT ACUTE TOXICITY. A. Sedykh, *Y. Low*, E. Lock, *I. Rusyn*, and A. Tropsha. University of North Carolina at Chapel Hill, Chapel Hill, NC.

#780 **Poster Board Number 641**
PREDICTIVE *IN SILICO* MODELS OF TOXICITY USING *C. ELEGANS* GROWTH ASSAY ALONG WITH TOXCAST PHASE I SHORT-TERM ASSAY DATA. A. Golbraikh[2,3], *R. Shah*[2,1,3], A. Sedykh[3], W. Boyd[4], M. Smith[1], H. Zhu[5], A. Tropsha[2,3], and *J. Freedman*[4]. [1]SRA International, Durham, NC, [2]SciOme LLC, Research Triangle Park, NC, [3]University of North Carolina at Chapel Hill, Chapel Hill, NC, [4]NIEHS, Research Triangle Park, NC, and [5]Rutgers University, Camden, NJ.

Abstract #

#781 **Poster Board Number 642**
A COMPUTATIONAL ANALYSIS OF THE MECHANISTIC RELATIONSHIP BETWEEN CIGARETTE SMOKING AND RISK OF RHEUMATOID ARTHRITIS. L. Cai, J. Lu, S. Ng, and *D. E. Johnson*. Nutritional Science & Toxicology, University of California Berkeley, Berkeley, CA.

#782 **Poster Board Number 643**
AN EXAMINATION OF THE COMBINED EFFECTS OF ENVIRONMENTAL FACTORS AND SUSCEPTIBLE GENES ON INCREASING THE RISK OF ALZHEIMER'S DISEASE. C. Ho, L. Feng, and *D. E. Johnson*. Nutritional Science & Toxicology, University of California Berkeley, Berkeley, CA.

#783 **Poster Board Number 644**
VIRTUAL LIVER: ESTIMATING PROLIFERATION AND APOPTOSIS OF HEPATOCYTES EXPOSED TO ENVIRONMENTAL CHEMICALS USING TOXCAST DATA. J. Jack, *J. F. Wambaugh*, and *I. Shah*. National Center for Computational Toxicology (NCCT), US EPA, Research Triangle Park, NC.

#784 **Poster Board Number 645**
BIOLOGICAL PROFILING OF THE TOXCAST PHASE II CHEMICAL LIBRARY IN PRIMARY HUMAN CELL COCULTURE SYSTEMS. *N. C. Kleinstreuer*[1], *K. Houck*[1], *R. Judson*[1], *D. Reif*[1], P. Kothiya[1], *M. Martin*[1], *T. Knudsen*[1], A. Richard[1], M. Polokoff[2], J. Yang[2], E. Berg[2], *R. Kavlock*[1], and *D. Dix*[1]. [1]ORD/NCCT, US EPA, Research Triangle Park NC, and [2]BioSeek, LLC, San Francisco, CA.

#785 **Poster Board Number 646**
TOXPI PRIORITIZATION AND PROFILING OF 1060 TOXCAST CHEMICALS ACROSS MULTIPLE SECTORS OF TOXICOLOGICAL CONCERN. *D. Reif*[1], A. Wilson[2], *R. Judson*[1], *R. Kavlock*[1], and *D. Dix*[1]. [1]NCCT, US EPA, Research Triangle Park, NC, and [2]Department of Statistics, North Carolina State University, Raleigh, NC.

#786 **Poster Board Number 647**
A GLOBAL GENOMIC AND GENETIC STRATEGY TO PREDICT PATHWAY ACTIVATION OF XENOBIOTIC-RESPONSIVE TRANSCRIPTION FACTORS IN THE MOUSE LIVER. K. Oshida[1], N. Vasani[1], *M. Rosen*[1], *B. Abbott*[1], *C. Lau*[1], B. Chorley[1], *S. Hester*[1], W. Ward[1], G. Guo[2], *R. Thomas*[3], *D. Applegate*[4], *T. Kensler*[5], *C. Klaassen*[2], and *C. Corton*[1]. [1]US EPA, Research Triangle Park, NC, [2]University of Kansas Medical Center, Kansas City, KS, [3]Hamner Institute for Health, Research Triangle Park, NC, [4]Regenemed, San Diego, CA, and [5]University of Pittsburgh, Pittsburgh, PA.

#787 **Poster Board Number 648**
ENHANCING MUTAGENICITY PREDICTIONS USING WEIGHT OF EVIDENCE APPROACHES. E. Ahlberg[1], C. Hasselgren[1], C. Yang[2], J. F. Rathman[3], and *S. Boyer*[1]. [1]Computational Toxicology, AstraZeneca, Mölndal, Sweden, [2]Altamira LLC, Columbus, OH, and [3]Ohio State University, Columbus, OH.

Program Description (Continued)

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#788 **Poster Board Number 649**
COMPUTATIONAL TOXICOLOGY AND LONGITUDINAL RISK ASSESSMENT OF SUBCHRONIC AND CHRONIC ATORVASTATIN CALCIUM ADMINISTRATION. A. G. Ibrahim[1], F. E. Ibrahim[2], and *R. C. Shank*[1]. [1]Environmental Toxicology and Occupational Medicine, University of California Irvine, Irvine, CA, and [2]Physics, California State University Long Beach, Long Beach, CA.

#789 **Poster Board Number 650**
L1 TOXICITY IN HUMAN AND RODENT HEPATOCYTES INVOLVES DISRUPTION OF GENETIC REGULATORY NETWORKS INVOLVED IN CELL ADHESION, INFLAMMATION, AND TUMORIGENESIS. P. Bojang[1], *R. Roberts*[2], *M. Anderton*[2], and *K. S. Ramos*[1,3]. [1]Biochemistry and Molecular Biology, University of Louisville School of Medicine, Louisville, KY, [2]General Toxicology Sciences, AstraZeneca, Manchester, United Kingdom, and [3]Center for Environmental Genomics and Integrative Biology, University of Louisville School of Medicine, Louisville, KY.

#790 **Poster Board Number 651**
KNOCKOUT AND HUMANIZED DRUG TRANSPORTER RATS AS MODELS FOR PRECLINICAL ASSESSMENT *IN VIVO*. *I. D. Carbery*, L. C. Little, A. Songstad, E. J. Weinstein, and X. Cui. Sigma-Aldrich, St. Louis, MO.

#791 **Poster Board Number 652**
CHARACTERIZATION AND APPLICATION OF AN EXTERNAL VALIDATION SET FOR SALMONELLA MUTAGENICITY QSAR MODELS USING STRUCTURAL FINGERPRINTS OF KNOWN TOXICOPHORES. N. L. Kruhlak[1], K. P. Cross[2], B. L. Minnier[1,3], D. A. Bower[2], and *R. Benz*[1]. [1]CDER/OTR/DDSR, US FDA, Silver Spring, MD, [2]Leadscope Inc., Columbus, OH, and [3]GlobalNet Services Inc., Rockville, MD.

Monday Afternoon, March 12
1:00 PM to 2:00 PM
Room 100

E

Exhibitor Hosted Session: Enhanced Early Nonclinical Cardiac Risk Assessment

Presented by:
Chantest Corporation

False positives and false negatives are known in hERG *in vitro* assays. Chantest founder Dr. Arthur Brown explains a new collaboration with the US FDA designed to improve predictivity, in particular early in drug discovery at the lead selection stage.

Monday Afternoon, March 12
1:00 PM to 2:00 PM
Room 105

E

Exhibitor Hosted Session: Transcriptomics Tools for Genotoxicity Testing: Mechanistic Insights

Presented by:
Agilent Technologies

The development of mechanism-based approaches for genotoxicity testing is an important undertaking and a prerequisite for the development of better, more rapid identification of genotoxic vs. non genotoxic compounds. Two transcriptomics-based mechanisms studies will be presented by leading toxicologists, including the development of guidelines for biomarker qualification.

Monday Afternoon, March 12
2:00 PM to 4:45 PM
Room 303

S

Regulatory Science: Bridging the Gap between Discovery and Product Availability

Symposium Session: 21st Century Validation Strategies—One Size No Longer Fits All

Chairperson(s): *Suzanne C. Fitzpatrick, US FDA, Silver Spring, MD, and Richard A. Becker, American Chemical Council, Washington, DC.*

Sponsor:
***In Vitro* and Alternative Methods Specialty Section**

Endorsed by:
Regulatory Safety Evaluation Specialty Section
Risk Assessment Specialty Section

Recent advances in systems biology and related scientific fields offer the potential to fundamentally change the way that chemicals and drugs are tested for their risk to humans. This new vision of toxicology testing will be based upon human rather than animal biology and will involve a strong commitment to the 3Rs—replacement, reduction, and refinement of animal use in research and testing. There are many challenges to fully implementing this vision. Current formal approaches to validation involve lengthy and expensive processes that require validating *in vitro* data against *in vivo* data. This approach may not be relevant or even feasible for the new pathways and endpoints being measured. Consequently, applying a one size fits all approach to validation is not conducive to the rapid incorporation of emerging science or technology into the regulatory decision-making framework. As new safety testing evolves, new approaches to demonstrating that a test is reliable and relevant for a particular purpose must also evolve. Such approaches may differ for different tests and be based on their intended use (e.g., as part of screening or other algorithmic approaches versus intended replacement of existing tests). To meet this challenge will require an active dialogue and early collaboration among all stakeholders, including federal regulatory agencies, other regulators, NGOs, academia, and industry scien-

Program Description (Continued)

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tists. This session offers an opportunity for such a dialogue about what could constitute a more flexible approach to demonstrating that these new toxicology testing methods are scientifically valid and address the fundamental questions of human safety and efficacy.

#792 2:00 **21ST CENTURY VALIDATION STRATEGIES—ONE SIZE NO LONGER FITS ALL.** *S. C. Fitzpatrick*[1], and *R. Becker*[2]. [1]Office of the Commissioner, US FDA, Silver Spring, MD, and [2]American Chemical Council, Arlington, VA.

2:00 **INTRODUCTION.** Suzanne Fitzpatrick

#793 2:09 **CHALLENGES TO INCORPORATING NEW TECHNOLOGIES INTO THE TOXICOLOGY REGULATORY TESTING PARADIGM.** *W. Hayes*. School of Public Health, Harvard University, Boston, MA.

#794 2:35 **BIOMARKER QUALIFICATION—A PATHWAY FOR ACCEPTANCE OF ALTERNATIVE TOXICOLOGY TEST METHODS BY REGULATORY AGENCIES.** M. Walton. Center for Drug Evaluation and Research, US FDA, Silver Spring, MD. Sponsor: *S. Fitzpatrick*.

#795 3:01 **DEVELOPING SCIENTIFIC CONFIDENCE IN COMPUTATIONAL APPROACHES FOR HAZARD EVALUATION.** *R. Becker*[1], and *G. Patlewicz*[2]. [1]American Chemical Council, Arlington, VA, and [2]DuPont, Wilmington, DE.

#796 3:27 **TOXICITY TEST VALIDATION IN THE 21ST CENTURY.** *Vicki Dellarco*. US EPA, Washington, DC.

#797 3:53 ***IN VITRO/IN SILICO*/EXPLORATORY ASSESSMENT OF PHARMACEUTICALS.** *A. Jacobs*. Center for Drug Evaluation and Research, US FDA, Silver Spring, MD.

#798 4:19 **AN EVOLVING EXAMPLE OF INTEGRATING *IN VITRO* RISK SIGNALS.** *R. Chapin*, and *D. Stedman*. Pfizer, Inc., Groton, CT.

Monday Afternoon, March 12
2:00 PM to 4:45 PM
Room 103

S

Symposium Session: Breast Cancer As a Multifactorial Disease: Interaction of Genetics, Life Stage, and the Environment

Chairperson(s): *David L. Eaton, University of Washington, Seattle, WA, and Joyce S. Tsuji, Exponent, Bellevue, WA.*

Sponsor:
Carcinogenesis Specialty Section

Endorsed by:
Disease Prevention Task Force
Mechanisms Specialty Section
Occupational and Public Health Specialty Section
Reproductive and Developmental Toxicology Specialty Section
Women in Toxicology Special Interest Group

Despite decades of research into its causes and treatments, breast cancer remains the most common invasive cancer and the second leading cause of cancer mortality for women in the United States. Known risk factors include genetic mutations; birth weight and stature; timing of breast development, child bearing, lactation, and senescence; body fat; and physical inactivity. Some common external, environmental risk factors include radiation, hormone therapy, diet, alcohol, and perhaps smoking and shift work/circadian rhythm disruption. Several environmental chemicals have also been implicated in the etiology of breast cancer. Although toxicological studies

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indicate potential hazards through endocrine disruption and even some hormone independent mechanisms, strong epidemiological evidence is largely lacking. Animal bioassays for breast and other types of cancer typically assess each chemical independently, and exposure periods usually do not include potentially sensitive windows of susceptibility, such as *in utero*, the neonatal period, puberty, or menopause. Nevertheless, emerging epigenetic data support the concept that exposure during sensitive early life stages when the mammary gland is developing can result in developmental reprogramming of breast cells, thereby increasing breast cancer risk later in life. Similarly, stimulation of breast cell division later in life by endocrine-active agents may increase mutation rates or promote tumors at a life stage in which DNA repair is waning. This important topic explores the complex interaction among the potential contributors to breast cancer risk in follow up to the 2011 report of the Institute of Medicine Committee on Breast Cancer and the Environment (funded by Komen for the Cure).

#799 2:00 **BREAST CANCER AS A MULTIFACTORIAL DISEASE: INTERACTION OF GENETICS, LIFE STAGE, AND THE ENVIRONMENT.** *D. L. Eaton*[1], and *J. S. Tsuji*[2]. [1]Department of Environmental and Occupational Health Sciences, University of Washington, Seattle, WA, and [2]Center for Toxicology and Mechanistic Biology, Exponent, Bellevue, WA.

2:00 **INTRODUCTION.** David Eaton

#800 2:05 **GENETIC FACTORS AS MODIFIERS OF ASSOCIATIONS BETWEEN ENVIRONMENTAL EXPOSURES AND BREAST CANCER RISK.** C. Ambrose, Department of Cancer Prevention and Control, Roswell Park Cancer Institute, Buffalo, NY. Sponsor: *D. Eaton*.

#801 2:30 **THE COMPLEX ETIOLOGY OF BREAST CANCER: A LIFE-COURSE APPROACH.** R. A. Hiatt. Professor and Chair, Epidemiology and Biostatistics, Deputy Director, Helen Diller Family Comprehensive Cancer Center, University of California, San Francisco, CA. Sponsor: *J. Tsuji*.

#802 2:55 **EARLY-LIFE EXPOSURES TO ENDOCRINE-ACTIVE CHEMICALS PROMOTES BREAST CANCER RISK LATER IN LIFE.** *L. Birnbaum*. National Institute of Environmental Health Sciences, Research Triangle Park, NC.

#803 3:20 **DIETARY AND OCCUPATIONAL DISRUPTION OF ENDOCRINE SIGNALING: IMPLICATIONS FOR BREAST CANCER RISK.** *H. Zarbl*[1,2], E. V. Bandera[1,3], U. Chandran[1,3], B. Buckley[2], M. Fang[2], B. Winnik[2], Y. Lin[1,3], S. Isukapalli[2], I. Marshall[4], and M. King[3]. [1]Cancer Institute of NJ, Robert Wood Johnson Medical School, New Brunswick, NJ, [2]Environmental and Occupational Health Sciences Institute, Piscataway, NJ, [3]School of Public Health, University of Medicine and Dentistry of New Jersey, Piscataway, NJ, and [4]Department of Pediatric Endocrinology, University of Medicine and Dentistry of New Jersey/Robert Wood Johnson Medical School, Piscataway, NJ.

#804 3:45 **ENVIRONMENTAL EPIGENOMICS: DEVELOPMENTAL REPROGRAMMING OF CANCER SUSCEPTIBILITY.** *C. L. Walker*. Department of Carcinogenesis, University of Texas MD Anderson Cancer Center, Smithville, TX.

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#805 4:10 **NEW DIRECTIONS FOR FUTURE RESEARCH ON ENVIRONMENTAL INFLUENCES ON BREAST CANCER.** *J. S. Tsuji*[1], and *D. L. Eaton*[2]. [1]Center for Toxicology and Mechanistic Biology, Exponent, Bellevue, WA, and [2]Department of Environmental and Occupational Health Sciences, University of Washington, Seattle, WA.

4:35 **PANEL DISCUSSION/Q&A.**

Monday Afternoon, March 12
2:00 PM to 4:45 PM
Room 305

Symposium Session: Evaluation of Ocular Safety in the Development of New Drugs

Chairperson(s): *Brian J. Christian, Covance Inc., Verona, WI, and James N. Ver Hoeve, University of Wisconsin, Madison, WI.*

Sponsor:
Ocular Toxicology Specialty Section

Endorsed by:
Biotechnology Specialty Section
Regulatory and Safety Evaluation Specialty Section

Interest in the research and development of therapies for age-related ocular disease has increased as the size of the aging population grows. In recent years significant advances in treating ocular disease have been developed such as the application of antineovascular drugs, previously used in oncology, for use in treating vascular disease of the eye. The development of sustained release formulations has similarly expanded the application of therapies for anterior segment ocular disease to diseases of the posterior segment. The eye poses a unique challenge to drug development as a consequence of the anatomic and physiologic barriers to drug access to intraocular targets. The complexity of the structure and function of the eye, the need to use nonroutine, specialized safety evaluation techniques, and the important role of vision in normal function, all add to the challenges faced by both ocular toxicologists and regulatory agencies. The focus of this session will be to highlight key ocular safety assessment techniques commonly used to evaluate the anterior (i.e., multiple corneal evaluation methods) and posterior (i.e., electroretinography) segments of the eye. Data will be presented that demonstrate how the techniques may be applied in a nonclinical safety evaluation setting. In addition, case studies detailing the development of a protein biologic and a sustained release formulation for posterior segment disease will provide attendees with examples of safety assessment strategies as well as the challenges that may be encountered. Finally, pertinent issues in the assessment of ocular safety from the perspective of the regulatory agency will be presented, along with discussion of the drug development implications of selected findings.

#806 2:00 **EVALUATION OF OCULAR SAFETY IN THE DEVELOPMENT OF NEW DRUGS.** *B. J. Christian*. Department of Toxicology, Covance Inc., Madison, WI.

2:00 **INTRODUCTION.** Brian Christian

#807 2:05 **ASSESSMENT OF CORNEAL TOXICITY.** H. F. Edelhauser. Department of Ophthalmology, Emory University, Atlanta, GA. Sponsor: *B. Christian*.

#808 2:35 **ELECTRORETINOGRAPHY IN OCULAR SAFETY ASSESSMENT: VIGABATRIN RETINAL TOXICITY.** J. N. Ver Hoeve. Department of Ophthalmology, University of Wisconsin-Madison, Madison, WI. Sponsor: *B. Christian*.

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#809 3:05 **SAFETY ASSESSMENT STRATEGIES AND CHALLENGES FOR DEVELOPING INTRAVITREALLY ADMINISTERED BIOLOGICS.** V. Bantseev. Safety Assessment, Genentech, Inc., South San Francisco, CA. Sponsor: *B. Christian*.

#810 3:35 **PRACTICAL ENCOUNTERS IN INTRAVITREAL NONCLINICAL SAFETY—THE RETISERT EXPERIENCE.** M. E. Richardson. Nonclinical Safety, Bausch & Lomb, Rochester, NY. Sponsor: *B. Christian*.

#811 4:05 **REGULATORY PERSPECTIVES OF CONTEMPORARY ISSUES IN OCULAR TOXICOLOGY.** W. A. Chambers. Center for Drug Evaluation Research, US FDA, Silver Spring, MD. Sponsor: *B. Chrisitan*.

4:35 **PANEL DISCUSSION/Q&A.**

Monday Afternoon, March 12
2:00 PM to 4:45 PM
Room 104

Characterizing Toxic Modes of Action and Pathways to Toxicity

Symposium Session: Molecular Basis for Prevention of Cardiotoxicity

Chairperson(s): *Qin M. Chen, University of Arizona, Tucson, AZ, and Y. James Kang, University of Louisville, Louisville, KY.*

Sponsor:
Cardiovascular Toxicology Specialty Section

Endorsed by:
Drug Discovery Toxicology Specialty Section
Mechanisms Specialty Section
Molecular Biology Specialty Section

Cardiac toxicity is an increasing concern for chemo, radiation, and gene targeting therapies. The overlapping molecular pathways of cardiac protection versus cancer cell growth, and cardiac energy metabolism versus underlying causes of diseases such as obesity or diabetes pose threats to new drug development against these diseases. Whereas anthracyclines, such as doxorubicin, are well known for inducing cardiotoxicity manifested by arrhythmia and chronic cardiomyopathy, the monoclonal antibody trastuzumab (Herceptin) targeting the epidermal growth factor receptor for cancer therapy induces apoptosis and hypertrophy of cardiomyocytes, leading to dilated cardiomyopathy. Small molecular kinase inhibitors, such as imatinib (Gleevec), cause cardiotoxicity due to induction of apoptosis of cardiomyocytes. While kinase inhibitors and gene targeting therapy have tremendous potential for pharmacological treatment of cancer and other diseases, finding the signaling pathways and genes that can protect against cardiotoxicity is an emerging issue. Thus, in exploration of this important topic, we will discuss the ways in which the heart can be protected from tissue injury by addressing signaling molecules, unique genes, and nutritional factors.

#812 2:00 **MOLECULAR BASIS FOR PREVENTION OF CARDIOTOXICITY.** *Q. M. Chen*[1], and *Y. Kang*[2]. [1]Department of Pharmacology, University of Arizona, Tucson, AZ, and [2]Department of Pharmacology and Toxicology, University of Louisville, Louisville, KY.

2:00 **INTRODUCTION.** Qin Chen

#813 2:05 **CARDIOTOXICITY OF CHEMOTHERAPEUTIC DRUGS: CLINIC PRESENTATION AND TREATMENT.** J. Alpert. Medicine, University of Arizona, Tucson, AZ. Sponsor: *Q. Chen*.

Program Description (Continued)

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#814 2:37 **CARDIOTOXICITY OF KINASE-TARGETED THERAPEUTICS.** T. Force. Center for Translational Medicine, Thomas Jefferson University, Philadelphia, PA. Sponsor: *Q. Chen*.

#815 3:09 **MITOCHONDRIAL ALDEHYDE DEHYDROGENASE 2, NITROGLYCERIN, AND MYOCARDIAL INJURY.** D. Mochly-Rosen, and C. Chen. Chemistry and System Biology, Stanford University, Stanford, CA. Sponsor: *Q. Chen*.

#816 3:41 **NRF2 AND GILZ AS MOLECULAR TARGETS FOR CARDIAC PROTECTION.** *Q. M. Chen*. Pharmacology, University of Arizona, Tucson, AZ.

#817 4:13 **HYPOXIA-INDUCIBLE FACTOR-1 IN CARDIAC TOXICITY AND REGENERATION.** *Y. J. Kang*. Pharmacology and Toxicology, University of Louisville, Louisville, KY.

Monday Afternoon, March 12
2:00 PM to 4:45 PM
Room 102

S

Symposium Session: Nanoparticles for Drug Delivery: Interactions with the Immune System

Chairperson(s): *Sandra Casinghino, Pfizer, Inc., Groton, CT, and Marina A. Dobrovolskaia, SAIC-Frederick Inc., NCI-Frederick, Frederick, MD.*

Sponsor:
Immunotoxicology Specialty Section

Endorsed by:
Nanotoxicology Specialty Section

Nanotechnology holds great promise for targeted drug delivery. Unique chemical and physical properties of nanomaterials may lead to improvements in delivery technology in several ways. Examples include increasing the solubility of poorly soluble drugs, increasing efficacy and safety by delivering drugs directly to diseased tissues,and potentially decreasing costs by achieving therapeutic efficacy despite administration of lower doses of drugs. Many publications have discussed the toxicology of environmental and occupational nanomaterials, but more information is needed regarding nanoparticles designed for parenteral administration. These nanoparticles may present unique issues due to recognition by the innate immune system and downstream effects on adaptive immunity. Interactions with the immune system may result in premature clearance before payload delivery, disseminated intravascular coagulation-like toxicities, inflammation, anaphylaxis, and decreased resistance to infection or tumors. Nanoparticles are a very broad and diverse class of biomaterials, and there are significant gaps in our knowledge of the mechanisms by which nanoparticles interact with the immune system. Recognition by immune cells is influenced by many factors, including direct interaction of nanoparticles with red blood cell proteins as well as proteins of the complement and coagulation systems. Therefore nanomaterials may need to be screened for hematocompatibility and complement activation prior to preclinical *in vivo* studies. Investigation of nanomaterial effects on the function of immune cells, such as phagocytes and lymphocytes, is also important, and development of *in vitro* assays that are predictive of *in vivo* observations is critical. Further work is needed to elucidate which chemical and physical properties of nanoparticles are responsible for specific interactions with immune system proteins or cells, and understanding these interactions may allow exploitation of nanoparticle properties to ensure both safety and efficacy of nanomedicines.

#818 2:00 **NANOPARTICLES FOR DRUG DELIVERY: INTERACTIONS WITH THE IMMUNE SYSTEM.** *S. Casinghino*[1], and M. A. Dobrovolskaia[2]. [1]Pfizer Inc., Groton, CT, and [2]SAIC-Frederick Inc., NCI-Frederick, Frederick, MD.

2:00 **INTRODUCTION.** Sandra Casinghino

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#819 2:05 **IMMUNOLOGICAL PROPERTIES OF ENGINEERED NANOMATERIALS.** M. Dobrovolskaia. SAIC-Frederick, Feredrick, MD. Sponsor: *S. Casinghino*.

#820 2:45 **UNDERSTANDING THE IMMUNOLOGICAL PROPERTIES OF FUNCTIONALIZED LIPID-POLYMER NANOPARTICLES.** C. Salvador-Morales. Bioengineering Department, George Mason University, Fairfax, VA. Sponsor: *S. Casinghino*.

#821 3:15 **RECOGNITION OF NANOPARTICLES BY MACROPHAGES—FROM PRINCIPLES TO CONSEQUENCES AND TOXICITY.** *A. A. Shvedova*[1,2]. [1]PPRB, NIOSH, Morgantown, WV, and [2]West Virginia University, Morgantown, WV.

#822 3:45 **DEVELOPMENT OF CYT-6091 (AURIMUNE®): A MODEL CANCER NANOMEDICINE.** L. Tamarkin, and G. F. Paciotti. CytImmune, Rockville, MD. Sponsor: *S. Casinghino*.

#823 4:15 **CASE STUDY: INTERACTION OF DEXTRAN NANOMATERIALS WITH THE IMMUNE SYSTEM—*IN VIVO* AND *IN VITRO* STUDIES.** *S. Casinghino*, *G. B. Freeman*, M. L. Mirsky, and *T. T. Kawabata*. Pfizer Inc., Groton, CT.

Monday Afternoon, March 12
2:00 PM to 4:45 PM
Room 308

S

Characterizing Toxic Modes of Action and Pathways to Toxicity

Symposium Session: Toxic Cell-Death: Signaling Pathways, Cross-Talk, and High-Throughput Analysis

Chairperson(s): *Sten Orrenius, Karolinska Institutet, Institute of Environmental Medicine, Stockholm, Sweden, and William Slikker Jr., US FDA, Jefferson, AR.*

Sponsor:
Mechanisms Specialty Section

Endorsed by:
Food Safety Specialty Section
Neurotoxicology Specialty Section
Ocular Specialty Section

Cell death is the ultimate result of toxicity caused by damage to critical cell functions and/or activation of death signaling pathways. Toxicants can trigger multiple modes of cell death (apoptosis, necrosis, necroptosis, and autophagic cell death) with distinct morphological and biochemical characteristics. In fact, several cell death modalities may coexist within the same lesion with cross-talk between them. To address this important topic, we will begin by discussing the role that cell death plays in toxic insult and disease, and how improved knowledge of cell death signaling pathways and mechanisms will help us understand how toxicants might interfere with cell viability and function. After the description of various cell death modalities, and the possible cross-talk between them, mechanisms of apoptotic cell death caused by anesthetics in the developing brain and of lead-induced apoptosis in retinal photoreceptors will be presented as examples of cell death caused by toxic insult. These studies illustrate the critical roles of the calcium ion and of reactive oxygen species as mediators of neurotoxicity, as well as the difference in sensitivity of the mitochondrial populations in rods and cones to apoptotic stimuli. Thereafter, the mechanisms of action of certain chemotherapeutic agents and fungal toxins will be discussed to illustrate the role of sphingolipid signaling molecules in cell death and disease. Finally, a molecular epidemiology approach using novel technologies to assess cell death and environmental impact in individual cells and in human populations in a high-throughput manner will be presented. The program

Program Description (Continued)

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will cover important toxicity mechanisms in multiple target organs and will hopefully contribute to a better understanding of the role of cell death mechanisms in toxic insult and disease.

#824	2:00	**TOXIC CELL-DEATH: SIGNALING PATHWAYS, CROSS-TALK, AND HIGH-THROUGHPUT ANALYSIS.** *S. Orrenius*[1], and *W. Slikker Jr*[2]. [1]Karolinska Institutet, Stockholm, Sweden, and [2]US FDA/NCTR, Jefferson, AR.
	2:00	**INTRODUCTION.** Sten Orrenius
#825	2:05	**MODES AND PATHWAYS OF TOXICANT-INDUCED CELL-DEATH.** *B. Zhivotovsky*. Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden.
#826	2:35	**PATHWAYS TO ANESTHETIC-INDUCED BRAIN CELL-DEATH AND TO NEURONAL PROTECTION.** *W. Slikker Jr*. National Center for Toxicological Research, US FDA, Jefferson, AZ.
#827	3:05	**DIFFERENTIAL PATHWAYS OF CELL DEATH BY LEAD AND NEUROPROTECTION BY BCL-XL IN PHOTORECEPTOR SYNAPTIC AND NONSYNAPTIC MITOCHONDRIA.** *D. A. Fox*. College of Optometry, University of Houston, Houston, TX.
#828	3:35	**CERAMIDE, SPHINGOID BASES, AND SPHINGOID BASE METABOLITES AS LIPID MEDIATORS IN SIGNALING PATHWAYS LEADING TO CELL DEATH AND DISEASE.** *R. T. Riley*. Toxicology and Mycotoxin Research Unit, USDA-ARS-SAA, Athens, GA.
#829	4:05	**MEASURING CELL DEATH AND GENOTOXICITY IN SINGLE CELLS AND HUMAN POPULATIONS USING LAB-ON-A-CHIP TECHNOLOGIES.** *M. T. Smyth*. School of Public Health, University of California Berkeley, Berkeley, CA.
	4:35	**PANEL DISCUSSION/Q&A.**

Monday Afternoon, March 12
2:00 PM to 4:45 PM
Room 309

W

Regulatory Science: Bridging the Gap between Discovery and Product Availability

Workshop Session: Concepts Critical to the Next Generation of Human Health and Ecological Risk Assessment

Chairperson(s): *P. Robinan Gentry, ENVIRON International Corporation, Monroe, LA, and Betty Locey, ARCADIS, Ann Arbor, MI.*

Sponsor:
Risk Assessment Specialty Section

Through the collaborative effort between the SOT Risk Assessment Specialty Section and the SETAC Human Health Risk Assessment Advisory Group, this session was developed to highlight the challenges currently facing the next generation of risk assessors. With the release of the recent National Academy of Sciences reports on toxicity testing that present a vision for movement from *in vivo* testing to *in vitro* and *in silico* testing, as well as the most recent changes in risk assessment guidelines by regulatory agencies, risk assessors are faced with the challenge of integrating innovative data (e.g., genomics) into the current risk assessment paradigms or with the development of new paradigms or methods to address changing issues in risk assessment. In considering all the biological changes and scientific information, many of these new methods attempt to integrate all of the available scientific information of a compound to better inform both human health

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and ecological risk assessment/risk management decisions. Our panel of experts will provide information on new programs and approaches within regulatory agencies, as well as in the private sector, that will be important in the next generation of risk assessment.

#830	2:00	**CONCEPTS CRITICAL TO THE NEXT GENERATION OF HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT.** *R. Gentry*[1], and *B. Locey*[2]. [1]ENVIRON International Corporation, Monroe, LA, and [2]ARCADIS, Novi, MI.
	2:00	**INTRODUCTION.** Robinan Gentry
#831	2:05	**A MORE EFFICIENT AND EFFECTIVE TESTING AND ASSESSMENT PARADIGM FOR CHEMICAL RISK MANAGEMENT.** *S. Bradbury*. US EPA, Washington, DC.
#832	2:37	**MABEL: USE OF PRECLINICAL DATA TO SET ACCEPTABLE STANDARDS FOR EXPOSURE.** G. Bruce. Intertox, Inc., Seattle, WA. Sponsor: *R. Gentry*.
#833	3:09	**USING TRANSCRIPTOMIC DATA IN THE RISK ASSESSMENT PARADIGM.** *R. S. Thomas*. The Hamner Institutes for Health Sciences, Research Triangle Park, NC.
#834	3:41	**ADVERSE OUTCOME PATHWAYS AS A UNIFYING CONCEPT IN ENVIRONMENTAL TOXICOLOGY.** *K. Crofton*. US EPA, Research Triangle Park, NC.
#835	4:13	**MIXTURES RISK MANAGEMENT: MOVING BEYOND TEQS AND HAZARD INDICES.** *P. S. Price*. Dow Chemical Company, Midland, MI.

Monday Afternoon, March 12
2:00 PM to 4:45 PM
Room 304

RI

Regulatory Science: Bridging the Gap between Discovery and Product Availability

Regional Interest Session: Bridging the Green Chemistry Gap between Product Discovery and Availability

Chairperson(s): *Abby A. Li, Exponent Health Sciences, San Francisco, CA, and Lauren Zeise, Cal/EPA, Berkeley, CA.*

Sponsor:
Ethical, Legal, and Social Issues Specialty Section

Endorsed by:
Occupational and Public Health Specialty Section
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

Recent government and industry initiatives seek to identify chemicals of toxicological concern in products to reduce their use or replace them with safer chemicals. At the same time, sustainable approaches to product manufacture and use that account for energy consumption, product life cycle, and societal benefit are being emphasized. This creates the challenge of developing sound scientific approaches for identifying important chemical hazards and evaluating alternative, safer chemicals or products, all done within the context of risk and benefit trade-offs. Two laws recently passed in California (Chapters 559 and 560, Statutes of 2008) direct the state's implementation of such green chemistry strategies. The US government, several states and cities, and industry are similarly exploring approaches for alternative analyses that can include hazard, risk, environmental, life cycle, and carbon impact assessments. A primary goal is a rapid and streamlined review and assessment to ensure the availability of safer and more effective products for the consumer and general public, at reduced costs and with minimal environmental impacts. Our panel of regulators and scientists from

Program Description (Continued)

Abstract #

different sectors will explore approaches that can be used to implement green chemistry goals. It begins with a government perspective on challenges of development and implementation of legislation that will be effective, enforceable, and practical. This session features toxicity methods and case studies for hazard and risk-informed screening strategies utilizing high-throughput data, structure activity, and other toxicity information. It also considers how toxicity assessments can be utilized together with evaluations that account for carbon footprint and other impacts of product manufacture, use, and disposal for green chemistry decision making. At the conclusion of this session, two experts will lead a panel discussion and provide their expertise in exposure and risk assessment, regulatory policy decision-making, and occupational clinical medicine.

#836 2:00 **BRIDGING THE GREEN CHEMISTRY GAP BETWEEN PRODUCT DISCOVERY AND AVAILABILITY.** *A. A. Li*[1], and *L. Zeise*[2]. [1]Exponent Health Sciences, San Francisco, CA, and [2]Cal/EPA OEHHA, Oakland, CA.

2:00 **INTRODUCTION.** Michael Wilson

#837 2:10 **INSIGHTS FROM IMPLEMENTING CALIFORNIA'S GREEN CHEMISTRY LEGISLATION.** D. Raphael[1], and O. Madriago[2]. [1]Director, Cal/EPA DTSC, Sacramento, CA, and [2]Chief Deputy Director, Cal/EPA DTSC, Sacramento, CA. Sponsor: *L. Zeise*.

#838 2:30 **CALIFORNIA'S HAZARD TRAIT FRAMEWORK AND OTHER TOXICOLOGICAL CONSIDERATIONS FOR GREEN CHEMISTRY DECISION-MAKING.** *L. Zeise*, *M. Marty*, R. Linville, and *G. Alexeeff*. Cal/EPA OEHHA, Oakland, CA.

#839 2:55 **ALTERNATIVE ASSESSMENT STRATEGIES FOR PRODUCT DEVELOPMENT FOR CHEMICALS REGULATED IN EUROPE: 3 CASE STUDIES.** *R. Landsiedel*, *B. Van Ravenzwaay*, S. Kolle, T. Ramirez, H. Kamp, and W. Wohlleben. Product Safety, BASF, Ludwigshafen, Germany.

#840 3:20 **OPTIMIZING POTENTIAL GREEN REPLACEMENT CHEMICALS—BALANCING FUNCTION AND RISK.** *R. Judson*. US EPA, Research Triangle Park, NC.

#841 3:45 **WEIGHING MULTIPLE VARIABLES IN IMPROVING THE GREEN PROFILE OF CONSUMER PRODUCTS.** *G. Daston*. Miami Valley Labs, Procter & Gamble, Cincinnati, OH.

4:10 **PANEL DISCUSSION/Q&A: THE GREEN CHEMISTRY INITIATIVE.** Tina Bahadori and Gina Solomon

Abstract #

Monday Afternoon, March 12
2:00 PM to 4:45 PM
Room 302

PL

Platform Session: Ecotoxicology and Sentinel Animals

Chairperson(s): *Louisa Hooven, Oregon State University, Corvallis, and James LaVelle, CDM, Green Valley, AZ.*

#842 2:00 **CROSS-SPECIES EXTRAPOLATION USING PROTEIN SEQUENCE HOMOLOGY TO PREDICT SUSCEPTIBILITY OF NONTARGET ORGANISMS TO CHEMICALS WITH KNOWN MODES OF ACTION.** C. LaLone[1], D. Villeneuve[1], *L. Burgoon*[2], C. Russom[1], J. Tietge[1], J. Berninger[1], and G. Ankley[1]. [1]Mid-Continent Ecology Division, US EPA, Duluth, MN, and [2]National Center for Environmental Assessment, US EPA, Research Triangle Park, NC.

#843 2:19 **ALTERED VITELLOGENIN GENE-REGULATION AND REPRODUCTIVE IMPACTS IN KILLIFISH (*FUNDULUS HETEROCLITUS*) FROM THE HEAVILY CONTAMINATED NEWARK BAY, NJ.** S. M. Bugel[1,2], *L. A. White*[2], and *K. R. Cooper*[1,2]. [1]Department of Environmental Sciences, Rutgers University, New Brunswick, NJ, and [2]Department of Biochemistry and Microbiology, Rutgers University, New Brunswick, NJ.

#844 2:38 **FURTHER ELUCIDATION OF THE MECHANISM OF ACTION OF TRIBUTYLTIN (TBT), AN ENDOCRINE DISRUPTOR IN ZEBRAFISH.** *C. L. McGinnis*. Biological Sciences, Quinnipiac University, Hamden, CT.

#845 2:57 **CHRONIC TOXIC EFFECTS OF DIETARY TCDD IN ZEBRAFISH.** *Q. Liu*[1,2], M. L. Rise[3], G. Goetz[2], *J. M. Spitsbergen*[4], R. Cariou[5,6], *R. J. Hutz*[1], P. J. Tonellato[7,8,9], and *M. J. Carvan*[2]. [1]Biological Sciences, University of Wisconsin-Milwaukee, Milwaukee, WI, [2]School of Freshwater Sciences, University of Wisconsin-Milwaukee, Milwaukee, WI, [3]Ocean Sciences Centre, Memorial University of Newfoundland, St. John's, NF, Canada, [4]Microbiology, Oregon State University, Corvallis, OR, [5]ONIRIS, USC 2013 Laberca, Nantes, France, [6]Université Nantes Angers Le Mans, Nantes, France, [7]Zilber School of Public Health, University of Wisconsin-Milwaukee, Milwaukee, WI, [8]Pathology, Beth Israel Deaconess Medical Center, Boston, MA, and [9]Center for Biomedical Informatics, Harvard Medical School, Boston, MA.

#846 3:15 **CHANGES IN GENE EXPRESSION IN PCB-EXPOSED AND REFERENCE WILD RAINBOW TROUT.** *J. M. LaVelle*[1], M. Powell[2], T. Macbeth[3], and T. Gendusa[4]. [1]CDM, Green Valley, AZ, [2]Aquaculture Research Institute, University of Idaho, Hagerman, ID, [3]CDM, Helena, MT, and [4]CDM, Little Rock, AR.

#847 3:33 **EFFECTS OF THE AQUATIC HERBICIDE ENDOTHALL ON SURVIVAL OF SALMON AND STEELHEAD SMOLTS DURING SEAWATER TRANSITION.** *L. Courter*[1], and I. Courter[2]. [1]Mount Hood Environmental, Portland, OR, and [2]Cramer Fish Sciences, Gresham, OR.

Program Description (Continued)

Abstract #

#848 3:51 **USING 1H NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY TO COMPARE TOXICANT RESPONSES IN MULTIBIOINDICATOR SUBJECTED TO MINING AND OTHER INDUSTRIAL EFFLUENT.** *O. T. Olubambi*. Zoology, University of Johannesburg, Johannesburg, South Africa.

#849 4:09 **TOXICOKINETICS OF BROMINATED FLAME RETARDANTS IN THE NORTHERN LEOPARD FROG.** W. H. Karasov, and T. Cary. Zoology, University of Wisconsin-Madison, Madison, WI. Sponsor: *D. Volz*.

#850 4:27 **SUBLETHAL EFFECTS OF PESTICIDES ON CIRCADIAN BEHAVIOR IN HONEY BEES.** *L. A. Hooven*. Horticulture, Oregon State University, Corvallis, OR.

Monday Afternoon, March 12
2:00 PM to 4:45 PM
Room 301

PL

Platform Session: Exposure Assessment: Biological and Probabilistic Approaches to Monitoring, Modeling, and Predictions

Chairperson(s): *Justin G. Teeguarden, Pacific Northwest National Laboratory, Richland, WA, and Susan Griffin, US EPA, Denver, CO.*

#851 2:00 **PHARMACOKINETICS-ENABLED REVERSE DOSIMETRY IMPROVES THE ACCURACY OF BISPHENOL A (BPA) EXPOSURE ASSESSMENT.** *H. Shankaran*[2], and *J. G. Teeguarden*[1]. [1]Biological Sciences, Pacific Northwest National Laboratory, Richland, WA, and [2]Computational Biology and Bioinformatics, Pacific Northwest National Laboratory, Richland, WA.

#852 2:19 **APPLICATION OF PHYSIOLOGICALLY-BASED PHARMACOKINETIC MODELS FOR OCTAMETHYLCYCLOTETRASILOXANE (D4) AND DECAMETHYLCYCLOPENTASILOXANE (D5) IN SIMULATING CONSUMER EXPOSURES.** *Y. Yang*[1], *H. Clewell*[1], *M. Anderson*[1], *T. McMullin*[2], and *K. Plotzke*[2]. [1]The Hamner Institutes for Health Sciences, Research Triangle Park, NC, and [2]Dow Corning Corporation, Midland, MI.

#853 2:38 **PROBABILISTIC RISK ASSESSMENT OF HUMAN EXPOSURE TO IRON AND STEEL SLAG.** *G. Brorby*[1], *D. Proctor*[2], *C. Perry*[3], L. Fitzgerald[3], and A. Tachosvsky[3]. [1]ToxStrategies, Inc., Vallejo, CA, [2]ToxStrategies, Inc., Rancho Santa Margarita, CA, and [3]ToxStrategies, Inc., Austin, TX.

#854 2:57 **A TIERED APPROACH FOR AGGREGATE EXPOSURE ASSESSMENT.** *D. A. Sarigiannis*[1,2], S. P. Karakitsios[1], A. Gotti[2], R. Torfs[4], C. Cornelis[4], M. van Tongeren[3], S. Spankie[3], and K. De Brouwere[4]. [1]Chemical Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece, [2]Chemical Process Engineering Research Institute, Centre for Research and Technology Hellas, Thermi, Greece, [3]Institute for Occupational Medicine, Riccarton, United Kingdom, and [4]VITO, Mol, Belgium.

#855 3:15 **COMPARATIVE CHEMICAL RISK ASSESSMENT USING BIOMONITORING DATA FROM NHANES: APPLICATION OF BIOMONITORING EQUIVALENTS.** *L. L. Aylward*, *S. M. Hays*, and *C. R. Kirman*. Summit Toxicology, LLP, Falls Church, VA.

Abstract #

#856 3:33 **AN *IN VITRO* BIOACCESSIBILITY TEST METHOD FOR THE ESTIMATION OF BIOAVAILABILITY OF ARSENIC FROM SOIL.** W. Brattin[1], J. Drexler[2], Y. Lowney[3], *S. Griffin*[4], and *G. Diamond*[1]. [1]SRC, Inc., Denver, CO, [2]University of Colorado, Boulder, CO, [3]Exponent, Boulder, CO, and [4]US EPA Region 8, Denver, CO.

#857 3:51 **BIOAVAILABILITY OF POLYCYCLIC AROMATIC HYDROCARBONS AFTER REPEATED EXPOSURE AND FROM DIFFERENT SOIL CONCENTRATIONS USING THE JUVENILE SWINE MODEL.** R. E. Peters[1], S. D. Siciliano[1,2], and M. Wickstrom[2]. [1]Soil Science, University of Saskatchewan, Saskatoon, SK, Canada, and [2]Toxicology Centre, University of Saskatchewan, Saskatoon, SK, Canada. Sponsor: *L. Weber*.

#858 4:09 **APPLICATION OF NHANES DATA TO EVALUATE CHLOROFORM EXPOSURE VIA THREE EXPOSURE ROUTES USING PHYSIOLOGICALLY-BASED PHARMACOKINETIC (PBPK) MODELING.** R. R. Worley[1], D. Fowler[1], C. Welsh[1], J. Wheeler[1], and *J. Fisher*[2]. [1]Agency for Toxic Substances and Disease Registry, Atlanta, GA, and [2]US FDA, Little Rock, AR.

#859 4:27 **RAPID EXPOSURE-BASED PRIORITIZATION OF ENVIRONMENTAL CHEMICALS USING USETOX.** O. Jolliet[1], D. Li[1], and T. E. McKone[2]. [1]Environmental Health Science, University of Michigan, Ann Arbor, MI, and [2]School of Public Health, University of California Berkeley, Berkeley, CA. Sponsor: *C. Emond*.

Monday Afternoon, March 12
2:00 PM to 4:45 PM
Room 310

PL

Platform Session: Inhalants and Cardiopulmonary: Pollutants and Irritants

Chairperson(s): *Tessa Serex, E.I. DuPont De Nemours, Newark, DE, and James Antonini, NIOSH, Morgantown, WV.*

#860 2:00 **NAPHTHALENE-INDUCED NASAL NONPROTEIN SULFHYDRYL DEPLETION IN ADULT AND JUVENILE RATS.** *J. A. Cichocki*[1], *L. S. Van Winkle*[2], and *J. B. Morris*[1]. [1]Toxicology Program, University of Connecticut, Storrs, CT, and [2]Veterinary Medicine, University of Califonia Davis, Davis, CA.

#861 2:19 **A SINGLE INHALATION EXPOSURE TO ACROLEIN DESENSITIZES BAROREFLEX RESPONSIVENESS IN WISTAR-KYOTO AND SPONTANEOUSLY HYPERTENSIVE RATS.** *M. S. Hazari*[1], K. Butler[2], D. Winsett[1], *D. L. Costa*[1], and *A. K. Farraj*[1]. [1]Environmental Public Health Division, US EPA, Research Triangle Park, NC, and [2]University of North Carolina at Chapel Hill, Chapel Hill, NC.

#862 2:38 **CHARACTERIZATION OF SOY BIODIESEL EXHAUST AND TOXICOLOGICAL EFFECTS IN MICE.** *M. I. Gilmour*[1], Q. T. Krantz[1], C. King[1], D. G. Nash[2,1], W. Preston[3], W. P. Linak[1], E. H. Boykin[1], M. J. Daniels[1], D. L. Andrews[1], J. H. Richards[1], and *S. H. Gavett*[1]. [1]US EPA, Research Triangle Park, NC, [2]ORISE, Department of Energy, Research Triangle Park, NC, and [3]Arcadis, Research Triangle Park, NC.

Program Description (Continued)

#863 2:57 **HYPOTENSIVE AND BRADYCARDIC RESPONSES TO INHALED O3 AND AMBIENT FINE PARTICLES ARE ENHANCED IN RATS ON A HIGH-FRUCTOSE DIET.** *J. G. Wagner*[1,2], A. S. Kamal[3], *K. Allen*[1,2], M. Morishita[4], J. T. Dvonch[4], R. Lewandowski[1,2], G. Fink[5,2], and *J. R. Harkema*[1,2]. [1]Pathobiology, Michigan State University, East Lansing, MI, [2]US EPA Great Lakes Air Center for Integrative Research, East Lansing, MI, [3]US EPA, Research Triangle Park, NC, [4]School Public Health, University of Michigan, Ann Arbor, MI, and [5]Pharmacology and Toxicology, Michigan State University, East Lansing, MI.

#864 3:15 **TOXICITY OF DAY/NIGHT URBAN SAN JOAQUIN VALLEY, CALIFORNIA PARTICULATE MATTER IS SIZE AND SEASON DEPENDENT.** *L. E. Plummer*, *C. M. Carosino*, K. J. Bein, Y. Zhao, A. S. Wexler, and *K. E. Pinkerton*. Air Quality Research Center, University of California Davis, Davis, CA.

#865 3:33 **AIRWAY SENSORY IRRITATION STUDY OF BORIC ACID AND SODIUM TETRABORATE PENTAHYDRATE IN MICE.** *W. Ball*[1], *D. Kirkpatrick*[2], and *J. Weinberg*[2]. [1]Rio Tinto Minerals, Greenwood Village, CO, and [2]WIL Research Laboratories, Ashland, OH.

#866 3:51 **BRONCHIAL FIBROSIS IN RATS EXPOSED TO 2,3-BUTANEDIONE AND 2,3-PENTANEDIONE VAPORS.** *D. L. Morgan*[1], M. P. Jokinen[2], C. L. Johnson[3], W. M. Gwinn[1], H. C. Price[4], and G. P. Flake[1]. [1]NIEHS/NTP, Research Triangle Park, NC, [2]Integrated Laboratory Systems, Research Triangle Park, NC, [3]Charles River Laboratories, Research Triangle Park, NC, and [4]Alion Science and Technology, Research Triangle Park, NC.

#867 4:09 **OXIDATIVE STRESS AND TOXICITY IN MACROPHAGES AFTER WILDFIRE PARTICULATE MATTER INSTILLATION IN THE MOUSE LUNG.** *K. Williams*, L. Franzi, and *J. Last*. University of California Davis, Davis, CA.

#868 4:27 **SELECTION OF AN ACUTE MODEL OF ALLERGIC AIRWAY INFLAMMATION FOR DIFFERENTIAL TESTING OF SOURCE-ORIENTED PARTICLES.** *C. Carosino*, *L. E. Plummer*, K. J. Bein, Y. Zhao, A. S. Wexler, and *K. E. Pinkerton*. Air Quality Research Center, University of California Davis, Davis, CA.

Monday Afternoon, March 12
2:15 PM to 3:15 PM
Room 100

Exhibitor Hosted Session: Application of Ultrasensitive Immunoassay Technology for Preclinical Toxicity Testing

Presented by:
Singulex

Drug safety and toxicity testing often requires precise monitoring of biomarker response, but analytical methods capable of providing the requisite sensitivity and dynamic range are lacking. The talk presents an ultrasensitive immunoassay technology and how it improves biomarker utility in preclinical/clinical testing.

Monday Afternoon, March 12
2:15 PM to 3:15 PM
Room 101

Exhibitor Hosted Session: CNS Characterization and Assessment of Innovative Efficacy Animal Research Models: Parkinson's Disease

Presented by:
WIL Research

The assessment of neurodegenerative animal models often includes neuropathology, behavior, and biochemical analysis. These assays are important for both neuroscience research and efficacy testing of potential clinical therapies. This session will discuss the CNS animal model disease program methodology and data at WIL Research as it relates to Parkinson's Disease.

Monday Afternoon, March 12
2:15 PM to 3:15 PM
Room 105

Exhibitor Hosted Session: Targeted Protein Biomarker Quantitation by LC-MS/MS

Presented by:
Tandem Labs

Peptide and protein molecules can serve as therapeutic drugs or biomarkers. Quantitative analysis of these molecules is required for monitoring pharmacokinetic profiles of peptide drugs or drug response in the body for protein biomarkers. This presentation will examine the challenges of peptide and protein analysis as well as relevant bioanalytical practices.

Monday Afternoon, March 12
3:00 PM to 4:00 PM
CC Room 202

Specialty Section Collaboration and Communication Group Meeting

Monday Afternoon, March 12
3:30 PM to 4:30 PM
Room 105

Exhibitor Hosted Session: An Introduction to the NTP DrugMatrix and ToxFX Toxicogenomic Database and Analysis Tools

Presented by:
National Toxicology Program

DrugMatrix and its automated reporting system, ToxFX, represent the scientific communities' largest, freely available toxicogenomic reference database and informatics system. Based on rat organ toxicogenomic profiles for 638 compounds, DrugMatrix allows an investigator to formulate a comprehensive picture of a compound's potential for toxicity with greater efficiency than traditional methods.

Program Description (Continued)

Monday Afternoon, March 12
3:30 PM to 4:30 PM
Room 101

E

Exhibitor Hosted Session: Metabolism-Dependent Toxicity Evaluation Using Human Hepatocytes and IdMOC

Presented by:
***In Vitro* ADMET Laboratories**

In vitro approaches for metabolism-dependent xenobiotic toxicity will be described, including the use of metabolic inhibitors with primary human hepatocyte cultures for *in vitro* metabolic-dependent hepatotocity, and the Integrated Discrete Multiple Organ Coculture for the evaluation of hepatic metabolite toxicity on nonhepatic organs.

Monday Afternoon, March 12
3:30 PM to 4:30 PM
Room 100

E

Exhibitor Hosted Session: Understanding the New ICH S2(R1) Genotoxicity Guideline and the Advantages of Automated Methods

Presented by:
Litron Laboratories

ICH S2(R1) was signed in November 2011. This session will focus on how Litron technologies address: 1) the requirement to score more cells for *in vivo* micronucleus studies, 2) acceptance of rat blood for simpler integration into general toxicology studies, and 3) the new role for *In Vitro* Micronucleus testing.

Monday Afternoon, March 12
4:30 PM to 5:50 PM
Room 307

FS

SOT/EUROTOX Debate: Comparative Hazards: Chemicals in the Environment Are the Largest Risk to Human Health

Chairperson(s): *Lois D. Lehman-McKeeman, Bristol-Myers Squibb Company, Princeton, NJ, and Ruth A. Roberts, AstraZeneca UK, Macclesfield, United Kingdom.*

SOT Debater: *Stephen Safe, Texas A&M University, College Station, TX.*

EUROTOX Debater: *David R. Bell, European Chemicals Agency, Helsinki, Finland.*

Endorsed by:
Society of Toxicology (SOT)
European Societies of Toxicology (EUROTOX)

Each year the SOT Annual Meeting includes a debate that continues a tradition that originated in the early 1990s in which leading toxicologists advocate opposing sides of an issue of great toxicological importance. This year, our debaters will address the proposition: Comparative Hazards: Chemicals in the Environment Are the Largest Risk to Human Health.

(*Continued*)

SOT/EUROTOX Debate *(Continued)*

Chemicals have been introduced into the environment through a variety of industrial and agricultural processes. They are measured in the air we breathe, the water we drink, and the food we eat. Although there are many chemicals that serve to improve the quality of life, there are also unintended hazards that are associated with their use. This debate is intended to focus on chemicals in the environment as the largest risk to human health, particularly when compared to other potential health hazards.

Regardless of framework differences and personal convictions, each scientific 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, this debate will again take place in Stockholm, Sweden, during the 2012 Eurotox Annual Congress, June 17–20.

Monday Afternoon, March 12
4:30 PM to 6:00 PM
CC Room 300

Specialty Section Presidents and Officers Meeting

MONDAY EVENING

Monday Evening, March 12
5:00 PM to 6:00 PM
Marriott Marquis Pacific Suite I

American Association of Chinese in Toxicology Special Interest Group Distinguished Chinese Toxicologist Lectureship Award and Seminar: Strategies for the Selection of Biomarks for Cardiotoxicity in Drug Development
Lecturer: James Kang

Monday Evening, March 12
5:00 PM to 8:00 PM
Marriott Marquis Nob Hill A

Northern California Regional Chapter Reception

Monday Evening, March 12
5:00 PM to 7:30 PM
ThirstyBear Brewing Company

Southern California & Mountain West Regional Chapters Joint Reception

Monday Evening, March 12
5:00 PM to 6:30 PM
Marriott Marquis Nob Hill D

Toxicologists of African Origin Special Interest Group Meeting/Reception

Monday Evening, March 12
5:30 PM to 7:30 PM
Marriott Marquis Juniper Room

National Capital Area Regional Chapter Reception

Program Description (Continued)

Monday Evening, March 12
6:00 PM to 7:30 PM
Marriott Marquis
See room listing below.

Specialty Section Meetings/Receptions: Biological Modeling (Yerba Buena Salon 2), Drug Discovery Toxicology (Yerba Buena Salon 6), Ethical, Legal, and Social Issues (Yerba Buena Salon 12), Inhalation and Respiratory (Yerba Buena Salon 4), Mechanisms (Golden Gate Ballroom C1), Mixtures (Yerba Buena Salon 10), Regulatory and Safety Evaluation (Golden Gate Ballroom B)

Monday Evening, March 12
6:30 PM to 9:00 PM
Canton Dim Sum and Seafood Restaurant

American Association of Chinese in Toxicology Special Interest Group Reception

Monday Evening, March 12
7:00 PM to 9:00 PM
Marriott Marquis Golden Gate Ballroom C3

Association of Scientists of Indian Origin Special Interest Group Reception

Monday Evening, March 12
7:00 PM to 10:00 PM
Jillian's @ Metreon

Pacific Northwest Regional Chapter Reception

Monday Evening, March 12
7:00 PM to 9:00 PM
ThirstyBear Brewing Company

South Central and Lone Star Regional Chapters Joint Social

Notes

Program Description (Continued)

TUESDAY MORNING

Tuesday Morning, March 13
6:00 AM

Past Presidents Fun Run

Building on the positive response from last year, the Past Presidents Fun Run returns on the streets of San Francisco. With no registration or sign-up fee and a flexible starting point, this is truly going to be a "Fun Run." Meet your fellow meeting attendees in the lobby of your hotel on Tuesday, March 13 at 6:00 am local time, ask the front desk for the official SOT Past Presidents Fun Run map, and begin! (All hotels in the official SOT housing block will have a copy of this map.)

Not a runner? Not a problem! This event looks to bring together runners or walkers of all levels and paces. The course accommodates everyone with a goal of having fun.

There will not be run officials, so if you plan to time yourself and would like to share, please email your name, time, and hotel to Heidi Prange at heidi@toxicology.org and we will post the times to the SOT website. We also welcome photos and a small writeup to be published in the Spring *Communiqué*.

Tuesday Morning, March 13
7:00 AM to 8:30 AM
CC Room 230

Inhalation and Respiratory Specialty Section Technical Committee Meeting

Tuesday Morning, March 13
7:00 AM to 8:30 AM
CC Room 300

Regional Chapter Presidents and Officers Meeting

Tuesday Morning, March 13
7:00 AM to 7:50 AM
Room 304

Leading Edge in Basic Science Award Lecture: Inorganic Phosphate: Hidden Signal?

Lecturer: *Myung-Haing Cho, Seoul National University, Seoul, South Korea.*

Inorganic phosphate (Pi) is being added to a large number of processed foods because the addition of Pi increases the quality of food through improved water retention and texture. Surveys conducted in various countries indicate that intake of Pi has increased steadily as Pi-containing foods increased. These surveys also suggest that the use of Pi as a food additive may continue to increase. Pi plays a key role in diverse physiological functions. Several studies indicate that Pi may affect lung cell development through Na/Pi co-transporter (NPT). Some NPT subtypes have been identified in mammalian lung and considerable progress has been made in our understanding of their function and regulation. Therefore, we have been tried to elucidate the potential effects of high dietary Pi. Our results clearly demonstrate that high dietary Pi may affect the lung development. Also, we show that high dietary Pi promotes lung tumorigenesis through Akt-related cap-dependent protein translation, cell cycle regulation, and angiogenesis. Our results support the hypothesis that Pi works as a stimulus capable of increasing or decreasing several pivotal genes for lung cancer growth and suggest that regulation of Pi consumption may be important in maintaining a high quality of life.

Tuesday Morning, March 13
8:00 AM to 9:00 AM
Room 103

Keynote Medical Research Council (MRC) Lecture: Role of microRNAs in Control of Gene Expression in Human Physiology and Pathology

Lecturer: *Witold Filipowicz, Friedrich Miescher Institute for Biomedical Research, Basel, Switzerland.*

MicroRNAs (miRNAs) are a novel class ~20-nt-long regulatory RNAs expressed in eukaryotes. MiRNAs regulate gene expression posttranscriptionally, by imperfectly base-pairing to 3'UTR of mRNAs, which results in translational repression or mRNA deadenylation and degradation. The number of different miRNAs in humans reaches ~1,000, and ~50% of all human genes are predicted to be subject to miRNA regulation. Although specific functions and target mRNAs have been assigned to only a fraction of identified miRNAs, much evidence exists that miRNAs participate in the regulation of nearly all cellular and developmental processes. Expression of many miRNAs is tissue- or development-specific and major changes in miRNA expression are observed in human pathologies, including cancer. Clearly, discovery of miRNAs added a new dimension to the complexity and regulation of eukaryotic genomes.

This lecture will provide current knowledge about the mechanism of miRNA-mediated repression of gene expression and procedures to identify miRNA targets, as well as a role of miRNAs in selected human pathologies and the use of miRNA profiling as a diagnostic tool in human diseases and in tissue and cell injuries. MiRNAs have been found to be secreted from cells via exosomes and their profiling in human serum and other body fluids appears to be a promising diagnostic tool in different pathologies. MiRNAs may also play important roles in cellular responses to xenobiotic stresses and in control of drug-metabolizing enzymes. In addition, miRNAs or compounds blocking their function represent promising therapeutic agents.

Tuesday Morning, March 13
8:30 AM to 9:30 AM
Room 101

Exhibitor Hosted Session: Development Challenges for Antibody Drug Conjugates (ADCs)

Presented by:
MPI Research

ADCs combine the targeting potential of mAbs with the pharmacology of small molecules. There are significant challenges in the development of ADCs, such as lot variation and the need to simultaneously determine safety margins for intact ADC, drug-free mAb, and small molecules that are released *in vivo*.

Program Description (Continued)

Tuesday Morning, March 13
8:30 AM to 9:30 AM
Room 105

E

Exhibitor Hosted Session: Human Induced Pluripotent Stem Cell Technology in Predictive and Mechanism-Based Drug Discovery and Toxicity Testing Using Photometric-Based Assays

Presented by:
Promega Corporation

Human iPSC-technology and photometric assays provide rapid and predictive assessments of viability/toxicity and ADME properties during drug development. This tutorial will highlight recent developments in human iPSC-derived cell types from CDI and reporter assays from Promega while demonstrating the advantages of these technologies in accurate assessment of drug-induced cellular responses.

Tuesday Morning, March 13
8:30 AM to 9:30 AM
Room 100

E

Exhibitor Hosted Session: Pathology Peer Review: Who, What, When, Where, Why, and How

Presented by:
Vet Path Services

This presentation will cover pathology peer review in the industrial, GLP setting, with discussions of who does a peer review, what the peer review achieves, when it is performed, why a peer review should be done, and how a pathologist goes about a peer review. It will highlight common practices in the current regulatory environment.

Tuesday Morning, March 13
9:00 AM to 11:45 AM
Room 303

S

Symposium Session: An Intelligent Reproductive and Developmental Testing Paradigm for The 21st Century

Chairperson(s): *David Dix, US EPA, Research Triangle Park, NC, and Thomas Knudsen, US EPA, Research Triangle Park, NC.*

Sponsor:
Reproductive and Developmental Toxicology Specialty Section

Endorsed by:
***In Vitro* and Alternative Methods Specialty Section**
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

Addressing the chemical evaluation bottleneck that currently exists can only be achieved through progressive changes to the current testing paradigm. The primary resources for addressing these issues lie in computational toxicology, a field enriched by recent advances in computer science, bio- and chem-informatics, molecular biology, and high-throughput screening (HTS). *In vivo* testing is resource intensive, particularly for multigenerational reproductive and prenatal developmental assessment. Furthermore, predicting adverse effects of chemicals for reproductive and developmental outcomes has been confounded by the lack of quantitative models that address the complex molecular and physiological factors underlying reproductive decrements and developmental malformations, and the life-stage and generational sensitivities involved. There is currently a strong focus on identifying endocrine-disrupting chemicals through a battery of *in vitro* and *in vivo* screening tests. However, the shared complexities and challenges of modeling reproductive, endocrine, and developmental toxicity, and the parallel need for higher throughput evaluation, creates the need for an integrated application of predictive models for chemical prioritization and targeted testing. Ultimately, predictive models of reproductive, endocrine, and developmental toxicity will provide a critical component in the computational toxicology toolbox that better informs regulatory testing decisions.

Abstract #		
#869	9:00	**AN INTELLIGENT REPRODUCTIVE AND DEVELOPMENTAL TESTING PARADIGM FOR THE 21ST CENTURY.** *D. J. Dix*, and *T. B. Knudsen*. US EPA, Research Triangle Park, NC.
	9:00	**INTRODUCTION.** David Dix
#870	9:05	**VALIDATION, ACCEPTANCE, AND EXTENSION OF A PREDICTIVE MODEL OF REPRODUCTIVE TOXICITY USING TOXCAST DATA.** *M. T. Martin*. US EPA, Research Triangle Park, NC.
#871	9:37	**SPECIES-SPECIFIC PREDICTIVE MODELS OF DEVELOPMENTAL TOXICITY USING THE TOXCAST CHEMICAL LIBRARY.** *N. S. Sipes*. ORD/NCCT, US EPA, Research Triangle Park, NC.
#872	10:09	**TEST STRATEGIES AND ALTERNATIVE APPROACHES FOR DEVELOPMENTAL-REPRODUCTIVE TOXICITY FROM THE EUROPEAN REGULATORY PERSPECTIVE.** *A. Piersma*. National Institute for Public Health and the Environment RIVM, Bilthoven, Netherlands.
#873	10:41	**BUILDING BRIDGES BETWEEN HIGH-THROUGHPUT SCREENING DATA AND *IN VIVO* REGULATORY GUIDELINE TESTS: APPLICATION OF INTERMEDIATE TIER *IN VITRO* FUNCTIONAL ASSAYS IN THE CHEMICAL INDUSTRY.** *E. W. Carney*. TERC, The Dow Chemical Company, Midland, MI.
#874	11:13	**INTELLIGENT APPROACHES TO DART EVALUATIONS OF THERAPEUTIC PROTEINS.** *K. E. Thompson*. Reproductive Toxicology, Bristol-Myers Squibb Company, New Brunswick, NJ.

Tuesday Morning, March 13
9:00 AM to 11:45 AM
Room 104

S

Characterizing Toxic Modes of Action and Pathways to Toxicity

Symposium Session: Cross-Species Analysis of Toxicogenomics Data: Approaches for Assessing Differences in Sensitivity and Conservation of Mode of Action

Chairperson(s): *Russell S. Thomas, The Hamner Institutes for Health Sciences, Research Triangle Park, NC, and J. Craig Rowlands, The Dow Chemical Company, Midland, MI.*

Sponsor:
Molecular Biology Specialty Section

Endorsed by:
Comparative and Veterinary Specialty Section
Mechanisms Specialty Section

Two fundamental, but interrelated, challenges in toxicology are to identify a mode of action for a particular chemical and determine whether a particular response will be conserved across species. The determination of whether a response will be conserved usually involves a mechanistic understanding of the molecular events and an assessment of whether the processes and components that comprise those events are present in both the model species and the species of interest. In light of the relationship between gene expression changes and the biological effects, cross-species toxicogenomic

Program Description (Continued)

Abstract #

studies may be used to identify potential modes of action for a chemical and determine appropriate cross-species adjustment factors for use in a risk assessment. We will evaluate the application of cross-species toxicogenomics analysis of chemical toxicant-induced modes of action across species for use in risk assessment in a series of highly focused presentations. These issues will be of broad interest to investigators and regulators across environmental, industrial, consumer products, and pharmaceutical toxicology who perform and interpret cross-species studies to understand human health risks.

#875 9:00 **CROSS-SPECIES ANALYSIS OF TOXICOGENOMICS DATA: APPROACHES FOR ASSESSING DIFFERENCES IN SENSITIVITY AND CONSERVATION OF MODE OF ACTION.** *R. S. Thomas*[1], and *C. Rowlands*[2]. [1]The Hamner Institutes for Health Sciences, Research Triangle Park, NC, and [2]Toxicology and Environmental Research & Consulting, The Dow Chemical Company, Midland, MI.

9:00 **INTRODUCTION.** Russell Thomas

#876 9:05 **CROSS-SPECIES COMPARISONS OF TRANSCRIPTOMIC ALTERATIONS IN HUMAN AND RAT PRIMARY HEPATOCYTES EXPOSED TO DIOXIN-LIKE CHEMICALS.** *C. Rowlands*. Toxicology and Environmental Research & Consulting, The Dow Chemical Company, Midland, MI.

#877 9:37 **APPLICATION OF CROSS-SPECIES TOXICOGENOMICS TO UNDERSTAND RODENT/CANINE MODE-OF-ACTION DIFFERENCES IN DRUG-INDUCED TOXICITIES.** *T. P. Ryan*. Drug Disposition, Eli Lilly and Company, Indianapolis, IN.

#878 10:09 **CROSS-SPECIES TRANSCRIPTOMIC ANALYSIS OF THE MOUSE AND RAT LUNG EXPOSED TO CHLOROPRENE.** *R. S. Thomas*. The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#879 10:41 **COMPARATIVE EVALUATION OF GENOMIC CHANGES IN THE HUMAN AND MOUSE BLADDER FOLLOWING EXPOSURES TO INORGANIC ARSENIC AND METHYLATED METABOLITES.** *H. J. Clewell*. The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#880 11:13 **SYSTEMS BIOLOGY TO INFORM CROSS-SPECIES EXTRAPOLATION.** *L. D. Burgoon*. National Center for Environmental Assessment, US EPA, Research Triangle Park, NC.

Abstract #

Tuesday Morning, March 13
9:00 AM to 11:45 AM
Room 102

S

Regulatory Science: Bridging the Gap between Discovery and Product Availability

Symposium Session: Development of Biosimilar Products: Overview of Standards and Regulations

Chairperson(s): *Gregory Finch, Pfizer, Inc., Groton, CT, and Barbara Mounho, Amgen, Thousand Oaks, CA.*

Sponsor:
Biotechnology Specialty Section

Endorsed by:
Regulatory and Safety Evaluation Specialty Section

Biosimilar products are follow-on versions of approved, innovative biopharmaceuticals derived from recombinant DNA technology. As innovator biopharmaceuticals are reaching the end of their patent protection period, there is an increased interest globally in the pharmaceutical industry in the opportunity for the development and registration of biosimilar products. A number of biosimilar products are now approved in certain regions (e.g., Europe), and numerous regulatory authorities around the world have either finalized or are in the process of developing guidance documents for the approval biosimilars. This symposium will provide an overview of the history and development of the regional guidelines for biosimilars, as well as some of the unique challenges in developing biosimilars such as CMC, nonclinical, and clinical issues. Currently approved biosimilar products will be reviewed, including a more in-depth outline of the nonclinical and clinical studies conducted to support the approval of certain biosimilar products to illustrate selected challenges in the development process. The session will also include an overview of the US Biologics Price Competition and Innovation Act and regulatory perspective on requirements for biosimilar development, as well as an update and review on the US FDA's regulatory guidance on the nonclinical and clinical approval requirements for biosimilars.

#881 9:00 **DEVELOPMENT OF BIOSIMILAR PRODUCTS: OVERVIEW OF STANDARDS AND REGULATIONS.** *G. Finch*[1], and *B. Mounho*[2]. [1]Drug Safety R&D, Pfizer Inc., Groton, CT, and [2]Global Regulatory Affairs and Safety, Amgen Inc., Thousand Oaks, CA.

9:00 **INTRODUCTION.** Gregory Finch

#882 9:05 **OVERVIEW OF THE HISTORY AND DEVELOPMENT OF REGIONAL GUIDELINES FOR THE APPROVAL OF BIOSIMILAR PRODUCTS.** *B. Mounho*. Global Regulatory Affairs and Safety, Amgen Inc., Thousand Oaks, CA.

#883 9:35 **BIOSIMILAR DRUG DEVELOPMENT—APPROACHES TO TOXICITY EVALUATION.** *D. Herzyk*. Laboratory Animal Resources and Safety Assessment, Merck & Co Inc., West Point, PA.

#884 10:05 **INDUSTRY PERSPECTIVE ON BIOSIMILAR DRUG DEVELOPMENT AND REGISTRATION.** K. Lai. Biotechnology Industry Organization, Washington, DC. Sponsor: *G. Finch*.

#885 10:35 **CHALLENGES AND REGULATORY APPROACH FOR THE APPROVAL OF SUBSEQUENT ENTRY BIOLOGICS IN CANADA.** A. Ridgway. Biologics and Genetic Therapies Directorate, Health Canada, Ottawa, ON, Canada. Sponsor: *G. Finch*.

TUESDAY

Program Description (Continued)

Abstract #

#886 11:05 **US FDA'S OVERVIEW OF THE REGULATORY GUIDANCE FOR THE APPROVAL OF BIOSIMILAR PRODUCTS IN THE UNITED STATES.** *D. Jacobson Kram*. CDER, US FDA, Silver Spring, MD.

11:35 **PANEL DISCUSSION/Q&A.**

Tuesday Morning, March 13
9:00 AM to 11:45 AM
Room 301

S

Symposium Session: The Role of Danger Signals in the Development of Chemical Sensitization by Environmental and Occupational Agents

Chairperson(s): *Marc Pallardy, Université Paris-Sud - INSERM, Chatenay-Malabry, France, and Raymond Pieters, Utrecht University of Applied Sciences - Institute for Risk Assessment Sciences, Utrecht, Netherlands.*

Sponsor:
Immunotoxicology Specialty Section

The adaptive immune response to a foreign antigen needs both the recognition of the specific antigen and the presence of a specific cellular microenvironment at the place of antigen entrance. This specific cellular microenvironment provides signals to antigen-presenting cells allowing the elicitation of the immune response instead of immune tolerance to the foreign antigen. To this extent danger signals (e.g., proinflammatory cytokines, specific molecules from pathogens,necrosis products) play a crucial role in the immune adaptive response to pathogens. Triggering the innate immune system with danger signals, for instance through specific receptors termed PRR (pattern recognition receptors) including TLR (toll-like receptors), is a prerequisite for the immune system to react to pathogens as well as environmental antigens. These danger signals can be considered as adjuvants of immunity and indeed this concept has been extensively used for vaccination by adding chemicals (aluminium hydroxide) or pathogen products in vaccines. By analogy to the immune response to pathogens, the hypothesis that chemical allergens need the presence of danger signals or provide this danger signal to induce chemical hypersensitivity reactions has been developed during the past five to ten years. In this case, the chemical will play the role of an adjuvant. Recent evidence suggests that particulate matters and nanoparticles (SiO2, TiO2) can also mimic the presence of danger signals and thus have adjuvant potential on immune responses. Recently, several *in vitro* models have been developed to address the adjuvant effect of chemical sensitizers as tools to predict chemical sensitizer potential.

#887 9:00 **THE ROLE OF DANGER SIGNALS IN THE DEVELOPMENT OF CHEMICAL SENSITIZATION BY ENVIRONMENTAL AND OCCUPATIONAL AGENTS.** *M. Pallardy*[1], S. F. Martin[2], *R. Dearman*[3], and *R. Pieters*[4]. [1]INSERM UMR 996, Université Paris-Sud, Chatenay-Malabry, France, [2]Department of Dermatology, University Freiburg, Freiburg, Germany, [3]Faculty of Life Sciences, University of Manchester, Manchester, United Kingdom, and [4]Institute for Risk Assessment Sciences, University of Utrecht, Utrecht, Netherlands.

9:00 **INTRODUCTION.** Marc Pallardy

#888 9:05 **CHEMICALS MODIFY THE CELLULAR MICROENVIRONMENT IN THE SKIN PROVIDING ENDOGENOUS DANGER SIGNALS.** S. F. Martin. Department of Dermatology, University of Freiburg, Freiburg, Germany. Sponsor: *M. Pallardy*.

#889 9:40 **CHEMICAL SENSITIZERS CAN PLAY THE ROLE OF DANGER SIGNALS.** *M. Pallardy*. INSERM UMR 996, Université Paris-Sud, Chatenay-Malabry, France.

Abstract #

#890 10:15 **PATHALATES INFLUENCE THE IMMUNE AND ALLERGIC RESPONSES.** *R. Dearman*. Faculty of Life Sciences, University of Manchester, Manchester, United Kingdom.

#891 10:50 **LUNG DENDRITIC CELLS ARE STIMULATED BY ULTRAFINE PARTICLES AND PLAY A KEY ROLE IN THEIR IMMUNOSTIMULATING ACTIVITY.** *R. Pieters*[1,2]. [1]Institute for Risk Assessment Science, Research Centre Technology and Innovation, University of Utrecht, Utrecht, Netherlands, and [2]Research Centre Technology Innovation, Utrecht University of Applied Sciences, Utrecht, Netherlands.

11:25 **PANEL DISCUSSION.**

Tuesday Morning, March 13
9:00 AM to 11:45 AM
Room 305

W

Workshop Session: Assessing the Bioavailability and Risk from Metal-Contaminated Soils and Dusts

Chairperson(s): *Michael Hughes, US EPA, Research Triangle Park, NC, and Karen Bradham, US EPA, Research Triangle Park, NC.*

Sponsor:
Metals Specialty Section

Endorsed by:
Occupational and Public Health Specialty Section

Exposure to contaminated soil and dust is an important pathway in human and ecological risk assessment and often is the risk-driver for metal-contaminated soil. Site-specific soil physical and chemical characteristics, as well as biological factors, determine the bioavailability of soil contaminants. Within a single sample, contamination may be from multiple sources of toxic elements that may exist as different forms and species. The bioavailability of soil and dust contaminants has a direct impact on human health risk assessment and risk management practices. Novel research efforts focusing on development and application of *in vitro* and *in vivo* methods to measure the bioavailability of metal-contaminated soils have advanced in the past few years. Our panel of experts will provide information on the recent developments in assessing the bioavailability and risk from metal contaminated soils and dusts. The presentations include the relative bioavailability of arsenic-contaminated soils, metal contamination in urban residences in Canada, and potential children's exposures to toxic elements in house dust. The information can be found in a community-based study known as the "West Oakland Residential Lead Assessment Study," which provides details of the bioavailability of soil cadmium, chromium, nickel, and mercury, and human exposures to contaminated Brownfield soils. These presentations cover issues related to human health and bioavailability along with the most recent studies on community participation in assessing metal contamination, studies of children's exposures to residential contamination, and recent *in vitro* and *in vivo* methods development for assessing the bioavailability of metals in soils and dusts. This session seeks to provide a forum for discussing the implications of these latest developments on incorporating bioavailability into the risk assessment and management process.

#892 9:00 **ASSESSING THE BIOAVAILABILITY AND RISK FROM METAL-CONTAMINATED SOILS AND DUSTS.** *M. F. Hughes*[1], and K. D. Bradham[2]. [1]NHEERL/ORD, US EPA, Research Triangle Park, NC, and [2]NERL/ORD, US EPA, Research Triangle Park, NC.

9:00 **INTRODUCTION.** Michael Hughes

Program Description (Continued)

Abstract #

#893 9:05 **RELATIVE BIOAVAILABILITY, BIOACCESSIBILITY, AND SPECIATION OF ARSENIC IN CONTAMINATED SOILS.** K. D. Bradham[1], K. G. Scheckel[2], C. M. Nelson[1], P. E. Seales[3], G. E. Lee[3], *M. F. Hughes*[3], S. M. Serda[4], and *D. J. Thomas*[3]. [1]NERL/ORD, US EPA, Research Triangle Park, NC, [2]NRMRL/ORD, US EPA, Cincinnati, OH, [3]NHEERL/ORD, US EPA, Research Triangle Park, NC, and [4]Region 9, US EPA, San Francisco, CA.

#894 9:37 **METAL CONTAMINATION IN URBAN RESIDENCES IN CANADA AND POTENTIAL CHILDREN'S EXPOSURES TO TOXIC ELEMENTS IN HOUSE DUST.** P. E. Rasmussen[1], S. Beauchemin[2], and L. MacLean[3]. [1]Health Canada, Ottawa, ON, Canada, [2]CANMET-MMSL, Natural Resources Canada, Ottawa, ON, Canada, and [3]Canadian Light Source, Inc., Saskatoon, SK, Canada. Sponsor: *M. Hughes*.

#895 10:09 **US EPA WEST OAKLAND RESIDENTIAL LEAD ASSESSMENT STUDY.** S. M. Serda[1], S. A. Calanog[1], K. D. Bradham[2], K. G. Scheckel[3], and B. W. Miller[3]. [1]Superfund Division/Region 9, US EPA, San Francisco, CA, [2]NERL/ORD, US EPA, Research Triangle Park, NC, and [3]NRMRL/ORD, US EPA, Cincinnati, OH. Sponsor: *M. Hughes*.

#896 10:41 **BEYOND LEAD AND ARSENIC: HOW ARE OTHER METALS BEING ADDRESSED?** *R. A. Schoof*. Environ International Corp, Seattle, WA.

#897 11:13 **CONTAMINANT MIXTURES AND MIXED EXPOSURE PATHWAYS: USING *IN VITRO* DIGESTORS TO TEASE OUT HUMAN EXPOSURE TO BROWNFIELD SOILS AND IDENTIFY ENGINEERING SOLUTIONS THAT REDUCE RISK.** S. D. Siciliano[1,2], K. James[1], B. Laird[1], and D. Peak[2]. [1]Interdisciplinary Toxicology Group, University of Saskatchewan, Saskatoon, SK, Canada, and [2]Department of Soil Science, University of Saskatchewan, Saskatoon, SK, Canada. Sponsor: *M. Hughes*.

Tuesday Morning, March 13
9:00 AM to 11:45 AM
Room 307

Characterizing Toxic Modes of Action and Pathways to Toxicity

Workshop Session: State of the Science and the Future for the Predictive Power of *In Vitro* and *In Vivo* Models for Nanomaterials Toxicity Testing

Chairperson(s): *Alison Elder, University of Rochester, Rochester, NY, and Srikanth Nadadur, NIEHS, Research Triangle Park, NC.*

Sponsor:
Nanotoxicology Specialty Section

Endorsed by:
Inhalation and Respiratory Specialty Section
Risk Assessment Specialty Section

The proliferation of engineered nanomaterials (ENMs) in commerce has led to a growing concern about the consequences of exposure for those who produce and use them. The National Institute of Environmental Health Sciences recognized the importance of gaining a more fundamental understanding of the potential influence of ENMs on human health and, so, initiated a high priority research program (Nanotechnology Environmental Health and Safety, NanoEHS) with the availability of funds through the American Recovery and Reinvestment Act. This Nano Grand Opportunity (NanoGO) program was developed to address major issues of inconsistency in results reported for similar engineered nanomaterials investigated at different laboratories, a problem that significantly impedes both hazard and risk assessment for this class of materials. The disparities in results likely arise from poor communication about material characteristics, lack of assay validation, and/or inconsistencies in methodology. The goal of the NanoGO initiative was to support the development of reliable and reproducible methods and models to assess biological response through coordinated research efforts. As a result of this program, the NanoGO Consortium was established with 13 investigators/institutions in November 2009. The Consortium selected a library of ENMs and identified a set of *in vitro* and *in vivo* assays to be used in interlaboratory comparisons using standardized protocols. This session will focus on the study design, specific objectives, and consensus findings from interlaboratory *in vitro* and *in vivo* toxicology and particle characterization studies that were done with the library of engineered metal oxide and carbonaceous nanoparticles within the NanoGO Consortium, with an emphasis on how the findings can be used in the context of hazard assessment.

Abstract #

#898 9:00 **STATE OF THE SCIENCE AND THE FUTURE FOR THE PREDICTIVE POWER OF *IN VITRO* AND *IN VIVO* MODELS FOR NANOMATERIALS TOXICITY TESTING.** *A. Elder*[1], and *S. Nadadur*[2]. [1]Environmental Medicine, University of Rochester, Rochester, NY, and [2]NIEHS, Research Triangle Park, NC.

9:00 **INTRODUCTION.** Alison Elder

#899 9:05 **OVERVIEW OF THE NIEHS-SPONSORED NANOGO PROGRAM.** *S. Nadadur*. NIEHS, Research Triangle Park, NC.

#900 9:35 **PHYSICOCHEMICAL PROPERTY-DEPENDENT *IN VITRO* EFFECTS OF ENGINEERED NANOMATERIALS IN LUNG TARGET CELLS: LESSONS FROM INTERLABORATORY COMPARISON STUDIES.** *A. Holian*. Center for Environmental Health Sciences, University of Montana, Missoula, MT.

#901 10:05 **PHYSICOCHEMICAL PROPERTY-DEPENDENT *IN VIVO* EFFECTS OF ENGINEERED NANOMATERIALS IN THE RESPIRATORY TRACT: LESSONS FROM INTERLABORATORY COMPARISON STUDIES.** *K. Pinkerton*. Center for Health and the Environment, University of California Davis, Davis, CA.

#902 10:35 **NANOPARTICLE DOSIMETRIC CONSIDERATIONS FOR *IN VITRO* AND *IN VIVO* MODEL SYSTEMS: CONSIDERATION OF DISPERSION STATUS, DOSE AND DOSE RATE FOR STUDY DESIGN AND *IN VIVO-IN VITRO* RESPONSE COMPARISONS.** *G. Oberdörster*. Environmental Medicine, University of Rochester, Rochester, NY.

11:05 **PANEL DISCUSSION: THE VALUE AND UTILITY OF INTERLABORATORY COMPARISON STUDIES.** Alison Elder

TUESDAY

Program Description (Continued)

Abstract #

Tuesday Morning, March 13
9:00 AM to 11:45 AM
Room 304

W

Workshop Session: Sufficient Similarity of Whole Representative Mixtures or a Relative Potency Factor Approach: Polycyclic Aromatic Hydrocarbons As a Case Study

Chairperson(s): *Cynthia V. Rider, NTP/NIEHS, Research Triangle Park, NC, and Julia M. Gohlke, University of Alabama at Birmingham, Birmingham, AL.*

Sponsor:
Mixtures Specialty Section

Endorsed by:
Risk Assessment Specialty Section

Predicting the toxicity of complex and dynamic mixtures represents a difficult challenge for risk assessment, as demonstrated recently by seafood safety concerns following the Deepwater Horizon oil spill. Two established approaches for addressing this challenge are the relative potency factor (RPF) approach and the sufficient similarity (SS) of whole mixtures approach. The RPF approach requires knowledge of dose-response relationships of the individual mixture components. These data are then input into a dose additivity model to predict the toxicity of the mixture. Alternatively, with the SS approach, representative whole mixtures are used as a basis for predicting the toxicity of related environmental mixtures. Polycyclic aromatic hydrocarbons (PAHs) offer a useful case study for comparing the advantages and disadvantages of RPF and SS approaches. These ubiquitous contaminants are found in many mixtures to which humans are regularly exposed. PAHs are a large and diverse group of chemicals with complex mechanisms of action. Much work has been dedicated to developing an RPF approach for estimating cancer risk associated with exposure to unsubstituted PAHs. However, there is no clear path forward for expanding risk assessments to include substituted PAHs or noncancer endpoints, such as immune and reproductive toxicity. Currently, individual PAH dose-response data is incomplete and insufficient for accurately evaluating risk to human health. In order to better characterize toxicity associated with PAH mixtures, more work is needed. Determining which approach is more appropriate is a necessary step in deciding how to focus research resources. In effect, an RPF approach would dictate additional individual chemical toxicity testing; whereas, an SS approach would necessitate deciding on appropriate representative mixtures and testing those mixtures. This session will provide the framework and cover topics including advantages and disadvantages of each approach, consideration of the complex mechanisms of action of PAHs, critical data needs, and novel techniques available for filling data gaps and refining testing.

#903	9:00	**SUFFICIENT SIMILARITY OF WHOLE REPRESENTATIVE MIXTURES OR A RELATIVE POTENCY FACTOR APPROACH: POLYCYCLIC AROMATIC HYDROCARBONS AS A CASE STUDY.** *C. V. Rider*. NTP/NIEHS, Research Triangle Park, NC.
	9:00	**INTRODUCTION.** Cynthia Rider
#904	9:05	**LESSONS FROM THE DEEPWATER HORIZON BLOWOUT: DEVELOPING APPROACHES TO ESTIMATE RISK FROM COMPLEX EXPOSURES.** *J. M. Gohlke*. Environmental Health Sciences, University of Alabama at Birmingham (UAB), Birmingham, AL.
#905	9:37	**COMPARING WHOLE MIXTURE AND COMPONENT MIXTURE RISK ASSESSMENT METHODS.** G. E. Rice, and L. K. Teuschler. US EPA/NCEA, Cincinnati, OH. Sponsor: *C. Rider*.
#906	10:09	**MULTIPLE MECHANISMS OF PAH TOXICITY REVEALED THROUGH SCREENING WITH ZEBRAFISH EMBRYOS.** J. Incardona, and N. Scholz. Environmental Conservation Division, NOAA, Seattle, WA. Sponsor: *C. Rider*.

Abstract #

#907	10:41	**UTILIZING QUANTITATIVE STRUCTURE-ACTIVITY RELATIONSHIP (QSARS) TO PREDICT TOXIC ENDPOINTS FOR POLYCYCLIC AROMATIC HYDROCARBON (PAH) RISK ASSESSMENT.** *E. D. Bruce*. Environmental Science, Baylor University, Waco, TX.
#908	11:13	**THE RELATIONSHIP BETWEEN AROMATIC RING CLASS CONTENT AND THE TOXICITY OF HIGH-BOILING PETROLEUM SUBSTANCES.** R. White. American Petroleum Institute, Washington, DC. Sponsor: *C. Rider*.

Tuesday Morning, March 13
9:00 AM to 11:45 AM
Room 308

RI

Regional Interest Session: What's the Buzz? Bee Health and California's Agricultural Industry

Chairperson(s): *Moire R. Creek, Valent USA Corporation, Walnut Creek, CA, and Karen Steinmetz, SRI International, Menlo Park, CA.*

Sponsor:
Northern California Regional Chapter

There is a significant honey bee health crisis in California and globally that may threaten the future of California's agricultural industry. Over half of California crops are dependent upon pollinators, including honey bees, with a potentially staggering economic impact approaching tens of billions of dollars. Some colonies collapse from the rapid loss of adult bees with the queen, a handful of bees, and some brood still present in the hive. In the US, this set of symptoms has been called Colony Collapse Disorder, or CCD. This condition is one component of a more general problem of colony losses, which has reached record highs in the past decade. Colony numbers in the US have been declining since the late 1940s because of the declining number of beekeepers. This trend continues but is now accelerated because of the challenge of keeping bees healthy and productive. Beekeeper surveys indicate annual colony losses of 30% and more. Multiple stressors, including *Varroa* and tracheal mites, *Nosema*, foulbroods diseases, numerous viruses, and small hive beetles, may be present in hives and can explain most of the colony losses. Other potential contributing factors are being investigated as well. Our panel brings together scientists, stakeholders, and regulators to discuss different viewpoints on the complex world of bees and what might be causing the honey bee health crisis. Pesticide testing methodologies and results will also be addressed. We will provide an overview on the current status of bee and colony health and an introduction into the multifactorial issues that affect bee health. This discussion will be followed by a presentation on the potential health threats posed by infectious agents. Next, a State of California representative will outline the steps being taken to protect bee health while balancing the need for agricultural crop protection tools. Finally, the complex approaches to understanding the relationship between pesticide residues and bee health and the logistical challenges of addressing these in a regulatory context will be discussed.

	9:00	**INTRODUCTION TO NORTHERN CALIFORNIA REGIONAL INTEREST SESSION.** Karen L. Steinmetz
	9:15	**WHAT'S THE BUZZ? BEE HEALTH AND CALIFORNIA'S AGRICULTURAL INDUSTRY: AN INTRODUCTION.** Moire R. Creek
#909	9:00	**WHAT'S THE BUZZ? BEE HEALTH AND CALIFORNIA'S AGRICULTURAL INDUSTRY.** *K. Steinmetz*[1], and M. R. Creek[2]. [1]SRI International, Menlo Park, CA, and [2]Valent USA Corporation, Walnut Creek, CA.
#910	9:25	**THE CURRENT STATE OF HONEY BEES AND COLONY HEALTH.** E. Mussen. Extension Apiculture, University of California, Davis, CA. Sponsor: *K. Steinmetz*.

Program Description (Continued)

Abstract #

#911 10:00 **TEMPORAL ANALYSIS OF THE HONEY BEE MICROBIOME REVEALS FOUR NOVEL VIRUSES AND SEASONAL PREVALENCE OF KNOWN VIRUSES, NOSEMA, AND CRITHIDIA.** J. DeRisi. Howard Hughes Medical Institute, University of California, San Francisco, CA. Sponsor: *K. Steinmetz*.

#912 10:35 **PESTICIDE RISK ASSESSMENT FOR HONEY BEES. A CALIFORNIA PERSPECTIVE.** R. Bireley. California Department of Pesticide Regulation, Sacramento, CA. Sponsor: *K. Steinmetz*.

#913 11:10 **HONEY BEE FIELD STUDY DESIGN CONSIDERATIONS AND IMPLICATIONS FOR STUDIES IN CALIFORNIA.** D. Rogers. Bayer CropScience, Research Triangle Park, NC. Sponsor: *K. Steinmetz*.

Tuesday Morning, March 13
9:00 AM to 11:45 AM
Room 309

PL

Platform Session: Acetaminophen Toxicity: Mechanistic and Translational Aspects

Chairperson(s): *Cynthia Ju, University of Colorado Denver, Denver, CO, and Hartmut Jaeschke, University of Kansas Medical Center, KS.*

#914 9:00 **ACETAMINOPHEN-INDUCED CHANGES IN MOUSE LIVER PROTEIN GLUTATHIONYLATION.** *W. F. Salminen*, *X. Yang*, J. Greenhaw, A. A. Ali, Q. Shi, *R. Beger*, L. M. Pence, Y. Ando, and J. Sun. Division of Systems Biology, US FDA National Center for Toxicological Research, Jefferson, AR.

#915 9:19 **FIBRIN(OGEN)-INDEPENDENT ROLE OF PLASMINOGEN ACTIVATORS IN ACETAMINOPHEN-INDUCED LIVER INJURY.** *B. P. Sullivan*, K. M. Kassel, and *J. P. Luyendyk*. Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS.

#916 9:38 **ROLE OF CATHEPSIN B IN ACETAMINOPHEN HEPATOTOXICITY.** B. L. Woolbright[1], *A. Ramachandran*[1], *M. Bajt*[1], *J. Lemasters*[2], and *H. Jaeschke*[1]. [1]Department of Pharmacology, Toxicology and Therapeutics, Kansas University Medical Center, Kansas City, KS, and [2]Department of Biochemistry & Molecular Biology and Pharmaceutical Sciences, Medical University of South Carolina, Charleston, SC.

#917 9:57 **INTEGRATED TRANSCRIPTOMICS AND METABOLOMICS APPROACH TO INVESTIGATE MECHANISM(S) OF ACETAMINOPHEN-INDUCED HEPATOTOXICITY.** *R. D. Beger*[1], J. Sun[1], Y. Ando[1,2], D. Ahlbory-Dieker[3], *L. K. Schnackenberg*[1], *X. Yang*[1], J. Greenhaw[1], L. M. Pence[1], T. C. Schmitt[1], S. Bhattacharyya[1], *W. F. Salminen*[1], and *D. L. Mendrick*[1]. [1]Division of Systems Biology, NCTR, Jefferson, AR, [2]Medicinal Safety Research Labs, Daiichi Sankyo Co., Ltd., Tokyo, Japan, and [3]Metanomics GmbH, Berlin, Germany.

#918 10:15 **INCREASED SUSCEPTIBILITY OF NATURAL KILLER T-CELL DEFICIENT MICE TO ACETAMINOPHEN-INDUCED LIVER INJURY.** B. Murphy, and *C. Ju*. Skaggs School of Pharmacy and Pharmaceutical Sciences, University of Colorado Denver Anschutz Medical Campus, Aurora, CO.

Abstract #

#919 10:33 **S-NITROSOGLUTATHIONE PROTECTS AGAINST ACETAMINOPHEN-INDUCED LIVER TOXICITY IN A MOUSE MODEL.** *D. B. Colagiovanni*[1], C. Scoggin[1], P. Bendele[2], K. Rothermel[2], and *G. J. Rosenthal*[1]. [1]Life Sciences, N30 Pharma, Boulder, CO, and [2]Bolder BioPath, Boulder, CO.

#920 10:51 **PROTECTION AGAINST ACETAMINOPHEN HEPATOTOXICITY BY SELENOCOMPOUNDS: ROLE OF THIOREDOXIN REDUCTASE.** *Y. Jan*[1], *D. L. Laskin*[2], and *J. D. Laskin*[1]. [1]Environmental & Occupational Medicine, University of Medicine and Dentistry of New Jersey, Robert Wood Johnson Medical School, Piscataway, NJ, and [2]Pharmacology & Toxicology, Rutgers University, Piscataway, NJ.

#921 11:09 **INHIBITION OF SPLA2 RESCUES MICE FROM A LETHAL OVERDOSE OF ACETAMINOPHEN.** *S. Banerjee*[1], *J. R. Latendresse*[2], and *H. M. Mehendale*[1]. [1]Toxicology, University of Louisiana at Monroe, Monroe, LA, and [2]Toxicologic Pathology Associates, National Center for Toxicological Research, Jefferson, AR.

#922 11:27 **NOVEL TRANSLATIONAL URINARY BIOMARKERS FOR ACETAMINOPHEN-INDUCED ACUTE LIVER INJURY.** *F. G. Russel*[1], R. P. van Swelm[1], C. M. Laarakkers[2], and R. Masereeuw[1]. [1]Pharmacology and Toxicology, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands, and [2]Laboratory Medicine, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands.

Tuesday Morning, March 13
9:00 AM to 11:45 AM
Room 310

PL

Platform Session: Cardiovascular Toxicity of Nanoparticles

Chairperson(s): *Alex Carll, University of Norther Carolina, Carrboro, NC, and Timothy R. Fennell, RTI International, Research Triangle Park, NC.*

#923 9:00 **SOLUBLE COMPONENTS OF ULTRAFINE PARTICULATE MATTER INDUCE PRO-COAGULANT RESPONSES IN ENDOTHELIAL CELLS.** *S. J. Snow*[1], A. Wolberg[2], and M. Carraway[3]. [1]Toxicology, University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]Pathology and Laboratory Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC, and [3]Human Studies Facility, NHEERL, US EPA, Chapel Hill, NC.

#924 9:21 **THINKING OUTSIDE THE LUNG: ALTERNATE ROUTES OF NANOPARTICLE EXPOSURE.** *T. R. Nurkiewicz*[1], *P. G. Stapleton*[1], V. Minarchick[1], B. T. Chen[2], A. Cumpston[2], W. McKinney[2], D. Frazer[2], and *V. Castranova*[2]. [1]Physiology and Pharmacology, West Virginia University, Morgantown, WV, and [2]NIOSH, Morgantown, WV.

#925 9:42 **EFFECTS OF MULTIWALLED CARBON NANOTUBE COINCUBATION ON VASCULAR REACTIVITY AND NITRIC OXIDE (NO) AVAILABLILITY.** *P. G. Stapleton*[1], C. R. McBride[1], B. T. Chen[2], *V. Castranova*[2], and *T. R. Nurkiewicz*[1]. [1]Physiology and Pharmacology, West Virginia University, Morgantown, WV, and [2]NIOSH, Morgantown, WV.

TUESDAY

Program Description (Continued)

Abstract #

#926 10:03 **PULMONARY EXPOSURE TO MULTIWALLED CARBON NANOTUBES AND C60 FULLERENES ACTIVATE INDOMETHACIN SENSITIVE CORONARY CONSTRICTOR RESPONSES TO ENDOTHELIN-1.** L. C. Thompson[1], E. E. Mann[1], A. Vidanapathirana[1], B. S. Harrison[3], L. Han[4], A. H. Lewin[4], *S. Sumner*[4], *T. R. Fennel*[4], *J. M. Brown*[2], and *C. J. Wingard*[1]. [1]Physiology, East Carolina University, Greenville, NC, [2]Pharmacology & Toxicology, East Carolina University, Greenville, NC, [3]Wake Forest Institute of Regenerative Medicine, Winston-Salem, NC, and [4]Discovery Sciences, RTI International, Research Triangle Park, NC.

#927 10:24 **CARDIAC ISCHEMIC/REPERFUSION INJURY RESPONSE TO INSTILLED C60 FULLERENE.** R. N. Urankar[1], R. A. Lust[1], A. H. Lewin[3], L. Han[3], *S. Sumner*[3], *T. F. Fennell*[3], *J. M. Brown*[2], and *C. J. Wingard*[1]. [1]Physiology, East Carolina University, Greenville, NC, [2]Phramacology & Toxicology, East Carolina University, Greenville, NC, and [3]Discovery Sciences, RTI International, Research Triangle Park, NC.

#928 10:45 **THE EFFECT OF C60 FULLERENE INSTILLATION ON THE VASCULAR RESPONSES IN PREGNANT SPRAGUE DAWLEY RATS.** A. K. Vidanapathirana[1], L. C. Thompson[1], E. E. Mann[1], *S. Sumner*[3], *L. Han*[3], *A. H. Lewin*[3], *T. R. Fennell*[3], *J. M. Brown*[2], and *C. J. Wingard*[1]. [1]Physiology, East Carolina University, Greenville, NC, [2]Pharmacology & Toxicology, East Carolina University, Greenville, NC, and [3]Discovery Sciences, RTI International, Research Triangle Park, NC.

#929 11:05 **PULMONARY NANOCERIA EXPOSURE IMPAIRS CORONARY AND MESENTERIC ARTERIOLAR REACTIVITY.** *V. Minarchick*[1], *P. Stapleton*[1], *D. Porter*[2], E. Sabolsky[3], and *T. Nurkiewicz*[1]. [1]Center for Cardiovascular and Respiratory Sciences, West Virginia University, Morgantown, WV, [2]National Institute of Occupational Safety and Health, Morgantown, WV, and [3]Department of Mechanical Engineering, West Virginia University, Morgantown, WV.

#930 11:25 **TELEMETRY-BASED MEASUREMENT OF SYMPATHETIC NERVE ACTIVITY DURING PULMONARY NANOPARTICLE EXPOSURE.** *T. L. Knuckles*, *J. Yi*, and *T. Nurkiewicz*. Center for Cardiovascular and Respiratory Sciences, West Virginia University, Morgantown, WV.

Abstract #

Tuesday Morning, March 13
9:00 AM to 11:45 AM
Room 302

PL

Platform Session: Emerging Methodologies for Genotoxicity Assessment

Chairperson(s): *Marilyn Aardema, BioReliance Corporation, and David Eastmond, University of California Riverside, Riverside, CA.*

#931 9:00 **PROTOTYPE PATHWAY RESEARCH FOR TOXICITY TESTING IN THE 21ST CENTURY (TT21C)—A CASE STUDY USING DNA DAMAGE CHARACTERIZATION.** *P. L. Carmichael*[1], Y. Adeleye[1], *M. E. Andersen*[2], *R. Clewell*[2], M. Dent[1], S. Malcomber[1], A. Scott[1], A. White[1], and *Q. Zhang*[2]. [1]Safety & Environmental Assurance Centre (SEAC), Unilever, Sharnbrook, Bedfordshire, United Kingdom, and [2]The Hamner Institutes for Health Sciences, Durham, NC.

#932 9:21 **PROFILING DNA DAMAGE PATHWAYS ACTIVATED BY ETOPOSIDE, METHYLMETHANE SULFONATE, AND QUERCETIN.** *R. A. Clewell*[1], *B. Sun*[1], A. Thomas[1], *P. Carmichael*[2], A. White[2], Y. Adeleye[2], and *M. E. Andersen*[1]. [1]Institute for Chemical Safety Science, The Hamner Institutes for Health Sciences, Research Triangle Park, NC, and [2]SEAC, Unilever, Colworth, United Kingdom.

#933 9:42 **AN 'OMICS-BASED METHOD FOR SENSITIVELY MEASURING GENOTOXICITY.** S. H. Reed[1], M. Bennett[1], Y. Teng[1], S. Yu[1], K. Evans[1], R. Waters[1], and A. Higgs[2]. [1]Pathology, Cardiff University, Cardiff, United Kingdom, and [2]Agilent Technologies UK Limited, Wokingham, Berskshire, United Kingdom. Sponsor: *N. Skinner*.

#934 10:03 **COMET ASSAY AND MICRONUCLEUS TEST USING CHIMERIC MICE WITH HUMANIZED LIVER (PXB MICE®).** C. Tateno[1,2], Y. Ishida[1,2], M. Kakuni[1], M. Fukumuro[3], J. Tanaka[3], S. Masumori[3], M. Nakajima[3], and M. Hayashi[3]. [1]PhoenixBio, Co. Ltd., Higashihiroshima, Japan, [2]Liver Research Project Center, Hiroshima University, Hiroshima, Japan, and [3]Biosafety Research Center, Foods, Drugs and Pesticides, Iwata, Japan. Sponsor: *M. Naya*.

#935 10:24 **INTEGRATION OF *PIG-A* GENE MUTATION AND MICRONUCLEATED RETICULOCYTE ENDPOINTS INTO 28-DAY REPEAT DOSE RAT STUDIES: EXPERIENCES WITH SEVEN PROTOTYPICAL GENOTOXICANTS.** *S. Dertinger*[1], *D. Torous*[1], P. Weller[1], S. Phonethepswath[1], S. Avlasevich[1], J. Mereness[1], *J. Bemis*[1], and *J. T. MacGregor*[2]. [1]Litron Laboratories, Rochester, NY, and [2]Toxicology Consulting Services, Arnold, MD.

#936 10:45 **DETECTING GENOTOXIC METABOLITES USING HCS-MICRONUCLEUS TEST AND METABOLITE PROFILING.** P. Walker[2], G. Clark[2], H. Woodhouse[2], A. Kerins[2], C. Dilworth[2], H. Gill[2], and *K. Tsaioun*[1,2]. [1]Apredica, Watertown, MA, and [2]Cyprotex, Macclesfield, United Kingdom.

TUESDAY

Program Description (Continued)

Abstract #

#937 11:05 **THE COMET ASSAY USING A RECONSTRUCTED 3D HUMAN EPIDERMAL SKIN MODEL: EXTENDED DATA SET TO DEMONSTRATE INTRA- AND INTER-LABORATORY REPRODUCIBILITY.** T. Downs[1], A. Reus[2], K. Reisinger[3], C. Krul[2], and S. Pfuhler[1]. [1]Procter & Gamble Co, Cincinnati, OH, [2]TNO Quality of Life, Zeist, Netherlands, and [3]Henkel AG & Co KgaA, Düsseldorf, Germany. Sponsor: *J. Skare*.

#938 11:25 **EVALUATION OF CHEMICALS REQUIRING METABOLIC ACTIVATION IN A NOVEL 3D HUMAN RECONSTRUCTED SKIN MICRONUCLEUS (RSMN) ASSAY.** *M. Aardema*[1], B. Barnett[2], G. Mun[3], *E. Dahl*[4], *R. Curren*[3], N. Hewitt[5], and S. Pfuhler[2]. [1]Marilyn Aardema Consulting, LLC, Fairfield, OH, [2]Procter & Gamble Company, Cincinnati, OH, [3]Institute for Invitro Sciences, Rockville, MD, [4]Exponent, Alexandria, VA, and [5]Nicky Hewitt Scientific Writing Services, Erzhausen, Germany.

Tuesday Morning, March 13
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Disease Prevention and Clinical and Translational Toxicology

Chairperson(s): *Robert Mitkus, US FDA, Rockville, MD.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *9:00 AM–11:00 AM*

#939 **Poster Board Number 101**
INHIBITION OF THE RHO/ROCK PATHWAY PREVENTS NEURONAL DEGENERATION *IN VITRO* AND *IN VIVO* FOLLOWING METHYLMERCURY EXPOSURE. M. Fujimura[1], and F. Usuki[2]. [1]Basic Medical Sciences, National Institute for Minamata Disease, Minamata, Kumamoto, Japan, and [2]Clinical Medicine, National Institute for Minamata Disease, Minamata, Kumamoto, Japan. Sponsor: *A. Naganuma*.

#940 **Poster Board Number 102**
NITROSATIVE STRESS-MEDIATED DEPLETION OF HIGH-ENERGY PHOSPHATES AND DENDRITIC DAMAGE IN CARBOFURAN OR DFP-INDUCED EXCITOTOXICITY: PROTECTION BY NMDA RECEPTOR ANTAGONIST OR SPIN TRAPPING AGENT. *R. C. Gupta*[1], S. Zaja-Milatovic[2], and *D. Milatovic*[2]. [1]Toxicology, Murray State University, Hopkinsville, KY, and [2]Vanderbilt University Medical Center, Nashville, TN.

#941 **Poster Board Number 103**
ADENYLYL CYCLASE INHIBITORS REVERSE THE NEUROTOXIC EFFECTS OF MANGANESE ON POST-SYNAPTIC DOPAMINE D2 RECEPTORS. M. Nelson, T. Adams, C. Ojo, *M. A. Carroll*, and *E. J. Catapane*. Biology, Medgar Evers College, Brooklyn, NY.

Abstract #

#942 **Poster Board Number 104**
TOPICAL PARAOXON TOXICITY REDUCED BY FULLERENES. *M. Ehrich*[1], K. Fuhrman[1], J. Hinckley[1], R. Van Tassell[2], Z. Zhou[3], and C. Kepley[3]. [1]Virginia-Maryland Regional College of Veterinary Medicine, Virginia Tech, Blacksburg, VA, [2]Luna Innovations, Blacksburg, VA, and [3]Luna nanoWorks, Danville, VA.

#943 **Poster Board Number 105**
THE ROLE OF ENZYME INDUCTION AND INHIBITION ON LAMBDA-CYHALOTHRIN HEPATOTOXICITY. O. S. El-Tawil[4], Y. M. Abd-Elhakim[1], A. H. Abou-Hadeed[2], and N. I. El-Sharkawy[3]. [1]Forensic Medicine and Toxicology, Faculty of Veterinary Medicine, Zagazig University, Zagazig, Sharkia, Egypt, [2]Forensic Medicine and Toxicology, Faculty of Veterinary Medicine, Zagazig University, Zagazig, Sharkia, Egypt, [3]Forensic Medicine and Toxicology, Faculty of Veterinary Medicine, Zagazig University, Zagazig, Sharkia, Egypt, and [4]Toxicology and Forensic Medicine, Faculty of Veterinary Medicine, Cairo University, Cairo, Giza, Egypt. Sponsor: *A. Kadry*.

#944 **Poster Board Number 106**
STUDY OF BEHAVIORAL AND NEUROPATHOLOGICAL EFFECTS 3 WEEKS AFTER A SINGLE DOSE OF ORGANOPHOSPHATE WITH A SINGLE DOSE OF FULLERENE AS A PROTECTANT. *B. S. Jortner*, J. Hinckley, S. Hancock, and *M. Ehrich*. Virginia Tech, Blacksburg, VA.

#945 **Poster Board Number 107**
PHARMACOKINETICS OF RESIDUAL FORMALDEHYDE IN VACCINES FOLLOWING INTRAMUSCULAR EXPOSURES IN INFANTS. *R. J. Mitkus*, and M. O. Walderhaug. CBER, US FDA, Rockville, MD.

#946 **Poster Board Number 108**
VITAMIN C MITIGATES SENSORIMOTOR AND COGNITIVE CHANGES INDUCED BY CHRONIC CHLORPYRIFOS IN WISTAR RATS. S. F. Ambali[2,1], M. Shittu[1], J. O. Ayo[1], S. A. Ojo[3], and K. N. Esievo[4]. [1]Veterinary Physiology and Pharmacology, Ahmadu Bello University, Zaria, Kaduna, Nigeria, [2]Veterinary Physiology and Pharmacology, University of Ilorin, Ilorin, Kwara, Nigeria, [3]Veterinary Anatomy, Ahmadu Bello University, Zaria, Kaduna, Nigeria, and [4]Veterinary Pathology and Microbiology, Ahmadu Bello University, Zaria, Kaduna, Nigeria. Sponsor: *O. Oladipo*.

#947 **Poster Board Number 109**
CHEMOPREVENTION OF GASTRIC CANCER IN *HELICOBACTER PYLORI*-INFECTED MONGOLIAN GERBILS USING AN NF-κB INHIBITOR (CAFFEIC ACID PHENETHYL ESTER). T. Toyoda[1,2], T. Tsukamoto[3], S. Takasu[1], L. Shi[4], Y. Cho[1], S. Onami[1], M. Tatematsu[5], *A. Nishikawa*[6], and K. Ogawa[1]. [1]Division of Pathology, National Institute of Health Sciences, Tokyo, Japan, [2]Division of Oncological Pathology, Aichi Cancer Center Research Institute, Nagoya, Japan, [3]Department of Pathology, Fujita Health University School of Medicine, Toyoake, Japan, [4]Production and Technology Center, Mitsui Chemical Inc., Mobara, Japan, [5]Japan Bioassay Research Center, Hadano, Japan, and [6]Biological Safety Research Center, National Institute of Health Sciences, Tokyo, Japan.

Program Description (Continued)

Abstract #

#948 **Poster Board Number 110**
IDENTIFICATION OF CANDIDATE GENES INVOLVED IN DIFFERENTIAL SUSCEPTIBILITY AND RESPONSE TO RESPIRATORY SYNCYTIAL VIRUS INFECTION. J. Ciencewicki[1], X. Wang[2], J. Marzec[1], F. Polack[3], D. Bell[2], and S. Kleeberger[1]. [1]Laboratory of Respiratory Biology, National Institute of Environmental Health Sciences, Research Triangle Park, NC, [2]Laboratory of Molecular Genetics, National Institute of Environmental Health Sciences, Research Triangle Park, NC, and [3]Vanderbilt University, Nashville, TN. Sponsor: *D. Harbourt*.

#949 **Poster Board Number 111**
CURCUMIN AND ITS ANALOG INHIBIT COLON CANCER CELL GROWTH BY INDUCING ROS AND DOWNREGULATING SPECIFICITY PROTEIN TRANSCRIPTION FACTORS. S. Gandhy[1,2], and *S. Safe*[2,3]. [1]College of Medicine, Texas A&M Health Science Center, College Station, TX, [2]Institute of Biosciences and Technology, Texas A&M Health Science Center, Houston, TX, and [3]Veterinary Physiology and Pharmacology, Texas A&M University, College Station, TX.

#950 **Poster Board Number 112**
CHARACTERIZATION OF VETERANS' POISONINGS IN THE STATE OF FLORIDA. *G. T. Johnson*[1], J. White[1], C. Younger[2], and *R. D. Harbison*[1]. [1]Environmental and Occupational Health, University of Southern Florida-College of Public Health, Tampa, FL, and [2]Florida Poison Control Center, Tampa, FL.

#951 **Poster Board Number 113**
ROLE OF SENSORY TRP CHANNELS IN CUTANEOUS INJURY BY VESICANTS AND RIOT CONTROL AGENTS. N. Chintagari[1], S. Balakrishna[1], B. Bessac[2], A. Sui[1], M. Brackmann[3], and *S. Jordt*[1]. [1]Pharmacology, Yale University, New Haven, CT, [2]Pharmaceutical Sciences, Texas A&M Health Science Center, Kingsville, TX, and [3]Charite School of Medicine, Berlin, Germany.

#952 **Poster Board Number 114**
A PUTATIVE INTERACTION OF TSPO WITH NADPH OXIDASE (NOX2) IN PRIMARY MICROGLIA. M. K. Loth, *J. Choi*, and *T. R. Guilarte*. Environmental Health Sciences, Columbia University Mailman School of Public Health, New York, NY.

#953 **Poster Board Number 115**
NEUREGULIN-1 IS NEUROPROTECTIVE AGAINST DELAYED NEURONAL INJURY FOLLOWING ACUTE ORGANOPHOSPHATE INTOXICATION. *D. A. Bruun*[1], Y. Li[2], B. D. Ford[2], and *P. J. Lein*[1]. [1]Molecular Biosciences, University of California Davis, Davis, CA, and [2]Neurobiology, Neuroscience Institute, Morehouse School of Medicine, Atlanta, GA.

#954 **Poster Board Number 116**
MEMANTINE AND RILUZOLE DO NOT REVERSE THE NEUROTOXIC EFFECTS RESULTING FROM CHRONIC EXPOSURE TO DEPLETED URANIUM. *S. M. Lasley*, B. L. Hanerhoff, and K. Pastucha. Cancer Biology & Pharmacology, University of Illinois College of Medicine, Peoria, IL.

Abstract #

#955 **Poster Board Number 117**
HYDROGEN-ENRICHED ELECTROLYZED REDUCED WATER LIMITS THE ACUTE EFFECTS OF SYSTEMIC INFLAMMATION AND PROMOTES RECOVERY IN MICE. L. Hong[1], *S. Ceccatelli*[1], S. Shirahata[2], and S. Spulber[1]. [1]Department of Neuroscience, Karolinska Institutet, Stockholm, Sweden, and [2]Laboratory of Cellular Regulation Technology, Division of Systems Biology, Kyushu University, Fukuoka, Japan.

#956 **Poster Board Number 118**
***IN VITRO* TESTS ON THE ANTITUMOR POTENTIALS OF EXTRACTS OF *CLERODENDRUM VIOLACEUM* LEAF AND *COCOS NUCIFERA* HUSK FIBRE.** J. O. Adebayo[1], *E. A. Balogun*[1], S. O. Malomo[1], H. A. Zailani[1], A. O. Soladoye[2], L. A. Olatunji[2], M. O. Kolawole[3], S. O. Oguntoye[4], A. S. Babatunde[5], O. B. Akinola[6], and A. U. Krettli[7]. [1]Biochemistry, University of Ilorin, Ilorin, Kwara, Nigeria, [2]Physiology, University of Ilorin, Ilorin, Kwara, Nigeria, [3]Microbiology, University of Ilorin, Ilorin, Kwara, Nigeria, [4]Chemistry, University of Ilorin, Ilorin, Kwara, Nigeria, [5]Hematology, University of Ilorin, Ilorin, Kwara, Nigeria, [6]Anatomy, University of Ilorin, Ilorin, Kwara, Nigeria, and [7]Laboratorio de Malaria, Centro de Pesquisas Rene Rachou, Fiocruz, Belo Horizonte MG, Brazil.

#957 **Poster Board Number 119**
ORGANIC SOLUTE TRANSPORTER OSTα-OSTβ AS A POTENTIAL THERAPEUTIC TARGET FOR OBESITY AND ITS RELATED DISORDERS. S. Gorman, W. Christian, *C. Hammond*, and *N. Ballatori*. Environmental Medicine, University of Rochester School of Medicine, Rochester, NY.

#958 **Poster Board Number 120**
RESVERATROL REVERSES PULMONARY TOXICITY OF AMBIENT PARTICULATE MATTER IN FVBN MICE. C. Chiu[1], *A. K. Cuevas*[1], *B. Narayanan*[1], *J. Niu*[2], *Q. Qu*[1], and *L. Chen*[1]. [1]Environmental Medicine, New York University School of Medicine, Tuxedo, NY, and [2]Environmental Health, Lanzhou University School of Public Health, Lanzhou, Gansu, China.

#959 **Poster Board Number 121**
CADMIUM-ZINC INTERACTION,GLYCEMIC CONTROL, AND PREDICTIVE INDICES OF RENAL INSUFFICIENCY IN TREATED TYPE-2 DIABETICS IN NIGERIA. J. I. Anetor[1], E. Ayita[1], K. Adedapo[1], J. Adeleye[2], and A. Iyanda[1]. [1]Chemical Pathology, University of Ibadan, Ibadan, Oyo, Nigeria, and [2]Medicine, University of Ibadan, Ibadan, Oyo, Nigeria. Sponsor: *L. Orisakwe*.

#960 **Poster Board Number 122**
BAX PHOSPHORYLATION AND TRANSLOCATION AFFECTS CELL DEATH IN THE BRAIN AFTER NEONATAL HYPOXIA-ISCHEMIA. S. K. Infante, A. Oberhauser, and J. Perez-Polo. University of Texas Medical Branch, Galveston, TX. Sponsor: *J. Ward*.

Program Description (Continued)

Abstract #

#961 **Poster Board Number 123**
PARAQUAT EXPOSURE INDUCES CYTOTOXICITY AND SIGNIFICANTLY UPREGULATES NRF2 IN RAT NEUROBLAST CELLS. *L. Chen*, A. Fowler, A. Leung, and G. Henderson. Department of Pharmacology & Neuroscience, Texas Tech University Health Science Center, Lubbock, TX.

#962 **Poster Board Number 124**
THE MICROSTRUCTURE OF SPONTANEOUS RUNNING REVEALS THE NEUROTOXICITY OF ADULT-ONSET MEHG EXPOSURE AND PROTECTION BY NIMODIPINE. *C. Newland*, and D. Hoffman. Psychology, Auburn University, Auburn, AL.

#963 **Poster Board Number 125**
SHORT-TERM SMOKE EXPOSURE ENHANCES ANGIOGENESIS AND BIOMECHANICAL STRENGTH DURING MOUSE TIBIA FRACTURE HEALING. *M. H. Kung*[1,2], C. Xie[2], R. J. O'Keefe[2], and M. J. Zusck[2]. [1]Environmental Medicine, University of Rochester, Rochester, NY, and [2]Orthopedics, University of Rochester, Rochester, NY.

#964 **Poster Board Number 126**
THE ARYL HYDROCARBON RECEPTOR (AHR) CONTRIBUTES TO THE PROLIFERATION OF HUMAN MEDULLOBLASTOMA CELLS. D. P. Dever, and *L. A. Opanashuk*. Environmental Medicine, University of Rochester, Rochester, NY.

#965 **Poster Board Number 127**
RESIDUES REQUIRED FOR FUNCTIONAL INTERACTION OF THE TWO SUBUNITS OF THE ORGANIC SOLUTE TRANSPORTER, OSTα-OSTβ W. V. Christian, and *N. Ballatori*. Environmental Medicine, University of Rochester School of Medicine, Rochester, NY.

#966 **Poster Board Number 128**
EFFECTS OF CACHE VALLEY PARTICULATE AIR POLLUTION ON PULMONARY FUNCTION, AND DISEASE BIOMARKERS IN HUMAN VOLUNTEERS: A PRELIMINARY STUDY. T. Allpress[1], N. Hergert[1], R. R. Martin[2], J. R. Stevens[3], J. Davis[4], *G. S. Yost*[5], *C. Rice-Deering*[5], *J. M. Veranth*[5], and *R. A. Coulombe*[1]. [1]Veterinary Sciences, and Toxicology Graduate Program, Utah State University, Logan, UT, [2]Civil and Environmental Engineering, Utah State University, Logan, UT, [3]Mathematics and Statistics, Utah State University, Logan, UT, [4]Student Health Center, Utah State University, Logan, UT, and [5]Pharmacology and Toxicology, University of Utah, Salt Lake City, UT.

#967 **Poster Board Number 129**
ANALYTICAL APPLICATIONS OF FOURIER TRANSFORM-INFRARED (FT-IR) SPECTROSCOPY IN THE CHARACTERIZATION OF CANDIDA. *R. M. Baldiris*[1], C. Torres[2], D. Aparicio[2], D. Duarte[2], and J. Mercado[1]. [1]University of Cartagena, Cartagena, Colombia, and [2]University Corporation Rafael Nuñez, Cartagena, Colombia.

Abstract #

#968 **Poster Board Number 130**
A WATER DAMAGED HOME AND HEALTH OF OCCUPANTS: A CASE STUDY. *J. D. Thrasher*[1], M. R. Gray[2], K. H. Kilburn[3], D. P. Dennis[4], and A. Yu[5]. [1]Private Consultant, Citrus Heights, CA, [2]Progressive Healthcare, Benson, AZ, [3]Neurotest Inc., Pasadena, CA, [4]Center for ENT and Facial Plastic Surgery, Atlanta, GA, [5]Compliance Solution, Honolulu, HI.

#969 **Poster Board Number 131**
THE EFFECTS OF GREEN TEA POLYPHENOLS ON OBESITY-RELATED GENES IN LONG-TERM HIGH-FAT, DIET-INDUCED OBESE RATS. *C. Lu*[1], C. Shen[2], and *W. Gao*[1]. [1]Department of Environmental Toxicology, TIEHH, Lubbock, TX, and [2]Department of Pathology, Texas Tech University Health Sciences Center, Lubbock, TX.

#970 **Poster Board Number 132**
PHENOTYPING CHARACTERIZATION OF A MOUSE MODEL FOR MYELOPROLIFERATIVE DISORDERS WITH JAK2 V617F (C57BL/6J N2) ALLELE. *P. Colombo*[1], U. Bonfanti[1], G. Texido[2], E. Pesenti[2], P. Gnocchi[2], A. Giusti[1], and M. Germani[1]. [1]Preclinical Development, Accelera Srl, Nerviano - Milano, Italy, and [2]Pharmacology & Cell Biology/Oncology, Nerviano Medical Sciences Srl, Nerviano - Milano, Italy.

#971 **Poster Board Number 133**
PHARMACOKINETICS (PK) OF ARYLSUFATASE A (ASA) AND IDURSULFASE (IS2) IN CEROBROSPINAL FLUID (CSF) OF CYNOMOLGUS MONKEYS AFTER INTRATHECAL (IT) ADMINISTRATION. T. G. McCauley[1], C. Jomphe[2], J. Marier[2], P. Calias[1], B. Boyd[3], and *M. Beliveau*[2]. [1]Shire Human Genetic Therapies, Lexington, MA, [2]Pharsight Consulting Services, Pharsight Corporation, Montreal, QC, Canada, and [3]Northern Biomedical Research, Muskegon, MI.

#972 **Poster Board Number 134**
PHARMACOKINETICS (PK) OF ARYLSUFATASE A (ASA) AND (IS2) IDURSULFASE IN SERUM OF CYNOMOLGUS MONKEYS AFTER INTRAVENOUS (IV) ADMINISTRATION. C. Jomphe[1], J. F. Marier[1], T. G. McCauley[2], P. Calias[2], B. Boyd[3], and *M. Beliveau*[1]. [1]Pharsight Consulting Services, Pharsight Corporation, Montreal, QC, Canada, [2]Shire Human Genetic Therapies, Lexington, MA, and [3]Northern Biomedical Research, Montreal, MI.

#973 **Poster Board Number 135**
SYTEMIC AND CENTRAL NERVOUS SYSTEM (CNS) DISTRIBUTION OF ARYLSUFATASE A (ASA) AND IDURSULFASE (IS2) IN CYNOMOLGUS MONKEYS AFTER INTRATHECAL (IT) AND INTRAVENOUS (IV) ADMINISTRATION. *M. Beliveau*[1], C. Jomphe[1], J. F. Marier[1], P. Calias[2], B. Boyd[3], and T. G. McCauley[2]. [1]Pharsight Consulting Services, Pharsight Corporation, Montreal, QC, Canada, [2]Shire Human Genetic Therapies, Lexington, MA, and [3]Northern Biomedical Research, Muskegon, MI.

Program Description (Continued)

Abstract #

#974 **Poster Board Number 136**
PHARMACOKINETIC AND PHARMACODYNAMIC (PK/PD) CORRELATION OF IDURSULFASE IN CEREBROSPINAL FLUID (CSF) OF CYNOMOLGUS MONKEYS AFTER INTRATHECAL (IT) AND INTRAVENOUS (IV) ADMINISTRATION. J. F. Marier[1], C. Jomphe[1], T. G. McCauley[2], P. Calias[2], B. Boyd[3], and *M. Beliveau*[1]. [1]Pharsight Consulting Services, Pharsight Corporation, Montreal, QC, Canada, [2]Shire Human Genetic Therapies, Lexington, MA, and [3]Northern Biomedical Research, Muskegon, MI.

#975 **Poster Board Number 137**
2-AMINOPURINE MODIFIED COCAINE APTAMER WITH IMPROVED AFFINITY FOR USE IN FLUORESCENCE-BASED HOMOGENEOUS ASSAYS TO DETECT COCAINE. A. Sachan[1], M. W. Thompson[2], M. H. Lamm[2], and M. Nilsen-Hamilton[1]. [1]Department of Biochemistry, Biophysics and Molecular Biology, Interdepartmental Toxicology Program, Iowa State University, Ames, IA, and [2]Department of Chemical and Biological Engineering, Iowa State University, Ames, IA. Sponsor: *A. Kanthasamy*.

Tuesday Morning, March 13
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Neurodegenerative Disease

Chairperson(s): *Richard Nass, Indiana University School of Medicine, Indianapolis, IN.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *11:00 AM–12:30 PM*

#976 **Poster Board Number 140**
POTENTIAL PATHWAYS UNDERLYING THE SUSPECTED INVOLVEMENT OF THE CYANOBACTERIAL NEUROTOXIN BMAA IN THE ETIOLOGY OF THE NEURODEGENERATIVE DISEASE ALS/PDC. O. Okle, and *D. R. Dietrich*. Human & Environmental Toxicology, University of Konstanz, Konstanz, Germany.

#977 **Poster Board Number 141**
PARKIN-DYSFUNCTION AND α-SYNUCLEIN AGGREGATION LEAD TO CELL-DEATH IN METHAMPHETAMINE (METH)-TREATED RHESUS MONKEYS AND HUMAN METH USERS. S. Z. Imam[1,3,4], Z. Binienda[1], *W. Slikker*[1], *M. G. Paule*[1], E. Masliah[2], and *S. F. Ali*[1]. [1]Neurotoxicology, US FDA/NCTR, Jefferson, AR, [2]Neurosciences, University of California San Diego, La Jolla, CA, [3]Geriatrics, University of Arkansas Medical School, Little Rock, AR, and [4]Institute for the Integration of Medicine and Science, University of Texas Health Science Center at San Antonio, San Antonio, TX.

Abstract #

#978 **Poster Board Number 142**
PHARMACOKINETIC STUDY AND EVALUATION OF THERAPEUTIC EFFECTS OF WATER SOLUBLE COQ10 IN A PARAQUAT-INDUCED RAT MODEL OF PARKINSON'S DISEASE. *S. Pandey*[1], K. Facecchia[1], K. Muthukumaran[1], J. Smith[1], K. Harrison[1], A. Laframboise[1], J. K. Sandhu[2], M. Sikorska[2], J. Cohen[1], and D. Lopatin[1]. [1]Department of Chemistry & Biochemistry, University of Windsor, Windsor, ON, Canada, and [2]National Research Council of Canada, Ottawa, ON, Canada.

#979 **Poster Board Number 143**
PATHOPHYSIOLOGY OF BAC-TRANSGENIC RATS EXPRESSING PARKINSON'S DISEASE CAUSING MUTATIONS. *J. Cannon*[1,2], K. Geghman[3], V. Tapias[1], T. Sew[1], M. Dail[1], J. Nelson[1], C. Li[3], and J. Greenamyre[1]. [1]Pittsburgh Institute for Neurodegenerative Diseases, University of Pittsburgh, Pittsburgh, PA, [2]Purdue University, West Lafayette, IN, and [3]Mount Sinai School of Medicine, New York, NY.

#980 **Poster Board Number 144**
EXPRESSION OF MUTANT HUNTINGTIN IMPAIRS STRIATAL MANGANESE (MN) TRANSPORT AND MN-DEPENDENT ENZYME ACTIVITIES BY A NOVEL CELLULAR MECHANISM. T. V. Bichell, *M. Wegrzynowicz*, *G. Kwakye*, C. Jetter, M. S. Cardone, H. Holt, A. Stubbs, and *A. Bowman*. Vanderbilt University, Nashville, TN.

#981 **Poster Board Number 145**
TRITERPENOIDS ENRICHED EXTRACTS OF INDIAN MEDICINAL PLANTS PROTECTS AGAINST AMYLOID β-PEPTIDE AND HYDROGEN PEROXIDE-INDUCED TOXICITY THROUGH THE MODULATION OF NRF2, NF-κB AND SIRT1 PATHWAYS. M. Singh[1], M. Arseneault[1], V. Murthy[2], and C. Ramassamy[1,2]. [1]Pharmacology, INRS - Institut Armand-Frappier, Laval, QC, Canada, and [2]Department of Medical Biology, Faculty of Medicine, Laval University, Québec, QC, Canada. Sponsor: *D. Cyr*.

#982 **Poster Board Number 146**
CONCENTRATED AMBIENT PARTICULATE MATTER AS A RISK FACTOR FOR THE PARKINSON'S DISEASE PHENOTYPE. *J. L. Allen*[1], K. Conrad[1], *J. N. Finkelstein*[1,2], *C. J. Johnston*[1,2], S. Liu[1], *G. Oberdorster*[1,2], and *D. A. Cory-Slechta*[1,2]. [1]Environmental Medicine, University of Rochester, Rochester, NY, and [2]Pediatrics, University of Rochester, Rochester, NY.

#983 **Poster Board Number 147**
THE ACTIVATION SEQUENCE OF CELLULAR PROTEIN HANDLING SYSTEMS IN RESPONSE TO PROTEASOMAL INHIBITION: AN *IN VITRO* MODEL RELEVANT TO PARKINSON'S DISEASE. R. Xiong, D. Siegel, and *D. Ross*. Skaggs School of Pharmacy and Pharmaceutical Sciences, University of Colorado Denver, Denver, CO.

Program Description (Continued)

Abstract #

#984 **Poster Board Number 148**
REDUCED VMAT2 EXPRESSION CAUSES NORADRENERGIC LOSS PRECEDING NIGROSTRIATAL DEGENERATION IN A MOUSE MODEL OF PARKINSON'S DISEASE.
S. P. Alter[1], D. S. Goldstein[2], T. N. Taylor[3], and *G. W. Miller*[1]. [1]Environmental Health, Emory University, Atlanta, OH, [2]Clinical Neurocardiology Section, NINDS, NIH, Bethesda, MD, and [3]Department of Physiology, Anatomy, and Genetics, University of Oxford, Oxford, United Kingdom.

#985 **Poster Board Number 149**
HUMAN NEURAL PROGENITORS WITH MUTATIONS IN PARK2 SHOW INCREASED MITOCHONDRIAL DAMAGE AND ABERRANT TRANSCRIPTIONAL RESPONSES AFTER COPPER EXPOSURE. A. M. Tidball[1,2,4], A. A. Aboud[2,4], K. K. Kumar[1,2,4], M. Neely[2,4], G. G. Li[2], M. J. Litt[2], P. Hedera[2,4], K. C. Ess[2,3,4], and *A. B. Bowman*[2,3,4]. [1]Neuroscience Graduate Program, Vanderbilt University, Nashville, TN, [2]Neurology, Vanderbilt University, Nashville, TN, [3]Pediatrics, Vanderbilt University, Nashville, TN, and [4]Vanderbilt Kennedy Center for Research on Human Development, Vanderbilt University, Nashville, TN.

#986 **Poster Board Number 150**
TRANSLOCATOR PROTEIN 18 KDA (TSPO) DETECTS EARLY AND WIDESPREAD NEURODEGENERATION IN THE BRAIN OF BAC[HTT220Q] BUT NOT YAC[HTT128Q] MOUSE MODELS OF HUNTINGTON'S DISEASE. B. D. Soares[1], *M. Wegrzynowicz*[2], M. K. Loth[1], *J. L. McGlothan*[1], F. S. Alikhan[1], T. J. Bichell[2], J. Coughlin[3], H. Wang[3], M. G. Pomper[3], K. Hua[3], S. Mori[3], *A. B. Bowman*[2], and *T. R. Guilarte*[1]. [1]Environmental Health Sciences, Columbia University Mailman School of Public Health, New York, NY, [2]Neurology, Vanderbilt University, Nashville, TN, and [3]Radiology, Johns Hopkins University, Baltimore, MD.

#987 **Poster Board Number 151**
DEVELOPMENT OF A CHRONIC RESERPINE MODEL TO STUDY CYTOPLASMIC DOPAMINE TOXICITY AND PARKINSON'S DISEASE PATHOGENESIS. *C. R. Lazo*, and *G. W. Miller*. Environmental Health, Emory, Atlanta, GA.

#988 **Poster Board Number 152**
GENETIC AND PHARMACOLOGIC BLOCKADE OF NF-KB PREVENTS ONGOING NEUROINFLAMMATION IN THE MPTP MODEL OF PARKINSON'S DISEASE. *B. Trout*[1], J. A. Miller[1], *R. B. Tjalkens*[1], and *S. Safe*[2]. [1]Environmental and Radiological Health Sciences, Colorado State University, Fort Collins, CO, and [2]Institute of Bioscience and Technology, Texas A&M Health Science Center, Houston, TX.

#989 **Poster Board Number 153**
CHARACTERIZATION OF AN ASTROCYTE-SPECIFIC IKK-BETA KNOCKOUT MOUSE. K. A. Kirkley, and *R. Tjalkens*. Environmental and Radiological Health Sciences, Colorado State University, Fort Collins, CO.

Abstract #

#990 **Poster Board Number 154**
FUNCTIONAL CHARACTERIZATION OF ABC EFFLUX TRANSPORTERS IN MICROGLIA: IMPLICATIONS DURING NEUROINFLAMMATION. *C. J. Gibson*[1,3], *J. R. Richardson*[2], and *L. M. Aleksunes*[1]. [1]Pharmacology & Toxicology, Rutgers University, Piscataway, NJ, [2]Environmental & Occupational Medicine, University of Medicine and Dentistry of New Jersey, Piscataway, NJ, and [3]Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ.

#991 **Poster Board Number 155**
DECREASING THE TOXICITY OF HSP90 INHIBITORS FOR THE THERAPY OF PROTEIN FOLDING DISEASES. R. Xiong[1], C. Chang[1], D. Siegel[1], R. Kitson[2], C. J. Moody[2], and *D. Ross*[1]. [1]Pharmaceutical Sciences, University of Colorado, Aurora, CO, and [2]School of Chemistry, University of Nottingham, Nottingham, United Kingdom.

#992 **Poster Board Number 156**
***IN VITRO* EFFECTS OF MUTANT APP AND PS1 ON MITOCHONDRIAL FUNCTION IN HIPPOCAMPAL N2A CELLS.** *A. E. Schlappal*[1,2], M. Ottinger[1,2], and *R. Schuh*[1,3,4]. [1]Neuroscience and Cognitive Sciences Program, University of Maryland, College Park, MD, [2]Animal and Avian Sciences, University of Maryland, College Park, MD, [3]R&D Service, VA Maryland Health Care System, Baltimore, MD, and [4]Department of Neurology, University of Maryland, School of Medicine, Baltimore, MD.

#993 **Poster Board Number 157**
PARAQUAT NEUROTOXICITY IS MEDIATED BY THE DOPAMINE TRANSPORTER AND ORGANIC CATION TRANSPORTER-3. P. M. Rappold[1], M. Cui[1], A. S. Chesser[1], J. Tibbett[1], J. C. Grima[1], L. Duan[2], N. Sen[2], J. A. Javitch[2], and *K. Tieu*[1]. [1]University of Rochester, Rochester, NY, and [2]Columbia University, New York, NY.

#994 **Poster Board Number 158**
STEREOSELECTIVE NEUROTOXICITY OF SOME NEW ANTICONVULSANT N,N'-DISUBSTITUTED CHIRAL SPIROHYDANTOINS. N. Anreddy, *R. A. Stephani*, I. Sadarangani, S. Bhatia, and J. N. Wurpel. Pharmaceutical Sciences, St. John's University, Jamaica, NY.

Tuesday Morning, March 13
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Neurotoxicity: Metals

Chairperson(s): *Jennifer Larson, University of North Dakota, Grand Forks, ND.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *9:00 AM–11:00 AM*

#995 **Poster Board Number 201**
REVISED REFERENCE CONCENTRATION FOR MANGANESE OXIDE BASED ON RECENT EPIDEMIOLOGICAL AND PHARMACOKINETIC STUDIES. *L. A. Bailey*, *J. E. Goodman*, and *B. D. Beck*. Gradient, Cambridge, MA.

Program Description (Continued)

Abstract #

#996 **Poster Board Number 202**
COMPARISON OF BRAIN METABOLITE CHANGES IN MANGANESE-EXPOSED WELDERS AND SMELTERS. *Z. Long*[1], Y. Jiang[3], X. Li[4], *J. Xu*[1,2], L. Long[4], *W. Zheng*[1], J. Murdoch[5], and *U. Dydak*[1,2]. [1]School of Health Sciences, Purdue University, West Lafayette, IN, [2]Department of Radiology, Indiana University School of Medicine, Indianapolis, IN, [3]Department of Occupational Health and Toxicology, Guangxi Medical University, Nanning, China, [4]Department of Radiology, Guangxi Medical University, Nanning, China, and [5]Toshiba Medical Research Institute USA, Cleveland, OH.

#997 **Poster Board Number 203**
BASELINE COMPARISON OF BRAIN METABOLITES BETWEEN RHESUS MONKEYS AND HUMANS BY MRS. *Z. Long*[1], *J. Xu*[1,2], *J. L. McGlothan*[3], R. Edden[4,5], P. Barker[4,5], *T. R. Guilarte*[3], and *U. Dydak*[1,2]. [1]School of Health Sciences, Purdue University, West Lafayette, IN, [2]Department of Radiology, Indiana University School of Medicine, Indianapolis, IN, [3]Department of Environmental Health Sciences, Columbia University Mailman School of Public Health, New York, NY, [4]Russell H. Morgan Department of Radiology and Radiological Science, Johns Hopkins University, Baltimore, MD, and [5]F.M. Kirby Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD.

#998 **Poster Board Number 204**
INCREASED CORTICAL GABA LEVELS IN MANGANESE-TREATED RATS. S. Dharmadhikari[1,2], *J. Xu*[1,2], *A. Epur*[2], *W. Zheng*[1], and *U. Dydak*[1,2]. [1]School of Health Sciences, Purdue University, West Lafayette, IN, and [2]Indiana University School of Medicine, Indianapolis, IN.

#999 **Poster Board Number 205**
X-RAY FLUORESCENT IMAGING FOR STUDYING MN-INDUCED NEUROTOXICITY IN RATS. G. A. Robison[1], T. Zakharova[1], W. Jiang[2], R. Fulper[1], R. Barrea[3], M. A. Marcus[4], *W. Zheng*[2], and Y. Pushkar[1]. [1]Physics, Purdue University, West Lafayette, IN, [2]School of Health Sciences, Purdue University, West Lafayette, IN, [3]Advanced Photon Source, Argonne National Laboratory, Argonne, IL, and [4]Advanced Light Source, Lawerence Berkeley National Laboratory, Berkeley, CA.

#1000 **Poster Board Number 206**
MANGANESE EXPOSURE DISRUPTS COPPER (CU) HOMEOSTASIS AT BLOOD-CSF BARRIER: ROLE OF CU TRANSPORTER ATP7A. *X. Fu*, *Y. Zhang*, W. Jiang, and *W. Zheng*. School of Health Sciences, Purdue University, West Lafayette, IN.

#1001 **Poster Board Number 207**
MANGANESE-RELATED DIFFERENTIAL PROTEOME IN CEREBROSPINAL FLUID FROM RATS BY LABEL FREE METHOD. *G. J. Li*[1], K. Wei[2], H. Jing[1], T. Zhang[2], C. Zhao[1], L. Ma[1], X. Zhang[2], F. Yang[2], and Y. Chen[3]. [1]Institute for Toxicology, Beijing Centers for Disease Control and Prevention, Beijing, China, [2]Beijing Proteome Research Center, Beijing, China, and [3]Xinjiang Medical University, Urumqi, China.

Abstract #

#1002 **Poster Board Number 208**
LOSS OF *PDR-1/PARKIN* INCREASES SUSCEPTIBILITY TO MANGANESE TOXICITY IN A *C. ELEGANS* MODEL. *S. Chakraborty*[1,2], *K. Erikson*[4], and *M. Aschner*[2,3]. [1]Neuroscience Graduate Program, Vanderbilt University Medical Center, Nashville, TN, [2]Center of Molecular Toxicology, Vanderbilt University Medical Center, Nashville, TN, [3]Pediatrics, Vanderbilt University Medical Center, Nashville, TN, and [4]Nutrition, University of North Carolina, Greensboro, NC.

#1003 **Poster Board Number 209**
***C. ELEGANS* DJ-1 HOMOLOGUES DIFFERENTIAL REGULATE LIFESPAN AND SURVIVAL UPON ACUTE MANGANESE EXPOSURE.** *M. R. DeWitt*[1,2], and *M. Aschner*[2]. [1]Neuroscience Graduate Program, Vanderbilt University, Nashville, TN, and [2]Department of Pediatrics, Vanderbilt University, Nashville, TN.

#1004 **Poster Board Number 210**
THE EFFECTS OF MANGANESE AND COPPER ON MITOCHONDRIAL MEMBRANE POTENTIAL IN THE GILL OF *CRASSOSTREA VIRGINICA*. B. Boisette, F. Dailey, K. Dorce, *E. J. Catapane*, and *M. A. Carroll*. Biology, Medgar Evers College, Brooklyn, NY.

#1005 **Poster Board Number 211**
INCREASED EXPRESSION OF PRO-APOPTOTIC KINASE PKCδ DURING MANGANESE EXPOSURE: IMPLICATIONS FOR GENE-ENVIRONMENT INTERACTIONS IN NEURODEGENERATION. H. Jin, A. Kanthasamy, V. Anantharam, and *A. Kanthasamy*. Iowa State University, Ames, IA.

#1006 **Poster Board Number 212**
EARLY MARKERS OF CELLULAR MANGANESE NEUROTOXICITY: RELATIONSHIP BETWEEN MANGANESE AND GOLGI PHOSPHOPROTEIN 4 (GPP130). M. J. Masuda, M. Braun-Sommargren, D. Crooks, and *D. R. Smith*. Microbiology and Environmental Toxicology, University of California Santa Cruz, Santa Cruz, CA.

#1007 **Poster Board Number 213**
MANGANESE DECREASES HUNTINGTIN PHOSPHORYLATION AT SERINE 421, INCREASES HUNTINGTIN PROTEIN LEVELS, AND DECREASES BDNF EXPRESSION IN CULTURED NEURONS: IMPLICATIONS FOR STRIATAL MEDIUM SIZE SPINY NEURON DEGENERATION IN MANGANESE NEUROTOXICITY AND IN HUNTINGTON'S DISEASE. *J. L. McGlothan*, *K. H. Stansfield*, and *T. R. Guilarte*. Environmental Health Sciences, Columbia University Mailman School of Public Health, New York, NY.

#1008 **Poster Board Number 214**
MANGANESE EXPOSURE DOWNREGULATES STAT5B TO COMPROMISE THE CELLULAR PROTECTIVE MECHANISMS AGAINST THE METAL NEUROTOXICITY. D. Kim, A. Kanthasamy, H. Jin, V. Anantharam, and *A. G. Kanthasamy*. Department of Biomedical Sciences, Iowa Center for Advanced Neurotoxicology, Iowa State University, Ames, IA.

Program Description (Continued)

Abstract #

#1009 **Poster Board Number 215**
HUMAN α-SYNUCLEIN PROTECTS AGAINST MANGANESE NEUROTOXIC INSULT DURING THE EARLY STAGES OF EXPOSURE IN A DOPAMINERGIC CELL MODEL OF PARKINSON'S DISEASE. D. Harischandra, H. Jin, A. Kanthasamy, V. Anantharam, and *A. G. Kanthasamy*. Biomedical Sciences, Iowa State University, Ames, IA.

#1010 **Poster Board Number 216**
EXPRESSION AND AGGREGATION OF A-SYNUCLEIN IN THE BLOOD-CSF BARRIER: INITIAL EVIDENCE FOR THE INFLUENCE OF CELLULAR MANGANESE AND COPPER STATUS. C. A. Bates, *G. Zheng*, *X. Fu*, and *W. Zheng*. Health Sciences, Purdue University, West Lafayette, IN.

#1011 **Poster Board Number 217**
MECHANISM OF COPPER (CU) TRANSPORT AT THE BLOOD-CEREBROSPINAL FLUID BARRIER: INFLUENCE OF IRON DEFICIENCY IN AN *IN VITRO* SYSTEM. *A. D. Monnot*[1], G. Robison[2], *G. Zheng*[1], Y. Pushkar[2], and *W. Zheng*[1]. [1]Health Sciences, Purdue University, West Lafayette, IN, and [2]Physics, Purdue University, West Lafayette, IN.

#1012 **Poster Board Number 218**
ESTABLISHMENT OF CHOROIDAL Z310 CELL-BASED TETRACYCLINE (TET)-INDUCIBLE CTR1 EXPRESSION CELL LINE FOR COPPER (CU) TRANSPORT AND TOXICOLOGICAL RESEARCH. G. Zheng, and *W. Zheng*. School of Health Sciences, Purdue University, West Lafayette, IN.

#1013 **Poster Board Number 219**
COPPER AFFECTS ACCUMULATION OF AMYLOID-BETA IN THE BRAIN. D. Kim, J. Song, *J. Park*, and *B. Choi*. Department of Preventive Medicine, Chung-Ang University, Dongjak-gu, Seoul, Republic of Korea.

#1014 **Poster Board Number 220**
ZINC TOXICITY IN ODORA CELLS. H. Hsieh[1], H. Amlal[2], and *M. Genter*[1]. [1]Department of Environmental Health, Division of Environmental Genetics and Molecular Toxicology, University of Cincinnati, Cincinnati, OH, and [2]Department of Internal Medicine, University of Cincinnati, Cincinnati, OH.

#1015 **Poster Board Number 221**
EFFECTS OF CHRONIC POSTNATAL METHYLMERCURY EXPOSURE ON THE EXPRESSION OF $GABA_A$ RECEPTOR SUBUNITS IN MOUSE CEREBELLUM. *A. Colón-Rodriguez*[2,1], R. Hajela[1], and *W. D. Atchison*[1,2]. [1]Pharmacology and Toxicology, Michigan State University, East Lansing, MI, and [2]Comparative Medicine and Integrative Biology Program, Michigan State University, East Lansing, MI.

Abstract #

#1016 **Poster Board Number 222**
IDENTIFICATION AND CHARACTERIZATION OF MOLECULAR MODULATORS OF METHYLMERCURY-INDUCED TOXICITY AND DOPAMINE NEURON DEGENERATION IN *C. ELEGANS*. *N. VanDuyn*, *R. Settivari*, and *R. Nass*. Pharmacology & Toxicology, Indiana University School of Medicine, Indianapolis, IN.

