Dear Colleagues,

I cordially invite you to attend the 48th Annual Meeting of the Society of Toxicology, (SOT) which will be held March 15–19 at the Baltimore Convention Center in Baltimore, Maryland.

SOT’s Annual Meeting is the forum to showcase toxicology’s novel discoveries. For the science of toxicology, this 5-day event is the culmination of a year’s worth of achievements in research and education.

The Annual Meeting also affords every member the opportunity to come together to learn about the latest scientific achievements from a myriad of experts in the field of toxicology. The thematic program that SOT instituted two years ago affords participants a unique opportunity to deepen their knowledge in topical areas and interact with leaders in the respective areas.

Opportunities abound for members to meet other scientists they have never met and to network with friends and colleagues. The Annual Meeting also affords the 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 members can take advantage of the ToxExpo™, which is the world’s largest exposition of its kind. This exposition offers a comprehensive marketplace for product information and cutting-edge technology in one place.

SOT’s Annual Meeting is the premier event that the Society hosts every year to meet the needs of the entire toxicology community. More importantly, the Annual Meeting goes a long way toward fulfilling SOT’s strategy of building the future of toxicology, highlighting the significant scientific achievements of members, and broadening the awareness of these accomplishments and their potential impact. One news publication that covered our Annual Meeting last year referred to SOT as the “world’s foremost professional and scientific organization.” Indeed, SOT’s Annual Meeting brings together the foremost professionals in the field.

I urge you to join us for this event. Help us to make the 48th Annual Meeting an event to remember.

Sincerely,

Kenneth S. Ramos, B.S.Ph., Ph.D., ATS
2008–2009 SOT President
Scientific Program Overview

A page reference follows the session information.

Sunday, March 15
7:00 AM–7:45 AM
CONTINUING EDUCATION SUNRISE MINI-COURSE
1. Topics in Ethics: Conflict of Interest—Real or Imagined?—PBDEs As a Case Study (p76)

8:15 AM–12:00 NOON
CONTINUING EDUCATION MORNING COURSES
2. Free Radicals for Toxicologists—From the Basics to Inflammation and Disease (p77)
3. Characterizing Modes-of-Action and Their Relevance in Assessing Human Health Risks (p77)
4. Evaluation of Toxicity to Male and Female Reproductive Systems: Biology, Study Design, and Data Interpretation (p78)
5. Immunology for Toxicologists (p78)
6. Principles and Applications of Toxicokinetics (p79)
7. Translation of Safety Biomarkers in Drug Discovery and Development (p79)

1:15 PM–5:00 PM
CONTINUING EDUCATION AFTERNOON COURSES
8. Free Radicals for Toxicologists—From the Basics to Inflammation and Disease (p80)
9. Characterizing Variability and Uncertainty with Physiologically-Based Pharmacokinetic Models (p80)
10. Current Approaches in Mixture Risk Assessment (p81)
11. How Similar Is Similar and How Relevant Is Relevant? Considerations in the Design of a Predictive Development Program for Biotherapeutics (p81)
12. New Frontier in Metal Toxicology: Genetic Susceptibility, Early Diagnosis, and Related Biological Indices (p82)
13. Stress As a Confounding Factor in Toxicology Studies (p82)

Thematic Approach
Session titles related to each theme are color coded in the Program overview.

Biomarkers—Biomarkers are invaluable tools for investigating and predicting toxic responses, and research from the toxicological sciences has contributed to the identification and validation of biomarkers at the molecular, biochemical, and cellular levels. The contributions of toxicology to biomarker research, as well as new discoveries related to the identification, validation, and utilization of biomarkers to integrate health and disease, will be highlighted in this theme.

Epigenetics—Heritable DNA and chromatin modifications regulate gene expression to direct many important biological processes. Alterations in epigenetic determinants including DNA methylation and histone modifications contribute to the adverse health effect of many toxicants. The importance of epigenetics in health and disease and new technologies for studying epigenetics will be featured in this theme on advances in epigenetic research for the toxicological sciences.

Inflammation and Disease—The inflammatory response contributes to many acute and chronic diseases. Inflammatory mediators such as ROS, cytokines and eicosanoids, and acute-phase proteins such as glucocorticoids, C-reactive protein and serum amyloid, play key roles in this response. Inflammatory mediators also play a role in the adverse response to many drugs and environmental agents. The important role of inflammation and inflammatory mediators in toxic responses and disease will be highlighted in sessions featured in this theme.

Nanotechnology—Nanomaterials are the building blocks for this promising new technology and are now routinely produced and commercialized. These materials are currently being utilized in many diverse areas such as engineering, information technology, and diagnostics. More information is needed on their biology and the potential health impacts of these new products, and sessions highlighted in this theme will explore the potential implication(s) of their use.

Neurodegenerative Diseases—Neurodegenerative diseases caused by loss of cells and/or cellular function in the brain and in dementias and movement disorders are becoming increasingly more common. The role of environmental agents and inflammatory mediators in the development of neurodegenerative disease and elucidation of sequelae from acute toxic exposures to the onset of disease will be highlighted in this theme as important areas of research for the toxicological sciences.

Monday, March 16
8:00 AM–9:00 AM
PLENARY OPENING LECTURE
Signal Transduction Pathway Used by Therapeutic Agents and Drugs of Abuse—Lecturer: Nobel Laureate Paul Greengard (p94)

9:15 AM–12:00 NOON
SYMPOSIA SESSIONS
• Eat Well, Breathe Well: Nutritional Determinants of Susceptibility to Airborne Pollutants (p94)
• MicrorNA in Biology and Toxicology (p95)
• Superantigens, Cytokine Storm, and Toxic Reactions (p95)
• Zinc, Inflammation, and Diabetes (p96)

WORKSHOPS SESSIONS
• Dose Selection and Design Considerations in Safety Studies for Biotherapeutics (p96)
• From Genes to Organs: Advancements in Modeling Biological Systems (p97)
• Strategies to Integrate Systems Biology into In Vitro Screening in Early Nonclinical Safety Assessment (p98)

PLATFORM SESSIONS
• Applications in Omics Technologies to Problems in Toxicology (p98)
• Immunoregulation and Toxicity (p99)
• Mechanistic Insights for Reproductive Toxicology (p100)

9:30 AM–12:30 PM
POSTER SESSIONS
• Ah Receptor Mediated Signalling (p102)
• Apoptosis: Activators and Regulatory Pathways (p117)
• Cardiovascular Toxicity I (p110)
• Dermal Absorption and Skin Toxicity (p103)
• Information and Education (p120)
• Insights in Endocrine Action and Toxicology (p105)
• Nanotoxicology In Vivo (p112)
• Neurotoxicity—Developmental (p107)
• Receptors (p101)
• ROS-Cycling, Reactive Oxygen Species (ROS), and Damage (p118)
• Xenobiotic Biotransformation (p115)

12:10 PM–1:30 PM
R dreamtable SESSIONS
• Devils Lie in the Details: Practices and Problems in Neuropathology—Significance for Neurotoxicology (p121)
• The Use of Engineered Nanomaterials in Food and Food-Related Products: Is This a Concern for Human and Environmental Safety? (p122)

HISTORICAL HIGHLIGHTS SESSION
• A Quarter of a Century (1984–2009) Since the Bhopal Disaster: Lessons Learned (p122)

INFORMATIONAL SESSION
• Peer Review of Toxicology, Exposure, and Risk Data: Ensuring the Best Science (p123)

12:30 PM–1:20 PM
LEADING EDGE IN BASIC SCIENCE AWARD LECTURE
The Structural Pervasiveness of Estrogen Activity—Benefits and Risks from the Eclectic Nature of Ligand Binding by the Estrogen Receptor—Lecturer: John Katzenellenbogen (p124)

1:00 PM–4:30 PM
POSTER SESSIONS
• Alternate Tests and Models I (p127)
• Assessment of Chemical Mixtures (p141)
• Biological Modeling (p134)
• Chemical and Biological Weapons (p138)
• Ecotoxicology (p132)
• In Vitro Methods, Models, and Mechanisms of Hepatotoxicity (p130)
• Neurotoxicity—Metals (p124)
• Safety Assessment for Non-Pharmaceuticals (p137)
• Toxicology of Kidney (p136)
1:40 PM–4:25 PM  SYMPOSIA SESSIONS

- Aromatase (CYP19) Gene Expression and Function: Current State of Knowledge As a Mode-of-Action for Toxicological Effects (p143)
- Genomic, Non-Genomic, and Epigenetic Mechanisms of Nuclear Hormone Receptor Action (p144)
- In Vitro Models of Human Toxicity Pathways (p144)
- Nitrative and Oxidative Stress in Toxicology and Disease (p145)
- Novel Signalling Mechanisms That Regulate Dopaminergic Neuronal Survival or Death: Implications in Parkinson’s Disease (p146)
- Regulation of Drug Transporters in Different Disease States and Its Toxicological and Clinical Implications (p146)

WORKSHOP SESSIONS

- Agglomeration Versus Dispersion: How Nanoparticle Behavior Affects Exposure and Toxicity In Vitro, In Vivo, and In the Real World (p147)
- Nanotoxicology—Is It Much Ado About Nothing? (p152)

4:35 PM–5:55 PM  ROUNDTABLE SESSIONS

- Leveraging Nonclinical Disease Models for Early Perspective on Safety and Risk during Drug Discovery (p152)
- Role of Regulatory Cooperative Efforts in Food Protection (p153)
- Weight of Evidence Advancements in Risk Assessment: Conceptual Frameworks and Case Studies Illustrating Fundamentals of Application (p153)

EDUCATION-CAREER DEVELOPMENT SESSION

- Grantsmanship Forum: Tools and Skills Needed to Navigate Toxicology Research Funding (p154)

Tuesday, March 17

7:30 AM–8:50 AM  ROUNDTABLE SESSIONS

- Biomarkers of Cardiac Hypertrophy and Skeletal Muscle Toxicity—Successes and Challenges Related to Their Implementation in Drug Development (p155)
- The Regulatory Frontier: Addressing Products of Nanotechnology (p156)

HISTORICAL HIGHLIGHTS SESSION

- Dioxin, Forty Years of Science: Are We Any Closer to Assessing Potential Risk? (p156)

INFORMATIONAL SESSION

- NIH Genes, Environment, and Health Initiative: Biomarkers and Biosensors for Detecting Response to Environmental Stress (p157)

8:00 AM–8:50 AM  TRANSLATIONAL IMPACT AWARD LECTURE

- Keap! One Eye on the Target—Translating Molecular Toxicology into Cancer Prevention—Lecturer: Thomas W. Kensler (p157)

9:00 AM–11:45 AM  SYMPOSIA SESSIONS

- Does Metal Toxicity Play a Role in the Etiology of Alzheimer’s Disease? (p158)
- Epigenetic Implications for Toxicology (p158)
- Immunomodulation during Complementary and Alternative Medicine (CAM) Therapy: Risks and Benefits (p159)
- Nanotoxicology and Drug Delivery (p160)

WORKSHOP SESSIONS

- Low-Dose Non-Linearity: What Can Emerging Technologies Tell Us? (p160)
- Maternal Toxicity and Its Impact on Study Design and Data Interpretation (p161)
- Pesticide Mixtures: Experimental Evaluation and Computational Modeling (p161)

PLATFORM SESSIONS

- Advances in Animal and Alternative Models (p162)
- Advances in Biological Modeling (p162)
- Cellular and Biological Sources for Biomarkers (p163)
- Metal-Induced Carcinogenesis (p164)
- Xenobiotic Modulation of Signal Transduction Pathways and Gene Regulation (p164)

9:00 AM–12:30 PM  POSTER SESSIONS

- Biological Actions of Natural Products (p168)
- Cardiovascular Toxicity II (p177)
- Nanotoxicology In Vivo (p172)
- Reactive Oxygen Species (ROS) Stimulated Signalling (p179)
- Research in Disposition and Pharmacokinetics (p180)
- Risk Assessment Applications (p170)
- Role of PPAR and COX-2 in Chemical Carcinogenesis (p176)
- Safety Issues Concerning Food Products and Micronutrients (p165)

12:00 NOON–1:20 PM  ROUNDTABLE SESSIONS

- Is There a Future for Animal Models in the Investigation of Idiosyncratic DILI in Humans? (p185)
- National Children’s Study: Opportunities and Challenges for Toxicologists (p185)
- Setting a Safe Starting Dose in Initial Clinical Trials with Biotherapeutics: Do I Use the NOAEL or the MABEL? (p186)

EDUCATION-CAREER DEVELOPMENT SESSION

- The Future of Environmental Health Science: Featuring NIEHS-Funded Early Career Investigators (p186)

12:30 PM–1:20 PM  Distinguished Toxicology Scholar Award Lecture

- Role of Reactive Metabolites, Protein Adducts, Immune System, and Other Susceptibility Factors in Drug-Induced Liver Injury—Lecturer: Lance R. Pohl (p187)

1:00 PM–4:30 PM  POSTER SESSIONS

- Bioinformatics and Prediction of Toxicity (p195)
- Epidemiology and Exposure Assessment (p203)
- Functional Genomics in Toxicology (p188)
- Gene Regulation (p191)
- Genotoxicity I (p193)
- Hepatotoxicity of NSAIDS and Acetaminophen (p198)
- Hepatotoxicity: In Vivo Studies (p199)
- Pesticide—Toxicity (p201)

1:30 PM–4:15 PM  SYMPOSIA SESSIONS

- Aquatic Species As Sentinels for Human Health: Comparative Toxicology of Metals, Nanoparticles, and PCB’s (p206)
- Mammalian Retrotranspositional Elements: Epigenetic Regulation, Species Differences, and Potential Roles As Mediators of Cellular Responses to Toxic Stress (p207)
- The Good, the Bad, and the Ugly of Toxicant-Induced Pulmonary Inflammation (p208)

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- Improved Safety Biomarkers for Monitoring Kidney Injury (p208)
- Oxidative Stress As a Regulator of Normal Function and Mediator of Toxicant-Induced Damage with Impacts on Reproduction and Development (p209)
- Pesticides and Parkinson’s Disease: Implications of New Epidemiology and Exposure Data to Risk Assessment (p210)
- Safety of High-intensity Sweeteners: Bittersweet Controversy (p210)

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- Advances in Disposition and Pharmacokinetics (p211)
- Advances in Risk Assessment Science (p212)
- Effects of Inhaled Pollutants—Cardiopulmonary Toxicity (p212)
- Mechanisms in Immunotoxicology (p213)
- New Insights in Ecotoxicology (p213)

Wednesday, March 18

7:30 AM–8:30 AM  ROUNDTABLE SESSION

- Characterization and Application of PBPK Models in Risk Assessment (p216)

INFORMATIONAL SESSION

- Novel Translational Safety Biomarkers and Safety First at the FDA (p216)

EDUCATION-CAREER DEVELOPMENT SESSION

- Toxicologists: The Next Generation (p217)

SPECIAL SESSION

- U.S. FDA Advisory Panel Appointments (p215)
Thursday, March 19

8:00 AM–8:50 AM
**KEYNOTE MEDICAL RESEARCH COUNCIL (MRC) LECTURE**
The Ubiquitin Proteolytic System—From Basic Mechanisms through Human Disease and on to Drug Targeting—Lecturer: Nobel Laureate Aaron Ciechanover (p217)

9:00 AM–11:45 AM
**SYMPOSIA SESSIONS**
- From Mechanisms to Biomarkers: Basic and Applied Metabolomics in Toxicology (p218)
- Incorporating ‘Omics in the Study of Reproduction and Development (p218)
- Interactomes and Their Application in Toxicology (p219)
- Transcriptional Changes in Immunotoxicology: Transcription Factors, Signal Transduction, and Epigenetics (p219)

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- Developing Brain: Safety Assessment for Pediatric Use of Pharmaceuticals (p220)
- Toxicology of Unintentional and Intentional Disasters (p220)

**REGIONAL INTEREST SESSION**
- Biofuels and the Bay: Characterizing Health and Ecosystem Impacts in the Chesapeake (p221)

**PLATfORM SESSIONS**
- Cardiopulmonary Toxicity of Inhaled Particles and Nanoparticles (p222)
- Endocrine-Toxicant Interactions (p222)
- Hot Topics in Metal-Induced Neurodegeneration (p223)
- Mechanisms of Persistent Organic Compound Toxicity (p224)
- Mechanisms of Pesticide-Induced Toxicity (p224)

9:00 AM–12:30 PM
**POSTER SESSIONS**
- Advances in Reproductive Toxicology (p228)
- Animal Models II (p226)
- Biomarker Discovery and Detection (p240)
- Biomonitoring and Exposure Assessment (p242)
- Cytoprotective Strategies Against Reactive Oxygen Species (p237)
- Genetic Polymorphisms (p225)
- Hypersensitivity and Autoimmunity (p233)
- Risk Assessment Research (p231)
- Metals—In Vivo (p238)
- Parkinson’s Disease (p236)

12:00 NOON–1:20 PM
**SYMPOSIA SESSION**
- Gene-Environment Interactions: Epigenetic Pathways in Chronic Disease Promotion and Progression (p245)

**ROUNDTABLE SESSION**
- Preclinical Evaluation of Cancer Hazard and Risk of Biopharmaceuticals (p245)

**INFORMATIONAL SESSION**
- Kinase Inhibitors As Targeted Therapeutics in Inflammation and Oncology—Approaches to Predict and Manage Clinical Toxicities (p246)

**SPECIAL SESSION**
Meet the Director of NIEHS, Linda Birnbaum (p244)

12:30 PM–1:20 PM
**MERIT AWARD LECTURE**
Chemical Hepatocarcinogenesis—Mechanisms, Pathogenesis, and Thresholds Lecturer: Gary M. Williams (p246)

1:00 PM–4:30 PM
**POSTER SESSIONS**
- Alternate Tests and Models II (p259)
- Chemical Carcinogenesis (p247)
- Developmental Basis of Disease (p250)
- Developmental Toxicology (p252)
- Genotoxicity II (p266)
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- Immunotoxicology (p253)
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- Stem Cell Biology and Toxicology (p262)

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- Biomarkers: New Breakthroughs in the World of Air Pollution Studies (p268)
- New Insights into Skin Homeostasis and Carcinogenesis (p268)
- Pulmonary Effects of In Utero and Early Postnatal Exposure to Arsenic (p269)
- The Role of Inflammation during Metabolic Liver Disease and Drug-Induced Liver Toxicity: Novel Insights (p270)

**WORKSHOP SESSIONS**
- Food Allergy—Basic Mechanisms and Applications to Identifying Risks Associated with Plant Incorporated Pesticides and Other Genetically Modified Crops (p270)
- The Impact of Transcript Profiling in Drug Safety Assessment (p271)
- The Road to Personalized Medicine (p271)

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- Bioinformatics and Computational Toxicology (p272)
- Expression and Modulation of Cytochrome P450 (p272)
- Mechanisms in Nanomaterial Toxicology (p273)
- Signal Transduction and Metal-Induced Toxicity (p274)

1:30 PM–2:30 PM
**SPECIAL SESSION**
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4:30 PM–5:50 PM
**ROUNDTABLE SESSION**
- What Is an Adverse Effect in the Age of ‘omics? (p274)

**EDUCATION–CAREER DEVELOPMENT SESSION**
- Career Opportunities and Transitions in Toxicology (p275)

7:30 AM–8:50 AM
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- Phototoxicology: A Passing Fancy or Enduring Concern? (p276)

**INFORMATIONAL SESSION**
- Lead: Children’s Exposures and Current Regulatory Standards (p276)

7:30 AM–11:45 AM
**ISSUES SESSION**
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8:30 AM–12:00 NOON
**POSTER SESSIONS**
- Cardiopulmonary Toxicity (p284)
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- New Applications in Animal Models (p290)
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9:00 AM–11:45 AM
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- Heat Shock Proteins and the Toxicological Response (p295)

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- Biomarkers for Assessing the Systemic Inflammatory Response Syndrome in Toxicology Studies (p296)
- Is Modulation of the Immune System by Perfluoroalkyl Acids a Human Health Concern? (p296)
- The Molecular Mechanism of Alpha, Beta-Unsaturated Carbonyl Toxicity: Getting in Touch with the Soft Side of Chemistry (p297)
SOT Resource Pavilion
How can you advance the science of toxicology?
Stop by the SOT Resource Pavilion in the Charles Street Lobby of the Baltimore Convention Center to:

• Access Information About SOT Membership
• Support the SOT Endowment
• Connect with SOT Volunteers
• Swap Communication Tips and Materials for Topics Important to Toxicologists

Animals in Research
K–12 Education
Public Outreach
Regulatory and Legislative Affairs

The Resource Pavilion is your connection to key resources and people in toxicology.
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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

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<th>Description</th>
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<tr>
<td>Front Fold-Out Cover—Scientific Program Overview</td>
<td>This quick reference guide lists the Annual Meeting scientific sessions with corresponding page numbers in the Program Description section. Color-coded presentation titles assist you in identifying sessions within each theme. A brief description for each theme is available as well.</td>
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<tr>
<td>Daily Pocket Calendar (pages 3–15)</td>
<td>This at-a-glance calendar is your guide to the daily activities of the Annual Meeting including special sessions; Specialty Section, Regional Chapter, Special Interest Group, and ancillary functions; and SOT committee meetings. We encourage you to tear out the daily guide for easy reference. Please note that the scientific session details are included at the end of each day’s guide.</td>
</tr>
<tr>
<td>Schedule by Event Name (pages 17–25)</td>
<td>This is an alphabetical listing of all the functions held during the Annual Meeting. You may use this easy-to-read schedule to quickly locate an event. Please note that for the scientific sessions detail, you must refer to the Scientific Program Overview on the front fold out cover or Daily Pocket Calendar on pages 3–15.</td>
</tr>
<tr>
<td>Poster Session Schedule and Board Surface Maps</td>
<td>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 Hall Monday–Wednesday and Ballroom I on Thursday.</td>
</tr>
<tr>
<td>Scientific Session Index (pages 83–90)</td>
<td>This index lists the scientific sessions by type, date, and time. In addition, this information includes the session titles with abstract numbers, poster boards, session locations, and corresponding page numbers in the Program Description section.</td>
</tr>
<tr>
<td>Author Index (pages 299–317)</td>
<td>The numerals following the author’s names refer to the abstract numbers referenced in this Program and The Toxicologist. The asterisk after the abstract number indicates the author is the first presenter.</td>
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<tr>
<td>Abstract Key Word Index (pages 318–327)</td>
<td>This index provides a listing of key words by subject or chemical and the relevant abstract(s) referenced in this Program and The Toxicologist.</td>
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Program Description Scientific Session Reference (pages 91–297)

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.

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<td>Session Type and Title</td>
<td>Session type and title display in bold type and are formatted in uppercase. A brief description for each scientific session type is listed below.</td>
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<tr>
<td>Sponsors or Endorsers</td>
<td>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.</td>
</tr>
<tr>
<td>Abstract Number or Presentation Time</td>
<td>The first number listed is the abstract number, or the SOT final identifying number. For scientific sessions (but not Continuing Education Courses or Poster Presentations), the second number is the presentation time. Individual abstracts can be found on The Toxicologist CD-ROM (free to all attendees), The Toxicologist publication (available for purchase on-site for $20), and on the SOT Web site.</td>
</tr>
<tr>
<td>Poster Sessions</td>
<td>The poster board surface number is listed above the title of each individual poster presentation for easy reference.</td>
</tr>
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Scientific Session Type Legend

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<th>EC</th>
<th>Education-Career Development Sessions (80 minutes)—Sessions that provide the tools and resources to toxicologists that will enhance their professional and scientific development</th>
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</thead>
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<td>E</td>
<td>Exhibitor Hosted Sessions (60 minutes)—Informative sessions developed by an exhibiting company</td>
</tr>
<tr>
<td>FS</td>
<td>Featured Sessions (50–60 minutes)—Keynote and other special lectures</td>
</tr>
<tr>
<td>HH</td>
<td>Historical Highlights (80 minutes)—Review of a historical body of science that has impacted toxicology</td>
</tr>
<tr>
<td>IS</td>
<td>Informational Sessions (80 minutes)—Scientific planning or membership development</td>
</tr>
<tr>
<td>PL</td>
<td>Platform Sessions (165 minutes)—Oral presentations that cover new areas, concepts, or data</td>
</tr>
<tr>
<td>PS</td>
<td>Poster Sessions (180–210 minutes)—Topic specific presentations that cover new areas, concepts, or data</td>
</tr>
<tr>
<td>RI</td>
<td>Regional Interest Session (165 minutes)—Central topics of relevance that describe public health and/or ecological problems of a particular region</td>
</tr>
<tr>
<td>R</td>
<td>Roundtable Sessions (80 minutes)—Controversial subjects</td>
</tr>
<tr>
<td>S</td>
<td>Symposia Sessions (80 or 165 minutes)—Cutting-edge science; new areas, concepts, or data</td>
</tr>
<tr>
<td>W</td>
<td>Workshop Sessions (165 minutes)—State-of-the-art knowledge in toxicology</td>
</tr>
</tbody>
</table>
Daily Pocket Calendar

For your convenience, please tear out and carry with you.

Friday

Events start at Hilton Marshall Room.

March 13, 2009

Saturday

March 14, 2009

Sunday

March 15, 2009
### Daily Pocket Calendar

**Scientific Program Overview by Day & Time**

<table>
<thead>
<tr>
<th>Day</th>
<th>March 15, 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sunday</strong></td>
<td></td>
</tr>
<tr>
<td><strong>7:00 AM–7:45 AM</strong></td>
<td>CONTINUING EDUCATION SUNRISE MINI-COURSE</td>
</tr>
<tr>
<td>1. Topics in Ethics: Conflict of Interest—Real or Imagined?—PBDEs As a Case Study</td>
<td></td>
</tr>
<tr>
<td><strong>8:15 AM–12:00 NOON</strong></td>
<td>CONTINUING EDUCATION MORNING COURSES</td>
</tr>
<tr>
<td>2. Free Radicals for Toxicologists—From the Basics to Inflammation and Disease</td>
<td></td>
</tr>
<tr>
<td>3. Characterizing Modes-of-Action and Their Relevance in Assessing Human Health Risks</td>
<td></td>
</tr>
<tr>
<td>4. Evaluation of Toxicity to Male and Female Reproductive Systems: Biology, Study Design, and Data Interpretation</td>
<td></td>
</tr>
<tr>
<td>5. Immunology for Toxicologists</td>
<td></td>
</tr>
<tr>
<td>6. Principles and Applications of Toxicokinetics</td>
<td></td>
</tr>
<tr>
<td>7. Translation of Safety Biomarkers in Drug Discovery and Development</td>
<td></td>
</tr>
<tr>
<td><strong>1:15 PM–5:00 PM</strong></td>
<td>CONTINUING EDUCATION AFTERNOON COURSES</td>
</tr>
<tr>
<td>8. Free Radicals for Toxicologists—From the Basics to Inflammation and Disease</td>
<td></td>
</tr>
<tr>
<td>9. Characterizing Variability and Uncertainty with Physiologically-Based Pharmacokinetic Models</td>
<td></td>
</tr>
<tr>
<td>10. Current Approaches in Mixture Risk Assessment</td>
<td></td>
</tr>
<tr>
<td>11. How Similar Is Similar and How Relevant Is Relevant? Considerations in the Design of a Predictive Development Program for Biotherapeutics</td>
<td></td>
</tr>
<tr>
<td>12. New Frontier in Metal Toxicology: Genetic Susceptibility, Early Diagnosis, and Related Biological Indices</td>
<td></td>
</tr>
<tr>
<td>13. Stress As a Confounding Factor in Toxicology Studies</td>
<td></td>
</tr>
</tbody>
</table>

**Notes**
### Daily Pocket Calendar

For your convenience, please tear out and carry with you.

<table>
<thead>
<tr>
<th>Monday</th>
<th>March 16, 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Events are listed alphabetically by the event start time. Events at the Baltimore Convention Center are noted as CC.</td>
<td></td>
</tr>
<tr>
<td><strong>6:30 AM to 8:00 AM</strong></td>
<td><strong>2:45 PM to 3:45 PM</strong></td>
</tr>
<tr>
<td>Comparative and Veterinary Specialty Section Officers Meeting CC Room 330</td>
<td>Exhibitor Hosted Sessions: Ariadne, Biopredic International, and Roche Applied Science</td>
</tr>
<tr>
<td><strong>6:30 AM to 8:00 AM</strong></td>
<td><strong>3:30 PM to 4:30 PM</strong></td>
</tr>
<tr>
<td>Metals Specialty Section Officers Meeting CC Room 346</td>
<td>Undergraduate Education Subcommittee Meeting CC Room 305</td>
</tr>
<tr>
<td><strong>6:30 AM to 8:00 AM</strong></td>
<td><strong>4:30 PM to 6:00 PM</strong></td>
</tr>
<tr>
<td>Past Presidents Breakfast CC Room 330</td>
<td>American Board of Toxicology Open Mixer Meeting Hilton Key Ballroom 1</td>
</tr>
<tr>
<td><strong>7:00 AM to 8:30 AM</strong></td>
<td><strong>4:30 PM to 6:00 PM</strong></td>
</tr>
<tr>
<td>Continuing Education Committee Meeting CC Room 312</td>
<td>ELSEI: Informational Forum: Creating an Extractable/Leachable Safety Database Hilton Poe A Room</td>
</tr>
<tr>
<td><strong>7:00 AM to 6:00 PM</strong></td>
<td><strong>4:30 PM to 7:00 PM</strong></td>
</tr>
<tr>
<td>E-mail Center/Message Boards CC Pratt Street Lobby</td>
<td>Roundtable of Toxicology Consultants Hilton Johnson A Room</td>
</tr>
<tr>
<td><strong>7:00 AM to 5:00 PM</strong></td>
<td><strong>4:30 PM to 5:30 PM</strong></td>
</tr>
<tr>
<td>Housing Desk CC Pratt Street Lobby</td>
<td>SOT/EUROTOX Debate: Nanotoxicology—Is It Much Ado About Nothing? CC Ballroom 1</td>
</tr>
<tr>
<td><strong>7:00 AM to 9:00 AM</strong></td>
<td><strong>4:30 PM to 6:00 PM</strong></td>
</tr>
<tr>
<td>In Vivo and Alternative Methods Specialty Section Officers Meeting CC Room 342</td>
<td>Specialty Section Presidents and Officers Meeting CC Room 302</td>
</tr>
<tr>
<td><strong>7:00 AM to 8:30 PM</strong></td>
<td><strong>4:30 PM to 9:00 PM</strong></td>
</tr>
<tr>
<td>Luggage/Coat Check CC Pratt Street Lobby</td>
<td>Toxicology Education Foundation Board Meeting Hilton Stone Room</td>
</tr>
<tr>
<td><strong>7:00 AM to 8:00 AM</strong></td>
<td><strong>4:35 PM to 5:55 PM</strong></td>
</tr>
<tr>
<td>Molecular Biology Specialty Section Officers Meeting CC Room 304</td>
<td>Scientific Sessions CC (See Program Description for Room Locations)</td>
</tr>
<tr>
<td><strong>7:00 AM to 8:15 AM</strong></td>
<td><strong>4:45 PM to 6:15 PM</strong></td>
</tr>
<tr>
<td>Postdoctoral Assembly Board Meeting CC Room 305</td>
<td>AAAS/Science: Scientific Careers Away from the Bench Hilton Key Ballroom 2</td>
</tr>
<tr>
<td><strong>7:00 AM to 8:30 AM</strong></td>
<td><strong>5:00 PM to 7:00 PM</strong></td>
</tr>
<tr>
<td>Regional Chapter/Special Interest Group Graduate Committee Meeting CC Room 302</td>
<td>Elverman Reception Hilton Latrobe Room</td>
</tr>
<tr>
<td><strong>7:00 AM to 5:00 PM</strong></td>
<td><strong>5:00 PM to 6:00 PM</strong></td>
</tr>
<tr>
<td>Registration CC Pratt Street Lobby</td>
<td>Gulf Coast and South Central Regional Chapters Joint Meeting/Reception Tir na nÓg Irish Bar &amp; Grill</td>
</tr>
<tr>
<td><strong>7:00 AM to 8:30 AM</strong></td>
<td><strong>5:30 PM to 6:00 PM</strong></td>
</tr>
<tr>
<td>Regulatory and Safety Evaluation Specialty Section Officers Meeting CC Room 345</td>
<td>Korean Toxicologists Association in America Special Interest Group Meeting/Reception Hilton Calloway A Room</td>
</tr>
<tr>
<td><strong>7:00 AM to 9:00 AM</strong></td>
<td><strong>5:30 PM to 7:30 PM</strong></td>
</tr>
<tr>
<td>Risk Assessment Specialty Section Officers Meeting CC Room 306</td>
<td>Southern California and Mountain West Regional Chapters Joint Meeting/Reception Phillips Seaford Restaurant</td>
</tr>
<tr>
<td><strong>7:00 AM to 8:00 AM</strong></td>
<td><strong>6:00 PM to 8:30 PM</strong></td>
</tr>
<tr>
<td>Scientific Program Committee Walk-Through CC Ballroom III</td>
<td>American Association of Chinese in Toxicology Special Interest Group Business Meeting/Reception Hilton Key Ballroom 4</td>
</tr>
<tr>
<td><strong>7:00 AM to 5:00 PM</strong></td>
<td><strong>6:00 PM to 8:00 PM</strong></td>
</tr>
<tr>
<td>SOT Office CC Room 332</td>
<td>Association of Scientists of Indian Origin in America Special Interest Group Meeting/Reception Hilton Key Ballroom 9</td>
</tr>
<tr>
<td><strong>7:00 PM to 5:00 PM</strong></td>
<td><strong>6:00 PM to 7:30 PM</strong></td>
</tr>
<tr>
<td>Speaker Ready Room CC Room 331</td>
<td>Mixtures Specialty Section Meeting/Reception CC Room 330</td>
</tr>
<tr>
<td><strong>7:15 AM to 8:00 AM</strong></td>
<td><strong>Continued on next page</strong></td>
</tr>
<tr>
<td>Undergraduate Education Program CC Room 339</td>
<td></td>
</tr>
<tr>
<td><strong>7:30 AM to 9:00 AM</strong></td>
<td></td>
</tr>
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</table>
### Monday (Continued)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:00 PM to 7:30 PM</td>
<td>Molecular Biology Specialty Section Meeting/Reception</td>
<td>CC Room 345</td>
</tr>
<tr>
<td>6:00 PM to 8:00 PM</td>
<td>Northern California and Pacific Northwest Regional Chapters and UC Davis-UC Berkeley Joint Meeting/Reception</td>
<td>Hilton Key Ballroom 8</td>
</tr>
<tr>
<td>6:00 PM to 7:30 PM</td>
<td>Regulatory and Safety Evaluation Specialty Section Meeting/Reception</td>
<td>CC Room 343</td>
</tr>
<tr>
<td>6:00 PM to 7:30 PM</td>
<td>Risk Assessment Specialty Section Meeting/Reception</td>
<td>CC Room 339</td>
</tr>
<tr>
<td>6:00 PM to 8:00 PM</td>
<td>St. John’s University 7th Annual Toxicology Alumni Dinner</td>
<td>Hilton Peale B Room</td>
</tr>
<tr>
<td>7:00 PM to 9:00 PM</td>
<td>Toxicological Sciences/Oxford Journals Appreciation Dinner (By Invitation Only)</td>
<td>Phillips Seafood Restaurant</td>
</tr>
<tr>
<td>7:30 PM to 9:00 PM</td>
<td>North Carolina State University Alumni Reception</td>
<td>Hilton Peale A Room</td>
</tr>
</tbody>
</table>

### Notes
## Daily Pocket Calendar

### Scientific Program Overview by Day & Time

#### Monday

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 AM–9:00 AM</td>
<td><strong>PLENARY OPENING LECTURE</strong> Signal Transduction Pathway Used by Therapeutic Agents and Drugs of Abuse—Lecturer: Nobel Laureate Paul Greengard (Exhibit Hall A)</td>
</tr>
</tbody>
</table>
| 9:15 AM–12:00 NOON | **SYMPOSIAS SESSIONS**  
  - Eat Well, Breathe Well: Nutritional Determinants of Susceptibility to Airborne Pollutants (Room 321)  
  - MicroRNAs in Biology and Toxicology (Ballroom I)  
  - Superantigens, Cytokine Storm, and Toxic Reactions (Room 324)  
  - Zinc, Inflammation, and Diabetes (Room 314)  
| 9:30 AM–12:30 PM | **WORKSHOPS SESSIONS**  
  - Dose Selection and Design Considerations in Safety Studies for Biotherapeutics (Room 308)  
  - From Genes to Organs: Advancements in Modeling Biological Systems (Room 327)  
  - Strategies to Integrate Systems Biology into In Vitro Screening in Early Nonclinical Safety Assessment (Room 307)  
| 10:00 AM–4:30 PM | **POSTER SESSIONS** (Exhibit Hall—See Poster Board Surface Maps on Pages 34–37)  
  - Ab Receptor Mediated Signalling (Exhibit Hall)  
  - Apoptotic Activators and Regulatory Pathways (Exhibit Hall)  
  - Cardiovascular Toxicity I (Exhibit Hall)  
  - Dermal Absorption and Skin Toxicity (Exhibit Hall)  
  - Information and Education (Exhibit Hall)  
  - Insights in Endocrine Action and Toxicology (Exhibit Hall)  
  - Nanotoxicology In Vivo (Exhibit Hall)  
  - Neurotoxicity—Developmental (Exhibit Hall)  
  - Receptors (Exhibit Hall)  
  - Redox-Cycling, Reactive Oxygen Species (ROS), and Damage (Exhibit Hall)  
  - Xenobiotic Biotransformation (Exhibit Hall)  
| 1:00 PM–4:30 PM | **SYMPOSIAS SESSIONS**  
  - Peer Review of Toxicology, Exposure, and Risk Data: Ensuring the Best Science (Room 307)  
  - The Structural Pervasiveness of Estrogen Activity—Benefits and Risks from the Eclectic Nature of Ligand Binding by the Estrogen Receptor—Lecturer: John Katzenellenbogen (Room 324)  
| 12:30 PM–1:20 PM | **LEADING EDGE IN BASIC SCIENCE AWARD LECTURE**  
  - Lecturer: Nobel Laureate Paul Greengard  
| 2:30 PM–3:50 PM | **WORKSHOPS SESSIONS**  
  - Applications in Omics Technologies to problems in Toxicology (Room 309)  
  - Immunoregulation and Toxicity (Room 316)  
  - Mechanistic Insights for Reproductive Toxicology (Room 310)  
| 4:35 PM–5:55 PM | **EDUCATION-CAREER DEVELOPMENT SESSION**  
  - Grantsmanship Forum: Tools and Skills Needed to Navigate Toxicology Research Funding (Room 307)  

#### March 16, 2009

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 AM–9:00 AM</td>
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  - MicroRNAs in Biology and Toxicology (Ballroom I)  
  - Superantigens, Cytokine Storm, and Toxic Reactions (Room 324)  
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| 9:30 AM–12:30 PM | **WORKSHOPS SESSIONS**  
  - Dose Selection and Design Considerations in Safety Studies for Biotherapeutics (Room 308)  
  - From Genes to Organs: Advancements in Modeling Biological Systems (Room 327)  
  - Strategies to Integrate Systems Biology into In Vitro Screening in Early Nonclinical Safety Assessment (Room 307)  
| 10:00 AM–4:30 PM | **POSTER SESSIONS** (Exhibit Hall—See Poster Board Surface Maps on Pages 34–37)  
  - Ab Receptor Mediated Signalling (Exhibit Hall)  
  - Apoptotic Activators and Regulatory Pathways (Exhibit Hall)  
  - Cardiovascular Toxicity I (Exhibit Hall)  
  - Dermal Absorption and Skin Toxicity (Exhibit Hall)  
  - Information and Education (Exhibit Hall)  
  - Insights in Endocrine Action and Toxicology (Exhibit Hall)  
  - Nanotoxicology In Vivo (Exhibit Hall)  
  - Neurotoxicity—Developmental (Exhibit Hall)  
  - Receptors (Exhibit Hall)  
  - Redox-Cycling, Reactive Oxygen Species (ROS), and Damage (Exhibit Hall)  
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| 12:30 PM–1:20 PM | **LEADING EDGE IN BASIC SCIENCE AWARD LECTURE**  
  - Lecturer: Nobel Laureate Paul Greengard  
| 2:30 PM–3:50 PM | **WORKSHOPS SESSIONS**  
  - Applications in Omics Technologies to problems in Toxicology (Room 309)  
  - Immunoregulation and Toxicity (Room 316)  
  - Mechanistic Insights for Reproductive Toxicology (Room 310)  
| 4:35 PM–5:55 PM | **EDUCATION-CAREER DEVELOPMENT SESSION**  
  - Grantsmanship Forum: Tools and Skills Needed to Navigate Toxicology Research Funding (Room 307)  

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**.up-to-date information at www.toxicology.org**
Tuesday

Events are listed alphabetically by the event start time.

7:30 AM to 9:00 AM
Immunotoxicology Specialty Section Officers Meeting
CC Room 330

7:30 AM to 9:00 AM
Scientific Sessions (Sunrise)
CC (See Program Descriptions for Room Locations)

8:00 AM to 10:45 AM
Exhibitor Hosted Sessions: BASF SE, Charles River, and Ricerca Biosciences, LLC
CC (See Program Description for Room Locations)

10:45 AM to 10:55 AM
Distinguished Toxicology Scholar Award Lecture: Role of Reactive Metabolites, Protein Adducts, Immune System, and Other Susceptibility Factors in Drug-Induced Liver Injury
Lecture: Lance K. Pohl
CC Room 324

12:30 PM to 1:30 PM
Poster Session
(CC Posters Board Surface Maps on Pages 34–37)

7:30 AM to 9:00 AM
Food Safety Specialty Section Officers Meeting
CC Room 342

7:30 AM to 9:00 AM
Hispanic Organization for Toxicologists Special Interest Group Officers Meeting TBD

March 17, 2009

1:30 PM to 2:30 PM
Exhibitor Hosted Sessions: Covance, National Library of Medicine, and National Toxicology Program (NTP)
CC (See Program Descriptions for Room Locations)

1:30 PM to 4:15 PM
Scientific Sessions
CC (See Program Descriptions for Room Locations)

2:45 PM to 3:45 PM
Exhibitor Hosted Sessions: CeeTox, Inc., InStem, and WuXi AppTec
CC (See Program Descriptions for Room Locations)

3:30 PM to 4:30 PM
Undergraduate Faculty Meeting
(All interested in teaching toxicology to undergraduates are invited)
CC Room 302

4:30 PM to 6:00 PM
Annual Business Meeting of the Society of Toxicology (SOT Members Only; Fall, Associate, Postdoctoral, and Student Members Invited)
CC Room 321

4:30 PM to 5:30 PM
ASTM E47.02 Biological Fate and Effects—Terrestrial Toxicology Methods Hilton Holiday Ballroom III

4:45 PM to 6:00 PM
ToxExpo™ 2010 Exhibit Space Selection Meeting
CC Room 336

5:30 PM to 7:00 PM
Hispanic Organization for Toxicologists Special Interest Group Meeting/Reception
Hilton Pickersgill Room

6:00 PM to 7:30 PM
Carcinogenesis Specialty Section Meeting/Reception
CC Room 339

6:00 PM to 7:30 PM
Dermal Toxicology Specialty Section Meeting/Reception
CC Room 343

6:00 PM to 7:30 PM
Ethical, Legal, and Social Issues Section Meeting/Reception
CC Room 334

6:00 PM to 7:30 PM
Food Safety Specialty Section Meeting/Reception
CC Room 342

6:00 PM to 7:30 PM
Immunotoxicology Specialty Section Meeting/Reception
CC Room 330

6:00 PM to 9:00 PM
Joinn Laboratories Mixer
Hilton Tubman B Room

6:00 PM to 7:30 PM
Mechanisms Specialty Section Meeting/Reception
CC Room 309

For your convenience, please tear out and carry with you.
### Tuesday (Continued)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event details</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:00 PM to 8:00 PM</td>
<td>Rosetta Biosoftware Hospitality Suite, Hilton Blake Room</td>
</tr>
<tr>
<td>6:00 PM to 8:00 PM</td>
<td>Toxicologists of African Origin Special Interest Group Meeting/Reception, Hilton Tubman A Room</td>
</tr>
<tr>
<td>7:00 PM to 8:30 PM</td>
<td>Kettering Laboratory Reunion, University of Cincinnati Reception, Hilton Poe A Room</td>
</tr>
<tr>
<td>7:30 PM to 10:00 PM</td>
<td>University of Rochester Alumni Reception, Sheraton Inner Harbor Potomac Room</td>
</tr>
<tr>
<td>9:00 PM to 11:00 PM</td>
<td>Michigan State University Environmental Toxicology Reception, Hilton Key Ballroom 9</td>
</tr>
<tr>
<td>9:00 PM to 11:00 PM</td>
<td>Rutgers University Joint Graduate Program in Toxicology Annual Dessert Reception, Hilton Peale Room</td>
</tr>
<tr>
<td>9:00 PM to 10:00 PM</td>
<td>University of Connecticut Reception, Hilton Armstead Room</td>
</tr>
</tbody>
</table>

### Notes

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## Daily Pocket Calendar

### Scientific Program Overview by Day & Time

**Tuesday, March 17, 2009**

### 7:30 AM–8:50 AM

**ROUNDTABLE SESSIONS**
- Biomarkers of Cardiac Hypertrophy and Skeletal Muscle Toxicity—Successes and Challenges Related to Their Implementation in Drug Development (Room 310)
- The Regulatory Frontier: Addressing Products of Nanotechnology (Room 309)

### 8:00 AM–8:50 AM

**TRANSLATIONAL IMPACT AWARD LECTURE**
- Keep! One Eye on the Target—Translating Molecular Toxicology into Cancer Prevention—
Lecturer: Thomas W. Kensler (Room 324)

### 9:00 AM–11:45 AM

**SYMPOSIA SESSIONS**
- Does Metal Toxicity Play a Role in the Etiology of Alzheimer’s Disease? (Room 321)
- Epigenetic Implications for Toxicology (Ballroom I)
- Immunomodulation during Complementary and Alternative Medicine (CAM) Therapy: Risks and Benefits (Ballroom IV)
- Nanotoxicology and Drug Delivery (Ballroom III)

**WORKSHOP SESSIONS**
- Low-Dose Non-Linearity: What Can Emerging Technologies Tell Us? (Room 314)
- Maternal Toxicity and Its Impact on Study Design and Data Interpretation (Room 324)
- Pesticide Mixtures: Experimental Evaluation and Computational Modeling (Room 327)

**PLATFORM SESSIONS**
- Advances in Animal and Alternative Models (Room 308)
- Advances in Biological Modeling (Room 307)
- Cellular and Biological Sources for Biomarkers (Room 309)
- Metal-Induced Carcinogenesis (Room 316)
- Xenobiotic Modulation of Signal Transduction Pathways and Gene Regulation (Room 310)

### 9:00 AM–12:30 PM

**POSTER SESSIONS**  
*Exhibit Hall—See Poster Board Surface Maps on Pages 34–37*

- Biological Actions of Natural Products (Exhibit Hall)
- Cardiovascular Toxicity II (Exhibit Hall)
- Nanotoxicology *In Vitro* (Exhibit Hall)
- Reactive Oxygen Species (ROS) Stimulated Signalling (Exhibit Hall)
- Research in Disposition and Pharmacokinetics (Exhibit Hall)
- Risk Assessment Applications (Exhibit Hall)
- Role of PPAR and COX-2 in Chemical Carcinogenesis (Exhibit Hall)
- Safety Issues Concerning Food Products and Micronutrients (Exhibit Hall)

### 12:00 NOON–1:20 PM

**ROUNDTABLE SESSIONS**
- Is There a Future for Animal Models in the Investigation of Idiosyncratic DILI in Humans? (Room 308)
- National Children’s Study: Opportunities and Challenges for Toxicologists (Room 310)
- Setting a Safe Starting Dose in Initial Clinical Trials with Biotherapeutics: Do I Use the NOAEL or the MABEL? (Room 307)

**EDUCATION-CAREER DEVELOPMENT SESSION**
- The Future of Environmental Health Science: Featuring NIEHS-Funded Early Career Investigators (Room 309)

### 1:20 PM–4:15 PM

**SYMPOSIA SESSIONS**
- Aquatic Species As Sentinels for Human Health: Comparative Toxicology of Metals, Nanoparticles, and PCB’s (Ballroom IV)
- Mammalian Retrotranspositional Elements: Epigenetic Regulation, Species Differences, and Potential Roles As Mediators of Cellular Responses to Toxic Stress (Room 314)
- The Good, the Bad, and the Ugly of Toxicant-Induced Pulmonary Inflammation (Ballroom I)

**WORKSHOP SESSIONS**
- Improved Safety Biomarkers for Monitoring Kidney Injury (Room 321)
- Oxidative Stress As a Regulator of Normal Function and Mediator of Toxicant-Induced Damage with Impacts on Reproduction and Development (Room 316)
- Pesticides and Parkinson’s Disease: Implications of New Epidemiology and Exposure Data to Risk Assessment (Ballroom III)
- Safety of High-Intensity Sweeteners: Bittersweet Controversy (Room 327)

**PLATFORM SESSIONS**
- Advances in Disposition and Pharmacokinetics (Room 308)
- Advances in Risk Assessment Science (Room 307)
- Effects of Inhaled Pollutants—Cardiopulmonary Toxicity (Room 309)
- Mechanisms in Immunotoxicology (Room 310)
- New Insights in Ecotoxicology (Room 324)
### Daily Pocket Calendar

**For your convenience, please tear out and carry with you.**

#### Wednesday, March 18, 2009

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 AM to 2:00 PM</td>
<td>Tour Desk</td>
<td>CC Pratt Street Lobby</td>
</tr>
<tr>
<td>8:30 AM to 9:30 AM</td>
<td>Complimentary Coffee</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>8:30 AM to 2:30 PM</td>
<td>Concession Stands</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>8:30 AM to 4:30 PM</td>
<td>Hot Zones (Wireless Internet Access)</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>8:30 AM to 9:00 AM</td>
<td>Poster Set Up (See Poster Board Surface Maps on Pages 34-37)</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>8:30 AM to 4:30 PM</td>
<td>SOT Resource Pavilion</td>
<td>CC Charles Street Lobby</td>
</tr>
<tr>
<td>8:30 AM to 9:00 AM</td>
<td>CC Exhibit Hall</td>
<td>CC Room 304</td>
</tr>
<tr>
<td>9:00 AM to 12:00 NOON</td>
<td>NIH Grants Room</td>
<td>CC Room 304</td>
</tr>
<tr>
<td>9:00 AM to 12:30 PM</td>
<td>Poster Sessions</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>9:00 AM to 11:45 AM</td>
<td>Scientific Sessions</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>9:00 AM to 4:30 PM</td>
<td>Scientific Sessions (Sunrise)</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>9:00 AM to 12:00 NOON</td>
<td>SOT History Room</td>
<td>CC Charles Street VIP Suite</td>
</tr>
<tr>
<td>9:30 AM to 11:00 AM</td>
<td>50th Anniversary SOT Task Force Meeting</td>
<td>CC Room 312</td>
</tr>
<tr>
<td>9:45 AM to 10:45 AM</td>
<td>Exhibitor Hosted Sessions: Cellulome, Inc., Charles River, and Huntington Life Sciences</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>11:00 AM to 12:00 NOON</td>
<td>Exhibitor Hosted Sessions: ADMET Group and Meso Scale Discovery</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>11:30 AM to 1:30 PM</td>
<td>Finance Committee Meeting</td>
<td>CC Room 334</td>
</tr>
<tr>
<td>11:30 AM to 1:00 PM</td>
<td>Membership Committee Meeting</td>
<td>CC Room 305</td>
</tr>
<tr>
<td>12:00 NOON to 1:20 PM</td>
<td>Special Session: Meet the Director of NIEHS, Linda Birnbaum</td>
<td>CC Room 316</td>
</tr>
<tr>
<td>12:00 NOON to 1:30 PM</td>
<td>Occupational and Public Health Specialty Section Meeting/Luncheon</td>
<td>CC Room 339</td>
</tr>
<tr>
<td>12:00 NOON to 1:20 PM</td>
<td>Scientific Sessions</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>12:00 NOON to 1:20 PM</td>
<td>(See Program Description for Room Locations)</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>12:15 PM to 1:15 PM</td>
<td>Exhibitor Hosted Session: Covance</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>12:30 PM to 1:20 PM</td>
<td>Merit Award Lecture: Chemical Hepatocarcinogenesis—Mechanisms, Pathogenesis, and Thresholds</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>12:30 PM to 2:30 PM</td>
<td>Special Session: Update from the NIH Center for Scientific Review</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>12:30 PM to 1:20 PM</td>
<td>Topical Award: Chemical Pathogenesis, and Thresholds</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>1:00 PM to 4:30 PM</td>
<td>Poster Sessions</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>1:00 PM to 4:30 PM</td>
<td>Soapbox Session</td>
<td>CC Pratt Street Lobby</td>
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<tr>
<td>1:30 PM to 1:45 PM</td>
<td>Scientific Sessions</td>
<td>CC Exhibit Hall</td>
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<tr>
<td>1:30 PM to 4:15 PM</td>
<td>Scientific Sessions</td>
<td>CC Exhibit Hall</td>
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<tr>
<td>1:30 PM to 4:15 PM</td>
<td>(See Program Descriptions for Room Locations)</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>1:30 PM to 4:15 PM</td>
<td>(See Program Descriptions for Room Locations)</td>
<td>CC Exhibit Hall</td>
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<tr>
<td>2:00 PM to 4:00 PM</td>
<td>Exhibit Liaison Advisory Committee Meeting</td>
<td>CC Room 312</td>
</tr>
<tr>
<td>3:00 PM to 5:00 PM</td>
<td>Board of Publications Committee Meeting</td>
<td>CC Room 305</td>
</tr>
<tr>
<td>4:30 PM to 5:50 PM</td>
<td>Scientific Sessions</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>4:30 PM to 6:00 PM</td>
<td>Women in Toxicology Special Interest Group Meeting/Reception</td>
<td>Hilton Latrobe Room</td>
</tr>
<tr>
<td>5:00 PM to 6:00 PM</td>
<td>INA Business Meeting</td>
<td>Hilton Latrobe Room</td>
</tr>
<tr>
<td>5:00 PM to 12:00 MIDNIGHT</td>
<td>ToxExpo™ Tear Down</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>6:00 PM to 7:30 PM</td>
<td>Biological Modeling Specialty Section Meeting/Reception</td>
<td>CC Room 330</td>
</tr>
<tr>
<td>6:00 PM to 7:30 PM</td>
<td>Drug Discovery Toxicology Specialty Section Meeting/Reception</td>
<td>CC Room 342</td>
</tr>
<tr>
<td>6:00 PM to 7:30 PM</td>
<td>(By Invitation Only)</td>
<td>CC Room 339</td>
</tr>
<tr>
<td>6:00 PM to 7:30 PM</td>
<td>(See Program Descriptions for Room Locations)</td>
<td>CC Room 345</td>
</tr>
<tr>
<td>6:00 PM to 7:30 PM</td>
<td>(See Program Descriptions for Room Locations)</td>
<td>CC Exhibit Hall</td>
</tr>
<tr>
<td>6:00 PM to 7:30 PM</td>
<td>Nanotoxicology Specialty Section Meeting/Reception</td>
<td>CC Room 339</td>
</tr>
<tr>
<td>6:00 PM to 7:30 PM</td>
<td>Neurotoxicology Specialty Section Meeting/Reception</td>
<td>CC Room 339</td>
</tr>
<tr>
<td>7:00 PM to 8:30 PM</td>
<td>President’s Reception (By Invitation Only)</td>
<td>Hilton Holiday 6 Room</td>
</tr>
<tr>
<td>8:00 PM to 9:00 PM</td>
<td>Academy of Toxicological Sciences Reception</td>
<td>Hilton Peale Room</td>
</tr>
</tbody>
</table>

**Society of Toxicology 2009**

**Daily Pocket Calendar**

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**up-to-date information at [www.toxicology.org](http://www.toxicology.org)**
Daily Pocket Calendar

Scientific Program Overview by Day & Time

Wednesday

7:30 AM–8:50 AM
ROUND TABLE SESSION
• Characterization and Application of PIPK Models in Risk Assessment (Room 307)

INFORMATIONAL SESSION
• Novel Translational Safety Biomarkers and Safety First at the FDA (Room 309)

EDUCATION-CAREER DEVELOPMENT SESSION
• Toxicologists: The Next Generation (Room 308)

SPECIAL SESSION
U.S. FDA Advisory Panel Appointments (Room 310)

8:00 AM–8:50 AM
KEYNOTE MEDICAL RESEARCH COUNCIL (MRC) LECTURE
The Ubiquitin Proteolytic System—From Basic Mechanisms through Human Disease and on to Drug Targeting—Lecturer: Nobel Laureate Aaron Ciechanover (Ballroom I)

9:00 AM–11:45 AM
SYMPOSIUM SESSIONS
• From Mechanisms to Biomarkers: Basic and Applied Metabolomics in Toxicology (Ballroom I)
• Incorporating ‘Omics in the Study of Reproduction and Development (Room 321)
• Interactomes and Their Application in Toxicology (Room 316)
• Transcriptional Changes in Immunotoxicology: Transcription Factors, Signal Transduction, and Epigenetics (Ballroom IV)

WORKSHOP SESSIONS
• Developing Brain: Safety Assessment for Pediatric Use of Pharmaceuticals (Room 327)
• Toxicology of Unintentional and Intentional Disasters (Ballroom III)

REGIONAL INTEREST SESSION
• Biofuels and the Bay: Characterizing Health and Ecosystem Impacts in the Chesapeake (Room 314)

PLATFORM SESSIONS
• Cardiovascular Toxicity of Inhaled Particles and Nanoparticles (Room 324)
• Endocrine-Toxicant Interactions (Room 307)
• Hot Topics in Metal-Induced Neurodegeneration (Room 309)
• Mechanisms of Persistent Organic Compound Toxicity (Room 308)
• Mechanisms of Pesticide-Induced Toxicity (Room 310)

9:00 AM–12:30 PM
POSTER SESSIONS
(Exhibit Hall—See Poster Board Surface Maps on Pages 34–37)
• Advances in Reproductive Toxicology (Exhibit Hall)
• Animal Models II (Exhibit Hall)
• Biomarker Discovery and Detection (Exhibit Hall)
• Biomonitoring and Exposure Assessment (Exhibit Hall)
• Cytoprotective Strategies Against Reactive Oxygen Species (Exhibit Hall)
• Genetic Polymorphisms (Exhibit Hall)
• Hypersensitivity and Autoimmunity (Exhibit Hall)
• Risk Assessment Research (Exhibit Hall)
• Metals—In Vivo (Exhibit Hall)
• Parkinson’s Disease (Exhibit Hall)

12:00 NOON–1:20 PM
SYMPOSIUM SESSION
• Gene-Environment Interactions: Epigenetic Pathways in Chronic Disease Promotion and Progression (Room 307)

ROUND TABLE SESSION
• Preclinical Evaluation of Cancer Hazard and Risk of Biopharmaceuticals (Room 309)

INFORMATIONAL SESSION
• Kinase Inhibitors As Targeted Therapeutics in Oncology—Approaches to Predict and Manage Clinical Toxicities (Room 308)

SPECIAL SESSION
Meet the Director of NIEHS, Linda Birnbaum (Room 316)

12:30 PM–1:20 PM
MERIT AWARD LECTURE
Chemical Hepatocarcinogenesis—Mechanisms, Pathogenesis, and Thresholds—Lecturer: Gary M. Williams (Ballroom I)

1:00 PM–4:30 PM
POSTER SESSIONS
(Exhibit Hall—See Poster Board Surface Maps on Pages 34–37)
• Alternate Tests and Models II (Exhibit Hall)
• Chemical Carcinogenesis (Exhibit Hall)
• Developmental Basis of Disease (Exhibit Hall)
• Developmental Toxicology (Exhibit Hall)
• Genotoxicity II (Exhibit Hall)
• Inflammation (Exhibit Hall)
• Immunotoxicology (Exhibit Hall)
• Mechanisms of Chemoprevention in Chemical Carcinogenesis (Exhibit Hall)
• Metals—In Vivo (Exhibit Hall)
• Steatosis and Cholestasis in Hepatic Disfunction (Exhibit Hall)
• Stem Cell Biology and Toxicology (Exhibit Hall)

March 18, 2009

1:30 PM–4:15 PM
SYMPOSIUM SESSIONS
• Biomarkers: New Breakthroughs in the World of Air Pollution Studies (Ballroom III)
• New Insights into Skin Homeostasis and Carcinogenesis (Room 321)
• Pulmonary Effects of In Utero and Early Postnatal Exposure to Arsenic (Ballroom IV)
• The Role of Inflammation during Metabolic Liver Disease and Drug-Induced Liver Toxicity: Novel Insights (Ballroom I)

WORKSHOP SESSIONS
• Food Allergy—Basic Mechanisms and Applications to Identifying Risks Associated with Plant Incorporated Pesticides and Other Genetically Modified Crops (Room 314)
• The Impact of Transcript Profiling in Drug Safety Assessment (Room 324)
• The Road to Personalized Medicine (Room 327)

PLATFORM SESSIONS
• Bioinformatics and Computational Toxicology (Room 307)
• Expression and Modulation of Cytochrome P450 (Room 308)
• Mechanisms in Nanomaterial Toxicology (Room 309)
• Signal Transduction and Metal-Induced Toxicity (Room 310)

1:30 PM–2:30 PM
SPECIAL SESSION
Update from the NIH Center for Scientific Review—Speaker: Antonio Scarpa, NIH CRS (Room 316)

4:30 PM–5:50 PM
ROUND TABLE SESSION
• What Is an Adverse Effect in the Age of “Omics”? (Room 314)

EDUCATION-CAREER DEVELOPMENT SESSION
• Career Opportunities and Transitions in Toxicology (Room 327)
Daily Pocket Calendar

For your convenience, please tear out and carry with you.

Thursday

7:30 AM to 8:30 AM
CC Room 309

7:30 AM to 8:50 AM
Scientific Sessions (Sunrise)
CC (See Program Description for Room Locations)

8:00 AM to 11:30 AM
Scientific Sessions (Primal)
CC Room 309

8:30 AM to 11:30 AM
Poster Set Up
(See Poster Board Surface Maps on Pages 34–37)
CC Ballroom I

9:00 AM to 11:45 AM
Scientific Sessions
CC (See Program Descriptions for Room Locations)

9:00 AM to 12:00 noon
Poster Sessions
CC Ballroom I

Thursday

March 19, 2009

8:30 AM to 12:00 noon
SOT Resource Pavilion
CC Charles Street Lobby

9:00 AM to 12:00 noon
Poster Sessions
CC Ballroom I

10:00 AM to 1:00 PM
Research Funding Committee Meeting
CC Room 305

12:00 Noon to 1:00 PM
Scientific Program Committee Meeting
CC Room 334

2:00 PM to 7:00 PM
Satellite Meeting: Development of Toxicological and Environmental Public Health Infrastructures in Africa: Understanding the Premise and Mapping the Approach
Hilton Johnson Room

Friday

8:00 AM to 12:00 noon
Satellite Meeting: Development of Toxicological and Environmental Public Health Infrastructures in Africa: Understanding the Premise and Mapping the Approach
Hilton Johnson Room

Scientific Program Overview by Day & Time

Thursday

7:30 AM–8:50 AM
Round Table Session
• Phototoxicology: A Passing Fancy or Enduring Concern?
(Room 308)

Informational Session
• Lead: Children’s Exposures and Current Regulatory Standards
(Room 307)

Issues Session
(Room 309)

Scientific Sessions (Sunrise)
CC (See Program Description for Room Locations)

8:00 AM to 11:30 AM
Registration
CC Pratt Street Lobby

8:00 AM to 12:00 noon
Poster Set Up
(See Poster Board Surface Maps on Pages 34–37)
CC Ballroom I

9:00 AM to 11:45 AM
Scientific Sessions
CC (See Program Descriptions for Room Locations)

9:00 AM to 12:00 noon
Poster Sessions
CC Ballroom I

8:30 AM to 12:00 noon
SOT Resource Pavilion
CC Charles Street Lobby

March 19, 2009

8:00 AM to 12:00 noon
SOT Resource Pavilion
CC Charles Street Lobby

9:00 AM to 12:00 noon
Poster Sessions
CC Ballroom I

10:00 AM to 1:00 PM
Research Funding Committee Meeting
CC Room 305

12:00 Noon to 1:00 PM
Scientific Program Committee Meeting
CC Room 334

2:00 PM to 7:00 PM
Satellite Meeting: Development of Toxicological and Environmental Public Health Infrastructures in Africa: Understanding the Premise and Mapping the Approach
Hilton Johnson Room

March 20, 2009

8:00 AM to 12:00 noon
Satellite Meeting: Development of Toxicological and Environmental Public Health Infrastructures in Africa: Understanding the Premise and Mapping the Approach
Hilton Johnson Room

9:00 AM–11:45 AM
Symposia Session
• Heat Shock Proteins and the Toxicological Response
(Room 309)

Workshop Sessions
• Biomarkers for Assessing the Systemic Inflammatory Response Syndrome in Toxicology Studies
(Room 307)

• Is Modulation of the Immune System by Perfluorooalkyl Acids a Human Health Concern?
(Room 310)

• The Molecular Mechanism of Alpha, Beta-Unsaturated Carbonyl Toxicity: Getting in Touch with the Soft Side of Chemistry
(Room 308)
Since the first Undergraduate Education Program for Minority Students at the 1989 SOT Annual Meeting in Atlanta, SOT has organized a special program every year for students from groups underrepresented in the sciences to encourage them to pursue graduate training in the biomedical sciences and learn about toxicology as a career. NIH Minority Access to Research Careers travel support has been available through these two decades. Other key supporters have included Pfizer, Inc., and Johnson & Johnson.

We invite all those who were selected for the program as undergraduates, as well as all the organizers, speakers, mentors, peer mentors, and other volunteers who made possible the SOT Undergraduate Education Program for Minority Students to attend the 20th Anniversary Celebration.

We recognize you, and we recognize SOT, for attracting bright minds to toxicology and increasing the diversity in the toxicology work force.

SOT Committee on Diversity Initiatives

The Undergraduate Education Program is supported by NIH 5T36GM008397-14.
## Schedule by Event Name

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>20th Anniversary Undergraduate Program Celebration (All past program participants and organizer are invited)</td>
<td>Saturday, Mar 14</td>
<td>7:00 PM to 9:00 PM</td>
<td>Convention Center</td>
<td>343</td>
</tr>
<tr>
<td>25-Year (Or More) Member Reception (By Invitation Only)</td>
<td>Sunday, Mar 15</td>
<td>7:00 PM to 8:00 PM</td>
<td>Convention Center</td>
<td>Charles Street VIP Suite</td>
</tr>
<tr>
<td>50th Year Anniversary SOT Task Force Meeting</td>
<td>Wednesday, Mar 18</td>
<td>9:30 AM to 11:00 AM</td>
<td>Convention Center</td>
<td>312</td>
</tr>
<tr>
<td>AAAS/Science: Scientific Careers Away from the Bench</td>
<td>Monday, Mar 16</td>
<td>4:45 PM to 6:15 PM</td>
<td>Hilton Key Ballroom 2</td>
<td></td>
</tr>
<tr>
<td>Academy of Toxicological Sciences Board Meeting</td>
<td>Tuesday, Mar 17</td>
<td>6:30 AM to 7:30 AM</td>
<td>Hilton Calloway A</td>
<td></td>
</tr>
<tr>
<td>Academy of Toxicological Sciences Reception</td>
<td>Wednesday, Mar 18</td>
<td>8:00 PM to 9:00 PM</td>
<td>Hilton Peale</td>
<td></td>
</tr>
<tr>
<td>Alliance for Risk Assessment: Steering Committee Meeting</td>
<td>Sunday, Mar 15</td>
<td>12:00 NOON to 1:15 PM</td>
<td>Hilton Latrobe</td>
<td></td>
</tr>
<tr>
<td>American Association of Chinese in Toxicology Special Interest Group Distinguished Chinese Toxicologist Lecturer</td>
<td>Monday, Mar 16</td>
<td>6:00 PM to 8:30 PM</td>
<td>Hilton Key Ballroom 4</td>
<td></td>
</tr>
<tr>
<td>American Association of Chinese in Toxicology Special Interest Group Business Meeting/Reception</td>
<td>Monday, Mar 16</td>
<td>6:00 PM to 8:30 PM</td>
<td>Hilton Key Ballroom 4</td>
<td></td>
</tr>
<tr>
<td>American Board of Toxicology Board of Directors Meeting</td>
<td>Saturday, Mar 14</td>
<td>1:00 PM to 6:00 PM</td>
<td>Hilton Calloway A</td>
<td></td>
</tr>
<tr>
<td>American Board of Toxicology Open Mixer Meeting</td>
<td>Monday, Mar 16</td>
<td>4:30 PM to 6:00 PM</td>
<td>Hilton Key Ballroom 11</td>
<td></td>
</tr>
<tr>
<td>American Board of Veterinary Toxicology Diplomate Meeting</td>
<td>Tuesday, Mar 17</td>
<td>6:45 AM to 7:45 AM</td>
<td>Sheraton Inner Harbor Severn I</td>
<td></td>
</tr>
<tr>
<td>Annual Business Meeting of the Society of Toxicology (SOT Members Only; Full, Associate, Postdoctoral, and Student Members Invited)</td>
<td>Tuesday, Mar 17</td>
<td>4:30 PM to 6:00 PM</td>
<td>Convention Center</td>
<td>321</td>
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<tr>
<td>Arizona Night</td>
<td>Sunday, Mar 15</td>
<td>8:00 PM to 10:30 PM</td>
<td>Hilton Holiday Ballroom 1</td>
<td></td>
</tr>
<tr>
<td>Association of Scientists of Indian Origin in America Special Interest Group Meeting/Reception</td>
<td>Monday, Mar 16</td>
<td>6:00 PM to 8:00 PM</td>
<td>Hilton Key Ballroom 9</td>
<td></td>
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<tr>
<td>ASTM E47.02 Biological Fate and Effects—Terrestrial Toxicology Methods</td>
<td>Tuesday, Mar 17</td>
<td>4:30 PM to 5:30 PM</td>
<td>Hilton Holiday Ballroom 3</td>
<td></td>
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<tr>
<td>Audit Committee Meeting</td>
<td>Tuesday, Mar 17</td>
<td>9:00 AM to 11:00 AM</td>
<td>Convention Center</td>
<td>311</td>
</tr>
<tr>
<td>Awards Ceremony (All Attendees Welcome)</td>
<td>Sunday, Mar 15</td>
<td>5:15 PM to 6:30 PM</td>
<td>Convention Center</td>
<td>321</td>
</tr>
<tr>
<td>Awards Ceremony Music—Performed by Maryland Sings</td>
<td>Sunday, Mar 15</td>
<td>4:45 PM to 5:15 PM</td>
<td>Convention Center</td>
<td>321</td>
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<tr>
<td>Awards Committee Meeting</td>
<td>Monday, Mar 16</td>
<td>12:00 NOON to 1:30 PM</td>
<td>Convention Center</td>
<td>305</td>
</tr>
<tr>
<td>Awards Recipients Photographed</td>
<td>Sunday, Mar 15</td>
<td>4:00 PM to 5:15 PM</td>
<td>Convention Center</td>
<td>324</td>
</tr>
<tr>
<td>Biological Modeling Specialty Section Meeting/Reception</td>
<td>Wednesday, Mar 18</td>
<td>6:00 PM to 7:30 PM</td>
<td>Convention Center</td>
<td>330</td>
</tr>
<tr>
<td>Board of Publications Committee Meeting</td>
<td>Wednesday, Mar 18</td>
<td>3:00 PM to 5:00 PM</td>
<td>Convention Center</td>
<td>305</td>
</tr>
<tr>
<td>Carcinogenesis Specialty Section Meeting/Reception</td>
<td>Tuesday, Mar 17</td>
<td>6:00 PM to 7:30 PM</td>
<td>Convention Center</td>
<td>339</td>
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<tr>
<td>Carcinogenesis Specialty Section Officers Meeting</td>
<td>Tuesday, Mar 17</td>
<td>7:00 AM to 8:30 AM</td>
<td>Convention Center</td>
<td>339</td>
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<tr>
<td>Career Resource and Development Committee Meeting I</td>
<td>Sunday, Mar 15</td>
<td>7:30 AM to 9:30 AM</td>
<td>Convention Center</td>
<td>312</td>
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<tr>
<td>Career Resource and Development Committee Meeting II</td>
<td>Wednesday, Mar 18</td>
<td>6:00 PM to 7:30 PM</td>
<td>Convention Center</td>
<td>311</td>
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<tr>
<td>Central States Regional Chapter Meeting/Luncheon</td>
<td>Tuesday, Mar 17</td>
<td>12:00 NOON to 1:30 PM</td>
<td>Marriott Inner Harbor</td>
<td>Grand Ballroom C</td>
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<tr>
<td>Committee on Diversity Initiatives Meeting</td>
<td>Wednesday, Mar 18</td>
<td>7:00 AM to 8:30 AM</td>
<td>Convention Center</td>
<td>305</td>
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<tr>
<td>Communications Committee Meeting</td>
<td>Monday, Mar 16</td>
<td>11:30 AM to 2:30 PM</td>
<td>Convention Center</td>
<td>306</td>
</tr>
<tr>
<td>Comparative and Veterinary Specialty Section Meeting/Luncheon</td>
<td>Monday, Mar 16</td>
<td>12:00 NOON to 1:30 PM</td>
<td>Convention Center</td>
<td>345</td>
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<tr>
<td>Comparative and Veterinary Specialty Section Officers Meeting</td>
<td>Monday, Mar 16</td>
<td>6:30 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>330</td>
</tr>
<tr>
<td>Complimentary Coffee</td>
<td>Monday, Mar 16</td>
<td>9:00 AM to 10:00 AM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
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<tr>
<td>Complimentary Coffee</td>
<td>Tuesday, Mar 17</td>
<td>8:30 AM to 9:30 AM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
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<tr>
<td>Complimentary Coffee</td>
<td>Wednesday, Mar 18</td>
<td>8:30 AM to 9:30 AM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
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<tr>
<td>Concession Stands</td>
<td>Sunday, Mar 15</td>
<td>7:30 AM to 2:30 PM</td>
<td>Convention Center</td>
<td>Level 300</td>
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<tr>
<td>Concession Stands</td>
<td>Monday, Mar 16</td>
<td>7:30 AM to 9:30 AM</td>
<td>Convention Center</td>
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<td>Concession Stands</td>
<td>Monday, Mar 16</td>
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<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
</tbody>
</table>

*up-to-date information at [www.toxicology.org](http://www.toxicology.org)*
### Schedule by Event Name (Continued)

<table>
<thead>
<tr>
<th>Event</th>
<th>Date:</th>
<th>Time:</th>
<th>Location:</th>
<th>Room:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concession Stands</td>
<td>Tuesday, Mar 17</td>
<td>7:30 AM to 9:30 AM</td>
<td>Convention Center</td>
<td>Level 300</td>
</tr>
<tr>
<td>Concession Stands</td>
<td>Tuesday, Mar 17</td>
<td>8:30 AM to 2:30 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Concession Stands</td>
<td>Wednesday, Mar 18</td>
<td>7:30 AM to 9:30 AM</td>
<td>Convention Center</td>
<td>Level 300</td>
</tr>
<tr>
<td>Concession Stands</td>
<td>Wednesday, Mar 18</td>
<td>8:30 AM to 2:30 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Concession Stands</td>
<td>Thursday, Mar 19</td>
<td>7:30 AM to 12:00 NOON</td>
<td>Convention Center</td>
<td>Level 300</td>
</tr>
<tr>
<td>Contemporary Concepts in Toxicology Committee Meeting</td>
<td>Tuesday, Mar 17</td>
<td>7:00 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>301</td>
</tr>
<tr>
<td>Continuing Education Committee Meeting</td>
<td>Monday, Mar 16</td>
<td>7:00 AM to 8:30 AM</td>
<td>Convention Center</td>
<td>312</td>
</tr>
<tr>
<td>Continuing Education Committee Walk-Through</td>
<td>Saturday, Mar 14</td>
<td>5:00 PM to 5:45 PM</td>
<td>Convention Center</td>
<td>307</td>
</tr>
<tr>
<td>Continuing Education Sunrise Mini-Course (Ticket Required)</td>
<td>Sunday, Mar 15</td>
<td>7:00 AM to 7:45 AM</td>
<td>Convention Center</td>
<td>(See Signage for Room Location)</td>
</tr>
<tr>
<td>Continuing Education Morning Courses (Ticket Required)</td>
<td>Sunday, Mar 15</td>
<td>8:15 AM to 12:00 NOON</td>
<td>Convention Center</td>
<td>(See Signage for Room Location)</td>
</tr>
<tr>
<td>Continuing Education Afternoon Courses (Ticket Required)</td>
<td>Sunday, Mar 15</td>
<td>1:15 PM to 5:00 PM</td>
<td>Convention Center</td>
<td>(See Signage for Room Location)</td>
</tr>
<tr>
<td>Continuing Education Luncheon for Speakers, Committee, and Student Volunteers (By Invitation Only)</td>
<td>Sunday, Mar 15</td>
<td>11:45 AM to 1:15 PM</td>
<td>Convention Center</td>
<td>324</td>
</tr>
<tr>
<td>Council Meeting</td>
<td>Saturday, Mar 14</td>
<td>8:00 AM to 1:30 PM</td>
<td>Hilton Poe</td>
<td></td>
</tr>
<tr>
<td>Council Orientation Meeting</td>
<td>Friday, Mar 13</td>
<td>4:00 PM to 7:00 PM</td>
<td>Hilton Marshall</td>
<td></td>
</tr>
<tr>
<td>Council Orientation Reception &amp; Dinner</td>
<td>Friday, Mar 13</td>
<td>7:00 PM to 10:00 PM</td>
<td>Hilton Carroll</td>
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<tr>
<td>Data Sciences International: Bringing Safety Endpoints Forward into Earlier Studies: Succeeding Sooner in Toxicology</td>
<td>Tuesday, Mar 17</td>
<td>12:00 NOON to 1:30 PM</td>
<td>Sheraton Inner Harbor</td>
<td>Harborview Ballroom II</td>
</tr>
<tr>
<td>Dermal Toxicology Specialty Section Officers Meeting</td>
<td>Tuesday, Mar 17</td>
<td>7:00 AM to 9:00 AM</td>
<td>Convention Center</td>
<td>340</td>
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<tr>
<td>Dermal Toxicology Specialty Section Meeting/Reception</td>
<td>Tuesday, Mar 17</td>
<td>6:00 PM to 7:30 PM</td>
<td>Convention Center</td>
<td>343</td>
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<tr>
<td>Distinguished Toxicology Scholar Award Lecture: Role of Reactive Metabolites, Protein Adducts, Immune System, and Other Susceptibility Factors in Drug-Induced Liver Injury Lecturer: Lance R. Pohl</td>
<td>Tuesday, Mar 17</td>
<td>12:30 PM to 1:20 PM</td>
<td>Convention Center</td>
<td>324</td>
</tr>
<tr>
<td>Drug Discovery Toxicology Specialty Section Meeting/Reception</td>
<td>Wednesday, Mar 18</td>
<td>6:00 PM to 7:30 PM</td>
<td>Convention Center</td>
<td>342</td>
</tr>
<tr>
<td>Education Committee Meeting</td>
<td>Thursday, Mar 19</td>
<td>7:30 AM to 9:00 AM</td>
<td>Convention Center</td>
<td>305</td>
</tr>
<tr>
<td>Elsevier Reception</td>
<td>Monday, Mar 16</td>
<td>5:00 PM to 7:00 PM</td>
<td>Hilton Latrobe</td>
<td></td>
</tr>
<tr>
<td>ELSIE: Informational Forum: Creating an Extractables/Leachables Safety Database</td>
<td>Monday, Mar 16</td>
<td>4:30 PM to 6:00 PM</td>
<td>Hilton Poe A</td>
<td></td>
</tr>
<tr>
<td>E-mail Center/Message Boards</td>
<td>Saturday, Mar 14</td>
<td>4:00 PM to 7:00 PM</td>
<td>Convention Center</td>
<td>Pratt Street Lobby</td>
</tr>
<tr>
<td>E-mail Center/Message Boards</td>
<td>Sunday, Mar 15</td>
<td>7:00 AM to 6:00 PM</td>
<td>Convention Center</td>
<td>Pratt Street Lobby</td>
</tr>
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<td>E-mail Center/Message Boards</td>
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<td>E-mail Center/Message Boards</td>
<td>Thursday, Mar 19</td>
<td>8:00 AM to 11:30 AM</td>
<td>Convention Center</td>
<td>Pratt Street Lobby</td>
</tr>
<tr>
<td>Endowment Fund Board Meeting</td>
<td>Sunday, Mar 15</td>
<td>1:00 PM to 3:00 PM</td>
<td>Convention Center</td>
<td>306</td>
</tr>
<tr>
<td>Ethical, Legal, and Social Issues Specialty Section Meeting/Reception</td>
<td>Tuesday, Mar 17</td>
<td>6:00 PM to 7:30 PM</td>
<td>Convention Center</td>
<td>334</td>
</tr>
<tr>
<td>Ethical, Legal, and Social Issues Specialty Section Officer Meeting</td>
<td>Wednesday, Mar 18</td>
<td>7:00 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>312</td>
</tr>
<tr>
<td>Exhibit Liaison Advisory Committee Meeting</td>
<td>Wednesday, Mar 18</td>
<td>2:00 PM to 4:00 PM</td>
<td>Convention Center</td>
<td>312</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: ADMET Group</td>
<td>Wednesday, Mar 18</td>
<td>11:00 AM to 12:00 NOON</td>
<td>Convention Center</td>
<td>336</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: Affymetrix</td>
<td>Tuesday, Mar 17</td>
<td>12:15 PM to 1:15 PM</td>
<td>Convention Center</td>
<td>336</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: Ariadne</td>
<td>Monday, Mar 16</td>
<td>2:45 PM to 3:45 PM</td>
<td>Convention Center</td>
<td>337</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: BASF SE</td>
<td>Tuesday, Mar 17</td>
<td>9:45 AM to 10:45 AM</td>
<td>Convention Center</td>
<td>336</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: Biopredic International</td>
<td>Monday, Mar 16</td>
<td>2:45 PM to 3:45 PM</td>
<td>Convention Center</td>
<td>336</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: Bridge Laboratories</td>
<td>Monday, Mar 16</td>
<td>11:00 AM to 12:00 NOON</td>
<td>Convention Center</td>
<td>337</td>
</tr>
</tbody>
</table>
### Schedule by Event Name (Continued)

<table>
<thead>
<tr>
<th>Event</th>
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<th>Time</th>
<th>Location:</th>
<th>Room:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhibitor Hosted Session: CANTEST Ltd.</td>
<td>Monday, Mar 16</td>
<td>9:45 AM to 10:45 AM</td>
<td>Convention Center</td>
<td>338</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: CeeTox, Inc.</td>
<td>Tuesday, Mar 17</td>
<td>2:45 PM to 3:45 PM</td>
<td>Convention Center</td>
<td>337</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: Cellumen, Inc.</td>
<td>Wednesday, Mar 18</td>
<td>9:45 AM to 10:45 AM</td>
<td>Convention Center</td>
<td>336</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: ChanTest Corp.</td>
<td>Tuesday, Mar 17</td>
<td>8:30 AM to 9:30 AM</td>
<td>Convention Center</td>
<td>337</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: Charles River</td>
<td>Monday, Mar 16</td>
<td>11:00 AM to 12:00 NOON</td>
<td>Convention Center</td>
<td>338</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: Charles River</td>
<td>Tuesday, Mar 17</td>
<td>9:45 AM to 10:45 AM</td>
<td>Convention Center</td>
<td>338</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: Charles River</td>
<td>Wednesday, Mar 18</td>
<td>9:45 AM to 10:45 AM</td>
<td>Convention Center</td>
<td>338</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: Covance</td>
<td>Tuesday, Mar 17</td>
<td>1:30 PM to 2:30 PM</td>
<td>Convention Center</td>
<td>336</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: Covance</td>
<td>Wednesday, Mar 18</td>
<td>12:15 PM to 1:15 PM</td>
<td>Convention Center</td>
<td>336</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: emka TECHNOLOGIES</td>
<td>Tuesday, Mar 17</td>
<td>12:15 PM to 1:15 PM</td>
<td>Convention Center</td>
<td>338</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: GeneGo Inc.</td>
<td>Tuesday, Mar 17</td>
<td>8:30 AM to 9:30 AM</td>
<td>Convention Center</td>
<td>338</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: Huntingdon Life Sciences</td>
<td>Wednesday, Mar 18</td>
<td>9:45 AM to 10:45 AM</td>
<td>Convention Center</td>
<td>337</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: Ina Research Inc.</td>
<td>Tuesday, Mar 17</td>
<td>11:00 AM to 12:00 NOON</td>
<td>Convention Center</td>
<td>338</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: Ingenuity Systems</td>
<td>Monday, Mar 16</td>
<td>12:15 PM to 1:15 PM</td>
<td>Convention Center</td>
<td>336</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: Instem</td>
<td>Tuesday, Mar 17</td>
<td>2:45 PM to 3:45 PM</td>
<td>Convention Center</td>
<td>338</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: Invitrogen</td>
<td>Monday, Mar 16</td>
<td>12:15 PM to 1:15 PM</td>
<td>Convention Center</td>
<td>337</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: LAB Research Inc.</td>
<td>Monday, Mar 16</td>
<td>1:30 PM to 2:30 PM</td>
<td>Convention Center</td>
<td>338</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: MDS Pharma Services</td>
<td>Monday, Mar 16</td>
<td>9:45 AM to 10:45 AM</td>
<td>Convention Center</td>
<td>337</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: Metabolon, Inc.: Metabolomics</td>
<td>Tuesday, Mar 17</td>
<td>11:00 AM to 12:00 NOON</td>
<td>Convention Center</td>
<td>337</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: MPI Research</td>
<td>Monday, Mar 16</td>
<td>1:30 PM to 2:30 PM</td>
<td>Convention Center</td>
<td>337</td>
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<tr>
<td>Exhibitor Hosted Session: National Library of Medicine</td>
<td>Tuesday, Mar 17</td>
<td>1:30 PM to 2:30 PM</td>
<td>Convention Center</td>
<td>338</td>
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<tr>
<td>Exhibitor Hosted Session: National Toxicology Program (NTP)</td>
<td>Tuesday, Mar 17</td>
<td>1:30 PM to 2:30 PM</td>
<td>Convention Center</td>
<td>337</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: Phylonix</td>
<td>Monday, Mar 16</td>
<td>12:15 PM to 1:15 PM</td>
<td>Convention Center</td>
<td>338</td>
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<tr>
<td>Exhibitor Hosted Session: Promega Corporation</td>
<td>Tuesday, Mar 17</td>
<td>12:15 PM to 1:15 PM</td>
<td>Convention Center</td>
<td>337</td>
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<tr>
<td>Exhibitor Hosted Session: Ricerca Biosciences, LLC</td>
<td>Tuesday, Mar 17</td>
<td>9:45 AM to 10:45 AM</td>
<td>Convention Center</td>
<td>337</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: Roche Applied Science</td>
<td>Monday, Mar 16</td>
<td>2:45 PM to 3:45 PM</td>
<td>Convention Center</td>
<td>338</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: Rosetta Biosoftware</td>
<td>Tuesday, Mar 17</td>
<td>8:30 AM to 9:30 AM</td>
<td>Convention Center</td>
<td>336</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: SNBL USA</td>
<td>Monday, Mar 16</td>
<td>1:30 PM to 2:30 PM</td>
<td>Convention Center</td>
<td>336</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: StemCell Technologies Inc.</td>
<td>Tuesday, Mar 17</td>
<td>11:00 AM to 12:00 NOON</td>
<td>Convention Center</td>
<td>336</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: Sysmex America, Inc.</td>
<td>Monday, Mar 16</td>
<td>9:45 AM to 10:45 AM</td>
<td>Convention Center</td>
<td>336</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: Thermo Fisher Scientific</td>
<td>Monday, Mar 16</td>
<td>11:00 AM to 12:00 NOON</td>
<td>Convention Center</td>
<td>336</td>
</tr>
<tr>
<td>Exhibitor Hosted Session: WuXi AppTec</td>
<td>Tuesday, Mar 17</td>
<td>2:45 PM to 3:45 PM</td>
<td>Convention Center</td>
<td>336</td>
</tr>
<tr>
<td>Finance Committee Meeting</td>
<td>Wednesday, Mar 18</td>
<td>11:30 AM to 1:30 PM</td>
<td>Convention Center</td>
<td>334</td>
</tr>
<tr>
<td>Food Safety Specialty Section Officers Meeting</td>
<td>Tuesday, Mar 17</td>
<td>7:30 AM to 9:00 AM</td>
<td>Convention Center</td>
<td>342</td>
</tr>
<tr>
<td>Food Safety Specialty Section Meeting/Reception</td>
<td>Tuesday, Mar 17</td>
<td>6:00 PM to 7:30 PM</td>
<td>Convention Center</td>
<td>342</td>
</tr>
<tr>
<td>Global Focus Group Meeting</td>
<td>Tuesday, Mar 17</td>
<td>12:00 NOON to 1:30 PM</td>
<td>Convention Center</td>
<td>306</td>
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<tr>
<td>Graduate Fellowship Interviews by Awards Committee</td>
<td>Saturday, Mar 14</td>
<td>5:30 PM to 8:00 PM</td>
<td>Convention Center</td>
<td>333</td>
</tr>
<tr>
<td>Guest Hospitality Center</td>
<td>Sunday, Mar 15</td>
<td>8:00 AM to 5:00 PM</td>
<td>Hilton</td>
<td>Douglass</td>
</tr>
<tr>
<td>Guest Hospitality Center</td>
<td>Monday, Mar 16</td>
<td>8:00 AM to 5:00 PM</td>
<td>Hilton</td>
<td>Douglass</td>
</tr>
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<td>Guest Hospitality Center</td>
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<td>Douglass</td>
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<td>Wednesday, Mar 18</td>
<td>8:00 AM to 5:00 PM</td>
<td>Hilton</td>
<td>Douglass</td>
</tr>
<tr>
<td>Guest Hospitality Center</td>
<td>Thursday, Mar 19</td>
<td>8:00 AM to 11:30 AM</td>
<td>Hilton</td>
<td>Douglass</td>
</tr>
<tr>
<td>Gulf Coast and South Central Regional Chapters Joint Meeting/Reception</td>
<td>Monday, Mar 16</td>
<td>5:00 PM to 6:00 PM</td>
<td>Tir na nÓg Irish Bar &amp; Grill</td>
<td></td>
</tr>
<tr>
<td>Hispanic Organization for Toxicologists Special Interest Group Meeting</td>
<td>Tuesday, Mar 17</td>
<td>5:30 PM to 7:00 PM</td>
<td>Hilton</td>
<td>Pickersgill</td>
</tr>
<tr>
<td>Event:</td>
<td>Date:</td>
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<tr>
<td>Hispanic Organization for Toxicologists Special Interest Group Officers Meeting</td>
<td>Tuesday, Mar 17</td>
<td>7:30 AM to 9:00 AM</td>
<td>TBD</td>
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<tr>
<td>Hot Zones (Wireless Internet Access)</td>
<td>Monday, Mar 16</td>
<td>9:00 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Hot Zones (Wireless Internet Access)</td>
<td>Tuesday, Mar 17</td>
<td>8:30 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
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<td>Hot Zones (Wireless Internet Access)</td>
<td>Wednesday, Mar 18</td>
<td>8:30 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Housing Desk</td>
<td>Saturday, Mar 14</td>
<td>4:00 PM to 7:00 PM</td>
<td>Convention Center</td>
<td>Pratt Street Lobby</td>
</tr>
<tr>
<td>Housing Desk</td>
<td>Sunday, Mar 15</td>
<td>7:00 AM to 5:00 PM</td>
<td>Convention Center</td>
<td>Pratt Street Lobby</td>
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<tr>
<td>Housing Desk</td>
<td>Monday, Mar 16</td>
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<td>Convention Center</td>
<td>Pratt Street Lobby</td>
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<td>Housing Desk</td>
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<td>Housing Desk</td>
<td>Wednesday, Mar 18</td>
<td>8:00 AM to 11:30 AM</td>
<td>Convention Center</td>
<td>Pratt Street Lobby</td>
</tr>
<tr>
<td>ILSI-HESI Seminar: Integration of Preclinical and Clinical Safety Data</td>
<td>Monday, Mar 16</td>
<td>12:15 PM to 1:30 PM</td>
<td>Hilton</td>
<td>Holiday Ballroom 1</td>
</tr>
<tr>
<td>Immunotoxicology Specialty Section Meeting/Reception</td>
<td>Tuesday, Mar 17</td>
<td>6:00 PM to 7:30 PM</td>
<td>Convention Center</td>
<td>310</td>
</tr>
<tr>
<td>Immunotoxicology Specialty Section Officers Meeting</td>
<td>Tuesday, Mar 17</td>
<td>7:30 AM to 9:00 AM</td>
<td>Convention Center</td>
<td>330</td>
</tr>
<tr>
<td>In Vitro and Alternative Methods Specialty Section Meeting/Luncheon</td>
<td>Tuesday, Mar 17</td>
<td>12:00 NOON to 1:30 PM</td>
<td>Convention Center</td>
<td>343</td>
</tr>
<tr>
<td>In Vitro and Alternative Methods Specialty Section Officers Meeting</td>
<td>Monday, Mar 16</td>
<td>7:00 AM to 9:00 AM</td>
<td>Convention Center</td>
<td>342</td>
</tr>
<tr>
<td>In Vitro Toxicology Lecture and Luncheon for Students (Ticket Required)</td>
<td>Monday, Mar 16</td>
<td>12:15 PM to 1:20 PM</td>
<td>Convention Center</td>
<td>339</td>
</tr>
<tr>
<td>INA Business Meeting</td>
<td>Wednesday, Mar 18</td>
<td>5:00 PM to 6:00 PM</td>
<td>Hilton</td>
<td>Latrobe</td>
</tr>
<tr>
<td>Inhalation and Respiratory Specialty Section Meeting/Reception</td>
<td>Wednesday, Mar 18</td>
<td>6:00 PM to 7:30 PM</td>
<td>Convention Center</td>
<td>337</td>
</tr>
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<td>Inhalation and Respiratory Specialty Section Officers Meeting</td>
<td>Tuesday, Mar 17</td>
<td>7:00 AM to 8:30 AM</td>
<td>Convention Center</td>
<td>345</td>
</tr>
<tr>
<td>IUTOX Executive Committee Dinner</td>
<td>Sunday, Mar 15</td>
<td>8:00 PM to 10:00 PM</td>
<td>Restaurant</td>
<td>TBD</td>
</tr>
<tr>
<td>IUTOX Meetings</td>
<td>Saturday, Mar 14</td>
<td>8:00 AM to 5:00 PM</td>
<td>Hilton</td>
<td>Tubman</td>
</tr>
<tr>
<td>IUTOX Meetings</td>
<td>Sunday, Mar 15</td>
<td>8:00 AM to 5:00 PM</td>
<td>Hilton</td>
<td>Tubman</td>
</tr>
<tr>
<td>IUTOX Meeting</td>
<td>Monday, Mar 16</td>
<td>8:00 AM to 3:00 PM</td>
<td>Hilton</td>
<td>Tubman</td>
</tr>
<tr>
<td>JHU/EHS/TOX Alumni Reception</td>
<td>Sunday, Mar 15</td>
<td>7:00 PM to 9:00 PM</td>
<td>JHU-Bloomberg School of Public Health</td>
<td>9th Floor</td>
</tr>
<tr>
<td>Job Bank Center</td>
<td>Sunday, Mar 15</td>
<td>10:00 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>347</td>
</tr>
<tr>
<td>Job Bank Center</td>
<td>Monday, Mar 16</td>
<td>9:00 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>347</td>
</tr>
<tr>
<td>Job Bank Center</td>
<td>Tuesday, Mar 17</td>
<td>8:30 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>347</td>
</tr>
<tr>
<td>Job Bank Center</td>
<td>Wednesday, Mar 18</td>
<td>8:30 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>347</td>
</tr>
<tr>
<td>Johnson &amp; Johnson Toxicology Interest Group Meeting</td>
<td>Saturday, Mar 14</td>
<td>11:30 AM to 6:00 PM</td>
<td>Hilton</td>
<td>Peale A</td>
</tr>
<tr>
<td>Joinn Laboratories Mixer</td>
<td>Tuesday, Mar 17</td>
<td>6:00 PM to 9:00 PM</td>
<td>Hilton</td>
<td>Tubman B</td>
</tr>
<tr>
<td>Kettering Laboratory Reunion, University of Cincinnati</td>
<td>Tuesday, Mar 17</td>
<td>7:00 PM to 8:30 PM</td>
<td>Hilton</td>
<td>Poe A</td>
</tr>
<tr>
<td>Keynote MRC Lecture: The Ubiquitin Proteolytic System—From Basic Mechanisms through Human Disease and on to Drug Targeting</td>
<td>Lecturer: Nobel Laureate Aaron Ciechanover</td>
<td>Wednesday, Mar 18</td>
<td>8:00 AM to 8:50 AM</td>
<td>Convention Center</td>
</tr>
<tr>
<td>Korean Toxicologists Association in America Special Interest Group Meeting/Reception</td>
<td>Monday, Mar 16</td>
<td>5:30 PM to 8:00 PM</td>
<td>Hilton</td>
<td>Calloway A</td>
</tr>
<tr>
<td>Leading Edge in Basic Science Award Lecture: The Structural Pervasiveness of Estrogen Activity—Benefits and Risks from the Eclectic Nature of Ligand Binding by the Estrogen Receptor</td>
<td>Lecturer: John Katzenellenbogen</td>
<td>Monday, Mar 16</td>
<td>12:30 PM to 1:20 PM</td>
<td>Convention Center</td>
</tr>
<tr>
<td>Event:</td>
<td>Date:</td>
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<tr>
<td>Lovelace Respiratory Research Institute Reception</td>
<td>Sunday, Mar 15</td>
<td>7:30 PM to 9:30 PM</td>
<td>Hilton Blake</td>
<td></td>
</tr>
<tr>
<td>Luggage/Coat Check</td>
<td>Sunday, Mar 15</td>
<td>7:00 AM to 8:30 PM</td>
<td>Convention Center</td>
<td>Pratt Street Lobby</td>
</tr>
<tr>
<td>Luggage/Coat Check</td>
<td>Monday, Mar 16</td>
<td>7:00 AM to 8:30 PM</td>
<td>Convention Center</td>
<td>Pratt Street Lobby</td>
</tr>
<tr>
<td>Luggage/Coat Check</td>
<td>Tuesday, Mar 17</td>
<td>7:00 AM to 8:00 PM</td>
<td>Convention Center</td>
<td>Pratt Street Lobby</td>
</tr>
<tr>
<td>Luggage/Coat Check</td>
<td>Wednesday, Mar 18</td>
<td>7:00 AM to 8:00 PM</td>
<td>Convention Center</td>
<td>Pratt Street Lobby</td>
</tr>
<tr>
<td>Luggage/Coat Check</td>
<td>Thursday, Mar 19</td>
<td>7:00 AM to 1:00 PM</td>
<td>Convention Center</td>
<td>Pratt Street Lobby</td>
</tr>
<tr>
<td>Mechanisms Specialty Section Meeting/Reception</td>
<td>Tuesday, Mar 17</td>
<td>6:00 PM to 7:30 PM</td>
<td>Convention Center</td>
<td>324</td>
</tr>
<tr>
<td>Mechanisms Specialty Section Officers Meeting</td>
<td>Tuesday, Mar 17</td>
<td>7:00 AM to 8:30 AM</td>
<td>Convention Center</td>
<td>312</td>
</tr>
<tr>
<td>Membership Committee Meeting</td>
<td>Wednesday, Mar 18</td>
<td>11:30 AM to 1:00 PM</td>
<td>Convention Center</td>
<td>305</td>
</tr>
<tr>
<td>Merit Award Lecture: Chemical Hepatocarcinogenesis–Mechanisms, Pathogenesis, and Thresholds Lecturer: Gary M. Williams</td>
<td>Wednesday, Mar 18</td>
<td>12:30 PM to 1:20 PM</td>
<td>Convention Center</td>
<td>Ballroom 1</td>
</tr>
<tr>
<td>Metals Specialty Section Meeting/Reception</td>
<td>Wednesday, Mar 18</td>
<td>6:00 PM to 7:30 PM</td>
<td>Convention Center</td>
<td>345</td>
</tr>
<tr>
<td>Metals Specialty Section Officers Meeting</td>
<td>Monday, Mar 16</td>
<td>6:30 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>346</td>
</tr>
<tr>
<td>Michigan State University Environmental Toxicology Reception</td>
<td>Tuesday, Mar 17</td>
<td>9:00 PM to 11:00 PM</td>
<td>Hilton Key Ballroom 9</td>
<td></td>
</tr>
<tr>
<td>Mid-Atlantic Regional Chapter Meeting/Luncheon</td>
<td>Monday, Mar 16</td>
<td>12:00 NOON to 1:30 PM</td>
<td>Restaurant</td>
<td>TBD</td>
</tr>
<tr>
<td>Midwest Regional Chapter Members Breakfast</td>
<td>Wednesday, Mar 18</td>
<td>7:00 AM to 8:30 AM</td>
<td>Marriott Inner Harbor</td>
<td>Grand Ballroom C</td>
</tr>
<tr>
<td>Mixtures Specialty Section Meeting/Reception</td>
<td>Monday, Mar 16</td>
<td>6:00 PM to 7:30 PM</td>
<td>Convention Center</td>
<td>330</td>
</tr>
<tr>
<td>Molecular Biology Specialty Section Meeting/Reception</td>
<td>Monday, Mar 16</td>
<td>6:00 PM to 7:30 PM</td>
<td>Convention Center</td>
<td>345</td>
</tr>
<tr>
<td>Molecular Biology Specialty Section Officers Meeting</td>
<td>Monday, Mar 16</td>
<td>7:00 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>304</td>
</tr>
<tr>
<td>Nanotoxicology Specialty Section Meeting/Reception</td>
<td>Wednesday, Mar 18</td>
<td>6:00 PM to 7:30 PM</td>
<td>Convention Center</td>
<td>339</td>
</tr>
<tr>
<td>Neurotoxicology Specialty Section Meeting/Reception</td>
<td>Wednesday, Mar 18</td>
<td>6:00 PM to 7:30 PM</td>
<td>Convention Center</td>
<td>343</td>
</tr>
<tr>
<td>Neurotoxicology Specialty Section Officers Meeting</td>
<td>Tuesday, Mar 17</td>
<td>7:00 AM to 8:30 AM</td>
<td>Convention Center</td>
<td>343</td>
</tr>
<tr>
<td>NIH Brown Bag Lunch</td>
<td>Tuesday, Mar 17</td>
<td>12:00 NOON to 1:15 PM</td>
<td>Convention Center</td>
<td>301</td>
</tr>
<tr>
<td>NIH Grants Room</td>
<td>Tuesday, Mar 17</td>
<td>9:30 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>304</td>
</tr>
<tr>
<td>NIH Grants Room</td>
<td>Wednesday, Mar 18</td>
<td>9:00 AM to 12:00 NOON</td>
<td>Convention Center</td>
<td>304</td>
</tr>
<tr>
<td>North Carolina State University Alumni Reception</td>
<td>Monday, Mar 16</td>
<td>7:30 PM to 9:00 PM</td>
<td>Hilton Peale A</td>
<td></td>
</tr>
<tr>
<td>Northern California and Pacific Northwest Regional Chapters and UC Davis-UC Berkeley Joint Meeting/Reception</td>
<td>Monday, Mar 16</td>
<td>6:00 PM to 8:00 PM</td>
<td>Hilton Key Ballroom 8</td>
<td></td>
</tr>
<tr>
<td>Occupational and Public Health Specialty Section Meeting/ Luncheon</td>
<td>Wednesday, Mar 18</td>
<td>12:00 NOON to 1:30 PM</td>
<td>Convention Center</td>
<td>339</td>
</tr>
<tr>
<td>Ocular Toxicology Specialty Section Meeting/Reception</td>
<td>Tuesday, Mar 17</td>
<td>6:00 PM to 7:30 PM</td>
<td>Convention Center</td>
<td>330</td>
</tr>
<tr>
<td>Paracelsus Outside the Classroom</td>
<td>Sunday, Mar 15</td>
<td>10:00 AM to 5:00 PM</td>
<td>Port Discovery Children's Museum</td>
<td></td>
</tr>
<tr>
<td>Past Presidents Breakfast</td>
<td>Monday, Mar 16</td>
<td>6:30 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>301</td>
</tr>
<tr>
<td>Plenary Opening Lecture: Signal Transduction Pathway Used by Therapeutic Agents and Drugs of Abuse Lecturer: Nobel Laureate Paul Greengard</td>
<td>Monday, Mar 16</td>
<td>8:00 AM to 9:00 AM</td>
<td>Convention Center</td>
<td>Exhibit Hall A</td>
</tr>
<tr>
<td>Postdoctoral Assembly Board Meeting</td>
<td>Monday, Mar 16</td>
<td>7:00 AM to 8:15 AM</td>
<td>Convention Center</td>
<td>305</td>
</tr>
<tr>
<td>Postdoctoral Assembly Luncheon (Ticket Required)</td>
<td>Tuesday, Mar 17</td>
<td>12:00 NOON to 1:15 PM</td>
<td>Convention Center</td>
<td>339</td>
</tr>
<tr>
<td>Postdoctoral Fellowship Interviews by Awards Committee</td>
<td>Saturday, Mar 14</td>
<td>5:30 PM to 7:00 PM</td>
<td>Convention Center</td>
<td>334</td>
</tr>
<tr>
<td>Poster Sessions</td>
<td>Monday, Mar 16</td>
<td>9:30 AM to 12:30 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Poster Sessions</td>
<td>Monday, Mar 16</td>
<td>1:00 PM to 4:30 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Poster Sessions</td>
<td>Tuesday, Mar 17</td>
<td>9:00 AM to 12:30 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Poster Sessions</td>
<td>Tuesday, Mar 17</td>
<td>1:00 PM to 4:30 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Poster Sessions</td>
<td>Wednesday, Mar 18</td>
<td>9:00 AM to 12:30 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Poster Sessions</td>
<td>Wednesday, Mar 18</td>
<td>1:00 PM to 4:30 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
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<tr>
<td>Event</td>
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<tr>
<td>Scientific Sessions</td>
<td>Monday, Mar 16</td>
<td>9:15 AM to 12:00 NOON</td>
<td>Convention Center</td>
<td>Ballroom I</td>
</tr>
<tr>
<td>Scientific Sessions</td>
<td>Monday, Mar 16</td>
<td>7:30 AM to 9:30 AM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Scientific Sessions</td>
<td>Monday, Mar 16</td>
<td>12:30 PM to 1:00 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Scientific Sessions</td>
<td>Tuesday, Mar 17</td>
<td>8:30 AM to 9:00 AM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Scientific Sessions</td>
<td>Tuesday, Mar 17</td>
<td>12:30 PM to 1:00 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Scientific Sessions</td>
<td>Wednesday, Mar 18</td>
<td>8:30 AM to 9:00 AM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Scientific Sessions</td>
<td>Wednesday, Mar 18</td>
<td>12:30 PM to 1:00 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Scientific Sessions</td>
<td>Thursday, Mar 19</td>
<td>8:00 AM to 8:30 AM</td>
<td>Convention Center</td>
<td>Ballroom I</td>
</tr>
<tr>
<td>President’s Reception (By Invitation Only)</td>
<td>Wednesday, Mar 18</td>
<td>7:00 PM to 8:30 PM</td>
<td>Hilton</td>
<td>Holiday 6</td>
</tr>
<tr>
<td>Professional Needs Assessment Task Force Meeting</td>
<td>Tuesday, Mar 17</td>
<td>12:00 NOON to 2:00 PM</td>
<td>Convention Center</td>
<td>312</td>
</tr>
<tr>
<td>Regional Chapter Presidents and Officers Meeting</td>
<td>Tuesday, Mar 17</td>
<td>7:00 AM to 8:30 AM</td>
<td>Convention Center</td>
<td>302</td>
</tr>
<tr>
<td>Regional Chapter/Special Interest Group Graduate Committee Meeting</td>
<td>Monday, Mar 16</td>
<td>7:00 AM to 8:30 AM</td>
<td>Convention Center</td>
<td>302</td>
</tr>
<tr>
<td>Registration</td>
<td>Saturday, Mar 14</td>
<td>4:00 PM to 7:00 PM</td>
<td>Convention Center</td>
<td>Pratt Street Lobby</td>
</tr>
<tr>
<td>Registration</td>
<td>Sunday, Mar 15</td>
<td>7:00 AM to 8:00 PM</td>
<td>Convention Center</td>
<td>Pratt Street Lobby</td>
</tr>
<tr>
<td>Registration</td>
<td>Monday, Mar 16</td>
<td>7:00 AM to 5:00 PM</td>
<td>Convention Center</td>
<td>Pratt Street Lobby</td>
</tr>
<tr>
<td>Registration</td>
<td>Tuesday, Mar 17</td>
<td>8:00 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>Pratt Street Lobby</td>
</tr>
<tr>
<td>Registration</td>
<td>Wednesday, Mar 18</td>
<td>8:00 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>Pratt Street Lobby</td>
</tr>
<tr>
<td>Registration</td>
<td>Thursday, Mar 19</td>
<td>8:00 AM to 11:30 AM</td>
<td>Convention Center</td>
<td>Pratt Street Lobby</td>
</tr>
<tr>
<td>Regulatory and Safety Evaluation Specialty Section Meeting/Reception</td>
<td>Monday, Mar 16</td>
<td>6:00 PM to 7:30 PM</td>
<td>Convention Center</td>
<td>343</td>
</tr>
<tr>
<td>Regulatory and Safety Evaluation Specialty Section Officers Meeting</td>
<td>Monday, Mar 16</td>
<td>7:00 AM to 8:30 AM</td>
<td>Convention Center</td>
<td>345</td>
</tr>
<tr>
<td>Reproductive and Development Toxicology Specialty Section Officers Meeting</td>
<td>Tuesday, Mar 17</td>
<td>7:00 AM to 8:30 AM</td>
<td>Convention Center</td>
<td>344</td>
</tr>
<tr>
<td>Reproductive and Developmental Toxicology Specialty Section Meeting/Reception</td>
<td>Tuesday, Mar 17</td>
<td>6:00 PM to 7:30 PM</td>
<td>Convention Center</td>
<td>309</td>
</tr>
<tr>
<td>Research Funding Committee Meeting</td>
<td>Thursday, Mar 19</td>
<td>10:00 AM to 1:00 PM</td>
<td>Convention Center</td>
<td>305</td>
</tr>
<tr>
<td>Risk Assessment Specialty Section Meeting/Reception</td>
<td>Monday, Mar 16</td>
<td>6:00 PM to 7:30 PM</td>
<td>Convention Center</td>
<td>339</td>
</tr>
<tr>
<td>Risk Assessment Specialty Section Officers Meeting</td>
<td>Monday, Mar 16</td>
<td>7:00 AM to 9:00 AM</td>
<td>Convention Center</td>
<td>306</td>
</tr>
<tr>
<td>Rosetta Biosoftware Hospitality Suite</td>
<td>Tuesday, Mar 17</td>
<td>6:00 PM to 9:00 PM</td>
<td>Hilton</td>
<td>Blake</td>
</tr>
<tr>
<td>Roundtable of Toxicology Consultants</td>
<td>Monday, Mar 16</td>
<td>4:30 PM to 7:00 PM</td>
<td>Hilton</td>
<td>Johnson A</td>
</tr>
<tr>
<td>Rutgers University Joint Graduate Program in Toxicology Annual Dessert Reception</td>
<td>Tuesday, Mar 17</td>
<td>9:00 PM to 11:00 PM</td>
<td>Hilton</td>
<td>Peale</td>
</tr>
<tr>
<td>Satellite Meeting: Development of Toxicological and Environmental Public Health Infrastructures in Africa: Understanding the Premise and Mapping the Approach</td>
<td>Thursday, Mar 19</td>
<td>2:00 PM to 7:00 PM</td>
<td>Hilton</td>
<td>Johnson</td>
</tr>
<tr>
<td>Satellite Meeting: Development of Toxicological and Environmental Public Health Infrastructures in Africa: Understanding the Premise and Mapping the Approach</td>
<td>Friday, Mar 20</td>
<td>8:00 AM to 12:00 NOON</td>
<td>Hilton</td>
<td>Johnson</td>
</tr>
<tr>
<td>Scientific Liaison Task Force Meeting</td>
<td>Monday, Mar 16</td>
<td>12:00 NOON to 1:30 PM</td>
<td>Convention Center</td>
<td>312</td>
</tr>
<tr>
<td>Scientific Program Committee Meeting</td>
<td>Thursday, Mar 19</td>
<td>12:00 NOON to 1:00 PM</td>
<td>Convention Center</td>
<td>334</td>
</tr>
<tr>
<td>Scientific Program Committee Walk-Through</td>
<td>Monday, Mar 16</td>
<td>7:00 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>Ballroom III</td>
</tr>
<tr>
<td>Scientific Sessions</td>
<td>Monday, Mar 16</td>
<td>9:15 AM to 12:00 NOON</td>
<td>Convention Center</td>
<td>(See Program Description for Room Locations)</td>
</tr>
<tr>
<td>Scientific Sessions</td>
<td>Monday, Mar 16</td>
<td>12:10 PM to 1:30 PM</td>
<td>Convention Center</td>
<td>(See Program Description for Room Locations)</td>
</tr>
<tr>
<td>Scientific Sessions</td>
<td>Monday, Mar 16</td>
<td>1:40 PM to 4:25 PM</td>
<td>Convention Center</td>
<td>(See Program Description for Room Locations)</td>
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<td>Event:</td>
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<tr>
<td>Scientific Sessions (Sunset)</td>
<td>Monday, Mar 16</td>
<td>4:35 PM to 5:55 PM</td>
<td>Convention Center</td>
<td>(See Program Description for Room Locations)</td>
</tr>
<tr>
<td>Scientific Sessions (Sunrise)</td>
<td>Tuesday, Mar 17</td>
<td>7:30 AM to 8:50 AM</td>
<td>Convention Center</td>
<td>(See Program Description for Room Locations)</td>
</tr>
<tr>
<td>Scientific Sessions</td>
<td>Tuesday, Mar 17</td>
<td>9:00 AM to 11:45 AM</td>
<td>Convention Center</td>
<td>(See Program Description for Room Locations)</td>
</tr>
<tr>
<td>Scientific Sessions</td>
<td>Tuesday, Mar 17</td>
<td>12:00 NOON to 1:20 PM</td>
<td>Convention Center</td>
<td>(See Program Description for Room Locations)</td>
</tr>
<tr>
<td>Scientific Sessions</td>
<td>Tuesday, Mar 17</td>
<td>1:30 PM to 4:15 PM</td>
<td>Convention Center</td>
<td>(See Program Description for Room Locations)</td>
</tr>
<tr>
<td>Scientific Sessions (Sunrise)</td>
<td>Wednesday, Mar 18</td>
<td>7:30 AM to 8:50 AM</td>
<td>Convention Center</td>
<td>(See Program Description for Room Locations)</td>
</tr>
<tr>
<td>Scientific Sessions</td>
<td>Wednesday, Mar 18</td>
<td>9:00 AM to 11:45 AM</td>
<td>Convention Center</td>
<td>(See Program Description for Room Locations)</td>
</tr>
<tr>
<td>Scientific Sessions</td>
<td>Wednesday, Mar 18</td>
<td>12:00 NOON to 1:20 PM</td>
<td>Convention Center</td>
<td>(See Program Description for Room Locations)</td>
</tr>
<tr>
<td>Scientific Sessions</td>
<td>Wednesday, Mar 18</td>
<td>1:30 PM to 4:15 PM</td>
<td>Convention Center</td>
<td>(See Program Description for Room Locations)</td>
</tr>
<tr>
<td>Scientific Sessions (Sunset)</td>
<td>Wednesday, Mar 18</td>
<td>4:30 PM to 5:50 PM</td>
<td>Convention Center</td>
<td>(See Program Description for Room Locations)</td>
</tr>
<tr>
<td>Scientific Sessions (Sunrise)</td>
<td>Thursday, Mar 19</td>
<td>7:30 AM to 8:50 AM</td>
<td>Convention Center</td>
<td>(See Program Description for Room Locations)</td>
</tr>
<tr>
<td>Scientific Sessions</td>
<td>Thursday, Mar 19</td>
<td>9:00 AM to 11:45 AM</td>
<td>Convention Center</td>
<td>(See Program Description for Room Locations)</td>
</tr>
<tr>
<td>Soapbox Session</td>
<td>Wednesday, Mar 18</td>
<td>12:00 NOON to 1:20 PM</td>
<td>Convention Center</td>
<td>Pratt Street Lobby</td>
</tr>
<tr>
<td>SOT Briefing: Congressional Visit</td>
<td>Tuesday, Mar 17</td>
<td>6:30 AM to 7:30 AM</td>
<td>Convention Center</td>
<td>305</td>
</tr>
<tr>
<td>SOT Committee/Task Force Chair Orientation</td>
<td>Saturday, Mar 14</td>
<td>2:00 PM to 5:00 PM</td>
<td>Hilton</td>
<td>Holiday Ballroom 1</td>
</tr>
<tr>
<td>SOT Office</td>
<td>Saturday, Mar 14</td>
<td>4:00 PM to 7:00 PM</td>
<td>Convention Center</td>
<td>332</td>
</tr>
<tr>
<td>SOT Office</td>
<td>Sunday, Mar 15</td>
<td>7:00 AM to 5:30 PM</td>
<td>Convention Center</td>
<td>332</td>
</tr>
<tr>
<td>SOT Office</td>
<td>Monday, Mar 16</td>
<td>7:00 AM to 5:00 PM</td>
<td>Convention Center</td>
<td>332</td>
</tr>
<tr>
<td>SOT Office</td>
<td>Tuesday, Mar 17</td>
<td>7:00 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>332</td>
</tr>
<tr>
<td>SOT Office</td>
<td>Wednesday, Mar 18</td>
<td>7:00 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>332</td>
</tr>
<tr>
<td>SOT Office</td>
<td>Thursday, Mar 19</td>
<td>7:00 AM to 11:30 AM</td>
<td>Convention Center</td>
<td>332</td>
</tr>
<tr>
<td>SOT Resource Pavilion</td>
<td>Sunday, Mar 15</td>
<td>11:00 AM to 2:00 PM</td>
<td>Convention Center</td>
<td>Charles Street Lobby</td>
</tr>
<tr>
<td>SOT Resource Pavilion</td>
<td>Monday, Mar 16</td>
<td>9:00 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>Charles Street Lobby</td>
</tr>
<tr>
<td>SOT Resource Pavilion</td>
<td>Tuesday, Mar 17</td>
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<td>Convention Center</td>
<td>Charles Street Lobby</td>
</tr>
<tr>
<td>SOT Resource Pavilion</td>
<td>Wednesday, Mar 18</td>
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<td>Convention Center</td>
<td>Charles Street Lobby</td>
</tr>
<tr>
<td>SOT Resource Pavilion</td>
<td>Thursday, Mar 19</td>
<td>8:30 AM to 12:00 NOON</td>
<td>Convention Center</td>
<td>Charles Street Lobby</td>
</tr>
</tbody>
</table>
## Schedule by Event Name (Continued)

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOT/EUROTOX Debate: Nanotoxicology—Is It Much Ado About Nothing?</td>
<td>Monday, Mar 16</td>
<td>4:30 PM to 5:50 PM</td>
<td>Convention Center</td>
<td>Ballroom I</td>
</tr>
<tr>
<td>Southern California and Mountain West Regional Chapters Joint</td>
<td>Monday, Mar 16</td>
<td>5:30 PM to 7:30 PM</td>
<td>Phillips Seafood</td>
<td></td>
</tr>
<tr>
<td>Meeting/Reception</td>
<td></td>
<td></td>
<td>Restaurant</td>
<td></td>
</tr>
<tr>
<td>Speaker Ready Room</td>
<td>Saturday, Mar 14</td>
<td>4:00 PM to 7:00 PM</td>
<td>Convention Center</td>
<td>331</td>
</tr>
<tr>
<td>Speaker Ready Room</td>
<td>Sunday, Mar 15</td>
<td>7:00 AM to 5:30 PM</td>
<td>Convention Center</td>
<td>331</td>
</tr>
<tr>
<td>Speaker Ready Room</td>
<td>Monday, Mar 16</td>
<td>7:00 AM to 5:00 PM</td>
<td>Convention Center</td>
<td>331</td>
</tr>
<tr>
<td>Speaker Ready Room</td>
<td>Tuesday, Mar 17</td>
<td>7:00 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>331</td>
</tr>
<tr>
<td>Speaker Ready Room</td>
<td>Wednesday, Mar 18</td>
<td>7:00 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>331</td>
</tr>
<tr>
<td>Speaker Ready Room</td>
<td>Thursday, Mar 19</td>
<td>7:00 AM to 11:30 AM</td>
<td>Convention Center</td>
<td>331</td>
</tr>
<tr>
<td>Special Interest Groups Presidents and Officers Meeting</td>
<td>Monday, Mar 16</td>
<td>12:00 NOON to 1:00 PM</td>
<td>Convention Center</td>
<td>302</td>
</tr>
<tr>
<td>Special Session: Meet the Director of NIEHS, Linda Birnbaum</td>
<td>Wednesday, Mar 18</td>
<td>12:00 NOON to 1:20 PM</td>
<td>Convention Center</td>
<td>316</td>
</tr>
<tr>
<td>Special Session: U.S. FDA Advisory Panel Appointments</td>
<td>Wednesday, Mar 18</td>
<td>7:30 AM to 8:50 AM</td>
<td>Convention Center</td>
<td>310</td>
</tr>
<tr>
<td>Special Session: Update from the NIH Center for Scientific Review</td>
<td>Wednesday, Mar 18</td>
<td>1:30 PM to 2:30 PM</td>
<td>Convention Center</td>
<td>316</td>
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<tr>
<td>Speaker: Antonio Scarpa, NIH CSR</td>
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<tr>
<td>Specialty Section Graduate Committee Meeting</td>
<td>Tuesday, Mar 17</td>
<td>7:00 AM to 8:30 AM</td>
<td>Convention Center</td>
<td>306</td>
</tr>
<tr>
<td>Specialty Section Presidents and Officers Meeting</td>
<td>Monday, Mar 16</td>
<td>4:30 PM to 6:00 PM</td>
<td>Convention Center</td>
<td>302</td>
</tr>
<tr>
<td>St. John's University 7th Annual Toxicology Alumni Dinner</td>
<td>Monday, Mar 16</td>
<td>6:00 PM to 8:00 PM</td>
<td>Hilton</td>
<td>Peale B</td>
</tr>
<tr>
<td>Student Advisory Council Business Meeting</td>
<td>Wednesday, Mar 18</td>
<td>7:00 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>302</td>
</tr>
<tr>
<td>Student/Postdoctoral Fellow Mixer (Ticket Required)</td>
<td>Sunday, Mar 15</td>
<td>7:30 PM to 8:30 PM</td>
<td>Convention Center</td>
<td>Camden Lobby</td>
</tr>
<tr>
<td>Tour Desk</td>
<td>Saturday, Mar 14</td>
<td>4:00 PM to 7:00 PM</td>
<td>Convention Center</td>
<td>Pratt Street Lobby</td>
</tr>
<tr>
<td>Tour Desk</td>
<td>Sunday, Mar 15</td>
<td>8:00 AM to 4:00 PM</td>
<td>Convention Center</td>
<td>Pratt Street Lobby</td>
</tr>
<tr>
<td>Tour Desk</td>
<td>Monday, Mar 16</td>
<td>8:00 AM to 4:00 PM</td>
<td>Convention Center</td>
<td>Pratt Street Lobby</td>
</tr>
<tr>
<td>Tour Desk</td>
<td>Tuesday, Mar 17</td>
<td>8:00 AM to 4:00 PM</td>
<td>Convention Center</td>
<td>Pratt Street Lobby</td>
</tr>
<tr>
<td>Tour Desk</td>
<td>Wednesday, Mar 18</td>
<td>8:00 AM to 2:00 PM</td>
<td>Convention Center</td>
<td>Pratt Street Lobby</td>
</tr>
<tr>
<td>ToxExpo™ 2010 Exhibit Space Selection Meeting</td>
<td>Tuesday, Mar 17</td>
<td>4:45 PM to 6:00 PM</td>
<td>Convention Center</td>
<td>336</td>
</tr>
<tr>
<td>ToxExpo™ Exhibits Open</td>
<td>Monday, Mar 16</td>
<td>9:00 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>ToxExpo™ Exhibits Open</td>
<td>Tuesday, Mar 17</td>
<td>8:30 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>ToxExpo™ Exhibits Open</td>
<td>Wednesday, Mar 18</td>
<td>8:30 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>ToxExpo™ Set Up</td>
<td>Saturday, Mar 15</td>
<td>8:00 AM to 5:00 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>ToxExpo™ Set Up</td>
<td>Sunday, Mar 15</td>
<td>8:00 AM to 5:00 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>ToxExpo™ Tear Down</td>
<td>Wednesday, Mar 18</td>
<td>5:00 PM to 12:00 MIDNIGHT</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>ToxExpo™ Tear Down</td>
<td>Thursday, Mar 19</td>
<td>8:00 AM to 12:00 NOON</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Toxicologic and Exploratory Pathology Specialty Section Meeting</td>
<td>Tuesday, Mar 17</td>
<td>12:00 NOON to 1:30 PM</td>
<td>Convention Center</td>
<td>345</td>
</tr>
<tr>
<td>Toxicologic and Exploratory Pathology Specialty Section Officers</td>
<td>Monday, Mar 16</td>
<td>7:30 AM to 9:00 AM</td>
<td>Convention Center</td>
<td>343</td>
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<tr>
<td>Meeting</td>
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</tr>
<tr>
<td>Toxicological Sciences Associate Editors Meeting</td>
<td>Sunday, Mar 15</td>
<td>12:00 NOON to 3:00 PM</td>
<td>Hilton</td>
<td>Poe A &amp; B</td>
</tr>
<tr>
<td>Toxicological Sciences/Oxford Journals Appreciation Dinner (By</td>
<td>Monday, Mar 16</td>
<td>7:00 PM to 9:00 PM</td>
<td>Phillips Seafood</td>
<td></td>
</tr>
<tr>
<td>Invitation Only)</td>
<td></td>
<td></td>
<td>Restaurant</td>
<td></td>
</tr>
<tr>
<td>Toxicologists of African Origin Special Interest Group Meeting/</td>
<td>Tuesday, Mar 17</td>
<td>6:00 PM to 8:00 PM</td>
<td>Hilton</td>
<td>Tubman A</td>
</tr>
<tr>
<td>Reception</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicology Editorial Board Meeting</td>
<td>Monday, Mar 16</td>
<td>12:00 NOON to 1:30 PM</td>
<td>Hilton</td>
<td>Blake</td>
</tr>
<tr>
<td>Toxicology Education Foundation Board Meeting</td>
<td>Monday, Mar 16</td>
<td>4:30 PM to 9:00 PM</td>
<td>Hilton</td>
<td>Stone</td>
</tr>
<tr>
<td>Toxicology History Room</td>
<td>Monday, Mar 16</td>
<td>9:00 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>Charles Street VIP Suite</td>
</tr>
<tr>
<td>Toxicology History Room</td>
<td>Tuesday, Mar 17</td>
<td>9:00 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>Charles Street VIP Suite</td>
</tr>
<tr>
<td>Event:</td>
<td>Date:</td>
<td>Time:</td>
<td>Location:</td>
<td>Room:</td>
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</tr>
<tr>
<td>Toxicology History Room</td>
<td>Wednesday, Mar 18</td>
<td>9:00 AM to 4:30 PM</td>
<td>Convention Center</td>
<td>Charles Street VIP Suite</td>
</tr>
<tr>
<td>ToxLearn Work Group Meeting</td>
<td>Tuesday, Mar 17</td>
<td>10:30 AM to 12:00 NOON</td>
<td>Convention Center</td>
<td>305</td>
</tr>
<tr>
<td>Translational Impact Award Lecture: Keap1 One Eye on the Target—Translating Molecular Toxicology into Cancer Prevention Lecturer: Thomas W. Kensler</td>
<td>Tuesday, Mar 17</td>
<td>8:00 AM to 8:50 AM</td>
<td>Convention Center</td>
<td>324</td>
</tr>
<tr>
<td>Undergraduate Education Program—Orientation for SOT Hosts, Peer Mentors, and Advisors</td>
<td>Saturday, Mar 14</td>
<td>4:15 PM to 5:45 PM</td>
<td>Convention Center</td>
<td>330</td>
</tr>
<tr>
<td>Undergraduate Education Program Reception</td>
<td>Saturday, Mar 14</td>
<td>5:45 PM to 7:00 PM</td>
<td>Convention Center</td>
<td>343</td>
</tr>
<tr>
<td>Undergraduate Education Program—Toxicology Lectures</td>
<td>Sunday, Mar 15</td>
<td>8:00 AM to 11:30 AM</td>
<td>Convention Center</td>
<td>334</td>
</tr>
<tr>
<td>Undergraduate Education Program—Lunch and Networking (By Invitation Only)</td>
<td>Sunday, Mar 15</td>
<td>11:45 AM to 12:30 PM</td>
<td>Convention Center</td>
<td>339</td>
</tr>
<tr>
<td>Undergraduate Education Program—Planning for Graduate School</td>
<td>Sunday, Mar 15</td>
<td>12:30 PM to 1:55 PM</td>
<td>Convention Center</td>
<td>311</td>
</tr>
<tr>
<td>Undergraduate Education Program—Career Opportunities in Toxicology</td>
<td>Sunday, Mar 15</td>
<td>2:00 PM to 2:40 PM</td>
<td>Convention Center</td>
<td>339</td>
</tr>
<tr>
<td>Undergraduate Education Program—Academic Toxicology Programs and Internships</td>
<td>Sunday, Mar 15</td>
<td>3:00 PM to 5:00 PM</td>
<td>Convention Center</td>
<td>343</td>
</tr>
<tr>
<td>Undergraduate Education Program—Host Mentor and Peer Mentor Meeting</td>
<td>Sunday, Mar 15</td>
<td>3:00 PM to 3:30 PM</td>
<td>Convention Center</td>
<td>311</td>
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<tr>
<td>Undergraduate Education Program</td>
<td>Monday, Mar 16</td>
<td>7:15 AM to 8:00 AM</td>
<td>Convention Center</td>
<td>339</td>
</tr>
<tr>
<td>Undergraduate Education Program—Poster Session for Visiting Students</td>
<td>Monday, Mar 16</td>
<td>9:30 AM to 11:15 AM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Undergraduate Education Program—Closing Session</td>
<td>Monday, Mar 16</td>
<td>1:30 PM to 2:00 PM</td>
<td>Convention Center</td>
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<tr>
<td>Undergraduate Education Subcommittee Meeting</td>
<td>Monday, Mar 16</td>
<td>3:30 PM to 4:30 PM</td>
<td>Convention Center</td>
<td>305</td>
</tr>
<tr>
<td>Undergraduate Faculty Meeting (All interested in teaching toxicology to undergraduates are invited)</td>
<td>Tuesday, Mar 17</td>
<td>3:30 PM to 4:30 PM</td>
<td>Convention Center</td>
<td>302</td>
</tr>
<tr>
<td>University of Connecticut Reception</td>
<td>Tuesday, Mar 17</td>
<td>9:00 PM to 10:00 PM</td>
<td>Hilton</td>
<td>Armistead</td>
</tr>
<tr>
<td>University of Rochester Alumni Reception</td>
<td>Tuesday, Mar 17</td>
<td>7:30 PM to 10:00 PM</td>
<td>Sheraton Inner Harbor</td>
<td>Potomac Room</td>
</tr>
<tr>
<td>University of Washington Alumni &amp; Friends Reception</td>
<td>Sunday, Mar 15</td>
<td>7:00 PM to 9:00 PM</td>
<td>Hilton</td>
<td>Key Ballroom 9</td>
</tr>
<tr>
<td>VIP ToxExpo™ Exhibit Hall Walk-Through</td>
<td>Monday, Mar 16</td>
<td>1:30 PM to 2:30 PM</td>
<td>Convention Center</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>Welcoming Reception (All Attendees Welcome)</td>
<td>Sunday, Mar 15</td>
<td>6:30 PM to 7:30 PM</td>
<td>Convention Center</td>
<td>Ballroom</td>
</tr>
<tr>
<td>Women in Toxicology Special Interest Group Meeting/Reception</td>
<td>Wednesday, Mar 18</td>
<td>4:30 PM to 6:00 PM</td>
<td>Hilton</td>
<td>Holiday Ballroom 3</td>
</tr>
</tbody>
</table>
Level 400

Ballroom Level

- Escalator to CE Courses, Meeting Rooms, and Scientific Sessions (Level 300)
- Elevator
- Entrance
- Ballroom
- Entrance
- Entrance
- Restrooms
- Escalator to Registration, Exhibit Hall, ToxExpo™, and Sessions

Welcoming Reception and Scientific Sessions
**Baltimore Hotel Accommodations**

1) **Days Inn Inner Harbor**
- $139 Single/Double
- 100 Hopkins Place
- Baltimore, MD 21201
- Tel: (410) 576-1000
- Fax: (410) 659-0257
- Web site: www.daysinnerharbor.com
- Club: Wyndham Rewards
- Check in: 3:00 PM
- Check out: 11:00 AM
- 1 block from Convention Center
- $18/day self parking
- Complimentary wireless Internet available in guest room and throughout hotel

2) **Hampton Inn at Camden Yards**
- $155 Government Rate or $179 Single/Double
- 550 Washington Boulevard
- Baltimore, MD 21230
- Tel: (410) 685-5000
- Fax: (410) 685-5002
- Web site: www.baltimorecamdenyards.hamptoninn.com
- Club: Hilton HHonors
- Check in: 3:00 PM
- Check out: 12:00 NOON
- 2 blocks from Convention Center
- $26/day valet parking
- Complimentary wireless Internet available in guest room and throughout hotel
- Complimentary hot breakfast.

3) **Hilton Baltimore**
- **SOT Headquarters Hotel**
- $192 Single/Double
- 401 West Pratt Street
- Baltimore, MD 21201
- Tel: (443) 573-8700
- Fax: (443) 573-8799
- Web site: www.baltimore.hilton.com
- New hotel—Rating not yet determined
- Club: Hilton HHonors
- Check in: 3:00 PM
- Check out: 12:00 NOON
- 1 block from Convention Center
- $26/day self and $36/day valet parking
- Internet access at $9.95/day—wireless Internet available

4) **Holiday Inn Inner Harbor**
- $169 Single/Double
- 301 West Lombard Street
- Baltimore, MD 21201
- Tel: (410) 685-3500
- Fax: (410) 727-6169
- Web site: www.holiday-inn.com/bal-downtown
- Club: Priority Club Rewards
- Check in: 4:00 PM
- Check out: 12:00 NOON
- 1 block from Convention Center
- $21/day self parking
- Complimentary wireless Internet available in guest room and throughout hotel

5) **Hyatt Regency Baltimore**
- $205 Single/Double
- 300 Light Street
- Baltimore, MD 21202
- Tel: (410) 528-1234
- Fax: (410) 685-3362
- Web site: www.baltimore.hyatt.com
- Club: Hyatt Gold Passport
- Check in: 4:00 PM
- Check out: 12:00 NOON
- 1 block from Convention Center
- $27/day self and $36/day valet parking
- Internet access at $9.99/day—wireless Internet available

6) **InterContinental Harbor Court Baltimore**
- $199 Single/Double
- 550 Light Street
- Baltimore, MD 21202
- Tel: (410) 234-0550
- Fax: (410) 385-6185
- Web site: www.interconti.com/harborcourt
- Club: Priority Club Rewards
- Check in: 3:00 PM
- Check out: 12:00 NOON
- 3 blocks from Convention Center
- $21/day self and $32/day valet parking
- Internet access at $11.95/day—wireless Internet available

7) **Marriott Inner Harbor at Camden Yards**
- $189 Single/Double
- 110 South Eutaw Street
- Baltimore, MD 21201
- Tel: (410) 962-0202
- Fax: (410) 625-7892
- Web site: www.marriotthotels.com/bwih
- Club: Marriott Rewards
- Check in: 4:00 PM
- Check out: 12:00 NOON
- 1 block from Convention Center
- $22/day self parking
- Internet access at $9.95/day—wireless Internet available

8) **Radisson Plaza Lord Baltimore**
- $180 Single/Double
- 20 West Baltimore Street
- Baltimore, MD 21201
- Tel: (410) 539-8400
- Fax: (410) 625-1060
- Web site: www.radisson.com/lordbaltimore
- Club: Goldpoints Plus
- Check in: 3:00 PM
- Check out: 12:00 NOON
- 3 blocks from Convention Center
- $29/day valet parking
- Complimentary wireless Internet available in guest room and throughout hotel

9) **Renaissance Harborplace**
- $192 Single/Double
- 202 East Pratt Street
- Baltimore, MD 21202
- Tel: (410) 547-1200
- Fax: (410) 539-5790
- Web site: www.marriott.com/renaissanceharborplace
- Club: Marriott Rewards
- Check in: 4:00 PM
- Check out: 12:00 NOON
- 2 blocks from Convention Center
- $26/day self and $36/day valet parking
- Internet access at $9.95/day—complimentary wireless Internet in lobby
Baltimore Hotel Accommodations (Continued)

<table>
<thead>
<tr>
<th>10</th>
<th>Sheraton Baltimore City Center</th>
<th>12</th>
<th>SpringHill Suites by Marriott</th>
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<tbody>
<tr>
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</tbody>
</table>
| ![Club](image17.png) &nbsp;&n...
Map of Baltimore Hotel Locations
# Baltimore Restaurant Listings

<table>
<thead>
<tr>
<th>Restaurants Within Seven Blocks of the Convention Center, Listed Alphabetically</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>$</strong> = Under $12</td>
</tr>
<tr>
<td>Au Bon Pain</td>
</tr>
<tr>
<td>Babalu Grill</td>
</tr>
<tr>
<td>Ban Thai</td>
</tr>
<tr>
<td>Blu Bambu</td>
</tr>
<tr>
<td>Boheme Café</td>
</tr>
<tr>
<td>Brightons Orangerie</td>
</tr>
<tr>
<td>Burke's Café</td>
</tr>
<tr>
<td>Café 100</td>
</tr>
<tr>
<td>Café Promenade</td>
</tr>
<tr>
<td>California Tortilla</td>
</tr>
<tr>
<td>Cazbar</td>
</tr>
<tr>
<td>Cheesecake Factory</td>
</tr>
<tr>
<td>Chipotle</td>
</tr>
<tr>
<td>Copra</td>
</tr>
<tr>
<td>Cosi</td>
</tr>
<tr>
<td>Diamond Tavern</td>
</tr>
<tr>
<td>Edgar's Billiards Club</td>
</tr>
<tr>
<td>Edo Sushi</td>
</tr>
<tr>
<td>ESPN Zone</td>
</tr>
<tr>
<td>Faidley's Seafood</td>
</tr>
<tr>
<td>Five Guys</td>
</tr>
<tr>
<td>Fogo de Chao</td>
</tr>
<tr>
<td>Geisha Sushi Bar</td>
</tr>
<tr>
<td>Hard Rock Café</td>
</tr>
<tr>
<td>Hooters of Baltimore</td>
</tr>
<tr>
<td>Houlihan's</td>
</tr>
<tr>
<td>J. Paul's Dining Saloon</td>
</tr>
<tr>
<td>La Tasca</td>
</tr>
<tr>
<td>Lucy's Irish Pub and Restaurant</td>
</tr>
<tr>
<td>Luna Del Sea</td>
</tr>
<tr>
<td>M &amp; S Grill</td>
</tr>
<tr>
<td>Mex Tequila Bar</td>
</tr>
<tr>
<td>Morton's The Steakhouse</td>
</tr>
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</table>

B=Breakfast, L=Lunch, D=Dinner
**Baltimore Restaurant Listings (Continued)**

<table>
<thead>
<tr>
<th>Restaurants Within Seven Blocks of the Convention Center, Listed Alphabetically (continued)</th>
<th>$\text{= Under $12}$</th>
<th>$$\text{= $12–$18}$</th>
<th>$$$\text{= $18–$30}$</th>
<th>$$$$$\text{= over $30}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.F. Chang’s China Bistro</td>
<td>Market Place, 600 East Pratt Street (South Gay Street)</td>
<td>(410) 649-2750</td>
<td>L D</td>
<td>$$–$$$</td>
</tr>
<tr>
<td>Phillips</td>
<td>Harbortplace Light Street Pavilion, 301 Light Street (Pratt Street)</td>
<td>(410) 685-6600</td>
<td>L D</td>
<td>$</td>
</tr>
<tr>
<td>Pickles Pub</td>
<td>520 Washington Boulevard</td>
<td>(410) 752-1784</td>
<td>L D</td>
<td>$</td>
</tr>
<tr>
<td>Pisces</td>
<td>Hyatt Regency, 300 Light Street</td>
<td>(410) 605-2835</td>
<td>D</td>
<td>$$ $$</td>
</tr>
<tr>
<td>Rusty Scupper Restaurant</td>
<td>402 Key Highway</td>
<td>(410) 727-3678</td>
<td>L D</td>
<td>$$</td>
</tr>
<tr>
<td>Shula’s Steak House</td>
<td>Sheraton Baltimore City Center Hotel, 101 West Fayette Street</td>
<td>(410) 385-6601</td>
<td>D</td>
<td>$$–$$$$</td>
</tr>
<tr>
<td>Slider’s Bar and Grill</td>
<td>504 Washington Boulevard</td>
<td>(410) 547-8891</td>
<td>L D</td>
<td>$</td>
</tr>
<tr>
<td>The Capital Grille</td>
<td>500 East Pratt Street (Gay Street)</td>
<td>(443) 703-4064</td>
<td>L D</td>
<td>$$ $$</td>
</tr>
<tr>
<td>The Wharf Rat</td>
<td>206 West Pratt Street</td>
<td>(410) 244-8900</td>
<td>L D</td>
<td>$</td>
</tr>
<tr>
<td>Watertable</td>
<td>Renaissance Harborplace Hotel, 202 East Pratt Street, 5th Floor</td>
<td>(410) 685-8439</td>
<td>B L D</td>
<td>$$</td>
</tr>
<tr>
<td>Xanadu</td>
<td>10 South Calvert Street</td>
<td>(410) 528-5110</td>
<td>L D</td>
<td>$$–$$$$</td>
</tr>
</tbody>
</table>

| Suggested Restaurants More Than Seven Blocks of the Convention Center, Listed Alphabetically |
|---|---|---|---|
| $\text{= Under $12}$ | $$\text{= $12–$18}$ | $$$\text{= $18–$30}$ | $$$$$\text{= over $30}$ |
| Aldo’s Ristorante Italiano | 306 South High Street | (410) 727-0700 | D | $$ $$ |
| Charleston | 1000 Lancaster Street | (410) 332-7373 | D | $$ $$ |
| Cinghiale | 822 Lancaster Street | (410) 547-8282 | D | $$ $$ |
| Ixia Restaurant Bar Lounge | 518 North Charles Street | (410) 727-1800 | D | $$ $$ |
| La Tavola Ristorante Italiano | 248 Albermarle Street | (410) 685-1859 | L D | $$–$$$$ |
| Meli Patisserie and Bistro | 1636 Thames Street | (410) 534-6354 | D | $$ |
| Obrycki’s Crab House and Seafood Restaurant | 1727 East Pratt Street | (410) 732-6399 | L D | $$–$$$$ |
| Pazo Restaurant | 1425 Aliceanna Street | (410) 534-7296 | D | $$ |
| Sotto Sopra | 405 North Charles Street | (410) 625-0534 | L D | $$–$$$$ |
| The Bicycle | 1444 Light Street | (410) 234-1900 | D | $$ |
| The Wine Market | 921 East Fort Avenue | (410) 244-6166 | L D | $$–$$$$ |

$\text{B=Breakfast, L=Lunch, D=Dinner}$
## Poster Session Schedule and Board Surface Maps

### Monday Morning, March 16—9:30 AM to 12:30 PM—Exhibit Hall—Level 100—Poster Set Up—7:30 AM to 9:30 AM

<table>
<thead>
<tr>
<th>SESSION TITLE</th>
<th>ABSTRACT NUMBERS</th>
<th>POSTER BOARD NUMBERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receptors</td>
<td>81–95</td>
<td>101–115</td>
</tr>
<tr>
<td>AH Receptor Mediated Signalling</td>
<td>96–109</td>
<td>117–130</td>
</tr>
<tr>
<td>Dermal Absorption and Skin Toxicity</td>
<td>110–139</td>
<td>131–160</td>
</tr>
<tr>
<td>Insights in Endocrine Action and Toxicology</td>
<td>140–166</td>
<td>201–227</td>
</tr>
<tr>
<td>Neurotoxicity—Developmental</td>
<td>167–199</td>
<td>231–260 and 301–303</td>
</tr>
<tr>
<td>Cardiovascular Toxicity I</td>
<td>200–230</td>
<td>306–336</td>
</tr>
<tr>
<td>Nanotoxicology In Vivo</td>
<td>231–263</td>
<td>337–360 and 401–409</td>
</tr>
<tr>
<td>Xenobiotic Biotransformation</td>
<td>264–284</td>
<td>410–430</td>
</tr>
<tr>
<td>Apoptosis: Activators and Regulatory Pathways</td>
<td>285–304</td>
<td>431–450</td>
</tr>
<tr>
<td>Redox-Cycling, Reactive Oxygen Species (ROS), and Damage</td>
<td>305–321</td>
<td>501–517</td>
</tr>
<tr>
<td>Information and Education</td>
<td>322–325</td>
<td>521–524</td>
</tr>
<tr>
<td>Visiting Student Poster Session</td>
<td>BY INVITATION ONLY</td>
<td>526–550</td>
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</table>

### Monday Afternoon, March 16—1:00 PM to 4:30 PM—Exhibit Hall—Level 100—Poster Set Up—12:30 PM to 1:00 PM

<table>
<thead>
<tr>
<th>SESSION TITLE</th>
<th>ABSTRACT NUMBERS</th>
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<tbody>
<tr>
<td>Neurotoxicity—Metals</td>
<td>330–368</td>
<td>101–139</td>
</tr>
<tr>
<td>Alternate Tests and Models I</td>
<td>369–406</td>
<td>146–160 and 201–223</td>
</tr>
<tr>
<td>In Vitro Methods, Models, and Mechanisms of Hepatotoxicity</td>
<td>407–437</td>
<td>226–256</td>
</tr>
<tr>
<td>Ecotoxicology</td>
<td>438–453</td>
<td>306–321</td>
</tr>
<tr>
<td>Biological Modeling</td>
<td>454–480</td>
<td>339–360 and 401–405</td>
</tr>
<tr>
<td>Toxicology of Kidney</td>
<td>481–495</td>
<td>406–420</td>
</tr>
<tr>
<td>Safety Assessment for Non-Pharmaceuticals</td>
<td>496–515</td>
<td>421–440</td>
</tr>
<tr>
<td>Chemical and Biological Weapons</td>
<td>516–535</td>
<td>441–450 and 501–528</td>
</tr>
<tr>
<td>Assessment of Chemical Mixtures</td>
<td>554–571</td>
<td>531–548</td>
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### Tuesday Morning, March 17—9:00 AM to 12:30 PM—Exhibit Hall—Level 100—Poster Set Up—8:30 AM to 9:00 AM

<table>
<thead>
<tr>
<th>SESSION TITLE</th>
<th>ABSTRACT NUMBERS</th>
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<tbody>
<tr>
<td>Safety Issues Concerning Food Products and Micronutrients</td>
<td>744–782</td>
<td>101–139</td>
</tr>
<tr>
<td>Biological Actions of Natural Products</td>
<td>783–809</td>
<td>146–160 and 201–212</td>
</tr>
<tr>
<td>Risk Assessment Applications</td>
<td>810–851</td>
<td>216–257</td>
</tr>
<tr>
<td>Nanotoxicology In Vitro</td>
<td>852–893</td>
<td>301–342</td>
</tr>
<tr>
<td>Role of PPAR and COX-2 in Chemical Carcinogenesis</td>
<td>894–902</td>
<td>346–354</td>
</tr>
<tr>
<td>Cardiovascular Toxicity II</td>
<td>903–932</td>
<td>401–430</td>
</tr>
<tr>
<td>Reactive Oxygen Species (ROS) Signalling</td>
<td>933–949</td>
<td>431–447</td>
</tr>
<tr>
<td>Research in Disposition and Pharmacokinetics</td>
<td>950–987</td>
<td>501–538</td>
</tr>
</tbody>
</table>

### Tuesday Afternoon, March 17—1:00 PM to 4:30 PM—Exhibit Hall—Level 100—Poster Set Up—12:30 PM to 1:00 PM

<table>
<thead>
<tr>
<th>SESSION TITLE</th>
<th>ABSTRACT NUMBERS</th>
<th>POSTER BOARD NUMBERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional Genomics in Toxicology</td>
<td>992–1031</td>
<td>101–140</td>
</tr>
<tr>
<td>Gene Regulation</td>
<td>1032–1056</td>
<td>146–160 and 201–210</td>
</tr>
<tr>
<td>Genotoxicity I</td>
<td>1057–1087</td>
<td>216–246</td>
</tr>
<tr>
<td>Bioinformatics and Prediction of Toxicity</td>
<td>1088–1125</td>
<td>306–343</td>
</tr>
<tr>
<td>Hepatotoxicity of NSAIDS and Acetaminophen</td>
<td>1126–1135</td>
<td>351–360</td>
</tr>
<tr>
<td>Hepatotoxicity: In Vivo Studies</td>
<td>1136–1156</td>
<td>401–421</td>
</tr>
<tr>
<td>Pesticide—Toxicity</td>
<td>1157–1185</td>
<td>431–450 and 501–509</td>
</tr>
<tr>
<td>Epidemiology and Exposure Assessment</td>
<td>1186–1219</td>
<td>511–544</td>
</tr>
</tbody>
</table>
### Poster Session Schedule and Board Surface Maps (Continued)

**Wednesday Morning, March 18—9:00 AM to 12:30 PM—Exhibit Hall—Level 100—Poster Set Up—8:30 AM to 9:00 AM**

<table>
<thead>
<tr>
<th>SESSION TITLE</th>
<th>ABSTRACT NUMBERS</th>
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</thead>
<tbody>
<tr>
<td>Genetic Polymorphisms</td>
<td>1392–1404</td>
<td>101–113</td>
</tr>
<tr>
<td>Animal Models II</td>
<td>1405–1432</td>
<td>116–143</td>
</tr>
<tr>
<td>Advances in Reproductive Toxicology</td>
<td>1433–1464</td>
<td>146–160 and 201–217</td>
</tr>
<tr>
<td>Risk Assessment Research</td>
<td>1465–1501</td>
<td>224–260</td>
</tr>
<tr>
<td>Hypersensitivity and Autoimmunity</td>
<td>1502–1532</td>
<td>301–331</td>
</tr>
<tr>
<td>Parkinson's Disease</td>
<td>1533–1548</td>
<td>334–349</td>
</tr>
<tr>
<td>Cytoprotective Strategies Against Reactive Oxygen Species (ROS)</td>
<td>1549–1560</td>
<td>351–360 and 401–402</td>
</tr>
<tr>
<td>Metals—<em>In Vivo</em></td>
<td>1561–1591</td>
<td>411–441</td>
</tr>
<tr>
<td>Biomarker Discovery and Detection</td>
<td>1592–1618</td>
<td>501–527</td>
</tr>
<tr>
<td>Biomonitoring and Exposure Assessment</td>
<td>1619–1633</td>
<td>531–545</td>
</tr>
</tbody>
</table>

**Wednesday Afternoon, March 18—1:00 PM to 4:30 PM—Exhibit Hall—Level 100—Poster Set Up—12:30 PM to 1:00 PM**

<table>
<thead>
<tr>
<th>SESSION TITLE</th>
<th>ABSTRACT NUMBERS</th>
<th>POSTER BOARD NUMBERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Carcinogenesis</td>
<td>1637–1666</td>
<td>101–130</td>
</tr>
<tr>
<td>Mechanisms of Chemoprevention in Chemical Carcinogenesis</td>
<td>1667–1685</td>
<td>131–149</td>
</tr>
<tr>
<td>Developmental Basis of Disease</td>
<td>1686–1699</td>
<td>151–160 and 201–204</td>
</tr>
<tr>
<td>Developmental Toxicology</td>
<td>1700–1714</td>
<td>206–220</td>
</tr>
<tr>
<td>Immunotoxicology</td>
<td>1715–1762</td>
<td>221–260 and 301–308</td>
</tr>
<tr>
<td>Metals—<em>In Vitro</em></td>
<td>1763–1802</td>
<td>311–350</td>
</tr>
<tr>
<td>Alternate Tests and Models II</td>
<td>1803–1842</td>
<td>351–360 and 401–430</td>
</tr>
<tr>
<td>Stem Cell Biology and Toxicology</td>
<td>1843–1857</td>
<td>431–445</td>
</tr>
<tr>
<td>Steatosis and Choleostasis in Hepatic Dysfunction</td>
<td>1858–1871</td>
<td>446–450 and 501–509</td>
</tr>
<tr>
<td>Inflammation</td>
<td>1872–1893</td>
<td>511–532</td>
</tr>
<tr>
<td>Genotoxicity II</td>
<td>1894–1910</td>
<td>534–550</td>
</tr>
</tbody>
</table>

**Thursday Morning, March 19—8:30 AM to 12:00 NOON—Ballroom I—Level 400—Poster Set Up—8:00 AM to 8:30 AM**

<table>
<thead>
<tr>
<th>SESSION TITLE</th>
<th>ABSTRACT NUMBERS</th>
<th>POSTER BOARD NUMBERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epigenetics</td>
<td>1994–2003</td>
<td>101–110</td>
</tr>
<tr>
<td>Persistant Organic Compounds</td>
<td>2004–2022</td>
<td>111–129</td>
</tr>
<tr>
<td>Regulations and Policy Implications in Toxicology</td>
<td>2023–2037</td>
<td>131–145</td>
</tr>
<tr>
<td>Non-Clinical Safety Testing: Biological and Small Molecular Therapeutics</td>
<td>2038–2079</td>
<td>146–180 and 201–207</td>
</tr>
<tr>
<td>Cardiopulmonary Toxicity</td>
<td>2080–2116</td>
<td>209–245</td>
</tr>
<tr>
<td>Neurotoxicity Pesticides</td>
<td>2117–2141</td>
<td>246–270</td>
</tr>
<tr>
<td>Chemical-Induced Neurotoxicity</td>
<td>2142–2164</td>
<td>271–280 and 301–313</td>
</tr>
<tr>
<td>New Applications in Animal Models</td>
<td>2165–2191</td>
<td>316–342</td>
</tr>
<tr>
<td>Toxicology of Nanotubes</td>
<td>2192–2215</td>
<td>344–367</td>
</tr>
<tr>
<td>Signal Transduction: Kinases</td>
<td>2216–2227</td>
<td>369–380</td>
</tr>
</tbody>
</table>

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### Poster Session Schedule and Board Surface Maps (Continued)

#### Monday, March 16–Wednesday, March 18—Exhibit Hall—Level 100

<table>
<thead>
<tr>
<th>100's</th>
<th>200's</th>
</tr>
</thead>
<tbody>
<tr>
<td>101-130</td>
<td>131-160</td>
</tr>
<tr>
<td></td>
<td></td>
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<tr>
<td>115</td>
<td>116</td>
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<td>114</td>
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<td>112</td>
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<tr>
<td>111</td>
<td>120</td>
</tr>
</tbody>
</table>

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The numbers listed refer to the poster location which does not change throughout the week. Presenters should ONLY display posters on the assigned date and time communicated in your acceptance notice. A list of poster session dates and times with abstract numbers can be found on pages 34–35. The Poster Session Schedule and Poster Board Surface Maps are displayed with a mock layout of the ToxExpo™ Exhibit Hall (pages 40–41) to assist you in finding poster sessions.

**15’ aisle space indicated here.**

#### Thursday, March 19—Ballroom I—Level 400

<table>
<thead>
<tr>
<th>100's 101-140</th>
<th>100's 141-180</th>
<th>200's 201-240</th>
<th>200's 241-280</th>
</tr>
</thead>
<tbody>
<tr>
<td>110 111</td>
<td>130 131</td>
<td>150 151</td>
<td>170 171</td>
</tr>
<tr>
<td>109 112</td>
<td>129 132</td>
<td>149 152</td>
<td>169 172</td>
</tr>
<tr>
<td>108 113</td>
<td>128 133</td>
<td>148 153</td>
<td>168 173</td>
</tr>
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Monday Morning, March 16—9:30 AM to 12:30 PM—Poster Set Up—7:30 AM to 9:30 AM  
Afternoon, March 16—1:00 PM to 4:30 PM—Poster Set Up—12:30 PM to 1:00 PM  
Tuesday Morning, March 17—9:00 AM to 12:30 PM—Poster Set Up—8:30 AM to 9:00 AM  
Afternoon, March 17—1:00 PM to 4:30 PM—Poster Set Up—12:30 PM to 1:00 PM  
Wednesday Morning, March 18—9:00 AM to 12:30 PM—Poster Set Up—8:30 AM to 9:00 AM  
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### EXHIBITOR HOSTED SESSIONS
( Listed by date and time, then presented by)

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

### Monday

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emka TECHNOLOGIES | Non-Invasive Blood Pressure Measurements on Large Animals | 338 | 187  
Promega Corporation | Profiling Environmental Chemicals in the Cellular Stress Pathway using Quantitative High-Throughput Screening | 337 | 187  

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National Library of Medicine | Environmental Health and Toxicology Resources | 338 | 206  
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**Time: 2:45 PM–3:45 PM**  
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CeeTox, Inc. | A Novel In Vitro Method to Assess Skin Sensitization | 337 | 214  
Instem Software | Software-As-a-Service in Preclinical: Remote Hosting of Data Systems—Are Laboratories Ready for This? | 338 | 214  
WuXi AppTec | Integration of a Small Molecule R&D and Manufacturing Organization with Toxicology | 336 | 214  

**Time: 11:00 AM–12:00 NOON**  
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ADMET Group | In Vitro Evaluation of Human Drug Toxicity: Organ Specificity and Metabolism-Based Toxicity | 336 | 244  
Meso Scale Discovery | Multiplexed Assays Qualified for Toxicology Biomarker Profiling | 337 | 244  

**Time: 12:15 PM–1:15 PM**  
**Presented by** | **Topic** | **Room** | **Page**  
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Covance | Drug Discovery: The Interface of Safety and Efficacy Evaluations in Lead Optimization | 336 | 246  

Additional sessions may be scheduled after print deadline. Please see ToxExpo™ Directory for the most current schedule.

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**Wednesday**

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*up-to-date information at [www.toxicology.org](http://www.toxicology.org)*
Annual Meeting Registration Includes:

- Awards Ceremony, Sunday, March 15 from 5:15 PM–6:30 PM.
- Welcoming Reception, Sunday, March 15 from 6:30 PM–7:30 PM.
- Plenary Opening Lecture, Monday, March 16 from 8:00 AM–9:00 AM.
- All Scientific Sessions (see program descriptions beginning on page 91) 9:15 AM, Monday, March 16 through 12:00 NOON, Thursday, March 19.
- ToxExpo™ Exhibit Hall, 9:00 AM–4:30 PM Monday, March 16; 8:30 AM–4:30 PM Tuesday, March 17 and Wednesday, March 18.

Participants are also encouraged to register for the Continuing Education Courses. These are available during three time intervals on Sunday, March 15: 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.

Registration Desk

Registration Desk is located in the Pratt Street Lobby on Level 300.

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–4:30 PM
- Wednesday ............................................. 8:00 AM–4:30 PM
- Thursday ............................................... 8:00 AM–11:30 PM

Registration Materials

For those of you who registered before January 30, 2009, your badge, Program, and The Toxicologist on CD-ROM will be sent to you prior to the Annual Meeting. 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 located in the Pratt Street Lobby on Level 300. Your 2009 Annual Meeting Registration badge must be presented to obtain access to SOT functions.

When you arrive at the Baltimore Convention Center, you will need to pick up your ToxExpo™ Directory and badge holder. If you have not already registered, please go to the registration counter in the Pratt Street Lobby on Level 300 to obtain these materials. If you already have your registration badge and event/CE course tickets, simply stop by a handout table in either the Pratt Street Lobby or the Charles Street Lobby on Level 100 and present your badge to obtain...
General Information

the other registration materials (i.e., The Toxicologist on CD-ROM, the ToxExpo™ Directory, and other supplementary materials). The hard copy version of The Toxicologist will be available to purchase in the Pratt Street Lobby next to the registration desk.

Accessibility for Persons with Disabilities
The Baltimore 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 Housing Request Form and the Registration Form. If you require more information about disabled access, please contact Heidi Prange at SOT Headquarters: (703) 438-3115 ext. 1424 or e-mail: heidi@toxicology.org.

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.

Badges
Those who registered before January 30, 2009, will receive badges and registration materials in the mail. If you already have your 2009 Annual Meeting badge you do not need to wait in a 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 located in the Pratt Street Lobby on Level 300 to pick up your badge.

If you have not registered for the meeting, please complete the On-Site Registration Form found at the kiosks in the registration area in Pratt Street Lobby on Level 300 and proceed to the appropriate registration line.

Baltimore Information Desks
The Baltimore Area Convention and Visitors Association will run two information kiosks during the Annual Meeting. They can assist you with everything from attraction tickets and dining reservations to sightseeing suggestions and local travel information. Brochures will also be available about all there is to see and do around the city. Kiosks are located on Level 200 near the Charles Street Lobby and on Level 300 in the Pratt Street Lobby. Open 10:00 AM–5:00 PM, Sunday–Thursday.

Business Center—ABC Imaging
ABC Imaging is a full-service business center offering FedEx, DHL, or UPS shipping, PC rentals, Internet access, cellular phone leasing, common office supplies, and a place to copy, fax, scan, and print business materials. You may also e-mail your files before arrival and have your documents ready for you at the start of the convention. The Business Center is located on Level 300 adjacent to the Pratt Street Lobby, across from Rooms 330–335. Open Monday through Friday, 8:30 AM–4:30 PM. Telephone: (410) 649-7194, or dial the last four digits from any white house phone within the center. Incoming fax number: (410) 649-7196 ($2.00 per page). E-mail: dspriggs@abcimaging.com.

Climate
Baltimore’s climate is moderated by the nearby Chesapeake Bay, the Atlantic Ocean to the East, and the Appalachian Mountains to the West. Rarely reaching extreme cold or warm temperatures, Baltimore is a great city to visit at any time of the year. The average annual rainfall for March is 3.4 inches with about 40 inches of precipitation a year. Average temperatures for March are highs in the mid 50s °F and lows in the mid 30s °F. For an up-to-date detailed weather forecast visit www.wbaltv.com/weather.

Exhibitor Information
Full exhibit information details may be found on pages 39–45.

Exhibit Hall (Hours/Location)
Exhibit hours at the Convention Center are as follows:
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 Level 100. A map of the Exhibit Hall is located on pages 40–41. Exhibitor personnel may enter the hall one hour before the Exhibit Hall opens with appropriate identification. Poster presenters may enter the hall at the poster set up times specified in the Event Calendar.

Exhibit Space Meeting
Exhibiting companies should plan on attending the 2010 Space Selection Meeting on Tuesday, March 17 at 4:45 PM in Room 336 on Level 300.
First Aid and Emergency Services at the Convention Center

If an emergency should occur while at the Baltimore Convention Center, proceed directly to the nearest white house phone, located throughout the facility, and dial 7055. You will be connected to the Security/ Public Safety Office, open 24 hours. From any phone that is not a house phone, dial (410) 649-7055.

The First Aid room is located in the back of Exhibit Hall aisle 2100. The first aid administrator will be on duty during SOT exhibit and show hours. During non-exhibit hours, please dial 7055 for the Public Safety Office and a first aid administrator will meet you at your location. Please note that in accordance with the State of Maryland and the City of Baltimore 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 Hall between 9:00 AM–10:00 AM, Monday, and 8:30 AM–9:30 AM, Tuesday–Wednesday. See Exhibit Hall signage for locations.

Concessions

Concession stands are available in the Exhibit Hall Monday 9:00 AM–2:30 PM, and Tuesday and Wednesday from 8:30 AM–2:30 PM. Breakfast and lunch items will be available, as well as coffee, soda, bottled water, and snacks for purchase. Concession stands will also be available near Level 300 meeting rooms. Seating is available in the Concession areas in Exhibit Halls located at the top of aisles 2400 and 2800.

Restaurants—Food and Drink at the Convention Center


Starbucks Coffee—offers high-quality coffee, tea, pastries, and other snacks and beverages. Located on Level 300 in the Pratt Street Lobby.

Growing Greener

Each year, SOT makes a significant effort to become more ecologically responsible so that we can truly say we “are creating a safer and healthier world by advancing the science of toxicology.”

The Cost of Big Gatherings

Meetings can have a tremendous impact on the environment in ways you can’t imagine. For example, during a five-day conference, 2,500 attendees will use 62,500 plates, 87,500 napkins, 75,000 cups/glasses and 90,000 cans/bottles!

This year, SOT has instituted the following environmentally friendly practices that are all designed to keep us growing greener:

- On-line registration is being promoted to cut down the use of paper registration
- Presenters and speaker requests are being handled electronically
- The final Program is printed on post consumer recycled paper that meets FSC requirements for well-managed forests (see back cover for details)
- Signage is made of 100% biodegradable materials
- Meeting surveys will be conducted electronically
- The E-mail Center offers electronic messaging
- Exhibit sales and the management of the ToxExpo™ exhibit floor plan were done electronically
- Plastic name badges will be collected and recycled
- Exhibitor kits are available on-line and include electrical, decorating, shipping/drayage, and AV forms
- Registration bags are made of certified recycled material

In addition, the Baltimore Convention Center is making every effort to become more eco-friendly and has initiated a substantial recycling program and implemented energy saving initiatives.

- Recycling containers for paper, plastic, bottles, and cans are conveniently located throughout the center
- Exterior glass and skylights allow for the use of natural light to reduce electricity cost
- Photo sensors in the public lobbies reduce the need for artificial lights
- Lighting and motion sensors in meeting rooms reduce the need for artificial light
- Cleaning solutions are bio-based and purchased in bulk

Take a Break!

Grab a bite! Check e-mail! Plenty of seating is available in the Hot Zones in Exhibit Hall where wireless Internet access is available.
General Information (Continued)

- Meeting room tables are made from 30% recycled products
- The catering company, Aramark, has a sustainable preferential purchasing system that increases support of local farmers and the community. This “Farm to Table” program buys locally, whenever possible, thereby conserving energy and creating less pollution when foods travel fewer miles to reach the Convention Center
- Coffee stirrers along with beverage cups and sleeves are made of recycled materials, all of which are biodegradable. Plates, spoons, forks, and knives are all made of recycled plastic
- China service is utilized to reduce waste

So, smile as you enter the Convention Center in March and know that SOT and its membership are doing their part to help keep our environment healthy.

Guest Hospitality Center

The SOT Guest Hospitality Center provides guest participants (non-scientists) with a place to meet and socialize with other guests. To visit the Hospitality Center, guests must register for the Annual Meeting with the person they are accompanying. Guests are welcome to attend the Welcoming Reception, but will not have access to the scientific sessions or the Exhibit Hall. Please remember to wear your badge to all SOT events.

The Guest Hospitality Center will be located in the Hilton Hotel.

Guest Hospitality Center 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–4:00 PM
Thursday ............................................... 8:00 AM–11:30 AM

Housing Desk hours:
Saturday .................................................... 4:00 PM–7:00 PM
Sunday .................................................... 7:00 AM–5:00 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

Housing desk hours are subject to change.

Housing Information

The Society of Toxicology has reserved and made arrangements for SOT Annual Meeting attendee discounted room rates at various Baltimore hotels—known as the SOT hotel block. This block includes discounted room rates at many premier hotel chains and details can be found on pages 28–29.

The Room Sharing program is available for 2009 SOT Annual Meeting Registrants. Access this option from the Annual Meeting section of the SOT Web site.

Did you know that your choice of hotel for the SOT Annual Meeting has direct impact on Society’s strategic initiatives? 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 the Baltimore Housing Bureau.

Please understand that it will take the Housing Bureau a few days to process your reservation into the hotel system. Rest assured that if you have received a confirmation number from the Housing Bureau, the hotel will honor your booking. Please do not call your hotel “to be sure” until after Friday, February 27, 2009. Thank you for your consideration.
General Information (Continued)

Methods for Making Housing Reservations
On-Line: www.toxicology.org

Telephone:
- Toll-Free (USA and Canada): (800) 282-6632
- International: (410) 837-4636
- Hours of Operation: 8:30 AM–5:30 PM (EST)
  Monday–Friday

Fax: (410) 659-8398

Mail:
- Baltimore Housing Bureau
  100 Light Street, 12th Floor
  Baltimore, MD 21202
  United States

E-mail: conventionhousing@baltimore.org

Internet Access
SOT knows the importance of staying connected to your daily activities while attending the Annual Meeting and provides you several ways to access the Internet.

Computers Available at the Convention Center
SOT will provide computers you can use to access the Internet. These computers are available to attendees in the E-mail Center, located in the Pratt Street Lobby on Level 300 of the Convention Center.

Wireless Access
“Hot Zone” designated areas in the Exhibit Hall will be clearly marked for laptop and handheld users to access the Internet via the Wi-Fi network at the Convention Center.

Internet E-mail Center
The SOT Annual Meeting E-mail Center is provided to help you stay connected to your colleagues during the Annual Meeting. SOT members, 2009 Annual Meeting attendees including exhibitors, and SOT Job Bank registrants can access the E-mail Center on the SOT Web site to send and receive e-mail messages during the 2009 Annual Meeting—just like a standard e-mail application. The difference? The 2009 SOT Annual Meeting E-mail Center gives you a unique mailbox without having to provide your personal e-mail address to correspondents.

The service will send you an e-mail alert when you receive a message. Use the communication preference to forward your incoming messages to your standard e-mail address or PDA.

Available 24/7, access to the E-mail Center is available any time of day and from any computer with an Internet connection, before, during and after the 2009 Annual Meeting. Simply visit the SOT Web site and follow the E-mail Center link from the homepage.

To log into your mailbox, use your e-mail address and password or Annual Meeting badge number. If you don’t know your login, you can use the SOT password retrieval request from the login on the SOT Web site or ask the Annual Meeting registration staff or E-mail Center attendant for assistance.

Job Bank users will have the option to send messages to the Annual Meeting E-mail Center mailboxes. E-mail Center users will have the option to send messages to Job Bank registrant mailboxes by name or position number or resume number.

Additionally, the E-mail Center provides extended communication permitting members and SOT Job Bank registrants who do not attend the meeting to communicate with attendees. Even colleagues and family members can e-mail messages into the Center.

Lost and Found
Lost and found articles may be taken to the SOT Headquarters Office, Room 332, of the Baltimore Convention Center. Any items left in the SOT Headquarters Office after 11:30 AM, Thursday, March 19, will be deposited in the Security Office at the Convention Center.

Luggage/Coat Check
For your convenience, a luggage/coat check will be available in the Baltimore Convention Center near the Pratt Street Lobby on Level 300. The luggage/coat check will be open from Sunday, March 15 through Thursday, March 19. There will be a fee of $2 per item checked and laptop computers will not be accepted.

Hours of operation:
Sunday ...................................................... 7:00 AM–8:30 PM
Monday .................................................... 7:00 AM–8:30 PM
Tuesday .................................................... 7:00 AM–8:00 PM
Wednesday ............................................... 7:00 AM–8:00 PM
Thursday .................................................. 7:00 AM–1:00 PM

Luggage/coat check hours are subject to change.
General Information (Continued)

Lunch with an Expert Information Board
The Specialty Section Graduate Committee coordinates Lunch with an Expert. The poster containing the list of Expert groups will be located in the Pratt Street Lobby near registration. Experts and students meet at the Lunch with an Expert Information Board at the designated time to go to the chosen restaurant.

Media Support Services
The Society of Toxicology welcomes accredited representatives of media organizations. Journalists may receive complimentary credentials for all meeting sessions, as well as a complete media kit, by contacting Martha Lindauer, Media Contact at SOT Headquarters: (703) 438-3115 or e-mail: martha@toxicology.org. On-site, media kits can be picked up at the SOT Headquarters Office, Room 332, in the Baltimore Convention Center.

Meeting Pole
In order to facilitate attendees in locating friends and new acquaintances, a centralized meeting location has been designated on Level 300 between Rooms 324 and 327 in the Baltimore Convention Center. The lighthouse meeting pole makes it easy to locate colleagues and will also present a great photo opportunity.

Memorabilia
Shirts, portfolios, and other items customized for SOT are available for sale at the Annual Meeting in the Memorabilia Booth on Level 300 of the Baltimore Convention Center. It will be located near Starbucks in the Pratt Street Lobby.

Message Boards
The pen is still mighty. Leave a quick note on the message boards. Note pads and push pins will be available to post messages on the message boards. SOT Message Boards will be located across from the E-mail Center computers on Level 300 in the Pratt Street Lobby of the Baltimore Convention Center. (Electronic messaging is available through the Internet E-mail Center.)

Photography Policy for Exhibit Hall and Session Etiquette for Attendees
Out of courtesy for the scientific presenters, we appreciate your compliance with the SOT Annual Meeting policies. Session chairs are asked to strictly enforce these policies and individuals who do not comply will be asked to leave the session.

• 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 scientific sessions unless consent is given by the session chair.

Poster Sessions and Exhibit Hall
• Photography of poster presentations is prohibited without the specific consent of the presenter(s)/author(s).
• Children under the age of 15 are prohibited from accessing the Exhibit Hall at any time.

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

Registration Desk Hours
The Annual Meeting Registration Desk is located in the Baltimore Convention Center, Level 300, Pratt Street 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–4:30 PM
Wednesday .......................................... 8:00 AM–4:30 PM
Thursday .............................................. 8:00 AM–11:30 AM

Full registration details may be found on page 46.

Safety and Security
The possibility of demonstrators is very real given the nature of our conference. Events of this nature range from verbal confrontations, protests, strikes, to riots. We recommend the following procedures in the event of demonstrations:

• 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.
General Information (Continued)

- 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 delegate to the Convention Center.
- Share schedules and check up on each other periodically.
- Build your awareness of unknown surroundings by reviewing local information.
- Laptop computers are attractive, easy targets for thieves. Be sure your laptop is in a secure place.
- Jackets with pockets provide a convenient alternative for women 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.

SOT Headquarters Office
The SOT Headquarters Office is located in the Baltimore Convention Center Room 332 on Level 300.

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 Resource Pavilion
Do you know all the resources available through SOT and where to find them? Stop by the SOT Resource Pavilion to learn about SOT activities, membership benefits, strategic initiatives, and the Endowment (Full Endowment details are on pages 353–360), and to find materials to support the discipline of toxicology and educational tools for K–12 and public outreach. It is a one-stop shop for all your questions and member needs. Centrally located in the Charles Street Lobby and open the following hours:

Sunday .................................................... 11:00 AM–2:00 PM
Monday .................................................... 9:00 AM–4:30 PM
Tuesday .................................................. 8:30 AM–4:30 PM
Wednesday ............................................ 8:30 AM–4:30 PM
Thursday .............................................. 8:30 AM–12:00 NOON

Speaker Ready Room
The Speaker Ready Room will be located in Room 331 and is available during the SOT Headquarters Office hours listed on page 52. Presentations must be preloaded to the Speaker Ready Room server at least thirty minutes prior to the session start time. Presentations can be loaded to this server before the meeting through the PSAV Web site. Presentations can modified or replaced up until thirty minutes before the session starts.

Sponsorship
The Society would like to invite your organization to be a sponsor of the 2009 Annual Meeting. SOT appreciates the generous contributions of sponsors that make the SOT Annual Meeting possible. Sponsor names are prominently displayed on the Annual Meeting Web site, as well as in print materials that are distributed before and during the Annual Meeting. Sponsorship is also recognized through signage displayed around the Convention Center during the Annual Meeting.

There are four levels of sponsorship available: Diamond ($10,000 or more), Platinum ($5,000–$9,999), Gold ($2,500–$4,999), and Silver ($1,000–$2,499). You will find a complete menu of sponsorships designed to assist your organization in establishing a leadership position at the SOT 2009 Annual Meeting on the Web site at www.toxicology.org. Promotional opportunities can be reviewed at www.toxexpo.com.

For detailed information about SOT sponsor and promotional opportunities, please contact Marcia Lawson at SOT Headquarters: (703) 438-3115 or e-mail: marcia@toxicology.org.

For a listing of sponsors at the print deadline, see the inside back cover and the back cover.
General Information (Continued)

Tour Information
For tour information, visit the Tour Desk located in the Registration area, Level 300 in the Pratt Street Lobby.

Tour Desk hours:
Saturday, March 14 ........................................ 4:00 PM–7:00 PM
Sunday, March 15 ........................................... 8:00 AM–4:00 PM
Monday, March 16 ......................................... 8:00 AM–4:00 PM
Tuesday, March 17 ......................................... 8:00 AM–4:00 PM
Wednesday, March 18 ................................. 8:00 AM–2:00 PM

Tour desk hours are subject to change.

Tour Tickets
Pre-purchased tickets will be mailed to registrants approximately 2 weeks prior to the Annual Meeting. After February 16, please call Baltimore Rent-A-Tour for availability of tickets, and tickets may be picked up at the convention tour desk located in the Pratt Street Lobby in the Baltimore Convention Center. Tickets are also sold on-site on a first-come, first-served basis at the convention tour desk or from the tour guide on the bus at the time of the tour. No refunds will be made after March 3, 2009.

Tour Departures
Tour departure information will be available at the Tour Desk located in the Pratt Street Lobby. All tours will leave from the Charles Street entrance of the Baltimore Convention Center. Please arrive at least 15 minutes prior to your scheduled tour departure time.

The Toxicologist/Itinerary Planner
(Print and CD-ROM): NEW Features for 2009
All Annual Meeting registrants receive a copy of this Program and The Toxicologist on CD-ROM, a special issue of Toxicological Sciences that includes all meeting abstracts and SOT Annual Meeting events. Special software on the CD, the Itinerary Planner, allows the meeting attendee to search the meeting abstracts, events, and create a personalized schedule for the meeting.

In 2009, the Itinerary Planner allows attendees to add committees meetings, special events, and exhibitor hosted sessions to their itinerary.

1. SOT members in the U.S. and Canada will receive the Program and The Toxicologist on CD-ROM (with Itinerary Planner) prior to the meeting, as will U.S. and Canadian non-members who pre-register by January 30, 2009. A printed version of The Toxicologist will be available on-site in the registration area for a fee of $20. Registrants may reserve a copy by signing up on the Registration form or may purchase a copy on-site, while supplies last.

2. Non-member registrants in the U.S. who register after January 30 will receive the printed Program and The Toxicologist on CD-ROM (with Itinerary Planner) at the registration area on-site.

3. The Annual Meeting Itinerary Planner will be available on the SOT Web site January–April.

4. International members who do not attend the Annual Meeting may contact the Headquarters office to request a copy of the printed 2009 Program and The Toxicologist on CD-ROM. These items will be mailed following the Annual Meeting.

5. The Toxicologist will be available on the SOT Web site after March 1, 2009.

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

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 Baltimore to participate in the 2009 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.
Toxicology History Room

For the first time ever, the SOT Annual Meeting will feature a Toxicology History Room (THR). The exhibit will showcase documents and other printed matter, artifacts, memorabilia, and digital displays that highlight the historical importance and societal impact of toxicology, and the history of the SOT. The goal of the THR is to stimulate the interest of SOT members and other meeting attendees in the origins and evolution of toxicology. SOT membership involvement is welcomed. Please contact Martha Lindauer at martha@toxicology.org if you have historical items that you would like to loan or contribute to this effort, or would be interested in staffing the room.

The THR will be in the VIP Suite just off the Baltimore Convention Center Charles Street Lobby. Please stop by to learn about, and from, your past.

Toxicology History Room hours:
Monday, March 16 .................................. 9:00 AM–4:30 PM
Tuesday, March 17 ................................... 9:00 AM–4:30 PM
Wednesday, March 18 .............................. 9:00 AM–4:30 PM

Ground Transportation

From the Airport—Shuttles, Car Rental, Light Rail and Taxi

BWI Airport is served by shuttle bus, taxi, Light Rail, Amtrak train or limousine service. Ground transportation is located on the lower level of the airport terminal—the same level as baggage claim. For taxi and shuttle services, look for the service desks located on the same level. For more information on ground transportation from the airport, visit www.bwiairport.com or call (410) 859-7992.

The Airport Shuttle

Discounted airport transportation is offered via The Airport Shuttle, Inc. for all SOT attendees arriving through BWI or Dulles Airports. The discount rates are $17 one way from BWI and $90 one way from Dulles Airport. The Airport Shuttle will track your flight in real time—You go directly to the vehicle from baggage claim, with no waiting at the airport. From your hotel, you are given a pick-up time based on your flight departure time (there are no multiple hotels stops). Customers are transported with no more than 2 stops. Airport Shuttle is available 4:00 AM to 12:00 MIDNIGHT and advance reservations are required. To make your shuttle reservations and secure the above conference discount, call (800) 776-0323 and say “My SOT profile number is 1411544” or go to the transportation section of the SOT Annual Meeting Web site. For more information, visit www.theairportshuttle.com.

SuperShuttle

The BWI SuperShuttle will transport you from BWI Airport to Baltimore’s Inner Harbor Hotel District for approximately $13 per person one way (prices subject to change). Upon arrival at the airport, proceed to one of the two ticket counters, located near baggage claims #1 and #10 on the lower level. Ticket counters are open between the hours of 6:00 AM and 2:00 AM. When counters are closed, please call (888) 826-2700 for information or to arrange service. For reservations and more information, call (800) 258-3826 or visit www.supershuttle.com.

Car Rental

Avis Rent A Car System is the official car rental company for the 48th Annual Meeting. SOT discounted rates, including unlimited mileage, begin at $43.99 per day. These special group rates are good one week before and after the SOT Annual Meeting so you can take in the sights and explore the surroundings at your own pace. To reserve your car on-line, go to www.avis.com.
General Information (Continued)

You may also call Avis directly at (800) 331-1600 to reserve your car. Be sure to mention the SOT Avis Worldwide Discount Number (AWD) T534999.

Light Rail
Light Rail stops at BWI Airport every half hour and takes you directly from BWI Airport to the Baltimore Convention Center for $1.60 one way (prices subject to change). Board the Light Rail next to Pier E, the new international wing, located on the lower level of the airport.

Hours of operation:
Monday–Friday........................................6:00 AM–11:00 PM
Saturday ..................................................7:00 AM–11:00 PM
Sunday ....................................................11:00 AM–7:00 PM

Taxi Service
The BWI taxi stand is located just outside of the baggage claim area located on the lower level of the terminal. Taxi cost from the airport to downtown Baltimore is approximately $30. Local regulations require the taxi driver to run the taxi meter on each trip and to charge the amount on the meter. Flat rates are not permitted. Check with the driver before starting out to verify. For more information, visit www.bwiairporttaxi.com.

Public Transportation—Buses, Trains, and Water Taxi
Trains arrive and depart from Penn Station, located at 1515 North Charles Street, less than two miles from the Baltimore Convention Center. Penn Station offers enclosed waiting areas, paid short-term and long-term parking, a restaurant, snack bar, and taxi service. It is accessible by MTA Bus, Light Rail, MARC Train’s Penn Line, and Amtrak.

Amtrak
Amtrak trains run 24 hours a day, seven days a week, connecting Baltimore to cities along the Northeast Corridor. Amtrak also runs to BWI. For fares and schedules, call (800) 872-7245 or visit www.amtrak.com.

Maryland Transit Administration (MTA)
The Maryland Transit Authority (MTA) operates commuter and local bus routes, Metro Subway, Light Rail, and weekday MARC train service between Baltimore and Washington, D.C. Call the MTA at (410) 539-5000 or visit www.mtamaryland.com for more information about their transportation services.

Water Taxi
An enjoyable and more unique way to travel around Baltimore’s Inner Harbor, as well as to Little Italy, Fells Point, Canton, and Federal Hill is by water taxi. It’s the perfect way to get around the city while taking in the sites and learning the history of Baltimore.

Ed Kane’s Water Taxi
1735 Lancaster Street
Baltimore, MD 21231

The cost for an all-day pass is $9 for adults and $4 for kids 10 and under (prices subject to change). For more information, call (410) 563-3901 or (800) 658-8947, or visit www.thewatertaxi.com.

Baltimore Parking Information
For those driving into Baltimore and staying overnight, please check hotel accommodations on pages 28–29 for parking options or contact the hotel directly, as rates are subject to change.

If you plan on driving into Baltimore for the day, please see our suggested parking options below.

Please note that all parking prices are subject to change.

Sheraton Inner Harbor Parking Garage on Conway Street
Open 24 hours/day
Current parking rate: $22/day for guests of the hotel and $26/day for all others
In/Out privileges for guests only
Sheraton Inner Harbor is connected to the Convention Center

Hyatt Regency Parking 300 Light Street
Open 24 hours/day
Current parking rate for guests and public: $27/day
In/Out privileges for guests and public
Hyatt Regency is connected to the Convention Center

Laz Parking 100 South Charles Street
(410) 625-2385
Open from 6:00 AM to 12:00 MIDNIGHT
Current parking rate: $16/day
From the parking garage: Head South on South Charles Street and the Convention Center will be on your right (across the street from the Hyatt Regency).
Laz Parking 100 East Pratt Street
(410) 244-8825
Open 24 hours/day
Current parking rate: $21/day; $12 if you enter between 6:00 AM and 9:00 AM and leave before 6:00 PM
From the parking garage: Head West on East Pratt Street toward Light Street. Take a left on South Charles Street and the Convention Center will be on your right (across the street from the Hyatt Regency).

Oriole Park at Camden Yards Parking Lot C
Open 24 hours/day
Open lot (not garage)
Current parking rate: Monday–Friday is $8/day if you enter before 2:00 PM and $10/day after 2:00 PM; Weekend parking is $10/day
No In/Out privileges
From the parking lot: Head North on West Camden Street
Take a left on South Howard Street. Take a right on West Pratt Street and the main entrance to the Convention Center will be on your right.

SOT Ride Share
SOT is offering a Ride Share Program in conjunction with the Annual Meeting. For those who live close enough to the Baltimore area or those that 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 Share Program from the Annual Meeting section of the Web site. You can indicate whether you want to drive or be a passenger, and then see a list of others who have registered. It will be up to you to match your plans with someone else who is registered. Please remember to remove your name when your travel plans are in place.

With the 50th SOT ANNIVERSARY MATCH
Your Contribution has twice the IMPACT.

Contribution + Match = Twice the Impact on the Endowment Fund of your choice.

Recognition Level

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<tr>
<th>Paracelsus Circle</th>
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<tr>
<td>Gold</td>
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<td>$40 or more + $40 or more = $80 or more</td>
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For details about the Endowment Fund or to make a contribution, please see pages 351–358
The Official Journal of the Society of Toxicology

TOXICOLOGICAL SCIENCES

Impact Factor of 3.814!*

Ranked in the top 10 most-cited journals in Toxicology!

www.toxsci.oxfordjournals.org

VISIT OUR BOOTH AT TOXEXPO 2009 FOR A FREE SAMPLE COPY AND A TOXSCI TRAVEL MUG!

*ISI Journal Citation Reports 2007 Edition, published in 2008

up-to-date information at www.toxicology.org
Career Resources and Development Services

The Society of Toxicology’s Career Resource and Development (CRAD) services include the on-line 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.

On-Line Mentor Match Program—NEW!!!

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 new on-line 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 on-line as mentors 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 On-Line Job Bank and On-Site Job Bank Center

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 on-line SOT Job Bank makes it easy for candidates and employers alike to access this resource year-round, any time, any place via the SOT Web site at www.toxicology.org.

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 on-line Job Bank includes more than 100 positions available at corporations, academic institutions, government agencies, and private research organizations. Employers rely on this on-line service to provide them with a robust database of candidates available for career opportunities, ranging from junior- to senior-level positions. There are over 250 candidate profiles currently posted on the Job Bank.

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 On-Line Job Bank

<table>
<thead>
<tr>
<th>Candidate Types</th>
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</tr>
<tr>
<td>Non-SOT Member</td>
<td>$80</td>
</tr>
<tr>
<td>Non-SOT Member—Postdoctoral</td>
<td>$45</td>
</tr>
<tr>
<td>Non-SOT Member—Student</td>
<td>$30</td>
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</tbody>
</table>

### Employer Registration for SOT On-Line Job Bank

<table>
<thead>
<tr>
<th>Employer Types</th>
<th>Fees</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOT Corporate Affiliate</td>
<td>$200</td>
</tr>
<tr>
<td>Corporation</td>
<td>$400</td>
</tr>
<tr>
<td>University or Government</td>
<td>$110</td>
</tr>
<tr>
<td>Nonprofit Organization</td>
<td>$110</td>
</tr>
</tbody>
</table>
Career Resources and Development Services (Continued)

Annual Meeting On-Site Job Bank Center

Located in the Baltimore 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 on-line.

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. Therefore, interview rooms are available on a first-come, first-served basis interviews. Employers and candidates may take advantage of the multiple spaces available in Room 348 to hold interviews. 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 hardwalls 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 347. The Center is available during the following hours of operation:

Sunday, March 15 .............................. 10:00 AM–4:30 PM
Monday, March 16 ............................ 9:00 AM–4:30 PM
Tuesday, March 17 ............................ 8:30 AM–4:30 PM
Wednesday, March 18 ...................... 8:30 AM–4:30 PM

On-line Job Bank access will be available—as always—through your personal computer and at the Annual Meeting E-mail Center. Access to the on-line Job Bank in the Center is limited to short searches for updates or new information. Be advised that all career service activities at the SOT Annual Meeting will be carried out at the SOT Job Bank Center.

For additional information, contact Kristy Rand at SOT Headquarters: (703) 483-3115 ext. 1429 or e-mail: kristy@toxicology.org.

Employer Ads in SOT Communiqué

The Society’s newsletter, the Communiqué, is published four times annually. It includes career opportunity advertisements for employers 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 e-mail: 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:

• Grantsmanship Forum: Tools and Skills Needed to Navigate Toxicology Research Funding—Monday, March 16, 4:35 PM–5:55 PM, Room 307

• The Future of Environmental Health Science: Featuring NIEHS-Funded Early Career Investigators—Tuesday, March 17, 12:00 NOON–1:20 PM, Room 309

• Toxicologists: The Next Generation—Wednesday, March 18, 7:30 AM–8:50 AM, Room 308

• Career Opportunities and Transitions in Toxicology—Wednesday, March 18, 4:30 PM–5:50 PM, Room 327
**K–12 Education and Public Outreach**

**Paracelsus Outside the Classroom**

**Sunday, March 15, 10:00 AM–1:30 PM, 2:00 PM–5:00 PM**

*Chairperson(s): Maureen Gwinn, U.S. EPA, Washington, DC*

*Sponsor: Communications Committee*

**Partners:**
- Port Discovery Children’s Museum
- University of Maryland Biotechnology Institute

SOT invites meeting attendees and their families, as well as the larger community, to visit Port Discovery Children’s Museum (www.portdiscovery.org) in Baltimore on Sunday, March 15.

Port Discovery is near the Inner Harbor and is a top ranked children’s museum. Toxicologists will enrich the museum exhibits with hands-on science activities to engage participants in the process of science and learn more about toxicology. Children can drop in and participate informally or those in Grades 1–5 can register for one of the groups scheduled to rotate among hands-on experiment stations. High school students will serve as group leaders for half the day and will participate in their own special workshop at the University of Maryland Biotechnology Institute the other half of the day. Meeting participants may register for complimentary tickets by selecting the link on the Annual Meeting Web site under “Special Events: Education and Public Outreach.” Request a morning or afternoon session if you wish to schedule your elementary children into one of the formal groups. Advance registration deadline is February 20.

**Undergraduate Education Program**

**Sunday, March 15, 8:00 AM–8:30 PM**

*Chairperson(s): Mari Stavanja, Celanese International Corporation, Dallas, TX*

*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 receiving MARC, SOT, and Pfizer travel funding, and the SOT program volunteers.

**All Participants**

- **Room 343**
  - **8:00 AM–8:15 AM** Opening Event (Room 339)
  - **8:15 AM–8:50 AM** Introduction to Toxicology, José Manautou, University of Connecticut, Storrs, CT
  - **9:00 AM–9:45 AM** Nano-a-Nano: The Good, the Bad, and the Ugly, Martin Philbert, University of Michigan, Ann Arbor, MI
  - **9:45 AM–10:00 AM** Break
  - **10:00 AM–10:45 AM** Transcription Factors and Fetal Programming of Renal Disease, Adrian Nanez, Amgen, Inc., Thousand Oaks, CA—Program Alumni
  - **10:45 AM–11:30 AM** Research Presentation, TBA
  - **11:30 AM–11:45 AM** Break
  - **11:45 AM–12:30 PM** Lunch and Networking (Room 339)

**Breakout Sessions for Students**

- **Rooms 305, 311, 312**
  - **Room 305**
    - **12:30 PM–1:05 PM** What Is Graduate School and What Can I Expect?
  - **Room 311**
    - **1:15 PM–1:55 PM** How to Get into Graduate School: An Academic Advisor’s Perspective
  - **Room 312**
    - **12:30 PM–1:05 PM** Tips for Advising Prospective Graduate Students or How to Get Your Students Accepted to Graduate School!!
  - **1:15 PM–1:55 PM** Best Practices: Idea Sharing About Keeping Students on a Science Path
### Education and Outreach Activities (Continued)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>2:00 PM–2:40 PM</td>
<td>Career Opportunities in Toxicology—Panel Discussion, Moderator: Vanessa Silva, Procter &amp; Gamble, Cincinnati, OH—Program Alumnae</td>
</tr>
<tr>
<td></td>
<td><strong>Academia:</strong> Alice Villalobos, Texas A&amp;M University, College Station, TX</td>
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<tr>
<td></td>
<td><strong>Industry:</strong> Robert P. Casillas, Battelle, Columbus, OH</td>
</tr>
<tr>
<td></td>
<td><strong>Government:</strong> Marquea D. King, U.S. EPA, Washington, DC</td>
</tr>
<tr>
<td>2:40 PM–3:00 PM</td>
<td>Break</td>
</tr>
<tr>
<td>Breakout Sessions for Host Mentor and Peer Mentors Room 311</td>
<td>3:00 PM–3:30 PM Host Mentor and Peer Mentor Meeting, Adrian Nanez, Amgen, Inc., Thousand Oaks, CA</td>
</tr>
<tr>
<td>For Students and Advisors Room 343</td>
<td>3:00 PM–5:00PM Student and Advisors: Open Time with Academic Toxicology Program Directors and Internship Sponsors, Chairperson: Kim Daniel, Texas A&amp;M University, College Station, TX</td>
</tr>
<tr>
<td></td>
<td>5:15 PM–6:30 PM Awards Ceremony (Room 321) (including the recognition of the 20th Anniversary)</td>
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<tr>
<td></td>
<td>6:30 PM–7:30 PM SOT Welcoming Reception (Ballroom)</td>
</tr>
<tr>
<td>All Students Camden Lobby</td>
<td>7:30 PM–8:30 PM Student/Postdoctoral Fellow Mixer</td>
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</tbody>
</table>

#### Undergraduate Education Program

**Monday, March 16, 7:15 AM–2:00 PM**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>7:15 AM–8:00 AM</td>
<td>Student, Advisor, Mentor Meeting (Room 339)</td>
</tr>
<tr>
<td>8:00 AM–9:00 AM</td>
<td>Plenary Opening Lecture: Signal Transduction Pathways Used by Therapeutic Agents and Drugs of Abuse, Paul Greengard, The Rockefeller University, New York, NY—Nobel Laureate (Ballroom)</td>
</tr>
</tbody>
</table>

### Outreach Programs

#### Make A Change: A Community Service Project for the Citizens of Baltimore

For the first time ever, SOT is sponsoring a community service project for the citizens of Baltimore during the 2009 Annual Meeting at the Baltimore Convention Center.

SOT members are being asked to give back to the Baltimore community by placing spare change in one of the specially marked collection boxes and old parking meters which are located in various hotel lobbies and through Downtown’s Pratt Street corridor. Meters will be placed inside the Convention Center so we can track how we give back. All the money that is collected goes to support Baltimore’s homeless shelters. In addition, items such as large sized white cotton socks, shirts, underwear, unused toiletries, etc., can be donated. Any left over items from the Exhibition may be placed in the bins located in the Convention Center.

The City’s Make A Change program was begun sometime ago by Downtown Partnership of Baltimore and Baltimore Homeless Services to “increase services for people who are truly in need and to discourage a behavior (panhandling) that adversely affects the quality of life for thousands of people each year,” according to Downtown Partnership President Kirby Fowler. He explained that there are many people on the street who are panhandling simply to make a fast buck, even though they present themselves as being in need.

While the majority of SOT members do not live in Baltimore, the Society can also make a real difference in the lives of Baltimore’s homeless.
Social Events

20th Anniversary Undergraduate Program Celebration
Saturday, March 14, 7:00 PM–9:00 PM
Rooms 343
Baltimore Convention Center

Chairperson(s): Claude McGowan, Johnson & Johnson, Skillman, NJ and Vicente Santa Cruz, Chevron Phillips Chemical Company, Brussels, Belgium

Sponsor: Committee for Diversity Initiatives

The Anniversary Celebration honors previous program participants and organizers and is open to all who have been connected to the Undergraduate Program for Minority Students since 1989.

7:00 PM–8:00 PM
Welcome
Lecture: The Beginning of the Future
Keynote Speakers: Faye Calhoun Broadwater, North Carolina Central State University, Durham, NC, and Marion Ehrich, Virginia Tech, Blacksburg, VA
Presentation: Perry J. Gehring Diversity Travel Award to Vanessa Y. De La Rosa, University of Texas at El Paso, El Paso, TX

8:00 PM–9:00 PM
Dessert and Networking

Awards Ceremony Music Performed by Maryland Sings
Sunday, March 15, 4:45 PM–5:15 PM
Room 321
Baltimore Convention Center

Maryland Sings, a 501(c)3 non-profit company of Broadway-type singers and dancers, delivers a well-crafted, extremely unique, and highly mature sound for middle and high school performers. The company, now in its 19th season, has performed for audiences in eight European countries, in the East Room of the White House, and throughout the State of Maryland. These talented young people have recorded several CDs and have also performed for a number of local television and radio broadcasts over the years.

Awards Ceremony
Sunday, March 15, 5:15 PM–6:30 PM
Room 321
Baltimore Convention Center
(Open to all attendees)

Join us as SOT honors our prestigious award winners at the SOT Awards Ceremony. Those honored are listed on pages 66–75. Please refer to the Awards and Fellowships section of the SOT Web site for complete details about awards and the application details for next year.

Welcoming Reception
Sunday, March 15, 6:30 PM–7:30 PM
Ballroom
Baltimore Convention Center

Continue the celebration by attending the Welcoming Reception following the Awards Ceremony. The Welcoming 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 15, 7:00 PM–8:00 PM
Charles Street VIP Suite/Toxicology History Room
Baltimore Convention Center

Have you been a member of the Society of Toxicology for 25 years (or more)? If so, please join your colleagues in celebration and recognition of the scientists who established the Society. Note that this year some of your colleagues will be sporting 35-year member pins.

Student/Postdoctoral Fellow Mixer
Sunday, March 15, 7:30 PM–8:30 PM
Camden Lobby
Baltimore Convention Center
(Ticket Required)

Sponsor: Student Advisory Council

All students and postdoctoral fellows are invited to attend this reception. Refreshments will be provided by SOT and sponsors. A cash bar will also be available. Ticket and Meeting Badge are required.
In Vitro Toxicology Lecture and Luncheon for Students
Monday, March 16, 12:15 PM–1:30 PM
Room 339
Baltimore Convention Center
(Ticket Required)

Title: The 3R's in Animal Use and a Prospective In Vitro Screening Tool for Identifying Potential Immunotoxicants

Lecturer: Courtney E.W. Sulentic, Wright State University, Dayton, OH

Sponsor: Colgate-Palmolive Company

The purpose of this lecture is to discuss the importance of animal research to biomedical sciences and toxicology and the ethical obligations of the scientific community to follow the “3R’s” of animal testing (refine, reduce, replace) whenever it is feasible. Following this discussion the remainder of the lecture will briefly describe Dr. Sulentic’s current research utilizing an in vitro alternative to understand mechanisms in altered immune function. The immune system is critical to human survival but also plays a contributing role in various mechanisms of toxicity. Assessing alterations of immune function by potential immunotoxicants is complicated by the diffuse nature of the immune system which is composed of various effector cells each with differing functions. Current immunotoxicity testing relies heavily on animal studies underscoring the need to develop and implement alternative approaches. Dr. Sulentic will discuss a cell line model developed to provide an in vitro alternative to animal studies in identifying immunotoxicants that specifically target B-cell function (i.e., alteration of immunoglobulin expression and antibody secretion) as well as elucidating the mechanisms of altered B-cell function.

Graduate students, undergraduates, postdoctoral scholars, and recipients of Colgate-Palmolive awards are among the guests at the In Vitro Toxicology Lecture and Luncheon. 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 and reducing animal use. Students and postdocs can reserve a ticket for the luncheon with a $5 deposit when they register for the SOT Annual Meeting. Lunch is served at the beginning of the event and service concludes before the talk/main program begins. Meal service may not be available to guests who arrive after 12:30 PM.
### Regional Chapter Meetings/Luncheons or Receptions

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gulf Coast and South Central Regional Chapters Joint Meeting/Reception</td>
<td>Monday, March 16</td>
<td>5:00 PM–6:00 PM</td>
<td>Tir na nÓg Irish Bar and Grill Inner Harbor</td>
</tr>
<tr>
<td>Mid-Atlantic Regional Chapter Meeting/Luncheon</td>
<td>Monday, March 16</td>
<td>12:00 NOON–1:30 PM</td>
<td>TBD</td>
</tr>
<tr>
<td>Midwest Regional Chapter Members Breakfast</td>
<td>Wednesday, March 18</td>
<td>7:00 AM–8:30 AM</td>
<td>Marriott Inner Harbor Grand Ballroom C</td>
</tr>
<tr>
<td>Northern California and Pacific Northwest Regional Chapters and UC Davis-UC Berkeley Joint Meeting/Reception</td>
<td>Monday, March 16</td>
<td>6:00 PM–8:00 PM</td>
<td>Hilton Key Ballroom 8</td>
</tr>
<tr>
<td>Southern California and Mountain West Regional Chapters Joint Meeting/Reception</td>
<td>Monday, March 16</td>
<td>5:30 PM–7:30PM</td>
<td>Phillips Seafood Restaurant</td>
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### Special Interest Groups Meetings and/or Receptions

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>American Association of Chinese in Toxicology Special Interest Group Distinguished Chinese Toxicologist Lecturer</td>
<td>Monday, March 16</td>
<td>12:00 NOON–1:00 PM</td>
<td>Hilton Holiday Ballroom 4</td>
</tr>
<tr>
<td>American Association of Chinese in Toxicology Special Interest Group Meeting/Reception</td>
<td>Monday, March 16</td>
<td>6:00 PM–8:30 PM</td>
<td>Hilton Key Ballroom 3</td>
</tr>
<tr>
<td>Association of Scientists of Indian Origin Special Interest Group Meeting/Reception</td>
<td>Monday, March 16</td>
<td>6:00 PM–8:00 PM</td>
<td>Hilton Key Ballroom 9</td>
</tr>
<tr>
<td>Hispanic Organization for Toxicologists Special Interest Group—Officers Meeting</td>
<td>Tuesday, March 17</td>
<td>7:30 AM–9:00 AM</td>
<td>TBD</td>
</tr>
<tr>
<td>Hispanic Organization for Toxicologists Special Interest Group Meeting/Reception</td>
<td>Tuesday, March 17</td>
<td>5:30 PM–7:00 PM</td>
<td>Hilton Pickersgill Room</td>
</tr>
<tr>
<td>Korean Toxicologists Association in America Special Interest Group Meeting/Reception</td>
<td>Monday, March 16</td>
<td>5:30 PM–8:00 PM</td>
<td>Hilton Calloway A</td>
</tr>
<tr>
<td>Women in Toxicology Special Interest Group Meeting/Reception</td>
<td>Wednesday, March 18</td>
<td>4:30 PM–6:00 PM</td>
<td>Hilton Holiday Ballroom 3</td>
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</table>

### Specialty Section Meetings/Luncheons or Receptions (All receptions are held at the Convention Center)

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
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<tbody>
<tr>
<td>Biological Modeling Specialty Section Meeting/Reception</td>
<td>Wednesday, March 18</td>
<td>6:00 PM–7:30 PM</td>
<td>Room 330</td>
</tr>
<tr>
<td>Carcinogenesis Specialty Section Meeting/Reception</td>
<td>Tuesday, March 17</td>
<td>6:00 PM–7:30 PM</td>
<td>Room 339</td>
</tr>
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</table>
### Special Event Meetings/Luncheons or Receptions

(All receptions are held at the Convention Center)

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparative and Veterinary Specialty Section Meeting/Luncheon</td>
<td>Monday, March 16</td>
<td>12:00 NOON–1:30 PM</td>
<td>Room 345</td>
</tr>
<tr>
<td>Dermal Toxicology Specialty Section Meeting/Reception</td>
<td>Tuesday, March 17</td>
<td>6:00 PM–7:30 PM</td>
<td>Room 343</td>
</tr>
<tr>
<td>Drug Discovery Toxicology Specialty Section Meeting/Reception</td>
<td>Wednesday, March 18</td>
<td>6:00 PM–7:30 PM</td>
<td>Room 342</td>
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<tr>
<td>Ethical, Legal, and Social Issues Specialty Section Meeting/Reception</td>
<td>Tuesday, March 17</td>
<td>6:00 PM–7:30 PM</td>
<td>Room 334</td>
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<tr>
<td>Food Safety Specialty Section Meeting/Reception</td>
<td>Tuesday, March 17</td>
<td>6:00 PM–7:30 PM</td>
<td>Room 342</td>
</tr>
<tr>
<td>Immunotoxicology Specialty Section Meeting/Reception</td>
<td>Tuesday, March 17</td>
<td>6:00 PM–7:30 PM</td>
<td>Room 310</td>
</tr>
<tr>
<td>In Vitro and Alternative Methods Specialty Section Meeting/Luncheon</td>
<td>Tuesday, March 17</td>
<td>12:00 NOON–1:30 PM</td>
<td>Room 343</td>
</tr>
<tr>
<td>Inhalation and Respiratory Specialty Section Meeting/Reception</td>
<td>Wednesday, March 18</td>
<td>6:00 PM–7:30 PM</td>
<td>Room 337</td>
</tr>
<tr>
<td>Mechanisms Specialty Section Meeting/Reception</td>
<td>Tuesday, March 17</td>
<td>6:00 PM–7:30 PM</td>
<td>Room 324</td>
</tr>
<tr>
<td>Metals Specialty Section Meeting/Reception</td>
<td>Wednesday, March 18</td>
<td>6:00 PM–7:30 PM</td>
<td>Room 345</td>
</tr>
<tr>
<td>Mixtures Specialty Section Meeting/Reception</td>
<td>Monday, March 16</td>
<td>6:00 PM–7:30 PM</td>
<td>Room 330</td>
</tr>
<tr>
<td>Molecular Biology Specialty Section Meeting/Reception</td>
<td>Monday, March 16</td>
<td>6:00 PM–7:30 PM</td>
<td>Room 345</td>
</tr>
<tr>
<td>Nanotoxicology Specialty Section Meeting/Reception</td>
<td>Wednesday, March 18</td>
<td>6:00 PM–7:30 PM</td>
<td>Room 339</td>
</tr>
<tr>
<td>Neurotoxicology Specialty Section Meeting/Reception</td>
<td>Wednesday, March 18</td>
<td>6:00 PM–7:30 PM</td>
<td>Room 343</td>
</tr>
<tr>
<td>Occupational and Public Health Specialty Section Meeting/Luncheon</td>
<td>Wednesday, March 18</td>
<td>12:00 NOON–1:30 PM</td>
<td>Room 339</td>
</tr>
<tr>
<td>Ocular Toxicology Specialty Section Meeting/Reception</td>
<td>Tuesday, March 17</td>
<td>6:00 PM–7:30 PM</td>
<td>Room 330</td>
</tr>
<tr>
<td>Regulatory and Safety Evaluation Specialty Section Meeting/Reception</td>
<td>Monday, March 16</td>
<td>6:00 PM–7:30 PM</td>
<td>Room 343</td>
</tr>
<tr>
<td>Reproductive and Developmental Toxicology Specialty Section Meeting/Reception</td>
<td>Tuesday, March 17</td>
<td>6:00 PM–7:30 PM</td>
<td>Room 309</td>
</tr>
<tr>
<td>Risk Assessment Specialty Section Meeting/Reception</td>
<td>Monday, March 16</td>
<td>6:00 PM–7:30 PM</td>
<td>Room 339</td>
</tr>
<tr>
<td>Toxicologic and Exploratory Pathology Specialty Section Meeting/Luncheon</td>
<td>Tuesday, March 17</td>
<td>12:00 NOON–1:30 PM</td>
<td>Room 345</td>
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</table>
Achievement Award

Russell S. Thomas, M.S., Ph.D., is recognized by the Society of Toxicology for outstanding contributions in bringing high data content, high throughput transformational research approaches to toxicology and applying these methods in a risk assessment context. Dr. Thomas, Director of the Center of Genomic Biology and Bioinformatics, The Hamner Institutes of Health Sciences, received his Ph.D. degree in Toxicology from Colorado State University in 1997 with Dr. Raymond Yang for research modeling the pharmacokinetics and modes of action of hepatic carcinogens. His interest then shifted to molecular biology, genomics, and high-throughput screening during his postdoctoral period and early career work in the biotech field.

Over the past five years, Dr. Thomas has pursued a broad research program in genomic biology, bioinformatics, and risk assessment to understand the complexities of responses of biological systems to chemical stressors. His high data content, frequently robot-assisted methodologies query underlying biology in much greater depth and breadth to examine the consequences of perturbations of biology by environmental agents. These tools allow much more rapid survey of possible targets of toxicity and provide greater detail about the signaling pathways related to target pathways and their dose response characteristics. For most of his recent publications, Dr. Thomas has had to develop co-ordinate bioinformatics tools to analyze the large quantity of data obtained from these technologies. The contributions in developing these informatic tools are as important as the research results themselves. Key contributions include tools to identify toxicologically predictive gene sets, genome wide functional profiling of the AP-1 signaling pathway, functional mapping of the NFκ-B signaling pathway with full-length gene libraries to identify novel modulators and describe systems level pathway control, and applying benchmark dose modeling of genomic data to identify doses at which different cellular processes are altered. His paper on benchmark dose modeling with genomic data was recognized as the best paper related to the scientific basis of risk assessment for 2008. In recognition of the broad scope and transformational character of his early career research contributions, the Society of Toxicology is pleased to present the 2009 Achievement Award to Dr. Russell S. Thomas.

Arnold J. Lehman Award

Michael Bolger, Ph.D., DABT, receives the 2009 Arnold J. Lehman Award. He is chief of the Chemical Hazards Assessment Team at the U.S. FDA-NCTR Center for Food Safety and Applied Nutrition. Dr. Bolger is an internationally recognized expert in the toxicology and safety/risk assessment of food-borne anthropogenic and naturally-derived chemical contaminants in food. These would include elemental contaminants, mycotoxins, seafood toxins, organic contaminants like dioxin-like contaminants, phenolic compounds, and mixtures of chemicals. As such, he has provided critical leadership and advice on important regulatory decisions on tolerable levels of chemical contaminants and natural toxicants in food. Dr. Bolger’s multidisciplinary background in physiology, pharmacology, and toxicology allows him to provide scientific evaluations of highly complex data and insightful conclusions on hazards of these chemical contaminants.

He is highly sought as a member for U.S. government and international review panels such as the Interagency Risk Assessment Workgroup for Dioxin/Furans, the CDC Advisory Committee on Childhood Lead Poisoning, the NOAA Expert Toxicological Committee on Oil Contamination of Seafood, the WHO Task Group on Methyl Mercury, the Interagency Methyl Mercury Workshop, the EPA Dioxin/Furan Reassessment Peer-Review Group, and on many joint expert committees of the World Health Organization (WHO) on food-borne environmental contaminants. He is currently serving in a second five-year term as a WHO designated food safety expert and as a member of the Expert Advisory Panel on Food Safety and the Foodborne Disease Burden Epidemiology Reference Group of the World Health Organization. He has also contributed a number of significant publications that support FDA regulations. Dr. Bolger is well-published, credible in his individual risk assessments, and forceful yet polite in his arguments. He is also purposeful, determined, and untiring in his efforts to incorporate the best toxicology information into individual chemical risk assessments. He has moved the field of risk assessment forward through innovative thinking and principled risk assessment practice. We are delighted to have Dr. Michael Bolger as the Arnold J. Lehman awardee for 2009.
Best Postdoctoral Publication Awards

The Postdoctoral Assembly recognizes these three recipients of their 2009 awards:

**Jeffery Card, Cantox Health Services International**

Cyclooxygenase-2 Deficiency Exacerbates Bleomycin Induced Lung Dysfunction but Not Fibrosis

American Journal of Respiratory Cell and Molecular Biology 2007, September, 37(3):300-8

**Kembra Howdeshell, NHEERL, U.S. EPA**

A Mixture of Five Phthalate Esters Inhibits Fetal Testicular Testosterone Production in the Sprague-Dawley Rat in a Cumulative, Dose-Additive Manner


**Lewis Shi, University of Wisconsin-Madison**

The Aryl Hydrocarbon Receptor Is Required for Optimal Resistance to Listeria monocytogenes Infection in Mice

Journal of Immunology 2007, 179: 6952–6962

Board of Publications Award for the Best Paper in Toxicological Sciences

The Board of Publications has selected the paper entitled “The PPARα-Humanized Mouse: A Model to Investigate Species Differences in Liver Toxicity Mediated by PPARα” as the best paper published in Toxicological Sciences in the past year (ToxSci 2008, 101:132–139). The authors of the paper are Qian Yang, Tomokazu Nagano, Yatrik Shah, Connie Cheung, Shinji Ito, and Frank J. Gonzalez.

The paper describes the development and phenotypic characterization of a PPARα-humanized transgenic mouse that was generated on a mouse ppara-null background using the complete human PPARα gene (designated hPPARαPAC). Importantly, this model expressed hPPARα in both hepatic and extra-hepatic tissues, including heart, kidney and intestine. The development of this model represents an important new tool for evaluating the physiologic and toxicologic consequences of PPARα activation. For example, although fenofibrate elicited similar responses in peroxisome proliferation and lipid lowering in wildtype and hPPARαPAC mice, reduced serum lipids in hPPARαPAC mice were not accompanied by the expected increased expression of lipoprotein lipase and decreased expressed of apolipoprotein C-III. These results challenge present assumptions regarding the mechanisms by which peroxisome proliferators (PPs) exert their hypolipidemic effects and demonstrate the need to reevaluate this purported mechanism. In addition, the research provided novel insights into species differences in hepatic cell proliferation in response to PPs, as hPPARαPAC mice showed no evidence of hepatomegaly, cell proliferation or PP-induced expression of CDK4 and cyclin D1, and no change in expression of hepatic miRNA let-7C and c-Myc expression. These results identify an important species difference in response to PPs, in that unlike mice, human PPARα activation is not associated with hepatocyte proliferation. However, no difference in ligand affinity between mouse and human PPARα was observed, thereby challenging another property proposed to explain species differences in response to PPs. In total, the development of hPPARαPAC mice provides important new and novel insights into the function of PPARα in humans and is the foundation for identifying the molecular mechanisms underlying species differences in response to PPs that will ultimately help to refine the human risk assessment for this important class of compounds.
**Distinguished Toxicology Scholar Award**

Lance R. Pohl, Pharm.D., Ph.D., is the recipient of the 2009 Distinguished Toxicology Scholar Award. Dr. Pohl is Chief of the Section on Molecular and Cellular Toxicology in the Laboratory of Molecular Immunology at the National Heart, Lung, and Blood Institute at NIH. For more than 30 years, he has been a leader in the field of drug toxicity. His seminal work on the anesthetic halothane established the association between biotransformation, covalent adduct formation and immune response with idiosyncratic hepatotoxicity. His laboratory has also made several other major contributions to the field of toxicology, including the development of innovative techniques for identifying highly reactive and toxic metabolites of drugs and other xenobiotics that are produced by cytochrome P450s and other hemoproteins and the first design and use of specific antibodies for exploring the identity and toxicologic consequences of *in vivo* protein adducts of hepatotoxic drug metabolites. In more recent years, he and his colleagues have used animal models to identify numerous cytokines and other factors that determine susceptibility to drug-induced liver injury. For example, Dr. Pohl and colleagues discovered that Kupffer cells can protect against drug-induced liver injury, while endogenous glucocorticoids can potentiate it, and both of these factors may have a role in preventing drug-protein adducts formed in the liver from causing allergic reactions by inducing immunological tolerance. His passion for discovery is reflected in those who have trained in his laboratory, many of whom have gone on to distinguished scientific careers of their own. Dr. Lance Pohl's professional record is the epitome of a career of distinguished scholarship in toxicology, and he is a highly deserving recipient of this 2009 Distinguished Toxicology Scholar Award.

**Distinguished Toxicology Scholar Award Lecture** — Role of Reactive Metabolites, Protein Adducts, Immune System, and Other Susceptibility Factors in Drug-Induced Liver Injury  
**Tuesday, March 17, 12:30 PM–1:20 PM, Room 324**

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**Education Award**

Janice Chambers, Ph.D., has contributed broadly to the successful development of toxicology education and training programs. After receiving a B.S. in Biology at the University of San Francisco and a Ph.D. in Animal Physiology at Mississippi State University, Dr. Chambers has developed an extraordinary career in education as well as research and service in the field of toxicology. She is now one of the few William L. Giles Distinguished Professors at Mississippi State University in recognition of excellence in all three areas of the academic triad, i.e., teaching, research and service, plus mentoring. Her contributions to educational programs are numerous. She taught physiology-related courses to a large number of students while on faculty in the Department of Biological Sciences, and after moving to the College of Veterinary Medicine, developed several toxicology courses. She maintains an active training program for graduate students and trained many Ph.D. students, most of whom are now active in the field of toxicology in academia or in government institutions. Recognizing her contributions to teaching, the Mississippi Board of Trustees of the Institutions of Higher Learning approved a Ph.D. program in Environmental Toxicology. More recently, she received a $10 million NCRR/NIEHS-funded Center of Biomedical Research Excellence (COBRE) award which was designed to nurture junior faculty members. While actively engaging in such multiple educational programs, she has made substantial progress in her research in pesticide toxicology. She was a recipient of numerous awards and honors, including the highly prestigious International Award for Research in Agrochemicals from the Agrochemical Division of the American Chemical Society, and the Burroughs Welcome Toxicology Scholar Award. She has been very active in various services such as participating on NIH Study Sections; SOT Continuing Education Committee, Education Committee, Membership Committee, and serving as SOT Secretary; U.S. EPA Scientific Advisory Panel for FIFRA and Human Studies Review Board; and ATSDR/NCEH Board of Scientific Counselors. Thus, Dr. Janice Chambers is not only outstanding in education but she is also making substantial contributions to toxicology research and service, and we honor her with the 2009 Education Award.
SOT 2009 Award Recipients (Continued)

**Education Award**

Serrine Lau, Ph.D., has made significant contributions in educating and developing new leaders in toxicology. Professor Lau received her Ph.D. in Pharmacology from the University of Michigan in 1980, followed by a postdoctoral fellowship in the laboratory of Dr. Jim Gillette at the NIH. Her first academic appointment was in 1986 at the University of Texas at Austin, where she became the first Endowed Assistant Professor in the history of the College of Pharmacy (COP), served as Director of a NIEHS supported training grant, Director of the Short-term Research Training Program for Minority Students, and as Minority Liaison Officer for the COP in the University of Texas Graduate Outreach Program. Professor Lau is currently the Director of the Southwest Environmental Health Sciences Center at the University of Arizona, Scientific Director of the Arizona Proteomics Alliance, Associate Director of the NIEHS supported Toxicogenomics graduate training grant, and co-PI of the Summer Undergraduate Fellowship Program supported by ASPET. Professor Lau has published over 140 peer-reviewed papers with the assistance of many talented students and postdoctoral fellows. Indeed, Professor Lau has mentored many high school, undergraduate, and graduate students who have gone on to successful careers in medicine, academia, government, and the private sector. Her students have won many awards, including two winners of the prestigious Carl C. Smith Graduate Student Award for Meritorious Research in Mechanisms of Toxicology. The success of Professor Lau’s students is a reflection of the unyielding passion that she brings each and every day to her laboratory, and her ability to encourage and cultivate scientific creativity. Professor Lau is a dynamic and powerful communicator, with the gift of being able to make complex subjects understandable and scientific research rewarding and enjoyable. Professor Lau has served on SOT Council, Awards Committee, Board of Publications, Education Committee, Task Force on Women in Toxicology, Task Force on Recruitment and Retention of Students in Toxicology, Task Force on NIH Funding, and as President of the Mechanisms Specialty Section. The Society of Toxicology recognizes Dr. Serrine S. Lau with the 2009 Education Award.

**Enhancement of Animal Welfare Award**

Sally Robinson, Ph.D., is honored by the Society of Toxicology for her contributions to the enhancement of animal welfare. The Enhancement of Animal Welfare Award is given in recognition of her vision, tenacity, expertise and determination to make a difference to the science of toxicology and animal welfare and her ongoing commitment to the 3Rs (Replace, Refine, or Reduce the need for experimental animals) at the international level.

Over the last five years, Dr. Robinson has led a cross-industry team, with support from the UK National 3Rs Centre (NC3Rs), that provided a novel, evidence-based challenge to the regulatory requirements for acute toxicity studies where lethality is an endpoint. Dr. Robinson initiated this project within her own company then collaborated with 17 other pharmaceutical companies globally to share data that were used to demonstrate that acute lethality toxicity studies have limited value to assess human safety. Therefore, requirements by regulators for these questionable experiments could not be justified.

The group's results and recommendations have been presented to regulators from the European Union, United States, and Japan to raise awareness of the need to question the requirement for acute toxicity studies within international guidelines. These communications were successful and the ongoing revision of ICH M3 and the EMEA draft position paper on acute toxicity studies has incorporated the recommendations made by the group, citing the publications by Dr. Robinson, et al.

Dr. Robinson is Principle Toxicologist within Global Safety Assessment at AstraZeneca, Alderley Park in Cheshire, UK, specializing in animal ethics and the science of in vivo study design. She continues to promote enhancement of animal welfare, and to embed these modern concepts through mentorship of other toxicologists. We congratulate Dr. Sally Robinson on these accomplishments and present her with the 2009 Enhancement of Animal Welfare Award.
Founders Award

Roger McClellan, D.V.M., is uniquely qualified for the Founders Award based on his outstanding leadership and accomplishments, all centered on understanding the effects of chemicals as a basis for minimizing human health risks. He supports the development of toxicological information from studies at multiple levels of biological organization, from macromolecules through populations of people or laboratory animals. This integration is most useful in predicting human health consequences of exposure to toxic agents. His experience of over 40 years in the fields of radiation, inhalation, and chemical toxicology have led to noteworthy publications and contributions clearly evident to SOT, as he has received three SOT awards for scientific achievements (Frank Blood, Arnold J. Lehman, and Merit).

His accomplishments also include outstanding leadership and strategic business analysis and planning for science-based organizations. He advocates the development of multi-discipline teams to address complex issues ranging from environmental health matters to new product development. He encourages critical analysis and revitalization of organizations through continuous improvement processes. His leadership is exemplified by his direction of the most distinguished toxicology research institutes in the world, the Lovelace Inhalation Toxicology Research Institute, now part of the Lovelace Respiratory Research Institute and the Chemical Industry Institute of Toxicology, now part of the Hamner Institutes for Health Sciences.

He currently is, or has been, an adjunct faculty member at 10 major research universities. He was elected to the Institute of Medicine of the National Academy of Sciences. He is a Diplomate of the American Board of Toxicology and the American Board of Veterinary Toxicology, and a Fellow of various societies, including the American Association for the Advancement of Science.

His outstanding leadership in fostering toxicology in safety decision-making through state-of-the-art approaches that elucidate the distinctions for humans between safe and unsafe levels of chemical exposures and the building of high-impact organizations leads us to enthusiastically bestow the Founders Award for 2009 on Dr. Roger McClellan.

Leading Edge in Basic Science Award

John Katzenellenbogen, Ph.D., recipient of the SOT Leading Edge in Basic Science Award, is an internationally recognized chemist who has been at the forefront of research on the structure and function of the estrogen receptor since the earliest days of his career at the University of Illinois at Urbana-Champaign, when he developed one of the first high affinity labels for the receptor. Currently he is Professor of Bioengineering at that institution. Among his more recent contributions has been the development of novel ER agonist and antagonists with remarkable selectivity for ER α and β. He has freely provided these compounds to dozens of investigators worldwide, and their use has been instrumental in defining the roles of ERα and ERβ in mediating the diverse effects of endogenous, dietary, and environmental estrogens. Recently Dr. Katzenellenbogen has also expanded the structural universe of estrogen active compounds and has developed estrogen dendrimer conjugates as novel tools to study the non-genomic pathway of estrogen signaling. Together, these accomplishments have paved the way for endocrine toxicologists to identify specific targets and dissect complex pathways through which estrogenic endocrine disruptors act.

During his distinguished career, Dr. Katzenellenbogen has published over 440 articles and trained over 80 doctoral and postdoctoral students, many of whom are now in leadership positions in academia or industry. The research career of Dr. John Katzenellenbogen provides a shining example of how the innovative investigations of a creative scientist can lead to a series of fundamental discoveries that drive many fields forward and that have profound impact on disciplines like toxicology. Dr. John Katzenellenbogen is a superb example of a researcher making important contributions to the understanding of fundamental mechanisms of toxicity and thus is the first recipient of the Leading Edge in Basic Science Award.

Leading Edge in Basic Science Award Lecture—
The Structural Pervasiveness of Estrogen Activity: Benefits and Risks from the Eclectic Nature of Ligand Binding by the Estrogen Receptor
Monday, March 16, 12:30 PM–1:20 PM, Room 324
Gary Williams, M.D., DABT, is Professor of Pathology at New York Medical College. Dr. Williams has made a number of contributions to chemical carcinogenesis, particularly hepatocarcinogenesis. He conducted pioneering work in developing methods for the culture of hepatocytes and introduced the use of cultured hepatocytes to measure chemical-induced DNA repair synthesis as a means of identifying potential chemical carcinogens. Based in part on extensive findings with hepatocarcinogens in the hepatocyte system, he advanced the concept of distinct DNA-reactive and epigenetic mechanisms of carcinogenicity. He contributed to the understanding of liver neoplasia as a multi-step process involving the initiation of hepatocytes to form proliferative preneoplastic lesions identifiable by phenotype abnormalities, such as resistance to iron accumulation and expression of glutamine synthetase. Through assessment of the influence of hepatocarcinogens on the development of preneoplastic cells, he documented that DNA-reactive carcinogens rapidly induced such lesions, whereas epigenetic agents only slowly enhanced their expansion, thereby extending the understanding of different modes of action. Furthermore, he helped in distinguishing adaptive from adverse effects in the liver and other tissues. Also, Dr. Williams has investigated in depth the dose-response characteristics of DNA-reactive hepatocarcinogens. By quantifying key events, including DNA adducts, cytotoxicity, cell proliferation and induction of preneoplastic lesions, he has identified non-linearities and no effect levels at low doses for several DNA-reactive carcinogens. Dr. Williams has been involved in teaching toxicology through the organization of symposia and, for the past fifteen years, a course on safety assessment of medicines, and has advanced the discipline by serving on numerous advisory bodies and editorial boards. He received the Arnold J. Lehman Award in 1982 and the Enhancement of Animal Welfare Award in 2002 from SOT and the Ambassador in Toxicology Award from the Mid-Atlantic Regional Chapter of SOT in 2001. We congratulate and recognize Dr. Gary Williams as the recipient of the 2009 Merit Award.

Translational Impact Award—Keap1 One Eye on the Target: Translating Molecular Toxicology into Cancer Prevention
Tuesday, March 17, 8:00 AM–8:50 AM, Room 324

Thomas W. Kensler, Ph.D., is the 2009 Translational Impact awardee. Dr. Kensler is currently Professor of Toxicology in the Department of Environmental Health Sciences at the Johns Hopkins Bloomberg School of Public Health where he holds a joint appointment in the Department of Biochemistry and Molecular Biology as well as in the Departments of Pharmacology and Molecular Sciences, and Oncology in the Johns Hopkins School of Medicine. Dr. Kensler has devoted much of his professional career to the development of molecular approaches to cancer prevention, seeking to develop the tools to test the hypothesis that enzyme induction through Keap1-Nrf2 signaling is a useful strategy for chemoprevention in humans. In the past decade, he has driven this science through several clinical trials towards practical strategies to affect a reduction of the impact of liver cancer in the economically developing world. He has provided outstanding leadership to bring together multidisciplinary teams of toxicologists, epidemiologists, biostatisticians and clinicians to the field of chemoprevention. Most importantly, he has managed to accomplish these achievements in a multicultural international setting.

Collectively Dr. Kensler has been a major contributor to the translational research efforts that are bringing new prevention opportunities to high-risk populations in the world. His work uses a foundation of rigorous, cutting-edge basic science to bring mechanism-based hypotheses into clinical trials. Over the past decade, this work has led to practical means for reducing the burden of environmentally-induced cancer in humans. These findings not only have importance in cancer research but have also been extended to the larger field of adaptive responses to many environmental stresses. Congratulations to Dr. Thomas Kensler, the first recipient of the Translational Impact Award.
SOT AstraZeneca IUTOX Fellowship

Sema Burgaz, Turkey
Estefania G. Moreira, Brazil
Kolawole V. Olorunshola, Nigeria
Kelly P.K. Olympio, Brazil
Kingsley C. Patrick-Iwuanyanwu, Nigeria
Betzbet Quintanilla-Vega, Mexico
Suresh V.S. Rana, India
Jalila Ben Salah, Tunisia
Suleeporn Sangrajang, Thailand

AstraZeneca Traveling Lectureship Award

Kim Boekelheide, M.D., Ph.D., is Professor of Pathology and Laboratory Medicine at the Brown University School of Medicine. His research focuses on fundamental molecular mechanisms by which environmental and occupational toxicants induce testicular injury, including the study of co-exposure synergy using model testicular toxicants and the effects of in utero endocrine disruptor exposure on steroidogenesis and a predisposition to cancer. The AstraZeneca Traveling Lectureship Award recognizes excellence in research and service to toxicology and enables a lecture tour of Europe to promote collaboration between European and North American toxicologists. He will use this award to address two hot topics—a discussion of the future of toxicity testing and the development in his laboratory of a novel xenotransplant model to investigate the human testicular response to in utero active endocrine disruptors. At both industrial and academic institutions in Europe, Dr. Boekelheide’s lecture series is designed to stimulate thoughtful discussion of both science policy and basic research in the toxicological sciences with cross-cutting and timely new perspectives with relevance to regulatory issues. We recognize Dr. Kim Boekelheide with the 2009 AstraZeneca Traveling Lectureship Award.

Nominations for 2010 awards are due October 9, 2009. Visit the SOT Web site for award details at…

www.toxicology.org
Colgate-Palmolive Awards for Student Research Training in Alternative Methods

Jennifer Cole, Texas Tech University
Project Title: Proteomic Profiling of Organotypic Cultures in Cetaceans
Host Institution: University of Buffalo, The State University of New York

Colgate-Palmolive Grants for Alternative Research

Qin Chen, University of Arizona
Project Title: Proteomic Identification for Biomarkers of Oxidative Stress

Timothy Shafer, U.S. EPA
Project Title: Comparison of Rodent and Human Models for High-Throughput Neurotoxicity Screening

Mehmet Uzumcu, Rutgers, The State University of New Jersey
Project Title: Fetal/Neonatal Ovary Organ Culture as an In Vitro Alternative for Testing Direct Epigenetic Effects of Endocrine Disruptors on Ovarian Development

P. Sean McGrath, Colorado State University

Pfizer Undergraduate Student Travel Award

Sherine Crawford, Medgar Evers College

Trish T. Hoang, University of Illinois at Urbana-Champaign

Kelly Kremarik, Michigan State University

Cory M. Mathias, Westminster College

P. Sean McGrath, Colorado State University
2009 Award Recipients (Continued)

2008 Fellowship Recipient
This scientist was selected for the Novartis Graduate Fellowship at the 2008 SOT Annual Meeting. Visit her presentations at this Meeting to see the outstanding work from her 2008–2009 Fellowship year.

2008 Novartis Graduate Fellowship

Helen J. Badham, Queens University

Abstract Number: 1690
Poster Board Number: 155

Abstract Title: Maternal Benzene Exposure Causes Persistent Strain and Gender Dependent Changes in the Hematopoietic System of Offspring

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 are submitted through a quick on-line process.

Applications for most SOT awards are due October 9, 2009.
Regional Chapter Awards, Special Interest Group Awards, and Specialty Section Awards have various deadlines throughout the year.
Visit the Awards and Fellowship section of the Web site for award descriptions, additional information, and to make nominations.

www.toxicology.org
Dr. Gilbert Omenn, M.D., Ph.D., has made tremendous contributions to public health, toxicology, and medicine and has been elected to 2009 SOT Honorary Membership.

Dr. Omenn is Professor of Internal Medicine Human Genetics and Public Health at the University of Michigan. He is the director of the U-M Center for Computational Medicine & Biology and the Proteomics Alliance for Cancer Research. He served as Executive Vice President for Medical Affairs and as Chief Executive Officer of the University of Michigan Health System from 1997 to 2002. He was formerly Dean of the School of Public Health, and Professor of Medicine and Environmental Health, University of Washington.

He served as Associate Director, Office of Science and Technology Policy, and Associate Director, Office of Management and Budget, in the Executive Office of the President in the Carter Administration. He is a longtime director of Amgen Inc. and of Rohm & Haas Company. He is a member of the Council and leader of the Plasma Proteome Project for the International Human Proteome Organization. He is Chairman of the Board (2006–2007) of the American Association for the Advancement of Science (AAAS). He is also on the advisory board of NextServices.

Dr. Omenn is the archetypal candidate for this honor based on his significant contributions to creating a safer and healthier world.

Professor John Walker FRS is Director of the Medical Research Council Dunn Human Nutrition Unit in Cambridge, UK, since 1998. He came to Cambridge in 1974 to join the Laboratory of Molecular Biology where he established the details of the modified genetic code of mitochondrial DNA, and he helped to discover overlapping genes in bacteriophages. In 1978, he began studying the ATP synthase from mitochondria and bacteria, and established their subunit compositions. From these data he discovered two protein sequence motifs involved in binding nucleotides to which his name has become attached. We know now that they are the most widely dispersed motifs in the entire biological kingdom. These contributions were the overture to his work leading, in 1994, to the determination of the 3D structure of the catalytic domain of this remarkable energy transducer by X-ray crystallography, which at once pointed towards a mechanical rotary mechanism of coupling of transmembrane protonmotive force to ATP synthesis mediated by the asymmetry of the rotating central “stalk”. Since this work, John has continued to unravel the secrets of this all-important enzyme for virtually all forms of life, including the structure of its membrane part (from yeast mitochondria), which demonstrated an unforeseen subunit stoichiometry that has led to new theories of the molecular mechanics of this intriguing nanomachine, the structure of the peripheral stalk or stator and the structure of the regulatory protein IF1 bound to the catalytic domain.

In addition to these achievements, John established the subunit composition of complex I, another highly complex membrane-bound enzyme of the mitochondrion made of 45 different proteins. He has also defined pathways for transport of metabolites, co-factors and biosynthetic precursors across the mitochondrial membrane.

In 1995 he was elected Fellow of the Royal Society. In 1997, he was awarded the Nobel Prize in Chemistry jointly with Dr Paul Boyer for their elucidation of the enzymatic mechanism underlying the synthesis of adenosine triphosphate (ATP). In 1999 he received his knighthood for his services to medical research. John’s many honours include the A.T. Clay Gold Medal in 1959, the Johnson Foundation Prize (University of Pennsylvania) in 1994, the CIBA medal and prize of the British Biochemical Society and the Peter Mitchell medal of the European Bioenergetics Conference, in 1996. He is a Foreign Member of L’Accademia Nazionale dei Lincei, Rome, Italy and the Royal Netherlands Academy of Sciences, and a Foreign Associate of the US National Academy of Sciences.
Continuing Education

CONTINUING EDUCATION COURSES

The Continuing Education Program offers a wide range of courses that cover state-of-the-art 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 15, 2009, at the Baltimore 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 go to the registration area on Saturday afternoon/evening or on Sunday morning. If you have misplaced your ticket, please go to a Continuing Education Booth, Level 300, at the Convention Center on Sunday. The booths will be open from 6:30 AM–5:15 PM.

7:00 AM–7:45 AM Continuing Education Sunrise Mini-Course:

1. Topics in Ethics: Conflict of Interest—Real or Imagined?—PBDEs as a Case Study

8:15 AM–12:00 NOON Continuing Education Morning (AM) Courses:

2. Free Radicals for Toxicologists—From the Basics to Inflammation and Disease

3. Characterizing Modes-of-Action and Their Relevance in Assessing Human Health Risks

4. Evaluation of Toxicity to Male and Female Reproductive Systems: Biology, Study Design, and Data Interpretation

5. Immunology for Toxicologists

6. Principles and Applications of Toxicokinetics

7. Translation of Safety Biomarkers in Drug Discovery and Development

1:15 PM–5:00 PM Continuing Education Afternoon (PM) Courses:

8. Free Radicals for Toxicologists—From the Basics to Inflammation and Disease

9. Characterizing Variability and Uncertainty with Physiologically-Based Pharmacokinetic Models

10. Current Approaches in Mixture Risk Assessment

11. How Similar Is Similar and How Relevant Is Relevant? Considerations in the Design of a Predictive Development Program for Biotherapeutics

12. New Frontier in Metal Toxicology: Genetic Susceptibility, Early Diagnosis, and Related Biological Indices

13. Stress as a Confounding Factor in Toxicology Studies

Sunday, March 15
7:00 AM–7:45 AM
Level 300 (See signage at CE Booth for room locations)

TOPICS IN ETHICS: CONFLICT OF INTEREST—REAL OR IMAGINED?—PBDES AS A CASE STUDY

SR01

Chairperson(s): Steven G. Gilbert, Institute of Neurotoxicology and Neurological Disorders, Seattle, WA and Philip Wexler, National Library of Medicine, Bethesda, MD

Sponsor:
Ethical, Legal, and Social Issues Specialty Section

Endorsed by:
Education Committee

Regulatory and Safety Evaluation Specialty Section

Throughout their professional lives, most toxicologists will confront an array of issues beyond the strictly scientific ones they have trained for. These may range across topics such as animals in research, human subject research, investigational and reporting bias, and conflict of interest concerns. The interdisciplinary nature of toxicology, its sometimes tangled regulatory framework, and implications for public safety and health, make policy considerations perhaps more relevant than they are for other sciences. Toxicologists, therefore, need to be braced for an array of ethical, legal, and social challenges, and to learn how to sensibly address allegations of conflict of interest or bias while practicing their science. This course will examine, through a case study related to polybrominated diphenyl ethers (PBDEs), the consequences of alleging conflict of interest or bias. In August, 2007 the U.S. EPA dismissed Deborah Rice from its PBDE review panel in compliance with a request from the American Chemistry Council, and expunged her comments from the official record. Dr. Rice had previously expressed her views about PBDE’s dangers as part of work with the Maine government. The U.S. EPA’s rationale was “the perception of a potential conflict of interest.” This incident highlights the challenge of a scientist holding a scientifically credible opinion about an issue prior to review by an expert panel (on which he/she is serving) assigned to assess the same issue. Under what circumstance does a position become a conflict of interest or bias? The practical and ethical issues raised in staffing scientific review panels affect scientists and policy makers. Course time will be provided for a discussion of conflict of interest and an examination of related incidents. Students will be provided with a selected list of Web resources related to the ethical issues under discussion.

- The Relevance of Ethics to Science and Toxicology, Steven G. Gilbert, Institute of Neurotoxicology and Neurological Disorders, Seattle, WA
- Case Study of PBDE Review and Allegations of Conflict of Interest, Deborah C. Rice, Maine Center for Disease Control and Prevention, Augusta, ME
- Audience Discussion with Panel, Deborah C. Rice, Steven G. Gilbert, and Philip Wexler
Society of Toxicology 2009

Continuing Education (Continued)

Sunday, March 15
8:15 AM–12:00 NOON
Level 300 (See signage at CE Booth for room locations)

INFILAMINATION AND DISEASE

FREE RADICALS FOR TOXICOLOGISTS—FROM THE BASICS TO INFILAMINATION AND DISEASE

AM02 (REPEATS AS PM08) CE BASIC

Chairperson(s): Lin L. Mantell, St. Johns University, College of Pharmacy, Queens, NY/The Feinstein Institute for Medical Research, North Shore-Long Island Jewish Health System, Manhasset, NY and Judith T. Zelikoff, New York University School of Medicine, Tuxedo Park, NY

Sponsor:
Immunotoxicology Specialty Section

Endorsed by:
Inhalation and Respiratory Specialty Section
Occupational and Public Health Specialty Section

The production of reactive oxygen species/reactive nitrogen species (ROS/RNS) has long been recognized to not only serve as a biomarker for oxidative stress, but also significantly contribute to the pathogeneses of various inflammatory tissue injuries and diseases. The emphasis of this course will be placed on an in-depth, state of the art review of the relationship among free radicals, immunologically-related inflammatory responses and environmental exposures and diseases. At the conclusion of this session, the participants will be able to describe the basic concepts of free radicals as they relate to immune-mediated events, better understand the production of reactive oxygen/nitrogen species (ROS/RNS) from both inflammatory responses and exposure to environmental toxicants, and realize the impact of ROS/RNS on normal physiological responses and pathological processes.

- The Basics of Free Radicals, Garry Buettner, University of Iowa, Iowa City, IA and Society for Free Radical Biology and Medicine
- Reactive Metabolites of Oxygen and Nitrogen in Inflammation: The Good and the Bad, Matthew Grisham, Louisiana State University Health Sciences Center, Shreveport, LA
- Metal-Induced Oxidants and Anti-Oxidants: Agents That Regulate and Dysregulate Immune Cell Activities, Michael A. Lynes, University of Connecticut, Storrs, CT
- Free Radical Generation from Exposure to Particulate Air Pollutants and the Inflammatory Response, Andy Ghio, U.S. EPA, Chapel Hill, NC

Sunday, March 15
8:15 AM–12:00 NOON
Level 300 (See signage at CE Booth for room locations)

Characterizing Modes-of-Action and Their Relevance in Assessing Human Health Risks

AM03 CE BASIC

Chairperson(s): Stephen S. Olin, ILSI Research Foundation, Washington, DC and Samuel M. Cohen, University of Nebraska Medical Center, Omaha, NE

Sponsor:
Carcinogenesis Specialty Section
Risk Assessment Specialty Section

Endorsed by:
Cytotoxicity, Carcinogenicity, and Dose-Response and the Mode-of-Action/Human Relevance Framework, M. E. (Bette) Meek, University of Ottawa, Ottawa, Ontario, Canada

Determining the modes(s)-of-action of a toxicant is the goal of many toxicology studies, and these data are often used in risk assessment. This course will present a systematic approach to characterizing the mode(s)-of-action (MOA) of toxicants and will lead participants through the application of a framework for evaluating the relevance of an animal mode-of-action in assessing human risk. A brief introduction to the history and significance for risk assessment of MOA/human relevance analysis will lay the foundation for this course, with the first presentation providing the basic concepts involved in application of the MOA/human relevance framework. Subsequent presentations will demonstrate the application of the framework through selected case studies with both cancer and non-cancer endpoints. Case studies will examine issues such as multiple endpoints with shared or different MOAs, the extension of the framework to dose-response analysis, and the effect of lifestage on the analysis. The objective of the case studies is to show clearly how the framework analysis is done, to illustrate the importance of a systematic evaluation of the available data, and to provide course participants with the tools to begin applying the MOA/human relevance framework in their own work.

- The Development and Significance of Mode-of-Action/Human Relevance Analysis, Samuel M. Cohen, University of Nebraska Medical Center, Omaha, NE
- Framework for Characterizing Modes-of-Action in Animals and Humans, Alan Boobis, Imperial College, London, United Kingdom
- A Mode-of-Action/Human Relevance Analysis for Thyroid Disruption and Its Relationship to Cancer and Neurodevelopmental Effects, Kevin M. Crofton, U.S. EPA, Research Triangle Park, NC
- Cytotoxicity, Carcinogenicity, and Dose-Response and the Mode-of-Action/Human Relevance Framework, M. E. (Bette) Meek, University of Ottawa, Ottawa, Ontario, Canada
Continuing Education (Continued)

Sunday, March 15
8:15 AM–12:00 NOON
Level 300 (See signage at CE Booth for room locations)

EVALUATION OF TOXICITY TO MALE AND FEMALE REPRODUCTIVE SYSTEMS: BIOLOGY, STUDY DESIGN, AND DATA INTERPRETATION

AM04 CE BASIC
Chairperson(s): Kok Wah Hew, Takeda Global Research & Development Center, Inc., Lake Forest, IL and Barry S. McIntyre, Schering-Plough Research Institute, Summit, NJ

Sponsor: Reproductive and Developmental Toxicology Specialty Section

Endorsed by:
Comparative and Veterinary Specialty Section
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

The objectives of this course are to provide the basic tools for toxicologists who desire a better understanding of how to assess toxicant-related effects on animal reproduction and the subsequent potential risk(s) to human reproduction. The anticipated audience includes toxicologists who work in regulated product development (e.g., pharmaceutical, chemical, and pesticide industries), as well as scientists who may be responsible for monitoring contracted reproductive toxicity studies, so that they can understand the subject sufficiently to work with study directors (i.e., study design and interpretation of study results). Reproductive toxicity studies assess multiple interrelated endpoints in the male and female reproductive systems. In order to properly design, conduct, and interpret these studies, a broad knowledge of male and female reproductive organ development, anatomy, physiology, and endocrinology is required. Using this as a starting point, the overall designs of reproductive toxicity studies for regulatory submissions, and subsequent application of these data to assess potential risk in humans will be discussed. The first and second presentations will provide an overview of the anatomy and physiology of the male and female reproductive systems, respectively, as well as endocrine regulation of these systems. The third talk will discuss the study designs to evaluate toxicity to male and female reproductive systems based on current regulatory guidelines. The course will conclude with case studies of reproductive toxicity data, subsequent interpretation, and how these results are being used to assess potential risks to human reproduction. In summary, upon completion of this course, the attendee will have an appreciation for the key information required for the design of reproductive toxicity studies and interpretation of reproductive toxicity data and will be able to provide guidance for risk assessment in reproductive toxicity evaluation.

- Male Reproductive System: Anatomy, Physiology, and Endocrine Regulation, Kim Boekelheide, Brown University, Providence, RI
- Female Reproductive System: Anatomy, Physiology, and Endocrine Regulation, Anthony R. Scialli, Sciences International Inc., Alexandria, VA
- Reproductive Toxicity Testing: Study Designs and Toxicity Endpoints, Barry S. McIntyre, Schering-Plough Research Institute, Summit, NJ
- Reproductive Toxicity Testing: Data Interpretation and Risk Assessment, Donald G. Stump, WIL Research Laboratories, LLC, Ashland, OH

IMMUNOLOGY FOR TOXICOLOGISTS

AM05 CE BASIC
Chairperson(s): Raymond Pieters, Institute for Risk Assessment Sciences (IRAS), Utrecht University, Utrecht, Netherlands and Ian Kimber, University of Manchester, Manchester, United Kingdom

Sponsor: Immunotoxicology Specialty Section

The adaptive immune response that is found in mammals comprises a dedicated interacting system of tissues, cells and molecules that work in concert to provide specific immune responses and host resistance to pathogenic microorganisms and transformed cells. Specific immunity is supplemented by, and works in harmony with, the phylogenetically more ancient innate immune system. Immunotoxicology describes the study of adverse health effects that may result from the interaction of xenobiotics with one or more components of the immune system. Such health effects may take a variety of forms. These include frank immunotoxicity where there is a functional impairment of the immune system. The concern here is that compromised immune function may translate into an increased susceptibility to infectious and/or malignant disease. A second potential consequence of the interaction of chemicals or proteins with the immune system is allergy; defined as the adverse health effects that may arise from the stimulation of a specific immune response. Allergic disease may take one of several forms, those of greatest significance for toxicologists being skin sensitization and allergic contact dermatitis, allergic sensitization of the respiratory tract, food allergy, and idiosyncratic drug reactions. Finally, xenobiotics have also been implicated in the induction or exacerbation of autoimmune responses and autoimmune disease. This basic grade course will provide a firm grounding in fundamental and clinical aspects of immunology, and will describe the basic elements of immunotoxicity, allergy and autoimmunity in view of the interaction between innate and adaptive immunity. The objective is to deliver an accessible guide to the immune system and immunotoxicology for general toxicologists.

- An Introduction to Immunology: Fundamental and Clinical Aspects, Ian Kimber, University of Manchester, Manchester, United Kingdom
- Elementary Immunotoxicology, Robert House, Dynport Vaccine Company-LLC, Frederick, MD
- Allergy and Allergic Disease, MaryJane Selgrade, U.S. EPA, Research Triangle Park, NC
- Autoimmunity and Autoimmune Disease, Raymond Pieters, IRAS, Utrecht University, Utrecht, Netherlands
Toxicokinetic (TK) data play an important role in chemical risk assessments. Why is an understanding of toxicokinetics important? Increasing reliance on MOA in such evaluations in turn requires increasingly detailed information regarding the active chemical moiety (parent compound or metabolite) and relevant target tissue dose metrics. This course will begin by providing background on the need for and role of toxicokinetic data in risk assessments. This presentation will include a discussion of the interaction between evaluation of MOA and toxicokinetic data and the role of such data in both interspecies and high to low dose extrapolations in risk assessment. We will go on to describe basic principles of pharmacokinetics from both the classical and physiologically-based approaches. The presentation will provide the conceptual and mathematical basis for developing a better understanding of pharmacokinetics and how pharmacokinetic analyses are conducted. In addition, we will address elements of the design of toxicokinetic experiments, conducted as part of subchronic/chronic toxicity studies. This presentation will include standardized approaches for TK sampling and data analysis. Finally, the presenters will provide examples of the integration of toxicokinetic data into current risk assessments, including the incorporation of human biomonitoring data in the evaluation of chemical exposures and risks.

- Why Is an Understanding of Toxicokinetics Important? James S. Bus, Dow Chemical, Midland, MI
- Basic PK Principles, Sean M. Hays, Summit Toxicology, Lyons, CO
- Toxicokinetic Study Design, Shakil A. Saghir, Dow Chemical, Midland, MI

BIOMARKERS

TRANSLATION OF SAFETY BIOMARKERS IN DRUG DISCOVERY AND DEVELOPMENT

This course will focus on translational issues in hematologic, clinical chemistry, protein assays and peptide assays. It concludes with a risk assessment presentation summarizing the realities of implementing the overall process in defining human relevance of safety and efficacy from preclinical data. Preclinical data gathered in laboratory animals is required by regulatory agencies to determine safety in humans prior to marketing of new products. Species-specific differences in routine and esoteric serum biomarkers make the relevance of findings in animals difficult to interpret. Knowledge in this area is beneficial to the safe conduct of clinical trials and the inclusion of relevant biomarkers as effective safety and efficacy endpoints during new product development. Research scientists, industry scientists, laboratory personnel, and pathologists interested in biomarker development, translation, execution and applications from preclinical through clinical trials may be interested. The difference between data obtained in preclinical and clinical circumstances will be covered in this course. Therefore, it may be of interest to anyone in a preclinical research setting through those engaged in clinical trials, as well as those evaluating the safety of industrial chemicals. Course objectives include identification of potential relevance or non-relevance of animal-based hematologic and clinical chemistry biomarkers to humans, identification of methods of overcoming species-specific problems in protein and peptides biomarkers, and understanding human relevance of animal data and the impact of biomarker utilization on speed and decision-making.

- Does Preclinical Hematology Predict Human Safety? Nancy Evers, Amgen Pharmaceutical, Seattle, WA
- Translation of Clinical Chemistry Biomarkers: Pitfalls and Solutions, Denise Boumou, Bristol-Myers Squibb, Princeton, NJ
- Overcoming the Problems of Species: Specific Proteins and Peptides in Assay Development, Jennifer Colangelo, Pfizer Global Research & Development, Groton, CT
- Connecting the Dots to Define Human Relevance to Preclinical Data: Implementing Techniques to Enhance Speed of Delivery and Decision Making, Michael R. Bleavins, Michigan Technology & Research Institute, Ann Arbor, MI
Continuing Education (Continued)

Sunday, March 15
1:15 PM–5:00 PM
Level 300 (See signage at CE Booth for room locations)

INFLAMMATION AND DISEASE

FREE RADICALS FOR TOXICOLOGISTS—FROM THE BASICS TO INFLAMMATION AND DISEASE

PM08 (REPEAT OF AM02) CE BASIC

Chairperson(s): Lin L. Mantell, St. Johns University, College of Pharmacy, Queens, NY/The Feinstein Institute for Medical Research, North Shore-Long Island Jewish Health System, Manhasset, NY and Judith T. Zelikoff, New York University School of Medicine, Tuxedo Park, NY

Sponsor:
Immunotoxicology Specialty Section

Endorsed by:
Inhalation and Respiratory Specialty Section
Occupational and Public Health Specialty Section

The production of reactive oxygen species/reactive nitrogen species (ROS/RNS) has long been recognized to not only serve as a biomarker for oxidative stress, but also significantly contribute to the pathogeneses of various inflammatory tissue injuries and diseases. The emphasis of this course will be placed on an in-depth, state of the art review of the relationship among free radicals, immunologically-related inflammatory responses and environmental exposures and diseases. At the conclusion of this session, the participants will be able to describe the basic concepts of free radicals as they relate to immune-mediated events, better understand the production of reactive oxygen/nitrogen species (ROS/RNS) from both inflammatory responses and exposure to environmental toxicants, and realize the impact of ROS/RNS on normal physiological responses and pathological processes.

• The Basics of Free Radicals, Garry Buettner, University of Iowa, Iowa City, IA and Society for Free Radical Biology and Medicine
• Reactive Metabolites of Oxygen and Nitrogen in Inflammation: The Good and the Bad, Matthew Grisham, Louisiana State University Health Sciences Center, Shreveport, LA
• Metal-Induced Oxidants and Anti-Oxidants: Agents That Regulate and Dysregulate Immune Cell Activities, Michael A. Lynes, University of Connecticut, Storrs, CT
• Free Radical Generation from Exposure to Particulate Air Pollutants and the Inflammatory Response, Andy Ghio, U.S. EPA, Chapel Hill, NC

CHARACTERIZING VARIABILITY AND UNCERTAINTY WITH PHYSIOLOGICALLY-BASED PHARMACOKINETIC MODELS

PM09 CE BASIC

Chairperson(s): Hugh A. Barton, Pfizer Inc., Groton, CT and Gunnar Johanson, Institute of Environmental Medicine, Karolinska Institute, Stockholm, Sweden

Sponsor:
Biological Modeling Specialty Section

Endorsed by:
Risk Assessment Specialty Section

As pharmacokinetic (PK) models are increasingly applied in risk and safety assessments, it is critical to improve the characterization of variability and uncertainty. Variability describes real differences among individuals arising from external exposure pathways, diet, health status, genetics, and other factors that contribute to differences in internal exposures or tissue dosimetry. Absent perfect knowledge, there are uncertainties arising from a range of sources including experimental error, that can impact confidence in model predictions. Physiologically-based pharmacokinetic (PBPK) models provide a biologically motivated description of processes influencing the absorption, distribution, metabolism, and excretion of endogenous compounds or xenobiotics. PBPK models rely on a wide range of in vitro and in vivo data to estimate parameter values and demonstrate the predictive capabilities of the models. This course will describe characterization of variability and uncertainty using PBPK models from a number of perspectives. The range of PBPK model structures and their applications in risk and safety assessment will be presented. How to approach characterizing uncertainty in the presence of variability will be described. Data from humans can be analyzed using PBPK models to characterize PK variability. Finally, linking variations in external exposure pathways with PK variability provides methods to characterize human dosimetry for use in risk assessments or interpretation of biomonitoring data.

• Pharmacokinetic Models—What Are They and What Are They Used For? Hugh A. Barton, Pfizer, Inc., Groton, CT
• Relating Data and Models to Characterize Parameter and Prediction Uncertainty, R. Woodrow Setzer, U.S. EPA, Research Triangle Park, NC
• Use of Human Experimental Data in PBPK Modeling of Population Variability, Gunnar Johanson, Karolinska Institute, Stockholm, Sweden
• Variability in Exposure and Internal Dosimetry Assessed with PBPK Models, Cecilia Tan, The Hamner Institutes for Health Sciences, Research Triangle Park, NC
Sunday, March 15
1:15 PM–5:00 PM
Level 300 (See signage at CE Booth for room locations)

CURRENT APPROACHES IN MIXTURE RISK ASSESSMENT

PM10
CE BASIC
Chairperson(s): Moiz Mumtaz, CDC Agency for Toxic Substances & Disease Registry, Atlanta, GA and Christopher J. Borgert, Applied Pharmacology and Toxicology Inc., Gainesville, FL

Sponsor:
Mixtures Specialty Section

Endorsed by:
Inhalation and Respiratory Specialty Section
Occupational and Public Health Specialty Section
Risk Assessment Specialty Section

Human exposure to combinations of chemicals and drugs is an everyday reality of life. There is tremendous interest in scientific and regulatory tools for evaluating the joint toxic action of chemicals and drugs in mixtures. This course will provide an overview of the methods and tools reflective of the current state of knowledge in the area of mixture risk assessment, as well as illustrative, real-life examples of their application to risk assessment. We will begin with an introduction to the various approaches to mixture risk assessment and illustrate the use of these methods to assess risks associated with human exposure to contaminants in selected hazardous waste sites. The course will then describe the process of cumulative risk assessment of pesticides, highlighting the use of pharmacokinetic, pharmacodynamic and relative potency factors in the process. The development and application of relative potency factor approach to evaluate safety of mixtures of drugs will also be addressed. Finally, we will discuss the current approaches and tools for assessing the role of interactions in mixture risk assessment, with particular emphasis on the use of physiologically-based pharmacokinetic (PBPK) models. Course participants will be provided with data evaluation strategies, data sets from real world examples, exercise results, and discussion of uncertainty pertaining to the application of various mixture procedures. The intended audience for this course will be experimentalists, modelers, epidemiologists and risk assessors interested in the assessment of health risks associated with human exposure to chemical and/or drug mixtures.

• Assessing Risk from Chemical Mixtures at Hazardous Waste Sites, Moiz Mumtaz, ATSDR, Atlanta, GA
• Cumulative Risk Assessment of Pesticides, Anna B. Lowit, U.S. EPA, Washington, DC
• Relative Potency Factors in Drug Safety Assessment, Christopher J. Borgert, Applied Pharmacology and Toxicology Inc., Gainesville, FL
• Assessing the Role of Interactions in the Risk Assessment of Chemical Mixtures, Kannan Krishnan, Université de Montréal, Montréal, Québec, Canada

Sunday, March 15
1:15 PM–5:00 PM
Level 300 (See signage at CE Booth for room locations)

HOW SIMILAR IS SIMILAR AND HOW RELEVANT IS RELEVANT? CONSIDERATIONS IN THE DESIGN OF A PREDICTIVE DEVELOPMENT PROGRAM FOR BIOThERAPEUTICS

PM11
CE BASIC
Chairperson(s): Laura Andrews, Genzyme, Framingham, MA and Leigh Ann Burns Naas, Pfizer Global Research and Development, San Diego, CA

Sponsor:
Comparative and Veterinary Specialty Section

Endorsed by:
Regulatory and Safety Evaluation Specialty Section
Toxicologic and Exploratory Pathology Specialty Section

Preclinical development programs that are designed to support the safe clinical use of biopharmaceuticals have considerations that are very different from programs designed to support the development of small molecule drugs. In particular, with more and more targeted therapeutics being developed, a traditional development program is becoming more and more difficult. While the ICH S6 guidance continues to drive the program decisions more often than not a different approach is warranted due to species specificity and paucity of relevant animal models. To design a predictive nonclinical program that will support not only first in human dosing but also eventual approval of the therapeutic is becoming more complex. Assuring safety in humans is the first and foremost task of a well designed program but assuring safety and application to specific patient populations is also essential to the targeted therapeutic products. Topics to be addressed in this course will include general pathology and physiology issues between species that might contribute to species selection/interpretation, utility of tissue cross reactivity to determine relevant species, considerations into the development of a homologous protein (from bench to beast), development and characterization of animal models or surrogate Protein development, additionally what to do if nothing is “relevant.” The course attendee will learn key concepts in the considerations for designing a predictive program for a biotherapeutic product.

• Understanding Comparative Physiology and Pharmacology, Frank Geoly, Pfizer, Groton, CT
• How Similar Is Similar: Understanding the Impact of Homologous or Surrogate Protein Development, Jeanine Bussiere, Amgen, Thousand Oaks, CA
• Integration of Concepts into Roadmaps for Development of Novel Biotherapeutics, Laura Andrews, Genzyme, Framingham, MA
Continuing Education (Continued)

Sunday, March 15
1:15 PM–5:00 PM
Level 300 (See signage at CE Booth for room locations)

NEW FRONTIER IN METAL TOXICOLOGY: GENETIC SUSCEPTIBILITY, EARLY DIAGNOSIS, AND RELATED BIOLOGICAL INDICES

PM12  CE ADVANCED

Chairperson(s): Wei Zheng, School of Health Sciences, Purdue University, West Lafayette, IN and Michael P. Waalkes, NCI at NIEHS, Research Triangle Park, NC

Sponsor:
Metals Specialty Section

Endorsed by:
Mechanisms Specialty Section
Neurotoxicology Specialty Section
Occupational and Public Health Specialty Section

Physical and chemical properties of many toxic metals are common in their tendency to donate electrons, their resistance to biotransformation and their similarity in physical sizes and electrical charges. Yet human responses to metal insults are not uniform such that metal-caused diseases may manifest in a particular population and spare in others. Thus, the inherited individual susceptibility must be taken into account when developing strategies for risk assessment or treatment becomes necessary. In many clinical cases, the signs and symptoms of metal intoxication are subtle and imperceptible. Because of these, clinically well defined metal diseases, such as lead-induced learning deficit or manganese-caused parkinsonism, are usually diagnosed too late for an effective therapeutic intervention. Thus, a reliable biomarker of a particular type of metal diseases, developed either based on injuries in biochemical and physiological functions or alterations in cellular signal pathways, bears a quintessential importance in metal toxicological research. This advanced course is intended to address the biological indices of metal toxicities from the angle of individual genetic susceptibility for early diagnosis. The course will provide an overview on metal-related biomarkers established from animal and human studies and the application of these biomarkers, such as lead, in risk assessment. Recent advancement in understanding the genetic susceptibility that contributes to metal-induced toxicities will then be discussed. Manganese will be used as an example to explore novel ideas to use integrated biomarkers combining exposure indices with biological outcomes. Finally, the course will illustrate an innovative way to explore metal biomarkers by targeting at metal interaction with the cellular signal pathways. The course will survey these new frontiers in metal toxicological research by providing details specific to ‘hot’ metals, such as lead, manganese, arsenic and mercury. The intended audience for this course are those who desire an advanced introduction to mechanisms of metal toxicities, an advanced knowledge of metal-gene interaction and risk assessment, and an advanced technical approach in developing a useful biomarker for metal intoxication. The course will be of interest to others engaged in wider aspects of metal toxicology, neurotoxicology, carcinogenesis, risk assessment, and occupational health.