#1017 **Poster Board Number 223**
METHYLMERCURY (MEHG) DISRUPTS FLUO4 FLUORESCENCE IN CEREBELLAR SLICES FROM $GABA_A$ RECEPTOR α6 (-/-) MICE. *A. B. Bradford*[1,3], and *W. D. Atchison*[2,3]. [1]Biochemistry/Molecular Biology, Michigan State University, East Lansing, MI, [2]Pharmacology and Toxicology, Michigan State University, East Lansing, MI, and [3]Center for Integrative Toxicology, Michigan State University, East Lansing, MI.

#1018 **Poster Board Number 224**
SUSCEPTIBILITY TO METHYLMERCURY-INDUCED (MEHG) CYTOTOXICITY IN HEK-293 CELLS: ROLE OF NEURONAL VOLTAGE-GATED CALCIUM CHANNEL (VGCC) α_1 SUBUNITS. M. Ríos Cabanillas[1,2], *H. Hannon*[1], and *W. D. Atchison*[1]. [1]Pharmacology & Toxicology, Michigan State University, East Lansing, MI, and [2]RISE Program, University of Puerto Rico Cayey, Cayey, Puerto Rico.

#1019 **Poster Board Number 225**
ACUTE *IN VITRO* EXPOSURE TO METHYLMERCURY AFFECTS SHORT-TERM SYNAPTIC TRANSMISSION AND PLASTICITY IN CEREBELLAR SLICES OF ADULT AND AGING MICE. *Y. Yuan*, W. Ku, *S. M. Fox*, E. Wakeling, D. Autio, and *W. D. Atchison*. Pharmacology/Toxicology, Michigan State University, East Lansing, MI.

#1020 **Poster Board Number 226**
METHYLMERCURY (MEHG) EXPOSURE DISRUPTS INTRACELLULAR CA^{2+} IN THE CEREBELLUM AND STRIATUM OF ADULT AND AGED MICE. *S. M. Fox*[1,2], E. N. Wakeling[1,2], and *W. D. Atchison*[1,2]. [1]Pharmacology and Toxicology, Michigan State University, East Lansing, MI, and [2]Center for Integrated Toxicology, Michigan State University, East Lansing, MI.

#1021 **Poster Board Number 227**
EFFECTS OF ACUTE EXPOSURE TO METHYLMERCURY ON THE VIABILITY OF PRIMARY CEREBELLAR GRANULE CELLS OF LETHARGIC MICE. A. K. González-Rivera[1,3], *B. M. Marrero-Rosado*[2], and *W. D. Atchison*[1]. [1]Pharmacology & Toxicology, Michigan State University, East Lansing, MI, [2]Genetics, Michigan State University, East Lansing, MI, and [3]Biology, University of Puerto Rico, Arecibo, Puerto Rico.

#1022 **Poster Board Number 228**
***IN VITRO* NEUROTOXICITY OF CLINICALLY RELEVANT CONCENTRATIONS OF COBALT AND CHROMIUM IN N1E-115 NEUROBLASTOMA CELLS.** B. E. Wildt, M. W. Betz, *P. L. Goering*, and *R. P. Brown*. CDRH, US FDA, Silver Spring, MD.

Program Description (Continued)

Abstract #

#1023 **Poster Board Number 229**
ALUMINIUM-INDUCED OXIDATIVE STRESS RESULTS IN DECREASED MITOCHONDRIAL BIOGENESIS VIA MODULATION OF PGC-1α EXPRESSION. D. R. Sharma, A. Sunkaria, W. Y. Wani, and *K. D. Gill*. Biochemistry, Post Graduate Institute of Medical Education and Research, Chandigarh, UT, India.

Tuesday Morning, March 13
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Neurotoxicity: General

Chairperson(s): *David Herr, US EPA, Durham, NC.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *11:00 AM–12:30 PM*

#1024 **Poster Board Number 234**
NEUROBEHAVIORAL AND ELECTROPHYSIOLOGICAL EFFECTS OF ACUTE TOLUENE EXPOSURE—IS A SHORT-TERM EXPOSURE LIMIT (STEL) OF 200 PPM SAFE? C. van Thriel, S. Kleinbeck, M. Schäper, *K. Golka*, M. Blaszkewicz, M. Lehmann, and M. Rottrof. IfADo—Leibniz Research Centre for Working Environment and Human Factors, Dortmund, Germany.

#1025 **Poster Board Number 235**
ADULT-ONSET HYPOTHYROIDISM INCREASES RESPONSE LATENCY AND LONG-TERM POTENTIATION (LTP) IN RAT HIPPOCAMPUS. K. Sanchez-Huerta[2], *M. E. Gilbert*[1], and J. Pacheco-Rosado[2]. [1]Toxicity Assessment Division, US EPA, Research Triangle Park, NC, and [2]Depart de Fisiologia, ENCB, IPN, Mexico City, Mexico.

#1026 **Poster Board Number 236**
EFFECTS OF MOBILE PHONE RADIATION ON HSP90 IN RAT BRAIN. E. Cuevas[1], *M. E. Wyde*[3], S. M. Lantz[1], B. R. Robinson[1], *W. R. Hamilton*[1], *P. C. Howard*[2], *N. J. Walker*[3], *M. G. Paule*[1], and *S. F. Ali*[1]. [1]NEUROTOXICOLOGY, NCTR/FDA, Jefferson, AR, [2]Office of Scientific Coordination, NCTR/FDA, Jefferson, AR, and [3]NTP, NIEHS, Research Triangle Park, NC.

#1027 **Poster Board Number 237**
EFFECTS OF METHAMPHETAMINE AND MPTP ON THE RETINAL DOPAMINERGIC SYSTEM IN MICE. *R. Hamilton*, *W. J. Trickler*, B. L. Robinson, *M. G. Paule*, and *S. F. Ali*. NCTR/FDA, Jefferson, AR.

#1028 **Poster Board Number 238**
***IN VIVO* STRESS AND CHRONIC GLUCOCORTICOID EXPOSURE INFLUENCE THE NEUROINFLAMMATION AND DOPAMINERGIC NEUROTOXICITY ASSOCIATED WITH METHAMPHETAMINE.** *D. B. Miller*[1], K. A. Kelly[1], *J. F. Bowyer*[2], and *J. P. O'Callaghan*[1]. [1]CDC-NIOSH, Morgantown, WV, and [2]US FDA-NCTR, Jefferson, AR.

Abstract #

#1029 **Poster Board Number 239**
THE MODULATION OF 3,4-(±)-METHYLENE-DIOXYMETHAMPHETAMINE-INDUCED NEUROTOXICITY BY CATECHOL-O-METHYLTRANSFERASE. *J. M. Herndon*, A. B. Cholanians, L. E. Lizarraga, *S. S. Lau*, and *T. J. Monks*. Pharmacology/Toxicology, University of Arizona - College of Pharmacy, Tucson, AZ.

#1030 **Poster Board Number 240**
PHARMACOLOGIC INHIBITION OF THE VESICULAR MONOAMINE TRANSPORTER 2 ATTENUATES 3,4-METHYLENEDIOXY-METHAMPHETAMINE-INDUCED HYPERTHERMIA, LOCOMOTOR ACTIVITY, AND NEUROTOXICITY. L. E. Lizarraga, A. B. Cholanians, *J. M. Herndon*, *S. S. Lau*, and *T. J. Monks*. Pharmacology/Toxicology, University of Arizona-College of Pharmacy, Tucson, AZ.

#1031 **Poster Board Number 241**
NEUROTOXIC EXPOSURES TO AMPHETAMINE CAN RESULT IN LIPOPOLYSACCHARIDES (LPS) PRESENCE IN CIRCULATING BLOOD, ORGAN DAMAGE, AND IMMUNE ACTIVATION. *J. F. Bowyer*[1], M. M. Vanlandingham[2], R. E. Patton[3], *J. P. Hanig*[4], and *M. S. Levi*[1]. [1]Neurotoxicology, US FDA/NCTR, Jefferson, AR, [2]Biochemical Toxicology, US FDA/NCTR, Jefferson, AR, [3]Toxicology & Pathology Associates, US FDA/NCTR, Jefferson, AR, and [4]US FDA/CDER, Jefferson, AR.

#1032 **Poster Board Number 242**
THE EFFECTS OF FLUORIDE ON THE NEUROTRANSMITTERS IN DISCRETE BRAIN REGIONS OF ICR-DERIVED GLOMERULONEPHRITIS MICE BY EXPOSURE VIA THEIR DRINKING WATER. *M. Tsunoda*[1], T. Kido[1], R. Ikeuchi[1], C. Sugaya[1], Y. Kodama[2], *Y. Sugita-Konishi*[2], and Y. Aizawa[1]. [1]Preventive Medicine, Kitasato University School of Medicine, Sagamihara, Kanagawa, Japan, and [2]National Institute for Health Sciences, Tokyo, Japan.

#1033 **Poster Board Number 243**
VESTIBULAR TOXICITY OF HYPOTHETICAL METABOLITES OF ALLYLNITRILE IN RATS. *J. Llorens*[1,2], M. Buffard[1,4], L. Sedó[1], H. Gerard[1], A. Masana[2], S. Saldaña-Ruíz[1], A. Delatorre[3,4], A. Greco[3,4], I. Gentil[1,4], C. Domínguez[3], J. M. Bayona[3], M. Angel[3], and F. Rua[3]. [1]D. Ciencies Fisiologiques II, Universitat de Barcelona, Hospitalet de Llobregat, Catalunya, Spain, [2]IDIBELL, Hospitalet de Llobregat, Catalunya, Spain, [3]CSIC, Barcelona, Catalunya, Spain, and [4]ENSCM, Montpellier, France.

#1034 **Poster Board Number 244**
MODULATION OF NEUROTRANSMITTER AMINO ACIDS BY PERFLUOROOCTANE SULFONATE (PFOS) WITHIN AMYGDALA IN RAT. M. A. Lafuente[1], N. Pereiro[1], R. Moyano[2], and B. Fernandez[1]. [1]Laboratory of Toxicology, University of Vigo, Orense, Spain, and [2]Department of Farmacology, Toxicology and Legal Medicine and Forensic Scientist, University of Cordoba, Cordoba, Spain. Sponsor: *G. Font*.

TUESDAY

Program Description (Continued)

Abstract #

#1035 **Poster Board Number 245**
PERFLUOROOCTANOIC AND PERFLUOROOCTANESULFONIC ACID EXPOSURES DISRUPT ACETYLECHOLINESTERASE AND GLUTATHIONE S-TRANSFERASE ACTIVITIES IN ZEBRAFISH ADULTS (*DANIO* SPP). K. Noell, S. Gunn, and S. Chao. Biological Sciences, Fayetteville State University, Fayetteville, NC. Sponsor: *H. Tilson*.

#1036 **Poster Board Number 246**
ENANTIOSELECTIVE FORMATION OF HYDROXYLATED METABOLITES OF PCB 95 IN FEMALE C57BL/6 MICE. *I. Kania-Korwel*[1], C. Barnhart[2], K. M. Truong[2], *P. J. Lein*[2], and *H. Lehmler*[1]. [1]Department of Occupational and Environmental Health, University of Iowa, Iowa City, IA, and [2]Molecular Biosciences, School of Veterinary Medicine, University of California Davis, Davis, CA.

#1037 **Poster Board Number 247**
STRUCTURE ACTIVITY OF FIVE RACEMIC POLYCHLORINATED BIPHENYLS TOWARDS RYR1 CHANNELS: INFLUENCE OF HYDROXYLATION AT THE META- AND PARA-POSITION. Y. Niknam[1], *S. N. Joshi*[2], *S. M. Vyas*[2], *H. Lehmler*[2], and *I. N. Pessah*[1]. [1]VM: Molecular Biosciences, University of California Davis, Davis, CA, and [2]Occupational and Environmental Health, University of Iowa, Iowa City, IA.

#1038 **Poster Board Number 248**
CHLOROACETIC ACID-INDUCED CELL APOPTOSIS THROUGH ROS/ENDOPLASMIC RETICULUM STRESS PATHWAY IN NEURONAL CELLS. *D. Hung*[1], C. Chen[2], F. Tang[3], C. Yen[4], *T. Lu*[5], S. Liu[6], *Y. Chen*[5], and *C. Huang*[7]. [1]Toxicology Center, China Medical University Hospital, Taichung, Taiwan, [2]Department of Emergency, China Medical University Hospital, Taichung, Taiwan, [3]Department of Occupational Medicine, Changhua Christian Hospital, Changhua, Taiwan, [4]Department of Occupational Safety and Health, Chung Shan Medical University, Taichung, Taiwan, [5]Department of Physiology and Graduate Institute of Basic Medical Science, China Medical University, Taichung, Taiwan, [6]Institute of Toxicology, National Taiwan University, Taipei, Taiwan, and [7]School of Chinese Medicine, China Medical University, Taichung, Taiwan.

#1039 **Poster Board Number 249**
***IN VITRO* TOXICITY OF AMPHOTERICIN B AND AMPHOTERICIN B METHYL ESTER EXPOSURE IN OLIGODENDROCYTES.** *O. U. Nnodi*[1], *K. R. Reuhl*[1], and C. P. Schaffner[2]. [1]Department of Pharmacology & Toxicology, Rutgers University, Piscataway, NJ, and [2]Waksman Institute of Microbiology, Rutgers University, Piscataway, NJ.

Abstract #

#1040 **Poster Board Number 250**
VITAMIN A DEFICIENCY INDUCES DYSFUNCTION OF INNER RETINAL LAYER CELLS IN ADDITION TO PHOTORECEPTOR CELLS. D. Kakiuchi[1,4], T. Uehara[2], M. Shiotani[1], K. Nakano[1], K. Sawada[3], *A. Suganuma*[1], T. Aoki[1], K. Tsukidate[1], and A. Fukamizu[4]. [1]Global Drug Safety, BA-CFU, Eisai Co., Ltd., Tsukuba-shi, Ibaraki, Japan, [2]Biomarkers and Personalized Medicine CFU, Eisai Co., Ltd., Tsukuba-shi, Ibaraki, Japan, [3]Global Cardiovascular Assessment, BA-CFU, Eisai Co., Ltd., Tsukuba-shi, Ibaraki, Japan, and [4]Aspect of Functional Genomic Biology, Graduate School of Life and Environmental Sciences, University of Tsukuba, Tsukuba-shi, Ibaraki, Japan.

#1041 **Poster Board Number 251**
NEUROACTIVITY OF THE β-CARBOLINES, HARMANE AND NORHARMANE, FOUND IN TOBACCO SMOKE: AN *IN VITRO* STUDY. *S. F. Ali*[1], S. M. Lantz[1], *E. Cuevas*[1], B. L. Robinson[1], *M. G. Paule*[1], and *M. H. Baumann*[2]. [1]NCTR/FDA, Jefferson, AR, and [2]Laboratory of Clinical Psychopharmacology, IRP/NICA, Baltimore, MD.

#1042 **Poster Board Number 252**
MODULATION OF HUMAN $GABA_A$ AND ACETYLCHOLINE RECEPTORS BY BROMINATED FLAME RETARDANTS. H. S. Hendriks, R. G. van Kleef, and *R. H. Westerink*. Neurotoxicology Research Group, Institute for Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands.

#1043 **Poster Board Number 253**
USING A FLUORESCENT SUBSTRATE TO DEFINE EFFECTS OF POLYCHLORINATED BIPHENYLS ON MONOAMINE TRANSPORTERS. *A. I. Bernstein*, K. A. Stout, *T. S. Guillot*, and *G. W. Miller*. Environmental Health, Emory University, Atlanta, GA.

#1044 **Poster Board Number 254**
EVALUATION OF MICROELECTRODE ARRAYS FOR NEUROTOXICITY SCREENING USING A CHEMICAL TRAINING SET. E. R. McConnell[2], M. McClain[2], *J. Ross*[2], W. R. LeFew[1], and *T. J. Shafer*[1]. [1]Integrated Systems Toxicology, US EPA, Research Triangle Park, NC, and [2]Axion Biosystems, Atlanta, GA.

#1045 **Poster Board Number 255**
BURST AND PRINCIPAL COMPONENTS ANALYSES OF MEA DATA SEPARATES CHEMICALS BY CLASS. B. Lin[1], J. Turner[3], C. M. Mack[2], *A. Johnstone*[2], *L. Burgoon*[4], and *T. J. Shafer*[2]. [1]North Carolina School of Science and Math, Durham, NC, [2]NHEERL, US EPA, Research Triangle Park, NC, [3]North Carolina State University, Raleigh, NC, and [4]NCEA, US EPA, Research Triangle Park, NC.

#1046 **Poster Board Number 256**
ONE-STEP LABELING OF DEGENERATIVE NEURONS IN UNFIXED BRAIN TISSUE SAMPLES. Q. Gu, S. Sarkar, L. C. Schmued, *M. G. Paule*, and B. Raymick. Division of Neurotoxicology, National Center for Toxicological Research, US FDA, Jefferson, AR.

Program Description (Continued)

Abstract #

#1047 **Poster Board Number 257**
FUNCTIONAL OBSERVATION BATTERY IN NONHUMAN PRIMATES WITH CONTINUOUS INTRACEREBRAL INFUSION. A. S. Aslam[1], S. Authier[1,2], A. Schneider[3], K. Wong[1], J. Bienvenu[1], R. Tavcar[1], *R. Forster*[1], and E. Troncy[2]. [1]CiToxLAB, Laval, QC, Canada, [2]Faculty of Veterinary Medicine, University of Montreal, St-Hyacinthe, QC, Canada, and [3]ANTISENSE PHARMA GmbH, Ratisbon, Germany.

#1048 **Poster Board Number 258**
FUNCTIONAL OBSERVATIONAL BATTERY IN PERSPECTIVE. *W. A. Irwin*, *J. Doherty*, and *E. Scollon*. HED, US EPA, Crystal City, VA.

#1049 **Poster Board Number 259**
COMPARISON OF MOTOR AND COGNITIVE FUNCTION IN TWO SUBSTRAINS OF C57BL/6 MICE. A. Ashworth, *C. P. Curran*, J. Fowler, and M. McKay. Biological Sciences, Northern Kentucky University, Highland Heights, KY.

Tuesday Morning, March 13
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Inhalants and Cardiopulmonary: Chemical Agents

Chairperson(s): *Deepak Bhalla, Wayne State University, Detroit, MI.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *9:00 AM–11:00 AM*

#1050 **Poster Board Number 267**
ASSESSMENT OF THE RESPIRATORY SENSITIZATION POTENTIAL OF PROTEINS USING AN ENHANCED MOUSE INTRANASAL TEST (MINT). S. M. Krieger, *D. R. Boverhof*, *M. R. Woolhiser*, and *J. A. Hotchkiss*. The Dow Chemical Company, Midland, MI.

#1051 **Poster Board Number 268**
ACUTE INHALATION TOXICITY IN RATS EXPOSED TO GASEOUS ATMOSPHERES OF HYDROGEN FLUORIDE AND CARBONYL FLUORIDE. *A. J. O'Neill*[1], M. A. Bazar[1], L. Crouse[1], M. A. Chapman[2], and A. J. Januszkiewicz[3]. [1]Toxicology Portfolio, US Army Public Health Command, Aberdeen Proving Ground, MD, [2]US Army Test Center, Aberdeen Proving Ground, MD, and [3]Walter Reed Army Institute of Research, Silver Spring, MD.

#1052 **Poster Board Number 269**
IN SEARCH OF PREDICTIVE PULMONARY HAZARD ASSAYS: LUNG TOXICITY AND *IN SILICO* STUDIES TO ASSESS TITANATE PARTICULATE MATERIALS. M. B. Golt[1], E. Daimon[2], K. Inada[2], K. L. Reed[1], and *D. B. Warheit*[1]. [1]DuPont Haskell Laboratory, Wilmington, DE, and [2]Otsuka Chemical Co., Ltd., Osaka, Japan.

Abstract #

#1053 **Poster Board Number 270**
ACUTE TOXICOLOGICAL RESPONSES OF FISCHER RATS TO NATURALLY OCCURRING ASBESTOS FROM THE UNITED STATES AND CANADA. *J. M. Cyphert*[1], *D. J. Padilla-Carlin*[2], A. Nyska[4], *J. H. Shannahan*[1], M. C. Schladweiler[3], *U. P. Kodavanti*[3], and *S. H. Gavett*[3]. [1]Curriculum in Toxicology, University of North Carolina Research Program, Chapel Hill, NC, [2]CRIS, DERT, NIEHS, Research Triangle Park, NC, [3]EPHD, NHEERL, US EPA, Research Triangle Park, NC, and [4]Sakler School of Medicine, Tel Aviv University, Tel Aviv, Israel.

#1054 **Poster Board Number 271**
DETECTION OF NAPHTHALENE (NA)-DNA ADDUCTS IN MOUSE OLFACTORY AND AIRWAY EPITHELIAL TISSUES BY ACCELERATOR MASS SPECTROMETRY. B. A. Buchholz[1], M. J. Sarachine[1], *L. S. Van Winkle*[2], D. Morin[2], and *A. R. Buckpitt*[2]. [1]Center for AMS, LLNL, Livermore, CA, and [2]Veterinary Medicine, University of California Davis, Davis, CA.

#1055 **Poster Board Number 272**
PULMONARY RESPONSES AFTER INHALATION OF RESISTANCE SPOT WELDING FUME USING AN ADHESIVE. *P. C. Zeidler-Erdely*, A. A. Afshari, T. G. Meighan, W. McKinney, B. T. Chen, D. Schwegler-Berry, M. Jackson, A. Cumpston, J. L. Cumpston, H. D. Leonard, *A. Erdely*, D. G. Frazer, and *J. M. Antonini*. NIOSH, Morgantown, WV.

#1056 **Poster Board Number 273**
CARDIOPULMONARY HEALTH EFFECTS OF TRAFFIC-RELATED AIR POLLUTANTS. *J. E. Mirowsky*[1], R. Peltier[2], M. Lippmann[1], and *T. Gordon*[1]. [1]Environmental Medicine, New York University, New York, NY, and [2]Environmental Health Science, University of Massachusetts, Amherst, MA.

#1057 **Poster Board Number 274**
COMPARATIVE LUNG DEPOSITION OF ACTIVATED CHARCOAL PARTICULATES IN RATS AND DOGS. A. Dumais[1], J. Haruna[1], J. Bienvenu[1], R. Tavcar[1], M. Stoute[1], and *R. Forster*[2]. [1]Study Managment, CiToxLAB North America, Laval, QC, Canada, and [2]Study Managment, CiToxLAB France, Evreaux, France.

#1058 **Poster Board Number 275**
COMPACT HIGH-OUTPUT RESPIRABLE AEROSOL GENERATOR FOR BIOLOGICS. D. B. Yeates. KAER Biotherapeutics, Escondido, CA. Sponsor: *J. Norris*.

#1059 **Poster Board Number 276**
CALCITE AS A PREVENTIVE AGENT FOR COAL WORKERS' PNEUMOCONIOSIS. M. M. Aladdin, X. Huang, Q. Yang, J. Jian, and *L. Chen*. Nelson Institute of Environmental Medicine, New York University School of Medicine, Tuxedo, NY.

#1060 **Poster Board Number 277**
IMPAIRED ABILITY OF NEONATAL RATS TO ALTER EXPRESSION OF ANTIOXIDANT ENZYMES FOLLOWING INHALATION OF ULTRAFINE PARTICLES. J. Chan, S. D. Kodani, D. S. Anderson, and *L. S. Van Winkle*. Center for Health and the Environment, University of California Davis, Davis, CA.

Program Description (Continued)

Abstract #

#1061 **Poster Board Number 278**
TEMPORAL PATTERN OF INFLAMMATION IN NEONATAL AND ADULT RATS FOLLOWING INHALATION OF PARTICULATE MATTER. D. S. Anderson, J. K. Chan, F. Tablin, and *L. S. Van Winkle*. University of California Davis, Davis, CA.

#1062 **Poster Board Number 279**
PULMONARY TOXICITY OF AMINES USED FOR CARBON CAPTURE AND STORAGE. D. Kracko[1], *J. McDonald*[1], *M. Doyle-Eisele*[1], *A. Rohr*[2], and E. Knipping[2]. [1]Lovelace, Albuqueruque, NM, and [2]EPRI, Palo Alto, CA.

#1063 **Poster Board Number 280**
COMPARISON OF HEALTH EFFECTS AND COMPOSITION OF SECONDARY ORGANIC AEROSOLS. *A. Rohr*[2], E. Knipping[2], J. Seinfeld[3], *M. Doyle-Eisele*[1], J. Surratt[4], D. Kracko[1], and *J. McDonald*[1]. [1]Lovelace, Albuqueruque, NM, [2]EPRI, Palo Alto, CA, [3]Cal-Tech, Pasadena, CA, and [4]University of North Carolina, Research Triangle Park, NC.

#1064 **Poster Board Number 281**
CORRELATION BETWEEN COMPUTER-DERIVED OZONE FLUX AND OZONE-INDUCED INJURY IN THE NASAL AIRWAYS OF INFANT RHESUS MONKEYS. *S. A. Carey*[1], G. Garcia[2], *E. M. Postlethwait*[3], *J. R. Harkema*[1], and *J. S. Kimbell*[4]. [1]Michigan State University, East Lansing, MI, [2]Universidade Federal de Minas Gerais, Belo Horizonte, Brazil, [3]University of Alabama at Birmingham, Birmingham, AL, and [4]University of North Carolina at Chapel Hill, Chapel Hill, NC.

#1065 **Poster Board Number 282**
CARDIOVASCULAR TOXICITY OF SEMIVOLATILE CONSTITUENTS OF PARTICULATE MATTER IN AN ATHEROSCLEROTIC MOUSE MODEL. A. J. Keebaugh[1], L. Mendez[1], P. Pakbin[2], Z. Ning[2], G. Gookin[1], C. Sioutas[2], and *M. Kleinman*[1]. [1]University of California Irvine, Irvine, CA, and [2]Environmental Engineering, University of Southern California, Los Angeles, CA.

#1066 **Poster Board Number 283**
PARTICULATE MATTER EXPOSURE MODULATES OXIDATIVE AND INFLAMMATORY PARAMETERS IN SPECIFIC REGIONS OF THE APOE-/- MOUSE BRAIN. *L. Mendez*[1], *A. Campbell*[2], A. Keebaugh[1], and *M. T. Kleinman*[1]. [1]Medicine, University of California, Irvine, Irvine, CA, and [2]Pharmaceutical Sciences, Western University of Health Sciences, Pomona, CA.

#1067 **Poster Board Number 284**
A FOUR-WEEK INHALATION TOXICITY STUDY OF CUPROUS OXIDE IN RATS. *D. T. Kirkpatrick*[1], J. B. Nold[1], *J. T. Weinberg*[1], *R. Danzeisen*[2], and C. Mackie[3]. [1]WIL Research Laboratories, LLC, Ashland, OH, [2]International Copper Assoc., New York, NY, and [3]Regulatory Compliance Ltd., Loanhead, Midlothian, United Kingdom.

Abstract #

#1068 **Poster Board Number 285**
EVALUATION OF INHALATION EXPOSURE TO AEROSOLIZED D-LIMONENE IN SPRAGUE DAWLEY RATS. *D. Vitale*[1], *M. Singal*[1], *D. T. Kirkpatrick*[2], *F. G. Burleson*[3], *G. Adamson*[4], *S. Robison*[5], *J. Rose*[5], and *L. W. Smith*[1]. [1]Research Institute for Fragrance Materials, Inc., Woodcliff Lake, NJ, [2]WIL Research Laboratories, LLC, Ashland, OH, [3]Burleson Research Technologies, Morrisville, NC, [4]Givaudan, East Hanover, NJ, and [5]Procter & Gamble Company, Cincinnati, OH.

#1069 **Poster Board Number 286**
EVALUATION OF INHALATION EXPOSURE TO AEROSOLIZED 2,3-PENTANEDIONE IN SPRAGUE DAWLEY RATS. *M. Singal*[1], *D. Vitale*[1], *D. T. Kirkpatrick*[2], *F. G. Burleson*[3], *G. Adamson*[4], *S. Robison*[5], *J. Rose*[5], and *L. W. Smith*[1]. [1]Research Institute for Fragrance Materials, Inc., Woodcliff Lake, NJ, [2]WIL Research Laboratories, LLC, Ashland, OH, [3]Burleson Research Technologies, Morrisville, NC, [4]Givaudan, East Hanover, NJ, and [5]Procter & Gamble Company, Cincinnati, OH.

#1070 **Poster Board Number 287**
THE ROLE OF CLAUDIN 4 IN EPITHELIAL REPAIR FOLLOWING LUNG INJURY. *K. Sutherland*[1,2], M. Lafemina[1,2], T. Bentley[2], and J. Frank[1,2]. [1]University of California San Francisco, San Francisco, CA, and [2]San Francisco VA Medical Center, San Francisco, CA.

#1071 **Poster Board Number 288**
AN INHALATION TOXICITY TIME-COURSE EVALUATION OF CUPROUS OXIDE IN RATS. *J. T. Weinberg*[1], *R. Danzeisen*[2], C. Mackie[3], *D. T. Kirkpatrick*[1], and J. B. Nold[1]. [1]WIL Research Laboratories, LLC, Ashland, OH, [2]International Copper Assoc., New York, and [3]Regulatory Compliance Ltd., Loanhead, Midlothian, United Kingdom.

#1072 **Poster Board Number 289**
VASCULAR FUNCTION EFFECTS OF ACUTE INHALATION OF CARBON MONOXIDE AND NITRIC OXIDE. J. G. Buntz, S. N. Lucas, and *M. Campen*. Pharmaceutical Sciences, University of New Mexico, Albuquerque, NM.

#1073 **Poster Board Number 290**
ALTERATIONS IN NEURAL TELOMERE SYSTEM FOLLOWING CHRONIC INHALATION EXPOSURE TO COAL COMBUSTION. E. S. Colombo[1], M. L. Paffett[2], *J. D. McDonald*[3], *M. D. Reed*[3], *J. Mauderly*[3], J. Griffith[1], K. Trujillo[1], and *M. Campen*[2]. [1]School of Medicine, University of New Mexico, Albuquerque, NM, [2]Pharmaceutical Sciences, University of New Mexico, Albuquerque, NM, and [3]Toxicology, Lovelace Respiratory Research Institute, Albuquerque, NM.

Program Description (Continued)

Abstract #

Tuesday Morning, March 13
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Ecotoxicology

Chairperson(s): *Louis Trombetta, St. John's University, Queens, NY, and Chris Pritsos, University of Nevada, Reno, NV.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *11:00 AM–12:30 PM*

#1074 **Poster Board Number 301**
THE EFFECTS OF COPPER PYRITHIONE ON DEVELOPING ZEBRA FISH EMBRYOS. *K. M. Almond*, and *L. D. Trombetta*. Pharmaceutical Sciences, St. John's University, Queens, NY.

#1075 **Poster Board Number 302**
DIFFERENCES IN UPTAKE, METABOLISM, AND CLEARANCE OF ATRAZINE AND TAMOXIFEN IN A FISH AND A RAT SPECIES. *L. J. Mills*[1], S. Jayaraman[1], M. M. Simoneau[1], R. E. Gutjahr-Gobell[1], G. E. Zaroogian[1], B. W. Riffle[2], and *S. C. Laws*[2]. [1]Atlantic Ecology Division, US EPA, Narragansett, RI, and [2]Toxicology Assessment Division, US EPA, Research Triangle Park, NC.

#1076 **Poster Board Number 303**
TOXICITY OF LEGACY AND REPLACEMENT FLAME-RETARDANT CHEMICALS ON *DAPHNIA MAGNA*. L. D. Scanlan, E. Lachenauer, X. Lin, and *C. Vulpe*. University of California Berkeley, Berkeley, CA.

#1077 **Poster Board Number 304**
ANXIOLYTIC EFFECTS OF FLUOXETINE ON THE STARTLE RESPONSE AND EXPLORATORY BEHAVIOR OF THE ZEBRAFISH. K. Thornton[1], T. Gallagher[1,2], R. Locker[2], and M. A. Connaughton[1]. [1]Biology, Washington College, Chestertown, MD, and [2]Chemistry, Washington College, Chestertown, MD. Sponsor: *M. Reynolds*.

#1078 **Poster Board Number 305**
FISH TISSUE LEVELS OF FIVE METALS ASSOCIATED WITH CRUDE OIL FROM THE DEEP HORIZON WELL. *A. C. Nichols*, and D. A. Steffy. Physical and Earth Sciences, Jacksonville State University, Jacksonville, AL.

#1079 **Poster Board Number 306**
APPLICATION OF EASILY SYNTHESIZED INTERNAL STANDARDS FOR RAPID QUANTITATIVE ANALYSIS OF CYANOBACTERIAL BLOOMS FOR HEPATOTOXIC MICROCYSTINS BY MATRIX-ASSISTED LASER DESORPTION IONIZATION MASS SPECTROMETRY (MALDI-MS). A. F. Roegner[1], *B. Puschner*[1], M. Pirez[2], B. Brena[2], and G. Gonzalez-Sapienza[2]. [1]Department of Molecular Biosciences, University of California Davis, Davis, CA, and [2]Fac de Química, UdeLaR, Montevideo, Uruguay.

#1080 **Poster Board Number 307**
LOW-LEVEL KETOCONAZOLE INCREASES ESTROGENIC POTENTIAL OF IBUPROFEN IN H295R CELL LINE AND ORYZIAS LATIPES. K. Ji, K. Kwak, and K. Choi. School of Public Health, Seoul National University, Seoul, Republic of Korea. Sponsor: *S. Kim*.

Abstract #

#1081 **Poster Board Number 308**
REPRODUCTIVE AND DEVELOPMENTAL EFFECTS FROM METHYLMERCURY EXPOSURE ON FOUR SUCCESSIVE BREEDING ROUNDS IN HOMING PIGEONS (*COLUMBA LIVIA*). J. K. Moye, C. R. Perez, and *C. Pritsos*. Agriculture, Nutrition and Veterinary Sciences, University of Nevada, Reno, NV.

#1082 **Poster Board Number 309**
CLINICO–HEMATOLOGICAL RESPONSE TO EXPERIMENTAL INFECTION OF *ESCHERICHIA COLI* O157:H7 IN *CLARIAS GARIEPINUS*. *F. Ajani*[1], and V. O. Adetunji[2]. [1]Animal Science & Fisheries Management, Bowen University-Iwo, Iwo, Osun, Nigeria, and [2]Veterinary Public Health&Preventive Medicine, University of Ibadan, Ibadan, Oyo, Nigeria.

#1083 **Poster Board Number 310**
US EPA ECOLOGICAL STRUCTURE-ACTIVITY RELATIONSHIP (ECOSAR) MODEL—VERSION 1.1 RELEASE. K. Mayo-Bean[2], and K. Moran[1]. [1]SRC, Arlington, VA, and [2]OCSPP/OPPT/RAD, US EPA, Washington, DC. Sponsor: *L. Scarano*.

#1084 **Poster Board Number 311**
ORGANOCHLORINE PESTICIDES AND PARASITES IN THE LISA (*MUGIL INCILIS*) COLLECTED IN THE BAY OF CARTAGENA, COLOMBIA, SOUTH AMERICA. B. E. Jaramillo-Colorado[1], *B. J. Arroyo-Salgado*[2], and L. C. Ruiz-Garcés[3]. [1]Chemistry Program, Agrochemical Research Group, Faculty of Exact and Natural Sciences, University of Cartagena, Cartagena, Bolivar, Colombia, [2]Faculty of Medicine, University of Cartagena, Cartagena, Bolivar, Colombia, and [3]Master in Microbiology, Faculty of Medicine, University of Cartagena, Cartagena, Bolivar, Colombia.

#1085 **Poster Board Number 312**
TOXICOLOGICAL EVALUATION STRATEGY PAIR OF COMPLEX MIXTURES BY ALTERNATIVE METHODS. E. de la Peña[3], A. Pillco[1], and M. Hazen[2]. [1]Environmental Mutagenesis, Spanish Research Council, CSIC. c/ Serrano 115 dpdo, Madrid, Spain, [2]Environmental Mutagenesis, Spanish Research Council, Madrid, Spain, and [3]Biology, Universidad Autónoma de Madrid, Madrid, Spain. Sponsor: *G. Font*.

#1086 **Poster Board Number 313**
SYNTHETIC ANALOGS OF OKADAIC ACID AND OTHER DSP TOXINS ELUCIDATE PHOSPHATASE STRUCTURE-ACTIVITY RELATIONSHIPS. *M. Twiner*[1], Y. Pang[2], C. Fang[2], C. O. Miles[3], and C. J. Forsyth[2]. [1]Natural Sciences, University of Michigan, Dearborn, MI, [2]Chemistry, Ohio State University, Columbus, OH, and [3]Norwegian Veterinary Institute, Oslo, Norway.

Program Description (Continued)

Abstract #

#1087 **Poster Board Number 314**
TRANSACTIVATION POTENCIES OF COMMON CORMORANT (*PHALACROCORAX CARBO*) AHR1 AND AHR2 BY DIOXINS AND RELATED COMPOUNDS: AN ALTERNATIVE APPROACH TO WILDLIFE TESTING FOR TOXICOLOGICAL RESEARCH. L. Thuruthippallil[1], E. Kim[2], and *H. Iwata*[1]. [1]Center for Marine Environmental Studies (CMES), Ehime University, Matsuyama, Ehime, Japan, and [2]Department of Life and Nano Pharmaceutical Science and Department of Biology, Kyung Hee University, Seoul, Republic of Korea.

#1088 **Poster Board Number 315**
BINDING AND TRANSACTIVATION OF THE LARGEMOUTH BASS ESTROGEN RECEPTORS BY MODEL COMPOUNDS. *R. E. Weil*[1], P. Hartig[2], M. Cardon[2], *V. Wilson*[2], C. Martyniuk[3], C. Lavelle[1], *D. Barber*[1], and *N. Denslow*[1]. [1]University of Florida, Gainsville, FL, [2]US EPA, ORD, NHEERL, TAD, RTB, Research Triangle Park, NC, and [3]University of New Brunswick, St. John, NB, Canada.

#1089 **Poster Board Number 316**
DIPHALLIA IN *PLICOPURPURA PANSA* (*MOLLUSCA: NEOGASTROPODA*) FEMALES EXPOSED TO TRIBUTYLTIN CHLORIDE. D. Domínguez[1], *I. Medina Díaz*[1], A. Patrón Soberano[2], *A. Rojas García*[1], J. Nieto Navarro[3], V. Jesús Bernardino[1], and M. Robledo Marenco[1]. [1]Laboratorio de Contaminación y Toxicología Ambiental, Universidad Autónoma de Nayarit, Tepic, Nayarit, Mexico, [2]Instituto de Fisiología de la Unam, Universidad Nacional Autónoma de México, DF, Mexico, and [3]Escuela Nacional de Ingeniería Pesquera, Universidad Autónoma de Nayarit, Tepic, Nayarit, Mexico.

#1090 **Poster Board Number 317**
EFFECTS OF PARENTAL AND DIRECT METHYLMERCURY EXPOSURE ON FLIGHT ACTIVITY IN YOUNG HOMING PIGEONS (*COLUMBA LIVIA*). J. K. Moye, C. R. Perez, and *C. Pritsos*. Agriculture, Nutrition and Veterinary Sciences, University of Nevada, Reno, NV.

#1091 **Poster Board Number 318**
EFFECT OF DEEP HORIZON LIGHT CRUDE OIL EMULSION WITH AND WITHOUT THE DISPERSANT, COREXIT, UPON EARLY FISH DEVELOPMENT. K. Kleinow[1], A. Bui[1], L. Thibodeaux[2], R. Xiao[1], *A. Penn*[1], and S. Fritz-Kleinow[1]. [1]Comparative Biomedical Sciences, Louisiana State University, Baton Rouge, LA, and [2]Chemical Engineering, Louisiana State University, Baton Rouge, LA.

#1092 **Poster Board Number 319**
RELATIONSHIPS BETWEEN CYTOCHROME P450 ACTIVITY AND EXPRESSION AND ALLELOCHEMICAL TOXICITY IN BUTTERFLYFISH (*CHAETODON SPP.*) OF DIFFERING FEEDING STRATEGIES. A. Maldonado[1], *R. Lavado*[1], *D. Schlenk*[1], *S. Knutson*[2], *G. Ostrander*[2], *M. Slattery*[3], and *S. Ankisetty*[3]. [1]Environmental Sciences, University of California Riverside, Riverside, CA, [2]University of Hawaii, Honolulu, HI, and [3]University of Mississippi, University, MS.

Abstract #

#1093 **Poster Board Number 320**
HISTOPATHOLOGY AND GENOTOXICITY STUDIES IN *IGUANA IGUANA* FROM A COAL MINING AREA IN COLOMBIA. M. Cabarcas-Montero, M. García-Espiñeira, H. Corrales-Aldana, M. Guerra-Hernandez, L. Cervantes-Ceballos, and *J. Olivero-Verbel*. Environmental and Computational Chemistry Group, University of Cartagena, Cartagena, Bolivar, Colombia.

#1094 **Poster Board Number 321**
NEMATODES AND MERCURY SHARE BIOMAGNIFICATION PATHWAYS IN A FRESHWATER ECOSYSTEM. K. Caballero-Gallardo, and *J. Olivero-Verbel*. Environmental and Computational Chemistry Group, University of Cartagena, Cartagena, Bolivar, Colombia.

#1095 **Poster Board Number 322**
ENGINEERING OF BIOREACTORS UTILIZING PLANT GLYCOSYL HYDROLASES: PROTEIN EVOLUTION BY TADSIR DNA SHUFFLING AND FRAGMENT DOPING DNA REASSEMBLY. *L. K. Davis*, and *R. M. Uppu*. Environmental Toxicology, Southern University, Baton Rouge, LA.

Tuesday Morning, March 13
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Food Safety and Nutrition II

Chairperson(s): *Ramesh Gupta, Murray State University, Hopkinsville, KY.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *9:00 AM–11:00 AM*

#1096 **Poster Board Number 329**
EFFECTS OF CHRONIC ACRYLAMIDE EXPOSURE ON DIGESTIVE ORGANS IN HAMSTERS. T. Imai[1], T. Hayakawa[2], and *A. Nishikawa*[3]. [1]Central Animal Division, National Cancer Center Research Institute, Tokyo, Japan, [2]Division of Cancer Prevention Research, National Cancer Center Research Institute, Tokyo, Japan, and [3]Biological Safety Research Center, National Institute of Health Sciences, Tokyo, Japan.

#1097 **Poster Board Number 330**
COMPARING EMESIS TOXICITY AND BIOAVAILABILITY BETWEEN DON AND ACETYL-DONS. *Y. Sugita-Konishi*[1,3], K. Toya[2], T. Kadota[3], H. Furusawa[1], T. Yoshinari[1], T. Ohnishi[1], and S. Itoh[2]. [1]Division of Microbiology, National Institute of Health Sciences, Tokyo, Japan, [2]Veterinary Sciences, Azabu University, Kanagawa, Japan, and [3]Gifu University, Gifu, Japan.

#1098 **Poster Board Number 331**
RELATION OF 8-KETOTRICHOTHECENE STRUCTURE TO ANOREXIC RESPONSE IN THE MOUSE. W. Wu[1], *B. Flannery*[1,2], *W. Maiko*[4], *S. Yoshiko*[4], and *J. Pestka*[1,2,3]. [1]Food Science and Human Nutrition, Michigan State University, East Lansing, MI, [2]Center for Integrative Toxicology, Michigan State University, East Lansing, MI, [3]Microbiology & Molecular Genetics, Michigan State University, East Lansing, MI, and [4]National Institute of Health Sciences, Tokyo, Japan.

Program Description (Continued)

Abstract #

#1099 **Poster Board Number 332**
PRESENCE OF EMERGING FUSARIUM MYCOTOXINS, BEAUVERICIN AND ENNIATINS, IN PASTA BY LIQUID CHROMATOGRAPHY COUPLED TO TANDEM MASS SPECTROMETRY. *G. Font*[1], C. Juan[1,2], A. Ritieni[2], and J. Mañes[1]. [1]Preventive Medicine, University of Valencia, Burjassot, Valencia, Spain, and [2]Food Science, University of Naples Federico II, Portici, Italy.

#1100 **Poster Board Number 333**
METALS (PB, CD, AL, B, BA, CR, CO, NI, LI, MO) IN MENTHA TEA. C. Rubio[1], J. Lucas[1], A. Hardisson[1], A. Gutiérrez[1], D. González[1], and *A. R. Anadón*[2]. [1]Toxicología, Universidad de La Laguna, La Laguna, Santa Cruz de Tenerife, Spain, and [2]Toxicología y Farmacología, Universidad Complutense de Madrid, Madrid, Spain.

#1101 **Poster Board Number 334**
LONG-TERM CONSUMPTION OF CATECHIN-RICH BEVERAGE HAS NO IMPACT ON LIVER FUNCTION. M. Takeshita[1], K. Kamachi[2], M. Yatsuda[2], C. Kasuga[2], M. Tsujitani[2], C. Kato[2], M. Katashima[1], M. Ai[3], and A. Tanaka[2]. [1]Health Care Food Research Laboratories, Kao Corporation, Tokyo, Japan, [2]Nutrition Clinic, Kagawa Nutrition University, Tokyo, Japan, and [3]Life Science and Bioethics Research Center, Tokyo Medical and Dental University, Tokyo, Japan. Sponsor: *M. Soni*.

#1102 **Poster Board Number 335**
HEXABROMOCYCLODODECANE (HBCD) STEREOISOMERS IN US FOOD AND ADULT DAILY DIETARY INTAKE. *L. S. Birnbaum*[1], *A. Schecter*[2], *D. T. Szabo*[3], *J. A. Colacino*[5], *T. Gent*[1], *N. Bass*[1], *O. Paepke*[4], *L. S. Hynan*[6], *T. R. Harris*[1], and *S. Malla*[1]. [1]National Cancer Institute, Research Triangle Park, NC, [2]University of Texas School of Public Health, Dallas, TX, [3]US EPA, National Center for Environmental Assessment, Arlington, VA, [4]3Eurofins Gfa, Hamburg, Germany, [5]University of Michigan School of Public Health, Ann Arbor, MI, and [6]Statistics Section, University of Texas Southwestern Medical Center, Dallas, TX.

#1103 **Poster Board Number 336**
LC-MS/MS DETERMINATION AND OCCURRENCE OF FUSARIUM MYCOTOXINS ENNIATINS, BEAUVERICIN AND FUSAPROLIFERIN IN PASTA. E. Ferrer, B. Houda, A. B. Serrano, and *G. Font*. Preventive Medicine, University of Valencia, Burjassot, Valencia, Spain.

#1104 **Poster Board Number 337**
ASSESSMENT OF THE SURFACE STABILITY AND AFLATOXIN SORPTION CAPACITY OF MONTMORILLONITE CLAY FOLLOWING FERMENTATION AND HEAT TREATMENT. S. E. Elmore, *N. J. Mitchell*, *A. Marroquin-Cardona*, K. Brown, T. Mays, *K. Zychowski*, and *T. D. Phillips*. Veterinary Integrative Bioscience, Texas A&M University, College Station, TX.

Abstract #

#1105 **Poster Board Number 338**
EVIDENCE FOR FUMONISIN INHIBITION OF CERAMIDE SYNTHASE IN HUMANS. *R. T. Riley*[1], J. L. Showker[1], *K. A. Voss*[1], *J. Gelineau van Waes*[2], J. R. Maddox[2], S. G. Gregory[3], A. E. Ashley-Koch[3], and O. Torres de Matute[4]. [1]USDA-ARS, Athens, GA, [2]Creighton University School of Medicine, Omaha, NE, [3]Duke University Medical Center, Durham, NC, and [4]Centro de Investigaciones en Nutricion y Salud, Guatemala City, Guatemala.

#1106 **Poster Board Number 339**
AGE AND GENDER ARE SUSCEPTIBILITY FACTORS IN DEOXYNIVALENOL-INDUCED ANOREXIA. E. S. Clark[1,2], *B. M. Flannery*[1,2], and *J. J. Pestka*[1,2,3]. [1]Food Science and Human Nutrition, Michigan State University, East Lansing, MI, [2]Center for Integrative Toxicology, Michigan State University, East Lansing, MI, and [3]Microbiology and Molecular Genetics, Michigan State University, East Lansing, MI.

#1107 **Poster Board Number 340**
CONSUMPTION OF FOLATE DEFICIENT DIET DID NOT INCREASE NEURAL TUBE DEFECTS IN LM/BC MICE EXPOSED TO FUMONISIN B_1 *K. A. Voss*[1], *R. T. Riley*[1], and *J. B. Gelineau-van Waes*[2]. [1]Toxicology & Mycotoxin Research Unit, USDA, ARS, Athens, GA, and [2]Department of Pharmacology, Creighton University School of Medicine, Omaha, NE.

#1108 **Poster Board Number 341**
SAFETY EVALUATION OF *AGARICUS SUBRUFESCENS* SP AND THEIR PRODUCTS OF THERARPEUTIC INTEREST OR FOR DISEASE PREVENTION. *E. E. Creppy*[1], S. Moukha[1,2], and C. Ferandon[1]. [1]Toxicology, University Bordeaux 2, Bordeaux, France, and [2]MycSa, INRA, Villenave d'Ornon, France.

#1109 **Poster Board Number 342**
DEOXYNIVALENOL (VOMITOXIN) INDUCES CHOLECYSTOKININ (CCK) AND GLUCAGON-LIKE PEPTIDE-1 (GLP-1) RELEASE FROM ENTEROENDOCRINE STC-1 CELLS VIA A TASTE RECEPTOR (TASR)-MEDIATED SIGNAL TRANSDUCTION PATHWAY. H. Zhou[1], and *J. Pestka*[1,2,3]. [1]Food Science & Human Nutrition, Michigan State University, East Lansing, MI, [2]Microbiology & Molecular Genetics, Michigan State University, East Lansing, MI, and [3]Center for Integrative Toxicology, Michigan State University, East Lansing, MI.

#1110 **Poster Board Number 343**
A DIETARY EMBRYOTOXICITY/FETAL DEVELOPMENT STUDY OF R,R-MONATIN SALT, A HIGH-POTENCY SWEETENER, IN SPRAGUE DAWLEY RATS. J. Hlywka[1], *W. A. Brathwaite*[1], *A. I. Nikiforov*[2], M. O. Rihner[2], and *E. D. Sloter*[3]. [1]Cargill Incorporated, Wayzata, MN, [2]Toxicology Regulatory Services, Charlottesville, VA, and [3]WIL Research Laboratories, LLC, Ashland, OH.

Program Description (Continued)

Abstract #

#1111 **Poster Board Number 344**
SAFETY ASSESSMENT OF GENETICALLY MODIFIED, HERBICIDE-TOLERANT CANOLA DP-Ø73496-4: 13-WEEK DIETARY STUDY IN RATS. *L. M. Appenzeller*[1], P. Mukerji[2], G. P. Sykes[2], D. Hoban[2], and *B. Delaney*[1]. [1]DuPont Agricultural Biotechnology, Pioneer Hi-Bred International, Inc., Ankeny, IA, and [2]DuPont Haskell Global Centers for Health and Environmental Sciences, Newark, DE.

#1112 **Poster Board Number 345**
NEONATAL PIGLETS AS AN ANIMAL MODEL TO EVALUATE SAFETY OF NEW INGREDIENTS IN INFANT FORMULA. *B. A. Thorsrud*[1], A. D. Aulbach[2], and *A. S. Faqi*[1]. [1]Developmental and Reproductive Toxicology, MPI Research, Mattawan, MI, and [2]Clinical Pathology, MPI Research, Mattawan, MI.

#1113 **Poster Board Number 346**
RESPONSES OF TILAPIA TO CONTAMINATED DIETS SUPPLEMENTED WITH NOVASIL. *K. Zychowski*[1], A. Peredo[2], A. Buentello[2], M. Hume[3], D. Gatlin[2], *A. Marroquin-Cardona*[1], S. Elmore[1], *N. Mitchell*[1], K. Brown[1], T. Mays[1], and *T. D. Phillips*[1]. [1]Veterinary Integrative Biosciences, Texas A&M University, College Station, TX, [2]Wildlife and Fisheries, Texas A&M University, College Station, TX, and [3]United States Department of Agriculture, Southern Plains Agricultural Research Center, College Station, TX.

#1114 **Poster Board Number 347**
SAFETY OF CALCIUM AND SODIUM BENTONITE CLAYS AS ENTEROSORBENTS FOR AFLATOXIN. *A. G. Marroquin-Cardona*[1], Y. Deng[2], J. F. Garcia-Mazcorro[3], *N. M. Johnson*[1], *N. J. Mitchell*[1], L. Tang[4], *J. Wang*[4], and *T. D. Phillips*[1]. [1]Veterinary Integrative Biosciences, Texas A&M University, College Station, TX, [2]Soil and Crop Sciences Department, Texas A&M University, College Station, TX, [3]Gastrointestinal Laboratory, Texas A&M University, College Station, TX, and [4]Environmental Health Sciences Department, University of Georgia, Athens, GA.

#1115 **Poster Board Number 348**
ETHANOL PRODUCTION FROM FUMONISIN-CONTAMINATED MAIZE GRAIN. *E. Bilsten*, and G. Munkvold. Plant Pathology, Iowa State University, Ames, IA.

#1116 **Poster Board Number 349**
BORIC ACID INDUCES ER STRESS IN DU145 PROSTATE CANCER CELLS. *S. Kobylewski*[1], *K. Yamada*[1], *K. Henderson*[1], and C. Eckhert[2]. [1]Molecular Toxicology, University of California Los Angeles, Los Angeles, CA, and [2]Environmental Health Sciences, University of California Los Angeles, Los Angeles, CA.

#1117 **Poster Board Number 350**
PROCOAGULANT AND PROTHROMBOTIC EFFECTS OF HERBAL MEDICINE, *DIPSACUS ASPER,* ON HUMAN PLATELETS. S. Kang, J. Song, K. Lim, and *J. Chung*. Seoul National University, Seoul, Republic of Korea.

Abstract #

#1118 **Poster Board Number 351**
SAFETY AND TOXICOLOGICAL EVALUATION OF A NOVEL, WATER-SOLUBLE UNDENATURED TYPE II COLLAGEN (NATUC-II™). *M. Bagchi*[1], O. Yoshinari[3], H. Moriyama[2], Y. Shiojima[3], and *P. A. Marone*[4]. [1]R&D, NutriToday LLC, Mississauga, ON, Canada, [2]Showa Pharmaceutical University, Tokyo, Japan, [3]Rusyendo & Co, Tokyo, Japan, and [4]Eurofins/Product Safety Labs, New Jersey.

Tuesday Morning, March 13
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Toxicology Education and Policy

Chairperson(s): *Sue Ford, St. John's University, Jamaica, NY, and Teresa Dodd-Butera, California State University San Bernardino. San Bernadino, CA.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *11:00 AM–12:30 PM*

#1119 **Poster Board Number 356**
REVAMPING THE LAB EXPERIENCE IN A TOXICOLOGY COURSE. *M. J. Pomeroy-Black*. Biology, LaGrange College, LaGrange, GA.

#1120 **Poster Board Number 357**
COMMUNITY RESEARCH RALLY BRINGS TOXICOLOGY EDUCATION TO A RURAL COMMUNITY IMPACTED BY ASBESTOS EXPOSURES. *J. C. Pfau*[1], *K. Serve*[1], K. Rowse[2], and B. Black[2]. [1]Biological Sciences, Idaho State University, Pocatello, ID, and [2]Center for Asbestos Related Diseases, Libby, MT.

#1121 **Poster Board Number 358**
EUROPEAN MODULAR EDUCATION AND TRAINING PROGRAM IN SAFETY SCIENCE FOR MEDICINES. C. Wilhelm[1], *P. Detilleux*[2], *L. A. Cornes*[3], *J. A. Piner*[4], and *D. R. Dietrich*[1]. [1]Human & Environmental Toxicology, University of Konstanz, Konstanz, Germany, [2]R&D, Sanofi, Vitry-Sur-Seine, Paris, France, [3]R&D – Alderley Park, AstraZeneca, Macclesfield, United Kingdom, and [4]R&D, GlaxoSmithKline, Ware, United Kingdom.

#1122 **Poster Board Number 359**
USE OF BISPHENOL A IN LABORATORY-BASED UNDERGRADUATE LEARNING EXPERIENCES. M. E. Kirkpatrick. Psychology and Neuroscience, Wheaton College, Norton, MA. Sponsor: *T. Dodd-Butera*.

#1123 **Poster Board Number 360**
COLLECTION OF WEB RESOURCES FOR THE TEACHING OF TOXICOLOGY. *M. Reynolds*. Biology, Washington College, Chestertown, MD.

#1124 **Poster Board Number 361**
DEVELOPMENT OF A CRITICAL THINKING TOOL FOR UNDERGRADUATES RELATED TO ONLINE DATABASE SEARCHES. *S. M. Ford*. College of Pharmacy & Allied Health Professions, St. John's University, Jamaica, NY.

Program Description (Continued)

Abstract #

#1125 **Poster Board Number 362**
TOXICOLOGY AND PUBLIC HEALTH: A CONCEPTUAL FRAMEWORK FOR POLICY UTILIZING A LOGIC MODEL. *T. Dodd-Butera*. Nursing, California State University San Bernardino, College of Natural Sciences, San Bernardino, CA.

#1126 **Poster Board Number 363**
JACKSONVILLE ASH SITE TOXICOLOGY TRAINING TO IMPROVE KNOWLEDGE OF THE LAY COMMUNITY. *A. Becker*[1], S. Suther[1], G. Pawlowicz[2], F. Close[1], K. Haire[1], C. Michael[1], G. Tucker[2], C. Harris[1], and A. Hilliard[2]. [1]Institute of Public Health, Florida A&M University, Tallahassee, FL, and [2]Environmental Health, Duval County Health Department, Jacksonville, FL.

#1127 **Poster Board Number 364**
EXPLORING TOXICOLOGY: TEACHING HOW BASIC TOXICOLOGY IS PRESENT IN EVERYDAY LIFE. *K. Blanke*, *B. Johnson*, and *E. Shanle*. Molecular & Environmental Toxicology Center, University of Wisconsin-Madison, Madison, WI.

#1128 **Poster Board Number 365**
RESOURCES FOR TOXICOLOGY K–12 EDUCATION OUTREACH: UPDATING THE SOT K–12 WEBSITE. *A. Slitt*[1], *T. Fick*[2], *M. R. Gwinn*[3], and *J. Matheson*[4]. [1]University of Rhode Island, Kingston, RI, [2]3M, Saint Paul, MN, [3]Office of Research & Development, US EPA, Washington, DC, and [4]Consumer Product Safety Commission, Bethesda, MD.

#1129 **Poster Board Number 366**
TEACHING TOXICOLOGY TO TEENS IN TUCSON. M. Lindsey. Southwest Environmental Health Sciences Center, University of Arizona, Tucson, AZ. Sponsor: *S. Lau*.

#1130 **Poster Board Number 367**
TOXICOLOGY K-12 EDUCATION OUTREACH: AN UNDERUTILIZED OPPORTUNITY WITH ENORMOUS POTENTIAL BENEFITS. *M. R. Gwinn*[1], *R. Ponce*[2], *C. Sulentic*[3], *T. Wang*[4], and *J. Matheson*[5]. [1]Office of Research & Development, US EPA, Washington, DC, [2]Amgen, Seattle, WA, [3]Wright State University, Dayton, OH, [4]Novartis, Emeryville, CA, and [5]Consumer Product Safety Commission, Bethesda, MD.

#1131 **Poster Board Number 368**
DOES INSTITUTIONAL SIZE MATTER? EXAMINING THE INFLUENCE OF ENVIRONMENTAL HEALTH ACCREDITATION ON UNDERGRADUATE TOXICOLOGY CURRICULA. *B. W. Brooks*. Baylor University, Waco, TX.

#1132 **Poster Board Number 369**
THE US NATIONAL LIBRARY OF MEDICINE'S EMERGENCY RESPONSE AND EMERGENCY MEDICAL MANAGEMENT TOOLS: EDUCATIONAL AND TRAINING COMPONENTS, AND OTHER CONTENTS. *P. J. Hakkinen*[1], F. Chang[1], J. Pakiam[1], G. Fonger[1], O. Kroner[2], A. Wullenweber[2], and *A. Maier*[2]. [1]National Library of Medicine, National Institutes of Health, Bethesda, MD, and [2]Toxicology Excellence For Risk Assessment, Cincinnati, OH.

Abstract #

#1133 **Poster Board Number 370**
INTEGRATING TOXICOLOGY AND ENVIRONMENTAL HEALTH INTO BASIC AND ADVANCED NURSING EDUCATION. B. Sattler. Environmental Health Education Center, University of Maryland School of Nursing, Baltimore, MD. Sponsor: *T. Dodd-Butera*.

#1134 **Poster Board Number 371**
OUTREACH AND EDUCATION PROGRAMS DESIGNED TO IMPROVE THE DIAGNOSIS, TREATMENT, AND REPORTING OF PESTICIDE-RELATED ILLNESSES IN CALIFORNIA. *C. B. Salocks*, J. Wisniewski, W. Ngai, and *A. M. Fan*. Office of Environmental Health Hazard Assessment, California EPA, Sacramento and Oakland, CA.

#1135 **Poster Board Number 372**
RISK AND DECISION MAKING: A WORKSHOP FOR ENVIRONMENTAL PROFESSIONALS. *M. Wade*, *K. C. Day*, *E. Sciullo*, *B. Davis*, and *T. Behrsing*. Department of Toxic Substances Control, Cal EPA, Sacramento, CA.

Tuesday Morning, March 13
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Characterizing Toxic Modes of Action and Pathways to Toxicity

Poster Session: Pharmaceutical Safety Assessment: Methods and Mechanisms

Chairperson(s): *Clay Scott, AstraZeneca, Waltham, MA.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *9:00 AM–11:00 AM*

#1136 **Poster Board Number 401**
CONTRIBUTION OF PHYSICOCHEMICAL PROPERTIES TO AUTOPHAGY PERTURBATION. R. Ashoor, *B. A. Jessen*, and *S. Lu*. Pfizer Inc., San Diego, CA.

#1137 **Poster Board Number 402**
ASSESSING SELECTIVITY OF COVALENT IRREVERSIBLE B-LACTAMS AND B-LACTAMASE INHIBITORS USING ACTIVITY-BASED PROTEIN PROFILING. *C. W. Scott*[1], D. Ehmann[2], *A. Kimzey*[1], and *Y. Dragan*[1]. [1]Safety Assessment, AstraZeneca Pharmaceuticals, Waltham, MA, and [2]Infection Bioscience, AstraZeneca Pharmaceuticals, Waltham, MA.

#1138 **Poster Board Number 403**
AUTOMATED IMAGE-BASED ACTION POTENTIAL AND CALCIUM TRANSIENT ANALYSIS FOR CARDIAC SAFETY ASSESSMENT. *F. Cerignoli*[1,2], R. Whittaker[2], P. McDonough[2], R. Ingermanson[2], M. Mercola[1], and J. H. Price[1,2]. [1]Sanford-Burnham Medical Research Institute, La Jolla, CA, and [2]Vala Sciences Inc., La Jolla, CA.

Program Description (Continued)

Abstract #

#1139 **Poster Board Number 404**
IDENTIFICATION OF DRUGS CAUSING CLINICALLY SERIOUS DRUG-INDUCED LIVER INJURY (DILI) USING *IN VITRO* APPROACH WITH PRIMARY HUMAN HEPATOCYTES. J. Zhang[1], *D. Utkarsh*[2], *M. Chen*[1], U. Laforge[2], H. Fang[3], *A. P. Li*[2], and *W. Tong*[1]. [1]NCTR/FDA, Jefferson, AR, [2]APSciences Inc., Columbia, MD, and [3]Z-Tech, an ICF International Company at NCTR, Jefferson, AR.

#1140 **Poster Board Number 405**
A NOVEL HIGH-CONTENT SCREENING ASSAY TO PREDICT HUMAN DRUG-INDUCED LIVER INJURY. M. V. Persson, A. F. Løye, *T. Mow*, and J. J. Hornberg. Exploratory Toxicology, H. Lundbeck A/S, Valby Copenhagen, Denmark.

#1141 **Poster Board Number 406**
ASSESSMENT OF TIME-KINETICS OF ENDOTHELIAL BARRIER INJURY BY IMPEDANCE TECHNOLOGY. S. Kustermann[1], M. Skubatz[1], T. Manigold[1], C. Ploix[1], H. Hinton[1], M. Schmitz[2], M. Watzele[2], *T. Singer*[1], *T. Weiser*[1], L. Suter[1], and *A. B. Roth*[1]. [1]Hoffmann-La Roche Ltd., Basel, Switzerland, and [2]Roche Diagnostics GmbH, Penzberg, Germany.

#1142 **Poster Board Number 407**
PREDICTING DRUG-INDUCED HEPATOTOXICITY IN ZEBRAFISH LARVAE: UNDERSTANDING THE COMPLEXITY. N. Mesens[1], A. Crawford[2], A. Menke[3], C. Esguerra[2], F. Van Goethem[1], A. Wolterbeek[3], P. De Witte[2], and J. Van Gompel[1]. [1]Drug Safety Sciences, Janssen Pharmaceutical Companies of Johnson & Johnson, Beerse, Belgium, [2]Laboratory for Pharmaceutical and Biological Sciences, Katholic University of Leuven, Leuven, Belgium, and [3]Reproductive Toxicology, TNO Triskelion bv, Zeist, Netherlands. Sponsor: *P. Guzzie-Peck*.

#1143 **Poster Board Number 408**
INVESTIGATION INTO THE ROLE OF OCTN2 IN DRUG-INDUCED TOXICITY. P. J. Calcraft, G. Smith, S. Stahl, and *J. Sidaway*. Molecular Toxicology, AstraZenenca, Macclesfield, Cheshire, United Kingdom.

#1144 **Poster Board Number 409**
IDENTIFICATION OF CARDIAC EXPRESSED TRANSPORTERS USING NEXT GENERATION SEQUENCING OF THE RAT TRANSCRIPTOME. R. Jackson, P. J. Calcraft, A. Pointon, H. Carr, S. Stahl, and *J. Sidaway*. AstraZeneca, Macclesfield, United Kingdom.

#1145 **Poster Board Number 410**
DUAL MONITORING OF MITOCHONDRIAL MEMBRANE POTENTIAL AND MITOCHONDRIAL MEMBRANE PERMEABILITY TRANSITION AS A TOOL FOR DISCERNING MECHANISMS OF DRUG-INDUCED MITOCHONDRIAL TOXICITY. *C. Hu*, *K. French*, and *K. Frazier*. Safety Assessment, GlaxoSmithKline, King of Prussia, PA.

Abstract #

#1146 **Poster Board Number 411**
ESTABLISHMENT OF *IN VITRO* MODELS FOR THE PRECLINICAL SAFETY EVALUATION OF THERAPEUTIC SIRNA. C. Bertinetti-Lapatki, C. Ploix, M. Ravon, L. Suter, *T. Weiser*, U. Certa, *T. Singer*, and H. Hinton. Nonclinical Safety, Hoffmann-La Roche, Basel, Switzerland.

#1147 **Poster Board Number 412**
ASSESSMENT OF SIRNA OFF-TARGET EFFECTS: A PRECLINICAL SAFETY TOOL FOR THE DEVELOPMENT OF RNAI THERAPEUTICS. M. Ravon, M. Berrera, M. Ebeling, *T. Weiser*, *T. Singer*, and U. Certa. Hoffmann-La Roche, Basel, Switzerland.

#1148 **Poster Board Number 413**
ROBUSTNESS AND TRANSFERABILITY STUDY OF A FLOW CYTOMETRIC 96-WELL MICROPLATE BASED *IN VITRO* MICRONUCLEUS ASSAY. M. Tate[1], S. Bryce[3], S. Avlasevich[3], *S. Dertinger*[3], M. De Boeck[4], F. Van Goethem[4], A. Elhajouji[5], N. Billinton[1], and *R. Walmsley*[1,2]. [1]Gentronix Ltd., Manchester, United Kingdom, [2]Faculty of Life Sciences, University of Manchester, Manchester, United Kingdom, [3]Litron Labs, Rochester, NY, [4]Johnson & Johnson, Beerse, Belgium, and [5]Novartis Pharma, Basel, Switzerland.

#1149 **Poster Board Number 414**
PREDICTIVITY OF CARDIOMYOCYTE MULTIELECTRODE ARRAY (MEA) ASSAYS FOR *IN VIVO* CARDIOVASCULAR OUTCOMES VERSUS STANDARD SAFETY ASSAYS: THREE EXAMPLES. H. Shi, J. Kwagh, G. Lewen, M. Huang, J. Zhu, L. Sun, *O. Flint*, and P. Levesque. Discovery Toxicology, Bristol-Myers Squibb, Princeton, NJ.

#1150 **Poster Board Number 415**
DEVELOPMENT AND VALIDATION OF AN *IN VITRO* HIPPOCAMPAL NEURONAL ASSAY TO PREDICT SEIZURE LIABILITY USING MULTIELECTRODE ARRAYS (MEAS). *O. Flint*, L. Sun, J. Kwagh, E. Burnett, M. Frenkel, and P. Levesque. Discovery Toxicology, Bristol-Myers Squibb, Princeton, NJ.

#1151 **Poster Board Number 416**
GENE EXPRESSION PROFILING OF TRANSPORTERS IN CELL LINES AND ITS IMPLICATIONS IN DRUG-INDUCED TOXICITY. *X. Zhang*[1], S. Louise-May[1], V. Bonato[2], B. Hirakawa[3], *M. Pletcher*[4], and *K. Leach*[1]. [1]Compound Safety Prediction, Pfizer Inc., Groton, CT, [2]Biostatistics, Pfizer Global Research and Development, Groton, CT, [3]Drug Safety Research and Development, Pfizer Global Research and Development, La Jolla, CA, and [4]Orphan Drug Disorders, Pfizer Global Research and Development, Cambridge, MA.

#1152 **Poster Board Number 417**
EVALUATION OF A DIVERSE SET OF MARKETED DRUGS FOR THEIR PROPENSITY TO DISRUPT MITOCHONDRIAL FUNCTION. P. J. Acton, Y. He, *P. Narayanan*, and J. W. Lawrence. Comparative Biology and Safety Sciences, Amgen, Thousand Oaks, CA.

Program Description (Continued)

Abstract #

#1153 **Poster Board Number 418**
STRATEGIES TO IDENTIFY THE POTENTIAL SAFETY LIABILITIES OF COVALENT, IRREVERSIBLE INHIBITORS. R. T. Naven, S. Kantasaria, S. N. Nadanaciva, T. Schroeter, *N. Greene*, and *K. Leach*. Compound Safety Prediction Group, Pfizer Inc., Groton, CT.

#1154 **Poster Board Number 419**
GAMMA-SECRETASE MEDIATED HEPATOTOXICITY: USING MULTIPARAMETER *IN VITRO* METHODS TO ASSESS TOXICITY AND INTERPRET MECHANISM. J. Senn, J. Lane, T. Sullivan, M. Carioto, and *J. Clarke*. Biogen Idec, Cambridge, MA.

#1155 **Poster Board Number 420**
NONINVASIVE REAL-TIME MEASUREMENT OF OXIDATIVE METABOLISM *IN VITRO* ALLOWS SENSITIVE DYNAMIC READOUT OF DRUG RESPONSE. W. Inman[1,2], M. Weissinger[1], *I. Rusyn*[4], *S. R. Tannenbaum*[1,3], I. W. Hunter[2], and L. G. Griffith[1,2]. [1]Biological Engineering, Massachusetts Institute of Technology, Cambridge, MA, [2]Mechanical Engineering, Massachusetts Institute of Technology, Cambridge, MA, [3]Chemical Engineering, Massachusetts Institute of Technology, Cambridge, MA, and [4]Environmental Sciences and Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC.

#1156 **Poster Board Number 421**
NEXT GENERATION DEL ASSAY: CYTOTOXICITY AND GENOTOXICITY DETECTION WITH DEL-XG. *L. Rivina*[1], L. Parfenova[1], and *R. H. Schiestl*[1,2,3]. [1]Environmental Health Sciences, University of California Los Angeles, Los Angeles, CA, [2]Pathology, University of California Los Angeles, Los Angeles, CA, and [3]Radiation Oncology, University of California Los Angeles, Los Angeles, CA.

#1157 **Poster Board Number 422**
ASSESSMENT OF HERG CHANNEL FUNCTION USING STEM CELL-DERIVED CARDIOMYOCYTES. X. Zhang, W. Ouyang, B. Xi, *C. Jin*, X. Wang, X. Xu, and Y. A. Abassi. ACEA Life Technologies, ACEA Biosciences, San Diego, CA.

#1158 **Poster Board Number 423**
BIOENGINEERED CELLULAR MICROENVIRONMENTS FOR DEVELOPMENT OF *IN VITRO* MODELS OF HUMAN DISEASE AND TOXICITY. S. Sheehy[1], D. Coon[1], *A. Bahinski*[2], and K. Parker[1,2]. [1]Harvard School of Engineering and Applied Sciences, Boston, MA, and [2]Wyss Institute for Biologically Inspired Engineering at Harvard University, Boston, MA.

#1159 **Poster Board Number 424**
DEVELOPMENT OF A CELLULAR KINASE ASSAY PANEL FOR USE IN KINASE INHIBITOR SELECTIVITY ASSESSMENT. R. Uzgare[1], J. Guzova[2], A. Solomon[1], C. Horton[1], T. Hundley[1], V. Wong[3], H. Chen[1], and *K. Leach*[4]. [1]Caliper Discovery Alliances and Services, Hanover, MD, [2]Drug Safety Research and Development, Pfizer, Inc., Cambridge, MA, [3]External Research Solutions, Pfizer, Inc., Groton, CT, and [4]Compound Safety Prediction Group, Pfizer, Inc., Groton, CT.

Abstract #

#1160 **Poster Board Number 425**
UNBIASED APPROACH FOR THE DOSE-RESPONSE ANALYSIS OF SIGNAL TRANSDUCTION PATHWAYS. *H. N. Williams*, J. Vrana, C. Kinzer, and *J. Boyd*. Chemistry, West Virginia University, Morgantown, WV.

#1161 **Poster Board Number 426**
ESTIMATING TEMPORAL BIFURCATIONS ASSOCIATED WITH CELLULAR SIGNAL TRANSDUCTION. J. A. Vrana, *H. N. Williams*, and *J. W. Boyd*. Chemistry, West Virginia University, Morgantown, WV.

#1162 **Poster Board Number 427**
IDENTIFICATION OF EARLY SIGNAL TRANSDUCTION RESPONSES PREDICTIVE OF SURVIVAL. *J. Boyd*, *H. N. Williams*, J. A. Vrana, and *X. Gao*. Chemistry, West Virginia University, Morgantown, WV.

#1163 **Poster Board Number 428**
MECHANISTIC INVESTIGATION OF B-RAF INHIBITOR-INDUCED HYPERPLASIA AND DEVELOPMENT OF A 3D HUMAN *IN VITRO* MODEL. L. Marroquin, W. Evering, S. Khoh-Reiter, J. Lee, V. Torti, A. John-Baptiste, *B. Jessen*, and *W. Hu*. Drug Research and Development, Pfizer Inc., San Diego, CA.

#1164 **Poster Board Number 429**
KINASE ACTIVITY PROFILING IN INVESTIGATIVE TOXICOLOGY. P. Lord[1], L. Houkes[1], J. Oosterwijk-Wakka[1], E. Oosterwijk[1], R. Ruijtenbeek[1], and *M. van Duursen*[2]. [1]PamGene International, 's-Hertogenbosch, Netherlands, and [2]University of Utrecht, Utrecht, Netherlands.

#1165 **Poster Board Number 430**
LYSOSOME FUNCTION IMPAIRMENT AS A POTENTIAL MECHANISM OF RETINOPATHY. S. Khoh-Reiter[1], S. Sokolowski[2], *B. Jessen*[1], and *S. Lu*[1]. [1]Pfizer Inc., San Diego, CA, and [2]DSRD, Pfizer Inc., Groton, CT.

#1166 **Poster Board Number 431**
NEW MODEL OF NONCLINICAL CARDIAC RISK ASSESSMENT. J. W. Kramer[1], G. J. Myatt[2], C. Obejero-Paz[1], A. Breuning-Wright[1], and *A. M. Brown*[1]. [1]ChanTest Corp., Cleveland, OH, and [2]Leadscope Inc., Columbus, OH.

#1167 **Poster Board Number 432**
EVALUATION OF CELLULAR IMPEDANCE ASSAYS FOR DRUG SCREENING IN CARDIOMYOCYTES. *M. Peters*, R. Ochalski, *C. W. Scott*, and *Y. P. Dragan*. Safety Assessment, AstraZeneca, Waltham, MA.

#1168 **Poster Board Number 433**
BEAT RATE ANALYSIS IMPROVES THE PREDICTION OF *IN VIVO* ECG ALTERATIONS BY THE IPSC-DERIVED HUMAN CARDIOMYOCYTES-BASED PROARRHYTHMIC MODEL. *L. Guo*[1], R. Kemper[1], R. Abrams[1], *T. Singer*[2,1], *T. Weiser*[2,1], E. Chiao[1], and *K. L. Kolaja*[1,2]. [1]Nonclinical Safety, Hoffmann-LaRoche, Nutley, NJ, and [2]Nonclinical Safety, Hoffmann-La Roche, Basel, Switzerland.

Program Description (Continued)

Abstract #

#1169 **Poster Board Number 434**
HEMODYNAMIC FLOW AND HETEROTYPIC CELL COMMUNICATION ARE NECESSARY FOR PREDICTING HUMAN VASCULAR DRUG RESPONSE IN PRECLINICAL VASCULAR *IN VITRO* SYSTEMS. B. R. Wamhoff[1,2], N. Hastings[2], M. Simmers[2], and B. R. Blackman[1,2]. [1]Biomedical Engineering, University of Virginia, Charlottesville, VA, and [2]HemoShear LLC, Charlottesville, VA. Sponsor: *E. LeCluyse*.

#1170 **Poster Board Number 435**
INHIBITION OF THE CARDIAC CYP2J2 BY CARDIOTOXIC TYROSINE KINASE INHIBITORS. M. Burnham, W. Hope, *T. G. Hammond*, *J. Valentin*, and J. Bowes. Safety Assessment UK, AstraZeneca, Macclesfield, United Kingdom.

#1171 **Poster Board Number 436**
***IN VITRO* SAFETY PHARMACOLOGY PROFILING IN EARLY DRUG DISCOVERY: MITIGATION OF ADRS.** *L. Urban*[1], S. Whitebread[1], H. Jacques[2], and *E. Gul*[1]. [1]Preclinical Safety Profiling, NIBR, Cambridge, MA, and [2]Preclinical Safety Profiling, NIBR, Basel, Switzerland.

#1172 **Poster Board Number 437**
AEROSOL DELIVERY TO A MICROFLUIDIC HUMAN BREATHING LUNG-ON-A-CHIP FOR INHALATION TOXICITY. D. C. Leslie[1,3], K. Domansky[1], J. Fraser[1], M. Khan[1], G. A. Hamilton[1], *A. Bahinski*[1], and D. E. Ingber[1,2,3]. [1]Wyss Institute/ Harvard University, Boston, MA, [2]Children's Hospital Boston and Harvard Medical School, Boston, MA, and [3]School of Engineering and Applied Sciences, Harvard University, Cambridge, MA.

Tuesday Morning, March 13
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Characterizing Toxic Modes of Action and Pathways to Toxicity

Poster Session: Oxidative Injury

Chairperson(s): *Aramandla Ramesh, Meharry Medical College, Nashville, TN.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *11:00 AM–12:30 PM*

#1173 **Poster Board Number 439**
PROTEOMIC ANALYSIS OF CARBONYLATED PROTEINS IN THE KIDNEYS OF TRICHLOROETHENE-EXPOSED MRL+/+ MICE. X. Fan[1], G. Wang[1], R. English[2], and *M. Khan*[1]. [1]Pathology, University of Texas Medical Branch, Galveston, TX, and [2]Biomolecular Resource Facility, University of Texas Medical Branch, Galveston, TX.

#1174 **Poster Board Number 440**
PROFILING PROTEIN CARBONYLATION IN A MURINE MODEL OF ALCOHOLIC LIVER DISEASE. *J. Galligan*[1], *R. L. Smathers*[2], J. D. Gomez[2], K. S. Fritz[2], and *D. R. Petersen*[2]. [1]Pharmacology, University of Colorado, Aurora, CO, and [2]Skaggs School of Pharmacy and Pharmaceutical Sciences, University of Colorado, Aurora, CO.

Abstract #

#1175 **Poster Board Number 441**
PROTEOMIC IDENTIFICATION OF CARBONYLATED PROTEINS IN RAT HIPPOCAMPUS AFTER 1-BROMOPROPANE EXPOSURE. Z. Huang[1,4], S. Ichihara[2], S. Oikawa[3], J. Chang[1], L. Zhang[1], K. Subramanian[1], *S. Sheik Mohideen*[1], and *G. Ichihara*[1]. [1]Nagoya University Graduate School of Medicine, Nagoya, Japan, [2]Mie University Graduate School of Regional Innovation Studies, Tsu, Japan, [3]Mie University Graduate School of Medicine, Tsu, Japan, and [4]Guangdong Prevention and Treatment Center for Occupational Diseases, Guangzhou, China.

#1176 **Poster Board Number 442**
DICARBONYL ADDUCTION OF PLASMINOGEN: POSSIBLE ROLE IN DIABETIC CARDIOVASCULAR COMPLICATIONS. *O. Kinsky*, *M. J. Kimzey*, G. Tsaprailis, *T. J. Monks*, and *S. S. Lau*. Southwest Environmental Health Science Center, Department of Pharmacology/Toxicology, University of Arizona, Tucson, AZ.

#1177 **Poster Board Number 443**
POSTTRANSLATIONAL OXIDATIVE MODIFICATION AND INACTIVATION OF MITOCHONDRIAL COMPLEX I IN KAINATE NEUROTOXICITY. *K. Ryan*, L. Liang, *D. Backos*, P. Reigan, and *M. Patel*. Pharmaceutical Sciences, University of Colorado Denver, Aurora, CO.

#1178 **Poster Board Number 444**
POSTTRANSLATIONAL MODIFICATION AND REGULATION OF GLUTAMATE CYSTEINE LIGASE BY S-GLUTATHIONYLATION. *C. C. Franklin*, *K. S. Fritz*, *D. S. Backos*, *D. R. Petersen*, and P. Reigan. Department of Pharmaceutical Sciences, University of Colorado Health Sciences Center, Denver, CO.

#1179 **Poster Board Number 445**
PLASMA PROTEIN NITRATION: A USEFUL BIOMARKER FOR DETECTING UNDIAGNOSED COPD IN TOBACCO SMOKERS. *R. C. Zangar*[1], H. Jin[1], B. Webb-Robertson[1], *D. Bigelow*[1], M. Schloand[2], J. Hoidal[2], and *J. Pounds*[1]. [1]Cell Biology and Biochemistry, Pacific Northwest National Laboratory, Richland, WA, and [2]Health Sciences Center, University of Utah, Salt Lake City, UT.

#1180 **Poster Board Number 446**
2D-LC-MS ANALYSIS OF OXIDIZED LIPID SPECIES: APPLICATION TO THE STUDY OF CARDIOLIPIN IN APOPTOSIS AND DAMAGED TISSUE. A. Samhan-Arias[1], V. Tyurin[1], *Y. Tyurina*[1], H. Bayir[1,2], *V. Kagan*[1], and A. Amoscato[1]. [1]EOH, University of Pittsburgh, Pittsburgh, PA, and [2]Critical Care Medicine, University of Pittsburgh, Pittsburgh, PA.

#1181 **Poster Board Number 447**
CELL-BASED ANALYSIS OF LIPID PEROXIDATION AND LIPID PEROXIDATION-DERIVED PROTEIN MODIFICATIONS USING FLUORESCENCE MICROSCOPY. *B. S. Mandavilli*, R. J. Aggeler, A. Rukavishnikov, C. Pickens, U. Singh, H. Kang, K. Gee, B. Agnew, and M. S. Janes. Cell Imaging and Analysis, Life Technologies, Eugene, OR.

Program Description (Continued)

Abstract #

#1182 **Poster Board Number 448**
MALDI MASS SPECTROMETRIC IMAGING OF CARDIOLIPIN AND ITS OXIDATION PRODUCTS DIRECTLY FROM TISSUE SECTIONS IN A LUNG OXIDATIVE DAMAGE MODEL. L. J. Sparvero, A. Amoscato, B. Pitt, and *V. Kagan*. EOH, University of Pittsburgh, Pittsburgh, PA.

#1183 **Poster Board Number 449**
GLUTATHIONE DYNAMICS AND DIFFERENTIAL SENSITIVITY TO PRO-OXIDANTS DURING ZEBRAFISH DEVELOPMENT. *A. R. Timme-Laragy*[1], *J. V. Goldstone*[1], *J. M. Hansen*[2], *J. J. Stegeman*[1], and *M. E. Hahn*[1]. [1]Biology, Woods Hole Oceanographic Institution, Woods Hole, MA, and [2]Pediatrics, Emory University, Atlanta, GA.

#1184 **Poster Board Number 450**
THE EFFECT OF MENADIONE ON GSTA1-JNK COMPLEX DISSOCIATION AND JNK ACTIVATION IN CACO-2 CELLS. H. Adnan, M. Antenos, and *G. M. Kirby*. Biomedical Sciences, University of Guelph, Guelph, ON, Canada.

#1185 **Poster Board Number 451**
MENADIONE-INDUCED OXIDATIVE AND NITROSATIVE STRESS IN C2C12 MYOTUBES. *P. Venkatakrishnan*, K. S. Hinchee, S. Panda, B. S. Masters, and L. J. Roman. Department of Biochemistry, University of Texas Health Science Center San Antonio, San Antonio, TX.

#1186 **Poster Board Number 452**
DETERMINATION OF NITRITE USING A MODIFIED FERROUS OXIDATION-XYLENOL ORANGE (FOX) ASSAY: AN INTERFERENCE TURNED INTO A USEFUL METHODOLOGY. S. Uppu[1], A. D. Logan[1], *R. M. Uppu*[2,1], and M. O. Fletcher Claville[1,2]. [1]Chemistry, Southern University, Baton Rouge, LA, and [2]Environmental Toxicology, Southern University, Baton Rouge, LA.

#1187 **Poster Board Number 453**
ACETAMINOPHEN INDUCES THE TRANSCRIPTION OF THE ANTIOXIDANT PROTEINS THIOREDOXIN 1 (TRX-1) AND GLUTAREDOXIN 1 (GRX-1)IN THE BRAIN AND LIVER OF BALB/C MICE. *C. Valdovinos-Flores*[1], J. H. Limén-Pacheco[2], R. M. Navarrete-León[1], P. Petrosyan[1], and *M. E. Gonsebatt*[1]. [1]Instituto de Investigaciones Biomédicas, Universidad Nacional Autónoma de México, México, D.F., Mexico, and [2]Instituto de Neurobiología, Universidad Nacional Autónoma de México, México, Querétaro, Mexico.

#1188 **Poster Board Number 454**
COMPARISON OF N-ACETYLCYSTEINE, S-METHYLCYSTEINE AND AMINOMETHANESULFONIC ACID FOR THE ABILITY TO ATTENUATE ACETAMINOPHEN-INDUCED CHANGES IN PLASMA INDICES OF OXIDATIVE STRESS IN THE RAT. *S. Koganti*, *M. C. Parikh*, and C. A. Lau-Cam. Pharmaceutical Sciences, St. John's University, Jamaica, NY.

Abstract #

#1189 **Poster Board Number 455**
ALL-TRANSRETINOIC ACID AFFORDS CYTOPROTECTION AGAINST REACTIVE OXYGEN SPECIES-INDUCED RENAL INJURY. *J. Sapiro*, *J. Lord-Garcia*, *Z. Jia*, A. Gallegos, *R. D. Canatsey*, *T. J. Monks*, and *S. S. Lau*. Department of Pharmacology/Toxicology, University of Arizona, Tucson, AZ.

#1190 **Poster Board Number 456**
ALIPHATIC ALCOHOLS MAY PRODUCE NEPHROTOXICITY VIA OXIDATIVE STRESS(OS) AND INFLUENCE SIRT1 AND FOXO3A EXPRESSION *IN VIVO*. A. Patel[1], V. Lawana[1], and *S. D. Ray*[2,1]. [1]Pharmaceutical Sciences, AMS College of Pharmacy, Brooklyn, NY, and [2]Pharmaceutical Sciences, Manchester College School of Pharmacy, Fort Wayne, IN.

#1191 **Poster Board Number 457**
ROLE OF OXIDATIVE STRESS AND MAPK SIGNALING PATHWAY IN OCCLUDIN SUBCELLULAR DISTRIBUTION IN THE NRK-52E CELLS. *L. Arreola-Mendoza*[1,2], J. L. Reyes[3], E. Sánchez[3], and *L. M. Del Razo*[2]. [1]Biosciences and Engineering, CIIEMAD-IPN, D.F., Mexico, [2]Toxicology, Cinvestav-IPN, D.F., Mexico, and [3]Physiology & Biophysics, Cinvestav-IPN, D. F., Mexico.

#1192 **Poster Board Number 458**
METABOLISM-LINKED MACROPHAGE-ERYTHROCYTE COCULTURE ASSAY TO PREDICT THE HEMOLYTIC POTENTIAL OF 8-AMINOQUINOLINE ANTIMALARIALS IN G6PD-DEFICIENCY. *J. M. McMillan*[1,2], N. A. Schulte[1], and *D. C. McMillan*[1]. [1]Pharmacology and Experimental Neuroscience, University of Nebraska Medical Center, Omaha, NE, and [2]Environmental, Agricultural, and Occupational Health, University of Nebraska Medical Center, Omaha, NE.

#1193 **Poster Board Number 459**
INDUCTION OF PHAGOCYTIC ACTIVATION BY MIXTURES OF DICHLOROACETATE AND TRICHLOROACETATE IN MICE AFTER SUBCHRONIC EXPOSURE. *E. Hassoun*, *J. Cearfoss*, and A. Al-Dieri. Pharmacology, University of Toledo, Toledo, OH.

#1194 **Poster Board Number 460**
AGE-RELATED AND CIRCADIAN CHANGES IN THE REDOX CYCLE IN MALE SPRAGUE DAWLEY RATS. *F. Y. Mohammed*, W. Day, and D. Zamorrano. Biology, University of Texas Pan American, Edinburg, TX.

#1195 **Poster Board Number 461**
GELSOLIN'S FUNCTIONS IN HEAVY ACUTE RADIATION INJURY MOUSE AND CELL MODELS. R. Min, J. Wang, Y. Cheng, D. Sun, and M. Li. Naval M, Second Military Medical University, Shanhai, China. Sponsor: *P. Zhou*.

#1196 **Poster Board Number 462**
INCREASED OXIDATIVE STRESS STATUS IN NEURONAL CELLS EXPOSED TO XENOESTROGEN BISPHENOL A. *S. Babu*, *A. C. Raghavamenon*, and *R. M. Uppu*. Environmental Toxicology, Southern University, Baton Rouge, LA.

Program Description (Continued)

Abstract #

#1197 **Poster Board Number 463**
PRO-OXIDANT ACTIVITY AND CYTOTOXICITY OF 1,4-DIAMINO-2-BUTANONE TO MAMMALIAN CELLS AND TRYPANOSOMA CRUZI. E. J. Bechara[1,2], C. O. Soares[2], M. M. Alves[2], M. Boiani[3], and *L. J. Marnett*[3]. [1]Ciências Exatas e da Terra, Universidade Federal de São Paulo, Diadema, São Paulo, Brazil, [2]Bioquímica, Universidade de São Paulo, São Paulo, Brazil, and [3]A.B. Hancock Jr. Memorial Laboratory for Cancer Research, Vanderbilt University, São Paulo, Brazil.

#1198 **Poster Board Number 464**
SULFUR DIOXIDE PROMOTES A PRO-OXIDANT SHIFT IN IL-10-DEFICIENT MICE WITH AIRWAY INFLAMMATION. A. L. Reno[1], L. M. Hallberg[2], W. C. Spear[1], J. L. Parks[1], M. F. Principe[3], E. G. Brooks[3], and B. T. Ameredes[1]. [1]Internal Medicine, University of Texas Medical Branch, Galveston, TX, [2]Preventive Medicine and Community Health, University of Texas Medical Branch, Galveston, TX, and [3]Pediatrics, University of Texas Health Science Center, San Antonio, TX. Sponsor: *C. Elferink*.

#1199 **Poster Board Number 465**
SELENOPROTEIN P REGULATES PCB3-METABOLITE-INDUCED CYTOTOXICITY IN HUMAN KERATINOCYTES. W. Xiao, Y. Zhu, E. H. Sarsour, A. L. Kalen, N. Aykin-Burns, D. R. Spitz, and P. C. Goswami. Department of Radiation Oncology, University of Iowa, Iowa City, IA. Sponsor: *L. Robertson*.

#1200 **Poster Board Number 466**
POSTTRANSCRIPTIONAL DEFECTS OF ANTIOXIDANT SELENOENZYMES CAUSE OXIDATIVE STRESS UNDER METHYLMERCURY EXPOSURE. F. Usuki[1], A. Yamashita[2], and M. Fujimura[3]. [1]Clinical Medicine, National Institute for Minamata Disease, Minamata, Japan, [2]Department of Microbiology and Molecular Biodefense Research, Yokohama City University School of Medicine, Yokohama, Japan, and [3]Department of Basic Medical Sciences, National Institute for Minamata Disease, Minamata, Japan. Sponsor: *A. Naganuma*.

#1201 **Poster Board Number 467**
TIME-DEPENDENT EFFECTS OF URANIUM ON CELLULAR OXIDATIVE STRESS MARKERS. C. Poisson, L. Grandcolas, S. Grison, I. Dublineau, and Y. Gueguen. DRPH/SRBE/LRTOX, IRSN, Fontenay-aux-Roses, France. Sponsor: *M. Pallardy*.

#1202 **Poster Board Number 468**
INVESTIGATION OF NOVEL ROLES FOR HEME OXYGENASE IN RESISTANCE TO CADMIUM-INDUCED OXIDATIVE STRESS. C. George, and *M. Jenny*. Biological Sciences, University of Alabama, Tuscaloosa, AL.

Abstract #

Tuesday Morning, March 13
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Characterizing Toxic Modes of Action and Pathways to Toxicity

Poster Session: Kidney

Chairperson(s): *Monica Valentovic, Marshall University School of Medicine, Huntington, WV.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *9:00 AM–11:00 AM*

#1203 **Poster Board Number 501**
THE BODY WEIGHTS AND FLUORIDE CONCENTRATIONS IN THE URINE OF ICGN MICE AND ICR MICE AFTER SUBACUTE ADMINISTRATION VIA DRINKING WATER. T. Kido[1], *M. Tsunoda*[1], C. Sugaya[1], R. Ikeuchi[1], K. Itai[2], Y. Kodama[3], *Y. Sugita-Konishi*[3], and Y. Aizawa[1]. [1]Preventive Medicine, Kitasato University School of Medicine, Sagamihara, Kanagawa, Japan, [2]Preventive Medicine and Public Health, Iwate Medical University School of Medicine, Morioka, Iwate, Japan, and [3]National Institute of Health Sciences, Tokyo, Japan.

#1204 **Poster Board Number 502**
INCREASED KIDNEY TUBULAR DAMAGE MARKERS IN RATS EXPOSED SUBCHRONICALLY TO FLUORIDE. C. Cardenas, *L. Del Razo*, and O. Barbier. Department of Toxicology, Cinvestav, Mexico City, Mexico.

#1205 **Poster Board Number 503**
IDENTIFICATION OF PRENATAL KIDNEY INJURY BY THE DETECTION OF EARLY BIOMARKERS IN AMNIOTIC FLUID. T. Jacobo, M. Cárdenas-González, *A. De Vizcaya-Ruiz*, and O. Barbier. Toxicology, Cinvestav, Mexico City, Mexico.

#1206 **Poster Board Number 504**
HYALINE DROPLET NEPHROPATHY INCREASED DIFFERENT RENAL BIOMARKERS DEPENDING ON COMPOUND AND TIME. *D. A. Brott*[1,2], P. Bentley[1,3], P. Nadella[3], D. Thurman[1], J. Fikes[1,3], and *L. B. Kinter*[1]. [1]Global Safety Assessment, AstraZeneca Pharmaceuticals (AZ), Wilmington, DE, [2]Patient Safety Sciences, AstraZeneca Pharmaceuticals (AZ), Wilmington, DE, and [3]Global Safety Assessment (GSA), AZ, Waltham, MA.

#1207 **Poster Board Number 505**
COMPARATIVE PROFILING OF URINARY BIOMARKERS IN IMIPENEM-INDUCED KIDNEY INJURY IN CYNOMOLGUS MONKEYS. *Y. Chen*[1], W. Luo[2], P. Bentley[1], H. Barthlow[1], H. Yu[3], Q. Qin[3], J. Qiao[3], J. Ren[3], *D. Thurman*[1], *B. Ruane*[4], *N. Barrass*[4], *J. Valentin*[4], *L. Kinter*[1], and *R. Bialecki*[1]. [1]Global Safety Assessment, AstraZeneca Pharmaceuticals, Waltham, MA, [2]DECS Discovery Statistics, AstraZeneca Pharmaceuticals, Waltham, MA, [3]Center for Drug Safety Evaluation and Research, Shanghai Institute of Materia Medica, Shanghai, China, and [4]Global Safety Assessment, AstraZeneca Pharmaceuticals, Macclesfield, United Kingdom.

Program Description (Continued)

Abstract #

#1208 **Poster Board Number 506**
ANALYSIS OF URINARY PROTEINS, MIRNA, AND TRANSCRIPTIONAL BIOMARKERS FOR THE DETECTION OF VANCOMYCIN-INDUCED NEPHROTOXICITY. T. Fuchs, *B. Emde*, E. Johann, *S. O. Müller*, and *P. Hewitt*. Toxikology, Merck Serono, Darmstadt, Germany.

#1209 **Poster Board Number 507**
MICRORNA-155 UP-REGULATION IN ACUTE KIDNEY INJURY. J. Saikumar[1], *D. Hoffmann*[1], K. Ramachandran[1], *Q. Zhang*[2], *P. L. Goering*[2], *R. P. Brown*[2], and *V. S. Vaidya*[1]. [1]Renal Division, BWH, Boston, MA, and [2]Center for Devices and Radiological Health, US FDA, Silver Spring, MD.

#1210 **Poster Board Number 508**
THE NATURAL PRODUCT RESVERATROL REDUCES CISPLATIN-MEDIATED OXIDATIVE MODIFICATIONS OF PROTEINS AND OXIDATIVE STRESS ENZYME ACTIVITY IN RENAL TISSUE OF RATS. *M. Valentovic*[1], A. M. Mills[2], A. B. Lamyaithong[3], J. G. Ball[1], S. Van Meter[1], M. S. Wright[1], and *J. Brown*[1]. [1]Pharmacology, Physiology and Toxicology, Marshall University School of Medicine, Huntington, WV, [2]Murray State University, Murray, KY, and [3]Wheeling Jesuit University, Wheeling, WV.

#1211 **Poster Board Number 509**
THE POSSIBLE ROLE OF ANNEXIN A5 IN CISPLATIN-INDUCED NEPHROTOXICITY. J. Jeong, N. Park, C. Seong, H. Im, Y. Kwon, and Y. Chun. College of Pharmacy, ChungAng University, Seoul, Republic of Korea. Sponsor: *T. Jeoung*.

#1212 **Poster Board Number 510**
MECHANISTIC ASPECTS OF 4-AMINO-2-CHOLOROPHENOL NEPHROTOXICITY *IN VITRO*. C. Racine, T. Ferguson, S. Baksi, D. Anestis, and *G. O. Rankin*. Pharmacology, Physiology and Toxicology, Marshall University, Huntington, WV.

#1213 **Poster Board Number 511**
COADMINISTRATION OF CHLORAMPHENICOL AND MULTIVITAMIN HEMATINIC COMPLEX INDUCES OXIDATIVE STRESS IN RAT KIDNEY. *A. A. Oyagbemi*[1,2], K. Kolawole[2], O. S. Adegboyega[2], *A. B. Saba*[1], and *O. E. Farombi*[2]. [1]Veterinary Physiology, Biochemistry and Pharmacology, University of Ibadan, Ibadan, Oyo, Nigeria, and [2]Biochemistry, College of Medicine, University of Ibadan, Ibadan, Oyo, Nigeria.

#1214 **Poster Board Number 512**
OVEREXPRESSION OF MITOCHONDRIAL GLUTATHIONE TRANSPORTERS IN RENAL PROXIMAL TUBULAR CELLS FROM CONTROL AND DIABETIC RATS. *L. H. Lash*, B. Benipal, and D. A. Putt. Pharmacology, Wayne State University School of Medicine, Detroit, MI.

#1215 **Poster Board Number 513**
MULTIDRUG RESISTANCE-ASSOCIATED PROTEINS AND THEIR ROLE IN THE RENAL ELIMINATION OF MERCURIC IONS. *C. Bridges*[1], L. Joshee[1], J. J. van den Heuvel[2], *F. G. Russel*[1], and *R. K. Zalups*[2]. [1]Basic Medical Sciences, Mercer University, Macon, GA, and [2]Pharmacology and Toxicology, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands.

Abstract #

#1216 **Poster Board Number 514**
MODULATION OF P-GLYCOPROTEIN ACTIVITY IN LLC-PK$_1$ CELLS BY GLUCOSE. R. Nagavally, and *S. M. Ford*. College of Pharmacy & Allied Health Professions, St. John's University, Jamaica, NY.

#1217 **Poster Board Number 515**
FIBRINOGEN BINDS TO CAVEOLIN-1 AND PROMOTES KIDNEY TISSUE REPAIR. *A. K. Ajay*[1,3], *J. Saikumar*[3], *D. Hoffmann*[1,3], and *V. S. Vaidya*[1,2,3]. [1]Medicine, Harvard Medical School, Boston, MA, [2]Environmental Health, Harvard School of Public Health, Boston, MA, and [3]Renal Division, Brigham and Women's Hospital, Boston, MA.

#1218 **Poster Board Number 516**
FIBRINOGEN PROMOTES KIDNEY FIBROSIS BY INTERACTING WITH PLATELET-DERIVED GROWTH FACTOR BETA. *D. Hoffmann*[1], J. Saikumar[1], V. Bijol[2], S. L. Fabian[1], B. D. Humphreys[1], and *V. S. Vaidya*[1]. [1]Renal Division, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, and [2]Pathology, Brigham and Women's Hospital, Harvard Medical School, Boston, MA.

#1219 **Poster Board Number 517**
BROMATE INCREASES 3-BROMOTYROSINE CONCENTRATION IN MALE RAT KIDNEYS. *N. Kolisetty*[1], J. Casper[1], S. Muralidhara[1], G. X. Zhongxian[2], *R. J. Bull*[3], *J. A. Cotruvo*[4], *J. W. Fisher*[5], *H. Jin*[6], *R. C. Zangar*[6], and *B. S. Cummings*[1]. [1]Pharmacology and Biomedical Science, University of Georgia, Athens, Athens, GA, [2]Center for Advanced Water Technology, Singapore, Singapore, [3]Mo Bull Consulting, Richland, WA, [4]Joseph Cotruvo & Associates, LLC, Washington, DC, [5]National Center for Toxicological Research, Jefferson, AR, and [6]Pacific Northwest National Laboratory, Richland, WA.

#1220 **Poster Board Number 518**
PRIMARY CULTURES OF MOUSE RENAL PROXIMAL TUBULE EPITHELIAL CELLS AS A MODEL FOR STUDYING ACETAMINOPHEN (APAP)-INDUCED NEPHROTOXICITY. *A. M. Bataille*[1], J. Renfro[2], and *J. E. Manautou*[1]. [1]Pharmaceutical Sciences, University of Connecticut, Storrs, CT, and [2]Physiology and Neurobiology, University of Connecticut, Storrs, CT.

#1221 **Poster Board Number 519**
DIGLYCOLIC ACID, THE NEPHROTOXIC METABOLITE OF DIETHYLENE GLYCOL, INDUCES NECROSIS VIA INTRACELLULAR ACCUMULATION AND METABOLIC DISRUPTION. *G. M. Landry*, and *K. E. McMartin*. Department of Pharmacology Toxicology & Neuroscience, Louisiana State University Health Sciences Center Shreveport, Shreveport, LA.

#1222 **Poster Board Number 520**
CADMIUM-INDUCED PROTEINURIA IS PREVENTED BY LOSARTAN AND N-ACETYLCYSTEINE TREATMENT IN A MURINE EXPERIMENTAL MODEL. M. P. Santoyo, *A. De Vizcaya-Ruiz*, and O. Barbier. Toxicology, Cinvestav, Mexico, City, Mexico.

Program Description (Continued)

Abstract #

#1223 **Poster Board Number 521**
HIGH-CONTENT IMAGING STUDY REVEALS METABOLITES OF DB289 INDUCE PRIMARY KIDNEY CELL INJURY. B. E. Foley[1], *O. Trask*[1], J. E. Hall[2], M. Z. Wang[2], R. R. Tidwell[2], *P. B. Watkins*[1,2], and *R. S. Thomas*[1]. [1]The Hamner Institutes for Health Sciences, Research Triangle Park, NC, and [2]University of North Carolina at Chapel Hill, Chapel Hill, NC.

Tuesday Morning, March 13
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: 'Omics in Toxicology

Chairperson(s): *Bruce Merrick, NIEHS, Research Triangle Park, NC.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *11:00 AM–12:30 PM*

#1224 **Poster Board Number 526**
TOXICOPROTEOMIC ANALYSIS OF NEPHROTOXICITY-INDUCED BY ARISTOLOCHIC ACID. L. Yu[1], Z. Li[2], Y. Gao[1], and *T. Chen*[2]. [1]Division of Systems Biology, National Center for Toxicological Research, US FDA, Jefferson, AR, and [2]Division of Genetic and Molecular Toxicology, National Center for Toxicological Research, US FDA, Jefferson, AR.

#1225 **Poster Board Number 527**
RNA-SEQ PROFILING REVEALS NOVEL GENE EXPRESSION PATTERN AFTER SUBCHRONIC AFLATOXIN B1 (AFB1) IN RATS. *B. A. Merrick*[1], *S. S. Auerbach*[1], S. M. Stiegelmeyer[2], D. P. Phadke[2], R. R. Shah[2], and *R. R. Tice*[1]. [1]Biomolecular Screening Branch, DNTP/NIEHS, Research Triangle Park, NC, and [2]SRA International, Research Triangle Park, NC.

#1226 **Poster Board Number 528**
POTENTIAL PANCREATITIS RISK FACTORS IN RODENTS TREATED WITH EXENATIDE. *H. Zhou*, B. Rosenzweig, T. Colatsky, and *R. Rouse*. Division of Drug Safety Research, US FDA, Silver Spring, MD.

#1227 **Poster Board Number 529**
GENE EXPRESSION CHANGES IN SPRAGUE DAWLEY RATS FOLLOWING COMMON HANDLING PROCEDURES. *C. M. Karbowski*, Y. He, C. Di Palma, Y. Chen, *M. Higgens-Garn*, S. Tran, and *H. Hamadeh*. Comparative Biology & Safety Sciences, Amgen, Thousand Oaks, CA.

#1228 **Poster Board Number 530**
DEVELOPMENT OF A QUANTITATIVE PCR-BASED GENE SIGNATURE FOR IDENTIFYING BILE DUCT HYPERPLASIA IN SHORT-DURATION RAT STUDIES. G. H. Searfoss[1], A. Smith[1], J. Liu[2], R. Jolly[1], K. Goldstein[1], and *C. Thomas*[1]. [1]Investigative Toxiocolgy, Eli Lilly and Company, Indianapolis, IN, and [2]Translational Sciences, Eli Lilly and Company, Indianapolis, IN.

#1229 **Poster Board Number 531**
A TOXICOGENOMICS-BASED *IN VITRO* METHOD FOR PREDICTING HEPATOTOXICITY. *K. N. De Abrew*, G. J. Overmann, R. L. Adams, G. J. Carr, J. P. Tiesman, *G. P. Daston*, and *J. M. Naciff*. Miami Valley Innovation Center, Procter & Gamble Company, Cincinnati, OH.

Abstract #

#1230 **Poster Board Number 532**
GLOBAL GENE EXPRESSION CHANGES IN HUMAN EMBRYONIC LUNG FIBROBLASTS INDUCED BY ORGANIC EXTRACTS FROM RESPIRABLE AIR PARTICLES. *J. Topinka*[1], H. Libalova[1,2], K. Uhlirova[1], J. Klema[3], M. Machala[4], and R. J. Sram[1]. [1]Institute of Experimental Medicine ASCR, v.v.i., Prague, Czech Republic, [2]Charles University in Prague, Prague, Czech Republic, [3]Czech Technical University in Prague, Prague, Czech Republic, and [4]Veterinary Research Institute, Brno, Czech Republic.

#1231 **Poster Board Number 533**
CONCENTRATION-RESPONSE ANALYSIS OF DIFFERENTIAL GENE EXPRESSION IN THE ZEBRAFISH EMBRYOTOXICITY TEST FOLLOWING FLUSILAZOLE EXPOSURE. S. A. Hermsen[1,2,3], T. E. Pronk[1,2], E. van den Brandhof[1], L. T. van der Ven[1], and A. H. Piersma[1,3]. [1]Laboratory for Health Protection Research, National Institute for Public Health and the Environment (RIVM), Bilthoven, Netherlands, [2]Department of Toxicogenomics, Maastricht University, Maastricht, Netherlands, and [3]Institute for Risk Assessment Sciences (IRAS), Utrecht University, Utrecht, Netherlands. Sponsor: *H. van Loveren*.

#1232 **Poster Board Number 534**
INVESTIGATION OF TROGLITAZONE-INDUCED HEPATO AND CARDIO TOXICITY IN NORMAL AND HIGH-FAT, DIET-INDUCED DIABETIC MOUSE MODELS. H. K. Bahia[1], and *T. W. Gant*[2]. [1]MRC Toxicology Unit, Leicester, United Kingdom, and [2]Health Protection Agency, Centre for Radiation, Chemical & Environmental Hazards, Didcot, United Kingdom.

#1233 **Poster Board Number 535**
PREDICTION MODEL OF POTENTIAL HEPATOCARCINOGENICITY OF RAT HEPATOCARCINOGENS USING A LARGE-SCALE TOXICOGENOMICS DATABASE. T. Uehara[1,2], Y. Minowa[2], Y. Morikawa[2], C. Kondo[1], T. Maruyama[1], I. Kato[1], N. Nakatsu[2], Y. Igarashi[2], A. Ono[2], H. Hayashi[3], K. Mitsumori[3], H. Yamada[2], Y. Ohno[4], and *T. Urushidani*[5]. [1]Shionogi & Co., Ltd., Toyonaka, Japan, [2]National Institute of Biomedical Innovation, Ibaraki, Japan, [3]Tokyo University of Agriculture and Technology, Fuchu, Japan, [4]National Institute of Health Sciences, Tokyo, Japan, and [5]Doshisha Women's College of Liberal Arts, Kyotanabe, Japan.

#1234 **Poster Board Number 536**
CHARACTERIZATION OF POLYBROMINATED DIPHENYL ETHER TOXICITY IN WISTAR HAN RATS AND USE OF LIVER MICROARRAY DATA FOR PREDICTING DISEASE SUSCEPTIBILITIES. K. Shockley, A. E. Brix, M. K. Vallant, *H. C. Cunny*, and J. K. Dunnick. National Toxicology Program/National Institute of Environmental Health Sciences, Research Triangle Park, NC.

Program Description (Continued)

Abstract #

#1235 **Poster Board Number 537**
TRANSCRIPTOME SEQUENCING OF INDIVIDUALS OCCUPATIONALLY EXPOSED TO BENZENE. *C. M. McHale*[1], *L. Zhang*[1], Q. Lan[2], *R. Thomas*[1], A. E. Hubbard[1], R. Vermeulen[3], G. Li[4], S. M. Rappaport[1], S. Yin[4], *M. T. Smith*[1], and N. Rothman[2]. [1]School of Public Health, University of California Berkeley, Berkeley, CA, [2]Division of Cancer Epidemiology and Genetics, National Cancer Institute, Bethesda, MD, [3]Institute of Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands, and [4]Institute of Occupational Health and Poison Control, Chinese Center for Disease Control and Prevention, Beijing, China.

#1236 **Poster Board Number 538**
DIFFERENTIAL EXPRESSION AND PROTEIN-PROTEIN INTERACTION NETWORKS OF THE BASIC HELIX-LOOP-HELIX FAMILY OF TRANSCRIPTION FACTORS IN RESPONSE TO ACETAMINOPHEN LIVER TOXICITY. *X. Gu*, and *J. E. Manautou*. Department of Pharmaceutical Sciences, University of Connecticut, Storrs, CT.

#1237 **Poster Board Number 539**
MECHANISTIC INVESTIGATION OF LIVER TOXICITY OF A FATTY ACID AMIDE HYDROLASE INHIBITOR USING GENE EXPRESSION ANALYSIS. J. N. Dwyer[1], T. Ackerson[1], *C. Thompson*[1], O. Mendes[1], *M. Kabiri*[2], and *Z. Jayyosi*[1]. [1]sanofi-aventis, Bridgewater, NJ, and [2]sanofi-aventis, Frankfurt, Germany.

#1238 **Poster Board Number 540**
TRANSCRIPTOME ANALYSIS FOLLOWING LOW-DOSE BISPHENOL A EXPOSURE REVEALS EFFECTS ON SIGNALING PATHWAYS IMPLICATED IN NERVOUS SYSTEM DEVELOPMENT AND FUNCTION. *K. S. Saili*[1], M. M. Corvi[1], *S. C. Tilton*[2], *S. R. Das*[1], *K. M. Waters*[2], and *R. L. Tanguay*[1]. [1]Department of Environmental & Molecular Toxicology, Environmental Health Sciences Center, Oregon State University, Corvallis, OR, and [2]Computational Biology & Bioinformatics Group, Pacific Northwest National Laboratory, Richland, WA.

#1239 **Poster Board Number 541**
PROTEOMIC PROFILES OF ZEBRAFISH LIVER CELL LINE FOLLOWING THE ADMINISTRATIONS OF CADMIUM ION. J. Zhu, and *K. Chan*. School of Life Sciences,Faculty of Science, The Chinese University of Hong Kong, Hong Kong, Hong Kong.

#1240 **Poster Board Number 542**
PROTEOMIC PROFILES AND GENE EXPRESSION STUDIES OF FISH LIVER CELL LINES FOLLOWING THE ADMINISTRATIONS OF COPPER ION. *K. Chan*, D. Chen, and S. K. Leung. School of Life Sciences, Chinese University, Sha Tin, Hong Kong.

Abstract #

Tuesday Morning, March 13
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Epigenetics

Chairperson(s): *Kathleen Gilbert, Arkansas Children's Hospital Research Institute, Little Rock, AR.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *9:00 AM–11:00 AM*

#1241 **Poster Board Number 547**
EFFECTS OF BENZYL ISOTHIOCYANATE ON METHYLATION AND EXPRESSION OF P21 TUMOR SUPPRESSOR GENE IN JURKAT LEUKEMIA CELLS. Y. Lee[1], Y. Kim[1,2], Y. Choi[1], J. Lee[1], S. Lee[1], and H. Chung[1]. [1]School of Public Health, Seoul National University, Seoul, Republic of Korea, and [2]Chung-Ang University, Seoul, Republic of Korea. Sponsor: *J. Chung*.

#1242 **Poster Board Number 548**
CHEMOPREVENTIVE ACTIVITY OF TRIBUTYRIN IS ASSOCIATED WITH INDUCTION OF THE P53 APOPTOTIC SIGNALING PATHWAY IN EXPERIMENTAL HEPATOCARCINOGENESIS. A. de Conti[1], *V. Tryndyak*[2], *I. Koturbash*[2], R. Heidor[1], T. P. Ong[1], *F. A. Beland*[2], I. P. Pogribny[2], and F. S. Moreno[1]. [1]Food and Experimental Nutrition, University of São Paulo, São Paulo, Brazil, and [2]Division of Biochemical Toxicology, National Center for Toxicological Research, Jefferson, AR.

#1243 **Poster Board Number 549**
SUBCHRONIC TRICHLOROETHYLENE EXPOSURE ALTERS EPIGENETIC PROCESSES IN CD4+ T CELLS. *K. Gilbert*[1], A. Nelson[1], C. Cooney[2], and *S. Blossom*[1]. [1]Arkansas Children's Hospital Research Institute, Little Rock, AR, and [2]Arkansas Veteran's Association Hospital, Little Rock, AR.

#1244 **Poster Board Number 550**
EPIGENETIC CHANGES IN P21 EXPRESSION IN RAT KIDNEY AFTER EXPOSURE TO BROMATE. *B. S. Cummings*[1], *X. Zhang*[1], *N. Kolisetty*[1], N. E. Scholpa[1], *R. J. Bull*[2], *J. Fisher*[3], *J. A. Cotruvo*[4], and *D. Delker*[5]. [1]Pharmacology and Biomedical Science, University of Georgia, Athens, GA, [2]MoBull Consulting, Richland, WA, [3]National Center for Toxicological Research, US FDA, Jefferson, AR, [4]Joseph Cotruvo & Associates, LLC, Washington, DC, and [5]School of Medicine, University of Utah, Salt Lake City, UT.

#1245 **Poster Board Number 551**
EFFECTS OF SUBCHRONIC EXPOSURE TO PARTICULATE MATTERS ON DNA METHYLATION OF LUNG TISSUE IN SPRAGUE DAWLEY RATS. Y. Yan[1,2], C. Hsu[2], C. Shen[2,3], M. Chan[4], and T. Cheng[1]. [1]Institute of Occupational Medicine and Industrial Hygiene, National Taiwan University, Taipei, Taiwan, [2]Department of Medical Research, Chia-Yi Christian Hospital, Chaiyi, Taiwan, [3]Department of Urology, Chia-Yi Christian Hospital, Chaiyi, Taiwan, and [4]Department of Life Science and Institute of Molecular Biology, National Chung Cheng University, Chaiyi, Taiwan. Sponsor: *L. Chen*.

Program Description (Continued)

Abstract #

#1246 **Poster Board Number 552**
DIFFERENTIAL EFFECTS OF CADMIUM IN UNDIFFERENTIATED AND DIFFERENTIATED MOUSE EMBRYONIC STEM CELLS ON TOTAL HISTONE PROTEIN PRODUCTION AND H3 HISTONE MODIFICATION PATHWAYS. *S. R. Gadhia*, and *F. A. Barile*. Pharmaceutical Sciences, Toxicology Division, St. John's University College of Pharmacy, Queens, NY.

#1247 **Poster Board Number 553**
TRANSPLACENTAL EXPOSURE TO LOW-DOSE ARSENIC IN MICE ALTERS DNA METHYLATION AND EXPRESSION OF CELL CYCLE GENES. A. Dalrymple[1], C. Newman[2], J. Hock[2], and R. VanBeneden[1,3]. [1]Molecular and Biomedical Sciences, University of Maine, Orono, ME, [2]Maine Institution of Human Genetics and Health, Bangor, ME, and [3]School of Marine Sciences, University of Maine, Orono, ME. Sponsor: *J. Gosse*.

#1248 **Poster Board Number 554**
HYPOMETHYLATION OF MIR-22 AND NEGATIVE REGULATION OF ITS APOPTOSIS-RELATED TARGET GENE EXPRESSION IN A BPA-EXPOSED HEPG2 CELL LINE. S. Kim[1], S. Yu[1,2], Y. An[2], J. Ha[1], J. Youn[1], S. Lee[3], J. Ryu[4], and *S. Hwang*[1,2,3]. [1]Genome Business, GenoCheck, Ansan, Republic of Korea, [2]Biochemistry, Hanyang University, Ansan, Republic of Korea, [3]Bio-Nanotechnology, Hanyang University, Ansan, Republic of Korea, and [4]Cellular and Molecular Toxicology Laboratory, Korea Institute of Science & Technology, Seoul, Republic of Korea.

#1249 **Poster Board Number 555**
EFFECTS OF FUMONISIN B1 ON DNA METHYLATION CHANGES IN RAT CELL CULTURES. *S. Ozden*, G. Demirel, and B. Alpertunga. Department of Pharmaceutical Toxicology, Istanbul University, Faculty of Pharmacy, Istanbul, Turkey.

#1250 **Poster Board Number 556**
DIET-MODULATED DNA METHYLATION PROFILING IN A HUMAN T-CELL ACUTE LYMPHOBLASTIC LEUKEMIA (T-ALL) CELL LINE: IMPLICATIONS FOR CHEMOPREVENTIVE STRATEGIES. P. Kaur[1,3], *L. E. Shorey*[1,3], E. Ho[2,3], R. H. Dashwood[1,3], and *D. E. Williams*[1,3]. [1]Environment and Molecular Toxicology, Oregon State University, Corvallis, OR, [2]Nutrition and Exercise Sciences, Oregon State University, Corvallis, OR, and [3]The Linus Pauling Institute, Oregon State University, Corvallis, OR.

#1251 **Poster Board Number 557**
DNA METHYLATION AND PERSISTENT ORGANIC POLLUTANTS (POPS) IN SYSTEMIC LUPUS ERYTHEMATOSUS. K. L. French, G. S. Gilkeson, and D. L. Kamen. Division of Rheumatology, Department of Medicine, Medical University of South Carolina, Charleston, SC. Sponsor: *D. Keil*.

Abstract #

#1252 **Poster Board Number 558**
EFFECT OF PRENATAL EXPOSURE TO DIETHYLSTILBESTROL (DES) ON MICRO RNA PROFILE IN THYMOCYTES. *M. Nagarkatti*, *N. P. Singh*, U. Singh, and *P. Nagarkatti*. Pathology, Microbiology, and Immunology, University of South Carolina School of Medicine, Columbia, SC.

#1253 **Poster Board Number 559**
METHIONINE SUPPLEMENTATION OR RESTRICTION HAS NO EFFECTS ON LIPOPEROXIDATION BUT ITS RESTRICTION REDUCES DNA DAMAGE IN MICE LIVER. T. Gomes[1], A. Aissa[2], F. Ribeiro[1], J. Darin[1], *D. Oliveira*[1], M. Bianchi[1], and L. Antunes[1]. [1]Faculty of Pharmaceutical Sciences of Ribeirão Preto, University of São Paulo, Ribeirão Preto, Brazil, and [2]Faculty of Medicine of Ribeirão Preto, University of São Paulo, Ribeirão Preto, Brazil.

#1254 **Poster Board Number 560**
ARSENIC-INDUCED MALIGNANT TRANSFORMATION CONTRIBUTES TO LONG-RANGE EPIGENETIC SILENCING THROUGH DNA METHYLATION. P. Severson[1], E. J. Tokar[2], *M. P. Waalkes*[2], and *B. W. Futscher*[1,3]. [1]Pharmacology and Toxicology, University of Arizona, Tucson, AZ, [2]National Toxicology Program Laboratory, National Institute of Environmental Health Sciences, Research Triangle Park, NC, and [3]Arizona Cancer Center, University of Arizona, Tucson, AZ.

#1255 **Poster Board Number 561**
ALTERATIONS OF GENE METHYLATION IN THE LIVERS OF RATS AND MICE CHRONICALLY EXPOSED TO LOW-DOSE CADMIUM. B. Wang[1,2,3], Y. Li[1], *T. Yi*[3], and *L. Cai*[3]. [1]Department of Pathophysiology, Jilin University, Changchun, Jilin, China, [2]Department of Pathology, Inner Mongolia Forestry General Hospital, Hulunbeier, China, and [3]Department of Pediatrics, University of Louisville School of Medicine, Louisville, KY.

#1256 **Poster Board Number 562**
MECP2 EXPRESSION IN DIFFERENTIATING P19 MOUSE EMBRYOCARCINOMA AND HUMAN GLIOBLASTOMA NEUROSPHERE CELLS. J. B. Coulter[1,3], C. M. O'Driscoll[1,3], J. J. Laterra[2,3], W. E. Kaufmann[2,3], and *J. P. Bressler*[1,3]. [1]Environmental Health Sciences, Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD, [2]Johns Hopkins University School of Medicine, Baltimore, MD, and [3]Hugo Moser Research Institute at Kennedy Krieger, Baltimore, MD.

#1257 **Poster Board Number 563**
REPEAT-DRIVEN METASTABILITY OF DNA METHYLATION IN RESPONSE TO ENVIRONMENTAL EXPOSURES. C. Faulk, A. K. Barks, O. S. Anderson, and *D. C. Dolinoy*. Environmental Health Sciences, University of Michigan, Ann Arbor, MI.

Program Description (Continued)

Abstract #

#1258 **Poster Board Number 564**
AGE AND SEX DIFFERENCES IN LIVER MIRNA EXPRESSION DURING THE RAT LIFE CYCLE. J. C. Kwekel, V. G. Desai, T. Han, W. S. Branham, C. L. Moland, and *J. C. Fuscoe*. Systems Biology/Center for Functional Genomics, US FDA National Center for Toxicological Research, Jefferson, AR.

#1259 **Poster Board Number 565**
EFFECTS OF INSULIN-LIKE GROWTH FACTOR-2 (IGF2) LOSS OF IMPRINTING IN AGING MURINE PROSTATE TISSUES. *S. Bhusari*[1], B. Yang[1], and D. Jarrard[1,2]. [1]Urology, University of Wisconsin-Madison, Madison, WI, and [2]Environmental and Molecular Toxicology, University of Wisconsin-Madison, Madison, WI.

#1260 **Poster Board Number 566**
EPIGENETIC EFFECTS OF ENVIRONMENTAL TOXICANTS IN MINORITY CHILDREN. P. Yousefi, R. Aguilar, H. Quach, V. Volberg, A. Bradman, L. Barcellos, B. Eskenazi, and N. Holland. CERCH, SPH, University of California Berkeley, Berkeley, CA. Sponsor: *M. Poirier*.

#1261 **Poster Board Number 567**
SITE-SPECIFIC DNA METHYLATION AND OBESITY IN MEXICAN-AMERICAN CHILDREN. V. Volberg, R. Aguilar, P. Yousefi, V. Dave, C. Phan, K. Kogut, H. Quach, L. Barcellos, K. Harley, B. Eskenazi, and N. Holland. University of California Berkeley, Richmond, CA. Sponsor: *M. Poirier*.

#1262 **Poster Board Number 568**
EPIGENETIC ALTERATION IN THE TESTICULAR GENE EXPRESSION FOLLOWING *IN UTERO* TRICLOSAN EXPOSURE. K. Soma[1], T. Kim[1], A. Won[1], Y. Shin[1], *B. Lee*[2], H. Kim[3], and *H. KIM*[1]. [1]College of Pharmacy, Pusan National University, Busan, Republic of Korea, [2]College of Pharmacy, Sungkyunkwan University, Suwon, Republic of Korea, and [3]College of Medicine, Yonsei University, Seoul, Republic of Korea.

#1263 **Poster Board Number 569**
MOLECULAR MECHANISMS OF SILENCING AND REACTIVATION OF LINE-1 RETROELEMENT BY BENZO(A)PYRENE. *K. S. Ramos*[1,2], *D. E. Montoya-Durango*[1,2], and I. Teneng[1,2]. [1]Biochemistry and Molecular Biology, University of Louisville, Louisville, KY, and [2]James Graham Brown Cancer Center, University of Louisville, Louisville, KY.

Abstract #

Tuesday Morning, March 13
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Nanotoxicology: Nanoparticles II

Chairperson(s): *Saber Hussain, Air Force Research Laboratory, Dayton, OH.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *11:00 AM–12:30 PM*

#1264 **Poster Board Number 609**
AEROSOLIZATION, FATE, AND PULMONARY TOXICITY OF MESOPOROUS SILICA NANOCAGES. X. T. Li[1], M. Xue[2], J. Evans[1], F. Hayes[1], J. Zink[2], S. Risbud[1], and *K. E. Pinkerton*[1]. [1]University of California Davis, Davis, CA, and [2]University of California Los Angeles, Los Angeles, CA.

#1265 **Poster Board Number 610**
PHENOTYPIC ANCHORING OF SUBCHRONIC CARBON NANOTUBE AND ASBESTOS EXPOSURE TO SMALL AIRWAY EPITHELIAL CELLS: LINKING TOXICOGENOMIC AND NEOPLASTIC TRANSFORMATION RESPONSES. T. A. Stueckle[1], A. Mishra[1], R. Derk[1], T. Meighan[1], *V. Castranova*[1], *Y. Rojanasakul*[2], and L. Wang[1]. [1]HELD/PPRB, National Institute for Occupational Safety and Health, Morgantown, WV, and [2]Basic Pharmaceutical Sciences, West Virginia University, Morgantown, WV.

#1266 **Poster Board Number 611**
MAGNETITE NANOPARTICLES FUNCTIONALIZED WITH ALPHA TOCOPHERYL SUCCINATE: CYTOTOXICITY AND ANTITUMOR EFFECT IN BREAST CANCER CELLS. A. Angulo Molina[3,1,2], J. Reyes Leyva[2], J. Hernández[3], T. Palacios[1], M. Mendez Rojas[1], M. Cerro López[1], and *O. Olivero*[4]. [1]Químico Biológicas-Nutrición, Universidad de las Américas Puebla, Puebla, Mexico, [2]Centro de Investigaciones Biomédicas de oriente CIBIOR, IMSS, Metepec, Puebla, Mexico, [3]Nutrición, CIAD, Hermosillo, Sonora, Mexico, and [4]Laboratory of Cancer Biology and Genetics, National Cancer Institute, Bethesda, MD.

#1267 **Poster Board Number 612**
DIFFERENTIAL GENE EXPRESSION CHANGES IN TWO HUMAN HEPATOCYTE MODEL SYSTEMS TO QUANTUM DOT EXPOSURE. *W. E. Smith*[1], Z. Afsharinejad[1], X. Hu[2], X. Gao[2], *D. L. Eaton*[1], and *T. J. Kavanagh*[1]. [1]Department of Environmental and Occupational Health Sciences, University of Washington, Seattle, WA, and [2]Department of Bioengineering, University of Washington, Seattle, WA.

Program Description (Continued)

Abstract #

#1268 **Poster Board Number 613**
DISTRIBUTION, BIOPERSISTENCE, AND EFFECTS OF A SYSTEMICALLY-INTRODUCED LOW-ASPECT-RATIO CERIA ENGINEERED NANOMATERIAL IN RATS. *R. A. Yokel*[1,2], H. Haghnazar[1], S. S. Hardas[3], A. M. Swomley[3], D. Butterfield[3,4], R. Sultana[3], *M. T. Tseng*[5], J. M. Unrine[6], P. Wu[7], and E. A. Grulke[7]. [1]Pharmacological Science, University of Kentucky, Lexington, KY, [2]Graduate Center for Toxicology, University of Kentucky, Lexington, KY, [3]Chemistry, University of Kentucky, Lexington, KY, [4]Center for Membrane Science, University of Kentucky, Lexington, KY, [5]Anatomical Science & Neurobiology, University of Louisville, Louisville, KY, [6]Plant & Soil Science, University of Kentucky, Lexington, KY, and [7]Chemical & Materials Engineering, University of Kentucky, Lexington, KY.

#1269 **Poster Board Number 614**
SUBTOXIC TIO2-NP PREDISPOSES TO DECREASE THE MITOCHONDRIAL FUNCTION IN LUNG TISSUE AND CYTOSKELETON DISRUPTION IN ALVEOLAR EPITHELIAL CELLS. I. M. Urrutia Ortega[1], Z. Ji[2], N. L. Delgado-Buenrostro[1], T. Cabellos-Avelar[1], E. B. Gutierrez-Cirlos[1], and *Y. I. Chirino*[1]. [1]Universidad Nacional Autonoma de Mexico, Estado de Mexico, Mexico, and [2]California NanoSystems Institute, University of California Los Angeles, Los Angeles, CA.

#1270 **Poster Board Number 615**
INHALATION EXPOSURE STUDY OF TITANIUM DIOXIDE NANOPARTICLES ON BLEOMYCIN-INDUCED PULMONARY INFLAMMATION IN MICE. S. Choi, M. Kang, J. Song, M. Yang, G. Ha, *C. Song*, and *K. Lee*. Inhalation Toxicology Center, Korea Institute of Toxicology, Jeongeup, Jeollabuk-Do, Republic of Korea.

#1271 **Poster Board Number 616**
THE ROLE OF CCR5 IN INFLAMMATORY RESPONSES TRIGGERED BY SINGLE-WALLED CARBON NANOTUBES. E. Park[1], J. Roh[3], S. Kim[2], Y. Kim[3], S. Han[4], and J. Hong[4]. [1]Ajou University, Suwon, Republic of Korea, [2]Korea Institute of Toxicology, Jeongeup, Republic of Korea, [3]Kwangwoon University, Seoul, Republic of Korea, and [4]Chungbuk National University, Cheongju, Republic of Korea. Sponsor: *E. Park*.

#1272 **Poster Board Number 617**
EFFECTS OF CARBON-BASED NANOMATERIALS ON PRIMARY HUMAN IMMUNE-COMPETENT CELLS. *B. Fadeel*[1], F. Torres Andon[1], L. Xiao[2], *E. Kisin*[3], *A. Murray*[3], *A. Shvedova*[3,4], and S. Mathur[2]. [1]Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden, [2]Institute of Inorganic and Materials Chemistry, University of Cologne, Cologne, Germany, [3]Pathology and Physiology Research Branch, Health Effects Laboratory Division, National Institute for Occupational Safety and Health, Morgantown, WV, and [4]Department of Physiology and Pharmacology, West Virginia University, Morgantown, WV.

Abstract #

#1273 **Poster Board Number 618**
POLYAMIDOAMINE (PAMAM) DENDRIMERS INDUCE EPIGENETIC CHANGES IN A549 CELLS. *B. Fadeel*, N. Feliu, H. Karlsson, A. Krais, P. Kohonen, and A. Wallberg. Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden.

#1274 **Poster Board Number 619**
DOSE-METRICS FOR NANOPARTICLES IN *IN VITRO* TOXICITY TESTS. M. V. Park, D. J. Delmaar, W. J. Peijnenburg, *H. van Loveren*, W. H. de Jong, and A. G. Oomen. RIVM, Bilthoven, Netherlands.

#1275 **Poster Board Number 620**
MULTIWALLED CARBON NANOTUBES, CYTOTOXICITY, AND OXIDATIVE STRESS IN THE LUNGS OF RATS. *L. S. Van Winkle*, D. S. Anderson, D. Sanchez, R. Silva, D. Morin, *A. R. Buckpitt*, and *K. E. Pinkerton*. University of California Davis, Davis, CA.

#1276 **Poster Board Number 621**
MULTIWALLED CARBON NANOTUBES EXERT ASBESTOS-LIKE SUPPRESSIVE EFFECT ON NK CELLS, DECREASED CYTOTOXICITY WITH ALTERED EXPRESSION OF NK CELL-ACTIVATING RECEPTORS. Y. Nishimura[1], N. Kumagai-Takei[1], M. Maeda[2], H. Matsuzaki[1], S. Lee[1], and *T. Otsuki*[1]. [1]Hygiene, Kawasaki Medical School, Kurashiki, Japan, and [2]Biofunctional Chemistry, Graduate School of Natural Science and Technology, Okayama University, Okayama, Japan.

#1277 **Poster Board Number 622**
SYNERGISTIC EFFECT OF NANOPARTICLE SIZE AND ALUMINUM CHEMICAL COMPOSITION IN PRIMARILY CULTURED NEURAL CELLS INDUCED BY NANO-ALUMINUM OXIDE. *L. Q. Zhang*[1], C. S. Tang[2], P. F. Gao[3], L. Xu[1], L. Zhao[2], L. H. Yang[1], C. Zhang[1], and Q. Niu[1]. [1]Department of Occupational Medicine, Shanxi Medical University, Taiyuan, Shanxi, China, [2]Beijing Municipal Institute of Labour Protection Beijing Key Laboratory of Occupational Health and Safety, Beijing, China, and [3]Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing, China.

#1278 **Poster Board Number 623**
INHALATIONAL EXPOSURE OF CADMIUM OXIDE NANOPARTICLES LEADS TO ENDOCRINE DISRUPTION IN THE REPRODUCTIVE TRACT OF PREGNANT FEMALE MICE. *J. L. Blum*, L. Horton, J. Q. Xiong, and *J. T. Zelikoff*. Environmental Medicine, New York University, Tuxedo, NY.

#1279 **Poster Board Number 624**
CARBON NANOTUBES INDUCE IMMUNE SUPPRESSION VIA DIRECT EFFECTS ON DENDRITIC CELLS. A. Tkach[1], G. V. Shurin[2], M. R. Shurin[2], E. R. Kisin[1], A. R. Murray[1,4], S. H. Young[1], A. Star[2], *B. Fadeel*[3], *V. E. Kagan*[2], and *A. A. Shvedova*[1,4]. [1]NIOSH, Morgantown, WV, [2]University of Pittsburgh, Pittsburgh, PA, [3]Karolinska Institutet, Stockholm, Sweden, and [4]West Virginia University, Morgantown, WV.

Program Description (Continued)

Abstract #

#1280 **Poster Board Number 625**
DESIGN AND CHARACTERIZATION OF A NANOPARTICLE AEROSOL GENERATOR. *J. Yi*[1], *T. Knuckles*[1], B. Chen[2], E. Sabolsky[3], *V. Castranova*[2], and *T. Nurkiewicz*[1]. [1]Center for Cardiovascular and Respiratory Sciences, West Virginia University, Morgantown, WV, [2]National Institute for Occupational Safety and Health, Morgantown, WV, and [3]Mechanical Engineering Department, West Virginia University, Morgantown, WV.

#1281 **Poster Board Number 626**
AUTOMATED SPRAY CAN AEROSOL EXPOSURE SYSTEM DEVELOPED FOR INHALATION STUDIES INVOLVING PRODUCTS CONTAINING TITANIUM DIOXIDE NANOPARTICLES. W. McKinney, M. Jackson, and D. Frazer. NIOSH, Mograntown, WV. Sponsor: *V. Castranova*.

#1282 **Poster Board Number 627**
ASSESSMENT OF PULMONARY TOXICITY OF FUNCTIONALIZED MULTIWALL CARBON NANOTUBES *IN VITRO*. *A. Mishra*[1,2], T. Stueckle[1], R. Derk[1], D. Schwegler-Berry[1], N. Wu[2], *Y. Rojanasakul*[2], *V. Castranova*[1,2], and L. Wang[1,2]. [1]Pathology & Physiology Research Branch, CDC NIOSH, Morgantown, WV, and [2]Pharmacological & Pharmaceutical Sciences, West Virginia University Health Sciences Center, Morgantown, WV.

#1283 **Poster Board Number 628**
SEMICONDUCTOR NANOPARTICLES EXHIBIT DIFFERENTIAL CYTOTOXICITY THROUGH MITOCHONDRIAL ROS STIMULATION IN A459 CELLS. V. Escamilla-Rivera[1], M. Uribe-Ramirez[1], V. Subramaniam[2], *L. Arreola-Mendoza*[3], O. Barbier[2], and *A. De Vizcaya-Ruiz*[1]. [1]Toxicology, Cinvestav-IPN, Mexico City, Mexico, [2]SEES, Cinvestav-IPN, Mexico City, Mexico, and [3]Biosciences and Engineering, CIIEMAD-IPN, Mexico City, Mexico.

#1284 **Poster Board Number 629**
LOCALIZATION, QUANTIFICATION, AND GENERAL TOXICOLOGY OF INTRAVENOUSLY INJECTED HAFNIUM-BASED NANOPARTICLES (NBTXR3) AFTER REPEATED X-RAY EXPOSURE TO COMPUTED TOMOGRAPHY (CT) IN THE RAT. *S. Baudet*[1], A. Pager[2], C. Devaux[3], D. Ravelo[1], E. Chéreul[2], and L. Lévy[3]. [1]Ricerca Biosciences SAS, Lyon, France, [2]Voxcan, Lyon, France, and [3]Nanobiotix, Paris, France.

#1285 **Poster Board Number 630**
CYTOTOXICITY AND GENOTOXICITY OF SILVER NANOPARTICLES IN HUMAN LUNG CELLS. L. Falank[1,2], *H. Xie*[1,2,3], D. McGovern[1,2], A. Sample[1,2], S. Abramson[1,2], A. Perez[1,2], M. D. Mason[4], G. Craig[4], and *J. P. Wise, Sr.*[1,2,3]. [1]Wise Laboratory of Environmental and Genetic Toxicology, University of Southern Maine, Portland, ME, [2]Maine Center for Toxicology and Environmental Health, University of Southern Maine, Portland, ME, [3]Department of Applied Medical Science, University of Southern Maine, Portland, ME, and [4]Department of Chemical and Biological Engineering, Institute for Molecular Biophysics, University of Maine, Orono, ME.

Abstract #

#1286 **Poster Board Number 631**
KIDNEY INJURY MOLECULE-1 AS AN EARLY BIOMARKER OF RENAL INJURY FOLLOWING INHALATIONAL EXPOSURE TO CADMIUM OXIDE NANOPARTICLES BY FEMALE MICE: COMPARISON WITH URINARY PROTEIN, CREATININE, AND GLUCOSE. *J. T. Zelikoff*[1], J. Vargha[2], *J. L. Blum*[1], and *J. Edwards*[2]. [1]Environmental Medicine, New York University School of Medicine, Tuxedo, NY, and [2]Pharmacology, Midwestern University, Downers Grove, IL.

#1287 **Poster Board Number 632**
DEPOSITION PATTERN OF SINGLE-WALLED CARBON NANOTUBES WITHIN ALVEOLAR MACROPHAGES OF GOLDEN SYRIAN HAMSTERS FOLLOWING INHALATION. H. Sukhija, K. Bijlani, and J. M. Cerreta. PHS, St. John's University, Queens, NY. Sponsor: *L. Trombetta*.

#1288 **Poster Board Number 633**
TRANSCRIPTIONAL REPROGRAMMING OF LUNG EPITHELIAL CELLS BY LOW-DOSE EXPOSURE TO SILICA NANOPARTICLES LEADS TO ENHANCED SUSCEPTIBILITY TO METAL CYTOTOXICITY. *N. J. Karin*[1,4], M. J. Gaffrey[1,4], M. H. Littke[1,4], *K. M. Waters*[1,4], *J. G. Teeguarden*[1,4], W. Wang[2,4], J. A. Price[3,4], and *B. D. Thrall*[1,4]. [1]Pacific Northwest National Laboratory, Richland, WA, [2]Oak Ridge National Laboratory, Oak Ridge, TN, [3]Battelle, Columbus, OH, and [4]Battelle Center for Fundamental and Applied Systems Toxicology, Columbus, OH.

#1289 **Poster Board Number 634**
THE PROINFLAMMATORY RESPONSE OF PORCINE BRAIN MICROVESSEL ENDOTHELIAL CELLS TO METALLIC NANOPARTICLES SHOWS COMPOSITION AND SIZE DEPENDENCY. W. J. Trickler[1], S. M. Lantz[1], B. L. Robinson[1], G. D. Newport[1], *J. J. Schlager*[2], *M. G. Paule*[1], *W. Slikker*[1], *S. M. Hussain*[2], and *S. F. Ali*[1]. [1]Neurotoxicology, NCTR/FDA, Jefferson, AR, and [2]Applied Biotechnology Branch, Human Effectiveness Directorate, Air Force Research Laboratory, Wright-Patterson AFB, Dayton, OH.

#1290 **Poster Board Number 635**
MULTIWALLED CARBON NANOTUBES INHIBIT REGENERATIVE AXON GROWTH IN MICE. D. Remonde, D. Wu, A. Raafat, E. Pak, *C. Wingard*, and A. Murashov. Physiology, East Carolina University, Greenville, NC.

#1291 **Poster Board Number 636**
A COMPARISON OF THREE DISPERSION MEDIA ON THE PHYSICOCHEMICAL AND TOXICOLOGICAL BEHAVIOR OF TIO2 AND NIO NANOPARTICLES. E. R. Gutierrez[1], Y. Li[1], *K. Sexton*[1], *I. Jaspers*[2], R. Kamens[1], and M. Tolocka[1]. [1]Gillings School of Global Public Health, Department of Environmental Sciences and Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC, and [2]Center for Environmental Medicine, Asthma, and Lung Biology, School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC.

Program Description (Continued)

Abstract #

#1292 **Poster Board Number 637**
DISTINCT IMMUNOMODULATORY EFFECTS OF A PANEL OF NANOMATERIALS IN HUMAN DERMAL FIBROBLASTS. *A. A. Romoser*, and *C. M. Sayes*. VTPP, Texas A&M University, College Station, TX.

#1293 **Poster Board Number 638**
ASSESSMENT OF HUMAN HEALTH HAZARDS FROM EXPOSURE TO NEW TECHNOLOGY DIESEL EXHAUST (NTDE). *T. W. Hesterberg*[1], C. M. Long[2], S. N. Sax[2], *C. A. Lapin*[3], *W. B. Bunn*[1], *P. A. Valberg*[2], and *R. O. McClellan*[4]. [1]Navistar, Inc., Chicago, IL, [2]Gradient, Cambridge, MA, [3]Lapin and Associates, Glendale, CA, and [4]Toxicology and Risk Analysis, Albuquerque, NM.

#1294 **Poster Board Number 639**
EFFECTS OF SURFACE CHEMISTRY ON TOXICITY OF COPPER NANOPARTICLES. M. Shi[1], Z. Peng[1], *A. Elder*[2], and H. Yang[1]. [1]Chemical Engineering, University of Rochester, Rochester, NY, and [2]Environmental Medicine, University of Rochester, Rochester, NY.

#1295 **Poster Board Number 640**
CONTRACTILE EFFECTS OF SILVER NANOPARTICLES ON THE RAT TRACHEAL SMOOTH MUSCLE: ROLE OF NITRIC OXIDE. C. Gonzalez[1,2], S. S. Salazar-Garcia[1], G. Palestino[1], P. P. Martinez-Cuevas[1], M. A. Ramirez-Lee[1], B. B. Jurado-Manzano[1], H. Rosas-Hernandez[1], N. Gaytan-Pacheco[1], G. Martel[1], R. Espinosa-Tanguma[1], and *S. F. Ali*[2]. [1]Faculty of Chemistry Sciences, Autonomous University of San Luis Potosi, San Luis Potosi, SLP, Mexico, and [2]NCTR/FDA, Jefferson, AR.

#1296 **Poster Board Number 641**
PULMONARY TOXICITY ASSESSMENT OF CARBON NANOTUBES IN MICE AFTER INHALATION EXPOSURE. A. Adamcakova-Dodd[1], P. T. O'Shaughnessy[1], R. Altmaier[1], W. Xie[1], V. H. Grassian[2], and *P. S. Thorne*[1]. [1]Occupational and Environmental Health, University of Iowa, Iowa City, IA, and [2]Chemistry, University of Iowa, Iowa City, IA.

#1297 **Poster Board Number 642**
EVALUTION OF PULMONARY TOXICITY RESULTING FROM NANOPARTICLE EXPOSURE. R. Silva, C. Teesy, L. Franzi, and *K. E. Pinkerton*. University of California Davis, Davis, CA.

#1298 **Poster Board Number 643**
SILICA NANOPARTICLES INDUCE CELL DEATH IN LUNG EPITHELIAL CELLS THROUGH MITOCHONDRIA AND ENDOPLASMIC RETICULUM PATHWAYS. *T. Lu*[1,2], L. Tsai[1], *D. Hung*[3], C. Yen[4], C. Su[5], *C. Huang*[6], S. Liu[7], and *Y. Chen*[1,2]. [1]Graduate Institute of Basic Medical Science, China Medical University, Taichung, Taiwan, [2]Department of Physiology, China Medical University, Taichung, Taiwan, [3]Toxicology Center, China Medical University Hospital, Taichung, Taiwan, [4]Department of Occupational Safety and Health, Chung Shan Medical University, Taichung, Taiwan, [5]Department of Otorhinolaryngology, Head and Neck Surgery, Changhua Christian Hospital, Changhua, Taiwan, [6]School of Chinese Medicine, China Medical University, Taichung, Taiwan, and [7]Institute of Toxicology, College of Medicine, National Taiwan University, Taipei, Taiwan.

Tuesday Morning and Afternoon, March 13
9:00 AM to 4:30 PM
Room 270

FS

Research Funding Session: Research Funding Information Room

Chairperson (s): *Nancy Kerkvliet, Oregon State University, Corvallis, OR.*

Sponsor:
Research Funding Committee

Program and review staff from agencies that fund research, including NIH and the Center for Scientific Review, NIEHS will be available in the Research Funding Information Room for individual conversations. Check the posted schedule at the NIEHS booth (2037) for specific times staff members will be available to answer your questions about scientific review or grant opportunities. The schedule also will be available at the registration area and in Room 206, site of the "Strategies for Submitting Successful Grants: Brown Bag Lunch."

Tuesday Morning, March 13
9:45 AM to 10:45 AM
Room 101

E

Exhibitor Hosted Session: Current Strategies for Juvenile Toxicity Testing

Presented by:
Charles River

Since issuance of the pediatric rule 14 years ago, we have conducted over 300 juvenile toxicity studies in rodent and nonrodent animals for numerous therapeutics (large and small molecule) and chemicals. This seminar will cover what we have learned, current global regulatory expectations, and program designs including species, dose routes, and evaluation.

Tuesday Morning, March 13
9:45 AM to 10:45 AM
Room 100

E

Exhibitor Hosted Session: Developing a Novel Gene Therapy Product for the Treatment of Rare X-Linked Disease

Presented by:
Huntingdon Life Sciences

Safety assessment of gene therapy products is a complex business with multiple safety risks. Standard paradigms do not exist and approaches must be designed on a case-by-case basis. A case study will be discussed that highlights considerations for a gene therapy to treat an x-linked disease.

Tuesday Morning, March 13
9:45 AM to 10:45 AM
Room 105

E

Exhibitor Hosted Session: Experience Results: Lessons Learned Developing New Anticancer Drugs and Biotherapeutics

Presented by:
Accelera Srl

Case stories from the direct experience of safety assessment for different drug development programs, including some marketed products, are presented with special emphasis on anticancer drugs and biotherapeutics. Challenges, key issues, and lessons learned are described in the context of scientific and regulatory requirements.

Program Description (Continued)

Tuesday Morning and Afternoon, March 13
10:30 AM to 2:30 PM
Exhibit Halls A–C *(Across from SOT Pavilion)*

High School Research Poster Presentations

Chairperson(s): *Daniel E. Arrieta, Chevron Phillips Chemical Company LP, The Woodlands, TX.*

Sponsors:
Education Committee
K–12 Subcommittee

High school student research related to toxicology is featured in an area adjacent to the SOT Pavilion. 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 drop by to visit with these outstanding potential future toxicologists. More information is available on the SOT Annual Meeting website.

Tuesday Morning, March 13
11:00 AM to 12:00 Noon
Room 105

Exhibitor Hosted Session: Best Practices for Assessing Functional CV Endpoints in Repeat Dose Tox Studies

Presented by:
Data Sciences International

Experienced cardiovascular physiologist and histopathologist will present data from recent studies. In the drug development context, utilization of current methodologies in tox studies and best practices for assessing CV risk will be discussed.

Tuesday Morning, March 13
11:00 AM to 12:00 Noon
Room 100

Exhibitor Hosted Session: Innovative Models and Techniques for the Investigation of Nanotoxicity

Presented by:
Fraunhofer ITEM

The session will focus on the state of the art and future of *in vivo* inhalation tests, innovative *in vitro* and *ex vivo* models as significant tools in inhalation toxicology, and sensitive methods to detect lung damage potentially induced by nanoparticles including carbonanotubes.

Tuesday Morning, March 13
11:00 AM to 12:00 Noon
Room 101

Exhibitor Hosted Session: Searching for Drug Safety, Efficacy, and Performance: Scientific and Regulatory Perspectives

Presented by:
PointCross Life Sciences, Inc.

Nonclinical scientists and regulatory reviewers are increasingly confronted with the need to assess safety, efficacy, and performance of drug candidates across study data, reports, chemical structures, and other artifacts. This session focuses on practical ways to search and navigate disparate information from the perspective of R&D and US FDA reviewers.

TUESDAY AFTERNOON

Tuesday Afternoon, March 13
12:00 Noon to 1:30 PM
Marriott Marquis Foothills G

Association of Scientists of Indian Origin Special Interest Group Student/Postdoc Mentoring Program

Tuesday Afternoon, March 13
12:00 Noon to 1:15 PM
Room 256
(Ticket Required)

Postdoctoral Assembly Luncheon

Chairperson(s): *Michele La Merrill, Mount Sinai School of Medicine, New York, NY.*

Sponsor:
Postdoctoral Assembly

Amidst scrambling to attend all of the events at the meeting, this will be time for postdocs to kick back and relax! All postdoctoral scholars are invited to a casual luncheon organized by the Postdoctoral Assembly (PDA). The recipients of the Best Postdoctoral Publication Awards and the postdocs who received awards this year from Regional Chapters, Special Interest Groups, and Specialty Sections will be announced. The PDA Board members will present an overview of accomplishments and future directions for the PDA, and will introduce the new board members for 2012–2013. There will be a drawing for prizes. Postdocs can reserve a ticket for $5 when they register for the Annual Meeting.

Tuesday Afternoon, March 13
12:00 Noon to 1:30 PM
Room 206

Research Funding Session: Strategies for Submitting Successful Grants: Brown Bag Lunch

Chairperson(s): *Nancy Kerkvliet, Oregon State University, Corvallis, OR.*

Sponsor:
Research Funding Committee

This investigators' luncheon focuses on strategies for submitting successful grant packages. Panelists will be on hand to talk about the ins and outs of what makes a successful grant submission, what you should do before putting pen to paper, how to write the grant, what strategies are used to help make grant submissions stand out, and how the application progresses through the review process. Panelists for this brown bag luncheon include Dr. Janice Benson-Allen, Scientific Review Officer, National Institute of Environmental Health Sciences, Dr. Heather B. Patisaul, Assistant Professor, North Carolina State University, and Dr. Stacey Lynn Harper, Assistant Professor, Oregon State University.

Program Description (Continued)

Abstract #

Tuesday Afternoon, March 13
12:00 Noon to 1:20 PM
Room 305

Regulatory Science: Bridging the Gap between Discovery and Product Availability

Roundtable Session: Evolving the EPA Endocrine Disruptor Screening Program: From Using High-Throughput Screening Assays for Prioritization to Reducing Reliance on Whole-Animal Tests

Chairperson(s): *Richard Judson, US EPA, Research Triangle Park, NC, and Vicki L. Dellarco, US EPA, Washington, DC.*

Sponsor:
Reproductive and Developmental Toxicology Specialty Section

Endorsed by:
***In Vitro* and Alternative Methods Specialty Section**

Testing has begun as part of the EPA Endocrine Disruptor Screening Program (EDSP) Tier 1 battery of 11 *in vitro* and *in vivo* tests. A recognized issue with the EDSP is that the current Tier 1 screening battery is highly resource intensive in terms of cost, time, and animal usage for the large numbers of chemicals with unknown endocrine potential that need to be evaluated. The significant advances in both computational and molecular technologies have enabled a more rapid identification of markers for adverse outcome pathways since EPA began work on developing and implementing the EDSP. The EPA is proposing to evolve the EDSP by incorporating *in vitro* high-throughput screening (HTS) assays that can rapidly detect potential interactions of chemicals with the estrogen, androgen, thyroid hormone, and steroidogenesis (EATS) pathways. In the near term, incorporating HTS assays will focus on developing a prioritized list of chemicals for evaluation in the current Tier 1 battery. Prioritization would continue to take other factors into account, including exposure and use. A longer term goal is to evolve the Tier 1 battery by fully incorporating HTS assays in order to increase reliance on nonanimal screens for which there is confidence in their ability to predict *in vivo* adverse effects. Although the overall approach is reasonable, it is highly provocative and debatable for a number of reasons. On the one hand, this proposal has the potential to greatly improve the speed, cost effectiveness, and mechanistic specificity of the EDSP using fewer animals, but on the other hand, there are concerns about reliability and relevance of the HTS assays and lack of full validation (e.g., transferability between laboratory evaluation) metabolic capacity, etc. Our panel of experts will present the case for and against using this approach and will allow time for open discussion with the audience.

#1299 12:00 **EVOLVING THE EPA ENDOCRINE DISRUPTOR SCREENING PROGRAM: THE CASE FOR AND AGAINST USING HIGH-THROUGHPUT SCREENING ASSAYS IN EDSP TIER 1.** *R. Judson*[1], *S. Marty*[3], *V. Dellarco*[2], and *T. Zoeller*[4]. [1]US EPA, Research Triangle Park, NC, [2]US EPA, Washington, DC, [3]Dow Chemical Company, Midland, MI, and [4]University of Massachusetts, Amherst, MA.

12:00 **INTRODUCTION.** Richard Judson

12:05 **HIGH-THROUGHPUT ENDOCRINE-PATHWAY ASSAYS ARE READY FOR TESTING THOUSANDS OF CHEMICALS.** Richard Judson

12:20 **ONE VIEW FROM INDUSTRY ON THE PROMISES AND CHALLENGES OF USING HTS ASSAYS IN EDSP.** Sue Marty

12:35 **A VIEW FROM THE EPA REGULATORY OFFICES ON THE PROMISES AND CHALLENGES OF USING HTS ASSAYS IN THE EDSP.** Vicki L. Dellarco

Abstract #

12:50 **HTS ASSAYS COVERING KEY PATHWAYS COVERED BY EDSP TIER 1 DO NOT YET EXIST.** Thomas Zoeller

1:05 **Q&A.** Panel Discussion

Tuesday Afternoon, March 13
12:00 Noon to 1:20 PM
Room 307

Regulatory Science: Bridging the Gap between Discovery and Product Availability

Roundtable Session: Improving Chemical Safety Assessment through Harmonization: Why, How, and When?

Chairperson(s): *Haitian Lu, Dow AgroSciences LLC, Indianapolis, IN, and Michael Holsapple, Battelle, Columbus, OH.*

Sponsor:
Regulatory and Safety Evaluation Specialty Section

Endorsed by:
American Association of Chinese in Toxicology Special Interest Group
Global Strategy Task Force
Risk Assessment Specialty Section

Chemical safety assessment for the protection of human health is not harmonized globally. Toxicology data requirements and test guidelines that differ across geographies could result in repetition of studies and therefore waste of animals and resources. The other prominent difference is that although exposure and risk assessment are critical components of well-established regulatory frameworks, the chemical safety regulations differ in several emerging geographies and heavily rely on hazard-based approaches. What also remains to be discussed is how more harmonized approaches for risk assessment can be achieved globally, considering potential geographic differences in exposure scenarios, and the utility of hazard-based approaches under certain circumstances. A roundtable session on opportunities for more harmonized paradigms and practices of chemical safety assessment is both important and timely as emerging geographies are becoming increasingly influential in the global economy, and several of them are actively developing their regulatory frameworks. This session intends to provide a unique opportunity for stakeholders from all over the world, including regulators from emerging geographies, to review the current status, exchange views on the challenges and opportunities, dialogue on potential solutions on the basis of sound science in toxicology and risk assessment, and brainstorm on a path forward. Overall, this session seeks to facilitate the participants to reach mutual understanding of current challenges and opportunities and collaborate on proposing strategies to achieve more harmonized paradigms and approaches across geographies.

#1300 12:00 **IMPROVING CHEMICAL SAFETY ASSESSMENT THROUGH HARMONIZATION: WHY, HOW, AND WHEN?** *H. Lu*[1], *M. P. Holsapple*[2], *A. Kaplan*[3], *M. K. Manibusan*[4], *A. Boobis*[5], Y. Gao[6], and A. Vekic[7]. [1]Dow AgroSciences LLC, Indianapolis, IN, [2]Battelle, Columbus, OH, [3]A. Michael Kaplan and Associates LLC, Landenberg, PA, [4]US EPA, Washington, DC, [5]Imperial College London, London, United Kingdom, [6]Chemical Registration Center, Ministry of Environmental Protection, Beijing, China, and [7]National Health Surveillance Agency, Brasilia, Brazil.

12:00 **INTRODUCTION.** Haitian Lu

12:05 **CAN MORE HARMONIZED RISK ASSESSMENT AND HAZARD IDENTIFICATION APPROACHES BE ACHIEVED?** A. Michael Kaplan

TUESDAY

Program Description (Continued)

Abstract #

12:17 **THE UNITED STATES PESTICIDE HUMAN HEALTH RISK ASSESSMENT PARADIGM: A SHIFT IN WEIGHT OF EVIDENCE ANALYSIS.** Mary K. Manibusan

12:29 **PROTECTION OF PUBLIC HEALTH FROM CHEMICALS IN EUROPE: HOW IMPORTANT IN EXPOSURE?** Alan R. Boobis

12:41 **DEVELOPMENT OF NEW CHEMICAL RISK ASSESSMENT IN CHINA, YESTERDAY, TODAY, AND TOMORROW.** Jinglei Nie

12:53 **CRITERIA FOR TOXICOLOGICAL EVALUATION FOR HUMAN HEALTH IN BRAZIL.** Ana Maria Vekic

1:05 **PANEL DISCUSSION/Q&A.**

Tuesday Afternoon, March 13
12:00 Noon to 1:20 PM
Room 303

R

Roundtable Session: Testing of Nanomaterials for Genotoxicity—Necessity or Waste of Time?

Chairperson(s): *Andre Nel, University of California, Los Angeles, CA, and Stefan Pfuhler, Procter & Gamble, Cincinnati, OH.*

Sponsor:
Nanotoxicology Specialty Section

Endorsed by:
Carcinogenesis Specialty Section
Risk Assessment Specialty Section

The selection or use of genotoxicity assays for testing nanomaterials remains a controversial issue. There are published studies indicating that some nanomaterials are genotoxic *in vitro* as well as *in vivo*, yet there are many unknowns and confounding factors that impact our ability to come up with the right approach. Genotoxicity tests were designed for testing chemicals and may not be suitable for the screening of particulate material. Furthermore, the classical direct interaction of a chemical or its metabolite with DNA, which our assays are optimized for, will not play a role in the majority of nanomaterials. Because we are still learning about the mechanisms by which nanomaterials can exert genotoxic effects, we can see a clear pattern evolving from acute and chronic toxicity studies. The bulk of nanomaterials that caused toxic effects seem to induce inflammatory processes that will generate oxidative stress. DNA damage triggered by inflammatory processes that is viewed quite differently in risk assessment, and the question of whether a material triggers genotoxic activity directly or through a threshold mechanism has a huge impact on public health decisions. How should this impact the selection of our assays? Does the performance of standard genotoxicity assays make sense at all? As the scientific community is facing the challenge of conducting hazard/risk assessments on nanomaterials today, guidance is desperately needed. Our panel of experts will share recent data in order to fuel discussion and seek consensus as to whether standard *in vitro* and *in vivo* genetox assays should have a place in the assessment of these materials, whether additional assays should be added on, or whether we are in need of a paradigm shift for this class of materials.

Abstract #

#1301 12:00 **TESTING OF NANOMATERIALS FOR GENOTOXICITY—NECESSITY OR WASTE OF TIME?** S. Pfuhler[1], A. Nel[2], S. H. Doak[3], M. Crosby[1], and T. Singer[4]. [1]Central Product Safety, Procter & Gamble, Cincinnati, OH, [2]Molecular Screening Shared Resources UC CEIN, NanoSystems Institute, University of California Los Angeles, Los Angeles, CA, [3]Institute of Life Science, School of Medicine, Swansea University, Swansea, Wales, United Kingdom, and [4]Mechanistic Studies Division, Environmental Health Science and Research Bureau, Health Canada, Ottawa, ON, Canada. Sponsor: *C. Somps*.

12:00 **INTRODUCTION.** Stefan Pfuhler

12:05 ***IN VITRO* GENOTOXICITY TESTING STRATEGIES FOR NANOMATERIALS.** Shareen H. Doak

12:18 **DNA DAMAGED CAUSED BY NANOPARTICLES MAY BE SECONDARY TO INFLAMMATION AND MAY BE PREDICTED BY A SYSTEMS BIOLOGY APPROACH.** Stefan Pfuhler

12:31 **HIGH-THROUGHPUT SCREENING (HTS) FOR NONGENOTOXIC RESPONSES TO ENGINEERED NANOMATERIALS.** Andre Nel

12:44 **UNTESTED WATERS: THE REGULATORY LANDSCAPE FOR GENETOX TESTING OF NANOMATERIALS.** Tim Singer

12:57 **Q&A.** Panel Discussion

Tuesday Afternoon March 13
12:15 PM to 1:15 PM
Room 105

E

Exhibitor Hosted Session: Advancing the Science of Stem Cells in Toxicology

Presented by:
Integrated Laboratory Systems, Inc.

This presentation will compare stem cells to traditional *in vivo* and *in vitro* models for their relative utility in evaluating the toxicity of pharmaceuticals, chemicals, and personal care products. Specific emphasis will be placed on the advantages of stem cell-based platforms for assessing reproductive and developmental toxicity, neurotoxicity, and cardiotoxicity.

Tuesday Afternoon March 13
12:15 PM to 1:15 PM
Room 100

E

Exhibitor Hosted Session: Dermal Drug Development

Presented by:
CiToxLAB

The session will present the toxicology studies to support the development of a dermal drug, covering early screening assays, IND-enabling package, and full development. In addition the session will cover the skin histology in laboratory animals and issues relating to broken skin and wound healing.

Program Description (Continued)

Tuesday Afternoon March 13
12:15 PM to 1:15 PM
Room 101

E

Exhibitor Hosted Session: Preliminary Characterization of the Aryl Hydrocarbon Receptor Knockout Rat Shows Significant Cross-Species Differences Compared with the Mouse

Presented by:
SAGE Labs

Advances in genetic engineering have enabled the generation of targeted knockout rats. We will discuss the technology used to develop Mdr1a, Bcrp, and Mrp2 drug transporter knockouts. Data from these models demonstrate they may serve as more relevant and specific tools for the elucidation of compound efflux and DMPK studies.

Tuesday Afternoon, March 13
12:30 PM to 2:00 PM
Marriott Marquis Foothills E

Northeast Regional Chapter Student Luncheon

Tuesday Afternoon, March 13
12:30 PM to 1:20 PM
Room 304

FS

Distinguished Toxicology Scholar Award Lecture: Environmental Chemicals: From Biochemical and Molecular Toxicology to Education and Outreach

Lecturer: *Ernest Hodgson, North Carolina State University, and the North Carolina Agromedicine Institute, Raleigh, NC.*

Knowledge of modes of toxic action and risk analysis are approaching the point where systems biology will be essential for understanding. Human environments are also complex, from pristine ecosystems to those contaminated by human activities such as the agroecosystem, industrial workplaces, military deployments, and home environments. Each environment has numerous variants that overlap within and between categories and the exposome concept may also become essential. The speaker has been fortunate to be involved in a number of these aspects and as Distinguished Toxicology Scholar has an opportunity to discuss their past, present, and future. Successes, failures, and disappointments include such items as the mechanism of action of benzodioxole synergists, aryl hydrocarbon receptor(AhR)-independent induction of cyp1a2, human metabolism of agrochemicals, metabolic interactions, and agromedicine. Our studies have identified environmental chemicals that interact in humans based on induction, on enzyme inhibition by organophosphorus toxicants of both exogenous substrate and steroid hormone metabolism, and on activation of naphthalene metabolism. Microarray studies of the effect of chlorpyrifos on gene expression in human hepatocytes identified regulated genes and characterized the affected biological pathways.

Abstract #

Tuesday Afternoon, March 13
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Alternatives to Mammalian Models for Ocular Toxicity Testing

Chairperson(s): *Michael Olson, GlaxoSmithKline, Research Triangle Park, NC.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *1:00 PM–2:45 PM*

#1302 **Poster Board Number 101**
IRRITATION SCREENING *IN VITRO*: PREVALIDATION ACTIVITIES FOR THE IRE (ISOLATED RABBIT EYE) ASSAY. *M. J. Olson*[1], *C. Seaman*[2], *F. Guerriero*[1], A. Whittingham[3], A. Else[3], E. Adriaens[4], R. Guest[3], and W. Hawkins[2]. [1]EHS, GSK, Research Triangle Park, NC, [2]EHS, GSK, Ware, Herts., United Kingdom, [3]Harlan Lab., Shardlow, Derbs., United Kingdom, and [4]Adriaens Consulting, Aalter, Belgium.

#1303 **Poster Board Number 102**
INTER-LABORATORY STUDY OF THE REPRODUCIBILITY OF THE BOVINE CORNEAL OPACITY AND PERMEABILITY ASSAY: INVESTIGATIONS OF SOLID TEST SUBSTANCES. K. Norman[1], A. Schrage[2], S. N. Kolle[2], M. C. Rey Moreno[2], B. van Ravenzwaay[2], *R. Landsiedel*[2], and *H. Raabe*[1]. [1]Institute for In Vitro Sciences, Gaithersburg, MD, and [2]BASF SE, Ludwigshafen, Germany.

#1304 **Poster Board Number 103**
CONSIDERATIONS FOR DEMONSTRATING THE INTER-LABORATORY RELIABILITY OF THE BOVINE CORNEAL OPACITY AND PERMEABILITY ASSAY (BCOP) AND CHORIOALLANTOIC MEMBRANE VASCULAR ASSAY (CAMVA). G. Mun[1], N. Wilt[1], D. A. Donahue[2], J. Avalos[2], K. Norman[1], A. Hilberer[1], F. Simion[2], and *H. Raabe*[1]. [1]Institute for *In Vitro* Sciences, Gaithersburg, MD, and [2]Kao Brands Company, Cincinnati, OH.

#1305 **Poster Board Number 104**
COMPARISON OF A NEWLY DEVELOPED HUMAN CORNEAL FULL-THICKNESS EYE IRRITATION TEST (EIT) AND THE BOVINE CORNEAL OPACITY AND PERMEABILITY (BCOP) ASSAY. L. d'Argembeau-Thornton, M. Klausner, H. Kandarova, *P. J. Hayden*, and Y. Kaluzhny. MatTek Corp, Ashland, MA.

#1306 **Poster Board Number 105**
USE OF CONFOCAL MICROSCOPY TO EXAMINE ULTRA-MILD OCULAR IRRITATION IN CULTURED PORCINE CORNEAS. M. Piehl, M. R. Carathers, *G. L. DeGeorge*, and *D. R. Cerven*. MB Research Laboratories, Spinnerstown, PA.

#1307 **Poster Board Number 106**
DEVELOPMENT OF THE REPLACEMENT OCULAR BATTERY TIER 1—CHORIOALLANTOIC MEMBRANE VASCULAR ASSAY. *D. R. Cerven*, D. Hall, and *G. L. DeGeorge*. MB Research Laboratories, Spinnerstown, PA.

Program Description (Continued)

Abstract #

#1308 **Poster Board Number 107**
PROTOCOL REFINEMENT OF THE BOVINE CORNEAL AND OPACITY PERMEABILITY (BCOP) TEST FOR EYE IRRITATION. *G. Costin*[1], J. Barroso[2], *H. Raabe*[1], *R. Curren*[1], J. R. Nash[1], A. Kong[1], and V. Zuang[2]. [1]Institute for In Vitro Sciences, Inc. (IIVS), Gaithersburg, MD, and [2]European Commission (Joint Research Centre), Ispra, Italy.

#1309 **Poster Board Number 108**
PREDICTING EYE IRRITATION OF AGROCHEMICAL FORMULATIONS ACCORDING TO DIFFERENT CLASSIFICATION SCHEMES BY *IN VITRO* METHODS (BOVINE CORNEAL OPACITY AND PERMEABILITY AND EPIOCULAR EYE IRRITATION TEST). *A. van Cott*[2], S. N. Kolle[1], T. Knieriem[3], W. Mayer[3], A. Buechse[3], C. Rey Moreno[1], B. van Ravenzwaay[1], and *R. Landsiedel*[1]. [1]Experimental Toxicology and Ecology, BASF SE, Ludwigshafen am Rhein, Germany, [2]Agrochemicals Regulatory Toxicology, BASF Corporation, Research Triangle Park, NC, and [3]Agrochemicals Formulation Development, BASF SE, Ludwigshafen am Rhein, Germany.

#1310 **Poster Board Number 109**
PREVALIDATION OF THE ISOLATED RABBIT EYE ASSAY. *C. W. Seaman*[1], *M. J. Olson*[1], *F. Guerriero*[1], E. Adriaens[2], R. Guest[3], A. Whittingham[3], A. Pooles[3], and A. Els[3]. [1]EHS, GlaxoSmithKline, Ware, Hertfordshire, United Kingdom, [2]Adriaens Consulting, Aalter, Belgium, and [3]Harlan Laboratories, Derby, United Kingdom.

#1311 **Poster Board Number 110**
CDER RECOMMENDATIONS FOR OCULAR IRRITATION TESTING IN THE 21ST CENTURY. *J. C. Merrill*, B. A. Hill, and *A. C. Jacobs*. CDER US FDA, Silver Spring, MD.

Tuesday Afternoon, March 13
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Alternatives to Mammalian Models for Dermal Toxicity

Chairperson(s): *Yvonne Will, Pfizer Global Research & Development, Groton, CT.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *2:45 PM–4:30 PM*

#1312 **Poster Board Number 111**
LUSENS: A STABLE ANTIOXIDANT RESPONSE ELEMENT-DEPENDENT REPORTER GENE CELL LINE FOR DETECTION OF SKIN SENSITIZERS. T. Eltze[1], C. Bauch[2,1], T. Ramirez[1], S. N. Kolle[1], B. van Ravenzwaay[1], A. Mehling[3], C. J. Wruck[4], and *R. Landsiedel*[1]. [1]Experimental Toxicology and Ecology, BASF SE, Ludwigshafen am Rhein, Germany, [2]Faculty of Life Sciences, University of Manchester, Manchester, United Kingdom, [3]BASF Personal Care and Nutrition GmbH, Düsseldorf, Germany, and [4]Universitätsklinikum, RWTH Aachen, Aachen, Germany.

Abstract #

#1313 **Poster Board Number 112**
METABOLIC CHARACTERIZATION OF DERMAL SYSTEMS: KERATINOCYTES, 3-D SKIN MODELS, AND NATIVE HUMAN SKIN. V. Blatz[1], C. Jäckh[1], E. Fabian[1], B. van Ravenzwaay[1], K. Reisinger[2], and *R. Landsiedel*[1]. [1]Experimental Toxicology and Ecology, BASF SE, Ludwigshafen am Rhein, Germany, and [2]Henkel AG & Co. KGaA, Düsseldorf, Germany.

#1314 **Poster Board Number 113**
FUNCTIONAL VALIDATION OF THE KERATINOSENS CELL LINE TO SCREEN SKIN SENSITIZERS. *G. Adamson*[1], R. Emter[2], G. Ellis[3], and A. Natsch[2]. [1]Global Regulatory Affairs & Product Safety, Givaudan US, East Hannover, NJ, [2]Bioscience, Givaudan Schweiz AG, Duebendorf, Switzerland, and [3]Global toxicology, Givaudan Schweiz AG, Vernier, Switzerland.

#1315 **Poster Board Number 114**
***IN VITRO* DETECTION OF CONTACT ALLERGENS: PROTOCOL DEVELOPMENT AND SUCCESSFUL INTERNATIONAL RING STUDY USING HUMAN PERIPHERAL BLOOD MONOCYTE-DERIVED DENDRITIC CELLS.** *A. G. Schepky*, J. Spieker, S. Gerlach, H. Wenck, and H. Reuter. 4218-Research Toxicology, Beiersdorf AG, Hamburg, Germany.

#1316 **Poster Board Number 115**
ECVAM VALIDATION OF SKIN SENSITIZATION ALTERNATIVES: PROGRESS UPDATE. *D. Basketter*[1], E. Adriaens[2], P. Aeby[3], S. Aiba[4], N. Alépée[5], A. Angers-Loustau[6], T. Ashikaga[7], T. Cole[6], *G. Gerberick*[8], S. Hoffmann[9], J. Ovigne[10], J. Richmond[11], H. Sakaguchi[12], and S. Casati[6]. [1]DABMEB Consultancy Ltd, Sharnbrook, United Kingdom, [2]Adriaens Consulting, Aalter, Belgium, [3]Colipa, Brussels, Belgium, [4]Tohoku University, Sendai, Japan, [5]L'Oréal Research, Aulnay-sous-Bois, France, [6]European Commission, Ispra, Italy, [7]Shiseido, Yokohama, Japan, [8]Procter & Gamble, Cincinnati, OH, [9]SEH Consulting & Services, Köln, Germany, [10]Episkin- L'Oréal, Lyon, France, [11]Dr. Jon Richmond: Advice and Consultancy, Kirkcaldy, United Kingdom, and [12]Kao Corporation, Tochigi, Japan.

#1317 **Poster Board Number 116**
VALIDATION OF A GENE LIST PREDICTIVE FOR SKIN SENSITIZATION IN HUMAN KERATINOCYTES. J. van der Veen[1,2], T. Pronk[1,2], *H. van Loveren*[1,2], and J. Ezendam[1]. [1]GBO, RIVM, Bilthoven, Netherlands, and [2]Toxicogenomics, Maastricht University, Maastricht, Netherlands.

#1318 **Poster Board Number 117**
DEVELOPMENT OF A NEW *IN VITRO* SKIN SENSITIZATION ASSAY USING RECONSTRUCTED HUMAN EPIDERMIS (EPISENSA). K. Saito, Y. Nukada, O. Takenouchi, M. Miyazawa, H. Sakaguchi, and N. Nishiyama. Kao Corporation, Tochigi, Japan. Sponsor: *J. Avalos*.

Program Description (Continued)

Abstract #

#1319 **Poster Board Number 118**
A NOVEL HUMAN T-CELL PRIMING ASSAY FOR THE IDENTIFICATION OF CONTACT SENSITIZERS. P. R. Esser[1], S. S. Schmucker[2], L. Dietz[3], H. Thierse[3], A. Richter[2], and S. F. Martin[1]. [1]Allergy Research Group, University Freiburg Medical Center, Freiburg im Breisgau, Germany, [2]Miltenyi Biotech GmbH, Bergisch Gladbach, Germany, and [3]Research Group for Immunology & Proteomics, Department of Dermatology and University Medical Center Mannheim, University of Heidelberg, Mannheim, Germany. Sponsor: *M. Pallardy*.

#1320 **Poster Board Number 119**
B CELL INCREASES AND *EX VIVO* IL-2 PRODUCTION AS SECONDARY ENDPOINTS FOR THE DETECTION OF SENSITIZERS IN NONRADIOISOTOPIC LOCAL LYMPH NODE ASSAY USING FLOW CYTOMETRY. K. Jung[1], W. Jang[1], B. Kim[2], Y. Lee[3], Y. Yum[3], S. Sohn[3], Y. Park[1], and *K. Lim*[1]. [1]AMOREPACIFIC Co. R&D Center, Gyeonggi-do, Republic of Korea, [2]Keimyung University, Dae-Gu, Republic of Korea, and [3]National Institute of Food and Drug Safety Evaluation, Korea Food and Drug Administration, Chungcheongbuk-do, Republic of Korea.

#1321 **Poster Board Number 120**
DEVELOPMENT OF AN *IN VITRO* MODEL TO ASSESS THE EFFICACY OF TOPICAL ANTIOXIDANTS. M. Krcha, L. Krawiec, and K. Norman. Institute for In Vitro Sciences, Gaithersburg, MD. Sponsor: *H. Raabe*.

#1322 **Poster Board Number 121**
RETROSPECTIVE ANALYSIS OF THE EPIDERM 3-MINUTE PREDICTION MODEL FOR ASSESSMENT OF GHS SKIN CORROSION PACKING GROUP SUB-CATEGORY 1A. *H. Kandarova*, Y. Kaluzhny, J. Kubilus, *P. J. Hayden*, J. Sheasgreen, and M. Klausner. MatTek Corp., Ashland, MA.

#1323 **Poster Board Number 122**
OECD TG 404 ACUTE DERMAL TOXICITY TESTING STRATEGY COMBINING THE USE OF THE EPISKIN VALIDATED TEST METHODS. J. Cotovio[1], N. Alépée[1], M. Grandidier[1], N. Seyler[2], F. Soler[2], and J. Meunier[1]. [1]L'Oréal Research, Aulnay-sous-Bois, France, and [2]EPISKIN Predictive Evaluation, Lyon, France. Sponsor: *G. Nohynek*.

#1324 **Poster Board Number 123**
OECD TG 404 ACUTE DERMAL TOXICITY TESTING STRATEGY USING THE SKINETHIC RHE VALIDATED TEST METHODS. S. Martins[2], N. Alépée[1], C. Tornier[2], J. Cotovio[1], and J. Meunier[1]. [1]L'Oréal Research, Aulnay-sous-Bois, France, and [2]SkinEthic Laboratories, Lyon, France. Sponsor: *G. Nohynek*.

#1325 **Poster Board Number 124**
EVALUATION OF IRR-IS®, AN EPISKIN™-BASED MODEL FOR QUANTIFYING CHEMICAL IRRITATION POTENCY. H. Groux[2], D. Lelièvre[1], F. Cottrez[2], C. Auriault[2], and J. Cotovio[1]. [1]L'Oréal Research, Aulnay-sous-Bois, France, and [2]Immunosearch, Grasse, France. Sponsor: *G. Nohynek*.

Abstract #

#1326 **Poster Board Number 125**
ASIAN RECONSTRUCTED EPIDERMIS MODEL ASSESSMENT FOR THE *IN VITRO* PREDICTION OF SKIN IRRITATION ACCORDING TO THE ECVAM-VALIDATED PROTOCOL. C. Ding[1], Y. Wu[1], N. Li[1], J. Qiu[1], D. Jiang[1], L. Zhong[1], D. Lelièvre[2], J. Cotovio[2], and Z. Cai[1]. [1]L'Oréal Research and Innovation, Shanghai, China, and [2]L'Oréal Research and Innovation, Aulnay-sous-Bois, France. Sponsor: *G. Nohynek*.

#1327 **Poster Board Number 126**
COMPARISON OF DIFFERENT SKIN MODELS TO THE 3T3 NRU PT FOR CHEMICALLY-INDUCED PHOTOTOXICITY. L. F. Pratt, *G. L. DeGeorge*, and *D. R. Cerven*. MB Research Laboratories, Spinnerstown, PA.

Tuesday Afternoon, March 13
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Chemical and Biological Weapons: Agents and Countermeasures

Chairperson(s): *John H. McDonough, US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *1:00 PM–2:45 PM*

#1328 **Poster Board Number 131**
ISOFLAVONE-INDUCED RECOVERY OF BODY WEIGHT FOLLOWING EXPOSURE TO GAMMA RADIATION. *M. R. Landauer*. Armed Forces Radiobiology Research Institute, Bethesda, MD.

#1329 **Poster Board Number 132**
NOVEL PYRIDINIUM OXIMES AS REACTIVATORS OF ORGANOPHOSPHATE (OP) INHIBITED ACETYLCHOLINESTERASE (ACHE) IN THE CENTRAL NERVOUS SYSTEM. *E. C. Meek*[1], H. W. Chambers[1], *J. M. Gearhart*[2], *R. B. Pringle*[1], and *J. E. Chambers*[1]. [1]College of Veterinary Medicine, Mississippi State University, Mississippi State, MS, and [2]AFRL, Wright-Patterson AFB, Dayton, OH.

#1330 **Poster Board Number 133**
NEURAL PROTECTION IN THE CENTRAL NERVOUS SYSTEM AGAINST NERVE AGENT SURROGATES USING NOVEL PYRIDINIUM OXIMES. *R. B. Pringle*[1], *E. C. Meek*[1], H. W. Chambers[2], *J. M. Gearhart*[3], and *J. E. Chambers*[1]. [1]College of Veterinary Medicine, Mississippi State University, Mississippi State, MS, [2]Entomology and Plant Pathology, Mississippi State University, Mississippi State, MS, and [3]AFRL, Wright-Patterson AFB, Dayton, OH.

Program Description (Continued)

Abstract #

#1331 **Poster Board Number 134**
DISTINCT ALKYLATION SIGNATURES OF NITROGEN MUSTARD AND α-HALO CINNAMALDEHYDES ON THE ACTIVE SITE OF THIOREDOXIN REDUCTASE. *R. G. Udasin*[1,4], *Y. Jan*[2], *Y. Wang*[2], *D. E. Heck*[3], C. Guillon[5], K. Fabio[5], N. D. Heindel[5], *D. L. Laskin*[1,4], and *J. D. Laskin*[1,2]. [1]Joint Graduate Program in Toxicology, Rutgers University/University of Medicine and Dentistry of New Jersey, Piscataway, NJ, [2]Environmental and Occupational Medicine, University of Medicine and Dentistry of New Jersey/ Robert Wood Johnson Medical School, Piscataway, NJ, [3]Environmental Health Sciences, New York Medical College, Valhalla, NY, [4]Pharmacology and Toxicology, Rutgers University, Piscataway, NJ, and [5]Chemistry, Lehigh University, Bethlehem, PA.

#1332 **Poster Board Number 135**
REMOVAL OF TOXIC EFFECTS OF SOMAN AT THE HUMAN RESPIRATORY MUSCLE BY A NONREACTIVATING COMPOUND. H. Thiermann, T. Seeger, K. V. Niessen, and F. Worek. Bundeswehr Institute of Pharmacology and Toxicology, Munich, Germany. Sponsor: *A. Buerkle*.

#1333 **Poster Board Number 136**
WHOLE BODY EXPOSURE TO SARIN (GB) RESULTS IN SPONTANEOUS RECURRENT SEIZURES AND FUNCTIONAL IMPAIRMENT IN MALE RATS. L. Lumley[1], D. Miller[2], J. Schwartz[1], M. Moffett[1], *M. Furtado*[3], M. Schultz[1], B. Muse[2], *L. Wright*[1], W. Lumeh[1], N. Kelley[1], M. Stone[1], D. Yourick[3], and *C. Whalley*[2]. [1]USAMRICD, Aberdeen Proving Ground, MD, [2]ECBC, Aberdeen Proving Ground, MD, and [3]WRAIR, Silver Spring, MD.

#1334 **Poster Board Number 137**
ENDOTHELIAL TUBE FORMATION *IN VITRO* IS DISRUPTED AFTER EXPOSURE TO SULFUR OR NITROGEN MUSTARDS. K. Kehe[1,2], A. Schmidt[2,3], H. Thiermann[2], W. Bloch[3], and D. Steinritz[2]. [1]X 5, Bundeswehr Medical Office, München, Germany, [2]Bundeswehr Institute of Pharmacology and Toxicology, München, Germany, and [3]Deutsche Sporthochschule, Köln, Germany. Sponsor: *A. Bürkle*.

#1335 **Poster Board Number 138**
ADJUNCT TREATMENT WITH CARAMIPHEN EDISYLATE DOSE-DEPENDENTLY ATTENUATES THE BEHAVIORAL DEFICITS ASSOCIATED WITH SOMAN-INDUCED SEIZURE ACTIVITY. *L. K. Wright*, M. K. Scultz, M. C. Moffett, A. R. Bourne, C. R. Schultz, N. R. Kelley, J. E. Schwartz, and L. A. Lumley. Analytical Toxicology Division, US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD.

#1336 **Poster Board Number 139**
EFFECTS OF SELECTED ORGANOSELENIUMS AND STILBENES UPON THE TOXICITY OF 2-CHLOROETHYLETHYL SULFIDE IN A SKIN CELL MODEL. *M. A. Pino*[1,2], M. Pietka-Ottlik[3], and *B. Billack*[1]. [1]Pharmaceutical Sciences, St. John's University, Jamaica, NY, [2]Basic Biomedical Sciences, Touro College of Osteopathic Medicine, Harlem, NY, and [3]Organic Technology, Wroclaw University of Technology, Wroclaw, Poland.

Abstract #

#1337 **Poster Board Number 140**
CYTOKINE REGULATION BY MK2 IN KERATINOCYTES EXPOSED TO SULFUR MUSTARD. E. K. Yego, and *J. F. Dillman*. Cell and Molecular Biology Branch, US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD.

#1338 **Poster Board Number 141**
COMPARISON OF SEVERAL TERTIARY OXIMES ON REACTIVATION OF OP NERVE AGENT-INHIBITED ACHE IN THE CENTRAL NERVOUS SYSTEM. *T. Shih*, I. Koplovitz, *R. K. Kan*, and *J. H. McDonough*. Research Division, US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD.

#1339 **Poster Board Number 142**
NITROGEN MUSTARD EXPOSURE OF THE CORNEA INDUCES ERK ACTIVATION OF ADAM17 WITHIN MINUTES. *A. S. DeSantis*[1], R. A. Hahn[2], *D. R. Gerecke*[2], K. K. Svoboda[3], and *M. K. Gordon*[2]. [1]Allergan, Irvine, CA, [2]Ernest Mario School of Pharmacy, Rutgers University, Piscataway, NJ, and [3]Biomedical Sciences, Baylor College of Dentistry, Dallas, TX.

#1340 **Poster Board Number 143**
ABROGATION OF NITROGEN MUSTARD-INDUCED LUNG INJURY AND INFLAMMATION BY THE INDUCIBLE NITRIC OXIDE SYNTHASE (INOS) INHIBITOR AMINOGUANIDINE (AG). *A. Venosa*[1], *R. Malaviya*[1], L. Hall[2], A. J. Gow[1], *J. D. Laskin*[1], and *D. L. Laskin*[1]. [1]Joint Graduate Program in Toxicology, Rutgers University and University of Medicine of New Jersey, Robert Wood Johnson Medical School, Piscataway, NJ, and [2]Johnson & Johnson, Raritan, NJ.

#1341 **Poster Board Number 144**
THIOREDOXIN REDUCTASE MEDIATES NITROGEN MUSTARD-INDUCED ACTIVATION OF NF-KAPPAB/STAT3 SIGNALING IN LUNG EPITHELIAL CELLS. *I. Wohlman*[1], *Y. Jan*[2], *D. E. Heck*[3], *R. P. Casillas*[4], *D. L. Laskin*[1], and *J. D. Laskin*[2]. [1]Pharmacology & Toxicology, Rutgers University, Piscataway, NJ, [2]Environmental & Occupational Medicine, UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ, [3]Environmental Health Sciences, New York Medical College, Valhalla, NY, and [4]MRIGlobal, Kansas City, MO.

#1342 **Poster Board Number 145**
THE EFFECTS OF THE PULMONARY EXPOSURE OF RATS TO SULFUR MUSTARD ON CELLS OF THE IMMUNE SYSTEM. H. L. Meier, S. Golfeyz, D. S. Olivera, and A. M. Sciuto. Research, USAMRICD, Aberdeen Proving Ground, MD. Sponsor: *W. Smith*.

#1343 **Poster Board Number 146**
RAPID EVALUATIONS OF AQUATIC TOXICITY FOR NEW MUNITION COMPOUNDS. *C. J. Cao*, *W. S. Eck*, and *M. S. Johnson*. Toxicology Portfolio, US Army Institute of Public Health, Aberdeen Proving Ground, MD.

Program Description (Continued)

Abstract #

#1344 **Poster Board Number 147**
PHARMACOKINETICS OF MIDAZOLAM IN RHESUS MACAQUES. *P. Sabourin*[1], P. S. Hong[1], B. A. McCracken[1], B. A. Carper[1], *M. C. Babin*[1], and T. T. Belski[2]. [1]Battelle, Columbus, OH, and [2]US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD.

#1345 **Poster Board Number 148**
HISTOPATHOLOGICAL AND INFLAMMATORY CHANGES IN NITROGEN MUSTARD-INDUCED MOUSE SKIN INJURY AND POSSIBLE ROLE OF MYELOPEROXIDASE IN NEUTROPHIL-MEDIATED INFLAMMATION. *A. K. Jain*[1], *N. Tewari-Singh*[1], *S. Inturi*[1], M. Gu[1], D. J. Orlicky[1], *C. W. White*[2], and *R. Agarwal*[1]. [1]University of Colorado Denver, Aurora, CO, and [2]National Jewish Health, Denver, CO.

#1346 **Poster Board Number 149**
POTENTIAL THERAPIES FOR VESICANT-INFLICTED OCULAR INJURIES. *R. Agarwal*[1], *N. Tewari-Singh*[1], *A. Jain*[1], S. Inturi[1], D. A. Ammar[2], C. Agarwal[1], P. Tyagi[1], U. Kompella[1,2], E. W. Robert[2], and J. Petrash[2,1]. [1]Pharmaceutical Sciences, University of Colorado Denver, Aurora, CO, and [2]Opthalmology, University of Colorado Denver, Aurora, CO.

#1347 **Poster Board Number 150**
A MATHEMATICAL MODEL OF MEDICAL COUNTERMEASURES FOR SULFUR MUSTARD EXPOSURE. J. Rodriguez, G. I. Reeves, and G. E. McClellan. Applied Research Associates, Inc., Arlington, VA. Sponsor: *B. Asgharian*.

#1348 **Poster Board Number 151**
ABSORPTION CHARACTERISTICS OF VX FOLLOWING PERCUTANEOUS EXPOSURE OF HAIRLESS GUINEA PIGS. C. Byers[1], C. Whalley[1], L. Lumley[2], *E. Clarkson*[2], and E. Jakubowski[1]. [1]ECBC, US Army, Aberdeen Proving Ground, MD, and [2]MRICD, US Army, Aberdeen Proving Ground, MD.

#1349 **Poster Board Number 152**
TRANSIENT INHIBITION OF CONNEXIN43 EXPRESSION ATTENUATES THE ACUTE INFLAMMATORY RESPONSE IN THE SKIN OF HAIRLESS MICE EXPOSED TO THE SULFUR MUSTARD ANALOG NITROGEN MUSTARD. *J. D. Wang*[1], *R. A. Hahn*[1], *M. K. Gordon*[1], *R. P. Casillas*[2], *D. R. Gerecke*[1], and *Y. Chang*[1]. [1]Pharmacology and Toxicology, Ernest Mario School of Pharmacy, Rutgers University, Piscataway, NJ, and [2]MRIGlobal, Kansas City, MO.

#1350 **Poster Board Number 153**
ANTICONVULSANT EFFECTIVENESS OF SCOPOLAMINE AGAINST SOMAN-INDUCED SEIZURES IN AFRICAN GREEN MONKEYS. *J. H. McDonough*, J. McMonagle, B. Capacio, I. Koplovitz, and *T. Shih*. Research Division, US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD.

Abstract #

#1351 **Poster Board Number 154**
A FIELD-READY ANTIMICROBIAL WOUND DRESSING FOR THE TREATMENT OF CUTANEOUS VESICANT WOUNDS. *L. Allen-Hoffmann*[1,2], K. Gratz[1], N. Wieczorek[1], T. Cleven[2], S. Schlosser[2], C. Johnston[1], R. Bauer[1], and B. Steiglitz[1]. [1]Stratatech Corporation, Madison, WI, and [2]University of Wisconsin-Madison, Madison, WI.

#1352 **Poster Board Number 155**
IDENTIFICATION OF POTENTIAL VESICANT THERAPEUTIC TARGETS USING A HIGH-THROUGHPUT SIRNA SCREENING APPROACH. *A. L. Ruff*, S. Beach, H. Bensinger, C. Rothwell, and *J. F. Dillman*. Cellular and Molecular Biology, USAMRICD, Aberdeen Proving Ground, MD.

#1353 **Poster Board Number 156**
DEVELOPMENT OF NOVEL METHODOLOGY FOR THE ISOLATION AND EXPANSION OF MURINE MESENCHYMAL STEM CELLS FOR USE AS TEST MATERIAL IN THE TREATMENT OF CHEMICAL INJURY. E. B. Eaton, *A. L. Ruff*, *J. F. Dillman*, and T. R. Varney. USAMRICD, Aberdeen Proving Ground, MD.

#1354 **Poster Board Number 157**
DEVELOPMENT OF PRELIMINARY INDOOR CLEARANCE LEVELS FOR CHEMICAL WARFARE AGENTS FOR EMERGENCY PREPAREDNESS. *K. Riveles*, and *R. Blaisdell*. The Office of Environmental Health Hazard Assessment, Cal/EPA, Sacramento, CA.

#1355 **Poster Board Number 158**
"COMPLEX MODEL SYSTEM" FOR INVESTIGATING NEW SULFUR DONORS FOR CYANIDE ANTAGONISM. *I. Petrikovics*[1], C. J. Jaszberenyi[1], M. Ancha[1], B. Feleke[1], A. Nagy[1], K. Kovacs[1], and *G. A. Rockwood*[2]. [1]Chemistry, SHSU, Huntsville, TX, and [2]Analytical Toxicology, USAMICD, Aberdeen Proving Ground, MD.

Tuesday Afternoon, March 13
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Nanotoxicology: Nanoparticles III

Chairperson(s): *William Boyes, US EPA, Research Triangle Park, NC.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *2:45 PM–4:30 PM*

#1356 **Poster Board Number 201**
DESIGN OF AN *IN VITRO* CHAMBER TO STUDY REALISTIC OCCUPATIONAL EXPOSURE OF ENGINEERED NANOMATERIALS. *C. Grabinski*[1,2], M. Sankaran[2], and *S. Hussain*[1]. [1]711 HPW/RHDJ, Air Force Research Laboratory, Wright-Patterson AFB, Dayton, OH, and [2]Chemical Engineering, Case Western Reserve University, Cleveland, OH.

TUESDAY

Program Description (Continued)

Abstract #

#1357 **Poster Board Number 202**
IMMORTALIZED PERIPHERAL MACROPHAGE (RAW 264.7) AND IMMORTALIZED MICROGLIAL RESPONSES TO C_{60} FULLERENES. K. A. Russ[1], B. Schneider[1], I. C. Speirs[1], A. Dews[1], P. Elvati[2], A. Violi[2], and *M. A. Philbert*[1]. [1]EHS, University of Michigan, Ann Arbor, MI, and [2]Mechanical Engineering, University of Michigan, Ann Arbor, MI.

#1358 **Poster Board Number 203**
APPLICATION OF QSAR MODELING TO PREDICT METAL NANOPARTICLE TOXICITY. N. M. Schaeublin[1], E. I. Maurer[1], A. Gajewicz[2,3], T. Puzyn[2,3], J. Leszczynski[3], and *S. M. Hussain*[1]. [1]711 HPW; RHDJ, Air Force Research Labs, Wright-Patterson AFB, Dayton, OH, [2]Department of Chemistry, University of Gdansk, Gdansk, Poland, and [3]Department of Chemistry, Jackson State University, Jackson, MS.

#1359 **Poster Board Number 204**
CELL IMPEDANCE AS A SENSITIVE TECHNIQUE FOR THE STUDY OF THE CYTOTOXICITY OF GOLD NANOPARTICLES *IN VITRO*. M. Vetten, and *M. Gulumian*. Toxicology and Biochemistry Section, National Institute for Occupational Health, Johannesburg, South Africa.

#1360 **Poster Board Number 205**
TOXICITY OF ASSESSMENT OF SILVER NANOPARTICLES: IMPLICATIONS OF ION DISSOLUTION. E. Maurer[1], K. Comfort[1], E. Breitner[2], and *S. Hussain*[1]. [1]Applied Biotechnology Branch, Human Effectiveness Directorate, Air Force Research Laboratory, Wright-Patterson AFB, Dayton, OH, and [2]Department of Biomedical Engineering, University of Toledo, Toledo, OH.

#1361 **Poster Board Number 206**
ROLE OF CONTROLLED AGGLOMERATION OF IRON OXIDE NANOPARTICLES ON CELLULAR RESPONSE IN MOUSE C10 LUNG EPITHELIAL CELLS. *B. Thrall*[1,4], G. Sharma[2,1,4], V. Kodali[1], M. Gaffrey[1,4], W. Wang[3,4], K. Hostetler[1], K. Minard[1,4], N. Karin[1,4], and J. Teeguarden[1,4]. [1]Biological Sciences, Pacific Northwest National Lab, Richland, WA, [2]Battelle - Columbus, Columbus, OH, [3]Oak Ridge National Laboratory, Oak Ridge, TN, and [4]Fundamental and Applied Systems Toxicology (B-FAST), Battelle, Columbus, OH.

#1362 **Poster Board Number 207**
ROLE OF SIZE AND SURFACE COATING ON SILVER NANOPRISM TOXICITY. K. M. Morrison, S. Fox, N. M. Schaeublin, *L. K. Braydich-Stolle*, and *S. M. Hussain*. 711 HPW/RHDJ, AFRL, Wright-Patterson AFB, Dayton, OH.

#1363 **Poster Board Number 208**
MUCILAIR™ VERSUS RAW264.7 CELLS IN NANOTOXICOLOGY. F. A. van Acker[1], M. Gröllers[2], A. Reus[1], Y. Staal[1], E. Zondervan[2], and F. Kuper[2]. [1]TNO Triskelion, Zeist, Netherlands, and [2]TNO, Zeist, Netherlands. Sponsor: *R. Woutersen*.

#1364 **Poster Board Number 209**
CARDIOPULMONARY EFFECTS OF ENGINEERED IRON OXIDE NANOPARTICLES. C. TeeSy, C. Chui, G. Leng, and *K. Pinkerton*. Pharmacology/Toxicology, University of California Davis, Davis, CA.

Abstract #

#1365 **Poster Board Number 210**
A STRATEGY FOR OVERCOMING CHALLENGES ASSOCIATED WITH MEASURING NANOPARTICLE BIOKINETICS: TITANOMAGNETITE NANOPARTICLE BIOKINETICS IN MICE. *J. N. Smith*, K. R. Minard, K. E. Hosteler, C. I. Pearce, and *J. G. Pounds*. Pacific Northwest National Laboratory, Richland, WA.

#1366 **Poster Board Number 211**
ASSESSMENT OF SEMICONDUCTOR NANOTOXICITY: COMPARISONS BETWEEN HUMAN PRIMARY BRONCHIAL EPITHELIAL CELLS AND AN *IN VITRO* LUNG TISSUE MODEL. A. Nagy, A. Steinbruck, *J. Gao*, J. Hollingsworth, and *R. Iyer*. Los Alamos National Laboratory, Los Alamos, NM.

#1367 **Poster Board Number 212**
INDUCED T-CELL CYTOKINE PRODUCTION IS ENHANCED BY ENGINEERED NANOMATERIALS. *B. L. Kaplan*[1,4], *W. Chen*[2,4], Q. Zhang[3], G. L. Baker[3], and *N. E. Kaminski*[1,4]. [1]Pharmacology and Toxicology, Michigan State University, East Lansing, MI, [2]Department of Microbiology and Molecular Genetics, Michigan State University, East Lansing, MI, [3]Department of Chemistry, Michigan State University, East Lansing, MI, and [4]Center for Integrative Toxicology, Michigan State University, East Lansing, MI.

#1368 **Poster Board Number 213**
ROLE OF NANOPARTICLE SURFACE CHEMISTRY ON CELLULAR RECOGNITION AND UPTAKE BY MACROPHAGE SCAVENGER RECEPTOR-A. *B. Thrall*, M. Littke, G. Sharma, Y. Xiong, and K. Minard. Biological Sciences, Pacific Northwest National Lab, Richland, WA.

#1369 **Poster Board Number 214**
THREE HUMAN CELL TYPES RESPOND TO ENGINEERED NANOMATERIALS WITH CELL-SPECIFIC TRANSCRIPTOMIC AND PROTEOMIC EXPRESSION PATTERNS. *G. Orr*[1], *S. Tilton*[1], *N. Karin*[1], *A. Tolic*[1], *Y. Xie*[1], *R. Hamilton*[3], *X. Lai*[2], *K. Waters*[1], *A. Holian*[3], and *F. Witzmann*[2]. [1]Pacific Northwest National Laboratory, Richland, WA, [2]Indiana University, Indianapolis, IN, and [3]University of Montana, Missoula, MT.

#1370 **Poster Board Number 215**
DISPOSITION OF AMPHIPHILIC POLYMER-COATED CD/SE/ZNS QUANTUM DOTS AND CADMIUM IN THE SPLEEN OF GCLM-HETEROZYGOUS, AND WILD-TYPE MICE. L. McConnachie, *D. Botta*, T. Zalobowski, C. C. White, J. Yu, R. Dills, X. Yu, W. C. Griffith, X. Hu, X. Gao, *E. M. Faustman*, and *T. J. Kavanagh*. University of Washington., Seattle, WA.

#1371 **Poster Board Number 216**
MWCNTS INDUCE AN OXIDATIVE STRESS RESPONSE IN IMMORTALIZED MURINE HEPATOCYTES. A. E. von dem Bussche[1], C. A. Vaslet[1], P. Ferland[1], N. J. Messier[1], R. Hurt[2], and A. B. Kane[1]. [1]Pathology and Laboratory Medicine, Brown University, Providence, RI, and [2]School of Engineering, Brown University, Providence, RI. Sponsor: *M. Hixon*.

Program Description (Continued)

Abstract #

#1372 **Poster Board Number 217**
CARBON MULTIWALLED NANOTUBES AND NANOSCALE TITANIUM DIOXIDE ALTER EXPRESSION OF THE DIFFERENTIATION PROGRAM OF 3T3-L1 ADIPOCYTES. *R. N. Murrell*, P. H. Pekala, and M. W. Metcalf. Biochemistry and Molecular Biology, Brody School of Medicine, East Carolina University, Greenville, NC.

#1373 **Poster Board Number 218**
FYN KINASE PLAYS A ROLE IN MANGANESE NANOPARTICLE-INDUCED NEUROINFLAMMATION. N. Panicker, K. Kanthasamy, H. Afeseh Ngwa, C. Jeffrey, M. Neal, A. Kanthasamy, V. Anantharam, and *A. G. Kanthasamy*. Biomedical Sciences, Iowa State University, Ames, IA.

#1374 **Poster Board Number 219**
COMPARATIVE TOXICOLOGICAL ANALYSIS OF QUANTUM DOTS ON HUMAN SKIN TISSUE. *J. Gao*, and *R. Iyer*., Los Alamos, NM.

#1375 **Poster Board Number 220**
COPPER NANOPARTICLES INDUCE TOXIC EFFECTS ON HUMAN ALVEOLAR TYPE-II CELLS (A549) AFTER AIR-DELIVERY OF NANOPARTICLES. *J. Kim*[1], and *P. S. Thorne*[1,2]. [1]Interdisciplinary Graduate Program in Human Toxicology, The University of Iowa, Iowa City, IA, and [2]Department of Occupational and Environmental Health, The University of Iowa, Iowa City, IA.

#1376 **Poster Board Number 221**
NANOPARTICLE TOXICOLOGY: INVESTIGATING OXIDATIVE STRESS-RELATED BIOLOGICAL ENDPOINTS TO SUPPORT MODE OF ACTION. M. Crosby, T. Downs, and *S. Pfuhler*. Miami Valley Innovation Center, Procter & Gamble Company, Cincinnati, OH.

#1377 **Poster Board Number 222**
EVALUATION OF DERMAL AND EYE IRRITATION AND SKIN SENSITIZATION DUE TO CARBON NANOTUBES AND FULLERENES. *M. Ema*[1], A. Matsuda[2], N. Kobayashi[1], *M. Naya*[1], and J. Nakanishi[1]. [1]Research Institute of Science for Safety and Sustainability, National Institute of Advanced Industrial Science and Technology (AIST), "Tsukuba, Ibaraki", Japan, and [2]Ina Research Inc., Ina, Nagano, Japan.

#1378 **Poster Board Number 223**
ASSESSING THE PHYSICOCHEMICAL AND BIOLOGICAL RESPONSES OF GOLD-BASED NANOMATERIALS IN EXPOSURE MEDIA. *F. L. Sinche*[1], M. R. Mackiewic[2], and *S. L. Harper*[1,3]. [1]Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR, [2]Chemistry, Portland State University, Portland, OR, and [3]Chemical, Biological and Environmental Engineering, Oregon State University, Corvallis, OR.

Abstract #

#1379 **Poster Board Number 224**
UPTAKE AND INTRACELLULAR LOCALIZATION OF AMPHIPHILIC POLYMER-COATED CDSE/ZNS QUANTUM DOTS IN CULTURED HUMAN AND MOUSE CELLS. *C. White*[1], *L. McConnachie*[1], *D. Botta*[1], X. Hu[2], X. Gao[2], P. Wallace[3], *D. Eaton*[1], and *T. Kavanagh*[1]. [1]Environmental & Occupational Health Sciences, University of Washington, Seattle, WA, [2]Bioengineering, University of Washington, Seattle, WA, and [3]Chemical Engineering, University of Washington, Seattle, WA.

#1380 **Poster Board Number 225**
A RAPID FLUOROMETRIC SCREEN FOR THE CATEGORIZATION OF NANOMATERIAL OXIDATIVE CAPACITY. J. T. Robinson[1], and *S. L. Harper*[1,2]. [1]Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR, and [2]Chemical, Biological and Environmental Engineering, Oregon State University, Corvallis, OR.

#1381 **Poster Board Number 226**
NEONATAL EXPOSURE TO LIPOPOLYSACCHARIDE ENHANCES VULNERABILITY OF DOPAMINERGIC DENDRITES IN THE SUBSTANTIA NIGRA TO ROTENONE IN LATER LIFE. *L. Tien*[1], Z. Cai[2], *P. G. Rhodes*[2], and L. Fan[2]. [1]School of Medicine, Fu Jen Catholic University, New Taipei City, Taiwan, and [2]Department of Pediatrics, Division of Newborn Medicine, University of Mississippi Medical Center, Jackson, MS.

#1382 **Poster Board Number 227**
COMPARISON OF THE EFFECTS OF CARBON NANOTUBE AND ASBESTOS EXPOSURE ON THE IMMUNE SYSTEM OF FATHEAD MINNOWS. K. B. Donohue[1], *D. R. Johnson*[1], A. Edgington[2], J. G. Laird[1], J. K. Stanley[1], S. Klaine[2], and *J. A. Steevens*[1]. [1]US Army ERDC, Vicksburg, MS, and [2]Clemson University, Clemson, SC.

#1383 **Poster Board Number 228**
***IN VITRO* TOXICITY OF AMORPHOUS SILICA NANOPARTICLES IN HUMAN COLON CARCINOMA CELLS.** *D. Marko*[1], H. Gehrke[1], J. Pelka[1], S. Diabaté[2], and C. Weiss[2]. [1]University of Vienna, Vienna, Austria, and [2]Karslruher Institut für Technologie, Karlsruhe, Germany.

#1384 **Poster Board Number 229**
EFFECTS OF SURFACE CHEMISTRY ON PROTEIN CORONA FORMATION ON SILICA NANOPARTICLES. N. P. Mortensen[1,3], G. B. Hurst[1,3], W. Wang[1,3], C. T. Foster[1,3], P. D. Nallathamby[1,2], and S. T. Retterer[1,3]. [1]Oak Ridge National Laboratory, Oak Ridge, TN, [2]Health and Life Sciences Global Business, Battelle, Columbus, OH, and [3]Battelle Center for Fundamental and Applied Systems Toxicology, B-FAST, Battelle, Columbus, OH. Sponsor: *J. Teegarden*.

Program Description (Continued)

Abstract #

#1385 **Poster Board Number 230**
ALPHA-SYNUCLEIN MEDIATED ACTIVATION OF C-ABL AND DOPAMINE DEPLETION IN DOPAMINERGIC NEURONAL CELLS TREATED WITH IRON-OXIDE NANOPARTICLES OR METHAMPHETAMINE. Z. K. Binienda[1], L. M. Saeed[2,1], B. Robinson[1], *M. G. Paule*[1], A. S. Biris[2], *S. F. Ali*[1], and S. Z. Imam[1]. [1]Neurotoxicology, US FDA/NCTR, Jefferson, AR, and [2]Nanotechnology Center, University of Arkansas at Little Rock, Little Rock, AR.

#1386 **Poster Board Number 231**
ACUTE EFFECTS OF METAL NANOPARTICLES BASED ON OXIDATION STATE IN A MURINE MODEL. E. L. Saunders, *T. Gordon*, and *L. Chen*. Environmental Medicine, New York University, Tuxedo Park, NY.

#1387 **Poster Board Number 232**
CELLULAR DOSE AND TOXICITY OF COPPER OXIDE AND SILVER NANOPARTICLES: THE IMPORTANCE OF A TROJAN HORSE-TYPE MECHANISM. H. L. Karlsson[1,2], P. Cronholm[2], I. Odnevall Wallinder[3], and L. Möller[2]. [1]Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden, [2]Department of Biosciences and Nutrition, Karolinska Institutet, Stockholm, Sweden, and [3]Division of Surface and Corrosion Science, Royal Institute of Technology, Stockholm, Sweden. Sponsor: *B. Fadeel*.

#1388 **Poster Board Number 233**
COMPARATIVE TOXIC EFFECTS OF NICKEL OXIDE NANOPARTICLES IN SKIN. A. R. Murray[1,2], E. Kisin[1], A. Tkach[1], S. H. Young[1], *V. Castranova*[1], *B. Fadeel*[3], *V. E. Kagan*[4], and *A. A. Shvedova*[1,2]. [1]PPRB, NIOSH, Morgantown, WV, [2]West Virginia University, Morgantown, WV, [3]Karolinska Instituet, Stockholm, Sweden, and [4]University of Pittsburgh, Pittsburgh, PA.

#1389 **Poster Board Number 234**
DISTRIBUTION OF INTRAVENOUSLY-INJECTED SILVER NANOPARTICLES (AGNPS) IN PREGNANT MICE AND DEVELOPING EMBRYOS. *C. A. Austin*[4], *G. K. Hinkley*[3], *Q. Zhang*[1], *T. H. Umbreit*[1], *M. W. Betz*[1], K. M. Brown[4], S. Francke-Carroll[5], *S. M. Hussain*[2], *S. M. Roberts*[3], and *P. L. Goering*[1]. [1]CDRH, US FDA, Silver Spring, MD, [2]AFRL, Wright-Patterson AFB, Dayton, OH, [3]CEHT, University of Florida, Gainesville, FL, [4]Department of Biological Science, George Washington University, Washington, DC, and [5]CFSAN, US FDA, College Park, MD.

#1390 **Poster Board Number 235**
MACROPHAGE RESPONSES TO NANOSCALE ZINC OXIDE (ZnO) THIN FILMS ON FLAT SILICON. *P. E. Petrochenko*[1,2], *Q. Zhang*[1], J. Chunming[2], R. J. Narayan[2], and *P. L. Goering*[1]. [1]CDRH, US FDA, Silver Spring, MD, and [2]Joint Department of Biomedical Engineering, University of North Carolina at Chapel Hill and North Carolina State University, Raleigh, NC.

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#1391 **Poster Board Number 236**
SYNTHESIS, CHARACTERIZATION, AND BIOLOGICAL *IN VITRO* ACTIVITY OF FUNCTIONALIZED METAL OXIDE NANOPARTICLES. *T. D. Palacios-Hernandez*[1,2,3], J. L. Sánchez[2], D. Momot[5], C. C. Berry[4], *O. A. Olivero*[5], E. Gonzalez-Vergara[1], and M. A. Mendez-Rojas[3]. [1]Sciences Institute, BUAP, Puebla, Mexico, [2]Chemical and Biological Sciences, UDLAP, Puebla, Mexico, [3]Biological Sciences, UPAEP, Puebla, Mexico, [4]Centre for Cell Engineering, University of Glasgow, Glasgow, Lanarkshire, United Kingdom, and [5]National Cancer Institute, NIH, Bethesda, MD.

#1392 **Poster Board Number 237**
ZINC OXIDE—NANOSIZE DOES NOT CHANGE THE TOXICOLOGICAL PROFILE. *K. Wiench*[1], S. Schulte[1], S. Champ[1], L. Ma-Hock[1], S. Schneider[1], O. Creutzenberg[2], B. Bellmann[2], C. Ziemann[2], N. Monteiro-Riviere[3], B. van Ravenzwaay[1], and R. Landsiedel[1]. [1]Product Safety, BASF SE, Ludwigshafen, Germany, [2]Fraunhofer ITEM, Hannover, Germany, and [3]North Carolina State University, Raleigh, NC.

#1393 **Poster Board Number 238**
MECHANISM OF AEROSOLIZED ZINC OXIDE NANOPARTICLE TOXICITY IN ALVEOLAR EPITHELIAL CELLS AT THE AIR-LIQUID INTERFACE. C. Mihai, *Y. Xie*, A. Tolic, W. Chrisler, R. Tan, *R. Zangar*, and *G. Orr*. Pacific Northwest National Laboratory, Richland, WA.

Tuesday Afternoon, March 13
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Pesticide: Toxicology

Chairperson(s): *Elliot Gordon, Elliot Gordon Consulting, LLC, Princeton Junction, NJ.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *1:00 PM–2:45 PM*

#1394 **Poster Board Number 239**
MODE OF ACTION (MOA) LEADING TO PRONAMIDE-INDUCED THYROID TUMORS IN CD RATS AND ITS RELEVANCE TO HUMANS. *M. S. Marty*[1], *G. A. Hazelton*[2], *L. H. Pottenger*[1], and *D. L. Eisenbrandt*[3]. [1]The Dow Chemical Co., Midland, MI, [2]The Dow Chemical Co., Spring House, PA, and [3]Dow AgroSciences, Indianapolis, IN.

#1395 **Poster Board Number 240**
MODIFIED PRENATAL DEVELOPMENTAL TOXICITY IN GUINEA PIGS WITH EPOXICONAZOLE. S. Stinchcombe[1], S. Schneider[2], V. Strauss[2], S. Gröters[2], M. C. Rey Moreno[2], B. van Ravenzwaay[2], and I. Fegert[1]. [1]Regulatory Toxicology Crop Science, BASF SE, Ludwigshafen, Germany, and [2]Experimental Toxicology and Ecology, BASF SE, Ludwigshafen, Germany. Sponsor: *R. Landsiedel*.

Program Description (Continued)

Abstract #

#1396 **Poster Board Number 241**
HISTOPATHOLOGICAL FINDINGS OF THE RAT PLACENTA FOLLOWING EPOXICONAZOLE TREATMENT OF PREGNANT RATS WITH AND WITHOUT SUPPLEMENTATION OF ESTRADIOL. M. C. Rey Moreno[1], S. Stinchcombe[2], S. Schneider[1], S. Gröters[1], and B. van Ravenzwaay[1]. [1]Experimental Toxicology and Ecology, BASF SE, Ludwigshafen, Germany, and [2]Regulatory Toxicology Crop Science, BASF SE, Ludwigshafen, Germany. Sponsor: *R. Landsiedel*.

#1397 **Poster Board Number 242**
GENIC EXPRESSION CHANGES IN MOUSE EMBRYONIC STEM CELLS AFTER 12-HOURS EXPOSURE TO CHLORPYRIFOS AND ITS METABOLITE. C. Estevan, *E. Vilanova*, and M. Sogorb. Instituto de Bioingenieria, Universidad Miguel Hernandez, Elche, Spain.

#1398 **Poster Board Number 243**
EFFECT OF ORGANOPHOSPHATES PESTICIDES ON PON1 ACTIVITY AND GENE EXPRESSION IN HEPG2 CELLS. B. Ramírez-Chávez[1], *E. Rojas*[1], L. Robledo[1], B. Barrón[1], I. Girón[1], G. Elizondo[2], and *I. Medina*[1]. [1]Secretaría de Investigación y Posgrado, Universidad Autónoma de Nayarit, Tepic, Nayarit, Mexico, and [2]Biología Celular, Cinvestav, D.F., Mexico.

#1399 **Poster Board Number 244**
COMPARATIVE SENSITIVITY OF NEONATE AND ADULT SPRAGUE DAWLEY RATS TO CHOLINESTERASE INHIBITION DUE TO DIAZOXON. *E. Gordon*[1], D. P. Myers[3], *P. Singh*[4], D. R. Stannard[3], and C. Strupp[2]. [1]E Gordon Consulting, Princeton Junction, NJ, [2]Makhteshim Agan Europe, Schaffhausen, Switzerland, [3]Huntingdon Life Sciences, Huntingdon, United Kingdom, and [4]Makhteshim Agan of North America, Inc., Raleigh, NC.

#1400 **Poster Board Number 245**
EFFECT OF ENDOPHYTIC BACTERIA AND METALAXYL ON METABOLOMIC PROFILE OF POTATO SEEDLINGS. F. G. Zuno[1], *M. G. Miller*[1], M. L. Aldana-Madrid[2], M. J. Hengel[1], N. W. Gaikwad[1], and A. G. Contreras-Cortes[3]. [1]Environmental Toxicology, University of California Davis, Davis, CA, [2]Investigación y Posgrado en Alimentos, Universidad de Sonora, Hermosillo, Sonora, Mexico, and [3]Biotecnología, Centro Interdisciplinario de Investigación para el Desarrollo Integral Regional (IPN), Jiquilpan, Michoacan, Mexico.

#1401 **Poster Board Number 246**
INDUCTION OF MOUSE CARBOXYLESTERASE EXPRESSION AND FUNCTION FOLLOWING DEVELOPMENTAL DELTAMETHRIN EXPOSURE: ROLE OF THE CONSTITUTIVE ANDROSTANE RECEPTOR. *A. A. Baker*[1], and *J. R. Richardson*[1,2]. [1]Toxicology, University of Medicine and Dentistry of New Jersey-Rutgers University, Piscataway, NJ, and [2]Department of Environmental & Occupational Medicine, University of Medicine and Dentistry of New Jersey, Piscataway, NJ.

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#1402 **Poster Board Number 247**
METABOLIC EFFECTS OF PERINATAL DELTAMETHRIN EXPOSURE IN WHITE ADIPOSE TISSUE OF MICE. L. Armstrong[1], A. Donepudi[1], J. Xu[1], A. Baker[2], L. Aleksunes[3], J. Richardson[2], and A. Slitt[1]. [1]Biomedical and Pharmaceutical Sciences, University of Rhode Island, Kingston, RI, [2]Department of Environmental and Occupational Medicine, University of Medicine and Dentistry of New Jersey, Piscataway, NJ, and [3]Department of Pharmacology and Toxicology, Rutgers University, Piscataway, NJ. Sponsor: *N. Zawai*.

#1403 **Poster Board Number 248**
DETERMINATION OF PYRETHROIDS IN RAT PLASMA AND TISSUES USING GAS CHROMATOGRAPHY (GC) NEGATIVE CHEMICAL IONIZATION MASS SPECTROMETRY (MS). D. R. Gullick[1], X. Wang[1], *J. V. Bruckner*[1], *B. S. Cummings*[1], *T. G. Osmitz*[2], M. G. Bartlett[1], D. Minnema[3], N. Assaf[4], W. Schmitt[5], *S. Anand*[6], and *D. Gammon*[7]. [1]PBS, University of Georgia, Athens, GA, [2]Science Strategies, Charlottesville, VA, [3]Syngenta Crop Protection, Greensboro, NC, [4]Valent Biosciences, Libertyville, IL, [5]Bayer Crop Sciences, Monheim, Germany, [6]DuPont, Newark, DE, and [7]FMC, Ewing, NJ.

#1404 **Poster Board Number 249**
ABSORPTION AND TRANSPORT OF THE PYRETHROID INSECTICIDES DELTAMETHRIN, TRANS-PERMETHRIN, AND CIS-PERMETHRIN BY CACO-2 CELLS. S. Muralidhara[1], *J. V. Bruckner*[1], *T. Osmitz*[2], P. Sethi[1], and *J. Zastre*[1]. [1]PBS, Univ of GA, Athens, GA, and [2]Science Str, Charlottesville, VA.

#1405 **Poster Board Number 250**
COMPARATIVE *IN VITRO* BIOTRANSFORMATION OF BIFENTHRIN IN RAT AND RAINBOW TROUT. N. Riar, and *D. Schlenk*. Environmental Toxicology, University of California, Riverside, Riverside, CA.

#1406 **Poster Board Number 251**
NEONICOTINOID INSECTICIDES: ALDEHYDE OXIDASE METABOLISM AND SENSITIZED PHOTODEGRADATION. T. Swenson, and *J. E. Casida*. Graduate Group in Molecular Toxicology, University of California Berkeley, Berkeley, CA.

#1407 **Poster Board Number 252**
ENDOSULFAN UP-REGULATES CYCLOOXYGENASE-2 EXPRESSION MEDIATED THROUGH ACTIVATION OF NF-κB TRANSCRIPTION FACTOR. J. Park, E. Han, J. Yang, H. Kim, J. Choi, and *H. Jeong*. Pharmacy, Chungnam National University, Daejeon, Republic of Korea.

#1408 **Poster Board Number 253**
MOLINATE TESTICULAR TOXICITY: EFFECT OF MOLINATE ON TESTOSTERONE AND CHOLESTEROL LEVELS IN RAT TESTES. F. G. Zuno[1], M. J. Hengel[1], N. W. Gaikwad[1], M. L. Aldana-Madrid[2], B. S. Winder[1], and *M. G. Miller*[1]. [1]Environmental Toxicology, University of California Davis, Davis, CA, and [2]Investigación y Posgrado en Alimentos, Universidad de Sonora, Hermosillo, Sonora, Mexico.

Program Description (Continued)

Abstract #

#1409 **Poster Board Number 254**
ETHYLENE BISDITHOCARBAMATE PESTICIDES MANEB AND MANCOZEB CAUSE TOXICITY IN NORMAL AND TRANSFORMED COLON CELLS VIA AN APOPTOTIC MECHANISM. *L. M. Hoffman*, and *D. Hardej*. Department of Pharmaceutical Sciences, St. John's University, Jamaica, NY.

#1410 **Poster Board Number 255**
***IN VITRO* SCREEN FOR PESTICIDE INTERACTIONS WITH HUMAN MDR1 AND BCRP EFFLUX TRANSPORTERS.** K. M. Bircsak[1,3], *J. R. Richardson*[2], and *L. M. Aleksunes*[1]. [1]Pharmacology and Toxicology, Rutgers University, Piscataway, NJ, [2]Environmental and Occupational Medicine, University of Medicine and Dentistry of New Jersey, Piscataway, NJ, and [3]Joint Graduate Program in Toxicology, Rutgers/University of Medicine and Dentistry of New Jersey, Piscataway, NJ.

#1411 **Poster Board Number 256**
KINETIC INTERACTION OF PMSF (A NEUROPATHY PROMOTER) WITH MEMBRANE-BOUND ESTERASES THAT ARE SENSITIVE OR RESISTANT TO ORGANOPHOSPHORUS INDUCERS OF DELAYED NEUROPATHY. *E. Vilanova*, I. Mangas, and J. Estevez. Unidad de Toxicologia. Instituto de Bioingenieria, Universidad Miguel Hernandez, Elche, Spain.

#1412 **Poster Board Number 257**
INDUCTION OF PLASMA ACETYLCHOLINESTERASE ACTIVITY AND APOPTOSIS IN MICE TREATED WITH ORGANOPHOSPHORUS TOXICANT, ETHANOL, OR COCAINE. W. Jiang, E. G. Duysen, and *O. Lockridge*. University of Nebraska Medical Center, Omaha, NE.

Tuesday Afternoon, March 13
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Pesticides: Exposure and Hazard Assessment

Chairperson(s): *Steven Singleton, University at Buffalo, Buffalo, NY.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *2:45 PM–4:30 PM*

#1413 **Poster Board Number 260**
CHARACTERIZING STABILITY OF ORGANOPHOSPHATES IN HOME ENVIRONMENT DUST. K. M. McDonald[1], *W. C. Griffith*[1], *Z. Guerrette*[2], E. M. Vigoren[1], M. Vredevoogd[1], B. Thompson[2], and *E. M. Faustman*[2]. [1]Environmental and Occupational Health Sciences, University of Washington, Seattle, WA, and [2]Fred Hutchinson Cancer Research Center, Seattle, WA.

#1414 **Poster Board Number 261**
URINARY PYRETHROID METABOLITES AMONG PREGNANT WOMEN IN A RURAL AREA OF JIANGSU PROVINCE: RESULTS OF A PILOT STUDY. *Z. Zhou*[1], C. Wu[1], X. Qi[1], G. Wang[2], and X. Chang[1]. [1]School of Public Health, Fudan University, Shanghai, China, and [2]Shanghai CDC, Shanghai, China.

Abstract #

#1415 **Poster Board Number 262**
SUSCEPTIBILITY AND EXPOSURE BIOMARKERS OF PESTICIDES IN WOMEN FROM AN AGRICULTURAL COMMUNITY IN SOUTHERN MEXICO. N. Pérez-Herrera[1], P. García-Molina[1,2], L. Dzib-Cocom[1,2], M. Vera-Avilés[1], G. López-Manzanero[1], R. Munguía-Zarco[1], L. González-Herrera[3], G. Pérez-Mendoza[3], I. García-González[3], T. Castillo-Burguete[4], L. González-Navarrete[1], J. Alvarado-Mejía[1], M. González-Góngora[1], L. Ruiz-Ortiz[1], and *B. Quintanilla-Vega*[5]. [1]Facultad de Medicina, UADY, Mérida, Yucatán, Mexico, [2]Facultad de Química, UADY, Mérida, Yucatán, Mexico, [3]Centro de Investigaciones Regionales, UADY, Mérida, Yucatán, Mexico, [4]Departamento de Ecología Humana, Cinvestav-IPN, Mérida, Yucatán, Mexico, and [5]Departamento de Toxicología, Cinvestav-IPN, México, D.F., Mexico.

#1416 **Poster Board Number 263**
EVALUATION OF URINARY PESTICIDE BIOMARKERS AMONG CHILDREN AND ADOLESCENTS. A. LeBeau, *G. Johnson*, *J. McCluskey*, and *R. D. Harbison*. Environmental and Occupational Health, University of South Florida, College of Public Health, Tampa, FL.

#1417 **Poster Board Number 264**
FOLIAGE RESIDUES OF MALATHION AND FENPROPATHRIN INSECTICIDES AS DETERMINANTS OF LOW-LEVEL STRAWBERRY HARVESTER EXPOSURES. *G. Sankaran*[1,2], T. Ahuja[2], *L. Chen*[2], *Z. Chen*[1], A. Krieger[2], W. Krieger[2], *T. Lopez*[1,2], L. Tang[2], H. Vega[2], and *R. Krieger*[1,2]. [1]Environmental Toxicology, Entomology, University of California Riverside, Riverside, CA, and [2]Personal Chemical Exposure Program, Entomology, University of California Riverside, Riverside, CA.

#1418 **Poster Board Number 265**
PESTICIDE TOXICITY BIOMARKERS IN INDIGENOUS AGRICULTURAL WORKERS. Y. Y. Bernal Hernández[1], L. Robledo[1], F. Herrera[1], *I. Medina*[1], B. Barrón[1], I. Girón[1], *B. Quintanilla*[2], N. Pérez[3], R. Cerda[1], R. Rosas[4], and *A. Rojas*[1]. [1]Laboratorio de Contaminación y Toxicología Ambiental, Universidad Autónoma de Nayarit, Tepic, Nayarit, Mexico, [2]Departamento de Toxicología, Cinvestav-IPN, DF, Mexico, [3]Facultad de Medicina, Universidad Autónoma de Yucatán, Mérida, Yucatán, Mexico, and [4]Subdelegación de Desarrollo Social y Humano, SEDESOL, Tepic, Nayarit, Mexico.

#1419 **Poster Board Number 266**
CORRELATION OF PESTICIDE SURFACE WATER CONCENTRATIONS WITH PUBLICLY AVAILABLE USAGE DATA. A. Patton, and *J. Keenan*. ChemRisk, San Francisco, CA.

#1420 **Poster Board Number 267**
PROFENOFOS METABOLISM AND ESTIMATES OF PROFENOFOS EXPOSURE IN EGYPTIAN COTTON FIELD WORKERS. *O. A. Dadson*[1], *C. A. Ellison*[1], *S. T. Singleton*[1], L. Chi[1], B. McGarrigle[1], F. M. Farahat[2], and *J. R. Olson*[1]. [1]State University of New York at Buffalo, Buffalo, NY, and [2]Menoufiya University, Shebin El-Kom, Egypt.

Program Description (Continued)

Abstract #

#1421 **Poster Board Number 268**
CHLORPYRIFOS EXPOSURE IN ADOLESCENT EGYPTIAN AGRICULTURAL WORKERS. *S. T. Singleton*[1], *A. L. Crane*[1], A. Ismail[2], G. Rasoul[3], O. Hendy[3], B. P. McGarrigle[1], *J. R. Olson*[1], and *D. S. Rohlman*[4]. [1]Pharmacology and Toxicology, University at Buffalo, Buffalo, NY, [2]Jazan University, Gizan, Saudi Arabia, [3]Menoufia University, Shebin El-Kom, Egypt, and [4]Oregon Health & Science University, Portland, OR.

#1422 **Poster Board Number 269**
PARAOXONASE 1 STATUS IN EGYPTIAN AGRICULTURAL WORKERS EXPOSED TO THE ORGANOPHOSPHORUS PESTICIDE CHLORPYRIFOS. *C. A. Ellison*[1], *A. L. Crane*[1], M. R. Bonner[1], *J. B. Knaak*[1], R. W. Browne[1], *P. J. Lein*[2], and *J. R. Olson*[1]. [1]State University of New York at Buffalo, Buffalo, NY, and [2]University of California Davis, School of Veterinary Medicine, Davis, CA.

#1423 **Poster Board Number 270**
EXPOSURE TO PESTICIDES, CYTOGENETIC DAMAGE IN BUCCAL MUCOSA CELLS AND ACTIVITY OF ACETYLCHOLINESTERASE IN NICARAGUAN PESTICIDE VENDORS. V. Mersch-Sundermann[1], I. Luna-Avilés[2,1], R. Gminski[1], and J. Huete-Pérez[2]. [1]University Medical Center, Freiburg, Germany, and [2]Universidad Centroamericana, Managua, Nicaragua. Sponsor: *D. DeMarini*.

#1424 **Poster Board Number 271**
ASSOCIATION BETWEEN URINARY CONCENTRATIONS OF DICHLOROPHENOL PESTICIDES AND OBESITY IN ADULTS. *Y. Wei*, and A. Nguyen. Department of Community Medicine, Mercer University School of Medicine, Macon, GA.

#1425 **Poster Board Number 272**
PESTICIDE EXPOSURE AND SUICIDE MORTALITY RISK AMONG AGRICULTURAL WORKERS FROM TOBACCO CROPS IN THE SOUTHERN REGION OF BRAZIL. M. Fonseca[1], *J. S. Lima*[2,1], and A. Meyer[3,1]. [1]Preventive Medicine, Mount Sinai School of Medicine, New York, NY, [2]LACAT, UNIRIO, Rio de Janeiro, Brazil, and [3]IESC, UFRJ, Rio de Janeiro, Brazil.

#1426 **Poster Board Number 273**
PESTICIDES CANCER RISK IN EUROPE. *D. A. Sarigiannis*[1,2], P. Kontoroupis[2], E. Solomou[2], S. Nikolaki[1,2], P. Fantke[3], A. J. Karabelas[2], and R. Friedrich[3]. [1]Chemical Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece, [2]Chemical Process Engineering Research Institute, Centre for Research and Technology Hellas, Thermi, Greece, and [3]Institute for Energy Research, University of Stuttgart, Stuttgart, Germany.

#1427 **Poster Board Number 274**
CARBOFURAN OCCUPATIONAL DERMAL TOXICITY, EXPOSURE AND RISK ASSESSMENT. *Z. Liu*, J. M. Becker, *M. Oh*, and *D. W. Gammon*. Agricultural Products Group, FMC Corporation, Ewing, NJ.

#1428 **Poster Board Number 275**
COMPARATIVE SAFETY OF RECENT PESTICIDES FOR ASIAN CITRUS PSYLLID CONTROL. *C. N. Aldous*, and *P. Leung*. Medical Toxicology Branch, Cal/EPA, Sacramento, CA.

Abstract #

#1429 **Poster Board Number 276**
HAZARD IDENTIFICATION FOR SIMAZINE RISK ASSESSMENT. *M. H. Silva*. California Department of Pesticide Regulation, California Environmental Protection Agency, Sacramento, CA.

#1430 **Poster Board Number 277**
HYPOTHESIS-BASED WEIGHT-OF-EVIDENCE EVALUATION OF THE NEURODEVELOPMENTAL EFFECTS OF CHLORPYRIFOS. *R. L. Prueitt*[1], *J. E. Goodman*[2], *L. A. Bailey*[2], and *L. R. Rhomberg*[2]. [1]Gradient, Seattle, WA, and [2]Gradient, Cambridge, MA.

#1431 **Poster Board Number 278**
INTEGRATING EMERGING TECHNOLOGIES INTO CHEMICAL SAFETY ASSESSMENT: THE REPORT OF THE EXPERT PANEL ON THE INTEGRATED TESTING OF PESTICIDES. *L. Ritter*, and O. Council of Canadian Academies. School of Environmental Sciences, University of Guelph, Guelph, ON, Canada.

Tuesday Afternoon, March 13
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Arsenic Toxicology

Chairperson(s): *Aaron Barchowsky, University of Pittsburgh, Pittsburgh, PA, and Michael P. Waalkes, NIEHS, Research Triangle Park, NC.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *1:00 PM–2:45 PM*

#1432 **Poster Board Number 301**
CHARACTERIZATION OF HBD1 DOWN-REGULATION FOLLOWING ARSENIC EXPOSURE. N. L. Dangleben, C. F. Skibola, and *M. T. Smith*. School of Public Health, University of California Berkeley, Berkeley, CA.

#1433 **Poster Board Number 302**
LOSS OF PTEN IS PRECEDED BY CHRONIC INFLAMMATORY RESPONSES DURING MMA (III)-INDUCED MALIGNANT TRANSFORMATION OF HUMAN UROTHELIAL CELLS. *C. Escudero*[1], A. de Conti[1], and *A. Gandolfi*[2]. [1]Universidad Autonoma de SLP, San Luis Potosi, Mexico, and [2]Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

#1434 **Poster Board Number 303**
OVEREXPRESSION OF SPARC MODULATES CELL GROWTH AND MIGRATION IN MALIGNANTLY TRANSFORMED HUMAN UROTHELIAL CELLS (UROTSA). *J. L. Larson*[1], *S. Somji*[2], *D. A. Sens*[2], *M. A. Sens*[2], *S. H. Garrett*[2], and *J. R. Dunlevy*[1]. [1]Anatomy and Cell Biology, University of North Dakota, Department of Atmospheric Sciences, Grand Forks, ND, and [2]Pathology, University of North Dakota, Grand Forks, ND.

Program Description (Continued)

Abstract #

#1435 **Poster Board Number 304**
EXPRESSION OF EXTRACELLULAR MATRIX PROTEINS IN UROTSA BLADDER CELLS TRANSFORMED WITH ARSENIC OR CADMIUM. H. M. Hewitt[1], *J. L. Larson*[1], *S. Somji*[2], *S. H. Garrett*[2], *M. A. Sens*[2], *D. A. Sens*[2], and *J. R. Dunlevy*[1]. [1]Anatomy, University of North Dakota, Grand Forks, ND, and [2]Pathology, University of North Dakota, Grand Forks, ND.

#1436 **Poster Board Number 305**
GENE EXPRESSION PROFILES OF MULTIPLE INDEPENDENT CADMIUM AND ARSENITE-INDUCED MALIGNANT TRANSFORMATIONS OF HUMAN UROTHELIAL CELLS (UROTSA). *S. H. Garrett*, K. Zhang, *S. Somji*, *M. A. Sens*, and *D. A. Sens*. Pathology, University of North Dakota, Grand Forks, ND.

#1437 **Poster Board Number 306**
INVESTIGATION OF ESSENTIAL GENES INVOLVED IN ARSENITE TOXICITY IN *SACCHAROMYCES CEREVISIAE*. T. Takahashi, and *A. Naganuma*. Graduate School of Pharmaceutical Sciences, Tohoku University, Sendai, Miyagi, Japan.

#1438 **Poster Board Number 307**
DYSFUNCTIONAL REGULATION OF METABOLIC AND MITOCHONDRIAL GENE EXPRESSION FOLLOWING ARSENIC EXPOSURES. L. R. Klei, and *A. Barchowsky*. Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA.

#1439 **Poster Board Number 308**
EXPOSURE TO ARSENIC AND PREVALENCE OF DIABETES IN CHIHUAHUA, MEXICO. C. González-Horta[1], *L. M. Del Razo*[2], B. Sánchez-Ramírez[1], L. Ballinas-Casarrubias[1], R. Luján-López[1], G. García-Vargas[3], M. C. Ishida[1], *Z. Drobná*[4], D. Loomis[5], and *M. Styblo*[4]. [1]Universidad Autónoma de Chihuahua, Chihuahua, Mexico, [2]Cinvestav-IPN, Mexico City, Mexico, [3]Universidad Juárez del Estado de Durango, Gomez Palacio, Mexico, [4]University of North Carolina at Chapel Hill, Chapel Hill, NC, and [5]University of Nebraska Medical Center, Omaha, NE.

#1440 **Poster Board Number 309**
PROLONGED IAS EXPOSURE LEADS TO ABERRANT INSULIN SIGNALING IN L6 MYOCYTES. *I. Druwe*, and *R. R. Vaillancourt*. Department of Pharmacology & Toxicology, University of Arizona, Tucson, AZ.

#1441 **Poster Board Number 310**
ACUTE ARSENIC CARDIOTOXICITY ALTERS CARDIAC CYTOCHROME P450 EXPRESSION AND ARACHIDONIC ACID METABOLISM IN C57BL/6 MICE. *A. Anwar-Mohamed*, A. A. El-Sherbeni, S. H. Kim, H. N. Althurwi, *B. N. Zordoky*, and *A. O. El-Kadi*. Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta, Edmonton, AB, Canada.

#1442 **Poster Board Number 311**
PRO-ATHEROGENIC ARSENIC EXPOSURE ALTERS MACROPHAGE POLARIZATION. *M. Lemaire*, C. A. Lemarié, M. Flores Molina, and *K. K. Mann*. Lady Davis Institute for Medical Research, McGill University, Montreal, QC, Canada.

Abstract #

#1443 **Poster Board Number 312**
SUPPRESSION OF ADIPOGENIC DIFFERENTIATION BY ARSENIC INVOLVES INDUCTION OF CHOP10 VIA ENDOPLASMIC RETICULUM STRESS RESPONSE. Y. Hou, P. Xue, *Q. Zhang*, *J. Fu*, *C. G. Woods*, K. Yarborough, R. Zhao, *M. E. Andersen*, and *J. Pi*. The Institute for Chemical Safety Sciences, The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#1444 **Poster Board Number 313**
LIPIDOMICS OF SUBCHRONIC LOW-LEVEL INORGANIC ARSENIC EXPOSURE IN THE RAT. *O. Ademuyiwa*[1], O. K. Afolabi[1], D. A. Wusu[1], O. O. Ogunrinola[1], E. O. Abam[1], *E. A. Balogun*[1], and O. O. Odukoya[2]. [1]Biochemistry, University of Agriculture, Abeokuta, Ogun, Nigeria, and [2]Chemistry, University of Agriculture, Abeokuta, Ogun, Nigeria.

#1445 **Poster Board Number 314**
ALTERED ARSENICAL DISPOSITION IN EXPERIMENTAL NONALCOHOLIC FATTY LIVER DISEASE. *M. Canet*, *R. N. Hardwick*, *A. D. Lake*, M. J. Kopplin, *A. Gandolfi*, and *N. J. Cherrington*. Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

#1446 **Poster Board Number 315**
ONCOGENIC TRANSFORMATION OF NORMAL PROSTATE STEM CELLS BY NEARBY, NONCONTIGUOUS MALIGNANT PROSTATE EPITHELIA POTENTIALLY INVOLVES INTERLEUKIN-6. *Y. Xu*, *E. J. Tokar*, *Y. Sun*, and *M. P. Waalkes*. National Toxicology Program Laboratory, DNTP, NIEHS, Research Triangle Park, NC.

#1447 **Poster Board Number 316**
P53 AND BCL2 RESPONSES TO INORGANIC ARSENIC AND METHYL METHANESULFONATE IN HUMAN HT-1080 FIBROSARCOMA CELLS. *P. Balbuena*[1], *R. Clewell*[1], *J. W. Yager*[2], and *H. J. Clewell*[1]. [1]Center for Human Health Assessment, The Hamner Institutes for Health Sciences, Research Triangle Park, NC, and [2]Department of Internal Medicine, Division of Epidemiology & Biostatistics, University of New Mexico, Albuquerque, NM.

#1448 **Poster Board Number 317**
ARSENIC INDUCES P53-DEPENDENT APOPTOSIS THROUGH THE DOWN-REGULATION OF UBE2D FAMILY GENES IN RENAL TUBULAR CELLS. *M. Satoh*[1], M. Tokumoto[1,2], Y. Fujiwara[1], M. Uchiyama[2,3], and *C. Watanabe*[4]. [1]School of Pharmacy, Aichi Gakuin University, Nagoya, Japan, [2]Institute of Physical and Chemical Research, Wako, Japan, [3]Graduate School of Pharmaceutical Sciences, University of Tokyo, Tokyo, Japan, and [4]Graduate School of Medicine, University of Tokyo, Tokyo, Japan.

Program Description (Continued)

Abstract #

#1449 **Poster Board Number 318**
ARSENIC AND THE EPIGENOME: LINKED BY METHYLATION. K. Bailey[1], L. Smeester[1], W. Ward[3], J. Rager[1], X. Guan[4], N. Smith[1], G. García-Vargas[5], L. Del Razo[6], *Z. Drobná*[2], K. Hemant[4], *M. Stýblo*[2], and *R. Fry*[1]. [1]Environmental Sciences and Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]Department of Nutrition, University of North Carolina at Chapel Hill, Chapel Hill, NC, [3]NHEERL, US EPA, Research Triangle Park, NC, [4]Center for Bioinformatics, University of North Carolina at Chapel Hill, Chapel Hill, NC, [5]Faculty of Medicine, Juarez University of Durango State, Durango, Mexico, and [6]Department of Toxicology, Cinvestav-IPN, Mexico City, Mexico.

#1450 **Poster Board Number 319**
EPIGENETIC REGULATION OF MT-1X OVER-EXPRESSION IN METAL-INDUCED BLADDER CANCER. *D. A. Sens*, S. Talaat, *S. Somji*, *M. A. Sens*, and *S. H. Garrett*. Pathology, University of North Dakota, Grand Forks, ND.

#1451 **Poster Board Number 320**
ARSENITE AND CADMIUM-INDUCED EPIGENETIC MODIFICATIONS IN THE PROMOTER OF THE METALLOTHIONEIN 3 GENE. *S. Somji*, J. V. Gieson, *D. A. Sens*, *M. A. Sens*, and *S. H. Garrett*. Pathology, University of North Dakota, Grand Forks, ND.

#1452 **Poster Board Number 321**
CHRONIC EXPOSURE TO MONOMETHYLARSONOUS ACID LEADS TO SUBSTANTIAL CHANGES IN GENE EXPRESSION AFTER 12 WEEKS. *M. Medeiros*[1], X. Zheng[1], *P. Novak*[2], *S. Wnek*[1], V. Chyan[1], *C. Escudero-Lourdes*[3], D. Troup[1], T. Minh Le[1], and *A. Gandolfi*[1]. [1]Pharmacology/Toxicology, University of Arizona, Tucson, AZ, [2]Biology Centre ASCR, Institute of Plant Molecular Biology, Ceske Budejovice, Czech Republic, and [3]Laboratorio de Inmunologia y Biologia Celular y Molecular, Universidad Autónoma de San Luis Potosí, San Luis Potosí, Mexico.

#1453 **Poster Board Number 322**
CHRONIC EXPOSURE TO ARSENIC RESULTS IN RETENTION OF METHYLARSONITE (MASIII) AND DIMETHYLARSINITE (DMASIII) IN UROTHELIAL CELLS. *J. Currier*[1], C. González-Horta[2], *L. Del Razo*[3], B. Sánchez-Ramírez[2], L. Ballinas-Casarrubias[2], G. García-Vargas[4], M. Ishida[2], *Z. Drobná*[5], D. Loomis[6], and *M. Styblo*[5]. [1]Curriculum in Toxicology, University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]Universidad Autónoma de Chihuahua, Chihuahua, Mexico, [3]Cinvestav-IPN, Mexico City, Mexico, [4]Universidad Juárez del Estado de Durango, Gomez Palacio, Mexico, [5]Nutrition, University of North Carolina at Chapel Hill, Chapel Hill, NC, and [6]University of Nebraska Medical Center, Omaha, NE.

#1454 **Poster Board Number 323**
METHYLARSONOUS ACID (MMAIII) CAUSES OXIDATIVE DNA DAMAGE INDEPENDENT OF THE ABILITY OF A CELL TO BIOMETHYLATE INORGANIC ARSENIC. *E. J. Tokar*[1], C. Kojima[1], *R. P. Mason*[2], and *M. P. Waalkes*[1]. [1]NTP, NIEHS, NIH, Research Triangle Park, NC, and [2]LTP, NIEHS, NIH, Research Triangle Park, NC.

Abstract #

#1455 **Poster Board Number 324**
GLUTATHIONE SYNTHETASE (GS) PROMOTES THE REDUCTION OF ARSENATE (ASV) BY GLUTATHIONE (GSH) VIA ARSENOLYSIS OF GSH. *Z. Gregus*[1], B. Nemeti[1], and M. E. Anderson[2]. [1]University of Pecs, Pecs, Hungary, and [2]Texas Woman's University, Danton, TX.

#1456 **Poster Board Number 325**
CYTOTOXICITY AND GENOTOXICITY OF ARSENIC IN PRIMARY HUMAN LUNG CELLS. *H. Xie*[1,2,3], S. Martin[1], S. Huang[1], and *J. P. Wise, Sr.*[1,2,3]. [1]Wise Laboratory of Environmental and Genetic Toxicology, University of Southern Maine, Portland, ME, [2]Maine Center for Toxicology and Environmental Health, University of Southern Maine, Portland, ME, and [3]Department of Applied Medical Science, University of Southern Maine, Portland, ME.

#1457 **Poster Board Number 326**
CHRONIC LOW-DOSE ARSENIC EXPOSURE *IN VIVO* AND *IN VITRO* COMPROMISES MECHANISMS IN AIRWAY EPITHELIAL WOUND RESPONSE. *C. Sherwood*[1,2,5], *R. Lantz*[1,4,5], and *S. Boitano*[2,3,5]. [1]Cellular and Molecular Medicine, Arizona Health Sciences Center, Tucson, AZ, [2]Arizona Respiratory Center, Arizona Health Sciences Center, Tucson, AZ, [3]Physiology, Arizona Health Sciences Center, Tucson, AZ, [4]Southwest Environmental Health Sciences Center, University of Arizona, Tucson, AZ, and [5]Bio5 Institute, University of Arizona, Tucson, AZ.

#1458 **Poster Board Number 327**
LUNG DISTRIBUTION OF ARSENIC AND HEME OXYGENASE EXPRESSION IN RATS INTRATRACHEALLY EXPOSED TO ARSENITE. *A. Hernandez-Zavala*[2,1], G. Alavez-Carranza[3], M. Uribe- Ramírez[1], L. Sánchez-Peña[1], *L. Del Razo*[1], and *A. De Vizcaya-Ruíz*[1]. [1]Toxicology, Cinvestav, Mexico, Mexico, [2]Sección de Investigación y Posgrado, Escuela Superior de Medicina-IPN, Mexico, Mexico, and [3]Biotecnologia, Universidad Tecnológica de Tecamac, Mexico, Mexico.

#1459 **Poster Board Number 328**
ARSENITE EXPOSURE DECREASES ENOS PROTEIN LEVELS AND DISRUPTS ITS PHOSPHORYLATION PROFILE IN A MODEL OF HUMAN PLACENTAL ENDOTHELIAL CELLS EA.HY 926. *P. Sanchez Soria*[1], S. T. Quach[1], P. Parker[1], and T. D. Camenisch[1,2,3]. [1]Pharmacology and Toxicology, College of Pharmacy, University of Arizona, Tucson, AZ, [2]Steele Children's Research Center, University of Arizona, Tucson, AZ, and [3]Southwest Environmental Health Sciences Center, University of Arizona, Tucson, AZ.

#1460 **Poster Board Number 329**
APOFERRITIN INHIBITS THE FORMATION OF ARSENIC-INDUCED REACTIVE OXYGEN SPECIES IN J774 MURINE MACROPHAGES. T. R. Radabaugh[2], J. Shi[2], *T. J. Monks*[2], and *S. S. Lau*[2,1]. [1]Southwest Environmental Health Sciences Center, University of Arizona, Tucson, AZ, and [2]Department of Pharmacology and Toxicology, College of Pharmacy, University of Arizona, Tucson, AZ.

TUESDAY

Program Description (Continued)

Abstract #

#1461 **Poster Board Number 330**
EFFECT OF MITOCHONDRIAL ATP BINDING CASSETTE TRANSPORTER B6 (ABCB6) IN ARSENIC TOXICITY AND MITOCHONDRIAL FUNCTION. *H. D. Chavan*[1], J. Lu[2], R. Swerdlow[2], and P. Krishnamurthy[1]. [1]Pharmacology, Toxicology & Therapeutics, Kansas University Medical Center, Kansas City, KS, and [2]Biochemistry and Molecular Biology, Kansas University Medical Center, Kansas City, KS.

#1462 **Poster Board Number 331**
LOWERED DIETARY PHOSPHATE INCREASES ORAL BIOAVAILABILITY OF ARSENATE IN MICE. *D. J. Thomas*[1], G. E. Lee[1], B. M. Edwards[1], K. Herbin-Davis[1], K. Bradham[2], and *M. F. Hughes*[1]. [1]ISTD, NHEERL, US EPA, Research Triangle Park, NC, and [2]HEASD, NERL, US EPA, Research Triangle Park, NC.

#1463 **Poster Board Number 332**
HUMANIZED UDP-GLURONOSYLTRANSFERASE 1 MICE AS A SENSOR FOR ENVIRONMENTAL EXPOSURE. *R. Fujiwara*[1], C. Konopnicki[1], S. Chen[1], M. Karin[1], and *R. H. Tukey*[1,2]. [1]Pharmacology, University of California San Diego, La Jolla, CA, and [2]Chemistry & Biochemistry, University of California San Diego, La Jolla, CA.

#1464 **Poster Board Number 333**
RESISTANCE TO ENVIRONMENTAL ARSENIC IN THE ATLANTIC KILLIFISH (*FUNDULUS HETEROCLITUS*). *D. Jung*[1,2], B. MacIver[3], B. Jackson[4], R. Barnaby[1], J. Sato[2], M. Ziedel[3], J. Shaw[2,5], and *B. Stanton*[1,2]. [1]Microbiology and Immunology, Dartmouth Medical School, Hanover, NH, [2]Mount Desert Island Biological Laboratory, Salisbury Cove, ME, [3]Medicine, Beth Israel Deaconess Center and Harvard Medical School, Boston, MA, [4]Earth Sciences and Chemistry, Dartmouth College, Hanover, NH, and [5]The School of Public and Environmental Affairs, Indiana University, Bloomington, IN.

#1465 **Poster Board Number 334**
A GENETIC APPROACH TO UNCOVERING CELLULAR PATHWAYS SENSITIVE TO METHYLATED ARSENICALS. *I. L. Cartwright*, and J. Shang. Molecular Genetics, University of Cincinnati College of Medicine, Cincinnati, OH.

Abstract #

Tuesday Afternoon, March 13
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Exposure Characterization: New Analytical Sampling Methods, Biomonitoring, and Assessment Applications

Chairperson(s): *Daniel Dietrich, University of Konstanz, Konstanz, Germany, and Xiaoying Hui, University of California San Francisco, San Francisco, CA.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *2:45 PM–4:30 PM*

#1466 **Poster Board Number 343**
WIND-ACTIVATED TOXICOLOGICAL SAMPLING AT A NEAR-ROADWAY SITE IN DETROIT, MICHIGAN. A. Kamal[1], G. Norris[1], M. Landis[1], *A. Vette*[2], Q. Krantz[2], J. Turlington[1], K. Kovalcik[1], J. McGee[2], and *I. Gilmour*[2]. [1]NERL, US EPA, Research Triangle Park, NC, and [2]NHEERL, US EPA, Research Triangle Park, NC.

#1467 **Poster Board Number 344**
TOTAL AROMATIC CONTENT IN PETROLEUM SOLVENTS MODIFIES HEADSPACE BENZENE VAPOR CONCENTRATIONS: IMPLICATIONS FOR EXPOSURE ASSESSMENTS. *B. D. Kerger*[1], R. O. Richter[2], S. Hoyt[3], and *M. Fedoruk*[4,1]. [1]HSRI, Tallahassee, FL, [2]Exponent, Irvine, CA, [3]EAS, San Luis Obispo, CA, and [4]Center for Occupational and Environmental Health, University of California-Irvine, Irvine, CA.

#1468 **Poster Board Number 345**
FLOW CYTOMETRY-BASED HEMATOTOXICITY MATRIX READILY INTEGRATES WITH STUDIES OF THE EFFECTS OF IONIZING RADIATION OR CHEMICAL EXPOSURE IN MULTIPLE SPECIES. *J. C. Bemis*[1], Y. Chen[2], S. M. Bryce[1], J. A. Mereness[1], S. Phonethepswath[1], P. Weller[1], E. Hernady[2], J. Williams[2], *J. Finkelstein*[2], and *S. D. Dertinger*[1]. [1]Litron Laboratories, Rochester, NY, and [2]Radiation Oncology, University of Rochester Medical Center, Rochester, NY.

#1469 **Poster Board Number 346**
COMPARISON OF THE SENSITIVITY OF GC/EI-MS TO GC/ECNI-MS FOR THE QUANTIFICATION OF BDE-47, BDE-49, BDE-52, BDE-95, BDE-99, BDE-100, BDE-136, AND BDE-153 IN MATERNAL PLASMA AND CORD BLOOD. Y. Lin, *I. N. Pessah*, and *B. Puschner*. University of California Davis, Davis, CA.

#1470 **Poster Board Number 347**
COMPARISON OF TWO DIFFERENT ELISA-BASED METHODS FOR THE DETECTION OF MICROCYSTINS IN HUMAN BLOOD. A. H. Heussner[1], I. Winter[1], F. Rubio[2], L. Kamp[2], A. Celona[2], and *D. R. Dietrich*[1]. [1]Human & Environmental Toxicology, University of Konstanz, Konstanz, Germany, and [2]Abraxis LLC., Warminster, PA.

TUESDAY

Program Description (Continued)

Abstract #

#1471 **Poster Board Number 348**
ANALYTICAL METHOD VALIDATION OF TRIS(2-CHLOROISOPROPYL)PHOSPHATE (TCPP) IN HARLAN SPRAGUE DAWLEY MATERNAL RAT BLOOD. J. Algaier[1], S. P. Kerns[1], C. C. Dillon[1], B. D. Sitzmann[1], A. L. Hoskins[1], J. L. Cobb[1], D. M. Logan[1], A. D. Ammenhauser[1], P. J. Schebler[1], R. K. Harris[1], B. J. Collins[2], and *C. S. Smith*[2]. [1]MRIGlobal, Kansas City, MO, and [2]National Toxicology Program, DNTP, NIEHS, Research Triangle Park, NC.

#1472 **Poster Board Number 349**
AN LC-MS/MS METHOD FOR DETERMINATION OF VARIOUS DRUGS OF ABUSE AND METABOLITES IN MUNICIPAL WASTEWATER EFFLUENT SAMPLES. R. McPeters, J. Berkbigler, W. Hanneman, and G. Dooley. Department of Environmental and Radiological Health Sciences, Colorado State University, Fort Collins, CO. Sponsor: *M. Legare*.

#1473 **Poster Board Number 350**
ASSOCIATION BETWEEN PON1 GENOTYPE AND PHENOTYPE AND BLOOD CHOLINESTERASE ACTIVITIES IN FARMWORKERS. *Z. Guerrette*[1], E. G. Moreira[1,2], W. C. Griffith[1], G. D. Coronado[3], B. Thompson[3], E. M. Vigoren[1], *X. Yu*[1], R. J. Richter[4], C. E. Furlong[4], and *E. M. Faustman*[1]. [1]Environmental & Occupational Health Sciences, University of Washington, Seattle, WA, [2]State University of Londrina, Londrina, PR, Brazil, [3]Fred Hutchinson Cancer Research Center, Seattle, WA, and [4]Medicine, University of Washington, Seattle, WA.

#1474 **Poster Board Number 351**
PROBABILISTIC EXPOSURE ASSESSMENT OF DIOXINS VIA BEEF, PORK, CHICKEN MEAT, AND MILK IN KOREAN POPULATION. S. Park, P. Young-Il, H. Shin, J. Kang, D. Kim, M. Kim, S. Son, and H. Kang. Toxicology and Residue Chemistry Division, Animal, Plant and Fisheries Quarantine and Inspection Agency, Anyang, Republic of Korea. Sponsor: *S. Jeong*.

#1475 **Poster Board Number 352**
PBPK MODELS IN ACUTE CHEMICAL INCIDENTS. R. Boerleider[1], C. C. Hunault[1], J. J. Kliest[2], M. Meijer[3], and J. Meulenbelt[1]. [1]National Poisons Information Centre, University Medical Center Utrecht, Utrecht, Netherlands, [2]Environmental Incident Service, National Institute for Public Health and the Environment, Bilthoven, Netherlands, and [3]Environmental Calamity Service Rijnmond, Rotterdam, Netherlands. Sponsor: *H. Clewell*.

#1476 **Poster Board Number 353**
SIMULTANEOUS DETERMINATION OF BISPHENOL A, 2.4-DIBROMOPHENOL, 2.4.6-TRIBROMOPHENOL AND TETRABROMOBISPHENOL A IN HUMAN SERUM SAMPLES BY LC-MS/MS. S. E. Petropoulou, J. Park, T. Guo, W. Guo, and M. Petreas. Department of Toxics Substances Control, California EPA, Berkeley, CA. Sponsor: *N. Holland*.

Abstract #

#1477 **Poster Board Number 354**
EVALUATING THE PLAUSIBILITY ESTROGEN RECEPTORS AS MEDIATORS OF BPA TOXICITY IN THE CONTEXT OF HUMAN SERUM CONCENTRATIONS OF UNCONJUGATED BPA. *J. G. Teeguarden*. Biological Sciences, Pacific Northwest National Laboratory, Richland, WA.

#1478 **Poster Board Number 355**
INFANT RISK AND EXPOSURE ASSESSMENT OF BISPHENOL A IN POLYCARBONATE AND BPA-FREE PLASTIC BOTTLES. *M. Peterson*[1], and *J. Goodman*[2]. [1]Gradient, Seattle, WA, and [2]Gradient, Cambridge, MA.

#1479 **Poster Board Number 356**
POTENTIAL RISKS OF HUMAN TRANSFER OF TOPICAL BIOACTIVE DRUG PRODUCTS. X. Hui, and *H. I. Maibach*. Dermatology, University of California San Francisco, San Francisco, CA.

#1480 **Poster Board Number 357**
LOW BIOAVAILABILITY OF MONOCLONAL ANTIBODY DRUGS BY INHALATION AND IMPLICATIONS FOR OCCUPATIONAL HEALTH RISK ASSESSMENT. *D. Van der Sluis*[1], and *S. Kim*[2]. [1]Solstice Neurosciences, a wholly-owned subsidiary of US WorldMeds, South San Francisco, CA, and [2]ToxiSan, Fairfield, CA.

#1481 **Poster Board Number 358**
DIETARY ACRYLAMIDE EXPOSURE, BIOMARKERS OF INTERNAL DOSE, AND LYMPHOCYTE DNA STRAND BREAKS IN CANADIAN TEENAGERS. B. Brisson[1,2], *P. Ayotte*[1,2], L. Normandin[1], É. Gaudreau[1], J. Bienvenu[1], *T. R. Fennell*[3], C. Blanchet[1], D. Phaneuf[1], C. Lapointe[4], Y. Bonvalot[4], M. Gagné[1], M. Courteau[1], R. W. Snyder[3], and *M. Bouchard*[5]. [1]Institut National de Sante Publique du Quebec, Quebec, Canada, [2]CHUQ Research Center and Laval University, Quebec, Canada, [3]RTI International, Research Triangle Park, NC, [4]Health Canada, Longueuil, QC, Canada, and [5]Department of Environmental and Occupational Health, University of Montreal, Montreal, QC, Canada.

#1482 **Poster Board Number 359**
OCCURRENCE OF INSECTICIDE BIOMARKERS OF MALATHION IN PRODUCE AND THEIR ABSORPTION AND EXCRETION IN THE RAT. *L. Chen*[1,2], T. Zhao[1], *J. Ross*[3], H. Vega[1], and *R. I. Krieger*[1]. [1]Personal Chemical Exposure Program, Department of Entomology, University of California Riverside, Riverside, CA, [2]Pesticide Analysis and Toxicology Laboratory, College of Science, China Agricultural University, Beijing, China, and [3]Gem Quality Risk, Inc., Carmichael, CA.

#1483 **Poster Board Number 360**
APPLICATION OF METHODS TO FACILITATE ENVIRONMENTAL CONTAMINANT MONITORING BY LOCAL RESIDENTS. I. Shapiro[1], R. Marqueda[3], L. A. Wood[2], D. Hensman[1], V. Tamez[3], G. Garza[3], J. del Bosque[3], and *D. Johnson*[1]. [1]University of California Berkeley, Berkeley, CA, [2]Advisor, Berkeley, CA, and [3]Universidad Antonimo de Nuevo Lion, Monterrey, Mexico.

Program Description (Continued)

Abstract #

#1484 **Poster Board Number 361**
OBSERVATIONAL EXPOSURE MONITORING OF CYPHENOTHRIN IN ADULTS AND CHILDREN FOLLOWING SPOT-ON DOG APPLICATION: DESIGN CRITERIA AND SUMMARY RESULTS. *J. H. Driver*[1], *J. H. Ross*[2], L. Holden[3], *S. Selim*[4], D. Carlson[5], and L. Nouvel[6]. [1]risksciences.net, LLC, Manassas, VA, [2]risksciences.net, LLC, Sacramento, CA, [3]Sielken & Associates, Inc., Bryan, TX, [4]Selim & Associates, Inc., Fresno, CA, [5]McLaughlin Gormley King Company, Minneapolis, MN, and [6]Nouvel, Inc., Plano, TX.

#1485 **Poster Board Number 362**
DEHP EXPOSURE ASSESSMENT. *D. A. Sarigiannis*[1,2], and S. P. Karakitsios[2]. [1]Chemical Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece, and [2]Chemical Process Engineering Research Institute, Centre for Research and Technology Hellas, Thermi, Greece.

#1486 **Poster Board Number 363**
EXPLORING PHTHALATE BIOMONITORING DATA WITHIN THE 2007/2008 NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY (NHANES) DATASET FOR COEXPOSURE PATTERNS. H. Qian, M. Chen, R. T. Zaleski, and *K. M. Kransler*. ExxonMobil Biomedical Sciences, Inc., Annandale, NJ.

#1487 **Poster Board Number 364**
OCCUPATIONAL EXPOSURE TO MERCURY IN AN OIL AND GAS PLATFORM: CONFOUNDING EFFECTS OF SEAFOOD INTAKE IN BIOMONITORING OF BLOOD. *S. Inayat-Hussain*[1], and M. Mohd Shaffi[2]. [1]Faculty of Health Sciences, Universiti Kebangsaan Malaysia, Kuala Lumpur, Federal Territory, Malaysia, and [2]MIOSH, Kuala Terengganu, Terengganu, Malaysia.

#1488 **Poster Board Number 365**
ALTERNATIVE METHODS FOR THE PREDICTION OF BIOAVAILABILITY OF ARSENIC IN MINING SOILS. *V. L. Mitchell*[1], C. N. Alpers[2], N. T. Basta[3], *S. W. Casteel*[4], A. L. Foster[5], C. S. Kim[6], L. Naught[4], and P. A. Myers[1]. [1]Toxic Substances Control, Cal EPA, Sacramento, CA, [2]US Geological Survey, Sacramento, CA, [3]Ohio State University, Columbus, OH, [4]University of Missouri, Columbia, MO, [5]US Geological Survey, Menlo Park, CA, and [6]Chapman University, Orange, CA.

#1489 **Poster Board Number 366**
ESTIMATING AN EXPOSURE POINT CONCENTRATION BASED ON LEAD BIOAVAILABILITY OF PARTICLE SIZES REPRESENTATIVE OF DERMAL ADHERENCE AND SUBSEQUENT SEDIMENT INGESTION IN A RECREATIONAL RISK ASSESSMENT. *M. Stifelman*[1], B. Thayer[2], B. Brattin[2], P. Wadman[2], N. Ross[2], and *G. Diamond*[2]. [1]US EPA, Seattle, WA, and [2]SRC, Syracuse, NY.

#1490 **Poster Board Number 367**
RISK OF FUMONISIN B1 TOXICITY IN PIGS: A COMPARATIVE ANALYSIS OF *BACILLUS THURINGIENSIS* (BT) CORN AND NON-BT CORN BY USING QUANTITATIVE DIETARY EXPOSURE ASSESSMENT MODELING. *J. E. Delgado*, and *J. D. Wolt*. Agronomy, Iowa State University, Ames, IA.

Abstract #

#1491 **Poster Board Number 368**
METAL BIOACCESSIBILITY IN THE TRADITIONAL FOODS OF FIRST NATIONS PEOPLE IN CANADA. B. D. Laird[1], S. Lehal[1], and *L. Chan*[1,2]. [1]University of Northern British Columbia, Prince George, BC, Canada, and [2]University of Ottawa, Ottawa, ON, Canada.

#1492 **Poster Board Number 369**
A VALIDATED METHOD FOR THE QUANTITATION OF CHLORFENAPYR IN LIVER BY GC/ECD. *C. Wilson*[1,2], K. Meyerholtz[1], H. Solomon[3], and *S. Hooser*[1,2]. [1]Indiana Animal Disease Diagnostic Laboratory, Purdue University, West Lafayette, IN, [2]Department of Comparative Pathobiology, Purdue University, West Lafayette, IN, and [3]School of Agriculture, Purdue University, West Lafayette, IN.

#1493 **Poster Board Number 370**
A VALIDATED ASSAY FOR SEVEN COMMON CARBAMATE PESTICIDES IN FEEDS, BAIT, AND STOMACH CONTENTS USING QUECHERS AND GAS CHROMATOGRAPHY/MASS SPECTROMETRY. *J. P. Buchweitz*[1,2], A. Lehner[2], M. Johnson[2], A. Couch[2], and W. K. Rumbeiha[3,2]. [1]Michigan Department of Agriculture and Rural Development, Lansing, MI, [2]College of Veterinary Medicine, Diagnostic Center for Population & Animal Health, Michigan State University, East Lansing, MI, and [3]College of Veterinary Medicine, Veterinary Diagnostic & Production Animal Medicine, Iowa State University, Ames, IA.

#1494 **Poster Board Number 371**
MEASUREMENT OF HYDROXY-PAHS IN URINE AND ATMOSPHERIC PARTICULATE MATTER. O. Motorykin[1], J. Schrlau[2], and *S. Simonich*[1,2]. [1]Department of Chemistry, Oregon State University, Corvallis, OR, and [2]Department of Environmental Molecular and Toxicology, Oregon State University, Corvallis, OR.

Tuesday Afternoon, March 13
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Cardiovascular Toxicity II

Chairperson(s): *Travis Knuckles, West Virginia University, Morgantown, WV.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *1:00 PM–2:45 PM*

#1495 **Poster Board Number 401**
PULMONARY INHALATION OF ULTRAFINE TIO2 AND CARDIOVASCULAR EFFECTS: A NEURON-REGULATED PATHWAY. H. Kan[1], Z. Wu[2], Y. Lin[1], B. T. Chen[1], J. L. Cumpston[1], M. L. Kashon[1], A. E. Munson[1], and *V. Castranova*[1]. [1]HELD/PPRB, NIOSH, Morgantown, WV, and [2]Neurobiology and Anatomy, West Virginia University School of Medicine, Morgantown, WV.

#1496 **Poster Board Number 402**
CARDIOVASCULAR EFFECTS AFTER PULMONARY EXPOSURE TO WELDING FUME. H. Kan, *J. M. Antonini*, *J. R. Roberts*, R. Salmen, Y. Lin, M. L. Kashon, and *V. Castranova*. HELD/PPRB, NIOSH, Morgantown, WV.

TUESDAY

Program Description (Continued)

Abstract #

#1497 **Poster Board Number 403**
NI IN AMBIENT PM CAUSES MICROVASCULAR DYSFUNCTION VIA NO AND NADPH PATHWAYS. *A. K. Cuevas*, *E. Liberda*, C. Chiu, *Q. Qu*, and *L. Chen*. Environmental Medicine, New York University School of Medicine, Tuxedo, NY.

#1498 **Poster Board Number 404**
TREADMILL STRESS TEST AFTER DIESEL EXHAUST PARTICULATE EXPOSURE REVEALS A TIME-DEPENDENT SHIFT FROM PARASYMPATHETIC TO SYMPATHETIC DOMINANCE. *A. P. Carll*[1], *C. M. Perez*[2], *A. K. Farraj*[3], and *D. L. Costa*[4]. [1]School of Public Health, University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]CURTOX, University of North Carolina at Chapel Hill, Chapel Hill, NC, [3]Environmental Public Health Division, US EPA, Research Triangle Park, NC, and [4]ORD, US EPA, Research Triangle Park, NC.

#1499 **Poster Board Number 405**
CHRONIC EXPOSURE TO DIESEL EXHAUST PARTICULATE INDUCES VENTRICULAR REMODELING AND DYSFUNCTION. J. Bradley, and J. D. Gardner. Louisiana State University Health Science Center, New Orleans, LA. Sponsor: *T. Dugass*.

#1500 **Poster Board Number 406**
DOSE-DEPENDENT INCREASES FOR THORACIC AORTA PLAQUE DEVELOPMENT IN APOE-/- MICE WITH CIGARETTE SMOKE INHALATION EXPOSURE. *G. M. Curtin*[1], *J. E. Swauger*[1], and *K. J. Nikula*[2]. [1]Regulatory Oversight, R.J. Reynolds Tobacco Company, Winston Salem, NC, and [2]Seventh Wave Laboratories, Chesterfield, MO.

#1501 **Poster Board Number 407**
AMBIENT MOUNTAIN TOP MINING PARTICULATE MATTER ALTERS SYSTEMIC MICROVASCULAR FUNCTION. *T. L. Knuckles*[1], *P. Stapleton*[1], *V. Minarchick*[1], M. McCawley[2], L. Esch[2], M. Hendryx[2], and *T. Nurkiewicz*[1]. [1]Center for Cardiovascular and Respiratory Sciences, West Virginia University, Morgantown, WV, and [2]Department of Community Medicine, West Virginia University, Morgantown, WV.

#1502 **Poster Board Number 408**
SUBCHRONIC EFFECTS OF CONCENTRATED AMBIENT PARTICLES ON HEMODYNAMIC CHANGE AND ORGAN DAMAGE IN ISOPROTERENOL-INDUCED MYOCARDIAL INJURY RATS. T. Cheng[1], Y. Yan[1,2], C. Huang[3], J. Wang[4], C. Tung[5], P. Chen[1], and *L. Chen*[6]. [1]Institute of Occupational Medicine and Industrial Hygiene, National Taiwan University, Taipei, Taiwan, [2]Department of Medical Research, Chia-Yi Christian Hospital, Chiayi, Taiwan, [3]Department of Emergency Medicine, National Taiwan University Medical College and Hospital, Taipei, Taiwan, [4]Department of Pathology, Kaohsiung Veterans General Hospital, Kaohsiung, Taiwan, [5]Department of Pathology, Chia-Yi Christian Hospital, Chiayi, Taiwan, and [6]Department of Environmental Medicine, New York University School of Medicine, New York, NY.

Abstract #

#1503 **Poster Board Number 409**
PULMONARY EXPOSURE TO PARTICULATE MATTER LEADS TO OXIDANT STRESS IN EXTRAPULMONARY ARTERIOLES OF FEMALE RATS. *M. Boegehold*, and *T. Nurkiewicz*. Center for Cardiovascular and Respiratory Sciences, West Virginia University, Morgantown, WV.

#1504 **Poster Board Number 410**
CARDIOMYOCYTE AUTOPHAGY IN SPRAGUE DAWLEY RATS TREATED WITH IMATINIB, A TYROSINE KINASE INHIBITOR, ASSESSED BY IMMUNOHISTOCHEMISTRY. J. Zhang, A. Knapton, K. Shea, and *E. H. Herman*. Division of Drug Safety Research, US FDA, Silver Spring, MD.

#1505 **Poster Board Number 411**
CARDIOTOXICITY IN MALE SPRAGUE DAWLEY RATS TREATED DAILY FOR UP TO 4 WEEKS WITH IMATINIB. *E. Herman*[1], A. Knapton[1], E. Rosen[1], J. Todd[2], A. Lu[2], J. Estis[2], S. Lipshultz[3], and *J. Zhang*[1]. [1]US FDA, Silver Spring, MD, [2]Singulex, Inc., Alameda, CA, and [3]University of Miami, Miller School of Medicine, Miami, FL.

#1506 **Poster Board Number 412**
MECHANISTIC INVESTIGATION OF IMATINIB-INDUCED CARDIAC TOXICITY AND THE INVOLVEMENT OF C-ABL KINASE. *W. Hu*[1], S. Lu[1], I. McAlpine[2], D. Lee[1], J. Jamieson[1], L. Marroquin[1], J. Heyen[1], D. Ramirez[1], S. Jenkinson[1], and *B. Jessen*[1]. [1]Drug Safety R&D, Pfizer, San Diego, CA, and [2]Medicinal Chemistry, Pfizer, San Diego, CA.

#1507 **Poster Board Number 413**
CHRONIC DOXORUBICIN CARDIOTOXICITY MODULATES EXPRESSION OF CYTOCHROME P450 AND SOLUBLE EPOXIDE HYDROXYLASE ACTIVITY IN RATS. A. M. Alsaad, *B. N. Zordoky*, and *A. O. El-Kadi*. Pharmacy and Pharmaceutical Sciences, University of Alberta, Edmonton, AB, Canada.

#1508 **Poster Board Number 414**
COMPARISONS OF CARDIAC TROPONIN BIOMARKER ASSAYS AFTER A SINGLE ISOPROTERENOL DOSE IN MALE HAN WISTAR RATS. P. I. Bentley[1], C. Betts[2], G. Budd[2], J. Fikes[1], and *D. Brott*[3]. [1]Safety Assessment, AstraZeneca, Waltham, MA, [2]Safety Assessment, AstraZeneca, Alderly Park, United Kingdom, and [3]Clinical Patient Safety Sciences, AstraZeneca, Wilmington, DE.

#1509 **Poster Board Number 415**
CHRONIC PROBUCOL TREATMENT DECREASES THE SLOW COMPONENT OF THE DELAYED-RECTIFIER POTASSIUM CURRENT IN CHO CELLS TRANSFECTED WITH KCNQ1 AND KCNE1: A NOVEL MECHANISM OF QT PROLONGATION. T. Taniguchi, M. Uesugi, T. Arai, T. Yoshinaga, N. Miyamoto, and K. Sawada. Eisai Co., Ltd., Tsukuba-shi, Japan. Sponsor: *A. Suganuma*.

Program Description (Continued)

Abstract #

#1510 **Poster Board Number 416**
INCREASED EXPRESSION OF PRO-ANGIOGENIC GENES AND ANGIOTENSIN CONVERTING ENZYME 1 IN THE CARDIAC TISSUES OF RATS FOLLOWING LONG-TERM EXPOSURE TO BISPHENOL A. H. Andersson[1], M. Rönn[2], *M. P. Lind*[2], and E. Brittebo[1]. [1]Department of Pharmaceutical Biosciences, Uppsala University, Uppsala, Sweden, and [2]Department of Medical Sciences, Uppsala University, Uppsala, Sweden.

#1511 **Poster Board Number 417**
EXERCISE MODULATES POLYCHLORINATED BIPHENYL-INDUCED CARDIOVASCULAR TOXICITY IN MICE. M. Murphy[1], K. Eske[1], *S. Han*[1], K. Esser[2], and *B. Hennig*[1]. [1]Graduate Center for Nutritional Sciences, University of Kentucky, Lexington, KY, and [2]Department of Physiology, University of Kentucky, Lexington, KY.

#1512 **Poster Board Number 418**
NEUROLOGICAL AND ARRHYTHMOGENIC EFFECTS OF 1,1-DIFLUOROETHANE. K. P. Joshi, J. Wurpel, and M. Barletta. Pharmaceutical Sciences, St. John's University, Queens, NY. Sponsor: *D. Hardej*.

#1513 **Poster Board Number 419**
EXPOSURE TO B(A)P *IN UTERO* PREDISPOSE LEH RAT OFFSPRING TO CARDIOVASCULAR DYSFUNCTION IN LATER LIFE. *G. E. Jules*[1], S. Pratap[2], *A. Ramesh*[3], and *D. B. Hood*[1]. [1]Neuroscience and Pharmacology, Meharry Medical College, Nashville, TN, [2]Microarray/Bioinformatics Core/Microbiology & Immunology, Meharry Medical College, Nashville, TN, and [3]Biochemistry and Cancer Biology, Meharry Medical College, Nashville, TN.

#1514 **Poster Board Number 420**
ANGIOTENSIN II/AT1 PLAYS A CRITICAL ROLE IN ALCOHOLIC CARDIOMYOPATHY THROUGH PKC/NADPH OXIDASE ACTIVATION PATHWAY. *Y. Tan*[1], Q. Chen[1], X. Yin[1], C. J. McClain[2], and *L. Cai*[1]. [1]Pediatrics, University of Louisville, Louisville, KY, and [2]Pharmacology and Toxicology, University of Louisville, Louisville, KY.

#1515 **Poster Board Number 421**
CHRONIC OVER-EXPRESSION OF RECEPTOR TYROSINE KINASE ERBB2 IN THE HEART AFFECTS MITOCHONDRIAL FUNCTION AND OXIDATIVE STRESS. *K. Gabrielson*. Molecular and Comparative Pathobiology, Johns Hopkins Medical Institutions, Baltimore, MD.

#1516 **Poster Board Number 422**
METALLOTHIONEIN PROTECTS INTERMITTENT HYPOXIA-INDUCED CARDIOMYOPATHY BY INHIBITION OF CARDIAC OXIDATIVE DAMAGE, APOPTOSIS, AND INFLAMMATION. X. Yin[1,2], *T. Yi*[1], B. Wang[1], Y. Zheng[2], J. Cai[1], and *L. Cai*[1,2]. [1]Pediatrics, University of Louisville, Louisville, KY, and [2]Jilin University, Changchun, Ji Lin Province, China.

Abstract #

#1517 **Poster Board Number 423**
REGULATION OF ENDOTHELIAL CELL-SPECIFIC NITRIC OXIDE SYNTHASE ACTIVITY BY THE PHOSPHODIESTERASE-4 INHIBITOR, CI-1044. G. A. McMahon Tobin[2], S. Stewart[2], A. Knapton[2], J. Zhang[2], S. Bancos[2], L. Zhang[2], B. Enerson[1], *M. Lawton*[1], and *J. L. Weaver*[2]. [1]DSRD, Pfizer Inc., Groton, CT, and [2]DDSR/OTR/OPS/CDER/US FDA, Silver Spring, MD.

#1518 **Poster Board Number 424**
MACROPHAGES AND TOXICANTS: EFFECTS ON CHOLESTEROL EFFLUX. A. Borazjani, J. A. Crow, R. Wang, and *M. Ross*. Mississippi State University, Mississippi State, MS.

#1519 **Poster Board Number 425**
ARSENIC DOES NOT AFFECT CARDIAC GROWTH IN THE ANGIOTENSIN-II MODEL OF HYPERTENSION. M. Aragon, M. L. Paffett, E. S. Colombo, M. Channell, J. Buntz, *S. N. Lucas*, and M. Campen. Pharmaceutical Sciences, University of New Mexico, Albuquerque, NM.

#1520 **Poster Board Number 426**
TRICLOSAN INTERFERES WITH EXCITATION-CONTRACTION COUPLING OF SKELETAL AND HEART MUSCLE- IMPLICATIONS FOR HUMAN ENVIRONMENTAL HEALTH. *I. N. Pessah*[1], *B. D. Hammock*[2], and N. Chiamvimonvat[3]. [1]VM:Molecular Biosciences, University of California Davis, Davis, CA, [2]Entomology, University of California Davis, Davis, CA, and [3]Cardiovascular Medicine, University of California Davis, Davis, CA.

#1521 **Poster Board Number 427**
AUTOMATED TYROSINE KINASE INHIBITOR CARDIOTOXICITY ASSAY IN ZEBRAFISH. C. Callol[1], O. Holgado[1], I. Ibarbia[1], J. Virto[1], A. Letamendia[1], D. Pez[2], M. Humbert[2], A. Moussy[2], and P. Dubreuil[2]. [1]Biobide, San Sebastian, Spain, and [2]ABScience, Marseille, France. Sponsor: *A. Muriana*.

#1522 **Poster Board Number 428**
EMBRYONIC EXPOSURE TO 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN INHIBITS EPICARDIAL DEVELOPMENT IN THE ZEBRAFISH HEART. J. S. Plavicki, P. Hofsteen, *R. E. Peterson*, and *W. Heideman*. School of Pharmacy, University of Wisconsin-Madison, Madison, WI.

#1523 **Poster Board Number 429**
SOX9B PLAYS A ROLE IN MEDIATING 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (TCDD)-INDUCED CARDIOTOXICITY IN THE DEVELOPING ZEBRAFISH EMBRYO. S. D. Johnson[1], *R. E. Peterson*[2,1], and *W. Heideman*[2,1]. [1]Molecular and Environmental Toxicology, University of Wisconsin, Madison, WI, and [2]School of Pharmacy, University of Wisconsin Madison, Madison, WI.

Program Description (Continued)

Abstract #

Tuesday Afternoon, March 13
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Biotransformation/Cytochrome P450

Chairperson(s): *Christopher A. Reilly, University of Utah, Salt Lake City, UT.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *2:45 PM–4:30 PM*

#1524 **Poster Board Number 433**
***IN VITRO* METABOLISM OF METHYLEUGENOL (ME) AND METHYLISOEUGENOL (MIE): IDENTIFICATION, QUANTIFICATION AND CYTOTOXICITY OF HEPATIC METABOLITES.** A. T. Cartus, I. Groh, L. W. Weishaupt, K. Merz, M. Esselen, and *D. Schrenk*. Food Chemistry and Toxicology, University of Kaiserslautern, Kaiserslautern, Rheinland-Pfalz, Germany.

#1525 **Poster Board Number 434**
ROLE OF INTESTINAL CYTOCHROME P450 ENZYMES IN DICLOFENAC-INDUCED TOXICITY IN THE SMALL INTESTINE. *Y. Zhu*, *X. Ding*, and *Q. Zhang*. Wadsworth Center, Albany, NY.

#1526 **Poster Board Number 435**
EMODIN ANALOGS AS CYTOCHROME P450 INHIBITORS—A STUDY OF THEIR POTENCY AND SELECTIVITY. *M. Foroozesh*, J. Sridhar, J. Liu, and C. Klein Stevens. Chemistry, Xavier University of Louisiana, New Orleans, LA.

#1527 **Poster Board Number 436**
INTERSTRAIN VARIABILITY IN TRICHLOROETHYLENE (TCE) METABOLISM: ROLE IN LIVER TOXICITY. H. Yoo, *B. U. Bradford*, L. B. Collins, O. Kosyk, S. Shymonyak, W. M. Bodnar, A. Gold, and *I. Rusyn*. Environmental Sciences and Engineering, University of North Carolina Gillings School of Global Public Health, Chapel Hill, NC.

#1528 **Poster Board Number 437**
LOCAL INHIBITION OF BRAIN CYP2B-MEDIATED CHLORPYRIFOS ACTIVATION REDUCES NEUROTOXICITY. J. Y. Khokhar[1,2], and R. F. Tyndale[1,2]. [1]Centre for Addiction and Mental Health, Toronto, ON, Canada, and [2]Departments of Psychiatry, Pharmacology and Toxicology, University of Toronto, Toronto, ON, Canada. Sponsor: *D. Grant*.

#1529 **Poster Board Number 438**
CYTOCHROME P450 1 GENES IN BIRDS: EVOLUTIONARY RELATIONSHIPS AND TRANSCRIPTION PROFILES IN CHICKEN AND JAPANESE QUAIL EMBRYOS. M. E. Jönsson[1,2], B. R. Woodin[2], *J. J. Stegeman*[2], and B. Brunström[1]. [1]Environmental Toxicology, Uppsala University, Uppsala, Sweden, and [2]Biology, Woods Hole Oceanographic Institution, Woods Hole, MA.

Abstract #

#1530 **Poster Board Number 439**
BIOAVAILABILITY AND EFFECT OF CLORAMINE-T ON DRUG-METABOLIZING ENZYMES. M. R. Martinez-Larrañaga, M. A. Martinez, M. Martinez, V. Castellano, I. Ares, E. Ramos, A. Romero, and *A. Anadon*. Department of Toxicology and Pharmacology, Faculty of Veterinary Medicine, Complutense University, Madrid, Spain.

#1531 **Poster Board Number 440**
CHIRAL POLYCHLORINATED BIPHENYLS (PCBs) ARE ENANTIOSELECTIVELY OXIDIZED IN MOUSE LIVER TISSUE SLICES. *H. Lehmler*[1], *X. Wu*[1], and *M. Duffel*[2]. [1]Department of Occupational and Environmental Health, University of Iowa, Iowa City, IA, and [2]Department of Pharmaceutical Sciences and Experimental Therapeutics, University of Iowa, Iowa City, IA.

#1532 **Poster Board Number 441**
2,2',3,3',6,6'-HEXACHLOROBIPHENYL (PCB136) IS ENANTIOSELECTIVELY OXIDIZED BY HUMAN LIVER MICROSOMES. *X. Wu*, and *H. Lehmler*. Department of Occupational and Environmental Health, University of Iowa, Iowa City, IA.

#1533 **Poster Board Number 442**
BIOTRANSFORMATION OF TRANS-1-CHLORO-3,3,3-TRIFLUOROPROPENE (HCFO-1233ZD). T. Schmidt[1], R. Bertermann[2], *G. M. Rusch*[3], and *W. Dekant*[1]. [1]Department of Toxicology, University of Würzburg, Würzburg, Germany, [2]Department of Inorganic Toxicology, University of Würzburg, Würzburg, Germany, and [3]Honmeywell Int. Inc., Morristown, NJ.

#1534 **Poster Board Number 443**
IMPACT OF AN INFLAMMATORY MICROENVIRONMENT ON THE ARYLAMINE-MEDIATED INDUCTION OF PHASE I ENZYMES IN HUMAN KERATINOCYTES. J. Hennen, J. Clemens, and *B. Blömeke*. Department of Environmental Toxicology, University Trier, Trier, Germany.

#1535 **Poster Board Number 444**
THE ROLES OF INTRONIC DNA ELEMENTS IN THE REGULATION OF HUMAN MICROSOMAL EPOXIDE HYDROLASE TRANSCRIPTION. *S. Su*[1,2], *Y. Xi*[1,2], and *C. Omiecinski*[2]. [1]Huck Institute of the Life Sciences, Penn State University, University Park, PA, and [2]Center for Molecular Toxicology and Carcinogenesis, Penn State University, University Park, PA.

#1536 **Poster Board Number 445**
CYTOCHROME P450 ENZYME EXPRESSION IN THE RODENT BRAIN. *M. Stamou*[1], *X. Wu*[2], *I. Korwel*[2], *H. Lehmler*[2], and *P. J. Lein*[1]. [1]Molecular Biosciences, University of California Davis, Davis, CA, and [2]Occupational & Environmental Health, University of Iowa, Iowa City, IA.

#1537 **Poster Board Number 446**
METABOLISM OF 3-(3,5-DICHLOROPHENYL)-2,4-THIAZOLIDINEDIONE (DCPT) IN RAT LIVER MICROSOMES. *S. Ejaz*, A. Azar, T. H. Rushmore, and *P. J. Harvison*. Department of Pharmaceutical Sciences, University of the Sciences in Philadelphia, Philadelphia, PA.

Program Description (Continued)

Abstract #

#1538 **Poster Board Number 447**
CYP1B1-DEFICIENCY PROMOTES THE DYSGENESIS OF TRABECULAR MESHWORK THROUGH ENHANCED OXIDATIVE STRESS. *Y. Zhao*[1], C. Sorenson[2], and N. Sheibani[1,3]. [1]University of Wisconsin-Madison, Madison, WI, [2]Pediatrics, University of Wisconsin-Madison, Madison, WI, and [3]Pharmacology, University of Wisconsin-Madison, Madison, WI.

#1539 **Poster Board Number 448**
EXPLORATION OF THE METABOLITES OF POLYBROMINATED DIPHENYL ETHERS AND RELATED METABOLIC ENZYMES. S. Wang[1], H. Dong[1], Z. Zhang[1], G. Xu[2], X. Wang[1], J. Zhou[1], and *X. Wang*[1]. [1]School of Public Health, Nanjing Medical University, Nanjing, China, and [2]School of Pharmacy, Nanjing Medical University, Nanjing, China.

#1540 **Poster Board Number 449**
***IN VITRO* REGULATION OF HUMAN CYP3A4 MRNA AND ENZYME ACTIVITY BY DIETHYLSTILBESTROL: COMPARISON TO PERSISTENT ORGANIC POLLUTANTS (POPS).** J. G. Lamb[1], *J. Raucy*[3], C. Peterson[2], and *M. R. Franklin*[1]. [1]Pharmacology and Toxicology, Salt Lake City, UT, [2]3Obstetrics and Gynecology, University of Utah, Salt Lake City, UT, and [3]Puracyp Inc., Carlsbad, CA.

#1541 **Poster Board Number 450**
SCREENING FOR MICRORNA REGULATORS OF THE ORPHAN P450, CYP4V2. K. A. Okialda[1], T. K. Bammler[2], R. P. Beyer[2], F. M. Farin[2], and *E. J. Kelly*[1]. [1]Pharmaceutics, University of Washington, Seattle, WA, and [2]Center for Ecogenetics and Environmental Health, University of Washington, Seattle, WA.

#1542 **Poster Board Number 451**
CATALYTIC FUNCTION OF YEAST-EXPRESSED BAIKAL SEAL CYP1A1, 1A2 AND 1B1 PROTEINS. *H. Iwata*[1], K. Yamaguchi[1], *E. Kim*[2], and A. Kubota[3]. [1]Center for Marine Environmental Studies, Ehime University, Matsuyama, Japan, [2]Department of Life and Nanopharmaceutical Science and Department of Biology, Kyung Hee University, Seoul, Republic of Korea, and [3]Biology Department, Woods Hole Oceanographic Institution, Woods Hole, MA.

#1543 **Poster Board Number 452**
COMPARATIVE CYP AND UDP-GLUCURONOSYLTRANSFERASE MRNA EXPRESSION IN LIVER AND INTESTINE AND THEIR INDUCIBILITY BY PHENOBARBITAL AND A SELF MICRO EMULSION DRUG DELIVERY SYSTEM (SMEDDS). F. Goldfain-Blanc, N. Sajot, C. Veau, H. Bertheux, R. J. Weaver, and *N. Claude*. Drug Safety, Servier, Gidy, France.

#1544 **Poster Board Number 453**
***IN UTERO* BISPHENOL A EXPOSURE ALTERS PHASE II METABOLIZING ENZYME EXPRESSION IN HUMAN FETAL LIVER TISSUE.** *M. S. Nahar*, and *D. C. Dolinoy*. Environmental Health Science, University of Michigan, Ann Arbor, MI.

Abstract #

#1545 **Poster Board Number 454**
***IN SILICO* DOCKING OF POLYCHLORINATED BIPHENYLS WITH CYTOCHROME P450 2A, 2B, AND 2C FROM THE BAIKAL SEAL (*PUSA SIBIRICA*).** J. Yoo[1], M. Hirano[1], E. Kim[2], and *H. Iwata*[1]. [1]Center for Marine Environmental Studies (CMES), Ehime university, Matsuyama, Japan, and [2]Department of Biology, Kyung Hee University, Seoul, Republic of Korea.

#1546 **Poster Board Number 455**
CONTRIBUTIONS OF ESTERASES AND CYP P450 3A ENZYMES TO THE METABOLISM OF BECLOMETHASONE DIPROPIONATE WHEN TREATING ASTHMA. J. K. Roberts, *C. D. Moore*, *C. A. Reilly*, and *G. S. Yost*. PHTX, University of Utah, Salt Lake City, UT.

#1547 **Poster Board Number 456**
EXPRESSION AND FUNCTIONAL CHARACTERIZATION OF HEPATIC MU-CLASS GLUTATHIONE S-TRANSFERASES FROM TURKEYS (*MELEAGRIS GALLOPAVO*) AND THEIR ROLE IN DETOXIFICATION OF AFLATOXIN B1. *B. R. Bunderson*[1], A. Croasdell[1], J. Kim[1], K. M. Reed[2], and *R. A. Coulombe*[1]. [1]Veterinary Sciences, Toxicology Graduate Program, Utah State University, Logan, UT, and [2]Veterinary Sciences, University of Minnesota, St. Paul, MN.

#1548 **Poster Board Number 457**
PREDOMINANT ROLE OF CYP2B6 IN THE OXIDATIVE METABOLISM OF BDE-99 IN HUMAN LIVER MICROSOMES. *C. Erratico*, and *S. Bandiera*. Faculty of Pharmaceutical Sciences, University of British Columbia, Vancouver, BC, Canada.

#1549 **Poster Board Number 458**
TISSUE DISPOSITION AND ELIMINATION OF 4-CHLOROBIPHENYL METABOLITES AS FREE PHENOLS, GLUCURONIDE OR SULFATE CONJUGATES IN SERUM, URINE AND FECES. K. Dhakal[1,2], *H. J. Lehmler*[1,2], L. M. Teesch[3], and *R. W. Larry*[1,2]. [1]Interdisciplinary Graduate Program in Human Toxicology, University of Iowa, Iowa City, IA, [2]Occupational and Environment Health, University of Iowa, Iowa City, IA, and [3]High Resolution Mass Spectrometry Facility, University of Iowa, Iowa City, IA.

#1550 **Poster Board Number 459**
EVALUATION OF DRUG METABOLIZING ENZYME AND TRANSPORTER GENE EXPRESSION IN THE LIVER AND KIDNEY DURING POSTNATAL DEVELOPMENT OF THE RAT USING AFFYMETRIX MICROARRAYS. L. McLean[1], M. Youreneff[1], S. Juelch[1], F. Nanna[1], D. Beckman[1], S. Chibout[2], P. Moulin[2], and F. Bolgnani[2]. [1]Preclinical Safety, Novartis Institutes for Biomedical Research (NIBR), East Hanover, NJ, and [2]Preclinical Safety, NIBR, Basel, Switzerland. Sponsor: *D. Lapadula*.

Program Description (Continued)

Abstract #

#1551 **Poster Board Number 460**
17α-ETHINYESTRADIOL ALTERS BENZO(A) PYRENE TOXICITY IN ZEBRAFISH HEPATOCYTES. *S. Tang*[1], *E. G. Notch*[2], *Q. Cai*[1], *K. Germ*[1], and *G. D. Mayer*[1]. [1]The Institute of Environmental and Human Health, Texas Tech University, Lubbock, TX, and [2]Department of Physiology, Dartmouth Medical School, Hanover, NH.

#1552 **Poster Board Number 461**
FORMATION AND STRUCTURAL CHARACTERIZATION OF A CATECHOL-O-SULFATE METABOLITE OF BENZO(A) PYRENE-7,8-DIONE IN THREE HUMAN LUNG CELLS. L. Zhang, M. Huang, I. A. Blair, and *T. M. Penning*. Centers of Excellence in Environmental Toxicology and Cancer Pharmacology, Department of Pharmacology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA.

#1553 **Poster Board Number 462**
DEVELOPMENT OF A MURINE *IN VITRO* BIOASSAY TO ASSESS PLACENTAL BIOTRANSFORMATION OF GENOTOXICANTS. *M. J. Wilson*, and *J. Wickliffe*. Global Environmental Health Sciences, Tulane University School of Public Health and Tropical Medicine, New Orleans, LA.

#1554 **Poster Board Number 463**
POSTNATAL ADMINISTRATION OF THE CYTOCHROME P450 (CYP)1A INDUCER, BETA-NAPHTHOFLAVONE (BNF), ATTENUATES HYPEROXIC LUNG INJURY IN NEWBORN WILD-TYPE AND CYP1A2 MICE: IMPLICATIONS FOR BRONCHOPULMONARY DYSPLASIA (BPD). *X. I. Couroucli*, Y. W. Liang, L. Wang, W. Jiang, and *B. Moorthy*. Pediatrics, Baylor College of Medicine, Houston, TX.

#1555 **Poster Board Number 464**
PERSISTENT INDUCTION OF CYTOCHROME P4501A1 BY 3-METHYLCHOLANTHRENE (MC) IN HEPA-1 CELLS: ROLE OF CYP1A2. *B. Moorthy*, *S. R. Kondgraganti*, W. Jiang, L. Wang, and C. Chu. Pediatrics, Baylor College of Medicine, Houston, TX.

#1556 **Poster Board Number 465**
IDENTIFICATION OF PROTEINS INVOLVED IN AHR-MEDIATED CYP1A1 INDUCTION THROUGH RNAi HIGH-THROUGHPUT SCREENINGS. *P. S. Solaimani*[1], R. Damoiseaux[2], and *O. Hankinson*[1]. [1]Molecular Toxicology Interdepartmental Program, University of California Los Angeles, Los Angeles, CA, and [2]California NanoSystems Institute, University of California Los Angeles, Los Angeles, CA.

#1557 **Poster Board Number 466**
GEOGRAPHIC VARIABILITY OF CYP 450 MEDIATED METABOLISM IN CYNOMOLGUS MACAQUES (*MACACA FASCICULARIS*). J. McGraw[2], S. Scholzen[2], J. Dubach[3], and D. P. Waller[1]. [1]PreLabs, Hines, IL, [2]Concordia University, Mequon, WI, and [3]Loyola University Medical Center, Maywood, IL. Sponsor: *P. Baneux*.

Abstract #

#1558 **Poster Board Number 467**
EVALUATION OF THE POTENTIAL FOR DRUG-INDUCED LIVER INJURY OF ACYL GLUCURONIDES BASED ON *IN VITRO* COVALENT BINDING TO HUMAN LIVER PROTEINS. M. Yahata[1], T. Usui[1], T. Omodani[2], M. Nakao[2], T. Hashizume[1], T. Katsumata[1], and M. Yabuki[1]. [1]Pharmacokinetics Research Laboratories, Dainippon Sumitomo Pharma Co., Ltd., Osaka, Japan, and [2]Chemistry Research Laboratories, Dainippon Sumitomo Pharma Co., Ltd., Osaka, Japan. Sponsor: *T. Yamada*.

#1559 **Poster Board Number 468**
GENDER-DEPENDENT PROTECTION BY ALPHA-TOCOPHEROL INVOLVES ALTERED BENZO(A)PYRENE PHARMACOKINETICS AND ANTIOXIDANT MECHANISMS. C. A. Crimp, T. McQuistan, and *D. Mustacich*. Linus Pauling Institute, Oregon State University, Corvallis, OR.

#1560 **Poster Board Number 469**
CHARACTERIZATION OF METABOLITES AND CYTOCHROME P450 ISOFORMS INVOLVED IN THE MICROSOMAL METABOLISM OF ACONITINE. Y. Gao. Beijing Institute of Radiation Medicine, Beijing, China. Sponsor: *Y. Gao*.