- Introduction: Principles of Metal Toxicology, Curtis D. Klaassen, University of Kansas, Kansas City, KS
- Biomarkers of Metal Intoxication: How Predictive Are Exposures of Adverse Effects? Deborah A. Cory-Slechta, University of Rochester, Rochester, NY
- Genetic Susceptibility Underlying Metal-Induced Toxicities, Jie Liu and Michael P. Waalkes, NCI at NIEHS, Research Triangle Park, NC
- A Single Parameter Combining Multiple Bio-Indices As a New Approach to Discover Biomarkers of Metal Toxicities: A Case Study with Manganese, Wei Zheng, Purdue University, West Lafayette, IN
- Cell Signal Pathways Targeted by Toxic Metals, Michael J. McCabe, University of Rochester, Rochester, NY

Sunday, March 15
1:15 PM–5:00 PM
Level 300 (See signage at CE Booth for room locations)

STRESS AS A CONFOUNDING FACTOR IN TOXICOLOGY STUDIES

PM13  CE BASIC

Chairperson(s): Katie Sprugel, Amgen, Seattle, WA and Nancy Everds, Amgen, Seattle, WA

Sponsor:
Toxicologic and Exploratory Pathology Specialty Section

Endorsed by:
Immunotoxicology Specialty Section
Regulatory and Safety Evaluation Specialty Section
Women in Toxicology Special Interest Group

Stress can confound the interpretation of toxicity studies. The biology of stress includes complex interrelationships between neurologic and endocrine pathways. Stressors can have effects on in-life, clinical pathology, endocrine, and immune system parameters. Effects on any of these systems may be observed during a toxicity study. The challenge in toxicology is to differentiate between primary test article-related changes and secondary changes related to stress. This differentiation is fundamental to the assessment of stress in the regulatory environment. Understanding the pathophysiology of major systems impacted by stress and the potential range of responses is key to assessing the contribution of stress to study findings. Effects of stress in animals and humans, including potential biomarkers, will be discussed. Key references for the understanding of stress-related findings will be provided.

- Neurohormonal Aspects of Stress, David Dorman, North Carolina State University, Raleigh, NC
- Stress and Clinical Pathology, Nancy Everds, Amgen, Seattle, WA
- Stress and Endocrine Organs, George Foley, Schering-Plough, Summit, NJ
- Stress and the Immune System, Paul Snyder, Purdue University, West Lafayette, IN
### General Scientific Sessions
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<tr>
<td>Wednesday 9:00 AM</td>
<td>Biomarker Discovery and Detection #1592–1618</td>
<td>Exhibit Hall</td>
<td>240</td>
</tr>
<tr>
<td>Wednesday 9:00 AM</td>
<td>Biomonitoring and Exposure Assessment #1619–1633</td>
<td>Exhibit Hall</td>
<td>242</td>
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### SYMPOSIUM SESSION

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<tbody>
<tr>
<td>Wednesday 12:00 NOON</td>
<td>Gene-Environment Interactions: Epigenetic Pathways in Chronic Disease Promotion and Progression #1634</td>
<td>307</td>
<td>245</td>
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### ROUNDTABLE SESSION

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<tbody>
<tr>
<td>Wednesday 12:00 NOON</td>
<td>Preclinical Evaluation of Cancer Hazard and Risk of Biopharmaceuticals #1635</td>
<td>309</td>
<td>245</td>
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### INFORMATIONAL SESSION

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<tbody>
<tr>
<td>Wednesday 12:00 NOON</td>
<td>Kinase Inhibitors As Targeted Therapeutics in Inflammation and Oncology—Approaches to Predict and Manage Clinical Toxicities #1636</td>
<td>308</td>
<td>246</td>
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### 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 34–37.

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<tbody>
<tr>
<td>Wednesday 1:00 PM</td>
<td>Chemical Carcinogenesis #1637–1666</td>
<td>Exhibit Hall</td>
<td>247</td>
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<tr>
<td>Wednesday 1:00 PM</td>
<td>Developmental Basis of Disease #1686–1699</td>
<td>Exhibit Hall</td>
<td>250</td>
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<tr>
<td>Wednesday 1:00 PM</td>
<td>Developmental Toxicology #1700–1714</td>
<td>Exhibit Hall</td>
<td>252</td>
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<tr>
<td>Wednesday 1:00 PM</td>
<td>Immunotoxicology #1715–1762</td>
<td>Exhibit Hall</td>
<td>253</td>
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<tr>
<td>Wednesday 1:00 PM</td>
<td>Metals—In Vitro #1763–1802</td>
<td>Exhibit Hall</td>
<td>256</td>
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<tr>
<td>Wednesday 1:00 PM</td>
<td>Alternate Tests and Models II #1803–1842</td>
<td>Exhibit Hall</td>
<td>259</td>
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<tr>
<td>Wednesday 1:00 PM</td>
<td>Stem Cell Biology and Toxicology #1843–1857</td>
<td>Exhibit Hall</td>
<td>262</td>
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<tr>
<td>Wednesday 1:00 PM</td>
<td>Steatosis and Cholestasis in Hepatic Dysfunction #1858–1871</td>
<td>Exhibit Hall</td>
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<tr>
<td>Wednesday 1:00 PM</td>
<td>Inflammation #1872–1893</td>
<td>Exhibit Hall</td>
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</tr>
<tr>
<td>Wednesday 1:00 PM</td>
<td>Genotoxicity II #1894–1910</td>
<td>Exhibit Hall</td>
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### SYMPOSIUM SESSIONS

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<tbody>
<tr>
<td>Wednesday 1:30 PM</td>
<td>Biomarkers: New Breakthroughs in the World of Air Pollution Studies #1911–1916</td>
<td>Ballroom III</td>
<td>268</td>
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<tr>
<td>Wednesday 1:30 PM</td>
<td>New Insights into Skin Homeostasis and Carcinogenesis #1917–1922</td>
<td>321</td>
<td>268</td>
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<tr>
<td>Wednesday 1:30 PM</td>
<td>Pulmonary Effects of In Utero and Early Postnatal Exposure to Arsenic #1923–1928</td>
<td>Ballroom IV</td>
<td>269</td>
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<tr>
<td>Wednesday 1:30 PM</td>
<td>The Role of Inflammation during Metabolic Liver Disease and Drug-Induced Liver Toxicity: Novel Insights #1929–1934</td>
<td>Ballroom I</td>
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### WORKSHOP SESSIONS

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<tr>
<td>Wednesday 1:30 PM</td>
<td>Food Allergy—Basic Mechanisms and Applications to Identifying Risks Associated with Plant Incorporated Pesticides and Other Genetically Modified Crops #1935–1942</td>
<td>314</td>
<td>270</td>
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<tr>
<td>Wednesday 1:30 PM</td>
<td>The Impact of Transcript Profiling in Drug Safety Assessment #1943–1948</td>
<td>324</td>
<td>271</td>
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<tr>
<td>Wednesday 1:30 PM</td>
<td>The Road to Personalized Medicine #1949–1954</td>
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### PLATFORM SESSIONS

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<tr>
<td>Wednesday 1:30 PM</td>
<td>Bioinformatics and Computational Toxicology #1953–1963</td>
<td>307</td>
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<tr>
<td>Wednesday 1:30 PM</td>
<td>Expression and Modulation of Cytochrome P450 #1964–1972</td>
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<tr>
<td>Wednesday 1:30 PM</td>
<td>Mechanisms in Nanomaterial Toxicology #1973–1980</td>
<td>309</td>
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<tr>
<td>Wednesday 1:30 PM</td>
<td>Signal Transduction and Metal-Induced Toxicity #1981–1989</td>
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### ROUNDTABLE SESSION

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<tr>
<td>Wednesday 4:30 PM</td>
<td>What Is an Adverse Effect in the Age of ‘Omics? #1990</td>
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### EDUCATION-CAREER DEVELOPMENT SESSION

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<tr>
<td>Wednesday 4:30 PM</td>
<td>Career Opportunities and Transitions in Toxicology #1991</td>
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### Thursday

#### ROUNDTABLE SESSION

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<tr>
<td>Thursday 7:30 AM</td>
<td>Phototoxicology: A Passing Fancy or Enduring Concern? #1992</td>
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### INFORMATIONAL SESSION

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<tr>
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<tbody>
<tr>
<td>Thursday 7:30 AM</td>
<td>Lead: Children’s Exposures and Current Regulatory Standards #1993</td>
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<td>276</td>
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### POSTER SESSIONS

*Author attended 8:30 AM–10:15 AM; otherwise author attended 10:15 AM–12:00 NOON. Poster Board Surface Maps are on pages 34–37.

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<tr>
<td>Thursday 8:30 AM</td>
<td>* Epigenetics #1994–2003</td>
<td>Ballroom I</td>
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<tr>
<td>Thursday 8:30 AM</td>
<td>Persistent Organic Compounds #2004–2022</td>
<td>Ballroom I</td>
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<tr>
<td>Thursday 8:30 AM</td>
<td>Regulations and Policy Implications in Toxicology #2023–2037</td>
<td>Ballroom I</td>
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</tr>
<tr>
<td>Thursday 8:30 AM</td>
<td>Non-Clinical Safety Testing: Biological and Small Molecule Therapeutics #2038–2079</td>
<td>Ballroom I</td>
<td>280</td>
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<tr>
<td>Thursday 8:30 AM</td>
<td>Cardiopulmonary Toxicity #2080–2116</td>
<td>Ballroom I</td>
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<tr>
<td>Thursday 8:30 AM</td>
<td>Neurotoxicity—Pesticides #2117–2141</td>
<td>Ballroom I</td>
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<tr>
<td>Thursday 8:30 AM</td>
<td>Chemical-Induced Neurotoxicity #2142–2164</td>
<td>Ballroom I</td>
<td>288</td>
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<tr>
<td>Thursday 8:30 AM</td>
<td>New Applications in Animal Models #2165–2191</td>
<td>Ballroom I</td>
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### Scientific Session Index (Continued)

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<tr>
<td>Thursday 8:30 AM</td>
<td>Toxicology of Carbon Nanotubes #2192–2215 Poster Boards 344–367</td>
<td>Ballroom I</td>
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<tr>
<td>Thursday 8:30 AM</td>
<td>Signal Transduction: Kinases #2216–2227 Poster Boards 369–380</td>
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#### SYMPOSIUM SESSIONS

**Date/Time** | **Topic/Abstract** | **Room** | **Page** |
---|---|---|---|
Thursday 9:00 AM | Heat Shock Proteins and the Toxicological Response #2228–2232 | 309 | 295 |

#### WORKSHOP SESSIONS

**Date/Time** | **Topic/Abstract** | **Room** | **Page** |
---|---|---|---|
Thursday 9:00 AM | Biomarkers for Assessing the Systemic Inflammatory Response Syndrome in Toxicology Studies #2233–2238 | 307 | 296 |
Thursday 9:00 AM | Is Modulation of the Immune System by Perfluoroalkyl Acids a Human Health Concern? #2239–2244 | 310 | 296 |
Thursday 9:00 AM | The Molecular Mechanism of Alpha, Beta-Unsaturated Carbonyl Toxicity: Getting in Touch with the Soft Side of Chemistry #2245–2250 | 308 | 297 |
Program Description

The Program Description layout is ordered by date and start time. All scientific sessions and special events will be held in the Baltimore Convention Center unless otherwise noted.

SOT general events and functions are displayed with a grey background.

SCIENTIFIC SESSION TYPES

- **EC**: Education-Career Development Sessions
- **E**: Exhibitor Hosted Sessions
- **FS**: Featured Sessions
- **HH**: Historical Highlights
- **IS**: Informational Sessions
- **PL**: Platform Sessions

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

**SUNDAY**

Society of Toxicology 2009

Saturday, March 14

**SOT COMMITTEE/TASK FORCE CHAIR ORIENTATION**

If you will be a Committee/Task Force Chairperson in 2009–2010, please make plans to attend the Committee/Task Force Chair Meeting scheduled from 2:00 PM–5:00 PM, on Saturday, March, 14. With new assignments taking effect on May 1, 2009, the meeting is intended to provide new (and current, if desired) chairpersons with a basic tutorial on the SOT structure, operation, and strategic direction. For additional information, please contact SOT Headquarters.

Saturday Evening, March 14

5:45 PM to 7:00 PM

Room 339

UNDERGRADUATE EDUCATION PROGRAM RECEPTION

**Chairperson(s)**: Mari Stavanja, Celanese International Corporation, Dallas, TX

**Sponsor**: Committee for Diversity Initiatives

Full Undergraduate Education details may be found on pages 60–61.

Saturday Evening, March 14

7:00 PM to 9:00 PM

Room 343

20TH ANNIVERSARY UNDERGRADUATE PROGRAM CELEBRATION

**Chairperson(s)**: Claude McGowan, Johnson & Johnson, Skillman, NJ and Vicente Santa Cruz, Chevron Phillips Chemical Company, Brussels, Belgium

**Sponsor**: Committee for Diversity Initiatives

The Anniversary Celebration honors previous program participants and organizers and is open to all who have been connected to the Undergraduate Program for Minority Students since 1989. Full Undergraduate Education details may be found on pages 60–61.

Satuday Afternoon, March 14

2:00 PM to 5:00 PM

Hilton Holiday 1

UNDERGRADUATE EDUCATION PROGRAM—ORIENTATION FOR SOT HOSTS, PEER MENTORS, AND ADVISORS

**Chairperson(s)**: Mari Stavanja, Celanese International Corporation, Dallas, TX

**Sponsor**: Committee for Diversity Initiatives

This event is for advisors peer mentors and mentors assisting with the Undergraduate Program. Full Undergraduate Education details may be found on pages 60–61.

**SATURDAY**

Saturday Afternoon, March 14

4:15 PM to 5:45 PM

Room 330

UNDERGRADUATE EDUCATION PROGRAM—ORIENTATION FOR SOT HOSTS, PEER MENTORS, AND ADVISORS

**Chairperson(s)**: Mari Stavanja, Celanese International Corporation, Dallas, TX

**Sponsor**: Committee for Diversity Initiatives

This event is for advisors peer mentors and mentors assisting with the Undergraduate Program. Full Undergraduate Education details may be found on pages 60–61.

up-to-date information at www.toxicology.org
Program Description (Continued)

**SUNDAY**

Sunday Morning, March 15  
7:00 AM to 7:45 AM  
Level 300  
(See signage at CE Booth for room information)

CONTINUING EDUCATION SUNRISE MINI-COURSE  
Full Continuing Education Course details may be found on pages 76–82.

Sunday Morning and Afternoon, March 15  
8:00 AM to 8:30 PM  
(See pages 60–61 for room information)

UNDERGRADUATE EDUCATION PROGRAM  

*Chairperson(s): Mari Stavanja, Celanese International Corporation, Dallas, TX*

*Sponsor: Committee for Diversity Initiatives*  
The Sunday program is open to undergraduate students who are registered for this event on the Annual Meeting Registration Form, the undergraduate students receiving MARC, SOT, and Pfizer travel funding, and the SOT program volunteers. Full Undergraduate Education Program details may be found on pages 60–61.

Sunday Morning, March 15  
8:15 AM to 12:00 NOON  
Level 300  
(See signage at CE Booth for room information)

CONTINUING EDUCATION MORNING COURSES  
Full Continuing Education Course details may be found on pages 76–82.

Sunday, Morning and Afternoon, March 15  
10:00 AM to 1:00 PM and 2:00 PM to 5:00 PM  
Port Discovery Children’s Museum  

**PARACELVSUS OUTSIDE THE CLASSROOM**  

*Chairperson(s): Maureen Gwinn, U.S. EPA, Washington, DC*

*Sponsor: Communications Committee*  

*Partners:*  
- Port Discovery Children’s Museum  
- University of Maryland Biotechnology Institute  

SOT invites meeting attendees and their families, as well as the larger community, to visit Port Discovery Children’s Museum (www.portdiscovery.org) in Baltimore on Sunday, March 15. Full Paracelsus Outside the Classroom details can be found on page 60.

**SUNDAY AFTERNOON**

Sunday Afternoon, March 15  
1:15 PM to 5:00 PM  
Level 300  
(See signage at CE Booth for room information)

CONTINUING EDUCATION AFTERNOON COURSES  
Full Continuing Education Course details may be found on pages 76–82.

Sunday Afternoon, March 15  
3:00 PM to 5:00 PM  
Room 343  

UNDERGRADUATE EDUCATION PROGRAM—ACADEMIC TOXICOLOGY PROGRAMS AND INTERNSHIPS  

*Chairperson(s): Kim Daniel, Texas A&M, College Station, TX*

*Sponsor: Committee for Diversity Initiatives*  
This informal session provides opportunity for undergraduate students to meet with representatives from academic programs and internship sponsors to explore opportunities. Full Undergraduate Education Program details may be found on pages 60–61.

Sunday Afternoon, March 15  
3:00 PM to 3:30 PM  
Room 311  

UNDERGRADUATE EDUCATION PROGRAM—HOST MENTOR AND PEER MENTOR MEETING  

*Chairperson(s): Adrian Nanez, University of Louisville, Louisville, KY*

*Sponsor: Committee for Diversity Initiatives*  
This meeting of host mentors and peer mentors meet to discuss Undergraduate Education Program follow-up. Full Undergraduate Education Program details may be found on pages 60–61.

Sunday Afternoon, March 15  
4:45 PM to 5:15 PM  
Room 321  

AWARDS CEREMONY MUSIC—PERFORMED BY MARYLAND SINGS  

Sunday Afternoon, March 15  
5:15 PM to 6:30 PM  
Room 321  
(Open to All Attendees)  

AWARDS CEREMONY  
Join us as SOT honors our prestigious award winners at the SOT Awards Ceremony. Please refer to the Awards and Fellowships section of the SOT Web site for complete details and the nominating information for next year.
Program Description (Continued)

Sunday Afternoon, March 15
6:30 PM to 7:30 PM
Ballroom
(All Attendees and Registered Guests Welcome)

WELCOMING RECEPTION
Continue the celebration by attending the Welcoming Reception following the Awards Ceremony. The Welcoming 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

Sunday Evening, March 15
7:00 PM to 8:00 PM
Charles Street VIP Suite/Toxicology History Room
(By Invitation Only)

25-YEAR (OR MORE) MEMBER RECEPTION
Have you been a member of the Society of Toxicology for 25 years (or more)? If so, please join your colleagues in celebration and recognition of the scientists who established the Society. Note that this year some of your colleagues will be sporting 35-year member pins.

The 25-Year Member reception is being held in the SOT History Room so SOT members can also enjoy relaxing with their colleagues and have an educational and entertaining look at toxicology's origins and progress.

Sunday Evening, March 15
7:30 PM to 8:30 PM
Camden Lobby
(Ticket Required)

STUDENT/POSTDOCTORAL FELLOW MIXER
Sponsor: Student Advisory Council
This is your opportunity to start the meeting by networking with other students and postdocs, learning about SOT Specialty Sessions, and hearing about the activities of the Graduate Committees and Postdoctoral Assembly. All students and postdoctoral fellows are invited to attend this reception. Refreshments will be provided by SOT and sponsors. A cash bar will also be available. Ticket and Meeting Badge are required.

MONDAY MORNING

Monday Morning, March 16
6:30 AM to 8:00 AM
See room listings below.

SPECIALTY SECTION MEETINGS: COMPARATIVE AND VETERINARY (ROOM 331), METALS (ROOM 346)

Monday Morning, March 16
7:00 AM to 8:00 AM
Room 304
SPECIALTY SECTION MEETING: MOLECULAR BIOLOGY

Monday Morning, March 16
7:00 AM to 8:30 AM
Room 345
SPECIALTY SECTION MEETING: REGULATORY AND SAFETY EVALUATION

Monday Morning, March 16
7:00 AM to 8:00 AM
Room 304
SPECIALTY SECTION MEETING: MOLECULAR BIOLOGY

Monday Morning, March 16
7:00 AM to 8:30 AM
Room 345
SPECIALTY SECTION MEETING: REGULATORY AND SAFETY EVALUATION

Monday Morning, March 16
7:00 AM to 9:00 AM
See room listings below.

SPECIALTY SECTION MEETINGS: IN VITRO AND ALTERNATIVE METHODS (ROOM 342), RISK ASSESSMENT (ROOM 306)

Monday Morning, March 16
7:00 AM to 8:30 AM
Room 302
REGIONAL CHAPTER/SPECIAL INTEREST GROUP GRADUATE COMMITTEE MEETING
Representatives will conduct their business meeting.

Monday Morning and Afternoon, March 16
7:15 AM to 2:00 PM
(See pages 60–61 for room information)

UNDERGRADUATE EDUCATION PROGRAM
Chairperson(s): Mari Stavanja, Celanese International Corporation, Dallas, TX

Sponsor: Committee for Diversity Initiatives
This session is open to undergraduate students who are registered for this event on the Annual Meeting Registration Form, the undergraduate students receiving MARC, SOT, and Pfizer travel funding, and the SOT program volunteers. Full Undergraduate Education Program details may be found on pages 60–61.

Monday Morning, March 16
7:30 AM to 9:00 AM
Room 343
SPECIALTY SECTION MEETING: TOXICOLOGY AND EXPLORATORY PATHOLOGY OFFICERS MEETING
Nerve cells communicate with each other through two distinct mechanisms referred to as fast and slow synaptic transmission. A number of components of the two signal transduction pathways have been identified. Fast synaptic transmission occurs via activation by a neurotransmitter of a ligand-gated ion channel. In contrast, slow synaptic transmission occurs via a signal transduction cascade that can be remarkably complex and that usually involves second messengers and/or protein phosphorylation/dephosphorylation reactions. A growing body of knowledge concerning slow signal transduction pathways has been utilized to elucidate the mechanism of action of therapeutic agents used for the treatment of schizophrenia, Parkinsonism, and depression, as well as of drugs of abuse, such as caffeine, cannabis, amphetamine, PCP, and LSD.

Dr. Paul Greengard is the Vincent Astor Professor of Molecular and Cellular Neuroscience at The Rockefeller University and Director of The Fisher Center for Alzheimer’s Research. Greengard received his Ph.D. from Johns Hopkins in 1953. He spent five years in England receiving advanced training at the University of London, at Cambridge University and at the National Institute of Medical Research. Upon his return to the United States, Greengard worked as Director of the Department of Biochemistry at Geigy (now Novartis) Research Laboratories, in Ardsley, New York for eight years. In 1967, he left the pharmaceutical industry to return to academia. From 1968 to 1983 Greengard served as Professor of Pharmacology and Psychiatry at Yale University, at which time he moved to his current position at The Rockefeller University.

Over the years, Greengard’s achievements have earned him many distinguished awards including the Metropolitan Life Foundation Award for Medical Research, The Charles A. Dana Award for Pioneering Achievements in Health, the Ralph W. Gerard Prize in Neuroscience from the Society for Neuroscience, The National Academy of Sciences Award in the Neurosciences, the 3M Life Sciences Award of the Federation of American Societies for Experimental Biology. In the year 2000, Greengard was awarded the Nobel Prize in Physiology or Medicine for his discoveries concerning signal transduction in the nervous system.

He is an Honorary Member of the National Academies of Science in Sweden, Norway, and Serbia and has been the recipient of many honorary degrees. He is a member of the National Academy of Sciences and of the Institute of Medicine of the National Academies.
Abstract #

#17 10:42 DIETARY INTERVENTION WITH SULFORAPHANE, A PHASE II ENZYME INDUCER TO PROTECT FROM AIRWAY INFLAMMATION, D. Diaz-Sanchez. U.S. Environmental Protection Agency, Chapel Hill, NC. Sponsor: J. Wagener.

#18 11:08 OBESITY ENHANCES AIRWAY INFLAMMATION AND REACTIVITY TO OZONE, S. Shore. Harvard University, Boston, MA. Sponsor: J. Wagener.


Monday Morning, March 16 9:15 AM to 12:00 NOON

SYMPOSIUM SESSION: MICRONRNAS IN BIOLOGY AND TOXICOLOGY

Chairperson(s): Mark E. Hahn, Woods Hole Oceanographic Institution, Woods Hole, MA and Raymond F. Novak, Wayne State University, Detroit, MI.

Sponsor: Molecular Biology Specialty Section

Endorsed by: Carcinogenesis Specialty Section

Mechanisms Specialty Section

Reproductive and Developmental Toxicology Specialty Section

Gene expression is highly regulated at many levels and altered gene expression is an important part of many toxicological mechanisms. Very recently, a fundamentally new mechanism of gene regulation, involving small RNAs known as microRNAs (miRNAs), has been discovered. MicroRNAs are single-stranded RNA molecules of ~22 nucleotides that function to regulate the synthesis of proteins by inhibiting the translation of mRNAs and promoting their degradation, or in some cases by stimulating their translation. MicroRNAs are abundant and evolutionarily conserved in eumetazoan animals. The human genome encodes hundreds of miRNAs, and a similar number of miRNAs occur in the genomes of other animals. Each miRNA can target hundreds of different messenger RNAs for degradation; up to 20% of the genes in a given genome may be regulated by miRNAs. The biological functions of miRNAs are not fully understood. However, recent studies have demonstrated important roles for miRNAs in the regulation of transcription factor expression and in pre-mRNA splicing. Studies in zebrafish and mammals have shown that miRNAs have important roles during embryonic development and that disruption of miRNA synthesis in embryos can have dramatic consequences. Altered miRNA expression is seen in a variety of cancers and in some cases is involved in the mechanism of tumorigenesis. Furthermore, miRNAs are involved in several human diseases and appear to regulate cellular responses to a variety of physiological and environmental stressors, including diabetes, high blood pressure, nutrient stress, hypoxia, and environmental chemicals. Thus, miRNAs have critical biological functions and there is an emerging understanding of the important role of miRNAs in toxicology, development, metabolic disease, and carcinogenesis. MicroRNAs have not yet been widely studied in a toxicological context; however, it seems likely that these small RNAs may have significant roles in regulating the genomic, proteomic and functional response of cells and tissues to chemicals. [Supported by a WHOI Independent Study Award and by Walter A. and Hope Noyes Smith.]

Program Description (Continued)

Abstract #

#20 9:15 MicroRNAs IN BIOLOGY AND TOXICOLOGY, M. E. Hahn1 and R. F. Novak2. 1Biology, Woods Hole Oceanographic Institution, Woods Hole, MA and 2Wayne State University, Detroit, MI.


#22 9:50 MicroRNAs IN HUMAN CANCERS AND CARCINOGENESIS, C. M. Croce. College of Medicine, The Ohio State University, Columbus, OH. Sponsor: M. Hahn.

#23 10:20 ABERRANT microRNA EXPRESSION IN HUMAN BREAST ONCogenesis, A. A. Dombkowski1, R. Ranganathan1, D. Dukovic1, J. Zheng1, S. Gajjala1, R. F. Novak2 and F. R. Miller3. 1Institute of Environmental Health Sciences, Wayne State University, Detroit, MI and 2Karmanos Cancer Institute, Detroit, MI.

#24 10:50 MicroRNA EXPRESSION IN HEPATIC AND NON-HEPATIC TISSUES OF DIOXIN-EXPRESSED RODENTS, A. B. Okey1 and P. A. Harper2. 1Pharmacology & Toxicology, University of Toronto, Toronto, ON, Canada and 2Research Institute, The Hospital for Sick Children, Toronto, ON, Canada. Sponsor: M. Hahn.


Monday Morning, March 16 9:15 AM to 12:00 NOON

SYMPOSIUM SESSION: SUPERANTIGENS, CYTOKINE STORM, AND TOXIC REACTIONS

Chairperson(s): G. Frank Gerberick, Procter & Gamble Company, Cincinnati, OH and Ian Kimber, University of Manchester, Manchester, United Kingdom.

Sponsor: Immunotoxicology Specialty Section

The term superantigen (SAg) was coined by Marrack and Kapler in 1990 to describe a large family of exotoxins secreted primarily by Staphylococcus aureus and Streptococcus pyogenes that are associated with adverse health effects that can range from relatively mild and transient symptoms to catastrophic shock and death. These toxins have been implicated in a number of diseases including scarlet fever, staphylococcal food poisoning and cases of both streptococcal and staphylococcal toxic shock syndrome, as well as being suspected of playing roles in autoimmune diseases. A unique feature of SAgS is that, unlike conventional antigens, they do not require processing by antigen presenting cells (APC) and they can interact with a large proportion of T cells. SAgS have been well characterized and have very specific binding sites on the α or β chain of MHC class II molecules expressed on APC, and on the Vβ chain of the T cell receptor forming a tri-molecular complexes that bridge SAgS with T cells and APCs, thereby enhancing intracellular interactions. The polyclonal stimulation of T cells in juxtaposition with APC by SAgS leads to extensive cytokine production by both cell types including interleukin (IL)-2, interferon-γ and tumor necrosis factor-β by T cells, and IL-1β and tumor necrosis factor-β by APC. The collective action of these cytokines, known as cytokine storm, is the trigger for the clinical manifestations of superantigen immunotoxicity. Moreover, adverse health
effects precipitated by cytokine storm are relevant also for considerations of drug safety. One illustrative example of the clinical picture of the TeGenero TGN1412 therapeutic monoclonal antibody was observed in the London UK 2006 trial. Finally, the structure of superantigens, the mechanisms through which they interact with the immune system, and the nature and clinical consequences of cytokine storm will be described and reviewed.

#26 9:15 SUPERANTIGENS, CYTOKINE STORM, AND TOXIC REACTIONS. G. Gerberick and I. Kimber. Procter & Gamble Co., Cincinnati, OH and University of Manchester, Manchester, United Kingdom.

#27 9:20 STRUCTURE AND FUNCTION OF SUPERANTIGENS. I. Kimber. University of Manchester, Manchester, United Kingdom.


#29 10:20 IMMUNE RESPONSES TO SUPERANTIGENS. M. Korb. University of Iowa, Iowa City, IA. Sponsor: F. Gerberick.

#30 10:50 EXPERIMENTAL MODELS FOR EVALUATING BIOAVAILABILITY OF SUPERANTIGENS. C. Squier. University of Iowa, Iowa City, IA. Sponsor: F. Gerberick.

#31 11:20 TOXICOLOGICAL CONSIDERATIONS FOR SUPERANTIGEN-MEDIATED DISEASES. G. Gerberick. Procter & Gamble Co., Cincinnati, OH.

11:50 PANEL DISCUSSION/Q&A.

Monday Morning, March 16
9:15 AM to 12:00 NOON
Room 314

INFLAMMATION AND DISEASE

SYMPOSIUM SESSION: ZINC, INFLAMMATION, AND DIABETES

Chairperson(s): Lu Cai, University of Louisville, Louisville, KY and Wolfgang Maret, The University of Texas Medical Branch, Galveston, TX.

Sponsor: Metals Specialty Section

Endorsed by:
- Immunotoxicology Specialty Section
- Molecular Biology Specialty Section
- Occupational and Public Health Specialty Section

Diabetes is a serious public issue due to its risk for chronic cardiovascular complications. However, mechanisms by which diabetes causes cardiovascular complications remain incompletely understood. Zinc (Zn) is one of the most abundant metals in the human body and therefore essential for the structure and activity of more than 300 enzymes and proteins. Zn deficiency was found to be associated with diabetes, but the direct role of Zn in diabetic etiology and its mechanisms are under-explored. Recent studies have shown that chronic inflammation is not only related to the onset of Type I and Type II diabetes, but also related to the development of diabetic complications. The current understanding of the roles of Zn homeostasis in the insulin signaling, systemic inflammation, diabetes and diabetic complications will be discussed. Finally, the evidence of Zn to protect ischemic and the diabetic heart will be presented.

#32 9:15 ZINC, INFLAMMATION, AND DIABETES: INTRODUCTION. L. Cai. Medicine & Radiation Oncology, University of Louisville, Louisville, KY.

#33 9:30 PATHOPHYSIOLOGY OF CELLULAR ZINC AND REDOX BUFFERING MECHANISMS IN DIABETES. W. Maret. The University of Texas Medical Branch, Galveston, TX. Sponsor: L. Cai.

#34 10:00 ZN REGULATION OF SYSTEMIC INFLAMMATION AND INSULIN RESISTANCE IN OBESITY. J. Ye. Molecular Biology, Pennington Biomedical Research Center, Louisiana State University, Baton Rouge, LA. Sponsor: L. Cai.

#35 10:30 METALLOTHIONEIN GENET POLYMORPHISMS AND ZINC HOMEOSTASIS IN THE SUSCEPTIBILITY OF DIABETES MELLITUS AND CARDIOVASCULAR COMPLICATIONS. R. Giacconi, M. Malavolta, A. Bonfigli, R. Testa, F. Lattanzio and E. Mocchegiani. Immunology Center (Laboratory of Nutrigenomic and Immunosenescence), Research Department, INRCA, Ancona, Italy. 'Diabetology Unit, INRCA, Ancona, Italy and Scientific Direction, INRCA, Ancona, Italy. Sponsor: L. Cai.

#36 11:00 PROTECTION OF METALLOTHIONEIN AND ZINC AGAINST DIABETIC COMPLICATIONS. L. Cai. Medicine, Pharmacology and Toxicology, University of Louisville, Louisville, KY.

Program Description (Continued)

Abstract #

Establishing a range of toxicity endpoints in a study using a classical approach is often not feasible or practical with biotherapeutic products due to challenges that might involve formulation, concentration, stability and volume issues. In addition, the use of recovery groups needs to be considered and the utility of the information gained from the use of additional animals added to a study. Aspects of full recovery evaluation and the impact of immunogenicity on the outcome and interpretation of the study design will be discussed. Challenges continue to exist in the appropriate study design for reproductive evaluation of biologics and the utility of such studies to the safety package. These considerations as well as challenges that may be encountered with reproductive study designs will be covered, in addition to addressing some of the challenges with respect to dose selection and study design considerations, including reproductive study designs for biotherapeutics. Emphasis will be placed on choosing a high dose for toxicology studies and how does that relate to clinical trial dosing strategies; the impact of immunogenicity on the dosing strategy and the potential to dose higher; the use and information to be gathered from recovery animals, and the selection of dose and dosing regimen for developmental and reproductive studies for biotherapeutics.

#38 9:15 DOSE SELECTION AND DESIGN CONSIDERATIONS IN SAFETY STUDIES FOR BIOTHERAPEUTICS. L. Andrews and T. MacLachlan. Pharmacology and Toxicology, Genzyme, Framingham, MA.


#40 10:00 RECOVERY GROUPS: A NECESSARY EVIL? PRECLINICAL DEVELOPMENT CONSIDERATIONS FOR DETERMINATION OF THE NEED FOR AND DURATION OF RECOVERY GROUPS. J. Green. Preclinical and Clinical Development Sciences, BiogenIDEC, Cambridge, MA.

#41 10:40 IMPACT OF IMMUNOGENICITY ON HIGH DOSE SELECTION FOR CHRONIC STUDIES—SHOULD YOU DOSE HIGHER? PROS AND CONS. D. Weirda. Biopharmaceutical Immunotoxicology, Eli Lilly & Co, Indianapolis, IN.

#42 11:20 HIGH DOSE SELECTION FOR DART STUDIES. J. Couch. Pharmacology/Toxicology, Genzyme, Framingham, MA.

Monday Morning, March 16
9:15 AM to 12:00 NOON
Room 327

WORKSHOP SESSION: FROM GENES TO ORGANS: ADVANCEMENTS IN MODELING BIOLOGICAL SYSTEMS


Sponsor: Biological Modeling Specialty Section

Endorsed by:
- Drug Discovery Toxicology Specialty Section
- Risk Assessment Specialty Section

As we consider the future of toxicity testing, the importance of applying biological models to this problem is clear. Modeling efforts exist along a continuum with respect to the level of organization (e.g. cell, tissue, organism) linked to the resolution of the model. Generally, a tradeoff is made whereby higher levels of organization are models with lower resolution. Consideration will be given to modeling efforts across the full range of this spectrum. First, a model will be described for intracellular signaling including important information on how the choice of cell type for in vitro studies affect the signaling seen. Next, two systems approaches will be highlighted which model genome-wide molecular changes (i.e. ‘omics’) within and between tissues and the application to pharmaceutical target discovery and toxicity testing. Finally, biologically-based dose-response models for risk assessment and data requirements associated with these models will be covered followed by a progress report on the development of detailed tissue models and integration of such models with molecular and cellular changes. If incorporated into future toxicity testing, these approaches should greatly facilitate the definition and quantitative modeling of mode of action for important environmental stressors. The systems approaches also have the potential to greatly improve interspecies extrapolation. In addition, the models described will facilitate the use of in vitro data for risk assessment thereby increasing the number of chemicals that can be evaluated each year. In considering these different modeling approaches, we hope to gain a better understanding of the future opportunities and challenges we face as we strive for increasingly higher resolution models at greater levels of organization. [This abstract does not reflect EPA policy.]

#43 9:15 WORKSHOP INTRODUCTION: SYSTEMS BIOLOGY & BIOLOGICAL MODELS. S. Edwards¹ and C. Timchalk¹, NHEERL, US EPA, Research Triangle Park, NC and Biological Sciences, PNNL, Richland, WA.

#44 9:30 QUANTITATIVE SYSTEMS ANALYSIS OF HEPATOCELLULAR RESPONSES TO INFLAMMATORY CYTOKINES AND PHARMACOLOGICAL AGENTS. D. Lauffenburger. Department of Biological Engineering, Massachusetts Institute of Technology, Cambridge, MA. Sponsor: S. Edwards.

#45 10:00 INFORMATIC AND STATISTICAL INTEGRATION OF ‘OMICS DATA TO MODEL CELLULAR RESPONSE TO STRESS. K. Waters. Pacific Northwest National Lab, Richland, WA. Sponsor: R. Corley.

#46 10:30 GENE NETWORKS REFLECTING TISSUE-TISSUE INTERACTIONS HIGHLIGHT NOVEL CAUSAL PATTERNS OF ASSOCIATION WITH HUMAN DISEASE. E. E. Schadt. Genetics, Merck, Seattle, WA. Sponsor: S. Edwards.


#48 11:30 VIRTUAL ORGAN MODELS FOR MULTI-SCALE INTEGRATION OF DOSE-RESPONSE RELATIONSHIPS. R. A. Corley¹, K. R. Minardi¹, R. E. Jacob¹, C. Timchalk¹, A. P. Kuprat¹, J. P. Carson¹, S. Kablan¹, C. Frevert¹, M. Fanucchi¹ and D. R. Einstein¹. Pacific Northwest National Laboratory, Richland, WA, University of Washington, Seattle, WA and University of Alabama, Birmingham, AL.
The understanding of the relevance of SB data to the traditional endpoints of interest, thus enabling a benchmarked relationship. The key to successfully implementing this approach is to anchor the data to target toxicity and to aid in the screening of molecules for favorable profiles. Techniques are initiated as the result of a clinical or histological finding, SB generated. Although most investigative toxicology studies that employ SB a SB approach is the need to verify the physiological relevance of the data with unanticipated molecules in the body (off-target) or the direct consequence of over-inhibiting or stimulating the intended molecular target in a desired or undesired location (target-based). Such complex processes of toxicity pose significant challenges to toxicologists who seek to either proactively minimize potential liabilities by devising screening strategies or to elucidate mechanistic understanding of an identified toxicity. The precept of systems biology (SB) is the ability to obtain, integrate and analyze complex data from multiple experimental sources using interdisciplinary tools with an overall goal of examining the gestalt of a biological process, e.g. disease or toxicity. A fundamental aspect of the application of a SB approach is the need to verify the physiological relevance of the data generated. Although most investigative toxicology studies that employ SB techniques are initiated as the result of a clinical or histological finding, SB approaches can be utilized and integrated to proactively evaluate potential target toxicity and to aid in the screening of molecules for favorable profiles during lead optimization. A common approach is to generate datasets in vivo using SB approaches and apply those learnings to develop in vitro models. The key to successfully implementing this approach is to anchor the data to traditional endpoints of interest, thus enabling a benchmarked relationship. The understanding of the relevance of SB data to the traditional endpoints coupled with data integration strategies aims at deriving more robust, mechanistic tools with an overall goal of examining the gestalt of a biological process, e.g. disease or toxicity. A fundamental aspect of the application of a SB approach is the need to verify the physiological relevance of the data generated. Although most investigative toxicology studies that employ SB
Program Description (Continued)

Abstract #


#61 11:06 GENOMIC ANALYSIS OF SKELETAL MUSCLE INJURY INDUCED IN THE RAT BY CHRONIC EXPOSURE TO CHLOROQUINE. K. Thompson, T. Miller, R. Honchel, B. Rosenzweig, P. Pine, J. Weaver, A. Knapot, J. Zhang and J. Hang. DAPR, CDER, FDA, Silver Spring, MD.

#62 11:24 MICROARRAY ANALYSIS OF CALCINEURIN INHIBITOR IMMUNOSUPPRESSANT-MEDIATED NEPHROTOXICITY IN THE RAT. Y. Cai, J. Aunan1, Q. Huang1, S. Javade2 and R. S. Paul1. 1NEIHs, Durham, NC, 2UNC Eshelman School of Pharmacy, Chapel Hill, NC and 3Boehringer Ingelheim Pharmacology . Inc., Ridgefield, CT.

#63 11:42 UTILIZING FUNCTIONAL GENOMICS IN YEAST TO DISCOVER NOVEL BIOMARKERS OF BENZENE TOXICITY IN HUMANS. M. North, A. Loguinov, V. Tandon, B. Ko and C. D. Vulpe. Nutritional Sciences and Toxicology, The University of California Berkeley, Berkeley, CA.

Abstract #

Monday Morning, March 16
9:15 AM TO 12:00 NOON
Room 316

#64 9:15 EFFECT OF THE MARINE VIBRIO VULNIFICUS LIPOLYSACCHARIDE ON BRAIN MICROGLIA CYTOKINE AND CHEMIKINE RELEASE. J. Frey1, M. Baldescu1, M. L. Hall1, J. L. Powell2, K. B. Glaser2 and A. M. Mayer1. 1Pharmacology, Midwestern University, Downers Grove, IL, 2Abbott Laboratories, Abbott Park, IL and 3University of Maryland School of Medicine, Baltimore, MD.

#65 9:36 RESVERATROL INHIBITS IL-2-INDUCED TOXICITY WHILE MAINTAINING EFFECTIVE TREATMENT OF MELANOMA BY DIFFERENTIALLY MODULATING THE SUPPRESSIVE FUNCTIONS OF MYELOID-DERIVED SUPPRESSOR CELLS. H. Guan, P. S. Nagarkatti and M. Nagarkatti. Pathology, Microbiology and Immunology, University of South Carolina School of Medicine, Columbia, SC.

#66 9:57 CERIUM OXIDE NANO PARTICLES INDUCE MAST CELL ACTIVATION, ALTER VASCULAR RELAXATION AND ARE ASSOCIATED WITH PRO-INFLAMMATORY CYTOKINE PRODUCTION. J. M. Brown1 and C. J. Wiegard2. 1Department of Pharmacology & Toxicology, East Carolina University, Greenville, NC and 2Department of Physiology, East Carolina University, Greenville, NC.

#67 10:18 GENERATION OF REACTIVE OXYGEN SPECIES IN BEAS-2B AND INFLAMMATORY RESPONSES IN HMVEC-LBI AND CO-CULTURES WITH WHITE BLOOD CELLS DURING IN VITRO EXPOSURE TO AMBIENT PARTICULATE MATTER. S. Qu, E. N. Liberda, L. Chen and Q. Qu. Environmental Medicine, New York University, New York.

#68 10:39 HIGH PHYSIOLOGICAL LEVELS OF THE STRESS HORMONE, CORTICOSTERONE (CORT), EXACERBATE BRAIN INFLAMMATORY RESPONSES TO LIPOLYSACCHARIDE (LPS) AND TO THE NERVE AGENT, DFP: ROLE IN GULF WAR ILLNESS?. J. P. O’Callaghan1, D. B. Miller1 and S. M. Lasley2. 1CDC-NIOSH, Morgantown, WV and 2University of Illinois College of Medicine, Peoria, IL.
Abstract #

#70 11:20 HYPOXIA AND NEUTROPHIL ELASTASE INTERACT TO CAUSE HEPATOCYTOLOGICAL INJURY AND INCREASE OXIDATIVE STRESS AND PHOSPHORYLATION OF P38 MAPK. E. Sparkenbaugh1, K. Traore1, K. Greenwood1, P. Ganey1 and R. Roth1. 1Pharmacology and Toxicology, Michigan State University, East Lansing, MI and 2Department of Chemistry, Elizabeth City State University, Elizabeth City, NC.

#71 11:40 ROLE OF NOS2 IN BLEOMYCIN-MEDIATED LUNG INJURY. A. J. Gow1, C. Guo1, E. Atochina-Vasserman and P. Scott1. 1Pharmacology & Toxicology, Rutgers University, Piscataway, NJ and 2Pulmonary & Critical Care Medicine, University of Wisconsin-Madison, Madison, WI.

#72 9:15 GENOMIC PROFILE OF RAT PLACENTA AFTER PHTHALATE EXPOSURE. K. Johnson. Nemours Biomedical Research, Alfred I. duPont Hospital for Children, Wilmington, DE.

#73 9:34 TRADITIONAL CHINESE MEDICINE ON MALE GENITAL SYSTEM IN MICE EXPOSED TO DIESEL EXHAUST PARTICLES. X. Hong1, Q. Chen1, Y. Song2, J. Wang2 and Q. Sun2. 1The Ohio State University, Columbus, OH and 2Hospital for Children, Wilmington, DE.

#74 9:53 HEDGEHOG SIGNALING REGULATES PROSTATE DEVELOPMENT: INTERPLAY OF PARACRINE AND AUTOCRINE MECHANISM. M. Xu1 and W. Buschman1,2. 1Molecular and Environmental Toxicology Center, Univ of Wisconsin-Madison, Madison, WI and 2Department of Pathology, Division of Urology, University of Wisconsin-Madison, Madison, WI.

#75 10:12 A MIXTURE OF IPRODIONE AND VINCLozolin DELAYS THE ONSET OF PUBERTY IN THE MALE RAT IN A CUMULATIVE MANNER. C. R. Blystone1,2,3, C. S. Lambright2, J. Furr2, C. V. Rider1,2, V. S. Wilson1 and L. E. Gray1,2,3. 1Reproductive Toxicology Division, U.S. EPA Research Triangle Park, NC, 2Environmental and Molecular Toxicology, NC State University, Raleigh, NC and 3National Toxicology Program, NIEHS, Research Triangle Park, NC.

#76 10:30 CYCLOPHOSPHAMIDE AND ITS ACTIVE METABOLITE PHOSPHORAMIDE MUSTARD CAUSE OVARIAN FOLLICLE LOSS AND DNA DAMAGE IN VIVO AND IN VITRO. T. Truong, S. K. Petillo and P. J. Devine. INRS-Institut Armand-Frappier, Laval, QC, Canada.

#77 10:48 DIET-INDUCED OBESITY IN MALE MICE ASSOCIATED WITH REDUCED FERTILITY AND POTENTIATION OF ACRYLAMIDE-INDUCED GERM CELL TOXICITY. U. Hoffner1, R. Bai1, G. Kissling1, G. Travlos1 and B. I. Ghanayem1,2. 1LP, NIEHS/NIH, RTP, NC, 2BB, NIEHS/NIH, RTP, NC and 3CMPB, NIEHS/NIH, RTP, NC.

#78 11:06 THE ABILITY OF THE ARYL HYDROCARBON RECEPTOR TO REGULATE OVARIAN FOLLICLE GROWTH AND OVULATION MAY DEPEND ON SEXUAL MATURITY IN MICE. J. Hernández-Ochoa, T. Leslie and J. A. Flaws. Veterinary Biosciences, University of Illinois, Urbana, IL.

#79 11:24 MOLECULAR PATHWAYS UNDERLYING CO-EXPOSURES TO DIFFERENT TESTICULAR TOXICANTS ACTING ON THE SAME OR DIFFERENT CELLULAR TARGETS. S. N. Campion1, M. Sandrof1, Y. Sui2, E. Houseman2, Z. Wu2 and K. Boekelheide1. 1Pathology and Laboratory Medicine, Brown University, Providence, RI and 2Community Health, Brown University, Providence, RI.


Program Description (Continued)
Program Description (Continued)

Abstract #

Monday Morning, March 16
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: RECEPTORS

Chairperson(s): Thiruchelvan Kariharan, Auburn University, Auburn, AL.

Displayed: 9:30 AM–12:30 PM

Author Attended: 9:30 AM–11:00 AM

#81
Poster Board Number ........................................101

#82
Poster Board Number ........................................102
TRANSFERRIN DIVERSITY OF ARYL HYDROCARBON RECEPTOR 2 (AHR2) IN SHARKS. T. W. Zalobowski and R. R. Merson. Biology, Rhode Island College, Providence, RI. Sponsor: M. Hahn.

#83
Poster Board Number ........................................103
TOXICITY OF TCDD IN NOVEL MOUSE LINES EXPRESSING RAT AHR RECEPTOR VARIANTS. R. Pohjanvirta, Department of Food and Environment Hygiene, University of Helsinki, Helsinki, Finland. Laboratory of Toxicology, National Public Health Institute, Kuopio, Finland and Kuopio Research Unit, Finnish Food Safety Authority EVIRA, Kuopio, Finland. Sponsor: M. Vlkusela.

#84
Poster Board Number ........................................104
XENOBIOTICS-MEDIATED TRANSLOCATION OF ADENOVIRUS-DRIVEN CONSTITUTIVE ANDROSTANE RECEPTOR IN HUMAN PRIMARY HEPATOCYTES. H. Li, T. Chen, J. Cottrell, L. Tompkins and H. Wang. Pharmaceutical Sciences, University of Maryland School of Pharmacy, Baltimore, MD and Department of Pathology, University of Maryland School of Medicine, Baltimore, MD.

#85
Poster Board Number ........................................105
CELL CYCLE WITHDRAWAL INCREASES LIGAND-MEDIATED CYPIA1 EXPRESSION IN HUMAN KERATINOCYTES. G. L. Stevens, C. H. Sutter and T. R. Sutter. Biology, University of Memphis, Memphis, TN and W. Harry Feinestone Center for Genomics, University of Memphis, Memphis, TN.

#86
Poster Board Number ........................................106
ROLE OF MU-OPIOID RECEPTOR IN ANTI-OXIDATIVE INDUCTION OF GABAPENTIN AND TRAMADOL. X. Dai, C. D. Brunson, H. H. Loh, I. K. Ho and T. Ma. Anesthesiology, University of Mississippi Medical Center, Jackson, MS. Pharmacology and Toxicology, University of Mississippi Medical Center, Jackson, MS. Pharmacology, University of Minnesota Medical School, Minneapolis, MN and Mental Health and Substance Abuse Research, NHRI, Zhunan, Miaoli, Taiwan.

#87
Poster Board Number ........................................107
DEVELOPMENT AND APPLICATION OF A RECOMBINANT HUMAN HEPG2 CELL BIOASSAY FOR IDENTIFYING AHR LIGANDS. A. Hayashi, W. Hu, M. R. Fielden and M. S. Denisson. Environmental Toxicology, UC Davis, Davis, CA and ICONIX Pharmaceuticals, Mountain View, CA.

#88
Poster Board Number ........................................108
TRPMA1 IS A MAJOR OXIDANT SENSOR IN AIRWAY SENSORY NEURONS. S. E. Jordi, B. F. Bessac, M. Sivula, C. A. von Hehn, J. Escalera and L. Cohn. Pharmacology, Yale University School of Medicine, New Haven, CT and Internal Medicine, Yale University School of Medicine, New Haven, CT.

#89
Poster Board Number ........................................109
THE ARYL HYDROCARBON RECEPTOR (AHR) SIGNALING PATHWAY INTERACTIONS INFLUENCES AHR-MEDIATED CHANGES IN MATRIX METALLOPROTEINASE GENE EXPRESSION. T. W. Zalobowski and R. R. Merson. Biology, Rhode Island College, Providence, RI. Sponsor: M. Hahn.

#90
Poster Board Number ........................................110
BOTH AHR AND UNLIGANDED ERα ATTENUATE CYTOKINE-MEDIATED INDUCTION OF IL-8. B. DiNatale and G. H. Peredew. Department of Veterinary & Biomedical Science, The Pennsylvania State University, University Park, PA.

#91
Poster Board Number ........................................111
ANALYSIS OF AHR PROTEIN STABILITY IN A YEAST EXPRESSION MODEL. S. Wilson, K. Schmidt and R. S. Pollenz. Biology, University of South Florida, Tampa, FL.

#92
Poster Board Number ........................................112
THE ARYL HYDROCARBON RECEPTOR (AHR) IS NOT REQUIRED FOR ESTROGEN-DEPENDENT TUMOR FORMATION BY MCF-7 BREAST CANCER CELLS. D. C. Spink, B. C. Spink and J. A. Bennett. Wadsworth Center, New York State Department of Health, Albany, NY and Center for Immunology and Microbial Diseases, Albany Medical College, Albany, NY.
Program Description (Continued)

Abstract #

#93 Poster Board Number ..........................................113
FUNCTIONAL ROLE OF VON-HIPPEL LINDAU TUMOR SUPPRESSOR GENE MUTATIONS IN ARNT-MEDIATED TRANSCRIPTIONAL REGULATION OF DRUG METABOLISM, M. C. DeSimone1, C. Powell2, W. Rathmell1, and D. Threadgill2. 1Curriculum in Toxicology, UNC Chapel Hill, Chapel Hill, NC and 2Department of Genetics, UNC Chapel Hill, Chapel Hill, NC.

#94 Poster Board Number ..........................................114

#95 Poster Board Number ..........................................115
INVOLVEMENT OF TRPV1 AND ER STRESS IN LUNG CELL DEATH IN VITRO AND ACUTE LUNG INJURY IN VIVO. K. C. Thomas, G. S. Yost1, E. Valen2, and C. A. Reilly. Pharmacology and Toxicology, University of Utah, Salt Lake City, UT.

Monday Morning, March 16
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: AH RECEPTOR MEDIATED SIGNALLING

Chairperson(s): Gary Perdew, Penn State University, and Sarah Wilson, University of South Florida, Tampa, FL.

Displayed: 9:30 AM–12:30 PM

Author Attended: 11:00 AM–12:30 PM

#96 Poster Board Number ..........................................117
AHR-MEDIATED REGULATION OF STEAROYL-COA DESATURASE 1. M. M. Angrish1, L. D. Burgoom2, B. D. Metz2 and T. R. Zacharewski3,2. 1Genetics Program, Michigan State University, East Lansing, MI, 2Biochemistry and Molecular Biology, Michigan State University, East Lansing, MI and 3Center for Integrative Toxicology & National Food Safety and Toxicology Center, Michigan State University, East Lansing, MI.

#97 Poster Board Number ..........................................118

#98 Poster Board Number ..........................................119
ACTIVATED ARYL HYDROCARBON RECEPTOR MODULATES THE GENOMIC BINDING PROFILE OF ESTROGEN RECEPTOR ALPHA. S. Ahmed1, E. Valen1, A. Sandelin1 and J. Matthews1. 1Department of Pharmacology & Toxicology, University of Toronto, Toronto, ON, Canada and 2The Bioinformatics Centre, Department of Molecular Biology & Biotech Research and Innovation Centre, University of Copenhagen, Copenhagen, Denmark.

#99 Poster Board Number ..........................................120
DIFFERENTIAL GENE REGULATION BY THE HUMAN AHR IN TRANSGENIC HUMANIZED MOUSE HEPATOCYTES. C. A. Flaveny, I. A. Murray, B. DiNatale and G. H. Perdew. Center for Molecular Toxicology and Carcinogenesis, Penn State University, University Park, PA.

#100 Poster Board Number ..........................................121
TCDD DOWNREGULATES SOX9B mRNA EXPRESSION IN ZEBRAFISH JAW EXPLANTS. K. M. Xiong1, R. E. Peterson2 and W. Heidenman1,2. 1Biomolecular Chemistry, University of Wisconsin at Madison, Madison, WI and 2Pharmacy, University of Wisconsin at Madison, Madison, WI.

#101 Poster Board Number ..........................................122
MECHANISMS OF INTESTINAL BCRP INDUCTION BY 3MC: EVIDENCE FOR AHR SIGNALING PATHWAY. L. M. Tompkins1, H. Li2, T. Nakanishi2, D. Ross3 and H. Wang. 1University of Maryland, School of Pharmacy, Baltimore, MD and 2University of Maryland, Greenebaum Cancer Center, Baltimore, MD.

#102 Poster Board Number ..........................................123
REPRESSION OF CARDIOMYOCYTE MARKERS BY AH RECEPTOR LIGANDS DURING DIFFERENTIATION OF MOUSE EMBRYONIC STEM CELLS. Y. Wang, Y. Fan and A. Pago. Environmental Health, University of Cincinnati College of Medicine, Cincinnati, OH.

#103 Poster Board Number ..........................................124
BENZO[α]PYRENE INCREASES REACTIVE OXYGEN SPECIES AND REGULATES THE METALLOTHIONEIN, CYTCHROME P450 AND ALDO-KETO REDUCTASES MESSENGER RNA LEVELS IN HUMAN LUNG ADENOCARCINOMA A549 CELLS. Y. Rodríguez-Vázquez1, B. Cisneros1, E. Brambila1 and A. Albores1. 1Toxicology Section, CINVESTAV-IPN, Mexico City, D.F., Mexico, 2Genetics Department, CINVESTAV-IPN, Mexico City, D.F., Mexico and 3Biochemistry and Molecular Biology Department, Benemérita Universidad Autónoma de Puebla, Puebla, Pue, Mexico.

#104 Poster Board Number ..........................................125
MICRORNAS IN DEVELOPMENTAL TOXICOLOGY: EFFECTS OF TCDD ON MICRORNA EXPRESSION IN EMBRYOS. M. J. Jenny and M. E. Hohn. Biology, Woods Hole Oceanographic Institution, Woods Hole, MA.

#105 Poster Board Number ..........................................126
3-METHYLCOLANTHRENE INDUCED GENOME-WIDE BINDING PROFILES OF ARYL HYDROCARBON RECEPTOR AND ESTROGEN RECEPTOR ALPHA. A. Hansoy, S. Ahmed, L. MacPherson and J. Matthews. Pharmacology & Toxicology, University of Toronto, Toronto, ON, Canada.

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**Legend**

- **EC**: Education-Career Development Sessions
- **EH**: Exhibitor Hosted Sessions
- **HS**: Historical Highlights
- **IS**: Informational Sessions
- **PS**: Platform Sessions
- **FS**: Featured Sessions
Program Description (Continued)

Abstract #

#106 Poster Board Number ..................................127
LOW-DOSE REPRESSION OF ARYL HYDROCARBON RECEPTOR SIGNALING BY RESVERATROL IS MEDIATED BY ESTROGEN RECEPTORS IN HUMAN CANCER CELL LINES. G. H. Peredw1, D. Hollingshead2, J. Morales3, M. K. Takhar2 and T. V. Bischlaga. 1Department of Veterinary and Biomedical Sciences, The Pennsylvania State University, State College, PA and 2Faculty of Health Sciences, Simon Fraser University, Burnaby, BC, Canada.

#107 Poster Board Number ..................................128
DEVELOPING TOOLS FOR RISK ASSESSMENT IN PROTECTED SPECIES: RELATIVE POTENCIES INFERRED FROM COMPETITIVE BINDING OF HALOGENATED AROMATIC HYDROCARbons TO ARYL HYDROCARBON RECEPTORS FROM BELUGA (DELPHINAPERKUS LEUCAS). B. Jensen1 and M. Hahn1. College of Natural Sciences, Hawaii Pacific University, Kaneohe, HI and 2Biology, Woods Hole Oceanographic Institution, Woods Hole, MA.

#108 Poster Board Number ..................................129
2, 3, 7, 8-TCMTS MEASURES ON BIocide FORMULATION ON ADULT VOLUNTEERS WITH NORMAL SKIN. L. Mathieu1, F. Burgher1, A. H. Hall2 and H. J. Mapbach3. PREVOR, Valmondois, France, 1TCMTS, Laramie, WY and 2DermatoLogy, UC San Francisco, San Francisco, CA.

#109 Poster Board Number ..................................130
MODULATION OF GENE EXPRESSION NETWORKS BY 2, 3, 7, 8-TETRACHLORIDIBENZO-P-DIOXIN. C. Mattingly1, W. A. Toscano1, N. E. Griffin1 and A. J. Planchard1, MDIBL, Salisbury Cove, ME and 2University of Minnesota, Minneapolis, MN.

#110 Poster Board Number ..................................131

#111 Poster Board Number ..................................132
A METHOD DEVELOPMENT STUDy TO ASSESS THE RECEPTOR EFFECTIVENESS OF MEASURES TO PREVENT CROSS CONTAMINATION DURING TOPICAL APPLICATION. B. Procter. ITR Laboratories Canada Inc., Baie d’Urfe, QC, Canada. Sponsor: B. Procter.

#112 Poster Board Number ..................................133
DETERMINATION OF THE OPERATIONAL BARRIER PH OF PORCINE SKIN USING A DERMAL ABSORPTION MODEL. J. E. Riviere and J. D. Brooks. Center for Chemical Toxicology Research and Pharmacokinetics, North Carolina State University, Raleigh, NC.

#113 Poster Board Number ..................................134

#114 Poster Board Number ..................................135

#115 Poster Board Number ..................................136
EVALUATION OF THE SENSITIZING POTENTIAL OF DIPHOTERINE® IN ADULT VOLUNTEERS WITH NORMAL SKIN. L. Mathieu1, F. Burgher1, A. H. Hall2 and H. J. Mapbach3. PREVOR, Valmondois, France, 1TCMTS, Laramie, WY and 2Dermatology, UC San Francisco, San Francisco, CA.

#116 Poster Board Number ..................................137
CYTOKINES IN RAT SKIN AFTER A ONE-HOUR EXPOSURE OF JET PROPULSION FUEL-8. T. J. Kannanayakul, C. M. Garrett and J. N. McDougall. Pharmacology and Toxicology, Boonshoft School of Medicine, Wright State University, Dayton, OH.

#117 Poster Board Number ..................................138
UV EFFECTS AND CHEMICALS SKIN TOLERANCE ASSESSMENT USING THE IVIVTO RECONSTRUCTED HUMAN FULL THICKNESS SKIN MODEL REALSKIN. M. Grandisard1, D. Lebèvre1, N. L1, E. Tinois-Tessonneaud2 and J. Cotovio1, 1Life Sciences, L’OREAL Research, Aulnay sous Bois, France and 2EPISKIN snc, Lyon, France. Sponsor: E. Defoort.

#118 Poster Board Number ..................................139
EFFECT OF METAL WORKING FORMULATIONS ON BIOCIDAL ABSORPTION IN A PDMS MEMBRANE COATED FIBER. R. E. Baynes and B. M. Barlow. Center for Chemical Toxicology Research and Pharmacokinetics, North Carolina State University, Raleigh, NC.

Monday Morning, March 16
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: DERMAL ABSORPTION AND SKIN TOXICITY

Chairperson(s): Nancy Monteiro-Riviere, North Carolina State University, Raleigh, NC.

Displayed: 9:30 AM–12:30 PM

Author Attended: 9:30 AM–11:00 AM

Poster Sessions
Symposia Sessions
Regional Interest Session
Thematic Sessions
Roundtable Sessions
Workshop Sessions

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Abstract #
#119  Poster Board Number ............................140

**CUTANEOUS RADIATION INJURY: LIPOSOMAL GLUTATHIONE TREATMENT AND MONITORING BY OPTICAL REFLECTANCE SPECTROSCOPY.** K. D. Thrall1, S. A. Bryan1, T. G. Levitskia1, J. M. Peterson1 and T. Guilford1. 1Pacific Northwest National Laboratory, Richland, WA and 2Your Energy Systems, LLC, Palo Alto, CA.

#120  Poster Board Number ............................141

**RETINYL PALMATE INCRESSES THE MULTIPLICITY OF SKIN TUMORS IN CRL:SKH-1 (HR/HR) HAIRLESS MICE EXPOSED TO SIMULATED SOLAR LIGHT.** M. D. Boudreau1, G. R. Olson1, P. J. Webb1, B. J. Miller2, P. C. Howard1, M. V. Pogribna1, J. A. Nichols1 and P. P. Fu1. 1Division of Biochemical Toxicology, National Center for Toxicological Research, FDA, Jefferson, AR and 2Risk Sciences, LLC, Sacramento, CA and 3Valent Biosciences, Libertyville, IL.

#121  Poster Board Number ............................142

**PERCUTANEOUS ABSORPTION OF CHEMICAL VAPORS THROUGH EXCISED PIG SKIN. A BIOLOGICAL ENDPOINT MODEL FOR EVALUATING PROTECTIVE CLOTHING.** G. Leach1, W. Reifenrath1, G. Reddy2 and W. McCauley2. 1Stratocor, Inc., Richmond, CA and 3Division of Biochemical Toxicology, National Center for Toxicological Research, FDA, Jefferson, AR.

#122  Poster Board Number ............................143

**ESTIMATED DERMAL PENETRATION OF PERMETHRIN IN HUMANS BASED ON IN VITRO AND IN VIVO DATA.** J. Ross1, J. Driver1, W. Reifenrath1 and N. Assaf2. 1Risk Sciences, LLC, Sacramento, CA, 2Stratocor, Inc., Richmond, CA and 3Valent Biosciences, Libertyville, IL.

#123  Poster Board Number ............................144

**DERMAL IRRITANCY OF ALIPHATIC HYDROCARBONS (C9-C14) USING THE IN VITRO EPIDERM FULL THICKNESS (EFT-300) SKIN MODEL.** R. Mallampati1, R. R. Patolla1, R. J. Bohs1, M. Klausner1, P. Hayden1 and M. S. Sachdeva1. 1PHARMAUTICS, FLORIDA A&M UNIVERSITY, Tallahassee, FL, 2MaTek Corporation, 200 Homer Avenue, Ashland, MA and 3Harrison school of pharmacy, Auburn university, Auburn, AL.

#124  Poster Board Number ............................145

**SKIN PENETRATION OF PERMETHRIN AFTER TOPICAL APPLICATION TO EXCISED RAT AND HUMAN SKIN.** W. Reifenrath1, J. Ross1 and N. Assaf1. 1Stratocor, Inc., Richmond, CA, 2Risk Sciences, LLC, Sacramento, CA and 3Valent Biosciences, Libertyville, IL.

#125  Poster Board Number ............................146

**SKIN PENETRATION OF PERMETHRIN AFTER TOPICAL APPLICATION TO LIVE RATS.** T. Doherty1, W. Reifenrath1, J. Ross1 and N. Assaf1. 1Stratocor, Inc., Richmond, CA, 2Risk Sciences, LLC, Sacramento, CA and 3Valent Biosciences, Libertyville, IL.

#126  Poster Board Number ............................147


#127  Poster Board Number ............................148

**CYP450 CHARACTERIZATION OF THE RECONSTRUCTED HUMAN EPIDERMIS EPISKIN™ INVOLVED IN XENOBIOTIC METABOLISM.** J. Eilstein1, P. Meunier1, M. Manso2, J. Pachot2, V. Luu-The2, P. Labrie3, J. Meunier1, J. Leclaire1 and D. Duché3. 1Life Sciences Research-Safety Research Department, L’Oréal Advance Research, Aulnay-sous-Bois, France, 2Orocell, Romainville, France and 3Oncoology and Molecular Endocrinology Research Center, Laval University Hospital Research Center (CRCHUL) and Laval University, Québec, QC, Canada. Sponsor: E. Dufour.

#128  Poster Board Number ............................149

**QUANTIFICATION OF PHASES 1 AND 2 METABOLIZING ENZYMES IN EPISKIN™ AND NORMAL HUMAN EPIERMIS.** D. Duché1, V. Luu-The2, C. Ferraris1, J. Leclaire1 and F. Labrie2. 1Life Sciences Research-Safety Research Department, L’Oréal Advanced Research, Aulnay-sous-Bois, France and 2Oncology and Molecular Endocrinology Research Center, Laval University Hospital Research Center (CRCHUL) and Laval University, Quebec, Canada. Sponsor: E. Dufour.

#129  Poster Board Number ............................150

**AN INITIAL EVALUATION OF THE CELLSYSTEMS EST-1000 RECONSTRUCTED HUMAN SKIN MODEL FOR DISTINGUISHING R34 AND R35 CORROSIVES IN VITRO.** H. Bytheway1, D. Fuchs1, H. Fuchs1, R. Guest1, J. Hoffman1, N. Warren1 and A. Whittingham1. 1Harlan Laboratories, Indianapolis, IN, 2SafePharm Laboratories, Derby, United Kindom and 3CellSystems Biotechnologie Vertrieb GmbH, St Katharinen, Germany. Sponsor: S. Corney.

#130  Poster Board Number ............................151


#131  Poster Board Number ............................152

**IDENTIFICATION OF MOLECULAR THERAPEUTIC TARGETS IN PORCINE SKIN EXPOSED TO BROMINE USING TOXICOGENOMICS.** J. Rogers1, J. Price1, J. McDougall1, M. Shaw1, R. Kiser1, F. Reid1 and J. Graham1. 1Battelle, Columbus, OH, 2Wright State University, Dayton, OH and 3USAMRICD, APG, MD.
Society of Toxicology 2009

Program Description (Continued)

Abstract #

Poster Board Number ..................................153
INTRACUTANEOUS ADMINISTRATION
AS A METHOD FOR EVALUATION OF
PHOTOTOXICITY. D. B. Learnt, C. P. Sambuco,
P. D. Forbes and A. M. Hoberman. Charles River
Laboratories, Horsham, PA.

Poster Board Number ..................................154
THE USE OF HUMAN DATA WHEN
CONDUCTING DERMAL SENSITIZATION
QUANTITATIVE RISK ASSESSMENTS
FOR FRAGRANCE INGREDIENTS; HOW
WELL DOES THE LLNA PREDICT HUMAN
NOELS? A. Apf J. Lalko and V. T. Politano.
Research Institute for Fragrance Materials, Inc.,
Woodcliff Lake, NJ.

Poster Board Number ..................................155
HUMAN CADAVER SKIN: A VALID
SURROGATE MODEL FOR THE
DEVELOPMENT OF TOPICAL AND
TRANSDERMAL DRUGS. T. J. Franz, P. A.
Lehman and S. A. Raney. Cetero Research, Fargo,
ND.

Poster Board Number ..................................156
STRATATEST™ TISSUE, A NOVEL IN VITRO
ALTERNATIVE FOR CYTOXICITY
TESTING. C. Rasmussen, A. Comer, J. Pirnstill, S.
Stratatech Corporation, Madison, WI.

Poster Board Number ..................................157
FROM TOPICAL ANTIDOTE AGAINST
SKIN IRRITANTS TO A NOVEL COUNTER-
IRRITATING AND ANTI-INFLAMMATORY
PEPTIDE. U. Wormser, A. Erlanger-Rosengarten,
E. Procura, E. Shapira and B. Brodsky.
Pharmacology, The Hebrew University, Jerusalem,
Israel.

Poster Board Number ..................................158
A STUDY OF PHOTOTOXICITY
EVALUATION BY ORAL ADMINISTRATION TO BALB/C MICE. S. Utsumoniyia, Y. Takahashi,
Y. Tanaka, K. Kumano, Y. Yamasita, T. Ichii, Y.
Otsubo, T. Nakamura, H. Izumi, T. Sukamoto and
N. Nagata. Shin Nippon Biomedical Laboratories
(SNBL), Ltd., Kogashima, Japan.

Poster Board Number ..................................159
TOPICAL APPLICATION OF ANTI-
INFLAMMATORY COMPOUNDS IN AN
EX VIVO HUMAN SKIN INFLAMMATION
MODEL. D. C. Bunton, E. J. Moss and K.
Macdonald. Weipers Centre, Biopta, Glasgow,
United Kingdom. Sponsor: S. Kirk.

Poster Board Number ..................................160
EFFECT OF BREVENAL ANTAGONISM IS
CELL LINE DEPENDENT. R. N. Marrelli1, A.
J. Bourdelais2, D. G. Baden1 and J. E. Gibson3.
1Environmental and Molecular Toxicology, NCSU,
Raleigh, NC, 2Center for Marine Science, UNCW,
Wilmington, NC, 3Chemistry, UNC, Wilmington,
NC and 4Pharmacology and Toxicology, ECU,
Greenville, NC.

Monday Morning, March 16
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: INSIGHTS IN ENDOCRINE ACTION AND
TOXICOLOGY

Chairperson(s): Kevin Crofton, U.S. EPA, Research Triangle Park, NC.

Displayed: 9:30 AM–12:30 PM

Author Attended: 11:00 AM–12:30 PM

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Poster Board Number ..................................201
DEVELOPMENT OF A SPECIFIC
ASSAY FOR THE DETERMINATION OF
AROMATASE ENZYME ACTIVITY. H.
Tinwell1, J. Rascel2 and R. Bars3. 1Research
Toxicology, Bayercropscience, Sophia Antipolis,
France and 2and Experimental Toxicology, Bayer
CropScience, Sophia Antipolis, France.

Poster Board Number ..................................202
ESTROGEN RECEPTOR ALPHA
OVEREXPRESSION IN MICE MAY BE A
USEFUL TOOL FOR STUDYING THE
EFFECTS OF ESTROGENIC COMPOUNDS
ON THE REPRODUCTIVE SYSTEM. J. Peretz,
T. Paulose, R. K. Gupta and J. A. Flus. Veterinary
Biosciences, University of Illinois Uc, Urbana, IL.

Poster Board Number ..................................203
ACTIVATION OF THE ARYL HYDROCARBON RECEPTOR (AHR)
DURING PREGNANCY IMPAIRS
MAMMARY EPITHELIAL CELL
DIFFERENTIATION THROUGH DIRECT
AND INDIRECT ACTIONS. B. J. Lev, B. N.
Winars and B. Lawrence. Environmental Medicine,
University of Rochester, Rochester, NY.

Poster Board Number ..................................204
ARSENIC INHIBITION OF T47D CELL
GROWTH IS ASSOCIATED WITH
PROMOTE HYPMETHYLATION OF
RASSFIA AND CCDN2 GENES. Y. Zang and
J. D. Tager. Johns Hopkins Bloomberg School of
Public Health, Baltimore, Baltimore, MD.

Poster Board Number ..................................205
AMPLIFICATION OF GLUCOCORTICOID-
INDUCED CYTOTOXICITY OF NB2
LYMPHOMA CELLS BY RESVERATROL:
EVIDENCE FOR A NOVEL MODE OF
ACTION FOR POTENTIAL ENDOCRINE
DISRUPTORS. R. J. Wiorsch. Physiology and
Biophysics, Virginia Commonwealth University,
Richmond, VA.

Poster Board Number ..................................206
EVALUATION OF PITUITARY AND
ADRENAL HORMONE RELEASE
FOLLOWING EXPOSURE TO ATRAZINE
AND ITS METABOLITE DEISOPROPYL-
ATRAZINE (DIA), USING TISSUE
PERFUSION. M. G. Hotchkiss, R. L. Cooper
and S. C. Laws. Reproductive Toxicology Division,
NHEERL, ORD, U.S. EPA, RTP, NC.
Abstract #148

**Poster Board Number** ..........................207

**EFFECTS OF 2, 3, 7, 8-TETRACHLORODIBENZO-P-DIOXIN ON INSULIN SECRETION STIMULATED BY GLUCOSE IN MICE.** K. Hisaka1, Y. Wataru1, N. Noriko2, K. Naoto3, K. Takashi3 and T. Chiharu4,5. Laboratory of Environmental Health Sciences, Center for Disease Biology and Integrative Medicine, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan, 2Research Center for Environmental Risk, National Institute for Environmental Studies, Tsukuba, Japan, 3Department of Metabolic Diseases, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan, 4Laboratory of Toxicology, Graduate School of Medicinal Sciences, University of Tsukuba, Tsukuba, Japan, and 5Graduate School of Medicine, The University of Tokyo, Tokyo, Japan.

**Abstract #149**

**Poster Board Number** ..........................208

**DISRUPTION OF STEROIDOGENESIS BY DI-(2-ETHYLHEXYL) PHthalATE AND ITS METABOLITES IN MA-10 CELLS.** C. D. Piche1, R. Leask1 and B. Robaire3. Chemical Engineering, McGill University, Montreal, QC, Canada and 2Pharmacology and Therapeutics, McGill University, Montreal, QC, Canada.

**Abstract #150**

**Poster Board Number** ..........................209

**CYCLIC ETHANOL METABOLISM IN HYPOPHYSECTOMIZED RATS CONTINUOUSLY INFUSED ALCOHOL-CONTAINING DIETS.** T. M. Balger1,2, M. Ferguson1 and M. J. Ronis1,2. 1Laboratory of Environmental Health Sciences, University of Texas El Paso, El Paso, TX and 2Department of Biological Sciences, University of Texas El Paso, El Paso, TX.

**Abstract #151**

**Poster Board Number** ..........................210

**POTENTIAL ROLE OF THE ADRENAL AXIS ON THE REPRODUCTIVE EFFECTS OF ATRAZINE.** M. J. Fraites, A. Buckalew and R. Cooper. ORD, NHEERL, Reproductive Toxicology, U.S. EPA, RTP, NC.

**Abstract #152**

**Poster Board Number** ..........................211

**TRANSCRIPTIONAL ACTIVATION OF ANDROGEN-REGULATED GENES BY ARYL HYDROCARBON RECEPTOR AGONIST IN ANDROGEN-RESPONSIVE CELL LINES.** Y. Gotoh1, N. Sanada1 and R. Kizu1. Faculty of Pharmaceutical Sciences, Doshisha Women’s College of Liberal Arts, Kyoto, Japan and 2Graduate School of Natural Science and Technology, Kanazawa University, Kanazawa, Ishikawa, Japan.

**Abstract #153**

**Poster Board Number** ..........................212

**MICE LACKING MRPI HAVE REDUCED TESTICULAR STEROID HORMONE LEVELS AND ALTERATIONS IN TESTOSTERONE SYNTHESIS.** J. Sivils1, J. A. Munger1 and L. J. Baine1, 2. Department of Biological Sciences, University of Texas El Paso, El Paso, TX and 3Department of Biological Sciences, Clemson University, Pendleton, SC.
Program Description (Continued)

Abstract #

#160  Poster Board Number ...........................................221  REPRODUCTIVE TOXICITY AND PHARMACOKINETICS OF DL-N-BUTYL PHTHALATE (DBP) FOLLOWING DIETARY EXPOSURE OF PREGNANT RATS. M. F. Straue1, K. W. Guidera2, J. B. Hensley2, K. P. Lehmann3, S. M. Ross4, M. A. Sochaski5, G. A. Willson6 and D. C. Dorman7,2. College of Veterinary Medicine, North Carolina State University, Raleigh, NC, 2The Hamner Institutes of Health Sciences, Research Triangle Park, NC and 3EPL, Inc., Research Triangle Park, NC.

#161  Poster Board Number ...........................................222  APPLICATION OF AN INTELLIGENT TESTING STRATEGY TO THE U.S. EPA ENDOCRINE DISRUPTOR SCREENING PROGRAM. K. M. Sullivan1 and C. Willett2. Physicians Committee for Responsible Medicine, Washington, DC and People for the Ethical Treatment of Animals, Norfolk, VA.

#162  Poster Board Number ...........................................223  SHORT-TERM EXPOSURE TO TRIFLURALIN DISRUPTS THYROID HORMONE HOMEOSTASIS IN RATS. J. M. Hedge1, K. B. Paul1 and K. M. Crofton1, U.S. EPA, Research Triangle Park, NC and 1UNC, Chapel Hill, NC.

#163  Poster Board Number ...........................................224  TRICLOSAN DISRUPTS THYROID HORMONE HOMEOSTASIS IN RATS. J. M. Hedge1, K. B. Paul1 and K. M. Crofton1, U.S. EPA, Research Triangle Park, NC and 1UNC, Chapel Hill, NC.

#164  Poster Board Number ...........................................225  COMPARATIVE DEVELOPMENTAL THYROID STUDIES WITH 6-PROPYL-2-THIOURACIL (PTU) USING TWO RAT STRAINS (WISTAR VERSUS SPRAGUE-DAWLEY)—RESULTS OF TREATMENT-RELATED EFFECTS IN THYROID HORMONES AND THYROID MORPHOLOGY. S. Schneider1, R. Buesen1, W. Kaufmann1, V. Strauss1, B. van Ravenzwaay1, C. Hastings1 and F. Hess1. Experimental Toxicology & Ecology, BASF AG, Ludwigshafen, Germany and 1BASF Corporation, Research Triangle Park, NC.

#165  Poster Board Number ...........................................226  EVALUATION OF SUBCHRONIC TOXICITY AND ESTROGENIC ACTIVITY OF BLACK COHOSH IN FEMALE WEANLING WISTAR HAN RATS EXPOSED BY GAVAGE. M. D. Stout1, S. A. Elmore1, L. M. Fomby2, P. M. Foster1, D. R. Germolec1, G. E. Kissling1, D. E. Marlarkey2, G. S. Travlos1, M. K. Vallant1 and R. S. Chhabra1. NIH, NIEHS, Research Triangle Park, NC and 1Batelle, Columbus, OH.

Abstract #

#166  Poster Board Number ...........................................227  IN UTERO EXPOSURE TO CHLOROQUINE REDUCES TESTOSTERONE AND STEROIDGENIC GENE EXPRESSION IN FETAL RAT TESTES. R. A. Clewell1 and M. E. Andersen2. 1University of North Carolina, Chapel Hill, NC and 2The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

Monday Morning, March 16
9:30 AM to 12:30 PM
Exhibit Hall

NEURODEGENERATIVE DISEASE

POSTER SESSION: NEUROTOXICITY—DEVELOPMENTAL

Chairperson(s): Christopher Toscano, U.S. FDA, Columbia, MD.

Displayed: 9:30 AM—12:30 PM

Author Attended: 9:30 AM—11:00 AM


#168  Poster Board Number ...........................................232  DIFFERENTIAL SPATIOTEMPORAL REGULATION OF BASIC HELIX-LOOP-HELIX (BHHL) AND HOMEODOMAIN (HD) TRANSCRIPTION FACTORS DURING GESTATIONAL LEAD EXPOSURE (GLE) SELECTIVELY INCREASES THE NUMBER OF LATE-BORN RETINAL NEURONS. A. Siddababapu, S. Mukherjee, W. Xiao, S. Chaney and D. A. Fox. University of Houston, Houston, TX.

#169  Poster Board Number ...........................................233  ASSESSMENT OF SYNAPSE FORMATION IN RAT PRIMARY NEURAL CELL CULTURE USING HIGH CONTENT MICROSCOPY. J. A. Harrill, T. M. Freudenrich, B. Robinette and W. R. Mundy. Cellular and Molecular Toxicology Branch, Neurotoxicology Division, U.S. EPA, RTP, NC.

#170  Poster Board Number ...........................................234  LEAD EXPOSURE AND EXTERNALIZING BEHAVIOR IN KINDERGÄRTEN CHILDREN. J. Liu1, L. McCauley1, J. Pintomartin1, X. Shen2, C. Yan3 and H. Needleman4. 1University of Pennsylvania, Philadelphia, PA; 2Shanghai Jiaotong University, Shanghai, China and 3University of Pittsburgh, Pittsburgh, PA.
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<td>CHANGE OF GENE EXPRESSION PROFILES IN ZEBRAFISH EMBRYOS AS AN ENDPOINT IN NEUROTOXICITY SCREENING. C. Fan, S. Padilla, R. Ramabhadran, U.S. EPA, Research Triangle Park, NC and ‘Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC.</td>
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<td>EXPOSURE TO PYRETHRIDS INSECTICIDES ALTERS EXPRESSION OF GENES IMPORTANT FOR DOPAMINERGIC NEURONAL DEVELOPMENT, A. DeMicco, K. R. Cooper, J. R. Richardson and L. A. White, Biochemistry and Microbiology, Rutgers University, New Brunswick, NJ and Environmental and Occupational Health Sciences Institute, UMDNJ, Picataway, NJ.</td>
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<td>DEVELOPMENTAL NEUROTOXICITY OF ACRYLAMIDE IN WISTAR RATS. M. V. Patel, S. M. Paneliya, M. M. Ghag and P. B. Deshmukh, Toxicology, Jai Research Foundation, Valavada-369108, Gujarat, India and Toxicology and Pharmacology Services, Jai Research Foundation, Valavada-369108, Gujarat, India.</td>
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<td>EARLY EXPOSURE TO OXYTOCIN ALTERS ZEBRA FINCH VOCAL DEVELOPMENT. B. Riffe and K. Soderstrom, Pharmacology and Toxicology, ECU, Greenville, NC.</td>
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<tr>
<td>PROTECTION FROM KETAMINE-INDUCED DNA DAMAGE IN RAT FOREBRAIN CULTURE BY L-CARNITINE. V. V. Sadowova, X. Zou, X. Zhang, J. P. Hanig, C. M. Paule, W. Slikker and C. Wang, Toxicologic Pathology Associates, Jefferson, AR.</td>
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<td>VALPROATE-INDUCED ABNORMAL DEVELOPMENT NEUROTOXICITY IS AFFECTED BY MATERNAL CONDITIONS, INCLUDING SHIPPING STRESS. M. Kuwagata, T. Ogawa, S. Shiolda and T. Nagata, Laboratory of Pathology, Toxicology, Hatano Research Institute, Food and Drug Safety Center, Kanagawa, Japan.</td>
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<th>#181</th>
<th>Poster Board Number ..................................</th>
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<tr>
<td>TIME COURSE OF CHOLINESTERASE INHIBITION FOLLOWING DEVELOPMENTAL CHLORPYRIFOS EXPOSURE USING DIFFERENT ADMINISTRATION PARADIGMS. R. L. Carr and C. A. Nail, Center for Environmental Health Sciences, Mississippi State University, Mississippi State, MS.</td>
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<th>#182</th>
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<tr>
<td>HIGH-THROUGHPUT BEHAVIORAL QUANTIFICATION OF DH(2-ETHYLHEXYL) PHTHALATE (DEHP) EXPOSED RATS. T. J. Zarcone, D. M. Carbonari, A. M. Katz, A. W. Duncan and B. Weiss, Environmental Medicine, University of Rochester Medical Center, Rochester, NY and Pediatrics, University of Rochester Medical Center, Rochester, NY.</td>
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<th>#183</th>
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<tr>
<td>DEVELOPMENTAL EXPOSURE TO DLTAMETHRON RESULTS IN REGIONAL ALTERATIONS IN SODIUM CHANNEL SUBUNIT AND BRAIN-DERIVED NEUROTROPHIC FACTOR mRNA EXPRESSION. J. P. Magby and J. Richardson, RWJMS, Piscataway, NJ.</td>
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#186
**Poster Board Number** ............................... 250
**ASSessment of the Neurotoxicity of Acrylamide and Trimethyltin Chloride in the Harlan Han Wistar Rat**, K. Weber1, N. Dhinsa2 and E. Wood2, Harlan Laboratories, Indianapolis, IN and 1RC Ltd, Iningen, Switzerland. Sponsor: V. Feron.

#187
**Poster Board Number** ............................... 251
**Developmental Neurotoxicity: Practical Experience from the Conduct of a Validation Study**, S. Corney1, C. Senn2, E. Sommer1, R. Gerspach1 and G. Krikke2, Harlan Laboratories, Indianapolis, IN and 1RC Ltd, Iningen, Switzerland.

#188
**Poster Board Number** ............................... 252
**Biologically-Based Modeling to Assess Early Embryonic Exposure to Xenobiotics Suited for Neurobehavioral Teratology Studies**, M. R. Goldsmith, R. Tornero-Velez and C. C. Dary, NERL/HEAS/EDRB, US. Environmental Protection Agency, Durham, NC.

#189
**Poster Board Number** ............................... 253
**Effects of Prenatal Haloperidol Exposure on the Developing Rat**, R. L. Williams1, R. R. Holson1 and K. F. Soliman2, 1CDC/ATSDR, Atlanta, GA, 2Psychology, New Mexico Tech, Albuquerque, NM and 3College of Pharmacy and Pharmaceutical Sciences, Florida A&M University, Tallahassee, FL.

#190
**Poster Board Number** ............................... 254
**Molecular and Cellular Characterization of Methymercury and Selenium Synaptotoxicity in the Developing Hippocampus of Rats and Mice**, J. Hradsky1, U. Kreher2, K. Braun3 and R. Nass1, 1Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN and 2Zoology/Developmental Neurobiology, Otto von Guericke University, Magdeburg, Germany.

#191
**Poster Board Number** ............................... 255
**Lifetime Studies of Developmentally PB-Exposed Mice and Alzheimer's Disease Biomarkers in the Brain and Blood: Alterations in Amyloid Precursor Protein, Specificity Protein 1 (SIP1) and Amyloid-Beta**, R. S. Dosanmu and N. H. Zawia, Biomedical and Pharmaceutical Sciences, University of Rhode Island, Kingston, RI.

#192
**Poster Board Number** ............................... 256
**Genetic Variation in Behavioral and Brain Transcriptional Effects of MeHg Exposure**, C. M. Foster1, J. S. Spence1, M. Beckmann1, W. Curd1, V. M. Phillips1, S. Durvasula1,2,3, G. N. Barnes1, M. Aschner4 and E. J. Chester1, Biosciences Division, Oak Ridge National Labs, Oak Ridge, TN and 2Pediatrics, Vanderbilt University Medical Center, Nashville, TN.

#193
**Poster Board Number** ............................... 257
**Low-Dose Methymercury (MeHg) Exposure Activates Caspase-3 in Postnatal Rat Hippocampus**, K. B. Sokolowski1, A. Fallaiu-More1, X. Zhou1 and E. DiCicco-Bloom2, 1Joint Graduate Program in Toxicology, Rutgers, Highland Park, NJ and 2Neuroscience and Cell Biology, Robert Wood Johnson Medical School, Piscataway, NJ.

#194
**Poster Board Number** ............................... 258
**Glial Inflammatory Responses and Age-Dependent Susceptibility to Manganese-Induced Neurotoxicity**, J. Moreno1,2, K. Streifel1, K. Sullivan3, M. Legare3, R. Tjalsma2, 1ERHS, Colorado State University, Fort Collins, CO and 2Cell and Molecular Biology Program, Colorado State University, Fort Collins, CO.

#195
**Poster Board Number** ............................... 259
**Manganese Impairs the Ability of Astrocytes to Promote Neurite Outgrowth in Rat Hippocampal Primary Neurons**, L. G. Costa1, D. Pizzurro2, K. Dao1, M. Guizzetti1 and G. Giordano2, 1Department of Environmental and Occupational Health Sciences, University of Washington, Seattle, WA and 2Department of Human Anatomy, Pharmacology and Forensic Science, University of Parma Medical School, Parma, Italy.

#196
**Poster Board Number** ............................... 260
**Perinatal Lead Exposure Alters Postnatal Cholinergic and Amimergic System in Rat Brain: Reversal Effect of Calcium Co-administration**, R. R. Gottipolu1, D. B. Chinthirala1 and C. S. Chellil1, 1Zoology, S.V.University, Tirupati, India, 2Zoology, S.P.W. UG and PG College, Tirupati, India and 3Natural Sciences and Mathematics, Savannah State University, Savannah, GA.
Program Description (Continued)

Abstract #  Poster Board Number ...................................... 301
#197 THE TRAJEKTORY OF BRAIN MONOAminES ACROSS TIME
FOLLOWING MATERNAL LEAD (Pb)
EXPOSURE AND OR PRENATAL STRESS IS ALTERED BY BEHAVIORAL HISTORY. D.
A. Cory-Slechta¹, M. B. Virgolini², A. Rossi-George³ and M. Thruchelman⁴. ¹Environmnetal Medicine,
University of Rochester Medical School, Rochester, NY and ²EHOIS, Piscataway, NJ.

Abstract #  Poster Board Number ...................................... 302
#198 ADVANTAGES OF MONKEY NEUROBEHAVIORAL ASSESSMENT USING
THE FUNCTIONAL OBSERVATIONAL BATTERY (FOB)—COMPARATIVE STUDY
WITH DOGS AND RATS—Y. Deguchi, T. Yoshikawa, K. Yunomae, Y. Numata, R. Anraku, A.
Biomedical Laboratories (SNBL), Ltd, Kagoshima, Japan.

Abstract #  Poster Board Number ...................................... 303
#199 MONITORING NEURITE MORPHOLOGY AND SYNAPSE FORMATION IN PRIMARY
NEURONS FOR NEUROTOXICITY ASSESSMENTS AND DRUG SCREENING. S.

Monday Morning, March 16
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: CARDIOVASCULAR TOXICITY I

Chairperson(s): Lisa Biegel, Covance, Madison, WI.

Abstract #  Poster Board Number ...................................... 304
#200 DIESEL EXHAUST EXPOSURE ALTERS MICROVASCULAR BLOOD FLOW
AND WALL SHEAR RATE, K. Sites, A. Goodwill, J. Frisbee and T. Narkiewicz. Center
for Interdisciplinary Research in Cardiovascular Sciences, West Virginia University, Morgantown,
WV.

Abstract #  Poster Board Number ...................................... 305
#201 TOXICOGENOMIC ANALYSIS OF CARDIOVASCULAR EFFECTS OF DIESEL
EXHAUST IN APOE-/- MICE. C. G. Woods¹, M. J. Campen², E. K. Rushlow¹, L. A. Gephart¹,
Pf² and G. D. Misuwaaga³. ¹ExxonMobil Biomedical Sciences, Annandale, NJ, ²The Hamner Institutes for
Health Sciences, RTP, NC, ³Lovelace Respiratory Research Institute, Albuquerque, NM and ²Concawe,
Brussels, Belgium.

Abstract #  Poster Board Number ...................................... 306
#202 DIESEL EXHAUST EXPOSURE AUGMENTS CONSTRUCTOR SENSITIVITY TO ET-1
THAT IS ET- RECEPTOR MEDIATED. T. Cherno¹, M. J. Campen², B. R. Walker¹ and N. L.
Kanagy³. ¹Cell Biology and Physiology, University of New Mexico, Albuquerque, NM and ²Toxicology,
Lovelace Respiratory Research Institute, Albuquerque, NM.

Abstract #  Poster Board Number ...................................... 307
#203 DIESEL EXHAUST PARTICULATE EXPOSURE AFFECTS ENDOTHELIN-1,
ENOS, INOS EXPRESSION IN MOUSE LYMPH NODE ENDOTHELIAL CELLS.
C. Weldy, D. P. Cox, H. W. Wilkerson and T. J. Kavanaugh. Environmental and Occupational Health
Sciences, University of Washington, Seattle, WA.

Abstract #  Poster Board Number ...................................... 308
#204 EXPOSURE TO COMBINED VEHICULAR EMISSIONS ALTERS VASCULAR
REACTIVITY IN APOE-/- MICE. A. K. Madrid¹, J. G. Bunzl², L. Chen¹, J. D. MacDonald¹,
J. L. Mauderly¹ and M. J. Campen². ¹Environmnetal Medicine, New York University, Tuxedo, NY and ²Division of Toxicology, Lovelace Respiratory Research Institute, Albuquerque, NM.

Abstract #  Poster Board Number ...................................... 309
#205 COMPARING THE TOXICITY OF FRESH AND AGED BIODIESEL AND DIESEL
EXHAUST USING SEPARATE PARTICLE AND GASEOUS EXPOSURE SYSTEMS. K.
de Bruinje1, K. G. Sexton1, S. Ebey and L. Lin. ¹Enr Sciences & Eng, University of North Carolina, Chapel Hill, NC and ²CEMALB, Chapel Hill, NC.

Abstract #  Poster Board Number ...................................... 310
#206 EFFECTS OF CONCENTRATED AMBIENT PARTICLES ON HEART RATE
VARIABILITY IN SPONTANEOUSLY HYPERVENTILATING RATS IN DETROIT,
MICHIGAN. A. S. Kanal¹, J. G. Wagenert², B. Mukherjee³, M. Morishita¹, J. R. Harkema¹,
G. J. Keefer¹ and A. C. Rohr¹. ¹University of Michigan, Ann Arbor, MI, ²Michigan State University, East
Lansing, MI and ³Electric Power Research Institute, Palo Alto, CA.

Abstract #  Poster Board Number ...................................... 311
#207 DIESEL EXHAUST PARTICLES INCREASE PERMEABILITY, INDUCE REACTIVE
OXYGEN SPECIES AND ARE CYTOTOXIC IN VITRO CAPILLARY ENDOTHELIAL
TUBES. M. Chao¹, J. Koleski¹, I. P. Po¹, D. R. Gercke¹, K. K. Svoboda¹, R. Laumbach¹ and M. K.
Gordon¹. ¹Pharmacology and Toxicology, Rutgers University, Piscataway, NJ, ²Molecular and Cell
Biology, Bristol-Myers-Squibb, New Brunswick, NJ, ³Biomedical Sciences, Baylor College of Dentistry,
Dallas, TX and ⁴Environmental and Occupational Medicine, UMDNJ, Robert Wood Johnson Medical School, Piscataway, NJ.
Program Description (Continued)

#208 Poster Board Number ......................................314
ACTIVATION OF GSK-3β PLAYS A CRITICAL ROLE IN DIABETES-RELATED CHANGES IN CARDIAC ENERGY METABOLISM, LIPID ACCUMULATION, INFLAMMATION, AND REMODELING: METALLOTHIONEIN PREVENTION VIA AKT2 PRESERVATION. Y. Wang, Medicine, University of Louisville, Louisville, KY.

#209 Poster Board Number ......................................315
ARYL HYDROCARBON RECEPTOR HETEROZYGOUS MICE EXHIBIT ENHANCED SENSITIVITY TO VASOCONSTRICTORS. M. K. Walker1, N. Zhang2, L. Agbor1 and W. Wang3.1Pharmacy, University of New Mexico, Albuquerque, NM and 3Chemistry, University of New Mexico, Albuquerque, NM.

#210 Poster Board Number ......................................316
DOXORUBICIN INDUCED PLATELET CYTOTOXICITY AND APOPTOSIS, POTENTIAL CONTRIBUTING FACTOR TO DOXORUBICIN ASSOCIATED THROMBOCYTOPENIA. E. Kim, K. Lim, J. Noh, K. Kim and J. Chung. College of Pharmacy, Seoul National University, Seoul, South Korea.

#211 Poster Board Number ......................................317
ARSENIC REQUIRES SPHINGOSINE-1-PHOSPHATE TYPE 1 RECEPTORS TO STIMULATE VASCULAR REMODELING. L. R. Klei1, A. C. Straub2, D. B. Stolz2 and A. Barchowsky3.1Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA and 2Cell Biology and Physiology, University of Pittsburgh, Pittsburgh, PA.

#212 Poster Board Number ......................................318
MITOCHONDRIAL REACTIVE OXYGEN SPECIES CAUSE ZIDOVUDINE-INDUCED CARDIAC MITOCHONDRIAL TOXICITY IN VIVO. W. Lewis, J. Kohler, I. Cucoranu, E. Fields, S. He, A. Hoying, R. Russ, A. Abuin, D. Tran, D. Johnson and S. Hosseini. Pathology, Emory School of Medicine, Atlanta, GA.

#213 Poster Board Number ......................................319

#214 Poster Board Number ......................................320

#215 Poster Board Number ......................................321
DOBUTAMINE CARDIAC “STRESS” TEST IN THE RAT: STRAIN COMPARISON AND POTENTIAL UTILITY IN CARDIOVASCULAR TOXICITY STUDIES. J. Callaway1, M. S. Hazari2, N. Haykal-Coates3, D. W. Winstead4, D. L. Costa1 and A. K. Farrag.1School of Medicine, University of North Carolina, Chapel Hill, NC and 2Experimental Toxicology Division, Environmental Protection Agency, Research Triangle Park, NC.

#216 Poster Board Number ......................................322
INCIDENCE AND SPECIFICITY OF DRUG-INDUCED TRAFFICKING INHIBITION OF CARDIAC ION CHANNELS. B. A. Wible, Y. A. Kuryshov, P. J. Hawryluk and A. M. Brown. ChanTest Corporation, Cleveland, OH.

#217 Poster Board Number ......................................323
CELLULAR OXIDATIVE STRESS ALTERS ENOS FUNCTION BUT NOT EXPRESSION IN EAHY926 CELLS. L. D’Augelo and D. Morel. Pharmacology and Toxicology, University of the Sciences, Philadelphia, PA.

#218 Poster Board Number ......................................324
HYPOXIA-INDOUCIBLE FACTOR 1α IS CRITICALLY INVOLVED IN METALLOTHIONEIN PROTECTION AGAINST DIABETIC CARDIOMYOPATHY. W. Xue, L. Cai, Y. Kang and W. Feng. University of Louisville, Louisville, KY.

#219 Poster Board Number ......................................325
ENHANCED CONSTITUTIVE ENDOTHELIUM-DEPENDENT VASODILATION IN ARYL HYDROCARBON RECEPTOR NULL MICE. N. Zhang, M. T. Walsh and M. K. Walker. Pharmacy, University of New Mexico, Albuquerque, NM.

#220 Poster Board Number ......................................326
MOLECULAR RESPONSE TO IMPLANTATION OF BARE METAL OR PACLITAXEL-ELUTING STENTS IN EXPLANTED INTACT HUMAN ARTERIES. S. Amisten1,3, A. Albrekt2, B. Ganter3 and D. Erlinge1. Cardiology, Lund University, Lund, Sweden and 2Chemical Technology Center, Lund University, Lund, Sweden and 3Ingenuity Systems, Redwood City, CA.

#221 Poster Board Number ......................................327

#222 Poster Board Number ......................................328
ELECTROPHYSIOLOGICAL PROFLING OF CARDIAC PROGENITORS FROM ADULT HUMAN MYOCARDIUM. L. Polonchuk1, J. Ly2, J. Jin1, S. Sweener2, H. UpPal1, K. Kolaja2, A. Breidenbach1 and D. Minser2.1Non-Clinical Safety, F Hoffmann-La Roche Ltd, Basel, Switzerland and 2Non-Clinical Safety, Roche Palo Alto LLC, Palo Alto, CA.
Program Description (Continued)

A ninety-day subchronic inhalation toxicity study of gold nanoparticles in Sprague-Dawley rats, J. Wu, J. Sung, J. Yi, J. Park, J. Yoon, K. Jeon, B. Choi, M. Song, J. Lee, K. Song, J. Han, Y. Chung, J. Jeong, B. Han and H. Chang. 1Biosafety Evaluation Headquarters, KEMTI, Incheon, South Korea, 2Samsung Electronics, Suwon, South Korea, 3HCT, Co., Icheon, South Korea, 4Preventive Medicine, Chung-Ang University, Seoul, South Korea, 5OSHRI, KOSHA, Daejeon, South Korea, 6NISTR, Korea Food and Drug Administration, Seoul, South Korea and 7Pathology, Kosin University, Busan, South Korea.

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Poster Board Number ..........................................339

EVALUATION OF THE EFFECT OF PARTICLE SIZE ON THE TOXICITY AND TOXIKINETICS OF FULLERENE C60 IN RATS AND MICE FOLLOWING NOSE-ONLY INHALATION EXPOSURE, N. J. Walker, G. L. Baker, J. A. Dill, D. R. Germolec, K. L. White and J. H. Roycroft. 1National Toxicology Program, National Institute of Environmental Health Sciences, RTP, NC, 2Battelle Toxicology Northwest, Richland, WA and 3Virginia Commonwealth University, Richmond, VA.

Poster Board Number ..........................................340

ABSTRACT #341

**ASSESSMENT OF THE DISTRIBUTION OF INTRAVENOUSLY-INJECTED SILVER NANOPARTICLES IN PREGNANT MICE AND DEVELOPING EMBRYOS.** C. A. Austin 1, T. H. Umbreit 2, K. M. Brown 1, D. S. Barber 3, B. F. Barger 1, M. J. Wagner 4, L. N. Talton 1, J. Scabilloni 1, D. Schwegler-Berry 2, R. Chapman 1, J. Grothaus 1, C. M. Sayes 2,3, and J. Hutchison 2,3, 1Environmental & Molecular Sciences Laboratory, 2Center for Environmental and Human Toxicology, University of Florida, Gainesville, FL, 3Center for Nanotechnology in Society, University of Wisconsin-Madison, Madison, WI, and 4Graduate School of Pharmaceutical Sciences, Osaka University, Osaka, Japan.

ABSTRACT #342

**ATTERAL RESPONSES TO DIESEL FUEL CATALYST CERIUM OXIDE NANOPARTICLES.** J. Y. Ma 1, H. Zhao 1, M. Barger 1, M. Rao 1, T. Meighan 1, and J. Ma 1.

Abstract #343

**EXAMINATION OF POTENTIAL DERMAL IRRITATION FOR DIFFERENT SIZES OF METAL NANOPARTICLES.** D. R. Mattie 1, R. J. Godfrey 1, T. A. Baussman 1, M. J. Wagner 3, L. N. Talton 1, P. Gunasekar 1, K. Prabhakaran 1, N. M. Schaeublin 1, and P. L. Geisinger 2.

Abstract #344

**LACK OF DERMAL PENETRATION FOLLOWING TOPICAL APPLICATION OF COATED AND UNCOATED NANO- AND MICRON-SIZED TITANIUM DIOXIDE TO INTACT AND DERMABRoded SKIN IN MICE.** N. V. Gopee 1, C. Cozart 1, P. Siitonen 1, C. S. Smith 2, N. J. Walker 2, and P. C. Howard 3.

Abstract #345

**PULMONARY RESPONSES TO DIESEL FUEL CATALYST CERIUM OXIDE NANOPARTICLES.** J. Y. Ma 1, H. Zhao 1, M. Barger 1, M. Rao 1, T. Meighan 1, V. Castranova 1, and J. Ma 1.

Abstract #346

**BIDISTRIBUTION OF QUANTUM DOTS AFTER PULMONARY EXPOSURE IN RATS.** J. R. Roberts 1, D. Schwager-Berry 1, R. Chapman 1, J. M. Antonini 1, J. Scabilloni 1, V. Castranova 1, and R. R. Mercer 1.

Abstract #347

**INVESTIGATION OF NANOPARTICLES-INDUCED TOXICITY USING CAENORHABDITIS ELEGANS FUNCTIONAL GENOMICS.** J. Choi 1 and J. Roh 1.

Abstract #348

**INVESTIGATION OF THE ROLE OF AIRWAY INFLAMMATION BY NANOPARTICLES IN RESPIRATORY ALLERGY INDUCED BY TMA.** H. Muisser 1, Y. Steaal 1, J. van Tiel 1, J. Arts 1, and F. Kuper 1.

Abstract #349

**PBPK MODELING OF MICRO AND NANO SIZED FLUORESCENT POLYSTYRENE SPHERES.** X. Chung 1, K. Sarlo 2, N. J. Walker 1, K. Blackburn 1, E. Clark 1, J. Chaney 1, J. Grothaus 2, and C. J. Portier 2. 1.NIEHS, Research Triangle Park, NC, and 2NIJHS, Research Triangle Park, NC.

Abstract #350

**ALTERED GENE EXPRESSION PROFILES IN MURINE BRAINS FOLLOWING EXPOSURE TO INHALED NICKEL NANOPARTICLES.** P. Gillespie, G. Kang, T. Gordon 1, and L. Chen 1. New York University School of Medicine, Taxedo, NY.
Abstract #

#249

**Poster Board Number** ......................................355

**SYSTEMATICALLY-INTRODUCED NANOSCOPIC SILICA BIODISTRIBUTION AND TOXICITY.** R. A. Yokel1,2, R. L. Florence3, J. Unrine4, M. T. Tseng5, U. M. Graham1, R. Sultana1, D. A. Butterfield2,3, P. Wu6 and E. A. Grulke1. 1Pharmaceutical Sciences, University of Kentucky, Lexington, KY. 2Toxicology, U KY, LEX, KY, 3Plant and Soil Sciences, U KY, LEX, KY, 4Anatomical Sciences & Neurobiology, U of Louisville, Louisville, KY, 5Center for Applied Energy Research, U KY, LEX, KY, 6Center of Membrane Sciences, U KY, LEX, KY and ‘Chemical & Materials Engineering, U KY, LEX, KY.

#250

**Poster Board Number** ......................................356

**FATE OF ULTRAFINE (UFTIO2) OR FINE TITANIUM DIOXIDE (FTIO2) FOLLOWING INTRATRACHEAL INSTILLATION IN RATS.** T. M. Sager1 and V. Castranova1. 1School of Public Health, Harvard University, Siler City, NC and 1HELD, PPRB, NIOSH, Morgantown, WV.

#251

**Poster Board Number** ......................................357

**TOXICITIES OF NANO-PARTICLES IN AN ENVIRONMENTALLY RELEVANT FISH MODEL.** J. Blatt Nicholas1, T. Virgini2 and T. Gordon3. 1Environmental Medicine, NYU School of Medicine, Tuxedo, NY and 1Howard Marine Sciences Laboratory, Northeast Fisheries Science Center, National Oceanic and Atmospheric Administration Fisheries Service, Highlands, NJ.

#252

**Poster Board Number** ......................................358

**GOLD AND SILVER NANO-MATERIALS REDUCE THE INFLAMMATORY RESPONSE TO INJURY.** K. S. Sall1, S. L. Harper1,2, K. P. Vercriuyse1 and R. L. Tanguay1,2. 1Department of Environmental & Molecular Toxicology, Environmental Health Sciences Center, Oregon State University, Corvallis, OR, 2Oregon Nanoscience & Microtechnologies Institute, Corvallis, OR and 1Department of Chemistry, Tennessee State University, Nashville, TN.

#253

**Poster Board Number** ......................................359

**EVALUATION OF SIZE-DEPENDENT BIOLOGICAL BEHAVIOR OF NANO-SILICAS.** H. Nabeshi1, T. Yoshikawa1, K. Matsuyama1,2, Y. Nakazato1,2, A. Arimori1,2, M. Isobe2, T. Imaizawa2, Y. Abe2, H. Kamada2, N. Itoh1, S. Tsunoda3 and Y. Tsutsumi4. 1Graduate school of Pharmaceutical Sciences, Osaka university, Suita, Osaka, Japan, 2National Institute of Biomedical Innovation, Ibaraki, Osaka, Japan and 3The Center for Advanced Medical Engineering and Informatics, Osaka University, Suita, Osaka, Japan. Sponsor: H. Nabeshi.

#254

**Poster Board Number** ......................................355

**CLEARANCE OF THE VASCULAR INFUSION CERTIFIED RABBIT BY RETICULOENDOTHELIAL CELLS IN RAT.** M. T. Tseng5, X. Lu5, R. Florence1, R. Sultana1, P. Wu6, D. A. Butterfield1,2, E. A. Grulke1, U. Graham1, J. Unrine4 and R. A. Yokel3,4. 1Anatomical Sciences & Neurobiology, U Louisville, Louisville, KY, 2Toxicology, U KY, Lexington, KY, 3Plant and Soil Sciences, U KY, Lexington, KY, 4Center for Applied Energy Research, U KY, Lexington, KY, 5Center of Membrane Sciences, U KY, Lexington, KY and 6Chemical & Materials Engineering, U KY, Lexington, KY and 7Pharmaceutical Sciences, U KY, Lexington, KY.

#255

**Poster Board Number** ......................................356

**THE EFFECTS OF SUB-CHRONIC EXPOSURE TO INHALED NICKEL NANOPARTICLES ON THE CARDIOVASCULAR SYSTEM.** G. Kang, P. Gillespie, A. Gunnison, T. Gordon and L. Chen. Environmental Medicine, New York University School of Medicine, Tuxedo, NY.

#256

**Poster Board Number** ......................................357

**SILVER NANOPARTICLE AND FULLERENE STUDIES WITH ADULT AND EMBRYONIC OYSTERS, CRASSOSTREA VIRGINICA.** A. Ringwood1, M. McCarthy2, D. Carroll2, J. Berry2 and N. Levi-Polyachenko3. 1Biology, UNC-Charlotte, Charlotte, NC, 2Wake Forest University, Center for Nanotechnology and Molecular Materials, Winston-Salem, NC and 3Wake Forest University Health Sciences, Winston-Salem, NC.

#257

**Poster Board Number** ......................................358

**NTEGRAITION OF GENOMIC AND PROTEOMIC BIOSIGNATURES IMPROVES THE DISCRIMINATION OF RESPONSE TO NANO-PARTICLES IN A MOUSE MODEL.** B. Webb-Robertson1, K. Waters1, S. Varnum1, J. Teegarden1, J. Jacobs1, R. Zanger1, E. Kisin2, A. Murray3, A. Shvedova2 and J. Pounds4. 1Pacific Northwest National Laboratory, Richland, WA and 2National Institute of Occupational Health and Safety, Morgantown, WV.

#258

**Poster Board Number** ......................................359

**POLYEThYLENE GLYCOL (PEG) NANOGEL AGGREGATE DRUG DELIVERY SYSTEM FOR TARGETED SYSTEMIC DELIVERY.** M. V. Deshmukh1, H. Kutscher1, D. Laskin2, S. Steind1 and P. Sinko3. 1Department of Pharmaceuticals, Rutgers University, Piscataway, NJ and 3Department of Toxicology, Rutgers University, Piscataway, NJ.

#259

**Poster Board Number** ......................................360

**TISSUE-SPECIFIC ANTI-OXIDANT RESPONSES OF OYSTERS, CRASSOSTREA VIRGINICA, TO SILVER NANOPARTICLE EXPOSURES.** M. McCarthy1, D. Carroll2, J. Berry2 and A. Ringwood3. 1Biology, UNC-Charlotte, Charlotte, NC and 3Wake Forest University Center for Nanotechnology and Molecular Materials, Winston-Salem, NC.
Program Description (Continued)

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#260 Poster Board Number ........................................ 406

NICKEL (NI) NANOPARTICLE (NP) INHALATION INDUCE SERUM NEUROANTIBODIES IN C57 MICE: TIME RESPONSE TO 5 MONTH EXPOSURE. H. A. El-Fawal1, P. Gillespie2, G. Kang2 and L. Chen3. 1Albany College of Pharmacy and Health Sciences, Albany, NY and 2NYU School of Medicine, Tuxedo, NY.

#261 Poster Board Number ........................................ 407

EXPOSURE ASSESSMENT AND HEALTH STATUS OF THE WORKERS HANDLING TITANIUM DIOXIDE. G. Ichihara1, W. Li2, T. Kobayashi1, X. Ding2, Y. Fujitani1, Y. Liu1, U. Sai1, N. Hat1, Q. Wang1 and S. Ichihara1, 2. Occupational and Environmental Health, Nagoya University Graduate School of Medicine, Nagoya, Japan, 3Shanghai Institute of Planned Parenthood Research, Shanghai, China, 4Tokyo Institute of Technology, Yokohama, Japan, 5National Institute for Environmental Studies, Tsukuba, Japan and 6Human Functional Genomics, Muse University Life Science Research Center, Tsu, Japan.

#262 Poster Board Number ........................................ 408


#263 Poster Board Number ........................................ 409

MANGANESE-30 AND ALUMINUM-80 NANOPARTICLES ALTER EXPRESSION OF OXIDATIVE STRESS-RELATED GENES IN MOUSE BRAIN. M. Rahman1, J. Wang2, T. A. Patterson1, G. D. Newport1, J. J. Schlager1, S. M. Hussain1 and S. F. Ali1. Division of Neurotoxicology, NCTR, Jefferson, AR, 2DDDP/OND/CDER/FDA, Silver Spring, MD and 3AFRL/Wright-Patterson AFB, Dayton, OH.

#264 Poster Board Number ........................................ 410


#265 Poster Board Number ........................................ 411

AN APPROACH BASED ON LC/ESI-MS TO DETECT BfraMES AS BIOMARKERS OF EXPOSURE TO STYRENE AND 1, 3-BUTADIENE. S. Shen1,2,3, F. Zhang1, S. Zeng1 and J. Zheng3, 1Department of Pharmaceutical Analysis and Drug metabolism, College of Pharmaceutical Sciences, Zhejiang University, Hangzhou, Zhejiang, China, 2Center of Developmental Therapeutics, Children’s Hospital Research Institute, Seattle, WA and 3Department of Pediatrics, University of Washington, Seattle, WA.

#266 Poster Board Number ........................................ 412

QUINONE METHIDE: REACTIVE METABOLITE OF DAURICINE. J. Zheng1,2, Y. Wang1, D. Zheng1, Q. Li1 and X. Chen1. Department of Pediatrics, University of Washington, Seattle, WA and 2Center for Developmental Therapeutics, Seattle Children’s Hospital Research Institute, Seattle, WA and 3Shanghai Institute of Materia Medica, Chinese Academy of Sciences, Shanghai, China.

#267 Poster Board Number ........................................ 413

DIFFERENTIAL LOCALIZATION OF FLAVIN-CONTAINING MONOOXYGENASE ISOFORMS 1, 3, AND 4 IN RAT LIVER AND KIDNEY. Y. R. M. Novick1, A. M. Mitze2, M. S. Brownfield1 and A. A. Elfarra1. Molecular and Environmental Toxicology, University of Wisconsin - Madison, Madison, WI and 2Comparative Biosciences, University of Wisconsin - Madison, Madison, WI.

#268 Poster Board Number ........................................ 414

IN VITRO CHARACTERIZATION OF HEPATIC EUGENOL AND METHYLEugenol BIOACTIVATION VERSUS DETOXIFICATION PATHWAYS. C. Meredith, E. Massey and E. M. Minet. Group R&D, British American Tobacco, Southampton, United Kingdom.

#269 Poster Board Number ........................................ 415

COVALENT BINDING AND GLUTATHIONE DEPLETION: COMPARISON OF NON-CYTOTOXIC DIETHYL MALEATE WITH THE CLARA CELL TOXICANT, NAPHTHALENE. D. M. Krawiec, D. Morin and A. Buckpot. VMV, UC Davis, CA.

#270 Poster Board Number ........................................ 416

COMPARISON OF METABOLISM OF INHALED GLUCOCORTICOIDS BY CYTOCHROME P450 3A ENZYMES AND IDENTIFICATION OF POTENTIALLY TOXIC METABOLITES. C. R. Ortio1,2, T. Murai1, R. M. Ward2 and G. D. Yost1. Pharmacology and Toxicology, University of Utah, Salt Lake City, UT, 1Pediatric Pharmacology Program, University of Utah, Salt Lake City, UT, 2Drug Metabolism and Pharmacokinetics Research Laboratories, Daiichi-Sankyo Co., LTD, 3Tokyo, Japan.

Monday Morning, March 16
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: XENOBIOTIC BIOTRANSFORMATION

Chairperson(s): Bhagavatula Moorthy, Baylor University School of Medicine, Houston, TX.

Displayed: 9:30 AM–12:30 PM

Author Attended: 11:00 AM–12:30 PM

Poster Board Number ........................................... #272 MECHANISM-BASED INACTIVATION OF CYTOCHROME P450 3A4 BY RETRONECINE-TYPE PYRROLIZIDINE ALKALOIDS. J. Dai1 and J. Zheng. Center for Developmental Therapeutics, Seattle Children’s Hospital Research Institute, Seattle, WA and 2Department of Pediatrics, University of Washington, Seattle, WA.


Poster Board Number ........................................... #274 COMPARISON OF SEMIEMPIRICAL AM1, PM3, AND SAM1, AND A DENSITY FUNCTIONAL THEORY METHOD TO PREDICT ACTIVATION ENERGIES OF CYTOCHROME P450-MEDIATED HYDROXYLATION OF ALIPHATIC SUBSTRATES. A. N. Mayeno1, J. L. Robinson1, R. Yang2 and B. Reifelder3,1. Environmental & Radiological Health Sciences, Colorado State University, Fort Collins, CO and 2Chemical & Biological Engineering, Colorado State University, Fort Collins, CO.

Poster Board Number ........................................... #275 FUNCTIONAL CHARACTERIZATION OF CYTOCHROME P450 3A37 FROM TURKEY LIVER WITH AFlATOXIN B1 OXIDIZING ACTIVITY. S. Rawal and R. A. Coulombe. Toxicology Graduate Program, Utah State University, Logan, UT.

Poster Board Number ........................................... #276 PHOSPHORYLATION OF SERINE-10 IN HISTONE H3 IS A CRITICAL MARK ESSENTIAL FOR INDUCTION OF THE CYP1A1 GENE BY THE ACTIVATED AH RECEPTOR. C. Ma, M. Schnekenburger, Y. Xia and A. Pugno. Environmental Health, Kettering lab, Cincinnati, OH.

Poster Board Number ........................................... #277 CYPIA, 1B, AND 1C GENE EXPRESSION AND EROD ACTIVITY IN RAINBOW TROUT GILL FILAMENTS - INDUCTION IN LABORATORY AND IN FIELD. M. Jönsson, J. Olsson and I. Brandt. Environmental Toxicology, Uppsala University, Uppsala, Sweden. Sponsor: M. Hult.

Poster Board Number ........................................... #278 ALTERATION OF THE PHARMACOKINETICS OF RUTAECARPINE AND ITS METABOLITE BY PHENOBARBITAL IN RATS. J. Choi, J. Kim, Y. Seo, S. Shin, M. Kang, Y. Jahng and T. Jeong. Pharmacy, Yeungnam University, Gyeongsan, Gyeongbuk, South Korea.

Poster Board Number ........................................... #279 CYP 450 DEPENDENT BIOACTIVATION OF XENOBIOTICS INTO TOXIC METABOLITES: AN IN VITRO APPROACH. P. Grossi, L. Vagnati, A. Moscone, D. Pezzetta and M. Brughera. Preclinical Development, Accelerata - Nerviano Medical Sciences srl, Nerviano, Milano, Italy.


Poster Board Number ........................................... #281 CHARACTERIZATION OF A NOVEL CYTOCHROME P450, CYP2S1 USING A PROTEIN EXPRESSED FROM A SYNTHETIC GENE. P. H. Bu1,2 and O. Hankinson2,3. Pathology of Laboratory Medicine, University of California, Los Angeles, Los Angeles, CA and 3Molecular Toxicology IDP, University of California, Los Angeles, Los Angeles, CA.

Poster Board Number ........................................... #282 MICE LACKING THE GENE FOR CYTOCHROME P450 (CYP)1A2 DISPLAY INCREASED LEVELS OF F2-ISOPROSTANES, OXIDATIVE DNA ADDUCTS, AND AUGMENTED SUSCEPTIBILITY TO HYPEROXIC LUNG INJURY. B. Moorthy1, L. Wang1, X. I. Couroucli1, G. Zhou1 and W. Jiang1. Pediatrics, Baylor College of Medicine, Houston, TX and 2Institute of Biotechnology, Texas A&M University System, Houston, TX.

Poster Board Number ........................................... #283 ETHANOL METABOLISM AND RELATED CYTOTOXICITY IN AR42J CELLS. K. K. Bhopale, G. Anseri and B. S. Kaphalia. Pathology, The University of Texas Medical Branch, Galveston, TX.

Poster Board Number ........................................... #284 DIFFERENTIAL EXPRESSION OF FIVE CYP1 MRNAS IN RESPONSE TO PCB126 IN FUNDULUS HETEROCLITUS. J. Zanette1,2, M. J. Jenny1,2, B. R. Woodin2, J. V. Goldstone2, L. A. Watka1,2, A. C. Bainy1 and J. J. Stegeman1. 1Biochemistry, Universidade Federal de Santa Catarina, Florianopolis, SC, Brazil, 2Biology, Woods Hole Oceanographic Institution, Woods Hole, MA and University of Massachusetts Dartmouth, North Dartmouth, MA.
**Poster Board Number .................................................**

**#285**

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

**#286**

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

**#287**

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

**#288**

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

**#289**

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

**#290**

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

**#291**

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

**#292**

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

**#293**

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

**#294**

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

**#295**

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

**#296**

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

**#297**

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

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**Program Description (Continued)**

**Abstract #**

Monday Morning, March 16
9:30 AM to 12:30 PM
Exhibit Hall

**POSTER SESSION: APOPTOSIS: ACTIVATORS AND REGULATORY PATHWAYS**

**Chairperson(s): John Richburg, University of Texas at Austin, Austin, TX.**

**Displayed: 9:30 AM–12:30 PM**

**Author Attended: 9:30 AM–11:00 AM**

**#285**

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

**CELL CYCLE PROGRESS AND APOPTOSIS ARE INTERRELATED IN CELLS TREATED WITH TOXIC CHEMICALS. R. N. Ghosh and S. J. Hong. Thermo Fisher Scientific, Rockford, IL. Sponsor: A. Barchowsky.**

**#286**

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

**CHARACTERIZATION OF THE CYTOTOXIC PATHWAYS ACTIVATED BY AMIODARONE AND ITS MAJOR METABOLITE DESETHYLAМИDARONE. J. E. Black, J. F. Brien, W. J. Ritz and T. E. Massey. Pharmacology & Toxicology, Queen’s University, Kingston, ON, Canada.**

**#287**

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

**PROFILING ENVIRONMENTAL CHEMICALS IN APOPTOSIS PATHWAY USING A HIGH-THROUGHPUT FORMAT. M. Choi1, R. Huang1, R. Leister1, K. L. Witt1, C. S. Smith2, J. Inglese2, R. R. Tice2, C. P. Austin2 and M. Xiu1. NIH Chemical Genomics Center, Bethesda, MD and National Toxicology Program (NTP), National Institute of Environmental Health Sciences, Research Triangle Park, NC.**

**#288**

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

**FASL AND TRAIL GENE-DEFICIENT MICE SHOW ALTERED SPERMATOGENESIS AND DIFFERENTIAL SENSITIVITY TO MEHP-INDUCED GERM CELL APOPTOSIS. Y. Lin1, P. Yao2 and J. H. Richburg1. College of Pharmacy, University of Texas at Austin, Austin, TX. Cell and Molecular Biology, The University of Texas at Austin, Austin, TX. Center for Molecular and Cellular Toxicology, The University of Texas at Austin, Austin, TX.**

**#289**

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

**A MAVERICK ROLE FOR HAIRLESS ON THE REGULATION OF APOPTOSIS. C. O’Driscoll1, D. L. Gorse2 and J. P. Bressler1,2. Division of Toxicological Sciences, Department of Environmental Health Sciences, Bloomberg School of Public Health, Baltimore, MD and Hugo Moser Research Institute at Kennedy Krieger, Baltimore, MD.**

**#290**

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

**BCL-XL ATTENUATES BAX-INDUCED INHIBITION IN MITOCHONDRIAL RESPIRATION AND CALCIUM RELEASE OF PRIMARY CULTURE ASTROCYTES. D. J. Dorta1,2, A. V. Teles2, R. P. Ureshino2, G. S. Lopes3, Y. Hsu4 and S. S. Smalli1, Chemistry, Faculty of Philosophy, Sciences and Letters of Ribeirão Preto - University of São Paulo, Ribeirão Preto, SP, Brazil, Pharmacology, Federal University of São Paulo, São Paulo, Brazil and Biochemistry and Molecular Biology, Medical University of South Carolina - USC, Charleston, SC.**

**#291**

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

**EFFECTS OF THE COFFEE DITERPENE KAHEWOEL ON THE INDUCTION OF APOPTOSIS IN HUMAN LUNG ADENOCARCINOMA A549 CELLS. H. Kim and H. Jeong. BK21 Project Team, Pharmacy, Chosun University, Gwangju, South Korea.**

**#292**

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

**BD02 INDUCED APOPTOSIS IN PROSTATE CANCER CELLS IS MEDITATED BY THE ANDROGEN RECEPTOR. S. Kopppula1, M. Tan2, W. Gray2 and A. Hurst1,2. Environmental Toxicology, Southern University, Baton Rouge, LA, Chemistry, Southern University A & M, Baton Rouge, LA and Biology, Southern University A & M, Baton Rouge, LA.**

**#293**

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

**HEAT SHOCK-INDUCED CELL DEATH. I. M. Mahajan and S. B. Bratton. Division of Pharmacology and Toxicology, The University of Texas at Austin, Austin, TX.**

**#294**

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

**MECHANISMS OF LEAD-INDUCED APOPTOSIS IN HUMAN LEUKEMIA (HL-60) CELLS. C. G. Yedjou1 and P. B. Tchounwou2,1. Biology, Jackson State University, Jackson, MS and Biology, Jackson State University, Jackson, MS.**

**#295**

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

**METALLIC NICKEL PARTICLES INDUCE CELL APOPTOSIS THROUGH A CAPSASE-8/AIF-MEDIATED CYTOCHROME C-INDEPENDENT PATHWAY. J. Zhao, L. Bowman, X. Zhang, X. Shi, Y. Castranova and M. Ding. PPRB, NIOSH CDC, Morgantown, WV.**

**#296**

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

**PS3-DEPENDENT AND PS3-INDEPENDENT APOPTOSIS IN CHROMIUM CARCINOGENESIS. A. O. Chiu1, N. H. Chiu1, R. Hill2, P. W. Lee3 and J. D. Robertson2,1. NCEAD & ODW, U.S. EPA, Washington, DC, Microbiology & Immunology, Dalhouse University, Halifax, NS, Canada and 1Pharmacology, Toxicology, and Therapeutics, University of Kansas Medical Center, Kansas City, KS. Sponsor: D. Singh.**

**#297**

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

**Mt ATTENUATES CARDIAC CELL DEATH VIA SUPPRESSION OF ER STRESS IS ONE OF THE MECHANISMS AGAINST DIABETIC CARDIOMYOPATHY. J. Xu, Q. Liu, Y. Tan, G. Wang and L. Cai. Department of Medicine, University of Louisville, Louisville, KY.**
Program Description (Continued)

3. The program includes sessions on the role of cytochrome c in apoptosis, as well as discussions on the mechanisms by which drug-induced redox cycling leads to mitochondrial toxicity.

4. There are sessions on the identification of redox-independent redox cycling activity in 10-phenanthrenequinone in mouse lung epithelial cells, as well as discussions on the role of naphthopyrene-induced redox cycling in the development of drug-induced toxicity.

5. The program features a poster session on redox-cycling, reactive oxygen species (ROS), and damage, with presentations on the effects of various compounds on the cellular redox status.

6. The annual meeting and ToxExpo™ event includes sessions on the detection of renal proximal tubule injury potential of compounds, as well as discussions on the development of new methods for the detection of drug-induced toxicity in human proximal tubule cells.

7. The program also features sessions on the role of naphthopyrene-induced redox cycling in the development of drug-induced toxicity, as well as discussions on the identification of redox-independent redox cycling activity in various mammalian cells and tissues.

8. The program concludes with a poster session on the role of naphthopyrene-induced redox cycling in the development of drug-induced toxicity, with presentations on the effects of various compounds on the cellular redox status.

9. The program includes sessions on the role of naphthopyrene-induced redox cycling in the development of drug-induced toxicity, as well as discussions on the identification of redox-independent redox cycling activity in various mammalian cells and tissues.

10. The program features a poster session on the role of naphthopyrene-induced redox cycling in the development of drug-induced toxicity, with presentations on the effects of various compounds on the cellular redox status.

11. The program includes sessions on the role of naphthopyrene-induced redox cycling in the development of drug-induced toxicity, as well as discussions on the identification of redox-independent redox cycling activity in various mammalian cells and tissues.

12. The program concludes with a poster session on the role of naphthopyrene-induced redox cycling in the development of drug-induced toxicity, with presentations on the effects of various compounds on the cellular redox status.

13. The program includes sessions on the role of naphthopyrene-induced redox cycling in the development of drug-induced toxicity, as well as discussions on the identification of redox-independent redox cycling activity in various mammalian cells and tissues.

14. The program concludes with a poster session on the role of naphthopyrene-induced redox cycling in the development of drug-induced toxicity, with presentations on the effects of various compounds on the cellular redox status.
Program Description (Continued)

Abstract #
Poster Board Number ..................................505
CHARACTERIZATION OF HYDROXYL RADICAL FORMATION DURING AUTOXIDATION OF GLUTATHIONE. L. Louis1, V. Mishin1, J. P. Gray2, D. E. Heck2 and J. D. Laskin.1, Pharmacology & Toxicology, Rutgers University, Piscataway, NJ, Science, U.S. Coast Guard Academy, New London, CT, 1Environmental Health, New York Medical College, Valhalla, NY and 2Environmental & Occupational Medicine, UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ.