#1561 **Poster Board Number 470**
REGULATION OF LIVER CYTOCHROME P450 BY ANTIANDROGENIC FUNGICIDE VINCLOZOLIN IN ADULT MALE RATS. C. L. Zazueta-Beltran, L. M. Lopez-Gonzalez, and *A. Sierra-Santoyo*. Toxicology, Cinvestav-IPN, Mexico City, D.F., Mexico.

#1562 **Poster Board Number 471**
INHIBITION OF CYP3A4 TRANSCRIPTION BY AMIODARONE AND DRONEDARONE. J. Huang, and C. Lin. Clinical Pharmacy and Pharmaceutical Sciences, National Cheng Kung University, Tainan, Taiwan. Sponsor: *Y. Guo*.

Tuesday Afternoon, March 13
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Immunotoxicity: Evaluation

Chairperson(s): *Sharon Meyer, University of Louisiana Monroe, Monroe, LA.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *1:00 PM–2:45 PM*

#1563 **Poster Board Number 501**
A COMPARISON OF CYNOMOLGUS MONKEY AND HUMAN NEUTROPHIL FUNCTION. *J. Piccotti*, M. Murillo, and S. Kulkarni. Merck Research Laboratories, Summit, NJ.

#1564 **Poster Board Number 502**
DOWNREGULATED IMMUNITY BY SLEEP DEPRIVATION MAY NOT BE COMPENSATED WITH WAKING DRUG, MODAFINIL. D. Kim[1], S. Kim[2], and *Y. Heo*[2]. [1]Basic Science, Korean Air Force Academy, Cheongwon, Chungbuk, Republic of Korea, and [2]Occupational Public Health, Catholic University of Daegu, Kyeongsan, Keongbuk, Republic of Korea.

Program Description (Continued)

Abstract #

#1565 **Poster Board Number 503**
PESTICIDES EFFECTS ON HUMAN CELL-MEDIATED IMMUNITY AND THEIR RELATIONS WITH VIRAL HEPATITIS. M. M. Amr, M. S. El-Attar, and F. S. Helal. Cairo University, Cairo, Egypt. Sponsor: *A. Ahmed*.

#1566 **Poster Board Number 504**
RETROSPECTIVE EVALUATION OF THE IMPACT OF US EPA'S FUNCTIONAL IMMUNOTOXICITY TESTING REQUIREMENT ON PESTICIDE RISK ASSESSMENT. *H. Lu*[1], *D. R. Boverhof*[2], *S. C. Gehen*[1], *J. M. Akins*[3], *A. M. Blacker*[4], W. Jones[5], and *G. S. Ladics*[5]. [1]Dow AgroSciences LLC, Indianapolis, IN, [2]The Dow Chemical Company, Midland, MI, [3]Tessenderlo Kerley Inc., Phoenix, AZ, [4]Bayer CropScience, Research Triangle Park, NC, and [5]Pioneer Hi-Breed International Inc., Wilmington, DE.

#1567 **Poster Board Number 505**
PROTECTIVE EFFECT OF TWO RECOMBINANT DNA RICIN VACCINES IN THE NEW ZEALAND WHITE RABBIT SUBJECTED TO A LETHAL AEROSOLIZED RICIN CHALLENGE: SURVIVAL, IMMUNOLOGICAL RESPONSE, AND HISTOPATHOLOGICAL FINDINGS. *D. E. McLain*[1], R. W. Wannemacher[2], B. S. Lewis[4], J. L. Chapman[5], L. A. Smith[6], and C. Y. Lindsey[3]. [1]Toxicology, Walker Downey & Associates, Inc., Verona, WI, [2]Toxicology, USAMRIID, Fort Detrick, MD, [3]Immunology, USAMRIID, Fort Detrick, MD, [4]Pathology, USAMRIID, Fort Detrick, MD, [5]Pathology, USAMRIID, Fort Detrick, MD, and [6]Medical Counter Measures, USAMRIID, Fort Detrick, MD.

#1568 **Poster Board Number 506**
EFFECTS OF ETHANOL AND ROLE OF HYPOTHERMIA IN SUPPRESSION OF HOST RESISTANCE TO SEPSIS BY ADMINISTERING ETHANOL 18-HR AFTER BACTERIAL CHALLENGE. W. Tan, *S. Pruett*, M. Bhatty, and B. Nanduri. Department of Basic Sciences, CVM, Mississippi State University, Mississippi State, MS.

#1569 **Poster Board Number 507**
AH RECEPTOR ACTIVATION INDUCES REGULATORY DENDRITIC CELLS AND ANTIGEN-SPECIFIC REGULATORY T CELLS *IN VIVO*. *T. Simones*, and *D. M. Shepherd*. Department of Biomedical & Pharmaceutical Sciences, Center for Environmental Health Sciences, University of Montana, Missoula, MT.

#1570 **Poster Board Number 508**
TIME COURSE FOR HEMATOTOXICITY OF MNX (HEXAHYDRO-1-NITROSO-3,5-DINITRO-1,3,5-TRIAZINE), RDX ENVIRONMENTAL DEGRADATION PRODUCT, IN RATS. *S. Jaligama*[1], *V. M. Kale*[2], *M. S. Wilbanks*[3], *E. J. Perkins*[3], and *S. A. Meyer*[1]. [1]Toxicology, University of Louisiana at Monroe, Monroe, LA, [2]Pharmaceutical Sciences, Roseman University of Health Science, Henderson, NV, and [3]Environmental Laboratory, US Army Engineer Research and Development Center, Vicksburg, MS.

Abstract #

#1571 **Poster Board Number 509**
IMMUNOHISTOCHEMICAL CHARACTERIZATION OF GLOMERULOPATHY IN CYNOMOLOGUS MONKEYS. *B. Wei*, Y. Zhan, Z. Stewart, *C. Rohde*, K. Percival, K. Shevlin, *M. Leach*, and S. O'Neil. Pfizer, Inc., Andover, MA.

#1572 **Poster Board Number 510**
INFLUENCE OF TUMOR NECROSIS FACTOR ALPHA (TNF-α) ON N-ACETYLTRANSFERASE 1 ACTIVITY IN HUMAN KERATINOCYTES AND MONOCYTES. J. Bonifas, S. Scheitza, and *B. Blömeke*. Environmental Toxicology, University of Trier, Trier, Germany.

#1573 **Poster Board Number 511**
AMODIAQUINE-INDUCED HEPATOTOXICITY IN BROWN NORWAY RATS. F. Liu[1], *L. Vega*[2], *P. Cai*[1], *J. Li*[3], and *J. Uetrecht*[1]. [1]Faculty of Pharmacy, University of Toronto, Toronto, ON, Canada, [2]Department of Toxicology, Centre of Research and Advanced Studies, Cinvestav-IPN, Mexico, and [3]Immunotoxicology, Bristol-Myers Squibb Company, New Brunswick, NJ.

#1574 **Poster Board Number 512**
IFN-γ, GRANZYME B AND PERFORIN-POSITIVE CELLS OF CD8⁺ LYMPHOCYTES IN ASBESTOS-EXPOSED PEOPLE WITH PLEURAL PLAQUE. N. Kumagai-Takei[1], Y. Nishimura[1], M. Maeda[2], H. Matsuzaki[1], S. Lee[1], T. Kishimoto[3], and *T. Otsuki*[1]. [1]Hygiene, Kawasaki Medical School, Kurashiki, Japan, [2]Biofunctional Chemistry, Graduate School of Natural Science and Technology, Okayama University, Okayama, Japan, and [3]Okayama Rosai Hospital, Okayama, Japan.

#1575 **Poster Board Number 513**
HUMORAL IMMUNOMODULATION BY *ECHINACEA PURPUREA* AND INTERACTION WITH ESTROGEN. J. R. Taylor, A. A. Einstman, E. M. Wheeler, and *D. O. Freier*. Biomedical Sciences, Lynchburg College, Lynchburg, VA.

#1576 **Poster Board Number 514**
SPANISH BLACK RADISH (*RAPHANUS SATIVUS L. VAR. NIGER*) DIET ENHANCES CLEARANCE OF DMBA AND DIMINISHES TOXIC EFFECTS ON BONE MARROW PROGENITOR CELLS. *A. U. N'jai*[1], M. Q. Kemp[3], B. Metzger[3], *P. R. Hanlon*[3], M. Robbins[3], *C. J. Czuprynski*[1,2], and D. M. Barnes[3]. [1]Pathobiological Sciences/Molecular & Environmental Toxicology, University of Wisconsin-Madison, Madison, WI, [2]Food Research Institute, University of Wisconsin-Madison, Madison, WI, and [3]Research and Development, Standard Process, Inc., Palmyra, WI.

#1577 **Poster Board Number 515**
EVALUATION OF THE COOPERATIVE PROINFLAMMATORY EFFECT BETWEEN ENDOTOXIN AND (1-3)-β-D-GLUCAN WITH THE *IN VITRO* PYROGEN TEST. *F. E. Rivera-Mariani*, *T. Hartung*, and P. N. Breysse. Environmental Health Sciences, Johns Hopkins University, Bloomberg School of Public Health, Baltimore, MD.

Program Description (Continued)

Abstract #

#1578 **Poster Board Number 516**
EFFECT OF ZIRAM ON NATURAL KILLER, LYMPHOKINE-ACTIVATED KILLER, AND CYTOTOXIC T-LYMPHOCYTE ACTIVITY.
Q. Li, M. Kobayashi, and T. Kawada. Department of Hygiene and Public Health, Nippon Medical School, Tokyo, Japan.

#1579 **Poster Board Number 517**
PERINATAL EXPOSURE TO ENVIRONMENTAL TOBACCO SMOKE (ETS) AND SUSCEPTIBILITY TO VIRAL AND BACTERIAL INFECTION. J. Claude, A. Grimm, and *K. E. Pinkerton*. University of California Davis, Davis, CA.

#1580 **Poster Board Number 518**
PERFLUORINATED COMPOUNDS AND IMMUNE HEALTH OUTCOMES IN 3 YEAR OLD CHILDREN. *U. C. Nygaard*, L. S. Haug, S. B. Stølevik, E. Namork, C. Thomsen, *M. Løvik*, and B. Granum. Division of Environmental Medicine, Norwegian Institute of Public Health, Oslo, Norway.

#1581 **Poster Board Number 519**
REGULATORY T-CELLS AND MARKERS OF AUTOIMMUNITY IN MICE DEVELOPMENTALLY EXPOSED TO PERFLUOROOCTANE SULFONATE (PFOS). *J. DeWitt*, J. N. Franklin, and Q. Hu. Pharmacology and Toxicology, East Carolina University, Greenville, NC.

#1582 **Poster Board Number 520**
ROLE OF MICRORNAS IN THE REGULATION OF TCDD-MEDIATED TOXICITY AGAINST THYMOCYTES FOLLOWING PRENATAL EXPOSURE. *P. Nagarkatti*, *N. P. Singh*, U. Singh, and *M. Nagarkatti*. Pathology, Microbiology, and Immunology, University of South Carolina School of Medicine, Columbia, SC.

#1583 **Poster Board Number 521**
PRENATAL EXPOSURE OF MICE TO DIETHYLSTILBESTROL (DES) DISRUPTS T-CELL DIFFERENTIATION BY REGULATING FAS/FASL EXPRESSION THROUGH ERE AND NF-KB MOTIFS. *N. P. Singh*, U. Singh, *M. Nagarkatti*, and *P. Nagarkatti*. Pathology, Microbiology, and Immunology, University of South Carolina School of Medicine, Columbia, SC.

Tuesday Afternoon, March 13
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Immunotoxicity: Methods

Chairperson(s): *Marija Popovic, Eli Lilly & Company, Indianapolis, IN*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *2:45 PM–4:30 PM*

#1584 **Poster Board Number 529**
MANIPULATION OF THE STANDARD CFU-GM ASSAY: TARGETED SCREENING ON HEMATOPOIETIC MYELOID PROGENITORS.
J. E. Damen[1], E. Lau[1], and A. Eaves[1,2]. [1]Contract Assay Services, STEMCELL Technologies Inc., Vancouver, BC, Canada, and [2]Terry Fox Laboratory, BC Cancer Agency, Vancouver, BC, Canada.

Abstract #

#1585 **Poster Board Number 530**
CROSS SPECIES COMPARISON OF IMMUNE STIMULATION IN WHOLE BLOOD FOLLOWING TREATMENT WITH SIRNA-CONTAINING LIPID NANOPARTICLES. J. Marlowe[1], S. Voytek[1], V. Jeliazkova[1], J. Baryza[2], K. Bowman[3], K. Henson[4], J. Moggs[5], D. Morrissey[3], J. Omerza[4], A. Pomerantz[3], L. Talbot[4], and C. Vargeese[3]. [1]Investigative Toxicology, Preclinical Safety, Novartis Institute for Biomedical Research, Cambridge, MA, [2]Global Discovery Chemistry, Novartis Institutes for Biomedical Research, Cambridge, MA, [3]RNAi Therapeutics, NIBR Biologics Center, Novartis Institutes for Biomedical Research, Cambridge, MA, [4]Immunotoxicology, Preclinical Safety, Novartis Institutes for Biomedical Research, East Hanover, NJ, and [5]Investigative Toxicology, Preclinical Safety, Novartis Institute for Biomedical Research, Basel, Switzerland. Sponsor: *R. Dugyala*.

#1586 **Poster Board Number 531**
HUMAN DENDRITIC CELL-BASED MODEL (DC-100) FOR IMMUNOTOXICITY STUDIES.
S. Ayehunie, A. Hunter, M. Spratt, A. Armento, and *M. Klausner*. MatTek Corporation, Ashland, MA.

#1587 **Poster Board Number 532**
IDENTIFICATION OF IMMUNOSUPPRESSIVE COMPOUNDS USING A HUMAN T-CELL PROLIFERATION ASSAY. *R. Pieters*[1,2], J. Ten Klooster[2], D. Fiechter[1], A. Kleensang[3], *E. Corsini*[4], R. Vandebriel[5], M. Teunis[2], and C. Krul[6]. [1]Institute for Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands, [2]Research Centre Technology & Innovation, Utrecht University of Applied Sciences, Utrecht, Netherlands, [3]ECVAM, IHCP, DG JRC, Ispra, Italy, [4]Department Pharmacological Sciences, University of Milan, Milan, Italy, [5]RIVM, Bilthoven, Netherlands, and [6]TNO, Zeist, Netherlands.

#1588 **Poster Board Number 533**
DEVELOPMENT AND VALIDATION OF A NONRADIOACTIVE NK LYSIS ASSAY IN MOUSE SPLENOCYTES. M. Perpetua, and G. Bannish. Huntingdon Life Sciences, East Millstone, NJ. Sponsor: *C. Auletta*.

#1589 **Poster Board Number 534**
FLUORESCENCE-BASED *IN VIVO* PHAGOCYTOSIS ASSAY TO MEASURE THE FUNCTION OF LIVER MACROPHAGES OF THE MONONUCLEAR PHAGOCYTE SYSTEM IN RAT. K. R. Tartaro[1], M. VanVolkenburg[1], D. Wilkie[2], *T. T. Kawabata*[1], and *S. Casinghino*[1]. [1]Immunotox, Pfizer, Groton, CT, and [2]Investigative Pathology, Pfizer, Groton, CT.

#1590 **Poster Board Number 535**
SIMPLIFIED CYTOMETRIC METHODS TO EVALUATE IMPACTS ON IMMUNE CELL HEALTH IN CYTOTOXICITY STUDIES. K. Tyagarajan, J. Clor, K. Tran, and K. Gillis. Research and Development, EMD Millipore, Hayward, CA. Sponsor: *R. Wiese*.

TUESDAY

Program Description (Continued)

Abstract #

#1591 **Poster Board Number 536**
FLOW CYTOMETRY AS A TOOL TO EVALUATE MOUSE PERITONEAL MACROPHAGES OF PHAGOCYTOSIS IN IMMUNOTOXICITY TESTING. Z. Li, *J. Huang*, and Q. Huang. Center for Disease Control and Prevention of Guangdong Province, Guangzhou, Guangdong, China.

#1592 **Poster Board Number 537**
FLOW CYTOMETRIC NATURAL KILLER CELL ANALYSIS: NEW STRATEGIES FOR TOXICOLOGICAL ASSESSMENT IN NONHUMAN PRIMATES. N. Clark, T. Warren, T. Salewsky, C. Cornwall, N. Pratt, M. Reid, *P. Franklin*, and *T. Beck*. SNBL, Everett, WA.

#1593 **Poster Board Number 538**
AN IMPROVED METHOD FOR IMMUNOPHENOTYPING IN THE CYNOMOLGOUS MONKEY. J. S. Hincks, and C. M. Kirton. Biologics and Biomarkers, HLS, Alconbury, United Kingdom. Sponsor: *D. Mitchell*.

#1594 **Poster Board Number 539**
IMMUNOPHENOTYPING COMPARISON OF CELLS ISOLATED IN-LIFE AND AT NECROPSY FROM BRONCHOALVELOAR LAVAGE (BAL) FLUID, OBTAINED IN THE CYNOMOLGUS MONKEY. V. Leighton, A. Head, J. Miller, G. Hale, and *S. A. Kirk*. Covance Laboratories Ltd, Harrogate, United Kingdom.

#1595 **Poster Board Number 540**
FROM IMMUNOTOXICITY IDENTIFICATION TO BIOMARKER ANALYSES: DEVELOPMENT OF HIGH-THROUGHPUT FLOW CYTOMETRY-BASED METHODS FOR T LYMPHOCYTE SUBSET CHARACTERIZATION IN PRIMATES AND HUMANS. M. P. Bernard, *H. G. Haggerty*, and *W. J. Freebern*. Immunotoxicology, Bristol-Myers Squibb, New Brunswick, NJ.

#1596 **Poster Board Number 541**
LYMPHOCYTE SUBSET ANALYSIS IN THE DOG: NORMAL RANGE IN CONTROL ANIMALS AND EFFECTS OF CYCLOPHOSPHAMIDE AND CYCLOSPORINE. C. Bouchez[1], J. Legrand[1], C. Mimouni[1], T. Ameller[1], and *J. Descotes*[2]. [1]CiToxLab France, Evreux, France, and [2]Poison Center, Lyon, France.

#1597 **Poster Board Number 542**
EFFECTS OF CYCLOPHOSPHAMIDE AND CYCLOSPORINE ON PRIMARY IGM AND IGG ANTIBODY RESPONSES TO KLH IN THE DOG USING A SPECIES-SPECIFIC ELISA ASSAY. J. Legrand[1], C. Bouchez[1], J. Freche[2], A. N'Guyen[1], J. Bouchard[1], T. Ameller[1], and *J. Descotes*[3]. [1]CiToxLab France, Evreux, France, [2]Atlanbio, Saint-Nazaire, France, and [3]Poison Center, Lyon, France.

Abstract #

#1598 **Poster Board Number 543**
VALIDATION OF A T-DEPENDENT ANTIBODY RESPONSE TO KLH IN CYNOMOLGUS MACAQUE. G. Bannish[1], T. Ramani[2], M. Perpetua[3], and J. Doughty[4]. [1]Biopharmaceutical Development, Huntingdon Life Sciences, East Millstone, NJ, [2]Safety Assessment, Huntingdon Life Sciences, East Millstone, NJ, [3]Huntingdon Life Sciences, East Millstone, NJ, and [4]Biologics and Biomarker Services, Huntingdon Life Sciences, East Millstone, NJ. Sponsor: *C. Auletta*.

#1599 **Poster Board Number 544**
***CANDIDA ALBICANS* DELAYED-TYPE HYPERSENSITIVITY MODEL IN JUVENILE RATS: EVALUATION OF IMMUNOSUPPRESSION BY PHARMACEUTICAL DRUGS.** *M. Collinge*[1], *M. Thorn*[1], *V. Peachee*[2], and *K. L. White*[2]. [1]Pfizer, Groton, CT, and [2]ImmunoTox, Inc., Richmond, VA.

Tuesday Afternoon, March 13
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Pharmacogenomics/Genetic Polymorphisms

Chairperson(s): *Yu (Janet) Zang, US FDA, College Park, MD.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *1:00 PM–2:45 PM*

#1600 **Poster Board Number 551**
GLUTATHIONE S-TRANSFERASE OMEGA 1 (A140D) POLYMORPHISM IN A TURKISH POPULATION: IS THERE ANY ASSOCIATION WITH SUSCEPTIBILITY TO LUNG CANCER? *M. Iscan*[1], T. G. Ada[1], A. O. Ada[1], S. C. Kunak[2], S. Alpar[3], and M. Gulhan[3]. [1]Toxicology, Ankara University Faculty of Pharmacy, Ankara, Turkey, [2]Pharmacology, Giresun University Faculty of Medicine, Giresun, Turkey, and [3]Pulmonary Diseases, Ataturk Pulmonary Diseases and Thoracic Surgery Hospital, Ankara, Turkey.

#1601 **Poster Board Number 552**
CATALASE CAN PROTECT CELLS AGAINST THE GENOTOXIC EFFECTS OF MONOMETHYLARSONOUS ACID. *J. G. Muniz Ortiz*, K. Wallace, and A. D. Kligerman. ORD, NHEERL, US EPA, Research Triangle Park, NC.

#1602 **Poster Board Number 553**
NQO1*2 POLYMORPHISM MODIFIES THE DNA DAMAGE IN MEXICAN CHILDREN ENVIRONMENTALLY-EXPOSED TO BENZENE. I. Alvarado-Cruz[1], *M. Sánchez-Guerra*[1], L. Hernández-Cadena[2], V. Pérez-Monroy[1], M. J. Solís-Heredia[1], N. Pelallo-Martínez[1], F. Díaz-Barriga[3], P. Escalante-Galindo[4], and *B. Quintanilla-Vega*[1]. [1]Toxicology Department, Cinvestav-IPN, Mexico City, Mexico, [2]INSP, Cuernavaca, Mor, Mexico, [3]Faculty of Medicine, UASLP, SLP, Mexico, and [4]Hospital Juárez de México, Mexico City, Mexico.

#1603 **Poster Board Number 554**
FUNCTIONAL CHARACTERIZATION OF ALLELIC VARIANTS OF HUMAN CYTOCHROME P450 2A6. S. Choi, S. Han, H. Park, Y. Lim, H. Lee, J. Kim, and D. Kim. Biological Sciences, Konkuk University, Seoul, 143-701, Republic of Korea. Sponsor: *H. Jeong*.

Program Description (Continued)

Abstract #

#1604 **Poster Board Number 555**
GENE-ENVIRONMENT INTERACTIONS ON POLYCYCLIC AROMATIC HYDROCARBONS (PAH) METABOLISM AND RELATED DNA DAMAGE IN CHILDREN. *B. Quintanilla-Vega*[1], *M. Sánchez-Guerra*[1], N. A. Pelallo-Martínez[1], L. Hernández-Cadena[2], S. J. Rothenberg[2], and F. Díaz-Barriga[3]. [1]Toxicology Department, Cinvestav-IPN, Mexico City, Mexico, [2]INSP, Cuernavaca, Mor, Mexico, and [3]Faculty of Medicine, UASLP, SLP, Mexico.

#1605 **Poster Board Number 556**
RISK HAPLOTYPES FOR PAH METABOLISM IN A MEXICAN POPULATION AND THEIR ASSOCIATION WITH DNA ADDUCT LEVELS IN LEUKOCYTES. E. D. Molina-Servín[1], R. Pérez-Morales[1], J. Rubio[1], P. Petrosyan[1], L. Hernández[2], V. M. Arlt[3], D. H. Phillips[3], and *M. E. Gonsebatt*[1]. [1]Instituto de Investigaciones Biomédicas, Universidad Nacional Autónoma de México, México, D.F., Mexico, [2]Instituto de Salud Pública, Cuernavaca, Morelos, Mexico, and [3]Section of Molecular Carcinogenesis, Institute of Cancer Research, Sutton, Surrey, United Kingdom.

#1606 **Poster Board Number 557**
NEW STATISTICAL METHODS USED FOR LYMPHOBLASTOID CELL LINES DRUG RESPONSE SHOWS PROMISE IN PHARMACOGENOMICS GENE DISCOVERY. C. Brown[1], T. Havener[2], R. Krauss[3], M. Wong-Medina[3], K. Long[2], H. McLeod[2], and A. Motsinger-Reif[1,4]. [1]Statistics, North Carolina State University, Raleigh, NC, [2]Institute for Pharmacogenomics and Individualized Therapy, University of North Carolina at Chapel Hill, Chapel Hill, NC, [3]Children's Hospital Oakland Research Institute, Oakland, CA, and [4]Bioinformatics Research Center, North Carolina State University, Raleigh, NC. Sponsor: *D. Reif*.

#1607 **Poster Board Number 558**
GENETIC VARIANTS IN HLA GENES ARE ASSOCIATED WITH DIISOCYANATE-INDUCED ASTHMA IN EXPOSED WORKERS. *B. Yucesoy*[1], *V. J. Johnson*[2], K. Fluharty[1], W. Wang[1], B. Frye[1], Z. L. Lummus[3], R. Marepalli[3], H. Bannerman-Thompson[3], D. Gautrin[4], J. Malo[4], A. Cartier[4], *D. R. Germolec*[5], *M. I. Luster*[1], and D. I. Bernstein[3]. [1]Health Effects Laboratory Division, CDC/NIOSH, Morgantown, WV, [2]BRT-Burleson Research Technologies, Morrisville, NC, [3]Departments of Medicine and Environmental Health, University of Cincinnati, Cincinnati, OH, [4]Sacré-Coeur Hospital, Université de Montréal, Montreal, QC, Canada, and [5]Toxicology Branch, NTP/NIEHS, Research Triangle Park, NC.

#1608 **Poster Board Number 559**
IS WHOLE GENOME AMPLIFIED (WGA) DNA SUITABLE FOR ACCURATE GENOTYPING? *J. C. Fuscoe*[1], T. Han[1], C. Chang[2], J. C. Kwekel[1], Y. Ge[1], Y. Chen[3], F. Francisco Martinez-Murillo[4], D. Roscoe[4], Z. Tezak[4], R. Philip[4], and K. Bijwaard[4]. [1]Division of Systems Biology, NCTR/FDA, Jefferson, AR, [2]Personalized Nutrition and Medicine, NCTR/FDA, Jefferson, AR, [3]Genetic and Molecular Toxicology, NCTR/FDA, Jefferson, AR, and [4]Office of In Vitro Diagnostic Device Evaluation & Safety, CDRH/FDA, Silver Spring, MD.

Abstract #

#1609 **Poster Board Number 560**
POLYMORPHISMS IN DNA METABOLIZING AND REPAIR GENES GSTM1, GSTT1, GSTP1, AND OGG1 AND TYPE 2 DIABETES MELLITUS RISK: A CASE-CONTROL STUDY IN A TURKISH POPULATION. B. Karahalil[1], E. Kadioglu[1], N. Kocabas[1], M. Ozkaya[2], *A. E. Karakaya*[1], and N. Gonul[3]. [1]Toxicology Department, Gazi University Faculty of Pharmacy, Ankara, Turkey, [2]Division of Endocrinology and Metabolism, Kahramanmaras Sutcu Imam University, Medical Faculty, Ankara, Turkey, and [3]Poison Research Center, Refik Saydam Hygiene Center, Ankara, Turkey.

#1610 **Poster Board Number 561**
EVALUATION OF THELIN USING A MOUSE DIVERSITY PANEL DEMONSTRATES GENETIC DIFFERENCES IN LIVER RESPONSE. C. L. Kurtz[1], *K. Adkins*[2], *H. Wu*[2], B. Rago[2], J. Barricklow[2], and *A. H. Harrill*[1]. [1]Institute for Drug Safety Sciences, The Hamner Institutes, Research Triangle Park, NC, and [2]Pfizer, Inc., Groton, CT.

#1611 **Poster Board Number 562**
P-GLYCOPROTEIN TRANSPORT OF PESTICIDES ASSOCIATED WITH PARKINSON'S DISEASE. *S. Lacher*, F. Cardozo-Pelaez, and E. L. Woodahl. CEHS/BMED, University of Montana, Missoula, MT.

#1612 **Poster Board Number 563**
DIFFERENT SENSITIVITY OF CARBOXYLESTERASE 1 GENETIC VARIANTS TO IRREVERSIBLE INHIBITION BY OXON METABOLITES OF ORGANOPHOSPHATE PESTICIDES. A. Press, *M. C. Fortin*, and *J. R. Richardson*. Environmental and Occupational Health Sciences Institute, Piscataway, NJ.

#1613 **Poster Board Number 564**
EFFECT OF CYP2B6 VARIANTS ON CHLORPYRIFOS METABOLISM: IMPLICATIONS FOR HUMAN RISK. *A. L. Crane*[1], K. Klein[2], U. M. Zanger[2,3], and *J. R. Olson*[1]. [1]University at Buffalo (SUNY), Buffalo, NY, [2]Dr. Margarete Fischer-Bosch Institute of Clinical Pharmacology, Stuttgart, Germany, and [3]University of Tuebingen, Tuebingen, Germany.

#1614 **Poster Board Number 565**
HUMAN ALDH1B1 POLYMORPHISMS MAY AFFECT THE METABOLISM OF NITROGLYCERIN AND ALL-TRANS RETINALDEHYDE—*IN VITRO* STUDIES AND MOLECULAR MODELING. *B. C. Jackson*, P. Reigan, and *V. Vasiliou*. Department of Pharmaceutical Sciences, University of Colorado Anschutz Medical Campus, Aurora, CO.

#1615 **Poster Board Number 566**
A MOUSE DIVERSITY PANEL APPROACH PREDICTS DB289-RELATED RENAL TOXICITY. *A. H. Harrill*[1,2], *K. D. DeSmet*[1], *K. Wolf*[2], J. E. Hall[2], M. Paine[2], R. Tidwell[2], and *P. B. Watkins*[1,2]. [1]Hamner Institutes, Research Triangle Park, NC, and [2]University of North Carolina at Chapel Hill, Chapel Hill, NC.

Program Description (Continued)

Abstract #

#1616 **Poster Board Number 567**
METABOLOMIC PROFILING OF THE MOUSE MODEL OF HUMAN POPULATION (MMHP) IDENTIFIES CYP46A1 AS A REGULATOR OF BILE ACID SYNTHESIS. H. Wu[1], *K. Adkins*[1], *M. Pletcher*[1], R. Wei[1], X. Zhou[2], *X. Ding*[2], *J. Colangelo*[1], and L. Luo[1]. [1]Pfizer Global Research and Development, Groton, CT, and [2]Wadsworth Center, New York State Department of Health, Albany, NY.

Tuesday Afternoon, March 13
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Immunotoxicity: Mechanisms

Chairperson(s): *Andrew A. Rooney, NIEHS, Research Triangle Park, NC.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *2:45 PM–4:30 PM*

#1617 **Poster Board Number 615**
EVALUATION OF POSSIBLE MODES OF ACTION FOR PFOS-INDUCED HUMORAL IMMUNOSUPPRESSION. *M. M. Peden-Adams*[1], N. Ayala[1], S. Young[1], K. Hinckley[2], J. A. Rueckert[2], L. Taylor[2], M. Chow[1], W. David[1], N. Henry[3], and *D. E. Keil*[2,1]. [1]HRC, University of Nevada-Las Vegas, Las Vegas, NV, [2]University of Utah, Salt Lake City, UT, and [3]NOAA, Charleston, SC.

#1618 **Poster Board Number 616**
HS3A/HS1,2 OR HS3B/HS4 IS SUFFICIENT TO MEDIATE TCDD-INDUCED INHIBITION OF THE 3'IGH IN A TRANSGENIC B-CELL LINE. B. Johnson, *J. Panchal*, E. Romer, *M. Wourms*, and *C. E. Sulentic*. Pharmacology & Toxicology, Wright State University, Dayton, OH.

#1619 **Poster Board Number 617**
BINARY INHIBITION OF B LYMPHOCYTE TERMINAL DIFFERENTIATION BY 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (TCDD). *Q. Zhang*[1,2], *D. E. Kline*[3], *S. Bhattacharya*[1,2], *R. B. Crawford*[3], *R. B. Conolly*[4], *R. S. Thomas*[2], *M. E. Andersen*[1,2], and *N. E. Kaminski*[3]. [1]Division of Computational Biology, The Hamner Institutes for Health Sciences, Research Triangle Park, NC, [2]Institute for Chemical Safety Sciences, The Hamner Institutes for Health Sciences, Research Triangle Park, NC, [3]Department of Pharmacology & Toxicology and Center for Integrative Toxicology, Michigan State University, East Lansing, MI, and [4]Integrated Systems Toxicology Division, National Health and Environmental Effects Research Laboratory, Office of Research and Development, US EPA, Research Triangle Park, NC.

#1620 **Poster Board Number 618**
SUPPRESSION OF THE PRIMARY IMMUNOGLOBULIN M (IGM) ANTIBODY RESPONSE BY DELTA^9-TETRAHYDROCANNABINOL (Δ^9-THC) IN HUMAN PRIMARY B CELLS. *T. Ngaotepprutaram*[1,2], *N. E. Kaminski*[1,2], and *B. Kaplan*[1,2]. [1]Pharmacology and Toxicology, Center for Integrative Toxicology, East Lansing, MI, and [2]Center for Integrative Toxicology, Michigan State University, East Lansing, MI.

Abstract #

#1621 **Poster Board Number 619**
INDUCTION OF MYELOID DERIVED SUPPRESSOR CELLS BY ENDOCANNABINOIDS REQUIRES MAST CELLS. A. R. Jackson, *V. Hegde*, *M. Nagarkatti*, and *P. Nagarkatti*. Pathology, Microbiology, Immunology, University of South Carolina, Columbia, SC.

#1622 **Poster Board Number 620**
DIFFERENTIAL MODULATION OF NF-κB SUBUNITS BY ACROLEIN. H. Dong, C. Lambert, P. Reigan, J. Goméz, and B. Freed. University of Colorado AMC, Aurora, CO. Sponsor: *V. Vasiliou*.

#1623 **Poster Board Number 621**
Δ^9TETRAHYDROCANNABINOL (THC) AMELIORATES STAPHYLOCOCCAL ENTEROTOXIN B (SEB)-INDUCED ACUTE LUNG INJURY THROUGH REGULATION OF EPIGENETIC PATHWAYS. *R. Rao*, *P. Nagarkatti*, and *M. Nagarkatti*. Pathology, Microbiology, Immunology, University of South Carolina, Columbia, SC.

#1624 **Poster Board Number 622**
OXYGENATED FATTY ACIDS IN PLASMA OF TUMOR-BEARING ANIMALS STIMULATE THEIR SCAVENGER RECEPTOR A1-MEDIATD UPTAKE BY DENDRITIC CELLS: MASS-SPECTROMETRIC EVIDENCE. W. Cao[2], V. A. Tyurin[1], *Y. Tyurina*[1], D. I. Gabrilovich[2], and *V. E. Kagan*[1]. [1]EOH, University of Pittsburgh, Pittsburgh, PA, and [2]Immunology, H. Lee Moffitt Cancer Center, Tampa, FL.

#1625 **Poster Board Number 623**
COMPARING THE IMMUNOSUPPRESSIVE EFFECTS OF CYCLOSPORIN A ON MOUSE SPLENOCYTES *IN VIVO* WITH MOUSE AND HUMAN T CELLS *IN VITRO* BY TRANSCRIPTOME PROFILING. P. Schmeits[1,3], A. A. Peijnenburg[1,3], *H. van Loveren*[2,3], and O. L. Volger[1,3]. [1]Toxicology and Effect Analysis Group, RIKILT—Institute of Food Safety, Wageningen UR, Wageningen, Netherlands, [2]Laboratory for Health Protection Research, National Institute of Public Health and the Environment, Bilthoven, Netherlands, and [3]Netherlands Toxicogenomics Centre, Maastricht, Netherlands.

#1626 **Poster Board Number 624**
INHIBITORY EFFECTS OF AZOLE-TYPE FUNGICIDES ON INTERLEUKIN-17 GENE EXPRESSION VIA RETINOIC ACID RECEPTOR-RELATED ORPHAN RECEPTORS ALPHA AND GAMMA. H. Kojima[1], R. Muromoto[2], M. Takahashi[2], S. Takeuchi[1], and T. Matsuda[2]. [1]Hokkaido Institute of Public Health, Sapporo, Japan, and [2]Graduate School of Pharmaceutical Sciences, Hokkaido University, Sapporo, Japan. Sponsor: *T. Yoshida*.

#1627 **Poster Board Number 625**
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN INDUCES TRANSCRIPTIONAL ACTIVITY OF THE HUMAN POLYMORPHIC HS1,2 ENHANCER OF THE 3'IGH REGULATORY REGION. *C. E. Sulentic*, *T. Fernando*, *S. Ochs*, *J. Liu*, and R. Chambers-Turner. Pharmacology & Toxicology, Wright State University, Dayton, OH.

TUESDAY

Program Description (Continued)

Abstract #

#1628 **Poster Board Number 626**
EFFECT OF LINDANE ON NITRIC OXIDE AND CYTOKINE RESPONSES IN RAW 264.7 MURINE MACROPHAGES. J. Bader, J. K. Muir, and *D. O. Freier*. Biomedical Sciences, Lynchburg College, Lynchburg, VA.

#1629 **Poster Board Number 627**
EFFECT OF ASBESTOS ON FORKHEAD TRANSCRIPTION FACTORS FOXO1 IN MT-2 CELLS. H. Matsuzaki[1], M. Maeda[2], S. Lee[1], N. Kumagai-Takei[1], Y. Nishimura[1], and *T. Otsuki*[1]. [1]Hygiene, Kawasaki Medical School, Kurashiki, Okayama, Japan, and [2]Biofunctional Chemistry, Okayama University, Graduate School of Natural Science and Technology, Okayama, Kurashiki, Japan.

#1630 **Poster Board Number 628**
CONTINUOUS EXPOSURE OF ASBESTOS ALTERS CELL-CYCLE REGULATION IN MT-2 CELL. S. Lee[1], H. Matsuzaki[1], M. Maeda[2], N. Kumagai-Takei[1], Y. Nishimura[1], and *T. Otsuki*[1]. [1]Hygiene, Kawasaki Medical School, Kurashiki, Okayama, Japan, and [2]Biofunctional Chemistry, Okayama University Graduate School of Natural Science & Technology, Okayama, Japan.

#1631 **Poster Board Number 629**
EFFECTS OF SODIUM METHYLDITHIOCARBAMATE-INDUCED OXIDATIVE STRESS ON NF-κB SIGNALING. M. C. Gadson, W. Tan, *X. Deng*, B. Jan, and *S. B. Pruett*. Department of Basic Sciences, College of Veterinary Medicine, Mississippi State University, Mississippi State, MS.

#1632 **Poster Board Number 630**
GLOBAL ASSESSMENT OF GLUCOCORTICOID-MEDIATED CHANGES IN EXPRESSION OF GENES RELEVANT TO IMMUNE AND INFLAMMATORY RESPONSES. *S. B. Pruett*, W. Tan, M. Bhatty, and B. Nanduri. Department of Basic Sciences, College of Veterinary Medicine, Mississippi State University, Mississippi State, MS.

#1633 **Poster Board Number 631**
OVEREXPRESSION OF THE CALCIUM CHANNEL TRPA1 IN LYMPHOCYTES DERIVED FROM CANNABINOID RECEPTOR KNOCKOUT MICE. A. Bach[3], T. Simkins[2,3], K. J. Lookingland[1,2], *N. E. Kaminski*[1,3], and *B. Kaplan*[1,2,3]. [1]Department of Pharmacology and Toxicology, Michigan State University, East Lansing, MI, [2]Neuroscience Program, Michigan State University, East Lansing, MI, and [3]Center for Integrative Toxicology, Michigan State University, East Lansing, MI.

#1634 **Poster Board Number 632**
CHARACTERIZATION OF THE ACUTE INFLAMMATORY RESPONSE TO RNAI-LIPID NANOPARTICLES IN RODENTS. *J. E. Sutherland*, *S. A. Barros*, *G. L. Warner*, *C. Gamba-Vitalo*, T. Novobrantseva, Y. Jiang, H. Epstein-Barash, B. R. Bettencourt, P. Karper, and J. Hettinger. Alnylam Pharmaceuticals, Cambridge, MA.

Abstract #

#1635 **Poster Board Number 633**
SUPPRESSION OF ACTIVATION AND ALTERED BCL-6 REGULATION BY 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (TCDD) IN HUMAN PRIMARY B CELLS. *A. S. Phadnis*[1,3], *R. B. Crawford*[2], and *N. E. Kaminski*[2,3]. [1]Genetics Program, East Lansing, MI, [2]Center for Integrative Toxicology, Michigan State University, East Lansing, MI, and [3]Pharmacology and Toxicology, Michigan State University, East Lansing, MI.

#1636 **Poster Board Number 634**
EFFECTS OF PERFLUOROOCTANE SULFONATE (PFOS) AND PERFLUOROOCTANOIC ACID (PFOA) ON IL-2 PRODUCTION IN THE HUMAN JURKAT T-CELL LINE. K. Midgett[1], D. L. Kamen[1], G. S. Gilkeson[1], and *M. Peden-Adams*[2]. [1]Medical University of South Carolina, Charleston, SC, and [2]Harry Reid Center for Environmental Studies, University of Nevada, Las Vegas, NV.

#1637 **Poster Board Number 635**
POLYBROMINATED DIPHENYL ETHERS ATTENUATE STORE-OPERATED CALCIUM ENTRY AND ALTER CYTOKINE SECRETION IN HUMAN PERIPHERAL BLOOD MONONUCLEAR CELLS. *D. D. Bose*[1], M. D. Eloi[2], J. Van de Water[2], and *I. N. Pessah*[1]. [1]Veterinary Molecular Biosciences, University of California Davis, Davis, CA, and [2]Division of Rheumatology, Allergy and Clinical Immunology, University of California Davis, Davis, CA.

#1638 **Poster Board Number 636**
EPIGENETIC MODIFICATIONS OF HISTONES PLAY A CRITICAL ROLE IN ETHANOL-MEDIATED ENHANCEMENT OF FASL GENE EXPRESSION AND CELL DEATH IN CD4+ T LYMPHOCYTES. S. Ghare[1], M. Patil[1], S. Joshi-Barve[1], *M. Cave*[1,3], *C. McClain*[1,2,3], and *S. Barve*[1,2]. [1]Department of Medicine/GI, University of Louisville, Louisville, KY, [2]Pharmacology and Toxicology, University of Louisville, Louisville, KY, and [3]Louisville VAMC, Louisville, KY.

#1639 **Poster Board Number 637**
DES AND METHOXYCHLOR METABOLITE, HPTE, INDUCTION OF CELL DEATH AND ALTERATION OF THYMOCYTE DEVELOPMENT: DOSE AND POTENTIAL MECHANISM. *C. Broussard*, F. Mourad, L. Leung Liu, Z. Muscato, P. Escalante, H. Johnson, D. Sortillon, and K. Pierce. Biology, University of La Verne, La Verne, CA.

#1640 **Poster Board Number 638**
PULMONARY HYPERTENSION-INDUCED BY EXPOSURE TO ANTIGEN AND URBAN PARTICULATE MATTER, ROLE OF B CELLS AND ANTIBODIES. *G. Grunig*, W. Chen, C. Hoffman, *T. Gordon*, and S. Park. New York University Medical Center, Tuxedo, NY.

#1641 **Poster Board Number 639**
CHARACTERIZING THE TOXIC MODE OF ACTION OF MERCURY ON THE B CELL. *A. J. Rosenspire*[1], R. Gill[1], *P. Stemmer*[1], A. Dombkowski[1], J. Caruso[1], and *M. McCabe*[2]. [1]Wayne State University, Detroit, MI, and [2]University of Rochester, Rochester, NY.

Program Description (Continued)

Abstract #

#1642 **Poster Board Number 640**
INVOLVEMENT OF IL-17 AND T-HELPER 17(TH17) CELLS IN DRUG-INDUCED LIVER INJURY (DILI). X. Zhu. University of Toronto, Toronto, ON, Canada. Sponsor: *J. Uetrecht*.

#1643 **Poster Board Number 641**
COVALENT BINDING OF NEVIRAPINE *IN VITRO* AND *IN VIVO*. A. M. Sharma, and *J. Uetrecht*. Pharmacy, University of Toronto, Toronto, ON, Canada.

#1644 **Poster Board Number 642**
Δ^9-TETRAHYDROCANNABINOL (Δ^9-THC) IMPAIRS ALVEOLAR MACROPHAGE RESPONSES TO INFLUENZA VIRUS *IN VIVO* AND TO TOLL-LIKE RECEPTOR STIMULATION *IN VITRO* IN A CANNABINOID RECEPTOR (CB)1 AND/OR 2-DEPENDENT MANNER. *P. Karmaus*[1,2], *B. L. Kaplan*[2,3], and *N. E. Kaminski*[2,3]. [1]Cell and Molecular Biology, Michigan State University, East Lansing, MI, [2]Center for Integrative Toxicology, Michigan State University, East Lansing, MI, and [3]Department of Pharmacology and Toxicology, Michigan State University, East Lansing, MI.

#1645 **Poster Board Number 643**
MAGNITUDE OF STIMULATION DICTATES THE CANNABINOID-MEDIATED DIFFERENTIAL T-CELL RESPONSE TO HIV_{GP120} *W. Chen*[1,3], *B. Kaplan*[3,2], *S. T. Pike*[3], and *N. E. Kaminski*[2,3]. [1]Microbiology and Molecular Genetics, East Lansing, MI, [2]Department of Pharmacology and Toxicology, Michigan State University, East Lansing, MI, and [3]Center for Integrative Toxicology, Michigan State University, East Lansing, MI.

#1646 **Poster Board Number 644**
IMMUNOTOXICITY OF POLYCYCLIC AROMATIC HYDROCARBONS AND ARSENIC FOLLOWING COMBINED EXPOSURES IN HUMAN PERIPHERAL BLOOD MONONUCLEAR CELLS. F. T. Lauer, and *S. W. Burchiel*. College of Pharmacy, University of New Mexico, Albuquerque, NM.

#1647 **Poster Board Number 645**
REDUCED RESPONSIVENESS OF CIRCULATING LEUKOCYTES FOLLOWING METAL-RICH PARTICULATE MATTER EXPOSURE. T. Hulderman, *P. C. Zeidler-Erdely*, M. L. Kashon, J. K. Gu, *S. Young*, R. Salmen-Muniz, T. G. Meighan, *J. M. Antonini*, and *A. Erdely*. NIOSH, Morgantown, WV.

#1648 **Poster Board Number 646**
OXIDATIVE STRESS, DNA DAMAGE, AND INFLAMMATION-INDUCED BY WOOD SMOKE PARTICULATE MATTER IN HUMAN A549 AND THP-1 CELLS. *C. L. Galli*[1], L. Marabini[2], S. Budello[1], A. Piazzalunga[3], M. Marinovich[1], and *E. Corsini*[1]. [1]Department of Pharmacological Sciences, University of Milan, Milan, Italy, [2]Dipartimento di Farmacologia, University of Milan, Milan, Italy, and [3]Dipartimento di Scienze dell'ambiente e del territorio, University of Milano-Bicocca, Milan, Italy.

Abstract #

#1649 **Poster Board Number 647**
EFFECTS OF GLUTAMATE ON B1A B CELL FUNCTION. R. D. Marcum, and *J. Pfau*. Department of Biological Sciences, Idaho State University, Pocatello, ID.

#1650 **Poster Board Number 648**
PULMONARY HYPERTENSION-INDUCED BY EXPOSURE TO ANTIGEN AND URBAN PARTICULATE MATTER, ROLE OF IL-33. *S. Park*, W. Chen, C. Hoffman, *T. Gordon*, and *G. Grunig*. Environmental Medicine, New York University Medical Center, Tuxedo, NY.

#1651 **Poster Board Number 649**
CHEMICAL-ALLERGEN-INDUCED INTERLEUKIN-17 PRODUCTION: ROLE OF THE INNATE AND ADAPTIVE IMMUNE SYSTEMS. M. D. Hayes, *I. Kimber*, and *R. J. Dearman*. Faculty of Life Sciences, University of Manchester, Manchester, United Kingdom.

#1652 **Poster Board Number 650**
DENDRITIC CELL-MEDIATED T CELL PROLIFERATION—A FUNCTIONAL BIOINDICATOR OF INFLAMMATORY SOURCE-SPECIFIC PARTICULATE MATTER. *M. A. Williams*, M. J. Daniels, T. J. Smith, and *I. Gilmour*. NHEERL-EPHD, US EPA, Research Triangle Park, NC.

#1653 **Poster Board Number 651**
THE ENHANCEMENT OF CD-8 POSITIVE T-CELL PROLIFERATION CAUSED BY TRICHLOROETHYLENE. R. Kobayashi, T. Nakanishi, and H. Nagase. Gifu Pharmaceutical University, Gifu, Japan. Sponsor: *S. Masahiko*.

#1654 **Poster Board Number 652**
INTERACTION OF ARYL HYDROCARBON RECEPTOR (AHR) WITH NF-κB MEDIATED RESPONSES IN DENDRITIC CELLS (DC) AND TISSUES FROM MICE. *C. Vogel*[1,5], D. Wu[1], *S. Goth*[4], G. Yang[2], P. Leung[2], E. Gershwin[2], J. Abel[3], *T. Herrmann-Stemmann*[3], *I. Pessah*[4], and *F. Matsumura*[1,5]. [1]Environmental Toxicology, University of California Davis, Davis, CA, [2]Allergy and Clinical Immunology, University of California Davis, Davis, CA, [3]Institute for Environmental Research, University of Dusseldorf, Duesseldorf, Germany, [4]Department of Molecular Biosciences, University of California Davis, Davis, CA, and [5]Center for Health and the Environment, University of California Davis, Davis, CA.

TUESDAY

Program Description (Continued)

Abstract #

Tuesday Afternoon, March 13
1:30 PM to 4:15 PM
Room 103

Aberrant Gene Expression in Toxicity and Disease—Epigenetics and microRNAs

Symposium Session: Circulating microRNAs: A New Class of Biomarkers for Tissue-Specific Toxicity

Chairperson(s): *Wenyue Hu, Pfizer, Inc., San Diego, CA, and Greg Falls, GlaxoSmithKline, Research Triangle Park, NC.*

Sponsor:
Drug Discovery Toxicology Specialty Section

Endorsed by:
Cardiovascular Toxicology Specialty Section
***In Vitro* Alternatives Specialty Section**
Molecular Biology Specialty Section
Regulatory and Safety Evaluation Specialty Section

MicroRNAs (miRNAs) are endogenous, small noncoding RNAs that down-regulate gene expression. Some miRNAs are produced at high concentrations within cells in a tissue-specific manner, and such miRNAs have recently been reported to be remarkably stable in plasma or other accessible body fluids. More importantly, differential increases in circulating miRNA populations have been shown by numerous studies to be associated with different disease or toxicity phenotypes. For example, tumor-derived miRNAs have been shown to distinguish patients with cancer from healthy individuals. Plasma concentrations of miR-122, miR-133a, and miR-124 have recently been shown to correspond to injuries in liver, muscle, and brain, respectively. Elevation in cardiac-specific miR-208a in plasma has been implicated as a potential biomarker for early diagnosis of acute myocardial infarction in humans. Taken together, because of their size, abundance, tissue specificity, and relative stability in body fluids, miRNAs hold promise as a new class of accessible biomarkers to monitor tissue-specific injuries. Our panel will explore the importance of this topic by providing perspectives from both industry and government sectors on the application of miRNAs as potential tissue injury biomarkers, the promises and pitfalls of miRNAs, and technical issues related to miRNA profiling in tissue and biofluids. Finally, our discussion will end with the impact of miRNA biomarkers on drug development in nonclinical studies, and the potential translatability to safety assessment in clinical settings.

#1655 1:30 **CIRCULATING MICRORNAS: A NEW CLASS OF BIOMARKERS FOR TISSUE-SPECIFIC TOXICITY.** *W. Hu*[1], and *G. J. Falls*[2]. [1]Drug Safety R&D, Pfizer, San Diego, CA, and [2]Safety Assessment, GlaxoSmithKline, Research Triangle Park, NC.

1:30 **INTRODUCTION.** Wenyue Hu

#1656 1:35 **MICRORNACHANGES IN RAT MESENTERY AND SERUM ASSOCIATED WITH DRUG-INDUCED VASCULAR INJURY.** *M. Scicchitano*, and R. Thomas. Safety Assessment, GlaxoSmithKline, King of Prussia, PA.

#1657 2:07 **URINE MICRORNAS AS KIDNEY INJURY BIOMARKERS: THE CASE FOR EXOSOMES.** P. Yuen. National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health, Bethesda, MD. Sponsor: *G. Falls*.

#1658 2:39 **MICRORNA BIOMARKERS OF GASTROINTESTINAL TOXICITY IN TISSUES AND BIOFLUIDS.** *A. Yang*, D. Kalabat, A. Vitsky, W. Scott, and *W. Huang*. Drug Safety R&D, Pfizer, San Diego, CA.

Abstract #

#1659 3:11 **EXTRACELLULAR MICRORNAS: A NEW SOURCE OF BIOMARKERS FOR LIVER INJURY.** K. Wang. Institute for Systems Biology, Seattle, WA. Sponsor: *G. Falls*.

#1660 3:43 **CIRCULATING MICRORNAS AS POTENTIAL BIOMARKERS OF DRUG-INDUCED TESTICULAR TOXICITY.** J. Kelsall[2], and *H. Lin*[1]. [1]Drug Safety R&D, Pfizer, Andover, MA, and [2]Safety Assessment UK, AstraZeneca, Macclesfield, Cheshire, United Kingdom.

Tuesday Afternoon, March 13
1:30 PM to 4:15 PM
Room 303

Symposium Session: *In Vitro* and *In Vivo* Alternative Models of Developmental Toxicity of Pharmaceutical Compounds

Chairperson(s): *Claudia McGinnis, Hoffmann-La Roche, Basel, Switzerland, and Aldert Piersma, National Institute for Public Health and the Environment RIVM, Bilthoven, Netherlands.*

Sponsor:
Reproductive and Developmental Toxicology Specialty Section

Endorsed by:
***In Vitro* and Alternative Methods Specialty Section**
Regulatory and Safety Evaluation Specialty Section

In vitro methods for testing of developmental toxicity effects of chemicals have been in use since ECVAM validated the EST (Embryonic Stem Cell Test for Embryotoxicity) assay as an alternative to *in vivo* developmental toxicology studies. The EST assay has been slow accept in the pharmaceutical industry, mostly due to the perceived complexity and uncertain applicability domain associated with *in vitro* differentiation from stem cells to cardiomyocytes, the classical EST endpoint. In recent years, considerable efforts have been undertaken to define new endpoints using genomic, proteomic, and metabolomic markers. In addition, a human stem cell-derived EST approach has been initiated as well as the validation of other alternative models such as zebrafish for embryotoxicity prediction. There are many new developments in this field such as comparing *in vitro* and *in vivo* alternative approaches and the use of models to identify primary targets of known teratogens. In addition, novel automation and culturing approaches will be reviewed that have considerably aided in the reduction of variability and work load of the EST assay. Advances in using transcriptomics for identification of predictive biomarkers will also be covered, along with the current status of development of a human EST assay. Finally, bottlenecks in the implementation of these assays in regulatory toxicology will be discussed.

#1661 1:30 ***IN VITRO* AND *IN VIVO* ALTERNATIVE MODELS OF DEVELOPMENTAL TOXICITY OF PHARMACEUTICAL COMPOUNDS.** *C. McGinnis*[1], A. H. Piersma[2], H. Handa[3], *T. B. Knudsen*[4], and J. Hescheler[5]. [1]Nonclinical Safety, Hoffmann-La Roche, Basel, Switzerland, [2]Laboratory for Health Protection Research, National Institute for Public Health and the Environment RIVM, Bilthoven, Netherlands, [3]Solutions Research Laboratory, Tokyo Institute of Technology, Yokohama, Japan, [4]National Center for Computational Toxicology, US EPA, Research Triangle Park, NC, and [5]Institute of Neurophysiology, University of Cologne, Cologne, Germany.

1:30 **INTRODUCTION.** Claudia Mcginnis

#1662 1:35 **THE ROCHE EXPERIENCE WITH THE EST ASSAY AND DEVELOPMENT OF A NOVEL, FULLY AUTOMATED APPROACH.** *C. McGinnis*. Nonclinical Safety, Hoffmann-La Roche, Basel, Switzerland.

TUESDAY

Program Description (Continued)

Abstract #

#1663 2:07 **TRANSCRIPTOMICS APPROACHES TOWARD BIOMARKERS OF EMBRYOTOXICITY IN THE EMBRYONIC STEM CELL TEST.** A. H. Piersma. Laboratory for Health Protection Research, National Institute for Public Health and the Environment RIVM, Bilthoven, Netherlands. Sponsor: *E. Carney*.

#1664 2:39 **USE OF ZEBRAFISH FOR IDENTIFICATION OF TARGETS OF TERATOGENICITY.** H. Handa, H. Ando, and T. Ito. Tokyo Institute of Technology, Yokohama, Japan. Sponsor: *E. Carney*.

#1665 3:11 **VIRTUAL EMBRYO: SYSTEMS MODELING OF DEVELOPMENTAL TOXCITY.** *T. B. Knudsen*. ORD/NCCT, US EPA, Research Triangle Park, NC.

#1666 3:43 **ES CELL-BASED NOVEL ALTERNATIVE TESTING STRATEGIES—THE ESNATS PROJECT.** J. Hescheler. Institute of Neurophysiology, University of Cologne, Cologne, Germany. Sponsor: *E. Carney*.

Tuesday Afternoon, March 13
1:30 PM to 4:15 PM
Room 307

W

Workshop Session: Beyond Traditional Monoclonals: New Biologics Formats and Preclinical Challenges

Chairperson(s): *Vladimir Vexler, Hoffmann-La Roche, Nutley, NJ, and Kenneth J. Olivier Jr., Merrimack Pharmaceuticals, Cambridge, MA.*

Sponsor:
Biotechnology Specialty Section

Endorsed by:
Immunotoxicology Specialty Section

Antibody-based biotherapeutics currently enjoy unprecedented success, growth, and recognition of their potential. Almost all FDA-approved therapeutic antibodies and the vast majority of those in clinical trials are full-size bivalent monoclonal antibodies (mAbs) mostly in IgG1 format of about 150 kDa size. This success and enthusiasm in the drug development community can be largely explained by the properties of antibodies: their exquisite binding specificity and low intrinsic toxicity. A fundamental problem for such large molecules is their poor penetration into tissues and poor or absent binding to regions on the surface of some molecules that are only accessible by molecules of smaller size. In addition, for certain applications it is desirable to increase the potency of mAbs or deliver them locally. Advances in protein engineering have led to the generation of a number of antibody derivatives and various scaffold proteins, which due to their smaller size can be beneficial in various aspects such as immunogenicity, biodistribution, renal clearance, and tissue penetration. Several approaches are being evaluated to improve the potency by the linkage of mAbs to highly cytotoxic drugs (antibody drug conjugates, ADC), by targeted delivery of cytotoxic drugs (ADC, immunoliposomes), by engineering antibodies with dual specificity, or by enhancing antibody effector function by engaging T cells and effector cells using bispecific T cell engagers (BiTE®) or glycoengineered antibodies. Due to their smaller size (e.g., nanobodies), format (e.g., ADC, immunoliposome), or pharmacology (e.g., bispecific), the development of these novel biotherapeutics presents an unusual toxicological challenges such as off-target toxicity (e.g., ADC, immunoliposome), immunotoxicity (e.g., BiTE®), and preclinical immunogenicity. This workshop will discuss general considerations for how to conduct nonclinical pharmacology and toxicology studies for these novel unconventional biotherapeutics with special focus on immunosafety assessment and the impact of nonclinical findings on clinical development.

Abstract #

#1667 1:30 **BEYOND TRADITIONAL MONOCLONALS: NEW BIOLOGICS FORMATS AND NONCLINICAL CHALLENGES.** *V. Vexler*[1], and *K. J. Olivier*[2]. [1]Hoffmann-La Roche, Nutley, NJ, and [2]Merrimack Pharmaceuticals, Cambridge, MA.

12:00 **INTRODUCTION.** Vladimir Vexler

#1668 1:30 **A NOVEL ANTITHROMBOTIC NANOBODY® TARGETING VON WILLEBRAND FACTOR: PRECLINICAL EXPERIENCE AND TRANSLATION TO CLINICAL PHARMACOLOGY.** J. Baumeister. Ablynx NV, Ghent, Belgium. Sponsor: *V. Vexler*.

#1669 1:30 **SAFETY EVALUATION OF ANTIBODY-DRUG CONJUGATES.** S. Willy. Roche Genentech, South San Francisco, CA. Sponsor: *V. Vexler*.

#1670 1:30 **ALTERNATIVE APPROACH FOR NONCLINICAL SAFETY ASSESSMENT OF MEDI-565 (MT111)—A NOVEL BISPECIFIC SINGLE-CHAIN BITE® ANTIBODY.** *P. C. Ryan*[1], S. A. Hammond[1], S. Ren[1], P. Lutterbuese[2], M. Amann[2], M. D. Oberst[1], K. Mulgrew[1], R. Criste[1], S. Fuhrmann[1], N. Lee[1], R. Gross[1], M. Liang[1], A. Schneider[1], R. Dixit[1], P. A. Baeuerle[2], *B. Rattel*[2], S. Coats[1], L. Roskos[1], B. Jallal[1], and L. Richmann[1]. [1]MedImmune LLC, Gaithesburg, MD, and [2]Micromet AG, Munich, Germany.

#1671 1:30 **NONCLINICAL SAFETY APPROACHES IN DEVELOPING TARGETED IMMUNOLIPOSOMES.** *K. J. Olivier*. Merrimack Pharmaceuticals, Cambridge, MA.

Tuesday Afternoon, March 13
1:30 PM to 4:15 PM
Room 304

W

Workshop Session: Biomarkers and Associated Health Consequences of Pesticide Exposures in Hispanic Populations

Chairperson(s): *Azita K. Cuevas, New York University School of Medicine, Tuxedo, NY, and Kenneth Ramos, University of Louisville, Louisville, KY.*

Sponsor:
Hispanic Organization of Toxicologists Special Interest Group

Endorsed by:
Global Strategy Task Force
Molecular Biology Specialty Section
Occupational and Public Health Specialty Section
Reproductive and Developmental Specialty Section

Hispanics comprise not only the largest minority group in the United States, but also the largest number of new farmer and migrant workers in the nation. US Pesticide usage exceeds 1.2 billion pounds per year and exposures among Hispanic farm workers and their families have become a serious public health threat. An estimated 3 million Hispanic farmworkers are at high risk of exposure (34% being women) to the most prominent classes of pesticides; organochlorines (OC), organophosphates (OP), carbamates, and pyrethroids. Exposure to these ubiquitous compounds is primarily through inhalation of the particulate components, skin absorption, and ingestion of pesticides in the food supply. Recent epidemiological studies indicate a link between exposures to complex pesticide mixtures and various chronic adverse health effects that impact the central nervous, reproductive, immune, cardiovascular, renal, and hepatic systems. However, the exact mechanism(s) by which pesticide exposure is linked to such diseases and the role that genetic susceptibility plays in these outcomes remain unclear. Previous studies have suggested that OC exposure increases breast cancer risk in migrant workers by up-regulation of the BRCA genes and carcinogen-metabolizing genes. Thus, it is possible that the genetic make-up of a woman

Program Description (Continued)

Abstract #

may predispose her to adverse effects from chemical exposures and increase her risk for developing breast cancer. Lymphocyte dysfunction may be an integral part of pesticide-induced immunosuppression, which is linked to a number of common respiratory diseases. Both *in utero* and early childhood exposures have been documented to lead to genetic instability, poorer intellect development, and neurobehavioral performance. Recent results suggest that prenatal OP exposure is associated with poor intellectual development in seven-year old children. Furthermore, target genes such as paraoxonase and glutathione S-transferase gene polymorphisms may be an important susceptibility factor for these deleterious effects.

#1672 1:30 **BIOMARKERS AND ASSOCIATED HEALTH CONSEQUENCES OF PESTICIDE EXPOSURES IN HISPANIC POPULATIONS.** *A. Cuevas*. Environmental Medicine, New York University School of Medicine, Tuxedo, NY.

1:30 **INTRODUCTION.** Azita Cuevas

#1673 1:35 **ENVIRONMENTAL EXPOSURES AND DISEASE PREVALENCE IN HISPANICS ALONG THE TEXAS-MEXICO BORDER.** *K. S. Ramos*[1], and I. N. Ramos[2]. [1]Biochemistry and Molecular Biology, University of Louisville, Louisville, KY, and [2]School of Public Health and Information Sciences, University of Louisville, Louisville, KY.

#1674 2:07 **GENOMIC INSTABILITY IN MEXICAN-AMERICAN CHILDREN EXPOSED TO ENVIRONMENTAL TOXINS.** M. A. Hernández-Valero. Department of Health Disparities, University of Texas MD Anderson Cancer Center, Houston, TX. Sponsor: *A. Cuevas*.

#1675 2:39 **PRENATAL EXPOSURE TO ORGANOPHOSPHATE PESTICIDES AND IQ IN 7-YEAR OLD LATINO CHILDREN.** B. Eskenazi[1], M. F. Bouchard[1,2], J. Chevrier[1], K. G. Harley[1], K. Kogut[1], N. Vedar[1], N. Calderon[3], C. Trujillo[1], C. Johnson[1], A. Bradman[1], and D. Boyd Barr[4]. [1]School of Public Health Division of Epidemiology, University of California Berkeley, Berkeley, CA, [2]Environmental and Occupational Health Sciences, Sainte-Justine Hospital Research Center & Université de Montréal, Montreal, QC, Canada, [3]Center for the Health Assessment of Mothers and Children of Salinas (CHAMACOS), Clinica de Salud del Valle de Salinas, Salinas, CA, and [4]Rollins School of Public Health, Emory University, Atlanta, GA. Sponsor: *A. Cuevas*.

#1676 3:11 **INHALATION EXPOSURE OF PESTICIDES AMONG HISPANIC MOTHERS AT THE US-MEXICO BORDER.** C. Miller. Family & Community Medicine, University of Texas Health Science Center, San Antonio, TX. Sponsor: *A. Cuevas*.

#1677 3:43 **PESTICIDE EXPOSURE AND HEALTH EFFECTS OF CHILDREN LIVING IN AN AGRICULTURAL COMMUNITY.** *D. Rohlman*. Center for Research on Occupational and Environmental Toxicology, Oregon Health & Science University, Portland, OR.

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Tuesday Afternoon, March 13
1:30 PM to 4:15 PM
Room 102

W

Characterizing Toxic Modes of Action and Pathways to Toxicity

Workshop Session: How Useful Are Liver *In Vitro* Models for Toxicity and Mode-of-Action Prediction?

Chairperson(s): *Chris Corton, US EPA, Research Triangle Park, NC, and Wolfgang Dekant, University of Würzburg, Würzburg, Germany.*

Sponsor:
Molecular Biology Specialty Section

Endorsed by:
***In Vitro* and Alternative Methods Specialty Section**
Mechanisms Specialty Section

The liver is a common target for chemicals and drugs and is frequently the most sensitive tissue target in two-year bioassays. Given the number of chemicals that need to be assessed for hepatotoxicity by the pharmaceutical and chemical industries, investigators currently use many types of *in vitro* rodent and human models, from simple primary hepatocytes and hepatocyte-derived cell lines to more complex three dimensional cocultures containing many liver cell types. These *in vitro* models have been used to predict different types of liver toxicities including cancer in rodents and cytotoxicity in humans. Additionally, transcript profile information is routinely used to identify altered pathways and to predict mode of action. As advances are rapidly being made in this area, we must assess the current strengths and limitations of these *in vitro* models and methods to predict chemical toxicity in the intact liver. To begin, we will explore the European perspectives partly, driven by REACH, which will include a discussion of the value of stem cell-derived human hepatocyte models. We will then turn our attention to the US EPA and industry perspectives, focusing on pathway prediction and next generation coculture models. The final overview will provide a platform to discuss the bioinformatic tools to mine databases used to predict drug hepatotoxicity from the perspective of the US FDA. At the conclusion of this session, our panel of experts will engage participants in an interactive discussion about the topic. The diversity of speakers will allow perspectives from a number of groups whose work is driven by various regulatory pressures. This session is sure to be of interest to those interested in high-throughput screening, hepatotoxicity, toxicogenomics, and mode of action research.

#1678 1:30 **HOW USEFUL ARE LIVER *IN VITRO* MODELS FOR TOXICITY AND MODE-OF-ACTION PREDICTION?** *C. Corton*[1], and *W. Dekant*[2]. [1]EPA, Research Triangle Park, NC, and [2]University of Würzburg, Würzburg, Germany.

1:30 **INTRODUCTION.** Chris Corton

#1679 1:35 **FROM PRIMARY CELLS TO HUMAN STEM CELL-DERIVED MODELS: TOWARDS MORE PREDICTIVE *IN VITRO* MODELS OF LIVER TOXICITY.** *S. Mueller*. Merck, Darmstadt, Germany.

#1680 2:05 **INTERINDIVIDUAL VARIABILITY IN GENOMIC RESPONSES IN HUMAN PRIMARY HEPATOCYTES AND COMPARISON WITH HUMAN CELL LINES.** J. van Delft, M. Jetten, and *J. Kleinjans*. Maastricht University, Maastricht, Netherlands.

#1681 2:35 **GENETIC IDENTIFICATION OF PATHWAY SIGNATURES AND ASSESSMENT OF EFFECTS IN MOUSE AND HUMAN *IN VITRO* LIVER MODELS.** *C. Corton*. US EPA, Research Triangle Park, NC.

Program Description (Continued)

Abstract #

#1682 3:05 **PREDICTION OF COMPLEX TOXICITIES USING 3D LIVER COCULTURE AND TOXICOGENOMICS.** D. R. Applegate[1], C. I. Pearson[1], L. New[1], A. H. Roter[2], R. Brennan[3], R. J. Llamas Vidales[1], and B. A. Naughton[1]. [1]RegeneMed, San Diego, CA, [2]Affymetrix, Palo Alto, CA, and [3]GeneGo, St. Joseph, MI. Sponsor: *C. Corton*.

#1683 3:35 **TRANSLATIONAL BIOMARKERS FOR DRUG-INDUCED LIVER INJURY.** *W. Tong*. US FDA, Jefferson, AR.

4:05 **PANEL DISCUSSION/Q&A.**

Tuesday Afternoon, March 13
1:30 PM to 4:15 PM
Room 104

W

Clinical Toxicology from Bedside to the Bench and Back

Workshop Session: Nonclinical and Clinical Applications of Translational Organ-Based Imaging

Chairperson(s): *Syril Pettit, HESI, Washington, DC, and Norman Barlow, sanofi-aventis, Bridgewater, NJ.*

Sponsor:
Toxicologic and Exploratory Pathology Specialty Section

Endorsed by:
Cardiovascular Toxicology Specialty Section
Comparative and Veterinary Specialty Section
Drug Discovery Toxicology Specialty Section
Neurotoxicology Specialty Section
Reproductive and Developmental Toxicology Specialty Section

Multimodal imaging is a widely applied and accepted standard of care in many medical settings. Innovations in imaging capabilities have developed rapidly, allowing noninvasive collection of an ever increasing quantity and quality of morphologic, functional, and even molecular data from humans and animals. Accordingly, imaging is becoming an important component of the clinical biomarker toolbox. However, advances in imaging strategies that have allowed for use in animals, including rodents, have not driven a large-scale integration of these capabilities into modern toxicology assessment or environmental hazard identification. Although a number of imaging and biomarker "opportunities" are outlined in the FDA's "Critical Path Opportunities List," an organized effort to explore integration of imaging into nonclinical safety assessment and hazard evaluation paradigms is just beginning. We will provide an overview of an organ-based approach to novel imaging methodologies in nonclinical safety assessment and translational toxicology. The presentations will describe how preclinical imaging can be an innovative tool for toxicity assessment, and how translational imaging can be used to bridge the gap between nonclinical safety assessment and clinical testing.

#1684 1:30 **NONCLINICAL AND CLINICAL APPLICATIONS OF TRANSLATIONAL ORGAN-BASED IMAGING.** *S. D. Pettit*. HESI, Washington, DC.

1:30 **INTRODUCTION.** Syril Pettit

#1685 1:35 **CARDIOVASCULAR IMAGING IN NONCLINICAL SAFETY STUDIES: INCREASING ACCEPTANCE AND APPLICATION.** R. Coatney. GlaxoSmithKline, King of Prussia, PA. Sponsor: *N. Barlow*.

#1686 2:06 **MULTIMODAL IMAGING IN DEVELOPMENTAL AND REPRODUCTIVE TOXICOLOGY.** *X. Ying*, *B. Beyer*, A. DeLise, *J. Cao*, *N. Barlow*, and *M. Feuston*. sanofi-aventis US, Bridgewater, NJ.

Abstract #

#1687 2:37 **PRECLINICAL ASSESSMENT OF NEUROTOXICITY WITH IMAGING.** *W. Slikker Jr.*, X. Zhang, F. Liu, G. Newport, S. Liu, *M. Paule*, and *C. Wang*. NCTR/US FDA, Jefferson, AR.

#1688 3:08 **IMAGING THE KIDNEY AND LIVER: METHODOLOGIES AND CURRENT PRACTICES.** P. Hockings. AstraZeneca, Molndal, Sweden. Sponsor: *S. Pettit*.

#1689 3:39 **TRANSLATIONAL CLINICAL IMAGING.** E. Hoffman. University of Iowa, Iowa City, IA. Sponsor: *S. Pettit*.

4:10 **CONCLUDING REMARKS.** Syril Pettit

Tuesday Afternoon, March 13
1:30 PM to 4:15 PM
Room 305

W

Characterizing Toxic Modes of Action and Pathways to Toxicity

Workshop Session: Novel Topics in Environmental Polycyclic Aromatic Hydrocarbon Metabolism Leading to Carcinogenesis

Chairperson(s): *Danielle Carlin, NIEHS, Durham, NC, and Bhagavatula Moorthy, Baylor College of Medicine, Houston, TX.*

Sponsor:
Carcinogenesis Specialty Section

Endorsed by:
Mechanisms Specialty Section
Mixtures Specialty Section
Risk Assessment Specialty Section

Epidemiological evidence indicates that exposure to complex environmental polycyclic aromatic hydrocarbon (PAH) mixtures increases the risk of lung cancer. However, most animal studies have focused on single PAH components. Moreover, little is known regarding the interactions between different PAH metabolites that lead to carcinogenesis. Thus, our panel of experts will provide information on this subject matter that will explore the mechanisms of toxicity mediated by PAH mixtures. Investigations on binary mixtures of PAHs, as well as PAH-natural product mixtures, will be described with regard to their inhibition of cytochrome P450 reactions of the P4501 family. The roles of critical cell signaling and growth pathways, and metabolic enzymes involved in benzo(a)pyrene (B(a)P) activation pathways in lung tumorigenesis in mice and humans will be examined. Strategies to determine how PAHs may affect the ontogeny of enzymes during fetal development and result in epigenetic alterations will also be discussed. Specifically, there will be discussion of how target organ doses of PAHs and ontogeny of PAH-metabolizing enzymes in the fetus impact PAH-dependent alterations in the fetal transcriptome and epigenome. It will be important to address how risk assessment approaches can use data from *in vitro*, detection, exposure, and 'omics studies to predict the carcinogenicity and relative potency of environmental PAHs and the global perspectives of PAH exposures in human populations. For example, while exposures to PAHs are generally well controlled in the developed world, this is not the case in some areas of Eastern Europe and China, where exposure levels can be extremely high, with predictable consequences for human health. Collectively, it is expected that the presentation of these topics will engage attendees in understanding the need for new research on PAHs to understand the mechanisms and modes of action of PAHs in disease etiology; to better establish the risk associated with PAH exposure; and to develop novel strategies for the prevention and/or treatment of cancers and other diseases caused by environmental PAHs.

Program Description (Continued)

Abstract #

#1690 1:30 **NOVEL TOPICS IN ENVIRONMENTAL POLYCYCLIC AROMATIC HYDROCARBON METABOLISM LEADING TO CARCINOGENESIS.** *D. Carlin*[1], and *B. Moorthy*[2]. [1]NIEHS, Research Triangle Park, NC, and [2]Pediatrics, Baylor College of Medicine, Research Triangle Park, TX.

1:30 **INTRODUCTION.** Bhagavatula Moorthy

#1691 1:35 **INTERACTIONS OF POLYCYCLIC AROMATIC HYDROCARBONS.** *F. P. Guengerich*[1], T. Shimada[2], and H. Yamazaki[3]. [1]Biochemistry, Vanderbilt University School of Medicine, Nashville, TN, [2]Cellular and Molecular Biology, Osaka Prefecture University, Osaka, Japan, and [3]Laboratory of Drug Metabolism and Pharmacokinetics, Showa Pharmaceutical University, Tokyo, Japan.

#1692 2:07 **COMBINED USE OF TRANSCRIPTIONAL AND TOXICOLOGICAL DATA TO AUGMENT THE METABOLIC AND MECHANISTIC UNDERSTANDING OF BENZO(A)PYRENE-INDUCED MOUSE LUNG CANCER AND ITS RELEVANCE TO HUMAN LUNG CARCINOGENESIS.** S. Nesnow. National Health and Environmental Effects Research Laboratory, US EPA, Research Triangle Park, NC. Sponsor: *B. Moorthy*.

#1693 2:39 **TRANSPLACENTAL CARCINOGENESIS DUE TO MATERNAL EXPOSURE TO INDIVIDUAL PAHS AND ENVIRONMENTAL MIXTURES.** *D. E. Williams*. Department of Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR.

#1694 3:11 **CURRENT EFFORTS IN THE ESTIMATION OF HUMAN HEALTH CANCER RISK OF POLYCYCLIC AROMATIC HYDROCARBON (PAH) MIXTURES.** *L. Flowers*. National Center for Environmental Assessment, US EPA, Research Triangle Park, NC.

#1695 3:43 **A GLOBAL PERSPECTIVE ON PAHS: WHAT ARE THE ISSUES?** *R. A. Roberts*. AstraZeneca, Cheshire, United Kingdom.

Tuesday Afternoon, March 13
1:30 PM to 4:15 PM
Room 308

EC

Education-Career Development Session: Career Alternatives and Transitions: New Challenges and Opportunities in Today's Job Market for Toxicologists

Chairperson(s): *Richard D. Storer, Merck Research Laboratories, West Point, PA, and James A. Popp, Stratoxon LLC, Lancaster, PA.*

Sponsor:
Career Resource and Development Committee

Endorsed by:
Education Committee
Postdoctoral Assembly

New toxicology graduates have traditionally pursued a diverse spectrum of career opportunities in teaching and research, in industrial or contract toxicology laboratories, or in regulatory agencies and affiliated institutes. Downturns in the global economy, together with a wave of consolidation and downsizing in industry, particularly in the pharmaceutical sector, has created a challenging environment for job seekers. This has compelled new graduates, as well as toxicologists at all phases of their careers, to confront new challenges in securing initial or continuing employment in their area of specialization, consistent with their career goals. This session will explore alternatives available to new graduates as well as to established toxicologists facing career transitions. To begin this important dialogue targeted to new graduates, postdocs, and nontenured faculty, we will examine the challenges facing toxicologists pursuing career paths in research and teaching and will touch on alternative career paths for which the skills developed in completing a doctorate and postdoctoral research in toxicology are transferable. Our panel will review the options and challenges facing the mid- to late-career industry toxicologist confronted with the prospect or actuality of layoffs or early retirement due to corporate downsizing. The focus of the talk will be on the current landscape for toxicology consultants either as independent consultants, employees of established consulting companies, or individuals pooling resources to form new consulting groups. If you are considering transitioning your career in a regulatory agency, a review of the opportunities and challenges for toxicologists will be provided. The final talk will provide insight on the impact of cutbacks in the pharmaceutical industry and trends favoring outsourcing of toxicology testing on career development opportunities in contract research. At the conclusion of the talks, a significant amount of time has been set aside by the panelists to allow time for questions from participants.

#1696 1:30 **CAREER ALTERNATIVES AND TRANSITIONS: NEW CHALLENGES AND OPPORTUNITIES IN TODAY'S JOB MARKET FOR TOXICOLOGISTS.** *R. D. Storer*[1], and *J. A. Popp*[2]. [1]Safety Assessment, Merck Research Laboratories, West Point, PA, and [2]Stratoxon LLC, Lancaster, PA.

1:30 **INTRODUCTION.** Richard Storer

#1697 1:40 **CURRENT CHALLENGES IN PURSUIT OF CAREERS IN ACADEMIA.** *B. L. Kaplan*. Center for Integrative Toxicology, Michigan State University, East Lansing, MI.

#1698 2:13 **CAREER TRANSITION TO TOXICOLOGY CONSULTING.** *J. A. Popp*. Stratoxon LLC, Lancaster, PA.

#1699 2:46 **CAREER TRANSITIONS FROM INDUSTRY TO GOVERNMENT.** *H. N. Ghantous*. Division of Antiviral Products, CDER, US FDA, Silver Spring, MD.

#1700 3:19 **CHALLENGES FACING TOXICOLOGISTS IN TODAY'S JOB MARKET: THE CRO ENVIRONMENT.** *S. K. Durham*. Toxicology, Charles River Laboratories, Reno, NV.

3:50 **PANEL DISCUSSION/Q&A.**

Program Description (Continued)

Abstract #

Tuesday Afternoon, March 13
1:30 PM to 4:15 PM
Room 302

PL

Platform Session: Advances in Developmental Neurotoxicity: Stem Cell, High-Throughput, and Alternative Species Approaches

Chairperson(s): *Andrea E. Seiler, Federal Institute for Risk Assessment, Germany, and Jason R. Richardson, University of Medicine and Dentistry of New Jersey, Environmental and Occupational Medicine.*

#1701 1:30 **ADVANCEMENT IN DEVELOPMENTAL NEUROTOXICITY TESTING *IN VITRO*: DIFFERENTIATING MOUSE EMBRYONIC STEM CELLS INTO FUNCTIONAL NEURONAL NETWORKS.** A. E. Seiler[1], K. Hayess[1], G. Podrygajlo[2], B. Slawik[1], U. Egert[2], and A. Luch[1]. [1]ZEBET, Federal Institute for Risk Assessment, Berlin, Germany, and [2]Biomicrotechnology, Department of Microsystems Engineering – IMTEK, University of Freiburg and Bernstein Center Freiburg, University of Freiburg, Freiburg, Germany. Sponsor: *E. Fritsche*.

#1702 1:49 **EFFECTS OF DEVELOPMENTAL TOXICANTS ON MICRORNA EXPRESSION DURING NEURAL DIFFERENTIATION OF MURINE EMBRYONIC STEM CELLS (MESC).** L. Smirnova, K. Block, D. Hunnecke, A. Seiler, and A. Luch. ZEBET, Federal Institute for Risk Assessment (BfR), Berlin, Germany. Sponsor: *T. Hartung*.

#1703 2:08 **THE DEVELOPMENTAL NEUROTOXICITY OF LEAD IN 3D RAT PRIMARY NEURONAL CELL CULTURES USING TRANSCRIPTOMICS AND METABOLOMICS APPROACHES.** H. T. Hogberg[1], E. van Vliet[2], S. J. Nolan[1], L. Zhao[1], A. Kleensang[1], S. Odwin-DaCosta[1], M. Bouhifd[1], H. Welles[1], and *T. Hartung*[1]. [1]The Johns Hopkins University, Bloomberg School of Public Health, Center for Alternative to Animal Testing, Baltimore, MD, and [2]University of Barcelona, Fetal and Perinatal Medicine Research Group, August Pi i Sunyer Biomedical Research Institute, Hospital Clinic, Barcelona, Spain.

#1704 2:27 **AN AUTOMATED CELL-BASED HIGH-THROUGHPUT PRESCREEN FOR IDENTIFYING POTENTIAL DEVELOPMENTAL NEUROTOXINS.** D. M. Miller, A. M. Laura, R. A. Lewis, M. L. Pietila, and *J. R. Haskins*. Thermo Fisher Scientific, Pittsburgh, PA.

#1705 2:45 **TOXICITY SCREENING WITH NEURAL PROGENITOR CELLS ON COMPLIANT HYDROGEL SURFACES.** S. L. Hume, S. E. Campbell, T. L. Oreskovic, and K. M. Jeerage. Materials Reliability Division, National Institute of Standards and Technology, Boulder, CO. Sponsor: *T. Shafer*.

#1706 3:03 **LIMITATIONS OF PLATE READER-BASED HIGH-THROUGHPUT MEASUREMENTS OF DYNAMIC INTRACELLULAR SIGNALS.** *R. H. Westerink*, and H. J. Heusinkveld. Neurotoxicology Research Group, Institute for Risk Assessment Sciences (IRAS)-Utrecht University, Utrecht, Netherlands.

Abstract #

#1707 3:21 **EMBRYONIC EXPOSURE TO DELTAMETHRIN ALTERS THE DEVELOPING DOPAMINERGIC SYSTEM AND BEHAVIOR IN THE ZEBRAFISH.** *T. S. Kung*, *J. R. Richardson*, *K. R. Cooper*, and *L. A. White*. Rutgers University/UMDNJ, New Brunswick, NJ.

#1708 3:39 **OVERT TOXICITY AND BEHAVIORAL EFFECTS OF DEVELOPMENTAL EXPOSURE TO ORGANOPHOSPHATE FLAME RETARDANTS IN ZEBRAFISH.** *L. V. Dishaw*[1], *S. Padilla*[2], and H. M. Stapleton[1]. [1]Integrated Toxicology and Environmental Health, Duke University, Durham, NC, and [2]National Heath and Environmental Effects Research Laboratory, US EPA, Research Triangle Park, NC.

#1709 3:57 **LONG-TERM BEHAVIORAL DYSFUNCTION RESULTS FROM EMBRYONIC METHYLPHENIDATE EXPOSURE IN ZEBRAFISH.** *E. D. Levin*, D. Sledge, S. Roach, A. Petro, S. Donerly, and E. Linney. Duke University, Durham, NC.

Tuesday Afternoon, March 13
1:30 PM to 4:15 PM
Room 309

PL

Characterizing Toxic Modes of Action and Pathways to Toxicity

Platform Session: miRNA As Biomarkers for Organ Damage

Chairperson(s): *Sidhartha Ray, Manchester College School of Pharmacy, Ft. Wayne, IN, and April Lake, Arizona State University, Tucson, AZ.*

#1710 1:30 **MULTILABORATORY ASSESSMENT OF BEST PRACTICES FOR MEASURING INJURY-ASSOCIATED MICRORNAS IN BIOFLUIDS USING A MODEL OF ISOPROTERENOL-INDUCED MYOCARDIAL INJURY IN RATS.** *K. Thompson*[1], Y. Bauer[2], *T. Chen*[3], P. Couttet[4], *H. Ellinger-Ziegelbauer*[5], M. Kanki[6], J. Léonard[7], R. Nassirpour[8], G. Searfoss[9], T. Sharapova[10], J. Kelsall[11], H. Uchiyama[12], P. Yuen[13], C. Spire[14], and R. O'Lone[15]. [1]CDER, US FDA, Silver Spring, MD, [2]Actelion, Allschwil, Switzerland, [3]NCTR, Jefferson, AR, [4]Novartis Pharmacology AG, Basel, Switzerland, [5]Bayer Pharmacology AG, Wuppertal, Germany, [6]Astellas Pharmacology Inc., Osaka, Japan, [7]Sanofi, Vitry-sur-Seine, France, [8]Pfizer, Andover, MA, [9]Lilly, Indianapolis, IN, [10]Abbott Laboratories, Abbott Park, IL, [11]AstraZeneca, Macclesfield, Cheshire, United Kingdom, [12]Takeda, Osaka, Japan, [13]NIDDK, NIH, Bethesda, MD, [14]Servier, Gidy, France, and [15]ILSI Health and Environmental Sciences Institute, Washington, DC.

#1711 1:54 **PANCREATIC-SPECIFIC MICRORNA (MIR217) AS A CIRCULATING BIOMARKER OF ACUTE PANCREATIC INJURY.** *R. Rouse*, B. Rosenzweig, and *K. Thompson*. Division of Drug Safety Research, US FDA, Silver Spring, MD.

#1712 2:18 **EVALUATION OF MIR122 AS A SERUM BIOMARKER FOR HEPATOTOXICITY IN FIVE-DAY RAT TOXICOLOGY STUDIES.** *J. M. Maher*, T. Sharapova, J. Lai-Zhang, *M. Liguori*, B. Leroy, W. R. Buck, and E. A. Blomme. R45M, Abbott Laboratories, Abbott Park, IL.

Program Description (Continued)

Abstract #

#1713 2:42 **EVALUATION OF URINARY MICRORNAS AS NOVEL BIOMARKERS OF NEPHROTOXICITY IN RATS TREATED WITH POTASSIUM DICHROMATE.** J. Gautier[1], M. Courcol[1], J. Léonard[1], E. Boitier[1], X. Palazzi[1], T. Gury[1], M. Guffroy[2], and *S. Pettit*[3]. [1]Disposition, Safety and Animal Research, Sanofi, Vitry-sur-Seine, France, [2]Pfizer, Pearl River, NY, and [3]Biomarkers of Nephrotoxicity Committee, HESI, Washington, DC.

#1714 3:06 **PLASMA MIRNAS ARE EARLY MARKERS OF DRUG-INDUCED LIVER INJURY IN THE RAT.** L. Suter-Dick, C. Bertinetti-Lapatki, I. Mikaelian, S. Fischer, A. Eichinger-Chapelon, T. S. Zabka, *T. Weiser*, *M. Albassam*, and *T. Singer*. Hoffmann-La Roche Ltd., Basel, Switzerland.

#1715 3:29 **EVALUATION OF URINARY MICRORNAS AS NOVEL BIOMARKERS OF NEPHROTOXICITY.** M. Guffroy[2], R. Bjoern[4], M. Kanki[5], M. Sonee[6], D. Ennulat[7], M. Pinches[8], B. Homer[3], *S. Pettit*[1], E. Lock[9], A. Baker[10], *E. Harpur*[11], D. Bounous[12], and J. Gautier[13]. [1]HESI, Washington, DC, [2]Pfizer, Pearl River, NY, [3]Pfizer, Cambridge, MA, [4]Bayer Pharma, Berlin, Germany, [5]Astellas, Osaka, Japan, [6]Johnson & Johnson, Raritan, NJ, [7]GlaxoSmithKline, King of Prussia, PA, [8]AstraZeneca, Macclesfield, United Kingdom, [9]John Moores University, Liverpool, United Kingdom, [10]Exiqon, Vedbaek, Denmark, [11]Newcastle University, Newcastle, United Kingdom, [12]Bristol-Myers Squibb, Princeton, NJ, and [13]Sanofi, Vitry-sur-Seine, France.

#1716 3:52 **ACETAMINOPHEN AND CARBON TETRACHLORIDE-INDUCED CHANGES IN RAT URINARY MICRORNA PROFILES.** *X. Yang*[1], J. Greenhaw[1], Q. Shi[1], Z. Su[2], F. Qian[2], K. Davis[3], *D. Mendrick*[1], and *W. F. Salminen*[1]. [1]Division of Systems Biology, US FDA National Center for Toxicological Research, Jefferson, AR, [2]ICF International, Jefferson, AR, and [3]Toxicologic Pathology Associates, Jefferson, AR.

Tuesday Afternoon, March 13
1:30 PM to 4:15 PM
Room 301

PL

Platform Session: New Insights into the Reproductive and Developmental Toxicity of Bisphenol A

Chairperson(s): *Heather Patisaul, North Carolina State University, Raleigh, NC, and Michael Garry, Exponent, Bellevue, WA.*

#1717 1:30 **DEVELOPMENTAL PROGRAMMING: PRENATAL BISPHENOL A TREATMENT ALTERS FETAL OVARIAN GENE AND MIRNA EXPRESSION.** A. Veiga-Lopez[1], L. J. Luense[2], L. K. Christenson[2], and *V. Padmanabhan*[1]. [1]Pediatric Endocrinology, University of Michigan, Ann Arbor, MI, and [2]Molecular and Integrative Physiology, University of Kansas Medical Center, Kansas City, KS.

#1718 1:51 **BISPHENOL A EXPOSURE ENHANCES MAMMARY HYPERPLASIA IN A CHEMICAL CARCINOGENESIS MOUSE MODEL AND PROMOTES PROLIFERATION, CELL CYCLE PROGRESSION, AND CHEMOTHERAPEUTIC RESISTANCE IN HUMAN BREAST CARCINOMA CELLS.** *J. LaRocca*, *J. Pietruska*, and *M. Hixon*. Brown University, Providence, RI.

Abstract #

#1719 2:12 **EFFECTS OF BISPHENOL A (BPA) AND ETHINYL ESTRADIOL (EE,,2) IN SPRAGUE DAWLEY RATS EXPOSED ORALLY FROM GD 6 THROUGH PND 90.** *K. B. Delclos*[1], *L. Camacho*[1], S. Lewis[4], M. Vanlandingham[1], M. Chidambaram[1], M. Churchwell[1], K. Davis[2], D. Doerge[1], *G. Gamboa da Costa*[1], B. Juliar[3], *J. Latendresse*[2], S. Moon[1], G. Olson[2], P. Siitonen[1], B. Thorn[3], R. Trbojevich[1], and K. Woodling[1]. [1]DBT, NCTR, Jefferson, AR, [2]TPA, NCTR, Jefferson, AR, [3]DPMN, NCTR, Jefferson, AR, and [4]OSC, NCTR, Jefferson, AR.

#1720 2:33 **ESTROGEN-LIKE CHANGES IN REPRODUCTIVE MATURATION AND METABOLISM OF MALE CD-1 MICE EXPOSED TO DIETARY BISPHENOL A.** *E. Kendig*, C. Cookman, S. Christie, D. Buesing, R. Gear, and *S. Belcher*. Pharmacology and Cell Biophysics, University of Cincinnati, Cincinnati, OH.

#1721 2:54 **DIETARY BISPHENOL A INCREASES THE UTERINE IMMUNE RESPONSE AND PYOMETRA IN MICE.** J. Kendziorski, *E. Kendig*, R. Gear, and *S. Belcher*. Pharmacology and Cell Biophysics, University of Cincinnati, Cincinnati, OH.

#1722 3:15 **PERINATAL EXPOSURE TO THE CURRENT TOLERABLE DAILY INTAKE OF BISPHENOL A DOES NOT ALTER FOLICULOGENESIS, OVULATION, OR THE FERTILIZING ABILITY OF OOCYTES IN FEMALE MICE.** D. G. Acuña–Hernández[1], T. R. Moore–Ambríz[1], M. Sánchez–Gutiérrez[2], *A. Sierra–Santoyo*[1], M. L. López–González[1], M. J. Solís–Heredia[1], and *I. Hernández-Ochoa*[1]. [1]Department of Toxicology, Cinvestav-IPN, Mexico, D.F., Mexico, and [2]Instituto de Ciencias de la Salud, UAEH, Pachuca, Hidalgo, Mexico.

#1723 3:35 **EXPOSURE TO THE CURRENT TOLERABLE DAILY INTAKE OF BISPHENOL A DURING ADULTHOOD DOES NOT ALTER OVULATION, BUT ALTERS THE FERTILIZING ABILITY OF OOCYTES IN FEMALE MICE.** T. R. Moore-Ambríz[1], D. G. Acuña-Hernandez[1], M. Sánchez-Gutiérrez[2], *A. Sierra-Santoyo*[1], S. Galindo-Gómez[3], M. López-González[1], M. Shibayama-Salas[3], and *I. Hernández-Ochoa*[1]. [1]Department of Toxicology, Cinvestav-IPN, Mexico, D.F., Mexico, [2]Instituto de Ciencias de la Salud, UAEH, Pachuca, Hidalgo, Mexico, and [3]Departamento de Infectómica y Patogénesis Molecular, Cinvestav-IPN, México, D.F., Mexico.

#1724 3:55 **BISPHENOL A INHIBITS FOLLICLE GROWTH OF CULTURED ANTRAL OVARIAN FOLLICLES IN MICE.** *A. Ziv-Gal*, *Z. R. Craig*, *T. Paulose*, *W. Wang*, *B. N. Karman*, *M. S. Basavarajappa*, and *J. A. Flaws*. Comparative Biosciences, University of Illinois at Urbana-Champaign, Urbana, IL.

Program Description (Continued)

Abstract #

Tuesday Afternoon, March 13
1:30 PM to 4:15 PM
Room 310

PL

Platform Session: Risk Assessment Approaches: Data-Derived Extrapolations, QSAR, *In Silico* Strategies, and Surrogates

Chairperson(s): *Moiz Mumtaz, ATSDR, Atlanta, GA, and Laurie Haws, ToxStrategies, Inc., Austin, TX.*

#1725 1:30 **APPLICATION OF MACHINE LEARNING IN THE DEVELOPMENT OF A WEIGHTING FRAMEWORK FOR EVALUATING ESTIMATES OF RELATIVE POTENCY FOR DIOXIN-LIKE COMPOUNDS.** *D. S. Wikoff*[1], *M. J. DeVito*[3], *N. J. Walker*[3], J. G. Hixon[1], *M. A. Harris*[2], J. A. Tachovsky[1], *L. S. Birnbaum*[4], and *L. C. Haws*[1]. [1]ToxStrategies, Inc., Austin, TX, [2]ToxStrategies, Inc., Katy, TX, [3]NIEHS, Research Triangle Park, NC, and [4]NCI, Research Triangle Park, NC.

#1726 1:49 **A GENOMICS-BASED BENCHMARK DOSE ANALYSES OF RELATIVE POTENCIES OF DIOXIN-LIKE COMPOUNDS IN PRIMARY RAT HEPATOCYTES.** *J. Urban*[1], *J. C. Rowlands*[2], *R. A. Budinsky*[2], A. Dombkowski[3], *C. M. Thompson*[4], and *R. S. Thomas*[5]. [1]ToxStrategies, Austin, TX, [2]The Dow Chemical Company, Midland, MI, [3]Wayne State University, Detroit, MI, [4]ToxStrategies, Katy, TX, and [5]The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#1727 2:08 **USING QUANTITATIVE STRUCTURE-ACTIVITY RELATIONSHIPS (QSAR) TO ESTABLISH TOXICITY/ENVIRONMENTAL SCORES (TES).** J. M. Ogden, P. Ruiz, and J. Wheeler. Division of Toxicology and Environmental Medicine, CDC ATSDR, Atlanta, GA. Sponsor: *M. Mumtaz*.

#1728 2:27 **INCLUDING METABOLITES IN THE *IN SILICO* TOXICITY PREDICTION OF SOLVENTS.** *M. M. Dingemans*[1], E. Rorije[2], *A. Efremenko*[3], *J. Bessems*[2], *H. Clewell*[3], and *B. J. Blaauboer*[1]. [1]Utrecht University, Institute for Risk Assessment Sciences, Utrecht, Netherlands, [2]National Institute for Public Health and the Environment (RIVM), Bilthoven, Netherlands, and [3]The Hamner Institutes, Research Triangle Park, NC.

#1729 2:45 **A QSAR-PBPK MODELING APPROACH FOR CONDUCTING ANIMAL-TO-HUMAN EXTRAPOLATION OF INHALATION PHARMACOKINETICS OF VOCS.** *T. Peyret*, and *K. Krishnan*. Département de Santé Environnementale et Santé au Travail, Université de Montréal, Montréal, QC, Canada.

#1730 3:03 **ASSESSING THE NONCANCER CHEMICAL RISK OF 1,3-DIBROMOBENZENE: SURROGATE AND QSAR APPROACHES EMPLOYING LONG-TERM LOAELS AND CHEMICAL STRUCTURES OF HALOGENATED BENZENES.** *C. J. Collar*[1], and *N. C. Wang*[2]. [1]ORISE, Oak Ridge, TN, and [2]NCEA, US EPA, Cincinnati, OH.

#1731 3:21 **TESTING FOR SUFFICIENT SIMILARITY IN ENVIRONMENTAL MIXTURES USING EXPOSURE DATA AND MIXTURE TOXICOLOGY DATA.** *C. Gennings*[1], and L. G. Stork[2]. [1]Virginia Commonwealth University, Richmond, VA, and [2]The Monsanto Company, St. Louis, MO.

Abstract #

#1732 3:39 **EVALUATING TOOLS AND MODELS USED FOR QUANTITATIVE EXTRAPOLATION OF *IN VITRO* TO *IN VIVO* DATA FOR NEUROTOXICANTS.** *M. P. Chan*[1], *M. J. DeVito*[1], *T. J. Shafer*[2], *R. Tornero-Velez*[3], and *M. F. Hughes*[2]. [1]DNTP/NIEHS, Research Triangle Park, NC, [2]NHEERL/ORD/US EPA, Research Triangle Park, NC, and [3]NERL/ORD/US EPA, Research Triangle Park, NC.

#1733 3:57 **INTEGRATED *IN VITRO-IN SILICO* APPROACH TO PREDICT DOSE-RESPONSE CURVES FOR *IN VIVO* DEVELOPMENTAL TOXICITY IN RAT AND HUMAN.** *J. Louisse*[1,2], *B. J. Blaauboer*[3], I. M. Rietjens[1], and M. Verwei[2]. [1]Toxicology, Wageningen University, Wageningen, Netherlands, [2]TNO, Zeist, Netherlands, and [3]Institute for Risk Assessment Sciences (IRAS), Utrecht University, Utrecht, Netherlands.

Tuesday Afternoon March 13
1:30 PM to 2:30 PM
Room 105

E

Exhibitor Hosted Session: New Capabilities of Noninvasive Telemetry Used for Cardiovascular Respiration and CNS Assessments

Presented by:
emka TECHNOLOGIES, INC.

The presentation will explain how the new features of emka TECHNOLOGIES' latest generation of noninvasive telemetry and associated software allow for a significant increase in power and efficiency of preclinical investigations. The focus will be on blood pressure and respiration analysis, subject-specific QT correction and arrhythmia detection, and EEG signal collection and use in sleep or epilepsy studies.

Tuesday Afternoon March 13
1:30 PM to 2:30 PM
Room 101

E

Exhibitor Hosted Session: The Key Role of Experience in Toxicological Study Design and Data Interpretation

Presented by:
RTC, Research Toxicology Centre S.p.A.

RTC senior science experts in different areas of toxicology will share some special cases for which practical experience played an important role during preclinical development. In fact, for an effective translational approach, it is important to define appropriate study designs and apply a critical interpretation of equivocal results.

Tuesday Afternoon March 13
1:30 PM to 2:30 PM
Room 100

E

Exhibitor Hosted Session: Utility of Primary Stem Cell Colony Assays in Drug Development

Presented by:
STEMCELL Technologies, Inc.

A potential side effect of anticancer and some novel inhibitor drugs is damage to stem cells, including those of the hematopoietic (blood) system. Impairment of proliferation and differentiation can result in neutropenia, anemia, or thrombocytopenia. This talk outlines the value of hematopoietic *in vitro* clonogenic assays for prediction of hematotoxicity.

Program Description (Continued)

Tuesday Afternoon March 13
2:45 PM to 3:45 PM
Room 105

E

Exhibitor Hosted Session: Knowledge-Driven Multi-Omics Integration for Pathways of Toxicology (PoT) Research: Policy and Technology Drivers

Presented by:
Agilent Technologies

The use of transcriptomics tools for toxicology research is nearly a decade old. Recent advances in other complimentary -omics domains offer the possibility of mapping the various Pathways of Toxicity (PoT). The regulatory, scientific, and technological drivers of current PoT research will be explored by two leading toxicologists.

Tuesday Afternoon March 13
2:45 PM to 3:45 PM
Room 101

E

Exhibitor Hosted Session: Modular Approaches for Pharmaceutical Lead Optimization

Presented by:
WIL Research

Lead optimization has become an important strategy in candidate selection to increase the probability of successful commercialization. In this seminar we will present how a core battery of *in vitro* and *in vivo* assays like automated hERG and rapid PK screening can be tailored to address the specific end-points of concern.

Tuesday Afternoon March 13
2:45 PM to 3:45 PM
Room 100

E

Exhibitor Hosted Session: Routine 3D Cell-Based Toxicology Assays for Compound De-Risking

Presented by:
InSphero AG

3D hepatocyte cell models (spheroids) offer significant advantages for toxicology testing: higher functionality, longer functional life time, integration of non-parenchymal cells and more. InSphero will illustrate, using examples from recent collaborations, various approaches for exploiting 3D models in toxicology using laboratory automation and reliable, proven off-the-shelf biochemical assays.

Tuesday Afternoon, March 13
3:00 PM to 4:15 PM
Room 300

Undergraduate Educator Network Meeting

Chairperson(s): *Sue M. Ford, St. John's University, Jamaica, NY.*

Sponsors:
Education Committee
Undergraduate Education Subcommittee

The Education Committee and the Undergraduate Education Subcommittee are hosting the Undergraduate Educator Network Meeting for all faculty involved in the teaching of toxicology to undergraduates, or for those interested in including toxicology at the undergraduate level. Hear an update on initiatives for undergraduate faculty, provide your input, and network.

Tuesday Afternoon, March 13
3:00 PM to 4:00 PM
CC Room 212

Women in Toxicology Special Interest Group Executive Committee Meeting

Tuesday Afternoon, March 13
4:30 PM to 6:00 PM
Room 102
(All SOT Members Invited)

SOT Annual Business Meeting

Members are invited and encouraged to attend the 51st SOT Annual Business Meeting. The agenda includes discussion of the NEW 2012–2015 SOT Strategic Plan, a financial summary, and a review of the 2011–2012 activities.

Tuesday Afternoon, March 13
4:30 PM to 5:50 PM
Room 307

EC

Education-Career Development Session: The Art of Negotiation: A Fundamental Skill for Scientists

Chairperson(s): *Larissa M. Williams, Woods Hole Oceanographic Institution, Woods Hole, MA, and Ebany J. Martinez-Finley, Vanderbilt School of Medicine, Nashville, TN.*

Sponsor:
Postdoctoral Assembly

Endorsed by:
Career Resource and Development Committee
Graduate Student Leadership Committee
Hispanic Organization of Toxicologists Special Interest Group
Women in Toxicology Special Interest Group

Negotiation is an essential skill for scientists of every rank and job sector to navigate their career successfully, yet it is often not part of a scientist's formal training. Fundamentally, negotiation culminates in the attainment of a mutually acceptable agreement between two or more parties—however there is an art to reaching such an agreement. Because negotiations typically occur behind closed doors, few will ever experience a negotiation until they represent one of the parties involved. In an ever-changing world it has become imperative to understand the nuances of negotiation, and this session offers attendees a unique opportunity to bring negotiations out in the open. This session will introduce scientists to the intricacies of negotiations in the workplace and to discuss idiosyncrasies in negotiation tactics across toxicology sectors. The session will be delivered in two segments: a formal lecture and a panel discussion delivered by speakers from academia, industry, and government. Our panel will deliver important information on the art of negotiation, addressing conflict styles and the basics of interest-based negotiation. The panel will then discuss their personal experiences in negotiation throughout their careers and address best practices in negotiation as it relates to their sector of toxicology. Topics covered will include preparation for negotiating, how to initiate negotiation, importance of body language, gender differences in negotiation, negotiating for salary and start-up in academia, negotiating for labor and represented management at the bargaining table in government, and negotiation practices in the pharmaceutical industry. At the end of the session, participants will come away with a better understanding of how negotiations work and how to use them to their advantage.

Program Description (Continued)

Abstract #

#1734 4:30 **THE ART OF NEGOTIATION: A FUNDAMENTAL SKILL FOR SCIENTISTS.** *L. M. Williams*[1], E. Kandell[2], *R. Smart*[3], *R. Gerson*[4], J. Budroe[5], J. Wong[6], and *E. Martinez-Finley*[7]. [1]Woods Hole Oceanographic Institution, Woods Hole, MA, [2]Alternative Resolutions, Silver Spring, MD, [3]North Carolina State University, Raleigh, NC, [4]Gerson Pharma Solutions, Lincoln University, PA, [5]California EPA, Oakland, CA, [6]California Department of Toxic Substances Control, Sacramento, CA, and [7]Vanderbilt School of Medicine, Nashville, TN.

4:30 **INTRODUCTION.** Larissa M. Williams

4:35 **NEGOTIATION: GETTING WHAT YOU WANT WITHOUT GIVING IN.** Ellen Kandell

4:55 **NEGOTIATING WITHIN ACADEMIA.** Robert C. Smart

5:05 **NEGOTIATING WITHIN INDUSTRY: A PERSPECTIVE FROM PHARMA.** Ronald J. Gerson

5:15 **NEGOTIATING WITHIN GOVERNMENT INSTITUTIONS: INSIGHT INTO COLLECTIVE BARGAINING.** John D. Budroe

5:25 **NEGOTIATING FOR SALARY AND BENEFITS WITHIN GOVERNMENT INSTITUTIONS.** Jeffrey Wong

5:35 **CONCLUDING REMARKS.** Ebany J. Martinez-Finley

5:40 **Q&A.** Panel Discussion

TUESDAY EVENING

Tuesday Evening, March 13
6:00 PM to 7:00 PM
Marriott Marquis Pacific Suite J

American Association of Chinese in Toxicology Special Interest Group Student/Postdoc Career Workshop: How to Prepare for a Successful Career

Tuesday Evening, March 13
6:00 PM to 9:00 PM
Jillian's @ Metreon

Hispanic Organization of Toxicologists Special Interest Group Reception

Tuesday Evening, March 13
6:00 PM to 7:30 PM
Marriott Marquis
See room listing below.

Specialty Section Meetings/Receptions: Carcinogenesis (Yerba Buena Salon 6), Cardiovascular Toxicology (Yerba Buena Salon 3), Dermal Toxicology (Juniper Room), Food Safety(Pacific Suite H), Immunotoxicology (Nob Hill A), Medical Device (Willow Room), Metals (Golden Gate Ballroom C2), Molecular Biology (Yerba Buena Salon 10), Nanotoxicology (Golden Gate Ballroom C1), Neurotoxicology (Golden Gate Ballroom B), Occupational and Public Health (Golden Gate Ballroom C3), Ocular Toxicology (Pacific Suite I), Risk Assessment (Golden Gate Ballroom A)

Tuesday Evening, March 13
7:30 PM to 9:00 PM
Marriott Marquis, Yerba Buena Salon 13

Tox ShowDown

Chairperson(s): *Sue M. Ford, St. John's University, Jamaica, NY, and Phil Wexler, NIH-NLM, Bethesda, MD.*

Sponsor:
Graduate Student Leadership Committee

Join the Graduate Student Leadership Committee (GSLC) and your peers Tuesday night for the *Tox ShowDown*, an engaging quiz game patterned off the popular long-running show *It's Academic*. Teams of three contestants will compete at answering questions concerning toxicology not only in its scientific context, but as it relates to society, the arts, and culture. Sponsored 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 will provide attendees with a break, albeit still toxicologically oriented, from the more technical business of the meeting.

Program Description (Continued)

Abstract #

WEDNESDAY MORNING

Wednesday Morning, March 14
7:30 AM to 8:30 AM
CC Room 300

Special Interest Group Collaboration Group Meeting

Wednesday Morning, March 14
7:30 AM to 8:50 AM
Room 303

Roundtable Session: Placing Bisphenol A Risks in a Human Exposure Context: Is Internal Exposure to Bioactive Bisphenol A in Humans Similar to Levels in Affected Rodent Test Species?

Chairperson(s): *Justin G. Teeguarden, Pacific Northwest National Laboratory, Richland, WA, and Jeffrey Fisher, National Center for Toxicological Research, Jefferson, AR.*

Sponsor:
Medical Device Specialty Section

Endorsed by:
Food Safety Specialty Section
Regulatory and Safety Evaluation Specialty Section
Reproductive and Developmental Toxicology Specialty Section
Risk Assessment Specialty Section

Human external and internal exposure to Bisphenol A (BPA) is widespread. Hydrolysis or leaching of unreacted monomer from polymeric products can release low levels of BPA leading to human exposure through the diet, handling of some paper products, and use of some medical devices utilized in neonatal/pediatric intensive care units. However, BPA undergoes substantial presystemic Phase II metabolism in the gut and liver following oral administration, producing inactive metabolites and limiting internal exposure to the active monomer, aglycone, or unconjugated BPA. Inconsistent reports of high (ng/ml) concentrations of aglycone BPA in human blood/tissue samples collected and/or analyzed in an uncontrolled manner and controversy regarding the pharmacokinetics of BPA in rodents and primates have fueled concerns that internal exposure to BPA may be high enough to cause endocrine disruption in humans. Recently published and emerging research funded by NIEHS/NTP, FDA, and EPA (STAR program) offer an exceptional scientific basis for assessing the significance of BPA exposure to human health. This session will introduce the BPA cause célèbre, present new data on internal exposures to unconjugated BPA in humans, the pharmacokinetics of aglycone and conjugated BPA in adult, neonatal, and fetal rodents and nonhuman primates, and present new rodent toxicity studies that concomitantly characterized internal BPA exposure and potentially adverse biological effects. These data will be synthesized and used to critically examine the hypothesis that human internal exposure to aglycone BPA is sufficiently high to produce a demonstrably adverse health outcome and identify key uncertainties and data needs. The conclusions will be discussed in a final session.

#1735 7:30 **PLACING BISPHENOL A RISKS IN A HUMAN EXPOSURE CONTEXT: IS INTERNAL EXPOSURE TO BIOACTIVE BISPHENOL A IN HUMANS SIMILAR TO LEVELS IN AFFECTED RODENT TEST SPECIES?** *J. Fisher*[2], and *J. G. Teeguarden*[1]. [1]Fundamental and Computational Sciences, Pacific Northwest National Laboratory, Richland, WA, and [2]Division of Biochemical Toxicology, National Center for Toxicological Research, Jefferson, AR.

7:30 **PHARMACOKINETICS AND BIOMONITORING OF BPA IN HUMANS: PROMISE AND PITFALLS.** Jeffrey W. Fisher

Abstract #

7:35 **BIOACTIVE BPA EXPOSURE AND PHARMACOKINETICS IN THE ADULT AND PERINATAL PERIOD IN EXPERIMENTAL ANIMALS.** Daniel R. Doerge

7:47 **INTERNAL CONCENTRATIONS OF BIOACTIVE BPA IN THE ADULT AND PERINATAL PERIOD IN HUMANS.** Justin G. Teeguarden

8:00 **RELATING INTERNAL BPA DOSES TO ADVERSE EFFECTS IN RODENT TOXICITY STUDIES.** K. Barry Delclos

8:13 **DOES INTERNAL DOSIMETRY INFORM US ABOUT THE LIKELIHOOD OF ADVERSE EFFECTS IN HUMANS AT CURRENT EXPOSURE LEVELS?** Richard M. Sharpe

8:25 **PANEL DISCUSSION/Q&A.**

Wednesday Morning, March 14
7:30 AM to 8:50 AM
Room 307

Informational Session: Getting Certified As a Toxicologist: Why, When, Where, and How?

Chairperson(s): *MaryJane Selgrade, ICF International, Durham, NC, and John Wisler, Amgen, Inc., Thousand Oaks, CA.*

Sponsor:
Career Resource and Development Committee

The purpose of this session is to provide information on the different certification options available to toxicologists and to highlight the benefits of certification. This session is intended for those who are considering certification and want to learn more about it. Practicing toxicologists come from different training backgrounds, are engaged in a diverse array of activities including research, risk assessment, product development, consulting, etc., and work in several different sectors. The SOT membership embodies this diversity and includes scientists from academia, government, nonprofits, and industry who practice toxicology in the United States and abroad. The diverse nature of the field makes certification particularly challenging and in truth many toxicologists are self-branded. However, several certification organizations exist worldwide, each with different foundations and requirements. Our panel of experts will explore what makes a toxicologist, understand the different certification options and their benefits, and identify opportunities for harmonization. Providing an overview of the requirements for each review body will be representatives from the American Board of Toxicology (ABT), the Academy of Toxicological Sciences (ATS), European Registered Toxicologists (ERT), and the Japanese Society of Toxicology (JSOT).

#1736 7:30 **GETTING CERTIFIED AS A TOXICOLOGIST: WHY, WHEN, WHERE, AND HOW.** *M. Selgrade*[1], *J. Wisler*[2], *W. Brock*[3], *N. Claude*[4], *S. Tsuda*[5], and *L. Smith*[6]. [1]ICF International, Durham, NC, [2]Amgen, Thousand Oaks, CA, [3]Brock Scientific Consulting, Montgomery Village, MD, [4]Servier, Courbevoie, France, [5]Iwate Institute of Environmental Health Sciences, Iwate, Japan, and [6]Syngenta Crop PRotection, Macclesfield, United Kingdom.

7:30 **INTRODUCTORY TALK: WHAT MAKES A TOXICOLOGIST?** MaryJane Selgrade

7:40 **CERTIFICATION THROUGH THE AMERICAN BOARD OF TOXICOLOGY (ABT).** John A. Wisler

7:50 **CERTIFICATION THROUGH THE ACADEMY OF TOXICOLOGICAL SCIENCES (ATS).** William J. Brock

Program Description (Continued)

Abstract #

8:00 **CERTIFICATION AS A EUROPEAN REGISTERED TOXICOLOGIST (ERT).** Nancy D. Claude

8:10 **CERTIFICATION THROUGH THE JAPANESE SOCIETY OF TOXICOLOGY (JSOT).** Shuji Tsuda

8:20 **OPPORTUNITIES FOR HARMONIZATION.** Lewis L. Smith

8:30 **Q&A.** Panel Discussion

Wednesday Morning, March 14
7:30 AM to 8:50 AM
Room 305

IS

Informational Session: Good Laboratory Practice (GLP) in China

Chairperson(s): *Jiaqin (Jack) Yao, US FDA/CDER, Silver Spring, MD, and Cai Cao, Chinese SFDA, Beijing, China.*

Sponsor:
American Association of Chinese in Toxicology Special Interest Group

China has experienced an increase in nonclinical studies conducted for submission to the US, Chinese, and other regulatory authorities. Both industry and regulators should be familiar with requirements and challenges in the emerging Chinese landscape. This session will review requirements and challenges of GLP regulations seen by both Chinese and US regulatory authorities, as well as provide industry perspectives on meeting and clarifying those challenges. Our panel of experts will highlight the current status of GLP laboratories certified by the Chinese State Food and Drug Administration (SFDA) and nonclinical GLP studies conducted in China for multinational regulatory submissions. Industry and regulatory leaders will participate in this session to share important perspectives to help achieve understanding and compliance with requirements. This particular topic will be useful to those interested in conducting nonclinical studies in China and those reviewing nonclinical studies conducted by Chinese contract research organizations (CROs).

#1737 7:30 **GOOD LABORATORY PRACTICE (GLP) IN CHINA.** *J. Yao*[1], C. Cao[2], *G. Hsu*[3], *J. Gong*[4], *J. Yan*[5], and Z. Chen[6]. [1]DDDP/ODE 3/OND/CDER, US FDA, Silver Spring, MD, [2]Center for Certification, State Food and Drug Administration (SFDA), Beijing, China, [3]Shanghai InnoStar Bio-Tech Co., Ltd., Shanghai, China, [4]JOINN Laboratories, Germantown, MD, [5]Hutchison MediPharma Limited, Shanghai, China, and [6]OSI/OC/CDER, US FDA, Silver Spring, MD.

7:30 **INTRODUCTION.** Cai Cao

7:35 **CHINESE PRECLINICAL SAFETY GLP LABORATORIES.** Gene Ching-Hung Hsu

7:50 **EXPERIENCE ON CONDUCTING NONCLINICAL GLP STUDIES IN CHINA.** John Gong

8:05 **PHARMACEUTICAL INDUSTRY PERSPECTIVE.** James Yan

8:20 **PERSPECTIVE OF GLP REGULATIONS ON NONCLINICAL STUDIES CONDUCTED IN CHINA FOR THE US FDA SUBMISSION.** Zhou Chen

8:35 **Q&A.** Panel Discussion

Wednesday Morning, March 14
8:30 AM to 9:30 AM
Room 101

E

Exhibitor Hosted Session: Toxicokinetic Evaluation in the Virtual Animal

Presented by:
MPI Research

Routinely generated *in vitro* ADME data can be used as prior knowledge to develop PBPK models in virtual animals (rat, dog, mouse) using the Simcyp Simulator. Optimisation of toxicokinetic/safety pharmacology studies can be undertaken focusing upon systemic xenobiotic concentrations rather than dose alone and reducing the need for iterative *in vivo*.

Wednesday Morning, March 14
9:00 AM to 11:45 AM
Room 302

FS

Special Symposium: Meet the Directors

Chairperson(s): *William Slikker Jr., US FDA, Jefferson, AR, and Lois D. Lehman-McKeeman, Bristol-Myers Squibb Company, Princeton, NJ.*

Each year this unique session provides an opportunity for the leaders of agencies to provide an overview of their organizations, scientific directions, funding opportunities, and scientific concepts/achievements. This year, our panel of experts—Chris Portier, Agency for Toxic Substances and Disease Registry (ATSDR), Linda Birnbaum, National Institute of Environmental Health Science (NIEHS), Paul Anastas, Environmental Protection Agency (EPA), and Jukka Malm, European Chemical Agency (ECHA) will provide information of interest to the SOT membership during their individual talks.

We hope you'll join them as they deliver the most recent updates related to important issues that have an impact on toxicology.

Program Description (Continued)

Abstract #

Wednesday Morning, March 14
9:00 AM to 11:45 AM
Room 103

Aberrant Gene Expression in Toxicity and Disease—Epigenetics and microRNAs

Symposium Session: Epigenetic and miRNA Regulations in Carcinogenesis: Toxicological Implications

Chairperson(s): *Jessica R. Placido, Saint John's University, Jamaica, NY, and Enrique Fuentes-Mattei, The University of Texas M.D. Anderson Cancer Center, Houston, TX.*

Sponsor:
Graduate Student Leadership Committee

Endorsed by:
Carcinogenesis Specialty Section
Hispanic Organization of Toxicologists Special Interest Group
Postdoctoral Assembly Committee
Mechanisms Specialty Section
Molecular Biology Specialty Section

Epigenetics is an increasingly evolving scientific field focused on mechanisms involving heritable gene expression profiles and phenotypic changes fundamental for normal development without alterations in nucleotide sequence. DNA methylation and acetylation patterns, histone modifications, germ-line reprogramming and noncoding RNAs mediate epigenetic regulations. Increasing evidence suggests that disruption and alteration of normal epigenetic regulation mechanisms are fundamental in cancer development and progression. Recent evidence shows that exposure to air toxicants and environmental pollutants triggers changes in microRNA (miRNA) expression profiles. These cellular changes reveal novel mechanisms through which toxicants may induce adverse health effects, including the development of leukemia and liver carcinogenesis. In addition, arsenic has been implicated in the development of human skin, lung, bladder, liver, and prostate cancers. Histone modifications have been suggested as epigenetic mechanisms related to arsenic-induced carcinogenesis. Identification and development of new therapeutic strategies with specific and selective targets in the epigenetic machinery are of utmost importance. Recent research shows that detecting alterations in miRNA expression has been associated with early stages of tumor development. These findings suggest that miRNAs may play an important role in cancer risk assessment. Alternatively, histone deacetylase inhibitors are effective in the treatment of hematological malignancies such as leukemia in children. Epigenetic alterations that result in carcinogenesis stress the importance of research efforts to characterize associated molecular mechanisms and highlight current public health issues.

#1738 9:00 **EPIGENETIC AND MIRNA REGULATIONS IN CARCINOGENESIS: TOXICOLOGICAL IMPLICATIONS.** *J. R. Placido*[1], and *E. Fuentes-Mattei*[2]. [1]Department of Pharmaceutical Sciences, St. John's University, Jamaica, NY, and [2]Department of Molecular and Cellular Oncology, The University of Texas M.D. Anderson Cancer Center, Houston, TX.

9:00 **INTRODUCTION.** Jessica Placido

#1739 9:05 **EPIGENETIC EFFECTS OF FORMALDEHYDE EXPOSURE.** *J. Rager*[1], L. Smeester[1], *K. G. Sexton*[1], *I. Jaspers*[2], *R. C. Fry*[1], and *J. A. Swenberg*[1]. [1]Department of Environmental Sciences and Engineering, Gillings School of Public Health, University of North Carolina at Chapel Hill, Chapel Hill, NC, and [2]Center for Environmental Medicine, Asthma, and Lung Biology, School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC.

Abstract #

#1740 9:37 **ARSENIC-INDUCED ALTERATIONS IN GLOBAL POSTTRANSLATIONAL HISTONE MODIFICATIONS AMONG ADULTS IN BANGLADESH.** Y. Chernova[1], M. Hall[2], *A. Arita*[1], F. Wu[1], H. Sun[1], H. Tseng[1], K. Kiok[1], T. Kluz[1], X. Liu[3], M. Gamble[4], and *M. Costa*[1]. [1]Nelson Institute of Environmental Medicine, New York University School of Medicine, New York, NY, [2]Department of Epidemiology, Mailman School of Public Health, Columbia University, New York, NY, [3]Department of Biostatistics, Mailman School of Public Health, Columbia University, New York, NY, and [4]Department of Environmental Health Sciences, Mailman School of Public Health, Columbia University, New York, NY.

#1741 10:09 **THE MOLECULAR AND EPIGENETIC MECHANISMS INVOLVED IN MAMMALIAN LINE-1 RETROELEMENT SILENCING ARE ALTERED BY BENZO(A)PYRENE.** D. Montoya-Durango, Y. Liu, I. Teneng, T. Kalbfleisch, M. E. Lacy, J. L. Quertermous, M. C. Steffen, and *K. S. Ramos*. Department of Biochemistry and Molecular Biology and Center for Genetics and Molecular Medicine, University of Louisville, Louisville, KY.

#1742 10:41 **EPIGENETIC AND MIRNA DYSREGULATION IN LIVER NONGENOTOXIC AND GENOTOXIC TUMORIGENESIS.** *K. R. Kutanzi*[1], S. Melnyk[2], *I. Koturbash*[1], and *I. Pogribny*[1]. [1]Biochemical Toxicology, National Center for Toxicological Research, Jefferson, AR, and [2]Department of Pediatrics, University of Arkansas for Medical Sciences, Little Rock, AR.

#1743 11:13 **OXIDATIVE STRESS BASED STRATEGIES FOR ENHANCING THE EFFICACY OF HISTONE DEACETYLASE INHIBITORS (HDACI) FOR THE TREATMENT OF LEUKEMIAS.** *N. Rivera-Del Valle*, and J. Chandra. Department of Pediatric Research, University of Texas M.D. Anderson Cancer Center, Houston, TX.

Wednesday Morning, March 14
9:00 AM to 11:45 AM
Room 102

Innovations of Applied Toxicology (IAT) Session

Symposium Session: Nonclinical Safety Assessment of Dual-Targeting Biotherapeutics

Chairperson(s): *Matthew S. Bogdanffy, Boehringer Ingelheim Pharmaceuticals, Inc., Ridgefield, CT, and Anne Pilaro, US FDA, Silver Spring, MD.*

Sponsor:
Biotechnology Specialty Section

Endorsed by:
Drug Discovery Specialty Section
Immunotoxicology Specialty Section
Regulatory and Safety Evaluation Specialty Section

Engineering of protein-based biotherapeutics has advanced significantly in recent years to delivering novel molecules having exceptional target specificity. Initial antibody-based therapies were designed to target a single epitope. More recently, however, multitargeting antibodies, including nanobodies, are being designed to bind and modulate multiple cellular targets having coordinated biological pathways. These novel and highly specific constructs present new challenges for assessing safety in the nonclinical setting, including identification of pharmacologically relevant species,

Program Description (Continued)

Abstract #

creative study designs that support clinical development in the presence of species dependent pharmacokinetic behavior, and antidrug antibody assay implementation strategies for multi-anti-idiotype immunological responses that may interfere with pharmacological/toxicological data interpretation. This important topic will generate interest in this issue and bring about the discussion and challenges with regard to assessing the safety of these cutting-edge biotherapeutic modalities. Our panel of experts will begin by providing a brief overview of protein engineering technologies used in the design of dual-targeting biotherapeutics with the aim of providing a basic understanding of the technologies and particularly the toxicology-relevant aspects of construct design, such as the influence of amino acid sequence homology and glycosylation patterns on species-relevant pharmacologic action. We will follow the introduction with a series of three case studies that illustrate the unique issues faced when developing clinical trial-enabling strategies, study design, and data interpretation. Finally, a brief commentary from the regulatory perspective on the need for nonclinical safety and regulatory scientists to partner when faced with these new challenges will close out the session. At the conclusion of the session a summary of the challenges and provocative commentary on the future directions of nonclinical safety assessment of dual-targeting biotherapeutics will be presented.

#1744 9:00 **NONCLINICAL SAFETY ASSESSMENT OF DUAL-TARGETING BIOTHERAPEUTICS.** *M. Bogdanffy*[1], and *A. Pilaro*[2]. [1]Nonclinical Drug Safety, Boehringer Ingelheim Pharmaceuticals, Inc., Ridgefield, CT, and [2]CDER, US FDA, Silver Spring, MD.

9:00 **INTRODUCTION.** Matthew Bogdanffy

#1745 9:05 **DUAL-TARGET CONSTRUCT ENGINEERING FOR TARGET SPECIFICITY AND EFFICACY.** J. Cochran. Stanford University, Palo Alto, CA. Sponsor: *M. Bogdanffy*.

#1746 9:32 **NONCLINICAL ASSESSMENT OF BISPECIFIC T CELL-ENGAGING ANTIBODIES.** B. Rattel. Micromet AG, Munich, Germany. Sponsor: *M. Bogdanffy*.

#1747 9:59 **COMPUTATIONAL, SAFETY, AND REGULATORY STRATEGIES USED IN DEVELOPING A NOVEL BISPECIFIC MOLECULE IN ONCOLOGY.** *K. Olivier*. Merrimack Pharmaceuticals, Inc., Cambridge, MA.

#1748 10:26 **NONCLINICAL CHARACTERIZATION OF A HER3 AND EGFR DUAL-ACTION ANTIBODY IN CYNOMOLGUS MONKEYS.** *R. Prell*, D. Danilenko, C. Wang, A. Kamath, G. Schaefer, A. Wong, G. Fuh, and W. Halpern. Genentech, S. San Francisco, CA.

#1749 10:53 **REGULATORY PERSPECTIVE ON DUAL-TARGETING BIOTHERAPEUTICS: APPROACHES, TRANSLATION OF NONCLINICAL FINDINGS, AND CHALLENGES.** *A. Pilaro*. CDER, US FDA, Silver Spring, MD.

#1750 11:19 **CHALLENGES AND FUTURE DIRECTIONS OF MULTITARGETING BIOTHERAPEUTIC APPROACHES.** *W. Ku*. Boehringer Ingelheim, Ridgefield, CT.

Abstract #

Wednesday Morning, March 14
9:00 AM to 11:45 AM
Room 307

S

Symposium Session: The Allergenicity and Immunomodulatory Effect of Food Substances

Chairperson(s): *Greg Ladics, DuPont Agricultrual Biotechnology, Wilmington, DE, and Reiko Teshima, National Institute of Health Sciences, Japan, Tokyo, Japan.*

Sponsor:
Immunotoxicology Specialty Section

Endorsed by:
Food Safety Specialty Section
Immunotoxicology Specialty Section

A food allergy is a reaction of the immune system to an otherwise harmless protein in food. Typically, such food allergic reactions are mediated by IgE and occur in atopic individuals who are genetically predisposed to allergy and who have been previously sensitized to the allergen. The incidence of food allergy ranges from approximately 1%–2% in adults and 6%–8% in children. The normal immune response to dietary proteins is associated with the induction of oral tolerance, a state of active inhibition of immune responses to an antigen by means of prior exposure to that antigen via the oral route. The mechanism(s) responsible for the development of oral tolerance are still the subject of research and debate. This symposium will present several hypotheses regarding the role that dietary triglycerides and synbiotics may play in the development of oral tolerance as well as the role immunomodulating factors (e.g., environmental factors) may play in breaking oral tolerance to protein allergens. Additionally, the structural and functional biology of allergenic food proteins will be discussed along with *in vitro* models to predict the potential crossreactivity of food proteins.

#1751 9:00 **THE ALLERGENICITY AND IMMUNOMODULATORY EFFECT OF FOOD SUBSTANCES.** *G. Ladics*[1], and R. Teshima[2]. [1]DuPont Co., Wilmington, DE, and [2]National Institute of Health Sciences, Tokyo, Japan.

9:00 **INTRODUCTION.** Gregory Ladics

#1752 9:05 **STRUCTURAL AND FUNCTIONAL BIOLOGY OF ALLERGENIC FOOD PROTEINS.** H. Breiteneder. Department of Pathophysiology and Allergy Research, Medical University of Vienna, Vienna, Austria. Sponsor: *G. Ladics*.

#1753 9:37 **FOOD ALLERGY AND THE ROLE OF DIETARY TRIGLYCERIDES IN SENSITIZATION AND ANAPHYLAXIS AGAINST DIETARY ANTIGENS.** E. Eckhardt. University of Kentucky, Lexington, KY. Sponsor: *G. Ladics*.

#1754 10:09 **ANTIALLERGIC EFFECTS OF A SPECIFIC MIXTURE OF OLIGOSACCHARIDES OR COMBINED WITH A PROBIOTIC STRAIN (SYNBIOTICS).** L. Knippels. Centre for Specialised Nutrition, Danone Research, Wageningen, Netherlands. Sponsor: *G. Ladics*.

#1755 10:41 **FOOD SENSITIZATION AND ITS INDUCTION BY IMMUNOMODULATING FACTORS.** T. Shindo. Food and Drug Safety Center, Hatano Research Institute, Hadano, Japan. Sponsor: *G. Ladics*.

#1756 11:13 ***IN VITRO* PROVOCATION STUDY.** R. Nakamura. Division of Novel Foods and Immunochemistry, National Institute of Health Sciences, Tokyo, Japan. Sponsor: *G. Ladics*.

Program Description (Continued)

Abstract #

Wednesday Morning, March 14
9:00 AM to 11:45 AM
Room 308

Symposium Session: The Toxicological Impact of Metals, Crude Oil, and Chemical Dispersants from the Gulf of Mexico Oil Crisis on Human and Wildlife Health

Chairperson(s): *John P. Wise, Sr., University of Southern Maine, Portland, ME, and Joe Griffitt, University of Southern Mississippi, Hattiesburg, MS.*

Sponsor:
Metals Specialty Section

Endorsed by:
Comparative and Veterinary Specialty Section
Mixtures Specialty Section
Toxicologic and Exploratory Pathology Specialty Section

The 2010 Gulf of Mexico oil crisis was the worst environmental pollution disaster in US history. By the time the well was capped, more than 200 million gallons of crude oil poured into the Gulf over an 87-day period. To combat the crisis, a marine toxicology strategy was deployed to decrease the toxic potential of the crisis to inshore species by increasing the toxic potential to offshore species. Thus, over two million gallons of chemical dispersants were applied to the oil, which prevented oil accumulation at the ocean surface and, instead, moved it into the water column and onto the ocean floor. This approach decreased the amount of surface oil reaching inshore waters and beaches. However, it is unclear if it ultimately decreased toxicity to inshore species because the acute and chronic toxicity of dispersants, dispersed oil, and oil-related metals in the water column are unknown. Also unknown are the toxic outcomes of this approach for offshore species. During this session our panel of experts will present and discuss some of the first studies to evaluate the impact of this toxicological strategy considering the toxicity of crude oil, dispersants, dispersed oil, and oil-related metals on benthic and pelagic species using a combination of field and laboratory studies. Species presented will span from microbes and invertebrates, to fish and whales with some consideration of human health effects. Outcomes discussed will range from simple survival studies to more subtle effects on reproduction and DNA integrity.

#1757 9:00 **THE TOXICOLOGICAL IMPACT OF METALS, CRUDE OIL, AND CHEMICAL DISPERSANTS FROM THE GULF OF MEXICO OIL CRISIS ON HUMAN AND WILDLIFE HEALTH.** *J. P. Wise*[1], and J. Griffitt[2]. [1]Maine Center for Toxicology & Environmental Health, University of Southern Maine, Portland, ME, and [2]Department of Coastal Sciences, University of Southern Mississippi, Hattiesburg, MS.

9:00 **INTRODUCTION.** John Wise

#1758 9:05 **THE DEEPWATER HORIZON DISASTER.** I. Kerr[1,3], and *J. P. Wise*[1,2,3]. [1]Ocean Alliance, Lincoln, MA, [2]Wise Laboratory of Environmental and Genetic Toxicology, University of Southern Maine, Portland, ME, and [3]Maine Center for Toxicology & Environmental Health, University of Southern Maine, Portland, ME.

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#1759 9:32 **MICROBIAL DEGRADATION OF OIL AND GAS FOLLOWING THE MACONDO BLOWOUT.** S. Joye[1], M. Crespo-Medina[1], K. Hunter[1], A. Vossmeyer[1], L. Beer[1], M. Bowles[1], V. Asper[2], A. Diercks[3], A. Teske[4], J. Montoya[5], C. Arnosti[4], C. Benitez-Nelson[6], J. Brandes[7], W. Moore[6], U. Passow[8], A. Subramaniam[9], T. Wade[10], K. Zeirvogel[4], and R. Highsmith[11]. [1]Department of Marine Sciences, University of Georgia, Athens, GA, [2]University of Southern Mississippi, Hattiesburg, MS, [3]University of Mississippi, University, MS, [4]University of North Carolina at Chapel Hill, Chapel Hill, NC, [5]Georgia Institute of Technology, Atlanta, GA, [6]University of South Carolina, Columbia, SC, [7]Skidaway Institute of Oceanography, Savannah, GA, [8]Marine Science Institute, University of California Santa Barbara, Santa Barbara, CA, [9]Lamont-Doherty Earth Observatory, Columbia University, Palisades, NY, [10]Geochemical and Environmental Research Group, Texas A&M University, College Station, TX, and [11]National Institute for Undersea Science & Technology, University of Mississippi, Abbeville, MS. Sponsor: *J. Wise, Sr.*

#1760 9:59 **ASSESSING THE IMPACT OF CHEMICAL OIL SPILL DISPERSANTS ON CORALS.** *C. Mitchelmore*. Chesapeake Biological Laboratory, University of Maryland Center for Environmental Science, Solomons, MD.

#1761 10:26 **EFFECTS OF DISPERSED OIL ON LARVAL SHEEPSHEAD MINNOWS.** J. Griffitt, N. Brown-Peterson, and I. Boube. Department of Coastal Sciences, University of Southern Mississippi, Hattiesburg, MS. Sponsor: *J. Wise, Sr.*

#1762 10:53 **WEATHERING AND DISPERSION OF CRUDE OIL ALTER ITS TOXICITY IN THE EURYHALINE TELEOST, *FUNDULUS GRANDIS*.** *G. Mayer*[1], A. Nyman[2], F. Galvez[3], and C. Green[2]. [1]The Institute of Environmental & Human Health, Texas Tech University, Lubbock, TX, [2]School of Renewable Natural Resources, Louisiana State University, Baton Rouge, LA, and [3]Department of Biological Sciences, Louisiana State University, Baton Rouge, LA.

#1763 11:19 **THE GULF OF MEXICO OFFSHORE TOXICOLOGY STUDY.** *J. P. Wise*[1,2,3], I. Kerr[2,3], J. P. Wise[1,2,3], C. F. Wise[1,2,3], *S. S. Wise*[1,2,3], J. Wise[1,2,3], C. Gianios[1,2,3], B. Wallace[3], S. Huang[1,2,3], *C. LaCerte*[1,2,3], and *A. Holmes*[1,2,3]. [1]Wise Laboratory of Environmental and Genetic Toxicology, University of Southern Maine, Portland, ME, [2]Maine Center for Toxicology & Environmental Health, University of Southern Maine, Portland, ME, and [3]Ocean Alliance, Lincoln, MA.

WEDNESDAY

Program Description (Continued)

Abstract #

Wednesday Morning, March 14
9:00 AM to 11:45 AM
Room 304

Characterizing Toxic Modes of Action and Pathways to Toxicity

Workshop Session: Caught in the Act: Free Radical Detection and Implications in Pathways to Toxicity

Chairperson(s): *Arno Siraki, University of Alberta, Edmonton, AB, Canada, and Maria Kadiiska, NIEHS/NIH, Research Triangle Park, NC.*

Sponsor:
Mechanisms Specialty Section

Endorsed by:
Molecular Biology Specialty Section

Free radicals are known to cause a multitude of effects in living systems, which span the spectrum of blunt injury to signal transduction pathways. Although it is important to understand the result of oxidative stress in toxicological pathways, the astute identification of the specific free radical initiators and mediators can provide insight into the source(s) of these species and their modulation, and their unique downstream targets that lead to activation of toxicity pathways. There are many diverse methods that are used to detect free radicals such as ROS (qualified as oxidative stress) but the diversity in the quality of data obtained can vary considerably. This session will focus on characterizing the free radical intermediates themselves and describe the consequences of their generation in terms of toxicological effects. These methods will be used to demonstrate the importance in making an association with a particular oxidant with specific toxic outcomes. We will discuss the various approaches to determine free radical species and highlight their advantages, disadvantages, and where improvements can be made. There are many issues to consider including electron paramagnetic resonance (EPR) spectroscopy which is considered the gold standard for free radical detection and identification but entails technical challenges and specialized expertise. Analytical methods such as HPLC and MS represent a more general approach but likely require previous findings with EPR to rationalize their use. Spectrophotometric and fluorimetric assays are quite popular, but either lack specificity or exaggerate findings due to the detection of artifacts. More recently, the detection of free radicals on macromolecules (protein, DNA) by immunoassays has presented an unprecedented opportunity to sensitively observe free radicals *in vitro* and *in vivo*. The discussions will focus on when and where each approach succeeds and fails and how each technique can be used to identify specific free radicals in pathways to toxicity.

#1764	9:00	**CAUGHT IN THE ACT: FREE RADICAL DETECTION AND IMPLICATIONS IN PATHWAYS TO TOXICITY.** *A. Siraki*. University of Alberta, Edmonton, AB, Canada.
	9:00	**INTRODUCTION.** Arno Siraki
#1765	9:05	**THE QUINONE/SEMIQUINONE/ HYDROQUINONE TRIAD: FREE RADICAL FORMATION VERSUS THIOL CONJUGATION IN TOXICITY.** G. Buettner. University of Iowa, Iowa City, IA. Sponsor: *A. Siraki*.
#1766	9:37	**ENZYMATIC FUNCTIONS DEFINED BY TRACKING REDOX REACTIONS: THE EXAMPLE OF MANGANESE SUPEROXIDE DISMUTASE.** M. G. Bonini. University of Illinois at Chicago, Chicago, IL. Sponsor: *A. Siraki*.
#1767	10:09	**INTRA- AND INTERCELLULAR SIGNALING PATHWAYS AS MODULATORS OF FREE RADICAL TOXICITY.** *L. Klotz*. University of Alberta, Edmonton, AB, Canada.

Abstract #

#1768	10:41	**FREE RADICALS AND OXIDIZED MACROMOLECULES: ROLES IN BIOMARKER TOXICOLOGY.** *M. Kadiiska*. NIEHS/NIH, Research Triangle Park, NC.
#1769	11:13	**DISTINGUISHING FREE RADICAL METABOLITES OF AROMATIC AMINE DRUGS BASED ON REACTIVITY AND THEIR POTENTIAL *IN VIVO* TOXICITY.** *A. Siraki*. University of Alberta, Edmonton, AB, Canada.

Wednesday Morning, March 14
9:00 AM to 11:45 AM
Room 305

Clinical Toxicology from Bedside to the Bench and Back

Workshop Session: Chelation Therapy: A Focus on the Risks and Benefits

Chairperson(s): *Carl Herbrandson, Minnesota Department of Health, Saint Paul, MN, and Richard Wang, Centers for Disease Control and Prevention, Atlanta, GA.*

Sponsor:
Occupational and Public Health Specialty Section

Endorsed by:
Clinical and Translational Toxicology Specialty Section
Metals Specialty Section

Chelation is a very important therapy to lessen the occurrence of health consequences from the exposure to high levels of metals including selected radionuclides. However, the efficacy of treatment long after exposure has not been consistently demonstrated. Chelation in cases where exposures are limited can compromise health. Furthermore, chelation has been used in attempts to treat diseases for which it has not been proven effective (e.g., arteriosclerosis and autism). On the surface, the idea of removing toxic metals from the body is appealing, but serious health consequences can occur when chelation is improperly used. Consideration of the perspectives of medical and public health practitioners on chelation practices are important.

#1770	9:00	**CHELATION THERAPY: A FOCUS ON THE RISKS AND BENEFITS.** *C. Herbrandson*[1], and *R. Wang*[2]. [1]Minnesota Department of Health, St. Paul, MN, and [2]National Center for Environmental Health, CDC, Atlanta, GA.
	9:00	**INTRODUCTION.** Carl Herbrandson
#1771	9:05	**CHELATION THERAPY AT DIFFERENT STAGES OF LIFE.** *D. A. Cory-Slechta*. Department of Environmental Medicine, University of Rochester Medical Center, Rochester, NY.
#1772	9:37	**CHELATION THERAPY—A CAUTIONARY TALE.** M. Brown, and *D. Corey Slecta*. CDC, Atlanta, GA.
#1773	10:09	**EXPERIMENTAL EVIDENCE OF EFFICACY AND HARM: THE GOOD AND BAD OF CHELATION THERAPY.** *D. Smith*[1], S. Beaudin[1], M. Luck[2], R. Lasky[3], N. Laughlin[2], and B. Strupp[4]. [1]Environmental Toxicology, University of California Santa Cruz, Santa Cruz, CA, [2]Harlow Primate Laboratory, University of Wisconsin-Madison, Madison, WI, [3]Center for Clinical Research and Evidence-Based Medicine, University of Texas Houston, Houston, TX, and [4]Psychology, Cornell University, Ithaca, NY.

Program Description (Continued)

Abstract #

#1774 10:41 **CHELATION CONTROVERSY: WHAT DOES THIS LABORATORY TEST MEAN?** C. A. McKay. Division of Medical Toxicology, Department of Emergency Medicine, University of Connecticut School of Medicine, Hartford, CT. Sponsor: *R. Wang*.

#1775 11:13 **CHELATION FOR HEAVY METAL INTOXICATION: A MEDICAL TOXICOLOGY PERSPECTIVE.** *M. J. Kosnett*. Division of Clinical Pharmacology & Toxicology, University of Colorado School of Medicine, Denver, CO.

Wednesday Morning, March 14
9:00 AM to 11:45 AM
Room 104

W

Workshop Session: Cooperative Epidemiology and Toxicology Research: HEI's National Particle Component Toxicity (NPACT) Initiative

Chairperson(s): *Matthew J. Campen, University of New Mexico, Albuquerque, NM, and Geoffrey Sunshine, Health Effects Institute, Boston, MA.*

Sponsor:
Cardiovascular Toxicology Specialty Section

Endorsed by:
Disease Prevention Task Force
Inhalation and Respiratory Specialty Section
Occupational and Public Health Specialty Section

In 2006, the Health Effects Institute (HEI) funded two major studies to address the comparative toxicity of components of particulate matter (PM) at multiple places across the United States where PM components and the sources of PM would differ. The goal of the program was to integrate toxicological and epidemiological approaches to address this issue. Both teams, one led by Sverre Vedal at the University of Washington, the other by Mort Lippmann at New York University (NYU), investigated the effects of PM components on cardiovascular endpoints in the same strain of mouse, ApoE knockout, but took contrasting approaches. In research conducted at Lovelace Respiratory Research Institute, Dr. Vedal's team exposed the mice to well-characterized, lab-generated pollutant atmospheres that included vehicular—diesel + gasoline engine emissions—resuspended road dust, and secondary nitrates and sulfate particles. Dr. Lippmann's team exposed the mice to particles concentrated from ambient air at four sites across the US. The NYU team also collected PM samples of different size ranges—ultrafine, fine, and coarse—at these sites to evaluate cardiovascular effects in another strain of mice. The epidemiological analyses in both studies used well-established cohorts with participants throughout the US and with some overlap between the locations studied by both groups. Dr. Vedal's team focused on evaluating associations between long-term exposure to PM components with cardiovascular endpoints in participants in the Multi-Ethnic Study of Atherosclerosis (MESA) and Women's Health Initiative (WHI) studies. Dr. Lippmann's team evaluated associations in multiple cities between PM components and daily mortality and hospital admissions endpoints, as well as between exposures to components and annual mortality in the American Cancer Society (ACS) cohort. These integrated studies provide important lessons on how to design and execute population and laboratory-based research in a cooperative manner.

#1776 9:00 **COOPERATIVE EPIDEMIOLOGY AND TOXICOLOGY RESEARCH: HEI'S NATIONAL PARTICLE COMPONENT TOXICITY (NPACT) INITIATIVE.** *M. J. Campen*[1], and G. Sunshine[2]. [1]University of New Mexico, Albuquerque, NM, and [2]Health Effects Institute, Boston, MA.

9:00 **INTRODUCTION.** Matthew Campen

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#1777 9:05 **THE UNIVERSITY OF WASHINGTON (UW)—LOVELACE RESPIRATORY RESEARCH INSTITUTE (LRRI) NPACT INITIATIVE ON THE CARDIOVASCULAR HEALTH EFFECTS OF PM2.5 COMPONENTS.** S. Vedal. Public Health, University of Washington, Seattle, WA. Sponsor: *M. Campen*.

#1778 9:34 **CARDIOVASCULAR TOXICOLOGY OF SIMULATED COMPLEX AIR POLLUTION ATMOSPHERES.** *J. D. McDonald*[1], *M. Campen*[2], and *A. K. Lund*[1]. [1]Toxicology Division, Lovelace Respiratory Research Institute, Albuquerque, NM, and [2]Pharmaceutical Sciences, University of New Mexico, Albuquerque, NM.

#1779 10:03 **OVERVIEW OF THE NEW YORK UNIVERSITY NPACT INITIATIVE ON THE HEALTH EFFECTS OF PM COMPONENTS.** M. Lippmann. Environmental Medicine, New York University, Tuxedo Park, NY. Sponsor: *M. Campen*.

#1780 10:32 **ALTERATIONS OF CARDIAC FUNCTION AND PLAQUE PROGRESSION IN APOE–/– MICE BY SUBCHRONIC INHALATION EXPOSURE OF CONCENTRATED AMBIENT PM2.5: THE ROLES OF PM COMPONENTS AND SOURCE CATEGORIES.** *L. Chen*. Environmental Medicine, New York University, Tuxedo Park, NY.

#1781 11:01 ***IN VITRO* AND *IN VIVO* EFFECTS OF PM: INFLUENCE OF SIZE, CITY, AND SEASON.** *T. Gordon*. Environmental Medicine, New York University, Tuxedo Park, NY.

11:30 **PANEL DISCUSSION/Q&A.** Geoffrey Sunshine

Wednesday Morning, March 14
9:00 AM to 11:45 AM
Room 303

W

Clinical Toxicology from Bedside to the Bench and Back

Workshop Session: Progress in Developing New Biomarkers of Drug-Induced Liver Injury (DILI): What You Don't Know Can Hurt You

Chairperson(s): *Douglas A. Keller, sanofi-aventis US, Malvern, PA, and Ina Schuppe-Koistinen, AstraZeneca, Södertälje, Sweden.*

Sponsor:
Drug Discovery Toxicology Specialty Section

Endorsed by:
Clinical and Translational Toxicology Specialty Section
Regulatory and Safety Evaluation Specialty Section
Toxicologic and Exploratory Pathology Specialty Section

Current biomarkers of drug-induced liver injury (DILI) are able to identify damage once it has occurred and when it becomes severe. Serum ALT and bilirubin are the accepted standards for hepatocellular injury and impaired liver function, respectively. The use of combined ALT and bilirubin levels (Hy's Law) is considered a useful hallmark of whether an individual drug may cause severe DILI, which results in a 10–50% chance of transplantation or mortality. However, many patients who exhibit combined drug-induced ALT and bilirubin elevations do not develop severe DILI but rather adapt; therefore these biomarkers do not reliably predict risk of severe liver injury in man. Also, during the preclinical drug development phase, ALT can increase in the absence of injury and this can result in a program delay or termination. More specific markers that distinguish true injury from these false signals would improve liver injury signal detection and provide novel

Program Description (Continued)

Abstract #

therapies to patients faster. The C-Path Preclinical Safety Testing Consortium and the IMI SAFE-T program are in the process of identifying and qualifying novel biomarkers of liver injury and function. Other liver biomarker discovery and qualification efforts are under way in academic, industrial, and government laboratories, such as the National Center for Toxicological Research. The greatest need is to find biomarkers for adaptation to liver injury, and to identify patients who will progress to DILI before the injury is severe and resolve false ALT signals. Our panel of experts will provide information and foster discussion on the major needs for DILI biomarkers, and highlight major areas of research under way on DILI biomarker discovery and qualification efforts.

#1782 9:00 **PROGRESS IN DEVELOPING NEW BIOMARKERS OF DRUG-INDUCED LIVER INJURY (DILI): WHAT YOU DON'T KNOW CAN HURT YOU.** *D. Keller*[1], I. Schuppe-Koistinen[2], *W. Bailey*[3], M. Merz[4], *W. Salminen*[5], and G. Kenna[6]. [1]Preclinical Safety, Sanofi US LLC., Bridgewater, NJ, [2]Safety Assessment, AstraZeneca, Södertälje, Sweden, [3]Merck & Co Inc., Fort Washington, PA, [4]Preclinical Safety, Translational Sciences, Novartis, Basel, Switzerland, [5]US FDA-NCTR, Jefferson, AR, and [6]Safety Assessment, AstraZeneca, Macclesfield, United Kingdom.

9:00 **INTRODUCTION.** Douglas Keller

#1783 9:05 **QUALIFICATION OF PRECLINICAL BIOMARKERS OF DILI: CURRENT GAPS, RESEARCH EFFORTS, AND FUTURE DIRECTIONS.** *W. Bailey*. Merck & Co Inc., Fort Washington, PA.

#1784 9:37 **QUALIFICATION OF CLINICAL BIOMARKERS OF DILI: CURRENT GAPS, RESEARCH EFFORTS, AND FUTURE DIRECTIONS.** M. Merz. Preclinical Safety - Translational Sciences, Novartis, Basel, Switzerland. Sponsor: *D. Keller*.

#1785 10:09 **MULTIPLE 'OMICS APPROACH FOR ASSESSING CLASSICAL AND IDIOSYNCRATIC HEPATOTOXICANTS IN PRECLINICAL SPECIES.** *W. Salminen*. US FDA-NCTR, Jefferson, AR.

#1786 10:41 **BIOMARKERS OF BSEP INHIBITION RELATING TO DILI.** G. Kenna. Safety Assessment, AstraZeneca, Macclesfield, United Kingdom. Sponsor: *D. Keller*.

#1787 11:13 **NEW PREDICTIVE BIOMARKER PROFILES FOR HUMAN DILI.** I. Schuppe-Koistinen. Safety Assessment, AstraZeneca, Södertälje, Sweden. Sponsor: *D. Keller*.

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Wednesday Morning, March 14
9:00 AM to 11:45 AM
Room 301

PL

Platform Session: Bioinformatics: Signature Applications and Network Analyses

Chairperson(s): *Arvind Dixit, US FDA, Silver Spring, MD, and Julia M. Gohlke, University of Alabama at Birmingham, Birmingham, AL.*

#1788 9:00 **DEVELOPING A FUZZY NEURAL NETWORK MODEL FOR PREDICTING THE INTERACTIVE EFFECTS OF COMPLEX PAH MIXTURES ON THE CYP1B1 TRANSCRIPTIONAL REGULATORY NETWORK.** A. J. Larkin[1,2,4], L. K. Siddens[1,4], S. K. Krueger[1,4], *S. C. Tilton*[3,4], K. M. Waters[3,4], *W. M. Baird*[1,4], and *D. E. Williams*[1,4]. [1]Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR, [2]Statistics, Oregon State University, Corvallis, OR, [3]Computational Biology and Bioinformatics, Pacific Northwest National Laboratory, Richland, WA, and [4]Superfund Research Center, Oregon State University, Corvallis, OR.

#1789 9:19 **BAYESIAN NETWORK ANALYSIS AND CONNECTIVITY MAPPING ENABLES PHENOTYPIC ANCHORING OF TRANSCRIPTOMIC RESPONSES TO CIGARETTE SMOKE IN HUMANS.** D. Jennen[1,2], D. van Leeuwen[1], M. Tsamou[1], J. van Delft[1,2], and J. Kleinjans[1,2]. [1]Department of Toxicogenomics, Maastricht University, Maastricht, Netherlands, and [2]Netherlands Toxicogenomics Centre, Maastricht, Netherlands. Sponsor: *H. van Loveren*.

#1790 9:38 **MULTISPACE K-NEAREST NEIGHBORS AS A NOVEL HYBRID APPROACH INTEGRATING CHEMICAL AND TOXICOGENOMIC DESCRIPTORS FOR IMPROVED TOXICITY PREDICTION.** *Y. Low*[1,2], D. Fourches[2], A. Sedykh[2], *I. Rusyn*[1], and A. Tropsha[2]. [1]Environmental Sciences & Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC, and [2]Chemical Biology & Medicinal Chemistry, University of North Carolina at Chapel Hill, Chapel Hill, NC.

#1791 9:57 **OBJECTIVE ASSESSMENT OF TOXICOLOGY QSAR MODEL APPLICABILITY DOMAIN USING ATOM SIGNATURES.** *S. Boyer*, C. Hasselgren, L. Carlsson, and E. Ahlberg. Computational Toxicology, AstraZeneca, Mölndal, Sweden.

#1792 10:15 **A MODE-OF-ACTION-BASED QSAR APPROACH TO IMPROVE UNDERSTANDING OF DEVELOPMENTAL TOXICITY.** *C. Yang*[1], A. P. Worth[2], K. B. Arvidson[3], and A. M. Richard[4]. [1]Altamira, LLC, Columbus, OH, [2]EC JRC, Ispra, Italy, [3]OFAS, US FDA CFSAN, College Park, MD, and [4]NCCT, US EPA ORD, Research Triangle Park, NC.

#1793 10:33 ***IN SILICO* PREDICTIVE MODELS FOR INHIBITION OF CYTOCHROME P450 3A4 AND 2D6.** A. J. Dixit[1], L. G. Valerio[1], *N. Sadrieh*[1], J. M. Villar[2], A. Valencia[2], J. Prous[2], and M. Carbó[2]. [1]CDER, Office of Pharmaceutical Science, US FDA, Silver Spring, MD, and [2]Prous Institute for Biomedical Research, Barcelona, Spain.

Program Description (Continued)

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#1794 10:51 **AHR-MEDIATED GENE EXPRESSION ACROSS MULTIPLE DEVELOPING MOUSE TISSUES.** *X. Chang*[1], J. Foley[1], *J. M. Gohlke*[2], *C. J. Portier*[3], and *M. Devito*[1]. [1]NIEHS, Research Triangle Park, NC, [2]University of Alabama at Birmingham, Birmingham, AL, and [3]NCEH/ATSDR, Atlanta, GA.

#1795 11:09 **ACTIVITY PROFILES OF 676 TOXCAST PHASE II COMPOUNDS IN 231 BIOCHEMICAL HIGH-THROUGHPUT SCREENING ASSAYS.** *N. S. Sipes*, *D. R. Reif*, *K. Houck*, *M. T. Martin*, P. Kothiya, *A. Richard*, *R. Judson*, *T. B. Knudsen*, *D. J. Dix*, and *R. Kavlock*. National Center for Computational Toxicology, ORD, US EPA, Research Triangle Park, NC.

#1796 11:27 ***IN SILICO* IDENTIFICATION OF BISPHENOL A MOLECULAR TARGETS.** D. Montes-Grajales, and *J. Olivero-Verbel*. Environmental and Computational Chemistry Group, University of Cartagena, Cartagena, Bolivar, Colombia.

Wednesday Morning, March 14
9:00 AM to 11:45 AM
Room 309

PL

Platform Session: Chemical and Biological Weapons: Agents and Countermeasures

Chairperson(s): *Neera Tewari-Singh, University of Colorado Denver, Aurora, CO, and Patrick Sabourin, Batelle, OH.*

#1797 9:00 **BIOCHEMICAL AND CELLULAR CHANGES ASSOCIATED WITH METHYL ISOCYANATE-INDUCED PULMONARY FIBROSIS IN C57BL/6 MICE.** *J. Benson*, *J. Seagrave*, Y. Shi, and J. Hutt. Lovelace Respiratory Research Institute, Albuquerque, NM.

#1798 9:19 **THE TOXICOLOGICAL RELEVANCE OF THE CUTANEOUS RESERVOIR OF SULPHUR MUSTARD.** J. Jenner[1], C. Green[1], P. Oliver[1], I. Hattersley[1], *J. Azeke*[2], *E. Braue*[2], and *J. Graham*[2]. [1]Biomedical Sciences, Dstl, Salisbury, Wiltshire, United Kingdom, and [2]USAMRICD, Aberdeen Proving Ground, MD.

#1799 9:38 **PUPILLARY LIGHT RESPONSE IN A GUINEA PIG MODEL EXPOSED TO ORGANOPHOSPHATE AGENTS.** *E. D. Clarkson*[1], K. H. Smith[1], S. M. Schulz[1], and C. Kolanko[2]. [1]Analytical Toxicology Division, US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Grounds, MD, and [2]EyeMarker Systems, Inc., Morgantown, WV.

#1800 9:57 **EFFICACY OF BIFUNCTIONAL AND NONSTEROID ANTI-INFLAMMATORY COMPOUNDS AGAINST VAPOR-INDUCED SULFUR MUSTARD INJURY IN A HAIRLESS MOUSE VESICANT MODEL (HMVM).** *Y. Chang*[1], *J. D. Wang*[1], *R. A. Hahn*[1], *M. K. Gordon*[1], *M. C. Babin*[2], S. C. Young[3], N. D. Heindel[3], *J. D. Laskin*[4], and *D. R. Gerecke*[1]. [1]Pharmacology and Toxicology, Ernest Mario School of Pharmacy, Rutgers University, Piscataway, NJ, [2]Battelle Biomedical Research Center, Columbus, OH, [3]Chemistry, Lehigh University, Bethlehem, PA, and [4]Environmental and Occupational Medicine, University of Medicine and Dentistry of New Jersey-Robert Wood Johnson Medical School, Piscataway, NJ.

Abstract #

#1801 10:15 **ANTI-INFLAMMATORY PROPERTIES EXHIBITED BY ARYL HYDROCARBON RECEPTOR (AHR) LIGANDS, INDOLE-3-CARBINOL, AND 3,3'-DIINDOLYLMETHANE, DURING STAPHYLOCOCCAL ENTEROTOXIN B-INDUCED IMMUNE SYSTEM ACTIVATION.** P. B. Busbee, *M. Nagarkatti*, and *P. Nagarkatti*. University of South Carolina School of Medicine, Columbia, SC.

#1802 10:33 **EFFECT OF SOLVENTS ON THE STABILITY OF CHLOROETHYL ETHYL SULFIDE (CEES).** M. D. Kennedy, J. D. Elliott, S. E. Colmenero, P. Collins, and *J. P. Gray*. Department of Science, United States Coast Guard Academy, New London, CT.

#1803 10:51 **THERAPEUTIC EFFICACY OF SILIBININ IN ATTENUATING SULFUR MUSTARD ANALOG-INDUCED SKIN INJURIES.** *N. Tewari-Singh*[1], *J. K. Anil*[1], *S. Inturi*[1], C. Agarwal[1], C. W. White[2], and *R. Agarwal*[1]. [1]Pharmaceutical Sciences, University of Colorado Denver, Aurora, CO, and [2]Pediatrics, National Jewish Health, Denver, CO.

#1804 11:09 **IDENTIFICATION OF EXPOSURE BIOMARKERS TO BIOLOGICAL TOXINS SEB, MICROCYSTIN LR, AND T2.** R. Harris[2], *J. McDonald*[1], P. Kuehl[1], *M. Doyle-Eisele*[1], *K. Turteltaub*[3], and M. Malfatti[3]. [1]Lovelace, Albuquerque, NM, [2]Commonwealth Biotechnologies, Richmond, VA, and [3]Lawrence Livermore National Laboratory, Livermore, CA.

#1805 11:27 **MECHANISMS OF SULFUR MUSTARD ANALOGS, 2-CHLOROETHYL ETHYL SULFIDE AND NITROGEN MUSTARD-INDUCED DNA DAMAGE IN SKIN CELLS.** *S. Inturi*[1], *N. Tewari-Singh*[1], C. Agarwal[1], *C. W. White*[2], and *R. Agarwal*[1]. [1]Pharmaceutical Sciences, University of Colorado Denver, Aurora, CO, and [2]Pediatrics, National Jewish Health, Denver, CO.

Wednesday Morning, March 14
9:00 AM to 11:45 AM
Room 310

PL

Platform Session: Nanotoxicology: Carbon Nanotubes and Nanofibers

Chairperson(s): *Michael P. DeLorme, DuPont Haskell Laboratories, Newark, DE, and Syed Ali, National Center for Toxicological Research, Jefferson, AR.*

#1806 9:00 **PULMONARY FIBROTIC RESPONSE FROM INHALED MULTIWALLED CARBON NANOTUBE EXPOSURE IN MICE.** R. R. Mercer, *A. F. Hubbs*, J. F. Scabilloni, L. Wang, L. A. Battelli, *V. Castranova*, and *D. W. Porter*. PPRB, NIOSH, Morgantown, WV.

#1807 9:19 **90-DAY INHALATION TOXICITY STUDY WITH CARBON NANOFIBERS IN RATS.** *M. P. DeLorme*[1], Y. Muro[2], S. R. Frame[1], K. L. Reed[1], and *D. B. Warheit*[1]. [1]DuPont Haskell Lab., Newark, DE, and [2]Showa Denko K.K., Tokyo, Japan.

#1808 9:38 **LINKING NANOMATERIAL PHYSICAL PARAMETERS TO TOXICITY: A SYSTEMATIC ASSESSMENT OF GOLD NANOMATERIALS.** *L. K. Braydich-Stolle*, L. Mahle, N. Schaeublin, C. Grabinski, and *S. Hussain*. AFRL/RHPB, Wright-Patterson AFB, Dayton, OH.

Program Description (Continued)

Abstract #

#1809 9:57 **THE ROLE OF IL-1β SIGNALING IN NICKEL-ASSOCIATED MULTIWALLED CARBON NANOTUBE-INDUCED ACUTE PULMONARY EOSINOPHILIA.** *T. A. Girtsman*, P. K. Shaw, B. B. Postma, and *A. Holian*. CEHS, University of Montana, Missoula, MT.

#1810 10:15 **MAST CELLS AND THE IL-33/ST2 AXIS ARE ESSENTIAL DETERMINANTS OF CARBON NANOTUBE TOXICITY.** *P. Katwa*[1], *X. Wang*[1], R. Urankar[2], S. C. Hilderbrand[1], *C. J. Wingard*[2], and *J. M. Brown*[1]. [1]Pharmacology & Toxicology, East Carolina University, Greenville, NC, and [2]Department of Physiology, East Carolina University, Greenville, NC.

#1811 10:33 **DIFFERENT EFFECT OF MULTIWALLED CARBON NANOTUBES IN LUNG TUMORIGENESIS.** *J. Kim*[1,2], *A. Minai-Tehrani*[1], B. Kang[1], S. Hong[1], J. Shin[1], *S. Park*[1], and *M. Cho*[1,2]. [1]Laboratory of Toxicology, College of Veterinary Medicine, Seoul National University, Seoul, Republic of Korea, and [2]Department of Nano Fusion Technology, Graduate School of Convergence Science and Technology, Seoul National University, Seoul, Republic of Korea.

#1812 10:51 **EVALUATION OF LUNG RESPONSE IN GOLDEN SYRIAN HAMSTERS TO INHALED SINGLE-WALLED CARBON NANOTUBES.** K. H. Bijlani, H. R. Sukhija, and J. M. Cerreta. PHS, St. John's University, Queens, NY. Sponsor: *L. Trombetta*.

#1813 11:09 **90-DAY INHALATION TOXICITY STUDY WITH CARBON NANOFIBERS IN RATS: FIBER-RELATED EFFECTS ON THE RESPIRATORY TRACT DO NOT IMPACT THE CARDIOVASCULAR SYSTEM.** *D. B. Warheit*[1], Y. Muro[2], K. L. Reed[1], S. R. Frame[1], and *M. P. DeLorme*[1]. [1]DuPont Haskell Lab., Newark, DE, and [2]Showa Denko K.K., Tokyo, Japan.

#1814 11:27 **INTERDISCIPLINARY *IN VITRO* APPROACH TO EVALUATE THE TOXIC POTENTIAL OF ENGINEERED NANOMATERIALS: GOLD NANOPARTICLES AND CARBON NANOTUBES AS CASES STUDIES.** *Y. Zhang*[1], *W. Salminen*[2], *Q. Shi*[2], *X. Yang*[2], Y. Jones[1], A. Keasling[1], A. Paredes[1], *S. Ali*[3], *T. Chen*[4], S. Linder[5], T. Mudalige[5], Y. Xu[6], A. Biris[6], and *P. Howard*[1]. [1]Office of Scientific Coordination, and Nanotechnology Core Facility, NCTR/US FDA, Jefferson, AR, [2]Division of Systems Biology, NCTR/US FDA, Jefferson, AR, [3]Division of Neurotoxicology, NCTR/US FDA, Jefferson, AR, [4]Division of Genetic and Molecular Toxicology, NCTR/US FDA, Jefferson, AR, [5]Arkansas Regional Laboratory, US FDA, Jefferson, AR, and [6]Nanotechnology Center, University of Arkansas-Little Rock, Little Rock, AR.

Abstract #

Wednesday Morning, March 14
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Alternatives to Mammalian Models I

Chairperson(s): *Andreas Schepky, Beiersdorf AG, Hamburg, Germany, and Patrick Allard, Harvard Medical School, Boston, MA.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *9:00 AM–11:00 AM*

#1815 **Poster Board Number 101**
BLTK1 MURINE LEYDIG CELLS AS A NOVEL MODEL FOR EVALUATING THE STEROIDOGENIC EFFECTS OF REPRODUCTIVE AND DEVELOPMENTAL TOXICANTS. R. Jaremba[1], *A. L. Forgacs*[1], Q. Ding[1], I. T. Huhtaniemi[2], N. A. Rahman[2], and *T. R. Zacharewski*[1]. [1]Department of Biochemistry & Molecular Biology, Center for Integrative Toxicology, Michigan State University, East Lansing, MI, and [2]Department of Physiology, University of Turku, Turku, Finland.

#1816 **Poster Board Number 102**
ASSESSMENT OF AN *IN VITRO* HUMAN VAGINAL EPITHELIAL MODEL FOR PREDICTING VAGINAL IRRITATION. E. B. Evans[1], R. Priston[1], J. Willoughby[2], H. N. Wagner[2], and *J. M. McKim*[2]. [1]Kimberly-Clark, Roswell, GA, and [2]CeeTox, Kalamazoo, MI.

#1817 **Poster Board Number 103**
MECHANISTIC AND LARGE-SCALE ANALYSIS OF ENVIRONMENTAL EFFECTS ON REPRODUCTIVE HEALTH USING THE NEMATODE *C. ELEGANS*. *P. Allard*, and M. P. Colaiacovo. Genetics, Harvard Medical School, Boston, MA.

#1818 **Poster Board Number 104**
ERα MARCONI AS AN *IN VITRO* ALTERNATIVE FOR THE RAT UTEROTROPHIC ASSAY FOR ENDOCRINE DISRUPTORS. R. Houtman[1], *M. van Duursen*[2], P. Lord[1], and R. Ruijtenbeek[1]. [1]PamGene International BV, Den Bosch, Netherlands, and [2]IRAS, Utrecht University, Utrecht, Netherlands.

#1819 **Poster Board Number 105**
A FUNCTIONAL, SENSITIVE, AND SPECIFIC CELL-BASED ASSAY FOR ENDOCRINE DISRUPTOR. R. A. Lewis, B. A. Samson, R. N. Ghosh, A. M. Laura, *J. R. Haskins*, and M. L. Pietila. Life Sciences Research—Cellomics, Thermo Fisher Scientific, Pittsburgh, PA.

#1820 **Poster Board Number 106**
SCREENING FOR ENDOCRINE DISRUPTORS IN PRODUCT DEVELOPMENT: TIERED TESTING USING *IN VITRO* AND *IN VIVO* ASSAYS. R. Buesen, S. N. Kolle, T. Ramirez, B. Flick, H. G. Kamp, B. van Ravenzwaay, and *R. Landsiedel*. Experimental Toxicology and Ecology, BASF SE, Ludwigshafen am Rhein, Germany.

Program Description (Continued)

Abstract #

#1821 **Poster Board Number 107**
COMPUTATIONAL MODELING OF HYPOTHALAMIC-PITUITARY-GONADAL AXIS TO PREDICT ADAPTIVE RESPONSES IN FEMALE FATHEAD MINNOWS EXPOSED TO AN AROMATASE INHIBITOR. *M. Breen*[1,2], D. L. Villeneuve[3], G. T. Ankley[3], D. Bencic[4], M. S. Breen[5], K. H. Watanabe[6], A. L. Lloyd[2], and *R. B. Conolly*[1]. [1]Integrated Systems Toxicology Division, NHEERL, ORD, US EPA, Research Triangle Park, NC, [2]Biomathematics Program, Department of Mathematics, North Carolina State University, Raleigh, NC, [3]Mid-Continent Ecology Division, US EPA, Duluth, MN, [4]Ecological Exposure Research Division, National Exposure Research Laboratory, US EPA, Cincinnati, OH, [5]National Exposure Research Laboratory, US EPA, Research Triangle Park, NC, and [6]Department of Environmental and Biomolecular Systems, Oregon Health & Science University, Beaverton, OR.

#1822 **Poster Board Number 108**
ICCVAM RECOMMENDATIONS AND LIMITATIONS OF THE BG1LUC ER TA TEST METHOD FOR IDENTIFYING ESTROGEN RECEPTOR AGONISTS AND ANTAGONISTS. D. Hattan[1], *K. Carlson*[2], *A. Jacobs*[3], J. Bray[3], *W. Casey*[4], and *W. Stokes*[4]. [1]CFSAN, US FDA, College Park, MD, [2]CPSC, Bethesda, MD, [3]CDER, US FDA, Silver Spring, MD, and [4]NTP/NICEATM, NIEHS, Research Triangle Park, NC.

#1823 **Poster Board Number 109**
ICCVAM PERFORMANCE STANDARDS FOR THE BG1LUC ER TA TEST METHOD. *W. Casey*[1], D. Hattan[2], *K. Carlson*[3], *A. Jacobs*[4], J. Bray[4], *J. Hamm*[5], *P. Ceger*[5], *D. Allen*[5], and *W. Stokes*[1]. [1]NTP/NICEATM, NIEHS, Research Triangle Park, NC, [2]CFSAN, US FDA, College Park, MD, [3]CPSC, Bethesda, MD, [4]CDER, US FDA, Silver Spring, MD, and [5]NTP/NICEATM, ILS, Inc., Research Triangle Park, NC.

#1824 **Poster Board Number 110**
BIOENERGETICS CHARACTERIZATION OF HUMAN-INDUCED PLURIPOTENT STEM (IPS) CELL-DERIVED CARDIOMYOCYTES GROWN IN DIFFERENT CARBON SOURCES. P. Rana[1], S. Engle[1], *B. Anson*[2], and *Y. Will*[1]. [1]Compound Safety Prediction, Pfizer Global Research & Development, Groton, CT, and [2]Cellular Dynamics International, Madison, WI.

#1825 **Poster Board Number 111**
THE ROLE OF METABOLISM IN DICLOFENAC-INDUCED INTESTINAL TOXICITY IN RAT AND HUMAN *IN VITRO*. X. Niu, M. Langelaar, I. de Graaf, and G. Groothuis. Pharmacokinetics, Toxicology and Targeting, Groningen Research Institute of Pharmacy, Groningen, Netherlands. Sponsor: *A. Vickers*.

#1826 **Poster Board Number 112**
ASSESSMENT OF AN *IN VITRO* HUMAN INTESTINAL EPITHELIAL CELL MODEL FOR EVALUATION OF PROTEIN CYTOTOXICITY. *M. Harper*[1], W. Pirzai[2], B. Hurley[2], *G. Ladics*[3], and *B. Delaney*[1]. [1]Pioneer Hi-Bred Intl., Inc., Ankeny, IA, [2]Department of Pediatrics, Mucosal Immunology Laboratory, Massachusetts General Hospital and Harvard Medical School, Charlestown, MA, and [3]DuPont Experimental Station, Wilmington, DE.

Abstract #

#1827 **Poster Board Number 113**
DNA ADDUCTS FORMED IN FETAL TURKEY LIVER BY AROMATIC AMINE-CONTAINING LOCAL ANESTHETICS. *A. M. Jeffrey*, J. Duan, K. D. Brunnemann, and *G. M. Williams*. Department of Pathology, New York Medical College, Valhalla, NY.

#1828 **Poster Board Number 114**
DETERMINATION OF SKIN AND AIRWAY GENOTOXICITY POTENTIAL USING THE NORMAL HUMAN 3-DIMENSIONAL (NHU-3D) EPIAIRWAY, EPIDERM, AND EPIDERM-FT *IN VITRO* HUMAN MODELS AND THE COMET ASSAY. A. Armento, J. DeLuca, Y. Kaluzhny, M. Klausner, R. Smith, and *P. J. Hayden*. MatTek Corp., Ashland, MA.

#1829 **Poster Board Number 115**
***IN SILICO* METHODS OF GENOTOXICITY PREDICTION: CAN IT BE USED RELIABLY FOR PREDICTION OF *IN VITRO/IN VIVO* GENOTOXICITY?** M. Mishra[1,4], R. Poduri[1,5], G. Jena[1], C. Mohan[2], N. Parikh[3], and A. Chakraborti[3]. [1]Department of Pharmacology & Toxicology, National Institute of Pharmaceutical Education & Research (NIPER), Mohali, Punjab, India, [2]Department of Pharmacoinformatics, NIPER, Mohali, Punjab, India, [3]Department of Medicinal Chemistry, NIPER, Mohali, Punjab, India, [4]Graduate Center for Toxicology, University of Kentucky, College of Medicine, Lexington, KY, and [5]School of Basic and Applied Sciences, Centre for Chemical and Pharmaceutical Sciences, Central University of Punjab, Bathinda, Punjab, India. Sponsor: *M. Vore*.

#1830 **Poster Board Number 116**
USE OF NORMAL HUMAN 3-DIMENSIONAL (NHU-3D) TISSUE MODELS (EPIDERM, EPIAIRWAY) FOR NANOTOXICOLOGY APPLICATIONS. *P. Hayden*[1], Y. Kaluzhny[1], A. Armento[1], V. Karetsky[1], J. Kubilus[1], S. Ayehunie[1], *H. Kandarova*[2], and *M. Klausner*[1]. [1]MatTek Corporation, Ashland, MA, and [2]MatTek *In Vitro* Life Science Laboratories, Bratislava, Slovakia.

#1831 **Poster Board Number 117**
THE USE OF DERMAL AND LUNG *IN VITRO* MODELS TO EVALUATE POTENTIAL OCCUPATIONAL EFFECTS OF MILITARY FUELS. *K. L. Mumy*[1], T. L. Doyle[1], and *D. Mattie*[2]. [1]Naval Medical Research Unit, Wright-Patterson AFB, Dayton, OH, and [2]711 HPW/RHPB, US Air Force, Wright-Patterson AFB, Dayton, OH.

#1832 **Poster Board Number 118**
PREDICTING PHOTOSENSITIZATION USING AN *IN VITRO* METHOD. P. Rao[1], D. J. Keller[2], *P. C. Wilga*[2], and *J. M. McKim*[2]. [1]Energizer Personal Care, Allendale, NJ, and [2]CeeTox, Kalamazoo, MI.

#1833 **Poster Board Number 119**
ADOPTING TESTING CONDITIONS OF THE VALIDATED CFU-GM ASSAY FOR HEMATOTOXICITY TO LIQUID CULTURES OF CD34+ HEMATOPOIETIC STEM CELLS IN A MICROWELL FORMAT. *H. Behrsing*[1], J. Hamre III[1], M. Davis[2], and R. Parchment[1]. [1]In Vitro Toxicology and ADME: Screening, Laboratory of Human Toxicology and Pharmacology, SAIC-Frederick/NCI-Frederick, Frederick, MD, and [2]Division of Cancer Treatment and Diagnosis, National Cancer Institute, Bethesda, MD.

Program Description (Continued)

Abstract #

#1834 **Poster Board Number 120**
EVALUATING *IN VITRO* MODELS FOR THE PREDICTION OF CNS EXPOSURE TO CHEMICAL ENTITIES. A. Stevens[1], C. Cantrill[2], P. Mistry[1], J. Wright[1], and J. Penny[2]. [1]Syngenta, Bracknell, United Kingdom, and [2]University of Manchester, Manchester, United Kingdom. Sponsor: *R. Peffer*.

#1835 **Poster Board Number 121**
PARACRINE SIGNALING IN A NOVEL MODEL FOR HEPATOCYTE-PREADIPOCYTE COCULTURES. A. R. Uzgare, and *A. P. Li*. *In Vitro* ADMET Laboratories, LLC, Columbia, MD.

#1836 **Poster Board Number 122**
DEVELOPMENT OF AN *IN VITRO* ACUTE TOXICITY PANEL TO ASSESS THE TOXICITY OF EXTRACTS FROM SINGLE-USE BIOPHARMACEUTICAL PROCESSING PRODUCTS. *L. M. Milchak*[1], J. Hart[1], G. Jellum[1], M. Meyering[1], *P. Wilga*[2], *J. McKim*[2], and *J. Zappia*[1]. [1]3M, St Paul, MN, and [2]CeeTox, Kalamazoo, MI.

#1837 **Poster Board Number 123**
EFFECT OF OXYGEN ON LIVER SLICES VIABILITY. E. Szalowska, G. Stoopen, S. Wang, J. Rijk, M. Groot, J. Ossenkoppele, and A. Peijnenburg. RIKILT/University of Wageningen, Wageningen, Netherlands. Sponsor: *S. Rangarajan*.

#1838 **Poster Board Number 124**
HUMAN LIVER MICROTISSUES AS A NOVEL SYSTEM TO PREDICT INFLAMMATION-MEDIATED TOXICITY. S. Messner[1], E. Lorbach[2], J. M. Kelm[1], W. Moritz[1], and H. Müller-Hartmann[2]. [1]InSphero AG, Zurich, Switzerland, and [2]Lonza Cologne GmbH, Cologne, Germany. Sponsor: *A. Wolf*.

#1839 **Poster Board Number 125**
HUMAN AND MOUSE PRECISION-CUT LIVER SLICES AS TRANSLATIONAL MODEL FOR IDIOSYNCRATIC HEPATOTOXICITY OF CLOZAPINE. G. M. Groothuis[1], Y. Chen[1], M. Merema[1], J. Joore[2], and M. Hadi[1]. [1]Division of Pharmacokinetics, Toxicology & Targeting, Groningen Research Institute of Pharmacy, Groningen, Netherlands, and [2]Pepscape, Rotterdam, Netherlands. Sponsor: *A. Vickers*.

#1840 **Poster Board Number 126**
MICROARRAY ANALYSIS OF GENE EXPRESSION CHANGES DUE TO CHILLING INJURY IN PRECISION-CUT LIVER SLICES (PCLS). N. Guan[1], S. A. Blomsma[1], G. M. Fahy[2], G. M. Groothuis[1], and I. A. de Graaf[1]. [1]Pharmacokintics, Toxicology and Targeting, University of Groningen, Groningen, Netherlands, and [2]21st Century Medicine, Fontana, CA. Sponsor: *A. Vickers*.

#1841 **Poster Board Number 127**
DOSIMETRY METHODS FOR TOBACCO SMOKE AEROSOL *IN VITRO* EXPOSURES. R. Marsh[2], J. Perkins[1], K. Scott[1], D. Dillon[1], and *C. Meredith*[1]. [1]Group R&D, British American Tobacco, Southampton, United Kingdom, and [2]Covance Laboratories Ltd, Harrogate, United Kingdom.

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#1842 **Poster Board Number 128**
CYTOTOXIC AND INFLAMMATORY EFFECTS OF TOBACCO-FATTY ACIDS: COMPARATIVE RESPONSE FROM MONO- VERSUS COCULTURED HUMAN LUNG CELLS *IN VITRO*. *M. Misra*. Lorillard Company, Greensboro, NC.

#1843 **Poster Board Number 129**
IMPACT OF TEST CONDITIONS ON *IN VITRO* CYTOTOXICITY MEASUREMENTS OF MAINSTREAM CIGARETTE SMOKE USING A WHOLE SMOKE EXPOSURE SYSTEM. X. Li, P. Shang, C. Nie, F. Xie, H. Liu, and J. Xie. Key Laboratory of Tobacco Chemistry, Zhengzhou Tobacco Research Institute of CNTC, Zhengzhou, China. Sponsor: *R. Meng*.

#1844 **Poster Board Number 130**
HUMAN 3D AIRWAY MODELS TO PREDICT *IN VIVO* AVAILABILITY UPON INHALATION. J. van Triel[1], Y. Staal[1], A. Reus[1], F. van Acker[1], H. Jansen[2], W. Maas[2], and F. Kuper[2]. [1]TNO Triskelion, Zeist, Netherlands, and [2]TNO, Zeist, Netherlands. Sponsor: *R. Woutersen*.

#1845 **Poster Board Number 131**
TESTING OF OECD REFERENCE NANOMATERIALS (NM-SERIES) IN RAT PRECISION CUT LUNG SLICES. A. Aumann[1], S. Vogel[1], M. Schulz[1], S. N. Kolle[1], W. Wohlleben[2,1], B. van Ravenzwaay[1], and *R. Landsiedel*[1]. [1]Experimental Toxicology and Ecology, BASF SE, Ludwigshafen am Rhein, Germany, and [2]Polymer Physics, BASF SE, Ludwigshafen am Rhein, Germany.

#1846 **Poster Board Number 132**
RESPIRATORY TOXICITY *IN VITRO*: IN HOUSE VALIDATION OF THE EPIAIRWAY MODEL. S. Vogel, S. N. Kolle, B. van Ravenzwaay, and *R. Landsiedel*. Experimental Toxicology and Ecology, BASF SE, Ludwigshafen am Rhein, Germany.

#1847 **Poster Board Number 133**
IMPROVED TOXICOLOGICAL CHARACTERIZATION OF INHALABLE SUBSTANCES *IN VITRO* BY *IN SITU* FLUORESCENCE ANALYSIS OF THE CELLULAR STATUS DURING EXPOSURE. D. Ritter, and J. Knebel. Fraunhofer ITEM, Hannover, Germany. Sponsor: *C. Dasenbrock*.

#1848 **Poster Board Number 134**
CALU-3 CELLS AS A MODEL TO ESTIMATE THE PULMONARY ABSORPTION OF INHALED DRUGS FOR THE TREATMENT OF COPD. T. Hansen, and J. Knebel. *In Vitro* and Mechanistic Toxicology, Fraunhofer Institute for Toxicology and Experimental Medicine, Hannover, Germany. Sponsor: *C. Dasenbrock*.

#1849 **Poster Board Number 135**
DEVELOPMENT OF ALTERNATIVE *IN VITRO* METHODS TO SCREEN FOR PULMONARY TOXICITIES—CHARACTERIZATION OF EPITHELIAL-MACROPHAGE COCULTURES AT THE AIR-LIQUID INTERFACE (ALI). *S. P. Ng*, and *D. B. Warheit*. DuPont Haskell Global Centers for Health & Environmental Sciences, Newark, DE.

Program Description (Continued)

Abstract #

#1850 **Poster Board Number 136**
METABOLIC CHARACTERIZATION OF THE *IN VITRO* LUNG CELL SYSTEM BEAS-2B. C. Garcia-Canton, E. Minet, and *C. Meredith*. Group R&D, British American Tobacco, Southampton, United Kingdom.

#1851 **Poster Board Number 137**
CHARACTERIZING THE ESTROGENIC POTENTIAL OF 1060 ENVIRONMENTAL CHEMICALS BY ASSESSING GROWTH KINETICS IN T47D CELLS. D. Rotroff[1,2], *R. Judson*[1], *D. Reif*[1], *M. Martin*[1], A. Richard[1], *K. Houck*[1], C. Jin[3], Y. Abassi[3], and *D. Dix*[1]. [1]National Center for Computational Toxicology, US EPA, Research Triangle Park, NC, [2]Environmental Sciences and Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC, and [3]ACEA Biosciences Inc., San Diego, CA.

#1852 **Poster Board Number 138**
***IN VITRO* ASSESSMENT OF SHAMPOO'S EYE-STINGING POTENTIAL USING TRANSIENT RECEPTOR POTENTIAL VANILLOID TYPE 1 (TRPV1).** F. Amaral[1], R. Note[1], L. Bourouf[1], J. Cotovio[1], T. Delanne[1], M. Hanegraaf[2], S. Loisel-Joubert[1], G. Ouédraogo[1], A. Forsby[2], and J. Meunier[1]. [1]L'Oréal Research, Aulnay-sous-bois, France, and [2]Department of Neurochemistry, The Arrhenius Laboratories for Natural Sciences, Stockholm University, Stockholm, Sweden. Sponsor: *G. Nohynek*.

Wednesday Morning, March 14
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Regulatory Policy: Procedures and Predictions

Chairperson(s): *April Neal Kluever, US FDA, College Park, MD, and John Lauterbach, Lauterbach & Associates, LLC, Macon, GA.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *11:00 AM–12:30 PM*

#1853 **Poster Board Number 141**
COMPARISON OF THE DPRA WITH A THREE-TEST BATTERY FOR *IN VITRO* EVALUATION OF SKIN SENSITIZATION. *W. Stokes*[1], *T. Burns*[2], *J. Strickland*[2], L. Rinckel[2], and *D. Allen*[2]. [1]NTP/NICEATM, NIEHS, Research Triangle Park, NC, and [2]NTP/NICEATM, ILS, Inc., Research Triangle Park, NC.

#1854 **Poster Board Number 142**
LIMITATIONS IN CHARACTERIZATION OF ACUTE DERMAL IRRITATION WITH REDUCED NUMBER OF TEST ANIMALS. *T. P. Kellner*, J. R. Corlett, M. E. Hansen, and *P. Leung*. California Department of Pesticide Regulation, Sacramento, CA.

#1855 **Poster Board Number 143**
DERMATOLOGY DRUGS WITHDRAWN BY FDA: RELATIONSHIP TO MODERN DERMATOTOXICOLOGIC DEVELOPMENT. *H. I. Maibach*. Department of Dermatology, University of California San Francisco, San Francisco, CA.

Abstract #

#1856 **Poster Board Number 144**
ANALYSIS TO DETERMINE IF ACUTE ORAL SYSTEMIC TOXICITY DATA CAN BE USED TO ESTIMATE AND AVOID ACUTE DERMAL SYSTEMIC TOXICITY TESTING. M. Paris[1], *J. Strickland*[1], F. Stack[1], *D. Allen*[1], *W. Casey*[2], and *W. Stokes*[2]. [1]NTP/NICEATM, ILS, Inc., Research Triangle Park, NC, and [2]NTP/NICEATM, NIEHS, Research Triangle Park, NC.

#1857 **Poster Board Number 145**
UPDATED NICEATM EVALUATION OF THE REDUCED MURINE LOCAL LYMPH NODE ASSAY. *T. Burns*[1], *D. Allen*[1], *J. Strickland*[1], *E. Salicru*[1], and *W. Stokes*[2]. [1]NTP/NICEATM, ILS, Inc., Research Triangle Park, NC, and [2]NTP/NICEATM, NIEHS, Research Triangle Park, NC.

#1858 **Poster Board Number 146**
EVALUATION OF TWO NONRADIOLABELED MURINE LOCAL LYMPH NODE ASSAYS (LLNA) FOR POTENCY CATEGORIZATION OF SUBSTANCES CAUSING ALLERGIC CONTACT DERMATITIS IN HUMANS. *J. Strickland*[1], F. Stack[1], *T. Burns*[1], *D. Allen*[1], *W. Casey*[2], and *W. Stokes*[2]. [1]NTP/NICEATM, ILS, Inc., Research Triangle Park, NC, and [2]NTP/NICEATM, NIEHS, Research Triangle Park, NC.

#1859 **Poster Board Number 147**
PILOT ANALYSIS OF FOOD CONTACT NOTIFICATION OUTCOME. *A. Neal Kluever*, and *M. Twaroski*. CFSAN/OFAS/DFCN, US FDA, College Park, MD.

#1860 **Poster Board Number 148**
SUGGESTED PROTOCOL FOR ESTIMATION OF HARMFUL AND POTENTIALLY HARMFUL CONSTITUENTS FROM IN MAINSTREAM AEROSOLS GENERATED BY ELECTRONIC NICOTINE DELIVERY SYSTEMS (ENDS). *J. H. Lauterbach*[1], M. Laugesen[2], and J. D. Ross[3]. [1]Lauterbach & Associates, LLC, Macon, GA, [2]Health New Zealand, Christchurch, New Zealand, and [3]Global Vapor Tobacco Corporation, Ft. Lauderdale, FL.

#1861 **Poster Board Number 149**
COMPARISON OF TOXICANT LEVELS IN MAINSTREAM AEROSOLS GENERATED BY RUYAN® ELECTRONIC NICOTINE DELIVERY SYSTEMS (ENDS) AND CONVENTIONAL CIGARETTE PRODUCTS. M. Laugesen[2], and *J. H. Lauterbach*[1]. [1]Lauterbach & Associates, LLC, Macon, GA, and [2]Health New Zealand, Christchurch, New Zealand.

#1862 **Poster Board Number 150**
INCORPORATING MULTIPLE DURATION ASSESSMENTS INTO DERIVATION OF DRINKING WATER GUIDANCE. *H. Goeden*, *K. Sande*, and *J. Dady*. Minnesota Department of Health, St. Paul, MN.

#1863 **Poster Board Number 151**
IMPLEMENTING BODY WEIGHT SCALING AS A DEFAULT APPROACH FOR DERIVING ORAL REFERENCE DOSES. *H. Goeden*, *K. Sande*, and *J. Dady*. Minnesota Department of Health, St. Paul, MN.

Program Description (Continued)

Abstract #

#1864 **Poster Board Number 152**
PRACTICAL IMPLEMENTATION OF GREEN CHEMISTRY PRINCIPLES FOR EVALUATING SAFER ALTERNATIVES DURING PRODUCT DEVELOPMENT. *N. V. Soucy*, and N. E. Walsh. Medical Department, 3M Company, St. Paul, MN.

#1865 **Poster Board Number 153**
THE ROLE OF CONFORMITY AUDITS OF GCP INSPECTIONS IN JAPANESE AUTHORITY AND THE QUALITY OF CLINICAL TRIALS IN JAPAN. *R. Anahara*, Y. Sato, and E. Kondo. Office of Conformity Audit, Pharmaceuticals and Medical Devices Agency (PMDA), Tokyo, Japan.

#1866 **Poster Board Number 154**
RETROSPECTIVE ANALYSIS OF THE ABILITY OF INDUSTRY, ACADEMIA, AND ANIMAL RIGHTS ORGANIZATIONS TO MEET THE TESTING AND MARKETING BANS ESTABLISHED BY THE 7TH AMENDMENT OF COSMETIC DIRECTIVE. J. Sheasgreen, M. Klausner, *P. J. Hayden*, H. Kandarova, and A. Armento. MatTek Corp, Ashland, MA.

#1867 **Poster Board Number 155**
DERIVATION OF ACCEPTABLE DAILY EXPOSURE (ADE) VALUES—A GUIDANCE PROPOSED BY PHARMACEUTICAL INDUSTRY. T. Pfister, and *A. Flueckiger*. Group Safety, Security, Health & Environmental Protection (LSH), Hoffmann-La Roche, Basel, Switzerland.

Wednesday Morning, March 14
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Disposition and Pharmacokinetics

Chairperson(s): *Mary Beth Genter, University of Cincinnati, Cincinnati, OH.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *9:00 AM–11:00 AM*

#1868 **Poster Board Number 201**
COMPARATIVE STUDY OF PLASMA MICROSAMPLING IN MALE RATS AFTER A SINGLE-DOSE OF ACETAMINOPHEN. *A. Stokes*[1], T. Moose[1], C. Kimbrough[2], M. Mullin[3], J. Kenney[4], J. Siple[4], and N. Spooner[5]. [1]Safety Assessment, GlaxoSmithKline, Research Triangle Park, NC, [2]Statistical Sciences, GlaxoSmithKline, Research Triangle Park, NC, [3]Bioanalytical Sciences and Toxicokinetics, GlaxoSmithKline, Research Triangle Park, NC, [4]Drummond Scientific Company, Broomall, PA, and [5]Bioanalytical Sciences and Toxicokinetics, GlaxoSmithKline, Ware, United Kingdom.

#1869 **Poster Board Number 202**
SPECIES COMPARISON OF INHALED SULFURYL FLUORIDE PHARMACOKINETICS IN FISCHER 344 RATS AND NEW ZEALAND WHITE RABBITS. *J. A. Hotchkiss*[1], S. M. Krieger[1], D. A. Markham[1], D. L. Rick[1], G. M. Whitford[3], and *D. L. Eisenbrandt*[2]. [1]The Dow Chemical Company, Midland, MI, [2]Dow AgroSciences, Indianapolis, IN, and [3]Medical College of Georgia, Augusta, GA.

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#1870 **Poster Board Number 203**
SULFURYL FLUORIDE: PHARMACOKINETICS OF REPEATED INHALATION EXPOSURES IN FISCHER 344 RATS. *D. L. Eisenbrandt*[1], D. L. Rick[2], S. M. Krieger[2], D. A. Markham[2], G. M. Whitford[3], and *J. A. Hotchkiss*[2]. [1]Dow AgroSciences, Indianapolis, IN, [2]The Dow Chemical Company, Midland, MI, and [3]Medical College of Georgia, Augusta, GA.

#1871 **Poster Board Number 204**
PBPK MODELING OF SPECIES AND AGE-SPECIFIC SULFURYL FLUORIDE DOSE METRICS. *T. S. Poet*[1], *P. M. Hinderliter*[1], *D. Eisenbrandt*[2], G. M. Whitford[3], and *M. J. Bartels*[4]. [1]Battelle, Pacific Northwest National Division, Richland, WA, [2]Dow AgroSciences, Indianapolis, IN, [3]Medical College of Georgia, Augusta, GA, and [4]The Dow Chemical Company, Midland, MI.

#1872 **Poster Board Number 205**
PLASMA METABOLITES AND DOSIMETRY OF 6:2 FLUOROTELOMER ALCOHOL IN RATS FOLLOWING 1, 5, AND 28-DAY INHALATION EXPOSURES. *M. W. Himmelstein*, Z. Shen, *S. P. Ng*, *M. P. DeLorme*, R. C. Buck, and *T. L. Serex*. DuPont Haskell Global Centers for Human Health and Environmental Sciences, Newark, DE.

#1873 **Poster Board Number 206**
TOXICOKINETIC EVALUATION OF 6:2 FLUOROTELOMER ALCOHOL AND METABOLITES IN RATS FOLLOWING 90 DAYS OF ORAL EXPOSURE. S. Gannon[1], M. Mawn[2], R. Buck[3], and *T. Serex*[1]. [1]DuPont Haskell Global Centers, Newark, DE, [2]DuPont Corporate Center for Analytical Science, Newark, DE, and [3]DuPont Chemicals and Fluoroproducts, Wilmington, DE.

#1874 **Poster Board Number 207**
METHOD FOR THE ANALYSIS OF 8-2 FLUOROTELOMER ALCOHOL IN RAT PLASMA, LIVER, KIDNEY, AND BRAIN AND ITS APPLICATION TO A SINGLE DOSE ORAL GAVAGE TOXICOKINETIC STUDY. L. Moran[1], *S. W. Graves*[1], *B. Burback*[1], S. Gibbs[1], *B. Jayaram*[2], *V. Robinson*[2], and *C. Smith*[2]. [1]Battelle Memorial, Columbus, OH, and [2]DNTP, NIEHS, Research Triangle Park, NC.

#1875 **Poster Board Number 208**
TOXICOKINETICS OF PERFLUORODECANOIC ACID (PFDA) AFTER A SINGLE INTRAVENOUS OR GAVAGE ADMINISTRATION TO HARLAN SPRAGUE DAWLEY RATS. S. Gibbs[1], S. Hong[1], *S. W. Graves*[1], C. Granville[1], *B. Jayaram*[2], C. Blystone[2], *V. Robinson*[2], and *C. Smith*[2]. [1]Battelle Memorial, Columbus, OH, and [2]DNTP, NIEHS, Research Triangle Park, NC.

Program Description (Continued)

Abstract #

#1876 **Poster Board Number 209**
INCREASING DIETARY SATURATED FAT IS NEGATIVELY ASSOCIATED WITH PLASMA CONCENTRATIONS OF NONHIGH DENSITY LIPOPROTEIN CHOLESTEROL AND PERFLUOROOCTANOATE (PFOA) IN APOE*3-LEIDEN.CETP MICE AT CONSTANT LOW-LEVEL DIETARY PFOA. *S. Chang*[1], *D. J. Ehresman*[1], E. J. Pieterman[2], H. M. Princen[2], *G. W. Olsen*[1], and *J. L. Butenhoff*[1]. [1]Medical Department, 3M Company, St. Paul, MN, and [2]Gaubius Laboratory, TNO, Leiden, Netherlands.

#1877 **Poster Board Number 210**
PLASMA PROTEIN BINDING OF PYRETHROID INSECTICIDES. P. Sethi[1], S. Muralidhara[1], *T. Osmitz*[2], *J. V. Bruckner*[1], C. A. White[1], D. Minnema[3], N. Assaf[4], W. Schmitt[5], *S. Anand*[6], and *D. Gammon*[7]. [1]PBS, University of Georgia, Athens, GA, [2]Science Strat., Charlottesville, VA, [3]Syngenta Crop Protect., Greensboro, NC, [4]Valent, Libertyville, IL, [5]Bayer, Monheim, Germany, [6]DuPont, Newark, DE, and [7]FMC, Ewing, NJ.

#1878 **Poster Board Number 211**
TOXICOKINETICS OF THE PYRETHROID INSECTICIDE BIFENTHRIN IN BLOOD AND BRAIN OF THE RAT. D. G. Ross[1], J. M. Starr[2], B. C. Edwards[1], J. Hutchison[1], *M. J. DeVito*[3], and *M. F. Hughes*[1]. [1]ORD/NHEERL, US EPA, Research Triangle Park, NC, [2]ORD/NERL, US EPA, Research Triangle Park, NC, and [3]NTP, NIEHS, Research Triangle Park, NC.

#1879 **Poster Board Number 212**
INTRAVENOUS PHARMACOKINETICS OF MEROPENEM IN AFRICAN GREEN MONKEYS. *K. K. Kabirov*[1], *A. Banerjee*[1], *A. Zakharov*[1], *T. Martín-Jiménez*[2], and *A. V. Lyubimov*[1]. [1]Toxicology Research Laboratory, University of Illinois Chicago, Chicago, IL, and [2]College of Veterinary Medicine, University of Tennessee, Knoxville, TN.

#1880 **Poster Board Number 213**
DOUBLE CROSS-OVER BIOEQUIVALENCE STUDY OF DERACOXIB FOLLOWING SINGLE DOSE ADMINISTRATIONS IN CANINES. C. Burfeind[1], S. Adams[2], and *E. Roberts*[1]. [1]New Product Development, Novartis Animal Health, Greensboro, NC, and [2]Bioanalytics, Novartis Animal Health, Yarrandoo, NSW, Australia.

#1881 **Poster Board Number 214**
PRECLINICAL PHARMACOKINETICS AND INTERSPECIES SCALING FOR ST-246, AN ORAL ANTIVIRAL THERAPEUTIC FOR THE TREATMENT OF ORTHOPOXVIRUS INFECTIONS. *A. Amantana*, Y. Chen, S. R. Tyavanagimatt, K. F. Jones, R. Jordan, J. Chinsangaram, T. C. Bolken, J. M. Leeds, and D. E. Hruby. SIGA Technologies Inc., Corvallis, OR.

#1882 **Poster Board Number 215**
DISTRIBUTION, METABOLISM, AND EXCRETION OF ^{14}C-ITX 7650, A NOVEL ANTI-HCV COMPOUND. J. M. Gow[1], A. Ta[1], P. Catz[1], J. Dabbs[1], J. F. McKelvy[2], D. Chapman[2], F. Wong-Staal[2], and *C. E. Green*[1]. [1]SRI International, Menlo Park, CA, and [2]iTherX Pharma, Inc., San Diego, CA.

Abstract #

#1883 **Poster Board Number 216**
ENHANCED DELIVERY OF INTRANASALLY-ADMINISTERED NUCLEOSIDE DRUGS TO THE CENTRAL NERVOUS SYSTEM. *M. Krishan*[1], G. Gudelsky[2], P. Desai[2], and *M. Genter*[1]. [1]Environmental Health, University of Cincinnati, Cincinnati, OH, and [2]College of Pharmacy, University of Cincinnati, Cincinnati, OH.

#1884 **Poster Board Number 217**
STUDY ON TRANSPORT KINETICS OF VENLAFAXINE INTO RAT BRAIN ACROSS BLOOD-BRAIN BARRIER. Y. Guan, Y. Peng, and Q. Guo. Beijing Institute of Pharmacology and Toxicology, Beijing, China. Sponsor: *W. Zheng*.

#1885 **Poster Board Number 218**
PHARMACOKINETICS AND BIOAVAILABILITY OF RIFAMPIN IN RATS. *A. Lyubimov*[1], E. Onua[1], M. Hautman[2], A. Zakharov[1], B. Gomez[2], J. Anwer[2], and *A. Banerjee*[1]. [1]Toxicology Research Laboratory, University of Illinois at Chicago, Chicago, IL, and [2]Center for Biomedical Testing, Chicago, IL.

#1886 **Poster Board Number 219**
KINETICS OF LEUCINE AND OTHER AMINO ACIDS IN THE LONG EVANS MALE RAT. *K. O. Yu*[1], L. Narayanan[2], *J. Schlager*[1], *J. Gearhart*[2], and P. Robinson[2]. [1]Molecular Bioeffects Branch, US Air Force, Wright-Patterson AFB, Dayton, OH, and [2]Henry Jackson Foundation, HMF, Wright-Patterson AFB, Dayton, OH.

#1887 **Poster Board Number 220**
DISPOSITION AND METABOLISM OF βN-METHYLAMINO-L-ALANINE IN SPRAGUE DAWLEY RATS AND B6C3F1 MICE. C. Wegerski[1], *J. M. Sanders*[2], *M. Doyle-Eisele*[1], and *J. McDonald*[1]. [1]Lovelace, Albuquerque, NM, and [2]NTP, NIEHS, Research Triangle Park, NM.

#1888 **Poster Board Number 221**
INHIBITION OF HUMAN BREAST CANCER-RESISTANT PROTEIN (BCRP) TRANSPORTER BY ENDOCRINE-DISRUPTING CHEMICALS. Q. Wang[1], K. M. Bircsak[1,2], and *L. M. Aleksunes*[1]. [1]Pharmacology and Toxicology, Rutgers University, Piscataway, NJ, and [2]Joint Graduate Program in Toxicology, Rutgers University/University of Medicine and Dentistry of New Jersey, Piscataway, NJ.

#1889 **Poster Board Number 222**
INVESTIGATION OF THE METABOLISM OF 1,3-DICHLORO-2-PROPANOL TO EPICHLOROHYDRIN *IN VIVO* IN MALE HARLAN SPRAGUE DAWLEY RATS. S. Waidyanatha[1], N. Gaudette[2], Y. Hong[2], P. Chan[1], and *T. Fennell*[2]. [1]National Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, NC, and [2]RTI International, Research Triangle Park, NC.

#1890 **Poster Board Number 223**
DETERMINATION OF *N*-BUTYLPARABEN AND METABOLITES IN HARLAN SPRAGUE DAWLEY RAT PLASMA, AMINIOTIC FLUID, FETAL TISSUE, AND PUPS. *T. Fennell*[1], W. Krol[1], C. R. Blystone[2], and S. Waidyanatha[2]. [1]RTI International, Research Triangle Park, NC, and [2]National Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, NC.

Program Description (Continued)

Abstract #

#1891 **Poster Board Number 224**
ABSORPTION, DISTRIBUTION, METABOLISM, AND ELIMINATION OF DBNPA IN CD RATS. F. Zhang, *M. J. Bartels*, A. J. Clark, J. L. Staley, K. A. Brzak, F. J. Mark, and *P. J. Spencer*. Toxicology and Environmental Research & Consulting, The Dow Chemical Company, Midland, MI.

#1892 **Poster Board Number 225**
COMPARISON OF *IN VIVO* DERIVED AND SCALED *IN VITRO* METABOLIC RATE CONSTANTS FOR SOME VOLATILE ORGANIC COMPOUNDS (VOCS). *E. M. Kenyon*[1], R. A. Pegram[1], C. Eklund[1], and *J. C. Lipscomb*[2]. [1]US EPA, Durham, NC, and [2]US EPA, Cincinnati, OH.

#1893 **Poster Board Number 226**
HUMAN PBPK MODELING OF BENZENE INHALATION BASED CHINESE WORKER URINARY METABOLITE DATA: COMPARISON OF HUMAN AND MOUSE METABOLISM. J. S. Knutsen[1], *B. D. Kerger*[2], *B. L. Finley*[3], and *D. J. Paustenbach*[3]. [1]ChemRik, Boulder, CO, [2]HSRI, Tallahassee, FL, and [3]ChemRik, San Francisco, CA.

#1894 **Poster Board Number 227**
INVESTIGATING COMPLEX PHENOTYPES: HAPLOTYPE ASSOCIATION MAPPING BENZENE PHARMACOKINETICS IN ISOGENIC MOUSE STRAINS. *G. A. Knudsen*[1], *J. E. French*[2], *M. C. Cunningham*[2], and *I. G. Sipes*[1]. [1]Medical Pharmacology, University of Arizona, Tucson, AZ, and [2]National Toxicology Program, National Institutes of Environmental Health Sciences, Research Triangle Park, NC.

#1895 **Poster Board Number 228**
DISPOSITION AND METABOLISM OF THE RUBBER PEPTIZING AGENT, 2,2-DITHIOBISBENZANILIDE, IN SPRAGUE DAWLEY RATS AND B6C3F1 MICE. *J. M. Sanders*[2], C. Wegerski[1], *M. Doyle-Eisele*[1], and *J. McDonald*[1]. [1]Lovelace, Albuqueruque, NM, and [2]NTP, NIEHS, Research Triangle Park, NM.

Wednesday Morning, March 14
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Developmental Toxicology

Chairperson(s): *Stephen Harris, Stephen B. Harris Group, San Diego, CA.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *11:00 AM–12:30 PM*

#1896 **Poster Board Number 229**
THE QUANTITATIVE IMPACT OF USING BOTH RODENTS AND NONRODENTS IN DEVELOPMENTAL TOXICITY RISK ASSESSMENT. *S. L. Makris*[1], and *P. Iyer*[2]. [1]ORD, NCEA, US EPA, Washington, DC, and [2]OEHHA, California EPA, Sacramento, CA.

Abstract #

#1897 **Poster Board Number 230**
INVOLVEMENT OF PGE_2 AND URINE VOLUME INCREASE IN THE ONSET OF DIOXIN-INDUCED HYDRONEPHROSIS IN MICE. W. Yoshioka[1], K. Aida-Yasuoka[1], T. Kawaguchi[1], N. Fujisawa[1], S. Ohsako[1], S. Hara[2], and *C. Tohyama*[1]. [1]Graduate School of Medicine, University of Tokyo, Tokyo, Japan, and [2]School of Pharmacy, Showa University, Tokyo, Japan.

#1898 **Poster Board Number 231**
EFFECT OF PRENATAL PERFLUOROOCTANOIC ACID (PFOA) EXPOSURE ON POSTNATAL DEVELOPMENT IN HUMANIZED PPARα MICE. *P. P. Albrecht*[1], N. E. Torsell[1], C. R. Anderson[1], D. G. Trujillo[1], L. R. Kramer[1], S. L. Mitchell[1], C. H. Ferry[1], C. Lee[1], S. Kang[1], K. Kulkarni[1], *F. J. Gonzalez*[2], and *J. M. Peters*[1]. [1]Veterinary Sciences, Pennsylvania State University, University Park, PA, and [2]Laboratory of Metabolism, National Cancer Institute, Bethesda, MD.

#1899 **Poster Board Number 232**
DEVELOPMENTAL AND SPECIES-SPECIFIC SENSITIVITY TO PPARα AGONIST-INDUCED HEPATIC EFFECTS. *J. E. Foreman*[1], L. R. Kramer[1], *F. J. Gonzalez*[2], and *J. M. Peters*[1]. [1]Department of Veterinary and Biomedical Science, Pennsylvania State University, University Park, PA, and [2]National Cancer Institute, Bethesda, MD.

#1900 **Poster Board Number 233**
EXPOSURE TO 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (TCDD) CHANGES DEVELOPMENTAL REGULATION OF N-METHYL-D-ASPARTATE-RECEPTOR 1 (NR1) SPLICE VARIANTS IN THE DEVELOPING ANTEROVENTRAL PERIVENTRICULAR NUCLEUS (AVPV). J. Del Pino, and *S. Petersen*. Veterinary and Animal Sciences, University of Massachusetts, Amherst, MA.

#1901 **Poster Board Number 234**
DIRECT EXPOSURE TO DEEPWATER HORIZON CRUDE OIL EMULSIONS ELICITS MORPHOLOGY AND GENE EXPRESSION CHANGES IN ZEBRAFISH EMBRYOS. F. Xin[1,2], A. Bui[2], Z. Perveen[2], L. Thibodeaux[3], K. Kleinow[2], and *A. Penn*[2]. [1]St. Olaf College, Northfield, MN, [2]Comp. Biomedical Science, Louisiana State University School of Veterinary Medicine, Baton Rouge, LA, and [3]Chemical Engineering, Louisiana State University, Baton Rouge, LA.

#1902 **Poster Board Number 235**
PUBERTAL DELAY IN MALE NONHUMAN PRIMATES (*MACACA MULATTA*) TREATED WITH METHYLPHENIDATE. *S. M. Morris*[1], T. M. Plant[2], J. C. Chen[1], H. Chen[1], D. M. Petibone[1], B. V. Vitiello[3], *W. Slikker*[1], and *D. R. Mattison*[4]. [1]National Center for Toxicological Research, US FDA, Jefferson, AR, [2]University of Pittsburgh, Pittsburgh, PA, [3]National Institute of Mental Health, Bethesda, MD, and [4]National Institute of Child Health and Development, Bethesda, MD.

Program Description (Continued)

Abstract #

#1903 **Poster Board Number 236**
A TRANSCRIPTOMIC APPROACH TO QUANTIFY DOSE-RESPONSE SENSITIVITY TO PHTHALATES IN WHOLE EMBRYO CULTURE. *J. F. Robinson*[1,2], A. Verhoef[1], J. L. Pennings[1], and A. H. Piersma[1,3]. [1]The National Institute for Public Health and the Environment (RIVM), Bilthoven, Netherlands, [2]Department of Toxicogenomics, Maastricht University, Maastricht, Netherlands, and [3]Institute for Risk Assessment Sciences (IRAS), Utrecht University, Utrecht, Netherlands.

#1904 **Poster Board Number 237**
EXPLORATION OF POTENTIAL MECHANISMS OF PERFLUOROOCTANOIC ACID-INDUCED DEVELOPMENTAL CARDIOTOXICITY IN AN AVIAN MODEL. Q. Jiang[1], R. M. Lust[2], and *J. C. DeWitt*[1]. [1]Department of Pharmacology and Toxicology, Brody School of Medicine, East Carolina University, Greenville, NC, and [2]Department of Physiology, Brody School of Medicine, East Carolina University, Greenville, NC.

#1905 **Poster Board Number 238**
COMPARATIVE ASSESSMENT OF LISTER HOODED AND WISTAR HAN RATS IN REGULATORY DEVELOPMENTAL TOXICITY EVALUATION. R. Kubaszky, D. J. Esdaile, and B. Komuves. CiToxLAB, Veszprem, Hungary. Sponsor: *R. Forster*.

#1906 **Poster Board Number 239**
EXPRESSION PATTERNS OF WNT SIGNALING PATHWAY COMPONENTS AND EFFECTORS IN UROGENITAL SINUSES (UGSs) FROM CONTROL AND 2,3,7,8-TETRACHLORODIBENZO-*p*-DIOXIN (TCDD)-EXPOSED FETAL MICE. *R. W. Moore*[1], K. P. Keil[2], *V. Mehta*[2], A. J. Schneider[1], *A. M. Branam*[3], *C. M. Vezina*[2], and *R. E. Peterson*[1]. [1]School of Pharmacy, University of Wisconsin-Madison, Madison, WI, [2]Comparative Biosciences, University of Wisconsin-Madison, Madison, WI, and [3]Molecular and Environmental Toxicology Center, University of Wisconsin-Madison, Madison, WI.

#1907 **Poster Board Number 240**
TOXICITY OF PERFLUORINATED COMPOUNDS IN BIRD EMBRYOS—IS PEROXISOME PROLIFERATOR ACTIVATED RECEPTOR ALPHA INVOLVED? M. Strömqvist[1], J. Olsson[1], A. Kärrman[2], and B. Brunström[1]. [1]Environmental Toxicology, Organismal Biology, UPPSALA, Sweden, and [2]Man-Technology-Environment Research Center (MTM), ÖREBRO, Sweden. Sponsor: *H. Viberg*.

#1908 **Poster Board Number 241**
ARSENIC DISRUPTS TGF-BETA-2 ACTIVITY AND EPITHELIAL TO MESENCHYMAL TRANSITION. T. Huang[1], *P. Allison*[1], D. Broka[1], P. Parker[1], and *T. Camenisch*[1,2,3]. [1]Pharmacology & Toxicology, University of Arizona, Tucson, AZ, [2]Southwest Environmental Health Sciences Center, University of Arizona, Tucson, AZ, and [3]Steele Children's Research Center, University of Arizona, Tucson, AZ.

Abstract #

#1909 **Poster Board Number 242**
QUANTIFICATION OF PERICARDIAL EDEMA USING HIGH-SPEED CAMERA: INVOLVEMENT OF PROSTANOID SIGNALING IN PERICARDIAL EDEMA IN EARLY LARVAE OF ZEBRAFISH EXPOSED TO 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN. *H. Teraoka*, A. Yamakoshi, Y. Okuno, and T. Kitazawa. School of Veterinary Medicine, Rakuno Gakuen University, Ebetsu, Japan.

#1910 **Poster Board Number 243**
A COMPARISON BETWEEN RAT EMBRYOS *IN VIVO* AND WHOLE EMBRYO CULTURE USING TRANSCRIPTOMICS: DEVELOPMENTAL CHANGES, MODEL DIFFERENCES, AND RETINOIC ACID RESPONSE. *J. F. Robinson*[1,2], A. Verhoef[1], J. L. Pennings[1], and A. H. Piersma[1,3]. [1]The National Institute for Public Health and the Environment (RIVM), Bilthoven, Netherlands, [2]Department of Toxicogenomics, Maastricht University, Maastricht, Netherlands, and [3]Institute for Risk Assessment Sciences (IRAS), Utrecht University, Utrecht, Netherlands.

#1911 **Poster Board Number 244**
THE EFFECTS OF TRIBUTYLTIN ON THE BONES OF F1 RATS BY EXPOSURE VIA THE PLACENTA AND THEIR DAMS' MILK AND/OR THEIR FOOD. M. Hosokawa[1,2], *M. Tsunoda*[2], H. Asakawa[3], T. Kaido[2], C. Sugaya[2], Y. Inoue[2], T. Tashiro[4], K. Yokoyama[1], and Y. Aizawa[2]. [1]Epidemiology and Environmental Health, Juntendo University Faculty of Medicine, Tokyo, Japan, [2]Preventive Medicine, Kitasato University School of Medicine, Sagamihara, Kanagawa, Japan, [3]Meiji Seika, Tokyo, Japan, and [4]Aoyama Gakuin University School of Science and Engineering, Sagamihara, Kanagawa, Japan.

#1912 **Poster Board Number 245**
DEVELOPMENTAL EXPRESSION OF THE NFE2-RELATED FACTOR (NRF) TRANSCRIPTION FACTOR FAMILY AND REGULATION BY AHR2. *L. M. Williams*[1], *A. R. Timme-Laragy*[1], D. G. Franks[1], *M. J. Jenny*[2], and *M. E. Hahn*[1]. [1]Biology, Woods Hole Oceanographic Institution, Woods Hole, MA, and [2]University of Alabama, Tuscaloosa, AL.

#1913 **Poster Board Number 246**
LOW-DOSE PRENATAL PERFLUOROOCTANOIC ACID EXPOSURE REDUCES ESTROGEN RECEPTOR-α AND ALTERS α-SMOOTH MUSCLE ACTIN PROTEIN EXPRESSION OF MAMMARY GLANDS IN LATE ADOLESCENT FEMALE OFFSPRING. *M. B. Macon*[1,2], C. E. Reed[2], D. K. Robinson[1,2], *A. J. Filgo*[1,2], and *S. E. Fenton*[2]. [1]Curriculum in Toxicology, University of North Carolina at Chapel Hill, Chapel Hill, NC, and [2]National Toxicology Program Laboratories, NIEHS, Research Triangle Park, NC.

#1914 **Poster Board Number 247**
DEVELOPMENTAL TOXICITY OF ACETYLSALICYLIC ACID IN RATS. *E. Mylchreest*, K. S. Gilbert, C. B. Cagle, and *K. D. Daniels*. Southern Research, Birmingham, AL.

Program Description (Continued)

Abstract #

#1915 **Poster Board Number 248**
BISPHENOL A (BPA) PERINATAL EXPOSURE IN AVY MICE SUPPRESSES PROCESSES CRITICAL TO HEPATIC BIOTRANSFORMATION AND CLEARANCE.
A. C. Donepudi[1], P. T. Sieli[3], C. S. Rosenfeld[2], and *A. L. Slitt*[1]. [1]University of Rhode Island, Kingston, RI, [2]Department of Biomedical Sciences, University of Missouri, Columbia, MO, and [3]Bond Life Sciences Center, University of Missouri, Columbia, MO.

#1916 **Poster Board Number 249**
DEVELOPMENTAL TOXICITY OF 6-AMINONICOTINAMIDE IN RABBITS. *E. Mylchreest*, K. S. Gilbert, C. B. Cagle, and *K. K. Daniels*. Southern Research, Birmingham, AL.

#1917 **Poster Board Number 250**
DEVELOPMENTAL TOXICITY OF LERSIVIRINE IN RABBITS WHEN ADMINISTERED THROUGHOUT ORGANOGENESIS AND WHEN LIMITED TO SENSITIVE WINDOWS OF AXIAL SKELETAL DEVELOPMENT. *G. D. Cappon*, *M. E. Hurtt*, *C. J. Bowman*, *G. L. Finch*, and *S. N. Campion*. Pfizer Worldwide Research & Development, Groton, CT.

#1918 **Poster Board Number 251**
POLYCYCLIC AROMATIC HYDROCARBONS INDUCE DISTINCT MRNA EXPRESSION PROFILES IN DEVELOPING ZEBRAFISH.
B. C. Goodale[1], *S. C. Tilton*[2], A. J. Swanson[1], *K. M. Waters*[2], and *R. L. Tanguay*[1]. [1]Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR, and [2]Computational Biology and Bioinformatics, Pacific Northwest National Laboratory, Richland, WA.

#1919 **Poster Board Number 252**
EXPOSURE TO 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN BLOCKS PROEPICARDIUM DEVELOPMENT IN THE ZEBRAFISH EMBRYO. *P. J. Hofsteen*, *J. S. Plavicki*, *R. E. Peterson*, and *W. Heideman*. School of Pharmacy, University of Wisconsin-Madison, Madison, WI.

#1920 **Poster Board Number 253**
NONINVASIVE AND AUTOMATED ACQUISITION OF PHYSIOLOGICAL AND DEVELOPMENTAL PARAMETERS IN RAT NEONATES. E. C. Durand[1], *F. Spézia*[2], J. Gallego[3,1], *P. C. Barrow*[2], *R. Forster*[2], and *J. Legrand*[2]. [1]PhenoPups SAS, Paris, France, [2]CiToxLAB France, Evreux, France, and [3]UMR676 Inserm/Université Paris Diderot, Paris, France.

#1921 **Poster Board Number 254**
G-PROTEIN-COUPLED ESTROGEN RECEPTOR 1 (GPER) ACTIVATION RESULTS IN CARDIOVASCULAR IMPAIRMENTS DURING ZEBRAFISH EMBRYOGENESIS.
B. S. Jayasinghe, and *D. C. Volz*. Department of Environmental Health Sciences, University of South Carolina, Columbia, SC.

Abstract #

#1922 **Poster Board Number 255**
DEFINING THE DEVELOPMENTAL TOXICITY OF OXYGENATED POLYCYCLIC AROMATIC HYDROCARBONS (OPAHS) USING EMBRYONIC ZEBRAFISH. A. L. Knecht, *B. Goodale*, A. Swanson, M. Simonich, and *R. L. Tanguay*. Department of Environmental and Molecular Toxicology and Health Sciences Center, Oregon State University, Corvallis, OR.

#1923 **Poster Board Number 256**
THE ROLE OF THE GPER IN THE DEVELOPMENTAL TOXICITY OF THE DIETARY FLAVONOID QUERCETIN. *S. R. Das*[1], E. Bee[2], A. Moffett[2], and *R. L. Tanguay*[1]. [1]Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR, and [2]Willamette University, Salem, OR.

#1924 **Poster Board Number 257**
MTBE ANTIANGIOGENESIS IN ZEBRAFISH EMBRYOS (*DANIO RERIO*) IS CAUSED BY THE DYSREGULATION OF THE HIF1 ALPHA-VEGF PATHWAY. *J. A. Bonventre*[1], *L. A. White*[2,1], and *K. R. Cooper*[2,1]. [1]Joint Graduate Program in Toxicology, Rutgers, the State University of New Jersey, New Brunswick, NJ, and [2]Department of Biochemistry and Microbiology, Rutgers, the State University of New Jersey, New Brunswick, NJ.

#1925 **Poster Board Number 258**
METABOLOMICS-BASED COMPARISON OF HUMAN EMBRYONIC AND INDUCED PLURIPOTENT STEM CELLS TO PREDICT DEVELOPMENTAL TOXICITY. E. R. Donley[1], A. M. Smith[1], J. A. Palmer[1], P. R. West[1], K. R. Conard[1], B. R. Fontaine[1], P. Bais[1], R. E. Burrier[1], and G. G. Cezar[1,2]. [1]Stemina Biomarker Discovery, Inc., Madison, WI, and [2]Department of Animal Sciences, University of Wisconsin-Madison, Madison, WI. Sponsor: *T. Knudsen*.

#1926 **Poster Board Number 259**
COORDINATED DOWN-REGULATION OF HEPATOBILIARY TRANSPORTERS IN PREGNANT MICE. *R. Yeager*[1,2], *L. M. Aleksunes*[2,3], *X. Wen*[3], *Y. J. Cui*[2], and *C. D. Klaassen*[2]. [1]Toxicology, Preclinical Safety, Abbott Laboratories, Abbott Park, IL, [2]Department of Pharmacology, Toxicology, and Therapeutics, University of Kansas Medical Center, Kansas City, KS, and [3]Department of Pharmacology and Toxicology, Rutgers University, Piscataway, NJ.

Program Description (Continued)

Abstract #

Wednesday Morning, March 14
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Developmental Toxicity II

Chairperson(s): *Arthur Penn, Louisiana State University School of Veterinary Medicine, Baton Rouge, LA.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *9:00 AM–11:00 AM*

#1927 **Poster Board Number 260**
EARLY EMBRYOGENESIS IS HIGHLY SUSCEPTIBLE TO TDCPP-INDUCED DEVELOPMENTAL TOXICITY. *S. P. McGee*[1], E. M. Cooper[2], H. L. Stapleton[2], and *D. C. Volz*[1]. [1]Environmental Health Sciences, University of South Carolina, Columbia, SC, and [2]Nicholas School of the Environment, Duke University, Durham, NC.

#1928 **Poster Board Number 261**
SEARCHING GENE CANDIDATES RESPONSIBLE FOR RISK OF MENTAL DISORDERS IN THE MOUSE INTRAUTERINE UNDERNUTRITION MODEL. *T. Ogawa*, R. Rakwal, J. Shibato, T. Saito, A. Murayama, G. Tamura, *M. Kuwagata*, and S. Shioda. Anatomy, Showa University School of Medicine, Tokyo, Japan.

#1929 **Poster Board Number 262**
LITHIUM PROTECTS AGAINST KETAMINE-INDUCED DEVELOPMENTAL NEUROAPOPTOSIS BY REGULATING GSK-3 ACTIVITY. *J. Liu*, S. Soriano, C. Baek, X. Han, and U. Athiraman. Aneasthesia, Harvard Medical School, Boston, MA.

#1930 **Poster Board Number 263**
INHALATIONAL ANESTHESIA-INDUCED NEURONAL DAMAGE AND CHANGES OF GENE EXPRESSION IN DEVELOPING RAT BRAIN. *F. Liu*[1], *L. Guo*[1], J. Zhang[1], S. Rainosek[5], L. Shi[1], *T. A. Patterson*[1], Q. Li[2], *N. Sadovova*[3], *J. P. Hanig*[4], *M. G. Paule*[1], *W. Slikker*[1], and *C. Wang*[1]. [1]National Center for Toxicological Research/FDA, Jefferson, AR, [2]UTSW Medical Center, Dallas, TX, [3]Toxicologic Pathology Associates, Jefferson, AR, [4]Center for Drug Evaluation and Research/FDA, Silver Spring, MD, and [5]University of Arkansas for Medical Sciences, Little Rock, AR.

#1931 **Poster Board Number 264**
POTENTIAL ANESTHETIC-INDUCED NEURONAL DAMAGE IN THE DEVELOPING RHESUS MONKEY. *C. Wang*[1], X. Zou[1], *F. Liu*[1], X. Zhang[1], T. A. Patterson[1], R. Callicott[2], S. Liu[1], *J. P. Hanig*[3], *M. G. Paule*[1], and *W. Slikker,*[1]. [1]National Center for Toxicological Research/FDA, Jefferson, AZ, [2]Bionetics Corporation, Jefferson, AR, and [3]Center for Drug Evaluation and Research/FDA, Jefferson, AR.

Abstract #

#1932 **Poster Board Number 265**
ASIAN GINSENG (*PANAX GINSENG*) PREVENTS ETHANOL-INDUCED NEUROCRANIAL CARTILAGE DEFORMITIES IN A FISH MODEL OF FETAL ALCOHOL SPECTRUM DISORDER. *M. H. Haron*[1,2], L. A. Walker[1,2], I. A. Khan[1,3], and *A. K. Dasmahapatra*[1,2]. [1]National Center for Natural Product Research, University of Mississippi, University, MS, [2]Department of Pharmacology, University of Mississippi, University, MS, and [3]Department of Pharmacognosy, University of Mississippi, University, MS.

#1933 **Poster Board Number 266**
CHARACTERIZATION OF MOTOR ACTIVITY OVER THE LIFESPAN IN SPRAGUE DAWLEY AND WISTAR HAN RATS. A. Zmarowski[1], M. Beekhuijzen[1], M. Teunissen[1], *A. Eapen*[2], and H. Emmen[1]. [1]Toxicology, NOTOX B.V., 's-Hertogenbosch, Netherlands, and [2]Toxicology, WIL Research, Ashland, OH.

#1934 **Poster Board Number 267**
POSTNATAL TRICHLOROETHYLENE MODULATES REDOX STATUS AND OXIDATIVE STRESS IN MOUSE HIPPOCAMPUS. *S. Blossom*[1], S. Melnyk[1], *K. M. Gilbert*[2], and J. James[1]. [1]Pediatrics, University of Arkansas for Medical Sciences, Little Rock, AR, and [2]Microbiology and Immunology, University of Arkansas for Medical Sciences, Little Rock, AR.

#1935 **Poster Board Number 268**
SUBTHRESHOLD DOSES OF CADMIUM AND ARSENITE COMBINE TO PRODUCE NEURAL TUBE DEFECTS IN C57BL/6J MICE: IMPACT OF THE SPLOTCH ALLELE. F. K. Huynh, Y. E. Chung, N. Dekeyan, M. Ansari, and A. F. Machado. Department of Environmental and Occupational Health, California State University California at Northridge, Northridge, CA. Sponsor: *D. Hovland*.

#1936 **Poster Board Number 269**
MICRORNA EXPRESSION PROFILING AFTER DEVELOPMENTAL EXPOSURE OF ZEBRAFISH (*DANIO RERIO*) EMBRYOS TO VALPROIC ACID. *N. Aluru*[1], K. Deak[1,2], *M. J. Jenny*[3], and *M. E. Hahn*[1]. [1]Biology, Woods Hole Oceanographic Institution, Woods Hole, MA, [2]Northeastern University, Boston, MA, and [3]Biology, University of Alabama, Tuscaloosa, AL.

#1937 **Poster Board Number 270**
ETHANOL METABOLIC TERATOGENICITY IN THE GUINEA PIG AND EFFECTS OF VOLUNTARY EXERCISE. C. Dobson[1], D. Mongillo[1], M. Poklewska-Koziell[1], A. Winterborn[3], R. Stepita[4], A. C. Holloway[4], J. F. Brien[1,2], and J. N. Reynolds[1,2]. [1]Department of Biomedical and Molecular Sciences, Queen's University, Kingston, ON, Canada, [2]Centre for Neuroscience Studies, Queen's University, Kingston, ON, Canada, [3]Office of the University Veterinarian, Queen's University, Kingston, ON, Canada, and [4]Department of Obstetrics and Gynecology, McMaster University, Hamilton, ON, Canada. Sponsor: *L. Winn*.

Program Description (Continued)

Abstract #

#1938 **Poster Board Number 271**
TOXICITY AND MESOTHELIAL CELL REACTIONS INDUCED BY POTASSIUM OCTATITANATE FIBERS (TISMO) INTRODUCED INTO THE LEFT THORACIC CAVITY IN A/J FEMALE MICE. S. Kishi, *M. Yokohira*, N. Hashimoto, Y. Nakano, K. Yamakawa, T. Inoue, and K. Imaida. Onco-Pathology, Kagawa University, Faculty of Medicine, Kita-gun, Kagawa, Japan.

#1939 **Poster Board Number 272**
APPLICATION OF TARGETED FUNCTIONAL ASSAYS TO ASSESS A PUTATIVE VASCULAR DISRUPTION DEVELOPMENTAL TOXICITY PATHWAY INFORMED BY TOXCAST HIGH-THROUGHPUT SCREENING DATA. *R. G. Ellis-Hutchings*[1], *R. S. Settivari*[1], A. T. McCoy[1], *N. C. Kleinstreuer*[2], V. A. Marshall[1], *T. B. Knudsen*[2], and *E. W. Carney*[1]. [1]TERC, The Dow Chemical Company, Midland, MI, and [2]NCCT, US EPA, Research Triangle Park, NC.

#1940 **Poster Board Number 273**
METHANOL EMBRYOPATHIES IN MOUSE EMBRYO CULTURE FOLLOWING PRETREATMENT WITH A FREE RADICAL SPIN-TRAPPING AGENT AND INHIBITORS OF PROSTAGLANDIN H SYNTHASE AND NADPH OXIDASES. *L. Miller*[1], and *P. G. Wells*[1,2]. [1]Pharmacology & Toxicology, University of Toronto, Toronto, ON, Canada, and [2]Pharmaceutical Sciences, University of Toronto, Toronto, ON, Canada.

#1941 **Poster Board Number 274**
POSTNATAL OZONE EXPOSURE ALTERS SEROTONIN, SEROTONIN RECEPTORS, AND SEROTONIN TRANSPORTER BY AIRWAY LEVEL. *S. R. Murphy*[1], D. Hyde[2], E. Schelegle[2], and *L. Van Winkle*[1]. [1]Center for Health & Environment, University of California Davis, Davis, CA, and [2]CNPRC, University of California Davis, Davis, CA.

#1942 **Poster Board Number 275**
COMPARATIVE EXPRESSION ANALYSIS OF MEMBRANE TRANSPORTERS AND METABOLISING ENZYMES IN THE RAT AND HUMAN PLACENTA DURING GESTATION. J. Wright[1], L. Taylor[2], J. Penny[2], and P. Mistry[1]. [1]Syngenta, Bracknell, United Kingdom, and [2]University of Manchester, Manchester, United Kingdom. Sponsor: *R. Peffer*.

#1943 **Poster Board Number 276**
PHASE II METABOLISM IN MICE DURING PREGNANCY: SHIFT FROM GLUCURONIDATION AND GLUTATHIONE CONJUGATION TO SULFATION. *X. Wen*[1], *P. E. Thomas*[2], and *L. M. Aleksunes*[1]. [1]Pharmacology and Toxicology, Rutgers University, Piscataway, NJ, and [2]Chemical Biology, Rutgers University, Piscataway, NJ.

#1944 **Poster Board Number 277**
CHARACTERIZATION OF MATERNO-FETAL ANTIBODY TRANSFER USING FLUORESCENTLY LABELED AVASTIN IN PREGNANT RATS. M. Thorn, S. Davenport, W. Nowland, and *C. J. Bowman*. Pfizer, Inc., Groton, CT.

Abstract #

Wednesday Morning, March 14
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Developmental Neurotoxicity I

Chairperson(s): *Dongren Yang, University of California Davis, Davis, CA.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *11:00 AM–12:30 PM*

#1945 **Poster Board Number 301**
MICROPET/CT IMAGING OF [18F]-FEPPA IN THE NONHUMAN PRIMATE: A POTENTIAL BIOMARKER OF PATHOGENIC PROCESSES ASSOCIATED WITH ANESTHETIC-INDUCED NEUROTOXICITY. *M. G. Paule*[1], *Z. Zhang*[1], G. D. Newport[1], *F. Liu*[1], R. Callicott[1], S. Liu[1], M. S. Berridge[2], S. M. Apana[2], W. Slikker[1], and *C. Wang*[1]. [1]Division of Neurotoxicology, National Center for Toxicological Research, Jefferson, AR, and [2]3D Imaging, LLC, Little Rock, AR.

#1946 **Poster Board Number 302**
EFFECTS OF INHALED ETHANOL ON DEVELOPMENTAL OUTCOMES IN RATS. *P. J. Bushnell*, T. E. Beasley, C. B. Copeland, P. A. Evansky, *R. W. Luebke*, *S. A. Martin*, K. L. McDaniel, *V. C. Moser*, J. Norwood, and *J. M. Rogers*. NHEERL, ORD, US EPA, Research Triangle Park, NC.

#1947 **Poster Board Number 303**
US EPA BIOFUELS RESEARCH: EFFECTS OF INHALED ETHANOL ON CORTICAL FUNCTIONS IN THE OFFSPRING OF RATS EXPOSED DURING GESTATION. W. M. Oshiro, *V. C. Moser*, K. L. McDaniel, T. E. Beasley, and *P. J. Bushnell*. National Health Effects and Environmental Research Laboratory, Office of Research and Development, US EPA, Research Triangle Park, NC.

#1948 **Poster Board Number 304**
EFFECTS OF GESTATIONAL ETHANOL INHALATION ON HIPPOCAMPAL FUNCTION IN RATS. T. E. Beasley, K. L. McDaniel, *V. C. Moser*, M. M. Taylor, *M. E. Gilbert*, and *P. J. Bushnell*. Toxicology Assessment Division, US EPA, Research Triangle Park, NC.

#1949 **Poster Board Number 305**
EFFECTS OF GESTATIONAL ETHANOL INHALATION ON SENSORY FUNCTION IN RATS. *D. W. Herr*[1], D. F. Lyke[1], L. L. Degn[1], T. E. Beasley[1], P. A. Evansky[2], *S. A. Martin*[1], S. Karafas[1], *W. K. Boyes*[1], and *P. J. Bushnell*[1]. [1]TAD/NB, US EPA, Durham, NC, and [2]EPHD/ITFB, US EPA, Durham, NC.

#1950 **Poster Board Number 306**
US EPA BIOFUELS RESEARCH: BIOFUEL VAPOR GENERATION AND MONITORING METHODS. P. Evansky[1], S. A. Martin[2], *P. J. Bushnell*[2], T. E. Beasley[2], M. A. Higuchi[1], and Q. Krantz[1]. [1]Environmental Public Health Division Branch, US EPA, Research Triangle Park, NC, and [2]Toxicity Assessment Division, US EPA, Research Triangle Park, NC.

Program Description (Continued)

Abstract #

#1951 **Poster Board Number 307**
MECHANISMS OF BUTANOL-INDUCED DEVELOPMENTAL NEUROTOXICITY.
A. S. Bale[1], and *J. S. Lee*[2]. [1]National Center for Environmental Assessment, US EPA, Washington, DC, and [2]National Center for Environmental Assessment, US EPA, Research Triangle Park, NC.

#1952 **Poster Board Number 308**
A SINGLE NEONATAL EXPOSURE TO BISPHENOL A CAUSES ADULT BEHAVIORAL DISTURBANCES IN MALE AND FEMALE MICE. *H. Viberg*, A. Fredriksson, S. Buratovic, and *P. Eriksson*. Environmental Toxicology, Uppsala University, Uppsala, Sweden.

#1953 **Poster Board Number 309**
A SINGLE NEONATAL EXPOSURE TO BISPHENOL A ALTERS THE LEVELS OF IMPORTANT NEUROPROTEINS IN MICE.
I. Lee, *P. Eriksson*, and *H. Viberg*. Environmental Toxicology, Uppsala University, Uppsala, Sweden.

#1954 **Poster Board Number 310**
THE IMPACT OF BISPHENOL-A (BPA) EXPOSURE ON NEURO-DEVELOPMENT AND SUBSEQUENT VISUOSPATIAL LEARNING AND MEMORY. J. N. Franklin, and *J. C. DeWitt*. Department of Pharmacology and Toxicology, Brody School of Medicine, East Carolina University, Greenville, NC.

#1955 **Poster Board Number 311**
***IN UTERO* BISPHENOL A-MEDIATED OXIDATIVE STRESS CAUSES NEOCORTICAL ABNORMALITIES IN MICE.** *A. M. Shapiro*[1], J. T. Henderson[1], and *P. G. Wells*[1,2]. [1]Pharmaceutical Science, University of Toronto, Toronto, ON, Canada, and [2]Pharmacology and Toxicology, University of Toronto, Toronto, ON, Canada.

#1956 **Poster Board Number 312**
MILD DEVELOPMENTAL HYPOTHYROIDISM AND TRACE FEAR CONDITIONING: ROLE OF GENDER AND SHOCK DURATION. *M. E. Gilbert*, and *M. M. Taylor*. Toxicity Assessment Division, US EPA, Research Triangle Park, NC.

#1957 **Poster Board Number 313**
ASSESSMENT OF THE ADULT TOXICITY OF PROPYLTHIOURACIL (PTU) AND DEVELOPMENTAL NEUROTOXICITY TO HARLAN WISTAR RATS. E. Wood[2], U. Aunskjar[4], T. F. Jensen[4], T. Wise[1], S. M. Fulcher[2], B. S. Neilsen[3], and A. Permin[3]. [1]Harlan Laboratories, Inc., Indianapolis, IN, [2]Toxicology, Harlan Laboratories Ltd, Derby, United Kingdom, [3]DHI Environment/ Toxicology, Horsholm, Denmark, and [4]Danisco A/S, Braband, Denmark. Sponsor: *T. Wise*.

#1958 **Poster Board Number 314**
***IN UTERO* AND LACTATIONAL EXPOSURE TO DIOXIN ALTERS GENE EXPRESSION IN THE DEVELOPING MOUSE BRAIN.** E. Kimura[1], W. Miyazaki[1,2], T. Endo[1], R. Hosaka[1], W. Yoshioka[1], M. Kakeyama[1], and *C. Tohyama*[1]. [1]Department of Medcine, University of Tokyo, Bunkyo-ku, Tokyo, Japan, and [2]Department of Public Health, Kumamoto University, Kumamoto-shi, Kumamoto, Japan.

Abstract #

#1959 **Poster Board Number 315**
GENETIC DIFFERENCES IN MOTOR FUNCTION IN MICE EXPOSED TO POLYCHLORINATED BIPHENYLS DURING GESTATION AND LACTATION. *C. P. Curran*, J. Fowler, A. Ashworth, C. Strohmaier, H. Garber, M. McKay, A. Brown, and A. Lang. Biological Sciences, Northern Kentucky University, Highland Heights, KY.

#1960 **Poster Board Number 316**
DEVELOPMENTAL PCB 95 EXPOSURE INTERFERES WITH SPATIAL MEMORY IN WEANLING MICE. *C. Barnhart*, *D. Yang*, H. Chen, K. Truong, *D. Bose*, *I. Pessah*, and *P. Lein*. Molecular BIosciences, University of California Davis, Davis, CA.

#1961 **Poster Board Number 317**
RYANODINE RECEPTORS ARE REQUIRED FOR BASAL AND PCB-MODIFIED ACTIVITY-DEPENDENT DENDRITIC GROWTH. *P. Lein*[1], G. A. Wayman[2], *D. D. Bose*[1], *D. Yang*[1], A. Lesiak[2], *D. Bruun*[1], and *I. N. Pessah*[1]. [1]Molecular Biosciences, University of California Davis, Davis, CA, and [2]Program in Neuroscience, Washington State University, Pullman, WA.

#1962 **Poster Board Number 318**
RYANODINE RECEPTOR-1 MUTATION POTENTIATES PCB 95 EFFECTS ON CALCIUM OSCILLATIONS IN PRIMARY CORTICAL NEURONS. H. Chen, *D. D. Bose*, S. C. Maxwell, *P. J. Lein*, and *I. N. Pessah*. Department of Molecular Biosciences, University of California Davis, Davis, CA.

#1963 **Poster Board Number 319**
BDE-47 AND BDE-49 INFLUENCE MORPHOLOGIC DETERMINANTS OF NEURONAL CONNECTIVITY IN PRIMARY CULTURES OF HIPPOCAMPAL NEURONS.
D. Yang, *H. Chen*, L. Mangini, *I. N. Pessah*, and *P. J. Lein*. Molecular Biosciences, School of Veterinary Medicine, University of California Davis, Davis, CA.

#1964 **Poster Board Number 320**
PAH PARTICLES PERTURB PRENATAL PROCESSES AND PHENOTYPES. *D. B. Hood*[2], Z. Li[2], G. Chadalapaka[4], *A. Ramesh*[1], H. Khoshbouei[3], M. Maguire[2], R. Clark[2], G. Jules[2], M. McCallister[2], *M. Aschner*[6], and S. Safe[4,5]. [1]Department of Biochemistry and Cancer Biology, Meharry Medical College, Nashville, TN, [2]Department of Neuroscience and Pharmacology, Center in Molecular and Behavioral Neuroscience, Meharry Medical College, Nashville, TN, [3]Department of Physiology, Meharry Medical College, Nashville, TN, [4]Department of Veterinary Physiology and Pharmacology, Texas A&M University, College Station, TX, [5]Department of Veterinary Physiology and Pharmacology & Institute of Biosciences and Technology, Texas A&M Health Sciences Center, College Station, TX, and [6]Departments of Pediatrics & Pharmacology, Center in Molecular Toxicology, Kennedy Center for Research on Human Development, Vanderbilt University School of Medicine, Nashville, TN.

Program Description (Continued)

Abstract #

#1965 **Poster Board Number 321**
ASSESSING LATER LIFE BEHAVIORAL PHENOTYPES SUBSEQUENT TO *IN UTERO* EXPOSURE TO BENZOPYRENE. M. McCallister[1], M. Newland[2], *A. Ramesh*[3], M. Maguire[1], and *D. B. Hood*[1]. [1]Department of Neuroscience and Pharmacology, Center in Molecular and Behavioral Neuroscience, Meharry Medical College, Nashville, TN, [2]Department of Psychology, Auburn University, Auburn, AL, and [3]Department of Biochemistry and Cancer Biology, Meharry Medical College, Nashville, AL.

#1966 **Poster Board Number 322**
2,3,7,8-TETRACHLORODIBENZO-*P*-DIOXIN (TCDD)-INDUCED DISRUPTION OF THE PERIPHERAL NERVOUS SYSTEM OF DEVELOPING RED SEABREAM (*PAGRUS MAJOR*) EMBRYOS. M. Iida[1], E. Kim[2], Y. Murakami[3], Y. Shima[4], and *H. Iwata*[1]. [1]Center for Marine Environmental Studies (CMES), Ehime University, Matsuyama, Japan, [2]Department of Life and Nanopharmaceutical Science and Department of Biology, Kyung Hee University, Seoul, Republic of Korea, [3]Department of Biology, Faculty of Science, Ehime University, Matsuyama, Japan, and [4]Hakatajima Station, National Center for Stock Enhancement, Fisheries Research Agency, Imabari, Japan.

#1967 **Poster Board Number 323**
EFFECT OF MIDAZOLAM ON DEVELOPING BRAIN: *IN VITRO* AND *IN VIVO* STUDIES. *N. Sadovova*[1], F. Liu[2], *M. G. Paule*[2], *W. Slikker*[2], and *C. Wang*[2]. [1]Toxicologic Pathology Associates, Jefferson, AR, and [2]Division of Neurotoxicology, NCTR/FDA, Jefferson, AR.

#1968 **Poster Board Number 324**
DKK1 AND NOTCH1 MEDIATE GLUCOCORTICOID-INDUCED CHANGES IN HUMAN NEURAL PROGENITOR CELLS PROLIFERATION AND DIFFERENTIATION. R. Bose[1], M. Moors[1], K. Johansson-Haque[2], K. Edoff[1], S. Okret[2], and *S. Ceccatelli*[1]. [1]Department of Neuroscience, Karolinska Institutet, Stockholm, Sweden, and [2]Department of Biosciences and Nutrition, Karolinska Institutet, Stockholm, Sweden.

#1969 **Poster Board Number 325**
SEX-RELATED DIFFERENCES IN HUMAN AND RODENT NEURAL STEM CELL SUSCEPTIBILITY TO METHYLMERCURY (MEHG). K. Edoff, W. Wan Ibrahim, M. Moors, and *S. Ceccatelli*. Department of Neuroscience, Karolinska Institutet, Stockholm, Sweden.

Abstract #

Wednesday Morning, March 14
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Molecular Basis of Carcinogenesis

Chairperson(s): *Alok Deoraj, Florida International University, Miami, FL.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *9:00 AM–11:00 AM*

#1970 **Poster Board Number 329**
VALIDATION OF CANDIDATE GI CANCER GENES WITH ION CHANNEL FUNCTIONS, IDENTIFIED FROM SLEEPING BEAUTY TRANSPOSON-MEDIATED MUTAGENESIS SCREENS IN *APC*$^{+/+}$MICE. *B. L. Than*[1], T. Starr[2], D. Largaespada[3], R. Cormier[1], and P. Scott[1]. [1]Biomedical Sciences, University of Minnesota Medical School, Duluth, MN, [2]Obstetrics, Gynecology, Women's Health, University of Minnesota Medical School, Minneapolis, MN, and [3]GCD, University of Minnesota, Minneapolis, MN.

#1971 **Poster Board Number 330**
INHIBITORY EFFECTS OF *PLATYCODON GRANDIFLORUM* ROOT-DERIVED SAPONIN ON TRANSFORMING GROWTH FACTOR-β1-INDUCED EPITHELIAL TO MESENCHYMAL TRANSITION IN A549 CELLS. J. Choi[1], H. Kim[1], Y. Hwang[1,2], Y. Chung[2], and *H. Jeong*[1]. [1]Pharmacy, Chungnam National University, Daejeon, Republic of Korea, and [2]Food Science, International University of Korea, Jinju, Republic of Korea.

#1972 **Poster Board Number 331**
ENHANCED INHIBITION OF CELL PROLIFERATION IN HUMAN COLON CANCER DLD1 CELLS OVER-EXPRESSING PPARγ. C. H. Ferry[1,2], *B. Zhu*[1], *T. S. Lahoti*[1], F. J. Gonzalez[3], and *J. M. Peters*[1]. [1]Veterinary & Biomedical Science, The Pennsylvania State University, University Park, PA, [2]Biochemistry & Molecular Biology, The Pennsylvania State University, University Park, PA, and [3]Laboratory of Metabolism, National Cancer Institute, Bethesda, MD.

#1973 **Poster Board Number 332**
THE ANTIDIABETIC DRUG METFORMIN INHIBITS PANCREATIC CANCER CELL GROWTH AND TARGETS DOWNREGULATION OF SPECIFICITY PROTEIN (SP) TRANSCRIPTION FACTORS. *V. Vasanthakumari*[1], and *S. Safe*[1,2]. [1]Department of Veterinary Physiology and Pharmacology, Texas A&M University, College Station, TX, and [2]Institute of Biosciences and Technology, Texas A&M Health Science Center, Houston, TX.

#1974 **Poster Board Number 333**
ATTENUATION OF THE UVC-INDUCED DNA DAMAGE RESPONSE IN TK6 CELLS WITH THE TUMOR PROMOTING AGENT TPA. K. P. Glover, A. Myhre, *L. K. Markell*, E. Donner, and *X. Han*. Haskell Global Centers for Health and Environmental Sciences, DuPont, Newark, DE.

Program Description (Continued)

Abstract #

#1975 **Poster Board Number 334**
ANILINE-INDUCED CELL CYCLE PROGRESSION OF SPLENOCYTES: EXPRESSION OF MICRORNAS AND CYCLIN mRNAS. J. Wang[1], J. Carmical[2], *S. Kondraganti*[1], *G. Wang*[1], H. Ma[1], *G. Ansari*[1], and *M. Khan*[1]. [1]Pathology, University of Texas Medical Branch, Galveston, TX, and [2]Biochemistry and Molecular Biology, University of Texas Medical Branch, Galveston, TX.

#1976 **Poster Board Number 335**
LIGAND-DEPENDENT ACTIVATION OF THE ORPHAN NUCLEAR RECEPTOR NR4A2 (NURR1) IN PANCREATIC CANCER CELLS. X. Li[1], and *S. Safe*[2,3]. [1]College of Medicine, Texas A&M Health Science Center, College Station, TX, [2]Veterinary Physiology and Pharmacology, Texas A&M University, College Station, TX, and [3]Institute of Biosciences & Technology, Texas A&M Health Science Center, College Station, TX.

#1977 **Poster Board Number 336**
STUDIES ON WILD YAM (*DIOSCOREA VILLOSA*) ROOT EXTRACT AS A POTENTIAL CHEMOPREVENTIVE AGENT FOR BREAST CANCER. *P. Aumsuwan*[1,2], S. I. Khan[1,3], I. A. Khan[1,3], L. A. Walker[1,2], and *A. K. Dasmahapatra*[1,2]. [1]National Center for Natural Product Research, University of Mississippi, University, MS, [2]Department of Pharmacology, University of Mississippi, University, MS, and [3]Department of Pharmacognosy, University of Mississippi, University, MS.

#1978 **Poster Board Number 337**
THE POTENTIAL ROLE OF ARYL HYDROCARBON RECEPTOR NUCLEAR TRANSLOCATOR 2 IN MOLECULAR RESPONSES TO XENOESTROGENS IN HUMAN BREAST CANCER CELLS. X. Qin[1,2], F. Wei[3], H. Zaha[1], J. Yoshinaga[2], *J. Yonemoto*[1], M. Tanokura[3], and *H. Sone*[1]. [1]Research Center for Environmental Risk, National Institute for Environmental Studies, Tsukuba, Ibaraki, Japan, [2]Department of Environmental Studies, University of Tokyo, Kashiwa, Chiba, Japan, and [3]Department of Applied Biological Chemistry, University of Tokyo, Tokyo, Japan.

#1979 **Poster Board Number 338**
EVIDENCE THAT SMAD5 DYSREGULATION IN HEMANGIOBLASTS MAY CONTRIBUTE TO HEMANGIOSARCOMA DEVELOPMENT IN MICE. *C. Qin*, K. Bleicher, A. Tosolini, C. Cunningham, K. Striano, D. Umbenhauer, *F. Sistare*, and *R. D. Storer*. Safety Assessment, Merck Research Laboratories, West Point, PA.

#1980 **Poster Board Number 339**
SMAD5 AND ID1/ID3 PROTEIN EXPRESSION IN SPONTANEOUS HEMANGIOSARCOMAS WITH A INTRACISTERNAL A PARTICLE (IAP) INSERTION IN THE SMAD5 GENE. C. Cunningham, A. Nair, G. Wollenberg, *C. Qin*, and *R. D. Storer*. Safety Assessment, Merck Research Laboratories, West Point, PA.

Abstract #

#1981 **Poster Board Number 340**
TAT-MEDIATED DELIVERY OF AN ARNT-INTERACTING PEPTIDE INTO HUMAN HEPATOMA CELLS CAUSES SUPPRESSION OF THE HYPOXIA INDUCIBLE FACTOR-1 FUNCTION. Y. Wang, J. Thompson, and *W. K. Chan*. Pharmaceutics and Medicinal Chemistry, University of the Pacific, Stockton, CA.

#1982 **Poster Board Number 341**
IMMUNOHISTOCHEMICAL CHARACTERIZATION OF CELL PROLIFERATION-RELATED PROTEIN CHANGES IN CAR-MEDIATED LIVER TUMOR DEVELOPMENT. K. Inoue[1], Y. Sakamoto[1], K. Tamura[1], M. Takahashi[1], S. Matsuo[1], S. Ozawa[2], *A. Nishikawa*[1], and M. Yoshida[1]. [1]Division of Pathology, National Institute of Health Sciences, Tokyo, Japan, and [2]School of Pharmacy, Iwate Medical University, Iwate, Japan.

#1983 **Poster Board Number 342**
ANALYSIS OF MOLECULAR, CELLULAR, AND BIOCHEMICAL CHANGES IN THE LIVER OF MALE CD-1 MICE TREATED WITH THE HERBICIDE PRONAMIDE. *M. J. LeBaron*[1], M. R. Schisler[1], H. L. Kan[1], R. Sura[1], *D. L. Eisenbrandt*[2], and *B. B. Gollapudi*[1]. [1]The Dow Chemical Company, Midland, MI, and [2]Dow AgroSciences, Indianapolis, IN.

#1984 **Poster Board Number 343**
MITOCHONDRIAL UNCOUPLING PROTEIN 3 (UCP3) ANTAGONIZES EPIDERMAL TUMOR PROMOTION AND GROWTH SIGNALING. S. M. Nowinski[1], J. E. Rundhaug[2], O. Rho[1], C. U. Lago[3], *J. Digiovanni*[1], and *E. M. Mills*[1]. [1]Division of Pharmacology and Toxicology, College of Pharmacy, University of Texas at Austin, Austin, TX, [2]Carcinogenesis, Science Park, Research Division, University of Texas MD Anderson Cancer Center, Smithville, TX, and [3]Center for Molecular Medicine, National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD.

#1985 **Poster Board Number 344**
OVEREXPRESSION OF UBIQUITIN C INHIBITS EXACERBATED CHEMICALLY-INDUCED SKIN TUMORIGENESIS IN PPARβ/δ MICE. S. Kang[1,2], *B. Zhu*[2], *L. K. Markell*[2], *P. Krishnan*[2], *N. E. Torsell*[2], *F. J. Gonzalez*[3], and *J. M. Peters*[2]. [1]Biology, Pennsylvania State University, University Park, PA, [2]Veterinary and Biomedical Science, Pennsylvania State University, University Park, PA, and [3]Laboratory of Metabolism, National Cancer Institute, Bethesda, MD.

#1986 **Poster Board Number 345**
CANNABINOIDS INDUCE PHOSPHATASES AND DECREASE EXPRESSION OF PRO-ONCOGENIC PHOSPHO-EIF4E IN COLON AND PROSTATE CANCER CELLS. *S. Sreevalsan*[1], and *S. Safe*[1,2]. [1]VTPP, Texas A & M University, College Station, TX, and [2]Institute of Biosciences and Technology, Texas A&M Health Science Center, Houston, TX.

#1987 **Poster Board Number 346**
STAT3 REGULATION BY SP TRANSCRIPTION FACTORS IN PANCREATIC CANCER CELLS. *I. D. Jutooru*, *G. Chadalapaka*, and *S. Safe*. TAMU, College Station, TX.

Program Description (Continued)

Abstract #

#1988 **Poster Board Number 347**
COLON CANCER STEM CELL MARKERS ARE MODULATED BY SP (SPECIFICITY PROTEIN) TRANSCRIPTION FACTORS. *G. Chadalapaka*, *I. Jutooru*, B. Zhou, and *S. Safe*. TAMU, College Station, TX.

#1989 **Poster Board Number 348**
NRF-1 CONTRIBUTES IN ESTROGEN-INDUCED BREAST CARCINOGENESIS. *A. Deoraj*, V. Okoh, and *D. Roy*. Environmental and Occupational Health, Florida International University, Miami, FL.

#1990 **Poster Board Number 349**
IDENTIFICATION OF NOVEL AHR TARGET GENES ASSOCIATED WITH METASTATIC PHENOTYPE OF HEAD AND NECK SQUAMOUS CELL CARCINOMA LINES. *G. H. Perdew*[1], and *K. John*[1,2]. [1]Center for Molecular Toxicology and Carcinogenesis, The Pennsylvania State University, State College, PA, and [2]DuPont Haskell Global Centers for Health and Environmental Sciences, Newark, DE.

#1991 **Poster Board Number 350**
CHARACTERIZATION OF HEPATOCELLULAR CARCINOMA RELATED GENES AND METABOLITES IN HUMAN NONALCOHOLIC FATTY LIVER DISEASE. J. Clarke[1], P. Novak[1], *A. D. Lake*[1], P. Shipkova[2], N. Aranibar[2], *D. Robertson*[2], M. D. Reily[2], *L. D. Lehman-McKeeman*[2], and *N. J. Cherrington*[1]. [1]Pharmacology and Toxicology, University of Arizona, Tucson, AZ, and [2]Bristol-Myers Squibb, Inc, New York, NY.

#1992 **Poster Board Number 351**
EFFECT OF CURCUMIN AND EPIGALLOCATECHIN GALLATE IN COMBINATION WITH DEMETHYLATING AGENT, 5-AZA-2'DEOXYCYTIDINE IN BREAST CANCER CELL GROWTH INHIBITION. T. Tyagi, and *K. P. Singh*. Environmental Toxicology, The Institute of Environmental and Human Health,Texas Tech University, Lubbock, TX.

#1993 **Poster Board Number 352**
THE EFFECTS OF BENZO(A)PYRENE ON THE P53 FUNCTION IN LUNG EPITHELIAL CELLS. *W. Zhu*, and *W. Gao*. The Institute of Environmental and Human Health, Lubbock, TX.

#1994 **Poster Board Number 353**
1,4-BENZOQUINONE-MEDIATED HISTONE MODIFICATIONS AND BENZENE MYELOTOXICITY. *C. Kuhlman*[1], *G. Tsaprailis*[1], *D. R. Petersen*[2], *T. J. Monks*[1], and *S. S. Lau*[1]. [1]Southwest Environmental Health Science Center, Department of Pharmacology and Toxicology, University of Arizona, Tucson, AZ, and [2]Department of Pharmacology Science, University of Colorado, Denver, CO.

#1995 **Poster Board Number 354**
PENTOXIFYLLINE DECREASES CYCLIN D1 THROUGH PROTEOSOMAL DEGRADATION AND ARRESTS RENAL CANCER CELLS IN THE G1 PHASE. *N. Mastrandrea*, K. Tham, W. Cai, *T. Monks*, and *S. Lau*. Pharmacology/Toxicology, Tucson, AZ.

Abstract #

#1996 **Poster Board Number 355**
LOSS OF PPARγ IN ADIPOCYTES CREATES A PROTUMOURIGENIC ENVIRONMENT. *G. Skelhorne-Gross*[1], *A. Apostoli*[1], N. Peterson[1], R. Rubino[1], M. Schneider[1], S. SenGupta[1], and *C. Nicol*[1,2]. [1]Pathology and Molecular Medicine, Queen's University, CRI, Kingston, ON, Canada, and [2]Division Of Cancer Biology & Genetics, Queen's University, CRI, Kingston, ON, Canada.

#1997 **Poster Board Number 356**
DEVELOPING A 3D CELL CULTURE MODEL OF DUCTAL CARCINOMA *IN SITU*. M. A. Carroll-Turpin[1], S. Crooks[1], S. Zhang[2], J. Mathis[3], and *H. Kleiner-Hancock*[1]. [1]Pharmacology, Louisiana State University Health Sciences Center Shreveport, Shreveport, LA, [2]Pathology, Louisiana State University Health Sciences Center Shreveport, Shreveport, LA, and [3]Cellular Biology and Anatomy, Louisiana State University Health Sciences Center Shreveport, Shreveport, LA.

#1998 **Poster Board Number 357**
DISTINCT CYTOCHROME P450 REGULATION BY PAH MIXTURES IN MOUSE SKIN: INSIGHTS ON CARCINOGENIC MECHANISMS FROM TRANSCRIPTIONAL PROFILING OF TUMOR INITIATION. *S. C. Tilton*[1], L. K. Siddens[2], *S. K. Krueger*[2], A. Larkin[2], *K. M. Waters*[1], *D. E. Williams*[2], and *W. M. Baird*[2]. [1]Pacific Northwest National Laboratory, Richland, WA, and [2]Oregon State University, Corvallis, OR.

#1999 **Poster Board Number 358**
THE ROLE OF ALDH1B1 IN ALCOHOL METABOLISM AND COLON CANCER. *S. Singh*[1], *Y. Chen*[1], *A. Matsumoto*[1], *J. Peters*[2], and *V. Vasiliou*[1]. [1]Department of Pharmaceutical Sciences, University of Colorado AMC, Aurora, CO, and [2]Department of Veterinary and Biomedical Sciences, Pennsylvania State University, University Park, PA.

#2000 **Poster Board Number 359**
LATE-ONSET GENE EXPRESSION CHANGES IN THE LIVERS OF MALE C3H MICE MATERNALLY EXPOSED TO ARSENIC: IMPLICATIONS FOR AN INCREASE IN HEPATIC TUMOR INCIDENCE. *K. Nohara*[1,2], Y. Tateishi[1], T. Suzuki[1], H. Murai[1], S. Takumi[1], K. Okamura[1,2], F. Maekawa[1], N. Nishimura[1], and T. Ito[3]. [1]National Institute for Environmental Studies, Tsukuba, Japan, [2]Graduate School of Life and Environmental Sciences, University of Tsukuba, Tsukuba, Japan, and [3]Kumamoto University Graduate School of Medical Sciences, Kumamoto, Japan.

#2001 **Poster Board Number 360**
EFFECT OF STABLE OVEREXPRESSION OF PPARβ/δ IN HUH7 CELLS. *G. Balandram*[1], *P. P. Albrecht*[1], C. H. Ferry[1], *M. G. Borland*[1], *B. Zhu*[1], *F. J. Gonzalez*[2], and *J. M. Peters*[1]. [1]Veterinary Sciences, Pennsylvania State University, University Park, PA, and [2]National Cancer Institute, Laboratory of Metabolism, Bethesda, MD.

#2002 **Poster Board Number 361**
FRY IS A NOVEL TUMOR SUPPRESSOR GENE CORRELATED WITH BREAST CARCINOMA PROGRESSION. *J. Graham*[1], *X. Ren*[2], and *H. Zarbl*[3]. [1]Toxicology, University of Medicine and Dentistry of New Jersey, Piscataway, NJ, [2]University of Buffalo, Buffalo, NY, and [3]DEOM, University of Medicine and Dentistry of New Jersey, Piscataway, NJ.

WEDNESDAY

Program Description (Continued)

Abstract #

#2003 **Poster Board Number 362**
LOSS OF P53 ACCELERATES TUMOR FORMATION IN RAP80 NULL MICE. *Z. Yin*[1,5], D. Menedez[2], K. Janardhan[3], *J. French*[4], M. Resnick[2], and A. Jetten[1]. [1]Laboratory of Respiratory Biology, NIEHS, Research Triangle Park, NC, [2]Laboratory of Molecular Genetics, NIEHS, Research Triangle Park, NC, [3]Celluar & Molecular Pathology Branch, NIEHS, Research Triangle Park, NC, [4]Host Susceptability Program, National Toxicology Program, Research Triangle Park, NC, and [5]Global Product Stewardship, Arcadis US, Cincinnati, OH.

#2004 **Poster Board Number 363**
INVESTIGATING THE DUEL ROLES OF STRA6 IN CELL SIGNALING AND VITAMIN A TRAFFICKING. C. E. Schulte[1,2], and M. J. Rowling[1]. [1]Food Science and Human Nutrition, Iowa State University, Ames, IA, and [2]Interdepartmental Graduate Program in Toxicology, Iowa State University, Ames, IA. Sponsor: *S. Hendrich*.

#2005 **Poster Board Number 364**
INVESTIGATION OF MOLECULAR MECHANISMS OF SUTENT-INDUCED BRUNNER'S GLAND CARCINOMA. D. Kalabat, A. H. Yang, A. McHarg, and W. Evering. Pfizer Inc., San Diego, CA. Sponsor: *B. Hirakawa*.

#2006 **Poster Board Number 365**
STUDIES CONDUCTED IN A MURINE MODEL OF BREAST CANCER METASTASIS REVEAL THAT AHR ACTIVATION INHIBITS THE SPREAD OF TUMORS TO SECONDARY SITES. *T. Wang*[1,3], K. L. Wyrick[1], *G. G. Meadows*[1], T. B. Wills[2], and *B. A. Vorderstrasse*[1,3]. [1]Pharmaceutical Sciences, Washington State University, Pullman, WA, [2]Veterinary Clinical Sciences, Washington State University, Pullman, WA, and [3]Center for Reproductive Biology, Washington State University, Pullman, WA.

#2007 **Poster Board Number 366**
ASPIRIN INHIBITS COLON CANCER CELL AND TUMOR GROWTH AND DOWNREGULATES SPECIFICITY PROTEIN (SP) TRANSCRIPTION FACTORS. *S. Pathi*[1], and *S. Safe*[1,2]. [1]Veterinary Physiology and Pharmacology, Texas A&M University, College Station, TX, and [2]Institute of Biosciences and Technology, Houston, TX.

#2008 **Poster Board Number 367**
MODE OF ACTION FOR THE SYNTHETIC PYRETHROID PERMETHRIN-INDUCED MOUSE LIVER TUMORS: EVIDENCE FOR PEROXISOME PROLIFERATOR-ACTIVATED RECEPTOR ALPHA (PPARα) ACTIVATION AND ASSOCIATED LIVER CHANGES. M. Kondo[1], *T. Yamada*[1], K. Miyata[1], H. Nagahori[1], K. Sumida[1], K. Mikata[1], *S. M. Cohen*[2], N. Isobe[1], and S. Kawamura[1]. [1]Environmental Health Science Laboratory, Sumitomo Chemical Company, Ltd., Osaka, Japan, and [2]University of Nebraska Medical Center, Omaha, NE.

Abstract #

Wednesday Morning, March 14
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Food Safety and Nutrition I

Chairperson(s): *Marie C. Fortin, Rutgers/UMDNJ, Piscataway, NJ.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *11:00 AM–12:30 PM*

#2009 **Poster Board Number 401**
IMBALANCE IN ONE-CARBON METABOLISM IN THE LIVERS OF MICE FED A METHYL-DEFICIENT DIET. S. Melnyk[1], *K. Kutanzi*[2], A. De Conti[3], B. Montgomery[2], J. James[1], F. A. Beland[2], and I. P. Pogribny[2]. [1]Department of Pediatrics, University of Arkansas for Medical Sciences, Little Rock, AR, [2]Department of Biochemical Toxicology, National Center for Toxicological Research, Jefferson, AR, and [3]University of São Paulo, São Paulo, Brazil.

#2010 **Poster Board Number 402**
RISK ASSESSMENT OF COUMARIN USING THE BENCH MARK DOSE (BMD) APPROACH: CHILDREN IN NORWAY, WHO REGULARLY EAT OATMEAL PORRIDGE WITH CINNAMON, ARE AT RISK FOR EXCEEDING TDI FOR COUMARIN BY SEVERAL FOLDS. T. Husøy[1], J. Paulsen[4], T. Sanner[3], I. L. Lillegaard[2], J. Alexander[1], and T. Fotland[2]. [1]Norwegian Institute of Publich Health, Oslo, Norway, [2]Norwegian Scientific Committee for Food Safety, Oslo, Norway, [3]The Norwegian Radium Hospital and University of Oslo, Oslo, Norway, and [4]Norwegian School of Veterinary Science, Oslo, Norway. Sponsor: *U. Nygaard*.

#2011 **Poster Board Number 403**
MICROARRAY ANALYSIS OF MOLECULAR CHANGES ELICITED IN MICE BY DIETS HIGH IN FAT, SUGAR, OR CHOLESTEROL, AND DIETS DEFICIENT IN CALORIES OR ESSENTIAL FATTY ACIDS. *H. J. Renaud*[1], *J. Y. Cui*[1], *H. Lu*[2], and *C. D. Klaassen*[1]. [1]Pharmacology, Toxicology, and Therapeutics, University of Kansas Medical Center, Kansas City, KS, and [2]Pharmacology, SUNY Upstate Medical University, Syracuse, NY.

#2012 **Poster Board Number 404**
DEVELOPMENT AND VALIDATION OF TWO STABLE REPORTER CELL LINES FOR PPARγ-MEDIATED MODULATION OF GENE EXPRESSION. L. de Haan[1], L. Gijsbers[1], H. Man[3], S. Kloet[1], J. Keijer[2], I. Rietjens[1], B. van der Burg[3], and J. Aarts[1]. [1]Toxicology, Wageningen University, Wageningen, Netherlands, [2]Human and Animal Physiology, Wageningen University, Wageningen, Netherlands, and [3]Bio Detection Systems, Amsterdam, Netherlands. Sponsor: *B. Blaauwboer*.

#2013 **Poster Board Number 405**
TOXICOLOGICAL PERSPECTIVE OF NRF2 ACTIVATION. M. Marin-Kuan[1], J. Holzwarth[2], A. Fuerholz[2], C. Bezençon[1], C. Verguet[1], D. Piguet[1], G. Guignard[1], R. Mansourian[2], F. Raymond[2], S. Metairon[2], and *B. Schilter*[1]. [1]Quality and Safety, Nestle Research Center, Lausanne, Switzerland, and [2]BioInformatics, Nestle Research Center, Lausanne, Switzerland.

WEDNESDAY

Program Description (Continued)

Abstract #

#2014 **Poster Board Number 406**
THE NEPHROTOXICITY OF MYCOTOXIN CITRININ AND PATULIN DURING ZEBRAFISH DEVELOPMENT. B. Liu[1], T. Wu[2], and F. Yu[1]. [1]Biomedicall Sciences, Chung Shan Medical University, Taichung, Taiwan, and [2]Institute of Medicine, Chung Shan Medical University, Taichung, Taiwan. Sponsor: *P. Lin*.

#2015 **Poster Board Number 407**
OIL SPILL CHEMICAL DISPERSANTS AND SEAFOOD SAFETY. K. F. Hailemariam, and *P. M. Bolger*. Center for Food Safety and Applied Nutrition, US FDA, College Park, MD.

#2016 **Poster Board Number 408**
LEVEL OF CONCERN FOR GLUTEN EXPOSURE IN INDIVIDUALS WITH CELIAC DISEASE. *S. A. Assimon*, M. DiNovi, and *P. M. Bolger*. CFSAN, US FDA, College Park, MD.

#2017 **Poster Board Number 409**
POMEGRANATE POLYPHENOLS INHIBIT BREAST CANCER CELL GROWTH TARGETING MIRNA-27A AND MIRNA-155 IN THE REDUCTION OF INFLAMMATION AND CELL GROWTH. *N. Banerjee*[1,2], *S. Safe*[1], S. Talcott[2], and *S. U. Mertens –Talcott*[1,2]. [1]Toxicology, Texas A&M University, College Station, TX, and [2]Nutrition and Food Science, Texas A&M University, College Station, TX.

#2018 **Poster Board Number 410**
UPSN INCLUDED IN FOOD REDUCES AFLATOXIN BIOAVAILABILITY IN A CROSSOVER STUDY IN GHANA. *N. J. Mitchell*[1], J. Kumi[2], E. Dotse[2], *A. Marroquin-Cardona*[1], *L. Tang*[3], *J. Wang*[3], N. Ankrah[2], and *T. D. Phillips*[1]. [1]College of Veterinary Medicine, Texas A&M University, College Station, TX, [2]Noguchi Memorial Institue for Medical Research, University of Ghana, Accra, Ghana, and [3]Department of Environmental Health Science, University of Georgia, Athens, GA.

#2019 **Poster Board Number 411**
CHRONIC DIETARY TRYPTOPHAN ENHANCEMENT AND DEPLETION IMPROVE MOUSE SOCIAL BEHAVIOR AND INCREASE BRAIN EXTRACELLULAR SEROTONIN LEVELS. M. D. Osorio, W. Q. Zhang, M. Gamez, P. A. Barba-Escobedo, T. Gu, J. J. Sanchez, M. A. Javors, J. O'Connor, L. C. Daws, and *G. G. Gould*. University of Texas Health Science Center at San Antonio, San Antonio, TX.

#2020 **Poster Board Number 412**
CHRONIC EPITHELIAL NOD2 ACTIVATION TRIGGERS ANTIINFLAMMATORY ATF3 AND PARADOXICAL SUPER-INDUCTION OF PROINFLAMMATORY CHEMOKINES BY CHEMICAL RIBOSOME-INACTIVATING STRESS. S. Park, and *Y. Moon*. Laboratory of Systems Mucosal Biomodulation, Pusan National University School of Medicine and Medical Research Institute, Yangsan, Republic of Korea.

Abstract #

#2021 **Poster Board Number 413**
EFFECTS OF AFLATOXIN B1 ON THE IMMUNE PHENOTYPES AND CYTOKINE SECRETIONS OF SPLEEN LYMPHOCYTES IN FISCHER 344 RATS. *G. Qian*, *L. Tang*, X. Guo, F. Wang, M. E. Massey, J. Su, and *J. Wang*. Environmental Health Science, University of Georgia, Athens, GA.

#2022 **Poster Board Number 414**
INDUCTION OF EpRE-MEDIATED GENE EXPRESSION BY BIOACTIVE INGREDIENTS OF TOMATO (*LYCOPERSICON ESCULENTUM* MILL). L. Gijsbers[1], H. van Eekelen[1,2], L. de Haan[1], T. Nguyen[1], J. Aarts[1], I. Rietjens[1], and A. Bovy[2]. [1]Toxicology, Wageningen University, Wageningen, Gelderland, Netherlands, and [2]Plant Research International, Wageningen, Gelderland, Netherlands. Sponsor: *B. Blaauboer*.

#2023 **Poster Board Number 415**
EXPOSURE TO THE MYCOTOXIN DEOXYNIVALENOL (VOMITOXIN) CAUSES RELEASE OF GUT SATIETY HORMONES PEPTIDE YY (PYY) AND CHOLECYSTOKININ (CCK) IN THE MOUSE. *B. Flannery*[1,2], and *J. J. Pestka*[1,2,3]. [1]Food Science and Human Nutrition, Michigan State University, East Lansing, MI, [2]Center for Integrative Toxicology, Michigan State University, East Lansing, MI, and [3]Microbiology and Molecular Genetics, Michigan State University, East Lansing, MI.

#2024 **Poster Board Number 416**
THERAPEUTIC EFFICACY AND SAFETY EVALUATION OF A NOVEL ALL NATURAL VEGETARIAN FORMULA IN ARTHRITIC DOGS USING GROUND FORCE PLATE. *R. C. Gupta*[1], N. M. Whitt[1], J. T. Goad[1], T. D. Canerdy[1], and *M. Bagchi*[2]. [1]Murray State University, Hopkinsville, KY, and [2]NutriToday, Boston, MA.

#2025 **Poster Board Number 417**
COCOA FLAVANOLS AND THEIR MAIN HUMAN METABOLITES PROTECT AGAINST OXIDATIVE STRESS IN PRIMARY VASCULAR ENDOTHELIAL CELLS. E. Ruijters, A. Weseler, G. Haenen, and A. Bast. Department of Toxicology, Maastricht University, Maastricht, Netherlands. Sponsor: *H. van Loveren*.

#2026 **Poster Board Number 418**
ISOTHERMAL ANALYSIS OF FUMONISIN B1 AND AFLATOXIN B1 ADSORPTION ONTO THE SURFACE OF NOVASIL™ CLAY BY HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY (HPLC). T. Mays, *A. Marroquin-Cardona*, *N. Mitchell*, K. Brown, S. Elmore, and *T. D. Phillips*. Veterinary Integrative Biosciences, Texas A&M University, College Station, TX.

#2027 **Poster Board Number 419**
DEVELOPMENT OF A MONOCLONAL ANTIBODY AGAINST OKADAIC ACID AND ITS APPLICATION IN ENZYME-LINKED IMMUNOSORBENT ASSAY AND GOLD NANOPARTICLE IMMUNOCHROMATOGRAPHIC STRIP. F. Yu, B. Liu, and C. Hung. Biomedical Sciences, Chung Shan Medical University, Taichung, Taiwan. Sponsor: *P. Lin*.

Program Description (Continued)

Abstract #

#2028 **Poster Board Number 420**
THE TOXICITY OF MONILIFORMIN—A COMMON FUSARIUM MYCOTOXIN. *K. Peltonen*[1], M. Jestoi[1], M. Jonsson[1], J. Atosuo[2], A. Nathanail[1], P. Koivisto[1], U. Kokkonen[1], M. Anttila[1], and E. Lilius[2]. [1]Chemistry and Toxicology, Finnish Food Safety Authority, Helsinki, Finland, and [2]University of Turku, Turku, Finland.

#2029 **Poster Board Number 421**
MODIFIED HYDRA BIOASSAY TO EVALUATE COMBINED EFFECTS OF AFLATOXIN B_1 AND FUMONISIN B_1 K. Brown, *A. Marroquin-Cardona*, *N. Mitchell*, T. Mays, S. Elmore, *K. Zychowski*, and *T. Phillips*. Veterinary Integrative Biosciences, Texas A&M University, College Station, TX.

#2030 **Poster Board Number 422**
EXCESSIVE CONSUMPTION OF CATECHIN-RICH BEVERAGE HAS NO IMPACT ON LIVER FUNCTION. E. Shibata, M. Takeshita, M. Katashima, and T. Yasumasu. Health Care Food Research Laboratories, Kao Corporation, Tokyo, Japan. Sponsor: *M. Soni*.

#2031 **Poster Board Number 423**
RESISTANCE OF MAIZE VARIETIES TO THE GROWTH OF TOXIGENIC STRAINS OF *ASPERGILLUS FLAVUS*. M. DeLuna-Lopez[1], A. Valdivia-Flores[1], F. Jaramillo-Juarez[1], J. Reyes-Sanchez[2], R. Ortiz-Martinez[1], A. Martinez-de Anda[1], and T. Quezada-Tristan[1]. [1]Universidad Autonoma de Aguascalientes, Aguascalientes, Mexico, and [2]Centro de Investigación y Estudios Avanzados. IPN, Mexico, Mexico. Sponsor: *G. Pallas-Guzman*.

Wednesday Morning, March 14
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Characterizing Toxic Modes of Action and Pathways to Toxicity

Poster Session: Cell Death Pathways

Chairperson(s): *David Ross, University of Colorado, Aurora, CO.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *9:00 AM–11:00 AM*

#2032 **Poster Board Number 425**
OXPHOS-DEPENDENT CELLS IDENTIFY ENVIRONMENTAL DISRUPTORS OF MITOCHONDRIAL FUNCTION. D. Ackerman, and S. O. Simmons. ORD/NHEERL/ISTD, US EPA, Research Triangle Park, NC. Sponsor: *W. Mundy*.

#2033 **Poster Board Number 426**
SIMPLIFIED METHODS TO STUDY INTER-RELATIONSHIP BETWEEN MITOCHONDRIAL HEALTH AND CELL HEALTH. K. Tyagarajan, J. Clor, K. Gillis, and K. Tran. Research and Development, EMD Millipore, Hayward, CA. Sponsor: *R. Wiese*.

Abstract #

#2034 **Poster Board Number 427**
MONOLYSO-CARDIOLIPIN—BIOMARKER OF MITOCHONDRIAL DYSFUNCTION INDUCED BY TOTAL BODY IRRADIATION. LC-ESI-MS STUDY. V. A. Tyurin[1], H. Zhao[1], *Y. Tyurina*[1], M. W. Epperly[2], J. S. Greenberger[2], and *V. E. Kagan*[1]. [1]EOH, University of Pittsburgh, Pittsburgh, PA, and [2]Radiation Oncology, University of Pittsburgh, Pittsburgh, PA.

#2035 **Poster Board Number 428**
MITOCHONDRIA TARGETING OF NONPEROXIDIZABLE TRIPHENYLPHOSPHONIU-CONJUGATED OLEIC ACID PROTECTS MOUSE EMBRYONIC CELLS AGAINST APOPTOSIS: ROLE OF CARDIOLIPIN REMODELING. *Y. Tyurina*, M. A. Tungekar, M. Jung, V. A. Tyurin, D. A. Stoyanovsky, and *V. E. Kagan*. EOH, University of Pittsburgh, Pittsburgh, PA.

#2036 **Poster Board Number 429**
A MITOCHONDRIA-TARGETED IMIDAZOLE-SUBSTITUTED FATTY ACID INHIBITS CYTOCHROME C PEROXIDASE AND MITIGATES RADIATION-INDUCED DEATH. J. Atkinson[4,2], *A. Kapralov*[1,2], N. Yanamala[1,2], *Y. Tyurina*[1,2], A. Amoscato[1,2], L. Pearce[1], J. Peterson[1], Z. Huang[1,2], *J. Jiang*[1,2], A. Samhan-Arias[1,2], A. Maeda[1,2], W. Feng[1,2], N. Belikova[1,2], V. Tyurin[1,2], H. Wang[1,2], J. Fletcher[4], Y. Wang[4], I. Vlasova[1,2], J. Klein-Seetharaman[1,2], D. Stoyanovsky[1,2], H. Bayîr[1,2], B. Pitt[1], M. Epperly[3,2], J. Greenberger[3,2], and *V. Kagan*[1,2]. [1]EOH, University of Pittsburgh, Pittsburgh, PA, [2]Center for Medical Countermeasures against Radiation, University of Pittsburgh, Pittsburgh, PA, [3]Radiation Oncology, University of Pittsburgh, Pittsburgh, PA, and [4]Chemistry, Brock University, St. Catharines, ON, Canada.

#2037 **Poster Board Number 430**
MINOCYCLINE AND DOXYCYCLINE CYTOPROTECT BY INHIBITION OF THE MITOCHONDRIAL CALCIUM UNIPORTER AND NOT BY OTHER MECHANISMS. J. Schwartz[1], X. Zhang[1], G. L. Lovelace[1], and *J. J. Lemasters*[1,2]. [1]Pharmaceutical Sciences, Medical University of South Carolina, Charleston, SC, and [2]Biochemistry, Medical University of South Carolina, Charleston, SC.

#2038 **Poster Board Number 431**
ETHYLMERCURY INDUCES ER STRESS AND MITOCHONDRIA-MEDIATED APOPTOSIS. J. Choi, Y. Park, and M. Dong. School Lifesciences and Biotechnology, Korea University, Seoul, Republic of Korea. Sponsor: *B. Lee*.

Program Description (Continued)

Abstract #

#2039 **Poster Board Number 432**
CADMIUM-INDUCED OXIDATIVE STRESS DAMAGE CAUSES NEURON CELLS APOPTOSIS THROUGH JNK/ MITOCHONDRIA-DEPENDENT/ ENDOPLASMIC RETICULUM STRESS PATHWAYS. L. Tsai[1], T. Tseng[2], *T. Lu*[1], *D. Hung*[3], C. Su[4], C. Yen[5], *C. Huang*[6], S. Liu[7], and *Y. Chen*[8]. [1]Graduate Institute of Basic Medical Science, China Medical University, Taichung, R.O.C., Taiwan, [2]Department of Anatomy, China Medical University, Taichung, R.O.C., Taiwan, [3]Toxicology Center, China Medical University Hospital, Taichung, R.O.C., Taiwan, [4]Department of Otorhinolaryngology, Head and Neck Surgery, Changhua Christian Hospital, Changhua, R.O.C., Taiwan, [5]Department of Occupational Safety and Health, Chung Shan Medical University, Taichung, R.O.C., Taiwan, [6]School of Chinese Medicine, China Medical University, Taichung, R.O.C., Taiwan, [7]Institute of Toxicology, National Taiwan University, Taipei, R.O.C., Taiwan, and [8]Department of Physiology, China Medical University, Taichung, R.O.C., Taiwan.

#2040 **Poster Board Number 433**
INVOLVEMENT OF OXIDATIVE STRESS-INDUCED ERK/JNK ACTIVATION IN THE CU2+/PYRROLIDINE DITHIOCARBAMATE COMPLEX-TRIGGERED MITOCHONDRIA-REGULATED APOPTOSIS IN PANCREATIC β-CELLS. *Y. Chen*[1], S. Liu[2], C. Su[3], *T. Lu*[1], *D. Hung*[4], C. Yen[5], and *C. Huang*[6]. [1]Department of Physiology and Graduate Institute of Basic Medical Science, China Medical University, Taichung, Taiwan, [2]Institute of Toxicology, National Taiwan University, Taipei, Taiwan, [3]Department of Otorhinolaryngology, Changhua Christian Hospital, Changhua, Taiwan, [4]Toxicology Center, China Medical University Hospital, Taichung, Taiwan, [5]Department of Occupational Safety and Health, Chung Shan Medical University, Taichung, Taiwan, and [6]School of Chinese Medicine, China Medical University, Taichung, Taiwan.

#2041 **Poster Board Number 434**
PBDES CONGENERS (BDE-209, BDE-99, AND BDE-47) DECREASE THE MITOCHONDRIAL MEMBRANE POTENTIAL AND INCREASE ROS ACCUMULATION LEADING TO HEPG2 CELL DEATH. A. O. Souza[1], *D. P. Oliveira*[2], and *D. J. Dorta*[1]. [1]Química, FFCLRP-USP, Ribeirão Preto, SP, Brazil, and [2]Análises Clínicas, Bromatológicas e Toxicológicas, FCFRP-USP, Ribeirão Preto, SP, Brazil.

#2042 **Poster Board Number 435**
STUDY OF EMERGENT FUSARIUM MYCOTOXINS BY MITOCHONDRIAL MEMBRANE POTENTIAL CHANGES ON HEPG2 CELLS USING FLOW CYTOMETRY. *A. Juan-Garcia*, M. Ruiz, and *G. Font*. Laboratory of Toxicology, University of Valencia, Valencia, Spain.

Abstract #

#2043 **Poster Board Number 436**
MULTIPLE CELL-DEATH MECHANISMS ARE TRIGGERED IN HEPATOTOXICITY INDUCED BY ACROLEIN, AN ENVIRONMENTAL POLLUTANT AND LIPID PEROXIDATION PRODUCT. M. Mohammad[1], D. Avila[1], J. Zhang[1], J. Jokinen[2], *G. Arteel*[2], *C. McClain*[1,2,3], *S. Barve*[1,2], and *S. Joshi-Barve*[1]. [1]Department of Medicine/GI, University of Louisville, Louisville, KY, [2]Pharmacology and Toxicology, University of Louisville, Louisville, KY, and [3]Louisville VAMC, Louisville, KY.

#2044 **Poster Board Number 437**
A DUAL ROLE FOR POLY(ADP-RIBOSE) POLYMERASE-1 IN THE REGULATION OF CASPASE ACTIVATION. *F. Zhang*, *S. S. Lau*, and *T. J. Monks*. Department of Pharmacology and Toxicology, College of Pharmacy, University of Arizona, Tucson, AZ.

#2045 **Poster Board Number 438**
PYRROLIDINE DITHIOCARBAMATE AUGMENTS HG2+ IN INDUCING MACROPHAGE CELL DEATH THROUGH OXIDATIVE STRESS-INDUCED APOPTOSIS AND NECROSIS SIGNALING PATHWAYS. *C. Huang*[1,2], S. Liu[2], *Y. Chen*[3], and S. Lin-Shiau[4]. [1]School of Chinese Medicine, China Medical University, Taichung, Taiwan, [2]Institute of Toxicology, College of Medicine, National Taiwan University, Taipei, Taiwan, [3]Department of Physiology and Graduate Institute of Basic Medical Science, China Medical University, Taichung, Taiwan, and [4]Institutes of Pharmacology, College of Medicine, National Taiwan University, Taipei, Taiwan.

#2046 **Poster Board Number 439**
A COMBINATION OF ANTIAPOPTOTIC/ ANTINECROPTOTIC INHIBITORS PROTECTS NCCIT CELLS FROM GAMMA-IRRADIATION-INDUCED CELL DEATH. Z. Huang[1,2], J. Greenberger[3,2], V. Kagan[1,2], and *H. Bayir*[1,2,4]. [1]Center for Medical Countermeasures against Radiation, University of Pittsburgh, Pittsburgh, PA, [2]EOH, University of Pittsburgh, Pittsburgh, PA, [3]Radiation Oncology, University of Pittsburgh, Pittsburgh, PA, and [4]Critical Care Medicine, University of Pittsburgh, Pittsburgh, PA.

#2047 **Poster Board Number 440**
CYTOTOXICITY MEDIATED BY EGFR INHIBITION IS OVERCOME BY NOX-INDUCED AUTOPHAGY IN HEAD AND NECK CANCER CELLS. *A. Sobhakumari*[1,2], A. Raeburn[3], E. V. Fletcher[1,2], *D. R. Spitz*[3,1], and *A. L. Simons*[2,1,3]. [1]Human Toxicology, University of Iowa, Iowa City, IA, [2]Pathology, University of Iowa, Iowa City, IA, and [3]Free Radical and Radiation Biology, University of Iowa, Iowa City, IA.

#2048 **Poster Board Number 441**
PREDICTING PRECLINICAL OUTCOMES BY MEASUREMENT OF LYSOSOMAL DYSFUNCTION. J. A. Willy, *J. L. Stevens*, and T. K. Baker. Investigative Toxicology, Eli Lilly and Co., Indianapolis, IN.

Program Description (Continued)

Abstract #

#2049 **Poster Board Number 442**
TARGETING THE ANAPHASE PROMOTING COMPLEX/CYCLOSOME TO INHIBIT CELL CYCLE AND TO INDUCE APOPTOSIS IN TUMOR CELLS. *J. States*[1], C. A. France[1], B. Taylor[1], and J. O. Trent[2]. [1]Pharmacology & Toxicology, University of Louisville, Louisville, KY, and [2]Medicine, University of Louisville, Louisville, KY.

#2050 **Poster Board Number 443**
INDUCTION OF HUMAN STEROID SULFATASE BY INSULIN-LIKE GROWTH FACTOR II THROUGH NUCLEAR FACTOR KAPPA B SIGNALING PATHWAY IN HUMAN PROSTATE CANCER CELLS. C. Seong, N. Park, J. Jeong, H. Im, Y. Kwon, and Y. Chun. College of Pharmacy, ChungAng University, Seoul, Republic of Korea. Sponsor: *T. Jeong*.

#2051 **Poster Board Number 444**
FGF21 EXPRESSES IN THE DIABETIC HEARTS AND PROTECTS FROM PALMITATE-INDUCED CARDIAC CELL DEATH VIA ERK1/2-DEPENDENT P38 MAPK/AMPK SIGNALING PATHWAY. C. Zhang[1,2], X. Li[2], and *L. Cai*[1,2]. [1]Pediatrics, University of Louisville, Louisville, KY, and [2]Wenzhou Medical College, Wenzhou, Zhejiang, China.

#2052 **Poster Board Number 445**
EMBELIN INDUCES APOPTOSIS THROUGH DOWNREGULATION OF AKT-DEPENDENT PATHWAY IN PC-3 HUMAN PROSTATE CANCER CELLS. N. Park, C. Seong, J. Jeoung, Y. Kwon, H. Im, and Y. Chun. College of Pharmacy, ChungAng Univesity, Seoul, Republic of Korea. Sponsor: *T. Jeong*.

#2053 **Poster Board Number 446**
DEFECTIVE EIF2α PHOSPHORYLATION CORRELATES WITH ENHANCED PROTEIN AGGREGATION AND CELL DEATH IN RESPONSE TO PROTEASOME INHIBITION. *M. White*[1,2], and D. J. McConkey[1]. [1]Departments of Urology and Cancer Biology, MD Anderson Cancer Center, Houston, TX, and [2]Graduate Program in Experimental Therapeutics, MD Anderson Cancer Center, Houston, TX.

#2054 **Poster Board Number 447**
CHRONIC EXPOSURE TO CADMIUM INDUCES APOPTOSIS THROUGH THE ACCUMULATION OF P53 IN KIDNEY OF MICE. M. Tokumoto[1,2], Y. Fujiwara[2], A. Shimada[3], M. Uchiyama[1,4], and *M. Satoh*[2]. [1]Institute of Physical and Chemical Research, Wako, Japan, [2]School of Pharmacy, Aichi Gakuin University, Nagoya, Japan, [3]School of Veterinary Medicine, Faculty of Agriculture, Tottori University, Tottori, Japan, and [4]Graduate School of Pharmaceutical Sciences, University of Tokyo, Tokyo, Japan.

#2055 **Poster Board Number 448**
APPLICATION OF *IN VITRO* CYTOLETHALITY AND PROLIFERATION ASSAYS TO IMPROVE KINASE INHIBITOR SELECTIVITY PROFILE AND REDUCE PRECLINICAL HEMATOTOXICITY. B. Halstead[1], E. L. Kreklau[1], A. De Dios[2], J. Du[2], J. P. Stutz[1], *J. L. Stevens*[1], and T. K. Baker[1]. [1]Investigative Toxicology, Eli Lilly and Company, Indianapolis, IN, and [2]Discovery Oncology LRL, Eli Lilly and Company, Indianapolis, IN.

Abstract #

#2056 **Poster Board Number 449**
ROLE OF OXYGENATED PHOSPHATIDYLSERINE AND ITS METABOLITES—LYSO-PHOSPHATIDYLSERINES PRODUCED AFTER OXIDATION AND HYDROLYSIS BY PLASMA LIPOPROTEIN-ASSOCIATED PHOSPHOLIPASE A2 IN CLEARANCE OF APOPTOTIC CELLS BY MACROPHAGES: LC-ESI-MS STUDY. *V. E. Kagan*[1], V. A. Tyurin[1], K. Balasubramanian[1], D. E. Winnica[1], C. H. Macphee[2], and *Y. Tyurina*[1]. [1]EOH, University of Pittsburgh, Pittsburgh, PA, and [2]GlaxoSmithKline, King of Prussia, PA.

#2057 **Poster Board Number 450**
INTRACELLULAR ACCUMULATION OF SULFIDES AND INDUCTION OF APOPTOSIS DEPEND ON PH IN NAHS-EXPOSED JURKAT CELLS. *S. Kanno*[1], *S. Hirano*[2], M. Sagi[1], S. Chiba[1], H. Takeshita[1], T. Ikawa[1], K. Ichiba[1], and T. Mukai[1]. [1]St. Marianna University School of Medicine, Kawasaki, Japan, and [2]National Institute for Environmental Studies, Tsukuba, Japan.

Wednesday Morning, March 14
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Stem Cell Biology and Toxicology

Chairperson(s): *Frank A. Barile, St. John's University, Jamaica, NY, and Alhaji N'jai, Procter & Gamble, Cincinnati, OH.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *11:00 AM–12:30 PM*

#2058 **Poster Board Number 452**
EFFECT OF SURFACE-MODIFIED TITANIUM BY CHEMICAL TREATMENT ON THE GENE EXPRESSION PROFILE IN OSTEOGENIC DIFFERENTIATION OF HUMAN MESENCHYMAL STEM CELLS. R. Sawada[1], Y. Haishima[1], K. Isama[2], and A. Matsuoka[1]. [1]Division of Medical Devices, National Institute of Health Sciences, Tokyo, Japan, and [2]Division of Environmental Chemistry, National Institute of Health Sciences, Tokyo, Japan. Sponsor: *A. Hirose*.

#2059 **Poster Board Number 453**
METHYL PARATHION-INDUCED EXPRESSION CHANGES OF PLURIPOTENCY MAINTENANCE GENES IN HUMAN EMBRYONIC STEM CELLS. J. S. Madren-Whalley, V. L. Bevilacqua, and *J. W. Sekowski*. Edgewood Chemical Biological Center, Aberdeen Proving Ground, MD.

#2060 **Poster Board Number 454**
COMPARISON OF PROTEIN EXPRESSION PROFILES IN HUMAN MESENCHYMAL STEM CELLS CULTURED ON SURFACE-MODIFIED TITANIUM WITH CHEMICAL TREATMENTS. R. Kato, Y. Haishima, C. Hasegawa, and A. Matsuoka. Division of Medical Devices, National Institute of Health Sciences, Setagaya-ku, Tokyo, Japan. Sponsor: *A. Hirose*.

Program Description (Continued)

Abstract #

#2061 **Poster Board Number 455**
EFFECTS OF HIGH FAT-DIET AND PARTICULATE MATTER (PM2.5) EXPOSURE ON CIRCULATING AND BONE MARROW ENDOTHELIAL PROGENITOR CELLS IN MICE. *D. J. Conklin*, *P. Haberzettl*, *J. Lee*, D. Dugginenі, D. Murphy, J. McCracken, and A. Bhatnagar. Diabetes and Obesity Center, University of Louisville, Louisville, KY.

#2062 **Poster Board Number 456**
CYTOTOXICITY AND INHIBITORY EFFECTS OF LOW-DOSE TRICLOSAN ON ADIPOGENIC DIFFERENTIATION OF HUMAN MESENCHYMAL STEM CELLS. *J. Fang*[1], B. Ning[2], L. Guo[2], and *Q. Wu*[1]. [1]Division of Biochemical Toxicology, National Center for Toxicological Research, Jefferson, AR, and [2]Division of Personalized Nutrition and Medicine, National Center for Toxicological Research, Jefferson, AR.

#2063 **Poster Board Number 457**
KEY METABOLIC PATHWAY CHANGES IN HUMAN EMBRYONIC STEM CELLS EXPOSED TO METHYL PARATHION AND METHYL PARAOXON. *J. W. Sekowski*[1], J. A. Palmer[2], V. Bevilacqua[1], R. E. Burier[2], A. M. Smith[2], K. R. Conrad[2], P. R. West[2], and J. Madren-Whalley[1]. [1]US Army Edgewood Chemical Biological Center, APG-EA, MD, and [2]Stemina Biomarker Discovery, Inc., Madison, WI.