#310
Poster Board Number ..................................506
A ROLE FOR OXIDATIVE STRESS IN SULFUR MUSTARD ANALOG CES-INDUCED LUNG CELL INJURY AND ANTIOXIDANT RESCUE. B. J. Day1,2, N. Gould1 and C. W. White.1, Medicine, National Jewish Health, Denver, CO, 1Pediatrics, National Jewish Health, Denver, CO, 1Medicine, University of Colorado Health Sciences, Aurora, CO and 1Pharmaceutical Sciences, University of Colorado Health Sciences, Aurora, CO.

#311
Poster Board Number ..................................507
METABOLISM OF 4-HYDROXYNONAL IN POST-MITCHONDRIAL FRACTIONS OF MOUSE LUNG AND LIVER. R. Zheng1, V. Mishin1, A. Groves1, C. R. Gardner1, D. E. Heck2, D. I. Laskin1 and J. D. Laskin.1, Pharmacology & Toxicology, Rutgers University, Piscataway, NJ, 1Environmental Health, New York Medical College, Valhalla, NY and 2Environmental & Occupational Medicine, UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ.

#312
Poster Board Number ..................................508
CYTOCHROME P450IA1 INDUCED BY 2,3,7,8-TCDD/TCB/E24-P-DIOXIN MEDIATES THE PRODUCTION OF REACTIVE OXYGEN SPECIES IN ENDOTHELIAL CELLS. P. G. Kogf1 and M. K. Walker. Pharmacy, University of New Mexico, Albuquerque, NM.

#313
Poster Board Number ..................................509
DETECTION OF CIGARETTE SMOKE-INDUCED REACTIVE OXYGEN SPECIES (ROS) USING A CM-H2DCFDA FLUORESCENCE INDICATOR. T. Carr1, T. Tai1, S. Faux1 and M. Gaca1.1 Group R&D, British American Tobacco, Southampton, United Kingdom and 1Toxicology group, Advanced Technologies (Cambridge) Ltd, Cambridge, United Kingdom. Sponsor: C. Meredith.

#314
Poster Board Number ..................................510
AN IMAGING APPROACH TO THE STUDY OF HYDROGEN PEROXIDE GENERATION BY MITCHONDRIAL DYSFUNCTION IN LIVING CELLS. W. Cheng1, H. Tong1, E. Miller1, C. Chang2, R. Zucker2, T. Hofer2 and J. Samel1.1 Department Environmental Science and Engineering, University of North Carolina, Chapel Hill, NC, 2Human Studies Division, NHEERL, U.S. EPA, Chapel Hill, NC, 1Department of Chemistry, University of California, Berkeley, CA, 2Reproductive Toxicology Division, NHEERL, U.S. EPA, Research Triangle Park, NC and 1German Research Center for Environmental Health, Gau廷t, Germany. Sponsor: M. Madden.

Abstract #
Poster Board Number ..................................511
GENOME-WIDE IDENTIFICATION OF OZONE TOXICITY MODULATING PROTEIN IN BUDDING YEAST. M. Papaccioli1, J. Rooney2, T. Begley3 and T. Gordon.1, 1Nelson Institute of Environmental Medicine, New York University, Tuxedo, NY and 2GenNYsis Center for Excellence in Cancer Genomics, University at Albany, Rensselear, NY.

#316
Poster Board Number ..................................512
STATUS OF GLUTATHIONE IN MOUSE EMBRYONIC STEM CELLS AFTER OXIDANT EXPOSURE. F. Skufca, L. Godzman, S. Worley, E. Lively, C. Gardiner and G. DeKrey. School of Biological Sciences, University of Northern Colorado, Greeley, CO.

#317
Poster Board Number ..................................513
5-CARBOXYAMIDO-5-FORMAMIDINO-2-IMINOHYDANTOIN (2-IIH), A NEW OXIDATION PRODUCT IN DNA. J. M. Ball1, W. Ye2, K. Sangani2, D. Degen2, A. Gold2, K. Jayara2, K. M. Koshlap2, G. Boyzen1, J. Williams1, K. B. Tomer1, V. Moceane1, N. Dicheva1, C. E. Parker2 and R. G. Schaaper1.1 Environmental Sciences and Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC, 2School of Pharmacy, The University of North Carolina at Chapel Hill, Chapel Hill, NC, 1Michael J. Hooker Proteomics Center, The University of North Carolina at ChapelHill, Chapel Hill, NC and 3NIEHS, Research Triangle Park, NC.

#318
Poster Board Number ..................................514
HEMOGLOBIN/HAPTOGLOBIN AGGREGATES PRODUCED BY PEROXIDASE ACTIVITY ARE TAKE-UP AND INJURE MACROPHAGES. A. Kapralov1,2, W. Feng2, I. I. Vlasova2, A. Maeda1, J. A. Cargarillo3, H. Bayir1,3 and V. E. Kagan2,3.1 Center for Free Radical and Antioxidant Health, University of Pittsburgh, Pittsburgh, PA, 2Departments of EOH, University of Pittsburgh, Pittsburgh, PA and 3Departments of Critical Care Medicine, University of Pittsburgh, Pittsburgh, PA.

#320
Poster Board Number ..................................515
COMPARISON OF THE ACUTE OXIDATIVE DAMAGE OF TRANSITION METALS ON TWO CELL LINES. V. C. Bukowski1, R. S. Chapman and S. S. Leonard. PPRB, NIOSH, Morgantown, WV.

#321
Poster Board Number ..................................516
INVOVLEMEN OF OXIDATIVE AND NITROSATIVE STRESS IN SYSTEMIC LUPUS ERYTHEMATOSUS. G. Wang, S. S. Pierangeli, E. Papalardo de Martinez, G. Ansari and M. Khan. Pathology, UTMH, Galveston, TX.

#319
Poster Board Number ..................................517
Program Description (Continued)

Abstract #

Monday Morning, March 16
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: INFORMATION AND EDUCATION

Chairperson(s): Janet Moser, Chemical Security Analysis Center, Aberdeen Proving Ground, MD.

Displayed: 9:30 AM–12:30 PM

Author Attended: 9:30 AM–11:00 AM

#322
Poster Board Number ......................521
THE CHEMICAL SECURITY ANALYSIS CENTER: KNOWLEDGE MANAGEMENT AND CHEMICAL THREAT AWARENESS. J. Moser1,2, W. P. Ashman1,2, P. S. Grasso1 and G. R. Famin1. 1Chemical Security Analysis Center, Department of Homeland Security, Aberdeen Proving Ground, MD and 2Battelle Memorial Institute, Columbus, OH.

#323
Poster Board Number ......................522
STEERING UNDERGRADUATE ENVIRONMENTAL SCIENCE RESEARCH IN NORTH DAKOTA. D. A. Sens, Pathology, University of North Dakota, Grand Forks, ND.

#324
Poster Board Number ......................523
TOXICOLOGY IN THE TEXTBOOKS USED IN THE LOWER LEVELS OF FINNISH COMPREHENSIVE SCHOOLS. R. O. Juvonen and M. A. Rimpiläinen. Pharmacology and Toxicology, University of Kuopio, Kuopio, Finland. Sponsor: M. Viluksela.

#325
Poster Board Number ......................524
JOHN SNOW, THE FATHER OF EPIDEMIOLOGY, WAS A TOXICOLOGIST: THE NEED FOR SYSTEMS APPROACHES TO CHEMICAL CAUSATION. B. D. Goldstein. Univ Pittsburgh Graduate School of Public Health, Pittsburgh, PA.

Monday Morning, March 16
9:45 AM–10:45 AM
Room 337

EXHIBITOR HOSTED SESSION: LEVERAGING BIOANALYSIS TO COMPRESS TIMELINES IN REGULATORY TOXICOLOGY STUDIES

Presented by: MDS Pharma Services

MDS Pharma Services will show you how to take a GLP approach to validated bioanalytical methods at the preclinical stage. Bioanalysis is now globally accepted by the pharmaceutical industry as a critical component in the journey of an NCE from the early discovery stage to the NDA filing.

Monday Morning, March 16
9:45 AM–10:45 AM
Room 336

EXHIBITOR HOSTED SESSION: SYSMEX XT-V HEMATOLOGY WORKSHOP

Presented by: Sysmex America, Inc.

This workshop provides an overview of the fluorescent flow cytometry technology and multi-species profile creation capability of the XT-V Hematology analyzer from Sysmex America. Applications specific to the toxicology market are highlighted via case examples of various animal species for whole blood, bone marrow and BALF specimens.

Monday Morning, March 16
11:00 AM–12:00 NOON
Room 336

EXHIBITOR HOSTED SESSION: CELL-BASED ASSAYS FOR PREDICTIVE TOXICITY

Presented by: Thermo Fisher Scientific

Panels of cell-based assays, measured using a quantitative imaging approach have been shown to be predictive of toxicity in humans. In this session we will review the cellular targets of toxicity, demonstrate the multi-parameter imaging approach and show cross-validation data with existing biochemical assays. The benefits of this approach for reducing potential toxicity risks in drug development will be outlined.

Monday Morning, March 16
11:00 AM–12:00 NOON
Room 338

EXHIBITOR HOSTED SESSION: THE CARDIOVASCULAR SYSTEM AND DRUG DEVELOPMENT

Presented by: Charles River

The cardiovascular system is an important therapeutic target for novel drug discovery and development. Development and utilization of appropriate models are essential to demonstrate the efficacy and safety of these drugs. Additionally, non-cardiac drugs can result in cardiovascular abnormalities which require further study and/or additional monitoring in clinical trials. Experiences from developing cardiac drugs and non-cardiac drugs with cardiac liabilities will be presented.
Monday Morning, March 16
11:00 AM–12:00 NOON
Room 337

EXHIBITOR HOSTED SESSION: WHY YOU SHOULD CONDUCT YOUR NEXT PRECLINICAL STUDY IN CHINA

Presented by: Bridge Laboratories

Bridge Laboratories will share insights into the current status and trends of the China preclinical safety sector and how companies can leverage conducting work in Asia. Bridge is a preclinical CRO that provides US-level regulatory compliant drug development services globally and is among the leading and most established “western standard” CROs in China. The presentation will be based on an evaluation of preclinical CROs in China and Bridge’s experience in providing GLP toxicology services through their Beijing lab.

MONDAY AFTERNOON

Monday Afternoon, March 16
12:00 NOON to 1:00 PM
Hilton Holiday Ballroom 4

AMERICAN ASSOCIATION OF CHINESE IN TOXICOLOGY SPECIAL INTEREST GROUP DISTINGUISHED CHINESE TOXICOLOGIST LECTURER

Monday Afternoon, March 16
12:00 NOON to 1:30 PM
Restaurant TBA

REGIONAL CHAPTER MEETING/LUNCHEON: MID- ATLANTIC

Monday Afternoon, March 16
12:00 NOON to 1:30 PM
Room 345

SPECIALTY SECTION MEETING/LUNCHEON: COMPARATIVE AND VETERINARY

Monday Afternoon, March 16
12:00 NOON to 1:00 PM
Room 302

SPECIAL INTEREST GROUPS PRESIDENTS AND OFFICERS MEETING

If you will be a President or a Vice President of a Special Interest Group in 2009–2010, please make plans to attend the Special Interest Groups Presidents meeting scheduled for 12:00 NOON–1:00 PM Monday, March 16. The agenda for the meeting will include an overview of the SOT Long-Range Plan. If you have long-range planning ideas that you would like added to the agenda, please send a message to Allison Branco Maxwell at SOT Headquarters. The agenda will include Headquarters administrative support information, budgetary guides, a review of 2008–2009 activities, and plans for the future.

Abstract #

Monday Afternoon, March 16
12:10 PM to 1:30 PM
Room 310

NEURODEGENERATIVE DISEASE

ROUNDTABLE SESSION: DEVILS LIE IN THE DETAILS: PRACTICES AND PROBLEMS IN NEUROPATHOLOGY — SIGNIFICANCE FOR NEUROTOXICOLOGY


Sponsor:
Neurologic and Exploratory Pathology Specialty Section

Endorsed by:
Neurotoxicology Specialty Section

The pathologic examination of the nervous system is an important component of experimental and regulatory neurotoxicology and in studies of neurodegenerative disease. Given the significance of the scientific and public health assessments, the ease with which histologic artifacts can be introduced into the process, and the possibility that the latter may be interpreted as representing toxicant-induced changes it is important to highlight these issues. Recent publications so interpreting such artifacts underscore the need for a review of this subject within the toxicology community. Mark Butt will provide an overview of the proper practice of neuropathology as it relates to study design, tissue fixation and specimen preparation. Robert Garman will describe the artifacts found in histologic preparations of the central nervous system, including their genesis, morphology and potential interpretative problems while Bernard Joynter will review similar aspects of artifacts of the peripheral nervous system. This session will be of interest to pathologists, toxicologists, and neuroscientists involved in neurotoxicologic investigations.

1Laboratory for Neurotoxicity Studies, Virginia Tech, Blacksburg, VA, 2Tox Path Specialists, LLC, Walkersville, MD and 3Consultants in Veterinary Pathology, Inc., Murrysville, PA.

12:12 INTRODUCTION. Bernard S. Jortner

12:15 CONTEMPORARY PATHOLOGY TECHNIQUES FOR EVALUATION OF THE NERVOUS SYSTEM. Mark T. Butt

12:45 ARTIFACTS IN THE CENTRAL NERVOUS SYSTEM AND THEIR IMPORTANCE IN NEUROTOXICOLOGY. Robert H. Garman

1:05 HISTOLOGICAL ARTIFACTS IN THE PERIPHERAL NERVOUS SYSTEM AND THEIR DIFFERENTIATION FROM LESIONS. Bernard S. Jortner

1:25 QUESTIONS & ANSWERS.
Program Description (Continued)

Abstract #
Monday Afternoon, March 16
12:10 PM to 1:30 PM
Room 308

nanomaterials to facilitate discussion. supplement as a means to alter bioavailability also increase its potential aging or food additives? Does nanoencapsulation of a dietary or nutritional in the assessment of risks from oral exposure to nanomaterials in food pack-

Sponsor:
Nanotoxicology Specialty Section

Endorsed by:
Food Safety Specialty Section
Regulatory and Safety Evaluation Specialty Section

The advent of nanotechnology has brought with it questions related to human and environmental safety. The application of nanotechnology to food packaging and as food or color additives has generated questions on the safety of nanomaterials in biological systems. Thus, it is important that we consider concerns expressed in the literature, press, and general toxicology community for unforeseen human and environmental health effects that may potentially be associated with the use of engineered nanomaterials in food and food-related products. In order to understand these potential concerns we need to consider both general and specific questions. Does the current regulatory framework adapt well to engineered nanomaterials in food as it is designed to do for other new materials manufactured for use in foods? Are there knowledge gaps and/or research needs for regulators that when filled may better prepare us to assess human health and environmental risks of food-related engineered nanomaterials? Can toxicology data generated on nanomaterials via dermal or pulmonary exposure be of use in informing us in the assessment of risks from oral exposure to nanomaterials in food packaging or food additives? Does nanoencapsulation of a dietary or nutritional supplement as a means to alter bioavailability also increase its potential toxicity? In exploring these issues, we will also take the opportunity to identify planned and ongoing research efforts in the area of food-related nanomaterials safety to facilitate discussion.

#327 12:10 THE USE OF ENGINEERED NANOMATERIALS IN FOOD AND FOOD-RELATED PRODUCTS: IS THIS A CONCERN FOR HUMAN AND ENVIRONMENTAL SAFETY? B. Magnuson, Cantox Health Sciences International, Mississauga, ON, Canada.

12:12 INTRODUCTION. T. Scott Thurmond

12:15 OVERVIEW OF RISK ASSESSMENT FOR ORAL EXPOSURE TO NANO PARTICLES. Kathy Sarlo

12:25 RESEARCH AND EDUCATIONAL ACTIVITIES OF THE IFT/ILSI/NCL FOOD NANOTECHNOLOGY COLLABORATION. Bernadene Magnuson

12:35 ENVIRONMENTAL RISK ISSUES WITH NANOMATERIALS IN FOOD. Jo Anne Shatkin

12:45 ASSURING THE SAFETY OF NANOMATERIALS IN FOOD PACKAGING: THE REGULATORY PROCESS AND KEY ISSUES. Nancy Rachman

Abstract #
Monday Afternoon, March 16
12:10 PM to 1:30 PM
Room 309


Chairperson(s): Brinda Mahadevan, Schering Plough Research Institute, Summit, NJ and Madhu Soni, Soni & Associates, Vero Beach, FL.

Sponsor:
Association of Scientists of Indian Origin

Endorsed by:
Ethical, Legal, and Social Issues Specialty Section
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

Bhopal was the site of one of the worst industrial disasters in history. During the night of December 2, 1984, nearly 30 metric tons of methyl isocyanate from the Union Carbide India Limited (UCIL), pesticide factory in Bhopal, India, leaked into the surrounding environment. On that fateful night over 2,000 individuals died immediately and more than 200,000 were directly affected. What followed this incident was the devastating impact of the chemical on the eyes, lungs and gastro-intestinal systems. Gynecological and obstetric complications soon became apparent, as did neurological disorders, immunological changes, emotional and mental stress. Twenty-five years later, the impact of the gas leak is evidenced by continuing medical and environmental issues. Besides safety challenges, the sheer scope of the Bhopal incident made it an extremely complex problem of public communication. The post-Bhopal era also witnessed a worldwide regulation on chemicals and toxicity and a demand by communities to the right to information. The post-Bhopal era also witnessed a worldwide regulation on chemicals and toxicity and a demand by communities to the right to information. The story of the Bhopal gas disaster demonstrates the complexity of the interaction of science, public reaction and government in forming the regulatory policy. The historic, scientific and global impact of the disaster will be explored to enable us to develop better public and environmental health and safety policies, to provide the current status of health effects from the disaster, and a review of the lessons learned from the disaster.


12:12 INTRODUCTION. Brinda Mahadevan

12:15 THE BHOPAL GAS TRAGEDY: SAFETY AND REGULATORY LESSON. Rosalie Bertell

12:40 THE BHOPAL DISASTER AND PREGNANCY OUTCOME. Daya Varma

1:05 THE BHOPAL DISASTER: LESSONS FROM STUDYING THE IMPACT OF A DISASTER IN A DEVELOPING NATION. Ramana Dhara
Program Description (Continued)

Abstract #

**Monday Afternoon, March 16**
12:10 PM to 1:20 PM
Room 307

**INFORMATIONAL SESSION: PEER REVIEW OF TOXICOLOGY, EXPOSURE, AND RISK DATA: ENSURING THE BEST SCIENCE**

Chairperson(s): Philip Wexler, National Library of Medicine, Bethesda, MD and Steven G. Gilbert, Institute of Neurotoxicology & Neurological Disorders, Seattle, WA.

Sponsor: Risk Assessment Specialty Section

Endorsed by:
- Ethical, Legal, and Social Issues Specialty Section
- Occupational and Public Health Specialty Section
- Regulatory and Safety Evaluation Specialty Section

Toxicology data bases are increasingly important tools in the regulatory and risk assessment process. While most toxicologists are well-versed in the intricacies of peer review in relation to journal publications and grants, there is considerably less understanding of how this process works in the evaluation of chemical toxicities and risk values as reflected in certain databases and monographic series. Therefore it is important to present examples of the scientific peer review process within the context of online databases and publications focusing on the toxicity and risk assessment of chemicals. Issues such as panel selection, impartiality and conflicts of interest, funding transparency in the conduct of meetings, procedure for reaching consensus, opposing views, and public involvement will be discussed for a number of high profile tools widely consulted in the toxicology community. Our panel of experts will reference many of these databases used including the National Library of Medicine’s Hazardous Substances Data Bank, Toxicology Excellence for Risk Assessment International Toxicity Estimates for Risk, the International Agency for Research in Cancer’s IARC Monographs and the European Centre of Ecotoxicology and Toxicology of Chemicals, Evaluating chemical toxicity when confronted with either a paucity of data or a bewildering array of sometimes conflicting data can be a particular challenge. High quality peer-reviewed databases can play a critical role in supporting the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals and be relevant to ethical concerns such as the reduction of animal testing, by offering consolidated and vetted information. With an increasing insistence that the regulatory framework be supported by the best science, this session will delve into ways of reaching consensus and credible decisions on chemical toxicity and human health. It should appeal to a broad cross-section of toxicologists.

#329


1Toxicology and Environmental Health Information Program, National Library of Medicine, Bethesda, MD, 2European Centre of Ecotoxicology and Toxicology of Chemicals, Brussels, Belgium, 3Agency for Toxic Substances and Disease Registry, Atlanta, GA, 4Toxicology Excellence for Risk Assessment, Cincinnati, OH, 5Technical Resources International, Bethesda, MD, 6Office of Liaison, Policy, and Review, National Toxicology Program, Research Triangle Park, NC, 7Retired, Gulf Breeze, FL, 8NCEA, ORD, U.S. Environmental Protection Agency, Washington, DC and 9Center for Substances and Integrated Risk Assessment, National Institute of Public Health and the Environment (RIVM), Bilthoven, Netherlands.

12:20 ECETOC PEER REVIEW AND QUALITY CONTROL PROCESS. Neil Carmichael

12:22 DEVELOPMENT OF ATSDR MINIMAL RISK LEVELS (MRSLs). Selene Chou

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**Monday Afternoon, March 16**
12:15 PM to 1:20 PM
Room 339

(Ticket Required)

**IN VITRO TOXICOLOGY LECTURE AND LUNCHEON FOR STUDENTS: THE 3R’S IN ANIMAL USE AND A PROSPECTIVE IN VITRO SCREENING TOOL FOR IDENTIFYING POTENTIAL IMMUNOTOXICANTS**

Lecturer: Courtney E.W. Sulentic, Wright State University, Dayton, OH

Sponsor: The Colgate-Palmolive Company

**ABSTRACT:** The purpose of this lecture is to discuss the importance of animal research to biomedical sciences and toxicology and the ethical obligations of the scientific community to follow the “3R’s” of animal testing (refine, reduce, replace) whenever it is feasible. Following this discussion the remainder of the lecture will briefly describe Dr. Sulentic’s current research utilizing an in vitro alternative to animal studies in identifying immunotoxins that specifically target B-cell function (i.e., alteration of immunoglobulin expression and antibody secretion) as well as elucidating the mechanisms of altered B-cell function. Graduate students, undergraduates, postdoctoral scholars, and recipients of Colgate-Palmolive awards are among the guests at the In Vitro Lecture and Luncheon. The goal of the In Vitro 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 and reducing animal use. Students and postdocs can reserve a ticket for the luncheon with a $5 deposit when they register for the SOT Annual Meeting.
Abstract #

Monday Afternoon, March 16
12:15 PM–1:15 PM
Room 336

EXHIBITOR HOSTED SESSION: A SYSTEMS TOXICOLOGY APPROACH FOR DRUG DISCOVERY AND DEVELOPMENT

Presented by: Ingenuity Systems

Within this session an overview of Ingenuity’s pathway and networks analysis software (IPA) will be presented with its specific molecular toxicity components specifically developed to understand drug toxicity and action. Following this overview, an industry relevant case study will demonstrate the functionality and richness of the toxicity module.

Monday Afternoon, March 16
12:15 PM–1:15 PM
Room 337

EXHIBITOR HOSTED SESSION: CULTURES OF PRIMARY HEPATO CYTES AS PREDICTIVE MODELS OF THE LIVER

Presented by: Invitrogen

Liver function can be modeled in vitro using cultures of primary hepatocytes (high-throughput) monitoring metabolism, induction/cell-signaling, transport, and cytotoxicity endpoints. Correlation of gene expression data, metabolic activity, and cytotoxicity endpoints over concentration and time can provide an effective approach to explore mode of action pathways. We will discuss our research using these tools including the EPA’s ToxCast 320 chemical library (320 chemicals, ~350,000 data points).

Monday Afternoon, March 16
12:15 PM–1:15 PM
Room 338

EXHIBITOR HOSTED SESSION: ZEBRAFISH: A PREDICTIVE MODEL FOR ASSESSING SAFETY AND TOXICITY

Presented by: Phylonix

Zebrafish are increasingly used as an alternative model for assessing compound safety and toxicity. Numerous studies show >70% correlation with results in mammals. In this workshop, we will describe methods for assessing drug effects on major organs as well as several discus models for high throughput screening.

Abstract #

Monday Afternoon, March 16
12:30 PM to 1:20 PM
Room 324

LEADING EDGE IN BASIC SCIENCE AWARD LECTURE: THE STRUCTURAL PERVERSIVENESS OF ESTROGEN ACTIVITY—BENEFITS AND RISKS FROM THE ECLECTIC NATURE OF LIGAND BINDING BY THE ESTROGEN RECEPTOR

Lecturer: John Katzenellenbogen, University of Illinois

Estrogens have diverse actions in both reproductive and nonreproductive tissues, and compounds of remarkably diverse structure sources can display estrogenic activity. These structures can be either steroidal or nonsteroidal but are typically phenolic. Estrogens act through estrogen receptors (ERs), ligand-modulated transcription factors that regulate hundreds of genes. When estrogens bind to ERs, they stabilize specific conformations that reflect ligand size and shape, and the rigidified surface features of these complexes serve as docking sites for coregulators that alter the pattern of gene transcription in a cell- and gene-specific manner. Guided by X-ray crystallography, we developed modular, combinatorial approaches to prepare novel nonsteroidal estrogens having high selectivity for the ER subtypes, ERα or ERβ, that are useful as pharmacological probes of receptor function. We have also diversified the three-dimensional structure of ER ligands, obtaining estrogens with unexpected biological selectivities of both fundamental and medical interest, and our estrogen-dendrimer conjugates can distinguish nuclear from extranuclear estrogen signaling. We have used estrogens labeled with fluorine-18 to image ER-positive breast tumors by positron emission tomography; this in vivo assessment of ER function is useful in predicting patient benefit from endocrine therapies. Our chemical, biochemical, and structural studies on the ERs and their ligands provide new insights into the broad functions of these receptors in biology and medicine. They also have assisted toxicologists by providing tools for distinguishing the specific receptors and mechanistic pathways through which some endocrine disruptor can act.

Author Attended: 1:00 PM–2:45 PM

Poster Board Number: #101

#101 NEUROTOXIC EFFECTS OF TIN COMPOUNDS: FROM ION CHANNEL TO BEHAVIOUR, K. Krüger1, H. Straub1, N. Binding2 and U. Musshoff1. 1 Institute of Physiology I, Münster, Germany and 2Institute of Occupational Medicine, Münster, Germany. Sponsor: K. Golka.

Poster Board Number: #102

#102 NEURONAL Ca CHANNEL SUBTYPES DIFFERENTIALLY MODIFY SENSITIVITY TO METHYLMERCURY-INDUCED CELL DEATH, K. E. Krcmarik, B. Pace-Graczyk, R. W. D. Atchison1, W. D. Atchison1, K. Hajela and W. D. Archison, Department PHM/Toxicology Michigan State University, East Lansing, MI.
Program Description (Continued)

Abstract #

#332  Poster Board Number ..........................103  Abstract #

Regulation of ATP7A in Copper Homeostasis as Affected by Iron Status in the Blood-Cerebrospinal Fluid Barrier. A. Monnot, M. Behl, Y. Zhang and W. Zheng, Purdue University, West Lafayette, IN.

#333  Poster Board Number ..........................104  Abstract #

Divalent Cation-Mediated Cell Death Induced by Methylmercury in a Motor Neuron Cell Line (Nsc34). M. Fain1, A. Negroni1, R. K. Hajela1 and W. D. Achiron1,2, 1Department PHM/Toxicology Michigan State University East Lansing, MI. 2RISE, Univ Puerto Rico-Cayey, Cayey, PR and College of Vet Med, Michigan State University East Lansing, MI.

#334  Poster Board Number ..........................105  Abstract #

Brain Glucose Utilization Following Chronic Manganese Exposure in Male Sprague-Dawley Rats. T. Smith1, N. Tantawy1, T. Peterson1 and V. A. Fitisnakis1. 1Biology, King College, Bristol, TN, 2Physics, King College, Bristol, TN and 3VUHS, Vanderbilt University, Nashville, TN.

#335  Poster Board Number ..........................106  Abstract #

Effect of Perinatal and Continuous Lead Exposure on Histone Modifications in the Hippocampus of Young Adult Rats. Y. Zhou, J. L. McGlothlan, T. Verina and T. R. Guilarte. EHS, Johns Hopkins University, Baltimore, MD.

#336  Poster Board Number ..........................107  Abstract #

Manganese Stabilizes Cellular Prion Proteins and Alter the Rate of Proteinase-K Dependent Limited Proteolysis. A. Kanthasamy1, C. Choi1, V. Anantharam1, E. Nicholson2, J. A. Richt1 and A. Kanthasamy1. 1Department of Biomedical Science, Iowa Center for Advanced Neurotoxicology, Iowa State University, Ames, IA and 2National Animal Disease Center, Ames, IA.

#337  Poster Board Number ..........................108  Abstract #

Acute Exposure to Lead (Pb) Results in an Increased Accumulation of β-Amyloid in the Choroid Plexus. M. Behl, Y. S. Zhang and W. Zheng. Health Sciences, Purdue University, West Lafayette, IN.

#338  Poster Board Number ..........................109  Abstract #

Lead Exposure Decreases Copper Clearance from the Cerebrospinal Fluid (CSF) by the Blood-CSF Barrier. Y. Zhang, M. Behl, Q. Fan and W. Zheng. Purdue University, West Lafayette, IN.

#339  Poster Board Number ..........................110  Abstract #

Neurotoxic Effects of Arsenic Compounds: From Ion Channels to Behaviour. H. Straub1, K. Krüger1, N. Binding1 and U. Musshoff. 1Institute of Physiology, Münster, Germany and 2Institute of Occupational Medicine, Münster, Germany. Sponsor: K. Gotika.

#340  Poster Board Number ..........................111  Abstract #


#341  Poster Board Number ..........................112  Abstract #


#342  Poster Board Number ..........................113  Abstract #

Peripheral and Central Inflammatory Response to LPS Challenge is Potentiated by Exposure to Manganese in the Absence of Enhanced Brain and Liver Accumulation. V. M. Filipov1, R. B. Pringle1 and L. Bennett1. 1CEHS, Basic Sciences, Mississippi State University, Mississippi State, MS, 2Pathobiology and Population Medicine, Mississippi State University, Mississippi State, MS and 3Physiology and Pharmacology, University of Georgia, Athens, GA.

#343  Poster Board Number ..........................114  Abstract #

Muscimic M3-Mediated Intracellular Calcium Changes is pH Sensitive and Dependant. H. Wang1, A. Martin1, Y. Huang1 and R. S. Aromstam1, 1Biological Sciences, Missouri University of Science and Technology, Rolla, MO and 2CDNA Resource Center, Missouri University of Science and Technology, Rolla, MO.

#344  Poster Board Number ..........................115  Abstract #

Chronic Manganese Exposure Induces Microglial Dystrophic Changes, Inos Expression and Iron Accumulation in the Non-Human Primate Substantia Nigra. T. Verina1, J. S. Schneider1 and T. R. Guilarte1. 1EHS, Johns Hopkins University, Baltimore, MD and 2Pathology, Anatomy and Cell Biology, Thomas Jefferson University, Philadelphia, PA.

#345  Poster Board Number ..........................116  Abstract #

Vanadium Can Synergistically Increase Manganese-Induced Neurotoxicity in Dopaminergic Neuronal Cells Via a Caspase Mediated Pathway. H. Afeseh Ngwa, A. Kanthasamy, V. Anantharam and A. G. Kanthasamy. Iowa State University, Ames, IA.

#346  Poster Board Number ..........................117  Abstract #

Methylmercury-Induced Death in C. Elegans and its Isolated Embryonic Neurons. J. Tew1, A. River1, R. K. Hajela1 and D. D. Achinson1. 1Department PHM/Toxicology Michigan State University East Lansing, MI and 2RISE, Univ Puerto Rico-Cayey, Cayey, PR.
Abstract #  Poster Board Number ..................................118
#347 ESTROGEN ANTAGONIZES THE PRO-INFLAMMATORY EFFECTS OF MANGANESE ON EXPRESSION OF NITRIC OXIDE SYNTHASE 2 (NOS2) IN ASTROCYTES. S. McGrath, J. Moreno and R. Tjaltens, ERHS, Colorado State University, Fort Collins, CO.

Abstract #  Poster Board Number ..................................119
#348 DIFFERENTIAL GENDER AND STRAIN SUSCEPTIBILITY TO THE MOTOR EFFECTS INDUCED BY CHRONIC LOW-LEVELS OF ARSENIC EXPOSURE IN C57BL/6J AND CD-1 MICE. J. H. Limón-Pacheco1, U. Bardullas1, M. Giordano1, L. Carrizales2, S. Mendoza-Tegó2 and V. M. Rodríguez1. 1Neurobiología Conductual y cognitiva, Instituto de Neurobiología, UNAM, Querétaro, Mexico and 2Facultad de Medicina, Universidad Autónoma de San Luis Potosí, San Luis Potosí, Mexico.

Poster Board Number ..................................120
#349 MAGNETIC RESONANCE IMAGING (MRI) AND 9-9-MAGNETIC RESONANCE SPECTROSCOPY (MRS) IN THE MANGANESE-EXPOSED NON-HUMAN PRIMATE BRAIN. J. L. McGlothlin1, P. B. Barker1, J. S. Schneider1, T. Syversen1 and T. R. Guillaume1. 1Department Env Hlth Sci, Johns Hopkins University School of Public Health, Baltimore, MD, 2Department Radiology, Johns Hopkins Hospital, Baltimore, MD, 3Department Pathol, Anatomy & Cell Biol, Thomas Jefferson University Philadelphia, PA and 4Department Neurosci, Norwegian Univ Sciences & Tech, Trondheim, Norway.

Poster Board Number ..................................121
#350 RESPONSE OF NEURAL STEM CELLS TO TRIMETHYLITN INJURY IN THE MURINE HIPPOCAMPUS. B. Weig, H. E. Lowndes and K. R. Reuhl. Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN, 9Zoology/Developmental Neurobiology, Otto von Guericke University, Magdeburg, Germany and 9Genetics, Cell Biology, and Development, University of Minnesota, Minneapolis, MN.

Poster Board Number ..................................122
#351 MOLECULAR AND GENETIC ANALYSIS IN A NOVEL MODEL OF METHYLMERCURY NEUROTOXICITY. N. VanDuyne1, R. Settivari1, L. Chen1, A. Braun2 and R. Nass. 1ChemRisk, Boulder, CO, 2School of Health and Behavioral Sciences, Purdue University, West Lafayette, IN, 3Department of Occupational Medicine, Zunyi Medical college, Zunyi City, China and 4Guizhou Institute of Occupational Safety and Health, Zunyi, Guizhou, China.

Poster Board Number ..................................123
#352 EVALUATION OF TELLURIUM TOXICITY IN RAT HIPPOCAMPAL ASTROCYTES. S. Roy and D. Hardej. Pharmaceutical Sciences, St. John’s University, Jamaica, NY.

Poster Board Number ..................................124
#353 REDUCED ATMOSPHERIC MANGANESE IN MONTREAL FOLLOWING REMOVAL OF METHYLCYCLOPENTADIENYL MANGANESE TRICARBONYL (MMT). J. Zayed1, A. Joly1, J. Lambert2, C. Gagnon3, K. Szynel1, G. Kennedy4 and D. Mergler5. 1Department of Environmental and Occupational Health, University of Montreal, Montreal, QC, Canada, 2Department of Social and Preventive Medicine, University of Montreal, Montreal, QC, Canada, 3Montreal Urban Community, Montreal, QC, Canada, 4Department of Engineering Physics, Polytechnic School, Montreal, QC, Canada and 5CINBIOSE, University of Quebec in Montreal, Montreal, QC, Canada.

Poster Board Number ..................................125

Poster Board Number ..................................126
#355 NEUROTOXIC EFFECTS OF ARSENITE IN ASTROGLIAL AND NEURONAL MODELS: MECHANISMS INVOLVED IN DIFFERENTIAL SUSCEPTIBILITY. Y. Castro-Corone1,2, J. Robledo1, L. Ramírez-Martínez2, A. Ortega1, L. Del Razo3 and E. López-Bayghen1. 1Department Genética y Biol. Mol., Cinvestav-IPN, Mexico DF, Mexico, 2Department Radiology, Johns Hopkins Hospital, Baltimore, MD, 3Department Pathol, Anatomy & Cell Biol, Thomas Jefferson University Philadelphia, PA and 4Department Neurosci, Norwegian Univ Sciences & Tech, Trondheim, Norway.

Poster Board Number ..................................127
#356 RELATIONSHIP BETWEEN BLOOD MANGANESE-IRON RATIO AND EARLY ONSET NEUROBEHAVIORAL ALTERATIONS. D. M. Cowan1,2, W. Zheng1, Y. Xou1, X. Shi1, J. Chen1, F. S. Rosenthal1 and Q. Fan1. 1ChemRisk, Boulder, CO, 2School of Health and Behavioral Sciences, Purdue University, West Lafayette, IN, 3Department of Occupational Medicine, Zunyi Medical college, Zunyi City, China, 4Drug Safety, MTC, Guizhou, China and 5Guizhou Institute of Occupational Safety and Health, Zunyi City, Zunyi, Guizhou, China.

Poster Board Number ..................................128
#357 DECREASED DMT1, TF AND HEPcidIN GENE EXPRESSIONS IN LEUCOCYTE OF MANGANESE EXPOSED WORKERS. Q. Fan1, Y. Zou1, J. Liu1, C. Yu1, J. Chen1, X. Shi1, Y. Zhang1 and W. Zheng1. 1Department of Preventive Medicine, Zunyi Medical college, Zunyi City, China, 2Guizhou Institute of Occupational Safety and Health, Zunyi City, China and 3Health Sciences, Purdue University, West Lafayette, IN.

Poster Board Number ..................................129
#358 MANGANESE MODIFICATION OF GLUTAMINE TRANSPORT IN PRIMARY ASTROCYTES. M. Sidoryk1, E. Lee1, H. Jiang1, J. Albrecht1 and M. Acshein1. 1Department of Pediatrics, Vanderbilt University, Nashville, TN, 2Department of Neurology, Meharry Medical College, Nashville, TN and 3Department of Neurotoxicology, Medical Research Centre, Polish Academy of Sciences, Warsaw, Poland.
Abstract #

#359  

**Poster Board Number** .......................... 130  

**METHYLmercury-inducEd oxidativE stress in culutureD astrocytEs leads to nRF2 activatinG and nuCluar translocat ion**.  


1Pediatrics Toxicology, Vanderbilt University, Nashville, TN, 2Biochemistry, University of Santa Maria, Santa Maria, Brazil and 3Ophthalmology, Vanderbilt University, Nashville, TN.

#360  

**Poster Board Number** .......................... 131  

**Antioxidants influenCe methylmercury-inducEd oxidativE reaction in primary culutureD astrocytEs**.  

Z. Yin1, D. Milatovic, H. Jiang, E. Lee and M. Aschner.  

Vanderbilt Medical Center, Nashville, TN.

#361  

**Poster Board Number** .......................... 132  

**CaeNorhabditis elegans as a model to study meChanisms of methylmercury toxiciTy.**  

K. J. Helmecke1, D. Miller2 and M. Aschner3.  

1Pharmacology, Vanderbilt University, Nashville, TN, 2Center In Molecular Toxicology, Vanderbilt University, Nashville, TN and 3Department of Cell and Developmental Biology, Vanderbilt University, Nashville, TN.

#362  

**Poster Board Number** .......................... 133  

**Assessment of manganese exposuRe by 3D high-resolution ti-weighted mRi.**  


1Neurobiology and Neurotoxicology, Meharry Medical College, Nashville, TN, 2Center for Molecular Toxicology, Vanderbilt University, Nashville, TN, 3Department of Pediatrics and Pharmacology, Vanderbilt University, Nashville, TN and 4Department of Psychology, Vanderbilt University, Nashville, TN.

#363  

**Poster Board Number** .......................... 134  

**Prenatal exposuRe to benzo(a)pyRene impairs later-life cortical nuCLEAR FUNCTION.**  

M. M. McCallister1, M. Maguire1, A. Ramesh2, Q. Amin2, S. Liu1, H. Koshbouei1, M. Aschner4, F. F. Ebner1 and D. B. Hood2.  

1Pediatrics, Vanderbilt University, Nashville, TN, 2Center for Molecular Toxicology, Vanderbilt University, Nashville, TN, 3Departments of Pediatrics and Pharmacology, Vanderbilt University, Nashville, TN and 4Department of Psychology, Vanderbilt University, Nashville, TN.

#364  

**Poster Board Number** .......................... 135  

**MEHg-inducEd oxidativE stress in microglial cells and its role in neurotoxicity.**  

M. Ni and M. Aschner.  

Pharmacology, Vanderbilt University, Nashville, TN.

#365  

**Poster Board Number** .......................... 136  

**oxidativE damage and neurodegeneration in manganEse-inducEd neurotoxicity.**  

D. Milatovic1, Y. Xu1, R. C. Gupta2, S. Zaja-Milatovic3 and M. Aschner1.  

1Pediatrics, Vanderbilt University, Nashville, TN, 2Breathitt Veterinary Center, Murray State University, Hopkinsville, KY and 3Cancer Biology, Vanderbilt University, Nashville, TN.

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**Monday Afternoon, March 16**

1:00 PM to 4:30 PM  

**Exhibit Hall**

**Poster Session: Alternate Tests and Models I**

**Chairpersons:** Yvonne Will, Pfizer Global Research and Development, Groton, CT.

**Displayed:** 1:00 PM–4:30 PM  

**Author Attended:** 2:45 PM–4:30 PM

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**Poster Board Number** .......................... 137  

**Estrogen attenuates manganese-inducEd glutamate transporter impairment in rat brain astroglIal cultures.**  

E. Y. Lee1, H. Jiang2, Z. Yin1, M. Aschner3 and M. Sideroky.  

1Neurology, Meharry Medical College, Nashville, TN and 2Pediatrics, Vanderbilt Medical Center, Nashville, TN.

#367  

**Poster Board Number** .......................... 138  

**Suppression of DFP-inducEd oxidativE injury and dendritic damage by memantine.**  

S. Zaja-Milatovic1, R. C. Gupta2, M. Aschner1 and D. Milatovic3.  

1Cancer Biology, Vanderbilt University, Nashville, TN, 2Breathitt Veterinary Center, Murray State University, Hopkinsville, KY and 3Pediatrics, Vanderbilt University, Nashville, TN.

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**Poster Board Number** .......................... 139  

**Surface dental enamEl lead levElS and antisocial behavIor in brazilian adolescents.**  


1Saúde Ambiental, Faculdade de Saúde Pública (FSP), Universidade de São Paulo (USP), São Paulo, Brazil, 2Quimica Analítica, Instituto de Química (IQ), USP, São Paulo, Brazil, 3Epidemiologia, FSP, USP, São Paulo, Brazil, 4Bioclimática, IQ, USP, São Paulo, Brazil.  

Sponsor: S. Barros.
Abstract #  

#372  
Poster Board Number ......................................149  
BIOACTIVATION OF NEVIRAPINE BY P450 AND SULFOTRANSFERASES, M. Novalen and J. Uetrecht. Faculty of Pharmacy, University of Toronto, Toronto, ON, Canada.

#373  
Poster Board Number ......................................150  

#374  
Poster Board Number ......................................151  
DOMINANT NEGATIVE ZEBRAFISH AHR2 PROTECTS AGAINST TCDD TOXICITY, K. A. Lanham, R. E. Peterson and W. Heideman. 1Biomolecular Chemistry, UW Madison, Madison, WI and 2School of Pharmacy, UW Madison, Madison, WI.

#375  
Poster Board Number ......................................152  

#376  
Poster Board Number ......................................153  
DECISION STRATEGY FOR DETECTION OF OCULAR IRRITANTS: ALTERNATIVE TESTS FOR HAZARD PROFILING OF PHARMACEUTICAL PROCESSES, M. J. Olson, F. J. Guerrero and C. W. Seaman. 1CEHS, GlaxoSmithKline, Research Triangle Park, NC, 2CEHS, GSK, Philadelphia, PA and 3CEHS, GSK, Ware, United Kingdom.

#377  
Poster Board Number ......................................154  

#378  
Poster Board Number ......................................155  
COLIPA PROGRAM ON OPTIMIZATION OF EXISTING IN VITRO EYE IRRITATION ASSAYS FOR ENTRY INTO FORMAL VALIDATION: TECHNOLOGY TRANSFER AND INTRA/INTER LABORATORY EVALUATION OF AN EPICULAR ASSAY FOR CHEMICALS, J. W. Harbell, B. Le Varlet, M. Marrec-Fairley, Y. Katzuhnzy and P. McNamane. 1Mary Kay Inc, Addison, TX, 2Consultant, 3Consultant, 4Ingenérie, Montélége, France, 5COLIPA, Brussels, Belgium, 6MatTek Corp., Ashland, MA and 7Procter & Gamble Co., Egham, United Kingdom.

Abstract #  

#379  
Poster Board Number ......................................156  
PROTECTIVE EFFECTS OF EXOGENOUS ANTIOXIDANTS ON BIOACTIVATION AND ANTIOXIDANT ENZYMES IN MYCOTOXINS-INDUCED TOXICITY, M. J. Ruiz, G. Font, A. J. Garcia, M. Fernandez and A. Anadon. 1Department of Toxicology, Faculty of Pharmacy, Universitat de Valencia, Valencia, Spain and 2Department of Toxicology and Pharmacology, Faculty of Veterinary Medicine, Universidad Complutense, Madrid, Spain.

#380  
Poster Board Number ......................................157  
GATA2: A POTENTIAL CANDIDATE GENE OF BLUE COHOOSH TOXICITY IN JAPANESE MEDAKA, M. Wu, A. K. Dasmahapatra, Z. Ali and I. A. Khan. 1National Center for Natural Product Research, University of Mississippi, University, MS, 2Department of Pharmacology, University of Mississippi, University, MS and 3Environmental Toxicology Research Program, University of Mississippi, University, MS.

#381  
Poster Board Number ......................................158  
A CELL VIABILITY ASSAY FOR ESTIMATING IN VIVO TOLERATION IN RODENTS, M. D. Aleo, J. Aubrecht, M. J. Banker, J. W. Benbow and D. Nettleton. 1Drug Safety R&D, Pfizer Global R&D, Groton, CT, 2Exploratory Safety Differentiation, Pfizer Global R&D, Groton, CT and 3CMED Chemistry, Pfizer Global R&D, Groton, CT.

#382  
Poster Board Number ......................................159  

#383  
Poster Board Number ......................................160  

#384  
Poster Board Number ......................................201  
PORFOCAL, FOR YOUR EYES ONLY! M. R. Carathers, M. Piehl, R. C. Soda and D. R. Cerven. MB Research Laboratories, Spinnerston, PA.

#385  
Poster Board Number ......................................202  
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<th>Abstract #</th>
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<td>#387</td>
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<td>EVALUATION OF THE SKIN SENSITIZATION POTENTIAL OF HAIR-DYE, PARA-PHENYLENEDIAMINE BY NONRADIOACTIVE MURINE LOCAL LYMPH NODE ASSAY USING BROMODEOXYURIDINE WITH FLOW CYTOMETRY AND IMMUNOHISTOCHEMISTRY. K. Jung, I. Bae and K. Lim, AMOREPACIFIC Co. R&amp;D Center, Gyeonggi-do, South Korea. Sponsor: J. Chung.</td>
<td>#389</td>
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<td>#390</td>
<td>ASSESSMENT OF DRUG INDUCED CARCINOGENICITY IN TRANSPARENT ZEBRAFISH. L. J. D’Amico, W. L. Seng, P. McGrath, Y. Yang and W. Suter. 1Phytocontain Pharmaceuticals, Inc., Cambridge, MA and 2Novartis Pharmaceuticals, East Hanover, NJ.</td>
<td>#391</td>
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<td>IN VITRO MODEL TO PREDICT THE ORAL BIOAVAILABILITY OF AROMATIC AMINE HAIR DYES. H. Rothe and C. Goebel. P&amp;G Service Gmbh, Darmstadt, Germany. Sponsor: F. Gerberick.</td>
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<td>#392</td>
<td>TESTING OF THE EPIOCULAR™ TISSUE MODEL FOLLOWING EXTENDED SHIPPING TIMES. M. Klausner, P. J. Hayden, M. Gennari and J. Kubilus. 1MatTek Corporation, Ashland, MA and 2Kurabo Industries, Osaka, Japan.</td>
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<td>MODELING INDIVIDUAL VARIABILITY FROM IN VITRO DATA. R. M. Gardner, J. F. Nyland, and E. K. Silbergeld. 1Environmental Health Sciences, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD and 2Department of Pathology, Microbiology, and Immunology, University of South Carolina School of Medicine, Columbus, SC.</td>
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<td>#395</td>
<td>A YEAST-BASED MODEL SYSTEM TO EVALUATE TOXICITY TO HUMAN STEROID HORMONE RECEPTOR SIGNALING. X. Tan, M. Wilson and C. Miller. Department of Environmental Health Sciences, Tulane Cancer Center, Center for Bioenvironmental Research, Tulane University School of Public Health and Tropical Medicine, New Orleans, LA.</td>
<td>210</td>
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<td>A HIGH CONTENT SCREENING (HCS) APPROACH FOR IDENTIFYING ANTIBACTERIALS THAT IMPAIR MITOCONDRIAL PROTEIN SYNTHESIS IN CELLS. S. Nadaanaciva, C. Zureno, P. A. Billis, D. Gebhard and Y. Will. Pfizer Inc, Groton, CT.</td>
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<td>IN VITRO SKIN IRRITATION ASSESSMENT OF DYES AND COLORING CHEMICALS USING THE EC4TM VALIDATED EPISKIN ASSAY. F. Amaral, E. Lambert, C. Chesneau, L. Martin, D. Leilievre, M. Grandidier and J. Cotovio. L’OREAL, Aulnay sous bois, France. Sponsor: E. Dufour.</td>
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Program Description (Continued)

Abstract #

#400  Poster Board Number ...........................................217 QUANTITATIVE STRUCTURE–ACTIVITY RELATIONSHIP (QSAR) MODELS AS SUITABLE ALTERNATIVES FOR EXPERIMENTS WITH FISH. E. Zivinashvile1,2, H. Berg vanden, A. Soffers, J. Vervoort, A. Freidig, A. Mark and I. Rijten1. Toxicology, Wageningen University, Wageningen, Netherlands, 2IRAS-Toxicology, Utrecht University, Utrecht, Netherlands, 3Biochemistry, Wageningen University, Wageningen, Netherlands and 4Toxicology and Metabolism, TNO Quality of Life, Zeist, Netherlands. Sponsor: B. Blauhoer.

#401  Poster Board Number ...........................................218 A 3D SKIN MODEL FOR COSMETIC, CHEMICAL AND MEDICAL DEVICE PHOTOSENSITIVITY TESTING. L. F. Pratt, D. R. Cerven and G. L. DeGeorge. MB Research Laboratories, Spinnerstown, PA.

#402  Poster Board Number ...........................................219 AN IMPROVED IN VITRO MODEL FOR SAFETY SCREENING OF DRUGS IN DEVELOPMENT: ACCURATE EVALUATION OF DRUG-MEDIATED CYP INHIBITION USING H-CLASS MICROSCOPES. J. Fleischer1, T. Moeller1, J. Lee1, D. Dryden1 and T. Christopher1. Development Services, Celsis In Vitro Inc, Baltimore, MD and 2Products, Celsis In Vitro Inc, Baltimore, MD.

#403  Poster Board Number ...........................................220 A TRANSGENIC MODEL FOR ARSENIC METHYLATION AND ITS BIOLOGICAL EFFECTS IN DROSOPHILA. J. G. Malaz Ortiz and I. Cartwright. Molecular Genetics, University of Cincinnati College of Medicine, Cincinnati, OH.

#404  Poster Board Number ...........................................221 ENVIRONMENTAL MUTAGENESIS AND CYTOCHROME P450 ACTIVITIES IN THE NEOTAMETO CAENORHABDITIS ELEGANS. M. C. Leung1, M. McKeever1, A. Berkowitz1, W. A. Boyd1, A. Burger1, J. H. Freedman1, R. L. Walsky1, H. M. Stapleton1 and J. N. Meyer1. 1Nicholas School of the Environment, Duke University, Durham, NC, 2Laboratory of Molecular Toxicology, National Institute of Environmental Health Sciences, RTP, NC and 3Prizer Global Research and Development, Groton, CT.


#406  Poster Board Number ...........................................223 USE OF THE RECONSTRUCTED EPIVAGINAL™ TISSUE MODEL TO SCREEN IRRITATION POTENTIAL OF FEMININE HYGIENE PRODUCTS. C. Cannon, S. Ayehunie, R. J. Hayden, K. LaRosa and M. Klauser. MatTek Corporation, Ashland, MA.

Abstract #

Monday Afternoon, March 16
1:00 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: IN VITRO METHODS, MODELS, AND MECHANISMS OF HEPATOTOXICITY

Chairperson(s): Lisa Kamendulis, Indiana University School of Medicine, Indianapolis, IN.

Displayed: 1:00 PM–4:30 PM

Author Attended: 1:00 PM–2:45 PM

#407  Poster Board Number ...........................................226 METABOLISM OF 7-ETHOXYCOUMARIN BY ISOLATED PERFUSED RAINBOW TROUT LIVERS. J. W. Nichols, G. J. Lien, A. D. Hoffman and P. N. Fitzsimmons. U.S. EPA/ORD/NHEERL/Mid-Continent Ecology Division, Duluth, MN.

#408  Poster Board Number ...........................................227 AN EVALUATION OF THE VENOUS EQUILIBRIUM MODEL FOR HEPATIC CLEARANCE USING ISOLATED PERFUSED RAINBOW TROUT LIVERS. A. D. Hoffman1, T. L. ter Laak2, P. N. Fitzsimmons1 and J. W. Nichols1. 1U.S. EPA/ORD/NHEERL/Mid-Continent Ecology Division, Duluth, MN and 2Institute for Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands.

#409  Poster Board Number ...........................................228 HEPATOPROTECTIVE MECHANISMS OF ARALIA CONTINENS AGAINST OXIDATIVE STRESS-INDUCED CELL DEATH IN HEPATOCYTES. Y. Chung1, Y. Hwang2, J. Choi3 and H. Jeong4. 1Division of Food Science, International University of Korea, Jinju, South Korea and 2BK21 Project Team, Pharmacy, Chosun University, Gwangju, South Korea.

#410  Poster Board Number ...........................................229 REDUCTIVE METABOLISM OF N-(1-(4-IMETHYLENEDIOXYPHENYL) PROPAN-2-YL)-N-METHYLHYDROXYLAMINE IN HUMAN HEPATOCYTES. A. Miyajima-Tabata1, M. Sunouchi1, K. Nakazawa1, R. Kikura-Hanajiri2 and Y. Goda2. 1Division of Pharmacology, National Institute of Health Sciences, Tokyo, Japan and 2Division of Pharmacognosy and Phytochemistry, National Institute of Health Sciences, Tokyo, Japan. Sponsor: M. Ema.

#411  Poster Board Number ...........................................230 DISPOSITION OF QUANTUM DOTS IN HEF2 CELLS. W. E. Smith1, J. H. Tracy1, C. C. White1, T. K. Bammelt1, X. Hu2, X. Gao3, T. J. Kavanagh1 and D. L. Eaton1. 1Department of Environmental and Occupational Health Sciences, University of Washington, Seattle, WA and 2Department of Bioengineering, University of Washington, Seattle, WA.
Abstract #  #412  
Poster Board Number  .........................  #231


#413  
Poster Board Number  .........................  #232


#414  
Poster Board Number  .........................  #233


#415  
Poster Board Number  .........................  #234


#416  
Poster Board Number  .........................  #235


#417  
Poster Board Number  .........................  #236


#418  
Poster Board Number  .........................  #237

COMPARISON OF THE EFFECT OF GSH DEPLETION IN MULTIPLE SPECIES AND THE EFFECT ON REACTIVE METABOLITE CYTOTOXICITY. D. D. Baker1, O. Laskin2, L. Latrano2, R. Amin3 and P. Lapanias3. 1Experimental Toxicology, Celgene, Inc., San Diego, CA and 2Early Drug Development, Celgene, Summit, NJ.

#419  
Poster Board Number  .........................  #238

DEVELOPMENT OF IN VITRO TOXICOGENETIC MODELS FOR HEPATOTOXICITY. S. Martinez1, B. Bradfords1, R. Kaisers2, V. Soldatos3, K. Amarals3, S. Ferguson3, C. Black3, E. LeChyse4 and J. Roux5. 1Environmental Sciences and Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC and 2CellzDirect/VitroGen Corporation, Durham, NC.

Abstract #  #420  
Poster Board Number  .........................  #239


#421  
Poster Board Number  .........................  #240

CROSS-FUNCTIONAL DRUG CLASS COMPARISON OF THE TRANSCRIPTOMES OF IDIOSYNCRATIC HEPATOTOXICANTS IN PRIMARY HUMAN HEPATOCYTES: ASSOCIATION WITH KNOWN DEATH MEDIATORS. M. J. Liguori1, A. C. Diteyg2, Y. Yang, J. P. Vierling and E. A. Blomme. Investigative Toxicology, Abbott Laboratories, Abbott Park, IL.

#422  
Poster Board Number  .........................  #241


#423  
Poster Board Number  .........................  #242

ASSAY VALIDATION OF HEPATOTOXICITY IN qHTS USING HUMAN PLATEABLE CRYOPRESERVED HEPATOCYTES. T. Moeller, S. J. Shukla and M. Xue. Celisio in vitro Technologies, Haledorpe, MD and 2NIH Chemical Genomics Center, Bethesda, MD.

#424  
Poster Board Number  .........................  #243

MULTIPLEX CYTOTOXICITY ASSAY FOR PRIMARY HEPATOCYTES. Y. Wu, U. Hanamosegawa and S. Adams. Discovery Toxicology, Bristol Myers Squibb, Wallingford, CT.

#425  
Poster Board Number  .........................  #244

PROTECTION BY THE PROX1 HYDROXYLASE INHIBITOR, EDHB, AGAINST CELL KILLING AFTER CHEMICAL HYPOXIA IN CULTURED RAT HEPATOCYTES. G. Lovelace1, J. R. Patnaik2, J. R. Nixon3, H. Jueulseke4, Z. Zhang5, G. L. Wright6 and J. J. Lemasters5. 1Center for Cell Death, Injury & Regeneration; Department of Pharmaceutical & Biomedical Sciences, Medical University of South Carolina, Charleston, SC and 2Department of Pharmacology, Toxicology & Therapeutics, University of Kansas Medical Center, Kansas City, KS.

#426  
Poster Board Number  .........................  #245

8-BR-CAMP INDUCES MULTIDRUG RESISTANCE-ASSOCIATED PROTEIN EXPRESSION IN Huh7 CELLS AND PRIMARY HUMAN HEPATOCYTES. S. Kulkarni and A. L. Slitt. Biomedical and Pharmaceutical Sciences, University of Rhode Island, Kingston, RI.
Abstract #

#427  
**Poster Board Number** ......................................246  

#428  
**Poster Board Number** ......................................247  
**REACTIVE OXYGEN SPECIES-RELATED MECHANISMS PARTICIPATE IN THE SENSITIVITY OF M-CSF-PRIMED RAT KUPFFER CELLS TO LPS CHALLENGE.** Z. Wang, J. E. Klaunig and L. M. Kamendulis. Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN.

#429  
**Poster Board Number** ......................................248  
**MALE-PREDOMINANT EXPRESSION OF HEPATIC TRANSPORTER OATP1A1 EXPLAINS THE GENDER DIFFERENCE IN PLASMA LEVELS OF UNCONJUGATED BILE ACIDS IN MICE.** Y. Zhang and C. D. Klaasen. Pharmacy, Toxicology & Therapeutics, University of Kansas Medical Center, Kansas City, KS.

#430  
**Poster Board Number** ......................................249  
**ALCOHOL CIRRHOSIS UPREGULATES MULTIDRUG-RESISTANCE-ASSOCIATED PROTEIN TRANSPORTER EXPRESSION IN HUMAN LIVER.** V. R. More, Q. Cheng and A. L. Stitt. Biomedical and Pharmaceutical Sciences, University of Rhode Island, Kingston, RI.

#431  
**Poster Board Number** ......................................250  
**AROMATIC HYDROXYLATION IS A MAJOR NOVEL PATHWAY IN THE METABOLISM OF THE MYCOTOXIN ZEARALENONE.** E. Pfeiffer, A. Hildebrand, G. Damm, A. Rapp, B. Gainesville, FL and 3Biochemistry and Molecular Biology, University of Florida, Gainesville, FL.

#432  
**Poster Board Number** ......................................251  
**METABOLISM COMPARATIVE CYTOTOXICITY ASSAY (MCCA) AND CYTOTOXIC METABOLIC PATHWAY IDENTIFICATION ASSAY (CMPIA) WITH CRYOPRESERVED HUMAN HEPATOCYTES FOR THE EVALUATION OF METABOLISM-BASED CYTOTOXICITY IN VITRO: PROOF-OF-CONCEPT STUDY WITH AFLATOXIN B1.** A. P. Li, In Vitro ADMET Laboratories, Advanced Pharmaceutical Sciences, Columbia, MD.

#433  
**Poster Board Number** ......................................252  
**MITOCHONDRIA AS A SITE OF METABOLISM OF DICHLOROACETATE.** W. Li, M. O. James, P. Reid and P. W. Stacpoole. 1Medicinal Chemistry, University of Florida, Gainesville, FL. 2Medicine, University of Florida, Gainesville, FL and 3Biochemistry and Molecular Biology, University of Florida, Gainesville, FL.

Abstract #

#434  
**Poster Board Number** ......................................253  

#435  
**Poster Board Number** ......................................254  
**COBALT CHLORIDE, A LEAKAGE PRODUCT OF COBALT NANOPIERCLES, IS TOXIC TO RAT LIVER MITOCHONDRIA: A CARBON 13 NMR STUDY.** G. Bauer, M. Bernier, C. Pinteur, R. Nazaret, G. Martin and C. Gauthier. Metabolomics and Metabolic Diseases, INSERM Unit # 820, Lyon Cedex 08, France.

#436  
**Poster Board Number** ......................................255  
**BILIARY EPITHELIAL CELL CULTURE PREDICTS TOXICITY BY 1-ARYLOXYPROPYAN-2-OL IN THE RAT.** V. Bhaskaran, L. Watson, L. Lehman-Mckeeform, B. Gromov and M. Otieno. Discovery Toxicology, Bristol-Myers Squibb, Lawrenceville, NJ.

#437  
**Poster Board Number** ......................................256  
**MEASUREMENT OF LIVER ALANINE AMINOTRANSFERASE ISOENZYME (ALT1 & ALT2) ACTIVITY BY D-CYCLOSERINE INHIBITION.** R. Goldstein, D. Neittelton, F. Rajamohan, R. Yang, D. Gong and W. Reagan. 1DSRD-Biomarkers, Pfizer, Groton, CT and 2School of Medicine, University of MD, Baltimore, MD.

Monday Afternoon, March 16  
1:00 PM to 4:30 PM  
Exhibit Hall

**POSTER SESSION: ECOTOXICOLOGY**

Chairperson(s): Michael H. Dong, California Environmental Protection Agency, Sacramento, CA.

Displayed: 1:00 PM–4:30 PM

**Author Attended:** 2:45 PM–4:30 PM

#438  
**Poster Board Number** ......................................306  
**IN SITU BIOMONITORING USING CAGED JUVENILE CHINOOK SALMON (ONCORHYNCHUS TSHAWYTSCHA) AT A RIVER SUPERFUND SITE IN THE PACIFIC NORTHWEST.** M. A. Kelley, A. Gillespie, B. Duncan, T. McDonald, G. D. Zhou, S. Wang, L. Y. He and K. C. Donnelly. 1Texas A&M University, College Station, TX and 2U.S. EPA Region 10, Seattle, WA.

#439  
**Poster Board Number** ......................................307  
**DETECTION AND QUANTIFICATION OF BAP AND BBF FROM SEDIMENTS AND TILAPIAS OF THE CUCHARILLAS MARSHLAND, PUERTO RICO.** P. Nieves, W. L. Lopez and B. Zayas. 1School of Environmental Affairs, Metropolitan University, San Juan, PR and 2School of Science and Technology, Metropolitan University, San Juan, PR. Sponsor: D. Herrenos.
**Abstract #**

**Poster Board Number** ......................................308

#440 TRANSLATING IN VITRO ESTROGENIC ASSAY RESULTS TO ECOLOGICAL RISK ASSESSMENT. C. Mori1, S. Thakali1, A. Tarrant2, M. Sharma1, H. Yekel3 and T. Verslycke1. 1Gradient Corporation, Cambridge, MA, 2Woods Hole Oceanographic Institution, Woods Hole, MA and 3Wyeth Pharmaceuticals, Malvern, PA.

**Poster Board Number** ......................................309

THE CYTOCHROME P450 (CYP) GENE SUPERFAMILY IN DAPHNIA PULEX, W. S. Baldwin1, P. B. Marko2 and D. R. Nelson3. 1Environmental Toxicology Program, Clemson University, Pendleton, SC, 2Biological Sciences, Clemson University, Clemson, SC and 3Molecular Sciences, University of Tennessee-Memphis, Memphis, TN.

**Poster Board Number** ......................................310


**Poster Board Number** ......................................311

EVALUATION OF THE EFFICIENCY OF THE TREATMENT BY PHOTOELECTROCATALYSIS AND CONVENTIONAL CHLORINATION IN THE REMOVAL OF THE AZO DYES FROM AQUEOUS SAMPLES USING THE SALMONELLA MUTAGENICITY ASSAY. E. R. Ferraz1, M. M. Osugi2, M. V. Zanoni2, A. R. Araujo3, K. Rajeshwar3 and D. P. Oliveira1. 1Departamento de Análises Clínicas, Toxicológicas e Bromatológicas, Universidade de São Paulo, Ribeirão Preto, São Paulo, Brazil, 2Universidade Paulista Julio de Mesquita Filho—UNESP, Araraquara, São Paulo, Brazil, 3University of Texas at Arlington, Arlington, TX.

**Poster Board Number** ......................................312

MOLECULAR CLONING OF AKRI A GENE AND ITS COMPARATIVE EXPRESSION WITH CYPIA IN RESPONSE TO BENZO(A)PYRENE TREATMENT IN TILAPIA (OREOCROMIS NILOTICUS). C. Osorio-Yánez1, M. Pérez-Núñez2, J. L. García-Taveras2, O. Zapata-Pérez3 and A. Albores4. 1Biochemistry and 2Veterinary Biomedical Sciences, University of Saskatchewan, Saskatoon, SK, Canada and 3Toxicology Centre, University of Saskatchewan, Saskatoon, SK, Canada.

**Poster Board Number** ......................................313

THE CYTOCHROME P450 EFFECT ON THE CLEAVAGE OF THE CHROMOPHORE GROUP OF THE MUTAGENIC DYES DISPERSE RED 1, DISPERSE ORANGE 1 AND DISPERSE RED 13 AND THE RELATION BETWEEN THE GUANOSINE REACTION AND AZO BOND FOR THEIR MUTAGENICITY. F. M. Chequer1, M. V. Zanoni2 and D. P. Oliveira1. 1Departamento de Análises Clínicas, Toxicológicas e Bromatológicas, Universidade de São Paulo, Ribeirão Preto, São Paulo, Brazil and 2Universidade Paulista Julio de Mesquita Filho—UNESP, Araraquara, São Paulo, Brazil.

**Poster Board Number** ......................................314

INVESTIGATION OF MITOCHONDRIAL TOXICITY OF MICROCYSTIN-LR. G. Jasonke1 and D. Papkovsky2,3. 1Biochemistry Department, University College Cork, Cork, Ireland and 2Luxcel Biosciences Ltd, Cork, Ireland. Sponsor: Y. Will.

**Poster Board Number** ......................................315

THE INTERACTION OF THE FOOD DYE SUDAN III AND ITS REDUCED METABOLITES WITH GUANOSINE AND SCREENING OF THE MUTAGENIC ACTIVITY EVALUATION WITH SALMONELLA TEST. T. B. Zanoni1, M. V. Zanoni2 and D. P. Oliveira1. 1Departamento de Análises Clínicas Toxicológicas e Bromatológicas, USP-Universidade de São Paulo, Araraquara, São Paulo, Brazil and 2Instituto de Química, Universidade Paulista Julio de Mesquita Filho, Araraquara, São Paulo, Brazil.

**Poster Board Number** ......................................316

IN VITRO FISH METABOLISM PREDICTS ELIMINATION OF SUSPECT BIOACCUMULATIVE CHEMICALS. P. D. Guiney1, J. A. Weeks2, K. M. Johanning1, J. E. Hall1 and R. L. Johnson3. 1SC Johnson & Son, Inc., Racine, WI and 2CellzDirect/ INVITROGEN Corporation, Austin, TX.

**Poster Board Number** ......................................317

THE EFFECT OF 2, 4-DINITROPHENOL ON ZEBRAFISH SWIM PERFORMANCE. J. S. Marit1 and L. P. Weber1,2. 1Veterinary Biomedical Sciences, University of Saskatchewan, Saskatoon, SK, Canada and 2Toxicology Centre, University of Saskatchewan, Saskatoon, SK, Canada.

**Poster Board Number** ......................................318

DNA SEQUENCE CHARACTERIZATION OF GOWANUS CANAL SOIL BACTERIA WITH POTENTIAL USE IN BIOREMEDIATION. J. Levia and C. Bolnet. Medgar Evers College, Brooklyn, NY.

**Poster Board Number** ......................................319

EVALUATION OF THE POTENTIAL FOR INTERACTIONS AMONG THE BACILLUS THURINGIENSIS CRY PROTEINS PRODUCED BY MON 89034. TC1507 MON 88017. S. L. Levine. Regulatory, Monsanto company, Saint Louis, MO.
Program Description (Continued)

Abstract #

#452

Poster Board Number ...........................................320

AN INTEGRATED BIOMARKER APPROACH FOR ASSESSING HEALTH IMPACTS ON KILLIFISH (FUNDULUS HETEROCLITUS) INHABITING THE HEAVILY CONTAMINATED NY/NJ HARBOR ESTUARY, S. M. Bagel1, L. A. White2 and K. R. Cooper1. 1Department of Environmental Sciences, Rutgers University, New Brunswick, NJ and 2Department of Biochemistry & Microbiology, Rutgers University, New Brunswick, NJ.

#453

Poster Board Number ...........................................321


Monday Afternoon, March 16
1:00 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: BIOLOGICAL MODELING

Chairperson(s): Elena Kenyon, U.S. EPA, Research Triangle Park, NC.

Displayed: 1:00 PM – 4:30 PM

Author Attended: 1:00 PM – 2:45 PM

#454

Poster Board Number ...........................................339

BIOLOGICALLY-BASED MODELING OF MODULATION OF MAP KINASE SIGNALING PATHWAY BY LF IN TOXICOGN PHASE OF ANTHRAX INFECTION, P. J. Robinson1, E. J. Fleming1, J. M. Gearhart2, E. Hack3, G. A. Andrews2 and B. W. Gutting2. 1RHPB, Air Force Research Laboratory, Dayton, OH and 2Naval Surface Warfare Center, Dahlgren, VA.

#455

Poster Board Number ...........................................340


#456

Poster Board Number ...........................................341


#457

Poster Board Number ...........................................320

ENVIRONMENTAL EXPOSURES TO THYROID DISRUPTING CHEMICALS: KEY CONSIDERATIONS FOR DEVELOPING A BBDR-HPT AXIS MODEL FOR THE PREGNANT MOTHER AND FETUS, B. O. Fatuyi1, M. Muntaz2 and J. W. Fisher1. 1Environmental Health Science, University of Georgia, Athens, GA and 2Computational Toxicology Laboratory, Division Toxicology and Environmental Medicine, Agency for Toxic Substances and Disease Registry (ATSDR), Atlanta, GA.

#458

Poster Board Number ...........................................339

A MORPHOMETRY MODEL OF THE RABBIT LUNG FOR PARTICLE DEPOSITION MODELING, E. Hack and J. M. Gearhart, Wright-Patterson AFB, Wright-Patterson AFB, OH.

#459

Poster Board Number ...........................................340

AN INTEGRATED QSAR-PBPK MODEL FOR SIMULATING INHALATION AND DERMAL KINETICS OF VOLATILE ORGANIC CHEMICALS (VOCS) IN HUMANS, E. Kamgang and K. Krishnan. SEST, University of Montreal, Montreal, QC, Canada.

#460

Poster Board Number ...........................................341

PBPK/BD MODEL OF FRANCISELLA TULARENSIS IN RHEUS MONKEYS, M. Lampkin, G. Diamond, S. Massulik and P. Coleman. Syracuse Research Corp, N. Syracuse, NY.

#461

Poster Board Number ...........................................342

A PHYSIOLOGICALLY BASED BIOKINETIC AND BIODYNAMIC (PBPK-BD) MODEL OF SYSTEMIC BACILLUS ANTHRACIS TOXINS, E. J. Fleming1, C. Hack1, P. J. Robinson1, S. R. Channel2, T. L. Nichols3, B. W. Gutting1 and J. M. Gearhart1. 1711HPW/RHPB, HJF, Wright-Patterson AFB, OH, 2Science Applications International Corporation, Linton, IN, 3National Health Security and Research Centre (NHSRC), U.S. EPA, Cincinnati, OH and 4National Naval Medical Center, Bethesda, MD.

#462

Poster Board Number ...........................................339

USE OF A PBPK MODEL TO DETERMINE THE POTENTIAL EFFECTS OF ALBUMIN AND PONI ESTERASE ACTIVITIES ON CHLOROPYRIFOS PHARMACODYNAMICS, T. S. Poet1, M. J. Bartels2 and C. Timchalk3. 1Battelle, Pacific Northwest Division, Richland, WA and 2The Dow Chemical Company, Midland, MI.

#463

Poster Board Number ...........................................340

IMPROVING RISK ASSESSMENT FROM DIETARY EXPOSURES BY MODELING VARIATION AND UNCERTAINTY IN EXPOSURE AND DOSE-RESPONSE USING LINKED EXPOSURE AND PBPK/PD MODELS, P. M. Hinderliter1, P. S. Price2, K. D. Schnelle3, C. Timchalk3 and T. S. Poet1. 1Battelle, Pacific Northwest Division, Richland, WA and 2The Dow Chemical Company, Midland, MI and 3Dow AgroSciences LLC, Indianapolis, IN.
Abstract # | Poster Board Number | Abstract#
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#464 | DEVELOPMENT AND VALIDATION OF AN OPEN SOURCE COMPUTATIONAL FRAMEWORK FOR FORWARD AND REVERSE DOSIMETRY OF ORGANOPHOSPHORUS INSECTICIDE MIXTURES, J. H. Ivy1, B. Reisfeld2, M. Lyons2, T. Renner2, A. N. Mayeno1 and R. Yang1. 1Quantitative & Computational Toxicology Group, Colorado State University, CO, 2Chemical & Biological Engineering, Colorado State University, Fort Collins, CO and 3Environmental & Radiological Health Sciences, Colorado State University, Fort Collins, CO.
#465 | USING QSAR TO PREDICT PBPK/PD MODEL PARAMETERS FOR ORGANOPHOSPHORUS CHEMICALS, C. D. Ruark, C. Hack, P. J. Robinson and J. M. Gearhart. HJF, Wright-Patterson AFB, OH.
#466 | ACCOUNTING FOR STEREO-ISOMERS AND IONIZATION IN A PBPK/PD MODEL OF VX EXPOSURE, T. R. Covington1, E. M. Jakubowski1, J. M. McGuire1, R. A. Evans1, S. W. Hulet1 and J. M. Gearhart1. HJF, 711th HPW/RHPB, Wright-Patterson AFB, OH and 2U.S. Army, ECBC, Aberdeen Proving Ground, MD.
#467 | ASSESSING THE INFLUENCE OF DIETARY MANGANESE VARIABILITY AND INHALED EXPOSURE BY PHARMACOKINETIC MODELING, A. Nong1, M. D. Taylor2, D. C. Dorman2, M. E. Andersen2 and H. J. Clewell2. 1The Hamner Institutes for Health Sciences, Research Triangle Park, NC, 2Afton Chemical Corporation, Richmond, VA and 3College of Veterinary Medicine, North Carolina State University, Raleigh, NC.
#468 | UNDERSTANDING Mn KINETICS IN RATS DURING GESTATION AND LACTATION USING PBPK MODELING, M. Yoon1, A. Nong1, H. J. Clewell2, M. D. Taylor2, D. C. Dorman2 and M. E. Andersen2. The Hamner Institutes for Health Sciences, RTP, NC, 2Afton Chemical, Richmond, VA and 3North Carolina State University, Raleigh, NC.
#469 | DEVELOPMENT OF A PBPK MODEL FOR HEXAVALENT CHROMIUM IN RATS AND MICE TO ESTIMATE EXPOSURE TO ORAL MUCOSA AND SMALL INTESTINE EPITHELIUM, J. L. Campbell, Y. Tan and H. J. Clewell. Center for Human Health Assessment, The Hamner Institutes for Health Sciences, Research Triangle Park, NC.
#470 | HARMONIZATION OF CYCLIC SILICANES PBPK MODEL STRUCTURES, Y. Tan1, Y. Yang2, M. E. Andersen1, H. Clewell1 and K. P. Plotzke2. 1The Hamner, Research Triangle Park, NC and 2Dow Corning Corporation, Midland, MI.

Poster Board Number | Abstract#
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#468 | UNDERSTANDING Mn KINETICS IN RATS DURING GESTATION AND LACTATION USING PBPK MODELING, M. Yoon1, A. Nong1, H. J. Clewell2, M. D. Taylor2, D. C. Dorman2 and M. E. Andersen2. The Hamner Institutes for Health Sciences, RTP, NC, 2Afton Chemical, Richmond, VA and 3North Carolina State University, Raleigh, NC.
#469 | DEVELOPMENT OF A PBPK MODEL FOR HEXAVALENT CHROMIUM IN RATS AND MICE TO ESTIMATE EXPOSURE TO ORAL MUCOSA AND SMALL INTESTINE EPITHELIUM, J. L. Campbell, Y. Tan and H. J. Clewell. Center for Human Health Assessment, The Hamner Institutes for Health Sciences, Research Triangle Park, NC.
#470 | HARMONIZATION OF CYCLIC SILICANES PBPK MODEL STRUCTURES, Y. Tan1, Y. Yang2, M. E. Andersen1, H. Clewell1 and K. P. Plotzke2. 1The Hamner, Research Triangle Park, NC and 2Dow Corning Corporation, Midland, MI.

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#465 | USING QSAR TO PREDICT PBPK/PD MODEL PARAMETERS FOR ORGANOPHOSPHORUS CHEMICALS, C. D. Ruark, C. Hack, P. J. Robinson and J. M. Gearhart. HJF, Wright-Patterson AFB, OH.
#466 | ACCOUNTING FOR STEREO-ISOMERS AND IONIZATION IN A PBPK/PD MODEL OF VX EXPOSURE, T. R. Covington1, E. M. Jakubowski1, J. M. McGuire1, R. A. Evans1, S. W. Hulet1 and J. M. Gearhart1. HJF, 711th HPW/RHPB, Wright-Patterson AFB, OH and 2U.S. Army, ECBC, Aberdeen Proving Ground, MD.
#467 | ASSESSING THE INFLUENCE OF DIETARY MANGANESE VARIABILITY AND INHALED EXPOSURE BY PHARMACOKINETIC MODELING, A. Nong1, M. D. Taylor2, D. C. Dorman2, M. E. Andersen2 and H. J. Clewell2. 1The Hamner Institutes for Health Sciences, Research Triangle Park, NC, 2Afton Chemical Corporation, Richmond, VA and 3College of Veterinary Medicine, North Carolina State University, Raleigh, NC.
#468 | UNDERSTANDING Mn KINETICS IN RATS DURING GESTATION AND LACTATION USING PBPK MODELING, M. Yoon1, A. Nong1, H. J. Clewell2, M. D. Taylor2, D. C. Dorman2 and M. E. Andersen2. The Hamner Institutes for Health Sciences, RTP, NC, 2Afton Chemical, Richmond, VA and 3North Carolina State University, Raleigh, NC.
#469 | DEVELOPMENT OF A PBPK MODEL FOR HEXAVALENT CHROMIUM IN RATS AND MICE TO ESTIMATE EXPOSURE TO ORAL MUCOSA AND SMALL INTESTINE EPITHELIUM, J. L. Campbell, Y. Tan and H. J. Clewell. Center for Human Health Assessment, The Hamner Institutes for Health Sciences, Research Triangle Park, NC.
#470 | HARMONIZATION OF CYCLIC SILICANES PBPK MODEL STRUCTURES, Y. Tan1, Y. Yang2, M. E. Andersen1, H. Clewell1 and K. P. Plotzke2. 1The Hamner, Research Triangle Park, NC and 2Dow Corning Corporation, Midland, MI.
Program Description (Continued)

Abstract #

#477
Poster Board Number ............................................402
USE OF A PHYSIOLOGICALLY BASED
PHARMACOKINETIC (PBPK) MODEL TO
PREDICT TISSUE DISPOSITION IN PIGS
FED MELAMINE, J. L. Buur1, R. E. Bayner2
and J. E. Riviere1, College of Veterinary Medicine,
Western University of Health Sciences, Pomona,
CA and 1Center for Chemical Toxicology and
Pharmacokinetics, NCSU, Raleigh, NC.

#478
Poster Board Number ............................................403
PHYSIOLOGICALLY-BASED
PHARMACOKINETIC MODELING OF
BROMODICHLOROMETHANE IN HUMAN.
E. Demchuk and H. Hansen. Computational
Toxicology Laboratory, Agency for Toxic Substances
and Disease Registry, Atlanta, GA. Sponsor: B.
Fowler.

#479
Poster Board Number ............................................404
AGE- AND GENDER-STRUCTURED
DISTRIBUTIONS FOR PHYSIOLOGICAL
PARAMETERS: ASSESSMENT OF HUMAN
VARIABILITY IN THE EXPOSURE-
INTERNAL-DOSE RELATIONSHIP FOR
DICHLOROMETHANE (DCM), P. M.
Schlosser1, A. Bae2 and G. S. Cooper2, NCEA, U.S.
EPA, RTP, NC and 1NCEA, U.S. EPA, Washington,
DC.

#480
Poster Board Number ............................................405
EVALUATING PBPK MODELING
TECHNIQUES USING CALIBRATION
DESCRIPTORS, J. L. Matthews1, M. V. Smith1
and G. E. Kissling2. 1SRA International, Inc., Durham,
NC and 2NCEA, U.S. EPA, Washington,
DC.

Monday Afternoon, March 16
1:00 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: TOXICOLOGY OF KIDNEY

Chairperson(s): Kenneth McMartin, LSU Health Sciences Center,
Shreveport, LA.

Displayed: 1:00 PM–4:30 PM

Author Attended: 2:45 PM–4:30 PM

#481
Poster Board Number ............................................406
MITOCHOONDRIAL FUNCTION AND
OXIDATIVE STRESS IN DIABETIC
NEPHROPATHY IN STREPTOZOTOCIN-
TREATED RATS, L. H. Leoh and Q. Zhong,
Pharmacology, Wayne State University Sch. Med.,
Detroit, MI.

#482
Poster Board Number ............................................407
MULTIDRUG RESISTANCE PROTEIN
2 MEDiates TRANSPORT OF
N-ACETYL-S-(1, 2-DICHLOOROVINYL)-L-
CYSTEINE. N. Abuladze1, K. Tsirulnikov1, M.
Koag1, K. Faul1, G. Bondar1, W. Dekant2, I. Kurza2
and A. Pushkin1. 1UCLA, Los Angeles, CA and
2University of Wurzburg, Wurzburg, Germany.

#483
Poster Board Number ............................................408
IMPAIRED RENAL FUNCTION AND
GLUCOSE METABOLISM IN CALCINEURIN
A ALPHA KNOCKOUT MICE. R. N. Reddy1,2
and J. L. Gooch1,2, 1Nephrology, Emory University,
Atlanta, GA and 2Atlanta VA Medical Center,
Atlanta, GA.

#484
Poster Board Number ............................................409
2-BROMOETHANAMINE (BEA) INDUCES
PAPILLARY NECROSIS BY IMPAIRING
THE FUNCTION OF TONEBP UNDER
HYPERTONIC STRESS IN KIDNEY CELLS.
M. A. Lanapsa, A. Andres-Hernando, C. J. Rivard,
A. E. Crunk, N. Li and T. Berl. Renal Medicine,
University of Colorado Health Sciences Center,
Denver, CO. Sponsor: C. Franklin.

#485
Poster Board Number ............................................410
POTENTIAL TOXICITY OF GLUCOSAMINE
MEDIATED THROUGH TRANSFORMING
GROWTH FACTOR β (TGFβ), A. A. Ali1, S. M.
Lewis1, H. L. Badley1, W. T. Alabbin1, V. H. Frankos1
and J. E. Leakey1. 1Office of Scientific Coordination,
NCTR, Jefferson, AR and 2Division of Dietary
Supplement, FDA-CFSAN, College Park, MD.

#486
Poster Board Number ............................................411
IN THE RAT, GAMMA-
HYDROXYBUTYRATE IS DETOXIFIED NOT
ONLY BY HEPATOCYTES BUT ALSO BY
RENAL PROXIMAL TUBULES: A CARBON
13 NMR STUDY. M. El Hage, G. Baverel
and G. Martin. Metabolomics and Metabolic Diseases,
INSERM Unit # 820, Lyon Cedex 08, France.

#487
Poster Board Number ............................................412
IN VITRO NEPHROTOXICITY INDUCED BY
AMINOCHLOROPHENOLS, D. Palmer2, A.
Sweeney1, A. Kraymel1, C. Schuetz1, K. A. Anestis1
and G. G. Rankin1. Pharmacology, Physiology &
Toxicology, Marshall University, Huntington, WV
and 2West Virginia State University, Institute, WV.

#488
Poster Board Number ............................................413
POTENTIAL ROLE OF OXIDATIVE STRESS
IN RESVERATROL PROTECTION OF
CISPLATIN IN VITRO RENAL TOXICITY. M.
Valentovic and J. G. Ball. Pharmacology, Physiology &
Toxicology, Marshall University School of
Medicine, Huntington, WV.

#489
Poster Board Number ............................................414
ANALYSIS OF RENAL BIOMARKERS IN
RAT URINE SAMPLES FROZEN FOR 44
MONTHS FROM A STUDY ON PUROMYCIN
AMINOUCLEOSIDE (PAN). M. Perron1, R.
Burnett1, A. Reinecke1, J. Briffaut1, D. Eisinger2
and J. Mapes2. 1MDS Pharmacology Services, St
Germain sur l’Arbresle, France and 2Rule Based
Medicine (RBM), Austin, TX.

#490
Poster Board Number ............................................415
SUBCHRONIC TOXICITY OF BETA-
PICOLINE IN FISHER 344 RATS AND
B6C3F1 MICE. M. E. Wyde1, S. Elmore1, B.
Sparrow2 and M. Hejtmancik1. 1NTP, NIHES,
Research Triangle Park, NC and 2Battelle, Columbus,
OH.

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Program Description (Continued)
Program Description (Continued)

Abstract # | Abstract #
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#491 | #416
Poster Board Number | N-CADHERIN EXPRESSION DICTATES ACUTE INJURY IN RESPONSE TO MERCURIC CHLORIDE AND SIMULATED ISCHEMIA. A. R. Parrish* and R. C. Burghardt1. 1Systems Biology, College of Medicine, Texas A&M Health Science Center, College Station, TX and Veterinary Integrated Biosciences, College of Veterinary Medicine, Texas A&M University, College Station, TX.

#492 | #417
Poster Board Number | PHARMACOLOGICALLY-INDUCED MITOCOCHONDRIAL BIOGENESIS AIDS IN RECOVERY OF FUNCTION OF OXIDANT-INJURED RENAL CELLS. J. A. Funk and R. G. Schnellmann. Pharmaceutical and Biomedical Sciences, Medical University of South Carolina, Charleston, SC.

#493 | #418
Poster Board Number | EFFECT OF URINARY CONSTITUENTS ON THE DIFFERENTIAL SENSITIVITY TO ETHYLENE GLYCOL-INDUCED RENAL TOXICITY IN WISTAR AND F344 RATS. Y. Li and K. McMartin. Pharmacology, Toxicology & Neuroscience, LSU Health Sciences Center, Shreveport, LA.

#494 | #419
Poster Board Number | METABOLITES OF DIETHYLENE GLYCOL (DEG) ARE RESPONSIBLE FOR THE RENAL TOXICITY ASSOCIATED WITH ACUTE DEG POISONING. L. M. Besenhofer, M. C. Cain, B. Latimer and K. McMartin. Pharmacology, Toxicology & Neuroscience, LSU Health Sciences Center, Shreveport, LA.

#495 | #420
Poster Board Number | IN ISOLATED RABBIT RENAL PROXIMAL TUBULES, THE BETA-LACTAM ANTIBIOTIC CEPHALORIDINE DOES NOT INHIBIT THE MITOCOCHONDRIAL UPTAKE OF SUCCINATE, A BIOMARKER OF ITS NEPHROTOXICITY: A CELLULAR METABOLIC STUDY WITH CARBON 13 NMR. G. Baverel, S. Cadi-Sousi and G. Martin. Metabolomics and Metabolic Diseases, INSEERM Unit # 820, Lyon Cedex 08, France.

Monday Afternoon, March 16
1:00 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: SAFETY ASSESSMENT FOR NON-PHARMACEUTICALS

Chairperson(s): Ronald Brown, U.S. FDA, Silver Spring, MD and David M. Lehmann, Bausch and Lomb, Rochester, NY.

Displayed: 1:00 PM–4:30 PM

Author Attended: 1:00 PM–2:45 PM

#496 | #421

#497 | #422

#498 | #423
Poster Board Number | USE OF CONSEPO IN CONSUMER PRODUCT RISK ASSESSMENTS FOR CALIFORNIA PROPOSITION 65 COMPLIANCE. N. Pechuck, L. Milchak, R. Roy and R. Skoglund. 3M, St. Paul, MN.

#499 | #424
Poster Board Number | EVALUATION OF PROPYLENE GLYCOL MONOPROPYLATE IN THE LOCAL LYMPH NODE ASSAY. R. O. Liedner and L. M. Milchak. Medical Department, 3M, St. Paul, MN.

#500 | #425
Poster Board Number | VALPROATE REDUCES NEURITE OUTGROWTH BUT REVERSIBLE IN HUMAN SY5Y NEUROBLASTOMA CELLS. Y. Qian, Y. Zheng and E. Tiffiny-Castiglia. Texas A&M University, College Station, TX.

#501 | #426
Poster Board Number | 28-DAY ORAL (GAVAGE) TOXICITY STUDY WITH ETHYL METHANESULFONATE (EMS) IN THE RAT. T. Prister1, L. Müller1, E. Gocke1, P. Larson2, T. Lave3 and A. Eichinger-Chapelon3. 1Nonclinical Drug Safety, F. Hoffmann-La Roche, Basel, Switzerland, 2Virology and Transplantation, F. Hoffmann-La Roche, Nutley, NJ and 3RCC, Itingen, Switzerland.

#502 | #427
Poster Board Number | A REPRODUCTION/DEVELOPMENTAL TOXICITY SCREENING ASSAY IN RATS WITH HIGH PURITY Monoctyl tin triS(2-Monoctyl Mercaptacacetate) (MOT). I. Waalkens-Berendsen1, W. Gaust-Chapelle1, S. Reiss Murphy2 and C. Farr3. 1TNO Quality of Life, Zeist, Netherlands, 2Akerma, Colombes Cedex, France and 3RCC Inc., Philadelphia, PA.

#503 | #428
Poster Board Number | SUBCHRONIC TOXICITY OF CITRONELLI NITRILE IN RATS. C. Letizia, V. T. Politano and A. Api. RIFM, Woodcliff Lake, NJ.

#504 | #429
Poster Board Number | FRAMEWORK FOR THE SAFETY ASSESSMENT OF MATERIALS USED IN AUTO INTERIORS. P. J. Beattie1, J. P. Rinkevich1 and T. G. Osimitz2. 1Science Strategies, LLC, Charlottesville, VA and 2General Motors Corporation, Warren, MI.

#505 | #430
Poster Board Number | APPLYING THE THRESHOLD OF TOXICOLOGICAL CONCERN TO LOW LEVEL INGREDIENTS IN AIR FRESHENERS. T. Petry, C. Namali1, P. H. Lloyd2, U. Vedula2 and F. J. Joachim1. ToxMinds BVBA, Brussels, Belgium, 1SC Johnson Ltd, Frimley, Surrey, United Kingdom and 2SC Johnson & Son Inc., Racine, WI.
Abstract #

#506 Poster Board Number .......................... 431

#507 Poster Board Number .......................... 432
THE COLIPA STRATEGY FOR DEVELOPING AND PRE-VALIDATING IN VITRO ALTERNATIVES FOR SKIN SENSITIZATION TESTING. P. Asby¹, T. Ashikaga², S. Bessou-Touya³, W. Diembeck¹, F. G. Gerberick⁴, M. Marrec-Fairley¹, G. Maxwell⁵, J. Ovigne⁶, H. Sakaguchi⁷, K. Schroeder⁸ and M. Tailhardat⁹, COLIPA, Brussels, Belgium, 2Shiseido Research Centre, Yokohama-Shi, Japan, ³Pierre Fabre, Castres, France, ⁴Beiersdorf, Hamburg, Germany, ⁵Procter & Gamble Company, Cincinnati, OH, ⁶Unilever, Sharnbrook, United Kingdom, ⁷L’Oréal, Aulnay sous Bois, France, ⁸Kao Corporation, Tochigi, Japan, ⁹Phenion GmbH & Co. KG (Henkel), Düsseldorf, Germany and ¹¹LVMH Recherche, Saint Jean de Braye, France.

#508 Poster Board Number .......................... 433
QRA APPROACH FOR SKIN SENSITIZATION TO HAIR DYSES BY MEASURING THE CONSUMER EXPOSURE LEVEL (MCEL) IN VITRO. C. Goebel¹, P. Kern², C. A. Ryan³, H. Rotte⁴ and G. F. Gerberick⁵, CPS, Procter & Gamble Service GmbH, Darmstadt, Germany and ⁶CPS, Procter & Gamble Company, Cincinnati, OH.

#509 Poster Board Number .......................... 434

#510 Poster Board Number .......................... 435
SAFETY ASSESSMENT OF OXIDATIVE DEGRADATION PRODUCTS IN HYDROCORTISONE, H. Fikree¹, A. C. Pais¹, L. N. Sarkissian², N. R. Bullock³ and L. A. A. Highton⁴, ¹Ashuren Health Sciences, Mississauga, ON, Canada and ²CPS, Procter & Gamble Company, Cincinnati, OH, and ³CPS, Procter & Gamble Company, Cincinnati, OH.

#511 Poster Board Number .......................... 436

#512 Poster Board Number .......................... 437
OPTIMIZATION OF IN VITRO MICRONUCLEUS TEST WITHOUT CYTOCHALASIN B TO EVALUATE TOTAL PARTICLE MATTER OF CIGARETTE SMOKE. J. Nakai, J. Sawaguri¹, M. Ogura¹, H. Fukudomi¹, K. Hori¹, M. Tsuchitani¹, T. Sofuni¹ and K. Inada¹, Japan Tobacco Inc., Tokyo, Japan and ²Mitsubishi Chemical Safety Institute Ltd., Tokyo, Japan.

#513 Poster Board Number .......................... 438

#514 Poster Board Number .......................... 439

#515 Poster Board Number .......................... 440
EFFECT OF SIMULATED RESPIRATORY ACIDOSIS AND HYPERTERMIA ON THE HEMOLYTIC EFFECT OF MATERIAL EXTRACTS. R. Brown, S. Loftin, C. Revenis, A. Trivedi, H. Baskar, Y. Das and M. Stratmeyer. CDRH, FDA, Silver Spring, MD.

Monday Afternoon, March 16
1:00 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: CHEMICAL AND BIOLOGICAL WEAPONS

Chairperson(s): Gunda Reddy, U.S. Army Center for Health Promotion and Preventive Medicine, Aberdeen Proving Ground, MD.

Displayed: 1:00 PM–4:30 PM

Author Attended: 2:45 PM–4:30 PM

#516 Poster Board Number .......................... 441
DETERMINING THE DISTRIBUTION OF VX IN GUINEA PIG TARGET ORGANS FOLLOWING A SINGLE SUBLETHAL SUBCUTANEOUS OR PERCUTANEOUS EXPOSURE. J. M. McGuire¹, C. E. Whalley¹, L. A. Lamley², E. D. Clarkson², E. M. Jakubowsk³, S. A. Thomson⁴ and T. Shih⁵, ¹U.S. Army Edgewood Chemical Biological Center, Aberdeen Proving Ground, MD and ²U.S. Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD.

#517 Poster Board Number .......................... 442
EFFECTIVENESS OF NOVEL PYRIDINIUM OXIDES FOR POTENTIAL ACTIVITY IN THE CENTRAL NERVOUS SYSTEM FOR REACTIVATING PHOSPHORYLATED ACETYLCHOLINESTERASE. A. Harman¹, E. C. Meek², H. Chambers³, J. Gearhart⁴ and J. E. Chambers⁵, ¹College of Veterinary Medicine, Mississippi State University, Mississippi State, MS; ²Department of Entomology and Plant Pathology, Mississippi State University, Mississippi State, MS; and ³U.S. Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD.

#518 Poster Board Number .......................... 443
Abstract #

#519
Poster Board Number ......................................444
EVIDENCE OF RDX-INDUCED BRAIN INJURY USING PERIPHERAL BENZODIAZEPINE RECEPTOR (PBR)/TRANSLOCATOR PROTEIN 18KDA (TSP10) QUANTITATIVE AUTORADIOGRAPHY. D. I. Bannon1, J. Choi2, R. Saul2 and T. Guiltarte2. 1Center for Health Promotion and Preventive Medicine Toxicology, U.S. Army, APG, Aberdeen, MD and 2Department of Environmental Health Sciences Toxicology Division, Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD.

#520
Poster Board Number ......................................445
ACUTE TOXICITY, TOXICOkinETICS AND HISTOPATHOLOGY OF INHALED RICIN IN BALB/C MICE AND SPRAGUE-DAWLEY RATS. A. Gomez, T. March, M. Wolf, E. Barr and J. Benson. Lovelace Respiratory Research Institute, Albuquerque, NM.

#521
Poster Board Number ......................................446
ACETYLCHOLINESTerase ACTIVITY IN GUINEA PIG TISSUE AFTER SUB-LETHAL VX EXPOSURE: COMPARISON OF PERCUTANEOUS VS. SUBCUTANEOUS EXPOSURE ROUTES. L. A. Lumley1, J. C. O’Donnell1, E. Clarkson1, T. Shih1 and E. L. Whalley2. 1USAMRICD, Aberdeen Proving Ground, MD and 2ECBC, APG, MD.

#522
Poster Board Number ......................................447
ACUTE TOXICITY, TOXICOkinETICS, AND HISTOPATHOLOGY OF INGESTED RICIN IN BALB/C MICE. J. Benson, A. Gomez, M. Wolf and T. March. Lovelace Respiratory Research Institute, Albuquerque, NM.

#523
Poster Board Number ......................................448
NEUregulin-1 PROTectS AGAINST PARAOXON-INDUCED APOPTOSIS IN HIPPOCAMAL SLICE CULTURES. C. Barnhart, H. Lauridsen, D. Braun and P. J. Lein. CROET, Oregon Health & Science University, Portland, OR.

#524
Poster Board Number ......................................449
2-DICHLOROETHYL ETHYL SULFIDE STIMULATES ARACHIDONIC ACID METABOLISM IN MOUSE SKIN. M. Huang1, J. P. Gray1, J. P. Gray1, R. P. Castillanos1, D. R. Gerecke1, D. L. Laskin1, J. D. Laskin1 and D. E. Heck1. 1Chemical Biology, Rutgers University, Piscataway, NJ, 2Science, U.S. Coast Guard Academy, New London, CT, 3Environmental Health Science, New York Medical College, Valhalla, NY, 4Batelle, Columbus, OH, 5Pharmacology & Toxicology, Rutgers University, Piscataway, NJ and 6Environmental & Occupational Medicine, UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ.

#525
Poster Board Number ......................................450
THE EFFECTS OF LOW DOSE SARIN AT SYMPTOMATIC AND ASYMPTOMATIC DOSES ON BEHAVIOR AND CATECHOLAMINE LEVELS IN MICE. T. L. Garrett1, C. M. Rapp1, M. Fernandez1, V. Tafuri1, J. J. Schlager2 and J. B. Lucot1. 1Pharmacology & Toxicology, Wright State University, Dayton, OH and 2Applied Biotechnology Branch, Air Force Research Laboratory, Wright Patterson Air Force Base, Dayton, OH.

#526
Poster Board Number ......................................501
ELECTRON PARAMAGNETIC RESONANCE SPECTROMETRY (EPR) AND SPIN-TRAPPING TO DETECT FREE RADICALS IN RAT LUNG AFTER SULFUR MUSTARD VAPOR EXPOSURE. A. A. Brinfield1, G. Murphy1, S. D. Soni2, W. W. Holmes3 and D. R. Anderson1. 1Pharmacology, U.S. AMRICD, Aberdeen Proving Ground, MD, 2Medical Toxicology, U.S. AMRICD, Aberdeen Proving Ground, MD and 3Analytical Toxicology, U.S. AMRICD, Aberdeen Proving Ground, MD.

#527
Poster Board Number ......................................502
PURIFICATION OF HUMAN PARAOXONASE 1 AND EVALUATION OF ITS CATALYTIC ACTIVITY AGAINST NERVE AGENT SIMULANTS. H. A. Farag1 and M. P. Nambiar2. 1Brain Dysfunction and Blast Injury, Walter Reed Army Institute of Research, Silver Spring, MD and 2Uniformed Services University of the Health Sciences, Bethesda, MD.

#528
Poster Board Number ......................................503

#529
Poster Board Number ......................................504

#530
Poster Board Number ......................................505

#531
Poster Board Number ......................................506
IN VIVO PHARMACOKINETIC EVALUATION OF A NOVEL CESIUM (CS) DECORPORATION AGENT IN RATS. J. A. Creim, W. Yantasee, S. Addleman, G. E. Fryxell and C. Timchalk. Biological Monitoring and Modeling, Pacific Northwest National Laboratory, Richland, WA.

#532
Poster Board Number ......................................507
Abstract #

#533 POSTER BOARD NUMBER..........................508
GENOMIC ANALYSIS OF PIRIFORM CORTEX AND HIPPOCAMPUS
FOLLOWING EXPOSURE TO SARIN. K. D. Spradling1, L. A. Lumley2, C. L. Robison2, J. L. Meyerhoff1 and J. F. Dillman1. 1Cell and Molecular Biology Branch, USAMRICD, Aberdeen Proving Ground, MD; 2Neurobehavioral Toxicology Branch, USAMRICD, Aberdeen Proving Ground, MD and 3WRAIR, Silver Spring, MD.

#534 POSTER BOARD NUMBER..........................509
A COMPARISON OF THE SENSITIVITY OF DIFFERENT STRAINS OF MICE TO SARIN AND KAINIC ACID SEIZURES. C. M. Rapp1, T. L. Garrett1, D. W. Watson1, A. R. Keeler1 and J. B. Lucot1. 1Pharmacology & Toxicology, Wright State University, Dayton, OH and 711 Human Performance Wing, Air Force Research Laboratory, Wright Patterson Air Force Base, Dayton, OH.

#535 POSTER BOARD NUMBER..........................510

#536 POSTER BOARD NUMBER..........................511

#537 POSTER BOARD NUMBER..........................512
POLYURETHANE SPONGES CONTAINING ADDITIVES FOR DECONTAMINATING GUINEA PIGS EXPOSED TO CUTANEOUS SOMAN OR VX. E. D. Clarkson1, S. Schulz1, A. Gunduz1, R. Raiser1, K. Baker1, L. Askins1, S. Stratig1, J. Echazabal1, R. Kaiser2, B. P. Doctor2, R. K. Gordon1 and S. I. Baskin1. 1Medical Toxicology, U.S. Army Institute for Chemical Defense, Aberdeen Proving Grounds, MD and 2Walter Reed Army Medical Center, Silver Spring, MD.

#538 POSTER BOARD NUMBER..........................513

#539 POSTER BOARD NUMBER..........................514
RAPID RADIATION EXPOSURE ASSESSMENT ACCOMPLISHED VIA A HEMATOXICITY MATRIX. J. C. Bemis1, Y. Chen2, S. Phontephsawat1, S. Bryce1, R. Chen2, G. Hyrien1, S. Peslak1, J. Pati1, P. Oknieff1 and S. Dertinger4. 1Litron Laboratories, Rochester, NY and 2University of Rochester Medical Center, Rochester, NY.

Abstract #

#540 POSTER BOARD NUMBER..........................515
EVALUATION OF A CAPSAICIN ANALOG AS A MODULATOR OF INFLAMMATORY CYTOKINE RELEASE IN HUMAN TISSUE MODELS. O. E. Clark1, E. W. Nealley1, A. L. Miller2, K. W. Leiter1, Y. Jung1 and W. J. Smith1. 1Research Division, US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD and 2Korea Research Institute of Chemical Technology, Daejeon, South Korea.

#541 POSTER BOARD NUMBER..........................516

#542 POSTER BOARD NUMBER..........................517
8-OH-DPAT PROTECTS FROM DEFICITS PRODUCED BY SARIN INDUCED CONVULSIONS. K. V. Joshi1, C. M. Rapp1, K. E. Irwin1, J. J. Schlager2 and J. B. Lucot1. 1Pharmacology and toxicology, Wright state university, Dayton, OH and 2Applied Biotechnology Branch, Air Force Research Laboratory, Wright Patterson Air Force Base, Dayton, OH.

#543 POSTER BOARD NUMBER..........................518
8-OH-DPAT REDUCES THE SEVERITY OF SEIZURES PRODUCED BY SARIN. B. Sims1, J. Harrod1, D. G. Watson1 and J. B. Lucot1. 1Wright State University, Dayton, OH and 711 Human Performance Wing, Air Force Research Laboratory, Wright Patterson Air Force Base, Dayton, OH.

#544 POSTER BOARD NUMBER..........................519
EFFECT OF LOW-DOSE SARIN EXPOSURE ON THE NEUROCHEMISTRY OF DIFFERENT BRAIN STRUCTURES IN MICE. D. P. Oswal1, B. S. Izu1, M. Morris1 and J. B. Lucot1. 1Pharmacology and Toxicology, Wright State University, Dayton, OH and 2Department of Surgery, Wright State University, Dayton, OH.

#545 POSTER BOARD NUMBER..........................520
QUANTITATIVE ASSESSMENT OF DNA DAMAGE VIA COMET ASSAY IN CEES-TREATED MOUSE SKIN EPIDERMAL CELLS AND FIBROBLASTS. S. Inturi1, N. Tewari-Singh1, C. Agarwal1, C. W. White1 and R. Agarwal1. 1Pharmaceutical Sciences, University of Colorado Denver, Aurora, CO and 2National Jewish Medical and Research Center, Denver, CO.

#546 POSTER BOARD NUMBER..........................521
Program Description (Continued)

Abstract #

#547

**Poster Board Number** ......................................522

**COUNTERMEASURES AGAINST NITROGEN MUSTARD INJURY TO THE CORNEA.** A. S. DeSantis1, R. A. Hahn1, J. Beloni1, K. K. Svoboda1, D. R. Gerecke2, M. Babin3 and M. K. Gordon1, 1Pharmacology and Toxicology, Rutgers University, Piscataway, NJ, 2Biomedical Sciences, Baylor College of Dentistry, Dallas, TX and 3Battelle, Biomedical Research Center, Columbus, OH.

#548

**Poster Board Number** ......................................523

**PROPHYLACTIC AND THERAPEUTIC EFFICACY OF GLUTATHIONE (GSH) AGAINST SULFUR MUSTARD ANALOGUES-INDUCED SKIN INJURY.** N. Tewari-Singh1, M. Gu1, A. Pa1, A. Agarwal1, C. W. White2 and R. Agarwal1, 1Pharmaceutics, Rutgers University, Piscataway, NJ, 2Biomedical Sciences, University of Colorado Denver, Aurora, CO and 3National Jewish Medical and Research Center, Denver, CO.

#549

**Poster Board Number** ......................................524

**DOXYCYCLINE AND TOBRADEX SUPPRESS RABBIT CORNEA BASEMENT MEMBRANE ZONE DAMAGE INDUCED BY 2-CHLOROETHYL ETHYL SULFIDE.** R. A. Hahn1, J. J. Schiager2, A. S. DeSantis1, M. A. Gallo1, D. Beck2, P. Sinko2, D. L. Laskin2, J. D. Laskin1, N. Heindel3, R. Casillas4, D. R. Gerecke5, M. C. Babin1 and M. K. Gordon1, 1Pharmacology and Toxicology, Rutgers University, Piscataway, NJ, 2Air Force Research Laboratory, Wright-Patterson AFB, Dayton, OH, 3Environmental and Occupational Medicine, UMDNJ, Robert Wood Johnson Medical School, Piscataway, NJ, 4Environmental Health Science, New York Medical College, Valhalla, NY, 5Pharmaceutics, Rutgers University, Piscataway, NJ, 6Chemistry, Lehigh University, Bethlehem, PA and 7Battelle, Biomedical Research Center, Columbus, OH.

#550

**Poster Board Number** ......................................525

**INVOLVEMENT OF BNIP3-MEDIATED INTRACELLULAR CALCIUM MOBILIZATION IN CYANIDE-INDUCED CELL DEATH.** J. Zhang, L. Li, H. Leavesley5, X. Zhang, J. Borowitz and G. Isom1, 1MCMP, Purdue University, West Lafayette, IN.

#551

**Poster Board Number** ......................................526

**RADIOPROTECTION BY ORAL ADMINISTRATION OF GENISTEIN IN MICE RECEIVING TOTAL BODY IRRADIATION.** M. R. Landauer1, T. A. Davis2 and S. R. Mog1, 1Armed Forces Radiobiology Research Institute, Bethesda, MD and 2Naval Medical Research Center, Silver Spring, MD.

#552

**Poster Board Number** ......................................527

**DISRUPTION OF KERATINOCYTE–BASEMENT MEMBRANE (BM) COMPONENT INTERACTIONS BY SULFUR MUSTARD (SM) ANALOGUES.** M. P. Shakarjian1, A. M. Vetrano2, J. P. Gray1, A. S. DeSantis1, D. J. Riley1, J. D. Laskin2, Y. Chang2, D. R. Gerecke2 and D. E. Heck2, 1Environmental Health Science, New York Medical College, Valhalla, NY, 2Science, U.S. Coast Guard Academy, New London, CT, 3Pharmacology & Toxicol., Rutgers University, Piscataway, NJ, 4Medicine, UMDNJ-RWJMS, Piscataway, NJ and 5Env. Occ. Med., UMDNJ-RWJMS, Piscataway, NJ.

Abstract #

#553

**Poster Board Number** ......................................528

**INHALATION OF 2-CHLOROETHYL ETHYL SULFIDE (CEES; HALF MUSTARD) RESULTS IN MARKED INJURY AT MULTIPLE LEVELS OF THE UPPER AND LOWER RESPIRATORY TRACTS.** H. C. O’Neill1, T. B. Hendry-Hofer1, J. E. Loader2, L. Veres2, R. C. Rancourt2, D. Orlicky1, B. J. Day1, and C. W. White2, 1Department of Pharmaceutical Sciences, UCHSC, Denver, CO and 2Pediatrics, National Jewish Health, Denver, CO.

Monday Afternoon, March 16
1:00 PM to 4:30 PM
Exhibit Hall

**POSTER SESSION: ASSESSMENT OF CHEMICAL MIXTURES**

**Chairperson(s):** Alvaro Osorno-Vargas, Instituto Nacional de Cancerología, Mexico City, Mexico.

**Displayed:** 1:00 PM–4:30 PM

**Author Attended:** 1:00 PM–2:45 PM

#554

**Poster Board Number** ......................................531

**CUMULATIVE REPRODUCTIVE EFFECTS OF IN UTERO ADMINISTRATION OF A MIXTURE OF TEN “ANTIANDROGENS” IN MALE SD RATS: SYNERGY OR ADDITIVITY?** L. E. Gray1, C. Rider2 and J. Furr1, 1ENDOCRINOLOGY BRANCH, NHEERL, U.S. EPA, Research Triangle Park, NC and 2NCSU/EPA Cooperative Research Grant, North Carolina State University, Raleigh, NC.

#555

**Poster Board Number** ......................................532

**IN UTERO EXPOSURE TO THE FUNGICIDE PROCYMIDONE AND DIBUTYL PHTHALATE PRODUCE DOSE-ADDITIONAL DISRUPTIONS OF MALE RAT SEXUAL DIFFERENTIATION.** A. K. Hotchkiss1,2, K. L. Howdeshell3, C. R. Blystone1,2, J. Furr1, C. V. Rider1,2 and L. E. Gray1, 1Reproductive Toxicology Division, NHEERL, ORD, U.S. EPA, Research Triangle Park, NC and 2Molecular Biomedical Sciences, NC State University, Raleigh, NC.

#556

**Poster Board Number** ......................................533

**DEFINING THE BORDERS OF DOSE ADDITION: MIXTURE EFFECTS OF 2, 3, 7,8-TETRACHLORODIBENZO-P-DIOXIN AND DIBUTYL PHTHALATE ON MALE RAT REPRODUCTIVE TRACT DEVELOPMENT.** C. V. Rider1,2, J. Furr1 and L. Gray1, 2Molecular Biomedical Sciences, NCSU, Research Triangle Park, NC and 3RTD, NHEERL, ORD, U.S. EPA, Research Triangle Park, NC.
Abstract #

**#557**

**Poster Board Number** .......................... 534


Abstract #

**#558**

**Poster Board Number** .......................... 535


Abstract #

**#559**

**Poster Board Number** .......................... 536

**CRITICAL ANALYSIS OF LITERATURE ON LOW DOSE SYNERGY FOR USE IN SCREENING CHEMICAL MIXTURES FOR RISK ASSESSMENT.** M. Embry, C. HESI RAM Mixtures, R. Herzberg, S. Collie and D. Kopp. ‘ILSI HESI, Washington, DC. ‘Biomathematics Consulting, Atlanta, GA, ‘Synergy Toxicology, San Antonio, TX and ‘Emory University, Atlanta, GA.

Abstract #

**#560**

**Poster Board Number** .......................... 537

**ACETYLCHOLINESTERASE INHIBITION FROM REPEATED EXPOSURES TO A MIXTURE OF TWO ORGANOPHOSPHORUS INSECTICIDES (CHLORPYRIFOS AND DIAZINON) IN RATS.** E. C. Meek, A. Coban, M. K. Davis, K. H. Lednum, S. X. Guo-Ross and J. E. Chambers. Center for Environmental Health Sciences, College of Veterinary Medicine, Mississippi State University, Mississippi State, MS.

Abstract #

**#561**

**Poster Board Number** .......................... 538


Abstract #

**#562**

**Poster Board Number** .......................... 539

Abstract #
Poster Board Number ..............................546
ATMOSPHERIC GAS-PARTICLE INTERACTIONS CAUSE A RAPID SHIFT IN TOXICITY FROM THE GAS PHASE TO THE PARTICLE PHASE. S. Ebersviller1, K. de Brauïne2, K. G. Sexton3, Y. Lin1, I. Jaspers1,2 and H. E. Jeffries1. 1UNC, Chapel Hill, NC and 2CEMALB, Chapel Hill, NC.

Abstract #
Poster Board Number ..............................547
ETS AND HORMONE EFFECTS ON AIRWAY RESPONSES IN A MODEL OF ALLERGIC ASTHMA. V. L. Mitchell1, T. J. Combs1, W. F. Wally2, E. S. Schelegle3 and L. S. Von Winkle4,5, 1CHE, University of California, Davis, Davis, CA and 2VM:APC, University of California, Davis, Davis, CA.

Abstract #
Poster Board Number ..............................548

Monday Morning, March 16
1:30 PM to 2:00 PM
Room 339
UNDERGRADUATE EDUCATION PROGRAM—CLOSING SESSION
Chairperson(s): Mari Stavanja, Celanese International Corporation, Dallas, TX
Sponsor: Committee for Diversity Initiatives

Monday Afternoon, March 16
1:30 PM–2:30 PM
Room 337
EXHIBITOR HOSTED SESSION: IMMUNOLOGIC CONSIDERATIONS FOR THE SUPPORT OF BIOLOGIC THERAPEUTICS AND OTHER INNOVATIVE IMMUNOMODULATORS—PRECLINICAL AND DEVELOPMENT COMMITMENTS
Presented by: MPI Research
This presentation will highlight immunologic characterizations required to enable successful IND registry of biologics including ligand binding assays for immunogenicity, PK/TK and other safety considerations to maximize clinical therapeutic investments.

Monday Afternoon, March 16
1:30 PM–2:30 PM
Room 338
EXHIBITOR HOSTED SESSION: PRACTICAL APPROACHES TO DOSING ROUTE CHALLENGES IN NON-CLINICAL RESEARCH
Presented by: LAB Research Inc.
There are many biological molecules that are unsuitable for oral administration, and with the development of drugs that are targeted for delivery to specific sites in humans, there is an increasing need to develop animal models to facilitate pharmacological and non-clinical toxicological research. We present a selection of such models.

Monday Afternoon, March 16
1:40 PM to 4:25 PM
Room 316
SYMPOSIUM SESSION: ARomatase (CYP19) Gene Expression and Function: Current State of Knowledge as a Mode-of-Action for Toxicological Effects
Sponsor:
Reproductive and Developmental Toxicology Specialty Section
During the past five years, advancements have been made in our understanding of the regulation of aromatase (CYP19) gene expression and function in humans and wildlife. This cytochrome P450 microsomal enzyme is responsible for the conversion of androgens to estrogens, and is essential for maintaining estrogen homeostasis within multiple target tissues for both males and females. The expression of the human CYP19 gene is regulated through multiple promoters and co-factors that are target tissue specific. Thus, local regulation of estrogen concentrations within various target tissues may vary significantly from that observed in circulating serum. To date, the ability of environmental chemicals to inhibit the catalytic activity of aromatase, as well as resulting adverse effects on reproductive function, have been clearly demonstrated. However, specific effects on aromatase gene expression following exposure to environmental chemicals, and the physiological impact on local and systemic levels of estrogen, remain to be elucidated. In addition, the presence of elevated aromatase expression in hormone-dependent cancers underscores the need for determining if environmental chemicals can modulate aromatase expression and their potential effects on aromatase expression. To highlight these important findings, the session will provide an overview of the current state of knowledge regarding the regulation of aromatase (CYP19) gene expression, describe the toxicological
consequences of altered aromatase gene expression and function in humans and wildlife, and present novel approaches for identifying environmental chemicals that disrupt the homeostasis of estrogen biosynthesis via this mode-of-action. This abstract does not necessarily reflect EPA policy.

#572 1:40 OVERVIEW: BIOLOGICAL IMPORTANCE OF AROMATASE (CYP19) EXPRESSION AND FUNCTION, S. Laws and T. Sanderson.

#573 2:00 REGULATION OF AROMATASE AND OTHER STEROIDOGENIC GENES IN ENDOMETRIOSIS, S. E. Bulun, Division of Reproductive Biology Research, Department of Obstetrics and Gynecology, Northwestern University, Chicago, IL. Sponsor: T. Sanderson.

#574 2:35 AROMATASE REGULATION IN BREAST CANCER, C. Clyne, K. Knower, A. Chand, N. Flemming and E. Simpson. Prince Henry’s Institute of Medical Research, Clayton, VIC, Australia. Sponsor: S. Laws.

#575 3:10 UNDERSTANDING THE EFFECTS OF ATRAZINE ON STEROIDOGENESIS IN WISTAR RATS, N. Tintó and S. Laws.


#577 4:00 EVALUATION OF LITEA® CD-1-TG(CYP19-LUC) XENOMICE AS A BIOLUMINESCENT RESEARCH TOOL FOR THE IN VIVO STUDY OF ENDOCRINE DISRUPTORS, T. Sanderson, P. Devine, S. Petritillo and P. Rivest. INRS-Institut Armand-Frappier, Laval, QC, Canada.

### EPIGENETICS

#### SYMPOSIUM SESSION: GENOMIC, NON-GENOMIC, AND EPIGENETIC MECHANISMS OF NUCLEAR HORMONE RECEPTOR ACTION

Chairperson(s): Cheryl Lyn Walker, University of Texas MD Anderson Cancer Center, Smithville, TX and Steven Safe, Texas A&M University, College Station, TX.

Sponsor: Molecular Biology Specialty Section

Endorsed by:
- Carcinogenesis Specialty Section
- Mechanisms Specialty Section
- Reproductive and Developmental Toxicology Specialty Section

Our understanding of how nuclear hormone receptors respond to steroid hormones, endocrine disruptors and xenobiotics is rapidly evolving. Nuclear hormone receptors, which were once thought to act as simple transcription factors primarily through interaction with the DNA, are now appreciated to have equally important activities as activators of non-genomic signaling cascades within the cell and to interact with protein modifiers, such as arginine and lysine methyltransferases, to induce epigenetic modifications of chromatin in a ligand-, receptor-, co-activator and gene-specific fashion. Because of the importance of this class of receptors for many toxic responses, including those induced by xenoestrogens and xenobiotics, this session will highlight cutting-edge discoveries being made in this area that are having a major impact on the discipline of toxicology.

#578 1:40 GENOMIC, NON-GENOMIC AND EPIGENETIC MECHANISMS OF NUCLEAR HORMONE RECEPTOR ACTION, C. Walker and S. Safe.

#579 1:45 TRANSCRIPT PROFILING OF ESTROGEN-RESPONSIVE GENES, G. Daston and J. Naciff.

Monday Afternoon, March 16
1:40 PM to 4:25 PM
Room 327

**SYMPOSIUM SESSION: IN VITRO MODELS OF HUMAN TOXICITY PATHWAYS**

Chairperson(s): David Dix, US. EPA, Research Triangle Park, NC and Russell Thomas, The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

Sponsor: In Vitro and Alternative Methods Specialty Section

Endorsed by:
- Risk Assessment Specialty Section
- Regulatory and Safety Evaluation Specialty Section

For toxicity testing and assessment programs to address the large numbers of substances of potential concern, a paradigm shift in the assessment of chemical hazard and risk is needed that takes advantage of advances in molecular toxicology, computational sciences, and information technology. This shift represents an evolution of toxicology from an observational science, to a predictive science built upon mechanism-based, biological observations in vitro. The progress in developing robust, quantitative in vitro models of human toxicity pathways with the potential to replace the current reliance on in vivo animal data will be presented. These in vitro models identify cellular and molecular responses associated with critical biological pathways, which can result in adverse health effects when sufficiently perturbed by chemical
Program Description (Continued)

Abstract #

exposure. One of the challenges to this in vitro approach is selecting appropriate cell types and endpoints that provide a sufficient battery for predicting the response of relevant toxicity pathways. Results from these high-throughput screening (HTS) assays are being linked to historical toxicological test results to facilitate a transition in testing paradigms. The results from five laboratories and programs wherein the convergence of science, technology and regulatory need have produced initial successes in creating in vitro models of human toxicity pathways will be highlighted. Although this work was reviewed by EPA and approved for publication, it may not necessarily reflect official Agency policy.

#583 1:40 IN VITRO MODELS OF HUMAN TOXICITY PATHWAYS. D. J. Dix, U.S. Environmental Protection Agency, Research Triangle Park, NC.

#584 1:50 EVALUATION OF THE TOXICANT SUITE OF CELLULAR AND MOLECULAR ASSAYS FOR PREDICTION OF IN VIVO TOXICITY. K. A. Houck, U.S. Environmental Protection Agency, Research Triangle Park, NC.

#585 2:21 USE OF NUCLEAR REPORTER ASSAYS TO INVESTIGATE SPECIES DIFFERENCES IN TOXICITY. R. C. Peffer and J. Vanden Heever.


#588 3:54 MICROSCALE LIVER MODELS FOR DRUG DEVELOPMENT AND TOXICITY SCREENING. S. Bhatia.

Monday Afternoon, March 16
1:40 PM to 4:25 PM
Ballroom III

© INFLAMMATION AND DISEASE

SYMPOSIUM SESSION: NITRATIVE AND OXIDATIVE STRESS IN TOXICOLOGY AND DISEASE

Chairperson(s): Ruth A. Roberts, AstraZeneca UK, Alderley Park, United Kingdom and William Slikker, U.S. FDA National Center for Toxicological Research, Jefferson, AR.

Sponsor: Carcinogenesis Specialty Section

Endorsed by:
Mechanisms Specialty Section
Molecular Biology Specialty Section
Neurotoxicology Specialty Section

Persistent inflammation and the formation and actions of reactive oxygen species play pivotal roles in tissue injury during disease pathogenesis and as a reaction to toxicant exposures. The associated oxidative and nitrative stresses promote diverse biological reactions including neurodegenerative disorders, cancer, atherosclerosis and stillbirth. These effects occur via sustained cell proliferation and cell death and, in some cases, via induction of a pro-angiogenic environment. Exposure to ozone, a ubiquitous urban air pollutant, leads to the generation of reactive oxygen and nitrogen species in lung macrophages inducing inflammatory genes which play a key role in subsequent tissue damage. Similarly, the developing brain is susceptible to anesthetic-induced injury; recent studies have indicated that genes along the oxidative stress pathway are altered by this anesthetic treatment. In addition to a role in damage to the developing brain, inflammation and oxidative stress are implicated in Parkinson’s disease (PD), a neurodegenerative disease characterized by the loss of dopamine neurons. Recent data suggests a mechanistic link between oxidative stress and elevated levels of DOPAL, a neurotoxin endogenous to dopamine neurons. Such work has significant implications for the development of therapeutics and identification of novel biomarkers for PD pathogenesis. As well as a role in lung disease and neuronal injury, oxidative and nitrative stress is implicated in creating the pro-inflammatory microenvironment associated with the aggressive phenotype of inflammatory breast cancer. Targeting these pathways may help diminish the pro-inflammatory microenvironment that may contribute to the genetic instability and aggressive phenotype. Fundamental concepts and progresses to how one might create a rational plan of treatment, based on understanding derived from basic principles will be addressed. This session will appeal to both those with specialist knowledge in the field as well as to toxicologists looking to learn more about the role of nitrative and oxidative stress in toxicology.
whereby the onset and progression of PD may depend on gene-environment interactions. Interestingly, mutations in LRRK2 found in dominant familial PD have also been found in idiopathic PD, and the penetrance of these mutations is incomplete. Thus, LRRK2 may provide an example of a gene that, when mutated, can cause PD, illustrating the complexity of determining the cause of idiopathic PD.

Monday Afternoon, March 16
1:40 PM to 4:25 PM
Ballroom IV

NEURODEGENERATIVE DISEASE

SYMPOSIUM SESSION: NOVEL SIGNALING MECHANISMS THAT REGULATE DOPAMINERGIC NEURONAL SURVIVAL OR DEATH: IMPLICATIONS IN PARKINSON’S DISEASE

Chairperson(s): Zhengui Xia, University of Washington, Seattle, WA and Anumantha Kanthasamy, Iowa State University, Ames, IA.

Sponsor:
Neurotoxicology Specialty Section

Endorsed by:
In Vivo and Alternative Methods Specialty Section
Mechanisms Specialty Section
Occupational and Public Health Specialty Section

Parkinson’s disease (PD) is the second most common aging-related neurodegenerative disorder characterized by loss of dopaminergic neurons in the substantia nigra pars compacta (SNpc), resulting in irreversible motor symptoms including tremor, bradykinesia, and rigidity. Although the etiology of idiopathic PD, which accounts for at least 90% of all PD cases, has been elusive, epidemiological studies suggest a correlation between increased risk factors such as age and environmental exposure to pesticides. Consequently, treatment of cultured neuronal and rodent models with pesticides has been useful in the investigation of PD pathogenesis. However, despite extensive research in the past, molecular mechanisms underlying dopaminergic neuronal death associated with PD remain incompletely defined. Recent studies using several pesticides including rotenone, paraquat, and dieldrin as models to investigate signal transduction mechanisms that regulate dopaminergic neuronal death have been presented. Furthermore, idiopathic PD is most likely caused by multiple factors, including a complex interaction between genes and the environment. Interestingly, mutations in LRRK2 found in dominant familial PD have also been found in idiopathic PD, and the penetrance of LRRK2 mutations is incomplete. Thus, LRRK2 may provide an example of a gene that, when mutated, can cause PD, illustrating the complexity of determining the cause of idiopathic PD.

Monday Afternoon, March 16
1:40 PM to 4:25 PM
Room 321

SYMPOSIUM SESSION: REGULATION OF DRUG TRANSPORTERS IN DIFFERENT DISEASE STATES AND ITS TOXICOLOGICAL AND CLINICAL IMPLICATIONS

Chairperson(s): Jose Manatou, University of Connecticut, and Nathan J. Cherrington, University of Arizona, Tucson, AZ.

Sponsor:
Mechanisms Specialty Section

Endorsed by:
Drug Discovery Toxicology Specialty Section
Molecular Biology Specialty Section

Drug transporters play an important role in the uptake, distribution and elimination of pharmaceuticals, environmental contaminants and endogenous compounds. In the last decade, considerable interest has been centered on regulation of drug transporters and on how chemicals and disease states alter their expression. It is clearly important to understand the pharmacological and toxicological consequences of changes in drug transporter function. Both induction and repression of transporter expression have been shown to promote dopaminergic neuronal survival and should be of general interest to scientists studying neurodegeneration, neurotoxicology, pesticide toxicology, signal transduction, molecular mechanisms of toxicity, and occupational and public health. Presentation of this data is likely to accelerate understanding of cell signaling mechanisms underlying environmental neurotoxicant-induced nigral degenerative processes as well as to foster the identification of novel therapeutic targets for treatment of PD.
Program Description (Continued)

Abstract #
documented with exposure to classical drug metabolizing enzyme inducers, treatment with target organ toxicants and under a variety of pathological conditions. Many of these changes are mediated by transcription factors, including CAR, PXR, Nrfl4, as well as cytokines and related inflammatory mediators. Therefore, it is important to highlight the recent knowledge gained on how transporter expression changes during non-alcoholic steato-hepatitis and drug-induced hepatotoxicity, as well as regulation of blood brain barrier transporters and its implications to the management and/or treatment of central nervous system disorders. Finally, this session will address the molecular regulatory mechanisms involved and the potential functional consequences, and understanding how changes in transporter expression or function may be involved in drug-drug interactions and the implications of these effects in drug development and the clinical setting.

#601 1:40 REGULATION OF DRUG TRANSPORTERS IN DISEASE STATES AND ITS TOXICOLOGICAL AND CLINICAL IMPLICATIONS, J. E. Manautou1 and N. J. Cherrington1. University of Connecticut, Storrs, CT and University of Arizona, Tucson, AZ.

#602 1:45 CHANGES IN THE EXPRESSION OF DRUG METABOLIZING ENZYMES AND TRANSPORTERS DURING FATTY LIVER DISEASE, N. Cherrington1, C. Fisher1, A. Lickteig1, M. Merrell1, J. Jackson2, S. Ferguson2 and L. Augustine1. Pharmacology and Toxicology, University of Arizona, Tucson, AZ and Celldirect, Durham, NC.


#604 2:49 REGULATION OF ABC TRANSPORTER EXPRESSION AT THE BLOOD-BRAIN BARRIER, D. S. Miller1, A. M. Hartz2 and B. Bauer3. Laboratory of Pharmacology, NIH/ NIEHS, Research Triangle Park, NC, 1Department of Biochemistry and Molecular Biology, Medical School, University of Minnesota, Duluth, MN and 2Department of Pharmaceutical Sciences, College of Pharmacy, University of Minnesota, Duluth, MN. Sponsor: J. Manautou.

#605 3:21 APPLYING MODELS OF ALTERED TRANSPORTER FUNCTION TO MECHANISMS OF TOXICITY AND DRUG INTERACTIONS, L. Lehman-McKeeman. Bristol-Myers Squibb, Princeton, NJ.


Abstract #
Monday Afternoon, March 16
1:40 PM to 4:25 PM
Room 314

 NANOTECHNOLOGY

WORKSHOP SESSION: AGGLOMERATION VERSUS DISPERSION: HOW NANOPARTICLE BEHAVIOR AFFECTS EXPOSURE AND TOXICITY IN VITRO, IN VIVO, AND IN THE REAL WORLD

Chairperson(s): Joyce Tsuji, Exponent, Inc., Bellevue, WA and Christie Sayes, Texas A&M University, College Station, TX.
Sponsor: Nanotoxicology Specialty Section
Endorsed by: Drug Discovery Toxicology Specialty Section
Inhalation and Respiratory Specialty Section
Risk Assessment Specialty Section

Many studies of nanoparticles have noted a tendency of these particles to agglomerate and form larger particles in air, solution, or suspension. Consequently, dispersion of nanoparticles has been a challenge for toxicity studies and pharmaceutical or medical applications, which have used various means, both chemical and physical to deliver nanoparticles to cells, tissues, or organisms. Such methods are important in evaluating free nanoparticles. However, clumping of nanoparticles, or particle agglomerates, is a real world phenomenon that is relevant to understanding risks posed by nanomaterials. In some systems, agglomeration of particles in air or solution/suspension appears to increase with particle concentration and decreasing size. The solution’s ionic strength and electrolyte concentration can affect agglomeration and surface characteristics. Particle characteristics in turn affect agglomeration. Other factors, such as dispersants used in sunscreens or dissolved organic matter in aquatic environments may prevent clumping. Consequences of agglomeration include exclusion by biological barriers. Agglomerated carbon nanotubes have also been shown to exhibit different effects in the lungs than their more dispersed counterparts. Studies with aquatic organisms indicate less toxicity with increasing size of particle agglomerates, although agglomerated nanoparticles are not necessarily similar in toxicity to micron-sized particles. Therefore, it is important to explore determinants of nano-sized particle-to-particle interactions, including particle properties, environmental conditions, consequences of change in size on fate in the environment and within organisms, its effects on toxicity, and the real world consequences of such particle behavior on health and environmental risks. Our increase in the understanding of nanoparticle exposure and toxicity in recent years is enabling inferences on certain aspects of nanoparticles that may help us design and interpret toxicity studies to better assess the health risks and beneficial applications of nanomaterials.
Program Description (Continued)

Abstract #

#610 2:39 STABILITY OF NANOPARTICLES FOR BIOMEDICAL APPLICATIONS. M. Phibbert. School of Public Health, University of Michigan, Ann Arbor, MI.


4:00 PANEL DISCUSSION.

Monday Afternoon, March 16
1:40 PM to 4:25 PM
Room 308

PLATFORM SESSION: CELLULAR RESPONSES TO CHEMICAL WEAPONS

Chairperson(s): Jean Clare Seagrace, Lovelace Respiratory Research Institute, and Tsung-Ming Shih, U.S. Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD.

#613 1:40 IDENTIFICATION OF SELENOCYSTEINE ADDUCTS IN THIOREDOXIN REDUCTASE BY 2-CHLOROETHYL ETHYL SULFIDE (CEES), A MODEL SULFUR MUSTARD VESICANT. Y. Tan1, J. P. Gray2, D. R. Gerecke3, H. Zheng1, R. P. Casillas1, D. E. Heck1, D. L. Laskin1 and J. D. Laskin1. Environmental & Occupational Medicine, UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ; Science, U.S. Coast Guard Academy, New London, CT; 1Pharmacology & Toxicology, Rutgers University, Piscataway, NJ; 2Battelle, Columbus, OH and 3Environmental Health, New York Medical College, Valhalla, NY.

#614 1:59 CALCIUM SIGNALING IN NEURONAL CELLS EXPOSED TO THE MUNITIONS COMPOUND CYCLOTRIMETHYLENETRINITRAME (RDX). X. Wu1, M. Ehrich2, S. Werre1, M. A. Majors3, W. C. McCain2 and G. Reddy2. Virginia Maryland Regional College of Veterinary Medicine, Blacksburg, VA and 1Directorate of Toxicology, U.S. Army Center for Health Promotion and Preventive Medicine, Aberdeen Proving Ground, MD.

#615 2:18 MODIFICATION OF NADPH CYTOCHROME P450 REDUCTASE BY 2-CHLOROETHYL ETHYL SULFIDE (CEES) STIMULATES PRODUCTION OF REACTIVE OXYGEN SPECIES. V. Mishin1, J. P. Gray1, D. E. Heck1, R. P. Casillas1, D. R. Gerecke1, D. L. Laskin1 and J. D. Laskin1. Pharmacology & Toxicology, Rutgers University, Piscataway, NJ; 2Science, United States Coast Guard Academy, New London, CT; 3Environmental Health, New York Medical College, Valhalla, NY; 4Battelle, Columbus, OH and 5Environmental & Occupational Medicine, UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ.

Abstract #


#617 2:55 SULFUR MUSTARD-INDUCED ENDOPlasMIC RETICUlUM STRESS RESPONSE IN THE MOUSE VESICANT MODEL. D. Gerecke1, M. Soriano2, R. P. Casillas2, C. L. Sabourin1, M. K. Gordon1 and Y. Chang1. Pharmacology & Toxicology, Rutgers University, Piscataway, NJ and Battelle Biomedical Research Center, Columbus, OH.

#618 3:13 EXPOSURE TO CEES INDUCES OXIDATIVE STRESS AND PRODUCES AN INFLAMMATORY RESPONSE IN SKH-1 HAIRLESS MOUSE SKIN. A. Pol1, N. Tewari-Singh1, M. Gyu1, C. W. White1 and R. Agarwal2. Pharmaceutical Sciences, University of Colorado Aurora, CO and 1National Jewish Medical and Research Center, Denver, CO.

#619 3:31 MODULATION OF GENE EXPRESSION BY MMP INHIBITORS IN SULFUR MUSTARD EXPOSED MOUSE SKIN. Y. Chang1, R. P. Casillas2, C. L. Sabourin1, M. K. Gordon1 and D. Gerecke1. Pharmacology & Toxicology, Rutgers University, Piscataway, NJ and Battelle Biomedical Research Center, Columbus, OH.

#620 3:49 TRPA1 MEDIATES THE ACUTE NOXIOUS EFFECTS OF INDUSTRIAL ISOCYNATES AND TEAR GASES. B. F. Bessac, S. E. Jodt, M. Sivula, C. von Hahn and A. I. Caceres. Pharmacology, Yale University School of Medicine, New Haven, CT.

#621 4:07 MAP KINASES REGULATE CHANGES IN ANTIOXIDANT AND INFLAMMATORY MEDIATOR EXPRESSION IN MOUSE KERATINOCYTES INDUCED BY THE VESICANT 2-CHLOROETHYL ETHYL SULFIDE. A. T. Black1, L. B. Joseph1, C. R. Gardner1, J. P. Gray1, R. P. Casillas1, D. E. Heck1, D. R. Gerecke1, D. L. Laskin1 and J. D. Laskin1. Pharmacology & Toxicology, Rutgers University, Piscataway, NJ; 2Battelle, Columbus, OH; 3Environmental Health, New York Medical College, Valhalla, NY and 4Environmental & Occupational Medicine, UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ.

Monday Afternoon, March 16
1:40 PM to 4:25 PM
Room 309

PLATFORM SESSION: DEVELOPMENTAL BASIS OF ADULT DISEASE


**Program Description (Continued)**

**Abstract #**

**#623** 2:01  **THE EFFECTS OF HIGH FAT DIET INDUCED GESTATIONAL DIABETES ON MOUSE METABOLIC DISORDER AND SKELETAL MALFORMATION.** C. Liang1, M. E. Oest1, J. C. Jones1 and R. M. Prater1.1 Biomedical Science and Pathobiology, Virginia Tech, Blacksburg, VA and 2Edward via Virginia College of Osteopathic Medicine, Blacksburg, VA.

**#624** 2:22  **DIOXIN SUPPRESSION OF DUCT FORMATION AND BRANCHING IN AN ENGINEERED 3D IN VITRO MODEL OF THE HUMAN MAMMARY GLAND.** J. Reiner1,2, M. Sameni1 and B. Sloane1. Institute Environmental Health Sciences, Wayne State University, Detroit, MI and 2Department of Pharmacology, Wayne State University School of Medicine, Detroit, MI.

**#625** 2:43  **PERSISTENT MODULATION OF T CELL AND B CELL MATURATION AND FUNCTION IN 48-WEEK-OLD C57BL/6 MICE DEVELOPMENTALLY EXPOSED TO TCDD.** S. D. Holladay2, A. Mustafa1, S. Witonsky1, R. Kerr1, C. M. Reilly1, D. P. Sponenberg1 and R. M. Gogal2. 1Biomedical Sciences & Pathobiology, Virginia Tech, Blacksburg, VA, 2Anatomy and Radiology, University of Georgia, Athens, GA and 3Biomedical Sciences, Virginia College of Osteopathic Medicine, Blacksburg, VA.

**#626** 3:04  **TCDD DECREASES β-CATENIN DEPENDENT SOX4 EXPRESSION DURING PROSTATIC BUD INHIBITION IN MOUSE UROGENITAL SINUS.** C. M. Vezina1, H. A. Hardin1, A. Lashua2, X. Sun2, R. L. Tanguay1 and R. E. Peterson1,2. 1School of Pharmacy, University of Wisconsin, Madison, WI, 2Laboratory of Genetics, University of Wisconsin, Madison, WI.

**#627** 3:25  **ASSESSING THE METHYLATION STATUS OF EMBRYOS TREATED WITH VALPROIC ACID AS A POSSIBLE MECHANISM OF TERATOGENESIS.** E. W. Tung1 and L. M. Winlo2. 1Pharmacology and Toxicology, Queen’s University, Kingston, ON, Canada and 2School of Environmental Studies, Queen’s University, Kingston, ON, Canada.

**#628** 3:45  **PRENATAL EXPOSURE TO B(AP)IMPAIRS LATER-LIFE NEURONAL FUNCTION AND BEHAVIOR IN CPR MICE.** D. B. Hood1, S. Liu1, M. M. McCullister1, M. Maguire1, A. Ramesh1, Q. Aimin1, H. Khoshbouei1, M. Aschner1,2, F. E. Ebner2 and P. Levitt1. 1Molecular and Behavioral Neuroscience, Meharry Medical College, Nashville, TN, 2Department of Cancer Biology, Meharry Medical College, Nashville, TN.

**#629** 4:05  **PLACENTAL AND NEURAL TUBE DEFECTS AFTER MATERNAL FUMONISIN OR PFTY720 EXPOSURE.** J. Gelineau-van Waes1, J. Maddox1, J. Wilberding1, K. Voss2 and R. T. Riley2. 1Department of Genetics, Cell Biology & Anatomy, University of Nebraska Medical Center, Omaha, NE and 2Toxicology & Mycotoxin Research Unit, USDA-ARS, Athens, GA.

**Abstract #**

**Monday Afternoon, March 16**

1:40 PM to 4:25 PM  
**Room 310**  

**EPIDIGNETICS**

**PLATFORM SESSION: EPIDIGNETIC MECHANISMS OF XENOBIOTICS**

**Chairperson(s):** Seema Sonjii, University of North Dakota, Grand Forks, ND and Asok Dasgupta, University of Mississippi, University, MS.

**#630** 1:40  **EPIDIGNETIC ALTERATIONS DURING TCDD-INDUCED INHIBITION OF B CELL DIFFERENTIATION.** E. A. McClure2, C. M. North2, N. E. Kominski1 and J. I. Goodman2. 1MMG, MSU, East Lansing, MI, 2PHM/Toxicology MSU, East Lansing, MI and 3CT, MSU, East Lansing, MI.

**#631** 2:04  **EXAMINATION OF IMPRINTED GENES AS EARLY INDICATORS OF METHYLATION CHANGES IN RESPONSE TO ROYENT CARCINOGENS.** J. Klapacz1, M. J. LeBaron1, R. Rasoloupour3, H. M. Hollnagel3 and B. B. Gollapudi, TERC, The Dow Chemical Company, Midland, MI.

**#632** 2:28  **GENOME-WIDE ANALYSIS OF DNA METHYLATION PROFILES IN A PRECLINICAL ANIMAL MODEL OF NONGENOTOXIC CARCINOGENESIS.** J. Marlowe1, S. Teo1, L. Marowiec1, D. Heard1, A. Mueller1, F. Staedtler1, D. Schuebeler1, T. Roloff1, F. Mohni, J. Goodman1, J. Phillips1, F. Pogna3, S. Chibout1 and J. Moggs1. 1Investigative Toxicology, Novartis Institutes for Biomedical Research, Basel, Switzerland, 2Biomarker Development, Novartis Institutes for Biomedical Research, Basel, Switzerland, 3Epigenetics Research Group, Friedrich Miescher Institute for Biomedical Research, Basel, Switzerland and 4Pharmacology & Toxicology, Michigan State University, East Lansing, MI.


**#634** 3:16  **ONTOGENIC EXPRESSION OF HEPATIC MICRONAS CORRELATES WITH HISTONE H3K4 DI-METHYLATION DURING MOUSE LIVER DEVELOPMENT.** Y. Cai1, X. Zhong and C. D. Klusien1. Department of Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS.

**#635** 3:39  **THE BENZENE METABOLITE, HYDROQUINONE ALTERS GLOBAL DNA METHYLATION AND SPECIFIC GENE PROMOTER METHYLATION IN HUMAN TK6 CELLS.** Z. Ji, C. M. McHale, L. Zhang and M. T. Smith1. School of Public Health, University of California at Berkeley, Berkeley, CA.
Abstract #

#636 4:02 EPIGENETIC CONTROL OF MAMMALIAN LINE-1 RETROTRANSPOSON BY RETINOBLASTOMA PROTEINS, D. E. Montoya-Durango1, T. Y. Liu1, T. Kalbfleisch1, D. E. Montoya-Durango1, T. Y. Liu1, T. Kalbfleisch1, I. Tenen1 and K. S. Ramos1, 2. Biochemistry, University of Louisville, Louisville, KY, 1Center for Genetics and Molecular Medicine, University of Louisville, Louisville, KY, 2J. G. Brown Cancer Center, University of Louisville, Louisville, KY, and 4Ophthalmology and Visual Sciences, University of Louisville, Louisville, KY.

### Abstract # Abstract #

**Program Description (Continued)**

**Abstract #**

#642 3:13 MOUSE MESENTERIC LYMPH NODE GENE EXPRESSION PROFILES DURING SENSITIZATION, AND EAR-SWELLING, HISTAMINE, AND IMMUNOGLOBULIN RESPONSE DURING ELICITATION IN RESPONSE TO COMMON FOOD ALLERGENS. M. Husain1, H. J. Boermans2 and N. A. Karrow1. 1Department of Animal & Poultry Science, University of Guelph, Guelph, ON, Canada and 2Department of Biomedical Sciences, University of Guelph, Guelph, ON, Canada.

#643 3:31 COMPARISON OF CONTACT ALLERGEN-INDUCED GENE EXPRESSION CHANGES IN HUMAN PERIPHERAL BLOOD MONONUCLEAR CELL-DERIVED DENDRITIC CELLS AND DC-SURROGATE CELL LINES. C. Royn1, S. Pyton2, P. Pyton2, P. Aebi2 and F. Gerberick. 1Procter & Gamble Company, Cincinnati, OH and 2Procter & Gamble Company, Marly, Switzerland.


### Monday Afternoon, March 16

1:40 PM to 4:25 PM
Room 324

**PLATFORM SESSION: MECHANISMS OF HYPERSENSITIVITY**

Chairperson(s): Rebecca Dearman, University of Manchester, Manchester, United Kingdom and Raymond Pieters, IRAS Utrecht University, Utrecht, Netherlands.

#637 1:40 USE OF IL-18 PRODUCTION IN A HUMAN KERATINOCYTE CELL LINE TO DISCRIMINATE CONTACT SENSITIZERS FROM IRRITANTS AND LOW MOLECULAR WEIGHT RESPIRATORY ALLERGENS. E. Corini1, M. Mitjans2, L. Lucchi1, C. L. Galli1 and M. Marinovich1. 1Department of Pharmaceutical Sciences, University of Milan, Milan, Italy and 2Department of Fisiologia, Facultat de Farmàcia, Universitat de Barcelona, Barcelona, Spain.

#638 1:59 RECOMBINANT LACTOFERRIN INHIBITS SPECIFICALLY IGE ANTIBODY RESPONSES PROVOKED BY NATIVE LACTOFERRIN. R. Almond1, B. F. Flanagan1, I. Kimber1 and R. J. Dearman2, 1University of Liverpool, Liverpool, United Kingdom and 2Faculty of Life Sciences, University of Manchester, Manchester, United Kingdom.

#639 2:18 STRAIN-DEPENDENT ALLERGIC RESPONSES IN A MOUSE MODEL FOR PEANUT FOOD ALLERGY. R. Pieters, J. Smit, M. Marcondes Rezende, R. Bleumink, I. Hassing and M. Bol. IRAS, Utrecht University, Utrecht, Netherlands.


### Abstract #

#646 1:40 MULTIPLEXED QUANTITATIVE HIGH CONTENT SCREENING ASSAYS REVEAL THAT CIGARETTE SMOKE CONDENSATE ACTIVATES NUCLEAR FACTOR-KAPPA B AND INDUCES CELL DEATH IN HUMAN BRONCHIAL EPITHELIAL CELLS. C. A. Carter1 and J. T. Hamn2. 1Life Sciences, Lorillard Tobacco Company, Greensboro, NC and 2Integrated Laboratory Systems, Inc., Research Triangle Park, NC.
Program Description (Continued)

Abstract #

#647 1:59 UP-REGULATION AND NUCLEAR ACCUMULATION OF PS3 PROTEIN IN HUMAN BRONCHIAL EPITHELIAL CELLS EXPOSED TO 4-(METHYL-NITROSAMINO)-1-(3-PYRIDYL)-1-BUTANONE, L. Chen,1 C. Shao,1 E. Cobos,1 J. Wang1 and W. Gao.1 Environmental Toxicology, The Institute of Environmental and Human Health (TIEHH), Texas tech university, Lubbock, TX. 2Texas Tech University Health Sciences Center, lubbock, TX and 7The University of Georgia, Athens, GA.

#648 2:18 BENZO(A)PYRENE INDUCES DEDIFFERENTIATION OF HUMAN BRONCHIAL EPITHELIAL BEAS-2B CELLS. H. Gao2 and K. S. Ramos2,2. 1Biochemistry and Molecular Biology, University of Louisville, Louisville, KY and 2Center for Genetics and Molecular Medicine, University of Louisville, Louisville, Kentucky, and 3The University of Louisville, Louisville, KY.

#649 2:37 EFFECTS OF SIDE STREAM TOBACCO SMOKE IN DNA DAMAGE REPAIR AND GSH-DEFICIENT MICE. M. L. Yamamoto1, A. Westbrook1, H. J. Miller2 and R. H. Schiestl1. 1Molecular Toxicology, University of California, Los Angeles, Los Angeles, CA and 2Microbiology, Immunology, and Molecular Genetics, University of California, Los Angeles, Los Angeles, CA.

#650 2:55 LUNG GLUTATHIONE ADAPTIVE RESPONSE TO CIGARETTE SMOKE. N. Gould1, C. Kariya2, R. Martin1, H. Chu1 and B. J. Day1. 1Pharmaceutical Sciences, University of Colorado Health Sciences Center, Aurora, CO. 2Medicine, University of Colorado Health Sciences Center, Aurora, CO and 3Medicine, National Jewish Health, Denver, CO.

#651 3:13 GLUTATHIONE S-TRANSFERASE P PROTEINS AGAINST ENDOTHELIAL DYSFUNCTION INDUCED BY EXPOSURE TO TOBACCO SMOKE AND ACROLEIN. D. J. Conklin1, P. Haberzettl1, R. A. Prough2 and A. Bhatnagar1. 1Inst. Mol. Card., University of Louisville, Louisville, KY and 2Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan. 3Institute of Environmental Health, China Medical University, Taichung, Taiwan and 4College of Veterinary Medicine, National Chung-Hsing University, Taichung, Taiwan.

#652 3:31 THIOREDOXIN MEDIATES TGF-ß1 AGAINST OXIDATIVE STRESS OF CIGARETTE SMOKE IN HUMAN AIRWAY EPITHELIUM. Y. Huang1, C. Chuang2, F. Sung1,3, C. Chen1 and C. Chou1. 1Institute of Environmental Health, National Taiwan University, Taipei, Taiwan. 2Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan. 3Institute of Environmental Health, China Medical University, Taichung, Taiwan and 4College of Veterinary Medicine, National Chung-Hsing University, Taichung, Taiwan.

Abstract #

**Program Description (Continued)**

**SOT/EUROTOX Debate**

Motion: Nanotoxicology—Is It Much Ado About Nothing?

**Endorsed by:**
- Society of Toxicology (SOT)
- European Societies of Toxicology (EUROTOX)

**Debaters:**
- SOT: Nigel Walker, NIEHS, Research Triangle Park, NC
- EUROTOX: Kai Savolainen, Finnish Institute of Occupational Health, Helsinki, Finland

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: Nanotoxicology Is NOT Much Ado About Nothing.

Nanomaterials are the building blocks of a promising new (nano)technological and medical field, and these materials have unique physical-chemical properties compared with their larger counterparts because of their quantum size effects and large surface area. Even though nanomaterials are now routinely produced and commercialized, there is still relatively little known about their biology or potential health impacts. Nanotoxicological studies are intended to determine whether, and to what extent these materials may pose a threat to human beings and the environment. The debate will present some of the challenges to the design, conduct, and interpretation of nanotoxicological studies, with particular emphasis on whether their unique properties contribute to unique toxicological profiles.

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 Annual Meeting, this debate will again take place from September 13–16, 2009, at the 46th Congress of EUROTOX in Dresden, Germany.
### Program Description (Continued)

**Abstract #**

5:04 **CREATIVE TOXICOLOGY TO IDENTIFY CNS-RELATED SIDE EFFECTS**, Stephen Adams

5:16 **THE INFLUENCE OF DISEASE ON THE TOXICOLOGICAL RESPONSE**, Mark Graham

5:28 **RODENT MODELS OF METABOLIC DISEASE: DISCOVERY TOXICOLOGY IN A TYPICAL PHARMACOLOGY, BUT ATYPICAL TOXICITY MODEL**, Brian Gemzik

5:40 **PANEL DISCUSSION/Q&A.**

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### Monday Afternoon, March 16
4:35 PM to 5:55 PM
Room 309

**ROUNDTABLE SESSION: ROLE OF REGULATORY COOPERATIVE EFFORTS IN FOOD PROTECTION**

**Chairperson(s):** Jay Vodela, USDA, Washington, DC and Kerry Dearfield, USDA/Food Safety Inspection Services, Washington, DC.

**Sponsor:**
Food Safety Specialty Section

**Endorsed by:**
Regulatory and Safety Evaluation Specialty Section

Risk Assessment Specialty Section

Chemical and microbial risk assessments are widely used in food safety decision making, in identifying data needs, and in implementing the Hazard Analysis and Critical Control Point (HACCP) Program. The HACCP Program is an excellent example of a collaborative effort between the U.S. Department of Agriculture and the Food and Drug Administration. Collaboration among all food safety bodies, including state, federal and global partners provides a robust system for continued protection and preparedness of the food protection system. The chemical and microbial risk assessment communities benefit from this on-going collaboration and cooperation. Collaboration has led to advancements in the food safety information infrastructure, data mining, data sharing and the development of sophisticated risk assessment models (risk assessments, vulnerability assessments, etc.) to guide the creation of preventive measures as part of food protection efforts. Leaders from state, federal and international bodies will discuss cooperative and innovative approaches for chemical and microbiological risk assessments in order to provide the safest food supply to the consumer.

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**Abstract #**


4:39 **FDA/FSIS PERSPECTIVE**, Kerry Dearfield

4:50 **FDA PERSPECTIVE AND EXPERIENCE**, Mike Bolger

5:01 **CDC PERSPECTIVE**, Schulz Rogers

5:12 **EPA PERSPECTIVE**, Tina Levine

5:23 **CODEX PERSPECTIVE**, Karen Hulebak

5:34 **INTERNATIONAL PERSPECTIVE**, Angelika Tritscher

5:45 **PANEL DISCUSSION/Q&A.**
Program Description (Continued)

Abstract #

**Monday Afternoon, March 16**
4:35 PM to 5:55 PM
Room 307

**EDUCATION-CAREER DEVELOPMENT SESSION:**
**GRANTSMANSHIP FORUM: TOOLS AND SKILLS NEEDED TO NAVIGATE TOXICOLOGY RESEARCH FUNDING**

**Chairperson(s):** Srikanth S. Nadadur, NIEHS, Research Triangle Park, NC and Jerrold Heindel, NIEHS, Research Triangle Park, NC.

**Sponsor:**
Career Resource and Development Committee

**Endorsed by:**
Education Committee
Postdoctoral Assembly Board
Research Funding Committee
Student Advisory Council

Toxicology research at academic institutions is supported by various extramural research funding mechanisms, of which the most common are research grants and fellowships. These research grants can be obtained either by investigator-initiated, generally unsolicited, or in response to research funding announcements by various funding agencies. Traditionally, the major research support for understanding the impact of toxic substances on public health is supported by the National Institute of Health (NIH) and its 26 different Institutes or Centers. While the National Institute of Environmental Health Sciences (NIEHS) supports toxicology research efforts to understand the impact of environmental pollutants, the National Institute of General Medical Sciences (NIGMS) supports toxicology research efforts to understand the impact of environmental pollutants, the National Institute of General Medical Sciences (NIGMS) supports research grants for a wide variety of agents including pharmaceuticals. Some of the federal agencies, such as the National Science Foundation, support research in the areas of environmental biology. Numerous non-profit organizations including the Pharmaceutical Research and Manufacturers of America (PhRMA) Foundation also provide research grant support, starting from pre-doctoral to sabbatical opportunities in pharmacology, toxicology and informatics. A representative Program Director from NIGMS, NIEHS, NSF and PhRMA Foundation will present the opportunities, tools, and skills needed for successful research funding. In highlighting this important funding opportunity available, one presentation will focus exclusively on successful grant writing noting specific requirements such as the correct mix of scientific knowledge and salesmanship to enable your to navigate NIH funding.

#658

**4:35**
**GRANTSMANSHIP FORUM: TOOLS AND SKILLS NEEDED TO NAVIGATE TOXICOLOGY RESEARCH FUNDING.** S. S. Nadadur1, J. Hiendel1, R.T. Okita2, S. O’Connor3 and E. M. Cannon4. 1Division of Extramural Research & Training, NIEHS, Research Triangle Park, NC, 2Pharmacology, Physiology & Biochemistry, National Institute of General Medical Sciences, Bethesda, MD, 3Biological Infrastructure, National Science Foundation, Arlington, VA and 4PhRMA Foundation, Washington, DC.

**4:45**
**SESSION INTRODUCTION.** Srikanth Nadadur

**4:59**
**GRANT PROGRAMS AT NIGMS TO SUPPORT TOXICOLOGY PROGRAMS.** Richard Okita

**5:13**
**GRANTSMANSHIP AT NIH: HOW TO SWIM WITH THE SHARKS AND SURVIVE.** Jerrold Heindel

**5:27**
**FUNDING OPPORTUNITIES AT THE NATIONAL SCIENCE FOUNDATION.** Sally O’Connor

**5:41**
**FELLOWSHIP AND GRANT OPPORTUNITIES FOR CLINICAL AND BASIC TOXICOLOGY AT PHRMA FOUNDATION.** Eileen Cannon

**Monday Afternoon, March 16**
5:00 PM to 6:00 PM
Tir na nOg Irish Bar & Grill

**REGIONAL CHAPTER JOINT MEETING/RECEPTION: GULF COAST AND SOUTH CENTRAL**

**Monday Afternoon, March 16**
5:30 PM to 7:30 PM
Phillips Seafood Restaurant

**REGIONAL CHAPTER JOINT MEETING/RECEPTION: SOUTHERN CALIFORNIA AND MOUNTAIN WEST**

**Monday Afternoon, March 16**
5:30 PM to 8:00 PM
Hilton Calloway A Room

**SPECIAL INTEREST GROUP MEETING/RECEPTION: KOREAN TOXICOLOGISTS ASSOCIATION IN AMERICA**

**Monday Evening, March 16**
6:00 PM to 7:30 PM
See room listings below.

**SPECIALTY SECTION MEETINGS/RECEPTIONS:**
**MOLECULAR BIOLOGY (ROOM 345), MIXTURES (ROOM 330), REGULATORY AND SAFETY EVALUATION (ROOM 343), RISK ASSESSMENT (ROOM 339)**

**Monday Evening, March 16**
6:00 PM to 8:00 PM
Hilton Key Ballroom 8

**REGIONAL CHAPTER JOINT MEETING/RECEPTION: NORTHERN CALIFORNIA AND PACIFIC NORTHWEST**

**Monday Evening, March 16**
6:00 PM to 8:00 PM
Hilton Key Ballroom 9

**SPECIAL INTEREST GROUP MEETING/RECEPTION: ASSOCIATION OF SCIENTISTS OF INDIAN ORIGIN**

**Monday Evening, March 16**
6:00 PM to 8:30 PM
Hilton Key Ballroom 3

**SPECIAL INTEREST GROUP MEETING/RECEPTION: AMERICAN ASSOCIATION OF CHINESE IN TOXICOLOGY**
**Program Description (Continued)**

### TUESDAY MORNING

**Tuesday Morning, March 17**
7:00 AM–8:30 AM
Room 306

**SPECIALTY SECTION GRADUATE COMMITTEE MEETING**

Representatives will conduct their business meeting.

**Tuesday Morning, March 17**
7:00 AM to 8:30 AM
See room listings below.

**SPECIALTY SECTION OFFICERS MEETINGS:**
CARCINOGENESIS (ROOM 309), INHALATIONS AND RESPIRATORY (ROOM 345), MECHANISMS (ROOM 321), NEUROTOXICOLOGY (ROOM 343)

**Tuesday Morning, March 17**
7:00 AM to 9:00 AM
Room 340

**SPECIALTY SECTION OFFICERS MEETING: DERMAL TOXICOLOGY**

**Tuesday Morning, March 17**
7:00 AM to 9:00 AM
Room 302

**REGIONAL CHAPTER PRESIDENTS AND OFFICERS MEETING**

If you will be a President or a Vice President of a Regional Chapter in 2009–2010, please make plans to attend the Regional Chapters Presidents meeting scheduled for 7:00 AM–8:30 AM Tuesday, March 17. The agenda for the meeting will include an overview of the SOT Long-Range Plan. If you have long-range planning ideas that you would like added to the agenda, please send a message to Allison Branco Maxwell at SOT Headquarters. The agenda will include Headquarters administrative support information, budgetary guides, a review of 2008–2009 activities, and plans for the future.

**Tuesday Morning, March 17**
7:30 AM to 9:00 AM
See room listings below.

**SPECIALTY SECTION OFFICERS MEETINGS: FOOD SAFETY (ROOM 342), IMMUNOTOXICOLOGY (ROOM 330)**

**Tuesday Morning, March 17**
7:30 AM to 9:00 AM
TBD

**SPECIAL INTEREST GROUP OFFICERS MEETING:**
HISPANIC ORGANIZATION FOR TOXICOLOGISTS

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Abstract #

**Tuesday Morning, March 17**
7:30 AM to 8:50 AM
Room 310

**BIOMARKERS**

**ROUNDTABLE SESSION: BIOMARKERS OF CARDIAC HYPERTROPHY AND SKELETAL MUSCLE TOXICITY—SUCCESSES AND CHALLENGES RELATED TO THEIR IMPLEMENTATION IN DRUG DEVELOPMENT**

**Chairperson(s):** David E. Watson, Eli Lilly & Company, Greenfield, IL, and Warren Glaab, Merck Research Laboratories, West Point, PA.

**Sponsor:**
Drug Discovery Toxicology Specialty Section

Endorsed by:
Regulatory and Safety Evaluation Specialty Section

Drug-related injury to cardiac and/or skeletal muscle is a common cause of safety-related attrition in drug development, and has resulted in the withdrawal of several efficacious pharmaceutical agents from the market. Improving our ability to detect muscle injuries should improve patient safety. Case studies are presented on successes and challenges related to the implementation in drug development of serological biomarkers of skeletal muscle necrosis, including differentiation of injury to Type I versus Type II muscle fibers; cardiac myocyte injury, including comparisons of the performance of cardiac troponins with other serological biomarkers and histopathology; and cardiac hypertrophy, including serological concentrations of natriuretic peptides, and their relationship to hemodynamic and structural changes in the heart. Scientific challenges that limit the broader application of these biomarkers are also addressed in a presentation on the changes in muscle structure and biochemistry that are driven by physiological and pathological processes, including those related to exercise, muscle atrophy, and drug toxicity in human muscle.

#659 7:30 BIOMARKERS OF CARDIAC HYPERTROPHY AND SKELETAL MUSCLE TOXICITY—SUCCESSES AND CHALLENGES RELATED TO THEIR IMPLEMENTATION IN DRUG DEVELOPMENT. D. Watson1 and W. Glaab2.

1Investigative Toxicology and Pathology, GlaxoSmithKline, Research Triangle Park, NC
2Investigative Toxicology, Lilly Research Laboratories, Greenfield, IN.

7:30 INTRODUCTION—OBJECTIVES OF THE PSTC MYOPATHY WORKING GROUP. David Watson

7:35 BIOMARKERS OF CARDIAC HYPERTROPHY. Heidi Colton

7:50 MECHANISMS AND BIOMARKERS OF SKELETAL MUSCLE INJURY: DIFFERENTIATING MUSCLE FIBER TYPE INJURY. Warren Glaab

8:05 IMPLEMENTATION OF SEROLOGICAL BIOMARKERS OF MUSCLE TOXICITY IN EARLY DRUG DISCOVERY. David Watson

8:20 CLINICAL PERSPECTIVE ON DRUG-INDUCED SKELETAL MUSCLE PATHOGENESIS—MECHANISMS AND BIOMARKERS. Paul Thompson

8:35 PANEL DISCUSSION.
NANOTECHNOLOGY

ROUNDTABLE SESSION: THE REGULATORY FRONTIER: ADDRESSING PRODUCTS OF NANOTECHNOLOGY

Chairperson(s): Tracey J. Woodruff, University of California San Francisco, San Francisco, CA and Edward Ohlman, U.S. EPA, Washington, DC.

Sponsor: Risk Assessment Specialty Section

Endorsed by: Inhalation and Respiratory Specialty Section
          Nanotoxicology Specialty Section
          Occupational and Public Health Specialty Section

Nanomaterials, typically defined as manufactured materials that have at least 1 dimension <100 nanometers, are being increasingly produced worldwide. Nanomaterials have been used or proposed for use in a variety of products, ranging from computers, clothing, cosmetics, medical devices, coatings and fuel cells, to new technologies for environmental clean up. Use is expected to increase and it is estimated that by 2015 about 10% of output from the chemicals sector will have some influence from nanotechnology, greatly increasing opportunities for human exposures. There has been some evaluation of potential health risks from nanomaterials, but to date, these have not been pursued in a systematic way. Nanomaterials pose new challenges and opportunities to the regulatory and policy structure. There is an increasing number of regulatory and policy decisions being discussed or made at the state, federal and international level. Given that this is still a new and emerging technology, there are opportunities to consider how to address potential health risks in the regulatory and policy framework prior to widespread use and adoption. This symposium will present an overview of nanomaterials, the current state of regulations and policies for addressing nanomaterials, the potential for increased exposure, and the potential for accumulation into the food chain. However, because of regulatory and voluntary efforts subsequently introduced, the levels of dioxin in the environment and food chain have significantly declined. The margin of exposures should continue to increase as additional controls on dioxin emissions are enacted and environmental levels dissipate. The available scientific data have improved our understanding of the strengths and weaknesses of toxicity equivalency factors used in dioxin risk assessment. The NAS evaluation of EPA's draft dioxin reassessment identified a number of important uncertainties and errors of how dioxin risks were managed. This session will focus on the research that has been reported over the last 40+ years, the principles of mechanistic toxicology learned from this research and what the future of research into the human health and environmental effects of this particularly toxic compound.


7:35 WHAT ARE NANOMATERIALS, WHERE DO THEY EXIST IN OUR ENVIRONMENT AND WHAT ARE HUMAN RISK FROM NANOMATERIALS? Kevin Dreher

7:45 HOW ARE NANOMATERIALS BEING ADDRESSED IN REGULATORY SYSTEMS? Jay Pendergrass

8:00 PUBLIC PERCEPTION OF NANOMATERIALS, David Berube

8:15 WHAT SHOULD WE DO TO ADDRESS NANOMATERIALS? Jennifer Sass and Terry L. Medley
The NIH established the Genes, Environment, and Health Initiative (GEI) in 2006 with a goal of establishing a foundation for large-scale gene environment interaction studies. A central component of this initiative is the Exposure Biology Program, led by the National Institute of Environmental Health Sciences in collaboration with the National Cancer Institute, National Heart, Lung, and Blood Institute, National Institute for Drug Abuse, and other NIH Institutes and Centers. The Exposure Biology Program aims to develop a new generation of tools for comprehensive exposure assessment. These tools stem from the efforts of four complementary program areas focused on improving detection of individual exposures to traditional environmental toxicants, assessing psychosocial stress and addictive substances, assessing diet and physical activity, and measuring biological responses to stressors. This activity is focused on the development and validation of new tools, approaches, and biomarkers that will enable fundamentally new directions in environmental epidemiology and the exploration of gene environment interactions. An overview of the GEI Exposure Biology Program will be presented by grantees from the Biological Response Indicators Program. The evolution of these new biomarkers and biosensors and how they may be used to assess early but persistent changes in key physiological pathways known to be involved in disease pathogenesis will be the primary focus. In addition, the application of new technologies and methodologies for improved detection of patterns of response to different chemical and lifestyle stressors in pathways that include oxidative stress, inflammation, and DNA damage will be highlighted. Presentations will cover transcriptomic and DNA adduct markers of tobacco smoke exposure, epigenetic alterations in breast stem/progenitor cells from endocrine disrupting chemicals, gene expression patterns from specific PCB congeners, and new biosensors for detecting protein adducts and genetic damage resulting from chemical exposures.
Tuesday Morning, March 17
8:30 AM–9:30 AM
Room 336

EXHIBITOR HOSTED SESSION: MAKING SENSE OUT OF MULTIPLE SAFETY ATTRIBUTES IN MULTIPLE DATA FORMATS

Presented by: Rosetta Biosoftware

As the ability to measure multiple safety attributes from preclinical, metabolomics, genetics, and transcriptomics data improves, the work to assimilate and interpret these data increases. This workshop describes how to use Rosetta Biosoftware technology in collaboration with the Predictive Safety Testing Consortium (PSTC) led by C-PATH to address these challenges.

Tuesday Morning, March 17
8:30 AM–9:30 AM
Room 338

EXHIBITOR HOSTED SESSION: SYSTEMS TOXICOLOGY DATA ANALYSIS SOLUTIONS FROM GENEGO

Presented by: GeneGo Inc.

GeneGo’s MetaDiscovery platform is a powerful suite of tools and molecular databases for the analysis of high content systems biology data. This session will demonstrate the power of the approach in predictive and mechanistic toxicology. Current capabilities of the system and upcoming enhancements for safety assessment will be presented.

Tuesday Morning, March 17
9:00 AM to 11:45 AM
Room 321

NEURODEGENERATIVE DISEASE

SYMPOSIUM SESSION: DOES METAL TOXICITY PLAY A ROLE IN THE ETIOLOGY OF ALZHEIMER’S DISEASE?

Chairperson(s): Nasser H. Zawia, University of Rhode Island, Kingston, RI and Wei Zheng, School of Health Sciences Purdue University, West Lafayette, IN.

Sponsor:
 Neurotoxicology Specialty Section

Endorsed by:
 Metals Specialty Section
 Occupational and Public Health Specialty Section

Alzheimer’s disease (AD) is a progressive neurodegenerative disorder whose clinical manifestations appear with advancing age. One of the pathological hallmarks found in brains of AD patients is a buildup of extracellular amyloid plaques that are rich in beta amyloid which is derived from the amyloid precursor protein (APP). Studies have shown that beta amyloid is a metalloprotein which binds zinc (Zn), copper (Cu) and iron (Fe). Exposure to low levels of lead (Pb) in early life has been linked to abnormal regulation and expression of APP, possibly by the reprogramming of APP expression. An epigenetic study of Pb-exposed subjects and work on beta-amyloid clearance from the brain following Pb exposure also provides evidence for a possible role for Pb in the etiology of AD. Manganese (Mn) exposure in primates has been recently shown to result in diffuse beta-amyloid plaques in the frontal cortex of young non-human primates. Experts in metal toxicology, neurotoxicology, and environmental epidemiology, who have performed pioneering work to address this newly emerging research area in metal neurotoxicology will address these issues.

Tuesday Morning, March 17
9:00 AM to 11:45 AM
Ballroom I

EPIGENETICS

SYMPOSIUM SESSION: EPIGENETIC IMPLICATIONS FOR TOXICOLOGY

Chairperson(s): Reza J. Rasoulpour, Dow Chemical Company, Midland, MI and Kathleen Gabrielson, Johns Hopkins Medical Institutions, Baltimore, MD.

Sponsor:
 Carcinogenesis Specialty Section

Endorsed by:
 Inhalation and Respiratory Specialty Section
 Molecular Biology Specialty Section
 Risk Assessment Specialty Section

The emerging field of epigenetics may profoundly impact the future of toxicology. Epigenetics can be defined as heritable changes in gene expression that do not involve genetic mutations and are propagated without continued stimulus. Discrete chemical modifications of the chromatin can regulate gene expression or repression and can be transmitted to daughter cells or future generations due to epigenetic memory. Although potentially reversible, these heritable changes may be classified as transgenerational, mitotic, or meiotic, implicating the wide-ranging impact of epigenetic control in cellular function. These epigenetic processes play fundamental roles in cell proliferation, differentiation, cancer development and toxicities. Epigenetic processes that occur in the cell include DNA methylation/demethylation at CpG islands, small nuclear RNA processes and protein acetylation/deacetylation. Understanding how these modifications are inherited from mother cells to daughter cells or from an organism to its progeny remains a major scientific challenge. Recently, there has been a growing concern that
epigenetic events may play a role in chemically and/or nutritionally driven adverse health effects, with particular focus toward reproductive toxicity and non-genotoxic carcinogenesis. For example, changes in DNA methylation which target tumor suppressor and DNA repair genes for silencing is a well established and valid step in cancer etiology. Overall, although the current literature consists of relatively few studies, there has been considerable interest by the popular press, government agencies, and the scientific community. Therefore, it is important to provide an introduction to epigenetic mechanisms and to highlight the current state-of-the-science in epigenetic toxicology.

**Abstract #**

**#669 9:00 EPIGENETIC IMPLICATIONS TO TOXICOLOGY. R. Rasoulpour, K. Gabrielson, J. Goodman, M. Costa, R. Jirtle, J. Herman, S. Ho, and C. Harris. The Dow Chemical Company, Midland, MI, Johns Hopkins University, Baltimore, MD, Michigan State University, East Lansing, MI, New York University School of Medicine, New York, Duke University, Durham, NC, Johns Hopkins University, Baltimore, MD, University of Cincinnati, Cincinnati, OH and National Institutes of Health, Bethesda, MD.**

**#670 9:15 EPIGENETIC MECHANISMS OF NICKEL ION CARCINOGENESIS. M. Costa and H. Chen. New York University School of Medicine, New York.**

**#671 9:42 EPIGENETICS: THE NEW GENETICS OF TOXICOLOGY. R. Jirtle. Department of Radiation Oncology, Duke University, Durham, NC.**

**#672 10:09 EPIGENETIC REGULATION IN DEVELOPMENT: IMPLICATIONS IN STEM CELL BIOLOGY AND TOXICITIES. J. Herman. Department of Oncology, Johns Hopkins University, Baltimore, MD. Sponsor: K. Gabrielson.**

**#673 10:36 IS THERE A COMMON “E-EPIGENOME”? S. Ho, Department of Environmental Health, University of Cincinnati, Cincinnati, OH.**

**#674 11:03 MICRON RNA EPIGENETIC REGULATION. C. C. Harris, Chief, Laboratory of Human Carcinogenesis, CCR, NCI, National Institutes of Health, Bethesda, MD. Sponsor: K. Gabrielson.**

**11:30 PANEL DISCUSSION/Q&A.**

**Tuesday Morning, March 17**

9:00 AM to 11:45 AM

**Ballroom IV**

SYMPOSIUM SESSION: IMMUNOMODULATION DURING COMPLEMENTARY AND ALTERNATIVE MEDICINE (CAM) THERAPY: RISKS AND BENEFITS

Chairperson(s): Barbara L.F. Kaplan, Michigan State University, East Lansing, MI and Prakash Nagarkatti, University of South Carolina School of Medicine, Columbia, SC.

Sponsor: Immunoxicology Specialty Section

Endorsed by: Association of Scientists of Indian Origin Special Interest Group

Food Safety Specialty Section

There are over 40 million Americans who suffer from some form of degenerative disease and it is estimated that approximately one third of them will attempt using complementary and alternative medicine (CAM) to alleviate pain and suffering. Of the various CAM therapies, the use of plant products remains popular. However, there is lack of sufficient experimental and clinical proof that they are safe and effective. In 1998, the National Center for Complementary and Alternative Medicine (NCCAM) was established by the U.S. Congress as one of the NIH Institutes to provide funds to investigate if the popular CAM modalities are truly beneficial. In the United States, while drugs must be approved by the FDA as being safe and effective before they can be sold, the FDA is not authorized to evaluate the safety or efficacy of dietary supplements. However, the FDA can ban the sale of supplements that are shown to be unsafe. On the other hand, the immunosuppressive properties of plant products, if found safe, can also be used to develop new therapeutic modality against inflammatory and autoimmune diseases. Herbal and plant-derived compounds are widely available in the market that claim to sustain, restore or enhance immunity. To begin addressing this issue an overview of CAM therapy with an emphasis on herbal and plant-derived compounds and their potential risks/benefits will be highlighted for their immunomodulatory properties. Benefits versus the risks of using certain plant-derived products that constitute CAM will be discussed including Cat’s Claw, Echinacea, Ginseng, Thunder God Vine, Aristolochia, Kava, Ephedra and St. John’s Wort. (Supported in part by NIH grants R01-DA016545, R01-ES09098, R01-AI053703, R01-AI058300, R01-HL058641, and P01-AT003961).

**Abstract #**

**#675 9:00 IMMUNOMODULATION DURING COMPLEMENTARY AND ALTERNATIVE MEDICINE (CAM) THERAPY: RISKS AND BENEFITS. P. S. Nagarkatti. Pathology, Microbiology and Immunology, University of South Carolina School of Medicine, Columbia, SC.**

**#676 9:10 IMMUNE MODULATION BY PLANT-DERIVED CANNABINOID COMPOUNDS. B. L. Kaplan and N. E. Kaminsk. Center for Integrative Toxicology, Michigan State University, East Lansing, MI and Department of Pharmacology and Toxicology, Michigan State University, East Lansing, MI.**

**#677 9:41 MECHANISMS OF RESVERATROL-INDUCED IMMUNOMODULATION AND ITS POTENTIAL USE IN THE TREATMENT OF INFLAMMATORY AND AUTOIMMUNE DISEASES. P. S. Nagarkatti and M. Nagarkatti. Pathology, Microbiology and Immunology, University of South Carolina School of Medicine, Columbia, SC.**

**#678 10:12 IMMUNOMODULATION BY N-3 POLYUNSATURATED FATTY ACIDS. J. Pestka. Center for Integrative Toxicology, Michigan State University, East Lansing, MI and Microbiology and Molecular Biology, Michigan State University, East Lansing, MI.**

**#679 10:43 IMMUNOMODULATION BY 3.3-DIODOLYL METHANE, L. Bjeldanes and J. Pestka. Department of Nutritional Sciences and Toxicology, University of California, Berkeley, CA and Department of Microbiology and Molecular Genetics, Michigan State University, East Lansing, MI.**

**#680 11:14 EOTAXIN-1 INHIBITION BY 7, 4-DIHYDROXY FLAVONE ISOLATED FROM GLYCYRRHIZA URALENSIS. X. Li. Department of Pediatrics and Immunobiology, Mt. Sinai School of Medicine, New York. Sponsor: B. Kaplan.**
Program Description (Continued)

Abstract #
Tuesday Morning, March 17
9:00 AM to 11:45 AM
Room 314

W WORKSHOP SESSION: LOW-DOSE NON-LINEARITY: WHAT CAN EMERGING TECHNOLOGIES TELL US?
Chairperson(s): James Bus, Dow Chemical Company, Midland, MI and William Slikki, U.S. FDA National Center for Toxicological Research, Jefferson, AR.
Sponsor: Risk Assessment Specialty Section
Endorsed by: Inhalation and Respiratory Specialty Section
Regulatory and Safety Evaluation Specialty Section
Characterization of dose-response, as captured in the Paracelsus phrase, “The dose makes the poison”, is a central tenant to the field of toxicology and risk assessment. Until recently, methodological limitations have prevented comprehensive examination of the nature of dose-response curves, including its shape in low-dose ranges that are more relevant to actual, real-world human exposures. To this end, and pursuant to the recent recommendations proposed by the National Academies/National Research Council Report and a joint SETAC-SOT sponsored Pestell Conference (NAS, “Applications of Toxicogenomic Technologies to Predictive Toxicology and Risk Assessment, 2007; DiGiulio and Benson, “Genomic Approaches to Cross-Species Extrapolation in Toxicology,” 2007), the practice of applying emerging technologies to characterize toxicant-induced responses in the low-dose range and shape of the dose-response are now being realized. Importantly, application of these molecular-level technologies may allow a more complete and predictive analysis of responses and/or associated risk assessment assumptions that are key to understanding human relevance of responses observed at the low end of the dose-response curve, i.e., decisions of whether to apply linear versus non-linear risk assessment approaches. Low-end dose-response analysis using emerging technologies on a number of diverse-acting compounds such as direct genotoxics, cytoxics, and receptor-mediated and undefined-acting toxicants, and will discuss the evidence for the existence, or lack thereof, of thresholds and non-linearity for genomic and other biological responses to xenobiotics will be addressed.

Abstract #
Tuesday Morning, March 17
9:00 AM to 11:45 AM
Ballroom III

N NANTOTECHNOLOGY
SYMPOSIUM SESSION: NANOTOXICOLOGY AND DRUG DELIVERY
Chairperson(s): Chris Samps, Pfizer Inc., Groton, CT and Bob Chapin, Pfizer Inc., Groton, CT.
Sponsor: Nanotoxicology Specialty Section
Endorsed by: Drug Discovery Toxicology Specialty Section
Immunotoxicology Specialty Section
Regulatory and Safety Evaluation Specialty Section
The biopharmaceutical industry is looking at the rapidly developing, multifaceted field of nanotechnology as an opportunity for improved approaches to drug delivery. A good example is the ongoing effort to exploit the unique physical and chemical properties of nanoscale materials for the purpose of improved drug delivery. Using nanoparticles with targeting ligands to precisely deliver a drug payload to a specific diseased tissue, while by-passing all other parts of the body, would clearly represent a game changing approach to drug development. However, before that future vision can be realized, significant unknowns and gaps in our understanding of the toxicity of nanoscale drug delivery platforms will need to be addressed. Academic and industry researchers, as well as government regulators, interested in the unique safety issues confronting drug developers will explore the use of nanomaterials for improved drug delivery. The program will consider the design and development of nanomaterials compatible with the unique requirements for drug delivery and therapy, focusing on material distribution and safety when intentionally delivered into physiologic systems. Special emphasis will be placed on properties that influence absorption, distribution, metabolism and excretion of nanomaterials, including immune system interactions, and properties that influence the toxicity of nanomaterials and their degradation products. Finally, we will explore the FDA’s current activities toward developing a regulatory framework to support the development and safe use of nanomedicine products, including nanoscale drug delivery platforms.

#681 9:00 NANOTOXICOLOGY AND DRUG DELIVERY. C. Samps and R. Chapin. Drug Safety, Pfizer Global R&D, Groton, CT.


#683 9:37 EVALUATION OF CANCER NANTHERAPEUTICS’ STABILITY AND DISPOSITION. S. T. Stern. Nanotechnology Characterization Laboratory, SAIC-Frederick, Inc., NCI-Frederick, Frederick, MD.

#684 10:09 SAFE DESIGN OF NANO PARTICLES FOR THERAPY AND IMAGING: PHYSICAL AND CHEMICAL CHARACTERISTICS. M. A. Philbert. University of Michigan, Ann Arbor, MI.

#685 10:41 NANO PARTICLE INTERACTIONS WITH IMMUNE SYSTEM. M. A. Dobrovolskaia. ATP, NCL, SAIC-Frederick, NCI-Frederick, Frederick, MD. Sponsor: S. Stern.

#686 11:13 SAFETY CONSIDERATIONS FOR THE REGULATION OF NANOMATERIAL-CONTAINING THERAPEUTICS. N. Sadrieh. FDA, SilverSpring, MD.
Tuesday Morning, March 17
9:00 AM to 11:45 AM
Room 324

WORKSHOP SESSION: MATERNAL TOXICITY AND ITS IMPACT ON STUDY DESIGN AND DATA INTERPRETATION

Chairperson(s): Bruce K. Beyer, sanofi-aventis, Malvern, PA and James Kim, ILSI Health and Environmental Sciences Institute, Alexandria, VA.

Sponsor:
Reproductive and Developmental Toxicology Specialty Section

Endorsed by:
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

Assessing maternal toxicity in DART studies is important because it can potentially influence the study’s outcome, thus impacting risk assessment and regulatory decisions. Some degree of maternal/parental toxicity is required in developmental and reproductive toxicity (DART) studies by regulatory agencies. However, excessive maternal/parental toxicity is a confounding factor in study design and data interpretation. There is no clear consensus on levels of toxicity that are high enough to meet regulatory requirements but low enough to avoid confounding data interpretation. In addition, there is a need to distinguish true toxicity from exaggerated pharmacology. It also appears that there may be some differences in species susceptibility to maternal toxicity, with the rabbit being more sensitive than the rat in certain cases. Finally, there are conflicting reports in the literature about the relationship between maternal toxicity and fetal abnormalities. Current views of the issues as they impact study design and interpretation and discussion of these areas in which more knowledge is needed will be addressed.
reviewed. Modeling approaches include the use of biomarker data produced for some of these pesticides. We will address exposures to the anticholinesterase insecticides, i.e., the organophosphorus and N-methyl carbamate classes of insecticides and the results in serine esterase inhibition. The levels of inhibition of some of these serine esterases, such as blood cholinesterase, is routinely used, in laboratory animal experiments and in worker exposure monitoring, to assess the level of exposure and potential toxicity. To fully understand these experimental results, biomarker data in terms of experimental results and the use of biomarker data in constructing the computational models will be highlighted.

#699 9:00 PESTICIDE MIXTURES: EXPERIMENTAL EVALUATION AND COMPUTATIONAL MODELING, J. E. Chambers1 and V. C. Moser2.
1Mississippi State University, Mississippi State, MS and 2U.S. EPA, Research Triangle Park, NC.

#700 9:05 CELLULAR SIGNALING PATHWAYS AS A TARGET OF A PESTICIDE MIXTURE. S. Pruett. Department of Basic Sciences, Mississippi State University, Mississippi State, MS.


#702 10:25 IN VITRO AND IN VIVO EFFECTS OF SEVERAL LOW-DOSE BINARY MIXTURES OF ORGANOPHOSPHORUS INSECTICIDES. J. E. Chambers. College of Veterinary Medicine, Mississippi State University, Mississippi State, MS.

#703 11:05 OP INSECTICIDE MIXTURE EXPOSURE: INTEGRATING COMPUTATIONAL APPROACHES AND BIOMARKERS TO RECONSTRUCT DOSE. B. Reisfeld3. 1Department of Chemical and Biological Engineering, Colorado State University, Fort Collins, CO, 2Department of Environmental and Radiological Health Sciences, Colorado State University, Fort Collins, CO and 3School of Biomedical Engineering, Colorado State University, Fort Collins, CO.

Program Description (Continued)

Tuesday Morning, March 17
9:00 AM to 11:45 AM
Room 308

PLATFORM SESSION: ADVANCES IN ANIMAL AND ALTERNATIVE MODELS

Chairperson(s): Andrew Olaharski, Roche Palo Alto, Palo Alto, CA and Robert Hamlin, The Ohio State University, Columbus, OH.


#705 9:24 INTERACTIVE EFFECTS OF SEX HORMONES AND PRO-INFLAMMATORY CYTOKINES ON A CULTURED HUMAN HEPATOCYTE CELL LINE. T. J. Flynn1 and M. S. Ferguson1. Toxicology, US, FDA, Laurel, MD and 2Public Health and Biostatistics, US, FDA, College Park, MD.
Program Description (Continued)

Abstract #  Abstract #
#714  9:57  BIOKINETIC CONSIDERATIONS IN IN VITRO TOXICOLOGY. B. Blauhofer. Div Toxicology, Institute for Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands.
#715  10:15  A PBPK MODELING TOOL TO PREDICT INFANT INTERNAL EXPOSURE TO PERSISTANT ORGANIC CHEMICALS AND ASSESS CRITICAL PERIODS OF SUSCEPTIBILITY. M. Verner1, F. Avotte2, G. Muckle2, M. Charbonneau2 and S. Haddad1, 1sciences biologiques, TOXEN, Université du Québec à Montréal, Montréal, QC, Canada, 2Centre de recherche du CHUQ-CHUL, Université Laval, Québec, QC, Canada and 3INRS-Institut Armand-Frappier, Université du Québec, Laval, QC, Canada.
#717  10:51  AN IMPROVED MODEL OF HUMAN RESPONSE TO AEROSOL CHEMICAL AND BIOLOGICAL AGENT HAZARDS. K. Millage1, J. Bergman1, G. McClellan1, S. Watson1, S. Langford1, B. Asgharian2 and O. Price2. 1Applied Research Associates, Inc., Arlington, VA and 2The Hamner Institutes For Health Sciences, Research Triangle Park, NC.
#718  11:09  UPTAKE OF C60 FULLERENE NANOPARTICLES IN ISOLATED PERFUSED PORCINE SKIN FLAPS. T. Leavens, X. Xia, H. Lee, N. Monteiro-Riviere, J. Brooks and J. Riviere. Center for Chemical Toxicology Research and Pharmacokinetics, NCSU, Raleigh, NC.
#719  11:27  COMPARISON OF QUANTUM DOT BIODISTRIBUTION WITH BLOOD FLOW-LIMITED PHYSICALLY BASED PHARMACOKINETIC MODEL. H. A. Lee, T. L. Leavens, S. E. Mason, N. A. Monteiro-Riviere and J. E. Riviere. Center for Chemical Toxicology Research and Pharmacokinetics, North Carolina State University, Raleigh, NC.

Tuesday Morning, March 17
9:00 AM to 11:45 AM
Room 309

**BIOMARKERS**

PLATFORM SESSION: CELLULAR AND BIOLOGICAL SOURCES FOR BIOMARKERS

Chairperson(s): James L. Stevens, Eli Lilly & Company, Greenfield, IL and Ruth A. Roberts, AstraZeneca UK, Alderley Park, United Kingdom.

#720  9:00  MICRONRNAS BIOMARKERS FOR CARCINOGEN ARISTOLOCHIC ACID EXPOSURE IN RATS. T. Chen, Z. Li and M. Pearce. Division of Genetic and Reproductive Toxicology, National Center for Toxicological Research, Jefferson, AR.

#721  9:24  METABOLIC APPROACHES TO CHARACTERIZING CHANGES IN TRANSFERR RNA SECONDARY MODIFICATIONS IN CELLULAR RESPONSES TO TOXINS. T. Chan1, K. Taghizadeh2, T. J. Begley3 and P. C. Dedon4. 1Chemistry, Massachusetts Institute of Technology, Cambridge, MA, 2Department of Biomedical Sciences, Gen”NY”sis Center for Excellence in Cancer Genomics, University at Albany, State University of New York, Rensselaer, NY and 3Department of Biological Engineering, Massachusetts Institute of Technology, Cambridge, MA.

#722  9:48  IMMUNOGLOBULIN SWITCH TRANSSCRIPTS ARE NON-INVASIVE SURROGATE BIOMARKERS OF ADAPTIVE IMMUNE FUNCTION AND BACTERIAL INFECTION. E. R. Fedyk1, E. Izmailova2, C. Simpson1, E. Koeni1g, J. Gray1, V. Cszignad1a, C. Milch3 and C. L. Allen1. 1Drug Safety Evaluation, Millennium Pharmaceuticals Inc., Cambridge, MA, 2Molecular Medicine, Millennium Pharmaceuticals Inc., Cambridge, MA, 3Molecular Technologies, Millennium Pharmaceuticals Inc., Cambridge, MA and 4Inflammation Clinical Research, Millennium Pharmaceuticals Inc., Cambridge, MA.


#724  10:36  URINARY LPBA TRACKS WITH ONSET AND REVERSAL OF DRUG-INDUCED PHOSPHOLIPIDOSIS. J. A. Phillips1, V. V. Papov1, J. H. Stoltz1, A. M. Mineo2, K. N. Locke3 and S. Jayadev3. 1Toxicology and Safety Assessment, Boehringer Ingelheim, Ridgefield, CT and 2Analytical Sciences, Boehringer Ingelheim, Ridgefield, CT.

#725  10:59  CARDIAC BIOMARKER EXPRESSION IN THE URINE OF COCAINE USERS. M. M. Bourgeois and J. S. Richards. EOH, USF COPH, Tampa, FL.

#726  11:22  IDENTIFICATION OF AUTOANTIBODIES AGAINST TUMOR-DERIVED ANTIGENS AS BIOMARKERS FOR EARLY DETECTION AND DIAGNOSIS OF ESOPHAGEAL CANCER. C. Shao1, L. Chen1, E. Cobos1, J. Wang1 and W. Gao1. 1Environmental Toxicology, The Institute of Environmental and Human Health (TIEHH), Texas Tech University, Lubbock, TX, 2Texas Tech University Health Sciences Center, Lubbock, TX and 3The University of Georgia, Athens, GA.
Abstract #

Tuesday Morning, March 17
9:00 AM to 11:45 AM
Room 316

PLATFORM SESSION: METAL-INDUCED CARCINOGENESIS

Chairperson(s): Deven Dandekar, Bayer CropScience LP, Stilwell, KS and Zahir A. Shaikh, University of Rhode Island, Kingston, RI.

#727 9:00 STEM CELL SELECTION FACILITATES ARSENIC-INDUCED MALIGNANT TRANSFORMATION VIA INNATE RESISTANCE, HYPER-ADAPTABILITY AND OVER-PRODUCTION, E. J. Tokar¹, W. Qu¹, J. Liu¹, W. Lin² and J. Phang² and M. P. Waalkes³. ¹Inorganic Carcinogenesis Section, LCC, NCI at NIH, Research Triangle Park, NC and ²Institution of Angewandte Biowissenschaften, Universität Karlsruhe (TH), Karlsruhe, Germany. ³Institut für Organische Chemie, Universität Karlsruhe (TH), Karlsruhe, Germany.

#728 9:19 CELLULAR UPTAKE OF PLATINUM NANOPARTICLES IN HUMAN COLON CARCINOMA CELLS AND THEIR IMPACT ON CELLULAR REDOX SYSTEMS AND DNA INTEGRITY. D. Marko, J. Peitk, H. Gehrke, M. Essel, M. Türk, M. Crone, S. Bräse, T. Mullen, W. Send, V. Zibat, P. Brenner, R. Schneider and D. Gerthsen. ¹Institut für Angewandte Biowissenschaften, Universität Karlsruhe (TH), Karlsruhe, Germany. ²Institut für Technische Thermodynamik und Kältetechnik, Universität Karlsruhe (TH), Karlsruhe, Germany. ³Institut für Organische Chemie, Universität Karlsruhe (TH), Karlsruhe, Germany. 4Laboratorium für Elektronenmikroskopie, Universität Karlsruhe (TH), Karlsruhe, Germany.

#729 9:38 CADMIUM-INDUCED ACQUISITION OF CANCER STEM CELL-LIKE CHARACTERISTICS DURING CARCINOGENIC TRANSFORMATION OF HUMAN PanCREATIC DUCTAL CELLS. W. Qu, E. J. Tokar, A. J. Kim, M. Bell and M. P. Waalkes. ICS, LCC, NCI at NIH, Research Triangle Park, NC and ²SAIC-Frederick Inc., NCI at Frederick, Frederick, MD.

#730 9:57 TUMORS AND PROLIFERATIVE LESIONS IN MICE INDUCED BY TRANSPLACENTAL INORGANIC ARSENIC COMBINED WITH DIMETHYLARSENIC ACID IN ADULTHOOD. M. P. Waalkes and B. A. Dowen. ¹ICS, LCC, NCI at NIH, Research Triangle Park, NC and ²SAIC-Frederick Inc., NCI at Frederick, Frederick, MD.

#731 10:15 DEPLETED URANIUM INDUCES TRANSFORMATION IN HUMAN BRONCHIAL EPITHELIAL CELLS. C. LaCerte, H. Xie, E. A. Jeevaragen and J. P. Wise. ¹Wise Laboratory of Environmental and Genetic Toxicology, University of Southern Maine, Portland, ME, ²Maine Center for Toxicology and Environmental Health, University of Southern Maine, Portland, ME and ³Applied Medical Sciences, University of Southern Maine, Portland, ME.

#732 10:33 HUMAN CANCER RISK OF SOLUBLE COBALT: BIOKINETIC EXTRAPOLATION FROM RODENT BIOASSAY DATA. K. T. Bogen. Exponent Health & Environmental, Oakland, CA.

Abstract #

Tuesday Morning, March 17
9:00 AM to 11:45 AM
Room 310

PLATFORM SESSION: XENOBIOTIC MODULATION OF SIGNAL TRANSDUCTION PATHWAYS AND GENE REGULATION

Chairperson(s): Richard Pollenz, University of South Florida, and Kong Xiong, University of Wisconsin at Madison, Madison, WI.

#734 11:09 DEPLETED URANIUM HAS GENOTOXIC AND EPIGENETIC EFFECTS IN HUMAN LUNG EPITHELIAL CELLS. H. Xie, C. LaCerte and J. P. Wise², ³. ¹Applied Medical Sciences, University of Southern Maine, Portland, ME, ²Wise Laboratory of Environmental and Genetic Toxicology, University of Southern Maine, Portland, ME and ³Maine Center for Toxicology and Environmental Health, University of Southern Maine, Portland, ME.

#735 11:27 PARTICULATE CHROMATE INDUCED DNA DOUBLE STRAND BREAKS ARE ASSOCIATED WITH XPC GENE ACTIVITY IN HUMAN LUNG CELLS. Q. Qin, H. Xie, A. Jeevaragen, W. Wallace, D. Hammond, T. Shehata and J. P. Wise. ¹Wise Laboratory of Environmental and Genetic Toxicology, University of Southern Maine, Portland, ME, ²Maine Center for Toxicology and Environmental Health, University of Southern Maine, Portland, ME and ³Department of Applied Medical Science, University of Southern Maine, Portland, ME.

#736 9:00 ROLE OF ARNT BINDING AND TRANSACTIVATION IN THE LIGAND DEPENDENT AND INDEPENDENT DEGRADATION OF THE AH RECEPTOR. R. S. Pollenz, J. Jones and E. J. Dougherty. ¹Biology, University of South Florida. Tampa, FL and ²Clinical Endocrinology Branch, NIH, Bethesda, MD.

#737 9:21 HYPOXIA POTENTIATES TCDD INDUCTION OF CYPIA1 IN DIFFERENTIATING CHONDROCYTES. M. H. Kung, J. Puzas², R. J. O’Keefe² and M. J. Zasck. ¹Environmental Medicine, University of Rochester, Rochester, NY and ²Orthopaedics, University of Rochester, Rochester, NY.

#738 9:42 TCDD, CO-PLANNER PCBs AND PAHS INDUCE COMMON AH RECEPTOR-DEPENDENT EPIGENETIC SIGNATURES IN THE CYP1A1 PROMOTOR. J. L. Ovesen, M. Schneekenburger and A. Puga. Environmental Health, University Of Cincinnati, Cincinnati, OH.
Tuesday Morning, March 17
9:00 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: SAFETY ISSUES CONCERNING FOOD PRODUCTS AND MICRONUTRIENTS

Chairperson(s): Ramesh Gupta, Murray State University, Hopkinsville, KY.

Displayed: 9:00 AM–12:30 PM

Author Attended: 9:00 AM–11:00 AM

#744 10:15 FURAN IN FOOD: 28 DAY ORAL TOXICITY AND CELL PROLIFERATION IN MALE F344/N RATS. A. Mally1, C. Graff2, S. Moro1, C. Hammerber1, U. M. Schauer3, J. Bröck1, S. Ozden1, M. Sieber1, U. Steiger1, G. C. Hur2, J. K. Chipman1, D. Schrenk1 and W. Dekan1. 1University of Wuerzburg, Wuerzburg, Germany, 2Kaiserslautern, Germany, 3Department of Toxicology, University of Birmingham, Birmingham, United Kingdom.

#745 10:20 MODULATION OF HEPATIC GENE EXPRESSION INDEPENDENT OF DNA METHYLATION IN FURAN TREATED F344/N RATS. T. Chen1, A. Mally1, S. Ozden1, W. Dekan1 and K. Chipman1. 1School of Biosciences, The University of Birmingham, Birmingham, United Kingdom and 2Department of Toxicology, University of Würzburg, Würzburg, Germany.

#746 10:25 A 13-WEEK ORAL TOXICITY STUDY OF L-SERINE IN RATS. K. Hayamizu1, 1Kaneko1, L. Han1 and A. Liang1. 1FANCL Research Institute, Yokohama, Kanagawa, Japan and 2Center of Safety Evaluation for Chinese Materia Medica, Institute of Chinese Materia Medica, Beijing, China.

#747 10:30 SAFETY AND THERAPEUTIC EFFICACY OF A NOVEL CHROMIUM(III) DINOCSYSTEINATE (CDNC), D. Bagchi1,2, S. K. Jain1, F. C. Lau1 and M. Bagchi1. 1Pharmaceutical & Pharmacological Sciences, University of Houston, Houston, TX, 2Research & Development, InterHealth Research Center, Benicia, CA and 3Department of Pediatrics, Louisiana State University Health Sciences Center, Shreveport, LA.

#748 10:35 SIMULTANEOUS DETERMINATION OF BIPHENOL A, OCTYLPHENOL AND NONYLPHENOL BY PRESSURIZED LIQUID EXTRACTION AND LIQUID CHROMATOGRAPHY–TANDEM MASS SPECTROMETRY IN INFANT FORMULAS. G. Font1, J. Males2, E. Ferrer3, G. Sagratini4, E. Santoni4, S. Vittori5 and 6Anadon1. 1Department of Bromatology And Toxicology, Faculty of Pharmacy, Universitat de Valencia, Valencia, Spain, 2Department of Chemical Sciences, Faculty of Pharmacy, University of Camerino, Camerino, Italy and 3Department of Toxicology and Pharmacology, Faculty of Veterinary Medicine, Universidad Complutense, Madrid, Spain.

#749 10:40 RELATIVE PHOTOMUTAGENIC POTENCY OF FUROCOUMARINS AND LIMETTIN. N. Raquet and D. Schrenk. Food Chemistry and Toxicology, University of Kaiserslautern, Kaiserslautern, Germany.
MAIZE GRAIN FROM HERBICIDE-TOLERANT TRANSGENIC EVENT DP-098140-6: SUBCHRONIC ORAL TOXICITY IN RATS. L. M. Appenzeller¹, S. M. Munley², D. Hoban³, G. P. Sykes¹, L. A. Malley³, R. Essner⁴ and B. Delaney⁴. Pioneer, DuPont Haskell Global Centers for Health and Environmental Sciences, Newark, DE.

HYDROLYZED FUMONISIN B¹, (HFB¹) DID NOT INDUCE NEURAL TUBE DEFECTS IN LM/Bc MICE. K. A. Voss¹, T. D. Burns², M. E. Snook¹, R. T. Riley³ and J. B. Gelineau-van Waez³. Toxicology & Mycotoxin Research Unit, USDA Agricultural Research Service, Athens, GA, ²Interdisciplinary Toxicology Program, University of Georgia, Athens, GA, and ³Department of Genetics, Cell Biology and Anatomy, University of Nebraska Medical Center, Omaha, NE.

IN VITRO ANALYSIS OF ZEAERALENONE BINDERS INCLUDED IN ANIMAL FEEDS IN MEXICO AND INITIAL STEPS FOR STANDARDIZATION OF OCHRATOXIN SORPTION ASSAYS. A. G. Marroquin-Cordona¹, M. J. Berg¹, N. M. Johnson¹, C. M. Sayes², A. Robinson³, J. F. Taylor⁴ and T. D. Phillips⁵. ¹Veterinary Integrative Biosciences, Texas A&M University, College Station, TX and ²Veterinary Physiology and Pharmacology, Texas A&M University, College Station, TX.

PREDOMINANCE OF AFLATOXIN EXPOSURE IN RURAL RESIDENTS OF SOUTHERN GUANGXI, CHINA. J. Xiu¹, L. Tang¹, G. Qian⁴, J. Su¹ and J. Wang¹. Department of Environmental Health Science, University of Georgia, Athens, GA, ²Jiangnan University, Wuxi, China and ³Guangxi Cancer Institute, Nanning, China.

SERUM LEVELS OF AFLATOXIN E₁-LYSINE ADDUCT IN A US. POPULATION COMPARED TO A HIGH RISK POPULATION IN CHINA. G. Qian¹, L. Tang¹, L. Xu¹, N. M. Johnson¹, D. Tietze², M. Rodriguez¹, L. Kaufman¹, K. Cunningham², J. Wittmer², F. Guerra², K. C. Donelly², T. D. Phillips³ and J. S. Wang³. College of Public Health, University of Georgia, Athens, GA, ²College of Veterinary Medicine, Texas A&M University, College Station, TX and ³San Antonio Metropolitan Health District, San Antonio, TX.

INITIAL EVALUATION OF PROTEIN EXPRESSION PATTERNS IN HUMAN LIVER CELLS TREATED WITH AFLATOXIN B¹. L. Tang¹,², Y. Zhou¹, Y. Yang¹ and J. Wang¹,². ¹Environmental Health Science, The University of Georgia, Athens, GA, ²Environmental Toxicology, Texas Tech University, Lubbock, TX and ³Food Safety and Nutrition, Jiangna University, Wuxi, China.

BENZOCAINE-INDUCED METHEMOGLOBINEMIA IN AN ACUTE EXPOSURE RAT MODEL. L. S. VonTungeln¹, F. A. Beland¹, K. A. Woodling¹, D. R. Doerge¹, K. J. Greenlee¹ and T. Zhou¹. ¹Division of Biochemical Toxicology, FDA/NCTR, Jefferson, AR and ²Office of New Animal Drug Evaluation, FDA/CVM, Rockville, MD.

ACCUMULATION OF 1-DEOXYSPHINGOSINE IN MAMMALIAN CELLS AND TISSUES FOLLOWING FUMONISIN INHIBITION OF CERAMIDE SYNTHASE. N. C. Zitomer¹, T. Mitchell¹, K. A. Voss¹, S. T. Pruett¹, E. Garnier¹, L. S. Liebeskind³, H. Park³, E. Wang³, C. Sullards⁴, A. H. Merrill⁵ and R. T. Riley⁵. Toxicology and Mycotoxin Research Unit, USDA-ARS, Athens, GA, ²Yerkes National Primate Research Center, Emory University, Atlanta, GA, ³Department of Chemistry, Emory University, Atlanta, GA and ⁴School of Biology and the Petit Institute for Bioengineering and Bioscience, Georgia Institute of Technology, Atlanta, GA.

IMPROVED REAL-TIME PCR QUANTITATION OF RIBOSOME-INACTIVATING PROTEINS. W. B. Melchior and W. H. Tolleson. Division of Biochemical Toxicology, NCTR, Jefferson, AR.


DISPOSITION OF [2,3-14C]ACRYLAMIDE ORALLY DOSED TO JUVENILE AND ADULT FEMALE RATS. H. Kurebayashi¹, N. Nanbru², Y. Hamai¹, A. Shigematsu¹, T. Imai¹, K. Nakazawa¹ and Y. Ohno¹. ¹NIHS, Japan, Tokyo, Japan and ²Institute of Whole Body Metabolism, Chiba, Japan. Sponsor: A. Nishikawa.
#763 Poster Board Number ........................................ .....120
RELATIVE QUANTIFICATION OF SEED PROTEIN ALLERGENS FROM NONTRANSGENIC SOYBEAN VARIETIES BY LIQUID CHROMATOGRAPHY-TANDEM MASS SPECTROMETRY. S. E. Stevenson1, J. J. Thelen1 and G. S. Ladics2. 1Interdisciplinary Plant Group and Department of Biochemistry, University of Missouri, Columbia, MO and 2Crop Genetics, DuPont Co., Wilmington, DE.

#764 Poster Board Number ........................................ .....121
SAFETY OF GERANIUM OIL AS A FOOD INGREDIENT. C. Crincoli and G. A. Burdock. Burdock Group, Orlando, FL.

#765 Poster Board Number ........................................ .....122
COMPARISON OF EXPOSURE ASSESSMENT MODELS IN DETERMINING ESTIMATED HUMAN DIETARY EXPOSURE TO N-ACTYLASPARTATE FROM FOODSTUFFS. C. A. Mathies1, R. Layton1, B. Delaney2, A. O. Hession2, E. G. Esrey2, R. A. Croes2 and C. A. Maxwell2. 1Pioneer, A DuPont Company, Johnston, IA and 2DuPont Agriculture and Nutrition, Wilmington, DE.

#766 Poster Board Number ........................................ .....123

#767 Poster Board Number ........................................ .....124
IMMUNOTOXICITY OF DEOXYNIVALENOL IN BALB/C MICE: EFFECTS ON CIRCULATING AND SPLENIC LEUKOCYTE AND CELL MIGRATION MARKERS WITH TIME COURSE AND DOSE-RESPONSE. X. Wu, J. Cumnick3, M. Kohut1 and S. Hendrich1. 1Food Science and Human Nutrition, Iowa State University, Ames, IA, 2Animal Science, Iowa State University, Ames, IA and 3Kinesiology, Iowa State University, Ames, IA.

#768 Poster Board Number ........................................ .....125
RISK ASSESSMENT OF DANDELION ROOT EXTRACT SOLID AS A FOOD INGREDIENT. R. A. Matulka. Burdock Group, Orlando, FL.

#769 Poster Board Number ........................................ .....126
PAIN REDUCTION MEASURED BY GROUND FORCE PLATE IN ARTHRITIC DOGS TREATED WITH TYPE-II COLLAGEN. R. C. Gupta1, M. Barnes4, J. M. Minniew1, J. Lindley2, J. T. Goua1, T. D. Canerdy1, M. Bagchi1 and D. Bagchi2. 1Toxicology, Murray State University, Hopkinsville, KY and 2InterHealth Research center, Benicia, CA.

#770 Poster Board Number ........................................ .....127

#771 Poster Board Number ........................................ .....128
APOTOPSIS IN RAW264.7 MACROPHAGE CELLS EXPOSED TO MELAMINE. W. H. Tolleson. Division of Biochemical Toxicology, Food and Drug Administration, National Center for Toxicological Research, Jefferson, AR.

#772 Poster Board Number ........................................ .....129
EFFECT OF PH ON THE THERMAL STABILITY OF RICIN. Z. Zhang1,2, W. H. Tolleson3, W. B. Melchner1, L. S. Jackson1 and P. Varelis1,2. 1National Center for Toxicological Research, Jefferson, AR, 2Illinois Institute of Technology, Summit-Argo, IL and 3National Center for Food Safety and Technology, Summit-Argo, IL.

#773 Poster Board Number ........................................ .....130
SIMULTANEOUS DETERMINATION OF MELAMINE AND CYANURIC ACID IN PET FOOD USING A UV/ECDUAL DIPETION SYSTEM. C. Chou1, C. Liao2, J. Liao3, J. Zen4 and C. Chuang5. 1Veterinary Medicine, National Chung-Hsing University, Taichung, Taiwan, 2Chemistry, NCHU, Taichung, Taiwan, 3Veterinary Pathology, NCHU, Taichung, Taiwan and 4Biomedical Engineering and Environmental Sciences, NTHU, Hsinchu, Taiwan.

#774 Poster Board Number ........................................ .....131

#775 Poster Board Number ........................................ .....132
NATURE AND CHARACTERISTICS OF THE TIMING OF REACTIVITY TO GLUTEN IN CELIAC DISEASE. S. A. Assimon and P. M. Bolger. CFSA, FDA, College Park, MD.

#776 Poster Board Number ........................................ .....133
EVALUATION OF URINARY FUMONISIN B1 AS A BIOMARKER OF EXPOSURE IN A WEST AFRICAN POPULATION HIGHLY EXPOSED TO AFLATOXINS. A. Robinson1, N. Johnson1, J. T. Taylor1, A. Marquoy-Cardona1, E. Afrizie-Gyawu1, N. Ankrah1, J. H. Williams1, J. S. Wang1, P. Jolly1 and T. D. Phillips1. 1College of Veterinary Medicine, Texas A&M University, College Station, TX, 2Noguchi MIMR, University of Ghana, Accra, Ghana, 3College of Public Health, University of Georgia, Athens, GA, 4School of Public Health, University of Alabama, Birmingham, AL and 5Peanut CRSP, University of Georgia, Griffin, GA.
Program Description (Continued)

Abstract #  Poster Board Number ____________________________135

#779 Poster Board Number ____________________________136
ASSESSMENT OF THE TOXICITY AND MUTAGENICITY OF A NOVEL SOLUBLE POLYSACCHARIDE, R. A. Matulka1, G. A. Burdock2, S. Wood1, M. Lyon3 and P. A. Marone3. 1Burdock Group, Orlando, FL, 2Canadian Centre for Functional Medicine, Coquitlam, BC, Canada and 3Eurofins-PDL, Dayton, NJ.

#780 Poster Board Number ____________________________137
ASSESSMENT OF THE TERATOGENICITY AND MUTAGENICITY OF REBAUDIOSIDE A, L. D. Williams4, E. Ford2, A. M. Hoberman2, J. Rochowicz1 and G. A. Burdock1. 1Burdock Group, Orlando, FL, 2Canadian Centre for Functional Medicine, Coquitlam, BC, Canada and 3Eurofins-PDL, Dayton, NJ.

#781 Poster Board Number ____________________________138

#782 Poster Board Number ____________________________139
IS THERE AN EFFECT OF FOOD MATRICES ON THE BIOAVAILABILITY OF ACRYLAMIDE? M. Baum, F. Berger, J. Feld and G. Eisenbrand. Food Chemistry and Toxicology, University of Kaiserslautern, Kaiserslautern, Germany.

Tuesday Morning, March 17
9:00 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: BIOLOGICAL ACTIONS OF NATURAL PRODUCTS

Chairperson(s): Kimberly A. Henderson, University of California Los Angeles, Los Angeles, CA.

Displayed: 9:00 AM–12:30 PM

Author Attended: 11:00 AM–12:30 PM

#783 Poster Board Number ____________________________146
BERGAMOTTIN INHIBITS PMA-MEDIATED MATRIX METALLOPROTEINASE-9 ACTIVATION THROUGH DOWN-REGULATING OF NUCLEAR FACTOR-KB. H. Pil and H. Jeong. BK 21 Project Team, Pharmacy, Chosun University, Gwangju, South Korea.

#784 Poster Board Number ____________________________147
PRUNELLA VULGARIS INHIBITS TUMOR CELL METASTASIS AND GROWTH BY MODULATING EXPRESSIONS OF MATRIX METALLOPROTEINASE-9. J. Seo1, J. Choi2, Y. Chung3 and H. Jeong3. 1Division of Food Science, International University of Korea, Jinju, South Korea and 2BK21 Project Team, Pharmacy, Chosun University, Gwangju, South Korea.

#785 Poster Board Number ____________________________148
EUCLATIN EXHIBITS A NOVEL ANTI-TUMOR ACTIVITY THROUGH THE INDUCTION OF CELL CYCLE ARREST AND DIFFERENTIATION OF GASTRIC CARCINOMA AGS CELLS. E. Choi and S. Kim. School of Medicine Kyungpook National University, Daegu, South Korea.

#786 Poster Board Number ____________________________149
SUPPRESSION OF P-GLYCOPROTEIN EXPRESSION BY PUEARRIN IN BREAST CANCER CELL MCF-7/ADR. H. Thi, H. Kim and H. Jeong. BK21 Project Team, Pharmacy, Chosun University, Gwangju, South Korea.

#787 Poster Board Number ____________________________150
ALLELOE GALLATES INHIBIT MULTIDRUG RESISTANCE THROUGH DOWN-REGULATION OF P-GLYCOPROTEIN EXPRESSION. S. Lee and S. Kim. Pharmacology, Kyungpook National University, Daegu, South Korea.

#788 Poster Board Number ____________________________151
EXPOSURE TO A PROANTHOCYANIDIN MISTURE SIGNIFICANTLY REDUCES DIMETHYLNITROSAMINE (DMN)–INDUCED NERPOCANCINOGENESIS IN VIVO. I. Khodos and S. Ray. Mol. Toxicology Labs, Division of Pharmacology Scs., AMS Coll. of Pharmacology & Health Scs., Brooklyn, NY.

#789 Poster Board Number ____________________________152
EFFECTIVENESS OF SOYA ISOFLAVONES AND VITAMIN D IN BREAST CANCER PREVENTION. R. Marik1, S. Sukumar2, M. A. Zeiger1, V. Stearns1 and C. B. Umbricht1. 1SOM, Johns Hopkins, Baltimore, MD and 2SKCC, Johns Hopkins, Baltimore, MD.

#790 Poster Board Number ____________________________153
LACK OF EFFECTS OF SULFORAPHANE (SFN) ON BASELINE CYP3A4 ACTIVITY IN HEALTHY HUMAN VOLUNTEERS. E. M. Poulton1, D. L. Eaton2 and J. W. Lampe3. 1DEOHS, University of Washington, Seattle, WA and 2Epidemiology, University of Washington, Seattle, WA.

#791 Poster Board Number ____________________________154
TOXIC AND GENOTOXIC STUDIES OF WOOD DUSTS. M. Wilson1, R. Rando4, C. Miller2,3 and X. Tan. 1Environmental Health Sciences, Tulane University, New Orleans, LA, 2Tulane Cancer Center, Tulane University, New Orleans, LA, 3Center for Bioenvironmental Research, Tulane University, New Orleans, LA and 4Environmental Medicine, Tulane University, New Orleans, LA.
Abstract #                  Poster Board Number ........................................155 #799  
#792  IN VITRO ANTI-ESTROGENIC AND GALLOTANNINS DECREASE NITRIC ANTI-ANDROGENIC PROPERTIES OF OXIDE PRODUCTION THROUGH LAMELLARINS, M. van den Berg1, S. M. INHIBITION OF NF-κB AND DOWNSTREAM NJimeijer1, P. Ploypradith2, M. Chittchang2, S. NOSES EXPRESSION IN MACROPHAGES, Ruchirawat1, M. S. Denison1 and M. B. Van Duursen1. 1Institute for Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands. 3Laboratory of Medicinal Chemistry, Chulabhorn Research Institute, Bangkok, Thailand, Bangkok, Thailand and 1University of California at Davis, Davis, CA. 

#793  BORIC ACID AS A NOVEL STORAGE #800  
ANTI-ANDROGENIC AGENT AND METHOD TO ASSIS PROSTATE CANCER CELLS. ENDOMPLASAMIC RETICULUM MODULATOR IN DU-145 PROSTATE CANCER CELLS. K. Henderson1, S. Kobylewski1, S. Stella2 and C. Eickhert. 1Molecular Toxicology, UCLA, Los Angeles, CA and 2Pharmacology, UCLA, Los Angeles, CA. 

#794  THE SUSCEPTIBILITY OF VARIOUS #801  

#795  INDUCTION OF HEME OXYGENASE-1 #802  
EXPRESSION BY SAPONINS DERIVED FROM ROOTS OF PLATYCODON GRANIFLORUM IN HEPA1C1C7 CELLS. B. Park, Y. Hwang2, Y. Chung2 and H. Jeong1. 1Jangsaeng Doraji Research Institute of Biotechnology, Jangsaeng Doraji Co., Ltd., Jinju, South Korea, 2BK21 Project Team, Pharmacy, Chosun University, Gwangju, South Korea and 3Division of Food Science, International University of Korea, Jinju, South Korea. 

#796  PROTECTIVE EFFECT OF THE ARALIA CONTINENTALIS ON CARBON TETRACHLORIDE-INDUCED HEPATOTOXICITY IN MICE. C. Ho, Y. Hwang and H. Jeong. BK 21 Project Team, Pharmacy, Chosun University, Gwangju, South Korea. 

#797  IMMUNOSTIMULATORY ACTIVITY OF AQUEOUS EXTRACT ISOLATED FROM PRUNELLA VULGARIS. E. Han1, J. Park1, Y. Chung2, J. Seo1 and H. Jeong1. BK 21 Project Team, Pharmacy, Chosun University, Gwangju, South Korea and 3Division of Food Science, International University of Korea, Jinju, South Korea. 

#798  EFFECTS OF CHEMICALLY CHARACTERIZED FRACTIONS FROM A COMMERCIAL ECHINACEA HERBAL PRODUCT AND AERIAL PARTS OF ECHINACEA PURPUREA AND ANGELICA PLANTS ON MYEOPOIESIS. S. Ramasubayam1, H. N. Baraka2, F. M. Abdel Bar2, K. A. El Sayed1 and S. A. Meyer2. 1Toxicology, University of Louisiana-Monroe, Monroe, LA and 2Basic Pharmaceutical Sciences, University of Louisiana-Monroe, Monroe, LA. 

#799  GALLOTANNINS DECREASE NITRIC OXIDE PRODUCTION THROUGH INHIBITION OF NF-κB AND DOWNSTREAM INOS EXPRESSION IN MACROPHAGES. M. Kim and S. Kim. Department of Pharmacology School of medicine Kyungpook National University, Daegu, South Korea. 

#800  METODOLOGY TO ASSESS THE INHIBITION OF α-AMYLASE BY PLANT EXTRACTS WITH ANTI-DIABETIC POTENTIAL. A. M. Rodriguez-Nassif and J. Gavillan-Suarez. Chemistry, University of Puerto Rico at Cayey, Cayey, PR. 


#802  APPLICATION OF THE THRESHOLD OF TOXICOLOGICAL CONCERN APPROACH FOR THE SAFETY EVALUATION OF CALENDULA FLOWER (CALENDULA OFFICINALIS) PETALS AND EXTRACTS USED IN COSMETIC AND PERSONAL CARE PRODUCTS. Y. A. Re1, D. Mooney, E. DuFour2, E. Antignac1, I. Bark1 and V. Srinivasan1. Product Safety, L’Oreal USA, Clark, NJ and 2L’Oreal, Recherche, Asnières-sur-Seine Cedex, France. 

#803  IN VITRO EVALUATION OF TECOMA STANS (BIGNONIACEAE) LEAF EXTRACTS USING HUMAN LIVER CELLS. J. Zhu, E. Roland and E. E. Smith. Department of Environmental Toxicology, TIEHH, TTU, Lubbock, TX. 

#804  HEPATOPROTTECTIVE EFFECTS OF THE ANTHOCYANIN FROM PURPLE-FLESHED SWEET POTATO AGAINST ACETAMINOPHEN-INDUCED TOXICITY IN MICE. C. Choi2, J. Choi1, Y. Chung2 and H. Jeong1, 1BK21 Project Team, Pharmacy, Chosun University, Gwangju, South Korea and 3Division of Food Science, International University of Korea, Jinju, South Korea. 

#805  THE EFFECTS OF RAYLESS GOLDENROD ON SPANISH GOATS. Z. Davis, B. Stegelmeier, B. Green, S. Lee and K. Welch. Poisonous Plant Research Laboratory, USDA-ARS, Logan, UT. 

#806  SUPPRESSIVE EFFECT OF THE WATER EXTRACTS OF HOUTTUYNIA CORDATA ON ANAPHYLAXIS REACTION AND IMMUNOGLOBULIN E-MEDIATED ALLERGIC RESPONSE IN MAST CELLS. J. Park, J. Park, E. Han and H. Jeong, BK 21 Project Team, Pharmacy, Chosun University, Gwangju, South Korea.
Program Description (Continued)

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#807
Poster Board Number .............................................210
IDENTIFICATION OF NOVEL MYCOTOXIN AND ITS CYTOTOXIC EFFECT ON HUMAN LYMPHOCYTE CELLS IN COMPARISON TO SOME OTHER MYCOTOXINS, P. B. Njobeh1, M. F. Dutton1, S. H. Koch1, P. A. Steenkamp1 and S. D. Stoev1. 1Food, Environment and Health Research Group, University of Johannesburg, Johannesburg, Gauteng, South Africa; 2Plant Protection Research Institute, Agricultural Research Council, Pretoria, Gauteng, South Africa and 3Biosciences, Council for Scientific and Industrial Research, Pretoria, Gauteng, South Africa.

#808
Poster Board Number .............................................211
HPLC FRACTIONATION OF AN EXTRACT OF COLA ACUMINATA, K. Harris1, K. Fontenot1 and W. Gray2. 1Chemistry, Southern University and A&M College, Baton Rouge, LA and 2Environmental Toxicology, Southern University and A&M College, Baton Rouge, LA.

#809
Poster Board Number .............................................212
INHIBITORY EFFECTS OF THE SAPONINS DERIVED FROM ROOTS OF PLATYCODON GRANDIFLORUM ON MAST CELL ACTIVATION, H. Jeong1, E. Han1, J. Park1 and Y. Chung1. 1BK 21 Project Team, Pharmacy, Chosun University, Gwangju, South Korea and 2Division of Food Science, International University of Korea, Jinju, South Korea.

Tuesday Morning, March 17
9:00 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: RISK ASSESSMENT APPLICATIONS

Chairperson(s): Lynne T. Haber, Toxicology Excellence for Risk Assessment, Cincinnati, OH and Eva D. McLanahan, U.S. EPA, Research Triangle Park, NC.

Displayed: 9:00 AM–12:30 PM

Author Attended: 9:00 AM – 11:00 AM

#810
Poster Board Number .............................................216

#811
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#812
Poster Board Number .............................................218
COMPARISON OF POINTS OF DEPARTURE FOR NONCANCER ENDPOINTS IN HUMANS AND ANIMALS FROM INHALATION EXPOSURE TO ACRYLONITRILE, D. Wong and T. Berner. ORD/NCEA, U.S. EPA, Washington, DC.

#813
Poster Board Number .............................................219

#814
Poster Board Number .............................................220
A NEW CHRONIC MINIMAL RISK LEVEL FOR INHALED INORGANIC MANGANESE, J. D. Garey1, M. F. Dutton2 and G. McClure1. 1Environmental Science, SRC, N. Syracuse, NY, 2Agency for Toxic Substances and Disease Registry, Atlanta, GA and 3Environmental Science, SRC, Arlington, VA.

#815
Poster Board Number .............................................221

#816
Poster Board Number .............................................222
CHRONIC MINIMAL RISK LEVELS (MRLS) FOR CADMIUM, L. Ingerman1, G. Diamond2 and O. Faroon. 1Syracuse Research Corp, N. Syracuse, NY and 2Agency for Toxic Substances and Disease Registry, Atlanta, GA.

#817
Poster Board Number .............................................223
REFERENCE EXPOSURE LEVEL FOR 1-BROMOPROPANE, PROPOSED AS A SUBSTITUTE FOR PERCHLOROETHYLENE IN DRY CLEANING, J. F. Collins, A. G. Salmon and M. A. Marzy. OEHH, CalEPA, Oakland, CA.

#818
Poster Board Number .............................................224
ANALYSIS OF EMISSIONS SOURCE CONTRIBUTIONS OF ARSENIC, MANGANESE, AND MERCURY AND THEIR IMPLICATIONS FOR THE PROPOSED OEHHA NONCANCER REFERENCE EXPOSURE LEVELS, M. Suh and D. HoMai. Exponent, Irvine, CA.

#819
Poster Board Number .............................................225
PROVISIONAL ADVISORY LEVELS (PALS) FOR TITANIUM TETRACHLORIDE (TICL), C. M. Troxel1, M. McClanahan2, D. Dorman3 and F. Adeshina1. 1CMTox., Inc. and 2Agency for Toxic Substances and Disease Registry, Atlanta, GA.

#820
Poster Board Number .............................................226
PROVISIONAL ADVISORY LEVEL (PAL) DEVELOPMENT FOR INORGANIC ARSENIC, P. B. Selby1, D. B. Selby1, D. Dorman3, L. Koller4 and F. Adeshina1. 1Oak Ridge National Laboratory, Oak Ridge, TN, 2North Carolina State University, Raleigh, NC, 3Environmental Health and Toxicology, Corvallis, OR and 4US Environmental Protection Agency, Washington, DC.
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<td>D. Qiao, J. Carlisle and D. Siegel. IRAB, OEHHA, Cal/EPA,</td>
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<td>POLYMERIC PRODUCTS. S. E. Loveless1, S. Mackenzie2, C. Carpenter1, T. Sere2 and R. Buck3.</td>
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<td>‘DuPont Haskell Global Centers for Health and Environmental Sciences, Newark, DE and ‘DuPont Chemical Solutions Enterprise, Wilmington, DE.</td>
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<td>C. Carpenter1, T. Sere2, R. Frame1, R. Buck2 and S. E. Loveless3. ‘DuPont Haskell Global Centers for Health and Environmental Sciences, Newark, DE and ‘DuPont Chemical Solutions Enterprise, Wilmington, DE.</td>
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Tuesday Morning, March 17
9:00 AM to 12:30 PM
Exhibit Hall

**NANOTECHNOLOGY**

**POSTER SESSION: NANOTOXICOLOGY IN VITRO**

Chairperson(s): Peter Hoet, Katholieke Universiteit Leuven, Leuven, Belgium.

Displayed: 9:00 AM–12:30 PM

Author Attended: 11:00 AM–12:30 PM

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<td>PHOSPHATE. T. Liberati1, E. Perkins2, R. Gairani2 and L. Vermeulen2. ’Internal Medicine, SUC School of Medicine, Springfield, IL, ’Chemistry, SIU, Carbondale, IL and ’West Chester University, West Chester, PA.</td>
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Abstract #


#854

Poster Board Number ......................................303 INCREASED INTRACELLULAR CALCIUM CONCENTRATIONS IN HUMAN BRONCHIAL EPITHELIAL CELLS EXPOSED TO ULTRAFINE ZINC OXIDE PARTICLES, C. Huang1, R. S. Aronstam1, D. Cher2 and J. Huang3.1, Biological Sciences, Missouri University of Science and Technology, Rolla, MO, 2Energy, Environmental and Chemical Engineering, Washington University in St. Louis, St. Louis, MO and 3Biological Sciences and cDNA Resource Center, Missouri University of Sciences and Technology, Rolla, MO.

#855

Poster Board Number ......................................304 ZINC OXIDE NANOPARTICLES: IT’S THE CONTACT THAT KILLS, P. J. Moos, K. Chung, D. Woesnner, M. Honeyggar and J. M. Veranth. Pharmacology & Toxicology, University of Utah, Salt Lake City, UT.

#856

Poster Board Number ......................................305 MACROPHAGE TARGETED MULTIVALENT MANNOSYLATED PEPTIDE BACKBONE PEG NANOCARRIERS: UPTAKE INTO J774-E CELLS, P. Chen, S. Pooyan, S. Gunaseelan, X. Zhang, S. Stein and P. Sinko. Pharmaceutical Science, Rutgers University, Piscataway, NJ.

#857


#858

Poster Board Number ......................................307 NOVEL EX VIVO OVARIAN FOLLICLE ASSAY TO TEST NANOMATERIALS FOR THEIR POTENTIAL TO INTERFERE WITH FISH REPRODUCTION, R. Weil1,2, K. Kroll1, S. Brown1, C. Martyniuk2, D. Barber2 and N. Denslow2. Pharmacology and Therapeutics, University of Florida, Gainesville, FL, 1Physiological Sciences, University of Florida, Gainesville, FL and 2Particle Engineering Research Group, University of Florida, Gainesville, FL.

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#860

Poster Board Number ......................................309 NANO PARTICLE SIZE AND COMPOSITION AFFECT ADSORPTION OF HUMAN PLASMA PROTEINS, D. S. Barber1, S. Stevens2, S. Wasdo3, A. Feswick1, P. Carpinone2, N. Denslow3, K. Powers2 and S. M. Roberts1. 1Center for Environmental and Human Toxicology, University of Florida, Gainesville, FL, 2Particle Research Center, University of Florida, Gainesville, FL and 3University of South Florida, Tampa, FL.

#861

Poster Board Number ......................................310 IN VITRO HEMOLYSIS TESTING OF SILVER NANOPARTICLES IN HUMAN BLOOD. J. Choi2,3, V. Reipa1, V. M. Hitchins3, P. L. Goering1 and R. A. Malinauskas2. 1Center for Devices and Radiological Health, U.S. FDA, Silver Spring, MD, 2Department of Chemical and Biomolecular Engineering, Univ of Maryland, College Park, MD and 3Biochemical Science Division NIST, Gaithersburg, MD.

#862

Poster Board Number ......................................311 NOVEL MOLECULAR PATHWAYS INDUCED IN FUNCTIONALIZED FULLERENE EXPOSED HUMAN EPIDERMAL KERATINOCYTES (HEK). J. Guo and R. Iyer. Bioscience Division, Los Alamos National Laboratory, Los Alamos, NM.

#863

Poster Board Number ......................................312 IN VITRO METHODS TO PREDICT IMMUNE-MEDIATED TOXICITIES OF DEXTRAN-BASED NANOMATERIAL PRECURSORS IN RATS, S. Casinghino1, L. Gauthier1, D. McClintock1, E. Bolden2, C. Nauman3, G. B. Freeman4, M. L. Miskry5, R. M. Shanker6, C. J. Somp7 and T. T. Kavabata8. Drug Safety R&D, Pfizer Inc., Groton, CT, 9Bend Research Inc., Bend, OR and 1Pharmaceutical Sciences, Pfizer Inc., Groton, CT.

#864

Poster Board Number ......................................313 UPTAKE AND TOXICITY OF TRI-N-OCTYLPHOSPHINE OXIDE, POLY(MALEIC ANHYDRIDE-ALT-1-TETRADECENE COATED CdSe QUANTUM DOTS IN THP-1 HUMAN MACROPHAGES. D. Botta1, C. C. White1, H. Wilkersen1, X. Hu1, X. Gao2 and T. J. Kavanagh3. 1Environmental and Occupational Health Sciences, University of Washington, Seattle, WA and 2Bioengineering, University of Washington, Seattle, WA.

#865

Poster Board Number ......................................314 OVEREXPRESSION OF MICROSOMAL GLUTATHIONE TRANSFERASE 1 PROTECTS AGAINST CYTOTOXIC EFFECTS OF SILICA NANOPARTICLES. J. Shi1, N. Kupferschmidt1, K. Johansson1, V. Gogvadze1, K. Hultenby1, R. Morgenstern1, V. Kagan1, A. Garcia-Bennett1 and B. Fadell1. 1Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden, 2Department of Laboratory Medicine, Karolinska University Hospital, Stockholm, Sweden, 3Department of Occupational and Environmental Health, University of Pittsburgh, Pittsburgh, PA and 4Department of Engineering Sciences, University of Uppsala, Uppsala, Sweden.
Poster Board Number ......................................315

#866

ASSIGNMENT OF QUANTUM DOT (QD) UPTAKE AND TOXICITY IN SVCC4-10 MURINE ENDOTHELIAL CELLS. D. Cox1, C. C. White2, X. Hu3, X. Gao4 and T. J. Kavanagh1. 1Center for Ecogenetic and Environmental Health, Environmental and Occupational Health Sciences, University of Washington, Seattle, WA and 2Department of Bioengineering, University of Washington, Seattle, WA.

#870

COMPARATIVE IN VITRO STUDIES ON THE PROINFLAMMATORY EFFECT OF CARBON BLACK PARTICLES ON MACROPHAGES AND DENDRITIC CELLS. M. Steenhof1, M. Brouwer and R. Pieters2. 1Institute for Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands.

#871

CHARACTERIZATION AND BIOCOMPATIBILITY OF GREEN SYNTHESIZED SILVER NANOPARTICLES. M. C. Moulton1, S. Kunzelman1, L. K. Braydich-Stolle1, R. Varma2 and S. Hussain3. 1711 HPW; RHPB, Air Force Research Labs, Wright Patterson, OH and 2AFRL/RXBN, AFRL, Wright-Patterson AFB, OH.

#872

MECHANISM OF QUANTUM DOT NANOPARTICLE UPTAKE IN A HUMAN CELL LINE. L. W. Zhang1,2,3, J. Wise1,2, J. Harber1, R. C. Murdock1, E. Klier2, H. Maupin2, B. Klotz3, D. Mattej2, J. J. Schagger1 and S. M. Hussain4. 1711 HPW; RHPB, Air Force Research Labs, Wright Patterson, OH, 2U.S. Army Research Laboratory, Aberdeen Proving Ground, MD and 3Dynamic Science, Inc., Aberdeen, MD.

#873

CHARACTERIZATION OF SELECTED NANOPARTICLES AND THEIR RELATIONSHIP TO TOXICITY IN LUNG EPITHELIAL CELL LINE. K. O. Yu1, J. Harber1, R. C. Murdock1, E. Klier2, H. Maupin2, B. Klotz3, D. Mattej2, J. J. Schagger1 and S. M. Hussain4. 1711 HPW; RHPB, Air Force Research Labs, Wright Patterson, OH, 2U.S. Army Research Laboratory, Aberdeen Proving Ground, MD and 3Dynamic Science, Inc., Aberdeen, MD.

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#875

LIMITATIONS AND RELATIVE UTILITY OF SCREENING ASSAYS TO ASSESS ENGINEERED NANOPARTICLE TOXICITY IN A HUMAN CELL LINE. A. O. Inman, N. A. Monteiro-Riviere and L. W. Zhang, Center for Chemical Toxicology Research and Pharmacokinetics, North Carolina State University, Raleigh, NC.

#876

ARE CELLULOSE NANOPARTICLES TOXIC TO HUMANS AND FISH? J. Wise1,2, C. LaCerte2,3, H. Xie2,3, J. Huang2, J. McKay2, M. Bickford2, D. Mooney3, D. Bousfield4, T. Mason2 and J. P. Wise5. 1Wise Laboratory of Environmental and Genetic Toxicology, University of Southern Maine, Portland, ME, 2Department of Applied Medical Science, University of Southern Maine, Portland, ME, 3Department of Chemical and Biological Engineering, University of Maine, Orono, ME.

#877

NANOSILICAS WITH VARIOUS SURFACE CHARGE ANGLE INDUCE THE DIFFERENT PROFILE OF CYTOKINE PRODUCTION ON MACROPHAGE. Y. Yoshioka1,2, A. Tanabe2, Y. Muki2, N. Okada2, Y. Tsutsu2, Y. Nakagawa3. 1The Center for Advanced Medical Engineering and Informatics, Osaka University, Osaka, Japan, 2Department of Biotechnology and Therapeutics, Graduate School of Pharmaceutical Sciences, Osaka University, Osaka, Japan, 3Department of Toxicology, Graduate School of Pharmaceutical Sciences, Osaka University, Osaka, Japan and 4Laboratory of Pharmaceutical Proteomics, National Institute of Biomedical Innovation, Osaka, Japan. Sponsor: Y. Yoshioka.

#878

CHARACTERIZATION AND COMPARISON OF SYNTHESIZED SILVER NANOPARTICLES. S. Krishna1,2,3, J. Wise1,2, J. Harber1, R. C. Murdock1, E. Klier2, H. Maupin2, B. Klotz3, D. Mattej2, J. J. Schagger1 and S. M. Hussain4. 1711 HPW; RHPB, Air Force Research Labs, Wright Patterson, OH, 2U.S. Army Research Laboratory, Aberdeen Proving Ground, MD and 3Dynamic Science, Inc., Aberdeen, MD.
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#878  Poster Board Number ..............................................327
ASSESSMENT OF FULLERENE TOXICITY IN A DYNAMIC ROTATING CELL CULTURE SYSTEM IN A HUMAN CELL LINE. K. M. Eeval and N. A. Monteiro-Riviere. Center for Chemical Toxicology Research and Pharmacokinetics, North Carolina State University, Raleigh, NC.

#879  Poster Board Number ..............................................328
OXIDATIVE STRESS AND APOPTOSIS IN HUMAN CELLS EXPOSED TO AG AND TiO2 NANOPARTICLES, R. Foldbjerg1, P. Olesen1, D. Dann1, F. Besenbacher2, and A. H. Aturup3, 1Institute of Public Health, University of Aarhus, Aarhus, Denmark and 2Nano Center, University of Aarhus, Aarhus, Denmark.

#880  Poster Board Number ..............................................329
ASSESSMENT OF SILVER NANOPARTICLES IN HUMAN EPIDERMAL KERATINOCYTES AND IN VIVO PIG SKIN. M. E. Samberg1, A. R. Siekkinen2, S. J. Oldenburg2 and N. A. Monteiro-Riviere3. 1Center for Chemical Toxicology Research and Pharmacokinetics, North Carolina State University, Raleigh, NC and 2nanoComposix, San Diego, CA.

#881  Poster Board Number ..............................................330

#882  Poster Board Number ..............................................331
DESIGN, SYNTHESIS, & BIOLOGICAL EVALUATION OF nanopARTICLE DRUG DELIVERY SYSTEMS. A. H. Faraji1, J. I. Vlasova2, N. V. Kondratenko1, W. Feng2, V. E. Kogan1, and P. Wipf3, 1Chemistry, University of Pittsburgh, Pittsburgh, PA, 2Environmental & Occupational Health, University of Pittsburgh, Pittsburgh, PA, and 3Pharmaceutical Sciences, University of Pittsburgh, Pittsburgh, PA.

#883  Poster Board Number ..............................................332
ASSESSMENT OF ALUMINUM nanopARTICLE INTERACTIONS IN HUMAN EPIDERMAL KERATINOCYTES. N. A. Monteiro-Riviere1, K. M. Eeval1 and S. J. Oldenburg1. 1Center for Chemical Toxicology Research and Pharmacokinetics, North Carolina State University, Raleigh, NC and 2nanoComposix, San Diego, CA.

#884  Poster Board Number ..............................................333
PREPARATION AND STABILITY TESTING OF ORAL FULLERENE C60 FORMULATIONS WITH PARTICLES IN THE NANO- AND MICROMETER SIZE RANGES. S. Graves1, T. Cryst1, V. Godfrey2, C. Smith2 and N. Walker2. 1Toxicology Columbus, Battelle, Columbus, OH and 2NTP, Research Triangle Park, NC.

#885  Poster Board Number ..............................................334
SILICA-BASED nanopARTICLE UPTAKE AND CELLULAR RESPONSE IN PRIMARY MICROGLIA. J. Choi1, Q. Zheng1, J. Bai2, H. E. Katz2 and T. R. Guilarte1. 1Environmental Health Sciences, Johns Hopkins School of Public Health, Baltimore, MD and 2Material Sciences & Engineering, Johns Hopkins University, Baltimore, MD.

#886  Poster Board Number ..............................................335
THE TRANSPORT OF TiO2 nanopARTICLES IN HUMAN LUNG EPITHELIAL CELLS AND ALVEOLAR MACROPHAGES: HOW DOES AGGREGATION STATE INFLUENCE CELLULAR UPTAKE MECHANISMS? J. M. Berg1, R. A. Zebda and C. M. Sayer. Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

#887  Poster Board Number ..............................................336
NANOCHEMISTRY, IN VITRO: A NEW DIMENSION TO NANOTOXICOLOGY USING NANO-SIZED CARBON BLACK AND IRON OXIDE. R. A. Zebda, J. Berg and C. M. Sayer. Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

#888  Poster Board Number ..............................................337
GENERATION OF REACTIVE OXYGEN SPECIES BY SILICON NANOWIRES. R. S. Chapman1, J. R. Roberts2, V. Castranova3 and S. S. Leonard. NIOSH, Morgantown, WV.

#889  Poster Board Number ..............................................338
UNANTICIPATED BREAKDOWN PRODUCTS FORMED USING DMSO AS A SOLVENT TO STUDY THE AGGREGATION EFFECTS OF TiO2 ON MARINE MICROORGANISMS. K. Rogers1, M. Patra1, Y. Ding1, D. Hatchett2 and S. Steinberg1. 1NERL, US EPA, Las Vegas, NV and 2Chemistry, University of Nevada-Las Vegas, Las Vegas, NV. Sponsor: C. Dary.

#890  Poster Board Number ..............................................339
CYTOKINES EXPRESSION IN VITRO AFTER EXPOSURE TO nanopARTICULATE SILICA PARTICLES. D. Napierks1, L. Thomassen1, L. Gonzalez1, V. Rabolli2, D. Lison1, M. Kirsch-Volders1, B. Nemer1 and P. Hoet3. 1Lung Toxicology Research Unit, K.U.Leuven, Leuven, Belgium, 2Centre for Surface Chemistry and Catalysis, K.U.Leuven, Leuven, Belgium, and 3Laboratory of Cell Genetics, Free University of Brussels, Brussels, Belgium and Industrial Toxicology and Occupational Medicine Unit, Catholic University of Louvain, Brussels, Belgium.

#891  Poster Board Number ..............................................340
Program Description (Continued)

#892 Poster Board Number ......................................341 MECHANISTIC APPROACH TO COMPARE TOXICITY OF THREE UNIQUE NANO-SIZED METAL COLLOIDAL SUSPENSIONS TO LIVER CELL CULTURE SYSTEMS, N. Banerjee, E. Dalley, Y. Tian and C. M. Suyes, Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

#893 Poster Board Number ......................................342 SYNTHESIS, CHARACTERIZATION, AND CYTOTOXIC EFFECTS OF MANGANESE NANOPARTICLES, S. F. Ali, M. C. Moulton, L. K. Braydish-Stolle, C. Murdock, H. Jiang, L. Rongzhao, D. Milatovics, M. Aschner, J. J. Schlager and S. M. Hussain, Division of Neurotoxicology, NCTR, Jefferson, AR. 3Applied Biotechnology Branch, AFR/L, Wright-Patterson AFB, OH and 3Department of Pediatrics, Vanderbilt University Medical Center, Nashville, TN.

Tuesday Morning, March 17
9:00 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: ROLE OF PPAR AND COX-2 IN CHEMICAL CARCINOGENESIS

Chairperson(s): Zemin Wang, Indiana University School of Medicine, Indianapolis, IN and Jeffery Coleman, Penn State University, State College, PA.

Displayed: 9:00 AM–12:30 PM

Author Attended: 9:00 AM–11:00 AM

#894 Poster Board Number ......................................346 THE ENDOTHELIAL AND ADIPOCYTE CELL SPECIFIC ROLE OF PEROXISOME PROLIFERATOR-ACTIVATED RECEPTOR (PPAR) IN DMBA-MEDIATED BREAST TUMOURIGENESIS, A. L. Reid, N. Peterson, S. K. Sengupta, F. J. Gonzalez and C. J. Nicol, 3Pharmacology & Toxicology, Queen’s University, Kingston, ON, Canada, 3Pathology & Molecular Medicine, Queen’s University, Kingston, ON, Canada, 3Center for Cancer Research, NCI, Bethesda, MD and 3Division of Cancer Biology & Genetics, CRI, Queen’s University, Kingston, ON, Canada.

#895 Poster Board Number ......................................347 RAT CARCINOGENICITY STUDY WITH GW501516, A PPAR DELTAAGONIST, L. E. Geiger, W. S. Dunsford, D. J. Lewis, C. Brennan, K. C. Liu and S. J. Newholm, 1Safety Assessment, GlaxoSmithKline, King of Prussia, PA, 1Safety Assessment, GlaxoSmithKline, Ware, United Kingdom and 1Huntingdon Life Sciences, Huntingdon, United Kingdom.

#896 Poster Board Number ......................................348 MOUSE CARCINOGENICITY STUDY WITH GW501516, A PPAR DELTAAGONIST, S. J. Newholm, W. S. Dunsford, T. Brodie, C. Brennan, M. Brown and L. E. Geiger, 1Safety Assessment, GlaxoSmithKline, King of Prussia, PA, 1Safety Assessment, GlaxoSmithKline, Ware, United Kingdom and 1Huntingdon Life Sciences, Huntingdon, United Kingdom.

#897 Poster Board Number ......................................349 LIGAND-ACTIVATION OF PEROXISOME PROLIFERATOR-ACTIVATED RECEPTOR-BETA/Delta INHIBITS THE PROLIFERATION OF HUMAN PANCREATIC CANCER CELLS, J. D. Coleman and J. Van den Heuvel, Pennsylvania State University, State College, PA.

#898 Poster Board Number ......................................350 COMBINING LIGAND ACTIVATION OF PEROXISOME PROLIFERATOR-ACTIVATED RECEPTOR-β/δ (PPAR-β/δ) AND INHIBITION OF CYCLOOXYGENASE-2 (COX2) ACTIVITY EXERTS BOTH CHEMOPREVENTIVE AND CHEMOTHERAPEUTIC EFFECTS ON SKIN TUMORIGENESIS, B. Zhu, M. T. Biliy, N. Blazanin, A. S. Glieck, B. Kang, F. J. Gonzalez and J. M. Peters, Veterinary and biomedical sciences, The Pennsylvania state university, university park, PA and 3Laboratory of metabolism, NCI, Bethesda, MD.

#899 Poster Board Number ......................................351 OVEREXPRESSION OF THE PROSTAGLANDIN E2 RECEPTOR SUBTYPE 1 (EP1) PROMOTES SKIN TUMOR DEVELOPMENT THROUGH COX-2 INDUCTION, L. J. Suri and S. Fischer, Carcinogenesis, U.T.M.D. Anderson Cancer Center, Smithville, TX and 3University of Texas at Austin, Austin, TX.

#900 Poster Board Number ......................................352 PPARβ/δ REGULATES AHR SIGNALING IN SKIN, M. G. Borland, M. T. Biliy, F. J. Gonzalez, G. H. Perdelw, and J. M. Peters, Department of Veterinary and Biomedical Sciences, The Pennsylvania State University, University Park, PA and 3Laboratory of Metabolism, NCI, Bethesda, MD.

#901 Poster Board Number ......................................353 INVOLVEMENT OF REACTIVE OXYGEN SPECIES AND MACROPHAGES IN TGOLITAZONE (TGY)-INDUCED HEMANGIOSARCOMAS, Z. Wang, S. Zhou and J. E. Klaunig, Department of Pharmacology and Toxicology, Center for Environmental Health, Indiana University School of Medicine, Indianapolis, IN.

#902 Poster Board Number ......................................354 EVALUATION OF THE EFFECTS OF THE PPAR δ AGONIST TROGLITAZONE ON CYTOTOXICITY AND MITOGENESIS OF ENDOTHELIAL CELLS: DIFFERENCES BETWEEN HUMAN AND MOUSE, S. Kakiuchi-Kiyota, R. K. Singh, J. A. Vetro, M. L. Varney, H. Han, S. Suzuki, K. L. Pennino and S. M. Cohen, Pathology and Microbiology, University of Nebraska Medical Center, Omaha, NE and 3Pharmaceutical Sciences, University of Nebraska Medical Center, Omaha, NE.
Program Description (Continued)

Tuesday Morning, March 17
9:00 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: CARDIOVASCULAR TOXICITY II

Chairperson(s): Jason M. Roper, WIL Research Laboratories, LLC, Ashland, OH.

Displayed: 9:00 AM-12:30 PM

Author Attended: 9:00 AM-12:30 PM

Poster Board Number ..................................401 OPTIMIZATION OF IN-VITRO TESTING TO ENHANCE THE PREDICTIVITY OF PRE-CLINICAL DATA: D-1SOTALOL, D-Solvail, I. Parent, V. Lessard, A. Bouchard and C. E. Laurent. IPS Therapeutique Inc., Sherbrooke, QC, Canada.

Poster Board Number ..................................402 BLOOD PRESSURE MEASUREMENTS IN JUVENILE BEAGLE DOGS; DIRECT AND INDIRECT. J. Perron, H. Penton, V. Frenette and C. Copeman. Toxicology, Charles River, Senneville, QC, Canada. Sponsor: M. Vézina.

Poster Board Number ..................................403 INHIBITORY EFFECTS OF OXYSTERS AND SATURATED AND UNSATURATED FATTY ACIDS ON HUMAN CARBOXYLESTERASE I AND THP1 MONOCYTE/MACROPHAGE HYDROLYTIC ACTIVITIES. M. K. Ross1, K. Herring1, S. Xie1, P. M. Potter2 and J. A. Crow3. 1Center for Environmental Health Sciences, Mississippi State University, Mississippi State, MS and 2Molecular Pharmacology, St. Jude Children’s Hospital, Memphis, TN.


Poster Board Number ..................................405 PLASMA NITRITES, ENDOTHELIAL FUNCTION AND THE EFFECTS OF DIESEL INHALATION. A. P. Pettit4, J. Aller5, S. Gandhi5, H. Kipen6 and A. Gow7. 1Toxicology, Rutgers University, Piscataway, NJ, 2UMDNJ-RWJMS, Piscataway, NJ and 3Duke University, Durham, NC.

Poster Board Number ..................................406 INHIBITION OF ISCHEMIA-INDUCED ANGIOGENESIS BY BENZO[α]PYRENE IN A MANNER DEPENDENT ON THE ARYL HYDROCARBON RECEPTOR. S. Ichihara1, Y. Yamada2, G. Ichihara3, T. Nakajima1, F. J. Gonzalez1, D. Murohara1, O. Occupational and Environmental Health, Nagoya University Graduate School of Medicine, Nagoya, Japan, 2Department of Human Functional Genomics, Mie University Life Science Research Center, Tsu, Mie, Japan, 3Laboratory of Metabolism, National Cancer Institute, NIH, Bethesda, MD and 4Cardiology, Nagoya University Graduate School of Medicine, Nagoya, Japan.

Poster Board Number ..................................407 NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITORS OF ALL SUBCLASSES INDUCE ENDOTHELIAL DYSFUNCTION AND COMPROMISE MITOCHONDRIAL FUNCTION. V. Y. Hebert, S. Xue, B. Jiang, A. L. Khandelwal, J. A. Zavecz and T. R. Dugas. Pharmacology, Toxicology & Neuroscience, LSU Health Sciences Center, Shreveport, LA.

Poster Board Number ..................................408 INHIBITORS OF NAPDH OXIDASE, APOCYNNIN AND DIPHENYLENEDIOXAN, MITIGATE OXIDATIVE STRESS BUT NOT CYTOTOXICITY IN H9C2 CARDIOMYOCYTES EXPOSED TO CHOLESTEROL SECOALDEHYDE. L. Laynes, A. C. Raghavamvnen and R. M. Uppu. Environmental Toxicology and the Health Research Center, Southern University and A&M College, Baton Rouge, LA.

Poster Board Number ..................................409 INVESTIGATION OF INTRACELLULAR CALCIUM CHANGE IN CULTURED CARDIOMYOCYTES USING LASER SCANNING CYTOMETRY. C. Hu, K. French and K. Frazier. Safety Assessment, GlaxoSmithKline, King of Prussia, PA.


Poster Board Number ..................................411 GENDER DIFFERENCES IN THE PULMONARY REGENERATIVE RESPONSE TO NAPHTHALENE-INDUCED BRONCHIOLAR EPITHELIAL CELL INJURY. J. R. Oliver1,2 and J. Hu1,2. 1Physiology and Experimental Medicine, Hospital for Sick Children, Toronto, ON, Canada and 2Laboratory Medicine and Pathobiology, University of Toronto, Toronto, ON, Canada.

Abstract #

#915
Poster Board Number ......................................413

#916
Poster Board Number ......................................414
UNDERSTANDING THE GENETIC BASIS OF OZONE SENSITIVITY IN THE NEONATAL MOUSE LUNG USING AN INTEGRATIVE GENETIC AND GENOMIC APPROACH. E. M. Vaccaro, A. Gunnison, K. Galdanes, J. A. Lyon and T. Gordon. Environmental Medicine, New York University School of Medicine, Tuxedo, NY.

#917
Poster Board Number ......................................415
DIESEL EXHAUST PARTICLE EXPOSURE INDUCES ANGIogenesis, Q. Sun1, N. Kherad1, A. Wang1, X. Hong1, L. Zheng1, J. Deuil1, C. Quan1, T. Kampfrath1, L. Chu1 and S. Rajagopalan1. The Ohio State University, Columbus, OH, 2New York University, Tuxedo Park, NY and 3Dongfang Hospital, Fuzhou, China.

#918
Poster Board Number ......................................416
DOWNREGULATION OF POLYAMINE BIOSYNTHESIS BY DIETARY RESTRICTION ATTENUATES BLEOMYCIN-INDUCED PULMONARY FIBROSIS. N. M. Elsayed2 and D. F. Tierney1. 1Early Drug Development, Toxicology, Celgene Corp, Summit, NJ, 3Anatomy and Cell Biology, SUNY Downstate Medical Center, Brooklyn, NY and 4Respiratory Disease, University of California, Los Angeles, CA.

#919
Poster Board Number ......................................417
ACONITINE CHALLENGE TEST REVEALS A SINGLE EXPOSURE TO AIR POLLUTION CAUSES INCREASED CARDIAC ARRHYTHMIA RISK IN HYPERTENSIVE RATS. M. S. Hazari, N. Haykal-Coates, D. W. Winnett, D. L. Costa and A. K. Farraj. Experimental Toxicology Division, Environmental Protection Agency, Research Triangle Park, NC.

#920
Poster Board Number ......................................418

#921
Poster Board Number ......................................419
PREVENTION OF BLEOMYCIN-INDUCED LUNG FIBROSIS AND DYSFUNCTION BY PROSTAGLANDIN E2, J. W. Card1, J. W. Volta1, L. M. DeGriff2, F. B. Lih2, G. P. Flake2, K. B. Tomer2 and D. C. Zeldin2. 1Cantox Health Sciences International, Mississauga, ON, Canada and 2Division of Intratracheal Research, National Institute of Environmental Health Sciences, National Institutes of Health, Research Triangle Park, NC.

Abstract #

#922
Poster Board Number ......................................420
TOXICOLOGIC COMPARISON BETWEEN LIBBY AMPHIBOLE AND AMOSITE ASBESTOS FOLLOWING INTRATRACHEAL INSTILLATION IN RATS. D. J. Padilla-Carlin1, M. J. Schladweiler2, U. P. Kodavanti3, J. H. Shanahan4, J. H. Richards5, R. H. Jaskot6, A. D. Ledbetter7 and S. H. Guev7. 1Institute of Toxicology, University of North Carolina-School of Medicine, Chapel Hill, NC and 2Pulmonary Toxicology Branch, ETD, NHEERL, ORD, U.S. Environmental Protection Agency, Research Triangle Park, NC.

#923
Poster Board Number ......................................421
SENSITIZATION OF THE SENSORY IRRITATION RESPONSE BY ADENOSINE. D. N. Willis and J. B. Morris. Toxicology Program, University of Connecticut, Storrs, CT.

#924
Poster Board Number ......................................422
COMPARATIVE EFFECTS OF DIESEL EXHAUST AND AMBIENT PARTICLES ON CARDIOVASCULAR SYSTEM. C. Quan1, Q. Sun2, M. Lippmann3 and L. Chen4. 1Environmental Medicine, New York University, Tuxedo Park, NY and 2Environmental Health Sciences, Ohio State University, Columbus, OH.

#925
Poster Board Number ......................................423
COMPARISON OF INHALATION TOXICITY OF GENTAMICIN SOLUTION IN RATS AND DOGS. H. Persson1, R. Wolff2 and M. Reed3. 1Nektar Therapeutics, San Carlos, CA and 2Lovelace Respiratory Research Institute, Albuquerque, NM.

#926
Poster Board Number ......................................424
AN EVALUATION OF THE PERMISSIBLE EXPOSURE LIMIT OF INHALED SYNTROLEUM S-8 SYNTHETIC JET FUEL IN MICE. S. S. Wong1, A. N. Thomas1, T. J. Desmarais1, R. Lantz2 and M. L. Witten3. 1Pediatrics, University of Arizona, Tucson, AZ and 2Cell Biology and Anatomy, University of Arizona, Tucson, AZ.

#927
Poster Board Number ......................................425

#928
Poster Board Number ......................................426
SYSTEMIC DELIVERY OF COTININE THOROUGH INHALATION EXPOSURE. S. Hu, M. Muzzio and N. Rajendran. IIT Research Institute, Chicago, IL. Sponsor: W. Johnson.

#929
Poster Board Number ......................................427
CIGARETTE SMOKE-INDUCED MOUSE EMPHYSEMA MODEL USING A DIRECT PUMP EXPOSURE SYSTEM. K. M. Lee1, B. Maclasaa1, S. Harbo1, L. Staska1, R. Meng1, D. Kobayashi2, S. Shapiro3 and K. Gideon1. 1Battelle TNW, Richland, WA, 2Washington University St. Louis School of Medicine, St. Louis, MO and 3University of Pittsburgh Medical School, Pittsburgh, PA.
Program Description (Continued)

Abstract #

#930  Poster Board Number ..................................................428
HISTOCHEMICAL STUDY OF INTESTINAL MUCINS AFTER ADMINISTRATION OF
SILVER NANOPARTICLES IN SPRAGUE-DAWLEY RATS. G. Jeong2, M. Song1, H. Ryu1,
Y. Kim1, U. Jo1 and I. Yu1. 1Biosafety Evaluation Headquarter, KEIMTI, Incheon, South Korea and
2Biology Education, Busan University, Busan, South Korea.

#931  Poster Board Number ..................................................429
SYSTEMIC TRANSLOCATION OF 70ZN FOLLOWING PULMONARY EXPOSURE IN
RATS. J. G. Wallenborn1, K. D. Kovaleck2, J. K. McGree1, M. S. Landis1 and U. P. Kadavanti1. 1SPH,
UNC, Chapel Hill, NC, 2NERL, U.S. EPA, Durham, NC and 3PTB, ETU, NHEERL, U.S. EPA, Durham,
NC.

#932  Poster Board Number ..................................................430
TOXICITY OF PARTICULATE MATTER GENERATED BY PYROTECHNIC DISPLAYS. C. A. Hickey1, C. Gordon, L. Chen, M.
Blaustein and T. Gordon. Environmental Medicine, New York University School of Medicine, Tuxedo,
NY.

Tuesday Morning, March 17
9:00 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: REACTIVE OXYGEN SPECIES (ROS)
STIMULATED SIGNALING

Chairperson(s): Donna D. Zhang, University of Arizona, Tucson, AZ.

Displayed: 9:00 AM–12:30 PM

Author Attended: 9:00 AM–11:00 PM

#933  Poster Board Number ..................................................431
SUPPRESSION OF WNT/BETA-CATENIN SIGNALING IN BONE OF FEMALE
RATS EXPOSED TO ETHANOL POST-
LACTATION. J. Chen1,2, O. P. Lazarenko1, K.
Shankar1, M. L. Blackburn2, T. M. Badger3 and M.
J. Ronis2. 1Pharmacology & Toxicology, University
of Arkansas Medical Sciences, Little Rock, AR, 2Arkansas Children’s Nutrition Center, Little
Rock, AR, 3Pediatrics, University of Arkansas for
Medical Sciences, Little Rock, AR and 4Physiology
& Biophysics, University of Arkansas Medical
Sciences, Little Rock, AR.

#934  Poster Board Number ..................................................432
THIOREDOXIN REDUCTASE DEPLETION INHIBITS NFkB SIGNALING BY
A THIOREDOXIN INDEPENDENT MECHANISM. J. M. Heilman and W. H. Watson.
Environmental Health Sciences, Johns Hopkins School of Public Health, Baltimore, MD.

#935  Poster Board Number ..................................................433
TRANSCRIPTIONAL REGULATORY RELATIONSHIPS INVOLVING GLUTATHIONE S-TRANSFERASE (GST)
AND OXIDATIVE STRESS RELATED GENE PRODUCTS: TARGETS INFLUENCING
MELANOTOXICITY OF SUBSTITUTED PHENOLS. G. Acquah-Mensah, K. A. Hoey, S.
Kerr and R. Sarangarajan. Massachusetts College of Pharmacy and Health Sciences, Worcester, MA.