#2064 **Poster Board Number 458**
POTENCY RANKING OF MONOPHTHALATES STUDIED BY TRANSCRIPTOMICS IN THE MOUSE EMBRYONIC STEM CELL TEST. S. Schulpen[1,2], *J. Robinson*[1,3], J. Pennings[1], and A. Piersma[1,2]. [1]Laboratory for Health Effects Research, RIVM, Bilthoven, Netherlands, [2]Institute for Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands, and [3]Maastricht University, Maastricht, Netherlands.

#2065 **Poster Board Number 459**
DERIVATION OF CYNOMOLGUS MACAQUE-INDUCED PLURIPOTENT STEM CELLS (IPSCS) FOR *IN VITRO* TOXICOLOGY ASSAY DEVELOPMENT. B. Leonard[1], L. Little[1], *T. Singer*[2,1], *T. Weiser*[2,1], *K. L. Kolaja*[1,2], and E. Chiao[1]. [1]Nonclinical Safety, Hoffmann-La Roche, Nutley, NJ, and [2]Nonclinical Safety, Hoffmann-La Roche, Basel, Switzerland.

#2066 **Poster Board Number 460**
SPECIFICATION OF CARDIOMYOCYTES USING SMALL MOLECULES DURING THE DIFFERENTIATION OF HUMAN PLURIPOTENT STEM CELLS. L. Little[1], J. Cohen[1], A. Hoffman[3], J. E. Babiarz[1], *T. Singer*[2,1], *T. Weiser*[2,1], *K. L. Kolaja*[1,2], and E. Chiao[1]. [1]Nonclinical Safety, Hoffmann-La Roche, Nutley, NJ, [2]Nonclinical Safety, Hoffmann-La Roche, Basel, Switzerland, and [3]Discovery Technologies, Hoffmann-La Roche, Nutley, NJ.

Abstract #

#2067 **Poster Board Number 461**
DEVELOPMENT OF A HIGH-THROUGHPUT, *IN VITRO* HUMAN PLURIPOTENT STEM CELL TEST (HPST) FOR THE IDENTIFICATION OF POTENTIALLY TERATOGENIC COMPOUNDS. E. Chiao[1], S. Kameoka[1], J. Babiarz[1], B. Leonard[1], *T. Singer*[2,1], *T. Weiser*[2,1], and *K. L. Kolaja*[1,2]. [1]Nonclinical Safety, Hoffmann-LaRoche, Nutley, NJ, and [2]Nonclinical Safety, Hoffmann-La Roche, Basel, Switzerland.

#2068 **Poster Board Number 462**
MECHANISM OF ACTION OF THE HERBICIDE PARAQUAT ON ERYTHROID DIFFERENTIATION PATHWAY IN BONE MARROW OF MICE. N. Bhardwaj, and R. K. Saxena. School of Life Sciences, Jawaharlal Nehru University, New Delhi, India. Sponsor: *M. Gilmour*.

#2069 **Poster Board Number 463**
CELLULAR, METABOLIC, AND HISTOLOGICAL EVIDENCE FOR ARSENIC-INDUCED MYOPATHY. F. Ambrosio[1], B. Goodpaster[2], L. Niedernhofer[3], *B. Van Houten*[4], G. Distefano[1,2], E. H. Brown[1], and *A. Barchowsky*[5]. [1]Physical Medicine & Rehabilitation, University of Pittsburgh, Pittsburgh, PA, [2]Medicine, University of Pittsburgh, Pittsburgh, PA, [3]Microbiology and Molecular Genetics, University of Pittsburgh, Pittsburgh, PA, [4]Pharmacology, University of Pittsburgh, Pittsburgh, PA, and [5]Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA.

#2070 **Poster Board Number 464**
A NEW STRATEGY FOR DRUG DISCOVERY AND DEVELOPMENT BY ANALYZING THE BEHAVIOR OF ES CELLS CULTURED ON TOSHI (TISSUE/ORGAN SECTIONS FOR HISTOPATHOLOGY)–SUBSTRATA. T. Takezawa. National Institute of Agrobiological Sciences, Tsukuba, Japan. Sponsor: *T. Satoh*.

#2071 **Poster Board Number 465**
REDOX DISRUPTING POTENTIAL OF TOXCAST CHEMICALS RANKED BY ACTIVITY IN MOUSE EMBRYONIC STEM CELLS. *K. J. Chandler*, *S. Hunter*, M. Hoopes, S. Jeffay, H. Nichols, *N. Kleinstreuer*, and *T. Knudsen*. US EPA, Durham, NC.

#2072 **Poster Board Number 466**
SMALL-MOLECULE KINASE INHIBITION TO EXPEDITE THE MATURATION OF HUMAN IPS-DERIVED CARDIOMYOCYTES. J. Babiarz[1], S. Kameoka[1], *T. Singer*[2,1], *T. Weiser*[2,1], *K. L. Kolaja*[1,2], and E. Chiao[1]. [1]Nonclinical Safety, Hoffmann-LaRoche, Nutley, NJ, and [2]Nonclinical Safety, Hoffmann-La Roche, Basel, Switzerland.

#2073 **Poster Board Number 467**
EVALUATION OF CADMIUM BIPHASIC CYTOTOXICITY ON HUMAN EMBRYONAL CARCINOMA AND MOUSE EMBRYONIC STEM CELLS. A. Aliberti, and *F. A. Barile*. Pharmaceutical Sciences, Toxicology Division, St. John's University College of Pharmacy, Queens, NY.

Program Description (Continued)

Abstract #

#2074 **Poster Board Number 468**
EXPRESSION OF THE ARYL HYDROCARBON RECEPTOR DURING MOUSE EMBRYONIC STEM CELL DIFFERENTIATION IS HIGHER IN MESODERMAL LINEAGES. Q. Wang, Y. Wang, Y. Fan, C. Ko, and *A. Puga*. University of Cincinnati, Cincinnati, OH.

#2075 **Poster Board Number 469**
ARSENIC INHIBITS DIRECTED DIFFERENTIATION OF MOUSE PLURIPOTENT STEM CELLS TO EPIDERMAL KERATINOCYTES. *J. F. Reichard*, and *A. Puga*. Environmental Health, University of Cincinnati, Cincinnati, OH.

#2076 **Poster Board Number 470**
IMPROVED HIPSCS-DERIVED CARDIOMYOCYTES (REPROCARDIO 2) FOR USE IN HIGH-THROUGHPUT ELECTROPHYSIOLOGICAL PLATFORMS AND HIGH-CONTENT IMAGING SYSTEMS. S. Yoshida, and Y. Asai. ReproCELL Inc., Yokohama, Japan. Sponsor: *T. Shafer*.

#2077 **Poster Board Number 471**
ESTABLISHMENT OF *IN VITRO* EPIGENETIC TOXICITY TEST MODEL USING PRIMORDIAL GERM CELL DERIVED FROM MOUSE EMBRYONIC STEM CELL. H. Kang[1], H. Shin[1], J. Seo[1], *S. Jeong*[2], S. Park[1], Y. Park[1], and S. Son[1]. [1]Veterinary Toxicology and Chemistry, National Veterinary Research and Quarantine Service, Anyang, Republic of Korea, and [2]GLP Research Center, College of Natural Sciences, Hoseo University, Asan, Republic of Korea.

#2078 **Poster Board Number 472**
ARSENIC-INDUCED MALIGNANT TRANSFORMATION OF HUMAN SKIN KERATINOCYTE STEM CELLS. *Y. Sun*, *E. J. Tokar*, *Y. Xu*, and *M. P. Waalkes*. National Toxicology Program Laboratory, DNTP, NIEHS, Research Triangle Park, NC.

Wednesday Morning, March 14
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Genotoxicity Testing

Chairperson(s): *Jeanne Mulder, Queens University, Kingston, ON, Canada.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *9:00 AM–11:00 AM*

#2079 **Poster Board Number 501**
REEVALUATION OF THE US NATIONAL TOXICOLOGY PROGRAM'S (NTP) MOUSE LYMPHOMA FORWARD MUTATION ASSAY (MLA) DATA USING CURRENT STANDARDS REVEALS LIMITATIONS OF USING THE PROGRAM'S SUMMARY CALLS. *B. Gollapudi*[1], M. R. Schisler[1], L. McDaniel[2], and *M. M. Moore*[2]. [1]The Dow Chemical Company, Midland, MI, and [2]NCTR, Jefferson, AR.

Abstract #

#2080 **Poster Board Number 502**
ARISTOLOCHIC ACID IS A MORE POTENT GENE MUTAGEN THAN CLASTOGEN IN F344 RATS. *J. A. Bhalli*, J. G. Shaddock, M. G. Pearce, and R. H. Heflich. NCTR, US FDA, Jefferson, AR.

#2081 **Poster Board Number 503**
DEVELOPMENT OF A HIGH-CONTENT HIGH-THROUGHPUT SCREENING PLATFORM FOR GENOTOXICITY ASSESSMENT. B. Goodwin[1], *K. Witt*[2], *C. Austin*[1], *R. Tice*[2], and *M. Xia*[1]. [1]National Institutes of Health Chemical Genomics Center, National Institutes of Health, Rockville, MD, and [2]National Institute of Environmental Health Sciences, National Toxicology Program, Research Triangle Park, NC.

#2082 **Poster Board Number 504**
OPTIMAL DOSE SETTINGS TO EVALUATE DNA DAMAGE IN DIFFERENT ORGANS IN A RAT COMET ASSAY. S. Kitamoto[1], R. Matsuyama[1], Y. Uematsu[2], K. Ogata[1], M. Ota[1], *T. Yamada*[2], K. Miyata[1], J. Kimura[2], H. Funabashi[2], and *K. Saito*[1]. [1]Environmental Health Science Laboratory, Sumitomo Chemical Co., Ltd., Osaka, Japan, and [2]Safety Research Laboratories, Dainippon Sumitomo Pharma Co., Ltd., Osaka, Japan.

#2083 **Poster Board Number 505**
IDENTIFICATION OF GENOMIC INSERTION SITES OF λEG10 DNA IN *GPT* DELTA TRANSGENIC MICE AND RATS BY HIGH-THROUGHPUT DNA SEQUENCING. T. Nohmi, K. Masumura, Y. Sakamoto, W. Kumita, and M. Honma. Division of Genetics and Mutagenesis, National Institute of Health Sciences, Setagaya, Tokyo, Japan. Sponsor: *A. Nishikawa*.

#2084 **Poster Board Number 506**
EVALUATION OF *IN VITRO* MICRONUCLEUS TEST IN TK6 LYMPHOBLASTOID CELLS: COMPARISON WITH CHL CELLS AND HUMAN PERIPHERAL LYMPHOCYTES USING PHARMACEUTICAL DRUG CANDIDATES. C. Hirogaki, *T. Yamada*, J. Kimura, and H. Funabashi. Safety Research Laboratories, Dainippon Sumitomo Pharma Co., Ltd., Osaka, Japan.

#2085 **Poster Board Number 507**
COMBINATION OF MUTATION AND CHROMOSOMAL DAMAGE ENDPOINTS USING PIG-A GENE AND MICRONUCLEUS ASSAY IN PERIPHERAL BLOOD IN RATS. M. Merker[1], *A. Poth*[1], and I. Willberger[2]. [1]Genetic and Atlernative Toxicology, Harlan Cytotest Cell Research GmbH, Rossdorf, Germany, and [2]Technical University Darmstadt, Darmstadt, Germany.

#2086 **Poster Board Number 508**
GENOTOXICITY OF FURAN DERIVATIVES AS ASSESSED BY THE COMET ASSAY. A. H. Sæther[1], G. Brunborg[1], H. Glatt[2], C. Svendsen[1], T. Rasmussen[1], J. Alexander[1], and T. Husøy[1]. [1]Norwegian Institute of Public Health, Oslo, Norway, and [2]Department of Nutritional Toxicology, German Institute of Human Nutrition, Potsdam-Rehbrücke, Germany. Sponsor: *U. Nygaard*.

Program Description (Continued)

Abstract #

#2087 **Poster Board Number 509**
FLOW CYTOMETRY-BASED *IN VITRO* MICRONUCLEUS ASSAY: MITIGATING THE INFLUENCE OF APOPTOGENIC ACTIVITY.
S. Bryce, S. Avlasevich, *J. Bemis*, and *S. Dertinger*. Litron Labs, Rochester, NY.

#2088 **Poster Board Number 510**
GENOTOXICITY ASSESSMENT OF MOLINDONE. *G. Krishna*, *S. Goel*, and P. Baroldi. Supernus Pharmaceuticals, Inc., Rockville, MD.

#2089 **Poster Board Number 511**
ASSESSMENT OF AN INTEGRATED *IN VITRO* GENOTOXICITY SCREENING TEST FOR AN EARLY AND MORE ACCURATE DETECTION OF GENOTOXIC COMPOUNDS. *N. Krause*, H. Kubas, and *C. Janaitis*. Merz Pharmaceuticals GmbH, Frankfurt am Main, Germany.

#2090 **Poster Board Number 512**
CYTOTOXIC AND MUTAGENIC EFFECTS OF HALOQUINONE DRINKING WATER DISINFECTION BYPRODUCTS. *C. F. McGuigan*, X. Li, and X. Le. Division of Analytical & Environmental Toxicology, University of Alberta, Edmonton, AB, Canada.

#2091 **Poster Board Number 513**
UTILIZATION OF A WHOLE SMOKE EXPOSURE SYSTEM FOR THE COMPARISON OF MAINSTREAM CIGARETTE SMOKE, GAS VAPOR PHASE, AND TAR MUTAGENICITY. *R. Leverette*. Lorillard, Greensboro, NC.

#2092 **Poster Board Number 514**
COMET ASSAY IN RAT SKIN—ESTABLISHMENT OF A RELIABLE AND ROBUST CELL ISOLATION METHOD. *A. Poth*[1], M. Merker[1], and O. Heinemann[2]. [1]Genetic and Atlernative Toxicology, Harlan Cytotest Cell Research GmbH, Rossdorf, Germany, and [2]University of Applied Sciences Darmstadt, Darmstadt, Germany.

#2093 **Poster Board Number 515**
RELATIONSHIP BETWEEN GENETIC DAMAGE AND DERMAL LESION OF ARSENICOSIS PATIENTS CAUSED BY BURNING COAL. G. Yang[1], A. Zhang[1], J. Li[1], and X. Huang[2]. [1]School of Public Health, Guiyang Medical University, Guiyang, China, and [2]44th Hospital of People's Liberation Army, Guiyang, China. Sponsor: *P. Zhou*.

#2094 **Poster Board Number 516**
ERYTHROSINE, A FOOD DYE, SHOWED MUTAGENIC POTENTIAL IN HEPG2 CELLS BY CYTOKINESIS-BLOCK MICRONUCLEI CYTOME ASSAY. F. D. Chequer[1], V. P. Venâncio[1], M. B. Zanoni[2], *D. P. Oliveira*[1], M. P. Bianchi[1], and L. G. Antunes[1]. [1]Análises Clínicas, Toxicológicas e Bromatológicas, Faculdade de Ciências Farmacêuticas de Ribeirão Preto-Universidade de São Paulo, Ribeirão Preto, São Paulo, Brazil, and [2]Química Analítica, Universidade Paulista Júlio de Mesquita Filho-UNESP, Araraquara, São Paulo, Brazil.

#2095 **Poster Board Number 517**
SYSTEMATIC EVALUATION OF EXPERIMENTAL VARIABILITY IN THE COMET ASSAY *IN VIVO*. M. Guérard, A. Zeller, E. Gocke, and *T. Singer*. pRED, Pharma Research & Early Development, Hoffmann-La Roche AG, Basel, Switzerland.

Abstract #

#2096 **Poster Board Number 518**
EVALUATION OF THE NUCLEOTIDE ANALOGS, 5-FLUOROURACIL AND CYTOSINE ARABINOSIDE IN THE *IN VITRO* MICRONUCLEUS ASSAY: COMPARISON OF FLOW CYTOMETRY AND SLIDE ANALYSIS. *C. S. Farabaugh*, M. M. Wells, M. L. Moy, and *M. J. Schlosser*. WIL Research Company, Skokie, IL.

#2097 **Poster Board Number 519**
THE DYE REACTIVE BLACK 5 INDUCES DNA DAMAGE IN HEPG2 CELLS. *D. J. Dorta*[2], G. A. Oliveira[1], E. S. Paula[1], E. A. Ferraz[1], and *D. P. Oliveira*[1]. [1]Departamento de Análises Clínicas, Toxicológicas e Bromatolóicas, Universidade de São Paulo-FCFRP/USP, Ribeirão Preto, São Paulo, Brazil, and [2]Departamento de Química, Universidade de São Paulo-FFCLRP/USP, Ribeirão Preto, São Paulo, Brazil.

#2098 **Poster Board Number 520**
DEVELOPMENT OF A NOVEL GLP 3D EPIDERM™ RECONSTRUCTED HUMAN SKIN MICRONUCLEUS ASSAY. *S. Roy*, A. Szkudlinska, K. Wang, J. Shi, S. Hickman, W. Madraymootoo, and M. Aardema. BioReliance, Rockville, MD.

#2099 **Poster Board Number 521**
EVALUATION OF THE MUTAGENICITY OF REACTIVE DYES. G. Meireles, and *D. P. Oliveira*. University of São Paulo, Ribeirão Preto, Brazil.

#2100 **Poster Board Number 522**
CYTOTOXIC AND GENOTOXIC PROPERTIES OF THE MIXED HERBAL TEAS. *G. Özhan*, A. Candas, and B. Alpertunga. Department of Pharmaceutical Toxicology, Istanbul University, Faculty of Pharmacy, Istanbul, Turkey.

#2101 **Poster Board Number 523**
MICRONUCLEI INDUCTION BY ETHYL-4-BROMOPHENYL-CARBAMATE AND ETHYL-4-CLOROPHENYL-CARBAMATE AFTER ACUTE AND SUBCHRONIC RAT EXPOSURE USING PERIPHERAL BLOOD ERYTHROCYTES. M. Prado Ochoa[1], *P. Ramírez Noguera*[2], R. Díaz Torres[4], E. Ángeles Anguiano[3], M. Muñoz Guzmán[2], and F. Alba Hurtado[2]. [1]Posgrado en Ciencias de la Producción y de la Salud Animal, UNAM FES-Cuautitlán, Cuautitlán Izcallí, Estado de México, Mexico, [2]Departamento de Ciencias Biológicas, UNAM FES-Cuautitlán, Cuautitlán Izcallí, Estado de México, Mexico, [3]Departamento de Ciencias Químicas, UNAM FES-Cuautitlán, Cuautitlán Izcallí, Estado de México, Mexico, and [4]Departamento de Ingeniería y Tecnología, UNAM FES-Cuautitlán, Cuautitlán Izcallí, Estado de México, Mexico.

Program Description (Continued)

Abstract #

Wednesday Morning, March 14
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Poster Session: Exposure Assessment: Case-Specific Characterizations

Chairperson(s): *Chris Pritsos, University of Nevada, Reno, NV, and Jesus Olivero-Verbel, University of Cartagena, Cartagena, Colombia.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *11:00 AM–12:30 PM*

#2102 **Poster Board Number 526**
FINE PARTICLE EMISSION FROM TOBACCO SMOKE IN ENCLOSED ENVIRONMENTS. *J. B. Schulze*[1,2], D. Mueller[2], S. Uibel[2], S. Beissmann[2], and D. Groneberg[2]. [1]Office of the Dean, Johann Wolfgang Goethe University Frankfurt, Frankfurt Main, Germany, and [2]Institute of Occupational, Social and Environmental Medicine, Goethe University, Frankfurt/Main, Germany.

#2103 **Poster Board Number 527**
EFFECT OF COMMERCIALLY USED AIR FILTERS ON ENVIRONMENTAL TOBACCO SMOKE CONSTITUENTS AND CYTOKINE-MEDIATED INFLAMMATORY RESPONSE. T. Muthumalage[3], K. Pritsos[1], K. Hunter[2], and *C. Pritsos*[1,3]. [1]Agriculture, Nutrition and Veterinary Sciences, University of Nevada, Reno, NV, [2]Microbiology and Immunology, University of Nevada, Reno, NV, and [3]Environmental Sciences Program, University of Nevada, Reno, NV.

#2104 **Poster Board Number 528**
EFFECT OF COMMERCIALLY USED AIR FILTERS ON ENVIRONMENTAL TOBACCO SMOKE CONSTITUENTS AND OXIDATIVE STRESS. T. Muthumalage[2], K. Pritsos[1], and *C. Pritsos*[1,2]. [1]Agriculture, Nutrition and Veterinary Sciences, University of Nevada, Reno, NV, and [2]Environmental Sciences Program, University of Nevada, Reno, NV.

#2105 **Poster Board Number 529**
COMPARISON OF MOUSE STRAINS AND EXPOSURE CONDITIONS IN 2 WEEK CIGARETTE SMOKE INHALATION STUDIES. H. Tsuji[1], H. Fujimoto[1], T. Nishino[1], *M. K. Lee*[2], *R. Renne*[3], and H. Yoshimura[1]. [1]Product & Science Division, Japan Tobacco, Tokyo, Japan, [2]Scientific Regulatory Affairs, JTI S.A, Geneva, Switzerland, and [3]Roger Renne ToxPath Consulting, Sumner, WA.

#2106 **Poster Board Number 530**
AN ANALYSIS OF HISTORICAL EXPOSURES OF PRESSMEN TO AIRBORNE BENZENE (1930s TO 2006). *R. M. Novick*, *J. J. Keenan*, and *D. J. Paustenbach*. ChemRisk, LLC, San Francisco, CA.

#2107 **Poster Board Number 531**
EVALUATION OF POTENTIAL EXPOSURE TO METALS IN LAUNDERED SHOP TOWELS. *L. A. Beyer*, G. I. Greenberg, and *B. D. Beck*. Gradient, Cambridge, MA.

#2108 **Poster Board Number 532**
RISK ASSESSMENT OF PHTHALATES FROM INTAKE OF COW'S MILK AND INFANT FORMULA. S. K. Lim, and *B. M. Lee*. College of Pharmacy, Sungkyunkwan University, Suwon, Gyeonggi-fo, Republic of Korea.

Abstract #

#2109 **Poster Board Number 533**
REVISITING THE IMPACT OF BIOLOGICAL AND EXPERIMENTAL CONDITIONS OF LABORATORY ANIMAL STUDIES ON ESTIMATIONS OF RISK OF NEUROTOXICITY BY EXPOSURE TO PESTICIDES IN HUMANS: THE PYRETHROID CASE. *M. J. Wolansky*[1], *K. M. Crofton*[2], D. M. Romero[3], and *R. Tornero-Velez*[4]. [1]Biological Chemistry (Toxicology), ARG NRC / University of Buenos Aires, Buenos Aires, Argentina, [2]ORD, US EPA, Durham, NC, [3]Biological Chemistry, University of Buenos Aires School of Science, ARG NRC, Buenos Aires, Argentina, and [4]NERL, US EPA, Durham, NC.

#2110 **Poster Board Number 534**
OUTDOOR AIR RISKS FROM SUBSURFACE CONTAMINATION BY VOLATILE CHEMICALS. *K. W. DiBiasio*, and C. Y. Jeng. Department of Toxic Substances Control, California Environmental Protection Agency, Sacramento, CA.

#2111 **Poster Board Number 535**
COMPARISON OF HUMAN EXPOSURE PATHWAYS FOR CONTAMINATED SOIL IN AN ARCTIC URBAN BROWNFIELD. K. James[1,2], R. E. Farrell[2], and S. D. Siciliano[2,3]. [1]Interdisciplinary Graduate Program of Toxicology, University of Saskatchewan, Saskatoon, SK, Canada, [2]Department of Soil Science, University of Saskatchewan, Saskatoon, SK, Canada, and [3]Toxicology Group, University of Saskatchewan, Saskatoon, SK, Canada. Sponsor: *L. Weber*.

#2112 **Poster Board Number 536**
EXPOSURE AND TOXICITY OF CHEMICALS RESULTING FROM NATURAL GAS EXTRACTION AND HYDRAULIC FRACTURING. *D. A. Kaden*[1], *A. B. Santamaria*[2], *A. Harris*[6], J. Imse[4], M. Travers[5], and *R. Schoof*[3]. [1]ENVIRON, Boston, MA, [2]ENVIRON, Houston, TX, [3]ENVIRON, Seattle, OR, [4]ENVIRON, Denver, CO, [5]ENVIRON, Chicago, IL, and [6]ENVIRON, Little Rock, AR.

#2113 **Poster Board Number 537**
FORMALDEHYDE EXPOSURE ASSOCIATED WITH USE OF PROFESSIONAL KERATIN HAIR-SMOOTHING PRODUCTS. *S. Hong*[1], R. Kalmes[2], M. Posson[2], R. Richter[1], and *M. Fedoruk*[1]. [1]Exponent, Inc, Irvine, CA, and [2]Exponent, Inc, Oakland, CA.

#2114 **Poster Board Number 538**
DERIVATION OF LOAEL AND NOAEL FOR TREMOLITE ASBESTOS. *R. E. Adams*[1], *B. Finley*[2], *J. Pierce*[1], *A. Phelka*[1], *D. Paustenbach*[2], *K. Thuett*[2], and *C. Barlow*[3]. [1]ChemRisk, Chicago, IL, [2]ChemRisk, San Francisco, CA, and [3]ChemRisk, Boulder, CO.

#2115 **Poster Board Number 539**
TREMOLITE ASBESTOS EXPOSURES ASSOCIATED WITH THE USE OF COMMERCIAL PRODUCTS. *A. Phelka*[1], *B. Finley*[2], *J. Pierce*[1], *R. E. Adams*[1], *D. Paustenbach*[2], *K. Thuett*[2], and *C. Barlow*[3]. [1]ChemRisk, Chicago, IL, [2]ChemRisk, San Francisco, CA, and [3]ChemRisk, Boulder, CO.

Program Description (Continued)

Abstract #

#2116 **Poster Board Number 540**
EVALUATION OF ASBESTOS EXPOSURE ASSOCIATED WITH ASBESTOS-CONTAINING GAUZE PADS. C. L. Blake[1], M. Stubbs[1], *G. T. Johnson*[2], and *R. D. Harbison*[2]. [1]Bureau Veritas North America, Inc., Kennesaw, GA, and [2]Environmental and Occupational Health, University of Southern Florida-College of Public Health, Tampa, FL.

#2117 **Poster Board Number 541**
DO WOODWORKING OPERATIONS GENERATE POLYCYCLIC AROMATIC HYDROCARBONS? E. Danisman, K. Huynh, B. Danuser, and *K. Clark*. Institute for Work and Health, Lausanne, Switzerland.

#2118 **Poster Board Number 542**
POLYFLUOROALKYL COMPOUNDS (PFCS) IN TEXAS—CHILDREN FROM BIRTH THROUGH 12 YEARS OF AGE. *A. J. Schecter*[1], N. Bass[1], A. Calafat[2], K. Kato[2], *J. Colacino*[3], T. Harris[1], L. S. Hynan[4], T. Gent[1], S. Malla[1], and *L. Birnbaum*[5]. [1]Environmental and Occupational Health Program, University of Texas School of Public Health, Dallas Campus, Dallas, TX, [2]Division of Laboratory Sciences, Centers for Disease Control and Prevention, Atlanta, GA, [3]Department of Environmental Health Sciences, University of Michigan School of Public Health, Ann Arbor, MI, [4]Statistics Program, University of Texas Southwestern Medical Center, Dallas, TX, and [5]Director, National Institute for Environmental Health Sciences/NCI/NIH, Research Triangle Park, NC.

#2119 **Poster Board Number 543**
DIETARY EXPOSURE TO ACRYLAMIDE IN ADOLESCENTS FROM A CANADIAN URBAN CENTER. L. Normandin[1], C. Blanchet[1], A. Becalski[2], Y. Bonvalot[2], D. Phaneuf[1], C. Lapointe[2], M. Gagné[1], *P. Ayotte*[1], M. Courteau[1], and *M. Bouchard*[3]. [1]Institut National de Santé Publique du Québec, Quebec, Canada, [2]Santé Canada, Ottawa, ON, Canada, and [3]Université de Montréal, Montreal, QC, Canada.

#2120 **Poster Board Number 544**
QUANTIFICATION OF BENZENE,TOLUENE, AND UFP DURING SURGERY WITH ELECTROCAUTERY. H. Anundi[1], S. Näslund-Andreason[2], *B. Sahlberg*[1], and H. Matheme[3]. [1]Occupational and Environmental Medicine, Uppsala University, Uppsala, Sweden, [2]Main Operating Theatres, Uppsala University Hospital, Uppsala, Sweden, and [3]Surgery, Uppsala University Hospital, Uppsala, Sweden.

#2121 **Poster Board Number 545**
DERIVATION OF ROUTE-SPECIFIC MAXIMUM ALLOWABLE DOSE LEVELS (SAFE HARBOR LEVELS) FOR LEAD FOR THE ASSESSMENT OF RISKS FROM CONSUMER PRODUCTS. *L. Haighton*, H. Fikree, A. Pais, and *J. W. Card*. Intertek Cantox, Mississauga, ON, Canada.

#2122 **Poster Board Number 546**
HIGH MERCURY LEVELS IN THE AIR OF DENTAL CENTERS IN CARTAGENA, COLOMBIA. W. Maldonado-Rojas, A. Arrazola-Diaz, and *J. Olivero-Verbel*. Environmental and Computational Chemistry Group, University of Cartagena, Cartagena, Bolivar, Colombia.

Abstract #

#2123 **Poster Board Number 547**
CHRONIC LEAD POISONING IN DOMESTIC FOWLS EXPOSED TO GOLD MINING ACTIVITY IN NIGERIA. *O. O. Oladipo*[1], B. O. Akanbi[2], P. S. Ekong[2], G. O. Ajani[2], and P. A. Okewole[2]. [1]Toxicology Section, Biochemistry Division, National Veterinary Research Institute, Jos, Plateau, Nigeria, and [2]Central Diagnostic Laboratory, National Veterinary Research Institute, Vom, Jos, Plateau, Nigeria.

#2124 **Poster Board Number 548**
SUCCESSFUL APPLICATION OF LEAD ISOTOPES IN SOURCE APPORTIONMENT, LEGAL PROCEEDINGS, REMEDIATION, AND MONITORING. *B. Gulson*[1,2], M. Korsch[2], W. Winchester[3], M. Devenish[3], T. Hobbs[3], C. Main[4], G. Smith[4], K. Rosman[5], L. Howearth[5], L. Burnes-Nunes[5], J. Seow[6], C. Oxford[6], L. Gillam[7], G. Yun[7], and M. Crisp[8]. [1]Macquarie University, Sydney, NSW, Australia, [2]ESRE, CSIRO, North Ryde, NSW, Australia, [3]WA Transport, Esperance, WA, Australia, [4]WA Animal Health, Perth, WA, Australia, [5]Curtin University, Perth, WA, Australia, [6]Environment, Perth, WA, Australia, [7]Health, Perth, WA, Australia, and [8]LED, Esperance, WA, Australia.

#2125 **Poster Board Number 549**
SIMULATION OF HEAVY METAL CONTAMINATION OF FRESH WATER BODIES: TOXIC EFFECTS IN THE CATFISH AND ITS AMELIORATION WITH COCONTAMINATION WITH GLYPHOSATE. F. O. Okonkwo[1], and C. E. Ejike[2]. [1]Department of Biochemistry, University Of Nigeria, Nsukka, Enugu State, Nigeria, and [2]Department of Biochemistry, Michaei Okpara University of Agriculture, Umudike, Abia State, Nigeria. Sponsor: *W. Hayes*.

#2126 **Poster Board Number 550**
MANAGING HUMAN HEALTH RISK THROUGH A COMPREHENSIVE AIR-MONITORING PLAN AT A FORMER MGP SITE. R. B. DeHate[1], B. Skelly[1], *G. Johnson*[2], and *R. D. Harbison*[2]. [1]GEI Consultants, Inc., Valrico, FL, and [2]Environmental and Occupational Health, University of South Florida-College of Public Health, Tampa, FL.

Program Description (Continued)

Abstract #

Wednesday Morning, March 14
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Characterizing Toxic Modes of Action and Pathways to Toxicity

Poster Session: NrF2

Chairperson(s): *Alexandria Lau, University of Arizona, Tucson, AZ, and Anil Jaiswal, University of Maryland School of Medicine, Baltimore, MD.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *9:00 AM–11:00 AM*

#2127 **Poster Board Number 551**
INDUCTION OF NAD(P)H:QUINONE OXIDOREDUCTASE: INTERPLAY BETWEEN AH RECEPTOR AND NRF2. L. Wang[1,3], *X. He*[2], G. Szklarz[1], and *Q. Ma*[2]. [1]Department of Basic Sciences, West Virginia University, Morgantown, WV, [2]TMBB/HELD, NIOSH, Morgantown, WV, and [3]Department of Occupational and Environmental Health, Wuhan University, Wuhan, China.

#2128 **Poster Board Number 552**
ESTROGEN RECEPTOR ALPHA AND ARYL HYDROCARBON RECEPTOR DIFFERENTIALLY MODULATE THE TRANSCRIPTIONAL ACTIVITY OF NUCLEAR FACTOR ERYTHROID-2-RELATED FACTOR 2 (NRF2). R. Lo, and *J. Matthews*. University of Toronto, Toronto, ON, Canada.

#2129 **Poster Board Number 553**
NUCLEAR FACTOR E2-RELATED FACTOR-2 (NRF2) REGULATES P-GLYCOPROTEIN EXPRESSION AT THE BLOOD-BRAIN BARRIER (BBB) BY ACTING THROUGH P38 MAP KINASE. *X. Wang*, and D. Miller. Laboratory of Pharmacology, National Institute of Environmental Health Sciences, Research Triangle Park, NC.

#2130 **Poster Board Number 554**
THE ROLE OF SIRTUIN-1 ON TBHQ INDUCTION OF NRF2 AND PROTOTYPICAL NRF2 TARGET GENE EXPRESSION. W. Wei[1], *J. Xu*[1], *S. Kulkarni*[1], *A. Donepudi*[1], *V. More*[1], C. Wang[1], *X. Li*[2], and *A. Slitt*[1]. [1]Biomedical and Pharmaceutical Sciences, University of Rhode Island, Kingston, RI, and [2]Signal Transduction, National Institute of Environmental Health Sciences, Research Triangle Park, NC.

#2131 **Poster Board Number 555**
XBP1 AND NRF2, AT THE CROSSROADS OF ENDOPLASMIC RETICULUM STRESS AND OXIDATIVE STRESS. *T. Wu*, *F. Zhao*, *W. T. Klimeki*, and *D. D. Zhang*. Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

#2132 **Poster Board Number 556**
REGULATORY ROLE OF NRF2 AND KEAP1 IN PPAR-GAMMA EXPRESSION AND CHEMORESISTANCE IN HUMAN NONSMALL-CELL LUNG CARCINOMA CELLS. L. Zhan, H. Zhang, *Q. Zhang*, P. Xue, Y. Hou, A. Wang, W. Qu, K. Yarborough, *C. G. Woods*, *M. E. Andersen*, and *J. Pi*. The Institute for Chemical Safety Sciences, The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

Abstract #

#2133 **Poster Board Number 557**
UPREGULATION OF QUINONE OXIDOREDUCTASE 1 ENZYME BY THE STRONGLY BASIC ALKALOIDAL FRACTION OF RHAZYA STRICTA THROUGH NRF2-DEPENDENT MECHANISM. *M. El Gendy*[1], B. H. Ali[2], and *A. O. El-Kadi*[1]. [1]Faculty of Pharmacy, University of Alberta, Edmonton, AB, Canada, and [2]Department of Pharmacology, Sultan Qaboos University, Al Khod, Oman.

#2134 **Poster Board Number 558**
NRF2 ACTIVATION PREVENTS ETHANOL-INDUCED HEPATIC ALTERATIONS. *K. C. Wu*, *J. J. Liu*, and *C. D. Klaassen*. University of Kansas Medical Center, Kansas City, KS.

#2135 **Poster Board Number 559**
NRF2 ACTIVATOR BARDOXOLONE METHYL TRANSCRIPTIONALLY REGULATES TRANSAMINASES AND INCREASES GLUTATHIONE IN MULTIPLE TISSUES. *S. A. Reisman*[1], G. A. Miller[1], R. Bumeister[1], B. Probst[1], *C. D. Klaassen*[2], S. Ruiz[1], C. J. Meyer[1], W. Wigley[1], and D. A. Ferguson[1]. [1]Reata Pharmaceuticals, Inc., Irving, TX, and [2]University of Kansas Medical Center, Kansas City, KS.

#2136 **Poster Board Number 560**
***BACOPA MONNIERA* EXTRACT ACTIVATES THE NRF2 PATHWAY AND PROTECTS AGAINST MPP+ AND PARAQUAT-INDUCED TOXICITY THROUGH THE MODULATION OF INTRACELLULAR OXIDATIVE STRESS AND MITOCHONDRIAL FUNCTIONS.** M. Singh[1], V. Murthy[2], and C. Ramassamy[1,2]. [1]Pharmacology, INRS–Institut Armand-Frappier, Laval, QC, Canada, and [2]Department of Medical Biology, Faculty of Medicine, Laval University, Québec, QC, Canada. Sponsor: *T. Sanderson*.

#2137 **Poster Board Number 561**
NRF2 DEFICIENCY PREVENTS GLUCOSE INTOLERANCE INDUCED BY A HIGH-FAT DIET IN MICE. *Y. J. Zhang*, *K. C. Wu*, *J. Liu*, and *C. D. Klaassen*. University of Kansas Medical Center, Kansas City, KS.

#2138 **Poster Board Number 562**
THERAPEUTIC POTENTIAL OF NRF2 ACTIVATORS IN STREPTOZOTOCIN-INDUCED DIABETIC MICE. *S. Whitman*[1], H. Zheng[1,2], W. Wu[1], *G. Wondrak*[1], P. Wong[3], D. Fang[4], and *D. D. Zhang*[1]. [1]Pharmacology & Toxicology, University of Arizona, Tucson, AZ, [2]Endocrinology, Xinqiao Hospital, Third Military Medical University, Chongqing, China, [3]Aerospace-Mechanical Engineering, University of Arizona, Tucson, AZ, and [4]Pathology, Northwestern University, Chicago, IL.

#2139 **Poster Board Number 563**
TOO MUCH OF A GOOD THING: ENHANCED NRF2 ACTIVITY INCREASES OBESITY, STEATOSIS, AND GLUCOSE INTOLERANCE. *V. R. More*, *J. Xu*, P. Shimpi, and *A. L. Slitt*. Biomedical and Pharmaceutical Sciences, University of Rhode Island, Kingston, RI.

Program Description (Continued)

Abstract #

#2140 **Poster Board Number 564**
ANTIOXIDANT-ACTIVATED PI3K/AKT BLOCKS GSK3β FROM REGULATING NRF2 EXPORT AND DEGRADATION THAT ALLOWS UNIMPEDED NRF2 ACTIVATION OF CYTOPROTECTIVE GENE EXPRESSION. P. M. Shelton, and *A. K. Jaiswal*. Pharmacology and Experimental Therapeutics, University of Maryland, Baltimore, Baltimore, MD.

#2141 **Poster Board Number 565**
ARSENIC INDUCES CHRONIC NRF2 ACTIVATION. *A. Lau*, H. Wang, and *D. D. Zhang*. Pharmacology and Toxicology, Tucson, AZ.

#2142 **Poster Board Number 566**
INCREASE IN NRF2 CONTRIBUTES TO REDUCED APOPTOSIS AND RESISTANCE TO AROMATASE INHIBITORS. R. Khatri, A. Brodie, and *A. K. Jaiswal*. Pharmacology and Experimental Therapeutics, University of Maryland Baltimore, Baltimore, MD.

#2143 **Poster Board Number 567**
INHIBITION OF PARAQUAT-INDUCED OXIDATIVE STRESS, PROINFLAMMATORY CYTOKINE EXPRESSION, AND FIBROBLAST-TO-MYOFIBROBLAST TRANSFORMATION BY RESVERATROL VIA THE NRF2 PATHWAY. *X. He*[1], L. Wang[2,3], G. Szklarz[2], and *Q. Ma*[1]. [1]TMBB/HELD, NIOSH, Morgantown, WV, [2]Department of Basic Pharmaceutical Sciences, West Virginia University, Morgantown, WV, and [3]Department of Occupational and Environmental Health, Wuhan University, Wuhan, China.

#2144 **Poster Board Number 568**
INRF2 (KEAP1) AND NRF2 BOTH CONTROL BCL-2 AND CELLULAR APOPTOSIS. S. K. Niture, and *A. K. Jaiswal*. Pharmacology, University of Maryland, Baltimore, MD.

#2145 **Poster Board Number 569**
NRF2 PROTECTS HUMAN AND MOUSE ALVEOLAR EPITHELIAL CELLS AGAINST INJURY BY CIGARETTE SMOKE. *B. Kosmider*, E. M. Messier, H. Chu, and R. J. Mason. National Jewish Health, Denver, CO.

#2146 **Poster Board Number 570**
NRF2 DEFICIENCY ATTENUATES FAT ACCUMULATION IN WHITE ADIPOSE TISSUE BY INHIBITING SREBP1C TRANSCRIPTION IN LEPOB/OB MICE. *J. Xu*, and *A. Slitt*. Biomedical and Pharmaceutical Sciences, University of Rhode Island, Kingston, RI.

Abstract #

Wednesday Morning, March 14
9:00 AM to 12:30 PM
Exhibit Halls A–C

PS

Characterizing Toxic Modes of Action and Pathways to Toxicity

Poster Session: Gene Regulation and Signal Transduction

Chairperson(s): *Lei Guo, National Center for Toxicological Research, Jefferson, AR.*

Displayed: *9:00 AM–12:30 PM*

Author Attended: *11:00 AM–12:30 PM*

#2147 **Poster Board Number 617**
MAP KINASES REGULATE NITROGEN MUSTARD-INDUCED ACTIVATION OF DAMAGE-ASSOCIATED MOLECULAR PATTERNS IN MURINE KERATINOCYTES. *H. Kim*[1], Z. Paras[1], *M. P. Shakarjian*[1], *J. D. Laskin*[2], and *D. E. Heck*[1]. [1]Environmental Health Science, New York Medical College, Valhalla, NY, and [2]Environmental and Occupational Medicine, University of Medicine and Dentistry of New Jersey, Robert Wood Johnson Medical College, Piscataway, NJ.

#2148 **Poster Board Number 618**
MULTIPLEXED HIGH-CONTENT SCREENING REVEALS THAT CIGARETTE SMOKE CONDENSATE-ALTERED CELL SIGNALING PATHWAYS ARE ACCENTUATED THROUGH FAK INHIBITION IN HUMAN BRONCHIAL CELLS. *C. A. Carter*. Life Sciences, Lorillard Tobacco Company, Greensboro, NC.

#2149 **Poster Board Number 619**
EXPRESSION OF STEROID SULFATASE INDUCES WNT SIGNAL PATHWAY AND CELL MIGRATION IN HUMAN PROSTATE CANCER CELLS. H. Im, N. Park, C. Seong, J. Jeong, Y. Kwon, and Y. Chun. College of Pharmacy, Chung-Ang University, Seoul, Republic of Korea. Sponsor: *T. Jeong*.

#2150 **Poster Board Number 620**
IDENTIFICATION OF A NOVEL PATHWAY INVOLVED IN THE NEGATIVE REGULATION OF METALLOTHIONEIN TRANSCRIPTION. *J. H. Freedman*, and *J. Hall*. NIEHS, Durham, NC.

#2151 **Poster Board Number 621**
REGULATION OF MNSOD BY THE AHR AGONIST PCB126: THE ROLE OF DIETARY MANGANESE. *B. Wang*[1,2], B. R. Wels[4], W. D. Klaren[1], K. Wang[3], *L. W. Robertson*[1,2], and *G. Ludewig*[1,2]. [1]Human Toxicology, University of Iowa, Iowa City, IA, [2]Occupational and Environmental Health, University of Iowa, Iowa City, IA, [3]Biostatistics, University of Iowa, Iowa City, IA, and [4]Iowa Hygienic Lab., Iowa City, IA.

#2152 **Poster Board Number 622**
EVALUATION OF PERFLUOROALKYL ACID ACTIVITY USING PRIMARY MOUSE AND HUMAN HEPATOCYTES. *M. B. Rosen*[1], K. P. Das[2], C. R. Wood[2], *C. J. Wolf*[2], *B. D. Abbott*[2], and *C. Lau*[2]. [1]Integrated Sys Biol, NHEERL, ORD, US EPA, Research Triangle Park, NC, and [2]Toxicity Assessment, NHEERL, ORD, US EPA, Research Triangle Park, NC.

WEDNESDAY

Program Description (Continued)

Abstract #

#2153 **Poster Board Number 623**
ARYL HYDROCARBON RECEPTOR KNOCKOUT RATS ARE INSENSITIVE TO THYMIC ATROPHY, CHANGES IN LIVER WEIGHT AND AHR-MEDIATED GENE INDUCTION FOLLOWING ACUTE TCDD EXPOSURE. *J. A. Harrill*[1], *R. Budinsky*[2], *J. Rowlands*[2], and *R. S. Thomas*[1]. [1]Institute for Chemical Safety Sciences, The Hamner Institutes for Health Sciences, Research Triangle Park, NC, and [2]Dow Chemical Company, Midland, MI.

#2154 **Poster Board Number 624**
COMPARISON OF GENOME-WIDE GENE EXPRESSION IN TCDD-EXPOSED C57BL/6 MICE AND SPRAGUE DAWLEY RATS. R. Nault, *S. Kim*, and *T. R. Zacharewski*. Biochemistry & Molecular Biology, Centre for Integrative Toxicology, Michigan State University, East Lansing, MI.

#2155 **Poster Board Number 625**
ALTERATION OF GENE EXPRESSION PROFILES AND CYTO-GENOTOXIC EFFECTS INDUCED BY EXPOSURE OF PCB153 TO A HUMAN B LYMPHOBLASTOID CELL LINE. J. Lou, P. Song, L. Jin, D. Xu, and N. Wu. Institute of Hygiene, Zhejiang Academy of Medical Sciences, Hangzhou, Zhejiang Province, China. Sponsor: *L. Fu*.

#2156 **Poster Board Number 626**
CYP1B1 MEDIATES EFFECTS OF BOTH PAHS AND ENDOGENOUS CHEMICALS ON HEMATOPOIETIC PROGENITORS IN BONE MARROW. M. Larsen[1], *A. N'jai*[2], T. Tong[1], J. Bushkofsky[2], *C. J. Czuprynski*[2,3,4], and *C. R. Jefcoate*[1,2]. [1]Cell and Regenerative Biology, University of Wisconsin-Madison, Madison, WI, [2]Molecular and Environmental Toxicology Center, University of Wisconsin-Madison, Madison, WI, [3]Food Research Institute, University of Wisconsin-Madison, Madison, WI, and [4]Pathobiological Sciences, University of Wisconsin-Madison, Madison, WI.

#2157 **Poster Board Number 627**
REGULATION OF XENOBIOTIC TRANSPORTERS IN MOUSE KIDNEYS BY PERFLUOROCARBOXYLIC ACIDS. *X. Cheng*, and *C. D. Klaassen*. Pharmacology, KU Medical Center, Kansas City, KS.

#2158 **Poster Board Number 628**
METHYSTICIN AND 7,8-DIHYDROMETHYSTICIN ARE TWO MAJOR KAVALACTONES IN KAVA EXTRACT TO INDUCE CYP1A1. *L. Guo*, H. Mei, Q. Wu, S. Zhang, *J. Fang*, L. Shi, and *Y. Li*. NCTR, Jefferson, AR.

#2159 **Poster Board Number 629**
THE CORE PROMOTER AND REDOX-SENSITIVE *CIS*-ELEMENTS AS KEY TARGETS FOR INACTIVATION OF THE LYSYL OXIDASE GENE BY CADMIUM. Y. Zhao, J. Zhou, S. Gao, P. Toselli, and *W. Li*. Biochemistry, Boston University School of Medicine, Boston, MA.

#2160 **Poster Board Number 630**
HYPOXIA PERTURBS PCB-INDUCED ARYL HYDROCARBON RECEPTOR SIGNALING. *S. U. Vorrink*, and F. E. Domann. Interdisciplinary Graduate Program in Human Toxicology, Department of Radiation Oncology, University of Iowa, Iowa City, IA.

Abstract #

#2161 **Poster Board Number 631**
COMPARISON OF MICROARRAY GENE EXPRESSION PROFILES CORRESPONDING TO XENOBIOTIC RESPONSES TO OXIDATIVE STRESSES INDUCED BY IONIZING RADIATION AND BENZENE TREATMENT. *Y. Hirabayashi*[1], G. Li[1], K. Igarashi[1], *J. Kanno*[1], J. Yodoi[2], and *T. Inoue*[3,4,5]. [1]Division of Cellular & Molecular Toxicology, Center for Biological Safety & Research, National Institute Health Sciences, Tokyo, Japan, [2]Virus Research Institute, Kyoto University, Kyoto, Japan, [3]Department of Function & Structural Medicine, Nihon University. School of Medicine, Tokyo, Japan, [4]Center for Biological Safety & Research, National Institute Health Sciences, Tokyo, Japan, and [5]Drug Evaluation Agency for Pharmaceuticals and Medical Devices, Tokyo, Japan.

#2162 **Poster Board Number 632**
IDENTIFICATION AND CHARACTERIZATION OF TRANSCRIPTIONAL CONTROL ELEMENTS REGULATING A NOVEL RECEPTOR-MEDIATED SIGNALING REGULATOR, TNIP1. *P. C. Encarnacao*, C. Zhang, S. Livings, and B. J. Aneskievich. Pharmaceutical Sciences, University of Connecticut, Storrs, CT.

#2163 **Poster Board Number 633**
COEXPOSURE OF LOW-DOSE EXTRAPOLATED MODEL TESTICULAR TOXICANTS (X-RADIATION AND 2,5-HEXANEDIONE) MODULATES GENE ALTERATIONS THROUGH TESTICULAR TRANSCRIPT PROFILING. *N. Catlin*, M. Sandrof, and *K. Boekelheide*. Brown University, Providence, RI.

#2164 **Poster Board Number 634**
HEAT SHOCK PROTEINS A1A AND A6 ARE TRANSCRIPTIONALLY REGULATED BY TNIP1 IN KERATINOCYTES. *V. P. Ramirez*, M. Stamatis, C. Zhang, and B. J. Aneskievich. University of Connecticut, Storrs, CT.

#2165 **Poster Board Number 635**
IDENTIFICATION OF CYTOPLASMIC PROTEINS THAT COMPRISE THE PLASMID TRAFFICKING COMPLEX DURING GENE TRANSFER. *M. A. Badding*, and D. A. Dean. Pediatrics, University of Rochester, Rochester, NY.

#2166 **Poster Board Number 636**
CHARACTERIZATION OF *IN VITRO* AND *IN VIVO* HEPATIC FUNCTIONAL RESPONSES USING AUTOMATED DOSE-RESPONSE MODELING. *T. R. Zacharewski*[1,2,3], *A. K. Kopec*[1], *A. L. Forgacs*[1], and *L. D. Burgoon*[1,3]. [1]Biochemistry & Molecular Biology, Center for Integrative Toxicology, Michigan State University, East Lansing, MI, [2]ORISE Faculty Fellow, US EPA, Research Triangle Park, NC, and [3]National Center for Environmental Assessment, US EPA, Research Triangle Park, NC.

#2167 **Poster Board Number 637**
CUSTOM-DESIGNED MITOCHIP FOR INVESTIGATION OF DRUG- AND DISEASE-RELATED MITOCHONDRIAL TOXICITY. T. Han, C. L. Moland, W. S. Branham, *V. G. Desai*, and *J. C. Fuscoe*. Division of Systems Biology, NCTR/FDA, Jefferson, AR.

Program Description (Continued)

Abstract #

#2168 **Poster Board Number 638**
NONGENOMIC ACTION MECHANISMS OF TCDD THROUGH ACTIVATION OF ARYL HYDROCARBON RECEPTOR (AHR) IN NCI-H441 HUMAN LUNG EPITHELIAL CELLS.
M. Tsuji[2,1], D. Wu[2], W. Li[2], P. Wong[2], *C. Vogel*[2], *T. Kawamoto*[1], and F. Matsumura[2]. [1]University of Occupational and Environmental Health, Kitakyusyu, Japan, and [2]Department of Environmental Toxicology, University of California Davis, Davis, CA.

#2169 **Poster Board Number 639**
ZINC FINGER NUCLEASE MEDIATED KNOCKOUT OF THE ARYL HYDROCARBON RECEPTOR IN HUMAN BREAST CANCER CELLS CAUSES THE LOSS OF BASAL CYTOCHROME P450 1B1 LEVELS. S. Ahmed, R. Lo, T. Celius, and *J. Matthews*. Pharmacology & Toxicology, University of Toronto, Toronto, ON, Canada.

#2170 **Poster Board Number 640**
PEPTIDE-MEDIATED TRANSLATIONAL REGULATION OF HUMAN MICROSOMAL EPOXIDE HYDROLASE (EPHX1). *H. T. Nguyen*, *X. Yang*, and *C. J. Omiecinski*. Huck Institutes of the Life Sciences and Center for Molecular Toxicology and Carcinogenesis, Pennsylvania State University, University Park, PA.

#2171 **Poster Board Number 641**
SMALL ANSWERS TO LONGEVITY: THE AGE-DEPENDENT ROLE OF SMALL RNAS IN TISSUE REGENERATION. *J. A. Franzosa*[1], I. H. Boucher[1], R. C. Ticknor[1], *S. C. Tilton*[2], *K. M. Waters*[2], and *R. L. Tanguay*[1]. [1]Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR, and [2]Computational Biology and Bioinformatics, Pacific Northwest National Laboratory, Richland, WA.

#2172 **Poster Board Number 642**
DIET COORDINATELY AFFECTS EXPRESSION OF MULTIPLE HEPATOCYTE P450 CYTOCHROMES BY PROCESSES THAT ARE HIGHLY SENSITIVE TO EXTERNAL CYP1B1. *C. Jefcoate*[1,2], J. Bushkofsky[1], and M. Larsen[2]. [1]Center for Molecular Toxicology, University of Wisconsin-Madison, Madison, WI, and [2]Cell and Regenerative Biology, University of Wisconsin-Madison, Madison, WI.

#2173 **Poster Board Number 643**
LONG-TERM, LOW-DOSE CHROMIUM EXPOSURE ALTERS THE CELLULAR RESPONSE TO THE POLYCYCLIC AROMATIC HYDROCARBON BAP. *J. L. Ovesen*, Y. Fan, and *A. Puga*. Cell and Cancer Biology, University of Cincinnati, Cincinnati, OH.

#2174 **Poster Board Number 644**
MICRORNA REGULATION OF THE TRANSITION TO THE LUNG CANCER PHENOTYPE. J. Mehta[1], *G. Acquaah-Mensah*[1], and A. Singh[2]. [1]Pharmaceutical Sciences, Massachusetts College of Pharmacy & Health Sciences, Worcester, MA, and [2]Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD.

Abstract #

#2175 **Poster Board Number 645**
PPAR BETA/DELTA AND BCL6 GENETIC POLYMORPHISMS AND ASSOCIATION WITH ALTERED GENE EXPRESSION IN HUMAN PANCREATIC CANCER. R. W. Smith[1], J. D. Coleman[1], J. T. Thompson[1], B. Prokopczyk[2], and *J. P. Vanden Heuvel*[1]. [1]Department of Veterinary and Biomedical Sciences and Center for Molecular Toxicology and Carcinogenesis, Pennsylvania State University, State College, PA, and [2]Department of Pharmacology, Pennsylvania State University, Hershey, PA.

#2176 **Poster Board Number 646**
REGULATION OF MRNA TURNOVER BY PREGNANE X RECEPTOR THROUGH INTERACTION WITH CCR4-NOT. *Y. Tian*, D. Liu, N. Eagleton, Y. Xie, and S. Ke. Program of Toxicology, Texas A&M University, College Station, TX.

#2177 **Poster Board Number 647**
GONADOTROPIN-DEPENDENT ACTIVATION OF THE STEROIDOGENIC ACUTE REGULATORY PROTEIN PROMOTER INVOLVES ESTROGEN RECEPTOR SIGNALING PATHWAYS. *M. Prucha*[1], *C. J. Martyniuk*[2], N. J. Doperalski[1], K. J. Kroll[1], *D. S. Barber*[1], and *N. D. Denslow*[1]. [1]CEHT, University of Florida, Gainesville, FL, and [2]Biology, University of New Brunswick, St. John, NB, Canada.

#2178 **Poster Board Number 648**
THE AH RECEPTOR EXERTS A REGULATORY ROLE IN HOMEOSTATIC CONTROL OF CHOLESTEROL SYNTHESIS. *R. Tanos*, R. D. Patel, and *G. H. Perdew*. Penn State University, University Park, PA.

#2179 **Poster Board Number 649**
RNA-SEQ REVEALS DIFFERENT ABUNDANCE OF TRANSPORTERS AND PRESENCE OF NOVEL ISOFORMS DURING LIVER DEVELOPMENT. *Y. J. Cui*[1], *J. Liu*[1], G. S. Sumedha[2], B. Yoo[2], *H. Lu*[1], X. Zhong[1], and *C. D. Klaassen*[1]. [1]Department of Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS, and [2]University of Kansas Medical Center, Kansas City, KS.

#2180 **Poster Board Number 650**
MULTIPLICITY OF 5′-END OF HUMAN HEPATIC MULTIDRUG RESISTANCE-ASSOCIATED PROTEIN 4 TRANSCRIPTS. *J. E. Manautou*, *X. Gu*, *V. Ramirez*, and B. J. Aneskievich. Pharmaceutical Sciences, University of Connecticut, Storrs, CT.

#2181 **Poster Board Number 651**
EVOLVED METAL TOLERANCE IN DAPHNIA RESULTS FROM VARIATION IN GENOME ARCHITECTURE. J. R. Shaw[1,2], S. Paland[2], S. Glaholt[1], M. Pfrender[3], and J. K. Colbourne[2]. [1]School of Public and Environmental Affairs, Indiana University, Bloomington, IN, [2]Center for Genomics and Bioinformatics, Indiana University, Bloomington, IN, and [3]Department of Biology, Notre Dame University, Notre Dame, IN. Sponsor: *J. Klaunig*.

Program Description (Continued)

Abstract #

#2182 **Poster Board Number 652**
PROTECTION OF HYDROQUINONE-INDUCED APOPTOSIS BY DOWNREGULATION OF FAU IS MEDIATED BY NQO1. E. Siew[1], *K. Chan*[1], G. T. Williams[2], *D. Ross*[3], and *S. Inayat-Hussain*[1]. [1]Faculty of Health Sciences, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia, [2]ISTM and School of Life Sciences, Keele University, Keele, United Kingdom, and [3]Department of Pharmaceutical Sciences, Skaggs School of Pharmacy and Pharmaceutical Sciences, University of Colorado Anschutz Medical Campus, Aurora, CO.

Wednesday Morning and Afternoon, March 14
9:00 AM to 4:30 PM
Room 270

FS

Research Funding Session: Research Funding Information Room

Chairperson (s): *Nancy Kerkvliet, Oregon State University, Corvallis, OR.*

Sponsor:
Research Funding Committee

Program and review staff from agencies that fund research, including NIH and the Center for Scientific Review, NIEHS will be available in the Research Funding Information Room for individual conversations. Check the posted schedule at the NIEHS booth (2037) for specific times staff members will be available to answer your questions about scientific review or grant opportunities. The schedule also will be available at the registration area and in Room 206, site of the "Strategies for Submitting Successful Grants: Brown Bag Lunch."

Wednesday Morning, March 14
9:45 AM to 10:45 AM
Room 101

E

Exhibitor Hosted Session: Beyond Antibodies: Characterization of the Cellular Immune Response to Keyhole Limpet

Presented by:
Charles River

Production of antigen-specific antibodies is the principal readout in the T-cell dependent antibody response (TDAR) assay. However, generation of specific antibodies requires participation of antigen-presenting cells, T and B lymphocytes. Given that this has not been well characterized, we will provide an overview of what is known about the cell mediated immune response in the TDAR.

Wednesday Morning, March 14
9:45 AM to 10:45 AM
Room 105

E

Exhibitor Hosted Session: Electric Cell-Substrate Impedance Sensing: A Label Free, Noninvasive Method of Cell Measurement

Presented by:
Applied BioPhysics

An overview of the use of impedance (both simple and complex) to detect cell morphological changes. Emphasis will be placed on the use of different AC frequencies to distinguish cell parameters. Various ECIS application.

Wednesday Morning, March 14
9:45 AM to 10:45 AM
Room 100

E

Exhibitor Hosted Session: Predicting Safety, Prophylactic, and Therapeutic Efficacy in an African Green Monkey RSV Model Dosed via Continuous Infusion

Presented by:
Huntingdon Life Sciences

RSV is an important unmet medical need in newborns. The development of an intravenous anti-RSV drug from target selection through proof of concept in the African Green Monkey RSV model is discussed. The development program start was impacted by surgical issues, which were successfully mitigated by an HLS surgical team.

Wednesday Morning and Afternoon, March 14
10:30 AM to 2:30 PM
Exhibit Halls A–C *(Across from SOT Pavilion)*

High School Research Poster Presentations

Chairperson(s): *Daniel E. Arrieta, Chevron Phillips Chemical Company LP, The Woodlands, TX.*

Sponsors:
Education Committee
K–12 Subcommittee

High school student research related to toxicology is featured in an area adjacent to the SOT Pavilion. 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 drop by to visit with these outstanding potential future toxicologists. More information is available on the SOT Annual Meeting website.

Program Description (Continued)

WEDNESDAY AFTERNOON

Wednesday Afternoon, March 14
12:00 Noon to 1:30 PM
CC Room 212

Regional Chapter Collaboration and Communications Committee Meeting

Wednesday Afternoon, March 14
12:00 Noon to 1:30 PM
See room listing below.

Specialty Section Meetings/Luncheons: *In Vitro* and Alternative Methods (Room 300), Toxicologic and Exploratory Pathology (Room 250)

Wednesday Afternoon, March 14
12:00 Noon to 1:20 PM
Room 307

R

Regulatory Science: Bridging the Gap between Discovery and Product Availability

Roundtable Session: Scientific, Regulatory, and Public Perspectives on the Credibility and Use of Alternative Toxicological Test Methods in a Legislative Framework

Chairperson(s): *Daland Juberg, Dow AgroScience, Indianapolis, IN, and Robert Skoglund, 3M Company, St. Paul, MN.*

Sponsor:
***In Vitro* and Alternative Methods Specialty Section**

Endorsed by:
Ethical, Legal, and Social Issues Specialty Section
Regulatory and Safety Evaluation Specialty Section

The role of toxicology and toxicity testing in legislation and regulatory decision-making continues to change and an understanding of the opportunities, as well as challenges, that accompany the consideration of alternative test methods in a legislative framework is critical for forward progress in public health protection. It is well-established that toxicology in the twenty-first century has taken on many faces, but none perhaps so well-recognized as that of the introduction of new tools, technologies, and alternative test approaches to testing and how these may play a role in legislation. These tools and approaches have moved beyond the laboratory and are being considered by regulatory authorities in decision-making and by lawmakers as they consider how to modernize chemical legislation. The timetable and suitability of these alternative approaches to supplement or replace existing test methods continues to deserve attention and discussion. This session will review how various existing test approaches are used, and then will bring in three important perspectives—a scientific, regulatory, and a public view, on the credibility and applicability of alternative approaches for use in legislation and regulation. This transformation in toxicity testing will continue to occur and it is critical that new approaches be met with acceptance and be suitable from all three perspectives if the transformation is to meet with success, be integrated into a legislative framework, and advance public health for decades to come.

Abstract #

#2183 12:00 **SCIENTIFIC, REGULATORY, AND PUBLIC PERSPECTIVES ON THE CREDIBILITY AND USE OF ALTERNATIVE TOXICOLOGICAL TEST METHODS IN A LEGISLATIVE FRAMEWORK.** *L. S. Birnbaum*[2], *R. S. Skoglund*[1], *D. R. Juberg*[7], *M. E. Andersen*[3], *S. P. Bradbury*[4], *M. L. Stephens*[5], and *T. A. Hartung*[6]. [1]Medical Department, 3M, St. Paul, MN, [2]NIEHS, Research Triangle Park, NC, [3]The Hamner Institutes of Health Sciences, Research Triangle Park, NC, [4]US EPA, Washington, DC, [5]Humane Society of the United States, Gaithersburg, MD, [6]Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, and [7]Dow AgroScience, Indianapolis, IN.

12:00 **THE ROLE OF TOXICOLOGY TESTING IN REGULATION.** Linda S. Birnbaum

12:12 **SCIENTIFIC SUITABILITY OF ALTERNATIVE TEST METHODS.** Melvin E. Andersen

12:24 **EVOLVING THE REGULATORY PROCESS—USE OF 21ST CENTURY SCIENCE AND ALTERNATIVE METHODS.** Steven P. Bradbury

12:36 **PUBLIC PERSPECTIVE ON THE CREDIBILITY OF ALTERNATIVE TEST METHODS.** Martin L. Stephens

12:48 **A SCIENTIFIC ROADMAP TO REGULATORY USE OF ALTERNATIVE APPROACHES.** Thomas A. Hartung

1:00 **Q&A.** Panel Discussion

Wednesday Afternoon, March 14
12:00 Noon to 1:20 PM
Room 102

R

Roundtable Session: The Future of Toxicology Education: Outcomes of the Toxicology Educational Summit

Chairperson(s): *Aaron Barchowsky, University of Pittsburgh, Pittsburgh, PA, and Mary Beth Genter, University of Cincinnati, Cincinnati, OH.*

Sponsor:
Education Committee

Endorsed by:
Professional Needs Assessment Task Force

The Society of Toxicology convened the Toxicology Educational Summit on October 20 and 21, 2011, to address updating and modernizing toxicology education at multiple levels to meet the needs of an ever advancing profession. As with many other scientific disciplines and professions, toxicology and careers in toxicology are undergoing rapid and dramatic changes as new discoveries, technologies, and hazards advance at a blinding rate. There are new demands on toxicologists to keep pace with expanding global economies, global threats to public health, and ever-evolving complex hazards that pose health risks. These demands must be met with new paradigms for multidisciplinary, technologically complex, and collaborative approaches that require advanced and continued education in toxicology and associated disciplines. This requires paradigm shifts in educational programs that both support development and training of the modern toxicologist and allow retraining of the midcareer professional to keep pace and sustain careers in industry, government, and academia. This session will present the outcome of discussions and strategic planning developed at the summit and solicit participation from the audience to discuss conclusions and recommendations from the summit, as well as SOT strategic objectives to address these recommendations to advance toxicology education. This session will consist of a series of short presentations from summit topics and conclusions, and will conclude with comments on each topic from the audience.

Program Description (Continued)

Abstract #

#2184 12:00 **THE FUTURE OF TOXICOLOGY EDUCATION: OUTCOMES OF THE TOXICOLOGY EDUCATIONAL SUMMIT.** *A. Barchowsky*[1], *S. H. Safe*[3], *C. W. Sulentic*[4], *M. Genter*[2], and *G. Carlson*[5]. [1]Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA, [2]University of Cincinnati, Cincinnati, OH, [3]Texas A&M University, College Station, TX, [4]Wright State University, Dayton, OH, and [5]Purdue University, West Lafayette, IN.

12:00 **OVERVIEW OF THE TOXICOLOGY EDUCATION SUMMIT.** Aaron Barchowsky

12:05 **BUILDING FOR THE FUTURE OF TOXICOLOGY.** Stephen H. Safe

12:20 **IDENTIFYING TRAINING NEEDS.** Courtney E.W. Sulentic

12:35 **STRENGTHENING TOXICOLOGY TRAINING.** Aaron Barchowsky

12:50 **TRAINING THE 'TOTAL TOXICOLOGIST'.** Mary Beth Genter

1:05 **CONTINUING AND MIDCAREER EDUCATION.** Gary Carlson

1:15 **Q&A.** Panel Discussion

Wednesday Afternoon, March 14
12:00 Noon to 1:20 PM
Room 308

IS

Informational Session: Pregnancy in the Workplace: Managing Occupational Safety for a Unique Subpopulation

Chairperson(s): *Linda Roberts, Chevron Energy Technology Company, San Ramon, CA, and John M. DeSesso, Exponent, Inc., Alexandria, VA.*

Sponsor:
Occupational and Public Health Specialty Section

Endorsed by:
Ethical, Legal, and Social Issues Specialty Section
Reproductive and Developmental Toxicology Specialty Section
Women in Toxicology Special Interest Group

Work site supervisors need to appreciate the physiological changes specific to pregnancy and breastfeeding, and develop processes to communicate reproductive hazards and prevent harmful exposures. Changing workforce demographics, as well as equal employment opportunities, have increased the proportion of reproductive-age women in nontraditional jobs with potential reproductive hazards. There are unique physiological factors important to maintaining a safe worksite during pregnancy. This session will begin with an overview of the physiological changes that occur during pregnancy. A pregnant woman's body differs dramatically from her nonpregnant state; for instance, the size of her uterus, breasts, volume of distribution, and blood protein-binding change as her body, baby, and placenta mature throughout pregnancy. These changes in physiology may result in situations wherein safe occupational settings that were set for nonpregnant adults are hazardous to pregnant/lactating women and their unborn babies. Physical stressors such as lifting, heat, shift work, and radiation may be unsafe for pregnant women. Occupational exposure limits, typically developed for healthy adults rather than pregnant women, may not be protective and do not provide sufficient guidance for a safe environment to the pregnant worker. Standard job safety analyses should be re-examined; pregnant employees need behavioral and exposure assessments that identify hazardous processes relative to their unique physiological state. Appropriate exposure controls can transform an unsafe situation to one that is acceptable. The session will cover physiological changes during pregnancy and lactation, chemical and nonchemical hazards, exposure control options, occupational exposure limit factors, and risk management options.

Abstract #

#2185 12:00 **PREGNANCY IN THE WORKPLACE: MANAGING OCCUPATIONAL SAFETY FOR A UNIQUE SUBPOPULATION.** *L. Roberts*[1], *J. M. DeSesso*[2], *A. R. Scialli*[3], J. Quint[5], G. Hunting[1], and *B. D. Naumann*[4]. [1]Health & Product Stewardship, Chevron Energy Technology Company, San Ramon, CA, [2]Exponent, Inc., Alexandria, VA, [3]Tetra Tech Sciences, Arlington, VA, [4]Occupational & Environmental Toxicology, Merck & Co., Inc., Whitehouse Station, NJ, and [5]Retired, Occupational Health Branch, California Department of Public Health, Sacramento, CA.

12:00 **PREGNANCY IN THE WORKPLACE: MANAGING OCCUPATIONAL SAFETY FOR A UNIQUE SUBPOPULATION.** Linda G. Roberts

12:05 **OVERVIEW OF PHYSIOLOGICAL CHANGES DURING PREGNANCY AND LACTATION: PRENATAL AND POSTNATAL EXPOSURE ISSUES.** John M. DeSesso

12:17 **CHEMICAL AND NONCHEMICAL OCCUPATIONAL RISKS TO REPRODUCTIVE HEALTH.** Anthony R. Scialli

12:29 **PROTECTING AGAINST WORKPLACE PREGNANCY HAZARDS: THE STATUS OF OCCUPATIONAL EXPOSURE LIMITS.** Julia Quint

12:41 **INDUSTRIAL HYGIENE CONSIDERATIONS: EVALUATING A WORK SITE FOR REPRODUCTIVE HAZARDS.** Gayle Hunting

12:53 **RIGHT-TO-KNOW AND RISK MANAGEMENT PRACTICES: SUCCESSFUL REPRODUCTIVE HAZARD PROGRAMS.** Bruce D. Naumann

1:05 **Q&A.** Panel Discussion

Wednesday Afternoon, March 14
12:30 PM to 1:20 PM
Room 304

FS

Translational Impact Award Lecture: Medical Toxicology Evaluations of the 2008 TVA Fly Ash Spill

Lecturer: *John G. Benitez, Vanderbilt University Medical Center, Tennessee Poison Center, Nashville, TN.*

At approximately 1:00 am on December 22, 2008, the retaining dike broke at the TVA Kingston Fossil Plant, releasing more than 5.4 million cubic yards of coal ash onto TVA property, private property and the Emory River. The ash flow filled several sloughs with ash debris and embankment material. The communities surrounding the spill site had an additional concern regarding health risks because of living next to the site, ash on their property, the emergency response, and planned remediation efforts. Through partnership with the Oak Ridge Associated Universities and the Tennessee Poison Center, residents living in the vicinity of the Kingston TVA plant had medical evaluations by a medical toxicologist including a history and physical exam, routine laboratory evaluations, pulmonary function testing, chest radiographs, and blood and urine metal evaluations. Three hundred twenty participants signed up initially; 200 were seen by the medical toxicologist. One hundred ninety-eight of these had blood and urine testing, 208 had chest radiographs, and 194 had pulmonary function tests. Many participants had ear, nose, throat, and pulmonary complaints. No pattern of heavy metal exposure, abnormal blood testing, pulmonary function testing, and chest radiographs were found.

Program Description (Continued)

Abstract #

Wednesday Afternoon, March 14
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Endocrine Toxicity

Chairperson(s): *Leon Gray, US EPA, Research Triangle Park, NC.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *1:00 PM–2:45 PM*

#2186 **Poster Board Number 101**
REGULATION OF GLUCAGON-LIKE PEPTIDE 1 RECEPTOR EXPRESSION IN FATTY ACID TREATED PANCREATIC DUCTAL CELLS. *L. Zhang*, *R. Rouse*, and G. Tobin. US FDA, Silver Spring, MD.

#2187 **Poster Board Number 102**
CHARACTERIZATION OF STEROID HORMONE RECEPTOR ACTIVITIES IN 100 HYDROXYLATED POLYCHLORINATED BIPHENYLS, INCLUDING CONGENERS IDENTIFIED IN HUMANS. S. Takeuchi[1], F. Shiraishi[2], S. Kitamura[3], H. Kuroki[4], K. Jin[1], and H. Kojima[1]. [1]Hokkaido Institute of Public Health, Sapporo, Japan, [2]National Institute for Environmental Studies, Tsukuba, Japan, [3]Nihon Pharmaceutical University, Saitama, Japan, and [4]Daiichi University, College of Pharmaceutical Sciences, Fukuoka, Japan. Sponsor: *T. Yoshida*.

#2188 **Poster Board Number 103**
MISFOLDING OF MUTATED VASOPRESSIN CAUSES ER-RETENTION AND DECREASE OF VASOPRESSIN SECRETION. *Z. Yan*, A. Hoffmann, E. K. Kaiser, W. C. Grunwald, and D. R. Cool. Pharmacology and Toxicology, Wright State University, Dayton, OH.

#2189 **Poster Board Number 104**
THYROXINE (T_4) CATABOLISM IN HUMAN AND RAT HEPATOCYTES INCREASES FOLLOWING EXPOSURE TO HEPATIC ENZYME INDUCERS. *V. M. Richardson*[1,2], and *M. J. DeVito*[3]. [1]NHEERL, US EPA, Research Triangle Park, NC, [2]Curriculum in Toxicology, University of North Carolina at Chapel Hill, Chapel Hill, NC, and [3]NIEHS/NTP, Research Triangle Park, NC.

#2190 **Poster Board Number 105**
EVALUATION OF FISH AND DAPHNIA REPRODUCTION TEST FOR DETECTING ENDOCRINE DISRUPTORS: REGULATORY IMPLICATIONS. *Z. Dang*. RIVM, Bilthoven, Netherlands.

#2191 **Poster Board Number 106**
TOXICOGENOMICS-BASED *IN VITRO* ALTERNATIVES FOR ESTROGENICITY TESTING. S. Wang[1,2], L. de Haan[1], A. Peijnenburg[2], J. Aarts[2], T. Bovee[2], and I. Rietjens[1]. [1]Division of Toxicology, Wageningen University and Research Centre, Wageningen, Netherlands, and [2]RIKILT–Institute of Food Safety, Wageningen, Netherlands. Sponsor: *B. Blaauboer*.

Abstract #

#2192 **Poster Board Number 107**
LACK OF ANDROGENIC AND ESTROGENIC POTENTIAL OF EXTRACTS OBTAINED FROM EASTMAN TRITAN™ COPOLYESTERS. M. Eldridge, F. Menn, and G. Sayler. The Center for Environmental Biotechnology, University of Tennessee, Knoxville, TN. Sponsor: *J. Deyo*.

#2193 **Poster Board Number 108**
POLYESTER MONOMERS UTILIZED BY EASTMAN CHEMICAL COMPANY LACK ABILITY TO BIND AND ACTIVATE BOTH ESTROGENIC AND ANDROGENIC RECEPTORS. E. O'Brien[1], *J. Deyo*[1], and *C. Toole*[2]. [1]Eastman Chemical Company, Kingsport, TN, and [2]CeeTox, Kalamazoo, MI.

#2194 **Poster Board Number 109**
CADMIUM DISRUPTS GLUCOSE-STIMULATED INSULIN RELEASE AND ALTERS BETA CATENIN IMMUNO-LABELING IN ISLETS. *J. Edwards*, J. Nguyen, and A. Goodman. Department of Pharmacology, Midwestern University, Downers Grove, IL.

#2195 **Poster Board Number 110**
A QUALITATIVE COMPARISON OF PORCINE AND RODENT THYROPEROXIDASE—EFFECTS OF ENVIRONMENTAL CHEMICALS. J. M. Hedge[1], *K. M. Crofton*[1], K. R. Grant[2], *K. B. Paul*[3], E. Burgess[4], E. Nevalainen[4], and *M. W. Hornung*[5]. [1]Integrated Systems Toxicology Division, NHEERL, ORD, US EPA, Research Triangle Park, NC, [2]Curriculum in Environmental Technology & Management, North Carolina State University, Raleigh, NC, [3]Curriculum in Toxicology, University of North Carolina at Chapel Hill, Chapel Hill, NC, [4]Student Services Contractor, US EPA, Duluth, MN, and [5]Mid-Continent Ecology Division, NHEERL, ORD, US EPA, Duluth, MN.

#2196 **Poster Board Number 111**
MENOPAUSAL SUPPLEMENTS, GENISTEIN AND 8PN INDUCE ESTROGEN-DEPENDENT TUMOR CELL GROWTH AND COUNTERACT THE EFFICACY OF TAMOXIFEN AND LETROZOLE IN *IN VITRO* BREAST CANCER MODEL. *M. van Duursen*, E. J. Smeets, S. M. Nijmeijer, and *M. van den Berg*. Institute for Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands.

#2197 **Poster Board Number 112**
BIOMARKERS OF PERCHLORATE EXPOSURE ARE CORRELATED WITH CIRCULATING THYROID HORMONE LEVELS IN THE 2007–2008 NHANES. W. M. Mendez. ICF International, Fairfax, VA. Sponsor: *M. Selgrade*.

#2198 **Poster Board Number 113**
NO EVIDENCE OF ENDOCRINE DISRUPTION BY GLYPHOSATE IN HERSHBERGER AND UTEROTROPHIC ASSAYS. *D. Saltmiras*[1,2], and *A. Tobia*[3,2]. [1]Monsanto, St. Louis, MO, [2]JGTF, Raleigh, NC, and [3]Nufarm, Morrisville, NC.

Program Description (Continued)

Abstract #

#2199 **Poster Board Number 114**
WEIGHT OF EVIDENCE EVALUATION OF ENDOCRINE DISRUPTION POTENTIAL FOR CHLORPYRIFOS. *S. Gehen*[1], V. Kramer[1], *S. Papineni*[1], *S. Marty*[2], and *D. Juberg*[1]. [1]Dow AgroSciences LLC, Indianapolis, IN, and [2]The Dow Chemical Company, Midland, MI.

#2200 **Poster Board Number 115**
***IN VITRO* ASSESSMENT OF ESTROGENIC BIOACTIVITY IN COMPLEX ENVIRONMENTAL EFFLUENTS.** M. C. Cardon[1], P. C. Hartig[1], L. Yonkos[2], S. Hutchins[3], and *V. S. Wilson*[1]. [1]Reproductive Toxicology Branch, US EPA, Research Triangle Park, NC, [2]Wye Research and Education Center, University of Maryland, Queenstown, MD, and [3]NRMRL, GWERD, US EPA, Ada, OK.

#2201 **Poster Board Number 116**
ATP-BINDING CASSETTE (ABC) TRANSPORTERS PRESENT IN THE BLOOD-TESTIS BARRIER ARE POTENTIAL DETERMINANTS IN ENDOCRINE DISRUPTION. A. C. Dankers[1], *M. B. van Duursen*[2], F. C. Sweep[3], *F. G. Russel*[1], and R. Masereeuw[1]. [1]Pharmacology and Toxicology, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands, [2]Endocrine Toxicology, Institute for Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands, and [3]Laboratory Medicine, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands.

#2202 **Poster Board Number 117**
HUMAN T47D BREAST CANCER CELLS WITH TETRACYCLINE-DEPENDENT ERα/ERβ EXPRESSION AS AN *IN VITRO* MODEL FOR ERα/ERβ RATIO DEPENDENT RESPONSES IN BREAST TISSUE. N. Evers[1], A. Murk[1], A. Ederveen[2], I. Rietjens[1], and *J. Groten*[1]. [1]Toxicology, Wageningen University, Wageningen, Netherlands, and [2]Pharmacokinetics Pharmacodynamics & Drug Metabolism, MSD, Oss, Netherlands.

#2203 **Poster Board Number 118**
ANALYSIS OF HORMONE LEVELS IN H295R CELL CULTURE SUPERNATANTS USING LC-MS/MS ANALYSIS IN AGREEMENT WITH CURRENT OECD AND OPPTS TESTGUIDELINES. S. Kolle[2], T. Walk[1], M. Dostler[1], D. Ahlbory-Dieker[1], T. Ramirez[2], V. Strauss[2], R. Looser[1], and B. van Ravenzwaay[2]. [1]Metanomics GmbH, Berlin, Germany, and [2]BASF SE, Ludwigshafen, Germany. Sponsor: *R. Landsiedel*.

#2204 **Poster Board Number 119**
EFFECT OF ENDOCRINE DISRUPTORS ON METABOLITE PROFILES. V. Strauss[1], H. Kamp[1], E. Fabian[1], M. Herold[2], G. Krennrich[1], W. Mellert[1], R. Looser[2], A. Prokoudine[2], T. Walk[2], J. Wiemer[2], and B. van Ravenzwaay[1]. [1]BASF SE, Ludwigshafen, Germany, and [2]metanomics GmbH, Berlin, Germany. Sponsor: *R. Landsiedel*.

#2205 **Poster Board Number 120**
EVALUATION OF POTENTIAL ENDOCRINE ACTIVITY OF ISOPHORONE IN THE TIER I *IN VIVO* MAMMALIAN ASSAYS. *N. M. Berdasco*, *S. Marty*, A. K. Andrus, C. L. Zablotny, K. J. Brooks, and V. A. Marshall. Toxicology and Environmental Research and Consulting, The Dow Chemical Company, Midland, MI.

Abstract #

#2206 **Poster Board Number 121**
BISPHENOL-S DISRUPTS E2-INDUCED NONGENOMIC SIGNALING IN AN MERα-ENRICHED (GH3/B6/F10) RAT PITUITARY CELL LINE. *R. Vinas*, and *C. S. Watson*. Biochemistry & Molecular Biology, University of Texas Medical Branch, Houston, TX.

#2207 **Poster Board Number 122**
A HUMAN COCULTURE MODEL TO STUDY ENDOCRINE DISRUPTION OF PLACENTAL-FETAL COMMUNICATION. *J. Sanderson*, A. Hudon Thibeault, H. Clabault, and C. Vaillancourt. Institut Armand-Frappier, INRS, Laval, QC, Canada.

#2208 **Poster Board Number 123**
EFFECT OF LETROZOLE, AN AROMATASE INHIBITOR, ON SKELETAL AND SEXUAL MATURATION IN RATS. R. Samadfam[1], L. Pouliot[1], K. Robinson[1], *M. DeCristofaro*[2], M. Schneider[2], and S. Y. Smith[1]. [1]Toxicology, Charles River Preclinical Services, Senneville, QC, Canada, and [2]Novartis Pharmaceuticals Corporation, East Hanover, NJ.

#2209 **Poster Board Number 124**
VALIDATED ANALYSIS METHOD FOR 2-ETHYLHEXYL P-METHOXYCINNAMATE IN VERIFIED CASEIN 5K96 RODENT DIET. B. J. Collins[2], K. L. Aillon[1], A. K. Sullivan[1], R. L. Mathias[1], K. D. Adams[1], J. Algaier[1], R. K. Harris[1], *B. S. McIntyre*[2], and *C. S. Smith*[2]. [1]MRIGlobal, Kansas City, MO, and [2]National Toxicology Program, DNTP, NIEHS, Research Triangle Park, NC.

#2210 **Poster Board Number 125**
ENDOCRINE DISRUPTING EFFECTS OF CONAZOLE FUNGICIDES ON MALE SEX STEROIDOGENESIS. M. J. Roelofs[1,2], M. E. Flores Guillén[1], *M. van den Berg*[1], *B. J. Blaauboer*[1], *A. H. Piersma*[2,1], and *M. B. van Duursen*[1]. [1]Institute for Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands, and [2]National Institute for Public Health and the Environment, Bilthoven, Netherlands.

#2211 **Poster Board Number 126**
***IN VITRO* AND *IN VIVO* METHODS FOR ASSESSING ENDOCRINE DISRUPTING CHEMICALS.** *X. Wang*, and G. Du. Nanjing Medical University, Institute of Toxicology, Nanjing Jiangsu, China.

#2212 **Poster Board Number 127**
CADMIUM-INDUCED EFFECTS ON CELLULAR-SIGNALING PATHWAYS IN THE LIVER OF TRANSGENIC ESTROGEN REPORTER MICE. I. Ali[1], P. Damdimopoulou[2], *S. I. Mäkelä*[3], *M. Berglund*[1], *U. Stenius*[1], A. Adamsson[4], *A. Åkesson*[1], *H. Håkansson*[1], and *K. Halldin*[1]. [1]Institute of Environmental Medicine, Karolinska Institute, Stockholm, Sweden, [2]Department of Biosciences and Nutrition, Karolinska Institute, Huddinge, Sweden, [3]Department of Cell Biology and Anatomy and Turku Center for Disease Modeling, Institute of Biomedicine, University of Turku, Turku, Finland, and [4]Department of Physiology, Institute of Biomedicine, University of Turku, Turku, Finland.

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#2213 **Poster Board Number 128**
ESTROGENIC EFFECT OF CIGARETTE SIDESTREAM SMOKE IN LUNG ADENOCARCINOMA CELLS. L. Li, L. Kuo, and P. Wu. Division of Environmental Health and Occupational Medicine, National Health Research Institutes, Zhunan, Miaoli, Taiwan. Sponsor: *P. Lin*.

#2214 **Poster Board Number 129**
FORMULATION DEVELOPMENT AND ANALYSIS FOR VARIOUS SUNSCREEN AGENTS IN CORN OIL VEHICLE AND DMSO IN SUPPORT OF TOXICOLOGICAL STUDIES. J. C. Blake[1], G. McNeill[1], D. Coleman[1], C. Crafford[1], S. Norton[1], M. A. Silinski[1], R. A. Fernando[1], B. J. Collins[2], and *V. G. Robinson*[2]. [1]RTI International, Durham, NC, and [2]NIEHS/NTP, Durham, NC.

#2215 **Poster Board Number 130**
DEFICIENCY IN THE NUCLEAR FACTOR-ERYTHROID 2-RELATED FACTOR 2 RENDERS PANCREATIC BETA-CELLS VULNERABLE TO ARSENIC-INDUCED CELL DAMAGE. B. Yang, *J. Fu*, K. Yarborough, *C. G. Woods*, P. Xue, Y. Hou, *M. Yamamoto*, *Q. Zhang*, *M. E. Andersen*, and *J. Pi*. The Institute for Chemical Safety Sciences, The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#2216 **Poster Board Number 131**
GENETIC PATHWAYS UNDERLYING THE IMMEDIATE AND LIFESPAN IMPACTS OF A DEVELOPMENTAL EXPOSURE TO THE ENDOCRINE-DISRUPTING HERBICIDE ATRAZINE. *G. J. Weber*[1], *S. S. Lewis*[2], *S. M. Peterson*[1], M. S. Sepulveda[2], and *J. L. Freeman*[1]. [1]Health Sciences, Purdue University, West Lafayette, IN, and [2]Forestry and Natural Resources, Purdue University, West Lafayette, IN.

#2217 **Poster Board Number 132**
PROFILE OF HYPOTHALAMIC ESTROGEN RECEPTOR EXPRESSION IN NEONATAL MALE AND FEMALE RATS FOLLOWING PRENATAL BISPHENOL A (BPA) EXPOSURE. *J. Cao*[1], M. E. Radford[1], J. Rogers[1], K. L. Todd[1], S. M. Leyrer[1], *S. A. Ferguson*[2], and *H. B. Patisaul*[1]. [1]Biology, North Carolina State University, Raleigh, NC, and [2]Division of Neurotoxicology, NCTR/US FDA, Jefferson, AR.

#2218 **Poster Board Number 133**
USE OF A NORMAL HUMAN 3-DIMENSIONAL (NHU-3D) ORGANOTYPIC VAGINAL TISSUE MODEL TO IDENTIFY ENDOCRINE-DISRUPTING CHEMICALS. T. Landry, M. Klausner, H. Kandarova, and S. Ayehunie. MatTek Corporation, Ashland, MA. Sponsor: *P. Hayden*.

#2219 **Poster Board Number 134**
EVALUATION OF STEROIDOGENIC PATHWAY DISRUPTION AND ADRENAL STEROID HORMONE SECRETION IN THE HUMAN ADRENOCORTICAL H295R CELLS BY LOWER CHLORINATED PCBS, THEIR METABOLITES AND COMMERCIAL MIXTURES. *S. Flor*, and *G. Ludewig*. OEH, University of Iowa, Iowa City, IA.

Abstract #

#2220 **Poster Board Number 135**
ARYL HYDROCARBON RECEPTOR 2 MEDIATES THE INHIBITION OF VITELLOGENESIS BY 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN IN ZEBRAFISH (*DANIO RERIO*). S. M. Bugel[1,2], *L. A. White*[2], and *K. R. Cooper*[1,2]. [1]Department of Environmental Sciences, Rutgers University, New Brunswick, NJ, and [2]Department of Biochemistry and Microbiology, Rutgers University, New Brunswick, NJ.

#2221 **Poster Board Number 136**
OPTIMIZATION OF A CELL MICROELECTRONIC SENSING TECHNIQUE FOR PROFILING OF ESTROGENIC CHEMICALS. V. Charoensuk, D. Y. Huang, and D. W. Kinniburgh. Physiology and Pharmacology, Alberta Centre for Toxicology, University of Calgary, Calgary, AB, Canada. Sponsor: *C. Jin*.

#2222 **Poster Board Number 137**
ESTROGENIC ACTIVITY OF THE RED CLOVER ISOFLAVONE IRILONE IN HUMAN ISHIKAWA AND MCF-7 CELLS. *H. L. Esch*, S. Lutter, and *L. Lehmann*. Institute of Pharmacy and Food Chemistry, University of Wüerzburg, Wüerzburg, Germany.

#2223 **Poster Board Number 138**
COEXPOSURE TO XENOESTROGENS AND BENZO(A)PYRENE ENHANCES DNA DAMAGE RESPONSE. K. Rydlizky[2], *G. D. Mayer*[1], and K. E. Germ[1]. [1]Environmental Toxicology, Texas Tech University, Lubbock, TX, and [2]Mount Desert Island Biological Laboratory, Bar Harbor, ME.

#2224 **Poster Board Number 139**
A NOVEL SENSITIVE AND SELECTIVE REAL-TIME CELLULAR ASSAY FOR DETECTION OF ENDOCRINE DISRUPTORS USING NATIVE ENDOCRINE SIGNALING PATHWAYS. Y. Abassi[1], N. Ke[1], *C. Jin*[1], A. Papas[1], K. Nguyen[1], A. Seiler[2], X. Xu[1], and X. Wang[1]. [1]Life Technologies, ACEA Biosciences Inc., San Diego, CA, and [2]Roche Diagnostics GmbH, Penzberg, Germany.

#2225 **Poster Board Number 140**
ENDOCRINE DISRUPTION POTENTIAL OF BENEFIN: WEIGHT OF EVIDENCE EVALUATION. *S. Papineni*[1], *S. Gehen*[1], V. J. Kramer[1], *S. Marty*[2], and K. Coady[2]. [1]Dow AgroSciences, Indianapolis, IN, and [2]The Dow Chemical Company, Midland, MI.

#2226 **Poster Board Number 141**
PERSONAL CARE PRODUCTS HAVE DETECTABLE ESTROGENIC AND ANTIESTROGENIC ACTIVITY. C. Z. Yang[1], G. J. Kollessery[1], G. D. Bittner[1,2,3], *S. Myers*[4], *D. D. Baird*[4], *K. L. Witt*[5], and *R. R. Tice*[5]. [1]CertiChem, Inc., Ausin, TX, [2]PlastiPure, Inc., Austin, TX, [3]University of Texas Austin, Austin, TX, [4]NIEHS, Research Triangle Park, NC, and [5]Division of the National Toxicology Program, NIEHS, Research Triangle Park, NC.

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#2227 **Poster Board Number 142**
DIFFERENTIAL RECRUITMENT OF ESTROGEN RECEPTOR COACTIVATORS BY XENOESTROGENS. L. C. Smith[1], J. Clark[2], P. L. Ferguson[3], and *T. Sabo-Attwood*[1]. [1]Department of Physiological Sciences, Environmental & Global Health and Center for Environmental and Human Toxicology, University of Florida, Gainesville, FL, [2]Department of Environmental Health Sciences, University of South Carolina, Columbia, SC, and [3]Department of Civil and Environmental Engineering and Nicholas School of the Environment, Duke University, Durham, NC.

#2228 **Poster Board Number 143**
VALIDATION OF T47D-KBLUC CELL ASSAY FOR DETECTION OF ESTROGEN RECEPTOR AGONISTS AND ANTAGONISTS. N. Evans, *L. E. Gray*, and *V. S. Wilson*. ORD/TAD, US EPA, Durham, NC.

#2229 **Poster Board Number 144**
COMPARISON OF *IN VITRO* CYTOTOXICITY, ESTROGENICITY, AND ANTIESTROGENICITY OF TRICLOSAN, PERFLUOROOCTANE SULFONATE (PFOS), AND PERFLUOROOCTANOIC ACID (PFOA). *N. D. Henry*, and *P. A. Fair*. National Ocean Service, Charleston, SC.

#2230 **Poster Board Number 145**
REASSESSMENT OF THE CRITICAL EFFECT OF PERCHLORATE TOXICITY IN THE HUMAN THYROID TO INFORM ON DRINKING WATER REGULATIONS. *M. H. Lumpkin*[1], *P. Gentry*[2], *T. Greene*[2], *A. Shipp*[2], and T. Cirone[3]. [1]Environ International Corporation, Atlanta, GA, [2]Environ International Corporation, Monroe, LA, and [3]The Chlorine Institute, Inc., Arlington, VA.

#2231 **Poster Board Number 146**
EFFECT OF GREEN TEA EXTRACT ON THYROTOXIC EFFECT OF LEAD ACETATE IN MALE WISTAR RATS. K. A. Abdou[1], W. A. Moselhy[1], and M. Salah[2]. [1]Forensic Medicine and Toxicology, Faculty of Veterinary Medicine, Beni Suef University, Beni Suef, Egypt, and [2]Biology Department, Faculty of Science, Beni Suef University, Beni Suef, Egypt. Sponsor: *A. Kadry*.

#2232 **Poster Board Number 147**
***IN VITRO* ENDOCRINE-DISRUPTING POTENCIES OF PHOSPHATE COMPOUNDS USED AS FLAME RETARDANTS AND PLASTICIZERS AND ANTIFOAMING AGENTS ON HUMAN OSTEOSARCOMA (U2OS) CELL-BASED REPORTER GENE ASSAYS.** G. Suzuki[1], A. Brouwer[2,3], and H. Takigami[1]. [1]Natinal Institute for Environmental Studies, Tsukuba, Japan, [2]BioDetection Systems b.v., Amsterdam, Netherlands, and [3]VU University, Amsterdam, Netherlands. Sponsor: *H. Iwata*.

#2233 **Poster Board Number 148**
THE ESTABLISHMENT OF ANDROGEN RECEPTOR-MEDIATED STABLY TRANSFECTED TRANSCRIPTIONAL ACTIVATION ASSAY TO DETECT ANDROGENIC AND ANTIANDROGENIC ACTIVITIES IN 22RV1 CELLS. M. Dong, Y. Choi, and H. Kang. School Lifesciences and Biotechnology, Korea University, Seoul, Republic of Korea. Sponsor: *B. Lee*.

Abstract #

#2234 **Poster Board Number 149**
METABOLIC PROFILING OF STEROIDOGENESIS IN THE HUMAN H295R ADRENOCORTICAL CELL LINE FOR DETECTION OF ENDOCRINE DISRUPTORS. J. Rijk[1,2], T. Bovee[1,2], A. Lommen[1,2], R. Hoogenboom[1], and A. Peijnenburg[1,2]. [1]RIKILT–Institute of Food Safety, Wageningen UR, Wageningen, Netherlands, and [2]Netherlands Toxicogenomics Centre, Maastricht, Netherlands. Sponsor: *S. Rangarajan*.

#2235 **Poster Board Number 150**
ISOPHORONE AND THE ENDOCRINE DISRUPTOR SCREENING PROGRAM: WEIGHT OF EVIDENCE EVALUATION FROM SCIENTIFICALLY RELEVANT INFORMATION AND RESULTS OF TIER I ASSAYS. *D. Geter*, *N. M. Berdasco*, *M. J. LeBaron*, *S. Marty*, and K. K. Coady. The Dow Chemical Company, Midland, MI.

#2236 **Poster Board Number 151**
LACK OF ESTROGENIC POTENTIAL OF MONOMERS UTILIZED IN EASTMAN TRITAN™ COPOLYESTER. *J. Deyo*[1], E. O'Brien[1], *C. Toole*[2], W. Welsh[4], N. Ai[4], E. Sloter[3], M. Eldrige[5], and F. Menn[5]. [1]Eastman Chemical Company, Kingsport, TN, [2]CeeTox, Kalamazoo, MI, [3]Wil Research Laboratories LLC, Ashland, OH, [4]Pharmacology, University of Medicine and Dentistry of New Jersey, Robert Wood Johnson Med. School, Piscataway, NJ, and [5]Center for Environmental Biotechnology, University of Tennessee, Knoxville, TN.

Wednesday Afternoon, March 14
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Characterizing Toxic Modes of Action and Pathways to Toxicity

Poster Session: Pharmaceutical Safety Assessment: Novel Therapeutics and Preclinical Safety Assessment

Chairperson(s): *Sven Korte, Covance Laboratories GmbH, Muenster, Germany.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *2:45 PM–4:30 PM*

#2237 **Poster Board Number 153**
REPEATED DOSE TOXICITY AND LOCAL TOLERANCE STUDY WITH RECMAGE-A3+AS15 ANTIGEN-SPECIFIC CANCER IMMUNOTHERAPEUTIC (ASCI) GIVEN INTRAMUSCULARLY TO CYNOMOLGUS MONKEYS. *L. Segal*[1], E. Grosdidier[2], E. Destexhe[1], N. Baudson[1], *R. Forster*[2], and S. Veenstra[1]. [1]GSK Biologicals, Wavre/Rixensart, Belgium, and [2]CiToxLAB France, Evreux, France.

WEDNESDAY

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#2238 **Poster Board Number 154**
REPEAT-DOSE ORAL TOXICITY STUDIES TO EVALUATE HISTAMINE H3-RECEPTOR ANTAGONIST LENS-RELATED CHANGES IN RATS. *M. E. Blazka*[1], D. Weinstock[2], H. Shen[3], M. Valerio[1], and N. A. Delamere[4]. [1]Disposition, Safety and Animal Research Scientific Core Platform, Sanofi, Bridgewater, NJ, [2]Biologics Scientific Core Platform, Sanofi, Bridgewater, NJ, [3]Molecular Innovative Therapeutics, Sanofi, Bridgewater, NJ, and [4]Department of Physiology, University of Arizona, Tucson, AZ.

#2239 **Poster Board Number 155**
COMBINED VIDEO-EEG AND CARDIOVASCULAR SCREENING USING TELEMETRY-IMPLANTED, FREELY MOVING BEAGLE DOGS. *M. Metea*, T. R. Gleason, and *P. Atterson*. WIL Research Laboratories, Ashland, OH.

#2240 **Poster Board Number 156**
SAFETY EVALUATION OF RECOMBINANT HUMAN LACTOFERRIN FROM RICE: 28-DAY TOXICOLOGY STUDY IN RATS. L. Craig[1], P. Cole[1], A. Aulbach[1], *S. Frantz*[1], V. Akoyev[2], C. Austin[2], M. Burnett[2], M. Rice[2], P. Smith[2], G. Unruh[2], N. Huang[3], D. Zhang[3], and *D. E. Johnson*[4]. [1]MPI Research, Mattawan, MI, [2]Ventria Bioscience, Junction City, KS, [3]Ventria Bioscience, Fort Collins, CO, and [4]Emiliem, Emeryville, CA.

#2241 **Poster Board Number 157**
DIAGNOSTIC COMPUTER TOMOGRAPHY IN NONHUMAN PRIMATES—A FEASIBILITY STUDY IN GERIATRIC CYNOMOLGUS MONKEYS. S. H. Korte[1], M. Wozniak[2], and B. Niggemann[1]. [1]Covance Laboratories GmbH, Muenster, Germany, and [2]Department of Pediatric Radiology, Medical University of Lublin, Lublin, Poland. Sponsor: *G. Weinbauer*.

#2242 **Poster Board Number 158**
PROLONGED AND CONTINUOUS INTRAVENOUS INFUSION TOXICITY STUDIES IN THE MARMOSET MONKEY USING A PORT CATHETER SYSTEM. P. Nowak, S. H. Korte, B. Niggemann, and J. Luft. Covance Laboratories GmbH, Muenster, Germany. Sponsor: *F. Vogel*.

#2243 **Poster Board Number 201**
HUMAN RISK ASSESSMENT OF PHOTOTOXIC POTENTIAL OF 8-MOP, LOMEFLOXACIN, SPARFLOXACIN, AND PIRFENIDONE USING LONG–EVANS RAT. T. Adachi. MItsubishi Tanabe Phrama Corporation, Kisarazu, Japan. Sponsor: *J. Shinozuka*.

Abstract #

#2244 **Poster Board Number 202**
OPTICAL COHERENCE TOMOGRAPHY (OCT) AND FLUORESCEIN ANGIOGRAPHY AS USEFUL TOOLS TO DETECT OCULAR TOXICITY IN CYNOMOLGUS MONKEY. J. Sohn[1,4], K. Cho[1,4], E. Choi[2,4], Y. Yoon[3], and W. Son[1,4]. [1]Department of Pathology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Republic of Korea, [2]Department of Radiation Oncology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Republic of Korea, [3]Department of Ophthalmology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Republic of Korea, and [4]Institute for Innovative Cancer Research, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Republic of Korea. Sponsor: *K. Lim*.

#2245 **Poster Board Number 203**
HIGH-DEFINITION AND CONVENTIONAL OSCILLOMETRY TECHNIQUES VERSUS TELEMETRY IN BLOOD PRESSURE AND HEART RATE MEASUREMENTS IN BEAGLE DOG AND CYNOMOLGUS MONKEY. C. Maraschiello, L. Pérez, E. Arévalo, A. Arañó, and A. Casadesús. Harlan Laboratories, S.A., Santa Perpetua de Mogoda, Barcelona, Spain. Sponsor: *A. Poth*.

#2246 **Poster Board Number 204**
VALIDATION OF A UV-LLNA PROTOCOL BASED ON LYMPH NODE WEIGHT AND CELL COUNT QUANTIFICATIONS TO ASSESS PHOTOALLERGIC POTENTIAL BY TOPICAL OR ORAL ADMINISTRATION TO MICE. N. J. Pearson[1], C. Gerbeix[1], P. Liberge[1], B. Palate[1], *J. Descotes*[2], *R. Forster*[1], and J. Legrand[1]. [1]CiToxLAB France, Evreux, France, and [2]Poison Center, Lyon, France.

#2247 **Poster Board Number 205**
USE OF AWAKE ANIMAL IMAGING TO FINGER PRINT FOR CNS LIABILITY. C. Ferris[2,1], M. Nedelman[1], P. Kulkarni[2,1], and T. Stolberg[2,1]. [1]Ekam Imaging, Boston, MA, and [2]Northeastern University, Boston, MA. Sponsor: *G. Treacy*.

#2248 **Poster Board Number 206**
PRECLINICAL CARDIAC RISK ASSESSMENT OF HDAC INHIBITORS: INVESTIGATIONS OF HDACI-INDUCED QT PROLONGATION. *S. Spence*[1], *J. Marlowe*[2], *M. Deurinck*[3], M. Tseng[2], *M. Traebert*[3], *L. McLean*[4], G. Erdemli[6], *H. Ju*[5], M. Shultz[7], and S. Pantano[8]. [1]Preclinical Safety Assessment, Novartis Institutes of Biomedical Research, Cambridge, MA, [2]Investigative Toxicology, Novartis Institutes of Biomedical Research, Cambridge, MA, [3]Safety Pharmacology, Novartis Pharmaceuticals, Basel, Switzerland, [4]Investigative Toxicology, Novartis Institutes of Biomedical Research, East Hanover, NJ, [5]Safety Pharmacology, Novartis Institutes of Biomedical Research, East Hanover, NJ, [6]Preclinical Safety Profiling, Novartis Institutes of Biomedical Research, Cambridge, MA, [7]Chemistry, Novartis Institutes of Biomedical Research, Cambridge, MA, and [8]Pathology, Novartis Pharmaceuticals, Basel, Switzerland.

Program Description (Continued)

Abstract #

#2249 **Poster Board Number 207**
DETECTION OF SUBTLE THYROIDEAL EFFECTS OF AMIODARONE BY MEANS OF METABOLOMICS. B. van Ravenzwaay[1], E. Fabian[1], M. Herold[2], G. Krennrich[1], R. Looser[2], W. Mellert[1], A. Prokoudine[2], V. Strauss[1], T. Walk[2], J. Wiemer[2], and H. Kamp[1]. [1]BASF SE, Ludwigshafen, Germany, and [2]metanomics GmbH, Berlin, Germany. Sponsor: *R. Landsiedel*.

#2250 **Poster Board Number 208**
HEPATIC LIPIDOSIS MEDIATED BY OFF-TARGET ACTIVATION OF CANNABINOID 1 RECEPTOR. *Y. Yang*, J. Lai-Zhang, R. Ciurlionis, A. R. Lisowski, W. Buck, E. A. Blomme, B. Yao, O. F. El-Kouhen, M. J. Dart, X. Wang, J. M. Frost, and M. D. Meyer. Abbott Laboratories, Abbott Park, IL.

#2251 **Poster Board Number 209**
ASSESSMENT OF SKELETAL MUSCLE MASS AND NERVE CONDUCTION VELOCITY IN RAT PRECLINICAL TOXICOLOGY STUDIES. A. Varela[1], N. Doyle[1], E. Lesage[1], S. Haile[1], J. C. Arezzo[2], and S. Y. Smith[1]. [1]Toxicology, Charles River Preclinical Services, Senneville, QC, Canada, and [2]Departments of Neuroscience and Neurology, A. Einstein College of Medicine, New York, NY. Sponsor: *M. Vézina*.

#2252 **Poster Board Number 210**
REPRODUCTIVE AND DEVELOPMENTAL TOXICITY STUDIES DEMONSTRATE THAT AN2728, A NOVEL BORON-CONTAINING SMALL MOLECULE, IS NEITHER A REPRODUCTIVE TOXICANT NOR A TERATOGEN. *C. Chen*[1], *V. A. Sharper*[2], and *S. Chanda*[1]. [1]Preclinical Safety, Anacor Pharmaceuticals, Palo Alto, CA, and [2]Preclinical Services, Charles River Laboratories, Horsham, PA.

#2253 **Poster Board Number 211**
NONCLINICAL SAFETY EVALUATION OF XOMA 3AB, A NOVEL TRIPLE MONOCLONAL ANTIBODY DRUG PRODUCT TARGETING BOTULINUM TOXIN TYPE A, IN SPRAGUE DAWLEY RATS. *K. Meyer*[1], *H. Ng*[2], *T. Parman*[2], A. D'Andrea[2], T. Harrison[2], *C. Green*[2], J. Ma[1], L. Cao[1], B. Shimizu[1], K. Der[1], and *J. Mirsalis*[2]. [1]Product Development, XOMA (US) LLC, Berkeley, CA, and [2]SRI International, Menlo Park, CA.

#2254 **Poster Board Number 212**
RESPIRATORY SAFETY PHARMACOLOGY IN RATS, CANINES, AND NONHUMAN PRIMATES: COMPARISON OF MINIMAL DETECTABLE DIFFERENCE. S. Authier[1,2], *R. Forster*[1], A. Ascah[1], M. Pouliot[1], and E. Troncy[2]. [1]CiToxLAB, Laval, QC, Canada, and [2]Faculty of Veterinary Medicine, University of Montreal, St-Hyacinthe, QC, Canada.

#2255 **Poster Board Number 213**
TEMPORAL ASSESSMENT OF ACCLIMATION PERSISTENCE WITH JACKETED EXTERNAL TELEMETRY: IMPACT OF HEMODYNAMIC STABILITY ON STUDY DESIGN. S. Tichenor, *H. Holzgrefe*, D. Regalia, and D. Meyer. Toxicology, Charles River Laboratories, Reno, NV.

Abstract #

#2256 **Poster Board Number 214**
MECHANISMS OF ACUTE PHOTOTOXICITY AND PHARMACOKINETIC PROPERTIES IN SKIN OF BALB/C MICE. S. Boudon, B. Prideaux, A. Piaia, M. Stoeckli, J. Schuemann, U. Plappert-Helbig, and D. Bauer. Novartis Institutes for BioMedical Research, Basel, Switzerland. Sponsor: *P. Ulrich*.

#2257 **Poster Board Number 215**
NONCLINICAL TOXICITY STUDIES TO SUPPORT 3000 IU BENEFIX®. *M. W. Bolt*[1], *M. W. Leach*[2], C. Jackson[3], *A. Alexander*[4], and L. Sun[5]. [1]Pfizer, Groton, CT, [2]Pfizer, Andover, MA, [3]Covance, Greenfield, IN, [4]Covance, Madison, WI, and [5]Alnylam, Cambridge, MA.

#2258 **Poster Board Number 216**
HEPATIC PORPHYRIA IN DOGS AFTER ADMINISTRATION OF A NEW ANTIEPILEPTIC DRUG CANDIDATE: MECHANISM AND SPECIES SPECIFICITY. S. M. Kervyn[1], H. Chanteux[1], V. Mancel[1], G. Dubin[2], X. Delepine[1], B. Gerin[1], L. Staelens[1], *O. Depelchin*[1], and J. Nicolas[1]. [1]Nonclinical Development, UCB Pharmacology SA, Braine-l'Alleud, Belgium, and [2]Mass Spectrometry, SGS Cephac, Saint Benoît, France.

#2259 **Poster Board Number 217**
GLYT1 INHIBITOR REDUCES OSCILLATORY POTENTIALS OF ELECTRORETINOGRAM IN RATS. *C. Somps*, C. Liu, G. Seitis, and *B. Pettersen*. Drug Safety, Pfizer Global R&D, Groton, CT.

#2260 **Poster Board Number 218**
EVALUATION OF RESPIRATORY INDUCTIVE PLETHYSMOGRAPHY USING THE EMKABELT SYSTEM IN THE CONSCIOUS DOG AND PRIMATE. K. Meecham, E. Spridgen, S. Purbrick, S. Jordan, and *C. Auletta*. Pharmacology, Huntingdon Life Sciences, Huntingdon, United Kingdom.

#2261 **Poster Board Number 219**
SAFETY EVALUATION OF RECOMBINANT HUMAN LACTOFERRIN FROM RICE: 28-DAY TOXICOLOGY STUDY IN BEAGLE DOGS. *W. Maier*[1], P. Cole[1], A. Aubach[1], *S. Frantz*[1], V. Akoyev[2], C. Austin[2], M. Burnett[2], M. Rice[2], P. Smith[2], G. Unruh[2], N. Huang[3], D. Zhang[3], and *D. E. Johnson*[4]. [1]MPI Research, Mattawan, MI, [2]Ventria Bioscience, Junction City, KS, [3]Ventria Bioscience, Fort Collins, CO, and [4]Emiliem, Emeryville, CA.

#2262 **Poster Board Number 220**
PRECLINICAL INVESTIGATIONS INTO POTENTIAL MECHANISMS OF PAZOPANIB–INDUCED HEPATOTOXICITY IN PATIENTS. D. Petrucci[1], *C. Hu*[1], *K. French*[1], L. Webster[2], K. Skordos[2], R. Brown[1], H. Jordan[1], *N. Cariello*[1], *R. Miller*[1], and K. Frazier[1]. [1]Safety Assessment, GlaxoSmithKline, King of Prussia, PA, and [2]Drug Metabolism and Pharmacokinetics, GlaxoSmithKline, King of Prussia, PA.

#2263 **Poster Board Number 221**
INCLUSION OF MICROCHIP TRANSPONDER BODY TEMPERATURE MEASUREMENTS IN RAT TOXICOLOGY STUDIES. H. Prior, J. Noakes, I. Slater, S. Kelly, M. Smith, A. Kimzey, *R. Roberts*, and *J. Valentin*. Safety Assessment UK, AstraZeneca UK Ltd, Macclesfield, Cheshire, United Kingdom.

Program Description (Continued)

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#2264 **Poster Board Number 222**
DISCOVERY OF HIDDEN MECHANISMS OF ADVERSE EVENTS USING INTEGRATED DATABASE MINING. H. Chen[1], M. Liu[1], A. Enayetallah[2], D. Manyak[1], and *M. Pletcher*[2]. [1]Research and Development, Caliper Discovery Alliances and Services, Hanover, MD, and [2]Compound Safety Prediction Group, Pfizer, Groton, CT.

#2265 **Poster Board Number 223**
HISTORICAL BACKGROUND DATA OF EXTENDED FERTILITY ASSESSMENTS IN REPEAT DOSE TOXICITY STUDIES. *N. Lalayeva*[1], *R. Love*[1], *R. Watson*[1], *S. Oneda*[1], G. DeLosSantos[1], *N. Makori*[1], *P. Franklin*[1], *T. Beck*[1], and *R. Nagata*[2]. [1]Safety Assessment, SNBL USA, Ltd., Everett, WA, and [2]Corporate, Shin Nippon Biomedical Laboratories, Ltd., Kagoshima, Japan.

#2266 **Poster Board Number 224**
PHASE I DOSE-ESCALATION STUDY OF ALN-VSP02, A NOVEL LIPID NANOPARTICLE (LNP)-MEDIATED DELIVERY OF AN RNAI THERAPEUTIC FOR SOLID TUMORS WITH LIVER INVOLVEMENT. *S. Barros*, *J. E. Sutherland*, *C. Gamba-Vitalo*, A. Vaishnaw, *G. Warner*, and J. Gollob. Alnylam Pharmaceuticals, Cambridge, MA.

#2267 **Poster Board Number 225**
NINE WEEK (2X/WEEK) ORAL TOXICITY STUDY OF DECITABINE AND TETRAHYDROURIDINE IN CD-1 MICE. *K. Engelke*[1], *E. Hanan*[1], J. Covey[2], Y. Ling[3], K. Chan[3], Y. Saunthararajah[4], and *P. Terse*[2]. [1]AVANZA Laboratories, LLC, Gaithersburg, MD, [2]National Cancer Institute, Bethesda, MD, [3]The Ohio State University, Columbus, OH, and [4]Cleveland Clinic, Cleveland, OH.

#2268 **Poster Board Number 226**
TOXICOLOGIC CHARACTERIZATION OF PF-05274857, A POTENT AND SELECTIVE SMOOTHENED INHIBITOR FOR THE TREATMENT OF ADVANCED CANCER. G. J. Stevens[1], *B. Hirakawa*[1], B. A. Blankenship[2], S. Sorden[2], *K. D. Williams*[2], and A. H. Yang[1]. [1]Pfizer Inc., San Diego, CA, and [2]Covance Laboratories Inc., Madison, WI.

#2269 **Poster Board Number 227**
NKTR-102, A NOVEL TOPOISOMERASE I INHIBITOR-POLYMER CONJUGATE, IN COMBINATION WITH PEGYLATED LIPOSOMAL DOXORUBICIN (PLD) DOES NOT EXACERBATE THE HEMATOLOGIC TOXICITIES OF PLD ALONE. *C. Ji*[1], *W. Lee*[2], and *T. D. Sweeney*[1]. [1]Toxicology, Nektar Therapeutics, San Francisco, CA, and [2]ITR Laboratories Canada Inc (ITR), Baie d'Urfe, QC, Canada.

#2270 **Poster Board Number 228**
TOXICOLOGICAL ASSESSMENT OF A SPLEEN TYROSINE KINASE INHIBITOR, CC-118, IN CYNOMOLGUS MONKEYS. *D. L. Misner*, *K. Ghoreishi*, R. Eydelloth, Y. Tang, and *M. A. Breider*. Celgene Corp., San Diego, CA.

Abstract #

#2271 **Poster Board Number 229**
PRECLINICAL DEVELOPMENT OF BIOMIMETIC ACTINIDE DECORPORATION AGENTS. P. Y. Chang[1], D. Bunin[1], and R. Abergel[2]. [1]Biosciences, SRI International, Menlo Park, CA, and [2]Chemical Sciences, Lawrence Berkeley National Laboratory, Berkeley, CA. Sponsor: *K. Steinmetz*.

#2272 **Poster Board Number 230**
THE DESIGN OF CHRONIC TOXICOLOGY STUDIES OF MONOCLONAL ANTIBODIES: IMPLICATIONS FOR THE REDUCTION IN USE OF NONHUMAN PRIMATES. K. Chapman. NC3Rs, London, United Kingdom. Sponsor: *L. Andrews*.

#2273 **Poster Board Number 231**
NONCLINICAL SAFETY EVALUATION OF MEDI-573, A DUAL-TARGETING ANTI-INSULIN-LIKE GROWTH FACTOR (IGF)-I AND IGF-II MONOCLONAL ANTIBODY IN CYNOMOLGUS MONKEYS. *L. A. Iciek*, J. Leininger, B. Lam, L. Roskos, *K. McKeever*, and *R. Dixit*. Translational Sciences, MedImmune LLC, Gaithersburg, MD.

#2274 **Poster Board Number 232**
***IN VITRO* SPECIES COMPARISON FOR EARLY MARKERS OF TUMORIGENESIS TO DERISK AN ATYPICAL NONGENOTOXIC CARCINOGEN.** F. Boess, J. Funk, B. Lenz, *T. Singer*, *T. Weiser*, *S. Platz*, and *A. B. Roth*. Nonclinical Safety, Hoffmann-La Roche, Basel, Switzerland.

#2275 **Poster Board Number 233**
A CROSS-COMPANY INITIATIVE ASSESSING RELATIONSHIPS BETWEEN CARDIOVASCULAR FUNCTIONAL MEASUREMENTS AND REPEAT-DOSE CARDIOVASCULAR TOXICITY. P. Milliken[1], P. Clements[1], N. McMahon[1], M. Aylott[1], L. Ewart[2], *J. Valentin*[2], A. Hargreaves[2], P. Jarvis[2], D. Leishman[3], K. Heinz Taheny[3], D. Watson[3], S. Engle[3], N. Edmunds[4], R. Wallis[4], and M. Guffroy[4]. [1]GlaxSmithKline, Ware, Hertfordshire, United Kingdom, [2]AstraZeneca, Macclesfield, Cheshire, United Kingdom, [3]Eli Lilly and Co., Indianapolis, IN, and [4]Pfizer, Groton, CT.

#2276 **Poster Board Number 234**
HISTOPATHOLOGICAL MARKERS OF OCULAR PHOTOTOXICITY. *D. B. Learn*[2], and J. M. Baker[1]. [1]Pathology Associates, Charles River, Frederick, MD, and [2]Center for Photobiology, Charles River Laboratories Preclinical Services, Horsham, PA.

#2277 **Poster Board Number 235**
MULTIVARIATE PRECLINICAL OBSERVATION PROFILES—TWO FINDINGS ARE BETTER THAN ONE. D. Muthas[1], J. Parkinson[2], M. Clark[3], J. Valentin[2], L. Ewart[2], and *S. Boyer*[1]. [1]Computational Toxicology, AstraZeneca R&D, Mölndal, Sweden, [2]Safety Pharmacology, AstraZeneca R&D, Alderly Park, United Kingdom, and [3]Discovery Information, AstraZeneca R&D, Wilmington, DE.

Program Description (Continued)

Abstract #

#2278 **Poster Board Number 236**
CONCORDANCE BETWEEN NONCLINICAL AND CLINICAL TOXICITY DATA DETERMINED BY A SURVEY OF APPROVED PHARMACEUTICALS IN JAPAN. *K. Nakamura*, S. Hisada, T. Ohkura, Y. Yoneta, K. Hattori, Y. Ogino, C. Tamaki, Y. Takashima, D. Yasugi, M. Hashiba, M. Matsumura, and T. Nagayama. Nonclinical Evaluation Subcommittee, Drug Evaluation Committee, Japan Pharmaceutical Manufactures Association, Tokyo, Japan.

Wednesday Afternoon, March 14
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Animal Models in Pharmaceutical Toxicology

Chairperson(s): *Simon Authier, CiToxLAB, Laval, QC, Canada.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *1:00 PM–2:45 PM*

#2279 **Poster Board Number 237**
IMAGING AND ASSESSMENT OF CORNEAL VESSELS IN A RAT SUTURE MODEL FOR NEOVASCULARIZATION USING A CONFOCAL SCANNING LASER OPHTHALMOSCOPE (CSLO). K. Tenneson, and *M. Vézina*. Toxicology, Charles River Preclinical Services, Senneville, QC, Canada.

#2280 **Poster Board Number 238**
USE OF SPECTRAL-DOMAIN OPTICAL COHERENCE TOMOGRAPHY (SD-OCT) TO MONITOR SUBRETINAL ADMINISTRATION IN ANIMAL MODELS. S. Wise, T. Bryant, S. Duval, N. Guay, T. Hallé, and *M. Vézina*. Toxicology, Charles River Preclinical Services, Senneville, QC, Canada.

#2281 **Poster Board Number 239**
SAFETY PHARMACOLOGY IN THE GÖTTINGEN MINIPIG: CARDIOVASCULAR, RESPIRATORY, AND NEUROLOGICAL INVESTIGATIONS. R. Mikaelian[1], S. Authier[1,2], S. Fournier[1], M. Pouliot[1], A. Ascah[1], E. Troncy[1,2], and *R. Forster*[1]. [1]CiToxLAB, Laval, QC, Canada, and [2]Faculty of Veterinary Medicine, University of Montreal, St-Hyacinthe, QC, Canada.

#2282 **Poster Board Number 240**
DEVELOPMENT OF A GROUP-HOUSED, AMBULATORY, SURGICALLY CANNULATED, INTRAVENOUS INFUSION MODEL IN CYNOMOLGUS MACAQUES (*MACACA FASCICULARIS*). M. D. Saunders, and R. Lawrence. Safety Assessment, Huntingdon Life Sciences, Huntingdon, Cambridgeshire, United Kingdom. Sponsor: *D. Mitchell*.

#2283 **Poster Board Number 241**
AROUSAL AND SPECTRAL ANALYSIS: EEG IN CONSCIOUS CYNOMOLGUS MONKEYS. S. Fournier[1], S. Maghezzi[1], E. Schaeffer[2], M. Weed[2], S. Digavalli[2], E. Troncy[3], *R. Forster*[1], and S. Authier[1,3]. [1]CiToxLAB, Laval, QC, Canada, [2]Bristol-Myers Squibb, Wallingford, CT, and [3]Faculty of Veterinary Medicine, University of Montreal, Laval, QC, Canada.

Abstract #

#2284 **Poster Board Number 242**
NOVEL TELEMETRIC APPROACHES TO MONITORING BLOOD PRESSURE IN A RODENT MODEL OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE. M. Lin, L. Griffiths, and *K. E. Pinkerton*. University of California Davis, School of Veterinary Medicine, Davis, CA.

#2285 **Poster Board Number 243**
COMPARATIVE ANALYSIS OF GENE EXPRESSION PROFILES FOR HEPATIC CYTOCHROMES P450 IN CYNOMOLGUS MONKEYS BRED IN CAMBODIA, CHINA, AND INDONESIA. R. Ise, Y. Nakanishi, H. Yamashita, T. Yoshikawa, S. Kohara, K. Fukuzaki, M. Utoh, C. Nakamura, Y. Uno, and *R. Nagata*. Drug Safety Research Labo, Shin Nippon Biomedical Laboratories, Ltd., Kagoshima-shi, Japan.

#2286 **Poster Board Number 244**
HEMATOLOGY AND BLOOD BIOCHEMISTRY CHANGES RELATED TO AGE IN GÖTTINGEN MINIPIGS. *A. Makin*, S. Klastrup, and J. Jensen. CiToxLAB, Lille Skensved, Denmark.

#2287 **Poster Board Number 245**
THE ADJUSTED HOLE BOARD TEST AND DEVELOPMENT OF A VISUAL DISCRIMINATION TEST FOR EVALUATING LEARNING AND MEMORY IN JUVENILE MINIPIGS. N. Grand[1], A. Juul Haagensen[2], *A. Makin*[1], C. Skytte[1], and D. Bratbo Soerensen[2]. [1]CiToxLAB, Lille Skensved, Denmark, and [2]KU LIFE, Copenhagen University, Copenhagen, Denmark.

#2288 **Poster Board Number 246**
INTERSPECIES COMPARISON OF TOXICO-PATHOLOGICAL FINDINGS INDUCED BY 4-WEEK REPEATED EXPOSURE TO DICLOFENAC IN DOGS AND MICROPIGS. B. Lee[1], J. Cho[1], H. Han[1], J. Han[1], S. Rime[1], H. Park[1], L. Jaison[2], F. A. Majeed[2], J. R. Calampinary[2], A. Asad[2], S. Park[2], M. J. Kim[2], S. Cha[1], M. Kwon[1], Y. Kim[1], and S. Yoon[1]. [1]Korea Institute of Toxocology, Daejeon, Republic of Korea, and [2]PWG Genetics Pte Ltd, Singapore, Singapore. Sponsor: *W. Koh*.

#2289 **Poster Board Number 247**
FEASIBILITY AND SAFETY EVALUATION OF AMBULATORY INFUSION IN SOCIALIZED CYNOMOLGUS MONKEYS FOR PRECLINICAL SAFETY STUDIES. C. Gerhardy, *S. Baudet*, F. Bossu, C. Botteron, and N. Pickersgill. Ricerca Biosciences SAS, Lyon, France.

#2290 **Poster Board Number 248**
INVESTIGATIVE EMBRYOTOXICITY STUDY IN THE GÖTTINGEN MINIPIG BY INTRAVENOUS INFUSION USING AN AMBULATORY PUMP. *J. Briffaux*, L. Reynaud, and E. Marsden. Ricerca Biosciences SAS, Lyon, France.

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#2291 **Poster Board Number 249**
SIX-WEEK EXPLORATORY STUDY ON VIGABATRIN-INDUCED RETINAL TOXICITY IN PIGMENTED (LONG EVANS) RATS. *J. Briffaux*[1], N. Truchot[1], C. Botteron[1], S. Rosolen[2], N. Pickersgill[1], and A. Rasmussen[3]. [1]Ricerca Biosciences SAS, St Germain sur l'Arbresle, France, [2]Institut de la Vision, Paris, France, and [3]H. Lundbeck A/S, Copenhagen, Denmark.

#2292 **Poster Board Number 250**
YUCATAN MINIATURE SWINE SURGICAL GLAUCOMA MODEL DEVELOPMENT AND RESPONSE TO THERAPY. S. Renna[1], C. Moore[2], *J. Liu*[1], Z. Burks[1], E. Blair[1], C. Hanks[1], K. Horlen[1], D. White[1], L. D. Brown[1], and *G. Bouchard*[1]. [1]Sinclair Research Center, LLC, Auxvasse, MO, and [2]Veterinary Ophthalmology, University of Missouri College of Veterinary Medicine, Columbia, MO.

#2293 **Poster Board Number 251**
MINIATURE SWINE MODEL OF PHOTOTOXICITY TESTING. H. Leigh[1], L. D. Brown[1], P. D. Forbes[2], C. Lawson[1], D. Y. Kim[3], D. White[1], D. R. Wehmeier[1], *J. Liu*[1], and *G. Bouchard*[1]. [1]Sinclair Research Center, LLC, Auxvasse, MO, [2]Aclario PDG, Inc., Vienna, VA, and [3]Veterinary Medical Diagnostic Laboratory University of Missouri, Columbia, MO.

#2294 **Poster Board Number 252**
A PROOF OF CONCEPT STUDY FOR EVALUATING ANTIHYPERTENSIVE COMPOUNDS IN AWAKE, CHRONICALLY-INSTRUMENTED, PHARMACOLOGICALLY HYPERTENSIVE MONKEYS. C. R. Hassler[1], *M. M. Hejtmancik*[1], M. A. Hawk[1], R. L. Hamlin[2], B. M. Roche[1], and E. Gonzalez[1]. [1]Toxicology, Battelle Memorial Institute, Columbus, OH, and [2]Veterinary Medicine, Ohio State University, Columbus, OH.

#2295 **Poster Board Number 253**
GENERATION OF PDE4D KNOCKOUT RATS USING ZINC FINGER NUCLEASE TECHNOLOGY. *M. Lawton*, *B. Enerson*, *I. Pardo*, and W. Qin. Pfizer, Groton, CT.

#2296 **Poster Board Number 254**
INTRAPUTAMENAL INFUSION IN THE ALBINO RAT. C. Copeman[1], J. Perron[1], Y. Trudel[1], S. Caron[1], F. Emond[1], V. Frenette[1], and *M. Butt*[2]. [1]Toxicology, Charles River Preclinical Services, Senneville, QC, Canada, and [2]Tox Path Specialist, LLC, Hagerstown, MD.

Abstract #

Wednesday Afternoon, March 14
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Animal Models in Toxicology

Chairperson(s): *Asok Dasmahapatra, University of Mississippi, University, MS.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *2:45 PM–4:30 PM*

#2297 **Poster Board Number 255**
POSSIBLE DETOXIFICATION MECHANISMS OF 2-CHLOROETHANOL INTOXICATION. Y. Chen[1], *D. Hung*[2,3], and I. Matsuura[1]. [1]Division of Molecular and Genomic Medicine, National Health Research Institutes, Miaoli County, Taiwan, [2]Graduate Institute of Drug Safety, College of Pharmacy, China Medical University, Taichung, Taiwan, and [3]Toxicology Center, China Medical University Hospital, Taichung, Taiwan.

#2298 **Poster Board Number 256**
CONTINUOUS CARCINOGENIC SUSCEPTIBILITY MONITORING OF CB6F1 TG RASH2 MICE. K. Urano, K. Machida, E. Nishinaka, K. Itoh, M. Tomizawa, T. Ogura, M. Yasuda, and *H. Tsutsumi*. Central Institute for Experimental Animals, Kawasaki, Japan.

#2299 **Poster Board Number 257**
***IN VIVO* EXPRESSION OF P16INK4A IN RESPONSE TO TOXICOLOGICAL EXPOSURES.** *J. Sorrentino*[1], C. Burd[2], and N. Sharpless[1,2,3]. [1]Toxicology, University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]Genetics, University of North Carolina at Chapel Hill, Chapel Hill, NC, and [3]Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC.

#2300 **Poster Board Number 258**
DEVELOPMENT OF AN ANIMAL MODEL OF ISONIAZID-INDUCED LIVER INJURY. *I. G. Metushi*[1], and *J. P. Uetrecht*[2,1]. [1]Pharmacology and Toxicology, University of Toronto, Toronto, ON, Canada, and [2]Pharmaceutical Sciences, University of Toronto, Toronto, ON, Canada.

#2301 **Poster Board Number 259**
MORTALITY PATTERNS IN CD-1 MOUSE TUMORIGENICITY STUDIES, CONDUCTED OVER THE PERIOD OF 1985 TO 2011. W. N. Hooks. Safety Assessment, Huntingdon Life Sciences, Huntingdon, Cambridgeshire, United Kingdom. Sponsor: *D. Mitchell*.

#2302 **Poster Board Number 260**
GENERAL TOXICITY STUDY OF F344 GPT DELTA TRANSGENIC RAT FOR ONE-YEAR FEEDING. H. Takagi[1], Y. Nozaki[1], A. Kawada[1], M. Yamada[2], K. Masumura[2], and T. Nohmi[2]. [1]Biotechnical Center, JAPAN SLC, Inc., Hamamatsu, Japan, and [2]Division of Genetics and Mutagenesis, National Institute of Health Sciences, Tokyo, Japan. Sponsor: *A. NIshikawa*.

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Abstract #

#2303 **Poster Board Number 261**
A COMPARISON OF SURVIVAL PATTERNS AND BACKGROUND PATHOLOGY IN SPRAGUE DAWLEY AND HAN WISTAR RATS. I. Taylor[1], *D. Creasy*[2], and V. Mowat[1]. [1]Pathology, HLS, Huntingdon, United Kingdom, and [2]Pathology, HLS, Princeton, NJ.

#2304 **Poster Board Number 262**
PROFILE OF EARLY-OCCURRING SPONTANEOUS TUMOURS IN CD-1 MICE. V. Mowat, and I. Taylor. Pathology, HLS, Huntingdon, United Kingdom. Sponsor: *C. Auletta*.

#2305 **Poster Board Number 263**
DIABETES AFFECTS BIODISTRIBUTION AND GENOTOXICITY OF CISPLATIN IN MICE. M. S. Faria[1], M. C. Rodrigues[1], J. L. Rodrigues[2], A. F. Aissa[1], N. G. Santos[1], L. G. Antunes[1], F. Barbosa[1], and A. C. Santos[1]. [1]Department of Clinical Analyses, Toxicology and Food Sciences, University of São Paulo, School of Pharmaceutical Sciences of Ribeirão Preto, Ribeirão Preto, São Paulo, Brazil, and [2]Department of Technology and Science, Federal University of Vales do Jequitinhonha and Mucuri, Teófilo Otoni, Minas Gerais, Brazil. Sponsor: *D. Dorta*.

#2306 **Poster Board Number 264**
DEVELOPMENT OF A MOUSE MODEL OF DOXORUBICIN-INDUCED CHRONIC CARDIOTOXICITY. *V. Desai*[1], E. Herman[2], C. Moland[1], W. Branham[1], S. Lewis[3], Y. Jones[3], A. Paredes[3], C. Cummings[4], S. Kerr[5], K. Davis[6], J. Latendresse[6], and *J. Fuscoe*[1]. [1]Division of Systems Biology, NCTR/FDA, Jefferson, AR, [2]Division of Applied Pharmacology and Research, CDER, Silver Spring, MD, [3]Office of Scientific Coordination, NCTR/FDA, Jefferson, AR, [4]Experimental Pathology Laboratories, Inc., NIEHS, Research Triangle Park, NC, [5]Arkansas Heart Hospital, Little Rock, AR, and [6]Toxicologic Pathology Associates, NCTR/FDA, Jefferson, AR.

#2307 **Poster Board Number 265**
EVALUATION OF HEPATOTOXIC EQUIVALENCY BY COMPARING CHANGES IN HEPATIC GENE EXPRESSION INDUCED BY TWO DIFFERENT FORMULATIONS OF ATORVASTATIN IN CHIMERIC PXB-MOUSE® WITH HIGHLY HUMANIZED LIVER. M. Nakashima[1], H. Tachiki[2], T. Shimada[3], and S. Nagatsuka[4]. [1]Graduate School of Biomedical Sciences, Nagasaki University, Nagasaki, Japan, [2]Research & Development Division, Towa Pharmaceuticals, Co., Ltd., Kadoma, Osaka, Japan, [3]Phoenix Bio, Co., Ltd., Higashi-Hiroshima, Hiroshima, Japan, and [4]ADME & Toxicology Research Institute, Sekisui Medical, Co., Ltd., Tokai-mura, Ibaraki, Japan. Sponsor: *T. Miyaoka*.

#2308 **Poster Board Number 266**
CARBON TETRACHLORIDE-INDUCED HEPATOTOXICITY IN MICROMINI-PIGS. H. Yamashita[1], M. Ikegawa[2], Y. Sasaki[1], M. Mishima[1], H. Kawaguchi[3], N. Miyoshi[3], A. Tanimoto[3], H. Izumi[1], and *R. Nagata*[1]. [1]Drug Safety Research Labo, Shin Nippon Biomedical Laboratories, Ltd., Kagoshima-shi, Kagoshima-ken, Japan, [2]Kyoto Prefectural University of Medicine, Kyoto, Kyoto-fu, Japan, and [3]Kagoshima University, Kagoshima, Kagoshima-ken, Japan.

Abstract #

#2309 **Poster Board Number 267**
EFFECTS ON KIDNEY GENE EXPRESSION IN WILD TYPE AND CANCER-PRONE TRANSGENIC MICE OF LONG TERM EXPOSURE TO THE MYCOTOXIN, OCHRATOXIN A (OTA). I. Curran[1], A. Nunnikhoven[1], C. Qiao[2], S. Gurofsky[1], V. Liston[1], and *G. Bondy*[1]. [1]Toxicology Research Division, Health Canada, Ottawa, ON, Canada, and [2]Food Surveillance and Science integration, Health Canada, Ottawa, ON, Canada.

#2310 **Poster Board Number 268**
A SYSTEMS GENETICS APPROACH TO INVESTIGATING CANCER SUSCEPTIBILITY DUE TO LOW-DOSE COEXPOSURES TO ENVIRONMENTAL CARCINOGENS. *M. C. DeSimone*[1], J. Cullen[3], *H. B. Patisaul*[2], and *D. W. Threadgill*[1]. [1]Genetics, North Carolina State University, Raleigh, NC, [2]Biology, North Carolina State University, Raleigh, NC, and [3]College of Veterinary Medicine, North Carolina State University, Raleigh, NC.

#2311 **Poster Board Number 269**
IMMUNE INVOLVEMENT IN AMINOGLUTETHIMIDE-INDUCED IDIOSYNCRATIC DRUG REACTIONS. W. Ng, and *J. Uetrecht*. Faculty of Pharmacy, University of Toronto, Toronto, ON, Canada.

#2312 **Poster Board Number 270**
COMPARATIVE EXPOSURE TO SOY BIODIESEL EMISSIONS IN AN ALLERGIC MOUSE MODEL. *S. H. Gavett*[1], *J. M. Cyphert*[2], M. J. Daniels[1], E. H. Boykin[1], L. B. Copeland[1], D. L. Andrews[1], T. J. Smith[1], *I. Gilmour*[1], and *M. A. Williams*[1]. [1]US EPA, Research Triangle Park, NC, and [2]University of North Carolina at Chapel Hill, Chapel Hill, NC.

#2313 **Poster Board Number 271**
ANTIINFLAMMATORY DRUG TESTING IN MARMOSET MONKEY MODELS OF LPS-INDUCED ACUTE LUNG INFLAMMATION. *S. Seehase*[1,2], S. Switalla[1], V. Neuhaus[1], M. Zöller[2], F. J. Kaup[2], C. Schlumbohm[3], E. Fuchs[3], H. D. Lauenstein[1,2], S. Knauf[1,2], K. Sewald[1], and A. Braun[1]. [1]Fraunhofer ITEM, Hannover, Germany, [2]German Primate Center, Göttingen, Germany, and [3]Encepharm, Göttingen, Germany.

#2314 **Poster Board Number 272**
CONTINUOUS INTRAVENOUS INFUSION IN GENETICALLY ALTERED MICE. H. van Wijk. Covance Laboratories Ltd, Harrogate, United Kingdom. Sponsor: *S. Kirk*.

#2315 **Poster Board Number 273**
POTENTIAL ACTIVATION OF BONE MARROW-DERIVED DENDRITIC CELLS BY NEVIRAPINE AND/OR ITS METABOLITES. *X. Chen*, and *J. Uetrecht*. Faculty of Pharmacy, University of Toronto, Toronto, ON, Canada.

#2316 **Poster Board Number 274**
BACKGROUND INCIDENCE OF EXPERIMENTAL-RELATED EVENTS ON INTRAVENOUS INFUSION STUDIES IN RATS, BEAGLE DOGS, NONHUMAN PRIMATES, AND GÖTTINGEN MINIPIG. A. Prefontaine, and C. Copeman. Toxicology, Charles River Preclinical Services, Senneville, QC, Canada. Sponsor: *M. Vézina*.

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#2317 **Poster Board Number 275**
FEASIBILITY OF MEDAKA AS AN ANIMAL MODEL TO STUDY FETAL VALPROATE SYNDROME. *M. Wu*[1,2], I. A. Khan[1,3,4], and *A. K. Dasmahapatra*[1,2]. [1]National Center for Natural Product Research, University of Mississippi, University, MS, [2]Department of Pharmacology, University of Mississippi, University, MS, [3]Pharmacognosy, University of Mississippi, University, MS, and [4]Department of Pharmacognosy, King Saud University, Riyadh, Saudi Arabia.

#2318 **Poster Board Number 276**
3RS: A REFINEMENT STRATEGY FOR ACUTE ORAL TOXICITY TESTING. K. Hempel, T. Kaufmann, *R. Landsiedel*, and B. van Ravenzwaay. Experimental Toxicology and Ecology, BASF SE, Ludwigshafen am Rhein, Germany.

#2319 **Poster Board Number 277**
OPTIMIZATION AND EVALUATION OF AN *EX VIVO* MOUSE PERITONEUM MAST CELL DEGRANULATION ASSAY TO EVALUATE POTENTIAL PROTEIN ALLERGENICITY. *S. Karaman*[1], *V. Peachee*[2], *G. Ladics*[1], and *K. White*[2]. [1]Pioneer Hi-Bred International, Inc., DuPont Agricultural Biotechnology, Ankeny, IA, and [2]ImmunoTox Inc., Richmond, VA.

#2320 **Poster Board Number 278**
SURAMIN PROMOTES RECOVERY FROM GLYCEROL-INDUCED ACUTE KIDNEY INJURY. *M. Korrapati*, B. E. Shaner, and *R. G. Schnellmann*. MUSC, Charleston, SC.

#2321 **Poster Board Number 279**
EXTRAHEPATIC UGT1A1 EXPRESSION PLAYS AN IMPORTANT ROLE IN BILIRUBIN HOMEOSTASIS. S. Chen[1], N. Nguyen[1], *R. Fujiwara*[1], and *R. H. Tukey*[1,2]. [1]Pharmacology, University of California San Diego, La Jolla, CA, and [2]Chemistry & Biochemistry, University of California San Diego, La Jolla, CA.

#2322 **Poster Board Number 280**
NEBULIZED THIOCYANATE IMPROVES HOST DEFENSE IN A MOUSE MODEL OF *P. AERUGINOSA* LUNG INFECTION. J. Chandler[1,2], E. Min[2], S. Gauthier[2], D. Nichols[2,3], and *B. J. Day*[1,2]. [1]Pharmaceutical Sciences, University of Colorado Denver, Aurora, CO, [2]Medicine, National Jewish Health, Denver, CO, and [3]Pediatrics, National Jewish Health, Denver, CO.

#2323 **Poster Board Number 281**
DEVELOPMENT AND EVALUATION OF AN LPS AIRWAY INDUCTION MODEL IN THE CYNOMOLGUS MACAQUE. A. Curran[2], M. Perpetua[3], and G. Bannish[1]. [1]Biopharmaceutical Development, Huntingdon Life Sciences, East Millstone, NJ, [2]Inhalation Toxicology, Safety Assessment, Huntingdon Life Sciences, East Millstone, NJ, and [3]Huntingdon Life Sciences, East Millstone, NJ. Sponsor: *C. Auletta*.

#2324 **Poster Board Number 282**
PREWEANING OR LIFE-LONG ORAL MANGANESE EXPOSURE PRODUCES LASTING AND CHRONIC REDUCTIONS IN SKILLED FORELIMB USE IN ADULT RATS: A MONTOYA STAIRCASE EVALUATION. S. A. Beaudin, S. Nisam, and *D. Smith*. Department of Microbiology and Environmental Toxicology, University of California Santa Cruz, Santa Cruz, CA.

Abstract #

#2325 **Poster Board Number 283**
IRREVERSIBILITY OF FIBROSIS AND PRENEOPLASTIC HEPATOCELLULAR FOCI BY OXIDATIVE STRESS AND HYPOXIA IN THE LIVER OF NONALCOHOLIC STEATOHEPATITIS RATS. A. Takeuchi, T. Noto, M. Matsumoto, and Y. Miyamae. Drug Safety Research Lab., Astellas Pharma Inc., Osaka-shi, Osaka, Japan. Sponsor: *J. Yanase*.

#2326 **Poster Board Number 284**
DIFFERENCES IN HEPATOTOXICANT-INDUCED CHANGES IN HEPATIC GENE EXPRESSION IN HUMAN HEPATOCYTES *IN VITRO* AND IN THE LIVER OF CHIMERIC PXB-MOUSE®. S. Nagatsuka[1], S. Ninomiya[1], M. Kakuni[2], C. Tateno-Mukaidani[2], T. Shimada[2], and Y. Yamazoe[3]. [1]ADME &TOX. Research Institute, Sekiui Medical, Co., Ltd., Tokai-mura, Ibaraki, Japan, [2]Phoenix Bio, Co., Ltd., Higashi-Hiroshima, Hiroshima, Japan, and [3]Graduate School of Pharmaceutical Sciences, Tohoku University, Sendai, Miyagi, Japan. Sponsor: *T. Miyaoka*.

#2327 **Poster Board Number 285**
A NOVEL SERIES OF ENDOTHELIN-A RECEPTOR ANTAGONISTS SHUTS DOWN PRETERM BIRTH IN THE ANIMAL MODEL: A LOOK AT MECHANISMS AND ALTERED GENE EXPRESSION. *N. S. Olgun*[1,2], *R. Stephani*[1], H. J. Patel[1], N. Hanna[2], and S. E. Reznik[1]. [1]Pharmaceutical Science, St. John's University, Jamaica, NY, and [2]Pediatrics, Winthrop University Hospital, Mineola, NY.

#2328 **Poster Board Number 286**
USE OF 3-CHLOROPROPANEDIOL AS A POSITIVE CONTROL FOR INVESTIGATING CEREBRAL EDEMA IN MOUSE MODELS OF ALZHEIMER'S DISEASE USING MAGNETIC RESONANCE IMAGING. *W. Angus*, J. Goodman, *G. Freeman*, T. Brown, P. Chou, M. Marzano, and K. Bales. Pfizer, Inc., Groton, CT.

#2329 **Poster Board Number 287**
DEVELOPMENT OF A RECOVERY PIG MODEL OF PHOSGENE-INDUCED LUNG INJURY. S. Graham[1], S. Fairhall[1], B. Jugg[1], R. Perrott[1], T. Mann[1], S. Rutter[1], P. Marshall[1], A. Smith[1], and *A. Sciuto*[2]. [1]Biomedical Sciences, Dstl., Salisbury, United Kingdom, and [2]USAMRICD, Aberdeen Proving Ground, MD.

#2330 **Poster Board Number 288**
NEED FOR ACCLIMATIZATION OF RATS TO RESTRAINT FOR NOSE-ONLY INHALATION EXPOSURE. Y. Staal[1], P. van Loo[2], J. Arts[3], J. van Triel[1], and H. Muijser[1]. [1]TNO Triskelion, Zeist, Netherlands, [2]TNO, Zeist, Netherlands, and [3]Akzo Nobel NV, Arnhem, Netherlands. Sponsor: *R. Woutersen*.

#2331 **Poster Board Number 289**
ACETAMINOPHEN ABSORPTION TEST: A METHOD FOR THE EVALUATION OF GASTRIC EMPTYING IN CYNOMOLGUS MONKEY. *R. Forster*[1], A. El Amrani[1], S. Loriot[1], R. Michaud[1], A. Bétat[1], *J. Descotes*[2], and J. Legrand[1]. [1]CiToxLab France, Evreux, France, and [2]Poison Center, Lyon, France.

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#2332 **Poster Board Number 290**
HUMAN FCGRIIA TRANSGENIC MICE AS A SUITABLE MODEL FOR STUDYING THROMBOSIS. *M. Otieno*[1], L. Price[2], Y. Callejas[1], A. Love[1], Y. Song[1], J. Tamura[2], *L. Lehman-McKeeman*[1], and E. Janovitz[1]. [1]Discovery Toxicology, Bristol-Myers Squibb, Princeton, NJ, and [2]Discovery Biology, Bristol-Myers Squibb, Hopewell, NJ.

Wednesday Afternoon, March 14
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Male Reproductive Toxicology

Chairperson(s): *Anthony Archibong, Meharry Medical College, Nashville, TN.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *1:00 PM–2:45 PM*

#2333 **Poster Board Number 301**
UTILITY AND TRANSLATABILITY OF RODENT TESTICULAR MIRNAS AS POTENTIAL TESTIS INJURY BIOMARKERS. *H. Lin*[1], *R. Chapin*[2], *J. Aubrecht*[2], and *S. Ramaiah*[1]. [1]DSRD, Pfizer Inc., Cambridge, MA, and [2]DSRD, Pfizer Inc., Groton, CT.

#2334 **Poster Board Number 302**
SMALL-MOLECULE INHIBITION OF THE PI3K BETA ISOFORM CAUSES TESTICULAR TOXICITY IN THE RAT. *J. Wisler*[1], M. Lafleur[1], *J. Lawrence*[1], B. Russell[1], J. Pretorius[1], *C. Afshari*[1], S. Wannberg[2], D. Metz[2], K. Henne[3], and J. Werner[1]. [1]Comparative Biology and Safety Sciences, Amgen, Thousand Oaks, CA, [2]Inflammation Research, Amgen, Thousand Oaks, CA, and [3]Pharmacokinetics and Drug Metabolism, Amgen, San Francisco, CA.

#2335 **Poster Board Number 303**
METAMIDOPHOS ALTERS SPERM FUNCTION, FERTILIZATION CAPACITY, AND DNA IN GERM CELLS AT MITOSIS, MEIOSIS, AND EPIDIDYMAL MATURATION IN MICE. *M. Urióstegui- Acosta*[1], M. Sánchez-Gutiérrez[2], B. Piña- Guzmán[3], *I. Hernández- Ochoa*[1], G. Martínez- Aguilar[1], and *B. Quintanilla- Vega*[1]. [1]Departamento de Toxicología, Cinvestav-IPN, Distrito Federal, Mexico, [2]Instituto de Ciencias de la Salud, Universidad Autónoma del Estado de Hidalgo, Pachuca, Hgo, Mexico, and [3]Biotecnología, Unidad Profesional Interdisciplinaria de Biotecnología, Distrito Federal, Mexico.

#2336 **Poster Board Number 304**
BLACK COHOSH (*ACTAEA RACEMOSA*) AFFECTS REPRODUCTION IN THE HARLAN SPRAGUE DAWLEY RAT. *M. Mercado Feliciano*[1], *J. Bishop*[1], *K. J. Turner*[2], *B. McIntyre*[1], and *P. M. Foster*[1]. [1]DNTP, NIEHS, Research Triangle Park, NC, and [2]RTI International, Research Triangle Park, NC.