#936  Poster Board Number ..................................................434
OXIDATIVE LIPIDOMICS OF MACROPHAGE ACTIVATION AND
APOPTOSIS INDUCED BY PHAGOCYTOSIS OF PARTICLES AND PATHOGENS. W.
Feng1, V. A. Tyurin1, K. L. Go1, P. Y. Tyurin1, N. A.
Stewart1, F. Fazzi2, E. R. Kisin3 and A. Murray4. 1A.
Slvedova1, B. Pitt1, L. A. Ortiz1 and V. E. Kogan1.
1EOH, University of Pittsburgh, Pittsburgh, PA, 2Medicine, University of Pittsburgh, Pittsburgh, PA and 3Pathology/Physiology, NIOSH, Morgantown, WV.

#937  Poster Board Number ..................................................435
SIRT1 IS POST-TRANSLATIONALLY MODIFIED BY ALDEHYDES AND
BICYCETE SMOKE IN LUNG EPITHELIAL CELLS. S. W. Cairo1, S.
Rajendrasonhan1, S. Chung1, P. Brookes2 and I.
Rahman1. 1Environmental Medicine, University of
Rochester, Rochester, NY and 2Pharmacology and
Physiology, University of Rochester, Rochester, NY.
Sponsor: N. Baitiori.

#938  Poster Board Number ..................................................436
IMPACT OF PEROXIREDOXIN 6 GENE DELETION AND OVER-EXPRESSION ON
ETHANOL-MEDIATED LIVER DAMAGE IN MICE. J. Roede1, A. B. Fisher2 and D. R. Petersen2.
1Pharmaceutical Sciences, University of Colorado
Denver, Aurora, CO and 2University of Pennsylvania,
Philadelphia, PA.

#939  Poster Board Number ..................................................437
OXIDATIVE STRESS IS THE MECHANISM OF PPAR-INDUCED SKELETAL MYOPATHY IN RATS. W. Casey1, H. Colton1, E. Bingham2 and S.
Ritchie2. GlimaxSmithKline, Durham, NC and 2Phenomenome Discoveries Inc, Saskatoon, SK,
Canada. Sponsor: P. Kwanyuen.

#940  Poster Board Number ..................................................438
INDICATORS OF OXIDATIVE STRESS AND APOPTOSIS FOLLOWING EXPOSURE TO STYRENE AND ITS METABOLITES IN
MOUSE WHOLE LUNG AND CLARA CELLS. J. A. Harvichuck1, X. Pu2, J. E. Klunig3 and G. P.
Carlson1. 1Health Sciences, Purdue University, West
Lafayette, IN and 2Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN.

#941  Poster Board Number ..................................................439
CELLULAR ADAPTIVE RESPONSE TO ENVIRONMENTAL OXIDATIVE STRESS
PERTURBS PanCREATIC BETA-CELL FUNCTION. J. Pi, J. Fu, C. G. Woods, S. Collins,
M. E. Andersen and Q. Zhang. The Hamer Institutes for Health Sciences, RTP, NC.
Abstract #

#942 Poster Board Number .................................440 TCDD INDUCES HEPATIC Nqo1 IN MICE VIA AhR AND NR2A. R. L. Yeager, S. A. Reisman, L. M. Aleksunes and C. D. Klaussen. Pharmacology, Toxicology, and Therapeutics, University of Kansas Medical Center, Kansas City, KS.

#943 Poster Board Number .................................441 ROLE OF NF-kB IN LUNG INFLAMMATION INDUCED BY IRON AND SELENIUM. P. A. Potnis, K. S. Sault and A. Elhawawi. Toxicology, University of Maryland, Baltimore, Baltimore, MD.

#944 Poster Board Number .................................442 INCREASED NRF2 ACTIVATION IN KEAP1-KNOCKDOWN MICE INCREASES HEPATIC CYTOPROTECTIVE GENES THAT DETOXIFY ELECTROPHILES BUT NOT REACTIVE OXYGEN SPECIES. C. D. Klaussen, E. L. Yeager and S. A. Reisman. University of Kansas Medical Center, Kansas City, KS.

#945 Poster Board Number .................................443 EXOGENOUS HYDROGEN PEROXIDE RESCUES HYPOXIA-INDUCED MACROPHAGE DYSFUNCTION OF BACTERIAL KILLING BY INHIBITION OF HMGBl RELEASE. B. D. Phan', T. Entezat-Zaher' and L. L. ManteII.2. 'Department of Pharmaceutical Sciences, College of Pharmacy and Allied Health Professions, St. John’s University, Queens, NY and ‘Cardiopulmonary Research, Department of Surgery, North Shore University Hospital, the Feinstein Institute for Medical Research, North Shore-Long Island Jewish Health System, Manhasset, NY.

#946 Poster Board Number .................................444 SERINE 374 C-FOS MEDIATES OXIDANT INDUCED C-FOS PROTEIN STABILIZATION. E. Sheveleva and Q. M. Chen. Pharmacology, University of Arizona, Tucson, AZ.


#948 Poster Board Number .................................446 15-DEOXY-A12, 14 PROSTAGLANDIN J2-INDUCED HEME OXYGENASE-1 IN MEGAKARYOCYTES REGULATES THROMBopoIESIS. J. J. O'Brien', C. J. Baglione', T. M. Garcia-Bates', N. Blumberg', C. W. Francis' and R. P. Phipps1,2. 'Environmental Medicine, University of Rochester, Rochester, NY, 'Lung Biology and Disease, University of Rochester, Rochester, NY, 'Microbiology and Immunology, University of Rochester, Rochester, NY, 'Pathology and Laboratory Medicine, University of Rochester, Rochester, NY and 'Medicine, University of Rochester, Rochester, NY.

Tuesday Morning, March 17
9:00 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: RESEARCH IN DISPOSITION AND PHARMACOKINETICS

Chairperson(s): Lawrence Updyke, Pfizer Global Research and Development, Groton, CT and Shashik A. Saghari, The Dow Chemical Company, Midland, MI.

Displayed: 9:00 AM–12:30 PM
Author Attended: 11:00 AM–12:30 PM

#949 Poster Board Number .................................447 OXIDATIVE LIPIDOMICS OF ACUTE LUNG INJURY INDUCED BY HYPOXIA AND GAMMA-IRRADIATION. Y. Tyurina1,2, V. Tyurin1, V. Kapralova1, A. Tungear1, M. Kaynar1, K. Wasserloos1, M. Mosher1, M. Eppler1, J. Greenberger1, B. Pitt2 and V. Kogon1,2. 'EOH, University of Pittsburgh, Pittsburgh, PA and 'Radiation Oncology, University of Pittsburgh, Pittsburgh, PA and 'Center for Free Radical and Antioxidant Health, University of Pittsburgh, Pittsburgh, PA.


#951 Poster Board Number .................................502 PHARMACOKINETIC AND PHARMACODYNAMIC PROFILES OF THE ASPRIN METABOLITE SALICYLATE FOLLOWING ORAL GAVAGE AND DIETARY ADMINISTRATION OF ASPRIN IN RATS. D. M. Tessler1, I. M. Kapetanovic2, K. S. Bauer3, M. O. Lindlbald3, A. D. Zhakharov1, R. Lubet1 and A. Lyubimov1. 'Toxicology Research Laboratory, University of Illinois Chicago, Chicago, IL, 'Division of Cancer Prevention, National Cancer Institute, Bethesda, MD and 'School of Pharmacy, University of Maryland, Baltimore, MD.


#953 Poster Board Number .................................504 EVALUATION OF FECAL AND URINARY EXCRETION PRODUCTS AFTER INHALATION OF AEROSOLIZED S-8 SYNTHETIC JET FUEL IN RATS. R. T. Tremblay, S. A. Martin and J. W. Fisher. Environmental Health Science, UGA, Athens, GA.

#956 THE FATE OF ARBUTIN IN AQUEOUS ACID AND IN RATS AND MICE. J. M. Sanders, D. E. Burlaz, P. Chan and L. T. Burka. NIEHS, RTP, NC.


#957 IDENTIFICATION OF TRANSPORTERS INVOLVED IN RENAL ELIMINATION OF PERFLUORINATED CARBOXYLATES IN RATS. Y. M. Weaver and B. Hagenbuch. Pharmacology Toxicology & Therapeutics, The University of Kansas Medical Center, Kansas City, KS. Sponsor: G. Guo.

#958 IDENTIFICATION OF HUMAN GENES THAT COMPLEMENT A GLUTATHIONE TRANSPORT DEFICIENCY IN YEAST. S. Shi, S. Notenboom and N. Ballatori. Environmental Medicine, University of Rochester, Rochester, NY.

#959 THE EFFECTS OF TEMPERATURE AND TIME ON THE GENERATION OF ALCOHOL IN STORED BLOOD. D. H. Petroni and W. J. George. Pharmacology, Tulane University, New Orleans, LA.


#962 IN VITRO TO IN VIVO EXTRAPOLATION WITH A PBPK MODEL. P. 2-CHEMISTRY - 1, 3-BUTADIENE. Y. Yang1, H. J. Clewell1, Y. Tan1, M. E. Andersen1, J. M. Socha1, M. W. Himmelstein7. 1. The Hamner Institutes for Health Sciences, Research Triangle Park, NC and 2. DuPont Haskell Global Centers, Newark, DE.

#963 ANALYTICAL METHOD VALIDATION OF 2-METHOXY-4-NITRONILINE IN NTP-2000 AND NIH-07 RODENT DIETS. J. W. Algaier1, A. K. Clay1, G. L. Goodman1, A. S. Haynes1, O. L. Beverly1, K. E. Schane1, S. E. Griffin1, V. F. Ault1, A. Kazerooni1, B. M. O’Brien1, P. J. Schebler1, R. K. Harris1, B. Jayaram1 and C. S. Smith1. Product Sciences Division, Midwest Research Institute, Kansas City, MO and 3. National Toxicology Program, NIEHS, Research Triangle Park, NC.

#964 EFFECT OF NARINGENIN ON DISPOSITIONS OF DEOXYXILEVANOL IN PIGLETS. A. Poapolathep1, 2, S. Poapolathep1, 2, Y. Sugita-konishi1, K. Machii1, Y. Itoh1 and S. Kumagai1. Veterinary Pharmacology, Kascetsart University, Bangkok, Thailand, Veterinary Public Health, The University of Tokyo, Tokyo, Japan and 2. National Institute of Health Sciences, Tokyo, Japan.

#965 VALIDATION OF PHYSIOLOGICALLY-BASED PHARMACOKINETIC (PBPK) MODEL PREDICTIONS OF PRESYSTEMIC ELIMINATION OF TRACE ORAL DOSES OF TRICHLOROETHYLENE (TCE). J. V. Bruckner, J. Qiu, Y. Liu, S. Muralidhara and M. G. Bartlett. PBS, University of Georgia, Athens, GA.

#966 ANALYTICAL METHOD VALIDATION OF TRIS(CHLOROPROPYL) PHOSPHATE, MIXTURE IN NTP-2000 AND NIH-07 RODENT DIETS. B. Jayaram1, G. L. Goodman1, S. E. Griffin1, A. S. Haynes1, A. K. Clay1, O. L. Beverly1, V. F. Ault1, A. Kazerooni1, B. M. O’Brien1, P. J. Schebler1, J. W. Algaier1, R. K. Harris1 and C. S. Smith1. Product Sciences Division, Midwest Research Institute, Kansas City, MO and 2. National Toxicology Program, NIEHS, Research Triangle Park, NC.

#967 PK/PD EFFECTS OF VARIOUS MB-4 DOSING REGIMENS ON ATROPINE BIOAVAILABILITY IN RATS. S. Hong1, B. Roche2, T. Vinc1, B. Burback1, L. Cabell1, J. McDonough1, J. D. Johnson1 and T. Underwood4. 1. Chemistry Technical Center, Battelle, Columbus, OH, 2. Safety Pharmacology, Battelle, Columbus, OH, 3. Chemistry and Chemical Engineering Division, Southwest Research Institute, San Antonio, TX and 4. Chemical Biological Medical Systems, Chemical and Biological Defense, Frederick, MD.

Abstract # Poster Board Number ......................................513

Abstract # Poster Board Number ......................................514

Abstract # Poster Board Number ......................................515

Abstract # Poster Board Number ......................................516

Abstract # Poster Board Number ......................................517

Abstract # Poster Board Number ......................................518
CHARACTERIZATION OF THE TRANSPORT AND INHIBITORY EFFECTS OF NBUPY-CL AND ITS STRUCTURALLY RELATED IONIC LIQUIDS BY HOCT2. Y. Cheng1, M. J. Hootb, S. H. Wrighta and I. Sipesa. 1Pharmacology, University of Arizona, Tucson, AZ, 2Physiology, University of Arizona, Tucson, AZ and 3National Toxicology Program, NIEHS, Research Triangle Park, NC.

DRIED BLOOD SPOT METHODOLOGY EVALUATION STUDY IN RATS AND DOGS GIVEN A SINGLE ORAL (CAPSULE) DOSE OF ACETAMINOPHEN OR DEXAMETHASONE. S. A. Plocht1, P. Chamberlainb, B. Stitcherc, S. Howery, S. Godfrey2, T. Addison1, X. Liang1 and F. Kirchner. Covance Labs, Inc., Madison, WI and Covance Labs, Inc., Vienna, VA.

BAYESIAN ANALYSIS OF PHYSIOLOGICALLY-BASED PHARMACOKINETIC (PBPK) MODELING OF PERCHLOROETHYLENE (PCE) IN HUMANS. J. Qua1, J. V. Bruckner1, J. W. Fisher1, Y. C. Chen2 and H. J. Clewell1. 1PBS, University of Georgia, Athens, GA, 2Industrial Safety and Health, Hunkuang Institute of Technology, Taichung, Taiwan and 3The Hammer Institute, Research Triangle Park, Raleigh, NC.

DISPOSITION OF C60 FULLERENE AFTER INTRAVENOUS INJECTION, INTRATRACHEAL INSTILLATION, OR INHALATION IN MALE F344 RATS. Z. Gao1, B. Hedtek1, J. Marsters1, M. Lehman1, T. Holmes1, J. Lukac1, L. Ferguson1, J. McDonald1 and N. Walker1. Lovelace Respiratory Research Institute, Albuquerque, NM and 3National Institute of Environmental Health Sciences, Research Triangle Park, NC.

ABSORPTION, DISTRIBUTION, AND EXCRETION OF [CARBONYL-14C]-PERFLUOROHexaoNOIC ACID IN RATS AND MICE. S. Gaunt1, T. Johnson1, T. Seree1 and R. Buck2. 1DuPont Haskell Global Centers for Health and Environmental Sciences, Newark, DE, 2DuPont Chemical Solutions Enterprise, Wilmington, DE and 3WIL Research Laboratories, Ashland, OH.

METHYLTRIHYDROFURAN (MTHF) BRAIN CONCENTRATIONS FOLLOWING A SINGLE INTRAVENOUS OR GAVAGE ADMINISTRATION OF MTHF TO F344 RATS AND B6C3F1 MICE. J. D. Johnson1, S. Hong1, S. Gibbs1, J. Merrill1, B. Barbuck3, S. Graves1, V. Godfrey2 and C. Smith2. Chemistry Technical Center, Battelle, Columbus, OH and NIEHS, NIH, Research Triangle Park, NC.

TOXICOKINETICS OF BIS-2-CHLOROETHOXYMETHANE (CEM) AFTER A SINGLE DERMAL APPLICATION TO F344 RATS AND B6C3F1 MICE. V. Godfrey2, S. Hong1, S. Gibbs1, J. D. Johnson1, S. W. Graves1, B. Barbuck2, J. Merrill1 and C. Smith2. 1Battelle Memorial Institute, Columbus, OH and 3NIEHS, NIH, Research Triangle Park, NC.


METABOLISM AND DISPOSITION OF DIMETHYLETHANOLAMINE AND ITS EFFECT ON THE DISPOSITION OF CHOLINE CHLORIDE IN RODENTS. L. C. Ferguson1, D. Kramer1, Z. Guo1, L. Thomas1, J. McDonald1 and M. Sanders2. 1Toxicology, Lovelace Respiratory Research Institute, Albuquerque, NM and 2National Institute of Environmental Health Sciences, Research Triangle Park, NC.

PHARMACOKINETIC STUDIES OF GISSENOSIDE RG1 IN RATS. M. Kang, S. Lee, J. Kim, Y. Seo, S. Shin, J. Choi and T. Jeong. Pharmacy, Yeungnam University, Gyeongsan, Gyeongbuk, South Korea.

IN VITRO DETERMINATIONS OF THE SITES OF HYDROLYSIS OF SULFURYL FLUORIDE AND FLUOROSULFATE IN THE RAT AND HUMAN. M. Bartells1, E. R. Lowel1, D. L. Rick2 and D. L. Eisenbrandt2. 1Toxicology, Dow Chemical, Midland, MI and 2Dow AgroSciences LLC, Indianapolis, IN.

SINGLE INTRAVENOUS ADMINISTRATION TOXICOKINETIC STUDY OF BIS(2-CHLOROETHOXY)METHANE USING FISCHER 344 RATS AND B6C3F1 MICE. S. Gibbs1, V. Godfrey2, S. Hong1, J. D. Johnson1, S. W. Graves1, B. Barbuck3, J. Merrill1 and C. Smith2. 1Battelle Memorial Institute, Columbus, OH and 3NIEHS, NIH, Research Triangle Park, NC.

**Abstract #**

**#981**
*Poster Board Number .................................................. 532*


1Toxicology Research Laboratory, Chicago, IL, 2National Cancer Institute, Bethesda, MD, 3Temple University, Philadelphia, PA and 4University of Maryland, Baltimore, Baltimore, MD.

**#982**
*Poster Board Number .................................................. 533*

**BILIARY CLEARANCE AND ENTEROHEPATIC CYCLING OF MYCOPHENOLIC ACID IN RATS, D. E. Harbour and P. C. Smith.*

Toxicology, UNC-Chapel Hill, Chapel Hill, NC and 2School of Pharmacy, UNC-Chapel Hill, Chapel Hill, NC.

**#983**
*Poster Board Number .................................................. 534*


Phylogyn Pharmaceuticals, Inc., Cambridge, MA.

**#984**
*Poster Board Number .................................................. 535*

**PHARMACOKINETICS OF AN ANTISENSE OLIGONUCLEOTIDE ADMINISTERED AS A CONTINUOUS INTRATHecal INFUSION IN MONKEY, R. A. Fey, R. S. Geary, R. B. Boyd and S. P. Henry.*

1TOX/PK, Isis Pharmaceuticals, Carlsbad, CA and 2Northern Biomedical Research, Muskegon, MI.

**#985**
*Poster Board Number .................................................. 536*

**PHARMACOKINETIC INTERACTIONS BETWEEN BISPHENOL A AND NAPROXEN IN HUMANS, S. Haddad, E. Blanchette, I. Rheault and M. Verner.*

sciences biologiques, TOXEN, Université du Québec à Montréal, Montréal, QC, Canada.

**#986**
*Poster Board Number .................................................. 537*

**PHARMACOKINETIC (PK) ANALYSIS AND OPTIMAL SAMPLING STRATEGY (OSS) FOR A RECOMBINANT PROTEIN (ENB-0040) IN ADULT AND JUVENILE RATS, M. Beliveau, J. Lemarie, M. Reimer, J. Marier and P. Leonard.*

1Pharsight Corporation, Montreal, QC, Canada and 2Enobia Pharmacology Inc., Montreal, QC, Canada. Sponsor: S. Morseth.

**#987**
*Poster Board Number .................................................. 538*

**REGULATION OF EFFLUX TRANSPORTERS AT THE BLOOD-BRAIN BARRIER (BBB) BY XENOBIOTICS, X. Wang, D. Sykes and D. S. Miller.*

Laboratory of Pharmacology and Chemistry, National Institute of Environmental Health Sciences, Research Triangle Park, NC.

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**Tuesday Morning, March 17**

**9:45 AM–10:45 AM**

**Room 337**

**EXHIBITOR HOSTED SESSION: ALL YOU EVER WANTED TO KNOW ABOUT AN IND—BUT WERE AFRAID TO ASK**

Presented by: Ricerca Biosciences, LLC

Ricerca focuses on the integration of the IP to IND pathway by managing both chemistry and toxicology simultaneously. Some case studies will be presented to provide early-stage biotech with a high level overview of the challenges they can expect to meet as they progress their development.

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**Tuesday Morning, March 17**

**9:45 AM–10:45 AM**

**Room 338**

**EXHIBITOR HOSTED SESSION: GLOBAL MANAGEMENT OF RODENT COLONY GENETICS**

Presented by: Charles River

Purposeful global management of rodent animal colonies is critical to minimize the effect of genetic variation on research results. Processes employed differ based on colony objectives, species/stock/strain characteristics and desired outcomes. As scientific discovery accelerates, effective management of these key research colonies takes on increased importance.

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**Tuesday Morning, March 17**

**9:45 AM–10:45 AM**

**Room 336**

**EXHIBITOR HOSTED SESSION: THE USE OF METABOLOMICS DATA IN TOXICOLOGY**

Presented by: BASF SE

BASF has developed a large metabolomics database (MetaMap™Tox) using data rich agro chemicals and drugs. Metabolite patterns established are indicative of different toxicological modes of action and can be used for early recognition of toxicity for new chemicals. Using blood samples, the information can be obtained from routine studies.
Program Description (Continued)

Abstract #

Tuesday Morning, March 17
11:00 AM–12:00 NOON
Room 337

EXHIBITOR HOSTED SESSION: METABOLOMICS: A NOVEL TOOL FOR UNDERSTANDING THE EARLY-STAGE MECHANISTIC UNDERPINNINGS OF DRUG ACTION AND SAFETY

Presented by: Metabolon, Inc.

With increased regulatory scrutiny, understanding the mechanistic underpinnings of drug action and safety has become paramount. Earlier information on potential drug safety issues is required before deciding which compounds to take into the clinic. Global biochemical profiling provides unparalleled insight into the mechanistic action of drugs. The simultaneous analysis of hundreds of biochemicals enables the identification of both on-target and off-target effects. Many changes are seen within hours of dosing, providing early-stage indication of safety issues.

Tuesday Morning, March 17
11:00 AM–12:00 NOON
Room 336

EXHIBITOR HOSTED SESSION: NEURAL, MESENCHYMAL, AND HEMATOPOIETIC TOXICITY TESTING USING IN VITRO STEM CELL ASSAYS

Presented by: StemCell Technologies Inc.

This session will highlight *in vitro* assay systems designed to quantify and assess neural, mesenchymal, and hematopoietic stem and progenitor cell populations from primary cell sources. The presentation will elaborate on how these assay systems can be used to evaluate compound toxicity.

Tuesday Morning, March 17
11:00 AM–12:00 NOON
Room 338

EXHIBITOR HOSTED SESSION: PROPOSED CARDIAC SAFETY ASSESSMENT: OVERALL STRATEGY FROM NON-CLINICAL TO CLINICAL PHASES

Presented by: Ina Research Inc.

INA will present its latest data from non-clinical (proarrhythmia model, atrioventricular block monkey) and clinical studies (thorough QT studies assessing ethnic and gender differences) in compliance with ICH-S7B/E14 guidelines for evaluating QT prolongation and TdP. An overall strategy for cardiac safety assessment from non-clinical to clinical will also be presented.

Tuesday Afternoon, March 17
12:00 NOON to 1:15 PM
Room 301

NIH BROWN BAG LUNCHEON

Chairperson: Joel G. Pounds, Pacific Northwest National Laboratory, Richland, WA

Sponsor: Research Funding Committee

Bring your lunch and join staff from the NIH Center for Scientific Review (CSR) and the NIEHS program officers for lunch and informal discussions about review and grant opportunities at NIEHS. There will be time for questions and discussion, and you can make arrangements to meet these representatives later in the NIH Grants Room. Bag lunches will be available at a nearby concession for purchase.

Tuesday Afternoon, March 17
12:00 NOON to 1:15 PM
Room 339

POSTDOCTORAL ASSEMBLY LUNCHEON

Chairperson: Heather Floyd, Alcon Laboratories, Fort Worth, TX

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 fellows are invited to a casual luncheon organized by the Postdoctoral Assembly (PDA). We will announce the recipients of the Best Postdoctoral Publication Awards and acknowledge the postdocs who received awards this year from Specialty Sections and Regional Chapters. The PDA Board members will present an overview of accomplishments and future directions for the PDA and will introduce the new board members for 2009–2010. There will be a drawing for prizes. Postdocs can reserve a ticket when registering for the Annual Meeting.

Tuesday Afternoon, March 17
12:00 NOON to 1:30 PM
See room listings below.

SPECIALTY SECTION MEETINGS/LUNCHEONS:
TOXICOLOGIC AND EXPLORATORY PATHOLOGY
ROOM 345), IN VITRO AND ALTERNATIVE METHODS
ROOM 343)

Tuesday Afternoon, March 17
12:00 NOON to 1:30 PM
Marriott Inner Harbor Grand Ballroom C

REGIONAL CHAPTER MEETING/LUNCHEON:
CENTRAL STATES
The National Children’s Study (NCS) is the first-of-its kind U.S. study tracking children’s health from womb to adulthood. Involving 100,000 children across the country, the NCS will be the largest long-term study of children’s health and development ever conducted in the U.S. Initiated in response to the Children’s Health Act of 2000, the NCS is led by a consortium of agencies which include the U.S. Department of Health and Human Services, including the National Institute of Child Health and Human Development, the National Institute of Environmental Health Sciences at NIH, and the Centers for Disease Control and Prevention, and the U.S. EPA. The NCS will ultimately reduce the public health burden of childhood chronic diseases and disorders, including not only pain and suffering, but also missed school days, health care expenses, and other costs to children, their families, and society at large. It will also be large enough to assess factors related to health disparities and differences in disease occurrence between groups of people. What does this study mean for toxicologists? The time is ideal to obtain input from toxicologists, as this landmark study is beginning to recruit families, to apply lessons learned from ongoing children’s studies, including the application and interpretation of new biomarkers, and to develop exposure and dose models for pregnant women and infants. Its design and innovative approaches will provide unique opportunities and a large enough sample size to collect and relate early biomarkers of exposure and effect to disease outcomes later in development, and it will help the U.S. tease apart the complex interplay between environmental factors and genetic influences that impact health.
Tuesday Afternoon, March 17
12:00 NOON to 1:20 PM
Room 307

ROUNDTABLE SESSION: SETTING A SAFE STARTING DOSE IN INITIAL CLINICAL TRIALS WITH BIOTHERAPEUTICS: DO I USE THE NOAEL OR THE MABEL?


Sponsor: Women in Toxicology Special Interest Group

Endorsed by:
Drug Discovery Toxicology Specialty Section
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

Years ago, establishment of safe exposures to new therapeutics utilized the determination of NOEL/NOAELs derived from routine toxicology studies followed by some form of dose adjustment prior to human exposure, an approach that evolved a few years later to include an interspecies scaling factor. In the past 15 years, however, approaches to clinical trial design have become more specific to the TA and questions being asked in these initial studies. During this same time, biotechnology-derived therapeutics have also evolved, becoming increasingly more diverse in nature and are much more specific to their targets. As a result of this evolution, an array of regulatory guidance has also arisen describing several approaches to establishing appropriate starting doses for clinical trials of a specific nature, for specific therapeutic areas, and for high risk therapeutics. The most recent of these is pharmacology-based and involves the determination of the MABEL. This method is recommended for therapeutics that may present defined perceived risk to those in FIH/FIP trials that is beyond what is generally accepted for new molecular entities. The choice to use the NOAEL or MABEL in selecting the starting dose falls to toxicologists and clinicians and may represent starting doses differing by orders of magnitude. A key starting point is determination of what constitutes elevated risk, an evaluation that depends on a combined assessment of the nature of the target, pharmacology, toxicology, and the intended patient population. Accurate estimation of the human efficacious dose is also critical and the complexity surrounding this prediction can have significant impact on the starting dose. Low and slow provides maximum safety but can also result in unnecessary time delays evaluating doses where little information may be gained, and in at least some instances may make it impossible to recruit patients who may have no benefit for weeks.

Abstract #

12:53 ASSESSING CHILDREN’S CANCER RISK RELATED TO IN UTERO EXPOSURE TO DIETARY CARCINOGENS: Jos Kleinjans

1:05 PANEL DISCUSSION.

Abstract #

12:10 ESTIMATING THE HUMAN EFFICACIOUS DOSE—IT’S NOT AS SIMPLE AS IT SEEMS. Mark Rogge

12:15 U.S. PERSPECTIVE. Hanan Ghantous

12:20 EUROPEAN PERSPECTIVE. Marc Pallardy

12:25 BALANCING PATIENT SAFETY AND REASONABLE EXPECTATION OF THERAPEUTIC BENEFIT. Leigh Ann Burns Naas

12:30 PANEL AND AUDIENCE DISCUSSION.

Tuesday Afternoon, March 17
12:00 NOON to 1:20 PM
Room 309

EDUCATION-CAREER DEVELOPMENT SESSION: THE FUTURE OF ENVIRONMENTAL HEALTH SCIENCE: FEATURING NIEHS-FUNDED EARLY CAREER INVESTIGATORS

Chairperson(s): Vishal S. Vaidya, Brigham and Womens Hospital, Boston, MA and Carol Shreffler, National Institute of Environmental Health Sciences, Research Triangle Park, NC.

Sponsor: Career Resource and Development Committee

Endorsed by:
Education Committee
Mechanisms Specialty Section
Postdoctoral Assembly Board

An essential element of the mission of the NIEHS is the support and career promotion of the future generation of exceptionally talented and creative new scientists who will push forward research in understanding the impact of environmental exposures and human health. Support through critical transition stages has been identified as being particularly important in developing a cadre of talented early career scientists. In response, the NIH and the NIEHS has started the Outstanding New Environmental Scientist (ONES) Award which is one of many initiatives that has taken to provide the funding for the research and career enhancement of scientists during the transition from postdoctoral to faculty positions, and to allow selected outstanding junior faculty to flourish. The ONES scientists are expected to make a long term career commitment to the environmental health sciences, and to bring innovative, ground breaking research thinking to bear on the problems of how environmental exposures affect human biology, human pathophysiology, and human disease. In the first three years, 21 awards have been made and the NIEHS ONES program has become an important showcase for the future leaders in environmental health sciences research. Three ONES awardees have been chosen to present who have had innovative publications in the first year of the award and who display a broad spectrum of research in the environmental health sciences. These exceptional scientists, who will present cutting edge science at the interface of molecular toxicology and environmental health sciences, are a model for junior faculty attendees who are considering applying for these competitive but highly rewarding grants.
Program Description (Continued)

Abstract #

12:04  ENDOCRINE DISRUPTION OF THE HYPOTHALAMIC SIGNALING THAT REGULATES PUBERTY. Heather Patisaul

12:26  MECHANISMS OF TELOMERIC DNA LOSS AND REPAIR. Patricia Opresko

12:48  MECHANISMS OF PESTICIDE-INDUCED NEUROBEHAVIORAL DEFICITS: RELEVANCE TO ADHD. Jason Richardson

1:10  PANEL DISCUSSION/Q&A.

Tuesday Afternoon, March 17
12:15 PM–1:15 PM
Room 338

EXHIBITOR HOSTED SESSION: NON-INVASIVE BLOOD PRESSURE MEASUREMENTS ON LARGE ANIMALS

Presented by: emka TECHNOLOGIES

emka TECHNOLOGIES will present its recent developments in non-invasive blood pressure measurements on large animals.

Tuesday Afternoon, March 17
12:15 PM–1:15 PM
Room 337

EXHIBITOR HOSTED SESSION: PROFILING ENVIRONMENTAL CHEMICALS IN THE CELLULAR STRESS PATHWAY USING QUANTITATIVE HIGH-THROUGHPUT SCREENING

Presented by: Promega Corporation

The NIH Chemical Genomics Center (NCGC) has developed in vitro assays utilizing quantitative high-throughput screening (qHTS), where concentration response curves for several thousand compounds are quickly and efficiently produced in cell-based 384- and 1536-well format. These assays identified compound-induced stimulation of the antioxidant response element (ARE) cellular stress pathways, glutathione levels, and cytotoxicity.

Tuesday Afternoon, March 17
12:15 PM–1:15 PM
Room 336

EXHIBITOR HOSTED SESSION: USING GENOMIC APPROACHES TO ACCELERATING TOXICOLOGY DECISIONS

Presented by: Affymetrix

Discover biomarkers, understand mechanisms of toxicity, and identify relationship between patient genetic diversity and response to treatment. Comprehensive pre-clinical portfolio spans rodents, canine, monkey, and human arrays. Complete solutions include ToxFX™ Analysis Suite, enabling you to rapidly understand compound safety through matching the toxicity of your compound against Iconix Toxicogenomics database.

Tuesday Afternoon, March 17
12:30 PM to 1:20 PM
Room 324

DISTINGUISHED TOXICOLOGY SCHOLAR AWARD LECTURE: ROLE OF REACTIVE METABOLITES, PROTEIN ADDUCTS, IMMUNE SYSTEM, AND OTHER SUSCEPTIBILITY FACTORS IN DRUG-INDUCED LIVER INJURY

Lecturer: Lance R. Pohl, National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD

Most of my research has been directed towards understanding the mechanisms of drug-induced liver injury (DILI). Early studies involved the development of chemical trapping, radiochemical, and stable isotope techniques for identifying reactive metabolites of chlorofluorocarbons, carbon tetrachloride, inhalation anesthetics, and other xenobiotics as well as providing evidence consistent with a mechanistic role in DILI for protein adducts of reactive metabolites. Then specific antibodies for detecting, purifying, identifying, and exploring the toxicologic consequences of specific protein adducts of hepatotoxic drugs were designed and used. For example, this approach made it possible for us to show that patients diagnosed with inhalation anesthetic-induced liver injury had serum antibodies that reacted with one or more purified endogenous liver proteins that had been the target of reactive trifluoroacetyl halide metabolites of inhalation anesthetics, a finding suggesting that the adaptive immune system may have a pathologic role in liver injury caused by inhalation anesthetics. More recently, we have turned our attention towards uncovering risk factors unrelated to reactive metabolite formation that may have a role in determining the susceptibility of patients to DILI. With the use of a murine model of acetaminophen-induced liver injury (AILI) and several genetically deficient mouse strains, we discovered that endogenous interleukin (IL)-13, IL-10, and IL-4 were hepatoprotectants, whereas IL-6 was either a hepatoprotectant or a hepatotoxicant depending on its serum concentration. In contrast, endogenous macrophage-migration inhibitory factor, osteopontin, and NK and NKT cells enhanced AILI. In other studies, Kupffer cells protected against AILI, while endogenous glucocorticoids enhanced AILI, and both of these factors appeared to have a role in preventing drug-protein adducts released from injured hepatocytes from causing allergic reactions by inducing immunological tolerance. Comparisons of the proteomes and transcriptomes of mice that were susceptible or resistant to AILI led to the discovery of numerous other potential risk factors that may contribute to the incidence of DILI. Recent findings suggest that polymorphisms in genes encoding risk factors and/or their receptors uncovered by us and other investigators in animal model studies may contribute to individual susceptibility to DILI. None of the research described here could have been done without the hard work and intellectual contributions made by my students, fellows, and colleagues and the continuous support of the Intramural Research Program of the NHLBI and NIH.
Program Description (Continued)

Abstract #

Tuesday Afternoon, March 17
1:00 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: FUNCTIONAL GENOMICS IN TOXICOLOGY

Chairperson(s): Brian Thrall, Pacific Northwest National Laboratory, Richland, WA.

Displayed: 1:00 PM–4:30 PM

#992 Poster Board Number ....................................101 NITROGEN-SENSING BISPHOSPHONATES INHIBIT FARNESSYL DIPHOSPHATE (FPP) SYNTHASE IN THE KIDNEY: IMPLICATIONS FOR RENAL SAFETY. A. Lühe1, K. Künkele2, M. Haiker1, K. Schad1, C. Zühlmann1, F. Baass1, L. Suter1 and T. Pfister1. 1Nonclinical Drug Safety, F. Hoffmann-La Roche, Basel, Switzerland and 2Pharmacology Research Penzberg, Roche Diagnostics GmbH, Penzberg, Germany. Sponsor: M. Stephan-Güldner.

#993 Poster Board Number ....................................102 TIME- AND DOSE-DEPENDENT EFFECTS OF DIETARY TCDD IN JUVENILE RAINBOW TROUT. Q. Liu1, M. L. Rise1, C. A. Strube1, J. M. Spitsbergen1, R. J. Hurz1 and M. J. Carvan1,2. 1Great Lakes WATER Institute, UW-Milwaukee, Milwaukee, WI, 2Department of Biological Sciences, UW-Milwaukee, Milwaukee, WI, 3Ocean Sciences Centre, Memorial University Newfoundland, St. John’s, NF, Canada. 4Department of Mathematics, Statistics, and Computer Science, Marquette University Milwaukee, WI, 5Center for Fish Disease Research, Oregon State University Corvallis, OR and 6Marine& Freshwater Biomedical Sciences Center, UW-Milwaukee, Milwaukee, WI.

#994 Poster Board Number ....................................103 TCDD EFFECTS ON EPIDERMAL METABOLITES –MOUSE VERSUS RAT. M. N. Keen1, M. K. Makley1, G. L. Johns2, N. DelRaso1, L. Burgoss1, T. R. Zacharewski1 and N. V. Reo1. 1Biochem & Mol Biol, Boonshoft School of Medicine, Wright State University, Dayton, OH, 2BAE Systems, San Diego, CA, 3AFRL/HEPB, Wright-Patterson AFB, Dayton, OH and 4Biochem & Mol Biol, National Food Safety & Toxicol Ctr, Ctr Integrative Toxicol, Michigan St University East Lansing, MI.

#995 Poster Board Number ....................................104 METABONOMIC STUDY OF OCRATOXIN A TOXICITY AFTER REPEATED ADMINISTRATION: PHENOTYPIC ANCHORING ENHANCES MODEL PREDICTIVITY AND BIOMARKER IDENTIFICATION. M. Sieber1, S. Wagner1, A. Anenberg1, A. Malley1 and W. Dekant1. 1Department of Toxicology, University of Würzburg, Würzburg, Germany and 2Drug Safety Evaluation, Sanofi-Aventis, Frankfurt, Germany.

#996 Poster Board Number ....................................105 IDENTIFICATION OF RAT BRAIN CYTOSOL PROTEIN TARGETS OF ACRYLONITRILE IN VIVO USING TWO-DIMENSIONAL GEL ELECTROPHORESIS AND MASS SPECTROMETRY. F. W. Benz, E. Campian, D. E. Nerland and J. Cai. Pharmacology & Toxicology, Univ of Louisville Medical School, Louisville, KY.

#997 Poster Board Number ....................................106 RESPONSES OF HUMAN ALVEOLAR MACROPHAGES TO DIESEL EXHAUST EXPOSURE: A LIPIDOMICS APPROACH. K. Sawyer1 and M. C. Maddon2. 1ORD, NHEERL, HSD, Clinical Research Branch, U.S. EPA, Chapel Hill, NC and 2Department of Environmental Sciences and Engineering, University of North Carolina, Chapel Hill, NC.

#998 Poster Board Number ....................................107 TRANSCRIPTIONAL MICROARRAY ANALYSIS AND CELL PROLIFERATION IN B6C3F1 FEMALE MOUSE LUNG FOLLOWING REPEATED INHALATION EXPOSURE TO 2-CHLORO-1,3-BUTADIENE. L. Pluta1, R. S. Thomas1, E. Bermudez1, E. A. Gross1 and M. W. Himmelstein1. 1The Hamner Institutes for Health Sciences, Research Triangle Park, NC and 2DuPont Haskell Global Centers, Newark, DE.

#999 Poster Board Number ....................................108 EARLY DETECTION OF (NON-GENOTOXIC) CARCINOGENESIS: IDENTIFICATION OF THE MODE OF ACTION THROUGH METABOLOMICS. B. van Ravenzwaay1, G. Coelho-Palermo Cunha1, M. Herold1, H. Kamp1, E. Fabian1, E. Leibold1, R. Looser2, G. Krennrich1, W. M. Schad1, M. Ierapetritou1, P. Georgopoulos2, W. Welsh2, B. Sen3, K. Gaido3 and I. Androulakis1. 1Chemical Engineering, Rutgers University, Piscataway, NJ, 2ebCTC, EOSHI, Piscataway, NJ, 3Great Lakes WATER Institute, Michigan St University East Lansing, MI, 4Cellular and Toxicology Lab., KIST, Seoul, South Korea and 5Environmental Exposure Assessment, NIER, Incheon, South Korea, 6Marine& Freshwater Biomedical Sciences Center, Newport News, VA.

#1000 Poster Board Number ....................................109 TEMPORAL PATHWAY ACTIVITY ANALYSIS OF TRANSCRIPTIONAL PROFILING OF IN UTERO EXPOSURE TO D-N-BUTYL PHTHALATE (DBP). M. A. Ovaci1, M. Ierapetritou1, P. Georgopoulos1, W. Welsh1, B. Sen1, K. Gaido1 and I. Androulakis1. 1Chemical Engineering, Rutgers University, Piscataway, NJ, 2ebCTC, EOSHI, Piscataway, NJ, 3Great Lakes WATER Institute, Michigan St University East Lansing, MI, 4Cellular and Toxicology Lab., KIST, Seoul, South Korea and 5Environmental Exposure Assessment, NIER, Incheon, South Korea, 6Marine& Freshwater Biomedical Sciences Center, Newport News, VA.

#1001 Poster Board Number ....................................110 COMPARATIVE SCREENING OF THE GENE EXPRESSION FOR NONYLPHENOL IN HUMAN CELL LINES. S. Hwang1, M. Oh1,2, S. Kim1,2, S. Paul1, J. Kim1, J. Youn1, H. Park1,2, H. Kim1, C. Lee1, K. Choi1, Y. Kim2 and J. Ryu1. 1Biochemistry, Hanyang University, Ansan, Gyeonggi-do, South Korea, 2Bio-Nanotechnology, Hanyang University, Ansan, Gyeonggi-do, South Korea, 3Bio-Nanotechnology, Hanyang University, Ansan, Gyeonggi-do, South Korea, 4Bio-Nanotechnology, Hanyang University, Ansan, Gyeonggi-do, South Korea, 5Biologically Active Substance, Laboratory, KIST, Seoul, South Korea and 6Environmental Exposure Assessment, NIER, Incheon, South Korea, Sponsor: S. Lee.
Program Description (Continued)

Abstract #

**Poster Board Number ** ...................................... 102  
**DEVELOPMENT OF A DNA MICROARRAY TO EVALUATE GENE EXPRESSION PROFILES OF DRUG-METABOLIZING GENES IN THE CYNOMOLGUS MONKEY. ** R. Ise1, Y. Uno1, H. Akiyama1, S. Kondo2, H. Nobumasa2 and R. Nagata1. 1Shin Nippon Biomedical Laboratories (SNBL), Ltd., Tokyo, Japan and 2Toryo Industries, Inc., Kanagawa, Japan.

**Poster Board Number ** ...................................... 103  
**ANALYSIS OF SECRETED PROTEINS AS AN IN VITRO MODEL FOR DISCOVERY OF LIVER TOXICITY MARKERS. ** J. A. Lewis1, W. E. Dennis1, J. Hadix1 and D. A. Jackson1. 1U.S. Army Center for Environmental Health Research, Frederick, MD and 2SAIC, Inc., Frederick, MD.

**Poster Board Number ** ...................................... 104  
**PREDICTION OF LIVER TOXICITY — AN IN VITRO TOXICOGENOMICS APPROACH. ** F. Boess, A. B. Roth, G. Steiner, E. Durr, K. Schad, N. Schaub, C. Zihlmann and L. Suter-Dick. 1Research Department, L’Oreal Advanced Research, Nanoscience Institute, University, East Lansing, MI, 2National Food Safety & Toxicology Center, Michigan State University, East Lansing, MI and 3Center for Integrative Toxicology, Michigan State University, East Lansing, MI.

**Poster Board Number ** ...................................... 105  
**ESTABLISHING A PROFILE OF GENE EXPRESSION IN AVIAN SPECIES EXPOSED TO PCBs. ** M. B. Bohannon, T. E. Porter and M. Oettinger. Animal Sciences, University of Maryland, College Park, MD.

**Poster Board Number ** ...................................... 106  
**TRANSCRIPTOMIC COMPARISON OF TCDD-ELICITED GLOBAL GENE EXPRESSION RESPONSES IN HUMAN PRIMARY HEPATOcytes. ** E. Dere1, L. D. Burgoon1,2 and T. R. Zacharewski1,2. 1Department of Biochemistry and Molecular Biology, Michigan State University, East Lansing, MI, 2National Food Safety & Toxicology Center, Michigan State University, East Lansing, MI and 3Center for Integrative Toxicology, Michigan State University, East Lansing, MI.

**Poster Board Number ** ...................................... 107  
**ANALYSIS OF PHASES 1 AND 2 METABOLIZING ENZYMES IN HUMAN SKIN SUGGESTS IMPORTANT ROLE OF PHASE 2 ENZYMES IN THE DETOXIFICATION. ** D. Duche2, V. Luu-The1, C. Ferraris1, J. Leclaire1 and F. Labrie1. 1Oncology and Molecular Endocrinology Research Center, Laval University Hospital Research Center (CRCHU) and Laval University, Quebec, Canada and 2Safety Research Department, L’Oreal Advanced Research, Aulnay sous Bois, France. Sponsor: E. Dufour.

**Poster Board Number ** ...................................... 108  
**LOW-DOSE MODULATION OF EMBRYONIC GENE EXPRESSION NETWORKS BY INORGANIC ARSENIC. ** A. Planchart, N. E. Griffin and C. J. Mattingly. Mount Desert Island Biological Laboratory, Salisbury Cove, ME.

**Poster Board Number ** ...................................... 109  
**AN INTEGRATIVE STATISTICAL FRAMEWORK FOR THE METABOLOMIC ANALYSIS OF NON-GENOTOXIC HEPATOCARCINOGENESIS IN THE RAT. ** D. Rubtsov1, C. Waterman1, R. Currie2, D. Salazar2, J. Wright2 and J. Griffin2. 1Department of Biochemistry, University of Cambridge, Cambridge, United Kingdom and 2Human Safety, Syngenta, Bracknell, United Kingdom.

**Poster Board Number ** ...................................... 110  
**FUNCTIONAL ROLE FOR CLASS A SCAVENGER RECEPTORS IN THE RECOGNITION OF ENGINEERED NANOPARTICLES BY MACROPHAGES. ** B. Thrail1, W. B. Chisler, M. Markillie, R. C. Zangar1, R. Tan and G. Orr. Pacific Northwest National Laboratory, Richland, WA.

**Poster Board Number ** ...................................... 111  
**ABSENCE OF AN ENDOTHELIAL CELL TRANSCRIPTOMIC SIGNATURE IN THE PERIPHERAL BLOOD AFTER ADMINISTRATION OF THREE ONCOTOXIC TUBULIN BINDERS. ** I. Mikaelian1, D. Coluccio1, C. Kanwal1, A. Buness1, M. Setlem1, J. C. Downing1, H. W. Char1, R. Nicklaus1, H. Hilton1, J. Funk1, C. de Vera-Madrid1, J. Hollack1, M. Fielden1 and F. Herting. 1Non-Clinical Safety, Hoffmann-La Roche, Inc., Nutley, NJ, 2Non-Clinical Safety, Hoffmann-La Roche, Basel, Switzerland, 3Non-Clinical Safety, Hoffmann-La Roche, Palo Alto, CA and 4Hoffmann-La Roche, Penzberg, Bavaria, Germany. Sponsor: R. Pendino.

**Poster Board Number ** ...................................... 112  
**COMBINED METABONOMIC TRANSCRIPTOMIC EVALUATION OF THE EFFECTS OF OVERNIGHT (16HR) FASTING ON SD RATS. ** S. A. Stryker1, S. Ruepf1, N. Arunbarai2, S. Petia1, S. Hnatushyn1, W. Foster1, M. Reilly1 and R. Donald1. 1Applied and Investigative Metabolomics, Bristol-Myers Squibb, Princeton, NJ and 2Discovery Toxicology, Bristol-Myers Squibb, Princeton, NJ.

**Poster Board Number ** ...................................... 113  

**Poster Board Number ** ...................................... 114  
**GENE EXPRESSION EFFECTS OF DIETARY FAT AND METASTASIS IN MICE PREDISPOSED TO OBESITY AND MAMMARY CANCER. ** M. La Merrill1,2, R. Gordon1, K. Hunter1, D. Threadgill1 and D. Pomp1. 1Community & Preventive Medicine, Mount Sinai School of Medicine, New York, 2Genetics, UNC, Chapel Hill, NC, 3Nutrition, UNC, Chapel Hill, NC and 4Metastasis Susceptibility, NIH/NCI, Bethesda, MD.


Program Description (Continued)

Abstract #

#1027
Poster Board Number .............................................. 136

#1028
Poster Board Number .............................................. 137

#1029
Poster Board Number .............................................. 138

#1030
Poster Board Number .............................................. 139

#1031
Poster Board Number .............................................. 140

Abstract #

#1032
Poster Board Number .............................................. 146
1, 2-NAPHTHOQUINONE DISRUPTS CREB TRANSCRIPTIONAL ACTIVITY THROUGH CHLORINATION OF CY5296. A. Endo, D. Sumi, N. Iwamoto and Y. Kumagai. Graduate school of comprehensive human sciences, University of Tsukuba, Tsukuba, Japan. Sponsor: A. Nagamama

#1033
Poster Board Number .............................................. 147
PHYTOESTROGEN PUERARIN PROTECTS AGAINST TERT-BUTYL HYDROPEROXIDE-INDUCED CELL DEATH THROUGH THE ESTROGEN RECEPTOR DEPENDENT PI3K/ AKT/HO-1 PATHWAY. Y. Hwang and H. Jeong. BK 21 Project Team, Pharmacy, Chosun University, Gwangju, South Korea.

#1034
Poster Board Number .............................................. 148
PROTHYMOsin-ALPHA MEDIATES NUCLEAR IMPORT OF NRF2/CUL3-RBX1 COMPLEX TO DEGRADE NUCLEAR NRF2. S. K. Niture and A. K. Jaiswal. Department of Pharmacology and Experimental Therapeutics, University of Maryland School of Medicine, Baltimore, MD. Sponsor: B. Moorthy.

#1035
Poster Board Number .............................................. 149
AN AUTO-REGULATORY LOOP BETWEEN NRF2 AND CUL3-RBX1 CONTROLS THEIR CELLULAR ABUNDANCE. J. W. Kaspar and A. K. Jaiswal. Pharmacology and Experimental Therapeutics, University of Maryland, Baltimore, MD.

#1036
Poster Board Number .............................................. 150
CHARACTERIZATION OF NRF2 INDEPENDENT NUCLEAR IMPORT ACTIVITY OF KAP1 DURING ANTIOXIDANT RESPONSES. Z. Sun, T. Wu, C. M. Birch, W. Chen and D. Zhang. University of Arizona, Tucson, AZ.

#1037
Poster Board Number .............................................. 151
LYSOSOMAL NON-ESTERIFIED CHOLESTEROL CONCENTRATION MODULATES THE FUSION OF AUTOPHAGOSOMES WITH LYSOSOMES. M. Kleinmann, J. Caruso and J. Reiners. Institute Environmental Health Sciences, Wayne State University, Detroit, MI.
Abstract #  

#1038  
**Poster Board Number** ................................. #152  
**Abstract #**  

**CpG-Oligodeoxynucleotides inhibit the tumor necrosis factor-alpha-induced expression of cell adhesion molecules in endothelial cells by suppressing NF-kB activation.** H. Yun, H. Kim and H. Jeong. BK21 Project Team, Pharmacy, Chosun University, Gwangju, South Korea.

#1039  
**Poster Board Number** ................................. #153  
**Abstract #**  

**Transcriptomics analysis in mouse lung exposed to mainstream smoke from two different smoking regimens.** Q. Meng¹, N. Machesky², K. Gideon¹ and M. Lee². ¹Battelle Toxicology Northwest, Richland, WA and ²Battelle Biomedical Research Center, Columbus, OH.

#1040  
**Poster Board Number** ................................. #154  
**Abstract #**  

**Chromium (VI) inhibits mouse metallothionein-I gene transcription by preventing the zinc-dependent formation of an MTF-1-P300 complex.** T. Kimura¹, Y. Li², F. Okumura³, N. Itoh¹, T. Nakamichi², T. Sone¹, M. Isobe¹ and G. K. Andrews². ¹Toxicology, Faculty of Pharmaceutical Sciences, Setsunan University, Hikakata, Japan, ²Biochemistry and Molecular Biology, University of Kansas Medical Center, Kansas City, KS, ³Toxicology, Graduate School of Pharmaceutical Sciences, Osaka University, Suita, Japan and ⁴Laboratory of Hygienics, Gifu Pharmaceutical University, Gifu, Japan. Sponsor: K. Tanaka.

#1041  
**Poster Board Number** ................................. #155  
**Abstract #**  

**Zinc-induced epigenetic changes in the mouse metallothionein-I promoter chromatin are mediated by the zinc-sensing transcription factor MTF-1.** F. Okumura³, T. Kimura¹, Y. Li², N. Itoh¹, T. Nakamichi², T. Sone¹, M. Isobe¹ and G. K. Andrews². ¹Toxicology, Faculty of Pharmaceutical Sciences, Setsunan University, Hikakata, Japan, ²Biochemistry and Molecular Biology, University of Kansas Medical Center, Kansas City, KS, ³Toxicology, Graduate School of Pharmaceutical Sciences, Osaka University, Suita, Japan and ⁴Laboratory of Hygienics, Gifu Pharmaceutical University, Gifu, Japan. Sponsor: K. Tanaka.

#1042  
**Poster Board Number** ................................. #156  
**Abstract #**  

**Consequences of altered cytochrome P450 2S1 expression in lung cells.** A. M. Rowland¹ and G. S. Yost². ¹Chemistry and Biochemistry, NMSU, Las Cruces, NM and ²Pharmacology and Toxicology, University of Utah, Salt Lake City, UT.

#1043  
**Poster Board Number** ................................. #157  
**Abstract #**  

**Quantitative assessment of whole blood RNA profiling as an early temporal marker of toxicological effects.** D. Harris¹, Y. Tessier¹, M. Hartness¹, M. Craigion¹, T. Freeman², T. Forster², G. Rubin¹, A. Ivens¹ and P. Ghazal¹. ¹Aptuit, Edinburgh, United Kingdom and ²University of Edinburgh, Edinburgh, United Kingdom. Sponsor: P. Berthe.

#1044  
**Poster Board Number** ................................. #158  
**Abstract #**  

**Evidence for the involvement of xenobiotic-responsive nuclear receptors in transcriptional effects upon perfluoralkyl acid exposure in diverse species.** H. Ren¹, B. Vallanat¹, J. C. Horton², D. M. Nelson², L. Y. Yeung¹, K. S. Guruge¹, P. S. Lam¹ and L. D. Lehman-McKeen³. ¹Toxicogenomics Core, U.S. EPA, Durham, NC, ²Discovery Toxicology, Bristol-Myers Squibb Company, Princeton, NJ, ³Safety Research Team, National Institute of Animal Health, Ibaraki, Japan and ⁴Department of Biology and Chemistry, City University of Hong Kong, Hong Kong SAR, China.

#1045  
**Poster Board Number** ................................. #159  
**Abstract #**  

**Identification of transcriptional networks involved in peroxisome proliferator chemical-induced hepatocyte proliferation.** B. Vallanat², R. Currie¹, J. R. Pirone³, A. Singh², F. Elloumi², C. Horton² and I. Shah³. ¹NEERL, U.S. EPA, Durham, NC, ²NCCT, U.S. EPA, Durham, NC, ³Central Toxicology Laboratory, Syngenta, Cheshire, United Kingdom and ⁴NCCT, Lockheed Martin, RTP, NC.

#1046  
**Poster Board Number** ................................. #160  
**Abstract #**  

**Mechanisms of zinc oxide-induced IL-8 expression in human airway epithelial cells.** W. Wu¹, J. M. Samet², D. B. Pedersen³ and P. A. Bromberg¹. ¹Center for Environmental Medicine, University of North Carolina, Chapel Hill, NC and ²Human Studies Division, U.S. EPA, Research Triangle Park, NC. Sponsor: J. Jaspers.

#1047  
**Poster Board Number** ................................. #201  
**Abstract #**  

**Disruption of the largemouth bass (Micropterus salmoides) steroidalogenic acute regulatory protein by endocrine disrupting chemicals: A role for estrogen receptor signaling?** M. S. Prucha¹, D. S. Barber¹, D. S. Barber¹ and N. D. Denslow¹. ¹Pharmacology and Therapeutics, University of Florida, Gainesville, FL and ²Physiological Sciences, University of Florida, Gainesville, FL.

#1048  
**Poster Board Number** ................................. #202  
**Abstract #**  

**Microrna expression and permissive tissue regeneration.** J. A. Francaza¹, L. K. Mathews¹, S. Sengupta¹, J. La Du³ and R. L. Tanguay². ¹Toxicology, Environmental Health Sciences Center, Oregon State University, Corvallis, OR.

#1049  
**Poster Board Number** ................................. #203  
**Abstract #**  

Program Description (Continued)

Abstract #

#1050  Poster Board Number .........................204  
EFFECTS OF SODIUM ARSENITE ON DNA METHYLATION, MTHFR, C-MYC, MT-1/2, PROTEIN LEVELS AND CELL CYCLE ALTERATIONS IN MCF-7 CELLS. R. Ruiz-Ramón1, L. Lopez-Carrillo1 and M. E. Cebrian2. 1Centro de Investigacion en Salud Poblacional, INSP, Cuernavaca, Morelos, Mexico and 2Toxicología, CINVESTAV, Mexico, City, Mexico.

#1051  Poster Board Number .........................205  
EFFECTS OF BENZO[α]PYRENE EXPOSURE ON FUNDULUS HETEROCILUS EMBRYONIC GMNT mRNA EXPRESSION AND ADULT HEPATIC ENZYME ACTIVITY. X. Fang1, W. Dong, C. Thornton1, B. E. Schellfer1 and K. L. Willert2. Department of Pharmacology, Environmental Toxicology Research Program, The University of Mississippi, University, MS and USDA-ARS-CGRU MSA Genomics Laboratory, Stoneville, MS.

#1052  Poster Board Number .........................206  
TISSUE DISTRIBUTION AND CHEMICAL INDUCTION OF THE CYSTEINE TRANSPORTERS XCT AND RBAT IN MICE. K. Wu, S. A. Reisman and C. D. Claussens. Department of Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS.

#1053  Poster Board Number .........................207  
PREGNANE X RECEPTOR REGULATES THE mRNA TURNOVER THROUGH INTERACTION WITH CCR4-NOT. N. Eagleton, D. Liu, S. Ke, F. Xie, N. Ouyang and Y. Tian. Toxicology, Texas A&M University, College Station, TX.

#1054  Poster Board Number .........................208  
EXPRESSION/ACTIVITY OF GLUTATHIONE S-TRANSFERASE ISOFORM (GST-8) IS ASSOCIATED WITH INCREASED SENSITIVITY TO 4-TERTIARY BUTYLPHENOL (4-TBP) TOXICITY: IMPLICATIONS FOR OCCUPATIONAL VITILIGO. K. A. Hoey, S. Kerr and R. Sarangarajan. Massachusetts College of Pharmacy and Health Sciences, Worcester, MA.

#1055  Poster Board Number .........................209  
MICROBIAL TRANSFORMATION PRODUCTS OF BROMINATED FLAME RETARDANTS RESULTS IN CHEMICAL SPECIFIC LESIONS IN THE DEVELOPING ZEBRAFISH (DANIO RERIO) EMBRYO. J. M. McCormick and L. A. White. Biochemistry and Microbiology, Rutgers University, New Brunswick, NJ.

#1056  Poster Board Number .........................210  
DIFFERENTIAL REGULATION OF IL-8 EXPRESSION BY HUMAN AIRWAY EPITHELIAL CELLS EXPOSED TO DIESEL PARTICLES. T. Tad1, S. Simmons3, R. Ramahhadran2, R. Silbajoris1 and J. M. Samet2. 1Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR, 2Toxicology, UNC Chapel Hill, Chapel Hill, NC, 3Neurotoxicology, U.S. EPA, RTP, NC and 4Human Studies, U.S. EPA, Chapel Hill, NC.

Abstract #

Tuesday Afternoon, March 17
1:00 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: GENOTOXICITY I

Chairperson(s): Christopher States, University of Louisville, Louisville, KY.

Displayed: 1:00 PM–4:30 PM

Author Attended: 1:00 PM–2:45 PM

#1057  Poster Board Number .........................216  
DEVELOPMENT AND VALIDATION OF AN INTEGRATED GENOME-WIDE APPROACH TO DETECT CHROMOSOMAL STRUCTURAL ABERRATIONS. J. L. Freeman and S. Peterson. Health Sciences, Purdue University, West Lafayette, IN.

#1058  Poster Board Number .........................217  
TOPOISOMERASE II INHIBITION INVOLVED IN DOUBLE-STRAIN BREAKS BY EMODIN AND ITS GENOTOXICITY. Y. Li, Y. Luan1, S. Suzuki and J. Ren1. 1Center for Drug Safety Evaluation and Research, Shanghai Institute of Materia Medica, Chinese Academy of Sciences, Shanghai, China and 2Division of Cellular and Gene Therapy Products, National Institute of Health Sciences (NIHS), Tokyo, Japan.

#1059  Poster Board Number .........................218  
ELEVATED ETHYL METHANESULFONATE (EMS) IN NELFINAVIR MESYLATE (VIRACEPT®, ROCHE): ANIMAL STUDIES CONFIRM TOXICITY THRESHOLD AND ABSENCE OF RISK TO PATIENTS. L. Miller1, E. Gocke1, P. Larson2, T. Lavé1 and T. Pfister1. 1Nonclinical Drug Safety, F. Hoffmann-La Roche, Basel, Switzerland and 2Virology and Transplantation, F. Hoffmann-La Roche, Nutley, NJ.

#1060  Poster Board Number .........................219  
CHARACTERIZATION OF WBP-PROIC ACID-INITIATED HOMOLOGOUS RECOMBINATION. K. Shu and L. M. Winn. Queen’s University, Kingston, ON, Canada.

#1061  Poster Board Number .........................220  
CYTOGENETIC EVALUATION OF MULTI-WALLED CARBON NANOTUBE TOXICITY IN SWISS-WEBSTER MICE. A. Patolla1, S. Patolla1, S. Hussain1, J. Schlander2 and P. Tchounwou1. 1Jackson State University, Jackson, MS, and 2Air Force Research Laboratory, Dayton, OH and 3Emory University, Atlanta, GA.

#1062  Poster Board Number .........................221  
THE WERNER SYNDROME PROTEIN FUNCTIONS IN REPAIR OF CR(VI) INDUCED STALLED DNA REPLICATION FORKS. F. Liu, A. Barchowsky and P. L. Opresko. Department of Environmental and Occupational Health, University of Pittsburgh Graduate School of Public Health, Pittsburgh, PA.
Program Description (Continued)

Abstract #

#1063 Poster Board Number ................................................. 222 POLYPLOIDY-INDUCTION BY DIHYDROXYLATED MONOCHLOROBIPHENYLS: STRUCTURE-ACTIVITY-RELATIONSHIP. S. M. Flor1 and G. Ludewig2,1, Occupational and Environmental Health, University of Iowa, Iowa City, IA and 1Human Toxicology, University of Iowa, Iowa City, IA.

#1064 Poster Board Number ................................................. 223 INDIRECT GENOTOXICITY TRIGGERED BY INTRACELLULAR PH CHANGES. H. Kauffmann1, K. Braun1, K. Braham1, A. Czich1, U. Hemmann1, I. Stammberger1 and G. Troschau1. 2Drug Safety Evaluation, sanofi-aventis, Frankfurt, Germany and 1Drug Safety Evaluation, sanofi-aventis, Alfortville, France.

#1065 Poster Board Number ................................................. 224 FOLLOW UNIVERSITY OF POLY (ADP-RIBOSE) POLYMERASE-1 EXPRESSION IN HUMAN LUNG CELLS IN CULTURE. H. Fohl1, M. Ahmad1, A. Torky1 and R. J. Scheube1. 2Environmental Toxicology, Martin Luther University, Halle / Saale, Germany and 1Cardiothoracic Surgery, Martin Luther University, Halle / Saale, Germany.

#1066 Poster Board Number ................................................. 225 GENOTOXICITY OF SINGLE-WALL AND MULTI-WALL CARBON NANOTUBES IN VITRO. K. Savolainen1, H. Lindberg1, G. Falck1, H. Järventaus1, S. Suohon2, J. Catalonia2, M. Vippola3, E. Vanhala1 and H. Norppa1. 1Finnish Institute of Occupational Health, Helsinki, Finland and 2University of Zaragoza, Zaragoza, Spain and 3Tampere University of Technology, Tampere, Finland.

#1067 Poster Board Number ................................................. 226 MICRONUCLEUS FREQUENCIES AND DNA DAMAGE IN MALE RATS ADMINISTERED METHYLPHENIDATE HCl (RITALIN) FOR 28 DAYS. K. L. Witt1, L. Recio2, S. Avlasevich1, A. Green2, C. Baldetti2, J. Winters2, J. Davis1, W. Caspary3 and C. A. Hobbs4. 1National Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, NC, 2Genetic Toxicology, ILS, Inc., Research Triangle Park, NC and 3Integrative Toxicology, ILS, Inc., Research Triangle Park, NC.

#1068 Poster Board Number ................................................. 227 CYCLOPHOSPHAMIDE AND ETOPOSIDE CANINE STUDIES DEMONSTRATE THE CROSS-SPECIES POTENTIAL OF THE PERIPHERAL BLOOD MICRONUCLEATED RETICULOCYTE ENDPOINT. M. McKeon1, D. Torous1, G. Schmuck2, Y. Xu1, S. Burgess2, S. Avlasevich3, S. Dertinger4 and D. Kirkland1. 1Liont Laboratories, Rochester, NY, 2Covance, Vienna, VA, 3Covance, Harrogate, United Kingdom and 4Bayer HealthCare, Leverkusen, Germany.

#1069 Poster Board Number ................................................. 228 PERFORMANCE CHARACTERISTICS OF A MINIATURIZED AND AUTOMATED IN VITRO MICRONUCLEUS ASSAY. S. Bryce, S. Phonethespwath, S. Avlasevich, S. Raja, J. Bemis and S. D. Dertinger. Lithon Laboratories, Rochester, NY.

#1070 Poster Board Number ................................................. 229 BATTERY OF GENOTOXICITY STUDIES CONDUCTED ON A GROUP OF STRUCTURALLY RELATED NITRILES. S. P. Bhatia, V. T. Polito and A. Api. Research Institute for Fragrance Materials Inc., Woodcliff Lake, NJ.


#1073 Poster Board Number ................................................. 232 MECHANISM(S) OF DNA DAMAGE INDUCTION BY 4-MONOCHLOROBIPHENYL (PCB3) METABOLITES. W. Xie1, L. Robertson2 and G. Ludewig. The University of Iowa, Iowa City, IA.

#1074 Poster Board Number ................................................. 233 MECHANISM OF GENOTOXIC EFFECTS OF SILVER NANOPARTICLES RELATED TO OXIDATIVE STRESS. H. Kim, H. Oh, Y. Park, S. Kang, S. Oh and K. Chung. Sungkyunkwan University, Suwon, South Korea.


#1076 Poster Board Number ................................................. 235 ESTABLISHMENT OF A SIMPLE IN VITRO COMET ASSAY AND ITS VALIDATION. A. Kimura1, H. Sakamoto2, K. Saigo1, T. Sakamoto1, R. Nagata2 and M. Honma1. 1Drug Safety Research Laboratories, Shin Nippon Biomedical Laboratories (SNBL), Ltd., Kagoshima, Japan, 2Division of Genetics and Mutagenesis, National Institute of Health Sciences, Tokyo, Japan and 3Canon Inc., Kanagawa, Japan.

Tuesday Afternoon, March 17

1:00 PM to 4:30 PM

Exhibit Hall

POSTER SESSION: BIOINFORMATICS AND PREDICTION OF TOXICITY

Chairpersons: Ivan Rusyn, University of North Carolina Chapel Hill, Chapel Hill, NC.

Displayed: 1:00 PM–4:30 PM

Author Attended: 2:45 PM–4:30 PM

Poster Board Number ...........................................237


Poster Board Number ...........................................238


Poster Board Number ...........................................239

COMPARISON OF BASELINE AND CHEMICAL-INDUCED DNA DAMAGE IN WISTAR HAN AND FISCHER 344/N RATS, C.A. Hobbs1, L. Recio1, K. Shepard1, C. Baldetti1, J. Winters1, C. Green1, P. Allen1, M. Streicker2, W. Cashary2 and K. Witt2. Genetic Toxicology, ILS, Inc., Research Triangle Park, NC, 1Investigative Toxicology, ILS, Inc., Research Triangle Park, NC and National Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, NC.

Poster Board Number ...........................................240

HIGH CONTENT FLOW CYTOMETRY-BASED MICRONUCLEUS SCORING METHOD IS APPLICABLE TO ATTACHMENT CELL LINES. J. Shi1, S. Bryce2, J. Nicollotte3, M. Diehl1, P. Sonder1, S. Phonomethaphath4, S. Avlasich6, S. Raja4, J. Benis4 and S. D. Dertinger2. 1BioReliance, Rockville, MD, 2Litron Laboratories, Rochester, NY and 3Abbott Laboratories, Abbott Park, IL.

Poster Board Number ...........................................241

PREGNANE X RECEPTOR (PXR) PROTECTS LIVER CELLS AGAINST DNA DAMAGES: EVIDENCE AND MECHANISMS. H. Cui1, X. Gu1, Y. Xia1, C. Naspinski1, S. Ke1, K. Donnelly1 and T. Tian1. 1Veterinary Physiology and Pharmacology, Texas A&M University, College Station, TX and 2Texas A&M University System Health Science Center, Texas A&M University, College Station, TX.

Poster Board Number ...........................................242

FLOW CYTOMETRIC EVALUATION OF MICRONUCLEATED POLYCHROMATIC ERYTHROCYTES IN BONE MARROW AND MICRONUCLEATED RETICULOCYTES IN PERIPHERAL BLOOD FOLLOWING ACUTE AND REPEAT DOSING REGIMEN OF CHEMICALS, D. K. Torous1, J. Shi1 and L. Krsmanovic1. 1BioReliance Corporation, Rockville, MD and 2Litron Laboratories, Rochester, NY.

Poster Board Number ...........................................243

CURCUMIN REGULATES CELL CYCLE PROGRESSION AND DNA REPAIR PROTEINS IN A P53-DEPENDENT MANNER. E. N. Rogers1, G. H. Jiang and J. States, Pharmacology and Toxicology, University of Louisville, Louisville, KY.
Abstract #

#1090
Poster Board Number .............................308

#1091
Poster Board Number .............................309

#1092
Poster Board Number .............................310
BIOCHEMICAL ACTIVITIES OF 320 TOXCAST CHEMICALS EVALUATED ACROSS 231 FUNCTIONAL TARGETS. T. B. Knudsen¹, K. Houck¹, R. Judson¹, A. Singh¹, D. Dix¹ and R. Kavlock¹. ¹ORD / NCCT, U.S. EPA, Research Triangle Park, NC and ²Lockheed Martin, Research Triangle Park, NC.

#1093
Poster Board Number .............................311
NOVEL INFORMATIC APPROACHES TO ANALYZE GENE EXPRESSION DATA WITH THE TOXCAST 320 CHEMICAL LIBRARY IN CULTURES OF PRIMARY HUMAN HEPATOCYTES. A. Beam¹, D. Rotroff¹, K. Pott¹, A. Farmer¹, H. Bondell¹, K. Houck¹, D. Dix¹, R. Judson¹, E. LeCluyse¹ and S. Ferguson¹. ¹CellzDirect, invitrogen corporation, Morrisville, NC, ²National Center for Computational Toxicology (NCCT), U.S. EPA, Research Triangle Park, NC and ³Statistics, North Carolina State University, Raleigh, NC.

#1094
Poster Board Number .............................312
MODE OF ACTION FROM DOSE-RESPONSE MICROARRAY DATA: CASE STUDY USING 8 ENVIRONMENTAL CHEMICALS. J. R. Pirone¹, D. J. Dix², M. DeVito² and I. Shah¹. ¹National Center for Computational Toxicology (NCCT), U.S. EPA, Durham, NC and ²National Health and Environmental Effects Lab. (NHEERL), U.S. EPA, Durham, NC.

#1095
Poster Board Number .............................313
SCREENING FOR CHEMICAL EFFECTS ON NEURONAL PROLIFERATION AND NEURITE OUTGROWTH USING HIGH-CONTENT MICROSCOPY. J. M. Breier¹, N. M. Radio¹, K. Houck, D. J. Dix, W. R. Mundy² and T. J. Stuefer². ¹Toxicology, UNC, Chapel Hill, NC, ²U.S. EPA, ORD, NCCCT, Research Triangle Park, NC, ³U.S. EPA, ORD, NHEERL, NTD, Research Triangle Park, NC and ⁴Cellumen, Inc., Pittsburgh, PA.
Program Description (Continued)

Abstract #  
#1103 Poster Board Number ........................................321 GENERATION OF COMPOUND SPECIFIC PATHWAYS FOR BIOINFORMATICS ANALYSIS OF TOXICOGENOMICS Datasets. Y. Staal1, C. Wierling2, R. Herwig3 and R. Stierum1. 1Toxicology and Applied Pharmacology, TNO Quality of Life, Zeist, Netherlands, 2Max Planck Institute for Molecular Genetics, Berlin, Germany and 3Physiological Genomics, TNO Quality of Life, Zeist, Netherlands. Sponsor: B. Blauwe.  
#1105 Poster Board Number ........................................323 THE COMPARATIVE TOXICOGENOMICS DATABASE: A DISCOVERY TOOL FOR IDENTIFYING CHEMICAL-GENE-DISEASE NETWORKS. A. P. Davis, C. G. Murphy, C. A. Saraceni-Richards, M. C. Rosenstein, T. C. Wiegers and C. Mattingly. Bioinformatics, MDIBL, Salisbury Cove, ME.  
#1106 Poster Board Number ........................................324 GENOME-LEVEL ANALYSIS OF GENETIC REGULATION OF SEX-SPECIFIC GENE EXPRESSION IN MOUSE LIVER. N. Zhao1, D. M. Gatti2, E. J. Chelsey2, L. Lu3 and J. Rucyn4. 1Department of Environmental Sciences and Engineering, UNC-CH, Chapel Hill, NC, 2‘Life Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN, 3Department of Anatomy and Neurobiology, University of Tennessee Health Science Center, Memphis, TN and 4‘Key laboratory of Nerve Regeneration, Nantong University, Nantong, Jiangsu, China.  
#1107 Poster Board Number ........................................325 NOVEL CLASSIFICATION APPROACH FOR BIOMARKER IDENTIFICATION AND CARCINOCENICITY PREDICTION. R. Shah1, D. Mav1, S. Auerbach1 and R. Irwin1. 1SRA International, Durham, NC and 2‘National Toxicology Program, NIEHS, RTP, NC.  
#1108 Poster Board Number ........................................326 DEVELOPMENT OF LIVER TOXICITY KNOWLEDGE BASE (LTKB) TO EMPOWER THE FDA REVIEW PROCESS. M. Chen1, Q. Shi1, L. Guo1, L. Guo1, E. Blam1, S. Dial1, J. Fusco1, Y. Gao1, R. D. Holland1, R. Berger1, L. Schneckenburger1, L. Shi1, L. Yu1, D. Anasappan1, H. Fang1, F. Goodcsaid1, J. Senior1, M. Orr2 and W. Tong2. 1Division of Systems Toxicology, FDA’s NCTR, Jefferson, AR, 2‘Z-tech, the NCTR on-site contractor, jefferson, AR and 3‘The Center for Drug Evaluation and Research, FDA, Silver Spring, MD.  
#1109 Poster Board Number ........................................327 NEW DEVELOPMENTS IN FDA/CDER’S COMPUTATIONAL TOXICOLOGY PROGRAM. N. L. Kruhlak1, E. J. Matthews1, L. G. Valerio1, B. L. Minnie12, W. Liu12, T. Dao12 and R. Benz2. 1CDER/OPS/SRS/ICSAS, Food and Drug Administration, Silver Spring, MD and 2GlobalNet Services, Rockville, MD.  
#1110 Poster Board Number ........................................328 COMPUTATIONAL PREDICTION OF THE HUMAN METABOLISM OF HEPATOTOXIC DRUGS. L. G. Valerio1, E. J. Matthews, N. L. Kruhlak and R. Benz, 1CDER / OPS / SRS / ICSAS, Food and Drug Administration, Silver Spring, MD.  
#1111 Poster Board Number ........................................329 COMPUTATIONAL PREDICTION OF THE CARCINOGENICITY OF PESTICIDES. E. J. Matthews and L. G. Valerio1, 1CDER / OPS / SRS / ICSAS, Food and Drug Administration, Silver Spring, MD.  
#1112 Poster Board Number ........................................330 USING QSAR TO PREDICT ADVERSE EFFECTS OF ALKALOIDS IN BOTANICAL PRODUCTS. C. D. Ellison12, E. J. Matthews1, A. Nguyen-Phe1, N. L. Kruhlak1, B. L. Minnie12, L. G. Valerio1 and R. Benz1. 1CDER/OPS/SRS/ICSAS, Food and Drug Administration, Silver Spring, MD, 2CDER/OPS/OTR/DQOR, Food and Drug Administration, Silver Spring, MD and 3GlobalNet Services, Rockville, MD.  
#1113 Poster Board Number ........................................331 PREDICTING MAXIMUM TOLERATED DOSE USING STRUCTURE-BASED SIMILARITY SEARCHING AND DOSE VS. EXPOSURE TIME DATA. W. Liu1, T. Dao1, E. J. Matthews1, N. L. Kruhlak1, B. L. Minnie2, L. G. Valerio1 and R. Benz1. 1CDER / OPS / SRS / ICSAS, Food and Drug Administration, Silver Spring, MD and 2GlobalNet Services, Rockville, MD.  
#1114 Poster Board Number ........................................332 ADVERSE EFFECTS OF PHARMACEUTICALS: CONSTRUCTION OF A RELATIONAL DATABASE OF IMMUNOLOGICAL AND PULMONARY ADVERSE EFFECTS USING FDA ARCHIVES, PHARMAPENDIUM, AND PUBLIC SOURCES. R. Benz1, T. Dao12, W. Liu12, E. J. Matthews1, N. L. Kruhlak1, B. L. Minnie2, L. G. Valerio1, 1CDER / OPS / SRS / ICSAS, Food and Drug Administration, Silver Spring, MD and 2GlobalNet Services, Rockville, MD.  
#1115 Poster Board Number ........................................333 PREDICTION OF HUMAN ADVERSE IMMUNOLOGICAL AND PULMONARY EFFECTS USING MC4PC, BIOEPITESTE, AND PREDICTIVE DATA MINER SOFTWARE PROGRAMS. T. Dao1, W. Liu1, E. J. Matthews1, N. L. Kruhlak1, B. L. Minnie12, L. G. Valerio1 and R. Benz1. 1CDER / OPS / SRS / ICSAS, Food and Drug Administration, Silver Spring, MD and 2GlobalNet Services, Rockville, MD.
The title of the document is "Program Description (Continued)". The text describes various sessions and poster boards that are scheduled for the 48th Annual Meeting & ToxExpo™. The sessions cover topics such as the prediction of carcinogenicity, systemic toxicology relationships, mutagenic potential of drugs, and comprehensive risk assessment. The sessions are led by various speakers from different institutions.

For example, one poster board is titled "Prediction of Carcinogenicity and Mutagenic Potential of Drugs" and is led by A. Trotier-Faurion, G. Ouédraogo-Arras, C. Hasselgren, L. Carlsson, and S. Boyer. The poster board discusses the impact of drugs on carcinogenicity and mutagenic potential.

Another session is "Combinatorial QSAR Modeling of Rat Acute Toxicity by Oral Exposure" and is led by M. Easterling, T. M. Martin, D. M. Young, and A. Tropsha. The session explores the modeling of acute oral toxicity in rats.

The sessions are scheduled for Tuesday afternoon, March 17, from 1:00 PM to 4:30 PM in the exhibit hall. The program also includes featured sessions and historical highlights.

The document provides a detailed schedule of the sessions, including the topics, speakers, and abstracts. It also includes information about the poster boards, their titles, and the presenters.

Overall, the document offers a comprehensive overview of the scheduled events, allowing attendees to plan their attendance and participate in sessions that align with their interests.
TEMPORAL STUDY OF ACETAMINOPHEN (APAP) AND S-ADENOSYL-L-METHIONINE (SAME) EFFECTS ON SUBCELLULAR HEPATIC SAME LEVELS AND METHIONINE ADENOSYLTTRANSFERASE (MAT) EXPRESSION. J. Brown1, J. B. Ball1, A. A. Hogsett1, T. Williams2 and M. Valentovic1. 1Pharmacology, Physiology and Toxicology, Marshall University School of Medicine, Huntington, WV and 2University of Charleston, Charleston, WV.

ANALYSIS OF CYTOKINES AND RELATED SIGNALING MOLECULES IN A CO-CULTURE MODEL OF PRIMARY MOUSE HEPATOCYTES AND KUPFERS CELL ACETAMINOPHEN EXPOSURE. C. Tatis-Rios1, D. Ferreira2 and J. Manautou1. 1Science and Technology, Universidad Metropolitana, San Juan, PR and 2Pharmaceutical Science, University of Puerto Rico-Mayaguez, Mayaguez, PR.

INDUCTION OF HEAT SHOCK PROTEIN 70 BY POLAPREZINC INHIBITS ACETAMINOPHEN-INDUCED HEPATOTOXICITY IN MOUSE PRIMARY HEPATOCYTES. T. Nishida1, T. Matsura1, J. Nakada2, Y. Ohta1 and K. Yamada1. 1Department of Pathophysiological and Therapeutic, Tottotti University Faculty of Medicine, Yonganog, Japan, 2Department of Anesthesiology, Aichi Cancer Center Hospital, Nagoya, Japan and 3Department of Chemistry, Fujita Health University School of Medicine, Toyoake, Japan.

MECHANISM OF PROTECTION BY METALLOTHIONEIN AGAINST ACETAMINOPHEN HEPATOTOXICITY. C. Saito, H. Yan and H. W. Jaeschke. Pharmacology, Toxicology & Therapeutics, University of Kansas, Kansas City, KS.


GENE EXPRESSION PROFILES IN LIVERS FROM DICLOFENAC-TREATED RATS REVEAL INTESTINAL BACTERIA-DEPENDENT AND -INDEPENDENT PATHWAYS ASSOCIATED WITH LIVER INJURY. X. Deng1, E. Sparkenbaugh1, M. Liguori2, J. Waring1, E. Blomme3, P. Ganey1 and R. Roth1. 1Michigan State University, East Lansing, MI and 2Abbott Laboratories, Abbott Park, IL.

HEPATOTOXIC INTERACTION OF SULINDAC WITH LIPID A SODIUM CHACRIDE: ROLE OF THE HEMOSTATIC SYSTEM. W. Zou1, S. D. Dev1, E. Sparkenbaugh2, H. S. Younis1, R. A. Roth2 and P. E. Gane3. 1Microbiology and Molecular Genetics, Michigan State University, East Lansing, MI; 2Pharmacology and Toxicology, Center for Integrative Toxicology, Michigan State University, East Lansing, MI and 3Pfizer Global Research and Development, Drug Safety R&D, San Diego, CA.
Abstract #          Abstract #
#1140               #1147
Poster Board Number ..............................................405 POSTER BOARD NUMBER ..............................................412
THE ROLE OF ETHANOL METABOLISM IN EFFECTS OF PERINATAL
ALCOHOL-INDUCED HEPATOTOXICITY, EXPOSURE TO A COMMERCIAL
M. J. Ronis1, M. Ferguson1, K. Hale1, T. Fletcher1, POLYBROMODIPHENYLELHER (PBDE)
J. Badeaux1, M. Blackburn1, S. Korourian1, and T. M. BADGER1, 'Arkansas Children’s Nutrition Center,
BADGER1, 'Arkansas Children’s Nutrition Center,
University of Arkansas Medical Sciences, Little University of Arkansas Medical Sciences, Little
Rock, AR and Pathology, University of Arkansas Swiss, AR.
Medical Sciences, Little Rock, AR.
#1141               #1148
Poster Board Number ..............................................406 POSTER BOARD NUMBER ..............................................413
NRF2 DELETION IMPAIRS GLUCOSE ROLE OF METALLOTHIONEIN
TOLERANCE AND EXACERBATES INDUCTION IN HEPATOPROTECTION
HYPERGLYCEMIA IN TYPE 1 DIABETIC AGAINST CARMUSTINE TOXICITY
MICE. L. M. Alekseyev1, S. A. Reisman1, R. L. IN NORMAL AND GLIOMA-BEARING RATS. K. 
Yeager2, M. J. Goodkin2 and C. D. Klussien1. Alharbi, G. Helal and S. Albakheet. Pharmacology,
'Pharmacology, Toxicology, and Therapeutics, King Saud University, Riyadh, Saudi Arabia.
University of Kansas Medical Center, Kansas City,
KS and 'Pathology, Schering-Plough Research
Institute, Lafayette, NJ.
#1142               #1149
Poster Board Number ..............................................407 POSTER BOARD NUMBER ..............................................414
ROSIGLITAZONE/METFORMIN HEPATOPROTECTIVE EFFECTS OF
(AVANDAMET)® INCREASES SELECT WATER-SOLUBLE PARP-1
MITOCHONDRIAL BIOGENESIS IN INHIBITORS. J. D. McCluskey, S. C. Harbison,
GOTO-KAKIZAKI RATS: BIOENERGETIC D. Sava and R. D. Harbison. Environmental
CONSEQUENCES FOR DIABETES, C. M. Occupation Health, University of South Florida,
Palmeira, A. Gomes, A. Varela, J. Soeito, F. Duarte Tampa, FL.
and 'R. J. Rolo. Center for Neurosciences and Cell
Biology, Mitolab, University of Coimbra, Coimbra, Portugal.
#1143               #1150
Poster Board Number ..............................................408 POSTER BOARD NUMBER ..............................................415
OVARIAN HORMONES SENSITIZE THE POSSIBLE ROLES OF METABOLIC
THE LIVER TO HALOTHAINE-INDUCED ACTIVATION IN 1-BROMOPROPANE-
HEPATOTOXICITY IN FEMALE MICE. A. HEPATOTOXICITY. S. Shin, S.
E. MacDonald1, C. M. Duggan1, R. A. Roth1 and P. E. Lee, J. Kim, Y. Seo, J. Choi, M. Kang and T. Jeong. 
Ganey1. 1Pharmacology and Toxicology, Michigan Environmental
State University, East Lansing, MI and 2Cell and
Molecular Biology, Michigan State University, East
Lansing, MI.
#1144               #1151
Poster Board Number ..............................................409 POSTER BOARD NUMBER ..............................................416
DEPLETION OF MOUSE KUPFFER CELLS THE NON-GENOTOXIC
BY CLODRONATE LIPOSOMES VERSUS HEPATOCARCINOCEN PHENOBARBITAL
GADOLINIUM CHLORIDE TREATMENT: ALTERS MICRORNA EXPRESSION IN THE
DIFFERENTIAL GENE EXPRESSION MALE FISCHER RAT. C. Kourias1, J. Wright2,
ANALYSIS. M. A. O’Connor1, S. N. Campion1, P. H. R. Currie2 and N. Gooderham1. 1Biomolecular
H. Koca-Taylor1, M. P. Lawson1 and J. E. MEDICINE, Imperial College London, London, United
Manuatu1. 1Department of Pharmaceutical Sciences, State University, East Lansing, MI and 2Human Safety, Syngenta, Bracknell,
University of Connecticut, Storrs, CT and 3Pfizer Inc, Groton,
Gyeongbuk, South Korea.
#1145               #1152
Poster Board Number ..............................................410 POSTER BOARD NUMBER ..............................................417
AMIODIAQUINE-INDUCED LIVER TROVAFLOXacin AND TUMOR NECROSIS
TOXICITY IN THE RAT. P. Cai and J. Uetrecht. FACTOR & SYNERGIZE TO CAUSE
Faculty of Pharmacy, University of Toronto, Toronto,
LIVER INJURY IN A MURINE MODEL OF CANCER
ON, Canada.
#1146               #1153
Poster Board Number ..............................................411 POSTER BOARD NUMBER ..............................................418
MITOCHONDRIA-MEDIATED LIVER ACUTE EFFECTS OF ORAL EXPOSURE TO
INJURY INDUCED BY FLUTAMIDE MIDDLE EAST PM10 DUST ON SYSTEMIC
IN HETEROZYGOUS SOD2+/- MICE. R. Hypoxia-Induced Oxidant Stress
Kashimshetty1, V. G. Desai1, T. Lee1, C. L. Moland2, in the Livers of Newborn Mouse
W. S. Branhant1, L. S. New1, E. C. Chan1 and U. A. PUPS1, 2, T. E. Tippie1, 2, L. D. Nel21
Boelsterli1. 1Department Pharmaceutical Sciences, and S. E. Welty2. 1Center for Perinatal Research, 
University of Connecticut, Storrs, CT, ‘Division The Research Institute at Nationwide Children’s Hospital,
Systems Toxicology, NCTR, Jefferson, AR, 2Department Columbus, OH and 2Department of Pediatrics, The
Information and Mathematics, Korea Ohio State University, Columbus, OH.
University, Jochiwon, South Korea and 2Department
Pharmacy, National University of Singapore,
Singapore, Singapore.
#1154
ACUTE EFFECTS OF ORAL EXPOSURE TO MIDDLE EAST PM10 DUST ON SYSTEMIC
PARAMETERS IN LABORATORY MOUSE (MUS MUSCULUS). V. Mokashi1, D. Wagner1, A.
Olabis1, D. Carson1, G. Babcock1, P. G. Gunasekar1 and G. Chapman1. Naval Health Research
Center Detachment Environmental Health Effects Laboratory, Wright-Patterson AFB, Dayton, OH and
‘Surgery, University of Cincinnati, Cincinnati, OH.
Program Description (Continued)

Abstract #

#1155 Poster Board Number ............................................. 420

COMPRIMISED KUPFER CELLS COULD LEAD TO TCE-MEDIATED SLE-LIKE DISEASE, S. Konrad-gantzi1, P. J. Boo1, M. Khan1, R. Konig1, B. S. Kaphalia2 and G. Ansari1,2. 1biochemistry and Molecular Biology, UTMB, Galveston, TX; 2pathology, UTMB, Galveston, TX and 1microbiology and immunology, UTMB, Galveston, TX.

#1156 Poster Board Number ............................................. 421

LIPIDOMICS OF ALCOHOL-INDUCED FATTY LIVER. H. Fernando1, S. Konrad-gantzi1, K. K. Bhopale1, M. Neerathilingam1, D. E. Volk2, B. S. Kaphalia1, B. A. Luzon1, P. J. Boo1 and G. A. Ansari1,2. 1Pathology, UTMB, Galveston, TX and 2biochemistry and Molecular Biology, UTMB, Galveston, TX.

Tuesday Afternoon, March 17
1:00 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: PESTICIDE—TOXICITY
Chairperson(s): Timothy J. Shafer, U.S. EPA, Research Triangle Park, NC.

Displayed: 1:00 PM—4:30 PM

Author Attended: 1:00 PM–2:45 PM

#1157 Poster Board Number ............................................. 431

UPTAKE AND METABOLISM OF INHALED SULFURYL FLUORIDE (SO2F) AND URINARY EXCRETION OF FLUOROSULFATE (FSO3) AND FLUORIDE (F) IN RATS. J. A. Hotchkiss1, S. M. Krieger1, D. L. Rick1, D. A. Markham1, F. Zhang1, M. J. Bartels1 and D. L. Eisenbrandt1. The Dow Chemical Company, Midland, MI and 1Dow AgroSciences, LLC, Indianapolis, IN.

#1158 Poster Board Number ............................................. 432

KINETICS OF CARBARYL BIOTRANFORMATION BY FRESHLY ISOLATED SPRAGUE-DAWLEY RAT HEPATOCYTES. G. L. Keidt ters1, M. You1, Y. Tan1 and H. J. Clewell1. Independent Consultant, Chapel Hill, NC and 1The Hamner Institutes for Health Sciences, RTP, NC.

#1159 Poster Board Number ............................................. 433

DEVELOPMENTAL EXPOSURE TO AMITRAZ ALTERS THE DOPAMINE SYSTEM. M. R. Martinez-Larrañaga, J. Del Pino, M. A. Martinez, M. J. Díaz and A. Anadon. 1Faculty of Veterinary Medicine, Universidad Complutense, Madrid, Spain.

#1160 Poster Board Number ............................................. 434

OCUPATIONAL PESTICIDE EXPOSURE OF COUNTRY RESIDENTS AND POTENTIAL HEALTH EFFECTS IN CHINA. Z. Zhou. School of Public Health, WHO Collaborating Center for Occupational Health, Fudan University, Shanghai, China.

#1161 Poster Board Number ............................................. 435

A DIETARY DOSE RANGE-FINDING AND TOXICOKINETIC (TK) STUDY OF 2,4-DICHLOROPHENOXACYCETIC ACID (2,4-D) IN ADULT CRL::CD(SD) RATS AND THEIR OFFSPRING: 1. TOXICOKINETICS. S. A. Saghir1, M. S. Marty1, A. J. Clark1, C. L. Zablotnoy1, J. S. Bus1, A. W. Peral1, B. L. Yano1 and R. H. Neal1. The Dow chemical Company, Midland, MI and 1The Weinberg Group, Washington, DC.

#1162 Poster Board Number ............................................. 436

HUMAN HEPATIC CYTOTOXIC P450-SPECIFIC METABOLISM OF CHLORPYRIFOS, PARATHION AND METHYL PARATHION. C. A. Ellis ton, R. J. Foxenberg, B. P. McGarrigle, J. R. Knuck and J. R. Olson. Pharmacology & Toxicology, University at Buffalo, Buffalo, NY.

#1163 Poster Board Number ............................................. 437

METEOXYCHLOR MAY CAUSE TOXICITY THROUGH THE ARYL HYDROCARBON RECEPTOR PATHWAY. M. Basavarajappa, I. Hemandez-Ochoa, R. Gupta and J. Flaws. Veterinary Biosciences, University of Illinois, Urbana, IL.

#1164 Poster Board Number ............................................. 438


#1165 Poster Board Number ............................................. 439

DERMAL ABSORPTION OF PESTICIDE VAPORS. M. H. Dong and S. Beaumais. California Department of Pesticide Regulation, California EPA, Sacramento, CA.

#1166 Poster Board Number ............................................. 440

A PHYSIOLOGICALLY-BASED PHARMACOKINETIC (PBPK) MODEL FOR CYPERMETHRIN IN THE RAT AND HUMAN. X. Zhang1, R. Tornero-Velez1, J. B. Knud1, L. S. Harrison1, R. Goldsmith1, S. Peterson1 and C. C. Day1. 1General Dynamics Information Technology, Henderson, NV, 2NERL, U.S. EPA, Research Triangle Park, NC, 3Department of Pharmacology and Toxicology, SUNYAB, Buffalo, NY and 4NERL, U.S. EPA, Las Vegas, NV.

#1167 Poster Board Number ............................................. 441

EVALUATION OF THE ANTI FUNGAL ACTIVITY OF TWO ANALOGS OF EBSOLEN. B. Bölück1, M. Pietka-Ottl1k, M. Santoro2, S. Nicholson2, J. Miłochowski2 and C. Lau-Carr1. 1Pharmaceutical Sciences, St. John’s University, Jamaica, NY and 2Organic Chemistry, Wrocław University of Technology, Wrocław, Poland.
Abstract #  #1168  
Poster Board Number ...........................................442  
COMPARATIVE CHLORPYRIFOS PHARMACOKINETICS VIA MULTIPLE ROUTES OF EXPOSURE AND VEHICLES OF ADMINISTRATION. J. N. Smith1, J. A. Campbell1, A. L. Busby1, T. S. Poel1, D. B. Barr2 and C. Timchalk1. 1Biological Monitoring and Modeling, Pacific Northwest National Laboratory, Richland, WA and 2National Center For Environmental Health, CDC, Atlanta, GA.

Abstract #  #1181  
Poster Board Number ...........................................449  
OXIDATIVE STRESS AND GENOTOXIC EFFECTS INDUCED BY IN UTERO AND LACTATIONAL EXPOSURE TO ENDOSULFAN ON RAT PITUATORY. A. A. Lafiunte1, T. Cabaleiro1, A. Caride1, B. Fernandez-Perez1 and A. Anadon1. 1Toxicology Laboratory, Faculty of Sciences, Vigo University, Orense Campus, Orense, Spain and 2Department of Toxicology and Pharmacology, Faculty of Veterinary Medicine, Universidad Complutense, Madrid, Spain.

Poster Board Number ...........................................450  
SAFETY DOSSIERS FOR AGROCHEMICALS DON'T NEED A 12-MONTH STUDY IN DOGS, J. Fegert1, R. Billington2, R. Lewis1, K. S. Bentley1, W. Boman1, P. A. Botham2, B. Stuhl2 and B. van Ravenzaa1. 1BASF SE, Ludwigshafen, Germany, 2Dow AgroSciences, Oxon, United Kingdom, 3Syngenta, Bracknell, Berkshire, United Kingdom, 4The DuPont Company, Newark, DE and 5Bayer CropScience SA, Sophia Antipolis, France.

Poster Board Number ...........................................501  
ALLOWABLE DRINKING WATER CONCENTRATIONS FOR NON-RELEVANT METABOLITES OF PESTICIDES—PROPOSAL FOR A HEALTH BASED APPROACH. S. Melching-Kollmann1, W. Dekam2 and F. Kalberlah1. 1BASF SE, Ludwigshafen, Germany, 2Department of Toxicology, University of Würzburg, Würzburg, Germany and 3FoBiG, Freiburg, Germany.

Poster Board Number ...........................................502  
IN VITRO AND IN VIVO ASSESSMENT OF ESTROGENIC ACTIVITY OF THE PYRETHRUID METABOLITES 3-PHENOXYBENZOIC ACID AND 3-PHENOXYBENZYL ALCOHOL. M. Pine, B. Laffin and M. Chavez. Veterinary Integrative Biosciences, Texas A&M University, College Station, TX.

Poster Board Number ...........................................503  
EFFECT OF CYPERMETHRIN (RIPCORD/ CYMBUSH) ON THYROID FUNCTIONS OF ALBINO WISTAR RATS. K. V. Olorunshola1, D. O. Akabnte2 and M. E. Ekamen2. 1Department Of Human Physiology, Faculty Of Medicine, Ahmadu Bello University, Zaria, Kaduna, Nigeria and 2Department Of Physiology And Pharmacology, Faculty Of Veterinary Medicine, Ahmadu Bello University, Zaria, Kaduna, Nigeria and 3Department Of Chemical Pathology, Ahmadu Bello University Teaching Hospital, Ahmadu Bello University, Zaria, Kaduna, Nigeria. Sponsor: C. Ndikuak.

Poster Board Number ...........................................504  
PHARMACOKINETIC EVALUATION OF PERMETHRIN ENANTIONERS IN RAT TISSUES. Y. M. Sev1, R. A. Harrison1, E. M. Ulrich2 and M. J. Devito3. 1NHEERL, US. EPA, Research Triangle Park, NC and 2NERL, US. EPA, Research Triangle Park, NC.

Poster Board Number ...........................................505  
Program Description (Continued)

Abstract #


#1183 Poster Board Number ........................................507 PARAOXONASE I STATUS AND ACTIVITY LEVELS AS RELATED TO RACE AND SEX IN HUMAN POPULATIONS IN THE DEEP SOUTH. H. Coombes1, H. W. Chambers2, J. A. Crow1, E. C. Meek1 and J. E. Chambers1. 'College of Veterinary Medicine, Mississippi State University, Mississippi State, MS and 2Department of Entomology and Plant Pathology, Mississippi State, Mississippi State, MS.

#1184 Poster Board Number ........................................508 EXPOSURE TO PYRETHROIDS AND CONTRIBUTING FACTORS IN RESIDENTS OF URBAN AND RURAL AREAS OF THE PROVINCE OF QUEBEC, CANADA. M. Bouchard, M. Fortin, C. Couture and G. Carrier. Environmental & Occupational Health, Université de Montréal, Montreal, QC, Canada.

#1185 Poster Board Number ........................................509 ADVERSE HEALTH EFFECTS IN PESTICIDE RETAILERS FROM MEXICO. E. Rojas1, I. M. Medina-Díaz2, M. L. Robledo-Marengo, J. B. Velázquez-Fernández, M. I. Girón-Pérez, B. Quintanilla-Vega, M. Fuentes-Reyes1, E. González-Banos1, A. Jarquín-Mendez1 and F. Monroy-Rivera1. Laboratorio de Contaminación y Toxicología Ambiental, Universidad Autónoma de Nayarit, Tepic, Nayarit, Mexico and 1Sección Externa de Toxicología, CINVESTAV-JIPN, México, DF, Mexico.

Tuesday afternoon, March 17
1:00 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: EPIDEMIOLOGY AND EXPOSURE ASSESSMENT

Chairperson(s): Maria E. Gonsebatt Bonaparte, National Autonomous University, Mexico City, Mexico.

Displayed: 1:00 PM–4:30 PM

Author Attended: 2:45 PM–4:30 PM

#1186 Poster Board Number ........................................511 URINARY ARSENIC, ETHNICITY AND SERUM MMP-9: A BINATIONAL STUDY. J. L. Burgess1, M. Kurzius-Spencer1, S. R. Littau1, J. Roberge1, E. Shahar1, M. M. Meza1, M. L. Moir1, L. E. Gutierrez Millan1, M. J. Kopplin1 and R. B. Harris1. 1Mel & Enid Zuckerman College of Public Health, University of Arizona, Tucson, AZ; 2Technological Institute of Sonora, Ciudad Obregón, Mexico; 3Universidad de Sonora, Hermosillo, Mexico and 4College of Pharmacy, University of Arizona, Tucson, AZ.

#1187 Poster Board Number ........................................512 ACTION PLAN OF JAPAN NATIONAL CHILDREN’S STUDY (JNCS), M. Hasegawa1, N. Tsukamoto1, T. Kawamoto2, F. Kawamura3, H. Nitta4, K. Murata5, R. Kishi2 and H. Satoh6. 1The Ministry of Environment, Tokyo, Japan; 2University of Occupational and Environmental Health, Kitakyushu, Japan; 3Tichi Medical School, Shimotsuke, Japan; 4National Institute for Environmental Studies, Tsukuba, Japan; 5Aki University, Aki, Japan; 6Hokkaido University Graduate School of Medicine, Sapporo, Japan and 7Tohoku University Graduate School of Medicine, Sendai, Japan.

#1188 Poster Board Number ........................................513 EXPOSURE TO DIOXINS AND FURANS IN THE POPULATION LIVING NEAR A HAZARDOUS WASTE INCINERATOR: A FOLLOW-UP STUDY. J. L. Domingo, M. Nadal, R. Martí-Cid, F. Garcia and M. Schuhmacher. Toxicology, Rovira i Virgili University, Reus, Spain.

#1189 Poster Board Number ........................................514 BLACK & WHITE SMOKERS OF CIGARETTES EXHIBIT SIMILAR LEVELS OF EXPOSURE BIOMARKERS. M. Hagan Hughes and J. Heck. Scientific Affairs, Lorillard Tobacco Company, Greensboro, NC.

#1190 Poster Board Number ........................................515 A WEIGHT-OF-EVIDENCE APPROACH TO EVALUATING EPIDEMIOLOGICAL DATA ON STYRENE CANCER HAZARDS. J. E. Goodman and L. R. Rhomberg. Gradient Corporation, Cambridge, MA.

#1191 Poster Board Number ........................................516 NO EVIDENCE OF INFECTION WITH AVIAN INFLUENZA AMONG U.S. POULTRY WORKERS, DELMARVA PENINSULA. J. Leibler, E. K. Silbergeld, A. Pekosz2 and G. Gray3. 1Department of Environmental Health Sciences, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD; 2Department of Molecular Microbiology and Immunology, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD and 3Department of Epidemiology, College of Public Health, University of Iowa, Iowa City, IA.

#1192 Poster Board Number ........................................517 DEVELOPMENT OF ENANTIOSELECTIVE POLYCLONAL ANTIBODIES TO DETECT STYRENE OXIDE PROTEIN ADDUCTS. S. Shen1,2,3, F. Zhang2, S. Zeng1, Y. Tian1, X. Chai1, S. Gee1, B. D. Hammock1 and J. Zheng1,2. 1Department of Pharmaceutical Analysis and Drug Metabolism, College of Pharmaceutical Sciences, Zhejiang University, Hangzhou, Zhejiang, China; 2Center of Developmental Therapeutics, Children’s Hospital Research Institute, Seattle, WA; 3Department of Pediatrics, University of Washington, Seattle, WA and 4Department of Entomology, University of California, Davis, Davis, CA.

Program Description (Continued)

Abstract #

#1194

Poster Board Number ......................................519

PRENATAL EXPOSURE TO MERCURY, PARTITIONING OF TOTAL AND ANA IMMUNOGLOBULINS IN MATERNAL AND CORD BLOOD, AND ASSESSMENT OF A BIOMARKER OF MERCURY IMMUNOTOXICITY. J. F. Nyland1,2, S. Wang3, E. C. Santos4, A. Ventura5, J. M. deSouza6 and E.K. Silbergeild7. 1Pathology, Microbiology & Immunology, University of SC School of Medicine, Columbia, SC, 2Environmental Health Sci, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD and 3Fundacao Nacional da Saude, Institute Evandro Chagas, Belem, Brazil.

#1195

Poster Board Number ......................................520

SINGLE NUCLEOTIDE POLYMORPHISMS (SNPs) IN METABOLIC ENZYMES AND THEIR INFLUENCE ON NEUROBEHAVIORAL RESPONSE TO CHRONIC SOLVENT EXPOSURE. H. Qian1, J. Hong2, S. Wang3, N. Fiedler4 and C. Weisel5. 1Exposure Science, EOHSI, Piscataway, NJ, 2Toxicology, EOHSI, Piscataway, NJ and 3Clinical Research and Occupational Medicine, EOHSI, Piscataway, NJ. Sponsor: J. Laskin.

#1196

Poster Board Number ......................................521


#1197

Poster Board Number ......................................522

STATISTICAL AND BIOLOGICAL APPROACH TO INVESTIGATE POSSIBLE RELATIONSHIPS BETWEEN PCB MIXTURES AND ENDOMETRIOSIS. C. Gennings1, E. W. Carney2, R. T. Sabo1, E. Schisterman1 and G. M. Buck Louis1. 1Biostatistics, Virginia Commonwealth University, Richmond, VA, 2Tox&Env Research and Consulting, The Dow Chemical Company, Midland, MI and 3Epidemiology Branch, NICHD, Rockville, MD.

#1198

Poster Board Number ......................................523

EXPOSURE TO POLYCHLORINATED BIPHENYLS (PCBs) AMONG AFRICAN AMERICAN NEONATES. B. L. Williams and M. S. Magambou. NCEH, Centers for Disease Control, Atlanta, GA. Sponsor: D. Barr.

#1199

Poster Board Number ......................................524


#1200

Poster Board Number ......................................525

WATER ADHERENCE FACTORS FOR HUMAN SKIN. J. Gajala1, D. Proctor1, S. Sun1 and J. Fedorak1. 1Health Sciences, Exponent, Inc., Irvine, CA and 2Health Sciences, Exponent, Inc., New York.

#1201

Poster Board Number ......................................526

CRYPTOSPORIDIUM EXPOSURE AND RECREATIONAL WATER CONTACT IN PERSONS WITH HIV/AIDS IN BALTIMORE, MARYLAND. C. C. McOliver, E. K. Silbergeld and T. K. Graczky. Environmental Health Sciences, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD.

#1202

Poster Board Number ......................................527

BISPHENOL A EFFECTS ON GENE EXPRESSION OF ADIPOKINES. C. Lin1, C. Chuang1, J. Chen2 and C. Chou3. 1Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan, 2Veterinary Medicine/National Chung-Hsing University, Taichung, Taiwan and 3Environment Engineering and Health, Yuanpei University, Hsinchu, Taiwan.

#1203

Poster Board Number ......................................528

TURNING A BLIND EYE ON SMOKING DURING PREGNANCY—NICOTINE METABOLITES IN URINE OF PREGNANT WOMEN. H. Käfferlein1, H. Koch2, M. Kumbartschi1 and T. Brüning2. 1BGFA, Ruhr University Bochum, Bochum, Germany and 2University Duisburg/Essen, Essen, Germany.

#1204

Poster Board Number ......................................529

ORGANOPHOSPHATE PESTICIDE RESIDUES IN HOME ENVIRONMENT DUST OF ORCHARD WORKERS. W. C. Griffith1, G. D. Coronado1, B. Thompson1, E. M. Vigoren1 and E. M. Faustman1. 1Univ of Washington, Seattle, WA and 2Fred Hutchinson Cancer Research Center, Seattle, WA.

#1205

Poster Board Number ......................................530

A META-ANALYSIS OF THE RELATIONSHIP BETWEEN OCCUPATIONAL EXPOSURE TO HEXAVALENT CHROMIUM AND CANCERS OF THE GASTROINTESTINAL TRACT. N. M. Gatto1, M. Kels2, D. Ha Mail3, M. Suh1 and D. M. Proctor1. 1Exponent, Irvine, CA and 2Exponent, Menlo Park, CA.

#1206

Poster Board Number ......................................531

URINARY AFLATOXIN M1 AND 1-HYDROXYPYRENE LEVELS IN A U.S. POPULATION COMPARED TO A HIGH RISK POPULATION IN GHANA. N. M. Johnson1, D. Tietze1, A. Marroquin-Cardona2, A. Robinson1, J. Taylor1, E. Afriyie-Gyawu1, M. Rodriguez2, L. Kaufman1, K. Cunningham1, J. Wittmer2, F. Guerra2, K. C. Donnelly1, J. Wang1 and T. D. Phillips1. 1College of Veterinary Medicine, Texas A&M University, College Station, TX, 2San Antonio Metropolitan Health District, San Antonio, TX and 3College of Public Health, The University of Georgia, Athens, GA.

#1207

Poster Board Number ......................................532

ETIOLOGICAL CHARACTERIZATION OF EMERGENCY DEPARTEMENT ACUTE POISONING. M. Khud1, L. Zhu1, A. Downey3, G. T. Johnson1 and R. D. Harbison1. 1Environmental Occupational Health, University of South Florida, Tampa, FL, 2Department of Emergency Medicine, Rosalind Franklin University of Medicine and Science/Chicago Medical School, Chicago, IL and 3School of Policy Studies, Roosevelt University, Chicago, IL.


POLYCYCLIC AROMATIC HYDROCARBON (PAH)-DNA ADDUCTS, CHROMOSOMAL ABERRATIONS, AND CYP1A1 AND GSTM1 RISK VARIANTS IN PERIPHERAL BLOOD LYMPHOCYTES FROM YOUNG ADULTS LIVING IN MEXICO CITY. W. A. García1, A. Chagoya2, K. Carrasco3, F. Peterson1, L. Azenjo1, R. Campos1, J. Rubio1, C. Castro1, M. C. Poirier1 and 2ChemRisk, Inc., San Francisco, CA.

PILOT STUDY OF PERCHLORATE EXPOSURE IN LACTATING WOMEN IN AN URBAN COMMUNITY IN NEW JERSEY. M. Borjan1, B. C. Blount2, S. Marcella1 and M. G. Robson1. 1UMDNJ - School of Public Health, New Brunswick, NJ and 2Peking University, Beijing, China.

A TALE OF ONE CITY: AIR POLLUTION AND THE BEIJING OLYMPICS. L. Chen1, J. Hwang2, X. Guo2, M. Zhong1, Q. Qu1, J. Zhang1 and Q. Sun1. 1Environ Med, NYUSOM, Tuxedo, NY, 2Occup and Environ Health Sci, Peking U School of Public Health, Beijing, China, 3Inst Statistical Sci, Academia Sinica, Taipei, Taiwan.

TOXICITY OF AMBIENT PM COLLECTED IN BEIJING AND TIANJIN DURING AND AFTER THE 2008 OLYMPICS. T. Gordon1, L. Chen2, J. Zhang3, J. Wang4, Z. Bai1, Y. Shang1, F. Tian1 and T. Zhu1. 1NYU School of Medicine, Tuxedo, NY, 2Nankai University, Tianjin, China, 3Peking University, Beijing, China and 4UMDNJ, Piscataway, NJ.

USE OF MULTIPLE LINES OF EVIDENCE FOR EVALUATING A VAPOR INTRUSION SCENARIO—CASE STUDIES. S. Roy-Semmen1, C. Y. Jeng1 and G. A. Pollock2. 1Department of Toxic Substances Control, California Environmental Protection Agency, Cypress, CA and 2Department of Toxic Substances Control, California Environmental Protection Agency, Sacramento, CA.

THE ROLE OF PM SIZE AND COMPOSITION ON THE CELLULAR TOXICITY INDUCED BY SAMPLES FROM AN ARID REGION CITY. A. R. Osorio-Vargas1, J. Serrano2, L. Rojas Bracho3, G. Flores1, M. Zak1, J. Miranda1, I. Vazquez1, Y. Sanchez2, C. Garcia3, M. A. Reyna4, M. Quintero5, T. Lopez6 and I. Rosas7. 1Inv Basica, 1Nat Cancerologia, SSA, Mexico, DF, Mexico, 2Fac Ciencias, UNAM, Mexico, DF, Mexico, 3ISE, SEMARNAT, Mexico, DF, Mexico, 4Inst Fisica, UNAM, Mexico, DF, Mexico, 5CCA, UNAM, Mexico, DF, Mexico and 6Inst Ingenieria, AUBC, Mexico, Baja California, Mexico.

HUMAN BIOMONITORING IN THREE AGE GROUPS, RESULTS OF THE FLEMISH ENVIRONMENTAL & HEALTH SURVEY (FLESH 2002–2006). G. Schoeters1,2, E. Den Hond1, G. Koppen1, E. Govarts1, V. Nelen1, K. Desager1, M. Viaene1,2, G. Vermeir1, L. Bruckers1, M. Viaene1,2, G. Vermeir1, L. Bruckers1, 3. 1CDI Section, National Cancer Institute, NIH, Bethesda, MD, 2Inv Basica, 1Nat Cancerologia, SSA, Mexico, DF, Mexico, 3ENSBI, Institute of Environmental Health and Safety, Ministry of Education, Shanghai, China. Sponsor: B. De Wever.

ISOLATION AND IDENTIFICATION OF ANTIBIOTIC RESISTANT BACTERIA FROM MANHATTAN BEACH, NY. S. M. Jeanlouis1, T. Osmondson1 and C. Bolnet2. 1EnvMed, NYUSOM, Tuxedo, NY and 2Environ & Occup Health, University of WA, Seattle, WA.

DECREASED NITRITE AND NITRATE IN BREATH CONDENSATE FOLLOWING DRASTIC REDUCTIONS IN AIR POLLUTION DURING THE BEIJING OLYMPICS. H. Kipin1, J. Gong1, D. Rich1, W. Huang1, G. Wang2, P. Zhu1, Y. Wang1, X. Shuo1, T. Zhu1 and J. Zhang1. 1University of Medicine and Dentistry of New Jersey, Piscataway, NJ and 2Peking University, Beijing, China. Sponsor: D. Laskin.

THE ESTROGENIC EFFECT OF ORGANIC EXTRACT FROM SOURCE WATER OF X CITY IN CHINA. X. Wang1,2, W. Qu1,2, Y. Zhang1,2, G. Zhang1,2, L. Yin1,2, S. Jiang1,2 and H. Zhu1,2. 1Department of environmental health, School of public health, Fudan University, Shanghai, China and 2Key laboratory of public health safety, Ministry of education, Shanghai, China. Sponsor: T. Zhou.
Program Description (Continued)

Abstract #
Tuesday Afternoon, March 17
1:30 PM–2:30 PM
Room 336

EXHIBITOR HOSTED SESSION: ENVIRONMENTAL HEALTH AND TOXICOLOGY PROGRAM RESOURCES
Presented by: National Library of Medicine
The National Library of Medicine will present an overview of the Environmental Health and Toxicology Program resources. Resources include TOXNET, databases on toxicology, hazardous chemicals, environmental health, and toxic releases. Search techniques will be demonstrated highlighting the Dietary Supplements Labels Database and the Drug Information Portal.

Tuesday Afternoon, March 17
1:30 PM–2:30 PM
Room 337

EXHIBITOR HOSTED SESSION: NTP CRITERIA FOR HAZARD IDENTIFICATION ON NON-CANCER STUDIES
Presented by: National Toxicology Program (NTP)
The National Toxicology Program (NTP) uses specific criteria to describe the strength of the evidence for conclusions for substances tested in its cancer bioassay. The program has now developed similar criteria for reaching conclusions from NTP immunotoxicology, reproductive toxicology, and developmental toxicology studies that will be presented at this session.

Tuesday Afternoon, March 17
1:30 PM–2:30 PM
Room 338

EXHIBITOR HOSTED SESSION: REGULATORY AND SCIENTIFIC ISSUES THAT IMPACT THE DEVELOPMENT OF BIOTHERAPEUTICS
Presented by: Covance
The preclinical development of a biotherapeutic requires the consideration of many factors that relate to the scientific and regulatory challenges faced. Of critical importance are the areas of manufacturing, characterization and purification, preclinical study design and selection of the relevant toxicology species, assay development and immunogenicity testing. Learn more about the critical considerations that will contribute to the success of your biotherapeutic development program.
#1221 1:35 WHALES AS SENTINELS FOR HUMAN HEALTH: A GLOBAL ASSESSMENT OF CHROMIUM POLLUTION. J. P. Wise1,2,3, S. Kraus2, R. Payne1, S. S. Wise1, J. Kerr1, C. LaCerte1, J. Wise1, C. Gianios1, F. Shaffiey1, M. Grau1, T. Li Chen1, C. Perkins1, W. Thompson1, Y. Zhang1, C. Zhu1 and T. O'Hara1. 1Wisconsin Environmental and Genetic Toxicology, Maine Center for Toxicology and Environmental Health, Applied MediSciences, University of Southern Maine, Portland, ME, 2Edgerton Research Laboratory, New England Aquarium, Boston, MA, 3Center for Environmental Sciences and Engineering, University of Connecticut, Storrs, CT, 4Yale University, New Haven, CT and Institute of Arctic Biology, University of Alaska, Fairbanks, AK.

#1222 2:07 RELATIVE TOXICITY OF METAL NANO PARTICLES TO DEVELOPING ZEBRAFISH. R. L. Tanguay2, S. L. Harper1, L. Duong1 and K. S. Saili2. 1Department of Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR and 2Department of Environmental and Molecular Toxicology and the Environmental Health Sciences Center, Oregon State University, Corvallis, OR.

#1223 2:39 COMPARATIVE TOXICITY OF SILVER NANO PARTICLES IN HUMAN, MARINE MAMMAL AND FISH CELLS. S. S. Wise1,2, M. D. Mason1, F. Shaffiey1, T. Li Chen1, B. Goodale1, C. LaCerte1, G. Craig1, R. Walter1, R. Payne1, J. Wise1, C. Kraus1 and J. P. Wise1,2,3. 1Wisconsin Environmental and Genetic Toxicology, Maine Center for Toxicology and Environmental Health, Applied Medical Sciences, University of Southern Maine, Portland, ME, 2Ocean Alliance, Lincoln, MA, 3The Department of Chemical and Biological Engineering, Institute for Molecular Biophysics, University of Maine, Orono, ME, 4Texas State University, San Marcos, TX and 5Edgerton Research Laboratory, New England Aquarium, Boston, MA.

#1224 3:11 ZEBRAFISH MODEL FOR UNDERSTANDING METHYLMERCURY DEVELOPMENTAL NEUROTOXICITY. M. J. Carvan1,2, Q. Liu1, D. N. Weber1 and M. L. Rise1. 1Great Lakes WATER Institute, University of Wisconsin-Milwaukee, Milwaukee, WI, 2Children’s Environmental Health Institute, University of Wisconsin-Milwaukee, Milwaukee, WI and 3Memorial University, St. John’s, NF, Canada.

#1225 3:43 IMMUNOTOXICITY OF PCBs, AN EXAMPLE OF MARINE MAMMALS AS SENTINELS FOR HUMAN HEALTH? S. De Guise. University of Connecticut, Storrs, CT.

Abstract #

Tuesday Afternoon, March 17
1:30 PM to 4:15 PM
Room 314

EPIGENETICS

SYMPOSIUM SESSION: MAMMALIAN RETROTRANSPOSITIONAL ELEMENTS: EPIGENETIC REGULATION, SPECIES DIFFERENCES, AND POTENTIAL ROLES AS MEDIATORS OF CELLULAR RESPONSES TO TOXIC STRESS

Chairperson(s): Richard D. Storer, Merck & Co., Inc., West Point, PA and Chunhua Qin, Merck & Co., Inc., West Point, PA.

Endorsed by:
Carcinogenesis Specialty Section
Mechanisms Specialty Section
Regulatory and Safety Evaluation Specialty Section

Epigenetic regulation of gene expression is being extensively investigated. However, approximately 38 to 47% of the mouse and human genomes respectively are composed of mobile elements (DNA transposons and retrotransposons) whose potential roles in susceptibility to toxicity and disease upon epigenetic dysregulation have not been fully explored. The retrotranspositional elements are the most numerous and complex, having promoter/enhancer activity, protein coding ability, and mutagenic potential and are subject to epigenetic control. Due to their structure and locations, often within, or proximate to genes and their regulation by DNA methylation, these elements can modify gene expression and serve as epigenetic mediators of phenotypic variation in a species and strain-specific manner. In addition, some classes of retrotransposons remain active as mobile elements with the potential to create new somatic mutations involved in cancer and germline mutations with the potential to drive genome evolution and modulate disease susceptibility. In humans, long interspersed nuclear elements (LINE-1) and Alu elements are the two classes of retrotransposons that remain active (mobile) while the less numerous endogenous retrovirus (ERV) LTR retrotransposons have mostly lost this capacity. In contrast, in mice, members of the class of retroviral LTR retrotransposons, in particular intracisternal A particles (IAPs), have retained retrotransposon activity. Germline IAP transpositions in certain mouse strains such as in the Agouti and Axin genes have provided fascinating examples of phenotypic variation mediated by epigenetic mechanisms, namely diet- and/or chemically-induced changes in DNA methylation. Given the large number of these genetic elements, and the species differences in their sequences, activity, and distribution in the genome, further investigation of their potential role(s) in mediating disease processes and cellular responses to endogenous chemicals and xenobiotics is warranted.

#1226 1:30 MAMMALIAN RETROTRANSPOSITIONAL ELEMENTS: EPIGENETIC REGULATION, SPECIES DIFFERENCES, AND POTENTIAL ROLES AS MEDIATORS OF CELLULAR RESPONSES TO TOXIC STRESS. R. D. Storer and C. Qin. Laboratory Sciences and Investigative Toxicology, Merck Research Laboratories, West Point, PA.

#1227 1:35 MAMMALIAN LI RETROTRANSPOSONS ARE POTENTIAL MUTAGENS IN HUMANS. H. H. Kazazian. Department of Genetics, University of Pennsylvania School of Medicine, Philadelphia, PA. Sponsor: C. Qin.
**Program Description (Continued)**

Abstract #

#1228 2:15  **MECHANISMS OF EPIGENETIC REGULATION OF IL1 ELEMENTS IN HUMAN AND MURINE CELLS.** K. S. Ramos, D. E. Montoya, T. Kallfeltsch, V. Srzibinskis, I. Teneng and M. E. Lacy. Department of Biochemistry and Molecular Biology, University of Louisville School of Medicine, Louisville, KY.

#1229 2:55  **GENETICS AND EPIGENETICS OF ENDogenous RETROvIRUSs.** D. Mages1, Y. Zhang2, and D. Reiss3. Terry Fox Laboratory, BC Cancer Agency, Vancouver, BC, Canada and 3Medical Genetics, University of British Columbia, Vancouver, BC, Canada. Sponsor: R. Storer.

#1230 3:35  **INTRACISTERNAL A-PARTICLE (IAP) GENES: DISTRIBUTION IN THE MOUSE GENOME AND POTENTIAL ROLES AS SPECIES-SPECIFIC MEDIATORS OF CELLULAR RESPONSES TO TOXIC STRESS.** C. Qin and R. D. Storer. Laboratory Sciences and Investigative Toxicology, Merck Research Laboratories, West Point, PA.

Tuesday Afternoon, March 17
1:30 PM to 4:15 PM
Ballroom I

**INFLAMMATION AND DISEASE**

**SYMPOSIUM SESSION: THE GOOD, THE BAD, AND THE UGLY OF TOXICANT-INDUCED PULMONARY INFLAMMATION**

Chairperson(s): Lin L. Mantell, St John’s University College of Pharmacy, Queens, NY and Judith T. Zelikoff, New York University School of Medicine, Tuxedo, NY.

Sponsor: Immunotoxicology Specialty Section

Endorsed by: Inhalation and Respiratory Specialty Section

Microbial products and endogenous molecules elaborated following tissue damage can activate cells through pattern recognition receptors. While Toll-Like Receptor (TLR) agonists can induce the expression of IL-1b, IL-18 and IL-33, these cytokines require further proteolytic processing by caspase-1 to be secreted. Caspase-1 is activated when in a multi-protein complex containing intracellular pattern recognition receptors of the NOD-like family, in particular Nalp3, which are stimulated by “danger signals”. Assembly of this complex, termed the inflammasome, relieves the autoinhibitory state of caspase-1 and facilitates the proteolysis of IL-1b, IL-18 and IL-33 into secreted forms capable of orchestrating innate and adaptive immune responses. In support of these roles, asbestos fibers and silica, contact sensitizers, and the adjuvant aluminum hydroxide all activate the inflammasome in their mechanisms of action. Inhalation of a TLR ligand (LPS) and a Nalp3 ligand (ATP or muramyl dipeptide) induces IL-1b and IL-33 mRNA expression, IL-1b cleavage, and the release of mature IL-1b protein. In vitro studies demonstrated that inhibition of caspase-1 or reactive oxygen species generation prevents IL-1b secretion. The role of the inflammasome in a model of nitrogen dioxide (NO2)-promoted allergic sensitization will be discussed.

#1231 1:30  **INFLAMMASOME ACTIVATION IN PULMONARY DISEASE.** M. E. Porter. University of Vermont, Burlington, VT.


Tuesday Afternoon, March 17
1:30 PM to 4:15 PM
Room 321

**BIOMARKERS**

**WORKSHOP SESSION: IMPROVED SAFETY BIOMARKERS FOR MONITORING KIDNEY INJURY**

Chairperson(s): Frank D. Sistare, Merck and Co., Inc., West Point, PA and Frank Dieterle, Novartis Pharma AG, Basel, Switzerland.

Sponsor: Regulatory and Safety Evaluation Specialty Section

Endorsed by: Comparative and Veterinary Specialty Section

Drug Discovery Toxicology Specialty Section

Toxicologic and Exploratory Pathology Specialty Section

A number of accessible biomarkers are becoming available to toxicologists and to clinicians as qualified tools that have demonstrated their ability to out-perform BUN and serum creatinine for monitoring the early onset of certain drug induced kidney pathologies. These tools are beginning to positively impact the development of drug candidates that may present with low grade kidney toxicities in first-in-human enabling GLP animal toxicity studies, especially when observed in a single species, and human irrelevance cannot otherwise be adequately assured. The biomarkers are showing utility not only for monitoring drug safety, but also for interrogating kidney disease progression and regression. Animal toxicology studies designed to assess the biological performance of these new safety biomarkers are providing new insights into fundamental aspects of kidney function, and are supporting potential opportunities to establish a positive response to intervention where kidney disease is a target for new therapies. With the positive response received recently from the U.S. FDA and EMEA regarding the acceptability and utility of certain qualified renal safety biomarkers for targeted regulatory applications, the challenge now is to expand the tool box and to define broader uses. Therefore, we should begin by understanding the performance strengths and limitations of the more robust kidney safety biomarkers established across numerous animal toxicology studies, understanding the molecular, cellular, and anatomical bases for kidney biomarker responses...
Program Description (Continued)

Abstract #

observed to chemical toxicities, and describing the research progress to fill the critical research and regulatory gaps and questions that remain. By fully grasping this information we should be able to present the strategy and progress made to bridge from animal studies to human clinical trials where establishing the performance attributes of these biomarkers is far more challenging and finally present clinical data of biomarkers responses to disease and drug-induced kidney injury matching the pre-clinical data and supporting the clinical qualification and utility of these and additional promising clinical biomarkers.

#1237 1:30 IMPROVED SAFETY BIOMARKERS FOR MONITORING KIDNEY INJURY. F. D. Sistare¹ and F. Dieterle². ¹Merck and Co., Inc., West Point, PA and ²Novartis Pharmacology AG, Basel, Switzerland.

#1238 1:45 ONE YEAR AFTER THE FIRST REGULATORY QUALIFICATION OF RENAL BIOMARKERS – LIMITATIONS, OPPORTUNITIES, ADVANCES AND IMPACT ON TOXICOLOGY AND TRANSLATIONAL MEDICINE. F. Dieterle², S. Chibout¹, E. Perentes¹, A. Corder⁴, J. Vonderscher⁵, G. Maurer⁵, J. Ozer⁵, D. Gerhold³, S. Troth¹, F. Sistare and P. Nephrotoxicity Working Group¹. ²Translational Sciences, Novartis, Basel, Switzerland, ³Safety Assessment, Merck Research Laboratories, West Point, PA, ⁴Molecular Medicine Labs, Roche, Basel, Switzerland, ⁵PGRD, Pfizer, Chesterfield, MO and PSTC, C-Path Institute, Tucson, AZ.


#1240 2:45 INTEGRATING ANIMAL WITH CLINICAL DATA TO BEST UNDERSTAND KIM-1 AS A KIDNEY SAFETY BIOMARKER. J. V. Bonventre. Brigham and Women’s Hospital, Harvard Medical School, Boston, MA. Sponsor: F. Sistare.


Tuesday Afternoon, March 17
1:30 PM to 4:15 PM
Room 316

WORKSHOP SESSION: OXIDATIVE STRESS AS A REGULATOR OF NORMAL FUNCTION AND MEDIATOR OF TOXICANT-INDUCED DAMAGE WITH IMPACTS ON REPRODUCTION AND DEVELOPMENT


Sponsor: Reproductive and Developmental Toxicology Specialty Section

Endorsed by: Mechanisms Specialty Section

Responses at the molecular level in cells and tissues. With respect to reproduction, high levels of endogenous antioxidants such as glutathione (GSH) as are normally present in gametes and embryos. As is the case of oxidative stress. To reduce the toxicants and induce membrane lipid peroxidation and DNA damage. In turn, such damage may induce one of the following mechanisms: a contributing factor in human infertility and abnormal pregnancy outcomes. Furthermore, recent evidence indicates that the long-term, low level oxidative stress may impair Leydig cell function with consequent decreases in testosterone secretion, thus contributing to declines in reproductive function with aging. To convey this message recent research findings on the relationship between oxidative stress and reproductive function with emphasis on specific reproductive and developmental toxicants that act in this manner, and whether polymorphisms in genes involved in the oxidative stress pathway that contribute to differential susceptibility will be discussed.

#1243 1:30 OXIDATIVE STRESS AS A REGULATOR OF NORMAL FUNCTION AND MEDIATOR OF TOXICANT-INDUCED DAMAGE WITH IMPACTS ON REPRODUCTION AND DEVELOPMENT. S. P. Nephrotoxicity, ORD, U.S. EPA, Research Triangle Park, NC.

#1244 1:35 SHIFTING CONCEPTS OF OXIDATIVE STRESS: FROM A GLOBAL IMBALANCE TO DISRUPTION OF SPECIFIC REDOX PATHWAYS; FROM FREE RADICAL TO NON-RADICAL MECHANISMS. D. P. Jones. Medicine, Emory University, Atlanta, GA.

#1245 1:55 OXIDATIVE STRESS AND OVARIAN FOLLICULAR ATRESIA. P. J. Devine¹ and U. Luderer². ¹Medicine, University of California Irvine, Irvine, CA and ²INRS-Institut Armand-Frappier, Laval, QC, Canada.

#1246 2:35 OXIDATIVE STRESS AND TESTICULAR FUNCTION. B. Robaire¹, H. Chen¹, G. Delbes², B. F. Hales¹ and B. R. Zirkin¹. ¹Pharmacology and Therapeutics, McGill University, Montreal, QC, Canada, ²Obstetrics and Gynecology, McGill University, Montreal, QC, Canada and ³Biochemistry and Molecular Biology, Johns Hopkins University, Baltimore, MD.


3:55 PANEL DISCUSSION.
Abstract #

Tuesday Afternoon, March 17
1:30 PM to 4:15 PM
Ballroom III

NEURODEGENERATIVE DISEASE

WORKSHOP SESSION: PESTICIDES AND PARKINSON’S DISEASE: IMPLICATIONS OF NEW EPIDEMIOLOGY AND EXPOSURE DATA TO RISK ASSESSMENT


Sponsor: Neurotoxicology Specialty Section

Endorsed by:
Occupational and Public Health Specialty Section
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

Numerous animal and epidemiological studies have suggested a relationship between pesticide exposure and the development of Parkinson’s Disease (PD). Frequently, scientists and the media question whether regulatory processes are sufficiently protective of this potential risk factor. However, there has been relatively little attention paid to the exposure side of the risk equation in the research to date. Furthermore, there is a tremendous need for an improved interface between toxicology and epidemiology. Thus, it is important that we focus our attention on new epidemiology and animal research with an emphasis on the exposure question and the implications of the findings for human health risk assessment. To adequately address these topics, speakers from government, academia and industry with knowledge of different aspects of pesticide risk assessment: toxicology, epidemiology, neurology, pharmacokinetics, and exposure assessment. The session will present new results of two important epidemiological studies on Parkinson’s Disease that evaluate exposure of humans to pesticides, and an animal study that uses PBPK modeling to relate animal models of PD to estimated human exposure levels. The two epidemiological studies that will be presented are the Honolulu-Asia Aging study (HAAS) and the Farm and Movement Evaluation (FAME) Study of the Agricultural Health Study (AHS). In addition, the results of the Farm Family Exposure Study, which focused on exposure assessment to pesticides, will be discussed in relation to the practice of exposure assessment in agricultural worker epidemiologic studies. This session will end in a panel discussion that will be stimulated by two discussants representing industry and government who have specialized expertise in pesticide exposure assessment and have an understanding of the risk assessment processes.

#1249 1:30

PESTICIDES AND PARKINSON’S DISEASE: IMPLICATIONS OF NEW EPIDEMIOLOGY AND EXPOSURE DATA TO RISK ASSESSMENT. T. Levine1 and A. A. Li2. 1Health Effects Division, EPA Office of Pesticides Program, Arlington, VA and 2Health Sciences, Exponent, Inc., San Francisco, CA.

#1250 1:33

A NEUROLOGIST’S BIRD’S EYE VIEW OF KEY RISK FACTORS OF PARKINSON’S DISEASE. J. Langston. Director and CEO, Parkinson’s Institute and Clinical Center, Sunnyvale, CA. Sponsor: A. Li.

Abstract #

HONOLULU-ASIA AGING STUDY (HAAS): RELATIONSHIP OF ORGANOCHLORINE LEVELS WITH PARKINSON’S DISEASE RISK. W. Ross1, E. Pellizzari2, O. A. He3, D. Miller4, J. P. O’Callaghan5, H. Petrovitch6, R. Abbott7, C. Tanner7 and L. White7. 1Veterans Affairs Pacific Islands Health Care System, Pacific Health Research Institute, Honolulu, HI, 2Research Triangle Institute International, RTP, NC, 3Pacific Health Research Institute, Honolulu, HI, 4Centers for Disease Control and Prevention, NIOSH, Morgantown, WV, 5University of Virginia School of Medicine, Charlottesville, VA and 6The Parkinson’s Institute, Sunnyvale, CA.

FARMING AND MOVEMENT EVALUATION STUDY (FAME): PARKINSON’S DISEASE IN PESTICIDE APPLICATORS AND THEIR SPOUSES. F. Kanell1 and C. M. Tanner2. 1National Institute of Environmental Health Sciences, RTP, NC and 2Parkinson’s Institute and Clinical Center, Sunnyvale, CA.

FARM FAMILY EXPOSURE STUDY: BIOMONITORING AND EXPOSURE ASSESSMENT IN AGRICULTURAL POPULATIONS. B. H. Alexander, Division of Environmental Health Sciences, University of Minnesota School of Public Health, Minneapolis, MN. Sponsor: A. Li.

PESTICIDE RISK ASSESSMENT AND ANIMAL MODELS OF PD. A. A. Li1, G. L. Redalies2, S. Warren3 and L. J. McIntosh4. 1Health Sciences, Exponent, San Francisco, CA, 2Independent Consultant, Chapel Hill, NC, 3Exponent International Ltd, Moorstown, NJ and 4Health Sciences, Exponent, Menlo Park, CA.

PANEL DISCUSSION: PESTICIDE EXPOSURE ASSESSMENT. Carol Burns and Kent W. Thomas.

Tuesday Afternoon, March 17
1:30 PM to 4:15 PM
Room 327

WORKSHOP SESSION: SAFETY OF HIGH-INTENSITY SWEETENERS: BITTERSWEET CONTROVERSY

Chairperson(s): Madhu Soni, Soni & Associates, Vero Beach, FL and Charles Thompson, U.S. FDA, Rockville, MD.

Sponsor: Food Safety Specialty Section

Endorsed by:
Association of Scientists of Indian Origin Special Interest Group
Carcinogenesis Specialty Section
Regulatory and Safety Evaluation Specialty Section

The quest for the perfect high-intensity sweetener with a clean, sweet taste, no off-flavor, non-caloric, and no adverse health effects continues. To date, the U.S. Food and Drug Administration (U.S. FDA) has approved five artificial sweeteners: aspartame, acesulfame-K, neotame, and sucralose, in addition to saccharin. Currently, cyclamate is pending FDA approval/re-approval. The agency regulates high-intensity sweeteners as food additives, which must be approved as safe for their intended use before they can be marketed. Although these approved sweeteners have whetted the palates of millions of Americans over the years, the one problem common to all of them has been the controversies over their safety, which have been anything but sweet. Saccharin has been marketed for more than 100 years and repre-
Program Description (Continued)

Abstract #

sents a good example of how the shifting requirements of the law and the progress of science can change a substance’s status from ‘safe’ to ‘unsafe.’ Both the products’ manufacturers and the FDA maintain that the currently approved intense sweeteners are safe for their intended uses. Nevertheless, there are accusations in both the scientific literature and in the popular media about risks posed by these sweeteners. Is there really a cause for concern? To fully understand the issues, it is important to present the current ‘state of the science’ as it relates to safety of the approved sweeteners; discuss the safety of certain sweeteners currently in development and/or approved outside the U.S., explore the evolving regulatory requirements for safety testing of sweeteners. The session will begin with a brief overview of the basic toxicological requirements for sweeteners in general, followed by presentations on specific controversial issues, lessons learned from previously approved sweeteners, concerns related to obesity, and a look at some possible future sweetener developments.

#1255 1:30 SAFETY OF HIGH-INTENSITY SWEETENERS: BITTERSWEET CONTROVERSY. M. G. Soni1 and D. Thompson2.
1Vero Beach Hematology Oncology, Vero Beach, FL and 2CDER/OND, U.S. Food & Drug Administration, Silver Spring, MD.


#1258 2:42 CONTROVERSIES SURROUNDING ASPARTEAME. B. Magnuson. Nutritional Sciences, University of Toronto, Toronto, ON, Canada.


Tuesday Afternoon, March 17
1:30 PM to 4:15 PM
Room 308

PLATFORM SESSION: ADVANCES IN DISPOSITION AND PHARMACOKINETICS

Chairperson(s): David Szabo, University of North Carolina, Chapel Hill, NC and Timothy Fennell, RTI International, Research Triangle Park, NC.

#1261 1:30 ABSORPTION, DISTRIBUTION, AND ELIMINATION OF BROMATE IN FEMALE F344 RATS. X. Zhang1, N. Kolisety1, S. Muralidhara1, R. J. Bull2, O. Quinones3, S. A. Snyder1, J. A. Carruvio4, J. Fisher5 and B. S. Cummings6. 1Pharmacology and Environmental Research, The Dow Chemical Company, Midland, MI and 2The Weinberg Group, Washington, DC.

#1262 1:49 A DIETARY DOSE RANGE-FINDING AND TOXICOKINETIC (TK) STUDY OF 2,4-DI-CHLOROPHENOXOACETIC ACID (2,4-D) IN ADULT CRL:(CD/SD) RATS AND THEIR OFFSPRING: II. TOXICITY. M. S. Marjy1, S. A. Saghir1, C. L. Zablotny1, A. J. Clark1, A. W. Peralta2, B. L. Yano2, J. S. Bus3 and B. H. Neal3. 1Toxicology & Environmental Research, The Dow Chemical Company, Midland, MI and 2The Weinberg Group, Washington, DC.

#1263 2:08 TOXICOKINETICS OF EPHEDRINE AND CAFFEINE FOLLOWING ADMINISTRATION OF EPHEDRINE, CAFFEINE, OR MA HUANG. T. Fennell1, N. L. Gaudette1, B. L. Fletcher1, S. D. Cooper1, R. Fernandez1, J. Dunnick1 and B. J. Collins2. 1RTI International, Research Triangle Park, NC and 2National Institute of Environmental Health Sciences, Research Triangle Park, NC.

#1264 2:27 METABOLISM OF (E2-ETHYLHEXYL) PHthalate (DEHP) IN NEONATAL MALE RHESUS MONKEYS AFTER INTRAVENOUS AND ORAL DOSEING. D. R. Doerge1, N. C. Twaddle1, J. J. James1, P. H. Sitonen2, L. Camacho3, S. Moon4, J. Vostal2 and K. DeLclos3. 1NCTR, FDA, Jefferson, AR and 2Office of Blood Research and Review, CBER, FDA, Rockville, MD.


#1266 3:03 IMPROVED ANALYSIS OF TRICHLOROETHYLENE (TCE) METABOLITES BY GAS CHROMATOGRAPHY (GC). S. Muralidhara and J. V. Bruckner. PBS, University of Georgia, Athens, GA.


#1268 3:39 ALTERED DISPOSITION OF ACETAMINOPHEN IN NRF2-NULL AND KEAP1-KNOCKDOWN MICE. S. A. Reisman1, I. L. Cusanay1 and C. D. Klaassen. University of Kansas Medical Center, Kansas City, KS.

#1269 3:57 USE OF PHARMACOKINETIC MODELING TO EVALUATE GENETIC POLYMORPHISMS IN CARISOPRODOL METABOLISM. T. A. Lewandowski. Health and Nutrition Sciences, Brooklyn College/CUNY, Brooklyn, NY.
**Program Description (Continued)**

Abstract #

Tuesday Afternoon, March 17
1:30 PM to 4:15 PM
Room 307

**PLATFORM SESSION: ADVANCES IN RISK ASSESSMENT SCIENCE**

Chairperson(s): Erik Carlson, General Electric Company, Niskayuna, NY and James M. LaVelle, CDM, Inc., Green Valley, AZ.

#1270 1:30
**COMPARATIVE TOXICOGENOMIC ANALYSIS OF PCB 126 REPS DERIVED FROM PRIMARY HUMAN AND RAT HEPATOCYTES.** E. Carlson1, T. R. Satter2, M. Collin1, S. Goodwin2 and J. Silkworth2. General Electric Company, Niskayuna, NY and the Feinestone Center for Genomic Research, University of Memphis, Memphis, TN.

#1271 1:49
**PAH ANALYTICAL TECHNIQUES AND IMPACTS ON RISK ASSESSMENT.** E. J. Martin, G. O’Sullivan and C. D. Sandau. TRUIM Environmental Solutions Inc., Cochrane, AB, Canada.

#1272 2:08
**SPECIES DIFFERENCES IN HUMAN AND RAT RELATIVE POTENCY VALUES FOR DIOXINS, FURANS AND PCBs ARE CONGENER-SPECIFIC.** C. Sutter1, S. Bodredigani1, T. R. Satter2, E. A. Carlson1 and J. B. Silkworth2. Feinestone Center for Genomic Research, University of Memphis, Memphis, TN and General Electric Company, Niskayuna, NY.

#1273 2:27
**APPLICATION OF NONLINEAR DOSE-RESPONSE METHODS BASED ON MODE OF ACTION FOR POLYCHLORINATED BIPHENYLS (PCBs).** R. E. Keenan1, P. Guwinn1, J. D. Schelf1, E. A. Carlson1 and J. B. Silkworth2. 1AMEC Earth & Environmental, Inc., Portland, ME, 2Emtrix, Houston, TX and General Electric Global Research, Niskayuna, NY.

#1274 2:45
**WEIGHT OF EVIDENCE EVALUATION OF THE MODE OF ACTION FOR PCB-PROMOTED RAT LIVER TUMORS USING THE HUMAN RELEVANCE FRAMEWORK.** R. Golden1, E. Carlson2 and J. Silkworth2. 1ToxLogic LLC, Potomac, MD and 2Global Research Center, General Electric, Niskayuna, NY.

#1275 3:03
**THE RELATIONSHIP BETWEEN THE IC50, TOXIC THRESHOLD, AND THE MAGNITUDE OF STIMULATORY RESPONSE IN BIPHASIC (HORMETIC) DOSE-RESPONSES.** M. A. Nascarella1 and E. J. Calabrese2. 1Gradient Corporation, Cambridge, MA and 2Environmental Health Sciences, University of Massachusetts Amherst, Amherst, MA.

#1276 3:21
**HEALTH RISK ASSESSMENT OF MELAMINE IN DRINKING WATER.** V. S. Bhat, C. J. McElhanan, L. L. Bestervelt and G. L. Ball. NSF International, Ann Arbor, MI.

#1277 3:39
**ARENSEC BIOAVAILABILITY IN SOIL: EVIDENCE FROM IN VITRO AND MICROPROBE STUDIES.** J. M. LaVelle. CDM, Green Valley, AZ.

Abstract #

Tuesday Afternoon, March 17
1:30 PM to 4:15 PM
Room 307

**PLATFORM SESSION: EFFECTS OF INHALED POLLUTANTS—CARDIOPULMONARY TOXICITY**

Chairperson(s): Monica Lind, Karolinska Institutet, Stockholm, Sweden and David Bernstein, Toxicology Consultant, Geneva, Switzerland.

#1278 3:57

#1279 1:30
**THE TRANSLLOCATION AND FATE OF CHRYSOXYLITE ASBESTOS IN COMBINATION WITH FINE PARTICLES FOLLOWING EXPOSURE IN A BIOPERSISTENCE STUDY.** D. M. Bernstein1, K. Donaldson1, D. Schuler2, S. Gaering1, P. Kunzendorf1, J. Chevalier1 and S. E. Holm3. 1Consultant in Toxicology, Geneva, Switzerland, 2University of Edinburgh, Edinburgh, United Kingdom, 3RCC, Itingen, Switzerland.

#1280 1:49

#1281 2:08
**VASCOULAR LIPID PEROXIDATION AND INDICES OF PLAQUE REMODELING ARE PROMOTED BY INHALATION EXPOSURE TO VEHICULAR EMISSIONS, BUT NOT HARDWOOD SMOKE OR A SIMULATED COAL COMBUSTION ATMOSPHERE.** A. A. De Vizcaya-Ruiz1, 2, A. Osorno-Vargas2, M. C. Schladowerle1, J. McGee1 and U. P. Kodavanti2. 1Consultant in Toxicology, Geneva, Switzerland, 2University of Louisville, Louisville, KY.

#1282 2:27
**MECHANISTIC INSIGHTS INTO THE RELATIONSHIP BETWEEN LUNG AND VASCULAR RESPONSES TO AMBIENT PARTICULATE MATTER (PM).** R. F. Thomas1, A. A. De Vizcaya-Ruiz2, A. Osorno-Vargas2, M. C. Schladowerle1, J. McGee1 and U. P. Kodavanti2. 1Consultant in Toxicology, Geneva, Switzerland, 2University of Louisville, Louisville, KY.

#1283 2:45
**ARSENIC INDUCES ENDOTHELIAL ACTIVATION, INFLAMMATION AND Atherosclerotic Lesion FORMATION.** S. E. D’Souza1, S. D. Sithu1, M. A. Siddiqui1, E. N. Vladypkovskaya2, P. Haberzettl1, J. Stites1 and S. Srivastava2. 1Physiology, University of Louisville, Louisville, KY, 2Medicine, University of Louisville, Louisville, KY and 3Pharmacology and Toxicology, University of Louisville, Louisville, KY.
**Program Description (Continued)**

**Abstract #**

#1284 3:03 EXPOSURE TO PARTICULATE AIR POLLUTION IN CHILDHOOD INCREASES SUSCEPTIBILITY TO DIABETES/INSULIN RESISTANCE DEVELOPMENT IN ADULTHOOD. M. Verdini1, Z. Yavar1, G. Mihai1, Z. Ying1, T. Kampfrath1, X. Hong1, A. Wang1, T. R. Williams2, M. Zhong2, L. Chen1, S. Rajagopalan1 and Q. Su1. 1The Ohio State University, Columbus, OH, 2New York University, Tuxedo, NY and 3Dongfeng Hospital, Fuzhou, China.

#1285 3:21 INTERSTRAIN VARIATION IN CARDIAC AND RESPIRATORY ADAPTATION WITH ACUTE PARTICULATE MATTER (PM) AND OZONE (O3) EXPOSURES. A. Hamade1, R. Rabold1 and C. G. Tankersley2. Gradient Corporation, Cambridge, MA and 3Johns Hopkins University, Baltimore, MD.


#1287 3:57 A SINGLE TRANSITION METAL-RICH PARTICULATE INHALATION EXPOSURE ELICITS CONCENTRATION-DEPENDENT CARDIOVASCULAR TOXICITY IN HYPERTENSIVE RATS. A. Farraj1, D. Winsett1, N. Haykal-Coates1, M. Hazarvi1, A. Cart1, A. Ledbetter1 and D. Costa1. Experimental Toxicology Division, U.S. Environmental Protection Agency, Research Triangle Park, NC, 2School of Public Health, University of North Carolina, Chapel Hill, NC and Office of Research and Development, US. Environmental Protection Agency, Research Triangle Park, NC.

**Tuesday Afternoon, March 17**

1:30 PM to 4:15 PM

Room 310

**PLATFORM SESSION: MECHANISMS IN IMMUNOTOXICOLOGY**

Chairperson(s): Courtney Sulentic, Wright State University, Dayton, OH and Robert W. Luebke, U.S. EPA, Research Triangle Park, NC.

#1288 1:30 RESVERATROL (TRANS-3,5, 4'-TRIHYDROXYSTILBENE) PROTECTS THE FETUS FROM THE IMMUNOTOXIC EFFECTS OF TCDD FOLLOWING PERINATAL EXPOSURE BY BLOCKING AHR ACTIVATION. N. Singh, M. Nagarkati and P. Nagarkati. Pathology, Microbiology, and Immunology, Univ of South Carolina School of Medicine, Columbia, SC.

#1289 1:51 ROLE OF NF-κB/REL PROTEINS IN MODULATING THE 3 IgHRR BY LPS AND TCDD. R. Salisbury and C. Sulentic. Wright State University, Dayton, OH.

**Abstract #**

#1290 2:12 GENERATION OF NOVEL “REGULATORY” DENDRITIC CELLS VIA AHR ACTIVATION. J. Bankoti1,2, T. Simonet1,2 and D. M. Shepherd1,2. 1Ctr for Environ Hlth Sci, University of Montana, Missoula, MT and 2Department of Biomedical & Pharmaceutical Sciences, University of Montana, Missoula, MT.

#1291 2:33 PATHWAYS OF PFOA-MEDIATED IMMUNOSUPPRESSION. J. DelWitt, C. Copeland and R. Luebke. 1Pharmacology and Toxicology, East Carolina University, Greenville, NC and 2Immunotoxicology Branch, ETD/NHEERL/ORD/U.S. EPA, RTP, NC.

#1292 2:54 MECHANISMS OF ETHANOL MEDIATED INHIBITION OF TOLL-LIKE RECEPTOR SIGNALING IN MACROPHAGES. K. von Maltzan1 and S. Pruett. 1Department of Basic Sciences, Mississippi State University, Mississippi State, MS and 2Cellular Biology & Anatomy, LSU Health Sci. Center, Shreveport, LA.

#1293 3:15 15D-PGJ2-G, A PUTATIVE METABOLITE OF 2-ARACHIDONYLGLYCEROL, ACTIVATES PEROXISOME PROLIFERATOR ACTIVATED RECEPTOR γ. P. Raman1, B. L. Kaplan1, J. T. Thompson1, J. F. Vandenvel2 and N. E. Kamiński. Center for Integrative Toxicology, Michigan State University, East Lansing, MI and 2Veterinary Science and Biomedical Sciences, Center for Molecular Toxicology and Carcinogenesis, Pennsylvania State University, University Park, PA.

#1294 3:35 SHORT-TERM SODIUM TUNGSTATE EXPOSURE REDUCES THE QUANTITY OF CYTOTOXIC AND HELPER T-CELLS IN C57BL6 MICE AFTER IMMUNE CHALLENGE. A. Osterburg2, D. Carson1, M. Sun1, D. Wagner1, A. Olabisi1, M. Stockelman1, S. Rajagopalan1 and G. Chapman1 and G. Balcock2. 1Department of Navy, Naval Health Research Center Detachment Environmental Health Effects Laboratory, Dayton, OH and 2Shriners Hospitals for Children, University of Cincinnati, Cincinnati, OH.

#1295 3:55 ACTIVATION OF THE TRANSCRIPTION FACTOR, NUCLEAR FACTOR ERYTHROID 2-RELATED FACTOR 2 (NRF2), INHIBITS IFN GAMMA PRODUCTION BY MURINE T CELLS, C. E. Rockwell and C. D. Klaussen. Pharmacology, Toxicology, & Experimental Therapeutics, University of Kansas Medical Center, Kansas City, KS.

**Tuesday Afternoon, March 17**

1:30 PM to 4:15 PM

Room 324

**PLATFORM SESSION: NEW INSIGHTS IN ECOTOXICOLOGY**

Chairperson(s): Louis D. Trombetta, St. Johns University, Jamaica, NY and Vikrant Vijay, North Carolina State University, Raleigh, NC.

#1296 1:30 TRICLOSAN GLUCONIDATION AND SULFONATION IN CHANNEL CATFISH LIVER FRACTIONS. M. O. James and C. J. Marth. Medicinal Chemistry, University of Florida, Gainesville, FL.


Program Description (Continued)

Abstract #

#1297 1:49 TOXICITY AND BIOTRANSFORMATION OF POLYBROMINATED DIPHENYL ETHERS IN AVIAN EMBRYOS, B. A. Rattner1, N. A. McKernan1, R. C. Hale2 and M. Ottinger3. 1Patuxent Wildlife Research Center, U.S. Geological Survey, Beltsville, MD; 2Department of Environmental and Aquatic Animal Health, Virginia Institute of Marine Science, Gloucester Point, VA and 3Department of Animal and Avian Sciences, University of Maryland, College Park, MD.

#1298 2:08 MARINE BIocide COPPER PYRIThione (COPPER 2-PyridinETHiol-1-OxIDe) ALTERs GILL MORPHOLOGY AND INCREASes OXIdATIVE STRESS IN JUVEnile BROOk TROUT, SAlVEllinus FONTInAlIS. D. Borg and L. D. Trombeta. Pharmaceutical Sciences, St. Johns University, New York.

#1299 2:27 ENDOCRINE DISRUPTION IN A NORTHERN CALIFORNIA WATERSHED: THE RESPONSE OF A RESIDENT FISH SPECIES. S. M. Brander and G. N. Cherr. Bodega Bay Marine Laboratory, Environmental Toxicology, U.C. Davis, Bodega Bay, CA.

#1300 2:45 EFFECTS OF CHLORPYRIFOS AND ALDICARB ON FLIGHT ACTIVITY AND RELATED CHOLINESTERASE INHIBITION IN HOMING PIGEONS (COLUMBA LIVIA): POTENTIAL FOR MIGRATION EFFECTS. J. Koehn1, C. A. Pitts2 and C. R. Fleming and R. T. Di Giulio. Nicholas School of the Environment, Duke University, Durham, NC.


#1302 3:21 DEVELOPMENTAL AND GROWTH EFFECTS ASSOCIATED WITH ACUTE EXPOSURE OF EGGS TO BISPHENOL A IN RAINBOW TROUT. N. Aluru1, J. F. Leatherland2 and M. M. Vijayan3. 1Biology, Woods Hole Oceanographic Institution, Woods Hole, MA; 2Biomedical Sciences, University of Florida, Gainesville, FL, Canada and 3Bioloogy, University of Waterloo, Waterloo, ON, Canada.

#1303 3:39 INFLUENCE OF ORGANOCHEMICAL PESTICIDES ON STEROID HOMEOSTASIS AND REPRODUCTIVE INDICES IN LARGEMOUTH BASS (MICROPTERUS SALMOIDES). N. J. DoperaLSki1, M. S. Prucha2, N. D. Denslow3 and D. S. Barber1. 1Department of Physiological Sciences, University of Florida, Gainesville, FL, 2Department of Pharmacology and Therapeutics, University of Florida, Gainesville, FL and 3Department of Environmental and Aquatic Animal Health, Virginia Institute of Marine Science, Gloucester Point, VA.


Abstract #

Tuesday Afternoon, March 17 2:45 PM–3:45 PM Room 337

EXHIBITOR HOSTED SESSION: A NOVEL IN VITRO METHOD TO ASSESS SKIN SENSITIZATION

Presented by: CeeTox, Inc.

The session will describe a novel in vitro method that identifies test articles as skin sensitizers and predicts LLNA EC3 values as sensitizer classes. Details of the models and preliminary data sets will be presented. The alternative method may reduce animal testing and can support REACH and EU Amendment 7.

Tuesday Afternoon, March 17 2:45 PM–3:45 PM Room 336

EXHIBITOR HOSTED SESSION: INTEGRATION OF A SMALL MOLECULE R&D AND MANUFACTURING ORGANIZATION WITH TOXICOLOGY

Presented by: WuXi AppTec

Integration of two separate organizations always presents challenges. Combining the assets of a Chinese based small molecule R&D and manufacturing company and a U.S. based medical device testing and biological manufacturing company has been not only a learning experience but has resulted in an organization with unmatched resources and potential.

Tuesday Afternoon, March 17 2:45 PM–3:45 PM Room 338

EXHIBITOR HOSTED SESSION: SOFTWARE-AS-A-SERVICE IN PRECLINICAL: REMOTE HOSTING OF DATA SYSTEMS—are LABORATORIES READY FOR THIS?

Presented by: Instem

This presentation will explore issues around the growing demand for affordable alternatives to traditional on-site data collection and analysis software in preclinical laboratories. As appetites for Web-based systems increase, do vendors and laboratories really understand issues related to regulatory guideline impact, data security and access requirements, qualification and validation, and requirements for peak performance?

Tuesday Afternoon, March 17 3:30 PM to 4:30 PM Room 302

UNDERGRADUATE FACULTY MEETING

Chairperson(s): Aaron Barchawsky, University of Pittsburgh, Pittsburgh, PA

Sponsor: Education Committee

The Education Committee is hosting the Undergraduate Toxicology Faculty 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.

Education-Career Development Sessions
Exhibitor Hosted Sessions
Informational Sessions
Featured Sessions
Platform Sessions
Program Description (Continued)

**Tuesday Afternoon, March 17**
4:30 PM to 6:00 PM
Room 321

**SOT ANNUAL BUSINESS MEETING**

*Chairperson(s): Kenneth S. Ramos, University of Louisville, Louisville, KY*

*(SOT Members Only; Full, Associate, Postdoctoral, and Student Members Invited)*

Members are invited and encouraged to attend the 48th Annual SOT Business Meeting. If you have long-range planning ideas that you would like added to the agenda, please send them to Shawn Lamb at SOT Headquarters. The agenda includes a discussion of the Council 2009 strategic planning session, financial summary, a review of the 2008–2009 activities, and plans for the future.

**Tuesday Afternoon, March 17**
5:30 PM to 7:00 PM
Hilton Pickersgrill Room

**SPECIAL INTEREST GROUP MEETING/RECEPTION: HISPANIC ORGANIZATION FOR TOXICOLOGISTS**

**Wednesday Morning, March 18**
7:00 AM–8:30 AM
Marriott Inner Harbor Grand Ballroom C

**REGIONAL CHAPTER MEMBERS BREAKFAST: MIDWEST**

**Wednesday Morning, March 18**
7:00 AM–8:00 AM
Room 302

**STUDENT ADVISORY COUNCIL MEETING**

Current and incoming Student Advisory Council members will conduct their business meeting, then meet with SOT Council and the PDA Board.

**Tuesday Evening, March 17**
6:00 PM to 8:00 PM
Hilton Tubman A Room

**SPECIAL INTEREST GROUP MEETING/RECEPTION: TOXICOLOGISTS OF AFRICAN ORIGIN**

**Tuesday Evening, March 17**
6:00 PM to 7:30 PM
See room listings below.

**SPECIALTY SECTION MEETINGS/RECEPTIONS:**
CARCINOGENESIS (ROOM 339), DERMAL TOXICOLOGY (ROOM 343), ETHICAL, LEGAL, AND SOCIAL ISSUES (ROOM 334), FOOD SAFETY (ROOM 342), IMMUNOTOXICOLOGY (ROOM 310), MECHANISMS (ROOM 324), OCULAR TOXICOLOGY (ROOM 330), REPRODUCTIVE AND DEVELOPMENTAL TOXICOLOGY (ROOM 309)

**Wednesday Morning, March 18**
7:30 AM to 8:50 AM
Room 310

**U.S. FDA ADVISORY PANEL APPOINTMENTS**

*Chairperson(s):* James A. Popp, Stratoxon, LLC., Lancaster, PA and Margaret A. Miller, U.S. FDA National Center for Toxicology Research, Rockville, MD

U.S. Food and Drug (FDA) Advisory Committees are panels of independent, outside experts who advise the agency on regulatory and research questions involving complex medical and scientific issues. FDA relies on Advisory Committees to ensure that FDA programs, products reviewed, and approvals are scientifically sound. A recent review of FDA Advisory Committee membership revealed that toxicologists are not routinely participating in these meetings. Toxicologists have a wealth of knowledge that could impact and improve agency decisions. Recognizing the need to include several disciplines in its decision-making, FDA is working to strengthen the Advisory Committee process by expanding participation of various scientific disciplines. This session will explain the role of FDA Advisory Committees and the rules governing participation on these Committees with a goal of encouraging participation by toxicologist. SOT members involved in FDA Advisory Committees will discuss their experience and provide insight on how to engage in the process.

- **Introduction for Advisory Committees at the Food and Drug Administration,** Michael Ortwerth, U.S. FDA, ACOMS, Rockville, MD
- **Advising the Food and Drug Administration: The Role of the Toxicologist,** Jim Riviere, North Carolina State University, Raleigh, NC
- **Participating in the Process: How and Why,** Margaret A. Miller, U.S. FDA, National Center for Toxicology Research, Rockville, MD
Program Description (Continued)

Abstract #

Wednesday Morning, March 18
7:30 AM to 8:50 AM
Room 307

ROUND TABLE SESSION: CHARACTERIZATION AND APPLICATION OF PBPK MODELS IN RISK ASSESSMENT

Chairperson(s): Harvey Clewell, The Hamner Institutes for Health Sciences, Research Triangle Park, NC and M.E. (Bette) Meek, University of Ottawa, Ottawa, ON, Canada.

Sponsor:
Risk Assessment Specialty Section

Endorsed by:
Biological Modeling Specialty Section
Mixtures Specialty Section

Physiologically-based pharmacokinetic (PBPK) models are part of a broader continuum of increasingly data-informed approaches to Dose-Response analysis ranging from default based on external dose to more biologically-realistic models. By facilitating the incorporation of dose measures of relevance to the mode of action of chemicals, and quantitative physiological scaling taking into account relevant chemical-specific physical chemical properties and biological constants, PBPK models provide a representation of biologically effective dose as a basis for conducting more informed extrapolations across studies, species, routes, and dose levels. Resultingly, they increase precision and reduce uncertainty in risk estimates. Despite the availability of PBPK models for a number of chemicals incorporating significant additional biological data over default and the potential of such models to contribute more broadly to the development of additionally informative testing strategies, their adoption in regulatory risk assessment has been limited. This limited uptake is being addressed in a project undertaken as part of the World Health Organization/International Programme on Chemical Safety project on harmonization. The initiative includes preparation of guidance and case studies on the characterization, documentation, evaluation and communication of PBPK models for risk assessment. Aspects being addressed include the need for early and continuing communication between risk assessors and modelers, greater consistency in consideration of guidance and case studies on the characterization, documentation, evaluation and communication of PBPK models for risk assessment. More consistent and transparent consideration of the basis for and output of PBPK models relative to default approaches in risk assessment is also being addressed.

#1305 7:30 CHARACTERIZATION AND APPLICATION OF PBPK MODELS IN RISK ASSESSMENT. B. Meek, U. Gundert-Remy*, H. Barton, H. Clewell and K. Krishnan*. McLaughlin Centre for Population Health Risk Assessment, University of Ottawa, Ottawa, ON, Canada, 2Federal Institute for Risk Assessment, Berlin, Germany, 3Pfizer Inc, Groton, CT, 4The Hamner Institutes for Health Sciences, Research Triangle Park, NC and 5University of Montreal, Montreal, QC, Canada.

7:35 CONSIDERATION OF MODE-OF-ACTION AS A BASIS FOR PBPK MODELING IN RISK ASSESSMENT. Ursula Gundert-Remy

7:40 PROBLEM FORMULATION AND CONTINUING INTERACTION OF MODELERS AND RISK ASSASSEORS. Harvey Clewell

7:50 MODEL DEVELOPMENT AND DOCUMENTATION FOR RISK ASSESSMENT: COMMUNICATING IN A FAMILIAR CONTEXT. Hugh Barton

8:05 EVALUATION OF PBPK MODELS IN RISK ASSESSMENT. Kannan Krishnan

8:20 PANEL DISCUSSION.
Program Description (Continued)

Wednesday Morning, March 18
7:30 AM to 8:50 AM
Room 308

EDUCATION-CAREER DEVELOPMENT SESSION:
TOXICOLOGISTS: THE NEXT GENERATION

Chairperson(s): Joan B. Tarloff, University of the Sciences in Philadelphia, Philadelphia, PA and Vanessa Fitsanakis, King College, Bristol, TN.

Sponsors:
Education Committee and Student Advisory Council

An important component of the Society of Toxicology 2008-2011 Strategic Plan is the priority to build for the future of toxicology. In addition to ongoing K-12, graduate, and postdoctoral fellow educational activities, undergraduate educators have been meeting regularly to exchange ideas and teaching strategies. Principles and applications of toxicology can enter curricula through a variety of mechanisms, from dedicated programs that lead to baccalaureate degrees to single, stand-alone courses that satisfy intellectual curiosity. It is logical that college students who have positive experiences in toxicology courses will be more likely to enter graduate programs and become our next generation of toxicologists. The Undergraduate Educators Forum hopes to establish a repository for course materials and to open the lines of communication for individuals involved in teaching undergraduate students. College-level education in toxicology demands different skills and approaches than those used for graduate or K-12 education. Developing critical thinking and analytical skills is particularly challenging for college students, who are more accustomed to accepting information without critique. In order to foster communication among educators it is important that we illustrate strategies that engage critical thinking and improve student learning and involvement. Several undergraduate college educators will present classroom-based exercises or assessments designed to stimulate student-based learning. Through this forum we will learn what has been developed for upper-level high school students and how these exercises and experiences may be modified for college students. This session will provide a venue for educators to discuss classroom experiences and educational philosophies.


7:38 DOING TOXICOLOGY RESEARCH IN THE CLASSROOM. Steven Mercurio

7:56 BRAIN-BASED LEARNING: EXPLANATIONS AND STRATEGIES. Vanessa Fitsanakis

8:14 STRATEGIES TO IMPROVE STUDENTS’ WRITING. Peter Harvison

8:32 TEACHING TOXICOLOGY: WHAT’S AVAILABLE FOR BASIC LABS? Bruce Fuchs

Wednesday Morning, March 18
8:00 AM to 8:50 AM
Ballroom I

KEYNOTE MEDICAL RESEARCH COUNCIL (MRC) LECTURE: THE UBQUITIN PROTEOLYTIC SYSTEM—FROM BASIC MECHANISMS THROUGH HUMAN DISEASES AND ON TO DRUG TARGETING

Lecturer: Nobel Laureate Aaron Ciechanover, The Rappaport Faculty of Medicine and Research Institute, Technion-Israel Institute of Technology, Bat Galim, Haifa, Israel

Dr. Aaron Ciechanover was born in Haifa, Israel in 1947. He received his M.Sc. (1970) and M.D. degrees (1975) from Hadassah and the Hebrew University School of Medicine in Jerusalem and his D.Sc. in biochemistry from the Technion (1981). There, as a graduate student with Dr. Avram Hershko, they discovered the ubiquitin-proteasome system for regulated degradation of intracellular proteins. They demonstrated that covalent attachment of ubiquitin to the target substrate signals it for degradation by a downstream proteasome. They purified the conjugating enzymes, deciphered their mechanism of action, showed that the system degrades abnormal proteins in cells, and proposed a model according to which polyubiquitination functions as a recognition signal for a specific, downstream protease that degrades the substrate with the release of reusable ubiquitin. Through the years it has become clear that ubiquitin-mediated degradation of proteins is central to the regulation of basic cellular processes, including the cell cycle, transcriptional regulation, growth and development, differentiation, apoptosis, receptor modulation, DNA repair, and maintenance of the cell’s quality control. With the multiple substrates targeted and processes involved, it is not surprising that the system has been implicated in the pathogenesis of many diseases, a broad array of malignancies and neurodegenerative disorders among them. This led pharma companies to initiate efforts to develop mechanism-based drugs. One of them to combat multiple myeloma, is already on the market with many more in the pipeline.

Following his graduate studies, Dr. Ciechanover obtained his postdoctoral training (1981–1984) with Dr. Harvey Lodish at the Massachusetts Institute of Technology (M.I.T.) and the Whitehead Institute in Cambridge, Massachusetts, U.S.A. There he studied receptor-mediated endocytosis and deciphered the mechanism of iron uptake by the transferring receptor. In parallel and in collaboration with Drs. Alexander Varshavsky and Daniel Finley, he continued his work on the ubiquitin system. Following his return to Israel in 1984, he joined the Faculty of Medicine of the Technion in Haifa and established his own laboratory where he has continued to contribute significantly to the development of the field via studying, among other subjects, the mechanisms of ubiquitin-mediated regulation of transcription factors and growth promoting factors such as p53, Myc, MyoD, and NF-kB. For his studies that led to the discovery of the ubiquitin system, Dr. Ciechanover, along with Drs. Avram Hershko and Irwin Rose, was awarded the Nobel Prize in Chemistry in 2004. Beforehand, in 2000, he shared the prestigious Albert Lasker Award for Basic Medical Research with Drs. Hershko and Varshavsky, and was awarded in 2003 the Israel Prize for Biological Research, the highest recognition bestowed by the State of Israel. Dr. Ciechanover is a member of the Israeli National Academy of Sciences and Humanities, the Pontifical Academy of Sciences of the Vatican, and the American Philosophical Society. He is a Foreign Fellow of the American Academy of Arts and Sciences, and a Foreign Associate of the National Academy of Sciences of the U.S.A. and its Institute of Medicine.
Program Description (Continued)

Abstract #

Wednesday Morning, March 18  
9:00 AM to 12:00 NOON  
Room 304  

NIH GRANTS ROOM  

Chairperson: Joel G. Pounds, Pacific Northwest National Laboratory, Richland, WA  

Sponsor:  
Research Funding Committee  

NIH program and review staff of the Center for Scientific Review and NIEHS will be available in the NIH Grants Room for individual conversations. Attend the NIH Brown Bag Lunch on Tuesday to make an appointment or check the posted schedule to meet with the NIH staff members who can discuss with you aspects of scientific review or specific grant opportunities. New investigators are especially encouraged to meet with program staff. Handouts will be available.

Wednesday Morning, March 18  
9:00 AM to 11:45 AM  
Ballroom 1  

# BIOMARKERS  

SYMPOSIUM SESSION: FROM MECHANISMS TO BIOMARKERS: BASIC AND APPLIED METABOLOMICS IN TOXICOLOGY  

Chairperson(s): Frank J. Gonzalez, National Cancer Institute, Bethesda, MD and Donald G. Robinson, Bristol-Myers Squibb, Princeton, NJ.  

Sponsor:  
Molecular Biology Specialty Section  

Endorsed by:  
Drug Discovery Toxicology Specialty Section  
Mixtures Specialty Section  
Risk Assessment Specialty Section  

The use of metabolomics in the discovery of biomarkers and elucidating mechanisms of human disease is a rapidly expanding field. While nuclear magnetic resonance (NMR) has historically been used in mammalian metabolomics studies, LC/MS and GC/MS, with new and powerful chemical and metabolic resonance (NMR) has historically been used in mammalian metabolomics studies, LC/MS and GC/MS, with new and powerful chemometric software, makes this technology more widely available to individual academic laboratories. Metabolomics can also be used to study the metabolism of drugs, toxins and carcinogens and to find biomarkers for drug efficacy and toxicities. Preview studies from both academic and industrial laboratories will be highlighted to show the value of this burgeoning technology.

Abstract #  

#1310  
9:40  
FROM DRUG METABOLISM TO DRUG METABOLOMICS. J. Idle, Institute of Pharmacology, Charles University, Prague, Czech Republic. Sponsor: D. Robertson.

#1311  
10:15  
METABOLOMICS IN PHARMACEUTICAL DISCOVERY AND DEVELOPMENT. D. Robertson. Applied and Investigative Metabonomics, Bristol-Myers Squibb, Princeton, NJ.

#1312  
10:50  
METABOLOMICS AND TRANSCRIPTOMICS: A SYNERGISTIC APPROACH TO BIOMARKERS AND MECHANISMS OF TOXICITY. L. Lehman-McKeeman. Bristol-Myers Squibb, Princeton, NJ.

11:25  
PANEL DISCUSSION.

Wednesday Morning, March 18  
9:00 AM to 11:45 AM  
Room 321  

SYMPOSIUM SESSION: INCORPORATING ‘OMICS IN THE STUDY OF REPRODUCTION AND DEVELOPMENT  


Sponsor:  
Reproductive and Developmental Toxicology Specialty Section  

Endorsed by:  
Mechanisms Specialty Section  
Occupational and Public Health Specialty Section  

In recent years, groundbreaking research in genomic applications in the area of reproductive and developmental toxicology have been successful in linking changes in the expression of specific genes and their higher-level biological processes to effects induced by drugs or chemicals in developing tissues. While gene expression profiling has demonstrated the ability to provide mechanistic insight into the cellular mechanisms of drug and chemical-induced effects, proteomics provides advantages in areas beyond the genome. For example, post-translation modifications of proteins that are known to be involved in cell-cell signaling cascades for developmental pathways, the flux-balance in signaling molecules themselves, or the metabolic intermediates connecting to these pathways are important parts of our ability to understand the pathogenesis of fetal malformations. These higher-level operations can be inferred, but not directly evaluated through measurement of mRNA or DNA sequencing. In recent years, the application of proteomics in the study of reproduction and development has rapidly increased, while such studies that incorporate metabolomics approaches are at their infancy. A summary of the recent advances in genomic, proteomic, and metabolomic methodologies that demonstrate the successful use of these technologies in the study of reproduction and development will be provided. Finally, an illustration of how these data may be integrated by multi-scale models of dynamical systems will be highlighted that can serve to improve our understanding of reproductive and developmental toxicities.

Abstract #  

#1313  
9:00  

#1314  
9:05  

#1315  
9:45  
APPLICATION OF TRANSCRIPTOMICS TO ASSESS CHEMICALS WITH ESTROGENIC ACTIVITY. J. M. Naciff and G. P. Daston. Proctor & Gamble Company, Cincinnati, OH.
#1316 10:25 IDENTIFYING MOLECULAR MECHANISMS OF GENE EXPRESSION IN MAMMALIAN GAMETES AND EMBRYOS USING FUNCTIONAL GENOMICS APPROACHES. E. Memili, Animal and Dairy Sciences, Mississippi State University, Mississippi State, MS. Sponsor: R. Carr.


Wednesday Morning, March 18
9:00 AM to 11:45 AM
Room 316

SYMPOSIUM SESSION: INTERACTOMES AND THEIR APPLICATION IN TOXICOLOGY

Chairperson(s): Joel Meyer, Duke University, Durham, NC and Thomas Begley, GeNysis Center, Rensselear, NY.

Sponsor:
Molecular Biology Specialty Section

A major challenge in the analysis of microarray data in toxicology and other fields is taking full advantage of the large and often very complex datasets that are obtained. A variety of tools are available for such analysis. The use of interactomes as an especially powerful systems biology tool applicable to the analysis of the transcriptomic response to toxicant exposure will be highlighted. Interactomes are networks of protein-protein, protein-DNA, and other interactions that occur in organisms. They are derived both from careful curation of decades of biological research on such interactions, and via higher-throughput assays designed to detect such interactions (e.g., yeast two-hybrid screens). By overlaying gene expression data on these interactomes, it is possible to analyze large, complex microarray datasets in a statistically robust and biologically meaningful fashion. Our panel of experts, who are foremost researchers in toxicological research utilizing interactomes, will discuss both the important toxicological findings and applications of this cutting-edge technology.

#1318 9:00 INTERACTOMES AND THEIR APPLICATION IN TOXICOLOGY. J. N. Meyer. NSOE, Duke University, Durham, NC.

#1319 9:15 SYSTEMS BASED APPROACHES FOR THE IDENTIFICATION OF CELLULAR RESPONSES TO TOXICANTS. T. Begley1, R. Cunningham2, A. George3, J. Rooney1, F. Joseph1 and A. Patil1. 1Biomedical Sciences, University at Albany, SUNY, Rensseleaer, NY and 2Biological Sciences, University at Albany, Albany, NY.

#1320 9:45 PATHWAY MAPPING OF CHEMICAL-PERTURBED REGULATORY NETWORKS. I. Rysin, Environmental Sciences and Engineering, School of Public Health, University of North Carolina at Chapel Hill, Chapel Hill, NC.

#1321 10:15 IDENTIFICATION OF NEW BIOLOGICAL PATHWAYS AFFECTED BY TRANSITION METALS. J. H. Freedman. Laboratory of Molecular Toxicology, NIEHS, NIH, Research Triangle Park, NC.

Program Description (Continued)

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Program Description (Continued)

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Program Description (Continued)

Abstract #


#1326 9:41  ROLE OF P53 AND ATM/ATR IN DMBA-INDUCED IMMUNOTOXICITY. S. W. Burchiel1, J. Guo2, L. Mitchell2 and F. Lauer2. 1College of Pharmacy, University of New Mexico, Albuquerque, NM and 2Los Alamos National Lab, Los Alamos, NM.


#1328 10:43  IMMUNE PROGRAMMING BY THE ARYL HYDROCARBON RECEPTOR. B. Lawrence1,2, 1Environmental Medicine, University of Rochester, Rochester, NY and 2Environmental Health Sciences, New York University, New York City, NY.

#1329 11:14  EPIGENETIC CHANGES IN T HELPER GENES AFFECTING IGE PRODUCTION IN VIVO FOLLOWING COMBINED INHALED DIESEL EXHAUST PARTICLES AND ALLERGEN EXPOSURE. R. L. Miller1,2, J. Liu1, M. Ballaney1, U. Al-ailem1, C. Quan1, X. Jin1, F. Perera1 and L. Chen1. 1Medicine, Columbia University, New York City, NY, and 2Environmental Health Sciences, New York University, Tuxedo, NY.

Wednesday Morning, March 18
9:00 AM to 11:45 AM
Room 327

WORKSHOP SESSION: DEVELOPING BRAIN: SAFETY ASSESSMENT FOR PEDIATRIC USE OF PHARMACEUTICALS

Chairperson(s): Mary Jeanne Kallman, Eli Lilly & Company, Greenfield, IN. and Allergen exposure.

Sponsor: Occupational and Public Health Specialty Section

Endorsed by:

Regulatory and Safety Evaluation Specialty Section
Reproductive and Developmental Toxicology Specialty Section
Risk Assessment Specialty Section

With the recent enactment of the EU pediatric regulation as well as the reenactment of the Pediatric Research Equity Act in the U.S., increased expectations from a number of regulatory agencies for nonclinical support of pharmaceuticals for pediatric use have lead to an increased need for testing in juvenile animals. One area of particular focus is on the developing central nervous system (CNS). Since development of the CNS continues through adolescence it is one organ system thought to be at high risk for drug toxicity. Safety assessment of the CNS is generally evaluated through functional assays including cognitive tests; however, histopathologic changes are also possible. Our panel of experts will discuss the relevant considerations when designing juvenile toxicity studies to evaluate potential effects on the developing CNS that will allow the most useful risk assessment for the intended clinical population.
### Program Description (Continued)

**Abstract #**

recent events including Hurricanes Katrina and Rita, the California wild fires, and the collapse of the World Trade Center. A brief roundtable discussion will follow to identify the idiosyncrasies and commonalities of dealing with unintentional and intentional disasters.

- **#1337 9:00** TOXICOLOGY OF UNINTENTIONAL AND INTENTIONAL DISASTERS. A. J. Harris and M. Ottlinger. CTEH, North Little Rock, AR. and Office of Emergency Management, U.S. Environmental Protection Agency, Cincinnati, OH.


- **#1340 9:38** PUBLIC IMPACT OF VOLCANIC ACTIVITY. P. Nony. CTEH, North Little Rock, AR.

- **#1341 10:06** RISK ASSESSMENT AND PUBLIC HEALTH IMPLICATIONS OF WTC DUST CONTAMINATION TOPIC: P. Good. CTEH, North Little Rock, AR.


- **11:30 PANEL DISCUSSION.**

**Wednesday Morning, March 18**

**9:00 AM to 11:45 AM**

**Room 314**

**REGIONAL INTEREST SESSION: BIOFUELS AND THE BAY: CHARACTERIZING HEALTH AND ECOSYSTEM IMPACTS IN THE CHESAPEAKE**

Chairperson(s): Michael Madden, U.S. EPA, Chapel Hill, NC and Annie M. Jarabek, U.S. EPA, Research Triangle Park, NC.

**Sponsor:**
- Risk Assessment Specialty Section

**Endorsed by:**
- Mixtures Specialty Section
- Occupational and Public Health Specialty Section

The Chesapeake Bay Commission has evaluated alternative fuel development efforts in the Chesapeake Region. Already under stress from anthropomorphic factors, the Chesapeake Bay Region could be adversely impacted by the wide spectrum of use of the region for biofuels production, transport, storage, and combustion. This Regional-Interest session will characterize the potential adverse effects on public health and ecological degradation from the production and use of biofuels in the Bay, an uncertain and complex challenge. There are multiple types of biofuels that are derived from various feedstocks and production processes. The amount of land use devoted to biofuels in this region will vary tremendously in part by the biofuel stock in economic demand, the advances made in the growth rate and energy content of plant stocks, and whether it can be imported. Domestic corn planting in the Bay Region increased 11,000 acres from 2005 to 2006, primarily for use in ethanol production with consequences for decreased food availability, soil loss, and nutrient runoff. In contrast, a biodiesel production plant in Baltimore will import soybeans as the raw material due to economic incentives, thereby avoiding issues with domestic corn production. Potential human health effects will occur through exposure to the fuels, inhalation of combustion products, and fallout into water supplies. Algal blooms due to increased nitrogen deposition in the estuarine environment from biofuel production would impact public and environmental health. Air quality could be impacted from combustion, as could water quality through deposition of the fuel products into the Bay. Estuarine and marine organisms, some with commercial importance, could be adversely impacted. Ethical issues over the displacement of crops for food to energy for mobile sources have arisen and will be considered. Both the public health and ecological problems posed by the wide spectrum of biofuels being considered for use in the Bay will be addressed. [This abstract of a proposed presentation may not reflect US EPA policy.]

- **9:00** INTRODUCTION.

- **#1345 9:15** OVERVIEW: BIOFUELS AND POTENTIAL EFFECTS IN THE BAY. A. Swanson, Office, Executive Director, Chesapeake Bay Commission, Annapolis, MD. MD. Sponsor: M. Madden.

- **#1346 9:45** HEALTH EFFECTS OF EXPOSURE TO BIOFUELS. M. L. Witten. Pediatrics, University of Arizona, Tucson, AZ.


- **#1349 11:15** ETHICS AND BIOFUELS: DISTRIBUTIVE AND INTERGENERATIONAL JUSTICE. T. M. Powers. Philosophy & Delaware Biotechnology Institute, University of Delaware, Newark, DE. Sponsor: M. Madden.
Program Description (Continued)

Abstract #
Wednesday Morning, March 18
9:00 AM to 11:45 AM
Room 324

NANOTECHNOLOGY

PLATFORM SESSION: CARDIOPULMONARY TOXICITY OF INHALED PARTICLES AND NANOPARTICLES

Chairperson(s): David Warheit, DuPont Haskell Laboratory, Newark, DE and Urmila Kodavanti, U.S. EPA, Research Triangle Park, NC.

#1350 9:00 CALCIUM-DEPENDENT VASODILATION IS IMPAIRED IN CORONARY ARTERIOLES AFTER NANOPARTICLE INHALATION. A. J. LeBlanc1, J. Cumpston, B. Chen1, D. Frazer2, V. Castranova1 and T. Nurkiewicz1. Center for Interdisciplinary Research in Cardiovascular Sciences, West Virginia University, Morgantown, WV and National Institute for Occupational Safety and Health, Morgantown, WV.

#1351 9:21 TIME COURSE OF SYSTEMIC EFFECTS FOLLOWING A SINGLE EXPOSURE TO CARBON NANOTUBES. A. Erdely, T. Hulderman, R. Salmen, A. Liston, P. C. Zeidler-Erdely and P. P. Simeonova. NIOSH, Morgantown, WV.


#1353 10:03 MECHANISTIC LINKS BETWEEN THE LUNG AND THE SYSTEMIC MICROCIRCULATION AFTER NANOPARTICLE EXPOSURE. T. R. Nurkiewicz1, M. Donlin2, A. Hubbs2, A. Goodwill1, J. Frisbee1, B. Chen1, D. Frazer2 and V. Castranova2. Center for Interdisciplinary Research in Cardiovascular Sciences, West Virginia University, Morgantown, WV and National Institute for Occupational Safety and Health, Morgantown, WV.

#1354 10:24 CARDIOVASCULAR EFFECTS OF ULTRAFINE PARTICULATE MATTER ON SPONTANEously HYPERTENStIVE RATS. K. Salsagar, G. Gookin, P. Willett, D. Meacher and M. T. Kleinman. Department of Medicine, University of California, Irvine, Irvine, CA.


#1356 11:05 ACTIVATION OF ENDOTHELIAL CELLS AFTER EXPOSURE TO AMBIENT ULTRAFINE PARTICLES: THE ROLE OF NADPH OXIDASE. Y. Mo, R. Wan, D. J. Tollerud and Q. Zhang. Environmental and Occupational Health Sciences, University of Louisville, Louisville, KY.

Abstract #
Wednesday Morning, March 18
9:00 AM to 11:45 AM
Room 307

PLATFORM SESSION: ENDOCRINE-TOXICANT INTERACTIONS

Chairperson(s): Tammy E. Stoker, U.S. EPA, Research Triangle Park, NC and Martin J. Ronis, University of Arkansas Medical Sciences, Little Rock, AR.

#1358 9:00 ADIPOSE DEPOSITION REGULATION THROUGH EPIDERMAL GROWTH FACTOR RECEPTOR SIGNALING. M. Weed1 and D. W. Threadgill1. Toxicology, University of North Carolina, Chapel Hill, NC and Genetics, University of North Carolina, Chapel Hill, NC.


#1360 9:38 ESTRADIOL IS INVOLVED IN THE UPRREGULATION OF GLUTATHIONE SYNTHESIS BY FSH IN OVARIAN FOLLICLES. Y. D. Hoang1, B. N. Nakamura and U. Luderer2. Medicine, University of California Irvine, Irvine, CA and Developmental and Cell Biology, University of California Irvine, Irvine, CA.

#1361 9:57 HORMONAL SUPPRESSION RESTORES FERTILITY IN IRRADIATED MICE FROM BOTH ENDOGENOUS AND DONOR-DERIVED SPERMATOGENESIS. G. Wang, S. H. Shao, C. Weng and M. L. Mestrich. Experimental Radiation Oncology, M.D. Anderson Cancer Center, Houston, TX.

#1362 10:15 INSULIN RESISTANCE IN SPRAGUE-DAWLEY RATS CRONICALLY TREATED WITH ETHANOL. T. M. Badger1,2, M. Ferguson1 and M. J. Ronis2. Arkansas Children's Nutrition Center, University of Arkansas Medical Sciences, Little Rock, AR, Pharmacology & Toxicology, University of Arkansas for Medical Sciences, Little Rock, AR and Pharmacology & Toxicology, University of Arkansas for Medical Sciences, Little Rock, AR.

#1363 10:33 LOW DOSE ETHANOL CONSUMPTION IMPROVES INSULIN SENSITIVITY IN RATS. L. He1,3, M. Ferguson1, M. Blackburn1, J. Badeaux1, M. J. Ronis2 and T. M. Badger1,2. Arkansas Children’s Nutrition Center, University of Arkansas Medical Sciences, Little Rock, AR, Pharmacology & Toxicology, University of Arkansas for Medical Sciences, Little Rock, AR and Pharmacology & Biophysics, University of Arkansas for Medical Sciences, Little Rock, AR.

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**Featured Sessions**

- **Education-Career Development Sessions**
- **Exhibitor Hosted Sessions**
- **Informational Sessions**
- **Historical Highlights**
- **Platform Sessions**

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**Order of Sessions**

1. Calcium-Dependent Vasodilation Impaired in Coronary Arterioles After Nanoparticle Inhalation
2. Time Course of Systemic Effects Following a Single Exposure to Carbon Nanotubes
3. Nanoparticle Inhalation Increases Microvascular Oxidative Stress and Compromises Nitric Oxide Bioavailability
4. Mechanistic Links Between the Lung and the Systemic Microcirculation After Nanoparticle Exposure
5. Cardiovascular Effects of Ultrafine Particulate Matter on Spontaneously Hypertensive Rats
6. Fine Particulate Matter Exposure Depresses Pulmonary Function in the Developing Mouse Lung
7. Activation of Endothelial Cells After Exposure to Ambient Ultrafine Particles: The Role of NADPH Oxidase

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**Program Description (Continued)**

Abstract #  
#1364 10:51 TRICLOSAN MODULATES ESTROGEN-DEPENDENT RESPONSES IN THE RAT UTEROTROPIC RESPONSE. T. Stokes1, E. Zorrilla2, J. Prepener3 and E. Gibson. 1US. EPA, Research Triangle Park, NC, 2NCSU College of Veterinary Medicine, Raleigh, NC and 3CEETOX, Kalamaazoo, MI.

Abstract #  
#1365 11:09 EFFECTS OF A MODEL INDUCER, PHENOBARBITAL, ON THYROID HORMONE GLUCURONIDATION IN RAT HEPATOCYTES. V. M. Richardson1 and M. J. DeVito2. 1ORD/NHEERL/ETD/PKB, U.S. EPA, Research Triangle Park, NC and 2Pharmacology & Toxicology, SUNY at Buffalo, School of Medicine and Biomedical Sciences, Buffalo, NY.

Abstract #  
#1366 11:27 ARYL HYDROCARBON RECEPTOR EXPRESSION AND FUNCTION IN NORMAL ENDOMETRIUM AND ENDOMETRIOSIS. E. V. Hestermann1, J. Wise1, B. Lessey2, A. Houwing3 and S. Young4. 1Biology Department, Furman University, Greenville, SC, 2Reproductive Endocrinology, Greenville Hospital System University Medical Center, Greenville, SC and 3Obstetrics and Gynecology, University of North Carolina Health Care, Chapel Hill, NC.

**NEURODEGENERATIVE DISEASE**

**PLATFORM SESSION: HOT TOPICS IN METAL-INDUCED NEURODEGENERATION**

**Chairperson(s):** William K. Boyes, U.S. EPA, Research Triangle Park, NC and Pradeep B. Deshmukh, Jai Research Foundation, Valavada, India.

Abstract #  
#1367 9:00 MULTIPOTENT NEURAL STEM CELLS ARE TARGETS FOR TCDD TOXICITY: POTENTIAL ROLES FOR AH RECEPTOR DURING NEUROGENESIS. S. E. Latchney and L. A. Opanashuk. Environmental Medicine, University of Rochester, Rochester, NY.

Abstract #  
#1368 9:19 COMPARING GENE EXPRESSION ALTERATIONS IN MOUSE EMBRYOS UNDERGOING NEUROTUBULATION; Dose AND TIME DEPENDENT EFFECTS OF CADMIUM AND ARSENIC EXPOSURES. J. F. Robinson, X. Yu, S. Hong and E. M. Faustman. Environmental and Occupational Health Sciences, University of Washington, Seattle, WA.

Abstract #  

Abstract #  
#1370 9:57 PERSISTING EFFECTS OF DEVELOPMENTAL COPPER EXPOSURE IN WILDLIFE AND METALLOTHIONEIN KNOCKOUT MICE. A. Petro1, N. Pollard1, H. Sexton1, C. Miranda1, A. Rastogi1, J. Freedman2 and E. D. Levin3. 1Psychiatry and Behavioral Sciences, Duke University Medical Center, Durham, NC and 2National Institute of Environmental Health Sciences, NIH, Research Triangle Park, NC.

Wednesday Morning, March 18  
9:00 AM to 11:45 AM  
Room 309

#1364 10:51 TRICLOSAN MODULATES ESTROGEN-DEPENDENT RESPONSES IN THE RAT UTEROTROPIC RESPONSE. T. Stokes1, E. Zorrilla2, J. Prepener3 and E. Gibson. 1US. EPA, Research Triangle Park, NC, 2NCSU College of Veterinary Medicine, Raleigh, NC and 3CEETOX, Kalamaazoo, MI.

#1365 11:09 EFFECTS OF A MODEL INDUCER, PHENOBARBITAL, ON THYROID HORMONE GLUCURONIDATION IN RAT HEPATOCYTES. V. M. Richardson1 and M. J. DeVito2. 1ORD/NHEERL/ETD/PKB, U.S. EPA, Research Triangle Park, NC and 2Pharmacology & Toxicology, SUNY at Buffalo, School of Medicine and Biomedical Sciences, Buffalo, NY.

#1366 11:27 ARYL HYDROCARBON RECEPTOR EXPRESSION AND FUNCTION IN NORMAL ENDOMETRIUM AND ENDOMETRIOSIS. E. V. Hestermann1, J. Wise1, B. Lessey2, A. Houwing3 and S. Young4. 1Biology Department, Furman University, Greenville, SC, 2Reproductive Endocrinology, Greenville Hospital System University Medical Center, Greenville, SC and 3Obstetrics and Gynecology, University of North Carolina Health Care, Chapel Hill, NC.

#1367 9:00 MULTIPOTENT NEURAL STEM CELLS ARE TARGETS FOR TCDD TOXICITY: POTENTIAL ROLES FOR AH RECEPTOR DURING NEUROGENESIS. S. E. Latchney and L. A. Opanashuk. Environmental Medicine, University of Rochester, Rochester, NY.

#1368 9:19 COMPARING GENE EXPRESSION ALTERATIONS IN MOUSE EMBRYOS UNDERGOING NEUROTUBULATION; Dose AND TIME DEPENDENT EFFECTS OF CADMIUM AND ARSENIC EXPOSURES. J. F. Robinson, X. Yu, S. Hong and E. M. Faustman. Environmental and Occupational Health Sciences, University of Washington, Seattle, WA.


#1370 9:57 PERSISTING EFFECTS OF DEVELOPMENTAL COPPER EXPOSURE IN WILDLIFE AND METALLOTHIONEIN KNOCKOUT MICE. A. Petro1, N. Pollard1, H. Sexton1, C. Miranda1, A. Rastogi1, J. Freedman2 and E. D. Levin3. 1Psychiatry and Behavioral Sciences, Duke University Medical Center, Durham, NC and 2National Institute of Environmental Health Sciences, NIH, Research Triangle Park, NC.

#1371 10:15 MODERATE MATERNAL IRON INADEQUACY WORSENS NEUROBEHAVIORAL OUTCOMES OF DEVELOPMENTAL ETHANOL EXPOSURE. E. S. Rufer1, T. Tran2 and S. M. Smith1. 1Nutritional Sciences, Molecular & Env. Toxicology, University of Wisconsin – Madison, Madison, WI and 2Psychology, East Carolina University, Greenville, NC.

#1372 10:33 DEVELOPMENTAL NEUROTOXICITY OF SILVER IN ZEBRAFISH AND PC12 CELLS. C. M. Powers1, J. Yen2, E. Linney2, S. Donerly2, F. J. Seidler1 and T. A. Slotkin1. 1Pharmacology & Cancer Biology, Duke Univ Med Ctr, Durham, NC and 2Molecular Genetics & Microbiology, Duke Univ Med Ctr, Durham, NC.


#1374 11:09 INTERFERON-GAMMA CAUSES DENDRITE RETRACTION IN SYMPATHETIC NEURONS IN VIVO. L. A. Courter1, E. A. Gonsiorek2, M. Garred3, D. Brown4, A. D. Fryer1, D. Higgins2 and P. J. Lein1. 1Center for Research in Occupational and Environmental Toxicology, Oregon Health & Science University, Portland, OR, 2Pharmacology and Toxicology, SUNY at Buffalo, School of Medicine and Biomedical Sciences, Buffalo, NY and 3Physiology and Pharmacology, Oregon Health & Science University, Portland, OR.

Program Description (Continued)

Abstract #

Wednesday Morning, March 18 Room 308

#1376 9:00  HEXABROMOCYCLODECANE (HBCD) INHIBITS THE DEPOLARIZATION-EVOKED INCREASE IN INTRACELLULAR CALCIUM LEVELS AND NEUROTRANSMITTER RELEASE IN PC12 CELLS. M. M. Dingesmans1, H. J. Heusinkveld1, A. de Groot1, Bergman2, M. van den Berg3, and R. H. Westerink1. 1Institute for Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands and 2Department of Environmental Chemistry, Stockholm University, Stockholm, Sweden.

#1377 9:24  THE ROLES OF CHONDROMODULIN I AND NQO1 IN THE INHIBITION OF TUBE FORMATION INDUCED BY THE BENZENE METABOLITE HYDROQUINONE IN HUMAN BONE MARROW ENDOTHELIAL CELLS. H. Zhou1, J. Kepa1, D. Siegel1, S. Miura1, Y. Hiraki2, and D. Ross1. 1Department of Pharmaceutical Sciences, University of Colorado Denver, Aurora, CO and 2Department of Cellular Differentiation, Institute for Frontier Medical Sciences, Kyoto University, Kyoto, Japan.

#1378 9:48  GENOTOXICITY AND CELL CYCLE EFFECTS OF A CHICAGO AIRBORNE POLYCHLORINATED BIPHENYL MIXTURE AND AROCLORS IN LUNG FIBROBLASTS. S. Pr1, S. Flor2, H. Lehmler2, L. W. Robertson3, and G. Ludewig. 1Interdisciplinary Graduate Program in Human Toxicology, The University of Iowa, Iowa.

#1379 10:12  TOXICOCENOMIC EVALUATION OF PCB153-ELICITED HEPATIC EFFECTS IN C57BL/6 MICE. A. K. Kopec1,2, L. D. Burgoon1,2, D. Ibrahim-Albo1, J. R. Harkema1, C. Tashiro1, B. Chittim1, and T. R. Zacharewski1,2. 1Biochemistry & Molecular Biology, Michigan State University, East Lansing, MI, 2Center for Integrative Toxicology & National Food Safety and Toxicology Center, Michigan State University, East Lansing, MI, 3Pathobiology & Diagnostic Investigations, Michigan State University, East Lansing, MI and 4Wellington Laboratories, Inc., Guelph, ON, Canada.

#1380 10:36  THE PARA SUBSTITUTION IS A KEY DETERMINANT OF ACTIVITY OF BROMINATED DIPHENYL ETHERS TOWARD THE TYPE 1 RYANOID RECEPTOR. K. Kim1, G. Marsh1, Bergman2, J. M. Lasalle1, and I. N. Pessah1. 1Department of Molecular Biosciences: VM and Center for Children’s Environmental Health, University of California, Davis, CA, 2Department of Environmental Chemistry, Stockholm University, Stockholm, Sweden and 3Department of Medical Microbiology and Immunology, the school of Medicine, University of California, Davis, CA.

Wednesday Morning, March 18 Room 310

#1381 10:59  METABOLISM OF PBDE 47, 99, AND 153 BY HUMAN LIVER MICROSONES. S. J. Lupton1, B. McGragle2, J. Olson3, T. D. Wood1 and D. S. Aga1. 1Chemistry, University at Buffalo, Buffalo, NY and 2Pharmacology and Toxicology, University at Buffalo, Buffalo, NY.

#1382 11:22  TOXICITY OF HIGHLY PURIFIED PCB 180 IN RATS. R. Roos1, P. Heikkinen2, L. van der Veen3, M. Korkalainen4, S. Lensu2, M. Nittynen5, S. Sankari2, K. Savolainen1, H. Schmitz1, P. L. Andersson2, D. Schrenk1 and M. Viluksla2. 1Food Chemistry and Toxicology, University of Kaiserslautern, Kaiserslautern, Germany, 2Department of Environmental Health, National Public Health Institute, Kuopio, Finland, 3Laboratory for Toxicology, Pathology and Genetics, National Institute for Public Health and the Environment (RIVM), Bilthoven, Netherlands, 4Department of Equine and Small Animal Medicine, University of Helsinki, Helsinki, Finland, 5ISLAB Laboratory Centre, Kuopio, Finland and 6Environmental Chemistry, Umeå University, Umeå, Sweden.
Program Description (Continued)

Abstract #  
#1386 9:57 SEX SPECIFIC CIRCADIAN VARIATION IN PHYSIOLOGICAL AND MOLECULAR RESPONSES TO PESTICIDES. L. A. Rooven, K. Sherman and J. Giebultowicz. Zoology, Oregon State University, Corvallis, OR.

Abstract #  
#1387 10:15 STRUCTURAL INSIGHT INTO INHIBITION/AGING OF NEUROPATHY TARGET ESTERASE (NTE) FROM X-RAY CRYSTAL STUDIES OF ITS CATALYTIC DOMAIN HOMOLOGUE, PATATIN-17 (PAT17), S. J. Wijeyesakere1, J. A. Stuckey2 and R. J. Richardson1. 1Environmental Health Sciences/Toxicology, University of Michigan, Ann Arbor, MI and 2Life Sciences Institute, University of Michigan, Ann Arbor, MI.

Abstract #  
#1388 10:33 A C60 POLYHYDROXYFULLERENE DECREASES PARAOXON-INDUCED ACETYCHOLINESTERASE (ACHE) INHIBITION IN VITRO. M. Ehrlich1, K. Fuhrman2 and R. Van Tassell1. 1Virginia Maryland Regional College of Veterinary Medicine, Blacksburg, VA and 2Luna Innovations, Inc., Blacksburg, VA.

Abstract #  

Abstract #  

Abstract #  
#1391 11:27 DICHLORVOS- AND METHOXYL-INDUCED RESPIRATORY TOXICITY RESULTS FROM CENTRAL MUSCARIC EFFECTS, F. J. Baud1, P. Houzé2, G. Lévy3 and A. Davi1. 1University Paris 7, Paris, France and 2Toxicological Laboratory, Faculty of Pharmacy, Paris, France.

Wednesday Morning, March 18
9:00 AM to 12:30 PM

Exhibit Hall

POSTER SESSION: GENETIC POLYMORPHISMS

#1392 Poster Board Number .................................101 HAPLOTYP ANALYSIS OF THE FULL XPC GENOMIC SEQUENCE REVEALS A CLUSTER OF VARIANTS ASSOCIATED WITH SENSITIVITY TO THE GENOTOXIC EFFECTS OF TOBACCO SMOKE. C. M. Rondelet1, J. K. Wickliffe1, R. A. El-Zein1, C. Etzel2 and S. Z. Abdel-Rahman1. 1PMCH-ET/NCB, UTMB, Galveston, TX and 2Epidemiology, MD Anderson Cancer Center, Houston, TX.

#1393 Poster Board Number .................................102 GENETIC INSTABILITY IN THE PERIPHERAL LYMPHOCYTES AND BUCCAL CELLS OF HEAD AND NECK CANCER PATIENTS AND THEIR FIRST DEGREE RELATIVES: INFLUENCE OF XRCC1 ARG399GLN POLYMORPHISM. S. Burgaz1, N. A. Cocabas1, E. Coskun2, G. D. Cakmak4, F. Cetindag2, O. Sunter1 and H. Edinsel2. 1Toxicology, Gazi University, Ankara, Turkey and 2Abdurrahman Yurtaslan Oncology Hospital, Ankara, Turkey. Sponsor: M. Iscan.

#1394 Poster Board Number .................................103 CYP1A1 (I1E462V) POLYMORPHISM, RESPONSE TO CHEMOTHERAPY AND SURVIVAL IN ADVANCED NON-SMALL CELL LUNG CANCER PATIENTS: IS THERE ANY ASSOCIATION? M. Iscan1, A. O. Ada2, S. Bilgen3, S. C. Kunak4, F. Hancer5, S. H. Suzen5, S. Alpar1 and M. Gulhan1. 1Toxicology, Ankara University, Faculty of Pharmacy, Ankara, Turkey, 2Pharmacology, University of Giresun, Faculty of Medicine, Giresun, Turkey and 3Pulmonary Diseases, Ankara Pulmonary Diseases and Thoracic Surgery Hospital, Ankara, Turkey.

#1395 Poster Board Number .................................104 ROLE OF POLYMORPHIC HUMAN CYTOCHROME P450 ENZYMES IN ESTROGEN METABOLISM AND BREAST CANCER RISK IN THAI WOMEN. S. Sangrajrang1, T. Khuhaprema1, P. Brennan2, P. Boffetta3 and T. Yoshida3. 1National Cancer Institute, Bangkok, Thailand, 2International Agency for Research on Cancer, Lyon, Thailand and 3National Cancer Center Research Institute, Tokyo, Japan.

#1396 Poster Board Number .................................105 UNEXPECTED DEATH DUE TO METHADONE OVERDOSE MAY BE ASSOCIATED WITH GENETIC POLYMORPHISMS OF THE CYP3A4. GENE, L. L. Richards-Waugh1, D. A. Primerano2, Y. Dementieva1, J. C. Kramer1 and G. O. Rankin1. 1Pharmacology, Physiology & Toxicology, Marshall University, Huntington, WV, 2Biochemistry and Microbiology, Marshall University, Huntington, WV, 3Mathematics & Integrated Science, Marshall University, Huntington, WV and 4WV Office of the Chief Medical Examiner, Charleston, WV.

#1397 Poster Board Number .................................106 DETECTION OF SINGLE NUCLEOTIDE POLYMORPHISMS IN CYTOCHROME B5 PROMOTER. T. T. Hoang1,2, J. C. Sacco1 and L. A. Treepener2. 1Medical Sciences, University of Wisconsin-Madison, Madison, WI and 2Biochemistry, University of Illinois at Urbana-Champaign, Champaign, IL.

#1398 Poster Board Number .................................107 GENOTYPE DETERMINES SUSCEPTIBILITY TO MERCURY TOXICITY: STUDIES IN TRANSFORMED CELLS EXPRESSING COPROPOPHRYNODGEN OXIDASE (CPOX) AND ITS GENETIC VARIANT. CPOX4. T. Li and J. S. Woods. Department of Environmental and Occupational Health Sciences, University of Washington, Seattle, WA.
Program Description (Continued)

Abstract #  
#1399  
Poster Board Number: #108  

Abstract #  
#1400  
Poster Board Number: #109  

Abstract #  
#1401  
Poster Board Number: #110  

Abstract #  
#1402  
Poster Board Number: #111  

Abstract #  
#1403  
Poster Board Number: #112  
ABNORMALLY DECREASED LEVELS OF NON-STEROIDAL ANTI-INFLAMMATORY DRUG-ACTIVATED GENE (NAG)-1 AND H6D POLYMORPHISM IN LUNG CANCER PATIENTS’ SERA. H. Kini, A. Joiakmin, D. J. Kaplan, K. Ondrey, R. Hadad and D. G. Beer. 

Abstract #  
#1404  
Poster Board Number: #113  

Wednesday Morning, March 18  
9:00 AM to 12:30 PM  
Exhibit Hall  
POSTER SESSION: ANIMAL MODELS II  
Chairperson(s): James McKim, CeeTox, Inc., Kalamazoo, MI.  
Displayed: 9:00 AM–12:30 PM  
Author Attended: 11:00 AM–12:30 PM  

Abstract #  
#1405  
Poster Board Number: #114  
BROMINE VAPOR SKIN STUDIES IN WEANLING PIGS. R. C. Kiser, F. M. Reid, M. R. Perry, J. Mann, A. Simmons, M. C. Bahiri, J. A. Blank and J. S. Graham. 

Abstract #  
#1406  
Poster Board Number: #115  
BROMINE VAPOR CUTANEOUS EXPOSURE SYSTEM FOR WEANLING PIGS. M. R. Perry, B. Reed, G. Sparks, R. C. Kiser, F. M. Reid and J. S. Graham. 

Abstract #  
#1407  
Poster Board Number: #116  

Abstract #  
#1408  
Poster Board Number: #117  

Abstract #  
#1409  
Poster Board Number: #118  
COMPARISON OF A HEPARIN-LOCK PROCEDURE TO CONTINUOUS MAINTENANCE SOLUTION ADMINISTRATION FOR INTERMITTENT INTRAVENOUS INFUSION STUDIES. A. M. Brooks, S. Pawl, J. Agate and A. N. Alexander. 

Abstract #  
#1410  
Poster Board Number: #119  
PRELIMINARY TRIAL FOR THE PREDICTION OF MECHANISM-BASED INHIBITION IN HUMAN USING PXB MICE. T. Takanohashi and R. Mihara. 

Abstract #  
#1411  
Poster Board Number: #120  
PRELIMINARY TRIAL FOR THE PREDICTION OF MECHANISM-BASED INHIBITION IN HUMAN USING PXB MICE. T. Takanohashi and R. Mihara.
#1411  
**Abstract**  
**Poster Board Number .................................122**  
**COMPARATIVE MAMMALIAN GASTROINTESTINAL ABSORPTION: THE INFLUENCE OF VARIOUS GASTROINTESTINAL FACTORS.**  
**A. L. Williams and J. M. DeSesso. Noblis, Falls Church, VA.**

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#1412  
**Poster Board Number .................................123**  
**ESTABLISHMENT OF A LINE OF SPORTS (SPONTANEOUSLY-RUNNING-TOKUSHIMA-SHIKOKE) RATS THAT FORM LEFT ATRIAL THROMB.**  
**T. Ohnishi1,2,  
1Pathology, Nishi-Kobe Medical Center, Kobe, Japan and 2Molecular and Environmental Pathology, The University of Tokushima, Tokushima, Japan.**

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#1413  
**Poster Board Number .................................124**  
**A NON CLINICAL TOXICITY AND BIODISTRIBUTION STUDY IN CYCLOMOLGUS MONKEY WITH A NEW LIVE ATTENUATED JAPANESE ENCEPHALITIS VACCINE.**  
**G. Ravel1, C. Meric2 and S. Gould.**  
**Non Clinical Safety, sanofi pasteur, Marcy l’etoile, France and R & D, sanofi pasteur, Marcy l’etoile, France.**

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#1414  
**Poster Board Number .................................125**  
**A NEW IN VITRO METHOD FOR IDENTIFYING SKIN SENSITIZERS AND PREDICTING LLNA EC3 VALUES.**  

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#1415  
**Poster Board Number .................................126**  
**PROTECTIVE EFFECT OF ASCORBIC ACID SUPPLEMENTATION ON LEAD TOXICITY IN RAT BLOOD.**  
**B. P. Patolla and L. M. Turner.**  
**Department of Biological Sciences, Alcorn State University, Alcorn State, MS. Sponsor: A. Patolla.**

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#1416  
**Poster Board Number .................................127**  
**COMMON NEOPLASTIC LESIONS IN THE WISTAR HANNOVER RCHCHANTM: WIST R AT K. Weber1,2, T. Thio1,2, H. Iwata1,2, A. Pierisgilli1 and M. Josten1.**  
**Harlan Laboratories, Indianapolis, IN and CRC Ltd, Itingen, Switzerland. Sponsor: S. Corney.**

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#1417  
**Poster Board Number .................................128**  
**DEVELOPMENT OF A RODENT MODEL OF INFLUENZA A INFECTION IN F344 RATS.**  
**M. Wolf1, A. Kajov1, T. March1, D. Boden1 and J. Benson.**  
**Lovelace Respiratory Research Institute, Albuquerque, NM and Center for Marine Science, University of North Carolina, Wilmington, NC.**

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#1418  
**Poster Board Number .................................129**  
**ACUTE AND SUBCHRONIC STUDIES FOR EVALUATION OF HALOACETAMIDE IN MINI PIGS: CLINICAL PATHOLOGY AND HISTOPATHOLOGY ASPECTS.**  
**L. C. Sa-Relva1, J. G. Júnior1, H. S. Mariano2, M. A. Foz2 and J. E. Kalil.**  
**Pathology, Faculty of Veterinary Medicine of São Paulo University, São Paulo, Brazil, 2Research, Mini Pigs Research and Development, Campina do Monte Alegre, São Paulo, Brazil, 3Animal Toxicology, Cialyxs Labs & Consultants, São Paulo, Brazil, 4Immunology, Faculty of Medicine of São Paulo Federal University, São Paulo, Brazil and 5Immunology and Allergy, Faculty of Medicine of São Paulo University, São Paulo, Brazil.**
Program Description (Continued)

Abstract # 1

Poster Board Number #1427

HOW TO INTEGRATE SAFETY PHARMACOLOGY END-POINTS DURING TOXICOLOGICAL STUDIES IN NON HUMAN PRIMATES FOR BIOLOGICS? H. Ficheux, G. Froget and J. Legrand. CIT, Evreux, France.

#1428

COMPARISON OF BACKGROUND DATA FROM NORMAL (NON-CANNULATED) VERSUS DATA FROM SURGICALLY-CANNULATED, INTRAVENOUSLY INFUSED, RATS, DOGS, MONKEYS AND PIGS. G. Washer, S. Authier and E. Lebel. LAB Research Inc., Laval, QC, Canada.

#1429


#1430

CEREBROSPINAL DELIVERY AND SAMPLING IN RATS. C. Copeman, M. Mus and Y. Trudel. Toxicology, Charles River, Senneville, QC, Canada. Sponsor: M. Vézina.

#1431


#1432

ACTIVATION OF ENDOPHOSMATIC RETICULUM-STRESS IN HEPATIC ALCOHOL DEHYDROGENASE-DEFICIENT DEER MICE IS ASSOCIATED WITH NONOXIDATIVE METABOLISM OF ETHANOL, B. S. Kaphalia1, S. Kondraganti2, K. K. Bhupale and G. Ansari2. Pathology, The University of Texas Medical Branch, Galveston, TX and 2Biochemistry & Molecular Biology, The University of Texas Medical Branch, Galveston, TX.

Wednesday Morning, March 18
9:00 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: ADVANCES IN REPRODUCTIVE TOXICOLOGY

Chairperson(s): Kelly K. Andringa, University of Alabama at Birmingham, Birmingham, AL and Eva McLanahan, U.S. EPA, Research Triangle Park, NC.

Displayed: 9:00 AM–12:30 PM

Author Attended: 9:00 AM–11:00 AM

#1433

Poster Board Number #1433

AN ALTERNATE DESIGN FOR THE EXTENDED ONE GENERATION REPRODUCTION STUDY. P. M. Foster.

Toxicology, DHHS, NIH, NIEHS, Research Triangle Park, NC.

#1434


#1435


#1436

CONTROL DATA OF REPRODUCTIVE TOXICITY STUDIES IN THE Wistar HANNOVER RccHaNTM: WIST RAT, K. Weber, S. Whitlow1,2, R. Gerspach1,2 and M. Josten1,2. Harlan Laboratories, Indianapolis, IN and 3RCC Ltd, Hingen, Switzerland. Sponsor: S. Corney.

#1437


#1438

#1440
Poster Board Number ........................................153
DEVELOPMENT AND VALIDATION OF MULTIPLE HORMONE PANELS TO EVALUATE RAT PITUITARY, STRESS AND THYROID HORMONES, R. Kuk and D. J. Stanislaus. Reproductive Toxicology, Safety Assessment, GlaxoSmithKline, King of Prussia, PA. Sponsor: S. Lerman.

#1441
Poster Board Number ........................................154
VINCLOZOLIN (V) TREATMENT INDUCES REPRODUCTIVE MALFORMATIONS AND INFERTILITY IN F1 MALE RATS WHEN ADMINISTERED DURING SEXUAL BUT NOT GONADAL DIFFERENTIATION, THE EFFECTS ARE NOT TRANSMITTED TO THE SUBSEQUENT GENERATIONS. J. Furr and L. E. Gray. ENDOCRINOLOGY BRANCH, NHEERL, U.S. EPA, Research Triangle Par, NC.

#1442
Poster Board Number ........................................155
A COMPARISON OF THE GLOBAL GENE EXPRESSION IN RAT GRANULOSA CELLS WHEN CHALLENGED BY METHOXYCHLOR AND ITS METABOLITE 2, 2-BIS-(P-HYDROXYPHENYL)-1, 1-TRICHLOROETHANE, HPE, IN VITRO. C. Harvey1, M. Esmai1, R. Zachow1,2 and M. Uzumcu2. 1,2Joint Graduate Program of Toxicology, UMDNJ/Rutgers University, Piscataway, NJ, 1Department of Animal Sciences, Rutgers, The State University of New Jersey, New Brunswick, NJ, 2Department of Physiology and Biophysics, UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ and 3College of Medicine, Touro University, Hackensack, NJ.

#1443
Poster Board Number ........................................156
Cynomolgus Monkey Fertility Assessment in a Repeated Dose Toxicology Study: Testosterone Levels, Semen Analysis and Testicular Volume. S. Onedra1, N. Makori1, N. Lalavaya1, D. Carwin1, J. Kenfield1, S. Herrin1, L. Lemmon1, W. Congdon1, R. Eyre1, B. Baker1, J. Klaassen1, S. Meyer1 and R. Nagata2. 1SNBL USA, Ltd., Everett, WA and 2Shin Nippon Biomedical Laboratories, Ltd., Kagoshima, Japan.

#1444
Poster Board Number ........................................157

#1445
Poster Board Number ........................................158
COLLABORATIVE WORK ON EVALUATION OF OVARIAN TOXICITY. (5) EFFECTS OF 2- OR 4-WEEK REPEATED DOSE AND FERTILITY STUDIES OF SULPIRIDE IN FEMALE RATS. M. Ube1, S. Ishii1, M. Okada1, T. Adachi1, J. Sugimoto1, Y. Inoue1, Y. Uno1 and M. Mutai1. 1Safety Research Laboratory (Kazusa), Mitsubishi Tanabe Pharmacology Corporation, Kisarazu, Japan and 2Safety Research Laboratory (Kashima), Mitsubishi Tanabe Pharmacology Corporation, Osaka, Japan. Sponsor: S. Marrko.

#1446
Poster Board Number ........................................159

#1447
Poster Board Number ........................................160

#1448
Poster Board Number ........................................201
INTRAVAGINAL ADMINISTRATION OF 17ß ESTRADIOL TO OVARIECTOMIZED RATS AS A POSITIVE CONTROL FOR UTEROTROPIC ASSAYS. T. D. Thullen1, A. K. Remick2, C. Abolin3, D. G. Stump1, A. Workman1, P. M. Jones1, T. Jerussi3, Y. Schwartz3 and M. D. Nemec1. 1DART, WIL Research, LLC., Ashland, OH, 2WIL-Biotechnics, LLC., Hillsborough, NC and 3Hygeia Therapeutics, Inc., Holden, MA.

#1450
Poster Board Number ........................................202
EFFECTS OF FENVALERATE ON CELL PROLIFERATION, APOPTOSIS AND COLLAGEN I PRODUCTION IN HUMAN UTERINE LEIOMYOMA CELLS AND UTERINE SMOOTH MUSCLE CELLS. X. Gao, L. Yu, M. Klippe1, L. Castro, T. Hermon, A. B. Moore and D. Dixon. Cellular and Molecular Pathology Branch, NTP, National Institute of Environmental Health Sciences, National Institutes of Health, Department of Health and Human Services, Research Triangle Park, NC.

#1451
Poster Board Number ........................................203

#1452
Poster Board Number ........................................204
Program Description (Continued)

Abstract #

#1452  
**Poster Board Number ..................205**  
REPRODUCTIVE AND DEVELOPMENTAL TOXICITY SCREENING TEST OF POTASSIUM PERFLUOROHESANESULFONATE IN SPRAGUE-DAWLEY RATS. R. G. York1, J. Batenhoff2, S. Chang3 and J. J. Ehresman1, 1Charles River Preclinical Services, Horsham, PA and 3M Company, St. Paul, MN.

#1453  
**Poster Board Number ..................206**  
PERCUTANEOUS UTEROTROPIC ASSAY OF LAVENDER OIL IN IMMATURE FEMALE RATS. V. T. Polin1o1, J. Scognamiglio1, E. M. Lewis2, A. M. Hoberman1, M. S. Christian1, R. M. Diener2 and A. Apé1, 1Research Institute for Fragrance Materials, Inc., Woodcliff Lake, NJ, 2Charles River Laboratories Preclinical Services, Horsham, PA and 3Argus International, Inc, Horsham, PA.

#1454  
**Poster Board Number ..................207**  
PLEIOTROPIC EFFECT OF AKT1 DEFICIENCY ON FEMALE FERTILITY. C. Brown, M. Ota, L. Anderson and M. Hixon. Brown University, Providence, RI.

#1455  
**Poster Board Number ..................208**  
THE ARYL HYDROCARBON RECEPTOR MAY REGULATE GENE EXPRESSION IN THE NEONATAL MOUSE OVARY. B. Karman and J. Flaws. Department of Veterinary Biosciences, University of Illinois, Urbana, IL.

#1456  
**Poster Board Number ..................209**  

#1457  
**Poster Board Number ..................210**  
COLLABORATIVE WORK TO EVALUATE OVARIAN TOXICITY BY REPEATED DOSE AND FEMALE FERTILITY STUDIES IN RATS: MORPHOLOGICAL CHARACTERISTICS OF NORMAL CYCLING OVARY IN RATS AND THEIR VIEWPOINTS FOR OVARIAN TOXICITY DETECTION. M. Yoshida1, A. Sanbuissu2, S. Hisada1, M. Takahashi1, Y. Ohno1 and A. Nishikawa1, 1National Institute of Health Sciences, Tokyo, Japan, 2Daichi-Sankyo Co., Ltd., Shizuoka, Japan, 3Aska Pharmaceutical Co. Ltd., Kanagawa, Japan and 4Pathology Peer Review Center, Tokyo, Japan.

#1458  
**Poster Board Number ..................211**  
Program Description (Continued)

Abstract #

#1465 Poster Board Number ..............................................224

ASSESSING THE CUMULATIVE IMPACTS OF CHEMICAL EMISSIONS AND DISCHARGES. G. V. Alexeeff1, J. Faust1, A. Kyle1, R. Morello-Frosch1, M. Jerrett1 and L. Zeise1.

1OEHHA, Cal/EPA, Oakland, CA and 2School of Public Health, UC Berkeley, Berkeley, CA.

#1466 Poster Board Number ..............................................225

A NOVEL ALGORITHM FOR COMPUTING INTERACTION-BASED HAZARD INDEX FOR THE HEALTH RISK ASSESSMENT OF CHEMICAL MIXTURES. S. S. Isukapalli1, A. F. Sasso1, P. G. Georgopoulos1 and K. Krishnan1.

1DEOM, UMDNJ RWJ Medical School, Piscataway, NJ and 2GRIS, University of Montreal, Montreal, QC, Canada.

#1467 Poster Board Number ..............................................226

THE CUMULATIVE DIETARY EXPOSURE TO ORGANOPHOSPHOROUS INSECTICIDES IS PROBABLY OVERSTATED. R. Krieger1, J. H. Ross1 and R. Cochran1.

1California EPA, Sacramento, CA, 2U C Riverside, Riverside, CA and 3risksciences.net LLC, Carmichael, CA.

#1468 Poster Board Number ..............................................227

SPECIATION PROFILING AND SIZE FRACTIONING OF TOTAL PARTICULATE MATTER Emitted FROM STATIONARY, MOBILE AND AREAWIDE SOURCES IN CALIFORNIA. D. HaMai and M. Suh.

Toxicology and Mechanistic Biology, Exponent Engineering and Health Sciences, Irvine, CA.

#1469 Poster Board Number ..............................................228


ATSDR/DTEM, Atlanta, GA.

#1470 Poster Board Number ..............................................229

ENVIRONMENTAL PREDICTORS OF U.S. COUNTY MORTALITY PATTERNS ON A NATIONAL BASIS. M. P. Chun1, R. S. Weinhold1, R. Thomas1, J. M. Gohlke2 and C. J. Portier1.

1Environmental Systems Biology, NIEHS, Research Triangle Park, NC and 2Independent researcher and journalist, Colorado City, Colorado City, CO.

Poster Board Number .......................................................230

HYPOTHESIS-BASED WEIGHT OF EVIDENCE (HBWO)—A TOOL FOR EVALUATING THE ENTIRE BODY OF LITERATURE IN CONSIDERING HUMAN RELEVANCE AND POTENTIAL CARCINOGENIC MODE OF ACTION—NAPHTHALENES AS AN EXAMPLE. L. Bailey and L. Rhomberg. Gradient Corporation, Cambridge, MA.

Poster Board Number .......................................................231

AN ASSESSMENT OF THE IMPACT OF EXPOSURE ROUTE ON THE INTERINDIVIDUAL VARIABILITY FACTOR (IVF) FOR DRINKING WATER CONTAMINANTS (DWCS). M. Valcèke1 and K. Krishnan1.

1Santé environnementale et santé au travail, Université de Montréal, Montréal, QC, Canada and 2Institut national de santé publique du Québec, Montréal, QC, Canada.

Poster Board Number .......................................................232

YOUR RESULTS MAY VARY: EXPLORING THE SENSITIVITY OF TITANIUM DIOXIDE RISK ESTIMATES TO DIFFERENT MODELING ASSUMPTIONS. D. A. Dankovic, E. D. Kuempel and M. W. Wheeler.

Risk Evaluation Branch, CDC/NIOSH, Cincinnati, OH.

Poster Board Number .......................................................233


CDM, Edison, NJ.

Poster Board Number .......................................................234

CONSIDERATION OF IN VITRO BIOACCESSIBILITY OF INDOOR DUST WHEN ASSESSING RISKS IN SMELTER COMMUNITIES. E. Sigal, G. Ferguson and C. Bacigalupo. Intrinsik, Mississauga, ON, Canada.

Poster Board Number .......................................................235


Poster Board Number .......................................................236


Poster Board Number .......................................................237

USING THERAPEUTIC DATA TO ASSESS POTENTIAL HUMAN HEALTH RISKS FROM EXPOSURE TO ORGANIC NITRATES. H. Choudhury and A. J. Weinrich.

ORD/NEEA, U.S. EPA, Cincinnati, OH.

Poster Board Number .......................................................238

STUDY OF THE EFFECT OF CONCOMITANT INGESTION AND INHALATION EXPOSURE TO THE INTERNAL DOSE OF N-HEXANE (HEX) OR CYCLOHEXANE (CYCLO) IN RATS. M. Gagné, G. Charest-Tardif, K. Krishnan and R. Tardif.

GRIS - Santé environnementale et santé au travail, Université de Montréal, Montréal, QC, Canada.
Program Description (Continued)

Abstract #  #1480  Poster Board Number  #1480  NASAL Olfactory Epithelial Lesions in F344 and SD Rats Following a 5-Day Inhalation Exposure to Naphthalene. D. E. Dodd1, M. W. Marshall1, E. A. Gross-Bermudez1, R. A. Miller2 and B. A. Wong1. 1The Hamner Institutes for Health Sciences, Research Triangle Park, NC and 2Experimental Pathology Laboratories, Inc., Research Triangle Park, NC.

Abstract #  #1481  Poster Board Number  #1481  METHYL TERTIARY BUTYL ETHER (MTBE): ONE-YEAR TOXICITY DRINKING WATER STUDY IN WISTAR RATS. E. Bermudez, H. Parkinson and D. E. Dodd. The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

Abstract #  #1482  Poster Board Number  #1482  PATHOLOGY AND GENOTOXICITY IN F344 RATS IN A TWO WEEK INHALATION EXPOSURE EXPOSED TO AEROSOLIZED FT JET FUEL. B. A. Wong3, C. U. Parkinson1, S. Sharma1, G. A. Willson1, D. J. Wagner1, D. R. Mattie1 and D. E. Dodd1. 1The Hamner Institutes for Health Sciences, Research Triangle Park, NC, 2Experimental Pathology Laboratories, Research Triangle Park, NC, 3Naval Health Research Center, Environmental Health Effects Laboratory, Wright-Patterson AFB, OH and 4AFRL/711 HPW/RHPB, Wright-Patterson AFB, OH.

Abstract #  #1483  Poster Board Number  #1483  INTRAVENOUS- AND INHALATION-ROUTE PHARMACOKINETICS OF PROPANOIC ACID AND ITS METABOLITE, PROPIONIC ACID. J. J. Soelberg1, T. S. Poet1, A. L. Bushy1, L. M. Sweeney2 and W. Faber1. 1 Battelle, Pacific Northwest Division, Richland, WA, 2The Sapphire Group, Dayton, OH and 3Willem Faber Toxicology Consulting, LLC, Victory, NY.

Abstract #  #1484  Poster Board Number  #1484  INHALATION KINETICS OF PENTAFLUOROPROPAINE IN HUMANS. L. Ernstgård1, M. Andersen2, W. Dekani3, S. Juran1, B. Lind1, B. Sjögren1 and G. Johanson1. 1Karolinska Institutet, Stockholm, Sweden, 2The Hamner Institute for Health Sciences, Research Triangle Park, NC and 3University of Wuerzburg, Wuerzburg, Germany.

Abstract #  #1485  Poster Board Number  #1485  ASSESSMENT OF THE IRRITATION POTENTIAL OF SWEDISH SNUS INGREDIENTS USING THE EPIORAL™ TISSUE MODEL. L. R. Neilson1, S. P. Faux2, S. J. Hinchcliffe2, T. S. Jaf2 and C. Meredith1. 1Group R&D, British American Tobacco, Southampton, United Kingdom and 2Toxicology Group, Advanced Technologies (Cambridge) Limited, Cambridge, United Kingdom.

Abstract #  #1486  Poster Board Number  #1486  HOW DO ANIMAL STRAINS AND VEHICLES IMPACT ON LLNA RESULTS. W. Wang-Fan and L. G. Ullmann. 1Business Unit Pharmacology, RCC Ltd, Itingen, Switzerland.

Abstract #  #1487  Poster Board Number  #1487  TSCA 8(E)/FYI INITIAL SCREEN DATABASE, A PRIORITIZATION TOOL. E. Cohen1, J. Von Runnen1, V. Houck1, W. L. Richards1, A. Blaschka2, A. Kennedy2 and M. Townsend2. 1Environmental Science, SRC, N. Syracuse, NY, 2Risk Assessment Division, OPPTS/US, EPA, Washington, DC and 3Environmental Science, SRC, Arlington, VA.

Abstract #  #1488  Poster Board Number  #1488  HORMESIS KNOWLEDGE AND OPINION SURVEY RESULTS. A. Jones, A. L. Douglas, S. J. Edward and C. J. Edward. 1School of Public Health, University of Massachusetts, Amherst, MA.

Abstract #  #1489  Poster Board Number  #1489  A PROBABILISTIC CANCER RISK ASSESSMENT MODEL OF KEY SMOKELESS TOBACCO CONSTITUENTS. Z. S. Naufal1, S. Kathanan1, J. Bodnar2, M. Borgerding2 and C. Wilson3. 1Integrated Toxicology and Environmental Health Program, Duke University, Durham, NC and 2Research and Development Department, RJ Reynolds Tobacco Co., Winston-Salem, NC.

Abstract #  #1490  Poster Board Number  #1490  EFFECTS ON EXPRESSION OF APOPTOSIS AND INFLAMMATORY GENES OF THE COMBINATION ARSENIC AND FLUORIDE-EXPOSURE. M. Salgado-Bustamante1, B. Estrada-Capetillo2, D. P. Portales-Pérez2 and R. González-Amaro3. 1Biologia Molecular y Bioquimica, Universidad Autonoma de San Luis Potosi, San Luis Potosi, Mexico, 2Inmunología Celular y Molecular, Universidad Autonoma de San Luis Potosi, San Luis Potosi, Mexico and 3Facultad de medicina, Universidad Autonoma de San Luis Potosi, Seattle, WA.

Abstract #  #1491  Poster Board Number  #1491  CONTRIBUTION OF TRICHLOOROACETIC ACID TO LIVER TUMORS OBSERVED IN PERCHLOROETHYLENE (PERC)-EXPOSED MICE. L. M. Sweeney1, C. R. Kirman2, M. L. Gargas3 and P. H. Dugard3. 1The Sapphire Group, Dayton, OH, 2The Sapphire Group, Cleveland, OH and 3Halogenated Solvents Industry Alliance, Arlington, VA.

Abstract #  #1492  Poster Board Number  #1492  ESTABLISHING A MUTAGENIC MODE OF ACTION: CASE STUDIES. M. Anatra-Cordone1, M. Odin1, H. Carlson-Lynch1, P. McClure1 and P. McGinnis1. 1Syracuse Research Corp, N. Syracuse, NY.

Abstract #  #1493  Poster Board Number  #1493  FACTORING PRE-EXISTING, TUMOR-ASSOCIATED MUTATIONS AND POLYCLONAL TUMOR DEVELOPMENT INTO THE REGULATORY RISK ASSESSMENT PARADIGM. B. L. Parsons2, F. Meng1 and P. B. McKinzie1. 1Division of Genetic and Reproductive Toxicology, FDA/National Center for Toxicological Research, Jefferson, AR.
# Program Description (Continued)

## Abstract #

### #1494

**Poster Board Number: 253**

**INDUCTION OF TUNICA VAGINALIS MESOTHELIOMAS IN RATS BY**


### #1495

**Poster Board Number: 254**


### #1496

**Poster Board Number: 255**


### #1497

**Poster Board Number: 256**


### #1498

**Poster Board Number: 257**


### #1499

**Poster Board Number: 258**


### #1500

**Poster Board Number: 259**

**PROTECTING EMERGENCY RESPONSE PERSONNEL FROM CHEMICALS OF HIGH PRIORITY BY DERIVING IMMEDIATELY DANGEROUS TO LIFE OR HEALTH (IDLH) VALUES USING REFINED METHODOLOGY. A. Maier, A. L. Parker, and G. Dutton. Toxicology Excellence for Risk Assessment (TERA), Cincinnati, OH and The National Institute for Occupational Safety and Health (NIOSH), Center for Disease Control and Prevention (CDC), Cincinnati, OH.**

## Abstract #

### #1501

**Poster Board Number: 260**

**DRAFT REVISIONS TO THE GUIDELINES FOR AUTHORS OF DRINKING WATER HEALTH ADVISORIES. S. S. Kueberuwa and L. T. Haber. Office of Water, U.S. Environmental Protection Agency, Washington, DC and Office of Toxicology Excellence for Risk Assessment (TERA), Cincinnati, OH.**

**Wednesday Morning, March 18**

**9:00 AM to 12:30 PM**

**Exhibit Hall**

**POSTER SESSION: HYPERSENSITIVITY AND AUTOIMMUNITY**

**Chairperson(s): Jean F. Regal, University of Minnesota Medical School, Duluth, MN.**

**Displayed: 9:00 AM–12:30 PM**

**Author Attended: 9:00 AM–11:00 AM**

### #1502

**Poster Board Number: 301**

**EFFECT OF THE IMMUNOSTIMULANT γ-D-GLUTAMYL-L-TRYPTOPHAN ON THE EFFECTOR PHASE OF ASTHMA IN A GUINEA PIG MODEL. J. F. Regal, C. Tuthill and M. Moleran. Biochemistry & Molecular Biology, University of Minnesota Medical School Duluth, Duluth, MN and SciClone Pharmaceuticals, Inc., Foster City, CA.**

### #1503

**Poster Board Number: 302**

**ASSESSMENT OF PROTEIN ALLERGENIC POTENTIAL IN MICE: RELATIONSHIPS BETWEEN IMMUNOGENICITY AND ALLERGENICITY. R. J. Dearman and I. Kimber. Faculty of Life Sciences, University of Manchester, Manchester, United Kingdom.**

### #1504

**Poster Board Number: 303**


### #1505

**Poster Board Number: 304**


Poster Board Number ...........................................306 TOLUENE DIISOCYANATE (TDI)-SPECIFIC MONOCLONAL ANTIBODIES: PRODUCTION AND EPITYPE MAPPING. T. B. Ruwona1, D. Schmechel1, J. M. Hettick1, E. Janotka1, F. M. Blachere1, D. H. Beezhold1, R. H. Simoyi2 and P. D. Siegel1. 1ACIB, NIOSH/CDC, Morgantown, WV and 2Chemistry, Portland State University, Portland, OR.


POSTER BOARD NUMBER ...........................................307 4-OXOPENTANAL IDENTIFIED AS A POTENTIAL INDOOR AIR IRRITANT AND ALLERGEN. J. L. Franko, A. E. Munson, J. Ham, L. Jackson, R. Wells, L. Butterworth and S. E. Anderson. CDC/NIOSH, Morgantown, WV.


IDENTIFICATION OF INDOOR AIR CONTAMINATES USING AN IN VITRO EXPOSURE SYSTEM. L. Jackson, R. Wells, A. E. Munson and S. E. Anderson. CDC/NIOSH, Morgantown, WV.

TH17 INVOLVEMENT IN PENICILLIME-INDUCED AUTOIMMUNITY. J. Li, X. Zhu and J. Uetrecht. Faculty of Pharmacy, University of Toronto, Toronto, ON, Canada.

GENEISTE INCREASES BLOOD GLUCOSE LEVELS IN STREPTOZOTOCIN-TREATED FEMALE B6C3F1 MICE. T. L. Guo, J. F. Zheng and K. L. White. Pharmacology and Toxicology, Virginia Commonwealth University, Richmond, VA.

ACETAMINOPHEN REVEALS IMMUNE-SENSITIZATION IN ORAL EXPOSURE MOUSE MODEL. L. S. Ludwig, L. Kwast, D. Flechter and R. Pieters. Institute for Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands.

EXAMINATION OF POTENTIAL CHEMICAL INTERACTIONS IN SKIN SENSITIZATION : ACTIVITY OF CLOVE BUD OIL ADMIXED WITH OXAZOLONE IN THE LOCAL LYMPH NODE ASSAY. J. Lallo1, I. Kimber1, R. J. Dearman2, G. Gerberick3 and A. Auj1. 1Research Institute for Fragrance Materials Inc., Woodcliff Lake, NJ; 2The University of Manchester, Manchester, United Kingdom and 3Procter & Gamble Co., Cincinnati, OH.


INCREASED CELL PROLIFERATION IN SPLEEN AND LYMPH NODES PERIPHERAL TO CONTACT ALLERGEN APPLICATION SITE. I. Chipinda, S. E. Anderson, L. F. Butterworth, D. H. Beezhold and P. D. Siegel. HELD/ACIB, CDC/NIOSH, Morgantown, WV.

COMPARISON OF GLOVE CONTACT ALLERGEN CONTENT AND CLINICAL PATCH TEST. P. D. Siegel1, F. J. Storrs2, D. Sassville1, M. Pratt1, A. A. Bledsoe1, B. F. Law1, D. H. Beezhold1 and J. F. Fowler5. 1NIOSH/CDC, Morgantown, WV, 2Oregon Health Sciences University, Portland, OR, 3McGill University, Montreal, QC, Canada, 4Ottawa Hospital, Ottawa, ON, Canada and 5University of Louisville, Louisville, KY.

TRICHLOROETHYLENE INGESTION ENHANCES PROLIFERATION RATE OF T CELLS AND CYTOKINE PRODUCTION ON MICE. R. Kobayashi1, S. Watanabe1, T. Nakanishi2, M. Satoh3 and H. Nagase4. 1Gifu Pharmaceutical University, Gifu, Japan and 2School of Pharmacy, Aichi Gakuin University, Nagoya, Japan.

MITOGEN-ACTIVATED PROTEIN KINASES CONTROL NRF2 ACCUMULATION IN HUMAN DENDRITIC CELLS IN RESPONSE TO THE CHEMICAL SENSITIZERS. S. Kerdine-Ronner1, D. Antonios1, M. Damiens1, J. Ourlin1 and M. Fallaridy1. 1University Paris Sud - INSERM UMR-S 749, Faculté de Pharmacie, 5 rue J.B Clément, Châtenay-Malabry, France and 2AFFSAPS DLC/BCM 635 rue de la Garenne F-34740, Vendargues, France.
Program Description (Continued)

Abstract # Poster Board Number ........................................320


#1524 ICCVAM TEST METHOD RECOMMENDATIONS FOR THE REDUCED LLNA (RLLNA): AN ALTERNATIVE TEST METHOD USING FEWER ANIMALS TO ASSESS THE ALLERGIC CONTACT DERMATITIS POTENTIAL OF CHEMICALS AND PRODUCTS, M. Wind1, J. Matheson1, A. Jacobs1, R. Tice1 and W. Stokes1. 1U.S. CPSC, Bethesda, MD, 2U.S. FDA, Silver Spring, MD and 3NICEATM, NIEHS, Research Triangle Park, NC.

#1525 LYMPH NODE CELL COUNT AS A USEFUL ALTERNATIVE FOR EVALUATING LLNA RESULTS, B. van Ravenzwaay, A. O. Gamer and R. Landsiedel. BASF SE, Ludwigshafen, Germany. Sponsor: A. Doi.

#1526 ALLERGEN-INDUCED INTERLEUKIN 2 EXPRESSION : CELLULAR SOURCE AND FUNCTION, C. Portsmouth1, M. Cumberbatch1, C. E. Griffiths1, I. Kimber1 and R. J. Dearman1. 1Faculty of Life Sciences, University of Manchester, Manchester, United Kingdom and 2Dermatological Sciences, University of Manchester, Manchester, United Kingdom.

Abstract # Poster Board Number ........................................326


#1528 ACCEPTABILITY OF THE MOUSE LOCAL LYMPH NODE ASSAY FOR PESTICIDE FORMULATION HAZARD ASSESSMENT, S. C. Gehen1, C. M. Wiesicsinski1, M. Woolhisser1 and R. Billington1. 1Dow AgroSciences, LLC, Indianapolis, IN, 2The Dow Chemical Company, Midland, MI and 3Dow AgroSciences, LLC, Abingdon, United Kingdom.

#1529 A PLASMACYTOID DENDRITIC CELL-BASED ASSAY TO SCREEN THE ALLERGICITY POTENTIAL OF CHEMICALS, S. Ayehunie, M. Klauauser, J. E. Sheeagreen and P. J. Haydn. MatTek Corporation, Ashland, MA.

#1530 APPLICATION OF TRYPTOPHAN FLUORESCENCE TO ASSESS SENSITIZING POTENTIALS OF CHEMICALS, T. Pham, T. Oyama, T. Ise and T. Kawamoto, environmental health, university of occupational and environmental health, Kitakyushu, Japan.

#1531 EXPOSURE TO ULTRAFINE PARTICLES DURING ALLERGIC SENSITIZATION YIELDS AN ALTERED LUNG EPITHELIAL STRUCTURE, C. M. Carosino1, J. R. Harkema2 and R. E. Pinckertnon. 1University of California, Davis, Davis, CA and 2Michigan State University, East Lansing, MI.

#1532 RAT SERUM ANTIBODIES INDICATE OXIDATIVE STRESS AND RENAL TOXICITY, BUT NOT NEUROTOXICITY FOLLOWING SUBCHRONIC ORAL EXPOSURE TO SODIUM TUNGSTATE, W. C. McCain1, T. M. Henson2, K. Mozzachio1, G. Leach1 and H. A. El-Fawal. 1Toxicology, U.S. Army Center for Health Promotion and Preventive Medicine, Aberdeen Proving Ground, MD, 2Mercy College, Dobbs Ferry, NY, 3Biotechnics, Hillsborough, NC and 4Albany College of Pharmacy and Health Sciences, Albany, NY.
Program Description (Continued)

Abstract #

Wednesday Morning, March 18
9:00 AM to 12:30 PM

Exhibit Hall

NEURODEGENERATIVE DISEASE

POSTER SESSION: PARKINSON’S DISEASE

Chairperson(s): Gary W. Miller, Emory University, Atlanta, GA.

Displayed: 9:00 AM–12:30 PM

Author Attended: 11:00 AM–12:30 PM

#1533 Poster Board Number ......................................334 REACTIVITY AND TOXICITY OF ENDGENOUS ALDEHYDES GENERATED VIA DOPAMINE CATABOLISM, L. L. Eckert, J. N. Rees, V. R. Florang and J. A. Doorn, Medicinal and Natural Products Chemistry, The University of Iowa, Iowa City, IA.

#1534 Poster Board Number ......................................335 THE MECHANISM OF TOXICITY OF 3, 4-DIHYDROXYPHENYLACETALDEHYDE, AN ENDGENOUS NEUROTOXIN. J. N. Rees, V. Florang and J. A. Doorn, Medicinal and Natural Products Chemistry, The University of Iowa, Iowa City, IA.

#1535 Poster Board Number ......................................336 OXIDATION AND REACTIVITY OF THE DOPAMINERGIC METABOLITE 3, 4-DIHYDROXYPHENYLACETALDEHYDE, A REACTIVE INTERMEDIATE OF DOPAMINE CATABOLISM. L. M. Mexas, V. Florang, J. Yunden and J. A. Doorn, Medicinal and Natural Products Chemistry, University of Iowa, Iowa City, IA.

#1536 Poster Board Number ......................................337 MODIFICATION OF TYROSINE HYDROXYLASE BY 3, 4-DIHYDROXYPHENYLACETALDEHYDE, A REACTIVE INTERMEDIATE OF DOPAMINE CATABOLISM. L. M. Mexas, V. Florang, J. Yunden and J. A. Doorn, Medicinal and Natural Products Chemistry, University of Iowa, Iowa City, IA.

#1537 Poster Board Number ......................................338 DISRUPTION OF CATECHOLAMINE HOMEOSTASIS PROMOTES OXIDATIVE DAMAGE AND NEURODEGENERATION. T. N. Taylor1,2, K. R. Shepherd1,2 and G. W. Miller1,2. 1Environmental and Occupational Health, Emory University, Atlanta, GA and 2Center For Neurodegenerative Disease, Emory University, Atlanta, GA.

#1538 Poster Board Number ......................................339 DOPAMINERGIC TOXICANT (MPTP) EFFECTS ON THE STRIATAL AND NIGRAL MITOCHONDRIAL PROTEOMES: IMPLICATIONS FOR PARKINSON’S DISEASE. R. B. Pringle1, T. Pechan2, J. Tang2 and N. M. Filippov2. 1CEHS, Basic Sci., Mississippi State University, Mississippi State, MS. 2LSBI, Mississippi State University, Mississippi State, MS and 3Physiol. & Pharmacology, University of Georgia, Athens, GA.

#1539 Poster Board Number ......................................340 PRE-TREATMENT WITH NEAR-INFRARED LIGHT ATTENUATES THE CYTOTOXIC EFFECTS OF MPP+ IN SH-SY5Y HUMAN NEUROBLASTOMA CELLS. K. D. DeSmet1, M. Henry2, E. V. Buchmann2, H. T. Whelan1,2,3 and J. T. Eells1,2,3. 1Clinical Laboratory Sciences, University of Wisconsin-Milwaukee, Milwaukee, WI and 2Neurology, Medical College of Wisconsin, Milwaukee, WI.

#1540 Poster Board Number ......................................341 EXPRESSION OF ALPHA-SYNUCLEIN IN RAT DOPAMINERGIC CELLS INCREASED SUSCEPTIBILITY TO MANGANESE LINKED TO OXIDATIVE STRESS. MAP KINASES AND NF-kB MEDIATED NEURONAL INJURY. K. Prabhakaran, G. D. Chapman and P. G. Gunasekar. Naval Health Research Center Detachment Environmental Health Effects Laboratory, Wright-Patterson AFB, Dayton, OH.


#1542 Poster Board Number ......................................343 PHARMACOGENETIC AND BIOCHEMICAL ANALYSIS OF PARKINSON’S DISEASE-, MANGANESE, AND DOPAMINE NEURON-ASSOCIATED PROTEINS IN C. ELEGANS: EFFECTS ON MITOCHONDRIA FUNCTION AND DOPAMINE NEURON VULNERABILITY. R. Settivari, J. LeVora and R. Nass. Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN.

#1543 Poster Board Number ......................................344 SUSTAINED STRIATAL H-1 OVEREXPRESSION AND THE PARKINSON’S DISEASE (PD) PHENOTYPE. J. Frasca1, D. A. Cory-Slechta1, M. K. O. Bannion2, M. Thiruchelvam3 and L. A. Opamasuk4. 1Environmental Medicine, University of Rochester Medical School, Rochester, NY, 2Neurobiology and Anatomy, University of Rochester Medical School, Rochester, NY and 3EOSHI, Piscataway, NJ.

#1544 Poster Board Number ......................................345 MITOCHONDRIAL MECHANISMS OF ROS PRODUCTION AND OXIDATIVE STRESS IMPLICATED IN PARKINSON’S DISEASE. D. Drechsel and M. Patel. School of Pharmacy, University of Colorado Denver, Aurora, CO.

#1545 Poster Board Number ......................................346 EFFECTS OF MIXED TOCOPHEROLS IN ANIMAL MODELS OF PARKINSON’S DISEASE. C. Becker, M. Thiruchelvam, J. Kochur and C. Yang. Joint Graduate Program in Toxicology, Rutgers University, UMDNJ-RWJMS, Environmental & Occupational Health Science Institute, Ernest Mario School of Pharmacy, Piscataway, NJ.
### Program Description (Continued)

#### Author Attended: 9:00 AM–11:00 AM

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<th>Abstract #</th>
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<tbody>
<tr>
<td>1547</td>
<td>FYN KINASE DEPENDENT PROTEOLYTIC ACTIVATION OF PROTEIN KINASE C-DELTA PHOSPHORYLATES ANTI-APOPTOTIC KINASE PKD1 DURING OXIDATIVE INSULT IN CELL CULTURE MODELS OF PARKINSON’S DISEASE. A. Asaithambi, A. Kanthasamy, A. Kanthasamy and V. Anantharam. Biomedical Sciences, Iowa State University, Ames, IA.</td>
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<tr>
<td>1548</td>
<td>ELEVATED HISTAMINE AS A VULNERABILITY FACTOR IN THE PARKINSON’S DISEASE PHENOTYPE. J. Allen, M. Thruhelvelt and D. A. Cory-Slechta. Environmental Medicine, University of Rochester Medical School, Rochester, NY and EOHSI, Piscataway, NJ.</td>
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**Wednesday Morning, March 18**
9:00 AM to 12:30 PM
Exhibit Hall

**POSTER SESSION: CYTOPROTECTIVE STRATEGIES AGAINST REACTIVE OXYGEN SPECIES**

**Chairperson(s):** Ura A. Boelsterli, University of Connecticut, Storrs, CT.

**Displayed: 9:00 AM–12:30 PM**

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**Poster Board Number**

### 350

#### PEROXIDASE-ACTIVATED MITOCHONDRIA-TARGETED NO-DONOR PROTECTS MOUSE EMBRYONIC CELLS AGAINST IRRADIATION-INDUCED INJURY.

N. A. Belikova, J. Jiang, V. Kapralova, Y. Y. Tyurina, J. S. Greenberger, D. A. Stoyanovsky and V. E. Kagan. Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA; Center for Free Radical and Antioxidant Health, University of Pittsburgh, Pittsburgh, PA; Radiation Oncology, University of Pittsburgh, Pittsburgh, PA; and Surgery, University of Pittsburgh, Pittsburgh, PA.

#### 353

CYPRESSOER A POST-TREATMENT PROTECTS FROM DICLOFENAC-INDUCED SMALL INTESTINAL INJURY IN MICE.

A. LoGuidice, V. Ramirez-Alcantara and U. A. Boelsterli, Department Pharmaceutical Sciences, University of Connecticut, Storrs, CT.

#### 354

KNOCKDOWN OF SUPEROXIDE DISMUTASE 2 IN BRL3 CELL AND RAT TO EVALUATE THE DURG-INDUCED HEPATOTOXICITY. T. Yokoi, Y. Yoshikawa, H. Hosomi, M. Morita and M. Nakajima. Drug Metabolism and Toxicology, Kanazawa University, Faculty of Pharmaceutical Sciences, Kanazawa, Japan.

#### 355

IDENTIFICATION OF SMALL MOLECULE INDUCERS OF HEAT SHOCK RESPONSE.

S. Sakamuru, K. Bi, M. K. Hancock, R. Huang, S. Shukla, C. S. Miller and M. Xiao. NIH Chemical Genomics Center, Rockville, MD and Invitrogen –Discovery Sciences, Madison, WI.

#### 356

LOW-LEVEL LIGHT THERAPY ENHANCES RENAL FUNCTION AND ANTIOXIDANT DEFENSE SYSTEM IN STREPTOZOTOCIN-INDUCED DIABETIC RAT MODEL. J. Lim, T. E. Balesli, R. A. Sanders, A. C. Snyder, J. T. Eells, D. S. Henshel and J. B. Watkins. SPEA, Indiana University, Bloomington, IN; Medical Sciences, Indiana University, Bloomington, IN and Health Sciences, University of Wisconsin, Milwaukee, WI.

#### 357

ANTIOXIDANT ACTIONS OF TAURINE AND STRUCTURALLY-RELATED SULFUR-CONTAINING COMPOUNDS IN THE BRAIN OF DIABETIC RATS.

S. N. Patel and C. A. Lacro, Pharmacological Sciences, St. John’s University, College Of Pharmacy, Jamaica, NY. Sponsor: B. Billack.

#### 358

ALDHTA1 IS A NOVEL ALDEHYDE DEHYDROGENASE WITH MULTIPLE FUNCTIONS INCLUDING PROTECTION FROM OXIDATIVE STRESS. C. Brocker, M. Cantore, N. Lassen, A. Pappa and V. Vasiliev. Department of Pharmaceutical Sciences, University of Colorado Health Sciences Center, Denver, CO.
Program Description (Continued)

Abstract #  

#1557  Poster Board Number ..............................359  EFFECTS OF SELENOCOMPOUNDS ON THIOREDOXIN REDUCTASE-I IN NON-TUMORIGENIC AND TUMORIGENIC HUMAN LUNG CELLS. R. Poerschke and P. J. Moos. Department of Pharmacology and Toxicology, University of Utah, Salt Lake City, UT.  

#1558  Poster Board Number ..............................360  MANIPULATION OF CELL GLUTATHIONE (GSH), γ-GLUTAMYL TRANSPEPTIDASE (GGT) & GLUTATHIONE S-TRANSFERASE (GST) ACTIVITY SENSITIZES NORMAL BUT NOT VITILIGO MELANOCYTES AGAINST 4-TERTIARY BUTYLPHENOL (4-TBP) TOXICITY. R. Sarangarajan1, I. Le Poole2 and S. Kerr3. 1 Massachusetts College of Pharmacy & Health Sciences, Worcester, MA and 2Loyola University, Chicago, IL.  

#1559  Poster Board Number ..............................401  DETA NONOATE RESCUES HYPEROXIA-INDUCED MACROPHAGE DYSFUNCTION. A. Pathak, T. Entezari-Zaher and L. Montell. St John’s University, New York.  

#1560  Poster Board Number ..............................402  RNA INTERFERENCE OF IGST4A IN HUMAN AORTIC VASCULAR SMOOTH MUSCLE CELLS RESULTS IN SIGNIFICANT CHANGES IN GENE EXPRESSION. Y. Yang1, Y. Xu1, M. Sinha2, B. Luxon2 and P. J. Boor2. 1Pathology, University of Texas Medical Branch, Galveston, TX and 2Bioinformatic Program, University of Texas Medical Branch, Galveston, TX.  

Wednesday Morning, March 18  
9:00 AM to 12:30 PM  
Exhibit Hall  

POSTER SESSION: METALS—IN VIVO  
Chairperson(s): Dallas M. Cowan, Purdue University, Lafayette, IN.  
Displayed: 9:00 AM–12:30 PM  
Author Attended: 11:00 AM–12:30 PM  

#1561  Poster Board Number ..............................411  COMPARATIVE DISTRIBUTION AND RETENTION OF ARSENIC IN ARSENIC (+3 OXIDATION STATE) METHYLTRANSFERASE KNOCKOUT AND WILD TYPE MICE. M. F. Hughes, B. C. Edwards, K. M. Herbin-Davis and D. J. Thomas. ORD/NHEERL, U.S. EPA, Research Triangle Park, NC.  

#1562  Poster Board Number ..............................412  COMPARISON OF TOXICOGENOMIC RESPONSES TO INORGANIC AND ORGANIC MERCURY IN CAENORHABDITIS ELEGANS. M. K. McElwee1, J. W. Chou1, J. H. Freedman1, 2Laboratory of Molecular Toxicology, NIEHS, Resarch Triangle Park, NC and 1Nicholas School of the Environment, Duke University, Durham, NC.  

#1563  Poster Board Number ..............................413  MOUSE SLC39A8 GENE ENCODING THE ZIPS ZINC/BICARBONATE SYMPORTER IS ESSENTIAL FOR EMBRYONIC NORMAL HEMATOPOIESIS. B. Wang, T. P. Dalton, M. L. Miller and D. W. Nebert. Environmental Health, University of Cincinnati Medical Center, Cincinnati, OH.  

#1564  Poster Board Number ..............................414  ROLE OF MELATONIN IN ENZYMATIC STRESS MARKERS AND GENE EXPRESSION IN ABETAPP TRANSGENIC MICE EXPOSED TO ALUMINUM. J. L. Domingo1, J. L. Esperza2, T. Garcia3, M. Gomez4, M. R. Nogue5 and M. Romeu6. Toxicology, Rovira i Virgili University, Reus, Spain and 4Pharmacology Unit, Rovira i Virgili University, Reus, Spain.  

#1565  Poster Board Number ..............................415  BLOOD CADMIUM AND LEAD AND CHRONIC KIDNEY DISEASE IN US. ADULTS. V. M. Weaver12, A. Navas-Acien12, M. Teller-Plaza23, E. Guallar23, P. Muntner4, E. Silbergeld5 and B. Jara23. Env Health Sciences, Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD, Epidemiology, JHSPH, Baltimore, MD, Welch Center for Prevention, Epidemiology and Clinical Research, JHMI, Baltimore, MD, Cardiovascular Epidemiology and Population Genetics, Centro Nacional de Investigaciones Cardiovasculares, Madrid, Spain, Medicine, JHMI, Baltimore, MD and Community and Preventive Medicine, Mount Sinai School of Medicine, NY, NY.  

#1566  Poster Board Number ..............................416  MICROARRAY ANALYSIS OF THE PULMONARY EFFECTS OF STAINLESS AND MILD STEEL WELDING FUMES IN A/J AND C57BL/6J MICE. P. C. Zeidler-Erdely1, M. L. Kashon, S. Li and J. M. Antonini. HELD, NIOSH, Morgantown, WV.  

#1567  Poster Board Number ..............................417  EXPOSURE TO ARSENIC COMBINED WITH HIGH FAT DIET PROMOTES THE IMPAIRMENT OF GLUCOSE TOLERANCE IN C57BL6 MICE. D. S. Paut1, F. S. Walton2 and M. Styblo2. Nutrition, University of North Carolina at Chapel Hill, Chapel Hill, NC and 2CEMALB, University of North Carolina at Chapel Hill, Chapel Hill, NC.  

#1568  Poster Board Number ..............................418  CADMIUM INDUCES REDUCED PLACENTAL ENOS ACTIVATION, REDUCED UMBILICAL ARTERY BLOOD VELOCITY AND FETAL GROWTH RESTRICTION IN MICE. N. Johnston, T. Hargest, P. Sysa, S. Pin, A. Tsao, Y. Xu, D. Bedja and K. L. Gabrielson. Molecular and Comparative Pathobiology, Johns Hopkins University, Baltimore, MD.
HYPOXIA INDUCIBLE FACTOR 1 ALPHA (HIF-1 alpha) PROTECTS MICE LUNGS FROM COBALT-INDUCED TOXICITY. Y. Saini1,2, K. Y. Kim1, J. R. Barkema2,3 and J. J. LaPres2,3.

LYMPHOCYTE NUCLEAR CHANGES AFTER INHALED V2OS EXPOSURE. BI-LAMIN IMPLICATION. V. Rodríguez-Lara1, E. García-Zepeda1, G. Soldevila1 and F. I. Tezgul1. Cellular and Tissular Biology, School of Medicine, UNAM, Mexico City, Mexico and 2 Immunology, Instituto Investigaciones Biomedicas, UNAM, Mexico City, Mexico.


METAL TOXICOLOGY IN NEW ORLEANS: SOIL Pb, BLOOD Pb AND ACHIEVEMENT BY 4TH GRADE STUDENTS. H. W. Mielke1,2. Chemistry, Tulane University, New Orleans, LA. 2 Center for Bioenvironmental Research, Tulane University, New Orleans, LA and 3 Lead Lab Inc., New Orleans, LA.

CADMIUM (CD) EXPOSURE IN VIVO RESULTS IN THE UPREGULATION OF THE RATE LIMITING ENZYME IN THE PENTOSE PHOSPHATE PATHWAY, GLUCOSE 6 PHOSPHATE DEHYDERGENASE (G6PDH), AND DIRECTLY INHIBITS NADPH FORMATION IN NRK CELLS. J. Edwards1, P. Lamar and W. Prozialeck. Pharmacology, Midwestern University, Downers Grove, IL.


EFFECT OF DMPS AND DMSA ON THE DISPOSITION OF HG2 IN MODELS OF REDUCED RENAL MASS. C. Bridges1, Joshee and R. K. Zahals. Division of Basic Medical Sciences, Mercer University School of Medicine, Macon, GA.
**Program Description (Continued)**

**Abstract #**

**#1583**  
**Poster Board Number**  433  
**ACUTE TOXICITY OF THIN-FILM CADMIUM TELLURIDE PHOTOVOLTAICS.** J. Zayed and S. Philippe. Department of environmental and occupational health, University of Montreal, Montreal, QC, Canada.

**#1584**  
**Poster Board Number**  434  
**RELEASE OF HEAVY METALS FROM HUMAN BLOOD AND URINE BY CYSTUS-SUD (CISTUS INCANUS SSP.PANDALIS).** C. Siegers1,2, R. K. Johannisson1 and J. Traedel1. 1Toxicology, University of Luebeck, Luebeck, Germany and 2University of applied Sciences, Luebeck, Germany.

**#1585**  
**Poster Board Number**  435  
**ARSENIC IN MEXICO: AN UP TO DATE OVERVIEW.** V. Obregón-Barboza, L. M. Del Razo and A. Albores. Toxicology, Cinvestav-IPN, Mexico D.F., Distrito Federal, Mexico.

**#1586**  
**Poster Board Number**  436  
**COMPARATIVE TOXICITY AND TISSUE DISTRIBUTION AFTER REPEATED ADMINISTRATION ORALLY WITH VARIOUS TYPES OF ARSENIC INTO THE MONKEY.** J. Park1, C. Kim2, S. Choi1, D. Kim1, M. Huang1, B. Choi1, K. Park1, Y. Yum1, E. Han1 and T. Kang1. Chung-Ang University, Seoul, South Korea.