#2337 **Poster Board Number 305**
TOXICOGENOMIC INVESTIGATION ON RAT TESTICULAR TOXICITY ELICITED BY 1,3-DINITROBENZENE. T. Matsuyama, N. Niino, N. Kiyosawa, K. Kai, *M. Teranishi*, and A. Sanbuissho. Daiichi Sankyo Co. Ltd., Edogawa-ku, Tokyo, Japan.

Abstract #

#2338 **Poster Board Number 306**
EVALUATION OF GENOMIC BIOMARKERS AND RELATIVE POTENCY OF PHTHALATE-INDUCED MALE REPRODUCTIVE DEVELOPMENTAL TOXICITY USING A TARGETED RTPCR ARRAY APPROACH. *B. Hannas*[1], C. Lambright[1], J. Furr[1], N. Evans[1], *P. Foster*[2], *L. Gray*[1], and *V. S. Wilson*[1]. [1]Reproductive Toxicology Branch, US EPA, Research Triangle Park, NC, and [2]NTP, NIEHS, Research Triangle Park, NC.

#2339 **Poster Board Number 307**
COMPARISON OF *EX VIVO* DBP AND *IN VITRO* MBP EXPOSURES ON FETAL TESTIS TESTOSTERONE PRODUCTION. *V. S. Wilson*, C. Lambright, N. Evans, J. Furr, H. Sampson, and *L. E. Gray*. Reproductive Toxicology Branch, US EPA, ORD, NHEERL, TAD, Research Triangle Park, NC.

#2340 **Poster Board Number 308**
A FETAL RAT TESTIS ENDOCRINE AND GENOMIC "SIGNATURE" ACCURATELY PREDICTS THE PHTHALATE SYNDROME OF MALFORMATIONS. *L. E. Gray*[1], *B. Hannas*[1], J. Furr[1], C. Lambright[1], N. Evans[1], *V. Wilson*[1], and *P. Foster*[2]. [1]Reproductive Toxicology BRANCH, NHEERL, US EPA, Research Triangle Park, NC, and [2]Toxicology Branch, NTP, NIEHS, Research Triangle Park, NC.

#2341 **Poster Board Number 309**
FASL REGULATES TESTICULAR GERM CELL C-FLIP LEVELS THOUGH GENE EXPRESSION AND UBIQUITINATION. *Y. Lin*, *P. Yao*, and *J. Richburg*. University of Texas at Austin, Austin, TX.

#2342 **Poster Board Number 310**
THE STRUCTURAL VARIATIONS OF Y CHROMOSOME AZFC MULTICOPY GENES ON SPERMATOGENIC FAILURE. C. Lu, *Y. Xia*, and *X. Wang*. Nanjing Medical University, State Key Laboratory of Reproductive Medicine, Institute of Toxicology, Nanjing, China.

#2343 **Poster Board Number 311**
WEIGHT-OF-EVIDENCE APPROACH IN EVALUATING POTENTIAL ANTIANDROGENIC SUBSTANCES. S. Melching-Kollmuss[1], R. Buesen[2], M. Dammann[2], K. Hempel[2], S. Stinchcombe[1], and B. van Ravenzwaay[2]. [1]Regulatory Toxicology, BASF SE, Ludwigshafen, Germany, and [2]Experimental Toxicology, BASF SE, Ludwigshafen, Germany. Sponsor: *R. Landsiedel*.

#2344 **Poster Board Number 312**
PHENOLS EXPOSURE AND MALE INFERTILITY OF HAN CHINESE IN THE MIDDLE AND LOWER REACHES OF YANGTZE RIVER. *Y. Xia*, M. Chen, P. Zhu, B. Xu, R. Zhao, S. Qiao, C. Lu, S. Wang, and *X. Wang*. Institute of Toxicology, Nanjing Medical University, Nanjing, China.

#2345 **Poster Board Number 313**
AGE-DEPENDENT ROLES OF ITCH DURING MOUSE TESTICULAR DEVELOPMENT. *J. L. Dwyer*[1], and *J. H. Richburg*[2,1]. [1]Institute for Cell and Molecular Biology, University of Texas at Austin, Austin, TX, and [2]College of Pharmacy, University of Texas at Austin, Austin, TX.

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#2346 **Poster Board Number 314**
EVALUATION AND VALIDATION OF HUMAN INHIBIN B ELISA (GEN II) ASSAY IN THE RAT AND CYNOMOLOGUS MONKEY. *R. Kuk*, A. R. Apostoli, C. A. Henry, J. E. Uhl, D. Kumar, and *S. B. Laffan*. Reproductive Toxicology, Safety Assessment, GlaxoSmithKline, King of Prussia, PA.

#2347 **Poster Board Number 315**
ADVERSE EFFECT OF ALUMINIUM ON SECRETARY PRODUCTS AND ANTIOXIDANT ENZYMES IN THE EPIDIDYMIS OF RATS—PROTECTIVE EFFECT OF VITAMIN E. *R. Venugopal*[1], S. Onorine Marcelline[1], P. Subbarayalu[2], and S. Viswanadhapalli[3]. [1]Zoology, Kanchi Mamunivar Centre for Post Graduate Studies, Puducherry 605 008, Puducherry, India, [2]Greehey Children Cancer Research Institute, University of Texas Health Science Centre at San Antonio, San Antonio, TX, and [3]Medicine/Nephrology, University of Texas Health Science Centre at San Antonio, San Antonio, TX.

#2348 **Poster Board Number 316**
APOPTOSIS INDUCED BY 4-TERT-OCTYLPHENOL IN RAT TESTIS AND THE INTRINSIC PATHWAY ACTIVATION. *Q. Bian*, and H. Wang. Jiangsu Center of Disease Control and Prevention, Nanjing, China.

#2349 **Poster Board Number 317**
DECIPHERING MECHANISMS UNDERLYING PROLONGED MALE INFERTILITY FOLLOWING A CLINICALLY RELEVANT MULTICYCLE CISPLATIN TREATMENT. *J. Harman*, and *J. Richburg*. University of Texas Austin, Austin, TX.

#2350 **Poster Board Number 318**
ZINC DEFICIENCY EXACERBATES DIABETIC TESTICULAR CELL DEATH BY DOWNREGULATION OF AKT EXPRESSION AND FUNCTION: ESSENTIAL ROLES OF PTEN, PTP1B, AND TRB3. Y. Zhao[1,2], J. Dai[2], *Y. Tan*[2], G. Wang[1], *L. Cai*[2,1], and W. Li[1]. [1]Cancer Center, First Bethune Hospital of Jilin University, Changchun, Jilin Province, China, and [2]KCHRI at the Department of Pediatrics, University of Louisville, Louisville, KY.

#2351 **Poster Board Number 319**
EXPOSURE TO POLYCYCLIC AROMATIC HYDROCARBONS RELATED TO SPERM QUALITY AND DNA INTEGRITY. A. Jeng[1], C. Pan[2], and M. Wu[3]. [1]Old Dominion University, Norfolk, VA, [2]Institute of Occupational Safety and Health, Taipei, Taiwan, and [3]Kaohsiung Medical University, Kaohsiung, Taiwan. Sponsor: *Y. Huang*.

#2352 **Poster Board Number 320**
EVALUATION OF REPRODUCTIVE FUNCTION IN MALE CYNOMOLGUS MONKEYS—TESTICULAR VOLUME AND SPERM ANALYSIS PARAMETERS. K. Mizuyoshi, S. Sakaki, K. Motokawa, R. Oohara, S. Sakoda, K. Watanabe, Y. Taniguchi, J. Nakano, Y. Harada, T. Sugimoto, Y. Ooshima, and *R. Nagata*. Drug Safety Research Laboratories, Shin Nippon Biomedical Laboratories, Ltd., Kagoshima-shi, Kagoshima-ken, Japan.

Abstract #

#2353 **Poster Board Number 321**
UNDERNUTRITION INHIBITS FETAL RAT TESTIS STEROIDOGENESIS. *K. Johnson*, E. McDowell, and J. Pike. Nemours Biomedical Research, Alfred I. duPont Hospital for Children, Wilmington, DE.

#2354 **Poster Board Number 322**
RESVERATROL RESTORES FERTILITY INDICES IN MALE RATS ORALLY ADMINISTERED WITH BENZO(A)PYRENE. A. E. Archibong[1], M. S. Niaz[2], and *A. Ramesh*[2]. [1]Physiology, Meharry Medical College, Nashville, TN, and [2]Biochemistry & Cancer Biology, Meharry Medical College, Nashville, TN.

#2355 **Poster Board Number 323**
TESTICULAR AND EPIDIDYMAL HISTOLOGIC CHANGES AROUND THE PERIOD OF SEXUAL MATURATION IN YUCATAN BOARS. *T. Evans*[1], J. Trickey[2], L. D. Brown[2], and *G. Bouchard*[2]. [1]Veterinary Medical Diagnostic Laboratory University of Missouri, Columbia, MO, and [2]Sinclair BioResources LLC, Auxvasse, MO.

#2356 **Poster Board Number 324**
R-SPONDINS (RSPOS) PROMOTE PROSTATIC BUD FORMATION AND PROTECT AGAINST PROSTATE BUDDING ABNORMALITIES CAUSED BY TCDD. *A. Branam*, N. M. Davis, A. J. Schneider, *T. Lin*, and *R. E. Peterson*. University of Wisconsin-Madison, Madison, WI.

#2357 **Poster Board Number 325**
EARLY STABILIZATION OF β-CATENIN IN UROGENITAL SINUS (UGS) EPITHELIA DISRUPTS MOUSE VENTRAL PROSTATE (VP) DEVELOPMENT. *T. Lin*, J. Bai, and *R. E. Peterson*. University of Wisconsin-Madison, Madison, WI.

#2358 **Poster Board Number 326**
ADULT HUMAN SERTOLI CELLS AS AN *IN VITRO* MODEL TO STUDY SERTOLI CELL INJURY INDUCED BY MONO-2-ETHYLHEXYL-PHTHALATE (MEHP). J. R. Pietruska, *C. W. Brown*, P. Weston, and *M. L. Hixon*. Pathology & Laboratory Medicine, Brown University, Providence, RI.

#2359 **Poster Board Number 327**
PROPYLPARABEN—8-WEEK POST-WEANING JUVENILE TOXICITY STUDY WITH 26-WEEK TREATMENT-FREE PERIOD IN THE MALE WISTAR RAT BY THE ORAL ROUTE (GAVAGE). V. Gazin[1], E. Marsden[2], and *J. Briffaux*[2]. [1]French Medicines Agency, Saint Denis, France, and [2]Ricerca Biosciences SAS, Lyon, France.

#2360 **Poster Board Number 328**
REPRODUCTIVE TOXICITY OF ACUTE SULFUR MUSTARD INTRATRACHEAL INHALATION IN MALE RATS AND NONHUMAN PRIMATES. *G. Wang*, G. J. Chavez, *J. M. Benson*, and W. M. Weber. Lovelace Respiratory Research Institute, Albuquerque, NM.

Program Description (Continued)

Abstract #

#2361 **Poster Board Number 329**
INHIBITION OF CYCLOOXYGENASE 2 REDUCES DIPENTYL PHTHALATE TOXICITY IN A 3-DIMENSIONAL *IN VITRO* RAT TESTES COCULTURE MODEL: EVIDENCE FOR AN ALTERNATE MECHANISM OF ACTION. S. Wegner, *X. Yu*, S. Hong, H. Kim, S. Harris, and *E. M. Faustman*. Department of Environmental and Occupational Health Sciences, University of Washington, Seattle, WA.

#2362 **Poster Board Number 330**
OXIDATIVE AND GENETIC DAMAGE IN GERMINAL AND MONONUCLEAR CELLS BY METHYL-PARATHION EXPOSURE IN MOUSE. V. M. Monroy-Pérez[1,2], J. A. Alcántara-Hernández[1,2], M. J. Solís-Heredia[1], L. Espinosa-Juárez[1], and *B. Quintanilla-Vega*[1]. [1]Toxicology Department, Cinvestav-IPN, Mexico City, Mexico, and [2]UPIBI-IPN, Mexico City, Mexico.

#2363 **Poster Board Number 331**
COMPARATIVE ASSESSMENT OF SEXUAL MATURATION IN MALE SPRAGUE DAWLEY AND WISTAR HAN RATS. *S. N. Campion*, *R. E. Chapin*, W. S. Nowland, and *G. D. Cappon*. Pfizer Worldwide Research and Development, Groton, CT.

#2364 **Poster Board Number 332**
COMPARISON OF TOXICOGENOMIC RESPONSES TO PHTHALATE ESTER EXPOSURE IN AN *IN VITRO* RAT TESTES COCULTURE (TCS) MODEL AND RESPONSES OBSERVED *IN VIVO*. S. Harris, *X. Yu*, and *E. Faustman*. University of Washington, Seattle, WA.

Wednesday Afternoon, March 14
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Reproductive Toxicology II

Chairperson(s): *Sakhila Banu, Texas A&M University, College Station, TX.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *2:45 PM–4:30 PM*

#2365 **Poster Board Number 338**
INTRAUTERINE QUINACRINE (IUQ) USED FOR HUMAN BIRTH CONTROL: UTERINE HISTOPATHOLOGY AND PLASMA QUINACRINE (PQ) DURING 96 HOURS AFTER IUQ IN RATS. *P. Fail*[1], *E. E. McConnell*[2], and R. Growe[3]. [1]ReproTox Assoc, Iola, KS, [2]ToxPath Inc., Raleigh, NC, and [3]International Services Assistance Fund, Research Triangle Park, NC.

#2366 **Poster Board Number 339**
TRANSFER OF TRICLOCARBAN ACROSS THE PLACENTAL BARRIER. M. J. Sarachine, V. Walsworth, and B. Buchholz. Center for Accelerator Mass Spectrometry, LLNL, Livermore, CA. Sponsor: *A. Buckpitt*.

Abstract #

#2367 **Poster Board Number 340**
SPECIES SELECTION FOR DEVELOPMENTAL AND REPRODUCTIVE TOXICITY EVALUATION OF A NEW LIVE ATTENUATED VACCINE AGAINST FLAVIVIRUS INFECTIOUS DISEASE. *R. Guillaume*, and *G. J. Sarah*. Nonclinical Safety, sanofi pasteur, Marcy L'Etoile, France.

#2368 **Poster Board Number 341**
ASSESSMENT OF POSTNATAL DEVELOPMENT IN THE COMMON MARMOSET (*CALLITHRIX JACCHUS*) IN THE CONTEXT OF DART EVALUATION. C. Luetjens, and A. Fuchs. Covance Laboratories GmbH, Muenster, Germany. Sponsor: *G. Weinbauer*.

#2369 **Poster Board Number 342**
DECREASED REPRODUCTIVE INDICES IN H-NAG-1 (GDF-15) MICE CORRELATED TO POTENTIAL ALTERATIONS IN MAMMARY GLAND FUNCTION. *G. J. Moser*[1], M. Streicker[1], M. Ehinger[1], M. Brown[1], C. Favaro[1], J. Kosak[2], T. Eling[2], A. Binder[2], and K. Korach[2]. [1]Investigative Toxicology, Integrated Laboratory Systems, Research Triangle Park, NC, and [2]National Institute of Environmental Health Sciences, Research Triangle Park, NC.

#2370 **Poster Board Number 343**
COMPARISON OF PLACENTAL HISTOPATHOLOGY AFTER ORAL ADMINISTRATION OF EPOXICONAZOLE TO PREGNANT RATS AND GUINEA PIGS. S. Schneider[1], S. Stinchcombe[2], M. C. Rey Moreno[1], S. Gröters[1], M. Richter[3], and B. van Ravenzwaay[1]. [1]Experimental Toxicology and Ecology, BASF SE, Ludwigshafen, Germany, [2]Regulatory Toxicology Crop Science, BASF SE, Ludwigshafen, Germany, and [3]Consumer Safety, BASF SE, Limburgerhof, Germany. Sponsor: *R. Landsiedel*.

#2371 **Poster Board Number 344**
PHOSPHORAMIDE MUSTARD-INDUCED OXIDATIVE STRESS RESPONSE IN THE NEONATAL RAT OVARY. *J. A. Madden*, and *A. F. Keating*. Iowa State University, Ames, IA.

#2372 **Poster Board Number 345**
COMBINED DEVELOPMENTAL AND PERINATAL/POSTNATAL REPRODUCTION ORAL TOXICITY STUDY OF AMMONIUM PERFLUOROHEXANOATE IN MICE. H. Iwai[1], *A. M. Hoberman*[2], and *J. E. Klaunig*[3]. [1]Daikin Industries Ltd., Settu, Japan, [2]Charles River Laboratories, Horsham, PA, and [3]Indiana University, Bloomington, IN.

#2373 **Poster Board Number 346**
ADVANCEMENT OF VAGINAL OPENING IN THE FEMALE RAT FOLLOWING NEONATAL BPA EXPOSURE IS ASSOCIATED WITH DISRUPTION OF HYPOTHALAMIC RFRP3 SIGNALING PATHWAYS. *S. M. Losa*, K. L. Todd, K. A. McCaffrey, and *H. B. Patisaul*. Department of Biology, North Carolina State University, Raleigh, NC.

Program Description (Continued)

Abstract #

#2374 **Poster Board Number 347**
ATRAZINE-MEDIATED DISRUPTION OF STEROIDOGENESIS IN BLTK1 MURINE LEYDIG CELLS. *A. L. Forgacs*[1], R. Jaremba[1], I. T. Huhtaniemi[2], N. A. Rahman[2], and *T. R. Zacharewski*[1]. [1]Department of Biochemistry & Molecular Biology, Center for Integrative Toxicology, Michigan State University, East Lansing, MI, and [2]Department of Physiology, University of Turku, Turku, Finland.

#2375 **Poster Board Number 348**
REPRODUCTIVE TOXICITY EVALUATION OF MAJOR SUBMARINE ATMOSPHERE COMPONENTS IN RATS. D. J. Hardt, and *M. L. Gargas*. Naval Medical Research Unit, Wright-Patterson AFB, Dayton, OH.

#2376 **Poster Board Number 349**
EFFECT OF DIET-INDUCED OBESITY ON XENOBIOTIC METABOLIZING GENE EXPRESSION IN THE OVARY. J. Nteeba[1], K. Stromsdorfer[2], J. Perfield[2,3], and *A. Keating*[1]. [1]Department of Animal Science, Iowa State University, Ames, IA, [2]Department of Nutrition and Exercise Physiology, University of Missouri, Columbia, MO, and [3]Department of Food Science, University of Missouri, Columbia, MO.

#2377 **Poster Board Number 350**
FREQUENCIES OF PRENATAL LOSS, NONVIABLE BIRTHS, PREMATURE/ PRETERM BIRTHS, AND POSTNATAL DEATHS IN CYNOMOLGUS MONKEYS. *S. Oneda*[1], *N. Lalayeva*[1], *R. Watson*[1], *N. Makori*[1], P. Franklin[1], *T. Beck*[1], and *R. Nagata*[2]. [1]Safety Assessment, SNBL USA, Ltd., Everett, WA, and [2]Shin Nippon Biomedical Laboratories, Ltd., Tokyo, Japan.

#2378 **Poster Board Number 351**
EFFECTS OF NEONATAL EXPOSURE TO LOW-DOSE 17α-ETHINYLESTRADIOL ON THE PUBERTY OF FEMALE RATS. *M. Shirota*[1], J. Kawashima[1], T. Nakamura[1], Y. Ogawa[1], and K. Shirota[2]. [1]Laboratory of Comparative Toxicology, School of Veterinary Medicine, Azabu University, Sagamihara, Japan, and [2]Laboratory of Veterinary Pathology, School of Veterinary Medicine, Azabu University, Sagamihara, Japan.

#2379 **Poster Board Number 352**
REPRODUCTIVE EFFECTS IN F1 ADULT FEMALE MICE EXPOSED *IN UTERO* TO MODERATE TO HIGH DOSES OF MONO-2-ETHYLHEXYLPHTHALATE (MEHP). *B. J. Moyer*, and *M. L. Hixon*. Brown University, Providence, RI.

#2380 **Poster Board Number 353**
REPRODUCTIVE ASSESSMENT BY CONTINUOUS BREEDING OF HEXACHLOROBENZENE IN SPRAGUE DAWLEY RATS. *C. R. Blystone*[1], *J. B. Bishop*[1], *G. W. Wolfe*[2,3], and *M. J. Hooth*[1]. [1]National Toxicology Program/NIEHS, Research Triangle Park, NC, [2]TherImmune Research Corporation, Gaithersburg, MD, and [3]Gary Wolfe Toxicology, LLC, Herndon, VA.

Abstract #

#2381 **Poster Board Number 354**
NORMAL AND CHEMICALLY-ALTERED MAMMARY GLAND DEVELOPMENT IN THE MALE AND FEMALE HARLAN SPRAGUE DAWLEY RAT. *A. J. Filgo*[1,2], A. R. Borde[3], P. Borde[3], L. M. Beck[4], and C. E. Reed[2]. [1]Curriculum of Toxicology, University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]NTP Labs Branch, NIEHS, Research Triangle Park, NC, [3]University of North Carolina at Chapel Hill, Chapel Hill, NC, and [4]School of Medicine, University of Missouri, Columbia, MO.

#2382 **Poster Board Number 355**
REGULATION OF OVARIAN XENOBIOTIC METABOLIZING GENE EXPRESSION BY PHOSPHATIDYLINOSITOL-3 KINASE SIGNALING. *P. Bhattacharya*, and *A. F. Keating*. Iowa State University, Ames, IA.

#2383 **Poster Board Number 356**
MONO-2-ETHYLHEXYL PHTHALATE-INDUCED OXIDATIVE STRESS IN HUMAN PLACENTAL CELLS. *L. M. Tetz*[1], *R. Loch-Caruso*[1], R. Giese[2], and P. Wang[2]. [1]Environmental Health Sciences, University of Michigan School of Public Health, Ann Arbor, MI, and [2]Department of Pharmaceutical Sciences, Barnett Institute, Northeastern University, Boston, MA.

#2384 **Poster Board Number 357**
OXIDATIVE INSULT ACTIVATES PARTURITION-ASSOCIATED PATHWAYS IN A HUMAN PLACENTAL CELL LINE. *C. S. Korte*, and *R. Loch-Caruso*. Environmental Health Science, University of Michigan, Ann Arbor, MI.

#2385 **Poster Board Number 358**
A NOVEL QUANTITATIVE METHOD FOR THE COMPARISON OF MAMMARY GLAND DEVELOPMENT IN MULTIPLE STRAINS OF RAT. *J. P. Stanko*, and *S. E. Fenton*. NTPL/NTP/ NIEHS, Research Triangle Park, NC.

#2386 **Poster Board Number 359**
BROMINATED DIPHENYL ETHER-47 ENHANCED MRNA EXPRESSION OF PRO-INFLAMMATORY CYTOKINES AND PROSTAGLANDIN-ENDOPEROXIDE SYNTHASE 2 IN HUMAN PLACENTAL CELLS. H. Park, P. W. Kimani, and *R. Loch-Caruso*. Environmental Health Sciences, University of Michigan, Ann Arbor, MI.

#2387 **Poster Board Number 360**
MONO-(2-ETHYLHEXYL) PHTHALATE INDUCES OXIDATIVE STRESS IN MOUSE ANTRAL FOLLICLES. *W. Wang, Z. R. Craig, M. S. Basavarajappa*, and *J. A. Flaws*. Comparative Bioscience, University of Illinois at Urbana-Champaign, Urbana, IL.

#2388 **Poster Board Number 361**
EVALUATION OF THE REPRODUCTIVE TOXICITY OF α-HEXYL CINNAMIC ALDEHYDE. *V. T. Politano*[1], *E. M. Lewis*[2], *A. M. Hoberman*[2], *R. M. Diener*[3], and *A. Api*[1]. [1]Research Institute for Fragrance Materials, Inc., Woodcliff Lake, NJ, [2]Charles River Laboratories Preclinical Services, Horsham, PA, and [3]Argus International, Inc., Horsham, PA.

Program Description (Continued)

Abstract #

#2389 **Poster Board Number 362**
ASSESSING REPRODUCTIVE AND DEVELOPMENTAL ALTERATIONS ASSOCIATED WITH BENZO(A)PYRENE EXPOSURE IN *FUNDULUS HETEROCLITUS*.
F. T. Booc[1], C. Thornton[1], *X. Fang*[1], A. Lister[2], D. MacLatchy[2], and *K. L. Willett*[1]. [1]Pharmacology, University of Mississippi, University, MS, and [2]Biology, Wilfrid Laurier University, Waterloo, ON, Canada.

#2390 **Poster Board Number 363**
EFFECTS OF THE FUNGICIDE PROPICONAZOLE ON FISH REPRODUCTION—DEFINING AN ADVERSE OUTCOME PATHWAY. *S. Y. Skolness*[1], J. Churchill[2], E. Durhan[2], K. Jensen[2], M. Kahl[2], C. LaLone[2], E. Makynen[2], D. Villeneuve[2], and G. Ankley[2]. [1]University of Minnesota, Duluth, MN, and [2]US EPA, Duluth, MN.

#2391 **Poster Board Number 364**
A COMBINED REPEATED DOSE AND REPRODUCTIVE /DEVELOPMENTAL TOXICITY SCREENING STUDY OF PERFLUORODODECANOIC ACID IN RATS.
M. Hirata-Koizumi[1], S. Fujii[2], M. Furukawa[2], T. Kawamura[1], M. Takahashi[1], M. Matsumoto[1], H. Kato[1], A. Ono[1], and *A. Hiorse*[1]. [1]Division of Risk Assessment, National Institute of Health Sciences, Tokyo, Japan, and [2]Safety Research Institute for Chemical Compounds Co., Ltd., Sapporo, Japan.

#2392 **Poster Board Number 365**
CHROMIUM-VI EXPOSURE TO POSTNATAL RATS THROUGH MOTHER'S MILK DEPLETES ANTIOXIDANTS, INCREASES FREE RADICALS AND INDUCES FOLLICULAR ATRESIA. J. A. Arosh[1], J. A. Stanley[1], J. Lee[1], P. B. Hoyer[2], R. C. Burghardt[1], and *S. K. Banu*[1]. [1]Department of Integrative Biosciences, College of Veterinary Medicine and Biomedical Sciences, Texas A&M University, College Station, TX, and [2]Department of Physiology, University of Arizona, Tucson, AZ.

#2393 **Poster Board Number 366**
EFFECTS OF CHROMIUM-VI ON THECA CELL CYCLE REGULATION AND APOPTOSIS. *S. K. Banu*[1], J. A. Stanley[1], J. Lee[1], *P. B. Hoyer*[2], J. A. Arosh[1], and *R. C. Burghardt*[1]. [1]Veterinary Integrative Biosciences, Texas A&M University, College Station, TX, and [2]Department of Physiology, University of Arizona, Tucson, AZ.

#2394 **Poster Board Number 367**
EVALUATION OF THE REPRODUCTIVE TOXICITY OF ALLYL CYCLOHEXANEPROPIONATE. D. McGinty[1], *V. T. Politano*[1], *E. M. Lewis*[2], *A. M. Hoberman*[2], *R. M. Diener*[3], and *A. M. Api*[1]. [1]Research Institute for Fragrance Materials, Inc., Woodcliff Lake, NJ, [2]Charles River Laboratories, Horsham, PA, and [3]Argus International, Inc., Horsham, PA.

#2395 **Poster Board Number 368**
IRREGULAR MENSTRUAL CYCLING: A LOGISTICAL HURDLE TO SUCCESSFUL BREEDING OF CYNOMOLGUS MONKEYS.
C. N. Diabo, M. Kob, C. Cohle, and *A. S. Faqi*. Drug Safety Evaluation, MPI Research, Mattawan, MI.

Abstract #

Wednesday Afternoon, March 14
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Natural Products

Chairperson(s): *Darrell Boverhof, Dow Chemical Company, Midland, MI.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *1:00 PM–2:45 PM*

#2396 **Poster Board Number 401**
INHIBITORY MECHANISM OF CYP1A1 EXPRESSION BY CAFFEIC ACID PHENETHYL ESTER MEDIATED HYPOXIA INDUCIBLE FACTOR-1α AND ARYL HYDROCARBON RECEPTOR IN MURINE HEPATOMA HEPA-1C1C7 CELLS. J. Im, E. Han, H. Kim, J. Choi, J. Yang, and *H. Jeong*. Pharmacy, Chungnam National University, Daejeon, Republic of Korea.

#2397 **Poster Board Number 402**
INHIBITION OF CYTOCHROME P450 1A OR 3A, BUT NOT 2B/2C, ENHANCES USNIC ACID CYTOTOXICITY IN PRIMARY CULTURED RAT HEPATOCYTES. Q. Shi, *X. Yang*, A. Ali, J. Greenhaw, and *W. F. Salminen*. Division of Systems Biology, US FDA National Center for Toxicological Research, Jefferson, AR.

#2398 **Poster Board Number 403**
EFFECTS OF USNIC ACID EXPOSURE ON HUMAN LIVER HEPG2 CELLS. *S. C. Sahu*, M. Amankwa-Sakyi, M. W. O'Donnell, and R. L. Sprando. Division of Toxicology, US FDA, Laurel, MD.

#2399 **Poster Board Number 404**
CHEMICAL-DISEASE CATEGORY LINKAGE (CDCL): COMPUTATIONAL METHODS LINKING TRADITIONAL CHINESE MEDICINE AND WESTERN THERAPEUTICS.
K. Cheung, and *D. E. Johnson*. Nutritional Science & Toxicology, University of California Berkeley, Berkeley, CA.

#2400 **Poster Board Number 405**
INOPHYLLIN A INDUCES OXIDATIVE STRESS MEDIATED-APOPTOSIS IN JURKAT T LYMPHOBLASTIC CELLS. *K. Chan*[1], R. Hamzah[1], A. Abd Rahaman[1], V. Jong[2], H. Khong[2], N. Rajab[1], G. Ee[3], and *S. Inayat-Hussain*[1]. [1]Faculty of Health Sciences, Universiti Kebangsaan Malaysia, Kuala Lumpur, Federal Territory, Malaysia, [2]Faculty of Applied Science, Universiti Teknologi MARA, Kota Samarahan, Sarawak, Malaysia, and [3]Faculty of Science, Universiti Putra Malaysia, Serdang, Selangor, Malaysia.

#2401 **Poster Board Number 406**
STIMULATIONS OF BREAST CANCER CELL GROWTH AND CYTOCHROME P4501B1 GENE EXPRESSION BY THE SOY ISOFLAVONE GENISTEIN. Y. K. Wei[1], I. Gamra[2], and *Y. Wei*[2]. [1]University of Georgia, Athens, GA, and [2]Department of Community Medicine, Mercer University School of Medicine, Macon, GA.

Program Description (Continued)

Abstract #

#2402 **Poster Board Number 407**
PROTECTIVE EFFECTS OF SAPONINS EXTRACTS FROM THE ROOTS OF *PLATYCODON GRANDIFLORUM* ON OVARIECTOMY-INDUCED BONE LOSS.
H. Eun[1], J. Choi[1], B. Park[1], K. Lee[2], and *H. Jeong*[1]. [1]Pharmacy, Chungnam National University, Daejeon, Republic of Korea, and [2]Pharmacy, Chonnam National University, Gwangju, Republic of Korea.

#2403 **Poster Board Number 408**
PIPERINE DOWN-REGULATES CYCLOOXYGENASE-2 EXPRESSION BY INHIBITING THE ACTIVITIES OF NF-κB, C/EBP AND AP-1 TRANSCRIPTION FACTORS.
E. Han, H. Kim, J. Yang, J. Choi, T. Khanal, D. Truong, T. Phuong, and *H. Jeong*. Pharmacy, Chungnam National University, Daejeon, Republic of Korea.

#2404 **Poster Board Number 409**
ANACARDIC ACID, 6-PENTADECYLSALICYLIC ACID, IS MORE CYTOTOXIC AND GENOTOXIC IN TRANSFORMED HUMAN CELL LINES THAN IN HUMAN PERIPHERAL BLOOD MONONUCLEAR CELLS. *L. Vega*[1], D. A. Alam-Escamilla[1], E. Estrada-Muñiz[1], and I. Romero-Alvarez[2]. [1]Toxicology, Cinvestav-IPN, Distrito Federal, DF, Mexico, and [2]Facultad de Medicina, UNAM, Distrito Federal, DF, Mexico.

#2405 **Poster Board Number 410**
CYTOTOXIC COMPOUNDS FROM LEAVES AND YOUNG TWIGS OF *CAESALPINIA BONDUC* (L.) ROXB. *O. O. Ogunlana*[1], W. J. He[2], J. T. Fan[2], G. Z. Zeng[2], *O. E. Ogunlana*[3], C. J. Ji[2], Y. Q. Zheng[2], J. O. Olagunju[4], A. A. Akindahunsi[5], and N. H. Tan[2]. [1]Department of Biological Sciences, College of Science and Technology, Covenant University, Ota, Ogun, Nigeria, [2]State Key Laboratory of Phytochemistry and Plant Resources in West China, Kunming Institute of Botany, Kunming, Yunnan, China, [3]Department of Biological Sciences, School of Natural and Applied Sciences, Crawford University, Igbesa, Ogun State, Nigeria, [4]Department of Medical Biochemistry, Faculty of Basic Medical Sciences, College of Medicine, Lagos State University, Ikeja, Lagos State, Nigeria, and [5]Department of Biochemistry, Federal University of Technology, Akure, Ondo State, Nigeria.

#2406 **Poster Board Number 411**
COMPOSITION OF MULTIPLE LOTS OF VALERIAN (*VALERIANA OFFICINALIS*) EXTRACTS, ROOT POWDERS, AND OILS.
T. Cristy[1], *S. Graves*[1], *C. Smith*[2], and B. Jayaram[2]. [1]Chemistry Technical Center, Battelle Memorial Institute, Columbus, OH, and [2]DNTP, NIEHS, Research Triangle Park, NC.

Abstract #

#2407 **Poster Board Number 412**
THE ANTIDIARRHEAL EFFECTS OF COCHLOSPERMUM TINCTORIUM AQUEOUS ROOT EXTRACT IN WISTAR STRAIN ALBINO RATS. *C. J. Dawurung*[1], P. A. Onyeyili[2], S. Sanni[3], J. S. Dawurung[4], S. M. Auwal[5], and S. B. Aji[6]. [1]Department of Biochmistry, Drug Development Section, National Veterinary Research Institute (NVRI) Vom, Jos, Plateau State, Nigeria, [2]Faculty of Veterinary Medicine, Federal University of Agriculture Makurdi, Makurdi, Benue State, Nigeria, [3]Faculty of Veterinary Medicine, University of Abuja, Abuja, FCT Abuja, Nigeria, [4]Immunology Department, University of Maiduguri Teaching Hospital, Maiduguri, Borno State, Nigeria, [5]Faculty of Veterinary Medicine, University of Maiduguri, Maiduguri, Borno State, Nigeria, and [6]Animal Health, Adamawa State College of Agriculture, Mubi Yola, Adamawa State, Nigeria.

#2408 **Poster Board Number 413**
SAFETY ASSESSMENT OF SABELL A4+, A NATURAL HEALTH PRODUCT TO AMELIORATE HEPATITIS. H. Semple[1], and F. Green[2,3]. [1]NuRx, Alberta Innovates-Technology Futures, Vegreville, AB, Canada, [2]Medicine, University of Calgary, Calgary, AB, Canada, and [3]Sabell Corporation, Calgary, AB, Canada. Sponsor: *J. Kehrer*.

#2409 **Poster Board Number 414**
EFFECTS OF *ATRACTYLODES JAPONICA* ON THE PHARMACOKINETICS OF CAFFEINE AND ITS METABOLITES IN RATS. D. Oh, D. Lee, K. Noh, M. Kang, M. Kong, Y. Seo, W. Kang, and *T. Jeong*. Pharmacy, Yeungnam University, Gyeongsan, Gyeongbuk, Republic of Korea.

#2410 **Poster Board Number 415**
THE ROLE OF POKEWEED ANTIVIRAL PROTEIN ISOFORMS ON BACTERIAL GROWTH. J. Frenyea[1], *S. Cheng*[1], and J. Vivanco[2]. [1]Sciences, John Jay College, New York, and [2]Colorado State University, Fort Collins, CO.

#2411 **Poster Board Number 416**
PINE OIL TREATMENT FOR BURN PAIN AND INFLAMMATION. *M. H. Bhattacharyya*[1], W. Bollag[1], K. Westlund-High[2], B. Wang[3], and S. Clark[1]. [1]Georgia Health Sciences University, Augusta, GA, [2]University of Kentucky, Lexington, KY, and [3]Georgia State University, Atlanta, GA.

#2412 **Poster Board Number 417**
MUTAGENICITY AND ANTIMUTAGENICITY EFFECTS OF RESVERATROL OLIGOMERS OF VATICA PAUCIFLORA USING THE AMES TEST. N. Rajab[1], Y. Widyasari[1], A. Kamarozaman[3], J. Latip[3], *K. Chan*[2], and *S. Inayat-Hussain*[2]. [1]Biomedical Science, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia, [2]Environmental Health Program, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia, and [3]School of Chemical Sciences & Food Technology, Universiti Kebangsaan Malaysia, Bangi, Malaysia.

#2413 **Poster Board Number 418**
PREVENTION OF AMIODARONE-INDUCED PULMONARY AND CARDIAC TOXICITY IN MALE BALB/C MICE BY A NUTRIENT MIXTURE. *M. Roomi*, N. W. Roomi, M. Rath, and A. Niedzwiecki. Dr. Rath Research Institute, Santa Clara, CA.

Program Description (Continued)

Abstract #

#2414 **Poster Board Number 419**
INHIBITORY EFFECT OF S-ALLYL CYSTEINE ON FREE FATTY ACID-INDUCED STEATOSIS IN HEPG2 CELLS. Y. Hwang[1,2], J. Choi[1], K. Tilak[1], D. Troung[1], H. Kim[1], E. Han[1], Y. Chung[3], and *H. Jeong*[1]. [1]Pharmacy, Chungnam National University, Daejeon, Republic of Korea, [2]Pharmaceutical Engineering, International University of Kore, Jinju, Republic of Korea, and [3]Food Science, International University of Korea, Jinju, Republic of Korea.

#2415 **Poster Board Number 420**
MOLECULAR MECHANISMS OF PUERARIN-MEDIATED ENDOTHELIAL NITRIC OXIDE SYNTHASE ACTIVATION. B. Park[1], Y. Hwang[2,1], H. Kim[1], E. Han[1], J. Choi[1], and *H. Jeong*[1]. [1]Pharmacy, Chungnam National University, Daejeon, Republic of Korea, and [2]Pharmaceutical Engineering, International University of Korea, Jinju, Republic of Korea.

#2416 **Poster Board Number 421**
SAPONINS DERIVED FROM ROOTS OF *PLATYCODON GRANDIFLORUM* POSSESS AN ANTIOBESITY EFFECT AND ABILITY TO INHIBIT HEPATIC LIPOGENESIS BY AMP-ACTIVATED PROTEIN KINASE ACTIVATION. Y. Chung[3], Y. Hwang[2,1], J. Choi[1], H. Kim[1], E. Han[1], and *H. Jeong*[1]. [1]Pharmacy, Chungnam National University, Daejeon, Republic of Korea, [2]Pharmaceutical Engineering, International University of Korea, Jinju, Republic of Korea, and [3]Food Science, International University of Korea, Jinju, Republic of Korea.

#2417 **Poster Board Number 422**
ANTHOCYANINS FROM PURPLE SWEET POTATO ATTENUATE HEPATIC LIPID ACCUMULATION THROUGH ACTIVATING AMP-ACTIVATED PROTEIN KINASE IN HUMAN HEPG2 CELLS AND OBESE MICE. H. Pil[1,2], J. Choi[1], E. Han[1], H. Kim[1], Y. Chung[3], and *H. Jeong*[1]. [1]Pharmacy, Chungnam National University, Daejeon, Republic of Korea, [2]Pharmaceutical Engineering, International University of Korea, Jinju, Republic of Korea, and [3]Food Science, International University of Korea, Jinju, Republic of Korea.

#2418 **Poster Board Number 423**
SAPONINS FROM THE ROOTS OF PLATYCODON GRANDIFLORUM INHIBITS UV IRRADIATION-INDUCED MATRIX METALLOPROTEINASE-1 AND INFLAMMATORY CYTOKINE PRODUCTION IN HUMAN KERATINOCYTES BY SUPPRESSING NF-κB AND AP-1 PATHWAY. Y. Lee[3,4], Y. Hwang[2,1], H. Kim[1], J. Choi[1], E. Han[1], J. Choi[3], Y. Chung[3], and *H. Jeong*[1]. [1]Pharmacy, Chungnam National University, Daejeon, Republic of Korea, [2]Pharmaceutical Engineering, International University of Korea, Jinju, Republic of Korea, [3]Food Science, International University of Korea, Jinju, Republic of Korea, and [4]Jangsaeng Doraji Research Institute of Biotechnology, Jangsaeng Doraji Co., Ltd., Jinju, Republic of Korea.

#2419 **Poster Board Number 424**
THE COFFEE DITERPENE KAHWEOL INHIBITS METASTASIS AND ANGIOGENESIS. H. Kim[1], J. Choi[1], Y. Hwang[1,2], Y. Chung[2], and *H. Jeong*[1]. [1]Pharmacy, Chungnam National University, Daejeon, Republic of Korea, and [2]Food Science, International University of Korea, Jinju, Republic of Korea.

Abstract #

#2420 **Poster Board Number 425**
INHIBITORY EFFECTS OF *PSIDIUM GUAJAVA* ON ATOPIC DERMATITIS-LIKE SKIN LESIONS INDUCED BY 2,4-DINITROCHLOROBENZENE IN NC/NGA MICE. J. Seo[2], J. Choi[1], E. Han[1], B. Park[1], H. Kim[1], Y. Chung[2], and *H. Jeong*[1]. [1]Pharmacy, Chungnam National University, Daejeon, Republic of Korea, and [2]Food Science, International University of Korea, Jinju, Republic of Korea.

#2421 **Poster Board Number 426**
HEPATOPROTECTIVE AND ANTIOXIDANT ACTIVITIES OF ETHANOL EXTRACT OF WHOLE FRUIT OF *LAGENARIA BREVIFLORA* ROBERT. *A. B. Saba*, O. Onakoya, and *A. A. Oyagbemi*. Veterinary Physiology, Biochemistry and Pharmacology, University of Ibadan, Ibadan, Oyo, Nigeria.

#2422 **Poster Board Number 427**
ROLE OF METABOLISM BY HUMAN INTESTINAL MICROFLORA IN GENIPOSIDE-INDUCED TOXICITY IN HEPG2 CELLS. M. Kang[1], T. Khanal[2], H. Kim[2], D. Oh[1], D. Kim[3], *H. Jeong*[2], and *T. Jeong*[1]. [1]Pharmacy, Yeungnam University, Gyeongsan, Gyeongbuk, Republic of Korea, [2]Pharmacy, Chungnam National University, Daejeon, Republic of Korea, and [3]Pharmacy, Kyung Hee University, Seoul, Republic of Korea.

#2423 **Poster Board Number 428**
INHIBITORY EFFECT OF DIHYDROARTEMISININ AGAINST PHORBOL ESTER-INDUCED CYCLOOXYGENASE-2 EXPRESSION IN RAW264.7 MACROPHAGES. *H. Jeong*, J. Yang, E. Han, and H. Kim. Pharmacy, Chungnam National University, Daejeon, Republic of Korea.

#2424 **Poster Board Number 429**
PREVENTION OF HIGH GLUCOSE-INDUCED HEPATIC LIPOGENESIS BY PHILLYRIN THROUGH AMP-ACTIVATED PROTEIN KINASE SIGNALING PATHWAY. M. Do[1], Y. Hwang[1,2], and *H. Jeong*[1]. [1]Pharmacy, Chungnam National University, Daejeon, Republic of Korea, and [2]Pharmaceutical Engineering, International University of Korea, Jinju, Republic of Korea.

#2425 **Poster Board Number 430**
INHIBITORY EFFECT OF WINTERGREEN OIL FROM *GAULTHERIA FRAGRANTISSIMA* IN ULTRAVIOLET B-IRRADIATED COLLAGENASES EXPRESSION. T. Phuong[1], M. Do[1], Y. Hwang[1,2], and *H. Jeong*[1]. [1]Pharmacy, Chungnam National University, Daejeon, Republic of Korea, and [2]Pharmaceutical Engineering, International University of Korea, Jinju, Republic of Korea.

#2426 **Poster Board Number 431**
TOXICOLOGICAL EVALUATIONS OF THE AQUEOUS LEAF EXTRACT OF *OCIMUM GRATISSIMUM*. J. O. Olukunle[1], M. O. Abatan[3], O. L. Ajayi[2], E. O. Akinrinola[1], O. T. Adenubi[1], and *A. B. Saba*[3]. [1]Veterinary Physiology and Pharmacology, University of Agriculture, Abeokuta, Abeokuta, Ogun, Nigeria, [2]Veterinary Pathology, University of Agriculture, Abeokuta, Abeokuta, Ogun, Nigeria, and [3]Veterinary Physiology, Biochemistry and Pharmacology, University of Ibadan, Ibadan, Oyo, Nigeria.

Program Description (Continued)

Abstract #

#2427 **Poster Board Number 432**
IMMUNOMODULATORY EFFECTS OF JACAREUBEIN IN HUMAN PERIPHERAL BLOOD MONONUCLEATED CELLS. G. Guerrero-Palomo[1], E. Estrada-Muñiz[1], R. Reyes-Chilpa[2], and *L. Vega*[1]. [1]Toxicology, Cinvestav-IPN, Distrito Federal, DF, Mexico, and [2]Chemistry Institute, UNAM, Distrito Federal, DF, Mexico.

#2428 **Poster Board Number 433**
CARDIOTOXICITY OF *TRIPTERYGIUM WILFORDII* HOOK F. H. Li, *C. Hsu*, and J. Ma. National Shanghai Center for New Drug Safety Evaluation and Research, Pudong, Shanghai, China.

#2429 **Poster Board Number 434**
TOXICITY PROFILE OF *ACONITUM HETEROPHYLLUM* WALL. H. G. Vyas[1], B. Vyas[1], S. V. Joshi[1], P. Shah[1], D. Shah[1], and T. Gandhi[2]. [1]Pharmacology, Maliba Pharmacy College, Tarsadi, Gujarat, India, and [2]Pharmacology, Anand Pharmacy College, Anand, Gujarat, India. Sponsor: *P. Shah*.

#2430 **Poster Board Number 435**
CYTOTOXICITY OF RESVERATROL AND ITS ANALOGS PTEROSTILBENE AND PICEATANNOL IN MACROPHAGES. *C. Adiabouah*, and *B. Billack*. Pharmaceutical Sciences, St. John's University, Jamaica, NY.

#2431 **Poster Board Number 436**
PRELIMINARY TOXICITY AND PHYTOCHEMICAL STUDIES OF THE AQUEOUS EXTRACT OF *FICUS PLATYPHYLLA* IN FEMALE WISTAR RATS. C. J. Ugwah-Oguejiofor[1], S. O. Bello[1], E. U. Etuk[2], V. U. Igbokwe[3], M. O. Ugwah[4], and R. U. Okolo[5]. [1]Pharmacology & Toxicology, Usmanu Dan Fodiyo University, Sokoto, Nigeria, [2]Department of Pharmacology, College of Health Sciences, Usmanu Dan fodiyo University, Sokoto, Nigeria, [3]Department of Physiology, Usmanu Dan Fodiyo University, Sokoto, Nigeria, [4]Department of Pharmacy, Usmanu Dan Fodiyo University Teaching Hospital, Sokoto, Nigeria, and [5]Department of Anatomy, College of Health Sciences, Usmanu Dan Fodiyo University, Sokoto, Nigeria. Sponsor: *W. Hayes*.

#2432 **Poster Board Number 437**
CARDIOPROTECTIVE EFFECTS OF PIQUIÁ PULP FRUIT (*CARYOCAR VILLOSUM*) AGAINST DOXORUBICIN-INDUCED LIPID PEROXIDATION AND DNA DAMAGE IN RATS. M. R. Almeida[1], J. C. Darin[1], A. F. Aissa[2], L. C. Hernandes[1], *D. J. Dorta*[3], A. Z. Mercadante[4], R. C. Chisté[4], L. G. Antunes[1], and M. P. Bianchi[1]. [1]Faculdade de Ciências Farmacêuticas de Ribeirão Preto, Ribeirão Preto, São Paulo, Brazil, [2]Faculdade de Medicina de Ribeirão Preto, Ribeirão Preto, São Paulo, Brazil, [3]Faculdade de Filosofia, Ciências e Letras de Ribeirão Preto, Ribeirão Preto, São Paulo, Brazil, and [4]Faculdade de Engenharia de Alimentos, Campinas, São Paulo, Brazil.

Abstract #

#2433 **Poster Board Number 438**
STUDY OF THE ANTIGENOTOXIC AND CYTOTOXIC ACTIVITIES OF THE FRUIT *SOLANUM SESSILIFLORUM* BY THE MICRONUCLEUS TEST IN RATS. L. C. Hernandes[1], J. C. Darin[1], M. R. Almeida[1], E. Rodrigues[2], A. Z. Mercadante[2], *D. J. Dorta*[3], M. P. Bianchi[1], and L. G. Antunes[1]. [1]Faculdade de Ciências Farmacêuticas de Ribeirão Preto, Ribeirão Preto, São Paulo, Brazil, [2]Faculdade de Engenharia de Alimentos, Campinas, São Paulo, Brazil, and [3]Faculdade de Filosofia, Ciências e Letras de Ribeirão Preto, Ribeirão Preto, São Paulo, Brazil.

Wednesday Afternoon, March 14
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Characterizing Toxic Modes of Action and Pathways to Toxicity

Poster Session: Biomarkers of Environmental Exposure and Toxicity

Chairperson(s): *Xiaoying Hui, University of California San Francisco, San Francisco, CA.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *2:45 PM–4:30 PM*

#2434 **Poster Board Number 441**
MONITORING OF *PIG-A* MUTATION IN HUMAN PERIPHERAL RED BLOOD CELLS. V. N. Dobrovolsky[1], R. H. Heflich[1], A. H. Bigger[3], and R. K. Elespuru[2]. [1]NCTR, Jefferson, AR, [2]CDRH, Silver Spring, MD, and [3]CDER, White Oak, MD. Sponsor: *S. Morris*.

#2435 **Poster Board Number 442**
DETECTION OF IDIOSYNCRATIC HEPATOTOXICITY POTENTIAL WITH METABOLITE PROFILING OF RAT SERUM. H. Kamp[1], B. van Ravenzwaay[1], N. Moeller[2], T. Walk[2], and W. Mattes[3]. [1]BASF SE, Ludwigshafen, Germany, [2]metanomics GmbH, Berlin, Germany, and [3]Pharmpoint Consulting, Poolesville, MD. Sponsor: *R. Landsiedel*.

#2436 **Poster Board Number 443**
ASSESSING HUMAN EXPOSURE TO TRICLOCARBAN USING URINARY TRICLOCARBAN AND ITS OXIDATIVE METABOLITES AS BIOMARKERS. S. Ye, X. Zhou, and A. Calafat. Center for Disease Control and Prevention, Atlanta, GA. Sponsor: *R. Wang*.

#2437 **Poster Board Number 444**
IDENTIFICATION OF NOVEL BIOMARKERS OF MERCURY-INDUCED IMMUNE DYSREGULATION IN HUMANS. J. Motts[2,1], *E. K. Silbergeld*[3], *R. M. Gardner*[4], and *J. F. Nyland*[1,3]. [1]Pathology, Microbiology & Immunology, University of South Carolina School of Medicine, Columbia, SC, [2]Biology, University of South Carolina, Columbia, SC, [3]Environmental Health Sciences, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, and [4]Institute of Environmental Medicine, Karolinska Institute, Stockholm, Sweden.

Program Description (Continued)

Abstract #

#2438 **Poster Board Number 445**
ASSOCIATION OF ENVIRONMENTAL EXPOSURE TO POLYCYCLIC AROMATIC HYDROCARBONS WITH BODY BURDEN OF ESTROGEN QUINONES IN BREAST CANCER PATIENTS USING HEMOGLOBIN ADDUCTS AS BIOMARKERS. C. Lin, R. Chang-Sin, G. Mao-Huei, S. Hung-Jie, and *L. Po-Hsiung*. National Chung Hsing University, Changhua City, Taiwan.

#2439 **Poster Board Number 446**
THE USE OF NOVEL NEPHROTOXICITY BIOMARKERS AFTER CHRONIC URANIUM AND ACUTE GENTAMICIN COEXPOSURE. Y. Guéguen[1], C. Rouas[1], J. Stefani[1], S. Grison[1], L. Grandcolas[1], I. Dublineau[1], and *P. Marc*[2]. [1]DRPH/SRBE, IRSN, Fontenay-aux-Roses, 92262, France, and [2]Faculté de Pharmacie INSERM UMR 996, Universud, Châtenay-Malabry, 92296, France.

#2440 **Poster Board Number 447**
IDENTIFYING THE SOURCES OF UNCERTAINTY IN THE PROCESS OF RECONSTRUCTING EXPOSURES TO CARBARYL USING EXPOSURE-TO-DOSE MODELING. *Y. Tan*[1], K. Holm[1], *M. Yoon*[2], *B. Young*[3], *H. Clewell*[2], R. Tornero-Velez[1], R. Goldsmith[1], D. Chang[1], C. Grulke[1], and *C. Dary*[4]. [1]US EPA, Research Triangle Park, NC, [2]The Hamner Institutes, Research Triangle Park, NC, [3]Bayer CropScience, Research Triangle Park, NC, and [4]US EPA, Las Vegas, NV.

#2441 **Poster Board Number 448**
EXPOSURE TO ORGANOPHOSPHATE INSECTICIDES AMONG CHILDREN LIVING ALONG THE US-MEXICO BORDER. K. Holm[1], R. Tornero-Velez[1], R. Goldsmith[1], D. Chang[1], C. Grulke[1], *C. Dary*[2], and *Y. Tan*[1]. [1]US EPA, Research Triangle Park, NC, and [2]US EPA, Las Vegas, NV.

#2442 **Poster Board Number 449**
EXPOSURE TO TRI-O-CRESYL PHOSPHATE AS A POSSIBLE EXPLANATION OF "AEROTOXIC SYNDROME" M. Liyasova[1,2], B. Li[2], L. M. Schopfer[2], F. Nachon[3], P. Masson[3,2], C. E. Furlong[4], and *O. Lockridge*[2,1]. [1]Environmental, Agricultural & Occupational Health, University of Nebraska Medical Center, Omaha, NE, [2]Eppley Institute, University of Nebraska Medical Center, Omaha, NE, [3]Département de Toxicologie, Institut de Recherche Biomédicale des Armées, La Tronche, France, and [4]Department of Medicine and Genome Sciences, University of Washington, Seattle, WA.

#2443 **Poster Board Number 450**
OXIDATIVE STRESS, INFLAMMATORY, AND IMMUNE RESPONSE AFTER INHALATION EXPOSURE TO BIODIESEL EXHAUST. E. K. Kisin[1], A. R. Murray[1,2], A. V. Tkach[1], *S. H. Gavett*[3], *M. I. Gilmour*[3], and *A. A. Shvedova*[1,2]. [1]NIOSH, Morgantown, WV, [2]West Virginia University, Morgantown, WV, and [3]US EPA, Research Triangle Park, NC.

#2444 **Poster Board Number 451**
SERUM PROTEOMIC ANALYSIS OF CHRONIC ARSENIC EXPOSURE USING 2-D DIGE TECHNOLOGY. L. Zhao[1], D. Sun[1], Y. Gao[1], and *Y. Wei*[2]. [1]Center for Endemic Disease Control, Harbin Medical University, Harbin, Heilongjiang, China, and [2]Department of Community Medicine, Mercer University School of Medicine, Macon, GA.

Abstract #

#2445 **Poster Board Number 452**
EXPRESSION OF ALDO-KETO REDUCTASE MRNA IN HUMAN LYMPHOCYTES OF SMOKERS. B. S. Barrón-Vivanco[1,3], S. J. Rothenberg[1,4], *I. M. Medina-Diaz*[3], L. Robledo-Marenco[3], *A. E. Rojas-García*[3], G. Elizondo[2], and *A. Medina*[1]. [1]Toxicología, Cinvestav, México, DF, Mexico, [2]Biología Celular, Cinvestav, México, DF, Mexico, [3]Laboratorio de Contaminación y Toxicología Ambiental, Universidad Autónoma de Nayarit, Tepic, Nayarit, Mexico, and [4]Salud Ambiental, Instituto Nacional de Salud Pública, Cuernavaca, Morelos, Mexico.

#2446 **Poster Board Number 453**
QUANTIFICATION OF SPECIFIC DNA ADDUCTS BY LC-MS/MS IN THE LIVERS OF MICE GIVEN ESTRAGOLE AT CARCINOGENIC DOSES. Y. Ishii[1], S. Takasu[1], M. Jin[1], K. Matsushita[1], K. Fukuhara[2], K. Ogawa[1], *A. Nishikawa*[3], and T. Umemura[1]. [1]Pathology, National Institute of Health Sciences, Tokyo, Japan, [2]Organic Chemistry, National Institute of Health Sciences, Tokyo, Japan, and [3]Biological Safety Research Center, National Institute of Health Sciences, Tokyo, Japan.

#2447 **Poster Board Number 454**
METHYLGLYOXAL PRODUCTION AND METABOLISM IN *SACCHAROMYCES CEREVISIAE* AS A FUNCTION OF GLYCOLYTIC FLUX. *B. Stewart*[1], A. Navid[2], *K. W. Turteltaub*[2], and G. Bench[1]. [1]Center for Accelerator Mass Spectrometry, Lawrence Livermore National Laboratory, Livermore, CA, and [2]Bioscience and Biotechnology Division, Lawrence Livermore National Laboratory, Livermore, CA.

#2448 **Poster Board Number 455**
BIOMARKERS OF ACRYLONITRILE EXPOSURE: SECOND-ORDER RATE CONSTANTS FOR THE REACTION OF ACRYLONITRILE WITH THE MOST REACTIVE SITES IN HUMAN HEMOGLOBIN. *F. W. Benz*, J. Cai, *D. E. Nerland*, and *H. E. Hurst*. Pharmacology & Toxicology, University of Louisville Medical School, Louisville, KY.

#2449 **Poster Board Number 456**
POLYCYCLIC AROMATIC HYDROCARBONS (PAHS) IN URINE FROM XUANWEI, CHINA AS BIOMARKERS OF EXPOSURE TO FUEL SMOKE. *S. S. Lu*[1], Q. Lan[2], B. Reiss[3], M. Shen[2], W. Hu[2,4], J. Xu[2,4], N. Rothman[2], R. Vermeulen[3], and S. M. Rappaport[1]. [1]University of California Berkeley, Berkeley, CA, [2]National Cancer Institute, Bethesda, MD, [3]Utrecht University, Utrecht, Netherlands, and [4]China National Environmental Monitoring Center, Beijing, China.

#2450 **Poster Board Number 457**
ROTENONE-INDUCED OXIDIZED MOLECULAR SPECIES OF CARDIOLIPIN IN HUMAN LYMPHOCYTES: CAN THEY BE USED AS BIOMARKERS OF MITOCHONDRIAL DYSFUNCTION ASSOCIATED WITH PARKINSON'S DISEASE? A. A. Amoscato, W. Feng, *V. E. Kagan*, and *Y. Tyurina*. EOH, University of Pittsburgh, Pittsburgh, PA.

Program Description (Continued)

Abstract #

#2451 **Poster Board Number 458**
DETERMINATION OF ENDOGENOUS AND EXOGENOUS ACETALDEHYDE DERIVED DNA ADDUCTS. *B. C. Moeller*[1], *L. Recio*[2], A. Green[2], and *J. A. Swenberg*[1,3]. [1]Curriculum in Toxicology, University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]ILS, Inc, Research Triangle Park, NC, and [3]Department of Environmental Sciences and Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC.

#2452 **Poster Board Number 459**
BIOMARKERS AND ONSET OF NONSPECIFIC BUILDING-RELATED SYMPTOMS IN THE DWELLING: A COHORT STUDY FROM 1992 TO 2002. *B. Sahlberg*[1], D. Norbäck[1], G. Wieslander[1], T. Gislason[3], and C. Janson[2]. [1]Department of Medical Sciences, Occupational and Environmental Medicine, Uppsala, Sweden, [2]Department of Medical Sciences, Respiratory Medicine & Allergology, Uppsala, Sweden, and [3]Department of Respiratory Medicine and Sleep, Faculty of Medicine, Reykjavik, Iceland.

#2453 **Poster Board Number 460**
VALIDATION OF A NONANTIBODY METHOD FOR DETECTION OF SERUM AFLATOXIN B1-LYSINE ADDUCT IN FISCHER 344 RATS. *L. Tang*, *G. Qian*, *F. Wang*, X. Guo, M. Massey, J. Su, and *J. S. Wang*. University of Georgia, Athens, GA.

#2454 **Poster Board Number 461**
IDENTIFICATION AND CHARACTERIZATION OF INTRACELLULAR PROTEINS IN LNCAP CELLS EXPOSED TO BIZ-2. L. Brown, and *W. Gray*. Chemical, Southern University A&M College, Baton Rouge, LA.

#2455 **Poster Board Number 462**
CREATING VIRTUAL BIOBANKING USING A GLOBAL METABOLOMICS APPROACH. Y. Lin[1], *Z. Guerrette*[2], T. Aliwarga[3], T. Senn[3], D. Whittington[3], M. Vredevoogd[2], E. Vigoren[2], and *E. Faustman*[2]. [1]Pharmaceutics, University of Washington, Seattle, WA, [2]Environmental and Occupational Health Sciences, University of Washington, Seattle, WA, and [3]Medicinal Chemistry, University of Washington, Seattle, WA.

#2456 **Poster Board Number 463**
THE BENZENE METABOLITE 1,4-BENZOQUINONE ENHANCES THE SECRETION OF TRANSFERRIN RECEPTOR (TFR). *S. Daniels*, B. Tu, C. Chang, *L. Zhang*, and *M. Smith*. School of Public Health, University of California Berkeley, Berkeley, CA.

#2457 **Poster Board Number 464**
PLASMA RESIDENCE TIME AND ORGAN DISTRIBUTION DETERMINATION OF THE CYANIDE METABOLITE 2-AMINOTHIAZOLINE-4-CARBOXYLIC ACID IN RAT SYSTEM. J. C. Yu[2], D. E. Thompson[1], *I. Petrikovics*[1], *B. Logue*[3], *S. I. Baskin*[4], and *G. A. Rockwood*[4]. [1]Chemistry, SHSU, Huntsville, TX, [2]The Master of Science in Forensic Science Program, SHSU, Huntsville, TX, [3]Chemistry and Biochemistry, SDSU, Brookings, SD, and [4]Analytical Toxicology, USAMRICD, Aberdeen Proving Ground, MD.

Abstract #

#2458 **Poster Board Number 465**
A STUDY OF EXPOSURES AND PRECLINICAL FINDINGS AMONG THE ALUMINUM CASTING WORKERS. M. Ogawa[1,2], and *F. Kayama*[2]. [1]Health Care Section, Jichi Medical University, Shimotsuke, Japan, and [2]Division of Environmental Toxicology, Jichi Medical University, Shimotsuke, Japan.

#2459 **Poster Board Number 466**
STRAIN-DEPENDENT RESPONSES OF SUBACUTE EXPOSURE TO TRICHLOROETHYLENE IN MULTIPANEL STRAIN OF INBRED MOUSE MODEL. Y. Ahn[1], S. Lee[1], H. Park[1], J. Jeon[2], D. Kim[1], Y. Kho[2], and *S. Kim*[1]. [1]Seoul National University, Seoul, Republic of Korea, and [2]Eulji University, Sungnam/Kyeonggi, Republic of Korea.

#2460 **Poster Board Number 467**
APPLICABILITY OF HIGH-THROUGHPUT 'OMICS TECHNOLOGIES IN EPIDEMIOLOGICAL STUDIES USING BIOBANK SAMPLES. T. M. de Kok[1], D. Hebels[1], H. Keun[3], R. Vermeulen[2], P. Georgiadis[4], and S. Kyrtopoulos[4]. [1]Toxicogenomics, Maastricht University, Maastricht, Netherlands, [2]IRAS, Utrecht University, Utrecht, Netherlands, [3]Imperial College, London, United Kingdom, and [4]National Hellenic Research Foundation, Athens, Greece. Sponsor: *H. van Loveren*.

#2461 **Poster Board Number 468**
PRESENCE OF AFLATOXIN B1 IN DIETS OF DAIRY CATTLE AND AFLATOXIN M1 IN RAW MILK. R. Ortiz-Martinez, A. Valdivia-Flores, M. DeLuna-Lopez, T. Quezada-Tristan, and A. Martinez-de Anda. Universidad Autonoma de Aguascalientes, Aguascalientes, Mexico. Sponsor: *G. Pallas-Guzman*.

Wednesday Afternoon, March 14
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Metals

Chairperson(s): *R. Clark Lantz, University of Arizona, Tucson, AZ.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *1:00 PM–2:45 PM*

#2462 **Poster Board Number 501**
BLOOD MERCURY SPECIATION IN BRAZILIAN RIPARIAN POPULATIONS. J. L. Rodrigues[1,2], L. R. Blanc[1], F. S. Moreira[1], R. C. Martín-Doimeadios[3], N. R. Fariñas[3], C. R. Alvarez[3], and F. Barbosa[2]. [1]ICET, UFVJM, Teófilo Otoni, Minas Gerais, Brazil, [2]FCFRP-USP, Ribeirão Preto, São Paulo, Brazil, and [3]UCLM, Toledo, Spain. Sponsor: *D. Oliveira*.

Program Description (Continued)

Abstract #

#2463 **Poster Board Number 502**
ASSOCIATED FACTORS WITH MERCURY EXPOSURE IN KOREAN ADULTS. *J. Park*[1], S. Eom[2], *B. Choi*[1], Y. Kim[3], Y. Hong[3], S. Sohn[4], H. Kim[2], K. Park[5], H. Pyo[5], H. Kim[6], S. Oh[7], M. Ha[8], and H. Kwon[8]. [1]Preventive Medicine, Chung-Ang University, Seoul, Republic of Korea, [2]Chungbuk National University, Cheongju, Republic of Korea, [3]Dong-A University, Busan, Republic of Korea, [4]Chonnam National University, Gwangju, Republic of Korea, [5]Korea Institute of Science and Technology, Seoul, Republic of Korea, [6]Seoul National University, Seoul, Republic of Korea, [7]Kyung Hee University, Seoul, Republic of Korea, and [8]Dankook University, Cheonan, Republic of Korea.

#2464 **Poster Board Number 503**
THE BLOOD MERCURY CONCENTRATION AND THE PROPORTION OF TOTAL/ METHYLMERCURY AND RELATED FACTORS IN KOREAN ADULTS. Y. S. Hong[1], B. G. Kim[1], C. H. You[1], E. M. Jo[1], G. Y. Kim[1], B. C. Yu[2], and D. S. Kim[3]. [1]Preventive Medicine, Dong-A University, Busan, Republic of Korea, [2]Preventive Medicine, Kosin University, Busan, Republic of Korea, and [3]Environmental Epidemiology, National Institute of Environmental Research, Incheon, Republic of Korea. Sponsor: *J. Jung*.

#2465 **Poster Board Number 504**
EFFECT OF MERCURY ON CYTOCHROME P4501A1, 1A2, AND 1B1 IN C57BL/6 MICE AT DIFFERENT EXTRAHEPATIC TISSUES. *I. Amara*, *A. Anwar-Mohamed*, *G. Abdelhamid*, and *A. O. El-Kadi*. Faculty of Pharmacy and Pharmaceutical Sciences, Edmonton, AB, Canada.

#2466 **Poster Board Number 505**
INCREASED EXPRESSION OF AQUAPORIN-4 BY METHYLMERCURY IN THE BRAIN OF THE COMMON MARMOSET. *M. Yamamoto*[1], M. Sasaki[1], M. Takeya[2], Y. Kawasaki[3], M. Shiraishi[3], S. Shiraishi[4], Y. Uezono[4], and K. Eto[5]. [1]Department of Basic Medical Sciences, National Institute for Minamata Disease, Minamata, Japan, [2]Kumamoto University, Kumamoto, Japan, [3]Kagoshima University, Kagoshima, Japan, [4]National Cancer Center Research Institute, Tokyo, Japan, and [5]Jushindai, Tamana, Japan.

#2467 **Poster Board Number 506**
DIFFERENCES IN METHYLMERCURY-INDUCED DOPAMINERGIC NEUROTOXICITY IN WILDTYPE, SKN-1 KO, AND MUTANT PARKIN *CAENORHABDITIS ELEGANS*. *E. Martinez-Finley*, and *M. Aschner*. Division of Pediatric Toxicology and Center in Molecular Toxicology, Vanderbilt University Medical Center, Nashville, TN.

#2468 **Poster Board Number 507**
DNA MICROARRAY ANALYSIS OF GENE EXPRESSION PROFILING IN THE CEREBELLUM OF MICE TREATED WITH METHYLMERCURY. J. Lee[1,2], G. Hwang[1], *M. Satoh*[2], and *A. Naganuma*[1]. [1]Graduate School of Pharmaceutical Sciences, Tohoku University, Sendai, Japan, and [2]School of Pharmacy, Aichi Gakuin University, Nagoya, Japan.

Abstract #

#2469 **Poster Board Number 508**
INACTIVATION OF METHYLMERCURY BY HYDROGEN SULFIDE PRODUCING ENZYME IN MAMMALIAN CELLS. E. Yoshida, T. Takashi, Y. Shinkai, and *Y. Kumagai*. Graduate School of Comprehensive Human Sciences, University of Tsukuba, Tsukuba, Japan.

#2470 **Poster Board Number 509**
CHRONIC EXPOSURE TO HEXAVALENT CHROMIUM INDUCES CHROMOSOME INSTABILITY IN PRIMARY HUMAN UROTHELIAL CELLS. *J. M. McKay*[1,2,3], *A. L. Holmes*[1,2,3], C. Case[4], and *J. P. Wise, Sr.*[1,2,3]. [1]Wise Laboratory of Environmental and Genetic Toxicology, University of Southern Maine, Portland, ME, [2]Maine Center for Toxicology and Environmental Health, University of Southern Maine, Portland, ME, [3]Department of Applied Medical Science, University of Southern Maine, Portland, ME, and [4]Bristol Implant Research Centre, Avon Orthopaedic Centre, Southmead Hospital, Bristol, United Kingdom.

#2471 **Poster Board Number 510**
INVESTIGATING ROLES FOR DNA POLYMERASE η IN PROTECTING AGAINST CR(VI)-INDUCED MUTATIONS AND TELOMERE ABERRATIONS. *H. C. Pope-Varsalona*[1], *F. Liu*[1], C. Murphy[1], H. Wang[2], and P. L. Opresko[1]. [1]Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA, and [2]Department of Pharmacology and Chemical Biology, University of Pittsburgh, Pittsburgh, PA.

#2472 **Poster Board Number 511**
ELUCIDATING THE ROLE OF NeK2A IN ZINC CHROMATE-INDUCED CENTROSOME AMPLIFICATION AND ANEUPLOIDY IN HUMAN LUNG FIBROBLASTS. R. T. Duffy[1,2], *A. L. Holmes*[1,2,3], and *J. P. Wise, Sr.*[1,2,3]. [1]Wise Laboratory of Environmental and Genetic Toxicology, University of Southern Maine, Portland, ME, [2]Maine Center for Toxicology and Environmental Health, University of Southern Maine, Portland, ME, and [3]Department of Applied Medical Science, University of Southern Maine, Portland, ME.

#2473 **Poster Board Number 512**
ACUTE INHALATION TOXICITY STUDIES WITH VANADIUM TRIOXIDE (V2O3), VANADIUM TETROXIDE (V2O4), VANADIUM PENTOXIDE (V2O5), AND VANADYL SULFATE (VOSO4). *A. I. Nikiforov*[1], *D. Sullivan*[2], N. Rajendran[2], S. C. Hu[2], *L. C. Fisher*[1], and *J. A. MacGregor*[3]. [1]Toxicology Regulatory Services, Charlottesville, VA, [2]IIT Research Institute, Chicago, IL, and [3]Toxicology Consulting Services, Arnold, MD.

#2474 **Poster Board Number 513**
ESTROGENS AVERT MICRONUCLEI FORMATION IN FEMALE MICE EXPOSED TO VANADIUM INHALATION. *T. I. Fortoul*[1], M. Rojas-Lemus[1], P. Bizarro-Nevares[1], L. Colin-Barenque[2], and M. Altamirano-Lozano[3]. [1]Biologia Celular y Tisular, UNAM, Mexico City, Mexico, [2]Laboratorio de Neuromorfologia, FES Iztacala, UNAM, Estado de Mexico, Mexico, and [3]Laboratorio de Citogenética, Mutagénesis y Toxicología Reproductiva, FES Zaragoza, UNAM, Mexico City, Mexico.

Program Description (Continued)

Abstract #

#2475 **Poster Board Number 514**
AN INVESTIGATION INTO THE CARCINOGENICITY OF SODIUM METAVANADATE IN HUMAN BRONCHIAL EPITHELIAL CELLS. *L. Passantino*, *X. Zhou*, and *M. Costa*. Environmental Medicine, New York University, Tuxedo, NY.

#2476 **Poster Board Number 515**
SELENIUM AND TELLURIUM COMPOUNDS CAUSE INHIBITION OF MITOCHONDRIAL COMPLEX I AND II IN RAT HIPPOCAMPAL ASTROCYTES. *S. Roy*, and *D. Hardej*. Department of Pharmaceutical Sciences, St. John's University, Jamaica, NY.

#2477 **Poster Board Number 516**
APOPTOSIS INDUCTION AND ANTIOXIDANT LEVELS IN TELLURIUM-TREATED TRANSFORMED AND NONTRANSFORMED HUMAN COLON CELLS. P. Vij, and *D. Hardej*. Department of Pharmaceutical Sciences, St. John's University, Jamaica, NY.

#2478 **Poster Board Number 517**
POTENTIAL ROLE OF STEM CELLS IN CADMIUM-INDUCED ONCOGENIC TRANSFORMATION OF HUMAN LUNG CELLS. *R. J. Person*, *E. J. Tokar*, and *M. P. Waalkes*. National Toxicology Program Laboratory, DNTP, NIEHS, Research Triangle Park, NC.

#2479 **Poster Board Number 518**
CADMIUM TRANSPORT IN A MODEL OF NEONATAL INTESTINAL CELLS IS CORRELATED WITH MRP1 AND NOT WITH DMT1 AND FPN1. J. Tallkvist, H. Öhrvik, and *A. Oskarsson*. Biomedical Sciences and Veterinary Public Health, Swedish University of Agricultural Sciences, Uppsala, Sweden.

#2480 **Poster Board Number 519**
CADMIUM APPEARS TO INITIALLY KILL THEN SELECT FOR STEM CELLS IN A HUMAN PANCREATIC EPITHELIAL CELL LINE. *W. Qu*, A. K. Chin, and *M. P. Waalkes*. National Toxicology Program Laboratory, DNTP, NIEHS, Research Triangle Park, NC.

#2481 **Poster Board Number 520**
DIURNAL SUSCEPTIBILITY TO CADMIUM TOXICITY. *N. Miura*[1], Y. Yanagiba[1], K. Ohtani[1], M. Togawa[2], and T. Hasegawa[2]. [1]National Institute of Occupational Safety and Health (JNIOSH), Kawasaki, Japan, and [2]Yamanashi Institute of Environmental Science, Yamanashi, Japan.

#2482 **Poster Board Number 521**
CADMIUM DISRUPTS THE EXTRACELLULAR MATRIX SECRETED BY HUMAN OSTEOSARCOMA SAOS-2 CELLS. S. Wright, D. L. Filer, K. B. Quinney, and *S. J. Heggland*. Biology, The College of Idaho, Caldwell, ID.

Abstract #

#2483 **Poster Board Number 522**
ROLES OF METALLOTHIONEIN AND GLUTATHIONE IN PRO-ANTIOXIDANT EFFECT OF ZINC IN CADMIUM-TREATED CULTURED CHOROID PLEXUS. S. D. Francis Stuart, R. K. Young, and *A. R. Villalobos*. Interdisciplinary Faculty of Toxicology and Nutrition & Food Science, Texas A&M University, College Station, TX.

#2484 **Poster Board Number 523**
CELLULAR ACCUMULATION AND BEHAVIOR OF SILVER AND INDUCTION OF METALLOTHIONEIN IN HUMAN BRONCHIAL EPITHELIAL CELLS FOLLOWING EXPOSURE TO SILVER NITRATE. T. Miyayama[1], Y. Arai[2], and *S. Hirano*[1,2]. [1]National Institute for Environmental Studies, Tsukuba, Ibaraki, Japan, and [2]Graduate School of Pharmaceutical Sciences, Chiba University, Chiba, Japan.

#2485 **Poster Board Number 524**
MTF-1 AND CARM1 PARTICIPATE IN A COMPLEX TO REGULATE METALLOTHIONEIN EXPRESSION AND METAL HOMEOSTASIS. *E. K. Braithwaite*, and *J. H. Freedman*. NIEHS, Research Triangle Park, NC.

#2486 **Poster Board Number 525**
INHIBITION OF ENDOGENOUS MTF-1 SIGNALING IN ZEBRAFISH EMBRYOS IDENTIFIES NOVEL ROLE FOR MTF-1 IN IRON AND HEME HOMEOSTASIS. *A. Holowiecki*[1], B. O'Shields[1], A. G. McArthur[2], and *M. Jenny*[1]. [1]Biological Sciences, University of Alabama, Tuscaloosa, AL, and [2]Bioinformatics Consulting Services, Hamilton, ON, Canada.

#2487 **Poster Board Number 526**
TRIMETHYLTIN CHLORIDE: INVESTIGATIONS INTO ITS ACUTE AND CUMULATIVE TOXICITY AND TOXICOKINETIC ASPECTS. X. Tang[1], X. Wu[1], A. M. Dubois[2,3], G. Sui[1], B. Wu[4], G. Lai[4], Z. Gong[2], Z. Lin[5], and *X. Ren*[2,3]. [1]Guangdong Medical Laboratory Animal Center, China, Foshan, Guangdong, China, [2]Social and Preventive Medicine, State University of New York at Buffalo, Buffalo, NY, [3]Pharmacology and Toxicology, State University of New York at Buffalo, Buffalo, NY, [4]Guangdong Prevention and Treatment Center for Occupational Diseases, Guangzhou, Guangdong, China, and [5]Sun Yat-Sen University, Guangzhou, Guangdong, China.

#2488 **Poster Board Number 527**
THE IMMUNOTOXIC EFFECTS OF TRIBUTYLTIN ON SPLENOCYTES IN FEMALE F1 RATS BY CONTINUOUS EXPOSURE FROM THE FETUS STAGE THROUGH THEIR DEVELOPING STAGES. R. Ikeuchi[1], T. Kido[1], C. Sugaya[1], *M. Tsunoda*[1], H. Katagiri[2], K. Hayashi[3], T. Kosaka[3], and Y. Aizawa[1]. [1]Preventive Medicine, Kitasato University School of Medicine, Sagamihara, Kanagawa, Japan, [2]Public Health, Kitasato University School of Allied Health Sciences, Sagamihara, Kanagawa, Japan, and [3]The Institute of Environmental Toxicology, Joso, Ibaraki, Japan.

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Abstract #

#2489 **Poster Board Number 528**
COEXPOSURE TO NICKEL AND COBALT CHLORIDE ENHANCES CYTOTOXICITY AND OXIDATIVE STRESS IN HUMAN LUNG EPITHELIAL CELLS. E. Patel, C. Lynch, V. Ruff, and *M. Reynolds*. Biology, Washington College, Chestertown, MD.

#2490 **Poster Board Number 529**
INSOLUBLE NI+2 COMPOUNDS SILENCE DRIP80 GENE, ALTERING CA+2 ION DISTRIBUTIONS IN NI+2/MCA-TRANSFORMED 10T1/2 MOUSE EMBRYO CELLS. *J. R. Landolph*[1,2], D. Mai[1,2], J. D. Zheng[1,2], and P. Samala[1,2]. [1]Department of Molecular Microbiology and Immunology, University of Southern California, Los Angeles, CA, and [2]Cancer Center, University of Southern California, Los Angeles, CA.

#2491 **Poster Board Number 530**
TUNGSTEN, NICKEL AND COBALT MEASUREMENTS IN TISSUE AND HISTOPATHOLOGY FOLLOWING INHALATION OF TUNGSTEN ALLOY POWDER BY SPRAGUE DAWLEY RATS. *B. A. Wong*[1,2], C. U. Parkinson[2], V. P. Mokashi[1], M. G. Stockelman[1], and P. A. Ortiz[1]. [1]Naval Medical Research Unit, Wright-Patterson AFB, Dayton, OH, and [2]The Hamner Institute for Health Sciences, Research Triangle Park, NC.

#2492 **Poster Board Number 531**
EVALUATION OF THE SUBCHRONIC TOXICITY OF SODIUM TUNGSTATE DIHYDRATE IN MALE AND FEMALE HARLAN SPRAGUE DAWLEY RATS AND B6C3F1/N MICE ADMINISTERED DOSED DRINKING WATER. *M. Hooth*[1], D. Malarkey[1], G. Travlos[1], *L. Fomby*[2], M. Buccellato[2], C. Briscoe[2], *M. Ryan*[2], *M. Hejtmancik*[2], *V. Godfrey Robinson*[1], *C. Smith*[1], *S. Graves*[2], L. Reed[3], K. Witt[1], and *M. Stout*[1]. [1]Division of the National Toxicology Program, NIEHS, Research Triangle Park, NC, [2]Battelle, Columbus, OH, and [3]Battelle, Richland, WA.

#2493 **Poster Board Number 532**
THE EFFECTS OF *IN VIVO* SODIUM TUNGSTATE EXPOSURE ON MURINE B-CELL DEVELOPMENT. *A. D. Kelly*[2], *M. Lemaire*[1], J. H. Eustache[3], Y. Young[1], *C. Guilbert*[1], and *K. K. Mann*[1,2]. [1]Onocology, Lady Davis Institute for Medical Research, Montreal, QC, Canada, [2]Experimental Medicine, McGill University, Montreal, QC, Canada, and [3]Microbiology and Immunology, McGill University, Montreal, QC, Canada.

#2494 **Poster Board Number 533**
HEAVY METAL EXPOSURE MODULATES RETROELEMENT ACTIVITY. A. M. Engel, B. J. Wagstaff, G. Servant, R. S. Derbes, and M. E. Morales. Epidemiology, Tulane University, New Orleans, LA. Sponsor: *K. Ramos*.

#2495 **Poster Board Number 534**
CHILDREN'S LEAD EXPOSURE IN NEW ORLEANS: THE NEED FOR LOWER SOIL LEAD GUIDELINES. *H. W. Mielke*[1], C. Gonzales[2], and E. Powell[2]. [1]Chemistry, Tulane University, New Orleans, LA, and [2]Lead Lab., Inc., New Orleans, LA.

Abstract #

#2496 **Poster Board Number 535**
SHORT-TERM ENVIRONMENTAL EXPOSURES TO COPPER ALTER MEDIATORS OF OLFACTORY SIGNAL TRANSDUCTION IN COHO SALMON. *L. Wang*, H. M. Espinoza, and *E. P. Gallagher*. Department of Environmental and Occupational Health Sciences, University of Washington, Seattle, WA.

#2497 **Poster Board Number 536**
HYPERSENSITIVITY TO METALS IN A COHORT OF DEPLETED URANIUM (DU)-EXPOSED GULF WAR I VETERANS WITH DU EMBEDDED FRAGMENTS. *K. S. Squibb*[1,2], M. Shvartsbeyn[3], P. Tuchinda[4], S. Hines[1,2], J. Gaines[1,2], *M. McDiarmid*[1,2], and A. Gaspari[1]. [1]University of Maryland School of Medicine, Baltimore, MD, [2]Veterans Affairs Medical Center, Baltimore, MD, [3]New York University, New York, NY, and [4]Mahidol University, Bangkok, Thailand.

#2498 **Poster Board Number 537**
DEVELOPMENT, VALIDATION AND APPLICATION OF A METHOD FOR DETERMINATION OF ZINC IN RAT WHOLE BLOOD. *K. Levine*[1], A. S. Essader[1], J. M. Perlmutter[1], D. J. Young[1], R. A. Fernando[1], B. J. Collins[2], and *V. G. Robinson*[2]. [1]RTI International, Research Triangle Park, NC, and [2]National Toxicology Program, NIEHS/NTP, Research Triangle Park, NC.

#2499 **Poster Board Number 538**
ROLE OF A SPINDLE ASSEMBLY CHECKPOINT PROTEIN, CDC20, IN CHROMATE-INDUCED SPINDLE ASSEMBLY CHECKPOINT BYPASS. *N. D. Karri*[1,2,3], and *J. P. Wise Sr*[1,2,3]. [1]Wise Laboratory of Environmental and Genetic Toxicology, University of Southern Maine, Portland, ME, [2]Maine Center for Toxicology and Environmental Health, University of Southern Maine, Portland, ME, and [3]Department of Applied Medical Science, University of Southern Maine, Portland, ME.

#2500 **Poster Board Number 539**
HEXAVALENT CHROMIUM INDUCES CHROMOSOME INSTABILITY RESULTING IN A DNA DOUBLE-STRAND BREAK REPAIR-DEFICIENT PHENOTYPE AND NEOPLASTIC TRANSFORMATION. *S. S. Wise*[1,2,3], *A. L. Holmes*[1,2,3], *H. Xie*[1,2,3], S. Martin[1,2], W. Thompson[2,3], and *J. P. Wise Sr.*[1,2,3]. [1]Wise Laboratory of Environmental and Genetic Toxicology, University of Southern Maine, Portland, ME, [2]Maine Center for Toxicology and Environmental Health, University of Southern Maine, Portland, ME, and [3]Department of Applied Medical Science, University of Southern Maine, Portland, ME.

#2501 **Poster Board Number 540**
SIMULATED MICROGRAVITY DECREASES CHROMIUM (VI)-INDUCED GENOTOXICITY IN HUMAN SKIN FIBROBLAST CELLS. M. C. Braun[1,2], J. M. McKay[1,2], C. Wheeler[1,2], and *J. P. Wise Sr*[1,2,3]. [1]Wise Laboratory of Environmental and Genetic Toxicology, University of Southern Maine, Portland, ME, [2]Maine Center for Toxicology and Environmental Health, University of Southern Maine, Portland, ME, and [3]Department of Applied Medical Science, University of Southern Maine, Portland, ME.

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#2502 **Poster Board Number 541**
EFFECTS OF ALTERED GRAVITY ON CHROMIUM-INDUCED GENOTOXICITY IN HUMAN LUNG CELLS. J. P. Wise Jr[1,2], S. Huang[1,2], C. Wheeler[1,2], and *J. P. Wise Sr*[1,2,3]. [1]Wise Laboratory of Environmental and Genetic Toxicology, University of Southern Maine, Portland, ME, [2]Maine Center for Toxicology and Environmental Health, University of Southern Maine, Portland, ME, and [3]Department of Applied Medical Science, University of Southern Maine, Portland, ME.

Wednesday Afternoon, March 14
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Persistent Organic Chemicals

Chairperson(s): *Martin Van den Berg, Utrecht University, Utrecht, Netherlands.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *2:45 PM–4:30 PM*

#2503 **Poster Board Number 549**
ASSOCIATION OF ORGANOCHLORINE COMPOUND BODY BURDEN AND ADIPOKINES WITH PREVALENCE OF TYPE 2 DIABETES MELLITUS. *P. Eden*[1], *E. Meek*[1], E. Olsen[2], and *J. Chambers*[1]. [1]Mississippi State University, Starkville, MS, and [2]Keesler AFB Clinical Research Laboratory, Keesler AFB, Biloxi, MS.

#2504 **Poster Board Number 550**
DETECTION OF PERFLUOROALKYL ACIDS IN RIVERS AND TAP WATER FROM ALL OVER JAPAN. *S. Tsuda*[1], K. Sasaki[1], Y. Suzuki[2], S. Tanaka[2], S. Fujii[2], and N. Saito[1]. [1]Iwate Institute of Environmental Health Sciences, Morioka, Japan, and [2]Kyoto University, Kyoto, Japan.

#2505 **Poster Board Number 551**
INVESTIGATION OF OXIDATIVE STRESS AS A MECHANISM FOR PBDE DISRUPTION OF NEURODEVELOPMENT. *C. Y. Usenko*[1], D. C. Hopkins[1], and *E. D. Bruce*[2]. [1]Biology, Baylor University, Waco, TX, and [2]Environmental Science, Baylor University, Waco, TX.

#2506 **Poster Board Number 552**
THE USE OF TOXIC EQUIVALENCY FACTORS (TEFS) FOR POLYBROMINATED DIBENZODIOXINS (PBDDS) AND DIBENZOFURANS (PBDFS) IN RISK ASSESSMENT. *M. Van den Berg*[1,5], H. Fiedler[2], *A. M. Tritscher*[3], and *R. E. Peterson*[4]. [1]Institute for Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands, [2]World Health Organization (WHO), Geneva, Switzerland, [3]United Nations Environmental Program (UNEP), Geneva, Switzerland, [4]University of Wisconsin-Madison, Madison, WI, and [5]WHO Collaborating Centre for Research on Environmental Health Risk Assessment, Utrecht, Netherlands.

Abstract #

#2507 **Poster Board Number 553**
IMMUNOLOGICAL EVALUATION OF THE RELATIVE POTENCY OF A SINGLE ORAL ADMINISTRATION OF BROMINATED AND CHLORINATED DIOXINS AND FURANS IN FEMALE B6C3F1 MICE. *R. Frawley*[1], *K. White Jr*[2], *M. Smith*[2], *N. Walker*[1], *L. Birnbaum*[1,3], *M. DeVito*[1], and *D. Germolec*[1]. [1]NTP, NIEHS, Research Triangle Park, NC, [2]Department of Pharmacology and Toxicology, Virginia Commonwealth University, Richmond, VA, and [3]NCI, Research Triangle Park, NC.

#2508 **Poster Board Number 554**
EGCG PROTECTS ENDOTHELIAL CELLS AGAINST PCB 126-INDUCED INFLAMMATION THROUGH INHIBITION OF AHR AND ACTIVATION OF NRF2. *S. Han*[1], K. Pearson[2], and *B. Hennig*[1,2]. [1]Animal and Food Sciences, University of Kentucky, Lexington, KY, and [2]Graduate Center for Nutritional Sciences, University of Kentucky, Lexington, KY.

#2509 **Poster Board Number 555**
TOXICITY AND INFLAMMATORY ENDPOINTS IN C57BL/6 MICE EXPOSED TO DIFFERENT DOSES OF 3,3',4,4',5-PENTACHLOROBIPHENYL (PCB 126). K. Eske, M. Murphy, J. Layne, *S. Han*, and *B. Hennig*. Graduate Center for Nutritional Sciences, University of Kentucky, Lexington, KY.

#2510 **Poster Board Number 556**
ADDUCTION OF CYTOCHROME C AND INHIBITION OF CASPASE-3 PROTEASE ACTIVITY BY DIFFERENT QUINOID METABOLITES OF POLYCHLORINATED BIPHENYLS (PCBs). M. Li[1], *S. Flor*[1,2], D. J. Murry[1,3], *L. W. Robertson*[1,2], and *G. Ludewig*[1,2]. [1]Interdisciplinary Graduate Program in Human Toxicology, University of Iowa, Iowa City, IA, [2]Department of Occupational & Environmental Health, University of Iowa, Iowa City, IA, and [3]College of Pharmacy, University of Iowa, Iowa City, IA.

#2511 **Poster Board Number 557**
USING A SOLID-PHASE EXTRACTION SYSTEM TO DETECT PBDES, TBPH AND OTHER NEW BROMINATED FLAME RETARDANTS IN SERUM. W. Guo, J. Park, Y. Wang, and M. Petreas. California Department of Toxic Substances Control, Berkeley, CA. Sponsor: *N. Holland*.

#2512 **Poster Board Number 558**
POTENTIAL DIETARY CONTAMINANT EXPOSURE FROM TRADITIONAL FOODS AMONG FIRST NATION ADOLESCENTS LIVING IN THE SUB-ARCTIC REGION OF ONTARIO, CANADA. *E. N. Liberda*[1], and L. J. Tsuji[2]. [1]School of Occupational and Public Health, Ryerson University, Toronto, ON, Canada, and [2]Faculty of the Environment and School of Public Health and Health Systems, University of Waterloo, Waterloo, ON, Canada.

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#2513 **Poster Board Number 559**
A COMPARATIVE TOXICITY STUDY IN RATS AFTER *IN UTERO* AND LACTATIONAL EXPOSURE TO PCB180 OR TCDD. R. Roos[1], F. Rendel[1], D. Borg[1], P. Heikkinen[2], U. Simanainen[2], M. Viluksela[2], *D. Schrenk*[3], G. Hamscher[4], K. Halldin[1], and *H. Håkansson*[1]. [1]Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden, [2]National Institute for Health and Welfare, Kuopio, Finland, [3]Food Chemistry and Toxicology, University of Kaiserslautern, Kaiserslautern, Germany, and [4]Institute for Food Toxicology and Analytical Chemistry, University of Veterinary Medicine, Hannover, Germany.

#2514 **Poster Board Number 560**
RETINOID SYSTEM MODULATIONS INDUCED BY A PURIFIED DE-71 MIXTURE IN AN OECD TG407 RAT STUDY EVALUATED IN RELATION TO HUMAN EXPOSURE LEVELS. *H. Håkansson*[1], S. Litens[2], J. Esteban[1,2], X. Barber[3], L. van der Ven[4], and G. Hamscher[5]. [1]Instituto de Bioingeniería, Universidad Miguel Hernández, Elche, ALICANTE, Spain, [2]Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden, [3]Centro de Investigación Operativa, Universidad Miguel Hernández, Elche, Spain, [4]Laboratory for Health Protection Research, National Institute of Public Health and the Environment, Bilthoven, Netherlands, and [5]Institut für Lebensmittelchemie und Lebensmittelbiotechnologie, Justus-Liebig-Universität Giessen, Giessen, Germany.

#2515 **Poster Board Number 561**
SHAM SURGERY RECAPITULATES THE EFFECTS OF GONADECTOMY FOLLOWING PCB EXPOSURE ON STRIATAL DOPAMINE IN MALE AND FEMALE MICE. *R. F. Seegal*[1], and *W. G. Foster*[2]. [1]New York State Department of Health, Wadsworth Center, Albany, NY, and [2]Department of Obstetrics and Gynecology, McMaster University, Hamilton, ON, Canada.

#2516 **Poster Board Number 562**
TELOMERASE REACTIVATION WITH INCREASED CMYC, HTERT AND HTR GENE EXPRESSION REVERSES TELOMERE SHORTENING IN HUMAN SKIN KERATINOCYTES: A POTENTIAL MECHANISM OF PCB CARCINOGENESIS. *S. Pk*, A. Klingelhutz, *L. Robertson*, and *G. Ludewig*. Human Toxicology, University of Iowa, Iowa city, IA.

#2517 **Poster Board Number 563**
UPTAKE AND SYSTEMIC DOSE LEVELS LEAD TO DIFFERENT RELATIVE EFFECT POTENCIES OF 4-PECDF AND PCB-126 IN MOUSE AND RAT. K. van Ede[1], K. Gaisch[1], P. Andersson[2], *M. van den Berg*[1], and *M. van Duursen*[1]. [1]Toxicology, IRAS, Utrecht University, Utrecht, Netherlands, and [2]Department of Chemistry, Faculty of Science and Technology, Umea University, Umea, Sweden.

#2518 **Poster Board Number 564**
TETRABROMOBISPHENOL A DISRUPTS EXCITATION-CONTRACTION COUPLING IN SKELETAL MYOTUBES VIA MODULATION OF RYANODINE RECEPTOR FUNCTION. *R. Zhang*, and *I. N. Pessah*. Department of Molecular Biosciences, School of Veterinary Medicine, University of California Davis, Davis, CA.

Abstract #

#2519 **Poster Board Number 565**
ELIMINATION OF PCB11 AND THE FORMATION OF ITS HYDROXYLATED METABOLITE IN RATS AFTER ACUTE INHALATION EXPOSURE. *X. Hu*, A. Adamcakova-Dodd, *H. Lehmler*, and *P. S. Thorne*. Interdisciplinary Graduate Program in Human Toxicology and the Iowa Superfund Research Program, University of Iowa, Iowa City, IA.

#2520 **Poster Board Number 566**
SULFATED METABOLITES OF POLYCHLORINATED BIPHENYLS BIND WITH HIGH AFFINITY TO THE THYROID HORMONE TRANSPORTER TRANSTHYRETIN. F. A. Grimm[1,2], *H. Lehmler*[1,3], *L. W. Robertson*[1,3], and M. W. Duffel[1,2]. [1]Interdisciplinary Graduate Program in Human Toxicology, University of Iowa, Iowa City, IA, [2]Pharmaceutical Sciences and Experimental Therapeutics, University of Iowa, Iowa City, IA, and [3]Occupational and Environmental Health, University of Iowa, Iowa City, IA.

#2521 **Poster Board Number 567**
ELIMINATION KINETICS OF PERFLUOROOCTANE SULFONATE (PFOS) IN CHAMBERED RAINBOW TROUT. *D. M. Consoer*[1], A. D. Hoffman[2], P. N. Fitzsimmons[2], and *J. W. Nichols*[2,1]. [1]University of Minnesota Duluth, Duluth, MN, and [2]US EPA Mid-Continent Ecology Division, Duluth, MN.

#2522 **Poster Board Number 568**
USING YEAST FUNCTIONAL TOXICOGENOMICS TO DECIPHER THE TOXICITY OF ORGANOCHLORINATED PESTICIDES. *B. Gaytan*[1], A. Loguinov[1], *N. Denslow*[2], and *C. Vulpe*[1]. [1]Nutritional Science and Toxicology, University of California Berkeley, Berkeley, CA, and [2]Physiology, University of Florida, Gainesville, FL.

#2523 **Poster Board Number 569**
SHORT TERM PFOA ADMINISTRATION DOES NOT MARKEDLY AFFECT KEY LIPOGENIC AND ANTIOXIDANT GENE EXPRESSION IN ADIPOSE TISSUE. D. Salter[1], J. Xu[1], L. Aleksunes[2], and A. L. Slitt[1]. [1]Biomedical and Pharmaceutical Sciences, University of Rhode Island, Kingston, RI, and [2]Department of Pharmacology and Toxicology, Rutgers, Piscataway, NJ. Sponsor: *N. Zawia*.

#2524 **Poster Board Number 570**
PCB126 INCREASES FAT MASS AND ATHEROSCLEROTIC PLAQUES IN APOE-/- MICE. *M. La Merrill*[1], L. Roteta[2], K. Saebo[2], Z. A. Fayad[2], and C. Buettner[2,3]. [1]Preventive Medicine, Mount Sinai School of Medicine, New York, NY, [2]Medicine, Mount Sinai School of Medicine, New York, NY, and [3]Neuroscience, Mount Sinai School of Medicine, New York, NY.

Program Description (Continued)

Abstract #

Wednesday Afternoon, March 14
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Neurotoxicity: Pesticides

Chairperson(s): *Prasada Rao Kodavanti, US EPA, Research Triangle Park, NC.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *1:00 PM–2:45 PM*

#2525 **Poster Board Number 601**
IMIDACLOPRID PRODUCES MINIMAL CHANGES IN THE EEG OF LONG-EVANS RATS. D. F. Lyke, K. L. McDaniel, *V. C. Moser*, and *D. W. Herr*. TAD/NB, US EPA, Durham, NC.

#2526 **Poster Board Number 602**
CYTOTOXICITY INDUCED BY DELTAMETHRIN AND ITS METABOLITES IN SH-SY5Y CELLS. *A. Anadon*, E. Ramos, V. Castellano, M. A. Martinez, I. Ares, M. Martinez, M. R. Martínez-Larrañaga, and A. Romero. Department of Toxicology and Pharmacology, Faculty of Veterinary Medicine, Complutense University, Madrid, Spain.

#2527 **Poster Board Number 603**
DIFFERENTIAL STATE-DEPENDENT MODIFICATION OF INACTIVATION-DEFICIENT RAT NAV1.6 SODIUM CHANNELS BY PYRETHROID INSECTICIDES. *D. M. Soderlund*, and S. J. McCavera. Cornell University, Geneva, NY.

#2528 **Poster Board Number 604**
A SINGLE DOSE OF SARIN AFTER A PROLONGED EXPOSURE TO STRESS AND LOW DOSES OF PYRIDOSTIGMINE BROMIDE (PB), DEET, AND PERMETHRIN IN MALE RATS TRIGGERS NEURODEGENERATION IN THE CEREBRAL CORTEX AND HIPPOCAMPUS. *M. B. Abou-Donia*[1], A. A. Abdel-Rahman[1], and A. K. Shetty[2]. [1]Pharmacology and Cancer Biology, Duke University Medical Center, Durham, NC, and [2]Medical Research Services, Veterans Affairs Medical Center, Durham, NC.

#2529 **Poster Board Number 605**
'OMIC EVALUATION OF REGION-SPECIFIC CHANGES INDUCED BY NONCHOLINERGIC DIISOPROPYLFLUOROPHOSPHATE (DFP) EXPOSURE IN FISCHER 344 RAT BRAIN. D. A. Mahle[1,2], A. Soto[1], V. T. Chan[1], and *N. V. Reo*[2]. [1]711 HPW/RHPB, Wright-Patterson AFB, Dayton, OH, and [2]Wright State University, Fairborn, OH.

#2530 **Poster Board Number 606**
DELINEATION OF OPTIC NERVE INJURY IN DFP-INDUCED OPIDN IN HENS. *T. V. Damodaran*[1,2,3], M. K. Attia[2], and *M. B. Abou-Donia*[2]. [1]Biology, North Carolina Central University, Durham, NC, [2]Pharmacology and Cancer Biology, Duke University Medical Center, Durham, NC, and [3]Medicine, Duke University Medical Center, Durham, NC.

Abstract #

#2531 **Poster Board Number 607**
LOCOMOTIVE ACTIVITY UPON ACUTE EXPOSURE TO MALATHION IN *C. ELEGANS*. J. Adcock, R. Williams, and *M. J. Pomeroy-Black*. Biology, LaGrange College, LaGrange, GA.

#2532 **Poster Board Number 608**
DICHLOROVS-INDUCED NITROSATIVE STRESS RESULTS IN MICROGLIAL ACTIVATION AND APOPTOTIC CELL DEATH AND ITS ATTENUATION BY SUPEROXIDE DISMUTASE MIMETIC, TEMPOL. A. Sunkaria, D. R. Sharma, W. Y. Wani, and *K. D. Gill*. Biochemistry, PGIMER, Chandigarh, India.

#2533 **Poster Board Number 609**
MOLECULAR MECHANISM OF DICHLORVOS NEUROTOXICITY: OXIDATIVE STRESS-INDUCED CYT C RELEASE AND APOPTOSIS. *K. D. Gill*, A. Sunkaria, P. Kaur, and B. Balachandran Krishnamma. Biochemistry, PGIMER, Chandigarh, UT, India.

#2534 **Poster Board Number 610**
IMPROVING *IN VITRO* TO *IN VIVO* EXTRAPOLATION (IVIVE) BY INCORPORATION OF TOXICOKINETIC MEASUREMENTS: A CASE STUDY WITH LINDANE-INDUCED SEIZURES. *E. Croom*, *T. J. Shafer*, *W. R. Mundy*, A. F. Johnstone, C. M. Mack, B. L. Robinette, and R. A. Pegram. US EPA, ORD, NHEERL, Durham, NC.

#2535 **Poster Board Number 611**
THE ORGANOCHLORINE INSECTICIDES LINDANE, DIELDRIN AND THEIR BINARY MIXTURE DISTURB CALCIUM HOMEOSTASIS IN DOPAMINERGIC PC12 CELLS. H. J. Heusinkveld, and *R. H. Westerink*. Neurotoxicology Research Group, Institute for Risk Assessment Sciences-University of Utrecht, Utrecht, Netherlands.

#2536 **Poster Board Number 612**
THE ROLE OF MICROTUBULE ON DITHIOCARBAMATE CYTOTOXICITY. E. Gonzalez-Lopez, and *S. Cheng*. Sciences, John Jay College, New York, NY.

#2537 **Poster Board Number 613**
THE CYTOTOXICITY OF MANGANOUS ETHYLENEBISDITHIOCARBAMATE (MANEB) IN RAT HIPPOCAMPAL ASTROCYTES: INVOLVEMENT OF OXIDATIVE STRESS AND INTRINSIC APOPTOTIC PATHWAY. M. Akhtar, and *L. D. Trombetta*. Pharmaceutical Sciences, St. John's University, Queens, NY.

#2538 **Poster Board Number 614**
THE EFFECTS OF MANEB ON GLUTATHIONE AND SOD ACTIVITY IN THE HIPPOCAMPUS OF NRF2(-/-) MICE. *D. M. Kurzatkowski*, and *L. D. Trombetta*. Pharmaceutical Sciences, St. John's University, Queens, NY.

#2539 **Poster Board Number 615**
MANEB AND MANCOZEB ACTIVATE NF-KAPPA B SIGNALING PATHWAY. C. Williams, and *S. Cheng*. Sciences, John Jay College, New York, NY.

Program Description (Continued)

Abstract #

#2540 **Poster Board Number 616**
EXPOSURE OF RAT HIPPOCAMPAL ASTROCYTES TO ZIRAM INCREASES OXIDATIVE STRESS. *A. Matei*, and *L. D. Trombetta*. Pharmaceutical Sciences, St. John's University, Queens, NY.

#2541 **Poster Board Number 617**
DUAL EXPOSURES OF A GLYPHOSATE-CONTAINING HERBICIDE FOLLOWED BY A MANGANESE/ZINC ETHYLENE-BIS-DITHIOCARBAMATE-CONTAINING FUNGICIDE LEAD TO INCREASED OXIDATIVE STRESS IN *CAENORHABDITIS ELEGANS*. I. B. Snapp, K. A. McVey, *R. Negga*, and *V. A. Fitsanakis*. Biology, King College, Bristol, TN.

#2542 **Poster Board Number 618**
EXPOSURE TO GLYPHOSATE CONTAINING HERBICIDES LEADS TO OXIDATIVE STRESS IN *CAENORHABDITIS ELEGANS*. K. A. McVey, I. B. Snapp, *R. Negga*, and *V. A. Fitsanakis*. Biology, King College, Bristol, TN.

#2543 **Poster Board Number 619**
DOPAMINERGIC TOXICITY OF THE ATRAZINE DEGRADATION PRODUCT DIAMINOCHLOROTRIAZINE AND THE THIOCARBAMATE PESTICIDES S-METHYL-N,N-DIETHYLTHIOCARBAMATE (DETC), MOLINATE, AND ETHYL N,N-DI-N-PROPYLTHIOLCARBAMATE (EPTC) IN *CAENORHABDITIS ELEGANS*. *S. W. Caito*[1,2], *D. S. Avila*[1], *W. M. Valentine*[2,3], and *M. Aschner*[1,2]. [1]Pediatrics, Vanderbilt University Medical Center, Nashville, TN, [2]Center in Molecular Toxicology, Vanderbilt University Medical Center, Nashville, TN, and [3]Pathology, Vanderbilt University Medical Center, Nashville, TN.

#2544 **Poster Board Number 620**
BEHAVIORAL AND NEUROCHEMICAL ALTERATIONS CAUSED BY A SHORT-TERM EXPOSURE OF MALE C57BL/6 MICE TO THE HERBICIDE ATRAZINE. *Z. Lin*[1,2], *C. A. Dodd*[1], and *N. M. Filipov*[1,2]. [1]Physiology and Pharmacology, University of Georgia, Athens, GA, and [2]Interdisciplinary Toxicology Program, University of Georgia, Athens, GA.

#2545 **Poster Board Number 621**
CHARACTERIZATION OF TETRAMETHYLENEDISULFOTETRAMINE (TETS) TOXICITY IN MICE. *C. N. Banks*[1], D. Zolkowska[2], A. Dhir[2], B. Inceoglu[3], J. R. Sanborn[3], M. R. McCoy[3], *D. A. Bruun*[1], *B. D. Hammock*[3], M. A. Rogawski[2], and *P. J. Lein*[1]. [1]Molecular Biosciences, University of California Davis, Davis, CA, [2]Neurology, University of California Davis, Sacramento, CA, and [3]Entomology, University of California Davis, Davis, CA.

#2546 **Poster Board Number 622**
GENE EXPRESSION ARRAY, HIGH PERFORMANCE METABOLIC PROFILING AND THIOL ANTIOXIDANT OXIDATION CHARACTERIZE DIVERGENT MECHANISMS OF PARAQUAT AND MANEB NEUROTOXICITY IN THE LOCUS COERULEUS. *J. Roede*, K. Gandhi, M. Krishnamoorthy, V. Tran, and *D. P. Jones*. Medicine, Emory University, Atlanta, GA.

Abstract #

#2547 **Poster Board Number 623**
PARAQUAT AFFECTS THE HOMEOSTASIS OF DOPAMINERGIC SYSTEM IN PC12 CELLS. D. Lou[1,2], *W. Li*[3], Q. Zhao[1], *E. Faustman*[2], and *Z. Zhou*[1]. [1]Department of Occupational Health Science and Toxicology, Fudan University, Shanghai, China, [2]Department of Environmental and Occupational Health Sciences, Institute for Risk Analysis and Risk Communication, Seattle, WA, and [3]Institute of Planned Parenthood Research, Shanghai, China.

#2548 **Poster Board Number 624**
PARAQUAT PRIMES MICROGLIAL ACTIVATION AND DOPAMINERGIC NEUROTOXICITY THROUGH NOX2 AND NF-κB P50. *M. L. Block*, S. Levesque, A. Wagner, L. O'Brian, and C. McGraw. Anatomy & Neurobiology, Virginia Commonwealth University, Richmond, VA.

#2549 **Poster Board Number 625**
THE PARKINSON'S DISEASE-LINKED PESTICIDE, ZIRAM, CAUSES SYNAPTIC DYSFUNCTION IN A *DROSOPHILA* MODEL. *C. A. Remillard*[1], A. Barajas[2], F. Schwiezer[2], and D. Krantz[2]. [1]Molecular Toxicology Interdepartmental Program, University of California Los Angeles, Los Angeles, CA, and [2]Semel Institute for Neuroscience, David Geffen School of Medicine, University of California Los Angeles, Los Angeles, CA.

Wednesday Afternoon, March 14
1:00 PM to 4:30 PM
Exhibit Halls A–C

PS

Poster Session: Developmental Neurotoxicity: Metals and Pesticides

Chairperson(s): *Samuel Peterson, Purdue University, West Lafayette, IN.*

Displayed: *1:00 PM–4:30 PM*

Author Attended: *2:45 PM–4:30 PM*

#2550 **Poster Board Number 628**
SODIUM (META) ARSENITE EXPOSURE EFFECTS ON THE EARLY DEVELOPING RAT FETAL BRAIN: A MORPHO-HISTOPATHOLOGICAL EXAMINATION. *M. Kuwagata*[1,2], M. Senuma[1], M. Furuya[1], H. Takashima[1], *T. Ogawa*[2], and S. Shioda[2]. [1]Toxicology, Hatano Research Institute, Food and Drug Safety Center, Hadano, Kanagawa, Japan, and [2]Anatomy I, Showa University School of Medicine, Shinagawa, Tokyo, Japan.

#2551 **Poster Board Number 629**
BIPHASIC EFFECTS OF LEAD ON ANGIOGENESIS (AG): IMPLICATIONS FOR DEVELOPMENTAL NEUROTOXICITY. *L. A. Shaiba*[1], S. A. Mousa[2], and *H. A. El-Fawal*[1]. [1]School of Health Sciences, Albany College of Pharmacy and Health Sciences, Albany, NY, and [2]Pharmaceutical Research Institute, Albany College of Pharmacy and Health Sciences, Albany, NY.

Program Description (Continued)

Abstract #

#2552 **Poster Board Number 630**
CNS EPIGENETIC CHANGES FOLLOWING DEVELOPMENTAL LEAD (PB) EXPOSURE, PRENATAL STRESS (PS), AND COMBINED PB+PS. *D. A. Cory-Slechta*[1], D. Weston[1], H. Ishitobi[1], W. Mettil[2], D. W. Anderson[2], and *J. S. Schneider*[2]. [1]Environmental Medicine, University of Rochester Medical School, Rochester, NY, and [2]Pathology, Anatomy and Cell Biology, Thomas Jefferson University, Philadelphia, PA.

#2553 **Poster Board Number 631**
DIFFERENTIAL INFLUENCE OF POSITIVE VS. NEGATIVE LIFETIME BEHAVIORAL EXPERIENCE ON THE CNS CONSEQUENCES OF CONTINUOUS LEAD (PB) EXPOSURE, PRENATAL STRESS (PS) AND THE COMBINATION. D. Weston, X. Liu, *K. Merchant-Borna*, *J. L. Allen*, and *D. A. Cory-Slechta*. Environmental Medicine, University of Rochester Medical School, Rochester, NY.

#2554 **Poster Board Number 632**
INVESTIGATION OF THE COMBINED NEUROTOXICITY OF DEVELOPMENTAL IRON DEFICIENCY AND LEAD EXPOSURE. A. Greminger[1], D. Lee[3], *D. Cory-Slechta*[1], and M. Mayer-Proschel[2]. [1]Environmental Medicine, University of Rochester, Rochester, NY, [2]Biomedical Genetics, University of Rochester, Rochester, NY, and [3]Pathology, University of Rochester, Rochester, NY.

#2555 **Poster Board Number 633**
INFLUENCES OF LEAD ON THE MALE AND FEMALE HIPPOCAMPAL TRANSCRIPTOME: EFFECTS OF DIFFERENT LEVELS OF EXPOSURE DURING DIFFERENT DEVELOPMENTAL PERIODS. *J. Schneider*, K. Talsania, R. Vadigepalli, and D. Anderson. Pathology, Anatomy and Cell Biology, Thomas Jefferson University, Philadelphia, PA.

#2556 **Poster Board Number 634**
ROLE OF GENETIC VARIATION IN THE PATHOGENICITY OF LEAD EXPOSURE: DIFFERENT EFFECTS OF LEAD ON THE HIPPOCAMPAL TRANSCRIPTOME IN RATS WITH DIFFERENT GENETIC BACKGROUNDS. D. Anderson, K. Talsania, R. Vadigepalli, and *J. Schneider*. Thomas Jefferson University, Philadelphia, PA.

#2557 **Poster Board Number 635**
EPIGENETIC MODIFICATIONS FROM DEVELOPMENTAL LEAD EXPOSURE: INFLUENCES OF SEX, EXPOSURE LEVEL, AND DEVELOPMENTAL TIMING OF EXPOSURE. K. Talsania, D. Anderson, R. Vadigepalli, Z. Wang, and *J. Schneider*. Thomas Jefferson University, Philadelphia, PA.

Abstract #

#2558 **Poster Board Number 636**
SYNERGISTIC EFFECTS OF DEVELOPMENTAL LEAD (PB^{2+}) EXPOSURE AND MUTANT DISRUPTED-IN-SCHIZOPHRENIA 1 (DISC1) ON BEHAVIORAL ABNORMALITIES CONSISTENT WITH SCHIZOPHRENIA: A GENE-ENVIRONMENT INTERACTION STUDY. B. Abazyan[1], *J. L. McGlothan*[3], S. Mori[2], M. V. Pletnikov[1], and *T. R. Guilarte*[3]. [1]Psychology, Johns Hopkins University, Baltimore, MD, [2]Radiology, Johns Hopkins University, Baltimore, MD, and [3]Environmental Health Science, Columbia University Mailman School of Public Health, New York, NY.

#2559 **Poster Board Number 637**
NMDA RECEPTOR-DEPENDENT BDNF-TRKB SIGNALING AND MECP2 CHANGES IN DEVELOPING HIPPOCAMPAL NEURONS BY PB2+: IMPLICATIONS FOR AN ENVIRONMENTAL BASIS OF NEURODEVELOPMENTAL DISORDERS. *K. Stansfield*[1], J. Pilsner[2], Q. Lu[3], and R. Wright[3]. [1]EHS, Columbia University Medical Center, New York City, NY, [2]Division of Environmental Health Science, University of Massachusetts, Amherst, MA, and [3]Department of Environmental Health, Harvard University, Boston, MA.

#2560 **Poster Board Number 638**
NEUROLOGICAL EFFECTS IN THE ZEBRAFISH MODEL SYSTEM CAUSED BY A DEVELOPMENTAL EXPOSURE TO LEAD. *S. M. Peterson*, *J. Zhang*, and *J. L. Freeman*. Health Sciences, Purdue University, West Lafayette, IN.

#2561 **Poster Board Number 639**
GENDER DIFFERENCES IN PARAOXONASE-2 EXPRESSION IN MOUSE PRIMARY STRIATAL NEURONS AND ASTROCYTES. *G. Giordano*[1], L. J. Tait[1], *C. Furlong*[2], *T. B. Cole*[2], and *L. G. Costa*[1,3]. [1]Department of Environmental Occupational Health Sciences, University of Washington Seattle, WA, [2]Division of Medical Genetics and Department of Genome Sciences, University of Washington, Seattle, WA, and [3]Department of Human Anatomy, Pharmacology and Forensic Science, University of Parma, Parma, Italy.

#2562 **Poster Board Number 640**
DIAZINON AND DIAZOXON IMPAIR ASTROCYTE ABILITY TO FOSTER NEURITE OUTGROWTH. *D. M. Pizzurro*[1], *G. Giordano*[1], K. Dao[1], and *L. G. Costa*[1,2]. [1]Environmental and Occupational Health Sciences, University of Washington, Seattle, WA, and [2]Human Anatomy, Pharmacology and Forensic Science, University of Parma, Parma, Italy.

#2563 **Poster Board Number 641**
CHLORPYRIFOS DURING DEVELOPMENT REDUCES ANXIETY-RELATED BEHAVIOR IN ZEBRAFISH LARVAE. H. Richendrfer, and R. Creton. MCB, Brown University, Providence, RI. Sponsor: *S. Pelkowski*.

#2564 **Poster Board Number 642**
REGIONAL BRAIN DOSIMETRY FOR THE ORGANOPHOSPHORUS INSECTICIDE CHLORPYRIFOS IN THE PREWEANLING RAT. *C. Timchalk*, *J. N. Smith*, and *T. S. Poet*. Biological Monitoring and Modeling, Pacific Northwest National Laboratory, Richland, WA.

Program Description (Continued)

Abstract #

#2565 **Poster Board Number 643**
PATTERN OF INHIBITION OF BRAIN ENDOCANNABINOID METABOLIZING ENZYMES FOLLOWING DEVELOPMENTAL CHLORPYRIFOS EXPOSURE. *R. L. Carr*, A. L. Adams, D. R. Kepler, A. B. Ward, and *M. K. Ross*. Center for Environmental Health Sciences, College of Veterinary Medicine, Mississippi State University, Mississippi State, MS.

#2566 **Poster Board Number 644**
EVALUATION OF DEVELOPMENTAL NEUROTOXICITY OF MANCOZEB IN RATS. M. Aggarwal[1], *S. Marty*[2], and *R. Billington*[1]. [1]Dow AgroSciences, Abingdon, United Kingdom, and [2]The Dow Chemical Company, Midland, MI.

#2567 **Poster Board Number 645**
ISOFORM-SPECIFIC DOWNREGULATION OF SODIUM CHANNELS FOLLOWING DEVELOPMENTAL DELTAMETHRIN EXPOSURE. *J. P. Magby*[1,2], and *J. R. Richardson*[1,2]. [1]JGPT, Rutgers University/UMDNJ, Piscataway, NJ, and [2]GSBS, University of Medicine and Dentistry New Jersey, Piscataway, NJ.

#2568 **Poster Board Number 646**
COMPARISON OF SINGLE AND REPEATED EXPOSURE TO LOW DOSES OF PYRETHROIDS, PERMETHRIN AND BIOALLETHRIN, DURING NEONATAL BRAIN DEVELOPMENT ON ADULT SPONTANEOUS BEHAVIOR. S. Buratovic[1], A. Fredriksson[1], *K. M. Crofton*[2], *H. Viberg*[1], and *P. Eriksson*[1]. [1]Department of Environmental Toxicology, Uppsala University, Uppsala, Sweden, and [2]NHEERL, ORD, US EPA, Research Triangle Park, NC.

#2569 **Poster Board Number 647**
CARBARYL EFFECTS ON OXIDATIVE STRESS IN BRAIN REGIONS OF ADOLESCENT AND SENESCENT BROWN NORWAY RATS. *P. S. Kodavanti*, *J. E. Royland*, J. E. Richards, and *R. C. MacPhail*. NHEERL, US EPA, Research Triangle Park, NC.

#2570 **Poster Board Number 648**
DOSE-RESPONSE AND TIME-COURSE OF NEUROTOXICITY AND TISSUE CONCENTRATIONS OF CARBARYL IN BROWN NORWAY RATS FROM PREWEANING TO SENESCENCE. *V. C. Moser*, P. M. Phillips, and K. L. McDaniel. TAD/NHEERL, US EPA, Research Triangle Park, NC.

Abstract #

Wednesday Afternoon, March 14
1:30 PM to 4:15 PM
Room 103

S

Characterizing Toxic Modes of Action and Pathways to Toxicity

Innovations of Applied Toxicology (IAT) Session

Symposium Session: New Visions in Toxicology Lysosomes—Roles in Disease, Toxicity, and Drug Development

Chairperson(s): *Shuyan Lu, Pfizer, Inc., San Diego, CA, and James M. Willard, US FDA, Silver Spring, MD.*

Sponsor:
Mechanisms Specialty Section

Endorsed by:
Drug Discovery Toxicology Specialty Section

Lysosomes, first discovered by Dr. Christian de Duve more than five decades ago, are membrane-enclosed compartments filled with acid hydrolytic enzymes that digest macromolecules from the endocytic, autophagic, and phagocytic membrane-trafficking pathways. Lysosomes are involved in various physiological processes, including cholesterol homeostasis, plasma membrane repair, bone and tissue remodeling, and pathogen defense. Lysosomal malfunction as a consequence of genetic deficiency of a lysosomal enzyme or membrane protein can trigger lysosomal storage diseases with various clinical abnormalities such as organomegaly and central nervous system dysfunction. Recently, growing lines of evidence point to a critical role of lysosomes in cell death. Leakage of lysosomal enzymes and iron has been shown to result in mitochondria-mediated apoptosis. Inducers of lysosomal membrane permeabilization include, but are not limited to, oxidative stress, lipids, caspases, microtubule toxins, and metals. A number of basic lipophilic compounds have been shown to accumulate into acidic organelles, including lysosomes, in a process known as lysosomotropism. Lysosomotropic agents include structurally diverse chemicals that are used in clinical medicine such as chloroquine, amiodarone, imipramine, tamoxifen, and imatinib. In the past, phospholipidosis associated with drug lysosomal sequestration has been investigated extensively and prevailing theory has been that the phopholipidosis is primarily an adaptive response rather than a toxic response. However, the relationship between physicochemical properties of compounds, lysosomal accumulation, cellular damage, impairment of membrane trafficking processes, including autophagy, and especially how this is associated with various toxicological manifestations has not been fully elucidated. The goal of this symposium is to highlight the potential role of the lysosome in drug-induced toxicity and recognize lysosome perturbation as a potential mechanism for organ toxicity.

#2571 1:30 **NEW VISIONS IN TOXICOLOGY: LYSOSOMES—ROLES IN DISEASE, TOXICITY, AND DRUG DEVELOPMENT.** *S. Lu*[1], and J. M. Willard[2]. [1]Pfizer Inc., San Diego, CA, and [2]US FDA, Silver Spring, MD.

1:30 **INTRODUCTION.** Shuyan Lu

#2572 1:35 **LYSOSOME AND LYSOSOMAL STORAGE DISORDER.** E. H. Schuchman. Mount Sinai School of Medicine, New York, NY. Sponsor: *S. Lu*.

#2573 2:07 **TRAIL-INDUCED LYSOSOMAL PATHWAY OF APOPTOSIS IN HEPATOBILIARY CELLS.** G. J. Gores[1], N. W. Werneburg[1], S. F. Bronk[1], L. Thomas[2], and G. Thomas[2]. [1]Division of Gastroenterology and Hepatology, Mayo Clinic, Rochester, MN, and [2]The Vollum Institute, Oregon Health & Science University, Portland, OR. Sponsor: *S. Lu*.

Program Description (Continued)

Abstract #

#2574 2:39 **AMINE-CONTAINING DRUG ACCUMULATION IN AND EGRESS FROM LYSOSOMES.** J. P. Krise, R. Funk, and R. Logan. Department of Pharmaceutical Chemistry, University of Kansas, Lawrence, KS. Sponsor: *S. Lu*.

#2575 3:11 **ROLE OF THE LYSOSOME IN THE LINK BETWEEN PHYSICOCHEMICAL PROPERTIES AND *IN VITRO* TOXICITY.** *S. Lu*[1], *B. A. Jessen*[1], *Y. Will*[2], and *G. J. Stevens*[1]. [1]Drug Safety Research & Development, Pfizer Inc., San Diego, CA, and [2]Compound Safety Prediction, Pfizer Inc., Groton, CT.

#2576 3:43 **PHOSPHOLIPIDOSIS: DRUG-INDUCED LYSOSOMAL STORAGE DISORDER.** J. M. Willard. US FDA, Silver Spring, MD. Sponsor: *S. Lu*.

Wednesday Afternoon, March 14
1:30 PM to 4:15 PM
Room 102

S

Symposium Session: Off the Beaten Path: Preclinical Approaches to Safety Evaluation of Cells/Gene Therapy, Vaccines, and Adjuvants

Chairperson(s): *Lauren E. Black, Charles River, Reno, NV, and Sarah J. Gould, sanofi pasteur, Marcy L'Etoile, France.*

Sponsor:
Biotechnology Specialty Section

Endorsed by:
Immunotoxicology Specialty Section
Stem Cells Specialty Section

Toxicologists in all fields model the human effects of test articles in animals, recognizing interspecies differences in immunology, biology, and disease status. But the toxicology of "extreme biologic" therapies raises this challenge to a new level, particularly regarding the long-lasting impact of immunomodulation. These biologics include: human cells, live microbes, or vaccines causing irreversible changes in immunity: all of these cause immunologic reactions, whether by intention or from side effects. These complexities force toxicologists out of their comfort zone to find a "relevant species"– like diseased, transgenic, or immunocompromised rodents—just to enable the test article to express its human actions. Other challenges arise from immune reactions seen in animals or humans. Do certain types of immune stimulation in animals portend hypersensitivity or autoimmune disease in humans? Are adverse events in toxicity studies arising from the model itself, primary pharmacology, or drug side effects (immunotoxicity)? Another challenge is the possibility that drug-related immunotoxicity may cause, or activate, latent autoimmune diseases in patients. To progress, these safety programs require new immune assays/endpoints to inform human trials. Currently, we know some immunomodulatory drugs have caused autoimmune disease in humans, but there are no validated ways to predict these risks, so research goals and regulatory views will be discussed. Related issues include toxicity assessment of immunosuppressant drugs, hypersensitivity responses, and immunogenic reactions to recombinant proteins. Progress will require collaboration of industry and regulatory scientists to consider new translational methods and to apply them appropriately to immunomodulators, biologics, and vaccines.

#2577 1:30 **OFF THE BEATEN PATH: PRECLINICAL APPROACHES TO SAFETY EVALUATION OF CELLS/GENE THERAPY, VACCINES, AND ADJUVANTS.** *L. E. Black*[1], *S. Gould*[2], M. D. Green[3], *T. MacLachlan*[4], T. Chen[5], and J. van der Laan[6]. [1]Navigators, Charles River, Reno, NV, [2]Toxicology, sanofi pasteur, Marcy L'Etoile, France, [3]CBER/OVRR, US FDA, Rockville, MD, [4]Toxicology, Novartis, Cambridge, MA, [5]CBER/OCTGT, US FDA, Rockville, MD, and [6]Medicines Evaluation Board, Bilthoven, Netherlands.

Abstract #

1:30 **INTRODUCTION.** Lauren Black

#2578 1:35 **VACCINES, ADJUVANTS AND AUTOIMMUNITY.** *S. Gould*. Toxicology, sanofi pasteur, Marcy L'Etoile, France.

#2579 2:07 **ACUTE PHASE REACTANTS: TRANSLATIONAL BIOMARKERS FOR ADVERSE EFFECTS OF VACCINES.** M. D. Green. CBER/OVRR, US FDA, Rockville, MD. Sponsor: *L. Black*.

#2580 2:39 **THE FLIP SIDE OF IMMUNITY TO VIRUSES—USE OF VIRAL VECTORS FOR GENE THERAPY.** *T. MacLachlan*. Toxicology, Novartis, Cambridge, MA.

#2581 3:11 **SAFETY ASSESSMENT OF THERAPEUTIC VACCINES/ADJUVANTS—REGULATORY CONSIDERATIONS.** T. Chen. CBER/OCTGT, US FDA, Rockville, MD. Sponsor: *L. Black*.

#2582 3:43 **SIGNALS OF AUTOIMMUNITY—A REGULATORY PERSPECTIVE.** J. van der Laan. Medicines Review Board, Bilthoven, Netherlands. Sponsor: *L. Black*.

Wednesday Afternoon, March 14
1:30 PM to 4:15 PM
Room 304

S

Symposium Session: Trivalent Arsenic Metabolites and Arsenic Toxicity

Chairperson(s): *Luz M. Del Razo, Toxicology Department Cinvestav-IPN, México D. F., Mexico City, Mexico, and Michael P. Waalkes, NIEHS, Research Triangle Park, NC.*

Sponsor:
Hispanic Organization of Toxicologists Special Interest Group

Endorsed by:
Global Strategy Task Force
Mechanisms Specialty Section
Metals Specialty Section
Molecular Biology Specialty Section
Women in Toxicology Special Interest Group

Inorganic arsenic (iAs) is a well-known environmental toxicant that could induce a variety of adverse health effects. iAs is enzymatically methylated in human tissues to mono- and dimethylated metabolites that contain trivalent arsenic (AsIII) or pentavalent arsenic (AsV). A recently identified arsenic (+3 oxidation state) methyltransferase (AS3MT) is the key enzyme in this pathway. Notably, trivalent methylated metabolites of iAs (MAsIII and DMAsIII) have been shown to play an important role in iAs-associated diseases such as cancer and diabetes. There is evidence that the AS3MT metabolic pathway, which was formerly considered a detoxification pathway, may significantly increase the toxicity of iAs. *Ex vivo* studies using tissue cultures have consistently shown that exposures to subtoxic concentrations of MAsIII and DMAsIII produce effects that mirror carcinogenic effects, and noncancerous conditions such as diabetes and cardiovascular diseases. However, the relevance of these findings for *in vivo* responses remains an area of on-going investigation and debate. The complexity and lack of suitable methods has hindered the analysis of MAsIII and DMAsIII in biological samples. Lately, results of epidemiology studies suggest that MAsIII and DMAsIII play a role in the onset of diabetes. Critical levels of iAs exposure and other factors that are associated with an increased production of these metabolites, and are linked/associated with increased prevalence of diabetes, have been characterized. The significance of these recent developments will be discussed in the context of physiologically-based pharmacokinetic models, and the relationship between methylation and specific organ toxicity, as well as variations in methylation ability as a function of host factors.

Program Description (Continued)

Abstract #

#2583 1:30 **TRIVALENT ARSENIC METABOLITES AND ARSENIC TOXICITY.** *L. M. Del Razo*[1], *M. P. Waalkes*[2], *M. Styblo*[3], *Z. Drobna*[3], D. Loomis[4], and *E. M. Kenyon*[5]. [1]Toxicology, Hispanic Organization of Toxicologists SIG-HOT, Cinvestav-IPN, Mexico, Distrito Federal, Mexico, [2]Inorganic Toxicology Group, National Toxicology Program, NIEHS, Research Triangle Park, NC, [3]Nutrition, University of North Carolina at Chapel Hill, Chapel Hill, NC, [4]Epidemiology and Eppley Cancer Institute, University of Nebraska Medical Center, Omaha, NE, and [5]ORD, NHEER, US EPA, Research Triangle Park, NC.

1:30 **INTRODUCTION.** Luz Del Razo

#2584 1:35 **ROLE AND IMPORTANCE OF ARSENIC METHYLATION ASSOCIATED WITH TOXIC EFFECTS.** *L. M. Del Razo*. Toxicology, Cinvestav-IPN, Mexico, Distrito Federal, Mexico.

#2585 2:02 **MODE OF ACTION OF METHYLATED TRIVALENT ARSENIC WITH A FOCUS ON THE POTENTIAL ACTION AS A CARCINOGEN.** *M. P. Waalkes*, C. Kojima, R. Orihuela, and *E. J. Tokar*. NTP, NIEHS, Research Triangle Park, NC.

#2586 2:29 **ANALYSIS OF METHYLATED TRIVALENT ARSENICALS IN BIOLOGICAL SAMPLES.** *M. Styblo*[1], *J. Currier*[1], J. Saunders[1], M. Svoboda[2], J. Dedina[3], and T. Matousek[3]. [1]Nutrition, University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]Charles University, Prague, Czech Republic, and [3]Institute of Analytical Chemistry of the ASCR, Brno, Czech Republic.

#2587 2:56 **ROLE OF AS3MT POLYMORPHISM IN ARSENIC METABOLISM: TRIVALENT ARSENICALS.** *Z. Drobna*[1], *L. Del Razo*[2], *G. Garcia-Vargas*[3], *O. Valenzuela*[2], E. Hernandez Castellanos[2], L. C. Sanchez-Pena[2], D. Loomis[4], and *M. Styblo*[1]. [1]Nutrition, CB#7461, University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]Toxicology, Cinvestav-IPN, Mexico City, Mexico, [3]Juarez University, Durango, Mexico, and [4]Epidemiology, University of Nebraska, Omaha, NE.

#2588 3:23 **PREVALENCE OF DIABETES AND ITS ASSOCIATION WITH URINARY TRIVALENT METHYLATED ARSENIC SPECIES IN ENDEMIC REGIONS IN MEXICO.** D. Loomis[1], *L. M. Del Razo*[2], *G. G. García-Vargas*[3], *Z. Drobna*[4], and *M. Styblo*[4]. [1]Epidemiology and Eppley Cancer Institute, University of Nebraska Medical Center, Omaha, NE, [2]Toxicology, Cinvestav-IPN, Mexico, D.F., Mexico, [3]Medicine, Juarez University of Durango State, Gomez Palacio, Durango, Mexico, and [4]Nutrition, University of North Carolina at Chapel Hill, Chapel Hill, NC.

#2589 3:49 **PHYSIOLOGICALLY-BASED PHARMACOKINETIC (PBPK) MODELING CONSIDERING METHYLATED TRIVALENT ARSENICALS.** *E. M. Kenyon*, and *H. El-Masri*. ORD/NHEERL/ISTD, US EPA, Durham, NC.

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Wednesday Afternoon, March 14
1:30 PM to 4:15 PM
Room 303

W

Regulatory Science: Bridging the Gap between Discovery and Product Availability

Workshop Session: Advancing Food Safety in a Global Marketplace

Chairperson(s): *Nicola Stagg, Dow AgroSciences LLC, Indianapolis, IN, and Michael Bolger, US FDA, College Park, MD.*

Sponsor:
Food Safety Specialty Section

Endorsed by:
Global Strategy Task Force
Mixtures Specialty Section
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

Advancements in packaging technology, such as those that extend food shelf-life, agricultural products including pesticides and genetically modified crops, and a more integrated and global marketplace have led to increased food quantity and quality, but as a consequence have also led to concerns about food safety and potential risks to public health. These global food safety concerns range from incidental or deliberate food contamination from micro-organisms or toxic substances, chemicals migrating into food from food containers, pesticide residues on food, and genetically modified foods. Our panel of experts will highlight the science-based approaches being used to regulate food safety in the food, chemical, and agricultural industries across the world. To underscore the important of these issues, we will identify opportunities for advancing technologies and science across many sectors including academia, industry, government, and public health organizations, to build confidence in the safety of our food to protect human health.

#2590 1:30 **ADVANCING FOOD SAFETY IN A GLOBAL MARKETPLACE.** *N. J. Stagg*[1], *A. Tritscher*[2], *D. Wilson*[3], *A. Boobis*[4], *B. Chassy*[5], and C. Carrington[6]. [1]Human Health Assessment, Dow AgroSciences, Indianapolis, IN, [2]Department of Food Safety and Zoonoses, World Health Organization, Geneva, Switzerland, [3]Toxicology and Environmental Research and Consulting, The Dow Chemical Company, Midland, MI, [4]Division of Investigative Science, Imperial College, London, United Kingdom, [5]Food Science and Human Nutrition, University of Illinois at Urbana-Champaign, Urbana, IL, and [6]Center for Food Safety and Applied Nutrition, US FDA, College Park, MD.

1:30 **INTRODUCTION.** Nicola Stagg

#2591 1:35 **NEW APPROACHES TO ASSESSING SAFETY/RISK OF CHEMICAL CONTAMINANTS IN FOOD.** *A. Tritscher*. Department of Food Safety and Zoonoses, World Health Organization, Geneva, Switzerland.

#2592 2:07 **EVALUATING THE SAFETY OF MATERIALS USED IN FOOD CONTACT MATERIALS.** *D. Wilson*. Toxicology and Environmental Research and Consulting, The Dow Chemical Company, Midland, MI.

#2593 2:39 **ADVANCES IN SAFETY/RISK ASSESSMENTS OF PESTICIDE RESIDUES ON FOODS.** *A. Boobis*. Division of Investigative Science, Imperial College, London, United Kingdom.

Program Description (Continued)

Abstract #

#2594 3:11 **REGULATING THE SAFETY OF FOODS AND FEEDS DERIVED FROM GENETICALLY MODIFIED CROPS.** B. Chassy. Food Science and Human Nutrition, University of Illinois at Urbana-Champaign, Urbana, IL. Sponsor: *N. Stagg*.

#2595 3:43 **RISK ASSESSMENT AND MANAGEMENT OPTIONS FOR CHEMICAL CONTAMINANTS IN A GLOBAL FOOD SUPPLY.** *C. Carrington*. Center for Food Safety and Applied Nutrition, US FDA, College Park, MD.

Wednesday Afternoon, March 14
1:30 PM to 4:15 PM
Room 104

W

Characterizing Toxic Modes of Action and Pathways to Toxicity

Workshop Session: Discovering Novel Hypotheses for Mechanisms of Toxicity from High-Content Data Sets

Chairperson(s): *Nigel Greene, Pfizer, Inc., Groton, CT, and Ahmed Enayetallah, Pfizer, Inc., Groton, CT.*

Sponsor:
Biological Modeling Specialty Section

Endorsed by:
Molecular Biology Specialty Section

For over a decade researchers have sought to apply technologies such as genomics, proteomics, and metabolomics to either predict toxicity through the use of gene, protein, or metabolite signatures or to further understand modes of action in toxicity through chemical exposure. There have been some success stories in recent years but largely these technologies have not lived up to the promises made when they were first developed. The complex nature of biological systems and the multivariate nature of a system's response to a xenobiotic have made it difficult to pick apart the true causes of the phenotypic changes that are observed. In addition, the explosion of data available in the public domain has made it difficult for the human brain to keep up with current knowledge and apply this effectively to a set of experimental readouts to determine cause and effect relationships. Xenobiotics often induce their biological effects via interactions with one or more biological targets, thus triggering whole cascades of events that culminate in adverse events in humans. Understanding the nature of these events, coupled with consideration of their relevance to the human mode of action and target context, will improve the scientific basis and thus increase the accuracy of risk and safety assessments. In addition, better understanding of toxicological modes of action will ultimately lead to the development of more predictive models of *in vivo* biological responses. Where these take the form of *in vitro* biochemical and cell-based assays it will lead to the reduction of the use of animals in laboratory experiments. This session will outline some of the cutting–edge research and methodologies for distilling down the vast array of public information into more manageable sets of knowledge and relationships. We will discuss novel *in silico* approaches to mine these relationships and formulate hypotheses for modes of action of the compound or biological target under study and present some applications of these methods in understanding toxicological mechanisms.

#2596 1:30 **DISCOVERING NOVEL HYPOTHESES FOR MECHANISMS OF TOXICITY FROM HIGH-CONTENT DATA SETS.** *N. Greene*, and *A. Enayetallah*. Pfizer Inc., Groton, CT.

1:30 **INTRODUCTION.** Nigel Greene

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#2597 1:35 **PREDICTING MECHANISMS OF CHEMICAL TOXICITY USING THE COMPARATIVE TOXICOGENOMICS DATABASE (CTD.** *C. J. Mattingly*, A. P. Davis, C. G. Murphy, C. A. Saraceni Richards, S. Mockus, M. C. Rosenstein, T. C. Wiegers, and B. King. The Mount Desert Island Biological Laboratory, Salisbury Cove, ME.

#2598 2:13 **A NOVEL COMPUTATIONAL APPROACH FOR EARLY PREDICTION OF TARGET-BASED TOXICITY THROUGH DOWNSTREAM MOLECULAR CAUSAL REASONING.** D. Laifenfeld[1], D. Pratt[1], J. Park[1], D. Drubin[1], and *M. Lawton*[2]. [1]Selventa Inc., Cambridge, MA, and [2]Pfizer, Groton, CT.

#2599 2:51 **TOXICITY BIOLOGICAL NETWORKS USING CAUSAL REASONING TO LEVERAGE HIGH-THROUGHPUT QUANTITATIVE SILAC PROTEOMICS.** *A. Enayetallah*[1], *P. Ajuh*[2], *S. Nadanaciva*[1], D. Ziemek[1], *N. Greene*[1], and *K. Leach*[1]. [1]PGRD, Pfizer Inc., Groton, CT, and [2]Dundee Cell Products Ltd, Dundee, United Kingdom.

#2600 3:28 **IDENTIFYING MECHANISMS OF DRUG-INDUCED TOXICITY USING METABOLOMICS.** *D. F. Grant*. Department of Pharmaceutical Sciences, University of Connecticut, Storrs, CT.

4:05 **PANEL DISCUSSION/Q&A.**

Wednesday Afternoon, March 14
1:30 PM to 4:15 PM
Room 307

W

Clinical Toxicology from Bedside to the Bench and Back

Workshop Session: Muscle Toxicity—Current Challenges in Translatable Biomarkers

Chairperson(s): *Warren Glaab, Merck, West Point, PA, and Denise Robinson-Gravatt, Pfizer, Groton, CT.*

Sponsor:
Regulatory and Safety Evaluation Specialty Section

Endorsed by:
Clinical and Translational Toxicology Specialty Section
Drug Discovery Toxicology Specialty Section
Molecular Biology Specialty Section
Toxicologic and Exploratory Pathology Specialty Section

Compound-related injury to cardiac and skeletal muscle are common preclinical and clinical toxicities observed in drug development, and have resulted in the withdrawal of several pharmaceutical agents from the market. Current biomarkers for detecting muscle injuries can be both insensitive and nonspecific as well as poorly predictive. Improving the ability to detect drug-induced muscle injuries will facilitate preclinical and clinical drug development and help ensure patient safety. This session will focus on a consortium approach to qualify novel muscle biomarker candidates and seek regulatory endorsement for specific use claims, and will include presentations on: (1) the biomarker qualification approach being used by the Critical Path Institute's Predictive Safety Testing Consortium (PSTC) in partnership with FDA and EMA, (2) a pathological assessment of cardiac and skeletal muscle drug-induced toxicities, (3) a Biomarker Qualification Submission (BQS) for skeletal muscle biomarkers consisting of ~40 rat studies from consortium member companies, (4) a clinical qualification strategy for the proposed skeletal muscle biomarker candidates, (5) cardiac hypertrophy biomarker candidates based on clinical data and a reverse translational strategy for their qualification into preclinical use, and (6) FDA perspective on novel safety biomarker qualifications for preclinical and clinical applications. Data will be presented highlighting the qualification and imple-

Program Description (Continued)

Abstract #

mentation of these novel cardiac and skeletal muscle biomarkers in drug development, as well as discussion about the importance of agency endorsement to further promote translation to clinical applications and better enable drug development.

#2601 1:30 **MUSCLE TOXICITY—CURRENT CHALLENGES IN TRANSLATABLE BIOMARKERS.** *D. Robinson-Gravatt*[1], and *W. Glaab*[2]. [1]Drug Safety R&D, Pfizer, Groton, CT, and [2]Safety Assessment, Merck, West Point, PA.

1:30 **INTRODUCTION.** Warren Glaab

#2602 1:40 **BIOMARKERS OF CARDIAC AND SKELETAL MUSCLE TOXICITY-PRECLINICAL QUALIFICATION AND TRANSLATION TO CLINICAL USE.** *D. Robinson-Gravatt*. Drug Safety R&D, Pfizer, Groton, CT.

#2603 2:06 **DRUG-INDUCED TOXICITIES OF CARDIAC AND SKELETAL MUSCLE.** G. Hall. Eli Lilly and Company, Indianapolis, IN. Sponsor: *D. Watson*.

#2604 2:32 **QUALIFICATION OF NOVEL SKELETAL MUSCLE TOXICITY BIOMARKERS BY THE PSTC WORKING GROUP.** *D. E. Watson*. Investigative Toxicology, Eli Lilly and Company, Indianapolis, IN.

#2605 2:58 **CLINICAL TRANSLATION OF SKELETAL MUSCLE BIOMARKERS.** *W. Glaab*. Merck Research Laboratories, West Point, PA.

#2606 3:24 **REVERSE TRANSLATING CLINICAL BIOMARKERS—A NONTRADITIONAL APPROACH TO QUALIFY NT-PROANP.** M. E. Dunn[1], and *H. Colton*[2]. [1]Nonclinical Safety, Hoffmann-La Roche, Nutley, NJ, and [2]Safety Assessment, GlaxoSmithKline, Research Triangle Park, NC.

#2607 3:50 **A US FDA PERSPECTIVE ON SAFETY BIOMARKERS AND THE QUALIFICATION PROCESS.** M. Walton. Office of Translational Sciences, CDER, US FDA, Silver Spring, MD. Sponsor: *D. Robinson-Gravatt*.

Wednesday Afternoon, March 14
1:30 PM to 4:15 PM
Room 305

W

Workshop Session: Progenitor and Stem Cells As Targets of Environmental Pollutants

Chairperson(s): *Daniel J. Conklin, University of Louisville, Louisville, KY, and Petra Haberzettl, University of Louisville, Louisville, KY.*

Sponsor:
Cardiovascular Toxicology Specialty Section

Stem and progenitor cells, including hematopoietic stem cells (HSC), endothelial progenitor cells (EPC), and mesenchymal stem cells (MSC), are potential important targets of environmental pollutants due to their capacity to differentiate and divide. These progenitor/stem cells are mobilized from their niches (e.g., bone marrow and spleen) by a variety of stimuli to the circulation where they effectively regulate organ and tissue homeostasis and repair after injury. Epidemiological studies suggest these cells play an important role in the development of human disease and indicate environmental exposures affect both the number and function of circulating stem/progenitor cells. For example, exposures to 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) are associated with an increased risk of specific hematological diseases, whereas inhalation of particulate and volatile air pollutants is associated with decreased circulating endothelial progenitor cells, which is a risk factor of cardiovascular disease. Thus, the level of circulating stem/progenitor cells could be a sensitive biomarker of pollutant exposure, as

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well as being a mechanism by which pollutant exposure affects disease risk. The mechanisms and signaling pathways by which different pollutants affect stem/progenitor cell number and function are not well understood. This session will provide an overview of how different types of adult stem/progenitor cells are measured in number and function, and also address the underlying mechanisms by which diverse environmental pollutant exposures affect these important cells.

#2608 1:30 **PROGENITOR AND STEM CELLS AS TARGETS OF ENVIRONMENTAL POLLUTANTS.** *D. J. Conklin*, and *P. Haberzettl*. University of Louisville, Louisville, KY.

1:30 **INTRODUCTION.** Daniel Conklin

#2609 1:35 **EXPOSURE TO AIRBORNE FINE PARTICULATE MATTER PM $_{2.5}$ AND DEFECTS IN CIRCULATING STEM CELLS IN HUMANS AND MICE.** T. E. O'Toole. University of Louisville, Louisville, KY. Sponsor: *D. Conklin*.

#2610 2:07 **THE EFFECTS OF NICKEL NANOPARTICLES ON BONE MARROW AND CIRCULATING PROGENITOR CELLS IN MICE.** *E. N. Liberda*, and *L. Chen*. New York University, New York, NY.

#2611 2:39 **VOLATILE AND PARTICULATE ENVIRONMENTAL AIR POLLUTANTS IMPEDE VEGF-MEDIATED EPC MOBILIZATION FROM BONE MARROW. A COMMON MECHANISM?** *P. Haberzettl*. University of Louisville, Louisville, KY.

#2612 3:11 **AH RECEPTOR ACTIVATION IN MICE ALTERS HEMATOPOIETIC STEM/PROGENITOR CELL FUNCTIONS AND GENE MODULATION REFLECTING CHANGES IN CELLULAR TRAFFICKING: IMPLICATIONS FOR HUMANS AND HEMATOPOIETIC DISEASES.** *T. A. Gasiewicz*. University of Rochester, Rochester, NY.

#2613 3:43 **ADVERSE EFFECTS OF POLYCYCLIC AROMATIC HYDROCARBONS ON BONE MARROW PROGENITOR CELLS AND ITS RELATIONSHIP TO REDUCED CELLULARITY IN THE SPLEEN AND THYMUS.** *C. J. Czuprynski*, *A. N'jai*, *C. Jefcoate*, and M. Larsen. University of Wisconsin-Madison, Madison, WI.

Wednesday Afternoon, March 14
1:30 PM to 4:15 PM
Room 308

W

Workshop Session: T-Dependent Antibody Responses in Nonhuman Primates: Challenges and Opportunities

Chairperson(s): *Jacintha M. Shenton, MedImmune, Inc., Cambridge, United Kingdom, and Herv Lebrec, Amgen Inc., Seattle, WA.*

Sponsor:
Immunotoxicology Specialty Section

Endorsed by:
Biotechnology Specialty Section
Regulatory and Safety Evaluation Specialty Section

Increasingly, the T-cell dependent antibody response (TDAR) assay is used as a means to evaluate immunomodulation—immunopharmacology or immunotoxicology—in nonhuman primates (NHPs). This is primarily due to the plethora of immunomodulatory biopharmaceuticals in development. Our focus will be on several key topics relevant to the TDAR and other measures of immune responses to T-dependent (TD) antigens. Traditionally,

Program Description (Continued)

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the TDAR has been used as a means to evaluate immunosuppression. It is less clear whether it is possible or appropriate to use the TDAR to evaluate immunostimulation. In addition, although the read-out of the TDAR is by definition the generation of antigen-specific antibodies, T-helper cells, as well as antigen presenting cells, are also involved in the response, while poorly characterized in the context of this assay in NHPs. There is, for instance, little information on T-cell differentiation towards T-helper [Th]1 versus Th2 responses in this context. Cellular immune responses to TD antigens may also be evaluated using the delayed-type hypersensitivity (DTH) response; however, DTH is notoriously difficult to produce in NHPs and correlative data between the systemic and local responses to the TD antigen are lacking. Although immune responses to TD antigens are routinely evaluated nonclinically there is little understanding of translational data across species and to humans. Furthermore, the increased use of the TDAR in NHPs is associated with a disparity of protocols as well as methods for data interpretation; any discussions on standardization/best practices generally result in significant debate. The goal of this session is to share data and progress in our understanding of the measurable endpoints of the immune response to TD antigens and to provide a forum for discussion on the utility of these endpoints within drug development.

#2614 1:30 **T-CELL DEPENDENT ANTIBODY RESPONSES IN NONHUMAN PRIMATES: CHALLENGES AND OPPORTUNITIES.** *J. Shenton*[1], and *H. Lebrec*[2]. [1]MedImmune, Cambridge, United Kingdom, and [2]Amgen, Seattle, WA.

1:30 **INTRODUCTION.** Jacintha Shenton

#2615 1:35 **USE OF THE T CELL-DEPENDENT ANTIBODY RESPONSE TO EVALUATE IMMUNOSTIMULATION.** *J. Descotes*[1], and *J. Piccotti*[2]. [1]Poison Center and Pharmacovigilance Department, Lyon, France, and [2]Safety Assessment and Laboratory Animal Resources, Merck Research Laboratories, Summit, NJ.

#2616 2:07 **BEYOND ANTIBODIES: CHARACTERIZATION OF THE CELLULAR IMMUNE RESPONSE TO KEYHOLE LIMPET HEMOCYANIN.** *L. LeSauteur*, and M. Christin-Piche. Charles River, Senneville, QC, Canada.

#2617 2:39 **CORRELATIONS BETWEEN SYSTEMIC AND LOCAL RESPONSES TO T-DEPENDENT ANTIGENS.** K. Haanstra[1], *J. Shenton*[2], and M. Jonker[1]. [1]BPRC, Rijswijk, Netherlands, and [2]MedImmune, Cambridge, United Kingdom.

#2618 3:11 **TRANSLATION OF THE IMMUNE RESPONSES TO T-DEPENDENT ANTIGENS BETWEEN NONHUMAN PRIMATES AND HUMANS.** *J. Shenton*[1], L. de Haan[1], K. Haanstra[4], M. Jonker[4], R. Kay[3], and Å. Ström[2]. [1]MedImmune, Cambridge, United Kingdom, [2]AstraZeneca, Södertälje, Sweden, [3]AstraZeneca, Charnwood, United Kingdom, and [4]Biomedical Primate Research Centre, Rijswijk, Netherlands.

#2619 3:43 **GOOD PRACTICES IN THE STUDY DESIGN, DATA ANALYSIS AND REPORTING OF T-DEPENDENT ANTIBODY RESPONSE STUDIES.** *H. Lebrec*. Amgen Inc., Seattle, WA.

Abstract #

Wednesday Afternoon, March 14
1:30 PM to 4:15 PM
Room 302

PL

Platform Session: Alternatives to Mammalian Models in Skin Sensitization

Chairperson(s): *Robert Landsiedel, BASF SE, Ludwigshafen am Rhein, Germany, and Erwin Roggen, Novozymes AS, Bagsvaerd, Denmark.*

#2620 1:30 **KEY EVENTS OF THE INNATE IMMUNE RESPONSE AS TOOLS FOR IDENTIFICATION OF CHEMICAL SENSITIZERS *IN VITRO*: DO WE NEED MORE?** *E. L. Roggen*. Toxicology, Novozymes AS, Bagsvaerd, Denmark.

#2621 1:51 **GARD—A GENOMIC BIOMARKER ASSAY FOR PREDICTION OF SENSITIZERS USING A CELL-BASED *IN VITRO* ALTERNATIVE TO ANIMAL TESTS.** H. Johansson[1], M. Lindstedt[1], A. Albrekt[1], *E. Roggen*[2], and C. Borrebaeck[1]. [1]Department of Immunotechnology, Lund University, Lund, Sweden, and [2]3RsMC, Kgs. Lyngby, Denmark.

#2622 2:12 **ESTABLISHMENT OF AN *IN VITRO* PHOTOASSAY TEST USING NCTC2544 CELLS AND IL-18 TO DISCRIMINATE PHOTOIRRITANTS FROM PHOTOALLERGENS.** *E. Corsini*[1], S. Bianchi[1], V. Galbiati[1], V. Martinez[2], and M. Mitjans[2]. [1]Department of Pharmacological Sciences, University of Milan, Milan, Italy, and [2]Departament de Fisiologia, Universitat de Barcelona, Barcelona, Spain.

#2623 2:33 **PYRIDOXYLAMINE REACTIVITY KINETICS AS AN AMINE-BASED PROBE FOR SCREENING ELECTROPHILIC CONTACT ALLERGENS.** *I. Chipinda*[1], W. Mbiya[2], R. H. Simoyi[2], and *P. D. Siegel*[1]. [1]HELD, CDC/NIOSH, Morgantown, WV, and [2]Chemistry, Portland State University, Portland, OR.

#2624 2:54 **EVALUATION OF *IN VITRO* REACTIVITY ASSAYS FOR ASSESSING THE SENSITIZATION POTENTIAL OF CHEMICALS.** *R. S. Settivari*[1], *Y. Jeong*[1], *A. Wood*[1], *M. Woolhiser*[1], *A. Natsch*[2], *E. Carney*[1], and *D. Boverhof*[1]. [1]The Dow Chemical Company, Midland, MI, and [2]Givaudan Schweiz AG, Dübendorf, Switzerland.

#2625 3:15 ***IN VITRO* SKIN IRRITATION AND CORROSION TESTING SERVING DIFFERENT REGULATORY CLASSIFICATION SCHEMES.** A. Mehling[2,1], S. N. Kolle[1], B. van Ravenzwaay[1], and *R. Landsiedel*[1]. [1]Experimental Toxicology and Ecology, BASF SE, Ludwigshafen am Rhein, Germany, and [2]BASF Personal Care and Nutrition GmbH, Düsseldorf, Germany.

#2626 3:35 **REFINEMENT OF THE APPLICABILITY DOMAIN AND PREDICTIVITY OF THE KERATINOSENS ASSAY, A NOVEL *IN VITRO* SKIN SENSITIZATION ASSAY.** A. Hilberer[1], N. Wilt[1], N. Barnes[1], *K. E. Eblin*[3], A. Natsch[2], and K. Norman[1]. [1]Institute for *In Vitro* Sciences, Gaithersburg, MD, [2]Givaudan Schweiz AG, Duebendorf, Switzerland, and [3]S.C. Johnson & Son, Inc., Racine, WI.

Program Description (Continued)

Abstract #

#2627 3:55 **AN *IN VITRO* TEST BATTERY FOR THE PREDICTION OF SKIN SENSITIZERS BASED ON KEY EVENTS OF THE TOXICITY PATHWAY.** C. Bauch[3,1], T. Eltze[1], T. Ramirez[1], S. N. Kolle[1], B. van Ravenzwaay[1], A. Mehling[2], and *R. Landsiedel*[1]. [1]Experimental Toxicology and Ecology, BASF SE, Ludwigshafen am Rhein, Germany, [2]BASF Personal Care and Nutrition GmbH, Düsseldorf, Germany, and [3]Faculty of Life Sciences, University of Manchester, Manchester, United Kingdom.

Wednesday Afternoon, March 14
1:30 PM to 4:15 PM
Room 309

PL

Platform Session: Computational Toxicology: Predicting Hepatotoxicity

Chairperson(s): *Katya Tsaioun, Apredica, Watertown, MA, and Harvey J. Clewell, The Hamner Institutes for Health Sciences, Research Triangle Park, NC.*

#2628 1:30 **BUILDING HYPOTHESES OF PATHWAY PERTURBATION USING 'OMICS DATA AND MACHINE LEARNING TOOLS.** R. Currie[1], H. Watanabe[2], D. Lin[2], P. Jain[2], J. Taubert[3], D. Salazar[1], C. Rawlings[3], M. Sternberg[2], S. Dunbar[1], and M. Stephen[2]. [1]Syngenta, Bracknell, United Kingdom, [2]Imperial College London, London, United Kingdom, and [3]Rothamsted Research, Harpenden, United Kingdom. Sponsor: *R. Peffer*.

#2629 1:51 **AN ANALYSIS OF N-ACETYLCYSTEINE TREATMENT FOR ACETAMINOPHEN OVERDOSE USING A SYSTEMS MODEL OF DRUG-INDUCED LIVER INJURY.** J. L. Woodhead[1], S. Q. Siler[1], *Y. Yang*[2], *M. E. Andersen*[2], *H. J. Clewell*[2], *P. B. Watkins*[1], and *B. A. Howell*[1]. [1]The Hamner-University of North Carolina Institute for Drug Safety Sciences, Research Triangle Park, NC, and [2]The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#2630 2:12 **DILISYM™ MODELING PREDICTS THAT AN EARLY RISE IN BILIRUBIN REFLECTS MODIFIED HEPATOCELLULAR FUNCTION PRIOR TO SUBSTANTIAL HEPATOCYTE LOSS–IMPLICATIONS FOR "HY'S LAW"** S. Q. Siler, J. L. Woodhead, L. Shoda, *P. B. Watkins*, and *B. A. Howell*. The Hamner-University of North Carolina Institute for Drug Safety Sciences, Research Triangle Park, NC.

#2631 2:33 **PREDICTING *IN VIVO* ENZYME INDUCTION USING PHYSIOLOGICALLY-BASED MODELLING.** M. Atari[1], P. Metcalfe[1], S. Thomas[1], and *K. Tsaioun*[2,1]. [1]Scientific Computing, Cyprotex, Macclesfield, United Kingdom, and [2]Apredica, Watertown, MA.

#2632 2:54 **VIRTUAL LIVER: QUANTITATIVE DOSE-RESPONSE USING SYSTEMS BIOLOGY.** *J. F. Wambaugh*, J. Jack, J. L. Davis, R. Setzer, and *I. Shah*. National Center for Computational Toxicology, US EPA, Research Triangle Park, NC.

#2633 3:15 **DETERMINING SEX AND AGE-SPECIFIC HEPATIC FUNCTIONAL STATUS BY GENE EXPRESSION SIGNATURES DURING THE RAT LIFE CYCLE.** Y. Ge, J. Kwekel, T. Han, V. Desai, and *J. Fuscoe*. Center for Functional Genomics, US FDA National Center for Toxicological Research (NCTR), Jefferson, AR.

Abstract #

#2634 3:35 **DRUG-INDUCED LIVER INJURY PREDICTION SYSTEM (DILIPS) FOR DRUG DISCOVERY APPLICATION.** Z. Liu[1], Q. Shi[1], D. Ding[2], R. Kelly[2], H. Fang[2], and *W. Tong*[1]. [1]National Center for Toxicological Center, Jefferson, AR, and [2]ICF International Company at FDA's National Center for Toxicological Research, Jefferson, AR.

#2635 3:55 **QUANTITATIVE STRUCTURE-ACTIVITY RELATIONSHIP (QSAR) MODEL FOR PREDICTING A DRUG'S POTENTIAL TO CAUSE LIVER INJURY IN HUMAN.** *M. Chen*, H. Hong, and *W. Tong*. US FDA National Center for Toxicological Research, Jefferson, AR.

Wednesday Afternoon, March 14
1:30 PM to 4:15 PM
Room 301

PL

Platform Session: Inhalants and Cardiopulmonary: Particulates

Chairperson(s): *George Alexeeff, Cal/EPA, Oakland, CA, and Alison Elder, University of Rochester, Rochester, NY.*

#2636 1:30 **EFFECTS OF COMBINATIONS OF DIESEL EXHAUST AND OZONE EXPOSURE ON LUNG FUNCTION IN HUMAN VOLUNTEERS.** T. Stevens[1], M. Case[1], J. Berntsen[2], C. Olenick[3], M. Bassett[1], T. Montilla[1], H. Hiers[1], J. Pleil[1], D. Diaz-Sanchez[1], and *M. C. Madden*[1]. [1]ORD, NHEERL, EPHD, Clinical Research Branch, US EPA, Chapel Hill, NC, [2]TRC, Chapel Hill, NC, and [3]Emory University, Atlanta, GA.

#2637 1:49 **TISSUE DISTRIBUTION OF INHALED MICRO- AND NANO-SIZED CERIUM OXIDE PARTICLES IN RATS: RESULTS FROM A 28-DAY EXPOSURE STUDY.** *F. R. Cassee*[1], L. Geraets[1], J. van Eijkeren[1], *J. D. Schroeter*[2], and A. G. Oomen[1]. [1]National Institute for Public Health and the Environment (RIVM), Bilthoven, Netherlands, and [2]Applied Research Associates, Inc., Raleigh, NC.

#2638 2:08 **COMPONENTS OF COMBUSTION EMISSIONS CAUSING VASCULAR RESPONSES IN MICE.** *J. Mauderly*[1], S. Seilkop[2], *J. McDonald*[1], *A. Lund*[1], and *M. Campen*[3]. [1]Lovelace Respiratory Research Institute, Albuquerque, NM, [2]SKS Consulting Services, Siler City, NC, and [3]University of New Mexico, Albuquerque, NM.

#2639 2:27 **ACUTE PHASE RESPONSE AND METABOLIC SYNDROME BIOMARKERS OF LIBBY ASBESTOS EXPOSURE.** *U. Kodavanti*[1], O. Alzate[2], *J. H. Shannahan*[3], D. Andrews[4], M. Schladweiler[1], *S. Gavett*[1], and W. Winnik[4]. [1]EPHD, NHEERL, US EPA, Research Triangle Park, NC, [2]Systems Proteomic Center, University of North Carolina at Chapel Hill, Chapel Hill, NC, [3]Curriculum in Toxicology, University of North Carolina at Chapel Hill, Chapel Hill, NC, and [4]RCU, US EPA, Research Triangle Park, NC.

Program Description (Continued)

Abstract #

#2640 2:45 **COMPARATIVE INHALATION TOXICITY OF CARBON-NANOMATERIALS (MULTIWALL CARBON NANOTUBES, GRAPHENE, AND CARBON BLACK).** L. Ma-Hock[1], V. Strauss[1], *S. Treumann*[1], W. Wohlleben[2,1], S. Brill[3,1], *K. Wiench*[4], B. van Ravenzwaay[1], and *R. Landsiedel*[1]. [1]Experimental Toxicology and Ecology, BASF SE, Ludwigshafen am Rhein, Germany, [2]Polymer Physics, BASF SE, Ludwigshafen am Rhein, Germany, [3]Occupational Medicine, BASF SE, Ludwigshafen am Rhein, Germany, and [4]Product Safety, BASF SE, Ludwigshafen am Rhein, Germany.

#2641 3:03 **COMPARATIVE STUDY OF BEHAVIORS OF INHALED SM, CE, OR EU IN MICE.** *M. Chiba*[1], A. Shinohara[2,1], T. Matsukawa[1], T. Kumasaka[3], and K. Yokoyama[1]. [1]Epidemiology and Environmental Health, Juntendo University, Tokyo, Japan, [2]Research Institute for Cultural Studies, Seisen University, Tokyo, Japan, and [3]Pathology, Japanese Red Cross Medical Center, Tokyo, Japan.

#2642 3:21 **PLASMA OBTAINED FOLLOWING NITROGEN DIOXIDE OR DIESEL ENGINE EMISSIONS EXPOSURE INDUCES ADHESION MOLECULE EXPRESSION IN HUMAN CORONARY ARTERY ENDOTHELIAL CELLS.** *M. Campen*[1], M. C. Channell[1], *M. Madden*[2], and *R. Devlin*[2]. [1]Pharmaceutical Sciences, University of New Mexico, Albuquerque, NM, and [2]Human Studies Division, US EPA, Chapel Hill, NC.

#2643 3:39 **ACES PHASE 3: 4- AND 13-WEEK RESULTS FROM RATS AND MICE EXPOSED TO 2007-COMPLIANT DIESEL EMISSIONS.** *M. Doyle-Eisele*[1], T. Holmes[1], A. Gigliotti[1], *J. Seagrave*[1], *R. Miller*[2], S. Seilkop[3], *J. Mauderly*[1], and *J. McDonald*[1]. [1]Lovelace, Albuquerque, NM, [2]EPL, Research Triangle Park, NC, and [3]SKS Consulting, Silver City, NC.

#2644 3:57 **AN IMPROVED COCULTURE SYSTEM MIMICKING THE CELLULAR ORGANIZATION AT THE ALVEOLAR BARRIER TO STUDY THE TOXIC POTENCY OF PARTICLES.** A. C. Gutleb[1], S. G. Klein[1,2], T. Serchi[1], L. Hoffmann[1], and *B. Blömeke*[2]. [1]EVA, Centre de Recherche Public-Gabriel Lippmann, Belvaux, Luxembourg, and [2]Environmental Toxicology, University Trier, Trier, Germany.

Wednesday Afternoon, March 14
1:30 PM to 4:15 PM
Room 310

PL

Platform Session: Risk Analysis: New Derivations and Updated Debates

Chairperson(s): *Can Jin, Acea Biosciences, San Diego, CA, and Bruce Fowler, ICF International, Fairfax, VA.*

#2645 1:30 **THE ORIGIN, MAGNITUDE, AND IMPLICATIONS OF DIFFERENCES IN ASBESTOS CANCER RISK ESTIMATES DERIVED USING VARYING PROTOCOLS.** D. Berman. Aeolus, Inc., Albany, CA. Sponsor: *G. Brorby*.

Abstract #

#2646 1:49 **EVALUATION OF DATA FOR A CAUSAL ASSOCIATION BETWEEN FORMALDEHYDE EXPOSURE AND MYELOID OR LYMPHOID MALIGNANCIES.** *J. Rodricks*[1], *R. Gentry*[1], A. Shipp[1], *D. Turnbull*[1], A. Bachand[1], C. Van Landingham[1], R. Irons[2], and R. Albertini[3]. [1]ENVIRON International Corporation, Arlington, VA, [2]Cinpathogen, Inc., Boulder, CO, and [3]University of Vermont, Burlington, VT.

#2647 2:08 **DEVELOPING A HIGH-THROUGHPUT REAL-TIME *IN VITRO* TOXICITY TESTING METHOD FOR HUMAN RISK ASSESSMENT.** *C. Jin*[1], M. Stampfl[1], Y. Abassi[1], X. Wang[1], X. Xu[1], F. Ackah[2], W. Zhang[2], C. Vichaya[3], D. Y. Huang[3], D. W. Kinniburgh[3], and S. Gabos[2]. [1]ACEA Biosciences, Inc, San Diego, CA, [2]Alberta Health and Wellness, Edmonton, AB, Canada, and [3]Department of Physiology and Pharmacology, Alberta Centre for Toxicology, University of Calgary, Calgary, AB, Canada.

#2648 2:27 **TOXICITY TESTING IN THE 21ST CENTURY (TT21C)—GENOTOXICITY AS A TOX-PATHWAY CASE STUDY.** S. Malcomber[1], Y. Adeleye[1], *M. Andersen*[3], M. Batakurki[2], *P. Carmichael*[1], *R. Clewell*[3], M. Davies[1], M. Dent[1], S. Edwards[1], C. Moore[1], S. Ross[3], A. Scott[1], B. Sun[3], S. Tk[2], A. White[1], and S. Windebank[1]. [1]Safety & Environmental Assurance Centre (SEAC), Unilever, Bedford, MK44 1LQ, United Kingdom, [2]SEAC, Hindustan Unilever Research Centre, Bangalore, Bangalore, 560 066, India, and [3]The Hamner Institutes for Health Sciences, Durham, NC.

#2649 2:45 **ENDOGENOUS DNA DAMAGE: CONSIDERATIONS FOR DOSE-RESPONSE AND RISK ASSESSMENT.** *L. H. Pottenger*[1], *J. A. Swenberg*[2], and *J. S. Bus*[1]. [1]The Dow Chemical Company, Midland, MI, and [2]University of North Carolina at Chapel Hill, Chapel Hill, NC.

#2650 3:03 **CHEMICAL TESTING IN 3D CULTURES OF RODENTS AND MEN IMPROVES HUMAN RISK ASSESSMENT.** *E. Fritsche*[1,2], J. Baumann[1], T. Schreiber[1], and K. Gassmann[1]. [1]Toxicology, Leibniz Research Institute of Environmental Medicine, Duesseldorf, Germany, and [2]Clinic of Dermatology, RWTH, Aachen, Germany.

#2651 3:21 **FACTORS INFLUENCING MUTAGENIC MECHANISM OF ACTION DETERMINATIONS FOR ENVIRONMENTAL CHEMICALS.** *D. A. Eastmond*[1], and *B. Sonawane*[2]. [1]University of California, Riverside, CA, and [2]US EPA, Washington, DC.

#2652 3:39 **PBPK/PD MODELING OF KEY EVENTS IN A TOXICITY PATHWAY—IMPLICATIONS FOR DETERMINING POPULATION THRESHOLDS.** *D. R. Juberg*[1], and *P. Price*[2]. [1]Dow AgroSciences, Indianapolis, IN, and [2]The Dow Chemical Company, Midland, MI.

#2653 3:57 **DATABASE DEVELOPMENT AND ANALYSES OF EMERGENCY RESPONSE PLANNING GUIDELINES (ERPGS).** M. H. Sims, M. T. Chu, C. J. Collar, and E. Demchuk. ATSDR/CDC, Atlanta, GA. Sponsor: *B. Fowler*.

Program Description (Continued)

Wednesday Afternoon, March 14
2:45 PM to 3:45 PM
Room 100

E

Exhibitor Hosted Session: Nanotechnology: US-EU Cooperative Research Opportunities

Presented by:
US EPA

In March, US National Nanotechnology Initiative Agencies and the European Commission held a joint Workshop to promote cooperation in environmental, health, and safety research (http://us-eu.org). This session will summarize US and EU Nanotechnology research programs, and seek to establish US-EU Communities of Research in defined areas.

Wednesday Afternoon, March 14
4:00 PM to 5:00 PM
Room 212

Undergraduate Student Meeting

Chairperson(s): *Sue M. Ford, St. John's University, Jamaica, NY.*

Sponsors:
Education Committee
Undergraduate Education Subcommittee
Toxicology Student Association at University of California Berkeley

Undergraduate students attending the meeting 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.

Wednesday Afternoon, March 14
4:30 PM to 6:00 PM
Marriott Marquis Yerba Buena Salon 7

Women in Toxicology Special Interest Group Meeting/ Reception

Wednesday Afternoon, March 14
4:30 PM to 5:50 PM
Room 303

IS

Informational Session: Evolution and Implementation of Combined Chemical Exposure Methods: International Perspectives

Chairperson(s): *Moiz Mumtaz, ATSDR, Atlanta, GA, and Bette Meek, University of Ottawa, Ottawa, ON, Canada.*

Sponsor:
Mixtures Specialty Section

Endorsed by:
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

The global risk assessment community, in response to recognition of the importance of the impact of combined exposure to multiple chemicals and other stressors, has been collaborating to coordinate efficient methods development. Important in these efforts is sharing of international expertise and experience gained in individual countries through global planning, strategic research, and coordinated assessment methodology. These efforts are being led by the World Health Organization/International Programme on Chemical Safety (IPCS), the Organization for Economic Cooperation and Development (OECD), and the International Life Sciences Institute (ILSI). The laws passed by United States and other governments have resulted in federal guidance for combined exposures assessment and joint toxicity assessment of multiple environmental contaminants/stressors. WHO and OECD have developed a framework for assessment of combined exposures with an emphasis on the critical content of problem formulation, the role of predictive tools in grouping of chemicals for consideration, and the importance of explicit delineation of uncertainty and sensitivity for tiered exposure assessment. The European Commission has supported the development of a state of art report for the predictive assessment of the toxicity of combined exposures in a regulatory context. ILSI's Health Environmental Science Institute (HESI) has pursued efforts to study the likelihood of synergism at low dose levels and the application of the threshold of toxicological concern (TTC) in Tier-0 screening approaches. Our expert panel will discuss the evolution of methods, harmonization of efforts of the recent past, and the role of coordinated research in future developments.

Abstract #

#2654 4:30 **EVOLUTION AND IMPLEMENTATION OF COMBINED CHEMICAL EXPOSURES METHODS—INTERNATIONAL PERSPECTIVES.** *M. Mumtaz*[1], *B. Meek*[2], M. Faust[3], and *A. R. Boobis*[4]. [1]Division of Toxicology and Environmental Medicine, CDC ATSDR, Atlanta, GA, [2]University of Ottawa, Ottawa, ON, Canada, [3]Faust & Backhaus Environmental Consulting GbR, Bremen, Germany, and [4]Imperial College, London, United Kingdom.

4:30 **INTRODUCTION.** Moiz Mumtaz

4:35 **MIXTURES TOXICITY ASSESSMENT: A PUBLIC HEALTH PERSPECTIVE.** Moiz Mumtaz

4:50 **EVOLUTION OF THE WHO IPCS FRAMEWORK ON COMBINED EXPOSURES TO MULTIPLE CHEMICALS.** Bette Meek

5:05 **QUANTITATIVE DIFFERENCES BETWEEN ALTERNATIVE CONCEPTS FOR THE PREDICTIVE ASSESSMENTS OF MIXTURE TOXICITY: DO THEY MATTER FOR REGULATORY PURPOSES?** Michael Faust

5:20 **GLOBAL COLLABORATIONS TO ADVANCE COMBINED EXPOSURE ASSESSMENT: HIGHLIGHTS OF ILSI-HESI PROJECTS.** Alan Boobis

5:35 **Q&A.** Panel Discussion

Program Description (Continued)

Abstract #

Wednesday Afternoon, March 14
4:30 PM to 5:50 PM
Room 305

IS

Informational Session: Proposition 65: Twenty-Five Years of Implementing California's Unique and Far-Reaching Law Regulating Organic and Metallic Carcinogens and Developmental/Reproductive Toxins

Chairperson(s): *Linda G. Roberts, Chevron Energy Technology Company, San Ramon, CA, and George V. Alexeeff, Cal/EPA, Oakland, CA.*

Sponsor:
Ethical, Legal, and Social Issues Specialty Section

Endorsed by:
Metals Specialty Section
Northern California Regional Chapter
Reproductive and Developmental Toxicology Specialty Section
Risk Assessment Specialty Section
Women in Toxicology Special Interest Group

Proposition 65 requires the Governor to publish, at least annually, a list of chemicals known to the state to cause cancer or reproductive toxicity. Proposition 65, the Safe Drinking Water and Toxic Enforcement Act of 1986, was enacted as a ballot initiative in November 1986. The Proposition was intended by its authors to protect California citizens and the State's drinking water sources from chemicals known to cause cancer and birth defects or other reproductive harm, and to inform citizens about exposures to such chemicals. The first list of chemicals was developed in 1987. Since then over 530 chemicals have been listed for cancer, including Cr(VI), nickel, and arsenic compounds and many organic and metallic/metalloid carcinogens, and 300 chemicals have been listed for reproductive toxicity. The statute states that "no person in the course of doing business shall knowingly and intentionally expose any individual to a chemical known to the state to cause cancer or reproductive toxicity without first giving a clear and reasonable warning…" The Proposition has resulted in product warnings, reformulations, and the identification of toxic substances in products from candy to jewelry. The law has also resulted in extensive discussions of the nexus between science and the law. The session will discuss this nexus with regard to the law's implementation and enforcement, its strengths and weaknesses, and its influence on science and toxicology. The session will include business and environmental perspectives on what works and what doesn't.

#2655 4:30 **PROPOSITION 65: TWENTY-FIVE YEARS OF IMPLEMENTING CALIFORNIA'S UNIQUE AND FAR-REACHING LAW REGULATING ORGANIC AND METALLIC CARCINOGENS AND DEVELOPMENTAL/REPRODUCTIVE TOXINS.** *G. V. Alexeeff*[1], *L. Roberts*[2], *J. Landolph*[3], *J. Murray*[4], S. Fiering[5], J. Margulies[6], and M. Green[7]. [1]OEHHA, Cal/EPA, Oakland, CA, [2]Chevron Energy Technology Company, Richmond, CA, [3]Norris Comprehensive Cancer Center/Keck School of Medicine/School of Pharmacy, University of Southern California, Los Angeles, CA, [4]Murray & Associates, San Jose, CA, [5]California Attorney General's Office, State of California, Oakland, CA, [6]Fulbright & Jaworski LLP, Los Angeles, CA, and [7]Center for Environmental Health, Oakland, CA.

4:30 **INTRODUCTION.** Linda G. Roberts

4:35 **INTRODUCTION TO PROPOSITION 65: WHY, HOW, WHAT AND WHO?** George V. Alexeeff

4:45 **THE PROPOSITION 65 SCIENCE ADVISORY BOARD.** Joseph R. Landolph, Jr.

4:55 **WHAT WORKS AND WHAT DOESN'T—INDUSTRY PERSPECTIVE.** Jay Murray

Abstract #

5:05 **ENFORCEMENT OF PROPOSITION 65.** Susan Fiering

5:15 **EXAMPLES OF THE INDUSTRY'S EXPERIENCE WITH PROPOSITION 65.** Jeffrey B. Margulies

5:25 **WHAT WORKS AND WHAT DOESN'T—NGO PERSPECTIVE.** Michael Green

5:35 **Q&A.** Panel Discussion

Wednesday Afternoon, March 14
4:30 PM to 5:50 PM
Room 307

EC

Education-Career Development Session: Refining Your Science Communication Skills

Chairperson(s): *Minerva Mercado-Feliciano, NIEHS, Research Triangle Park, NC, and Nancy B. Beck, Office of Management and Budget, Washington, DC.*

Sponsor:
Communications Committee

Endorsed by:
Hispanic Organization of Toxicologists Special Interest Group
Regulatory and Safety Evaluation Specialty Section

Attendee questions during a Science Policy Opportunities Education-Career Development Session at the 2010 SOT Annual Meeting highlighted the importance of effective communication as a key skill needed to succeed in the field of science policy. As scientists progress in their careers and/or transition into the science policy arena or into positions that require interactions with the public sector, effective written and oral communication becomes a vital skill. This session is designed to share information on key aspects and topic areas that are of critical importance when communicating science to fellow scientists and non-scientists alike. We will begin this session by covering the importance of effective communication skills and show students and postdoctoral fellows how to begin building a skill set, thus preparing themselves for careers in science, policy, or public health. From there, tips and advice will be provided on communicating science to the general public, as well as how to communicate science to other scientists—a skill that is often overlooked within academic environments. Rounding out this important information will be delivery of the art of the one-page memo, explaining how to summarize large scientific documents for the benefit of nonscientist decision makers. All the presentations will underscore the necessity of educating a target audience that needs to understand complex scientific concepts and critical issues regarding impacts on stakeholders—taxpayers, shareholders, etc.—in order to facilitate decision-making, but has limited prior background of the science at hand. Time will be allotted for a robust discussion period, including questions and answers directed at all the speakers.

#2656 4:30 **REFINING YOUR SCIENCE COMMUNICATION SKILLS.** *M. Mercado-Feliciano*[1], *T. Pastoor*[2], *G. Gray*[3], *N. Walker*[1], and *N. Beck*[4]. [1]National Toxicology Program, NIEHS, Research Triangle Park, NC, [2]Syngenta, Greensboro, NC, [3]School of Public Health and Health Services, George Washington University, Washington, DC, and [4]Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC.

4:30 **REFINING YOUR SCIENCE COMMUNICATION SKILLS—AN INTRODUCTION.** Minerva Mercado-Feliciano

4:35 **THE IMPORTANCE OF SCIENCE COMMUNICATION.** Timothy P. Pastoor

Program Description (Continued)

4:50 **EFFECTIVE COMMUNICATION: TIPS ON COMMUNICATING SCIENCE TO THE PUBLIC.** George M. Gray

5:05 **SELLING YOUR SCIENCE UP THE FOOD CHAIN: TIPS ON COMMUNICATING YOUR SCIENCE TO UPPER MANAGEMENT.** Nigel J. Walker

5:20 **THE ART OF THE ONE-PAGER.** Nancy B. Beck

5:35 **Q&A.** Panel Discussion

WEDNESDAY EVENING

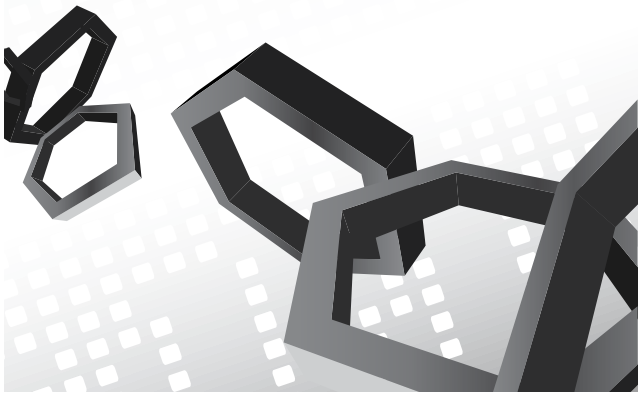
Wednesday Evening, March 14
6:00 PM to 7:30 PM
Marriott Marquis
See room listing below.

Specialty Section Meetings/Receptions: Biotechnology (Yerba Buena Salon 2), Clinical and Translational Toxicology (Walnut Room), Reproductive and Developmental Toxicology (Nob Hill A), Stem Cells (Yerba Buena Salon 4)

Extended Abstract Submission Phase Complete

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. At this time we are pleased that an overwhelming number of abstracts were accepted for the Annual Meeting. These abstracts bring the total number of presentations for the 51st meeting more than 3,000 abstracts.

These abstracts will be presented on Thursday, March 15 along with several dynamic symposia and workshop sessions already scheduled. You can find the poster sessions in the Gateway Ballroom on the Exhibit Level of the convention center. A printed supplement of the accepted abstracts can be picked up at the Registration Desk, and will be available in front of the Gateway Ballroom. The abstracts are not available in the final *Program* but are fully searchable through the SOT mobile app and the online Itinerary Planner.



Program Description (Continued)

Abstract #

THURSDAY MORNING

Thursday Morning, March 15
7:30 AM to 8:50 AM
Room 301

Issues Session: Building for the Future: Strategic Initiatives for the SOT Endowment Fund

Chairperson(s): *Norbert E. Kaminsky, Michigan State University, East Lansing, MI, and Lois D. Lehman-McKeeman, Bristol-Myers Squibb Company, Princeton, NJ.*

An important goal emerging from the Society's strategic initiatives is to continue support of programs and activities that cultivate the long-term interests and professional development of its members. Achieving this goal requires sufficient resources to address specific needs, including adequate research funding and providing the next generation of scientists with the tools and opportunities to advance their science and facilitate harmonization in a global marketplace.

As part of the strategic plan, the SOT Council has directed the SOT Endowment Fund Board to develop aspirational goals that would generate the enthusiasm necessary to grow the Endowment Fund and to initiate new activities that broadly support membership development and engagement.

We invite you to join us for this very informative and important Issues Session. We will discuss the strategic initiatives and plans to create a margin of excellence for supporting the priority needs and advancing the science of toxicology. We also encourage and value membership input and perspective on these efforts, particularly in this critical early stage when plans are being developed.

Thursday Morning, March 15
8:30 AM to 12:00 Noon
Gateway Ballroom

Poster Session: Carcinogenesis

Chairperson(s): *Rachel Novick, ChemRisk, LLC, San Francisco, CA.*

Displayed: *8:30 AM–12:00 Noon*

Author Attended: *8:30 AM–12:00 Noon*

#2657 **Poster Board Number 101**
ROLES OF RAT HEPATOCYTE MALIGNANT TRANSFORMING FACTOR (HMTF) IN RAT LATE-STAGE HEPATOCARCINOGENESIS. *S. Suzuki*[1,2], P. Pitchakarn[1,3], K. Takeshita[1], M. Asamoto[1], S. Takahashi[1], and *T. Shirai*[1]. [1]Experimental Pathology and Tumor Biology, Nagoya City University Graduate School of Medical Sciences, Nagoya, Japan, [2]Pathology Division, Nagoya City East Medical Center, Nagoya, Japan, and [3]Biochemistry, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand.

#2658 **Poster Board Number 102**
IMPACT OF INHALATION EXPOSURE REGIMEN ON THE POTENTIAL OF BENZENE TO INDUCE GENOTOXICITY IN MICE. *C. Palermo*[1], *M. G. Bird*[1], *B. A. Wetmore*[2], D. J. Letinski[1], M. Chen[1], and A. R. Schnatter[1]. [1]ExxonMobil Biomedical Sciences, Annadale, NJ, and [2]The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

Abstract #

#2659 **Poster Board Number 103**
ROLE OF MAMMARY EPITHELIAL AND STROMAL P450 ENZYMES IN THE CLEARANCE AND METABOLIC ACTIVATION OF 7,12-DIMETHYLBENZ(A)ANTHRACENE. L. Yang[1], Y. Yao[1], S. Liu[1], W. Yang[1], *B. Moorthy*[2], *X. Ding*[1], and *J. Gu*[1]. [1]Wadsworth Center, Albany, NY, and [2]Baylor College of Medicine, Houston, TX.

#2660 **Poster Board Number 104**
CARCINOGENESIS STUDY OF TRIMETHYLOLPROPANE TRIACRYLATE IN F344/N RATS AND B6C3F1 MICE. *I. Surh*[1], *D. B. Rao*[2,3], M. Cesta[2], and *R. Chhabra*[1]. [1]Toxicology Branch, Division of National Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, NC, [2]Cellular and Molecular Pathology Branch, Division of National Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, NC, and [3]Integrated Laboratory Systems, Inc., Research Triangle Park, NC.

#2661 **Poster Board Number 105**
DIFFERENTIAL EFFECTS OF CHRONIC INFLAMMATION ON DHPN LUNG CARCINOGENESIS IN F344, WISTAR-HANNOVER AND SD RATS. Y. Nakano[1], N. Hashimoto[1], *M. Yokohira*[1], K. Yamakawa[1], S. Kishi[1], F. Ninomiya[1], K. Saoo[1,2], and K. Imaida[1]. [1]Faculty of Medicine, Kagawa University, Kita-gun, Kagawa, Japan, and [2]Kaisei General Hospital, Sakaide, Kagawa, Japan.

#2662 **Poster Board Number 106**
POTENTIAL CARCINOGENIC TRANSFORMATION OF MYELOID PROGENITOR CELLS WITH FORMALDEHYDE. *L. Fuhrman*, *E. J. Tokar*, and *M. P. Waalkes*. National Toxicology Program Laboratory, DNTP, NIEHS, Research Triangle Park, NC.

#2663 **Poster Board Number 107**
FORMATION OF 7-(2-OXOETHYL)GUANINE FROM LIPID PEROXIDATION AND VINYL CHLORIDE EXPOSURE IN MALE SPRAGUE DAWLEY RATS. *E. Mutlu*[1], Y. Jeong[2], L. Collins[1], *A. Ham*[3], P. Upton[1], G. Hatch[4], D. Winsett[4], P. Evansky[4], and *J. Swenberg*[1]. [1]Department of Environmental Sciences and Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]TERC, Dow Chemical, Midland, MI, [3]Department of Biochemistry, Vanderbilt University School of Medicine, Nashville, TN, and [4]NHEERL, US EPA, Durham, NC.

#2664 **Poster Board Number 108**
ETHANOL PROMOTES HEPATOCARCINOGENESIS IN MICE THROUGH ACTIVATION OF BETA-CATENIN. *M. Ronis*[1,2], K. Mercer[1,2], R. A. Wynne[1,3], *T. M. Badger*[1,3], C. Chandler[1], and L. Hennings[4]. [1]Arkansas Children's Nutrition Center, University of Arkansas for Medical Sciences, Little Rock, AR, [2]Pharmacology & Toxicology, University of Arkansas for Medical Sciences, Little Rock, AR, [3]Physiology & Biophysics, University of Arkansas for Medical Sciences, Little Rock, AR, and [4]Pathology, University of Arkansas for Medical Sciences, Little Rock, AR.

Program Description (Continued)

Abstract #

#2665 **Poster Board Number 109**
DISRUPTION OF AUTOPHAGY PRODUCES REVERSIBLE EVENTS IN THE MALIGNANT TRANSFORMED HUMAN UROTHELIUM-DERIVED CELL LINE UROTSA. *F. Zhao*, *S. M. Wnek*, *A. J. Gandolfi*, and *W. T. Klimecki*. Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

#2666 **Poster Board Number 110**
EVALUATION OF THE UROTHELIAL CYTOTOXICITY OF PULEGONE. *P. Dodmane*[1], M. S. Da Rocha[1], *L. L. Arnold*[1], K. L. Pennington[1], M. M. Anwar[1], B. R. Adams[3], S. V. Taylor[2], T. B. Adams[2], and *S. M. Cohen*[1]. [1]Pathology and Microbiology, University of Nebraska Medical Center, Omaha, NE, [2]Flavor and Extract Manufacturers Association, Washington, DC, and [3]Biochemistry, Virginia Commonwealth University, Richmond, VA.

#2667 **Poster Board Number 111**
EVALUATION OF DIURON'S MODE OF ACTION: *IN VIVO* AND *IN VITRO* APPROACHES. M. S. Da Rocha[1,2], *L. Arnold*[1], K. Pennington[1], M. M. Anwar[1], *M. Battalora*[3], *J. V. De Camargo*[2], and *S. M. Cohen*[1]. [1]Pathology, UNMC, Omaha, NE, [2]Pathology, UNESP, Botucatu, São Paulo, Brazil, and [3]DuPont Crop Protection, Newark, DE.

#2668 **Poster Board Number 112**
GAP JUNCTION ENHANCER INCREASES EFFICACY OF CISPLATIN TO ATTENUATE MAMMARY TUMOR GROWTH. S. N. Shishido, and *T. A. Nguyen*. Diagnostic Medicine/Pathobiology, Kansas State University, Manhattan, KS.

#2669 **Poster Board Number 113**
MODE OF ACTION FOR THE SYNTHETIC PYRETHROID PERMETHRIN-INDUCED MOUSE LUNG TUMORS: EVIDENCE FOR CLARA CELL PROLIFERATION. *T. Yamada*[1], M. Kondo[1], K. Miyata[1], *S. M. Cohen*[2], N. Isobe[1], and S. Kawamura[1]. [1]Environmental Health Science Laboratory, Sumitomo Chem. Co., Ltd., Osaka, Japan, and [2]University of Nebraska Medical Center, Omaha, NE.

#2670 **Poster Board Number 114**
FORMALDEHYDE INDUCES CENTROSOME AMPLIFICATION IN HUMAN LYMPHOBLASTOID TK6 CELLS. *Z. Ji*, J. Bersonda, *M. T. Smith*, and *L. Zhang*. School of Public Health, University of California Berkeley, Berkeley, CA.

#2671 **Poster Board Number 115**
RAPID INDUCTION OF COLONIC ADENOCARCINOMA IN MICE EXPOSED TO BENZO(A)PYRENE AND DEXTRAN SULFATE SODIUM. A. Hakura[1], Y. Seki[1], J. Sonoda[1], S. Hosokawa[1], T. Aoki[1], *A. Suganuma*[1], *W. D. Kerns*[2], and K. Tsukidate[1]. [1]Drug Safety, Eisai Co.,Ltd., Tsukuba, Ibaraki, Japan, and [2]Accellient Partners LLC, Waltham, MA.

Abstract #

#2672 **Poster Board Number 116**
TEMPORAL CHANGES IN GENE EXPRESSION AND CELLULAR RESPONSES AFTER EXPOSURE TO MENADIONE, TERT-BUTYL HYDROPEROXIDE, AND HYDROGEN PEROXIDE IN HEPG2 CELLS. J. Briede, L. Deferme, and J. C. Kleinjans. Toxicogenomics, Maastricht University, Maastricht, Netherlands. Sponsor: *H. van Loveren*.

#2673 **Poster Board Number 117**
MODE OF ACTION (MOA) AND HUMAN RELEVANCE FRAMEWORK (HRF) ANALYSIS FOR FISCHER 344 RAT LEYDIG CELL TUMOURS. *C. Terry*[1], *R. J. Rasoulpour*[2], *M. J. LeBaron*[2], *R. G. Ellis-Hutchings*[2], *B. B. Gollapudi*[2], and *R. Billington*[1]. [1]Dow AgroSciences, Abingdon, United Kingdom, and [2]The Dow Chemical Company, Midland, MI.

#2674 **Poster Board Number 118**
DIETARY ADMINISTRATION OF γ- AND δ-TOCOPHEROL INHIBITS MAMMARY CARCINOGENESIS. *A. K. Smolarek*[1,2], J. So[2], A. Kong[3,5], *K. Reuhl*[1,5], Y. Lin[4,5], W. Shih[4,5], M. Lee[2], C. S. Yang[2,5], and N. Suh[2,5]. [1]Pharmacology and Toxicology, Rutgers, The State University of New Jersey, Piscataway, NJ, [2]Chemical Biology, Rutgers, The State University of New Jersey, Piscataway, NJ, [3]Pharmaceutics, Rutgers, The State University of New Jersey, Piscataway, NJ, [4]Biostatistics, School of Public Health, University of Medicine and Dentistry of New Jersey, New Brunswick, NJ, and [5]The Cancer Institute of New Jersey, New Brunswick, NJ.

#2675 **Poster Board Number 119**
AEROSOL-DELIVERED AKT1 SHRNA USING SPERMINE-BASED POLY(AMINO ESTER) SUPPRESSED LUNG TUMORIGENESIS. *S. Hong*[1], Y. Kim[3], *A. Minai-Tehrani*[1], *S. Park*[1], *J. Kim*[1], J. Shin[1], H. Kim[1], *H. Jiang*[1], and *M. Cho*[1,2]. [1]Laboratory of Toxicology, Seoul National University, Seoul, Republic of Korea, [2]Nano Fusion Technology, Graduate School of Convergence Science and Technology, Seoul National University, Seoul, Republic of Korea, and [3]Agricultural Biotechnology and Research Institute for Agriculture and Life Sciences, Seoul National University, Seoul, Republic of Korea.

#2676 **Poster Board Number 120**
THE COMBINATION OF RALOXIFENE AND GEFITINIB IS SYNERGISTICALLY CYTOTOXIC TOWARD TRIPLE NEGATIVE BREAST CANCER CELLS. S. Taurin, M. Nimick, and *R. J. Rosengren*. Pharmacology & Toxicology, University of Otago, Dunedin, New Zealand.

#2677 **Poster Board Number 121**
FUNCTIONAL PROFILING REVEALS THAT MODULATION OF RAS SIGNALING ALTERS THE TOXICITY OF HYDROQUINONE. *M. North*[1], *J. Shuga*[2], M. Fromowitz[2], V. J. Tandon[1], R. Thomas[3], A. Loguinov[1], I. Gerlovina[3], K. Shannon[4], A. Hubbard[3], *L. Zhang*[2], *M. Smith*[3], and *C. Vulpe*[1]. [1]Nutritional Science and Toxicology, University of California Berkeley, Berkeley, CA, [2]Environmental Health, School of Public Health, University of California Berkeley, Berkeley, CA, [3]Biostatistics, University of California Berkeley, Berkeley, CA, and [4]Pediatrics, University of California San Francisco, San Francisco, CA.

Program Description (Continued)

Abstract #

#2678 **Poster Board Number 122**
JAPANESE QUESTIONNAIRE DATA SURVEY ON PREDICTIVITY FOR NEGATIVE TUMOR OUTCOMES IN TWO-YEAR RAT CARCINOGENICITY STUDIES. S. Hisada, A. Wakata, S. Sasaki, S. Sawada, S. Kudo, E. Wato, T. Kumazawa, K. Moriyama, M. Mishima, Y. Kasahara, N. Kito, K. Inoue, and *K. Nakamura*. Nonclinical Evaluation Subcommittee, Drug Evaluation Committee, Japan Pharmaceutical Manufacturers Association, Tokyo, Japan.

#2679 **Poster Board Number 123**
N-NITROSO COMPOUND EXPOSURE AND RED MEAT INTAKE-ASSOCIATED TRANSCRIPTOMIC PROFILES ARE INDICATIVE OF AN INCREASED RISK FOR COLORECTAL CANCER. D. G. Hebels[1], K. M. Sveje[1], M. C. de Kok[1], M. H. van Herwijnen[1], G. G. Kuhnle[2], L. G. Engels[3], W. G. Mares[3,4], A. A. Masclee[4], J. C. Kleinjans[1], and T. M. de Kok[1]. [1]Toxicogenomics, Maastricht University, Maastricht, Netherlands, [2]Food and Nutritional Sciences, University of Reading, Reading, United Kingdom, [3]Gastroenterology, Orbis Medical Center, Sittard-Geleen, Netherlands, and [4]Internal Medicine, Maastricht University Medical Center, Maastricht, Netherlands. Sponsor: *H. van Loveren*.

#2680 **Poster Board Number 124**
TOXICOLOGICAL IMPLICATIONS OF THE SMOKELESS TOBACCO, GUTHKA. *M. A. Popovech*[1], C. Hoffman[1], S. Doherty-Lyons[1], *J. L. Blum*[1], F. Gany[2], and *J. T. Zelikoff*[1]. [1]Environmental Medicine, New York University School of Medicine, Tuxedo, NY, and [2]Memorial Sloan Kettering, New York, NY.

#2681 **Poster Board Number 125**
MODE OF ACTION AND LACK OF HUMAN HEALTH RELEVANCE OF INCREASED HEPATOCELLULAR ADENOMA IN THE FEMALE HAN WISTAR RAT TREATED WITH ISOPYRAZAM. R. Currie, R. M. Green, J. Wright, and P. Parsons. Toxicology and Health Science, Syngenta, Bracknell, United Kingdom. Sponsor: *R. Peffer*.

#2682 **Poster Board Number 126**
THE APPLICATION OF ORGANELLE LIPIDOMICS COUPLED TO PROTEOMICS (LIPID-LOPIT) FOR DETECTING EARLY CHANGES ASSOCIATED WITH NONGENOTOXIC CARCINOGENICITY. R. Currie[1], Z. Ament[2], J. Wright[1], and J. L. Griffin[2]. [1]Syngenta, Bracknell, United Kingdom, and [2]Department of Biochemistry and Cambridge Systems Biology Centre, University of Cambridge, Cambridge, United Kingdom. Sponsor: *R. Peffer*.

#2683 **Poster Board Number 127**
EXPOSURE TO DIETHYLDITHIOPHOSPHATE (DEDTP), A METABOLITE OF ORGANOPHOSPHOROUS COMPOUNDS, MODIFIES THE DEVELOPMENT OF SKIN TUMORS IN AN ANIMAL MODEL. E. Estrada-Muñiz, M. Flores-Valadés, and *L. Vega*. Toxicology, Cinvestav-IPN, Distrito Federal, DF, Mexico.

Abstract #

#2684 **Poster Board Number 128**
RESVERATROL EXPOSURE ALTERS BENZO(A)PYRENE METABOLIZING ENZYME EXPRESSION, ACTIVITIES AND METABOLITE DISPOSITION IN APC^{MIN} MOUSE MODEL OF COLON CANCER. *A. C. Huderson*, M. S. Niaz, S. E. Adunyah, and *A. Ramesh*. Biochemistry & Cancer Biology, Meharry Medical College, Nashville, TN.

#2685 **Poster Board Number 129**
VINYL ACETATE AND ACETALDEHYDE DOSE-RESPONSE MUTAGENICITY STUDIES AT THETK+\- AND HPRT LOCUS IN HUMAN-DERIVED TK6 CELLS. *R. Budinsky*[1], *B. Gollapudi*[1], R. J. Albertini[2], *R. Valentine*[3], *M. Stavanja*[4], *J. Teeguarden*[6], *R. Fensterheim*[5], *A. Green*[6], and *L. Recio*[7]. [1]The Dow Chemical Company, Dow Center Midland, MI, [2]University of Vermont, Burlington, VT, [3]DuPont Haskell Global Centers for Health and Environmental Sciences, Newark, DE, [4]Celanese International Corporation, Dallas, TX, [5]Vinyl Acetate Council, Washington, DC, [6]Pacific Northwest National Laboratory, Richland, WA, and [7]ILS, Research Triangle Park, NC.

#2686 **Poster Board Number 130**
IMMUNOHISTOCHEMICAL STAINING OF SPONTANEOUS AND CHEMICALLY-INDUCED BRAIN TUMORS IN THE RAT. *J. Hardisty*, and H. Kolenda-Roberts. EPL, Inc., Durham, NC.

#2687 **Poster Board Number 131**
ROLE OF INTESTINAL P450 ENZYMES IN THE METABOLIC ACTIVATION OF THE COLON CARCINOGEN AZOXYMETHANE IN MICE. V. Megaraj, *C. Fang*, *X. Zhou*, *X. Ding*, and *Q. Zhang*. Molecular Toxicology, Wadsworth Center, New York State Department of Health, and School of Public Health, State University of New York at Albany, Albany, NY.

#2688 **Poster Board Number 132**
IDENTIFICATION OF COVALENT BENZO(A) PYRENE-7,8-DIONE-DNA ADDUCTS IN HUMAN LUNG CELLS. M. Huang, I. A. Blair, and *T. M. Penning*. Centers of Excellence in Environmental Toxicology and Cancer Pharmacology, Department of Pharmacology, University of Pennsylvania, Philadelphia, PA.

#2689 **Poster Board Number 133**
METHOD DEVELOPMENT FOR BUTADIENE TRIHYDROXYBUTYL-VALINE GLOBIN ADDUCTS (THB-"FIRE") USING THE "FIRE" PROCEDURE™ S. Carro, Z. Zhenfa, W. Bodnar, L. Collins, and *J. A. Swenberg*. Environmental Sciences and Engineering, University of North Carolina at Chapel Hill, Carrboro, NC.

Program Description (Continued)

Abstract #

#2690 **Poster Board Number 134**
ARE CHEMICAL DISPERSANTS USED IN THE GULF OF MEXICO CYTOTOXIC AND GENOTOXIC TO HUMAN LUNG AND SKIN FIBROBLASTS? J. Wise[1,2], *S. S. Wise*[1,2,3], *H. Xie*[1,2,3], J. Griffitt[4], and *J. P. Wise, Sr.*[1,2,3]. [1]Wise Laboratory of Environmental and Genetic Toxicology, University of Southern Maine, Portland, ME, [2]Maine Center for Toxicology and Environmental Health, University of Southern Maine, Portland, ME, [3]Department of Applied Medical Science, University of Southern Maine, Portland, ME, and [4]Department of Coastal Sciences, University of Southern Mississippi, Ocean Springs, MS.

#2691 **Poster Board Number 135**
THE IARC MONOGRAPHS VOLUME 101: 2-NITROTOLUENE "PROBABLY CARCINOGENIC TO HUMANS" *L. Benbrahim-Tallaa*, R. Baan, Y. Grosse, B. Secretan-Lauby, F. El Ghissassi, V. Bouvard, N. Guha, L. Galichet, and K. Straif. IARC Monographs, IARC, Lyon Cedex 08, France.

#2692 **Poster Board Number 136**
CALORIC-RESTRICTION AND DIET-INDUCED OBESITY EFFECTS IN A/J MOUSE MODEL OF NNK-INDUCED LUNG CANCER. *T. Liberati*[1], M. Randle[1], O. Arum[1], M. Masternak[2], and A. Bartke[1]. [1]Southern Illinois University School of Medicine, Springfield, IL, and [2]University of Central Florida College of Medicine, Orlando, FL.

#2693 **Poster Board Number 137**
MODULATION OF PROSTATE CANCER CELL PROLIFERATION BY FATTY ACIDS AND EFFECTS OF ADIPOCYTE-CONDITIONED MEDIA. P. O. Eser, J. T. Thompson, and *J. P. Vanden Heuvel*. Veterinary and Biomedical Sciences, Pennsylvania State University, University Park, PA.

#2694 **Poster Board Number 138**
A RAT MODEL OF COLON CANCER REVEALS ZONES OF ENHANCEMENT OF TUMOR MULTIPLICITY BY VITAMIN D. A. Irving[1,2], J. Amos-Landgraf[1], L. Plum[1], L. Clipson[1], H. DeLuca[1], and W. Dove[1,2]. [1]University of Wisconsin Madison, Madison, WI, and [2]University of Wisconsin Madison, Molecular & Environmental Toxicology Center, Madison, WI. Sponsor: *C. Jefcoate*.

#2695 **Poster Board Number 139**
DETERMINATION OF MODULATORS OF LOW-DOSE FORMALDEHYDE TOXICITY BY FUNCTIONAL TOXICOGENOMIC SCREENING IN YEAST. *M. North*[1], C. Romero[1,2], A. Loguinov[1], *M. T. Smith*[2], *L. Zhang*[2], and *C. Vulpe*[1]. [1]Nutritional Science and Toxicology, University of California Berkeley, Berkeley, CA, and [2]Environmental Health, School of Public Health, University of California Berkeley, Berkeley, CA.

#2696 **Poster Board Number 140**
COMPARISON OF TAMOXIFEN (TAM)-DNA ADDUCT LEVELS IN UTERINE TISSUE FROM DIFFERENT SPECIES OF MONKEYS AND HUMANS EXPOSED TO TAM. *E. Hernandez Ramon*[1], N. A. Sandoval[1], M. Cline[2], C. E. Wood[2], R. A. Woodward[3], and *M. C. Poirier*[1]. [1]National Cancer Institute, NIH, Bethesda, MD, [2]Department of Pathology, Wake Forest University School of Medicine, Wake Forest, NC, and [3]NICHD, NIH, Poolesville, MD.

Abstract #

#2697 **Poster Board Number 141**
COMPARATIVE EFFECT OF OLIVE AND PALM OILS ON BENZO(A)PYRENE-INDUCED COLON TUMOR DEVELOPMENT IN APC^{MIN} MICE. L. D. Banks, M. S. Niaz, and *A. Ramesh*. Biochemistry & Cancer Biology, Meharry Medical College, Nashville, TN.

#2698 **Poster Board Number 142**
MEASUREMENT OF THE KINETICS OF REACTION OF *CIS*-2-BUTENE-1,4-DIAL WITH GLUTATHIONE USING NMR. *M. B. Phillips*, and *L. A. Peterson*. Medicinal Chemistry, University of Minnesota, Minneapolis, MN.

#2699 **Poster Board Number 143**
EXPOSURE TO NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITORS (NRTIS) INDUCES GENOTOXICITY PERSISTENT FOR UP TO 3 YEARS IN ERYTHROCEBUS PATAS MONKEYS. L. Rivera Torres[1], *M. Poirier*[1], S. Gorjifard[1], *Y. Liu*[1], R. Woodward[2], and *O. Olivero*[1]. [1]National Cancer Institute, Bethesda, MD, and [2]NIH Animal Center, Poolesville, MD.

#2700 **Poster Board Number 144**
ABERRANT METHYLATION AND GENETIC POLYMORPHISMS ARE ASSOCIATED WITH DECREASED EXPRESSIONS OF TUMOR SUPPRESSOR GENE P15 AND P16 IN BENZENE POISONING. C. Xing[1], L. Zhang[1], M. Zheng[1], Z. Zou[2], G. Li[1], X. Liu[3], and Q. Wang[2]. [1]National Institute of Occupational Health and Poison Control, China CDC, Beijing, China, [2]Beijing Institute of Genomics,Chinese Academy of Sciences, Beijing, China, and [3]Feinberg School of Medicine, Northwestern University, Chicago, IL. Sponsor: *B. Zhao*.

#2701 **Poster Board Number 145**
FIN WHALE CELLS ARE MORE RESISTANT TO HEXAVALENT CHROMIUM THAN HUMAN CELLS. C. F. Wise[1,2], *S. S. Wise*[1,2,3], and *J. P. Wise, Sr.*[1,2,3]. [1]Wise Laboratory of Environmental and Genetic Toxicology, University of Southern Maine, Portland, ME, [2]Maine Center for Toxicology and Environmental Health, University of Southern Maine, Portland, ME, and [3]Department of Applied Medical Science, University of Southern Maine, Portland, ME.

#2702 **Poster Board Number 146**
ARSENIC IS CLASTOGENIC AND ANEUGENIC TO PRIMARY HUMAN UROTHELIAL CELLS. *A. L. Holmes*[1,2,3], and *J. P. Wise, Sr.*[1,2,3]. [1]Wise Laboratory of Environmental and Genetic Toxicology, University of Southern Maine, Portland, ME, [2]Maine Center for Toxicology and Environmental Health, University of Southern Maine, Portland, ME, and [3]Department of Applied Medical Science, University of Southern Maine, Portland, ME.

Program Description (Continued)

Abstract #

Thursday Morning, March 15
9:00 AM to 11:45 AM
Room 302

S

Clinical Toxicology from Bedside to the Bench and Back

Symposium Session: Advances in Bridging Nonclinical Cardiovascular Data to the Clinic

Chairperson(s): *Syril Pettit, HESI, Washington, DC, and John Koerner, US FDA, Silver Spring, MD.*

Sponsor:
Cardiovascular Toxicology Specialty Section

Endorsed by:
Clinical and Translational Toxicology Specialty Section

Cardiovascular adverse events remain a significant cause of attrition during drug development as well as postmarket. The availability of translatable animal data that is more predictive and sensitive for clinical outcomes is essential to overcome this public health challenge. This symposium will feature four approaches to generating and assessing the concordance between nonclinical cardiovascular endpoints and clinical outcomes.

#2703 9:00 **ADVANCES IN BRIDGING NONCLINICAL CARDIOVASCULAR DATA TO THE CLINIC.** *S. D. Pettit*. HESI, Washington, DC.

9:00 **INTRODUCTION.** Syril Pettit

#2704 9:05 **THE ABPI-ANIMAL MODEL FRAMEWORK: CONCORDANCE OF DOG CARDIOVASCULAR TELEMETRY PARAMETERS TO SINGLE ASCENDING DOSE TRIALS IN MAN.** L. Ewart[1], D. Gallagher[7], *T. Hammond*[1], D. Leishman[2], N. McMahon[3], W. Suter[6], *J. Valentin*[1], H. Vargas[5], and R. Wallis[4]. [1]AstraZeneca, Macclesfield, United Kingdom, [2]Lilly, Indianapolis, IN, [3]GSK, Hertfordshire, United Kingdom, [4]Pfizer, Groton, CT, [5]Amgen, Thousand Oaks, CA, [6]Novartis, Basel, Switzerland, and [7]Janssen, Beerse, Belgium.

#2705 9:45 **THE ROLE OF PKPD MODELLING IN TRANSLATIONAL RESEARCH IN CARDIOVASCULAR SAFETY.** V. Dubois[1], A. Chain[1], P. van der Graaf[2], D. Leishman[3], D. Gallacher[4], N. McMahon[5], S. Visser[6], M. Danhof[1], and O. Della Pasqua[1,7]. [1]Pharmacology, LACDR/TI-Pharma, Leiden, Zuid-Holland, Netherlands, [2]Pharmacometrics/Global Clinical Pharmacology, Pfizer, Canterbury, United Kingdom, [3]Global Safety Pharmacology, Eli Lilly and Company, Canterbury, IN, [4]Cardiovascular Safety, Johnson&Johnson, Beerse, Belgium, [5]Safety Assessment, GlaxoSmithKline, Ware, United Kingdom, [6]Nonclinical Modelling & Simulation, AstraZeneca, Södertälje, Sweden, and [7]Clinical Pharmacology, Modelling & Simulation, GlaxoSmithKline, Stockley Park, United Kingdom. Sponsor: *S. Pettit*.

#2706 10:25 **CORRELATIONS BETWEEN NONCLINICAL AND CLINICAL QT DATA IN FDA DATABASE.** J. Koerner. Division of Cardiovascular and Renal Products, US FDA, Silver Spring, MD. Sponsor: *S. Pettit*.

#2707 11:05 **ADVANCES IN TRANSLATIONAL BIOMARKER APPLICATIONS TO NONCLINICAL CARDIOVASCULAR SAFETY ASSESSMENT.** B. Berridge. GlaxoSmithKline, Research Triangle Park, NC. Sponsor: *S. Pettit*.

Abstract #

Thursday Morning, March 15
9:00 AM to 11:45 AM
Room 308

S

Symposium Session: Emerging Evidence for Novel Noncholinergic Mechanisms of Organophospate-Induced Neurotoxicity

Chairperson(s): *John H. McDonough, US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD, and Pamela J. Lein, University of California School of Veterinary Medicine, Davis, CA.*

Sponsor:
Neurotoxicology Specialty Section

Endorsed by:
Mechanisms Specialty Section
Occupational and Public Health Specialty Section

Organophosphate (OP) compounds are used as pesticides and in more potent forms are chemical warfare nerve agents that have been used as terrorist weapons. Low-dose, nonlethal exposures to these compounds is known to produce changes in a number of neurobehavioral functions, to include impaired cognitive abilities that are subtle and may be reversible. In contrast, exposure to near-lethal doses of OP nerve agents can produce prolonged seizures that result in overt brain damage and long-term changes in learning, memory, and emotional behavior. With low-dose, nonlethal, exposures the relationships between the OP dose, magnitude of effects, and the impact of repeated exposures over long periods are experimental variables still under active investigation. In the case of lethal nerve agent exposure, the role of noncholinergic factors in modulating the prolonged seizures and the need for improved treatments to counteract these processes is another area of robust investigation. Also, new research into the time- and regional-dependent changes in neuropathology along with the role of neuroinflammatory processes observed in nerve agent exposed animals offers insight into the potential for neuroprotectant treatments to prevent and/or minimize these effects. This symposium will bring together experts in each of these research areas to present their latest findings, identify areas for future work, and stimulate discussion between researchers with these common areas of interest.

#2708 9:00 **EMERGING EVIDENCE FOR NOVEL NONCHOLINERGIC MECHANISMS OF ORGANOPHOSPHATE-INDUCED NEUROTOXICITY.** *J. H. McDonough*. Research Division, US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD.

9:00 **INTRODUCTION.** John McDonough

#2709 9:15 **PARALLEL ANIMAL AND HUMAN RESEARCH IDENTIFY NEUROTOXIC EFFECTS OF OCCUPATIONAL EXPOSURES TO THE ORGANOPHOSPHORUS PESTICIDE CHLORPYRIFOS.** *P. J. Lein*[1], *K. Anger*[2], F. M. Farahat[3], D. S. Rohlman[2], T. M. Farahat[3], and M. R. Bonner[4]. [1]University of California School of Veterinary Medicine, Davis, CA, [2]Oregon Health and Science University, Portland, OR, [3]Menoufia University, Shebin El-Kom, Egypt, and [4]State University of New York at Buffalo, Buffalo, NY.

#2710 9:38 **CHRONIC EXPOSURE TO THE NERVE AGENT VX: PHYSIOLOGICAL, BEHAVIORAL, HISTOPATHOLOGICAL AND NEUROCHEMICAL STUDIES.** E. Bloch-Shilderman, S. Lazar, I. Egoz, R. Brandeis, S. Katalan, R. Sahar, I. Rabinovitz, G. Yaacov, S. Baranes, S. Chapman, N. Allon, and L. Raveh. Pharmacology, Israel Institute for Biological Research, Ness Ziona, Israel. Sponsor: *J. McDonough*.

Program Description (Continued)

Abstract #

#2711 10:01 **SOMAN-INDUCED BRAIN DAMAGE AND NEUROLOGICAL DEFICITS: NEUROINFLAMMATORY DISORDERS AND CHANGES IN BRAIN METABOLISM: CONSEQUENCES FOR THERAPY.** P. Carpentier[1], G. Testylier[1], F. Dhote[1], K. Billon[1], C. Piérard[2], D. Béracochéa[3], P. Filliat[1], L. Barbier[1], and F. Dorandeu[1]. [1]Département de Toxicologie et Risques Chimiques, Institut de Recherche Biomédicale des Armées, La Tronche, France, [2]Département des Environnements Opérationnels, Institut de Recherche Biomédicale des Armées, La Tronche, France, and [3]Centre de Neurosciences Intégratives et Cognitives, Universités de Bordeaux, Talence, France. Sponsor: *J. McDonough*.

#2712 10:24 **TEMPORAL, REGIONAL, AND CELLULAR PROGRESSION OF NEUROINFLAMMATION FOLLOWING ORGANOPHOSPHATE NERVE AGENT-INDUCED STATUS EPILEPTICUS IN RATS.** E. A. Johnson, and R. K. Kan. Research Division, US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD. Sponsor: *J. McDonough*.

#2713 10:46 **NONCHOLINERGIC MECHANISMS IN THE TOXIC EFFECTS OF ORGANOPHOSPHATE POISONING—ATTEMPTS TO DESIGN EFFECTIVE ANTIDOTAL COUNTERMEASURES.** L. Raveh, E. Bloch-Shilderman, and B. A. Weissman. Department of Pharmacology, Israel Institute for Biological Research, Ness Zioan, Israel. Sponsor: *J. McDonough*.

#2714 11:08 **NEUROTOXICOLOGICAL EFFECTS OF EXPOSURE TO ORGANOPHOSPHATE (OP) COMPOUNDS: THE SIMILARITIES AND DIFFERENCES BETWEEN LOW AND HIGH DOSES.** *J. H. McDonough*. Research Division, US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD.

11:30 **PANEL DISCUSSION/Q&A.**

Thursday Morning, March 15
9:00 AM to 11:45 AM
Room 305

Influence of Global Climate Change on Environmental Health Issues

Symposium Session: Emerging Mechanistic Targets in Lung Injury Induced by Combustion-Generated Particles

Chairperson(s): *Marc Fariss, Altria Client Services, Richmond, VA, and Andrew Ghio, US EPA, Chapel Hill, NC.*

Sponsor:
Inhalation and Respiratory Specialty Section

Endorsed by:
Mechanisms Specialty Section
Molecular Biology Specialty Section
Occupational and Public Health Specialty Section

Environmental combustion-generated air pollutants are a global concern, and the adverse effects of such materials on human health, particularly respiratory and cardiovascular health, are firmly established. Despite strong epidemiological evidence linking ambient air pollutants to specific human diseases and general health decline, a significant gap remains in our understanding of precisely how such materials produce nonneoplastic respiratory diseases. This symposium will highlight recent advances in our understanding of the molecular and chemical mechanisms that govern lung and lung cell toxicity by common respirable forms of complex ambient particulate materials originating from the combustion of fossil fuels, wood, or tobacco. Presentations will describe the current understanding of nonneoplastic respiratory diseases induced by combustion-derived particulate matter (PM); the participation of transient receptor potential (TRP) channels in detecting and initiating responses to unique forms of environmental combustion-derived PM to produce acute lung inflammation/injury/remodeling; the role of disrupted cell and mitochondrial iron homeostasis in wood combustion-derived PM toxicity, and the isolation and chemico-physical characterization of insoluble nanosized particles from cigarette smoke condensate including their cytotoxic potential. Attendees of this symposium session will gain up-to-date knowledge of novel cellular processes and PM components that appear to regulate the acute toxicological effects of particulate air pollutants. These effector molecules may represent important targets for future therapeutic strategies to mitigate the adverse impact of inhaled combustion-generated pollutants.

Abstract #

#2715 9:00 **EMERGING MECHANISTIC TARGETS IN LUNG INJURY INDUCED BY COMBUSTION-GENERATED PARTICLES.** *M. W. Fariss*[1], and *A. Ghio*[2]. [1]Altria Client Services, Richmond, VA, and [2]US EPA, Chapel Hill, NC.

9:00 **INTRODUCTION.** Marc Fariss

#2716 9:05 **CURRENT UNDERSTANDING OF NONNEOPLASTIC DISEASE FOLLOWING EXPOSURE TO FOSSIL FUEL AND BIOMASS COMBUSTION EMISSIONS.** *M. I. Gilmour*. Environmental Public Health Division, US EPA, Research Triangle Park, NC.

#2717 9:37 **DIFFERENTIAL ACTIVATION OF TRPA1, V1, AND M8 BY COMBUSTION-DERIVED PM AND PM COMPONENTS: RELATIONSHIP TO LUNG INFLAMMATION AND INJURY.** *C. A. Reilly*. Pharmacology and Toxicology, University of Utah, Salt Lake City, UT.

#2718 10:09 **ROLE OF TRPV4-MEDIATED CALCIUM INFLUX IN DIESEL EXHAUST PARTICLE-INDUCED LUNG TOXICIY.** W. Liedtke. Neurology and Medicine, Duke University, Durham, NC. Sponsor: *M. Fariss*.

#2719 10:41 **WOOD SMOKE PARTICLES SEQUESTER MITOCHONDRIAL IRON RESULTING IN BIOLOGICAL EFFECT.** *A. Ghio*. US EPA, Chapel Hill, NC.

#2720 11:13 **CYTOTOXIC INSOLUBLE NANO-SIZED PARTICLES IN REFERENCE CIGARETTE SMOKE CONDENSATE.** *M. W. Fariss*. Altria Client Services, Richmond, VA.

Program Description (Continued)

Abstract #

Thursday Morning, March 15
9:00 AM to 11:45 AM
Room 304

S

Characterizing Toxic Modes of Action and Pathways to Toxicity

Symposium Session: Realizing the Vision of 21st Century Toxicity Testing: Genetic Approaches to Pathway Analysis

Chairperson(s): *Chris Corton, US EPA, Research Triangle Park, NC, and Lyle Burgoon, US EPA, Durham, NC.*

Sponsor:
Molecular Biology Specialty Section

Endorsed by:
***In Vitro* and Alternative Methods Specialty Section**
Mechanisms Specialty Section

The US National Academy of Science (NAS) report, "Toxicity Testing in the 21st Century," outlined a vision that virtually all routine toxicity testing would be conducted in human cell lines by evaluating cellular responses of toxicity pathway assays using high-throughput tests. Dose-response modeling of perturbations of pathway function would be organized around computational systems biology models of the circuitry underlying each toxicity pathway. Although there is a growing consensus that this vision will one day become reality, the difficult task of linking changes in the expression or modification of components in pathways to toxicity have yet to be fully realized. There is a clear need to better incorporate new and existing genetic tools that can be routinely used by toxicologists allowing relationships between chemical exposure, genetic networks, and phenotypic responses to be better understood. This symposium brings together experts to discuss genetic analysis of pathways that can be generally applied to toxicology and as such will help move us toward realizing the vision of the NAS report. This important topic will begin with a discussion on global approaches to discover genetic targets of disease, drugs, and environmental chemicals by coupling transcript profiling with GWAS. To expand on this information, widely applicable high-throughput approaches to identify gene, pathway, and phenotypic relationships using small inhibitor RNA arrays will be addressed. Final discussions will discuss genetic approaches in vertebrates to discover biomarkers of pathways and gene-chemical interactions applicable to predicting mode of action of cancer and developmental toxicity. The summary provided will bring together the salient findings in the previous talks to highlight bioinformatic NextGen risk assessment approaches that can assist the toxicologist to enable linkages of chemicals, genes/ pathways, and diseases in chemical risk assessment. This topic will appeal to a wide audience interested in the promising approaches for the analysis and use of pathway perturbations in toxicity testing.

#2721	9:00	**REALIZING THE VISION OF 21ST CENTURY TOXICITY TESTING: GENETIC APPROACHES TO PATHWAY ANALYSIS.** *C. Corton*, and *L. Burgoon*. US EPA, Research Triangle Park, NC.
	9:00	**INTRODUCTION.** Chris Corton
#2722	9:05	**A REVERSE ENGINEERING APPROACH TO CONSTRUCTING NETWORKS OF CHEMICAL RESPONSE.** E. Schadt. Pacific Biosciences, Menlo Park, CA. Sponsor: *C. Corton*.
#2723	9:37	**EXPANDING THE SCOPE OF LOSS-OF-FUNCTION GENOMIC SCREENING WITH RNAI CELL MICROARRAYS.** J. Rantala. Oregon Health and Science University, Portland, OR. Sponsor: *C. Corton*.
#2724	10:09	**USE OF PREDICTIVE MARKERS OF CANCER MODE OF ACTION THROUGH INTEGRATION OF GENETICS AND GENOMICS.** *C. Corton*. US EPA, Research Triangle Park, NC.

Abstract #

#2725	10:41	**RAPID *IN VIVO* ASSESSMENT OF CHEMICAL—GENE INTERACTIONS IN EMBRYONIC ZEBRAFISH.** *R. L. Tanguay*, M. T. Simonich, L. Truong, and D. Mandrell. Oregon State University, Corvallis, OR.
#2726	11:13	**MASHING THE DISEASEOME, TOXICOGENOMICS, AND FROZEN PIZZAS: NETWORK SYSTEMS BIOLOGY AND ITS IMPACTS ON NEXGEN RISK ASSESSMENTS.** *L. Burgoon*. US EPA, Research Triangle Park, NC.

Thursday Morning, March 15
9:00 AM to 11:45 AM
Room 303

W

Regulatory Science: Bridging the Gap between Discovery and Product Availability

Workshop Session: Challenges and Opportunities in Evaluating Protein Allergenicity across Biotechnology Industries

Chairperson(s): *Nicola Stagg, Dow AgroSciences LLC, Indianapolis, IN, and Hanan Ghantous, US FDA, Silver Spring, MD.*

Sponsor:
Biotechnology Specialty Section

Endorsed by:
Food Safety Specialty Section
Immunotoxicology Specialty Section

Biotechnology is a field at the cutting-edge of science, using living cells and materials produced by cells to prevent and fight disease, improve food production, and benefit other industries as well, but there are increasing concerns over the allergenicity of biotechnology products that continue to receive increasing attention in public and regulatory domains. These concerns range from the transfer of an existing allergen or cross-reactive protein into another crop or increasing endogenous (existing) allergens in crops to accidental modification of therapeutic proteins resulting in autoimmune reactions to endogenous molecules. This session will provide important information on allergenicity testing requirements and research in the agricultural chemical/biotech sector, pharmaceutical/biopharma sector, and vaccine sector and includes speakers from industry and regulatory. An anticipated outcome is discussion over why allergenicity is a concern, what tools are available to evaluate allergenicity in the different areas of biotechnology, and any challenges we face with this testing.

#2727	9:00	**CHALLENGES AND OPPORTUNITIES IN EVALUATING PROTEIN ALLERGENICITY ACROSS BIOTECHNOLOGY INDUSTRIES.** *N. J. Stagg*[1], *G. Ladics*[2], *K. Hastings*[3], *R. House*[4], and S. Gendel[5]. [1]Human Health Assessment, Dow AgroSciences, Indianapolis, IN, [2]DuPont Agricultural Biotechnology, DuPont, Wilmington, DE, [3]Corporate Regulatory Affairs, sanofi-aventis, Bethesda, MD, [4]DynPort Vaccine Company LLC, Frederick, MD, and [5]Center for Food Safety and Applied Nutrition, US FDA, College Park, MD.
	9:00	**INTRODUCTION.** Nicola Stagg
#2728	9:05	**EXISTING AND EMERGING METHODS AND TECHNIQUES FOR ASSESSING ALLERGENICITY OF GENETICALLY MODIFIED CROPS.** *G. Ladics*. Dupont Agricultural Biotechnology, DuPont, Wilmington, DE.
#2729	9:45	**EVALUATING THE POTENTIAL ALLERGENICITY OF VACCINES.** *R. House*. DynPort Vaccine Company LLC, Frederick, MD.

Program Description (Continued)

Abstract #

#2730 10:25 **FOOD REGULATORY PERSPECTIVE ON EVALUATION OF ALLERGENICITY.** S. Gendel. Center for Food Safety and Applied Nutrition, US FDA, College Park, MD. Sponsor: *N. Stagg*.

#2731 11:05 **ALLERGENICITY RESEARCH IN THE PHARMACEUTICAL/BIOPHARMA SECTOR.** *K. Hastings*. Corporate Regulatory Affairs, sanofi-aventis, Bethesda, MD.

Thursday Morning, March 15
9:00 AM to 11:45 AM
Room 307

W

Workshop Session: Chemical Standardization of Botanical Medicines for Safe and Effective Use As Therapeutic Agents

Chairperson(s): *Madhu Soni, Soni & Associates Inc., Vero Beach, FL, and Brinda Mahadevan, Abbott Laboratories, Abbott Park, IL.*

Sponsor:
Association of Scientists of Indian Origin Special Interest Group

Endorsed by:
American Association of Chinese in Toxicology Special Interest Group
Food Safety Specialty Section
Mixtures Specialty Section
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

Botanical medicines have been used for millennia to cure ailments in traditional societies around the world. According to the World Health Organization (WHO), in Asian and African countries, over three fourths of the population rely on botanical medicines for their primary health care needs. The use of botanical medicines in the developed world is increasingly on the rise with individuals seeking alternate and/or complementary medicine options. The popular belief is that because botanical medicines are derived from natural sources, they are safe and pose no harm when used. However, within the scientific community, botanical medicines are under increased scrutiny due in part to concerns regarding their safety and clinical efficacy. Safety issues often arise from lack of controlled manufacturing conditions, unproven formulations, improper storage, and poor or ineffective quality control measures. In addition, a number of plant materials have been found to be contaminated with toxicological substances, including heavy metals and interfere with the actions of commonly prescribed medications, which has resulted in a number of adverse patient effects. Thus, use of botanical medicines is further confounded with considerable variations in chemical composition, inclusion of known toxic components during the processing, uncertain therapeutic potency, and potential safety issues when used alone or in combination with pharmaceutical agents. In an effort to broaden the understanding of the aforementioned issues pertaining to botanical medicines, the following key aspects will be addressed: the toxicity of botanical medicines; if it's natural, is it necessarily safe; successful scientific strategies that are needed to ensure safe and effective use of botanical medicines; quality and safety issues of botanical medicines; chemical standardization of botanical medicines; and current state and federal regulations affecting this line of therapeutic agents.

#2732 9:00 **CHEMICAL STANDARDIZATION OF BOTANICAL MEDICINES FOR SAFE AND EFFECTIVE USE AS THERAPEUTIC AGENTS.** *M. Soni*[1], and *B. Mahadevan*[2]. [1]Soni & Associates Inc., Vero Beach, FL, and [2]Abbott Quality & Regulatory, Abbott Laboratories, Abbott Park, IL.

9:00 **INTRODUCTION.** Madhu Soni

Abstract #

#2733 9:05 **CHARACTERIZATION AND USE OF HERBAL PREPARATIONS AS TEST ARTICLES IN SAFETY ASSESSMENTS—ANALYTICAL CHALLENGES AND REASONABLE SOLUTIONS.** *C. S. Smith*. National Toxicology Program, National Institute of Environmental Health Science, Research Triangle Park, NC.

#2734 9:37 **PHARMACOPEIAL APPROACHES TO SETTING SPECIFICATIONS FOR ARTICLES OF BOTANICAL ORIGIN.** *N. Sarma*, and G. I. Giancaspro. US Pharmacopeia, Rockville, MD.

#2735 10:09 **INTEGRITY OF A PRODUCT: USE OF VALIDATED METHODS IN ASSESSING THE QUALITY AND SAFETY OF BOTANICALS.** I. Khan. School of Pharmacy's National Center for Natural Products Research, University of Mississippi School of Pharmacy, Oxford, MS. Sponsor: *M. Soni*.

#2736 10:41 **STANDARDIZING SNOWFLAKES: USING TECHNOLOGY TO NORMALIZE NATURE.** C. Hopp. NIH/NCCAM, Bethesda, MD. Sponsor: *M. Soni*.

#2737 11:13 **CHEMICAL STANDARDIZATION OF AN HERBAL FORMULATION AS SAFE AND EFFECTIVE THERAPEUTIC AGENT FOR PARKINSON'S DISEASE—A CASE STUDY.** B. Manyam. Department of Neurology, Penn State University, Hershey, PA. Sponsor: *B. Mahadevan*.

Notes

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THANK YOU

ATTENDEES

On behalf of the 2011–2012 SOT Council, thank you for attending the 2012 SOT Annual Meeting and ToxExpo in San Francisco, California. 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 globally in the world.

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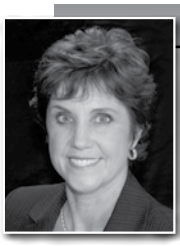

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2010–2011	**Michael P. Holsapple**

*Deceased

Elected and Appointed Committees

Elected Committees

Awards Committee
Serrine S. Lau, Chair (2011–2012), Member (2010–2012)
Robert E. Chapin, Member (2010–2012)
Qin M. Chen, Member (2011–2013)
Harvey J. Clewell III, Member (2011–2013)
David Jacobson Kram, Member (2011–2013)
Ruth A. Roberts, Member (2010–2012)
Mary Ann Smith, Member (2011–2013)
Lois D. Lehman-McKeeman*
Matthew J. Price**

Membership Committee
Robert L. Tanguay, Chair (2011–2012), Member (2009–2012)
Abigail C. Jacobs, Co-Chair (2011–2012), Member (2010–2013)
Lauren M. Aleksunes, Member (2011–2014)
Michael L. Dourson, Member (2011–2014)
Terry Gordon, Member (2009–2012)
Alice R. Villalobos, Member (2010–2013)
Anne Elizabeth Locciasano, Postdoctoral Representative (2011–2012)
Jeremy Kevin Larson, Student Representative (2011–2012)
John C. Lipscomb*
Matthew J. Price**

Nominating Committee
Cheryl Lyn Walker, Chair (2011–2012)
Laura Andrews, Member (2011–2013)
Deborah A. Cory-Slechta, Member (2010–2012)
Vicki L. Dellarco, Member (2010–2012)
Marion F. Ehrich, Member (2011–2013)
Michael F. Hughes, Member (2010–2012)
Jane Ellen Simmons, Member (2011–2013)
Robert S. Skoglund, Member (2011–2013)
Kimberley Anne Treinen, Member (2010–2012)
Michael P. Holsapple*
Shawn Douglas Lamb**

Appointed Committees

Audit Committee
Jeffrey M. Charles, Chair (2011–2012), Member (2007–2012)
David L. Eaton, Co-Chair (2011–2012), Member (2010–2013)
Marion F. Ehrich, Member (2011–2014)
Michael P. Holsapple*
Shawn Douglas Lamb**

Board of Publications
Ivan Rusyn, Chair (2011–2012), Member (2008–2012)
Serrine S. Lau, Co-Chair (2011–2012), Member (2009–2013)
Janice E. Chambers, Member (2010–2014)
Jon C. Cook, Member (2010–2012)
Michael L. Cunningham, *ToxSci* Editor, Auditor (2011–2014)
Douglas A. Keller, Member (2011–2015)
William Slikker Jr.,* *ad hoc* (2011–2012)
Marcia G. Lawson**

Career Resource and Development Committee
Richard Davis Storer, Chair (2011–2012), Member (2009–2012)
Courtney E. W. Sulentic, Co-Chair (2011–2012), Member (2010–2013)
Carmen D. Booker, Member (2010–2014)
Marila Cordeiro-Stone, Member (2009–2012)
Aimen K. Farraj, Member (2010–2013)
Barbara L. F. Kaplan, Member (2010–2013)
Gregory S. Ladics, Member (2011–2014)
Jeffrey S. Moffit, Member (2011–2014)
Vasilis Vasiliou, Member (2009–2012)
Chidozie Joshua Amuzie, Postdoctoral Representative (2011–2012)
Kristina Lynn Blanke, Student Representative (2011–2012)
Donald A. Fox*
Matthew J. Price**

Committee on Diversity Initiatives
Jennifer L. Rayner, Chair (2011–2012), Member (2009–2012)
Erin P. Hines, Co-Chair (2011–2012), Member (2010–2013)
Yolanda Banks Anderson, Member (2009–2012)
Sudheer Reddy Beedanagari, Member (2011–2014)
Rosonald R. Bell, Member (2011–2014)
Nathan J. Cherrington, Member (2009–2012)
Elaine Valerie Knight, Member (2010–2013)
Ofelia A. Olivero, Member (2011–2014)
Leslie Recio, Member (2010–2013)
José E. Manautou, *ad hoc* (2011–2012)
Natalie Johnson, Postdoctoral Representative (2011–2012)
Clarisse Muenyi, Student Representative (2011–2012)
John C. Lipscomb*
Susan Simmons**

Communications Committee
George M. Gray, Chair (2011–2012), Member (2010–2012)
W. Mark Lafranconi, Co-Chair (2011–2012), Member (2011–2013)
Nathan J. Cherrington, Member (2011–2014)
Myrtle A. Davis, Member (2011–2014)
John W. Davis II, Member (2011–2014)
Paul C. Howard, Member (2009–2012)
José E. Manautou, Member (2010–2012)
Jennifer Orme-Zavaleta, Member (2010–2013)
Timothy P. Pastoor, Member (2010–2013)
Ryan Hamilton, Postdoctoral Representative (2011–2012)
Thomas Simones, Student Representative (2011–2012)
Peter L. Goering*
Martha Lindauer**

Communications Subcommittee: Congressional Subcommittee
George B. Corcoran, Chair (2009–2012), Member (2009–2012)
George M. Gray, Member (2009–2012)
Carol J. M. Henry, Member (2010–2012)
Michael P. Holsapple, Member (2010–2012)
Erik R. Janus, Member (2010–2012)
Daland R. Juberg, Member (2009–2012)
W. Mark Lafranconi, Member (2010–2012)
James C. Lamb IV, Member (2010–2012)
Martin Luther Stephens, Member (2010–2012)
Martha Lindauer**

Communications Subcommittee: Toxic Substances Control Act (TSCA) Subcommittee
Daland R. Juberg, Chair (2010–2012), Member (2010–2012)
Dennis J. Devlin, Member (2010–2012)
William H. Farland, Member (2010–2012)
Ronald S. Filler, Member (2010–2012)
Michael A. Gallo, Member (2011–2012)
George M. Gray, Member (2010–2012)
Michael P. Holsapple,* Member (2011–2012)
W. Mark Lafranconi, Member (2010–2012)
James C. Lamb IV, Member (2010–2012)
Nancy J. Rachman, Member (2010–2012)
Robert S. Skoglund, Member (2010–2012)
Martha Lindauer**

* Council Contact
** Staff Liaison
TBD=To be determined

Elected and Appointed Committees (Continued)

Contemporary Concepts in Toxicology (CCT) Conferences Committee
Deborah A. Cory-Slechta, Chair (2009–2012), Member (2008–2012)
Chris Corton, Co-Chair (2011–2012), Member (2010–2013)
Drew A. Badger, Member (2011–2014)
James S. Bus, Member (2010–2013)
Laurie C. Haws, Member (2011–2014)
Timothy Richard Zacharewski, Member (2009–2012)
Michael P. Waalkes*
Clarissa Russell Wilson**

CCT Organizing Committee for Building for Better Decisions: Multiscale Integration of Human Health and Environmental Data Meeting
Lyle Burgoon, Co-Chair (2011–2012), Member (2011–2012)
Robinan Gentry, Co-Chair (2011–2012), Member (2011–2012)
Annie Jarabek, Co-Chair (2011–2012), Member (2011–2012)
Richard Corley, Member (2011–2012)
David de Graaf, Member (2011–2012)
Jeffrey Fisher, Member (2011–2012)
George Daston, Member (2011–2012)
Edward Perkins, Member (2011–2012)
Paul Price, Member (2011–2012)
Glenn Suter, Member (2011–2012)
Bruce Vigon, Member (2011–2012)
Gene Whelan, Member (2011–2012)
Tim Zacharewski, Member (2011–2012)
Mike Waalkes*
David Rosse**
Clarissa Wilson**

CCT Organizing Committee for FutureTox: Building the Road for 21st Century Toxicology and Risk Assessment Practices
Jim Bus, Co-Chair (2011–2012), Member (2011–2012)
Craig Rowlands, Co-Chair (2011–2012), Member (2011–2012)
Kim Boekelheide, Member (2011–2012)
George Daston, Member (2011–2012)
Vicki Dellarco, Member (2011–2012)
Suzanne Fitzpatrick, Member (2011–2012)
Laurie Haws, Member (2011–2012)
Bob Kavlock, Member (2011–2012)
Marty Stephens, Member (2011–2012)
Rusty Thomas, Member (2011–2012)
Ray Tice, Member (2011–2012)
Clarissa Wilson**

CCT Organizing Committee for PPTOX III: Role of Environmental Stressors in the Developmental Origins of Disease
Robert Barouki, Co-Chair (2011–2012)
Philippe Grandjean, Co-Chair (2011–2012)
Peter Gluckman, Member (2011–2012)
Mark Hanson, Member (2011–2012)
Jerrold J. Heindel, Member (2011–2012)
Gérard Lasfargue, Member (2011–2012)
William Slikker Jr.*
Clarissa Russell Wilson**

Continuing Education Committee
Stephen H. Safe, Chair (2011–2012), Member (2009–2012)
J. Craig Rowlands, Co-Chair (2011–2012), Member (2010–2013)
Kathleen Gabrielson, Member (2009–2012)
Hanan N. Ghantous, Member (2010–2013)
Mark E. Hurtt, Member (2011–2014)
Debra L. Laskin, Member (2009–2012)
James Patrick O'Callaghan, Member (2010–2013)
Vishal S. Vaidya, Member (2011–2014)
Tao Wang, Member (2011–2014)
Mayurranjan S. Mitra, Postdoctoral Representative (2011–2012)
Colleen Elizabeth McLoughlin, Graduate Student Representative (2011–2012)
Michael P. Waalkes*
David Rosse**

Council Subcommittee for Non-SOT Meeting, Component, and Global Funding
John B. Morris, Chair (2011–2012), Member (2010–2012)
Peter L. Goering, Member (2009–2012)
Lois D. Lehman-McKeeman, Member (2011–2012)
Michael P. Waalkes, Member (2010–2012)
Marcia G. Lawson*

Disease Prevention Task Force
Thomas W. Kensler, Chair (2010–2012), Member (2009–2012)
Donna L. Mendrick, Co-Chair (2011–2012), Member (2010–2013)
Erica L. Dahl, Member (2009–2012)
Bruce A. Fowler, Member (2010–2013)
Timothy D. Phillips, Member (2011–2014)
Ellen K. Silbergeld, Member (2011–2014)
Dori R. Germolec*
Marcia G. Lawson**

Education Committee
Lorrene A. Buckley, Chair (2011–2012), Member (2009–2012)
Thomas A. Lewandowski, Co-Chair (2011–2012), Member (2010–2013)
Robin C. Guy, Member (2009–2012)
Teresa L. Leavens, Member (2011–2014)
Chudy I. Nduaka, Member (2011–2014)
Jean C. Pfau, Member (2010–2013)
Dana L. Shuey, Member (2011–2014)
Marie M. Bourgeois, Postdoctoral Representative (2011–2012)
Chad Brocker, Graduate Student Representative (2011–2012)
Dori R. Germolec*
Betty Eidemiller**

Education Committee: K–12 Subcommittee
Maureen R. Gwinn, Co-Chair (2011–2012), Member (2009–2012)
Joanna M. Matheson, Co-Chair (2011–2012), Member (2009–2012)
Daniel E. Arrieta, Member (2011–2014)
Therese K. Fick, Member (2011–2014)
Toufan Parman, Member (2011–2013)
Rafael A. Ponce Jr., Member (2011–2013)
Angela Slitt, Member (2011–2013)
Dana L. Shuey, Education Committee Liaison (2011–2012)
Betty Eidemiller**

Education Subcommittee: ToxLearn Work Group
Phil Wexler, Chair (2004–2012), Member (2004–2012)
John H. Duffus, Member (2004–2012)
Tammy R. Dugas, Member (2006–2012)
Sue M. Ford, Member (2006–2012)
Dona J. Huggins, Member (2006–2012)
Michael A. Kamrin, Member (2004–2012)
Sidhartha D. Ray, Member (2011–2012)
Paul Wright, Member (2004–2012)
Lorrene A. Buckley, Education Committee Liaison (2010–2012)
Betty Eidemiller**

Elected and Appointed Committees (Continued)

Education Subcommittee: Undergraduate Education
Sue M. Ford, Chair (2009–2012)
Teresa G. Dodd-Butera, Member (2009–2012)
Wesley G. N. Gray, Member (2009–2012)
Sara Heggland, Member (2009–2012)
Mindy F. Reynolds, Member (2009–2012)
Jean C. Pfau, Education Committee Liaison (2010–2013)
Betty Eidemiller**

Endowment Fund Board
Norbert E. Kaminski, Chair (2011–2012), Member (2007–2012)
Jeff Handler, Co-Chair (2011–2012), Member (2011–2014)
Lawrence R. Curtis, Member (2010–2014)
Michael A. Gallo, Member (2011–2012)
Charlene A. McQueen, Member (2011–2013)
Martin A. Philbert, Member (2010–2012)
Robert G. Tardiff, Member (2009–2013)
Cheryl Lyn Walker, Member (2010–2012)
Kendall B. Wallace, Member (2011–2014)
Jon C. Cook, *Ex-Officio* Member (2011–2012)
Shawn Douglas Lamb, *Ex-Officio* Member (2006–2012)
John B. Morris, *Ex-Officio* Member (2010–2012)
Michael P. Holsapple,* Member (2011–2013)
Clarissa Russell Wilson**

Exhibitor Liaison Working Group
Cyndi Bono, Member (2009–2012)
Lyric Boyle, Member (2011–2014)
Deborah Curry, Member (2011–2013)
Jay Gizzi, Member (2009–2012)
Brent Kovach, Member (2011–2014)
John B. Morris*
Liz Kasabian**

Finance Committee
John B. Morris,* Chair (2011–2012), Member (2010–2013)
Jon C. Cook, Member (2010–2012)
John DiGiovanni, Member (2009–2012)
Craig Marcus, Member (2010–2013)
William Slikker Jr., Member (2011–2012)
Karen L. Steinmetz, Member (2011–2014)
Clarissa Russell Wilson**

Government Liaison Groups

ATSDR/NCEH/CDC
Peter L. Goering,* Chair (2010–2012), Member (2010–2012)
John C. Lipscomb, Member (2011–2012)
Judith T. Zelikoff, Member (2011–2012)
Moiz Mumtaz, Agency Contact
John S. Wheeler, Agency Contact
Martha Lindauer**

EPA
John B. Morris,* Chair (2011–2012), Member (2010–2012)
Matthew S. Bogdanffy, Member (2010–2012)
Lawrence R. Curtis, Member (2010–2012)
Lois D. Lehman-McKeeman, Member (2011–2012)
Harold Zenick, Agency Contact
Martha Lindauer**

FDA/NCTR
Jon C. Cook,* Chair (2011–2012), Member (2010–2012)
Suzanne Compton Fitzpatrick, Agancy Contact (2011–2012)
Dori R. Germolec, Member (2011–2012)
Michael P. Holsapple, Member (2010–2012)
Michael P. Waalkes, Member (2010–2012)
Margaret Ann Miller, Agency Contact
Martha Lindauer**

NICHD
Judith T. Zelikoff,* Chair (2011–2012), Member (2011–2012)
Susan J. Borghoff, Co-Chair (2010–2012), Member (2010–2012)
Michael P. Holsapple, Member (2010–2012)
Donald R. Mattison, Agency Contact (2010–2012), Member (2010–2012)
Lisa Kaeser, Agency Contact
Martha Lindauer**

NIEHS
Donald A. Fox,* Chair (2011–2012), Member (2010–2012)
Jon C. Cook, Member (2010–2012)
Lois D. Lehman-McKeeman, Member (2011–2012)
Cheryl Lyn Walker, Member (2010–2012)
John M. Balbus, Agency Contact
Christopher P. Weis, Agency Contact
Martha Lindauer**

NIOSH
Michael P. Holsapple,* Chair (2011–2012), Member (2011–2012)
Lawrence R. Curtis, Member (2010–2012)
Peter L. Goering, Member (2010–2012)
Judith T. Zelikoff, Member (2011–2012)
Vincent Castranova, Agency Contact
Martha Lindauer**

Global Strategy Task Force
Ruth A. Roberts, Chair (2009–2012), Member (2010–2012)
Silvia B. M. Barros, Member (2009–2012)
Kok Wah Hew, Member (2009–2012)
Denise Robinson Gravatt, Member (2009–2012)
Tao Wang, American Association of Chinese in Toxicology (2010–2012)
S. Satheesh Anand, Association of Scientists of Indian Origin (2009–2012)
Betzabet Quintanilla-Vega, Hispanic Organization of Toxicologists (2009–2012)
Ji-Eun Lee, Korean Toxicologists Association in America (2009–2012)
Anthony M. Ndifor, Toxicologists of African Origin (2009–2012)
Laura Andrews, Women in Toxicology (2009–2012)
Jon C. Cook*
Shawn Douglas Lamb**

Graduate Student Leadership Committee (GSLC) Executive Board
Jessica R. Placido, Chair (2011–2012), Member (2010–2012)
Kevin M. Beggs, Secretary (2011–2012), Member (2011–2012)
Tammy Lynn Palenski, Member (2011–2012)
Senthilkumar Perumal Kuppusamy, Member (2011–2012)
Thomas Simones, Member (2010–2012)
Donald A. Fox*
David Rosse**

* Council Contact
** Staff Liaison
TBD=To be determined

Elected and Appointed Committees (Continued)

Graduate Student Leadership Committee (GSLC)
Kevin M. Beggs, GSLC Secretary (2011–2012), Member (2011–2012), Michigan (2010–2012)
Jenna Benson, Immunotoxicology (2011–2012)
Kristina Blanke, Midwest (2011–2012)
Miyuki Breen, Biological Modeling (2011–2012)
Chad Brocker, Mountain West (2011–2012)
Christopher M. Carosino, Inhalation and Respiratory (2011–2012)
Weimin Chen, American Association of Chinese in Toxicology (2011–2012)
Justin A. Colacino, Stem Cells (2011–2012)
Azita K. Cuevas, Hispanic Organization of Toxicologists (2011–2012)
Brenna Montague Flannery, Food Safety (2011–2012)
Brandon D. Gaytan, Northern California (2011–2012)
Britton C. Goodale, Molecular Biology (2011–2012)
Jessica C. Graham, Carcinogenesis (2011–2012)
Jennifer Leigh Head, Women in Toxicology (2010–2012)
Nicholas Heger, Reproductive and Developmental Toxicology (2010–2012)
Kimberly N. Herman, North Carolina (2011–2012)
Sridhar Jaligama, *In Vitro* and Alternative Methods (2011–2012)
Jong Sung Kim, Korean Toxicologists Association in America (2011–2012)
Jim John Kleinedler, Cardiovascular Toxicology (2011–2012)
Senthilkumar Perumal Kuppusamy, GSLC Member (2011–2012)
Sarah Elizabeth Lacher, Ethical, Legal, & Social Issues (2010–2012)
Greg Landry, South Central (2011–2012)
Jeremy K. Larson, Biotechnology (2011–2012)
Lydia Marie Louis, Occupational and Public Health (2011–2012)
Jingtao Lu, Comparative and Veterinary (2010–2012)
Colleen Elizabeth McLoughlin, National Capital Area (2010–2012)
Marcy L. McNamara, Regulatory and Safety Evaluation (2011–2012)
Arpit Mehta, Allegheny-Erie (2010–2012)
Clarisse S. Muenyi, Toxicologists of African Origin (2011–2012)
Tammy Lynn Palenski, GSLC Member (2011–2012)
Jessica R. Placido, GSLC Chair (2011–2012), Member (2010–2012)
Amelia Romoser, Lone Star (2011–2012)
Gayatri Sankaran, Dermal Toxicology (2011–2012)
Robin Helene Schmidt, Ohio Valley (2011–2012)
Justin Schwartz, Southeastern (2011–2012)
Thomas Simones, GSLC Member (2010–2012)
Sarah Y. Skolness, Northland (2010–2012)
Rebecca L. Smathers, Mechanisms (2011–2012)
Parrisa S. Solaimani, Southern California (2010–2012)
Sandeep Sreevalsan, Association of Scientists of Indian Origin (2011–2012)
Rachel Tanos, Drug Discovery Toxicology (2011–2012)
Lisa Truong, Nanotoxicology (2011–2012)
Chad S. Weldy, Pacific Northwest (2010–2012)
David Williams, Central States (2011–2012)
Sandra S. Wise, Metals (2010–2012)
Donald A. Fox*
David Rosse**

Graduate Student Leadership Committee (GSLC) Communications Subcommittee
Thomas Simones, Chair (2011–2012)
Lydia Marie Louis, Secretary (2011–2012)

Graduate Student Leadership Committee (GSLC) Professional Development Subcommittee
Senthilkumar Perumal Kuppusamy, Chair (2011–2012)
Sarah Y. Skolness, Secretary (2011–2012)

Graduate Student Leadership Committee (GSLC) Programming Subcommittee
Tammy Lynn Elmergreen, Chair (2011–2012)
Sarah Elizabeth Lacher, Secretary (2011–2012)

Historian
Hanspeter R. Witschi, (2010–2013)
Peter L. Goering*
Clarissa Russell Wilson**

Nominating Group for Honorary Members
Michael P. Holsapple,* Chair (2011–2012), Member (2011–2012)
William Slikker Jr., Member (2011–2012)
Cheryl Lyn Walker, Member (2011–2012)
Matthew J. Price**

Postdoctoral Assembly (PDA) Executive Board
Michele La Merrill, Chair (2011–2012), Member (2010–2012)
Enrique Fuentes-Mattei, Vice Chair (2011–2012), Member (2011–2012)
Ebany J. Martinez-Finley, Secretary (2011–2013)
Marie Chantale Fortin, Treasurer (2011–2012)
Larissa Williams, Councilor (2011–2012)
Michael P. Waalkes*
Susan Simmons**

Postdoctoral Assembly (PDA) Representatives

Regional Chapters
Allegheny-Erie: Phoebe Stapleton (2011–2012)
Central States: Julia Yue Cui (2011–2012)
Lake Ontario: TBD
Lone Star: Gayathri Chadalapaka (2011–2012)
Michigan: Schuyler Todd Pike (2011–2012)
Mid-Atlantic: Jason Blum (2011–2012)
Midwest: TBD
Mountain West: Samantha Whitman (2011–2012)
National Capital Area: Linnzi Wright (2011–2012)
North Carolina: Christina Marie Powers (2011–2012)
Northeast: Courtney Kozul-Horvath (2011–2012)
Northern California: Matthew North (2011–2012)
Northland: TBD
Ohio Valley: Jing Liu (2011–2012)
Pacific Northwest: Wesley Edward Smith (2011–2012)
South Central: Ryan Hamilton (2011–2012)
Southeastern: Marie M. Bourgeois (2011–2012)
Southern California: David J. Castro (2011–2012)

Special Interest Groups
American Association of Chinese in Toxicology: Xun Zhang (2011–2013)
Association of Scientists of Indian Origin: Sheetal Ashok Thakur (2011–2012)
Hispanic Organization of Toxicologists: Jorge G. Muñiz Ortiz (2011–2012)
Korean Toxicologists Association in America: TBD
Toxicologists of African Origin: TBD
Women in Toxicology: Kristy Kutanzi (2011–2012)

Specialty Sections
Biological Modeling: Susie Ritger-Crowell (2011–2012)
Biotechnology: Fanny Casado-Pena (2011–2012)
Carcinogenesis: Zhengyu Yin (2011–2012)
Cardiovascular Toxicology: Mayurranjan S. Mitra (2011–2012)
Clinical and Translational Toxicology: TBD
Comparative and Veterinary: Yogesh Saini (2011–2012)
Dermal Toxicology: Lauren Mordasky-Markell (2011–2012)
Drug Discovery Toxicology: Li Zhan (2011–2012)
Ethical, Legal, and Social Issues: Melinda Prucha (2011–2012)
Food Safety: Natalie M. Johnson (2011–2012)
Immunotoxicology: Teri Alyson Girtsman (2011–2012)
In Vitro and Alternative Methods: Prajakta P Albrecht (2011–2012)
Inhalation and Respiratory: Patti C. Zeidler-Erdely (2011–2012)
Mechanisms: Tamara Tal (2011–2012)
Medical Device: TBD

Elected and Appointed Committees (Continued)

Metals: Rachel Person (2011–2012)
Mixtures: Xianglu Han (2011–2012)
Molecular Biology: Cassandra Deering Rice (2011–2012)
Nanotoxicology: Leshuai Wu Zhang (2011–2012)
Neurotoxicology: TBD
Occupational and Public Health: David Taylor Szabo (2011–2012)
Ocular Toxicology: TBD
Regulatory and Safety Evaluation: Michael Christopher Boyle (2011–2012)
Reproductive and Developmental Toxicology: Wei Wang (2011–2012)
Risk Assessment: Anne Elizabeth Loccisano (2011–2012)
Stem Cells: Amy Skinner (2011–2012)
Toxicologic and Exploratory Pathology: Chidozie Joshua Amuzie (2011–2012)

Professional Needs Assessment Task Force
Mary Beth Genter, Chair (2010–2012), Member (2009–2012)
Gary P. Carlson, Co-Chair (2011–2012), Member (2010–2012)
Betty Eidemiller, Data Task Force Liaison (2009–2012)
Thomas T. Kawabata, Member (2011–2012)
James A. Popp, Member (2009–2012)
Timothy P. Reilly, Member (2011–2012)
Mari S. Stavanja, Member (2010–2012)
J. Kevin Kerzee, *ad hoc* (2011–2012)
Michael P. Waalkes*
Marcia G. Lawson**

Job Market Survey Subcommittee
J. Kevin Kerzee, Chair (2011–2012), Member (2010–2012)†
Mary Beth Genter, Member (2010–2012)†
James A. Popp, Member (2010–2012)†
Richard Davis Storer, Member (2010–2012)‡
Vasilis Vasiliou, Member (2010–2012)‡
Betty Eidemiller, Data Task Force Liaison (2011–2012)
Marcia G. Lawson**

†*Representatives from the Professional Needs Assessment Task Force*
‡*Representatives from the Career Resource and Development Committee*

Recognition Working Group
Jon C. Cook, Member (2011–2012)
Donald A. Fox, Member (2011–2012)
John C. Lipscomb, Member (2011–2012)
William Slikker Jr., Member (2011–2012)
Judith T. Zelikoff, Member (2011–2012)
Martha Lindauer**

Research Funding Committee
Nancy I. Kerkvliet, Chair (2010–2012), Member (2009–2012)
David C. Dorman, Co-Chair (2011–2012), Member (2011–2014)
Michael Aschner, Member (2010–2013)
Jonathan A. Doorn, Member (2009–2012)
Robert A. Roth, Member (2011–2014)
Hollie I. Swanson, Member (2010–2013)
Donald A. Fox*
Martha Lindauer**

Scientific Liaison Task Force
David G. Kaufman, Chair (2010–2012), Member (2009–2012)
Thomas B. Knudsen, Co-Chair (2011–2012), Member (2011–2012)
John M. DeSesso, Member (2010–2014)
Kenneth L. Hastings, Member (2010–2013)
Qiang Ma, Member (2010–2013)
Dennis J. Naas, Member (2010–2012)
Paul B. Watkins, Member (2011–2014)
Jeffrey I. Everitt, *ad hoc* (2008–2012)
Lois D. Lehman-McKeeman*
Marcia G. Lawson**

Scientific Program Committee
William Slikker Jr.,* Chair (2011–2012), Member (2010–2012)
Lois D. Lehman-McKeeman, Co-Chair (2011–2012), Member (2011–2012)
Leigh Ann Burns Naas, Member (2009–2013)
Michael J. Carvan III, Member (2011–2015)
Paul M. D. Foster, Member (2009–2013)
B. Bhaskar Gollapudi, Member (2011–2015)
Annie M. Jarabek, Member (2009–2013)
Abby A. Li, Member (2010–2014)
Terrence J. Monks, Member (2008–2012)
Richard S. Pollenz, Member (2008–2012)
David Ross, Member (2011–2015)
James L. Stevens, Member (2010–2014)
David B. Warheit, Member (2009–2012)
Peter K. Working, Member (2010–2014)
Nichelle Sankey**

SOT Liaison Representatives

American Association for the Advancement of Science (AAAS) Representative
Yvonne P. Dragan, Member (2011–2014)

Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC) Board of Trustees Representative
Loren D. Koller

XIIth International Congress of Toxicology (ICTXII) Representative
Michael P. Holsapple*

International Union of Toxicology (IUTOX) Councilors
Jon C. Cook,* Member (2010–2013)
Jay I. Goodman, Member (2010–2013)
William Slikker Jr., Member (2010–2013)
Cheryl Lyn Walker, Member (2007–2013)
Michael P. Holsapple, Member (2010–2013)
Shawn Douglas Lamb**

IUTOX Toxicologist Recognition Task Force
Janis E. Hulla, Member (2011–2012)
John A. Wisler, Member (2011–2012)

ToXchange Task Force
Robert S. DeWoskin, Chair (2011–2012)
Sarah Campion, Member (2011–2012)
Betina J. Lew, Member (2011–2012)
Anne Elizabeth Loccisano, Member (2011–2012)
Peyton Myers, Member (2011–2012)
Jessica R. Placido, Member (2011–2012)
Dori R. Germolec*
Matthew J. Price**

Regional Chapter—Officers

Allegheny-Erie (67*)
Sachin S. Devi, President
Aaron Barchowsky, Vice President
Timothy Nurkiewicz, President-Elect
Robin Gandley, Secretary
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Meagan B. Myers, Councilor
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Greg Landry, Student Representative

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Justin Schwartz, Student Representative

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Vince R. Torti, Vice President-Elect
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Jacob Jabbour, Councilor
Aida I. Sacaan, Councilor
David J. Castro, Postdoctoral Representative
Parrisa S. Solaimani, Student Representative

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Michelle J. Horner, Member
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Yi Yang, Secretary
Jiaqin (Jack) Yao, Treasurer
Jia Sheng Wang, Past President
Lu Cai, Councilor
Tim Tak Lam, Councilor
Tao Wang, Councilor
Xun Zhang, Postdoctoral Representative
Weimin Chen, Student Representative

Association of Scientists of Indian Origin (163*)
Vinayak Srinivasan, President
Saryu Goel, Vice President
S. Satheesh Anand, Vice President-Elect
Sachin S. Devi, Secretary/Treasurer
Binu K. Philip, Past President, Councilor
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Beby Jayaram, Councilor
Anumantha G. Kanthasamy, Councilor
Vikrant Vijay, Councilor
Sheetal Ashok Thakur, Postdoctoral Representative
Sandeep Sreevalsan, Student Representative

Hispanic Organization of Toxicologists (105*)
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Leslie Recio, Vice President
Minerva Mercado Feliciano, Secretary
Sergio Alex Villalobos, Treasurer
Pedro L. Del Valle, Past President
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Ranulfo Lemus Olalde, Councilor
Betina J. Lew, Councilor
Maureen McConnell, Councilor
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Azita K. Cuevas, Student Representative

Korean Toxicologists Association in America (54*)
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Christopher J. Choi, Secretary/Treasurer
Woon-Gye Chung, Past President, Councilor
Jin Ho Chung, Councilor
Jong Sung Kim, Student Representative

Toxicologists of African Origin (84*)
Irene M. Abraham, President
Sakina E. Eltom, Vice President
Kristini Miles, Secretary/Treasurer
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Rosonald R. Bell, Councilor
Eunice Musvasva, Councilor
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Women in Toxicology (556*)
Brinda Mahadevan, President
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Prathibha S. Rao, Vice President
Deborah E. Keil, Secretary/Treasurer
Suzanne Compton Fitzpatrick, Past President, Councilor
Sharmilee P. Sawant, Councilor
Tao Wang, Councilor
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Jennifer Leigh Head, Student Representative

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Pedro L. Del Valle, Co-Chair
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Kristina D. Chadwick, Member
Christopher J. Choi, Member
Sakina E. Eltom, Member
James H. Kim, Member
Brinda Mahadevan, Member
Binu K. Philip, Member
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Tao Wang, Member
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Specialty Section—Officers

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Biotechnology (179*)
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Jim John Kleinedler III, Student Representative

Clinical and Translational Toxicology (New)
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Drug Discovery Toxicology (382*)
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Rachel Tanos, Student Representative

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In Vitro and Alternative Methods (283*)
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Janet B. Clarke, Member
Michael L. Dourson, Member
Elaine M. Faustman, Member
José E. Manautou, Member
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Society of Toxicology Awards and Honors

SOT Honor Descriptions

Honorary Membership

The Society of Toxicology recognizes non-members who embody outstanding and sustained achievements in the field of toxicology with Honorary Membership. Candidates are nominated by two Full or Associate members of the Society. Seconding letters and information regarding career achievements in toxicology should accompany the nomination. A two-thirds vote of Council determines recipients, with not more than two Honorary Members elected during any one term of Council. Nominations should be sent to SOT Headquarters by October 9.

Inductees

1962 Eugene M. K. Geiling*
1962 W. F. Von Oettingen*
1962 Torald H. Sollman*
1963 Ethel Browning*
1966 R. Tecwyn Williams*
1976 Norton Nelson*
1982 George H. Hitchings*
1986 Bernard B. Brodie*
1986 Herbert Remmer*
1991 Hyman J. Zimmerman*
1994 Ronald W. Estabrook
1994 Wendell W. Weber
1995 Gertrude B. Elion*
1995 Charles S. Lieber*
1996 Sten G. Orrenius
1996 Dennis Parke*
1997 John E. Casida
1997 Roger W. Russell*
1998 Jud Coon
1998 Michel Mercier
1999 William O. Robertson
1999 Takashi Sugimura
2000 Findlay Russell
2001 Herbert Needleman
2007 Mario Molina
2008 Lee Hartwell
2008 H. Robert Horvitz
2009 Gilbert S. Omenn
2009 Sir John E. Walker
2010 Sir Philip Cohen
2010 Ferid Murad
2011 William C. Hays
2011 Frances Oldham Kelsey
2012 Frank J. Gonzalez
2012 Leroy Hood

Indicates SOT Awards

*Deceased

Awards Descriptions

Achievement Award

The Achievement Award is presented to a member of the Society of Toxicology who has less than 15 years experience since obtaining his/her highest earned degree (in the year of the SOT Annual Meeting) made significant contributions to toxicology. This award consists of a plaque and a cash stipend.

Award Recipients

1967 Gabriel L. Plaa*
1968 Allan H. Conney
1969 Samuel S. Epstein
1970 Sheldon D. Murphy*
1971 Yves Alarie
1972 Robert L. Dixon*
1974 Morris F. Cranmer
1975 Ian C. Munro*
1976 Curtis D. Klaassen
1977 James E. Gibson
1978 Raymond D. Harbison
1979 Michael R. Boyd
1980 Philip G. Watanabe*
1982 Frederick P. Guengerich
1984 Melvin E. Andersen
1985 Alan R. Buckpitt
1986 Sam Kacew
1987 James S. Bus
1988 Jeanne M. Manson
1989 James P. Kehrer
1990 Michael P. Waalkes
1991 Debra Lynn Laskin
1992 Michael P. Holsapple
1993 David L. Eaton
1994 James L. Stevens
1995 Lucio G. Costa
1996 Kenneth S. Ramos
1997 Kevin E. Driscoll
1998 Rick G. Schnellmann
1999 Michel Charbonneau
2000 Christopher Bradfield
2001 Martin A. Philbert
2002 Ruth A. Roberts
2003 Lois D. Lehman-McKeeman
2004 David C. Dorman
2006 José E. Manautou
2007 Jeffrey M. Peters
2008 Ivan Rusyn
2009 Russell S. Thomas
2010 Gary W. Miller
2011 Nathan Cherrington
2012 Donna D. Zhang

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 cash stipend.

Award Recipients

1980 Allan H. Conney
1981 Gabriel L. Plaa*
1982 Gary M. Williams
1983 David P. Rall*
1984 Tibor Balasz
1985 Frederick Coulston*
1986 Gerrit Johannes Van Esch
1987 John P. Frawley*
1988 Kundan S. Khera*
1989 Richard H. Adamson
1990 Harold C. Grice
1991 Bernard A. Schwetz
1992 Roger O. McClellan
1993 Thomas W. Clarkson
1994 Bruce Ames
1995 Emil A. Pfitzer*
1996 John F. Rosen
1998 Helmut Alfred Greim
2000 Carole A. Kimmel and Janardan K. Reddy
2001 Samuel M. Cohen
2002 Dennis Paustenbach
2003 Michael L. Dourson
2004 Melvin E. Andersen
2005 Rory B. Conolly
2006 Kathryn R. Mahaffey*
2007 Harvey J. Clewell
2008 Vicki Dellarco
2009 Michael Bolger
2010 Edward V. Ohanian
2011 Bette Meek
2012 Joe L. Mauderly

Best Postdoctoral Publication Awards

The Best Postdoctoral Publication Awards recognize talented postdoctoral researchers who have recently published exceptional papers in the field of toxicology. Applications are reviewed by the Postdoctoral Assembly Board and outside reviewers with appropriate scientific expertise. The research reported in the paper must have been conducted while the applicant was engaged in a postdoctoral research position. The applicant will be the first author on a peer-reviewed paper published online or in print, or in press, in the preceding interval of June 1, 2010, and September 30, 2011. The review process follows NIH conflict of interest, confidentiality, and nondisclosure rules.

Award Recipients

2007 Nadine Dragin
Kristen Mitchell
Drobna Zuzana
2008 Joshua P. Gray
Christie M. Sayes
Khristy J. Thompson
2009 Jeffrey W. Card
Kembra Howdeshell
Lewis Zhichang Shi
2010 Bret F. Bessac
Manabu Nukaya
Nicholas Radio
2011 Dieldrich S. Bermudez
Joshua A. Harrill
Jordan Ned Smith
2012 Maryse Lemaire
Xuefeng Ren
Nisha S. Sipes

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 cash stipend. (This award was formerly known as the Frank R. Blood Award from 1974–1994.)

Best Paper in *Toxicological Sciences*

(formerly published as Fundamental and Applied Toxicology)

Award Recipients

1995 J. L. Larson, D. C. Wolf, B. E. Butterworth
1995 M. I. Luster, C. Portier, D. G. Pait, G. J. Rosenthal, D. R. Germolec, E. Corsini, B. L. Blaylock, P. Pollock, Y. Kouchi, W. Craig, K. L. White, A. E. Munson, C. E. Comment
1996 B. C. Allen, R. J. Kavlock, C. A. Kimmel, E. M. Faustman
1997 F. L. Fort, H. Ando, T. Suzuki, M. Yamamoto, T. Hamashima, S. Sato, T. Kitazaki, M. C. Matony, G. D. Hodgen
1998 D. D. Parrish, M. J. Schlosser, J. C. Kapeghian, V. M. Traina
1999 C. A. Franklin, M. J. Inskip, C. L. Baccanale, C. M. Edwards, W. I. Manton, E. Edwards, E. J. O'Flaherty

Society of Toxicology Awards and Honors (Continued)

2000 H. A. Boulares, C. Giardina, C. L. Navarro, E. A. Khairallah*, S. D. Cohen
2001 J. Chen, Y. Li, J. A. Lavigne, M. A. Trush, J. D. Yager
2002 M. J. Bajt, J. A. Lawson, S. L. Vonderfecht, J. S. Gujral, H. Jaeschke
2003 S. Haddad, M. Beliveau, R. Tardif, K. Krishnan
2004 A. Nyska, C. Moyer, A. Ledbetter, D. Christiani, M. Schlasweiler, D. Costa, R. Hauser, U. Kodavanti,
2005 N. V. Soucy, M. A. Ihnat, L. Hess, C. D. Kamat, A. Barchowsky, M. J. Post, L. R. Klei, C. Clark,
2006 H. Sawada, K. Takami, S. Ashai
2007 T. Green, R. Lee, S. Lloyd, J. Noakes, T. Pastoor, R. Peffer, M. Robinson, P. Rose, A. Toghill, F. Waechter, E. Weber
2008 S. Snykers, T. Vanhaecke, P. Papelue, A. Luttun, Y. Jiang, Y. V. Heyden, C. Verfaillie, V. Rogiers
2009 Q. Yang, T. Nagano, Y. Shah, C. Cheung, S. Ito, F. J. Gonzalez
2010 R. L. M. Dobson, S. Motlagh, M. Quijano, R. T. Cambron, T. R. Baker, A. M. Pullen, B.T. Regg, A. S. Bigalow-Kern, T. Vennard, A. Fix, R. Reimschuessel, G. Overmann, Y. Shan, G. P. Daston
2011 K. Lu, L. B. Collins, H. Ru, E. Bermudez, J. A. Swenberg
2012 J. G. DeKeyser, E. M. Laurenzana, E. C. Peterson, T. Chen, C. J. Omiecinski

Frank R. Blood Award

Award Recipients

1974 Y. Alarie
1975 D. J. Ecobichon, G. J. Johnstone, O. Hutzinger
1976 R. D. Brown
1977 J. Dedinas, G. D. DiVincenzo, C. J. Kaplan
1978 P. J. Gehring*, E. O. Madrid, G. R. McGowan, P. G. Watanabe*
1979 R. Fradkin, E. J. Ritter, W. J. Scott, J. G. Wilson
1980 J. A. Last, P. F. Moore, O. G. Raabe, B. K. Tarkington
1981 Y. Alarie, M. Brady, C. Dixon, M. Karol
1982 M. E. Andersen, M. L. Gargas, L. J. Jenkins Jr., R. A. Jones
1983 H. D. Heck
1984 E. Dybing, S. Nelson, E. Soderlund, C. von Bahr
1985 N. Imura, M. Inokawa, K. Miura
1986 C. C. Wilhite, M. I. Dawson, K. J. Williams
1987 J. Kao, F. K. Patterson, J. Hall
1988 D. L. Laskin, S. Ji, A. M. Pilaro
1989 R. G. Cuddihy, W. C. Griffith, R. F. Henderson, J. L. Mauderly, R. O. McClellan, M. D. Snipes, R. K. Wolff
1990 W. P. Beierschmitt, J. T. Brady, J. B. Bartolone, D. S. Wyand, E. A. Khairallah*, S. D. Cohen
1991 J. B. Silkworth, D. Cutler, L. Antrim, D. Houston, C. Tumasonis, L. S. Kaminsky
1992 D. A. Fox, S. D. Rubinstein, P. Hsu
1993 T. Mably, R. W. Moore, R. W. Goy, R. E. Peterson
1994 S. J. Borghoff, W. H. Lagarde

Congressional Science Leadership Award

The Congressional Science Leadership Award provides recognition of a Congressional leader who demonstrates reliance upon sound scientific principles in either 1) public policy or decision-making relating to health and safety or 2) dedicated advancement of legislation for the protection of human, animal, and environmental health. This award consists of a plaque.

Award Recipients

2009 Congressman David Wu (D-OR)
2010 Senator Johnny Isakson (R-GA)
Congressman David Price (D-NC)
2011 Congresswoman Judy Biggert (R-IL)
Senator Amy Klobuchar (D-MN)

Contributions to Public Awareness of the Importance of Animals in Toxicology Research Award

The Contributions to Public Awareness of the Importance of Animals in Toxicology Research Award is presented annually to an individual (or organization) in recognition of contributions made to the public understanding of the role and importance of experimental animals in toxicological science. This award may be for either a single seminal piece of work or a longer-term contribution to public understanding of the necessity of the use of animals in toxicological research to both ensure and enhance the quality of human and animal health and the environment. This award consists of a plaque and a cash stipend.

Award Recipients

2000 Allegheny-Erie Regional Chapter
2001 Massachusetts Society for Medical Research
2002 George Nethercutt
2003 Michael Derelanko
2004 North Carolina Association for Biomedical Research (NCABR), Americans for Medical Progress (AMP)
2005 Orrin G. Hatch, Foundation for Biomedical Research (FBR)
2006 Jayne Mackta

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 cash stipend. The recipient delivers the Distinguished Toxicology Scholar Award Lecture at the SOT Annual Meeting. (This award was presented in 2001 as the Scientific Achievement Award.)

Award Recipients

2001 James E. Troska
2003 Henry C. Pitot
2004 Gerald N. Wogan
2005 Daniel Nebert
2006 Sten G. Orrenius
2007 Stephen H. Safe
2008 Toshio Narahashi
2009 Lance R. Pohl
2010 Harihara M. Mehendale
2011 Oliver Hankinson
2012 Ernest Hodgson

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 cash stipend.

Award Recipients

1975 Harold C. Hodge*
1976 Ted A. Loomis
1977 Robert B. Forney*
1979 Sheldon D. Murphy*
1980 Herbert H. Cornish*
1981 Frederick Sperling*
1982 Lloyd W. Hazleton*
1983 Julius M. Coon*
1984 Frank Guthrie, Ernest Hodgson
1985 William B. Buck
1986 Robert I. Krieger
1987 Gabriel L. Plaa*
1988 John Autian
1989 Tom S. Miya
1990 Charles H. Hine
1991 Hanspeter R. Witschi
1992 Dean E. Carter*
1993 Curtis D. Klaassen
1994 Robert A. Neal*
1995 William Carlton
1996 Robert Snyder
1997 Albert E. Munson
1998 David J. Holbrook
1999 Jules Brodeur
2000 Gary Carlson
2001 Harihara Mehendale
2002 Joseph Borzelleca
2003 Frederick W. Oehme
2004 A. Jay Gandolfi
2005 Nobuyuki Ito
2006 Robert A. Schatz
2007 Torbjörn Malmfors
2008 Steven Cohen
2009 Janice E. Chambers, Serrine S. Lau
2010 Tetsuo Satoh
2011 Michael Gallo
2012 John H. Duffus

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 cash stipend.

Award Recipients

2000 Yves Alarie
2001 Alan Goldberg
2002 Gary Williams
2003 G. Frank Gerberick
Ian Kimber
2005 Daniel Acosta
2006 William S. Stokes
2007 Thomas Hartung
2009 Sally Robinson
2010 Leonard M. Schechtman

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 cash stipend.

Award Recipients

2008 John Doull
2009 Roger O. McClellan
2010 James S. Bus
2011 Joseph F. Borzelleca
2012 John A. Moore

Society of Toxicology Awards and Honors (Continued)

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 US 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 Jesus Olivero-Verbel (Colombia), Orish Ebere Orisakwe (Nigeria)

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 last 5 years), seminal basic scientific contribution to understanding fundamental mechanisms of toxicity. The recipient may be a respected basic scientist, member or non-member, 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 cash stipend.

Award Recipients

2009 John Katzenellenbogen
2010 Richard S. Paules
2011 Masayuki Yamamoto
2012 Myung-Haing Cho

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 cash stipend. The recipient delivers the Merit Awardee Lecture at the SOT Annual Meeting.

Award Recipients

1966 Henry F. Smyth, Jr.*
1967 Arnold J. Lehman*
1968 R. T. Williams*
1969 Harold C. Hodge*
1970 Don D. Irish
1971 Kenneth P. DuBois*
1972 O. Garth Fitzhugh*
1973 Herbert E. Stokinger*
1974 William B. Deichmann*
1975 Frederick Coulston*
1976 Verald K. Rowe*
1977 Harry W. Hays*
1978 Julius M. Coon*
1979 David W. Fassett*
1980 Bernard L. Oser*
1981 John H. Weisburger
1982 Harold M. Peck*
1983 Perry J. Gehring*
1984 Tom S. Miya
1985 Carrol S. Weil*
1986 Ted A. Loomis
1987 Bo Holmstedt
1988 Seymour L. Friess*
1989 Wayland J. Hayes, Jr.*
1990 Sheldon D. Murphy*
1991 Toshio Narahashi
1992 W. Norman Aldridge
1993 John Doull
1994 Ernest Hodgson
1995 Robert A. Scala
1996 Gabriel L. Plaa*
1997 Mary O. Amdur*
1998 John A. Thomas
1999 Thomas Clarkson
2000 Philippe Shubik*
2001 Donald Reed
2002 Bernard Schwetz
2003 M. W. Anders
2004 Robert Goyer
2005 Roger O. McClellan
2006 A. Wallace Hayes
2007 James A. Swenberg
2008 Hanspeter Witschi
2009 Gary M. Williams
2010 Marion F. Ehrich
2011 Michael Aschner
2012 Curtis D. Klaassen

Minority Undergraduate Student and Advisor Awards

The Minority Undergraduate Student and Advisor Awards provide support for awardees to participate in the Undergraduate Education Program at the SOT Annual Meeting. This program is an introduction to the discipline of toxicology for undergraduate science majors and includes an orientation, a special poster session with scientists, and activities with an SOT mentor. The travel awards are for those from races and ethnic groups underrepresented in the sciences (African American, American Indian, or Hispanic American) and for their advisors. The advisors are eligible regardless of racial or ethnic background. Meeting registration and support for travel, lodging, and meals are provided for students and advisors who are not local to the meeting site. Students and advisors from local institutions receive meeting and program registration and meals. In the past, the program has been supported in part by NIH-MARC, Pfizer, Johnson & Johnson, Covance, and other supporters. The recipient list is available on the website.

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, Hariharan Saminathan
2011 Heather Bolstad, Michael Borland

Perry J. Gehring Diversity Student Travel Award

The Perry J. Gehring Diversity Student Travel Award recognizes a student who was selected to participate in a previous SOT Undergraduate Program, is from an ethnic group underrepresented in toxicology (African American, Hispanic, Native American or Pacific Islander), and is presenting a paper at the upcoming SOT meeting. The award recipient is selected by the Committee on Diversity Initiatives.

The Gehring Student Travel Award is provided through the Society of Toxicology Endowment Fund. This award recognizes Dr. Perry J. Gehring, who served as SOT President in 1980–1981 and made important scientific contributions, especially in biological modeling and evidence-based assessment. Dr. Gehring had a strong interest in encouraging individuals from ethnic groups underrepresented in the sciences to enter biomedical sciences and toxicology.

Award Recipients

2009 Vanessa De La Rosa
2010 Nygerma L. Dangleben
2011 Eva A. Amouzougan
2012 Alba K. Gonzalez Rivera

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 cash 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

SOT/AstraZeneca/IUTOX Travel Fellowships

AstraZeneca and SOT sponsor travel fellowship awards annually, which are administered by IUTOX. Awards are available to senior scientists from a country where toxicology is underrepresented to assist with travel to attend the Society of Toxicology Annual Meeting.

Award Recipients

2002 Christophor Dishovsky (Bulgaria), Zoltan Gregus (Hungary), Maritza Rojas Martini (Venezuela), Choon-Nam Ong (Singapore), W. Wasowicz (Poland), Ping-kun Zhou (China)
2003 Jian-Hui Liang (China), Marjan G. Vracko (Slovenia), Eman A. Seif (Egypt)

Society of Toxicology Awards and Honors (Continued)

2004 Cristina Bolaton (Phillipines), P.K. Gupta (India), Salmaan Inayat-Hussain (Malaysia), Xianping Ying (China)
2005 Diana B. Apostolova (Bulgaria), Marite Arija Bake (Latvia), Teresa I. Fortuoul (Mexico), Mary Gulumian (South Africa), He Jiliang (China), Khalidya Khamidulina (Russia), L. Orish Orisakwe (Nigeria), Songsak Srianujata (Thailand), Sinan Suzen (Turkey)
2006 Olanike Adeyemo (Nigeria), Deepak Argwal (India), Carlos Colangelo (Argentina), Sandra Demichelis (Argentina), Mumtaz Iscan (Turkey), Karolina Lyubomirova (Bulgaria), Osman Aly Osman (Egypt), Shuang-Qing Peng (China), Julia Radenkova-Saeva (Bulgaria)
2007 Hatem Ahmed (Egypt), Jiri Bajgar (Czech Republic), Ismet Çok (Turkey), Carlos Garcia (Peru), Wenceslao Kiat (Philippines), Calivarathan Latchoumycandane (Singapore), Fateheya Metwally (Egypt), Hilmi Orhan (Turkey), Nwoha Umunna (Nigeria)
2008 Jin-Ho Chung (Korea), Lyndy McGaw (South Africa), Kemal Buyukguzel (Turkey), Hande Gurer-Orhan (Turkey), Phillip Burcham (Australia), Sayed Bakry (Egypt), Zdravko Paskalev (Bulgaria), Gafer Rageh Ahmed (Egypt)
2009 Sema Burgaz (Turkey), Estefania G. Moreira (Brazil), Kolawole V. Olorunshola (Nigeria), Kelly P.K. Olympio (Brazil), Betzabet Quintanilla-Vega (Mexico), Jalila Ben Salah (Tunisia), Suleeporn Sangrajang (Thailand)
2010 Asongalem Emmanuel Acha (Cameroon), Ayse Basak Engin (Turkey), Ronnie A. D. Frazer-Williams (Sierra Leone), Yan Li (China), Jesus T. Olivero-Verbel (Colombia), Suresh V. S. Rana (India), Ganna Shayakhmetova (Ukraine), Vanessa Steenkamp (South Africa), Marcelo J. Wolansky (Argentina), Motao Zhu (China)
2011 Sonali Das (India), Rawiwan Maniratanachote (Thailand), Anoka A. Njan (Nigeria), Osman S. Shaik (India), Songsak Srianujata (Thailand), Qinli Zhang (China), Bin Zhao (China)
2012 Oladipo Ademuyiwa (Nigeria), Murali Badanthadka (India), Xianju Huang (China), Zhenlie Huang (China), Guojun Li (China), Maria Samayoa (Guatemala), Haixue Wang (China), Jingshu Zhang (China), Xiaofeng Zhang (China), Li Zhou (China)

SOT Endowment Fund/ IUTOX Travel Fellowships

IUTOX and SOT sponsor travel fellowship awards annually, which are administered by IUTOX. Awards are available to senior scientists from a country where toxicology is underrepresented to assist with travel to attend the Society of Toxicology Annual Meeting.

Award Recipients

2011 Daam Settachan (Thailand), Omoniyi Kayode Yemitan (Nigeria)
2012 Sunisa Chaiklieng (Thailand), Jianlin Lou (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.

Translational Impact Award

The Translational Impact Award is presented to a scientist whose recent (in the last 10 years) outstanding clinical, environmental health, or translational research has improved human and/or public health in an area of toxicological concern. Scientists who are leaders in multidisciplinary team efforts who have contributed to alleviating toxicity-related health problems are particularly attractive candidates. The nominee may be a member or non-member from any background (toxicologists, clinicians, basic scientists, epidemiologists, engineers, etc.). This award consists of a plaque and a cash stipend. The recipient delivers the Translational Impact Award Lecture at the SOT Annual Meeting.

Award Recipients

2009 Thomas W. Kensler
2010 Kenneth E. McMartin
2011 Weida Tong
2012 John G. Benitez

Translational/Bridging Travel Award

Two awards will be given annually to assist with travel to the SOT Annual Meeting. The SOT Awards Committee will confer two awards annually to either a mid- or senior-level scientist or clinician, with at least ten years postdoctoral research or clinical practice experience and who has an active research program, or currently is active either in the practice of clinical toxicology, medical toxicology, disease prevention, or in the application of transitional toxicology. This award consists of a cash stipend and a complimentary registration for the SOT Annual Meeting.

Award Recipient

2012 Xuemei Huang

Undergraduate Educator Award

The Undergraduate Educator Award, sponsored by the Endowment Fund, is presented to an SOT member who is distinguished by outstanding contributions to the teaching of undergraduate students in toxicology and toxicology-related areas, and whose efforts support SOT's strategic efforts to "Build for the Future of Toxicology." Members of the Society of Toxicology who have made significant contributions to undergraduate education in toxicology may be nominated and should have a faculty appointment with primary responsibilities in the teaching of undergraduates and demonstrate a distinguished undergraduate teaching record. This award consists of a plaque and a cash stipend.

Award Recipients

2011 Joan B. Tarloff
2012 Sue M. Ford

Undergraduate Toxicology Education Awards

The Undergraduate Toxicology Education Awards provide support for awardees to participate in the Undergraduate Education Program at the SOT Annual Meeting. This program is an introduction to the discipline of toxicology for undergraduate science majors and includes an orientation, a special poster session with scientists, and activities with an SOT mentor. The travel awards are for those from institutions that receive a limited amount of federal funding in science and technology (list is available on the website). Preference in selection will be students who are first generation college attendees (that is, neither parent graduated from a four-year academic institution).

Meeting registration and support for travel, lodging, and meals are provided for students who are not local to the meeting site. Students from local institutions receive registration, meeting materials, and an expense stipend. The recipient list is available on the website.

Sponsored Award Descriptions

AstraZeneca Traveling Lectureship Awards

The AstraZeneca Traveling Lectureship Award is presented through the Society of Toxicology to recognize excellence in research and service in toxicology. AstraZeneca provides one award annually in the amount of $9,000 to promote greater collaboration between European and North American toxicologists and to enable North American toxicologists to undertake a three to four week lecture tour of Europe. The award is intended to familiarize recipients with research and regulatory issues in Europe and to bring a North American perspective to these issues. Candidates for the award should be established, mid-career North American scientists who are members of the Society and who demonstrate the ability to develop collaborative relationships with European colleagues.

Award Recipients

1990	Robert I. Krieger, Joseph R. Landolph
1991	Sam Kacew
1992	Charles V. Smith, Jerold A. Last
1993	Terrence James Monks, Harihara H. Mehendale
1995	David L. Eaton, Hanspeter R. Witschi
1996	Rick G. Schnellmann, James P. Kehrer
1997	Lucio G. Costa, Durisala Desaiah
1998	Syed F. Ali, Curtis J. Omiecinski
1999	Alvaro Puga
2000	Kenneth Ramos, Garold Yost
2001	Ronald Hines, Richard Seegal
2003	William D. Atchison
2004	Charlene A. McQueen
2005	Kevin M. Crofton
2006	Robert A. Roth
2007	Michael S. Denison
2008	José E. Manautou
2009	Kim Boekelheide
2010	J. Chris Corton
2011	Saber Hussain
2012	Bhagavatula Moorthy

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 non-mammalian animal models, computer modeling, and structure-activity relationships. Graduate students may propose to develop expertise in relevant methodologies at 1) a laboratory away from their home institution; 2) a laboratory at their home institution that would not be available to them otherwise; or 3) approved workshops, symposia, or continuing education programs where hands-on training will be received. The training should help toxicology graduate students enhance their thesis or dissertation research.

Award Recipients

2000	Jason Gross
2001	Jason Biggs, Victoria Richards
2002	Kartik Shankar, Chad M. Vezina, Ryan L. Williams
2003	Sachin Devi, Midhun Korrapati, Pallavi Limaye
2004	Jaya Chilakapati, Marc A. Nascarella
2005	Vishaka Bhave, Ankur Dnyanmote, Jonathan Maher
2006	Mary Hassani, Prajakta Palkar
2007	Renee Gardner, Prajakta Palkar, Rohit Singhal, René Viñas
2008	Kimberly A. Hays, Haitian Lu
2009	Jennifer Cole, Katie Beth Paul, Samuel Peterson
2010	Maxwell C. K. Leung, David T. Szabo, Natalia M. VanDuyn
2011	Vijay More
2012	Agnes Forgacs, René Viñas

Colgate-Palmolive Grants for Alternative Research

The Colgate-Palmolive Grants for Alternative Research will identify and support efforts that promote, develop, refine, or validate scientifically acceptable animal alternative methods to facilitate the safety assessment of new chemicals and formulations. Scientists at any stage of career progression may submit a proposal.

High priority will be given to projects that use *in vitro* or non-animal models, reproductive and developmental toxicology, neurotoxicology, systemic toxicology, sensitization, and acute toxicity.

The maximum award is $40,000, made as a single lump payment. Awardees can re-apply for funding in subsequent years.

Award Recipients

2006	Rola Barhoumi, Abby Benninghoff, Jodie Flaws, Courtney Sulentic, Xiaouzhong Yu
2007	Rita L. Caruso, Daniel R. Cerven, Anne R. Greenlee, Glenn M. Walker
2008	Daniel R. Ceven, Duncan C. Ferguson, Shashi K. Ramiah
2009	Qin M. Chen, Timothy J. Shafer, Mehmet Uzumcu
2010	Patrick Allard, Duncan C. Ferguson, Mehmet Uzumcu
2011	Patrick Allard, Hao Zhu
2012	Mingzhu Fang, Jennifer Freeman

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

The Colgate-Palmolive Company sponsors the Colgate-Palmolive Postdoctoral Fellowship Award in *In Vitro* Toxicology through the Society of Toxicology to advance the development of alternatives to animal testing in toxicological research. The award is given annually and includes stipend and research-related costs up to $44,000 for one year (including funding to attend the SOT Annual Meeting to present this research). The award is available to postdoctoral trainees employed by academic institutions, federal/national laboratories, or research institutes worldwide. Preference will be given to applicants in their first year of postdoctoral study.

Award Recipients

1988	Ernest Bloom
1989	Gin Hsieh
1990	Dennis E. Chapman
1991	Anne Walsh
1992	Qin Chen
1993	Erika Cretton
1994	William Chan
1995	Bob Van de Water
1997	Alan Parrish
1999	Russell Thomas
2001	Kevin Kerzee, Christopher Reilly
2002	Kevin Kerzee
2003	Kimberly Miller
2004	Kimberly Miller
2005	Francis Tukov
2007	Aaron Rowland
2008	Aaron Rowland
2009	Ankur Dnyanmote
2010	Ankur Dnyanmote
2011	Cassandra Deering-Rice
2012	Melanie Adler

Sponsored Award Descriptions (Continued)

Colgate-Palmolive Traveling Lectureship in Alternative Methods in Toxicology Award

Offered 1996–2008

Award Recipients

1996 University of Mississippi Medical Center
Visiting Professor: Tetsuo Satoh

1996 University of Illinois at Urbana
Visiting Professor: Julio Davila

1996 Mississippi State University
Visiting Professor: Michael Holsapple

1996 Washington State University
Visiting Professor: Daniel Acosta

1997 Indiana University School of Medicine
Visiting Professor: A. Jay Gandolfi

1997 University of Arizona Health Science Center
Visiting Professor: Kevin E. Driscoll

1997 University of New Mexico Health Sciences Center
Visiting Professor: Sam Kacew

1997 University of Illinois
Visiting Professor: Michael Denison

1998 University of Washington
Visiting Professor: Bruce Fowler

1998 San Diego State University
Visiting Professor: Leigh Ann Burns-Naas

1999 San Diego State University
Visiting Professor: Robert Chapin

2000 Yale University, School of Medicine
Visiting Professor: Narendre Singh

2001 Medical College of Wisconsin
Visiting Professor: Garold Yost

2003 Washington State University
Visiting Professor: Marc W. Fariss

2004 University of Louisiana at Monroe
Visiting Professor: Snorri S. Thorgeirsson

2008 University of Louisiana at Monroe
Visiting Professor: George Michalopoulos

Graduate Student Fellowship Award—Novartis

The Graduate Student Fellowship—Novartis Award is available for student members of the SOT engaged in full-time graduate study toward a Ph.D. in toxicology. The major professor must be an SOT member. The evaluation is based primarily on originality of the dissertation research, research productivity, relevance to toxicology, scholastic achievement, and letters of recommendation. Finalists are interviewed at the Annual Meeting and receive travel support.

Award Recipients

1989 Timothy Zacharewski
1990 Mary Suzanne Stefaniak
1991 Donald Bjerke
1992 Lhanoo Gunawardhana
1993 Christopher Martenson
1994 Nyla Harper
1995 Heather E. Kleiner
1996 Russell Thomas
1997 Melva Rios-Blancos
1998 Kent Carlson
1999 Mark Hickman
2000 Jeffrey Moran
2001 Vishal Vaidya
2002 Kartik Shankar
2003 Sachin Devi
2004 James Luyendyk
2005 Andrea W. Wong
2006 Sheung P. Ng
2007 Atrayee Banerjee
2008 Helen J. Badham
2009 Yue Cui
2010 Eric N. Liberda
2011 Alexandria Lau

Pfizer Undergraduate Student Travel Awards

Pfizer 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. Awardees will be selected by the Education Committee based on the quality of the submitted abstract and the advisor's supporting recommendation. Those selected will receive travel assistance for the meeting, a plaque presented at the annual Awards Ceremony, and recognition at a special Pfizer function. Awardees will be matched with a graduate student and a Pfizer scientist to mentor them during the Annual Meeting, and will have the opportunity to attend the Society of Toxicology Undergraduate Education Program on the Sunday of the Annual Meeting.

Award Recipients

2006 Shawntay Chaney, Theresa M. Eagle, Natalie Malek, Adeliada Segarra, Ryan Vaughan

2007 Kay Gonsalves, Lisa Koselke, Basharat Sanni, Sonia Talathi, Anna Zimmerman

2008 Amy DeMicco, Tharu Fernando, Yamel Perdomo, Amy Yi Hsan Saik, Kelly Sullivan

2009 Sherine Crawford, Trish T. Hoang, Kelly Krcmarik, Cory M. Mathias, P. Sean McGrath

2010 Annie L. Carlton, Alisha Chitrakar, Megan E. Culbreth, Chang Woo Lee, Sharon Ochs

2011 Brandon Haghverdian, Jessica H. Hartman, Camila Odio, Viviana Vidal Anaya, Phillip Alan Wages

2012 Ashley Press, Darien Shapiro, Qi Wang, Brittany Winner, Frances A. Xin

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

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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 July 2010 to December 2011.

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Details about SOT 2011 Endowment Fund Recipients can be found on pages 78–80. For more information about the Award Recipients and the Endowment Fund, please visit the SOT Contribute Section of the SOT website.

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

- **Educational Activities**—Proceeds from this Fund support a margin of excellence in SOT Educational Activities.
- **International Activities**—Proceeds from this Fund will be used to promote the involvement of the SOT in international activities such as those of the International Union of Toxicology.
- **SOT Priorities**—Proceeds from this Fund support the highest priority needs of the Society as determined by the SOT Council.

Your contributions can have twice the IMPACT—Matches will be made to the Education, International, and SOT Priorities Society Funds and to specified Named Funds *(listed below with the asterisk)* that support the Society Funds.

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).

- **Daniel and Patricia Acosta Diversity Student Fund***—SOT Education Fund
- **Mary Amdur Student Award**—Inhalation and Respiratory SS
- **Young Soo Choi Student Scholarship Award**—Korean Toxicologists Association in America SIG
- **Laxman S. Desai ASIO Student Award**—Association of Scientists of Indian Origin SIG
- **Diversity Initiatives**—Committee on Diversity Initiatives
- **John Doull Student Award**—Risk Assessment SS
- **Founders Fund**—Founders Fund recipient selected by Awards Committee
- **Angelo Furgiuele Young Investigator Technology Award**—Reproductive and Developmental Toxicology 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 Priority Needs Fund
- **Health and Environmental Science Institute Immunotoxicology Young Investigator Student Award**—Immunotoxicology SS
- **Vera W. Hudson and Elizabeth K. Weisburger Scholarship**—Women in Toxicology SIG
- **Frank C. Lu Food Safety Student Award**—Food Safety SS
- **Jean Lu Student Scholarship Award**—American Association of Chinese in Toxicology SIG
- **Roger O. McClellan Student Award**—Comparative and Veterinary SS and Toxicologic and Exploratory Pathology SS
- **Harihara Mehendale ASIO Student Award**—Association of Scientists of Indian Origin SIG
- **Metals Specialty Section Student Research Award**—Metals SS
- **Molecular Biology Student Award**—Molecular Biology SS
- **Sheldon D. Murphy Memorial Fund***—SOT Education and/or Student Travel
- **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
- **Regulatory and Safety Evaluation Student Award**—Regulatory and Safety Evaluation 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
- **Toxicologists of African Origin Endowment**—Toxicologists of African Origin SIG

Recognition Levels

Individual Recognition
(Cumulative Contributions)

- **Benefactor**—Cumulative contributions of $10,000 or more.
- ***Paracelsus* Circle Lifetime Member**—Cumulative contribution of $5,000 or more. Alternatively, a contribution of $500 and statement of intent to contribute $5,000 within 10 years.

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
(Based on July–June Fiscal Year Giving)

- **Diamond**—Over $10,000
- **Platinum**—$5,000–$9,999
- **Gold**—$2,500–$4,999
- **Silver**—$1,000–$2,499

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.

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The SOT Endowment Fund is part of the Society of Toxicology, a charitable, non-profit, 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 acknowledgement of all contributions made to the SOT Endowment Fund.

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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 preceding page.

Contribution Information

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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.

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☐ Establishing a new Fund.

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	$
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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 Clarissa Wilson at SOT Headquarters by telephone: 703.438.3115 or email: clarissa@toxicology.org.

Mail or Fax to:

Society of Toxicology Endowment Fund
1821 Michael Faraday Drive, Suite 300
Reston, VA 20191

Fax: 703.438.3113

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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 of toxicology."

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Notes

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For more information contact SOT Headquarters and ask for Liz Kasabian at 703.438.3115 or email liz@toxicology.org.

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(as of January 23, 2012)

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51st Annual Meeting and ToxExpo™

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