**Wednesday Morning, March 18**
9:00 AM to 12:30 PM
Exhibit Hall

**BIOMARKERS**

**POSTER SESSION: BIOMARKER DISCOVERY AND DETECTION**

**Chairperson(s):** Jacqueline K. Akunda, Eli Lilly & Company, Greenfield, IN.

**Displayed: 9:00 AM–12:30 PM**

**#1591**  
**Poster Board Number**  441  
**REFERENCE VALUES OF 28 ELEMENTS (HEAVY METAL AND OLOEGELEMS) IN HAIR IN A CHILDREN POPULATION IN SPAIN FOR THE USE AS BIOMARKER OF ENVIRONMENTAL EXPOSURE.** E. Vilanova1, R. Ruz1, J. V. Marti-Bosca1 and C. Esteban1. 1Toxicología. Instituto de Bioingeniería, Universidad Miguel Hernández de Elche, Elche, Spain and 2D. G. Salud Pública, Generalitat Valenciana, Valencia, Spain.

**Author Attended: 9:00 AM–11:00 AM**

**#1592**  
**Poster Board Number**  501  

**#1593**  
**Poster Board Number**  502  
**CHARACTERIZATION OF GLUTATHIONE CONJUGATES OF 1-BROMOPENTANE AND ITS HEPATOTOXICITY.** T. Jeong, S. Lee, J. Kim, Y. Seo, S. Shin, J. Choi and M. Kang. Pharmacy, Yeungnam University, Gyeongsan, Gyeongbuk, South Korea.

**#1594**  
**Poster Board Number**  503  
**NOVEL TOXICOLOGY DATABASE ALLOWING FOR CROSS-COMPANY, MULTI-STUDY DATA MINING AND ANALYSIS FOR THE QUALIFICATION OF PREDICTIVE BIOMARKERS.** P. G. Rossi1, W. Mattes1, E. Walter2, M. Cooper1 and A. Hoover2. 1PSTC, the Critical Path Institute, Rockville, MD; 2Product Development, Rosetta Biosoftware, Seattle, WA and 3Roche, Pao-Alto, AZ.

**#1595**  
**Poster Board Number**  504  
Program Description (Continued)

Abstract #

#1596 Poster Board Number .................................. 505  
NGAL EXPRESSION IN KIDNEY OF SPONTANEOUS HYPERTENSIVE RATS (SHR) TREATED WITH DOXORUBICIN ALONE OR WITH DEXRAZOXANE: A COMPARISON WITH KIM-1 EXPRESSION. J. Zhang1, J. Ohm2, V. S. Vaidya1, P. Espandian1, A. Knapton1, P. L. Geuring1, R. P. Brown1, J. V. Bonventre2 and E. H. Herman1. 1CIDER, FDA, Silver Spring, MD, 2BioPorto Diagnostic A/S, Gentofte, Denmark, 3Department of Med., Brigham & Women’s Hosp, Harvard Medical School, Boston, MA and 4CDRH, FDA, Silver Spring, MD.

#1597 Poster Board Number .................................. 506  
ASSESSMENT OF OSTEOPONTIN INDUCTION IN VIVO AND IN VITRO TO PREDICT ITS POTENTIAL AS A SAFETY BIOMARKER OF HEPATIC INFLAMMATION AND LIVER INJURY. J. Lee1 and S. K. Ramaiiah. Pathobiology, Texas A&M University, College Station, TX.

#1598 Poster Board Number .................................. 507  
EVALUATION OF NEPHROTOXICITY BIOMARKERS IN GENTAMICIN-TREATED RATS. E. Wang1, I. Knemeyer2, R. Snyder1, S. Brunnert1, R. Casadei1, R. Smith1, A. Ingrassia1, R. Andrukievica1, K. Prevetel1, E. Evans1, N. Collins1 and Y. Z. Gu1. Toxicology, Schering-Plough, Summit, NJ and 1DMPK, Schering-Plough, Kenilworth, NJ.

#1599 Poster Board Number .................................. 508  
CHANGES IN URINARY CREATINE AND GENE EXPRESSION IN TESTIS TISSUE OF RATS TREATED WITH TESTICULAR TOXICANT. M. Sone1, A. Collins1, G. C. Lee2, E. Taylor1 and M. McMillian1. 1GPCD, Johnson & Johnson PRD, Raritan, NJ and 2Research and Early Development, Johnson & Johnson PRD, Spring House, PA.

#1600 Poster Board Number .................................. 509  
PLASMON-ENHANCED FLUORESCENT MICROARRAY ANALYSIS OF TOXICOLOGICAL SIGNATURES. D. V. Donaldson1, J. Rice2, E. Guignon2, D. A. Lawrence3 and M. A. Lynes1. Molecular and Cell Biology, University of Connecticut, Storrs, CT, 1Cienica, Inc., E. Hartford, CT and 2Wadsworth Laboratory, Albany, NY.

#1601 Poster Board Number .................................. 510  
A NOVEL TOXICOPROTEOMIC/TOXICOGENOMIC METHOD FOR THE IDENTIFICATION OF MOLECULAR BIOMARKERS. M. E. Gillespie. PHS, St. John’s University, Jamaica, NY.

#1602 Poster Board Number .................................. 511  
TRANSPISTOMIC CHANGES INDUCED BY LIPOPOLYSACCHARIDE TREATMENT IN RAT WHOLE BLOOD: OPTIMIZATION OF A NOVEL COLLECTION PROCEDURE. A. C. Ditewig1, M. M. Grudzien1, M. J. Liguori1, E. A. Blomme1, P. M. Jung2 and Y. Lou1. Cellular, Molecular and Exploratory Toxicology, Abbott Laboratories, Abbott Park, IL and 1Gene Expression Analysis, Abbott Laboratories, Abbott Park, IL.

#1603 Poster Board Number .................................. 512  
PERFORMANCE OF NOVEL KIDNEY BIOMARKERS IN PRECLINICAL TOXICITY STUDIES. D. Hoffmann1, M. Adler1, E. Rached1, L. Mulrane1, W. L. Gallagher1, J. J. Callanan1, J. Gautier1, K. Mathies1, F. Staudler1, F. Dieterle1, A. Walijew1, P. Hewitt1, H. Ellinger1, V. S. Vaidya1, M. Clement1, J. V. Bonventre1, W. Dekant1 and A. Mally1. University of Wuerzburg, Wuerzburg, Germany, 2University College Dublin, Dublin, Ireland, 3Sanofi-Aventis, Paris, France, 4Boehringer Ingelheim, Biberach, Germany, 5Novartis Pharmaceuticals AG, Basel, Switzerland, 6Merck KGaA, Darmstadt, Germany, 7Bayer Healthcare, Wuppertal, Germany and 8Harvard Medical School, Boston, MA.

#1604 Poster Board Number .................................. 513  
MECHANISM-BASED BIOMARKER GENE SETS FOR GLUTATHIONE-DEPLETION RELATED HEPATOTOXICITY IN RAT LIVER. W. Gao1, Y. Mizukama1, H. Yamada1, N. Nakatsu1, Y. Minowa1, Y. Ohno1 and T. Urushidani2,3. Toxicogenomics Informatics Project, National Institute of Biomedical Innovation, Osaka, Japan, 4Faculty of Pharmaceutical Sciences, Doshisha Women’s College of Liberal Arts, Kyoto, Japan and 5National Institute of Health Sciences, Tokyo, Japan.

#1605 Poster Board Number .................................. 514  
NOVEL BIOMARKERS FOR RISK OF PROSTATE CANCER, RESULTS FROM A CASE-CONTROL STUDY. L. Ying1, E. G. Rogan1, E. L. Cavaliere2, P. Muti1, B. Trock2 and J. Meza1. 1Department of Environmental, Agricultural and Occupational Health, University of Nebraska Medical Center, Omaha, NE, 2Eppley Institute for Research in Cancer and Allied Diseases, Omaha, NE, 3Department of Biostatistics, University of Nebraska Medical Center, Omaha, NE, 4Brady Urological Institute, The Johns Hopkins School of Medicine, Baltimore, MD and 5Department of Cancer Epidemiology, Italian National Cancer Institute, Rome, Italy.

#1606 Poster Board Number .................................. 515  
INVESTIGATIONS TO IDENTIFY PROLIFERATING SINUSOIDAL ENDOTHELIAL CELLS IN B6C3F1 MOUSE SPLEEN. A. Shen, S. Zhao, C. Huang and S. A. Sokolowski. Drug Safety Research and Development, Pfizer Global Research and Development, Groton, CT.

#1607 Poster Board Number .................................. 516  
IDENTIFICATION AND QUANTITATION OF PROLIFERATING LIVER SINUSOIDAL ENDOTHELIAL CELLS BY FLOW CYTOMETRY IN MICE AFTER TREATMENT WITH 2-BUTOXYETHANOL. C. Huang, S. Eddy, A. Shen, S. Zhao and S. A. Sokolowski. Drug Safety Research and Development, Pfizer Global Research and Development, Groton, CT.

#1608 Poster Board Number .................................. 517  
BLOOD GENE EXPRESSION MARKERS FOR TARGET ORGAN TOXICITY. P. Joseph, C. Umbright, R. Sellamuthu, M. Kasbon and M. Laster. Health Effects Laboratory Division, NIOSH, Morgantown, WV.
Abstract #

#1609  Poster Board Number ...............................518
IDENTIFICATION OF NOVEL GENOMIC BIOMARKERS OF SKELETAL MUSCLE TOXICITY IN RAT BY CORRELATION ANALYSIS OF GENE EXPRESSION AND HISTOPATHOLOGY DATA. U. Hemmann1, A. Bube1, K. Lindauer1, I. Stammerberger1, G. Troschau1 and K. Kotlienga1. ‘Drug Safety Evaluation, sanofi-aventis, Frankfurt, Germany and 2Biological Sciences Department, sanofi-aventis, Frankfurt, Germany.

#1610  Poster Board Number ...............................519
DEVELOPMENT AND VALIDATION OF A GENE EXPRESSION SIGNATURE FOR SKELETAL MUSCLE INJURY IN RAT. G. H. Searfoss1, J. Gollub2, C. L. Pearson1, M. Fielden2 and C. Thomas1. Investigative Toxicology, Eli Lilly & Co., Indianapolis, IN and ‘Entelos, Inc., Foster City, CA.

#1611  Poster Board Number ...............................520
NON-INVASIVE BIOMARKER DEVELOPMENT FOR AIRWAY DISEASE AND EXPOSURE. K. Bube1, R. Van Den Heuvel1, G. Koenen1, E. Govaert1, K. Desager1, E. Witters2 and G. Schoeters2. 1Environmental toxicology, VITO, Mol, Belgium, 2UA, Antwerp, Belgium and 3UZA, Antwerp, Belgium. Sponsor: B. De Wever.

#1612  Poster Board Number ...............................521

#1613  Poster Board Number ...............................522
NATRIURETIC PEPTIDES AS BIOMARKERS OF CARDIAC HYPERTROPHY IN RATS. S. K. Engle1, M. J. Berna1, M. L. Pritt1, B. Ackermann1, A. Schultz1, V. Reynolds1, P. F. Solter1 and D. E. Watson1. ‘Eli Lilly and Company, Indianapolis, IN and ‘University of Illinois, Urbana-Champaign, IL.

#1614  Poster Board Number ...............................523

#1615  Poster Board Number ...............................524
PORCINE-TO-MURINE TESTICULAR XENOGRAFTS AS NOVEL BIOMARKERS FOR PREPUBERTAL EXPOSURE TO ENDOCRINE DISRUPTORS. T. J. Evans, E. M. Walters, V. K. Gangjam and Y. Agca. University of Missouri-Columbia, Columbia, MO.

Abstract #

#1616  Poster Board Number ...............................525

#1617  Poster Board Number ...............................526
DETECTION OF THE MITOCHONDRIAL AND CATALYTICALLY ACTIVE ALANINE AMINOTRANSFERASE (ALT2) IN HUMAN TISSUES AND PLASMA. B. Glinkhammar1, I. Rafter1, L. Anna-Karin1, H. Jesper1 and C. Ian1. 1Molecular Toxicology, Safety Assessment, Södertälje, Sweden and 2Pathology, Safety Assessment, Södertälje, Sweden.

#1618  Poster Board Number ...............................527
IDENTIFICATION OF GLUTATHIONE-DNA ADDUCTS INDUCED BY FORMALDEHYDE. K. Lu, W. Ye, A. Gold, L. M. Ball and J. A. Sweeney. Environmental Sciences and Engineering, University of North Carolina, Chapel Hill, NC.

Wednesday Morning, March 18
9:00 AM–12:30 PM
Exhibit Hall

BIOMARKERS

POSTER SESSION: BIOMONITORING AND EXPOSURE ASSESSMENT

Chairperson(s): David K. Blackwell, Pfizer Global Research and Development, Groton, CT.

Displayed: 9:00 AM–12:30 PM

Author Attended: 11:00 AM–12:30 PM

#1619  Poster Board Number ...............................531
INTERPRETING TRIHALOMETHANE BIOMONITORING DATA IN A PUBLIC HEALTH RISK CONTEXT USING BIOMONITORING EQUIVALENTS. S. M. Hays1, L. L. Aygift2, J. S. LaKind3 and B. C. Blount4. ‘Summit Toxicology LLP, Lyons, CO, 2Summit Toxicology LLP, Falls Church, VA, 3LaKind Associates LLC, Catonsville, MD, 4School of Medicine, University of Maryland, Baltimore, MD and 5National Center for Environmental Health, Centers for Disease Control and Prevention, Atlanta, GA.

#1620  Poster Board Number ...............................532

#1621  Poster Board Number ...............................533
USING BLOOD MEASUREMENTS TO ASSESS EXPOSURE TO DIOXIN/FURANS: POTENTIAL INFLUENCE OF ELEVATED DETECTION LIMITS. L. F. Scott1, J. Keenan1, B. L. Finley2, L. S. VonTungeln2, L. K. Schnackenberg2, J. J. Chen2, T. Han2, C. Chang2, Z. Su2, X. Fan2, W. Tong2, S. A. Booth4, R. Balasaubramanian1, P. L. Courchesne1, J. M. Campbell2, A. Graber1, Y. Guo1, T. Y. Li2, M. D. Lynch2, N. M. More2, T. N. Plasterer2, C. Zeng2, F. A. Beland1 and R. N. McBurney2. 1BG Medicine, Waltham, MA and 2National Center for Toxicological Research, U.S. Food and Drug Administration, Jefferson, AR.

#1622  Poster Board Number ...............................534
Poster Board Number ...............................535
Abstract #
# Program Description (Continued)

**Abstract #**

#1622 Poster Board Number ............................................534

INFLUENCE OF THE UNIT OF EXPRESSION OF BIOMONITORING DATA ON THE ASSESSMENT OF PYRETHROID EXPOSURE. M. C. Fortin, G. Carrier and M. Bouchar. Department of Environmental and Occupational Health, Universite de Montreal, Montreal, QC, Canada.

#1623 Poster Board Number ............................................535

EVALUATION OF A TEST METHOD FOR THE MEASUREMENT OF URINARY CYCLOPHOSPHAMIDE, 4-KETO-CYCLOPHOSPHAMIDE AND IFOFSAMIDE. C. B’Hymer and K. L. Cheever. Bhab, Niosh, Cincinnati, OH.

#1624 Poster Board Number ............................................536

URINARY PROTEIN/PEPTIDE ADDUCTS AS MARKERS OF REACTIVE NAPHTHALENE METABOLITE FORMATION IN MALE MICE. N. T. Pham and A. Buckgitt. Molecular Biosciences, University of California, Davis, Davis, CA.

#1625 Poster Board Number ............................................537

INCREASED MALONDIALDEHYDE LEVELS IN EXHALED BREATH CONDENSATE OF RETIRED COAL MINERS WITH DECREASED LUNG FUNCTION. J. Lee1, J. Shin1, B. Choi1, K. Lee1, J. Lee1, W. Lee1 and J. Lee1. 1Center for Occupational Lung Diseases, K- medi, Ansan, South Korea and 2Aansan Chongung General Hospital, K-medi, Ansan, South Korea. Sponsor: I. Yu.

#1626 Poster Board Number ............................................538


#1627 Poster Board Number ............................................539

MICRORNA EXPRESSION CAN BE SIGNIFICANTLY ALTERED ONE DAY AFTER CANCINOGEN TREATMENT. Z. Li1, L. Shi2, M. Pearce1, Y. Wang1, T. Chen1. 1Division of Genetic and Reproductive Toxicology, National Center for Toxicological Research, Jefferson, AR and 2Division of Systems Toxicology, National Center for Toxicological Research, Jefferson, AR and 3SABiosciences Corporation, Frederick, MD.

#1628 Poster Board Number ............................................540


#1629 Poster Board Number ............................................541

EVALUATION OF BIOMARKERS OF EXPOSURE IN CLINICAL SAFETY ASSESSMENTS. H. Leslie, A. Wong and K. Musa-Veloso. Cantox Health Sciences International, Mississauga, ON, Canada.

**Abstract #**

#1630 Poster Board Number ............................................542

OPTIMIZATION OF A PROTOCOL TO ISOLATE GENOMIC MATERIAL FROM BUCCAL CELLS. Z. Guerette, X. Yu, H. Kim, S. Hong and E. M. Faustman. Environmental and Occupational Health Sciences, University of Washington, Seattle, WA.

#1631 Poster Board Number ............................................543

QUANTIFICATION OF BUTADIENE-MONOEPoxide AND DiePOXIDE N-TERMINAL VALINE ADDUCTS IN RODENTS AT LOW EXPOSURES. N. Bordeaer1, N. I. Georgieva1, G. Boyesi2, L. Collins1, V. Walker2 and J. A. Swenberg. 1ESE, University of North Carolina at Chapel Hill, Chapel Hill, NC and 2Lovelace Respiratory Research Institute, Albuquerque, NM.

#1632 Poster Board Number ............................................544

THE ASSESSMENT OF ENDOThELIAL CELL PROLIFERATION BY FLOW CYTOMETRY WITH PROLIFERATION MARKERS BRDU AND EDU IN MOUSE BONE MARROW AFTER TREATMENT WITH 2-BUTOXYETHANOL. S. Zhao, A. Shen, C. Huang and S. A. Sokolowski. Drug Safety Research and Development, Pfizer Global Research and Development, Groton, CT.

#1633 Poster Board Number ............................................545

COMPARATIVE MICROARRAY STUDY OF GENE EXPRESSION IN CULTURED RAT LUNG CELLS FOLLOWING JET FUELS EXPOSURE. M. Stockelman1, A. Olabisi1, H. Fullenkamp1, T. Doyle1, D. Wagner1, C. Garrett1, M. Kadakia1, P. G. Guanasekar1, G. Chapman1, M. Markey1, S. Berberich1 and J. McDougall2. 1Department of Navy, Naval Health Research Center Detachment Environmental Health Effects Laboratory, Dayton, OH and 2Wright State University, Dayton, OH.

Wednesday Morning, March 18
9:45 AM–10:45 AM
Room 336

**EXHIBITOR HOSTED SESSION: CELLULAR SYSTEMS BIOLOGY (CSB®) FOR DISCOVERY TOXICOLOGY**

Presented by: Cellumen, Inc.

Cellular Systems Biology (CSB®) is a powerful new paradigm for both Discovery Toxicology and Predictive Toxicology. CSB Toxicity Profiling enables the simultaneous determination of dose-response relationships for multiple mechanisms of toxicity over several exposure times and produces a classifier with high precision (96.6%) for predicting the safety risk of unknown compounds.
Program Description (Continued)

Abstract #

Wednesday Morning, March 18
9:45 AM–10:45 AM
Room 338

EXHIBITOR HOSTED SESSION: PRECLINICAL STUDIES IN CHINA: FROM ANIMAL SUPPLY TO REGULATORY SUBMISSION

Presented by: Charles River

Pharmaceutical companies and CROs continue to make solid progress in their Asian R&D operations and relationships. Charles River will present its experience in the operation and regulation of its preclinical facility in Shanghai, together with the ongoing development of its Research Models and Services group in this region. In addition, the experience of two multinational pharmaceutical companies that are performing and managing R&D activities in China will be presented.

Wednesday Morning, March 18
9:45 AM–10:45 AM
Room 337

EXHIBITOR HOSTED SESSION: STRATEGIC STUDY DESIGN—BIOPHARMACEUTICALS AND BEYOND

Presented by: Huntingdon Life Sciences

Safety assessment in clinical and preclinical studies is evolving in part due to the increased understanding of mechanism of action as seen with biopharmaceuticals. Evaluation of drug action (pharmacodynamics) is paramount for selection of an appropriate species and design of nonclinical studies. In addition to the traditional approach (i.e., pathology and clinical pathology) evaluation should include product-specific markers of activity and safety and be replicated throughout the entire drug development process so that Chemistry, Manufacturing, and Control (CMC), nonclinical and clinical, do not exist in isolation.

Wednesday Morning, March 18
11:00 AM–12:00 NOON
Room 336

EXHIBITOR HOSTED SESSION: IN VITRO EVALUATION OF HUMAN DRUG TOXICITY: ORGAN SPECIFICITY AND METABOLISM-BASED TOXICITY

Presented by: ADMET Group

In vitro assays for hepatotoxicity, nephrotoxicity, neurotoxicity, and pulmonary toxicity using primary cell cultures either as single cell types or Integrated Discrete Multiple Organ Co-cultures (IdMOC) and an assay for metabolism-based hepatotoxicity will be presented. These assays are useful in early phases of drug development for drug candidate selection.

Wednesday Morning, March 18
11:00 AM–12:00 NOON
Room 337

EXHIBITOR HOSTED SESSION: MULTIPLEXED ASSAYS QUALIFIED FOR TOXICOLOGY BIOMARKER PROFILING

Presented by: Meso Scale Discovery

Meso Scale Discovery has developed multiplex panels of novel biomarkers for muscle injury, kidney damage and vasculitis that overcome the limitations of traditional clinical chemistries. The challenges of multiplex biomarker assay development will be discussed as well as method for assay qualification for use in preclinical studies.
Program Description (Continued)

Wednesday Afternoon, March 18
12:00 NOON to 1:20 PM
Room 309

EPIGENETICS

SYMPOSIUM SESSION: GENE-ENVIRONMENT INTERACTIONS: EPIGENETIC PATHWAYS IN CHRONIC DISEASE PROMOTION AND PROGRESSION

Chairperson(s): Heather S. Floyd, U.S. EPA, Research Triangle Park, NC and Sheppard A. Martin, University of Georgia, Athens, GA.

Sponsor: Postdoctoral Assembly Board

Endorsed by:
Inhalation and Respiratory Specialty Section
Occupational and Public Health Specialty Section
Student Advisory Council

The study of gene-environment interactions has become increasingly more common as it relates to disease susceptibility and chronic disease development. These studies aid in the characterization of environmental exposures and development of targeted prevention/treatment regimens. Traditional genetic endpoints can be expanded to include epigenetic modifications related to altered DNA methylation patterns, histone modifications, and germ-line reprogramming. Heritable alterations in the expression of particular genes or gene clusters and transgenerational effects that are linked to environmental exposures, such as gonadal sex determination and tumor development, are of particular interest. Alterations that result in chronic conditions present in early to mid-life stress the importance of ongoing development, are of particular interest. Alterations at childhood conditions. Gene-environment interactions resulting in the promotion of autoimmunoneurodegenerative diseases serve to highlight current public health issues with an epigenetic basis. This is an important platform that will highlight toxicologically relevant epigenetic alterations with accompanying disease states and showcase trainee achievements. This session is brought to you through the collaborative efforts of the Postdoctoral Assembly and the Student Advisory Council.

#1634
1Alcon Laboratories, Ft. Worth, TX, 2School of Medical Sciences, Washington State University, Pullman, WA, 3University of Cincinnati College of Medicine, Cincinnati, OH, 4Department of Biomedical and Pharmaceutical Sciences, University of Rhode Island, Kingston, RI.

12:05 LEAD-INDUCED EPIGENETIC ALTERATIONS IN ALZHEIMER’S DISEASE: ASSOCIATIONS BETWEEN METHYLATION PROFILES AND AMYLOIDOGENESIS. Adermi Dosunmu

12:23 EPIGENETIC TRANSGENERATIONAL ACTIONS OF ENDOCRINE DISRUPTORS. Carlos Guerrero-Bosagna

12:41 EARLY DEVELOPMENTAL EXPOSURES TO ESTROGENS/BISPHENOL-A IMPACT A SPECIFIC PROSTATE EPIGENOME. Wan-Yee Tang

Abstract #

12:59 ABNORMAL T-CELL DNA METHYLATION AND THE DEVELOPMENT OR PROMOTION OF AUTOIMMUNE DISEASES SUCH AS LUPUS. Donna Ray

1:17 CLOSING REMARKS.

Wednesday Afternoon, March 18
12:00 NOON to 1:20 PM
Room 309

ROUNDTABLE SESSION: PRECLINICAL EVALUATION OF CANCER HAZARD AND RISK OF BIOPHARMACEUTICALS

Chairperson(s): Joy Cavagnaro, Access BIO, Boyce, VA and Laine Payton Myers, U.S. FDA, Silver Spring, MD.

Sponsor:
Regulatory and Safety Evaluation Specialty Section

Endorsed by:
Carcinogenesis Specialty Section
Risk Assessment Specialty Section

The carcinogenicity testing of biopharmaceuticals may not always be possible by conventional means due to factors such as species specificity and immunogenicity. However, cause for concern for tumorigenicity of biopharmaceuticals is heightened based on knowledge and plausibility of particular mechanisms of action. Mitogenicity is a concern for exogenously administered biopharmaceuticals such as hormones and growth factors and may also be a concern for pharmaceuticals designed to stimulate their endogenous production. In an attempt to address the potential risks of these agents, investigators have explored the ability of growth factors to influence the growth of tumor cells expressing their receptors in vivo and in vitro models. However, the value of these models to adequately address the clinical risk of enhanced tumor growth with therapeutically administered growth factors is not clear. Special issues of concern following chronic treatment of immunomodulatory pharmaceuticals and biopharmaceuticals include the potential for immune impairment leading to opportunistic infections and/or lymphoproliferative disorders. Experimental data will be presented from approaches that have been used in an attempt to answer the central question of the role of exogenous growth factors and immunomodulatory agents in tumor progression in vivo; these approaches include rodent tumor xenograft, and alternative short-term and traditional carcinogenicity models. This material will also provide an overview of the current practices in the assessment of carcinogenic risk of biopharmaceuticals including the challenges in assessing human derived proteins in animals and developing waivers of carcinogenicity assessments and labeling considerations.

#1635
12:00 PRECLINICAL EVALUATION OF CANCER HAZARD AND RISK OF BIOPHARMACEUTICALS. J. Cavagnaro and M. D. Todd.

1Drug Safety R&D, Pfizer, Inc, San Diego, CA and 2Access BIO, LC, Boyce, VA.

12:05 KEY CONSIDERATIONS IN ASSESSING CARCINOGENIC RISK OF BIOPHARMACEUTICALS—OVERVIEW. Peyton Myers

12:25 ASSESSMENT OF TUMORGENIC RISK OF GROWTH FACTORS. David Hovland

12:45 COMMUNICATING TUMORGENIC RISKS OF IMMUNOMODULATORY BIOPHARMACEUTICALS. Peter J. Bugelski

1:05 PANEL DISCUSSION/Q&A.
Program Description (Continued)

Abstract #

Wednesday Afternoon, March 18
12:00 NOON to 1:20 PM
Room 308

INFORMATIONAL SESSION: KINASE INHIBITORS AS TARGETED THERAPEUTICS IN INFLAMMATION AND ONCOLOGY—APPROACHES TO PREDICT AND MANAGE CLINICAL TOXICITIES


Sponsor:
Toxicologic and Exploratory Pathology Specialty Section

Endorsed by:
Drug Discovery Toxicology Specialty Section

Targeted therapy with either monoclonal antibodies or small molecules has been a major focus of recent pharmaceutical research efforts in the inflammation and oncology disease areas. In particular, cell surface and cytoplasmic kinases have been targeted with varying degrees of clinical success in human oncologic disease. Although targeted therapy does provide an opportunity for more predictable and manageable toxicity based on anticipated and characterized exaggerated pharmacology of kinase inhibition, there have been considerable safety surprises with the various kinase inhibitor therapies in man. Therefore, it is important to address the pharmacologic rationale of targeted therapeutics in inflammation/oncology and provide an overview of kinase inhibitor toxicity in preclinical and clinical settings to demonstrate the importance of kinase activity profiling. To high-light these various issues participants will be provided with an overview of kinase biology and the use of high-throughput kinase profiling as a drug development tool and the correlation of kinase-inhibitor cardiotoxicity to kinase specificity profiles using in vitro tools to predict toxicological liabilities of kinase inhibitors with an emphasis on cardiac injury. The on and off-target toxicity for currently marketed kinase inhibitors of observed toxicities of currently marked kinase inhibitors will be provided to gain a broader understanding of the complexities of kinase inhibitor pharmacology and toxicology. Finally, the tools to be better prepared to assess the possible toxicity of kinase inhibitors through systematic kinase target analysis and will be addressed that will enable us to ultimately devise an early identification of safety and derisking strategies.

#1636 12:00 KINASE INHIBITORS AS TARGETED THERAPEUTICS IN INFLAMMATION AND ONCOLOGY—APPROACHES TO PREDICT AND MANAGE TOXICITIES, M. A. Breider1,*; A. Kolaja1 and E. Zarrinkar1. 1Preclinical Development, Ambit Biosciences, Inc., San Diego, CA, 2Technology Development, Ambit Biosciences, Inc., San Diego, CA and 3Discovery and Investigative Safety, Roche Palo Alto, LLC, Palo Alto, CA.

12:05 HUMAN KINOME OVERVIEW AND CURRENT RESEARCH TOOLS TO PROFILE KINASE-INHIBITOR SPECIFICITY, Patrick Zarrinkar

12:20 CORRELATION OF KINASE-INHIBITOR CARDIOTOXICITY TO KINASE SPECIFICITY PROFILES, Kyle L. Kolaja

12:45 OVERVIEW OF ON AND OFF-TARGET TOXICITY FOR CURRENTLY MARKETED KINASE INHIBITORS, Mike Breider

1:10 PANEL DISCUSSION.
Program Description (Continued)

Abstract #

Wednesday Afternoon, March 18
1:00 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: CHEMICAL CARCINOGENESIS

Chairperson(s): Shaoyu Zhou, Indiana University, Indianapolis, IN and Dae Kim, University of Texas MD Anderson Cancer Center, Smithville, TX.

Displayed: 1:00 PM–4:30 PM

Author Attended: 1:00 PM–2:45 PM

Poster Board Number ......................................101
THE ROLE OF CANDIDANTS IN ETHANOL-INDUCED HEPATIC DNA SYNTHESIS, S. M. Corthals, C. L. Walker and L. M. Kamendulis. Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN.

Poster Board Number ......................................102
ROLE OF KUPFER CELL IN TUMOR PROMOTION CAUSED BY NON-GENOTOXIC CARCINOGENS WYETH 14, 643 AND PHENOBARBITAL IN DIETHYLNITROSAMINE INITIATED C3H MICE, T. J. Peat, B. K. Philip and J. E. Klaunig, Department of Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN.

Poster Board Number ......................................103
KUPFER CELL INVOLVEMENT IN PHENOBARBITAL AND WYETH-14, 643 INDUCED CLONAL EXPANSION OF PRENEOPLASTIC HEPATIC LESIONS, B. K. Philip, T. J. Peat, L. M. Kamendulis and J. E. Klaunig, Department of Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN.

Poster Board Number ......................................104
MECHANISMS FOR POLYHEXAMETHYLENE BIGUANIDE (PHMB) CARCINOGENICITY, L. M. Kamendulis1, X. Pu2, S. J. Barbere1 and Z. Wang1. 1Department of Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN and Arch Chemicals Inc., Cheshire, CT.

Poster Board Number ......................................105
THE AH RECEPTOR PLAYS AN ANTI-APOPTOTIC ROLE IN DEN-INDUCED LIVER CARCINOGENESIS, Y. Fan, E. Knudsen and A. Pugs. Environmental Health, University of Cincinnati, Cincinnati, OH.

Poster Board Number ......................................106
ESTROGEN RECEPTOR-ALPHA IS PROTECTIVE AGAINST LIVER TUMOR DEVELOPMENT AND IS CRITICAL FOR SEXUAL DIFFERENTIATION OF HEPATIC GENE EXPRESSION, M. H. Feld1 and N. R. Drinkwater2. 1McArdle Laboratory for Cancer Research, University of Wisconsin, Madison, WI and 2Department of Biology, Boston University, Boston, MA.

Poster Board Number ......................................107
HISTOLOGIC AND IMMUNOHISTOCHEMICAL CHARACTERIZATION OF CYP1C1 AND CYP1A EXPRESSION IN PAH-INDUCED FUNDULUS HEPATIC LESIONS, L. Wang, W. Dong, C. Thornton, M. W. Thornton, A. Camus and K. L. Willert. Pharmacology and Environmental Toxicology, University of Mississippi, University, MS and Pathology, College of Veterinary Medicine, University of Georgia, Athens, GA.

Poster Board Number ......................................108
MODULATION OF ACRYLONITRILE ON MITOCHONDRIAL GENE EXPRESSION AND MEMBRANE POTENTIAL, S. Zhou, Z. Wang, X. Pu and J. E. Klaunig. Pharmacology and Toxicology, Indiana University, Indianapolis, IN.

Poster Board Number ......................................109

Poster Board Number ......................................110
DOSE EFFECTS OF ARSENITE ON RODENT BLADDER UROTHELIUM, S. Suzuki, L. L. Arnold, K. L. Pennington, B. Chen, X. Le and S. M. Cohen. Pathology and Microbiology, University of Nebraska Medical Center, Omaha, NE and Environmental Health Sciences, University of Alberta, Edmonton, AB, Canada.

Poster Board Number ......................................111
ALTERATION OF H4K16 ACETYLATION VIA SAS2 IN YEAST AND MYST1 IN HUMANS IS ASSOCIATED WITH INCREASED SENSITIVITY TO ARSENIC TOXICITY, X. Ren, W. Ji, M. Aleshin, H. Wintz, M. Smith, C. Vulpe and L. Zhuang. Division of Environmental Health Sciences, University of California, Berkeley, Berkeley, CA and Department of Nutritional Sciences and Toxicology, University of California, Berkeley, Berkeley, CA.

Poster Board Number ......................................112

Poster Board Number ......................................113
PHARMACOLOGICAL INHIBITION OF TGFbeta1 SIGNALING ENHANCES MALIGNANT PROGRESSION, L. Mordasky Markell, R. Perez-Lorenzo and A. B. Glick. Center for Molecular Toxicology and Carcinogenesis, Penn State University, University Park, PA. Sponsor: G. Perdue.
Program Description (Continued)

Abstract #  
#1650  
**Poster Board Number ..........................114**  
TARGETED DISRUPTION OF BCL-2 IN MOUSE KERATINOCYTES INHIBITS BOTH UVB- AND CHEMICALLY-INDUCED SKIN CARCINOGENESIS. D. J. Kim1, K. Kataoka1, S. Sano1 and J. DiGiovanni1. Cancerogenesis, The University of Texas M.D. Anderson Cancer Center, Smithville, TX and 1Dermatology, Osaka University, Osaka, Japan.

#1651  
**Poster Board Number ..........................115**  
HIGHER EXPRESSION OF P63 AND LOWER INDUCTION OF P53 AND APOPTOSIS LED TO BENZ(A)PYRENE AND DIMETHYLBENZ(A)ANTHRACENE INDUCED SKIN TUMORS IN NQO1-/-NQO2-/- DOUBLE KNOCKOUT MICE. J. Shelton1, Barrios1 and A. Jaiswal1. 1Pharmacology and Exp. Therapeutics, University Maryland Sch.Medicine, Baltimore, MD and 1Department .Pathology, Methodist Hospital, Houston, TX. Sponsor: B. M. Saitoh.

#1652  
**Poster Board Number ..........................116**  
GASTROESOPHAGEAL REFLUX LEADS TO ESOPHAGEAL CANCER IN A SURGICAL MODEL WITH MICE. J. Hao1, B. Liu1, C. Yang1 and X. Chen2. 1Chemical Biology, Rutgers, The State University of New Jersey, Piscataway, NJ and 2Department .Pathology, Methodist Hospital, Houston, TX. Sponsor: B. M. Saitoh.

#1653  
**Poster Board Number ..........................117**  
TUMOR SUPPRESSOR MEL-18 IS A NOVEL GLOBAL SUMOYLATION INHIBITOR. J. Zhang1, M. L. Goodson1, Y. Hong1 and K. D. Sarge1. 1Graduate Center of Toxicology, University of Kentucky, Lexington, KY. Sponsor: G. Z. Smith.

#1654  
**Poster Board Number ..........................118**  
GENETIC AND EPIGENETIC EFFECTS OF FORMALDEHYDE ON HUMAN BLOOD STEM AND PROGENITOR CELLS. S. Z. Zhang, Z. Ji, W. Guo, M. Azuma, Y. Bai and M. T. Smith. School of Public Health, University of California at Berkeley, Berkeley, CA.

#1655  
**Poster Board Number ..........................119**  
BENZENE-INHALATION ENHANCED THE INCIDENCE OF HEMATOPOIETIC NEOPLASMS IN P53-DEFICIENT MICE WITH RESPECT TO STRAIN-DIFFERENCES BETWEEN C57BL/6 AND C57BL/10. T. Inoue1 Y. Kawasaki2, Y. Hirabayashi2, B. Yoon1, Y. Kodama1, O. Uchida1, T. Umemura1, Y. Matsuhashi1, M. Saitoh1, K. Sekita1, J. Kanno1 and T. Kaneko1. 1Center for Biological Safety & Research, National Institute of Health Sciences, Tokyo, Japan and 1Department of Cellular & Molecular Toxicology, Center for Biological Safety & Research, National Institute of Health Sciences, Tokyo, Japan and 1Laboratory of Histology & Molecular Pathogenesis, School of Veterinary Medicine, Kangwon National University, Chunchon, South Korea.

#1656  
**Poster Board Number ..........................120**  
COMPARISON OF HEPG2 AND HEPARG CELL LINES EXPOSED TO DIFFERENT CARCINOGENS BY GENE EXPRESSION ANALYSES. D. Jennen1, H. Ketelslegers1, M. Van Herwijnen1, J. Kleinjans1 and J. Van Delft1,2. 1Department of Health Risk Analysis and Toxicology, Maastricht University, Maastricht, Netherlands and 2Netherlands Toxicogenomics Centre, Maastricht, Netherlands. Sponsor: H. Van Lovern.

#1657  
**Poster Board Number ..........................121**  
The influence of dietary fat on BENZ(a)PYRENE (BAP)-INDUCED DNA ADDUCT CONCENTRATIONS AND COLON TUMORS IN APC-/- MICE. D. L. Harris1, M. K. Washington1, L. Roberts H and A. Ramesh1. 1Cancer Biology, Meharry Medical College, Nashville, TN, 2Pathology, Vanderbilt University, Nashville, TN and 3Pharmacology, Vanderbilt University, Nashville, TN.

#1658  
**Poster Board Number ..........................122**  
REQUIREMENT FOR METALLOPROTEINASES-DEPENDENT ERK AND AKT ACTIVATION IN UVB-INDUCED G1-S CELL CYCLE PROGRESSION OF HUMAN KERATINOCYTES. Y. He and W. Han. Medicine/Dermatology, University of Chicago, Chicago, IL.

#1659  
**Poster Board Number ..........................123**  
CENTROSOMAL AMPLIFICATION IN XPA/P53 TRANSGENIC MICE EXPOSED TO ZIDOVUDINE (AZT). T. A. Nostrand1, M. C. Poirier1 and O. A. Olivero. Carcinogen-DNA Interactions, National Cancer Institute, NIH, Bethesda, MD.

#1660  
**Poster Board Number ..........................124**  
OGG1 SER326CYS AND P53 ARG72PRO POLYMORPHISMS IN A TURKISH POPULATION WITH GASTRIC CARCINOMA. A. E. Karakaya1, A. Engin1, B. Karahalil1 and A. Engin1. 1Department of Toxicology, Gazi University, Faculty of Pharmacy, Ankara, Turkey and 2Department of General Surgery, Gazi University, Faculty of Medicine, Ankara, Turkey.

#1661  
**Poster Board Number ..........................125**  
ATM DEFICIENT MICE DEMONSTRATE AN EXACERBATED RESPONSE TO DEXTRAN SULFATE SODIUM-INDUCED COLITIS CHARACTERIZED BY ELEVATED DNA DAMAGE AND A CHRONICALLY ACTIVATED IMMUNE RESPONSE. A. M. Westbrook and R. H. Schiestl. Molecular Toxicology, UCLA, Los Angeles, CA.

#1662  
**Poster Board Number ..........................126**  
MESOTHELIOMA DIAGNOSIS: SHOULD GENETIC SCREENING BE USED TO EVALUATE PRIMARY SITE AND PLAUSIBILITY OF ASBESTOS CAUSATION? B. D. Kerger1, J. Brownfield1 and R. C. James2. 1Health Science Resource Integration, Tallahassee, FL and 2TERRA Inc, Tallahassee, FL.

#1663  
**Poster Board Number ..........................127**  
Wednesday Afternoon, March 18
1:00 PM – 4:30 PM
Exhibit Hall

POSTER SESSION: MECHANISMS OF CHEMOPREVENTION IN CHEMICAL CARCINOGENESIS

Chairperson(s): Sudha Kondraganti, Baylor College of Medicine, Houston, TX and Rhonda Rosengren, University of Otago College of Medicine, Dunedin, New Zealand.

Displayed: 1:00 PM – 4:30 PM

Author Attended: 2:45 PM – 4:30 PM

#1664 Poster Board Number ...........................................128 INCREASED FORMATION OF MDA-DNA ADDUCTS IN ANILINE-INDUCED SPLENIC TOXICITY. H. Ma, J. Wang, P. J. Boor and M. Khan. Pathology, UTMB, Galveston, TX.

#1665 Poster Board Number ...........................................129 PHOSPHORYLATION OF CYCLIN-DEPENDENT KINASES AND RETINOBLASTOMA PROTEIN IN RAT SPLEEN FOLLOWING ANILINE EXPOSURE. J. Wang and M. Khan. Pathology, UTMB, Galveston, TX.

#1666 Poster Board Number ...........................................130 HIGHER LEVELS/AGGREGATION OF MICROTUBULES/MICROFILAMENTS AND GLOBAL DISRUPTION OF GENE EXPRESSION IN NI-TRANSFORMED 10T1/2 MOUSE EMBRYO CELL LINES. A. T. DeSilva*, H. S. Lee* and J. R. Landolph*t, tDepartment of Molecular Microbiology and Immunology, University of Southern California, Los Angeles, CA, tDepartment of Pathology, University of Southern California, Los Angeles, CA and tUSC Cancer Center, University of Southern California, Los Angeles, CA.

#1667 Poster Board Number ...........................................131 ALTERATIONS OF DIURNAL EXPRESSION RHYTHM OF CIRCADIAN GENES AND HORMONE RECEPTOR GENES BY CHEMOPREVENTIVE DOSE OF SELENIUM IN RAT MAMMARY TISSUE. M. Fong*, X. Zhang* and H. Zarbl*. tDepartment of Environmental Occupational Medicine, University of Medicine and Dentistry of New Jersey, Piscataway, NJ and tDivision of Human Biology, Fred Hutchinson Cancer Research Center, University of Washington, Seattle, WA.


#1669 Poster Board Number ...........................................133 INHIBITION OF MAMMARY DNA ADDUCTS AND TUMORS INDUCED BY XENOESTROGENS. S. R. Kondraganti and B. Moorthy. Pediatrics, Baylor College of Medicine, Houston, TX.


#1671 Poster Board Number ...........................................135 ESTROGENIC STATUS MODULATES THE EFFECT OF SOY ON HEPATIC RESPONSES TO 7,12-DIMETHYLBENZ(A)ANTHRACENE (DMBA). R. Singhal1,2, T. M. Badger1,3 and M. J. Ronis1,2. tArkansas Children’s Nutrition Center, University of Arkansas Medical Sciences, Little Rock, AR, tDepartment of Pharmacology & Toxicology, University of Arkansas for Medical Sciences, Little Rock, AR and tDepartment of Physiology & Biophysics, University of Arkansas for Medical Sciences, Little Rock, AR.

#1672 Poster Board Number ...........................................136 EFFECT OF CAFFEIC ACID PHENETHYL ESTER AND QUERCETIN ON N-7-ETHYLGLUCORINE ADDUCT FORMATION INDUCED BY N-DEETHYL-NITROSAMINE IN RAT LIVER DNA. R. M. Pérez1,2, O. Beltrán-Ramírez1,2, V. Vásquez-Garzón1,2, M. L. López-González1,2, A. Sierra-Santoyo1 and S. Villa-Treviño1. tCell Biology, Cinvestav-IPN, Mexico City, D.F., Mexico and tToxicology Section, Cinvestav-IPN, Mexico City, D.F., Mexico.

#1673 Poster Board Number ...........................................137 CAFFEIC ACID PHENETHYL ESTER INHIBITES CYP 1A1 ACTIVITY IN HEPICIC-C7 CELLS. J. Park, E. Han and H. Jeong. BK21 Project Team, Pharmacy, Chosun University, Gwangju, South Korea.

#1674 Poster Board Number ...........................................138 EFFECTS OF DIETARY FISH OIL ON THE DECREASE OF CARCINOGENIC PAH-DNA ADDUCT LEVELS IN THE LIVER OF B6C3F1 MALE MOUSE. G. Zhou, S. S. Wang and K. C. Donnelly. Environmental & Occupational Health, Texas A&M University System Health Science Center, College Station, TX.

#1675 Poster Board Number ...........................................139 TRANSPLENTAL CHEMOPREVENTION BY CHLOROPHYLLIN, PURIFIED CHLOROPHYLLS AND FREEZE-DRIED SPINACH: CONFIRMATION OF THE COMPLEXATION THEORY FOR CHL. D. J. Castro1,2 and D. E. Williams1,2,3. tEnvironmental & Molecular Toxicology, Oregon State University, Corvallis, OR, tLinus Pauling Institute, Oregon State University, Corvallis, OR and tEnvironmental Health Sciences Center, Oregon State University, Corvallis, OR.
Abstract #

#1676  
**Poster Board Number** ..............................140  
**SAPONINS DERIVED FROM ROOTS OF PLATYCODON GRANDIFLORUM**  
*HIBIT 4-(METHYL NITROSAMINO)-1-(3-PYRIDYL)-1-BUTANONE (NNK)-INDUCED NF-KB TRANSACTION AND CELL TRANSFORMATION IN BEAS-2B HUMAN BRONCHIAL EPITHELIAL CELLS.*  
H. Park and H. Jeong. BK21 Project Team, Pharmacy, Chosun University, Gwangju, South Korea.

#1677  
**Poster Board Number** ..............................141  
**EFFECT OF CELASTROL ON SPECIFICITY PROTEIN TRANSCRIPTION FACTORS IN PANCREATIC CANCER CELLS.** I. Jutooru1, G. Chadalapaka1 and S. Safe2,  
*Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX and 2Institute of Biosciences & Technology, Texas A&M Health Science Center, Houston, TX.*

#1678  
**Poster Board Number** ..............................142  
1,1-BIS(3'-INDOLYL)-1-(P-BROMOPHENYL) METHANE AND RELATED COMPOUNDS DECREASE PANCREATIC AND COLON CANCER CELL SURVIVAL AND EXPRESSION OF SURVIVIN. S. Sreevalsan1, I. Jutooru1, G. Chadalapaka1 and S. Safe2,  
*Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX and 2Institute of Biosciences & Technology, Texas A&M Health Science Center, Houston, TX.*

#1679  
**Poster Board Number** ..............................143  
**PREGNANE X RECEPTOR SUPPRESSES PROLIFERATION AND TUMORIGENICITY OF COLON CANCER CELLS THROUGH REGULATING RB/E2F PATHWAY.** N. Ouyang, S. Ke, N. Eagleton, Y. Xie and Y. Tum,  
VTPP, Texas A&M University, College Station, TX.

#1680  
**Poster Board Number** ..............................144  
**INHIBITION OF EPIDERMAL GROWTH FACTOR RECEPTOR (EGFR) IN BLADDER CANCER CELLS BY CURCUMIN AND BETULINIC ACID.** G. Chadalapaka1, I. Jutooru1 and S. Safe2,  
*Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX and 2Institute of Biosciences & Technology, Texas A&M Health Science Center, Houston, TX.*

#1681  
**Poster Board Number** ..............................145  
**A NOVEL ANTI-CANCER DRUG DERIVED FROM GLYCRRHETINIC ACID DECREASES LNCAp CELL SURVIVAL BY INDUCTION OF A DUAL PHOSPHATASE, MKP5, S. Papineni1, S. Chintharpalli1, S. Lee1 and S. Safe2.**  
*Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX and 2Institute of Biosciences & Technology, Texas A&M Health Science Center, Houston, TX.*

#1682  
**Poster Board Number** ..............................146  
**TCDD AND THE SELECTIVE ARYL HYDROCARBON RECEPTOR (AHR) MODULATORS INDOLE-3-CARBINOL (I3C) AND 3,3'-DINDOLYL METHANE (DIM) REGULATE PROSTATE TUMORIGENESIS IN TRAMP MICE.** T. M. Lin1, W. A. Fritz1, S. Safe2 and R. E. Peterson1.  
*S. Sch. of Pharmacy, University Wisc., Madison, WI and 2Vet. Physiol. Pharmacology, Texas A&M University, College Station, TX.

Wednesday Afternoon, March 18  
1:00 PM to 4:30 PM  
Exhibit Hall

**POSTER SESSION: DEVELOPMENTAL BASIS OF DISEASE**

Chairperson(s): John J. Reiners, Wayne State University, Detroit, MI.

Displayed: 1:00 PM–4:30 PM

Author Attended: 1:00 PM–2:45 PM

#1683  
**Poster Board Number** ..............................147  
**A NOVEL NUTRIENT MIXTURE INHIBITS MMP EXPRESSION IN A549 HUMAN LUNG EPITHELIAL CELL LINE AND INDUCES APOPTOSIS IN CHONDROSARCOMA CELL LINE SW 1353.** M. Roomi, N. Roomi, M. Rath and A. Niedzwiecki. Dr. Rath Research Institute, Santa Clara, CA.

#1684  
**Poster Board Number** ..............................148  
**ROLE OF NF-KB IN THE CHEMOPREVENTIVE ACTIVITIES OF CITRUS AND GINGER COMPOUNDS AGAINST SKIN CANCER DEVELOPMENT.** H. E. Kleiner1,2, A. Remeika1,2, V. Batra1,2, N. Gill1,2, Z. Syed1, T. Terry1,2, P. Adegboyega1,2, J. DiGiovanni1, M. Mathur1,2 and J. Clifford1,2.  
1Pharmacology, LSHUHC, Shreveport, LA, 2Feist-Weiller Cancer Center, Shreveport, LA, 3Biochemistry, LSHUHC, Shreveport, LA, 4Animal Resources & Imaging, LSHUHC, Shreveport, LA, 5Pathology, LSHUHC, Shreveport, LA, 6Cellular Biology & Anatomy, LSHUHC, Shreveport, LA and 7Carcinogenesis, UTMD Anderson Cancer Center, Smithville, TX.

#1685  
**Poster Board Number** ..............................149  
**BHAS42 CELL TRANSFORMATION ASSAY FOR INVESTIGATION OF ANTI-TUMORIGENIC EFFECTS OF CHEMICAL COMPOUNDS.** A. Poth1,2, A. Heppenheimer1,2, A. Schaefer1, S. Bohnenberger1,2 and D. Pellet1.  
Harlan Laboratories, Indianapolis, IN, 1RCC Cytotest Cell Research GmbH, Rossdorf, Germany and 2Hochschule Darmstadt, Fachbereich Chemie und Biotechnologie, Darmstadt, Germany.
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<tr>
<td>STRUCTURAL AND FUNCTIONAL DIFFERENCES IN RAT LUNGS DUE TO POST-NATAL OZONE OR PARTICLE EXPOSURE. D. Lee1, E. Schelegle2, C. Wallis1, M. Fanucchi2, L. Van Winkle2, C. Plopper2 and A. Wexler1,3,4. 1Department of Anatomy, Physiology and Cell Biology, University of California, Davis, CA, 2Department of Mechanical and Aeronautical Engineering, University of California, Davis, CA, 3Department of Civil and Environmental Engineering, University of California, Davis, CA and 4Department of Land, Air and Water Resources, University of California, Davis, CA.</td>
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<tr>
<td>PRENATAL TCDD EXPOSURE AND POSTNATAL IMMUNE MODULATION IN A 36-WEEK-OLD LUPUS-NEPHRITIS STRAIN. R. M. Gogol1,2, A. Mustafa1, S. Witonsky1, R. Kerr1, K. Zimmerman1, C. M. Reilly1 and S. D. Holladay2, 1Biomedical Science &amp; Pathobiology, Virginia Tech, Blacksburg, VA, 2Radiology and Anatomy, University of Georgia, Athens, GA and 3Biomedical Sciences, Virginia College of Osteopathic Medicine, Blacksburg, VA.</td>
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<td>MATERNAL BENZENE EXPOSURE CAUSES PERSISTENT STRAIN AND GENDER DEPENDENT CHANGES IN THE HEMATOPOIETIC SYSTEM OF OFFSPRING. H. Badham and L. M. Wijn. Queen’s University, Kingston, ON, Canada.</td>
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<td>GESTATIONAL EXPOSURE TO THE TYPE II PYRETHROID DELTAMETHRIN RESULTS IN INCREASED EXPRESSION OF NEUROTOPHIN 3 AND 4 IN THE DEVELOPING HIPPOCAMPUS AND CORTEX. B. Laffin and M. Pine. Veterinary Integrative Biosciences, Texas A&amp;M University, College Station, TX.</td>
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<td>PBPK MODELING OF ALKYLBENZENE MIXTURES IN NEONATES: EVALUATION OF THE RELATIVE CONTRIBUTION OF INHALATION AND LACTATIONAL TRANSFER TO THE INTERNAL DOSE. T. Adamou1, S. Haddad2 and K. Krishnan1, 1sciences biologiques, TOXEN, Université du Québec à Montréal, Montréal, QC, Canada and 2and santé environnementale et santé au travail, Université de Montréal, Montréal, QC, Canada.</td>
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<td>PERINATAL EXPOSURE TO A MIXTURE OF ENVIRONMENTAL CONTAMINANTS WHEN ASSOCIATED WITH POSTNATAL STRESS ALTERS THE GLUCOCORTICOID STRESS RESPONSE DURING ADULTHOOD IN THE RAT. D. Desaulniers and G. Xiao. HECSB, Hazard Identification Division, Health Canada, Ottawa, ON, Canada. Sponsor: G. Bondy.</td>
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<td>AKT1-DEPENDENT GENE CHANGES ARE ASSOCIATED WITH BLOOD-TESTIS-BARRIER FORMATION FOLLOWING EXPOSURE TO A POSTNATAL GOITROGEN. M. Hixon1, J. Santos Ahmed1, A. DeLong2 and Z. Wu3. 1Pathology, Brown University, Providence, RI and 2Statistics, Brown University, Providence, RI.</td>
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<tr>
<td>ACUTE AND LONG-TERM EFFECTS FOLLOWING IN UTERO EXPOSURE TO Di-(n-BUTYL) PHTHALATE IN p53-NULL MICE. C. Saffarin, N. Jones, S. J. Hall1, H. Yamazaki and K. Boekelheide. Department of Pathology and Laboratory Medicine, Brown University, Providence, RI.</td>
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<td>INTERSPECIES APPROACH TO THE ASSESSMENT OF HUMAN SUSCEPTIBILITY TO PHTHALATE-INDUCED ENDOCRINE DISRUPTION. N. Heger1, K. Gaido2, K. J. Johnson1, S. J. Hall1 and K. Boekelheide2. 1Pathology and Laboratory Medicine, Brown University, Providence, RI, 2The Hamner Institutes for Health Sciences, Research Triangle Park, RI and 3Nemours Biomedical Research, Alfred I. duPont Hospital for Children, Wilmington, Delaware.</td>
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<td>DEVELOPMENTAL SEX DIFFERENCES IN MYELINATION, ASTROCYTIC AND DOPAMINERGIC DENSITY: IMPLICATIONS FOR INCREASED RISK OF ADHD IN MALES. V. M. Miller1,2, T. Khanket1, S. Sanchez-Morrissey1 and R. F. Seegal1,2. 1DEDP, Wadsworth Center, Albany, NY and 2School of Public Health, State University of New York, Albany, NY.</td>
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<td>AKTI MEDIATES EPIGENETIC REGULATION VIA HISTONE MODIFICATIONS IN THE POSTNATAL TESTIS. B. Moyer1, A. DeLong3, Z. Wu2, C. Schor1 and M. Hixon2. 1Department of Pathology and Laboratory Medicine, Brown University, Providence, RI, 2Department of Community Health, Brown University, Providence, RI and 3Center for Genomics and Proteomics, Brown University, Providence, RI.</td>
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#1700 Poster Board Number.................................


#1701 Poster Board Number.................................

NEONATAL AMPHETAMINE EXPOSURE AND CEREBELLAR GRANULE CELL NUMBER IN RATS: A STEREOMETRY STUDY. D. Pappalardo, R. Morrow, M. Files, A. Smith and W. Chen. NEXT, Texas A&M Health Science Center College of Medicine, College Station, TX. Sponsor: S. Maier.

#1702 Poster Board Number.................................


#1703 Poster Board Number.................................

THE DEVELOPMENTAL TOXICITY OF ALCOHOL OR NICOTINE: A ZEBRAFISH (DANIO RERIO) MODEL. A. Leal and W. A. Chen. Neuroscience & Experimental Therapeutics, Texas A&M HSC College of Medicine, College Station, TX. Sponsor: S. Maier.

#1704 Poster Board Number.................................


#1705 Poster Board Number.................................


#1706 Poster Board Number.................................


#1707 Poster Board Number.................................


#1708 Poster Board Number.................................

EMBRYOPROTECTIVE ROLE OF ENDOGENOUS CATALASE IN WILD-TYPE (C3HEB/FEJ) AND ACATALASEMIC (C3GA. CF-CATB/J) MICE. J. Persson and P. G. Wells. ‘Pharmaceutical Sciences, University of Toronto, Toronto, ON, Canada and ‘Pharmacology and Toxicology, University of Toronto, Toronto, ON, Canada.

#1709 Poster Board Number.................................


#1710 Poster Board Number.................................


#1711 Poster Board Number.................................

ONTOTENY OF GLUTATHIONE S-TRANSFERASES IN MOUSE LIVER. T. House-Knight, S. Choudhuri and C. D. Klaassen. University of Kansas Medical Center, Kansas City, KS.

#1712 Poster Board Number.................................

CHANGES IN BLOOD PARAMETERS AND COAGULATION-RELATED GENE EXPRESSION DURING GESTATION AND LACTATION IN RATS. M. Ikeya, Y. Urasko, X. He, M. Takano, T. Ebata, Y. Kinoshita, J. Kobayashi, M. Mochizuki and Y. Katsumata. ‘Gotemba laboratory, Bozo research Center Inc., Gotemba-shi, Shizuoka, Japan and ‘Department of veterinary pathology, Graduate School of Agricultural and Life Sciences, The University of Tokyo, Tokyo, Japan. Sponsor: Y. Ano.
Program Description (Continued)

Abstract #  

#1713  
**Poster Board Number ............................219**  
EVALUATION OF PHYSICAL, SENSORY AND SEXUAL LANDMARKS IN AN EXTENDED ONE GENERATION REPRODUCTION STUDY: A COMPARISON BETWEEN A CLASSICAL NOAEL AND A BENCHMARK APPROACH. D. M. De Groot¹, M. De Groot¹, C. De Esch¹, I. Tonk², J. Lammers³, L. Van Loveren⁴, A. Piersma⁵, I. Waalkens⁵, A. Woterbeeck⁶ and R. Woutersen⁶. ’TNO Quality of Life, Zeist, Netherlands and ’RIVM, Bilthoven, Netherlands.

#1714  
**Poster Board Number ............................220**  
INFLUENCE OF AGE ON SUB-CHRONIC TOXICITY OF AQUEOUS LEAVES EXTRACT OF CALOTROPIS PROCERA IN RABBITS. G. Pouokam¹, H. Ahmed¹, C. Dawurung¹ and A. Atiku¹. ’Biochemistry, University of Yaounde 1, Yaounde, Centre, Cameroon, ’Forensic toxicology Laboratory, University of Cairo, Cairo, Egypt and ’Biochemistry, National Veterinary Research Institute, Vom, Plateau, Nigeria.

#1715  
**Poster Board Number ............................221**  

#1716  
**Poster Board Number ............................222**  
VALIDATION OF METHOD FOR DETERMINATION OF ANTI-KLH ANTIBODIES IN RAT SERUM USING ENZYME LINKED IMMUNOSORBENT ASSAY. W. Koh, W. Choi and Y. Ryu. Korea Institute of Toxicology, Daejeon, South Korea.

#1717  
**Poster Board Number ............................223**  
OPTIMIZATION OF LENTIVIRAL VECTOR PRODUCTION FOR USE IN GENERATION OF δ-LYMPHOCYTE MODELS. J. Suarez¹ and N. Kaminski². ’University of Puerto Rico at Cayey, Cayey, PR and ’Michigan State University, East Lansing, MI.

#1718  
**Poster Board Number ............................224**  
ESTABLISHMENT OF AN IgM ANTIBODY FORMING CELL RESPONSE MODEL FOR EVALUATING IMMUNOTOXICITY IN HUMAN PRIMARY B LYMPHOCYTES. H. Lu, R. B. Crawford and N. E. Kaminski. Pharmacology and Toxicology, Center for Integrative Toxicology, Michigan State University, East Lansing, MI.

#1719  
**Poster Board Number ............................225**  

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**Poster Board Number ............................226**  
COMPARISON OF BOVINE VERSUS HUMAN PRIMARY EPITHELIAL CELLS IN AN IN VITRO MODEL FOR TESTING PARTICLE TOXICITY ON INNATE IMMUNE RESPONSES OF AIRWAY EPITHELIUM. L. K. Ryan¹, A. M. Pavlosky² and G. Diamond³. ’1Medicine, Public Health Research Institute, NJ Medical School, UMDNJ, Newark, NJ, ’2Graduate School of Biomedical Sciences, UMDNJ, Newark, NJ and ’3Oral Biology, NJ Dental School UMDNJ, Newark, NJ.

#1721  
**Poster Board Number ............................227**  
COMPARISONS OF THE IN VITRO IMMUNOMODULATORY EFFECTS OF ELASTIN AND COLLAGEN NANOFIBROUS BIOMATERIALS BLENDED WITH POLYDIOXANONE. M. J. Smith¹, D. C. Smith¹, G. L. Bowlin² and K. L. White¹. ’Pharmacology and Toxicology, Virginia Commonwealth University, Richmond, VA and ’Altria Client Services, Richmond, VA.

#1722  
**Poster Board Number ............................228**  
ANIMAL EXPOSURE IN EARLY LIFE IS ASSOCIATED WITH DECREASED TNF-α RESPONSES IN INFANCY. M. H. Lappalainen¹, K. Huttunen¹, M. Roponen¹, J. Pekkanen¹ and M. Hirvonen¹. ’1Department of Environmental Health, National Public Health Institute, Kuopio, Finland and ’University of Kuopio, Kuopio, Finland. Sponsor: M. Vilukela.

#1723  
**Poster Board Number ............................229**  
INDEPENDENT EVALUATION OF CRITICAL WINDOWS IN IMMUNE SYSTEM DEVELOPMENT MAY BE NECESSARY TO ACCURATELY PREDICT DEVELOPMENTAL IMMUNOTOXICITY (DIT). K. L. White¹, D. M. Roesh¹, T. L. Guo², W. Autschach¹ and D. R. Germolec³. ’Pharmacology and Toxicology VCU, Richmond, VA and ’NTNP, NIEHS, RTP, NC.

#1724  
**Poster Board Number ............................230**  
PRENATAL EXPOSURE TO CIGARETTE SMOKE SUPPRESSES ANTITUMOR CYTOTOXIC T-LYMPHOCYTE ACTIVITY POSSIBLY VIA CHANGES IN T-REGULATORY CELL NUMBER AND TGF-β LEVELS. S. P. Ng¹, A. E. Silverstone¹, Z. Lai² and J. T. Zelikoff³. ’1Nelson Institute of Environmental Medicine, New York University School of Medicine, Tuxedo, NY and ’2Department of Microbiology & Immunology, SUNY Upstate Medical University, Syracuse, NY.
Program Description (Continued)

#1725

**Poster Board Number** ......................................231

**IMMUNOTOXIC EFFECT OF PRENATAL CADMIUM EXPOSURE ON MURINE OFFSPRING.** M. L. Hanson, K. M. Brandage, R. Schafer, R. A. Brundage and J. B. Barnett. Microbiology, Immunology, and Cell Biology, West Virginia University, Morgantown, WV.

#1726

**Poster Board Number** ......................................232

**CHLORPYRIFOS INDUCES APOPTOSIS IN HUMAN T CELLS.** Q. Li, M. Kobayashi and T. Kawada. Hygiene and Public Health, Nippon Medical School, Tokyo, Japan.

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**Poster Board Number** ......................................233

**GENE EXPRESSION PROFILING OF MOUSE THYMOCYTES UPON IN VITRO EXPOSURE TO BIS(TRI-N-BUTYLITIN) OXIDE (BTBO).** S. W. van Koll1, A. A. Peijnenburg2, P. J. Hendriksen2 and H. van Loveren3. 1Department of Health Risk Analysis and Toxicology (GRAV), Maastricht University, Maastricht, Netherlands. 2RIKILT-Institute of Food Safety, Wageningen University and Research Centre, Wageningen, Netherlands and 3Department of Toxicology, Pathology and Genetics (Toxicology, National Institute of Public Health and the Environment (RIVM)), Bilthoven, Netherlands.

#1728

**Poster Board Number** ......................................234

**STAPHYLOCOCCAL ENTEROTOXIN B INDUCES VASCULAR LEAK AND ACUTE LUNG INJURY THROUGH DIRECT ACTIVATION OF NATURAL KILLER T CELLS.** S. A. Rieder, P. Nagarkatti and M. Nagarkatti. Pathology Microbiology and Immunology, University of South Carolina, Columbia, SC.

#1729

**Poster Board Number** ......................................235

**TRIBUTYLITIN: A DUAL BONE MARROW Stromal Cell and Lymphocyte TOXICANT?** J. Schlezinger, A. Haas and D. Sherr. Environmental Health Sciences, Johns Hopkins Bloomberg School of Public Health, Boston, MA.

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**Poster Board Number** ......................................236

**IMMUNOTOXICOLOGICAL EFFECTS OF ASBESTOS ON HUMAN T CELLS.** T. Otsumi1, M. Maeda1, S. Murakami1, Y. Miura1, N. Kumagai2, Y. Chen1, H. Hayashi2, T. Nakano1, K. Fujioka1, T. Kishimoto1 and Y. Nishimura1. 1Hygiene, Kawasaki Medical School, Kurashiki, Okayama, Japan, 2Respiratory Medicine, Hyogo Medical College of Medicine, Nishimomiya, Hyogo, Japan and 3Internal Medicine, Okayama Rosai Hospital, Okayama, Japan. Sponsor: S. Pruett.

#1731

**Poster Board Number** ......................................237

**LOW-DOSE MERCURY TARGETS MACROPHAGE ACTIVATION IN HUMAN CELLS IN VITRO.** R. M. Gardner, J. F. Nyland2 and E. K. Silbergerl. 1Environmental Health Sciences, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD and 2Department of Pathology, Microbiology, and Immunology, University of South Carolina School of Medicine, Columbia, SC.

#1732

**Poster Board Number** ......................................238

**POTENTIAL IMMUNOTOXICITY BY 2, 3 BUTANEDIONE IN BALB/C MICE.** R. P. Frawley1, J. Painter2, W. G. Lieuallen1, T. Masinde1, Y. Rebolloso1, G. Hurlburt1, N. Clayton1, K. L. White1, W. Autschoauf1, D. L. Morgan1 and D. R. Germolec3. 1National Institute of Environmental Health Sciences, Research Triangle Park, NC, 2Integrated Laboratory Systems, Research Triangle Park, NC, 3Pathology Associates, Inc., Research Triangle Park, NC and 4Virginia Commonwealth University, Richmond, VA.

#1733

**Poster Board Number** ......................................239

**COVALENT BINDING OF NEVIRAPINE IN VIVO AND IN VITRO.** Y. Li and J. P. Uetrecht. Faculty of Pharmacy, University of Toronto, Toronto, ON, Canada.

#1734

**Poster Board Number** ......................................240

**DANGER SIGNALS IN NEVIRAPINE-INDUCED SKIN RASH.** X. Zhang and J. Uetrecht. The faculty of pharmacy, University of Toronto, Toronto, ON, Canada.

#1735

**Poster Board Number** ......................................241

**A STUDY OF LYMPHOCYTES SPECIFICITY IN NEVIRAPINE-INDUCED SKIN RASH.** X. Chen and J. Uetrecht. Faculty of Pharmacy, University of Toronto, Toronto, ON, Canada.

#1736

**Poster Board Number** ......................................242

**SODIUM METHYLTHIOCARBAMATE AS A PROBE FOR MECHANISMS OF LETHALITY IN SEPSIS.** W. Tan, P. Crittenden, D. Liu, T. Sebastian and S. Pruett. Department of Basic Sciences, Mississippi State University, Mississippi State, MS.

#1737

**Poster Board Number** ......................................243

**TARGETING CANNABINOIDS RECEPTORS AS A NOVEL APPROACH TO PREVENT DONOR T CELL-MEDIATED INFLAMMATION DURING GRAFT-VERSUS-HOST DISEASE.** R. Pandey, M. Nagarkatti and P. Nagarkatti. Pathology, microbiology and Immunology, University of South Carolina, Columbia, SC.

#1738

**Poster Board Number** ......................................244

**DELTA+TETRAHYDROCANNABINOL (Δ9-THC) SUPPRESSION OF CD40 LIGAND (CD40L) EXPRESSION IN ACTIVATED CD4+ T CELLS.** T. Ngaotepprutaram1,2, B. L. Kaplan1, R. B. Crawford2 and N. E. Kaminski1,2. Pharmacology and Toxicology, Michigan State University, East Lansing, MI and 1Center of Integrative Toxicology, Michigan State University, East Lansing, MI.

#1739

**Poster Board Number** ......................................245

**IMMUNOLOGICAL CONSEQUENCES OF SUSTAINED VERSUS TRANSIENT AHR ACTIVATION DURING INFLUENZA VIRUS INFECTION.** J. Head1, A. Moore1 and B. Lawrence1,2. 1Environmental Medicine, University of Rochester, Rochester, NY and 2Microbiology & Immunology, University of Rochester, Rochester, NY.
#1740 POSTER BOARD NUMBER .................................................. 246 DEVELOPMENT OF A HUMAN MODEL FOR 2, 3, 7, 8-TETRACHLOROBENZO-P-DIOXIN (TCDD) DISRUPTION OF LPS-INDUCED B CELL DIFFERENTIATION. C. M. North1, R. B. Crawford1, M. Manzan2, S. Simmons2, R. Ramasubramanian3 and N. E. Kaminski4. 1Center for Integrative Toxicology, Michigan State University, East Lansing, MI and 2ORD/NHEERL/Neurotoxicology Division, U.S. EPA, Durham, NC.

#1741 POSTER BOARD NUMBER .................................................. 247 DECREASED IN VITRO CYTOTOXICITY T LYMPHOCYTE (CTL) EFFECTOR RESPONSES IN MICE LACKING CANNABINOID RECEPTORS 1 AND 2. W. Chen1,2, P. W. Karmass1, B. L. Kaplan1 and N. E. Kaminski1. 1Center for Integrative Toxicology, Michigan State University, East Lansing, MI; 2Microbiology and Molecular Genetics, Michigan State University, East Lansing, MI. 1Cell and Molecular Biology Program, Michigan State University, East Lansing, MI and 3Pharmacology and Toxicology, Michigan State University, East Lansing, MI.

#1742 POSTER BOARD NUMBER .................................................. 248 TCDD INHIBITS TRANSCRIPTIONAL ACTIVATION OF THE 3'IgHRR AND HS3A/ HS1, 2 ENHANCERS IN A TRANSGENIC B-CELL LINE. D. Ellis, T. Fernando and C. Sulentic. Wright State University, Dayton, OH.

#1743 POSTER BOARD NUMBER .................................................. 249 TCDD MODULATES THE TRANSCRIPTIONAL ACTIVITY OF THE HS1, 2 ENHANCER IN THE 3'IgH REGULATORY REGION. T. Fernando and C. Sulentic. Wright State University, Dayton, OH.

#1744 POSTER BOARD NUMBER .................................................. 250 INVESTIGATION OF THE IMMUNOMODULATORY EFFECTS OF PERFLUORINATED FATTY ACIDS (PFCA) IN VITRO. V. Aluja1, M. Eisenblätter1, V. Aluja1, R. Ignatius1 and R. Stahlmann2. 1Institute for Integrative Toxicology, Michigan State University, East Lansing, MI, 2Institute of Clinical Pharmacology & Charite University, Berlin, Germany and 3Institute of Microbiology & Hygiene, Charite University, Berlin, Germany.

#1745 POSTER BOARD NUMBER .................................................. 251 IMMUNOSUPPRESSIVE EFFECTS OF 1,2,5, 6-DIBENZANTHRACENE ARE MEDIATED PRIMARILY BY CYP1B1 AND NOT CYP1A1 OR AHR. D. Smith1, M. J. Smith1 and K. L. White1. 1Altria Client Services, Richmond, VA and 2Pharmacology and Toxicology, Virginia Commonwealth University, Richmond, VA.

#1746 POSTER BOARD NUMBER .................................................. 252 DIFFERENTIAL EFFECTS OF ACUTE ETHANOL ADMINISTRATION ON THE POLY I:C-INDUCED IMMUNE RESPONSE: IS ALL POLY I:C CREATED EQUAL? M. Glover1 and S. Pruett1. 1Department of Basic Sciences, Mississippi State University, Mississippi State, MS and 2Cellular Biology & Anatomy, LSU Health Sci. Center, Shreveport, LA.

#1747 POSTER BOARD NUMBER .................................................. 253 A GENOMIC APPROACH TO AN INNATE IMMUNO-MALIGNANT MECHANISM MODULATED BY ETHANOL: MICROARRAY AND PATHWAY ANALYSIS. T. Sebastian1, M. Glover2 and S. Pruett1. 1Department of Basic Sciences, Mississippi State University, Mississippi State, MS and 2Cellular Biology & Anatomy, LSU Health Sci. Center, Shreveport, MS.

#1748 POSTER BOARD NUMBER .................................................. 254 THE ROLE OF PPAR-ALPHA ON MACROPHAGE FUNCTION FOLLOWING PFOS EXPOSURE IN THE MOUSE RAW264.7 CELL LINE. M. Mollenhauer1, F. Fairn and M. Peden-Adams2. 1 Medical University of South Carolina, Charleston, SC and 2NOAA/NOS, Charleston, SC.

#1749 POSTER BOARD NUMBER .................................................. 255 EFFECTS OF PERFLUOROOCTANE SULFONATE (PFOS) ON MACROPHAGE FUNCTION AND SPLENOCYTE SUBPOPULATIONS IN B6C3F1 MICE. D. E. Keil1, M. Mollenhauer1, J. Berger-Ritchie2, M. Lutman1, M. Morse1 and M. Peden-Adams2. 1UNLV, Las Vegas, NV and 2Medical University of South Carolina, Charleston, SC.

#1750 POSTER BOARD NUMBER .................................................. 256 COMPARATIVE IMMUNOLOGICAL RESPONSES BETWEEN WILD-TYPE AND PPAR-ALPHA NULL MICE FOLLOWING EXPOSURE TO PFOS. M. Morse1, M. Mollenhauer1, J. Berger-Ritchie2, M. Lutman1, D. E. Keil1 and M. Peden-Adams2. 1Medical University of South Carolina, Charleston, SC and 2CLS, UNLV, Las Vegas, NV.

#1751 POSTER BOARD NUMBER .................................................. 257 DIFFERENTIAL DISRUPTION OF HEMATOPOIESIS IN BONE MARROW BY BENZO(A)PYRENE AND 7,12-DIMETHYL-BENZ(A)ANTHRACENE: EFFECTS ON BLOOD, SPLEEN, AND THYMUS. A. G. N. Juli1,2, M. Larson1, C. Czuprynski1 and C. Jefcoate2. 1PBS, UW, Madison, WI and 2UNLV, Las Vegas, NV.

#1752 POSTER BOARD NUMBER .................................................. 258 IDENTIFICATION AND CHARACTERIZATION OF INFILTRATING MACРОPHAGES IN ACETAMINOPHEN-INDUCED LIVER INJURY. M. Holt, L. Cheng and C. Ju. Pharmaceutical Sciences, University of Colorado Denver, Denver, CO.

#1753 POSTER BOARD NUMBER .................................................. 259 EICOSANOID MEDIANE GALLERIA MELLONELLA CELLULAR IMMUNE RESPONSE TO VIRAL INFECTION. E. Buyrukcu2, H. Tunaz2, D. Stanley1 and K. Buyrukcu2. 1Faculty of Arts and Sciences, Biology Department, Zonguldak Karadeniz University, Zonguldak, Turkey and 2Faculty of Agriculture, Department of Plant Protection, Kahramanmaras-Sutcuimam University, Kahramanmaras, Turkey and 3Biological Control of Insects Research Laboratory, USDA/Agricultural Research Service, Columbia, MO.
Program Description (Continued)

Abstract #

#1754

Poster Board Number ........................................260

CHRONIC LOW-DOSE ARSENIC IN DRINKING WATER ALTERS IMMUNE RESPONSES TO RESPIRATORY VIRAL INFECTION IN VIVO. C. D. Kozul1, K. H. Ely2, R. I. Elenow3 and J. W. Hamilton1, Pharmacology/Toxicology, Dartmouth Medical School, Hanover, NH, 1Medicine, Dartmouth Medical School, Lebanon, NH and 3Medicine and Microbiology, Dartmouth Medical School, Lebanon, NH.

#1755

Poster Board Number ........................................301

METALLOTHIONEIN EXPRESSION AFFECTS THE FUNCTIONAL IMMUNE RESPONSE OF MURINE MACROPHAGES. G. Marasovi1, X. Xie1, R. Emeny1, D. A. Lawrence2 and M. A. Lynes3, Molecular and Cell Biology, University of Connecticut, Storrs, CT and 2Wadsworth Laboratory, Albany, NY.

#1756

Poster Board Number ........................................302

A NOVEL IN VITRO SYSTEM (MIMIC™) FOR THE ASSESSMENT OF THE IMMUNOTOXIC EFFECTS OF DRUGS ON THE HUMAN IMMUNE CELLS. M. Fort1, Y. Ma2, V. Wittman2, R. Highbe3, E. Mishkin2 and P. Narayanani4, Investigative Toxicology, Amgen Inc., Seattle, WA and 2VaxDesign Corp., Orlando, FL.

#1757

Poster Board Number ........................................303


#1758

Poster Board Number ........................................304


#1759

Poster Board Number ........................................305

IMMUNOTOXICITY OF EMISSION PARTICLES FROM FOSSIL- AND BIODIESEL-FUELED NON-ROAD DIESEL ENGINE. M. Tapanainen1, P. I. Jalka2, R. O. Salonen1, A. S. Pennanen1, M. S. Huppo2, K. Kuusela1, M. Ilahainen1, J. Jokinen1 and M. Hirvonen2, National Public Health Institute, Kuopio, Finland and 1University of Kuopio, Kuopio, Finland. Sponsor: M. Viluksla.

#1760

Poster Board Number ........................................306

INHIBITION OF HUMAN DENDRITIC CELL ACTIVATION BY CIGARETTE SMOKE EXTRACT. S. M. Castro, T. Ivaniciu, R. P. Garofalo and A. Guerrero-Plata, Pediatrics, University of Texas Medical Branch, Galveston, TX.

#1761

Poster Board Number ........................................307

TOXIC EFFECTS OF MERCURIC SULFIDE IN MICE. H. Son, S. Park, S. Lee, M. Kim and S. Kim, Pharmacology, Kyungpook National University Medical school, Daegu, South Korea.

Abstract #

#1762

Poster Board Number ........................................308

LYMPHOCYTE IMMUNOPHENOTYPING AND RED BLOOD CELL ONTOGENY IN FETAL AND NON-VACCINATED AND KHL-IMMUNIZED INFANT CYTOMONOLGUS MONKEYS. T. L. Warren1, N. Makori1, J. Stewart1, L. Brown1, S. Oneda1, R. Klein1, R. Grant1, R. Eyre1, J. Klausen1, S. Meyer1 and R. Nugouta1, SNL, USA, Everett, WA and 1Shin Nippon Biomedical Laboratories, Ltd., Kagoshima, Japan.

Wednesday Afternoon, March 18
1:00 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: METALS—IN VITRO

Chairperson(s): Yogesh Saini, Michigan State University, East Lansing, MI.

Displayed: 1:00 PM–4:30 PM

Author Attended: 2:45 PM–4:30 PM

#1763

Poster Board Number ........................................311

ARSENIC PREDISPOSES SKIN KERATINOCYTES TO UV-INDUCED OXIDATIVE DNA DAMAGE YET ENHANCES THEIR SURVIVAL. Y. Sun1, C. Kojima1, C. Chignielf1, R. Mason1 and M. P. Waalkes1, 1ICS, LCC, NCI at NEIHS, Research Triangle Park, NC and 2LP, NIEHS, Research Triangle Park, NC.

#1764

Poster Board Number ........................................312

ARSENIC AND HUMAN LUNG CELL CULTURES—GENOTOXICITY AND EFFECTS ON MRP TRANSPORTERS. F. Glahn, J. Wiese and H. Foth, Environmental Toxicology, Martin Luther University, Halle / Saale, Germany.

#1765

Poster Board Number ........................................313

STABLE OVEREXPRESSION OF HUMAN MTL-1A GENE IN A HEART-DERIVED CELL LINE CONFRS OXIDATIVE PROTECTION. W. Feng, W. Xue, Q. Liu, L. Cai and Y. Kang, University of Louisville, Louisville, KY.

#1766

Poster Board Number ........................................314

EFFECTS OF CHRONIC LOW DOSE ARSENIC EXPOSURE ON HORMONE-REGULATED GLOBAL GENE EXPRESSION IN NORMAL HUMAN LUNG FIBROBLASTS. J. A. Goss1,2,3, E. R. Macari1, C. D. Kozul2, T. H. Hampton2,2, M. Wungjiranirun1, J. E. Bodwell1 and J. W. Hamilton2,1, Pharmacology and Toxicology, Dartmouth Medical School, Hanover, NH, 1Center for Environmental Health Sciences, Dartmouth Medical School, Hanover, NH. 2Center for Environmental Health Sciences, Dartmouth Medical School, Hanover, NH, 3Pharmacology, Dartmouth Medical School, Lebanon, NH. Sponsor: N. Makori1, J. Stewart1, L. Brown1, S. Oneda1, R. Klein1, R. Grant1, R. Eyre1, J. Klausen1, S. Meyer1 and R. Nugouta1, SNL, USA, Everett, WA and 1Shin Nippon Biomedical Laboratories, Ltd., Kagoshima, Japan.
Program Description (Continued)

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#1767  Poster Board Number .................................. 315 ARSENITE INDUCES APOPTOSIS OF HUMAN UMBILICAL VESSEL ENDOTHELIAL CELLS THROUGH MITOCHONDRIAL PATHWAYS. Y. Wei1 and R. Li1. 1 Department of Community Medicine, Mercy University School of Medicine, Macon, GA and 2 Key Laboratory of Pathobiology, Jinlin University, Changchun, China.

#1768  Poster Board Number .................................. 316 DISTINCT ROLES OF THE MAPKs IN Cr(VI) TOXICITY. L. Chen1, J. L. Ovesen2, A. Puga1 and Y. Xiao1. 1 Environmental Health, University of Cincinnati, Cincinnati, OH and 2 Interdisciplinary Graduate Program in Cancer and Cell Biology, University of Cincinnati, Cincinnati, OH.

#1769  Poster Board Number .................................. 317 MICROTUBULES AS A MAJOR CELLULAR TARGET FOR ARSENIC TOXICITY. W. Li, Y. Zhao and P. Toselli. Biochemistry, Boston University School of Medicine, Boston, MA.


#1772  Poster Board Number .................................. 320 ARSENIC ALTERS THE DIFFERENTIATION OF MOUSE MUSCLE CELLS THROUGH THE REPRESSION OF TRANSCRIPTION FACTORS. A. A. Steffens1 and L. J. Bain2. 1 Environmental Toxicology Program, Clemson University, Pendleton, SC and 2 Biological Sciences, Clemson University, Pendleton, SC.

#1773  Poster Board Number .................................. 321 EPIGENETIC CONTROL OF MT-3 EXPRESSION IN NORMAL BREAST AND BLADDER CELL LINES. S. Somji, A. H. Garrett, M. Sens and D. A. Sens. Pathology, University of North Dakota, Grand Forks, ND.

#1774  Poster Board Number .................................. 322 EFFECT OF EGF AND INSULIN ON THE EXPRESSION OF KERATIN 6 IN ARSENIC AND CADMIUM TRANSFORMED UROTS A CELL LINES. L. Cao, S. H. Garrett, D. A. Sens, M. Sens, X. Zhou and S. Somji. Pathology, University of North Dakota, Grand Forks, ND.

#1775  Poster Board Number .................................. 323 THE ROLE OF CYTOKINE SIGNALING IN ARSENIC INDUCED DIABETES. J. Druve, J. J. Sollome and R. R. Vaillancourt. Department of Pharmacology & Toxicology, The University of Arizona, Tucson, AZ.

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#1776  Poster Board Number .................................. 324 DEPLETED URANIUM INDUCED OXIDATIVE STRESS ACTIVATES DNA REPAIR IN HUMAN BRONCHIAL EPITHELIAL CELLS. M. Yellowhair1, L. A. Henrickson2, J. A. Hossain2, K. Dixon3 and C. R. Lantz. 1 Department of Pharmacology & Toxicology, The University of Arizona, Tucson, AZ and 2 Department of Molecular & Cellular Biology, The University of Arizona, Tucson, AZ.

#1777  Poster Board Number .................................. 325 ARSENIC SYNERGISTICALLY INCREASES ZINC CHROMATE-INDUCED ANEUPLOIDY AND SPINDLE ASSEMBLY CHECKPOINT BYPASS IN HUMAN LUNG CELLS. A. Holmes1,2, D. Buehler1, J. Youngs1,2, S. A. Wise2, A. Jegevaragen1, W. Wallace1, D. Hammond1 and J. P. Wise1,2. 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 NASA Johnson Space Center, Houston, TX and 4 Department of Applied Medical Science, University of Southern Maine, Portland, ME.

#1778  Poster Board Number .................................. 326 LUNAR DUST AND ITS COMPONENTS ARE CYTOTOXIC TO HUMAN LUNG CELLS. J. L. Young3,4,5, J. P. Wise1,2, J. Wise1,2, A. Jegevaragen1, W. Wallace1, D. Hammond1 and J. P. Wise1,2. 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 NASA Johnson Space Center, Houston, TX and 4 Maine Space Grant Consortium, Augusta, ME.

#1779  Poster Board Number .................................. 327 DEFINING THE DURATION OF CHRONIC, LOW-LEVEL MONOMETHYLARSENIC ACID EXPOSURE REQUIRED TO INDUCE THE MALIGNANT TRANSFORMATION OF UROTS A CELLS. S. M. Wnek, T. J. Jensen, M. K. Medeiros and A. J. Gandolfi. Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

#1780  Poster Board Number .................................. 328 PGE2 FACILITATES HIF-1α SIGNALING IN HUMAN LUNG FIBROBLASTS TO AMPLIFY NF- AND VANADIUM-INDUCED VEGF AND CXCL8 RELEASE. K. A. Braun and I. P. Fabisiak. Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA.

#1781  Poster Board Number .................................. 329 LOW DOSE ARSENIC EXPOSURE POTENTIATES A PRO-ATHEROGENIC PHENOTYPE IN MACROPHAGES AND LIVER. K. K. Mann, J. M. Padovan1, W. H. Miller1, A. Straub2 and A. Barchowsky. 1 Lady Davis Institute for Medical Research, McGill University, Montreal, QC, Canada and 2 Occupational and Environmental Health, University of Pittsburgh Graduate School of Public Health, Pittsburgh, PA.
Abstract #  #1785

**Poster Board Number** ...............................332

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**Abstract #**  #1792

**Poster Board Number** ...............................340
Program Description (Continued)

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#1793  
**Poster Board Number ......................................341**  
ALTERED GRAVITY EXACERBATES CHROMATOPLASM-INDUCED GENOTOXICITY. J. P. Wise1,2, S. S. Wise1,2, J. Wise1,2, J. McKay1,2, A. Courtemanche1, B. Freedman1, M. Brown1, C. Giansio1,2, M. Mason1, T. Shehata1, D. Hammond1 and J. P. Wise1,2. Wise Laboratory of Environmental and Genetic Toxicology, University of Southern Maine, Portland, ME, 1Maine Center for Toxicology and Environmental Health, University of Southern Maine, Portland, ME, 2Department of Applied Medical Sciences, University of Southern Maine, Portland, ME, 3Department of Chemical and Biological Engineering, University of Maine, Orono, ME, 4Maine Space Grant Consortium, Augusta, ME and 5NASA Johnson Space Center, Houston, TX.

#1794  
**Poster Board Number ......................................342**  
MMA45 MAY BE THE ARSENIC METABOLITE RESPONSIBLE FOR DECREASED HBII EXPRESSION FOLLOWING ARSENIC EXPOSURE. N. Dangleben1, C. Skibola and M. Smith1. School of Public Health, University of California, Berkeley, Berkeley, CA.

#1795  
**Poster Board Number ......................................343**  
THE I KK BETA CROSSTALKS WITH THE TGF BETA PATHWAYS IN ARSENIC TOXICITY. Z. Peng and Y. Xia. University of Cincinnati, Cincinnati, OH.

#1796  
**Poster Board Number ......................................344**  
HUMAN INDIVIDUAL VARIATION IN SUSCEPTIBILITY TO ARSENIC-INDUCED CYTOTOXICITY. A. M. Bolt, P. Severson, and W. Klimecki1. Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

#1797  
**Poster Board Number ......................................345**  
ARSENIC BIOMEMYLATION IS OBLIGATORY FOR OXIDATIVE DNA DAMAGE BUT NOT FOR MALIGNANT TRANSFORMATION. C. Kojima1, E. Tokai1, D. Ramirez1, Z. Drobon1, M. Syblo1, R. Mason1 and M. Wuylex1. 1ICS, LCC, NCI at NIEHS, Research Triangle Park, NC. 2LPC, NIEHS, NIH. Research Triangle Park, NC and 3Department of Nutrition, UNC, Chapel Hill, NC.

#1798  
**Poster Board Number ......................................346**  
AUGMENTATION OF CISPLATIN CYTOTOXICITY ASSOCIATED WITH ALTERED DNA DAMAGE RESPONSE AND CELLULAR PLATINUM ACCUMULATION. C. S. Muenyi, A. A. Pandit, T. Fan, C. Helm and J. Storer. Pharmacology and Toxicology, University of Louisville, Louisville, KY.

#1799  
**Poster Board Number ......................................347**  
THE ROLE OF PKC CONSENSUS SITES IN MTF-1 TRANSCRIPTIONAL ACTIVATION. E. K. Braithwaite. Laboratory of Molecular Toxicology, NIEHS, Research Triangle Park, NC.

#1800  
**Poster Board Number ......................................348**  
ROLE OF DIVALENT METAL IONS IN AMINOACYLASE 3 MEDIATED CATALYSIS. K. Tsirulnikov1, N. Abuladze1, T. Wolak1,2, D. Newman1, S. Que Hee1, J. Abramson1, J. Kurta1 and A. Pushkin1. 1UCLA, Los Angeles, CA and 2Ben-Gurion University of the Negev, Beer Sheva, Israel. Sponsor: W. Dekant.

Abstract #

#1801  
**Poster Board Number ......................................349**  
PROTECTIVE ROLE OF FERRIC SULFATE IN CHROMIUM TOXICITY. R. Sellamuthu, C. Umbright, S. Leonard, R. Chapman, S. Li, M. Kashon and P. Joseph. Health Effects Laboratory Division, NIOSH, Morgantown, WV.

#1802  
3'-OH-GENESTIN IN THE TREATMENT OF ACUTE PROMYELOCYTIC LEUKEMIA. Z. Drobon1, C. S. Tarraga1, F. S. Walton1, L. D. Bennie1, R. Marcos1 and M. Syblo1,2,3. Nutrition, University of North Carolina, Chapel Hill, NC, 1Department of Genetics and Microbiology, Universitat Autonoma de Barcelona, Barcelona, Spain and 2CEMLB, University of North Carolina, Chapel Hill, NC.

Wednesday Afternoon, March 18
1:00 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: ALTERNATE TESTS AND MODELS II

Chairperson(s): Ray Tice, NIEHS, Research Triangle Park, NC.

Displayed: 1:00 PM–4:30 PM

Author Attended: 1:00 PM–2:45 PM

#1803  
**Poster Board Number ......................................350**  

#1804  
**Poster Board Number ......................................351**  
NEUROPROTECTIVE EFFECT OF SILDENAFIL AGAINST AMYLOID-BETA INDUCED TOXICITY. S. Uthayathas, S. K. Rupapagounder, B. Shonesy, T. Kariharana, K. Prameshwaran, V. Suppiramaniam and M. Dhunasekaran. Pharmacal Sciences, Auburn University, Auburn, AL.

#1805  
**Poster Board Number ......................................352**  
C. ELEAGANS MITOCHONDRIAL UNCOUPLING PROTEIN 4: ROLE IN REDOX BALANCE, AGING, AND MITOCHONDRIAL SUBSTRATE UTILIZATION. M. E. Pfeiffer1, C. A. Ungle1, E. Abramson1, P. Morgan2 and E. Mills3. 1University of Texas at Austin, Austin, TX and 2University of Washington, Seattle, WA.

#1806  
**Poster Board Number ......................................353**  
ESTABLISHING A HISTORICAL DATABASE FOR A MULTI-PHASED INTERNATIONAL VALIDATION STUDY OF A STABLY TRANSFECTED ESTROGEN RECEPTOR (ER) TRANSCRIPTIONAL ACTIVATION (TA) TEST METHOD. R. Tice1, F. Deal1, P. Ceger1, D. Allen1, J. Gordon1, J. de Lange1, S. Bremer1, M. Nakamura1, H. Kojima1, A. Ono1 and W. Stokes1. 1NICEATM, NIEHS, Research Triangle Park, NC, 2ILS, Inc./NICEATM, NIEHS, Research Triangle Park, NC, 3XDS, Inc., Durham, NC, 4ECVAM, Ispra, Italy, 5Hiyoshi Corp., Omihachiman, Japan and 6JaCVAM, Tokyo, Japan.
Program Description (Continued)

Abstract # | Abstract #
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#1807 | #1814
Poster Board Number ......................................355 | Poster Board Number ......................................402

#1808 | #1815
Poster Board Number ......................................356 | Poster Board Number ......................................403
**COMPARATIVE EVALUATION OF COSMETIC FORMULATIONS WITH DIFFERENT ALTERNATIVE METHODS FOR EYE IRRITATION.** A. Poit1,2, A. Heppenheim1,2, R. Faust2 and A. Fuchs1. Harlan Laboratories, Indianapolis, IN. **RCC CytoTest Cells Research GmbH, Rossdorf, Germany and KPSS-Kao Professional Salon Services GmbH, Darmstadt, Germany.**

#1809 | #1816
Poster Board Number ......................................357 | Poster Board Number ......................................404
**AN ALTERNATIVE METHOD FOR SKIN IRRITATION TESTING USING AN OPTIMIZED “42BiS” PROTOCOL: SKINETHIC® RECONSTRUCTED HUMAN EPIDERMIS (RHE) MODEL.** C. Tornier1, C. Amселlem2, M. Pelletier2, J. Meunier3, A. De Brugère1 and P. McNamee1. L’Oréal, Aulnay sous bois, France, 1Link Ingénierie, Montélier, France, 2Colipa, Brussels, Belgium, 3SkinEthic, Nice, France and 3Procter & Gamble, Egham, United Kingdom. Sponsor: E. Dufour.

#1810 | #1818
Poster Board Number ......................................358 | Poster Board Number ......................................405

#1811 | #1819
Poster Board Number ......................................359 | Poster Board Number ......................................406
**IN VITRO TOOLS TO ASSESS THE MYELOTOXICITY OF KINASE INHIBITORS.** M. Brugerha, G. Pennella, M. Magistrelli, P. Rossi and A. Giusti. Preclinical Development, Accela - Nerviano Medical Sciences srl, Nerviano, Milano, Italy.

#1812 | #1820
Poster Board Number ......................................360 | Poster Board Number ......................................407
**IL-1α MEASUREMENT AS A USEFUL ADJUNCT TO VIABILITY ASSAYS IN RECONSTRUCTED EPIDERMIS: HOW TO ENSURE STANDARDIZATION AND REPRODUCIBILITY?** D. Lelièvre, F. Amaral, N. Li, L. Martin and J. Cotovio. L’Oréal Research, Aulnay sous Bois, France. Sponsor: E. Dufour.

#1813 | #1821
Poster Board Number ......................................401 | Poster Board Number ......................................408
**EXPRESSION OF MAJOR PHASE 1 ENZYMES IN HACAT CELLS.** J. Hennen, M. Kalmes and B. Blömeke. Department of Environmental Toxicology, University Trier, Trier, Germany.

#1807 | #1814
Poster Board Number ......................................402 | Poster Board Number ......................................409

#1808 | #1815
Poster Board Number ......................................356 | Poster Board Number ......................................403
**COMPARATIVE EVALUATION OF COSMETIC FORMULATIONS WITH DIFFERENT ALTERNATIVE METHODS FOR EYE IRRITATION.** A. Poit1,2, A. Heppenheim1,2, R. Faust2 and A. Fuchs1. Harlan Laboratories, Indianapolis, IN. **RCC CytoTest Cells Research GmbH, Rossdorf, Germany and KPSS-Kao Professional Salon Services GmbH, Darmstadt, Germany.**

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#1810 | #1818
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**IN VITRO TOOLS TO ASSESS THE MYELOTOXICITY OF KINASE INHIBITORS.** M. Brugerha, G. Pennella, M. Magistrelli, P. Rossi and A. Giusti. Preclinical Development, Accela - Nerviano Medical Sciences srl, Nerviano, Milano, Italy.

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**IL-1α MEASUREMENT AS A USEFUL ADJUNCT TO VIABILITY ASSAYS IN RECONSTRUCTED EPIDERMIS: HOW TO ENSURE STANDARDIZATION AND REPRODUCIBILITY?** D. Lelièvre, F. Amaral, N. Li, L. Martin and J. Cotovio. L’Oréal Research, Aulnay sous Bois, France. Sponsor: E. Dufour.

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Poster Board Number ......................................401 | Poster Board Number ......................................408
**EXPRESSION OF MAJOR PHASE 1 ENZYMES IN HACAT CELLS.** J. Hennen, M. Kalmes and B. Blömeke. Department of Environmental Toxicology, University Trier, Trier, Germany.

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#1822

Poster Board Number ......................................410

PREDICTION OF OCULAR IRRITANT POTENTIAL OF SURFACANTS-BASED FORMULATIONS AT DIFFERENT CONCENTRATIONS USING THE EPIOCULAR MODEL. J. Yin1, A. Dong1, A. Gill1, C. Rodriguez2, H. Pham1, W. Armbrister2, J. Harboll1 and B. Jones1.1, Product Safety, Mary Kay Inc., Dallas, TX and 2Clinical and Consumer Evaluation, Mary Kay Inc., Dallas, TX.

#1823

Poster Board Number ......................................411


#1824

Poster Board Number ......................................412

USE OF THE EPIOCULAR™ TISSUE MODEL FOR TESTING OF ULTRA-MILD EYE CARE COSMETICS. J. Kubilus, P. J. Hayden, M. Klausner and J. McDonnell. 1MatTek Corporation, Ashland, MA and 2Bioscience Laboratories, Inc., Bozeman, MT.

#1825

Poster Board Number ......................................413

FOLLOW-UP VALIDATION OF THE EPIDERM SKIN IRRITATION TEST. M. Liesch1, A. Ganser1, R. Curren1, J. Frank1, E. Genschow1, J. Tharmann1, M. Remmel1, B. Bauer2, H. Raabe1, N. Barnes1, A. Hilberer1, N. Witt1, M. Lornejad-Schäfer1, C. Schäfer1, P. Hayden1 and H. Kandarova1. 1Unit 37 (ZEBET), Federal Institute for Risk Assessment (BfR), Berlin, Germany, 2Experimentelle Toxikologie und Ökologie, BASF SE, Ludwigshafen, Germany, 3Institute for In Vitro Sciences, Inc., Gaithersburg, MD, 4Center for Alternative and Complementary Methods to Animal Testing, Linz, Austria and 5MatTek Corporation, Ashland, MA.

#1826

Poster Board Number ......................................414

DEVELOPMENT OF AN EPIDERM™ IN VITRO SKIN IRRITATION TEST (SIT) FOR THE GLOBALLY HARMONIZED SYSTEM (GHS) OF CLASSIFICATION AND LABELING OF CHEMICALS. P. J. Hayden, H. Kandarova, A. Armento, J. Kubilus and M. Klausner. MatTek Corp., Ashland, MA.

#1827

Poster Board Number ......................................415

EVALUATING THE CONSISTENCY OF THE MEDIUM THROUGHPUT C. ELEGANS GROWTH ASSAY FOR TOXICITY. M. Smith1, W. A. Boyd2, J. R. Rice2, J. H. Freedman2 and C. J. Porter1. 1SRA International, Durham, NC, 2National Toxicology Program, RTP, NC and 3National Institute of Environmental Health Sciences, RTP, NC.

#1828

Poster Board Number ......................................416


#1829

Poster Board Number ......................................417

ANALYSIS OF CELL TOXICITY USING TOXREPORTER™ TECHNOLOGY. J. Hwang, R. Wies, J. Mistry and D. Hayes, R&D Immunoasays, Millipore Corp, St. Charles, MO. Sponsor: S. Sarang.

#1830

Poster Board Number ......................................418

IN VITRO MODULATION OF BCNU TOXICITY BY O4 BENZYLFOLIC ACID IN HUMAN BONE MARROW CFU-GM AND TUMOR CELL LINES. H. P. Behring1, M. Furniss1, K. A. Robillard1, J. E. Tomaszewski1 and R. E. Parchment1. Predictive Toxicology Section, Laboratory of Human Toxicology and Pharmacology, SAIC-Frederick/NCI-Frederick, Frederick, MD and 3Division of Cancer Treatment & Diagnosis, National Cancer Institute, Bethesda, MD.

#1831

Poster Board Number ......................................419

EYE AND SKIN IRRITATION IN 3-D TISSUE CONSTRUCTS USING MITT AND ATP ENDPOINTS. H. Raabe1, P. J. Hayden2, J. Burdick1, E. Hanlon2, A. Hilberer2, M. Hyder2, H. Inglis2, A. Kong2, S. Majewski2, M. McNamara2, G. Mun2, J. Nash2 and N. Witt2. 1Beauty Avenues, Reynoldsburg, OH and 2Institute for In Vitro Sciences, Inc., Gaithersburg, MD.

#1832

Poster Board Number ......................................420


#1833

Poster Board Number ......................................421

THE APPLICATION OF ALGINATE SCAFFOLDS FOR THREE-DIMENSIONAL CELL CULTURE. A. Sams, Z. Li and M. J. Powers. Primary and Stem Cell Systems R&D, Invitrogen Corporation, Frederick, MD.

#1834

Poster Board Number ......................................422

DEVELOPMENTAL EXPOSURE TO A DOPAMINERGIC TOXICANT PRODUCES ALTERED LOCOMOTOR ACTIVITY IN LARVAL ZEBRAFISH. T. D. Irons1,2, R.C. MacPhail2, D. L. Hunter1, B. Padnos3 and S. Padilla4. 1Curriculum in Toxicology, UNC-CH, Chapel Hill, NC and 2Neurotoxicology Division, U.S. EPA, Research Triangle Park, NC.

#1835

Poster Board Number ......................................423

DEVELOPMENT OF INTEGRATED TESTING STRATEGY IN THE FRAME OF THE 7TH AMENDMENT TO THE EUROPEAN COSMETIC DIRECTIVE. J. Clouzeau1, R. Note2, J. M. Ovigne1, G. Ouedraogo1, S. Ringelissen1, E. Dufour1, M. A. Levebvre1, S. Thornback1, S. Loisel-Joubert1, J. R. Meunier1, V. Belin1 and P. Berthe1. L’Oréal, Asnieres cedex, France and L’Oréal, Aulnay sous Bois, France. Sponsor: E. Dufour.

#1836

Poster Board Number ......................................424

TO DEVELOP AN IN VITRO (EFT-300) SKIN MODEL FOR WOUND HEALING STUDIES. M. S. Sachdeva1, R. R. Patlolla1, R. Mallampati1, P. Vashish1, M. Klausner1 and M. Tuli1. 1Pharmacy, Florida A&M University, Tallahassee, FL and 2MatTek Corporation, 200 Homer Avenue, Ashland, MA.
**Program Description (Continued)**

### Abstract #

**Poster Board Number** .................. #1837


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**Poster Board Number** .................. #1838


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**Poster Board Number** .................. #1839


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**Poster Board Number** .................. #1840


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**Poster Board Number** .................. #1841


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**Poster Board Number** .................. #1842

**#1842** DECREASED VEGF EXPRESSION IN ZEBRAFISH (DANIO RERIO) EMBRYOS EXPOSED TO METHYL TERT BUTYL ETHER (MTBE) CORRELATES WITH DISRUPTED ANGIGENESIS AND DECREASED POST HATCH SURVIVAL. J. A. Bonventre, S. M. Bugel, L. A. White and K. R. Cooper. 1Joint Graduate Program in Toxicology, Rutgers University, New Brunswick, NJ and 2Department Biochemistry & Microbiology, Rutgers University, New Brunswick, NJ.

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**Poster Board Number** .................. #1843


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**Poster Board Number** .................. #1844


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**Poster Board Number** .................. #1845


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**Poster Board Number** .................. #1846


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**Poster Board Number** .................. #1847


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**Poster Board Number** .................. #1848

**#1848** EFFECTS OF TCDD ON DIFFERENTIATION OF HUMAN EMBRYONIC STEM CELLS. E. A. Bolterstein and B. Allen-Hoffmann. 1Department of Pathology, University of Wisconsin - Madison, Madison, WI and 2Molecular and Environmental Toxicology, University of Wisconsin - Madison, Madison, WI.
#1851 Poster Board Number ...............................439
RELIABLE AND PREDICTIVE \textit{IN VITRO} ASSAYS FOR MYELOTOXICITY AND CARDIOTOXICITY OF KINASE INHIBITORS.
E. Clarke\textsuperscript{1}, S. Schwengberg\textsuperscript{2},
R. Kettenhofen\textsuperscript{1}, G. dos Santos\textsuperscript{1} and H. Bohlen\textsuperscript{2},
ReachBio LLC, Seattle, WA and \textsuperscript{2}Axiongen AG, Koln, Germany. Sponsor: R. Schnellmann.

#1852 Poster Board Number ...............................440
THE ARYL HYDROCARBON RECEPTOR MODULATES ERYTHROPOIESIS IN MICE.
F. L. Casado-Pena, K. P. Singh and T. A. Gasiewicz,
Environmental Medicine, School of Medicine and Dentistry, University of Rochester, Rochester, NY.

#1853 Poster Board Number ...............................441
CHARACTERIZATION OF PRIMARY HUMAN CARDIOMYOCYTES AS A POTENTIAL \textit{IN VITRO} MODEL FOR TESTING CARDIOTOXICITY.
M. D. Sweeney\textsuperscript{1}, D. Puppala\textsuperscript{1}, H. Uppal\textsuperscript{2}, N. M. Lies\textsuperscript{1}, M. W. Majdoob\textsuperscript{1}, J. Sharma\textsuperscript{1}, S. Kaushal\textsuperscript{1}, M. Fielden\textsuperscript{1} and K. Kolaja\textsuperscript{1},
Discovery and Investigative Safety, Roche Palo Alto, Palo Alto, CA, \textsuperscript{2}Celprogen Inc, San Pedro, CA and \textsuperscript{1}Division of Cardiovascular Thoracic Surgery, Children’s Memorial Hospital, Northwestern University’s Feinberg School of Medicine, Chicago, IL.

#1854 Poster Board Number ...............................442
POTENTIAL MECHANISMS OF \textit{IN VITRO} CARDIOTOXICITY ASSOCIATED WITH TYROSINE KINASE INHIBITORS.
H. Uppal\textsuperscript{1}, D. Puppala\textsuperscript{1}, M. Sweeney\textsuperscript{1}, P. Dhowan\textsuperscript{1}, J. Jin\textsuperscript{1}, R. Varma\textsuperscript{2}, H. Bitter\textsuperscript{1}, D. Goldstein\textsuperscript{2}, D. Misner\textsuperscript{3}, S. Platz\textsuperscript{4} and K. Kolaja\textsuperscript{1},
\textsuperscript{1}Non Clinical Safety, Roche Palo Alto LLC, Palo Alto, CA, \textsuperscript{2}Global Research Informatics, Roche Palo Alto LLC, Palo Alto, CA and \textsuperscript{3}Medicinal Chemistry, Roche Palo Alto LLC, Palo Alto, CA.

#1855 Poster Board Number ...............................443
A QUANTITATIVE STEM CELL ASSAY FOR TESTING OF DEVELOPMENTAL NEUROTOXICITY.
D. M. De Groot\textsuperscript{1}, H. Stegeman\textsuperscript{1}, R. Kayser\textsuperscript{1}, A. Bholia\textsuperscript{1}, M. Mulderij\textsuperscript{1}, J. Bruijntjes\textsuperscript{1}, H. Wortelboer\textsuperscript{1}, J. Lammers\textsuperscript{1}, R. Westerink\textsuperscript{2}, A. Seiler\textsuperscript{1} and J. Van Burgsteden\textsuperscript{1},
\textsuperscript{1}Novo Nordisk, Bagsvaerd, Denmark and \textsuperscript{2}NIH, Bethesda, MD.

Program Description (Continued)

Abstract #

Poster Board Number ...............................437
A ROLE FOR THE CONSTITUTIVE ANDROSTANE RECEPTOR IN HEPATIC DIFFERENTIATION OF HUMAN EMBRYONIC STEM CELLS.
S. M. Zanule, D. M. Weyant and C. J. Omiecinski, Veterinary and Biomedical Sciences, Pennsylvania State University, University Park, PA.

Poster Board Number ...............................438
AGING ARYL HYDROCARBON RECEPTOR NULL ALLELE MICE ARE PRONE TO HEMATOPOIETIC DISEASE CHARACTERISTIC OF LEUKEMIA.
K. P. Singh, F. L. Casado and T. A. Gasiewicz,
Environmental Medicine, School of Medicine and Dentistry, University of Rochester, Rochester, NY.

Poster Board Number ...............................439
RELIABLE AND PREDICTIVE \textit{IN VITRO} ASSAYS FOR MYELOTOXICITY AND CARDIOTOXICITY OF KINASE INHIBITORS.
E. Clarke\textsuperscript{1}, S. Schwengberg\textsuperscript{2},
R. Kettenhofen\textsuperscript{1}, G. dos Santos\textsuperscript{1} and H. Bohlen\textsuperscript{2},
ReachBio LLC, Seattle, WA and \textsuperscript{2}Axiongen AG, Koln, Germany. Sponsor: R. Schnellmann.

Poster Board Number ...............................440
THE ARYL HYDROCARBON RECEPTOR MODULATES ERYTHROPOIESIS IN MICE.
F. L. Casado-Pena, K. P. Singh and T. A. Gasiewicz,
Environmental Medicine, School of Medicine and Dentistry, University of Rochester, Rochester, NY.

Poster Board Number ...............................441
CHARACTERIZATION OF PRIMARY HUMAN CARDIOMYOCYTES AS A POTENTIAL \textit{IN VITRO} MODEL FOR TESTING CARDIOTOXICITY.
M. D. Sweeney\textsuperscript{1}, D. Puppala\textsuperscript{1}, H. Uppal\textsuperscript{2}, N. M. Lies\textsuperscript{1}, M. W. Majdoob\textsuperscript{1}, J. Sharma\textsuperscript{1}, S. Kaushal\textsuperscript{1}, M. Fielden\textsuperscript{1} and K. Kolaja\textsuperscript{1},
Discovery and Investigative Safety, Roche Palo Alto, Palo Alto, CA, \textsuperscript{2}Celprogen Inc, San Pedro, CA and \textsuperscript{1}Division of Cardiovascular Thoracic Surgery, Children’s Memorial Hospital, Northwestern University’s Feinberg School of Medicine, Chicago, IL.

Poster Board Number ...............................442
POTENTIAL MECHANISMS OF \textit{IN VITRO} CARDIOTOXICITY ASSOCIATED WITH TYROSINE KINASE INHIBITORS.
H. Uppal\textsuperscript{1}, D. Puppala\textsuperscript{1}, M. Sweeney\textsuperscript{1}, P. Dhowan\textsuperscript{1}, J. Jin\textsuperscript{1}, R. Varma\textsuperscript{2}, H. Bitter\textsuperscript{1}, D. Goldstein\textsuperscript{2}, D. Misner\textsuperscript{3}, S. Platz\textsuperscript{4} and K. Kolaja\textsuperscript{1},
\textsuperscript{1}Non Clinical Safety, Roche Palo Alto LLC, Palo Alto, CA, \textsuperscript{2}Global Research Informatics, Roche Palo Alto LLC, Palo Alto, CA and \textsuperscript{3}Medicinal Chemistry, Roche Palo Alto LLC, Palo Alto, CA.

Poster Board Number ...............................443
A QUANTITATIVE STEM CELL ASSAY FOR TESTING OF DEVELOPMENTAL NEUROTOXICITY.
D. M. De Groot\textsuperscript{1}, H. Stegeman\textsuperscript{1}, R. Kayser\textsuperscript{1}, A. Bholia\textsuperscript{1}, M. Mulderij\textsuperscript{1}, J. Bruijntjes\textsuperscript{1}, H. Wortelboer\textsuperscript{1}, J. Lammers\textsuperscript{1}, R. Westerink\textsuperscript{2}, A. Seiler\textsuperscript{1} and J. Van Burgsteden\textsuperscript{1},
\textsuperscript{1}Novo Nordisk, Bagsvaerd, Denmark and \textsuperscript{2}NIH, Bethesda, MD.

Abstract #

Poster Board Number ...............................444
AHUCYP1A1 EXPRESSION IN MOUSE TROPHOBLAST ALLOGRAFTS.
J. Epple-Farmer, N. Ouyang, S. Ke and Y. Tian, Program of Toxicology, Texas A&M University, College Station, TX.

Poster Board Number ...............................445
PREDICTING DEVELOPMENTAL TOXICITY WITH HUMAN EMBRYONIC STEM CELLS AND METABOLICOSIS.
A. M. Weir\textsuperscript{1}, P. R. West\textsuperscript{1}, S. Bhattacharyya\textsuperscript{1}, A. M. Smith\textsuperscript{2} and G. G. Cezar\textsuperscript{1,2},
\textsuperscript{1}Semia Biomarker Discovery, Inc., Madison, WI and \textsuperscript{2}Animal Sciences, University of Wisconsin-Madison, Madison, WI.

Wednesday Afternoon, March 18
1:00 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: STEATOSIS AND CHOLESTASIS IN HEPATIC DISFUNCTION

Chairperson(s): Mark Fielden, Roche Palo Alto, Palo Alto, CA.

Displayed: 1:00 PM–4:30 PM

Author Attended: 1:00 PM–2:45 PM

Poster Board Number ...............................446
ANTIOXIDANT RESPONSE ENZYMES IN PROGRESSIVE STAGES OF HUMAN NON-ALCOHOLIC FATTY LIVER DISEASE.
R. N. Hardwick, C. D. Fisher and N. J. Cherrington, Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

Poster Board Number ...............................447
HEPATIC CYTOCHROME P450 ENZYME ALTERATIONS IN HUMANS WITH PROGRESSIVE NON-ALCOHOLIC FATTY LIVER DISEASE.
L. Augustine\textsuperscript{1}, C. D. Fisher\textsuperscript{4}, A. J. Lickteig\textsuperscript{2}, J. Ranger-Moore\textsuperscript{2}, J. P. Jackson\textsuperscript{3}, S. S. Ferguson\textsuperscript{1} and N. J. Cherrington\textsuperscript{1},
\textsuperscript{1}Pharmacology & Toxicology, University of Arizona, Tucson, AZ, \textsuperscript{2}Division of Epidemiology and Biostatistics, University of Arizona, Tucson, AZ, \textsuperscript{3}CellzDirect, Inc., Austin, TX and \textsuperscript{4}CellzDirect, Inc., Durham, NC.

Poster Board Number ...............................448
PRECLINICAL ASSESSMENT AND BIOMARKER DISCOVERY OF DRUG-INDUCED HEPATIC STEATOSIS.

Poster Board Number ...............................449
INVOLVEMENT OF AMP-ACTIVATED PROTEIN KINASE/ACC PATHWAY ON THE FATTY LIVER INDUCED BY OROTIC ACID.
Program Description (Continued)

Abstract #

Poster Board Number ......................................450

PESTICIDE AND HEAVY METAL EXPOSURES ARE ASSOCIATED WITH LIVER DISEASE. M. Patel1, K. Falkner1, C. McClain2, G. Brock3, S. Appana4 and M. Cave1,2. 1Medicine/Gastroenterology, University of Louisville, Louisville, KY; 2Medicine, University of North Carolina, Chapel Hill, NC and 3School of Public Health, University of Louisville, KY. Sponsor: D. Conklin.

#1863

Poster Board Number ......................................501

TOXICANT ASSOCIATED STEATOHEPATITIS (TASH) IN AMERICAN VINYL CHLORIDE WORKERS. M. Cave1, M. Patel1, K. Falkner1, S. Josh-Barve1, L. Reynolds1 and C. McClain2, 1Medicine/Gastroenterology, University of Louisville, Louisville, KY and 2Medicine, Louisville VAMC, Louisville, KY. Sponsor: D. Conklin.

#1864

Poster Board Number ......................................502

PROTECTIVE EFFECT OF THE AQUEOUS EXTRACT FROM THE ROOTS OF PLATYCodon RADIX ON ETHANOL-INDUCED LIVER INJURY IN RAT. T. Khanal1, J. Choi1, B. Park2, Y. Chung2 and H. Jeong2. 1BK21 Project Team, Pharmacy, Chosun University, Gwangju, South Korea, 2Jangsaeng Doraji Research Institute of Biotechnology, Jangsang Doraji Co., Ltd., Jinju, South Korea and 3Division of Food Science, International University of Korea, Jinju, South Korea.

#1865

Poster Board Number ......................................503

EUGENIA JAMBOLANA FRUIT EXTRACT DOES NOT ALTER CHOLESTASIS-INDUCED LIVER INJURY DESPITE DOWN REGULATION OF EFFLUX TRANSPORTER EXPRESSION IN MICE. A. Donepudi, A. L. Slitt and N. Seeram. Biomedical and Pharmaceutical Sciences, University of Rhode Island, Kingston, RI.

#1866

Poster Board Number ......................................504

DEVELOPMENT OF AN IN VITRO MODEL WITH THE POTENTIAL FOR DETECTION OF CHOLESTATIC COMPOUNDS. L. Rice1,3, E. Ainscow1, J. Bowes1, M. Ismail2, J. Pilling1, J. Valentin2, R. Walls3, P. Webborn3 and M. Sullivan3. 1ASTL, AstraZeneca, Loughborough, United Kingdom, 2DMPK, AstraZeneca, Loughborough, United Kingdom and 3Safety Assessment, AstraZeneca, Macclesfield, United Kingdom.

#1867

Poster Board Number ......................................505


#1868

Poster Board Number ......................................506

TISSUE FACTOR-DEPENDENT COAGULATION CRystals TO ALPHA-NAPHTHYLISOTHIOCYANATE-INDUCED CHOLESTATIC LIVER INJURY IN MICE. J. P. Layendy1, G. H. Cantor2, D. Kirchhofer3, N. Mackman1 and R. Wang1. 1Pharmacology, Toxicology and Therapeutics, The University of Kansas Medical Center, Kansas City, KS; 2Discovery Toxicology, Bristol-Myers Squibb, Princeton, NJ; 3Department of Medicine, University of North Carolina, Chapel Hill, NC and 4Protein Engineering, Genentech, Inc., South San Francisco, CA.

#1869

Poster Board Number ......................................507

INHIBITION OF BOTH BSEP AND MRP2 ACTIVITY CORRELATES WITH RISK OF DRUG INDUCED LIVER INJURY IN MAN. J. Barber1, S. Stahl1, B. K. Park1, J. R. Foster1 and J. G. Kenn1. 1Safety Assessment UK, AstraZeneca, Cheshire, United Kingdom and 2Pharmacology and Therapeutics, Liverpool University, Liverpool, United Kingdom. Sponsor: R. Roberts.

#1870

Poster Board Number ......................................508

ROLE OF NUCLEAR FACTOR-E2-RELATED FACTOR 2 (NRF2) IN CHESTEROL MONOHYDRATE CRYSTAL FORMATION. M. A. Paranjpe1, Q. Cheng and A. L. Slitt. Biomedical and Pharmaceutical sciences, University of Rhode Island, Kingston, RI.

#1871

Poster Board Number ......................................509

ACETAMINOPHEN DISPOSITION: METABOLICOMIC BIOMARKER FOR NON-ALCOHOLIC FATTY LIVER DISEASE. M. D. Merrell1, A. J. Lickteig1, C. D. Fisher1, L. M. Augustine1, S. B. Campion2, J. E. Manautou1, H. H. A-Kader1, R. P. Erickson2 and N. J. Cherrington2. 1Pharmacology and Toxicology, University of Arizona, Tucson, AZ; 2Pediatrics, University of Arizona, Tucson, AZ and 3School of Pharmacy, The Ohio State University, Columbus, OH.

Wednesday Afternoon, March 18
1:00 PM to 4:30 PM
Exhibit Hall

© INFLAMMATION AND DISEASE

POSTER SESSION: INFLAMMATION

Chairperson(s): Myrtle A. Davis, National Cancer Institute, Rockville, MD.

Displayed: 1:00 PM–4:30 PM

Author Attended: 2:45 PM–4:30 PM

#1872

Poster Board Number ......................................511

EXPOSURE TO AIR POLLUTION INDUCES INFLAMMATION IN VISCERAL ADIPOSITY IN MICE. Z. Yavar, M. Verdin, N. Kherada, A. Wang, S. Rajagopalan and Q. Sun. The Ohio State University, Columbus, OH.
Program Description (Continued)

Abstract #  

#1873  
**Poster Board Number ..........................512**  
**EFFECTS OF SAPONINS ISOLATED FROM THE ROOTS OF PLATYCODON GRANDIFLORUM ON ALLERGIC AIRWAYS INFLAMMATION IN THE MURINE MODEL.**  
J. Choi and H. Jeong, BK21 Project Team, Pharmacy, Chonson University, Gwangju, South Korea.

#1874  
**Poster Board Number ..........................513**  
**INCREASED SUSCEPTIBILITY OF NEONATES TO THE INFLAMMATORY EFFECTS OF MONO-2-ETHYLPHENYLPHTHALATE**  
1UMDNJ-Robert Wood Johnson Medical School, New Brunswick, NJ; 2New York Medical College, Valhalla, NY and 3Rutgers University, Piscataway, NJ.

#1875  
**Poster Board Number ..........................514**  
**SILICA INDUCES LUNG INFLAMMATION, TYPE II CELL HYPERPLASIA AND ALTERED LUNG MECHANICS IN MICE.**  
1Rutgers University, Piscataway, NJ; 2UMDNJ-Robert Wood Johnson Medical School, New Brunswick, NJ; 3New York Medical College, Valhalla, NY and 4Rutgers University, Piscataway, NJ.

#1876  
**Poster Board Number ..........................515**  
**ANTI-INFLAMMATORY AND ANTI-ALLERGIC ACTIVITY OF PUTRANJIVAIN IN HUMAN MAST CELLS.**  
P. Zeidier-Erdely1, J. M. Antonini2, K. Sriram and J. L. Williams1.  
1Pharmacology, School of medicine, Kyungpook National University, Daegu, South Korea; 2Research Institute for Diabetic Complications, Chosun University, Gwangju, South Korea.

#1877  
**Poster Board Number ..........................516**  
**DEVELOPMENT OF A RAPID ONE-STEP METHOD USING FOUR-COLOR FLOW CYTOMETRY TO MEASURE IMMUNE CELLS AND DETERMINATION AND QUANTIFICATION IN MOUSE WHOLE BLOOD.**  
NIOHS, Morgantown, WV.

#1878  
**Poster Board Number ..........................517**  
**MULTIDRUG RESISTANCE RELATED PROTEIN (MRP) IN HUMAN LUNG CELLS IN PRESENCE OF PRO-INFLAMMATORY MEDIATORS.**  
A. Torky, R. Gherbal, M. Ahmad, F. Glahn and H. Foth.  
Environmental Toxicology, Martin Luther University, Halle / Saale, Germany.

#1879  
**Poster Board Number ..........................518**  
**EVIDENCE THAT PEROXISOME PROLIFERATOR-ACTIVATED RECEPTOR-γ/δ (PPARγ/δ) IS NOT UPREGULATED BY THE APC/β-CATENIN PATHWAY OR DOWNREGULATED BY NONSTEROIDAL ANTI-INFLAMMATORY DRUGS (NSAIDS).**  
J. E. Foreman1, J. M. Sorg1, K. S. McCinnis1, B. Rigas2, J. L. Williams2, F. J. Gonzalez1 and J. M. Peters1.  
1Pennsylvania State University, University Park, PA; 2Rutgers University, New Brunswick, NJ.

#1880  
**Poster Board Number ..........................519**  
**DIET-INDUCED OBESITY EXACERBATES INFLAMMATORY/OXIDATIVE STRESS RESPONSES IN MICE EXPOSED TO CIGARETTE SMOKE.**  
1Pacific Northwest National Lab, Richland, WA and 2Battelle Toxicology Northwest, Richland, WA.

#1881  
**Poster Board Number ..........................520**  
**IRON-MEDIATED PROINFLAMMATORY RESPONSE IN LUNG ENDOTHELIAL CELLS.**  
1Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA and 2Cardiovascular Research Center, University of Connecticut, Farmington, CT.

#1882  
**Poster Board Number ..........................521**  
**EVALUATION OF SAFETY AND EFFICACY OF TNFR1-SELECTIVE ANTAGONISTIC MUTANT TNE AS A NOVEL ANTI-INFLAMMATORY DRUG.**  
Y. Abe1, H. Shibata2, T. Nomura1, H. Kayamuro1, T. Yoshikawa1, Y. Yoshikawa1, S. Nakagawa1, H. Kamada2, S. Tsunoda3, Y. Tsutsuji4, Y. Abe1, H. Shibata2, T. Nomura1, H. Kayamuro1, T. Yoshikawa1, Y. Yoshikawa1, S. Nakagawa1, H. Kamada2, S. Tsunoda3, Y. Tsutsuji4, Laboratory of Pharmaceutical Proteomics, National Institute of Biomedical Innovation, Ibaraki, Osaka, Japan; 2National Institute of Health Science, Tokyo, Japan; 3Graduate School of Pharmaceutical Sciences, Osaka University, Suita, Osaka, Japan and 4The Center for Advanced Medical Engineering and Informatics, Osaka University, Suita, Osaka, Japan. Sponsor: Y. Abe.

#1883  
**Poster Board Number ..........................522**  
**GENDER-DIMORPHIC INFLAMMATORY RESPONSE IN HALOTHANE HEPATITIS IN MICE.**  
C. M. Dugan1, A. A. MacDonald1, A. R. Rothi1 and P. E. Gane2.  
1Cell and Molecular Biology, Michigan State University, East Lansing, MI and 2Pharmacology and Toxicology, Michigan State University, East Lansing, MI.

#1884  
**Poster Board Number ..........................523**  
**THERAPEUTIC EFFECT OF AFGE/G-CSF/ZN ON DIABETIC ULCER HEALING AND MECHANISMS.**  
Y. Tan1, H. Xu2, J. Xiao2, X. Li2 and L. Cai3.  
1Department of Medicine, University of Louisville, Louisville, KY and 2Chinese-American Research Institute for Diabetic Complications, Wenzhou Medical College, Wenzhou, Zhejiang, China.

#1885  
**Poster Board Number ..........................524**  
**EFFECTS OF INDUCIBLE NITRIC OXIDE SYNTHASE INHIBITION ON SKIN WOUND HEALING AND MONONUCLEAR PHAGOCYTIC SYSTEM.**  
R. R. Bell1, P. T. Manning2, L. F. Branson3 and N. K. Khan1.  
1Drug Safety Research & Development, Pfizer Inc., Groton, CT; 2Research & Development, VASCULOX, Inc., St. Louis, MO and 3Cardiovascular Pharmacology, Pfizer Inc., Chesterfield, MO.

#1886  
**Poster Board Number ..........................525**  
**NEUTROPHIL ACTIVATION BY HIGH MOBILITY GROUP BOX-1 PROTEIN IN MICE.**  
D. Williams, H. Yan and H. W. Jaeschke.  
Pharmacology, Toxicology & Therapeutics, University of Kansas Medical Center, Kansas City, KS.
Abstract #

#1887

**Poster Board Number** .......................... 526
**ADMINISTRATION OF LIPOXIN ANALOG DECREASES INFLAMMATORY RESPONSES AND ENHANCES RESOLUTION PATHWAYS IN H441 CELLS TREATED WITH LPS.** R. D. Britt1, 2, L. D. Nelin1, 2, S. E. Welty1 and L. K. Rogers1, 2. 1Center for Perinatal Research, The Research Institute at Nationwide Children’s Hospital, Columbus, OH and 2Integrated Biomedical Graduate Program, The Ohio State University, Columbus, OH.

#1888

**Poster Board Number** .......................... 527
**CORRELATION OF TOTAL ANTIOXIDANT CAPACITY WITH NITRIC OXIDE AND NEOPTERIN IN GASTROINTESTINAL CANCER PATIENTS.** B. A. Engin1, A. Sepci, Dineli2 and A. Engin. 1Department of Toxicology, Gazi University, Faculty of Pharmacy, Ankara, Turkey, 2Department of Biochemistry, Gazi University, Faculty of Medicine, Ankara, Turkey and 3Department of General Surgery, Gazi University, Faculty of Medicine, Ankara, Turkey. Sponsor: A. Karakaya.

#1889

**Poster Board Number** .......................... 528
**REDUCTION IN THE ABILITY OF MACROPHAGES TO PHAGOCYTE APOTOTIC NEUTROPHILS FOLLOWING EXPOSURE TO CRYSTALLINE SILICA.** M. Gulamani1 and N. Mutha. 1Toxicology, National Institute for Occupational Health, Johannesburg, Gauteng, South Africa and 2Haematology and Molecular Medicine, University of the Witwatersrand, Johannesburg, Gauteng, South Africa.

#1890

**Poster Board Number** .......................... 529

#1891

**Poster Board Number** .......................... 530
**CXCR1 CONTRIBUTES TO OZONE-INDUCED PULMONARY INFLAMMATION IN THE MOUSE.** M. High1, 2, H. Cho2, R. Wilson2, S. Kleeberger1 and D. Cook2. 1University of North Carolina, Chapel Hill, NC and 2NIHES, Durham, NC. Sponsor: D. Holbrook.

#1892

**Poster Board Number** .......................... 531
**ROLE OF SURFACANT PROTEIN-D IN OZONE-INDUCED INFLAMMATION, INJURY AND ALTERED LUNG FUNCTIONING.** A. Groves1, A. Gou1, C. Guo1, P. Scott1, M. Veleparambil1, J. Laskin1 and D. Laskin1. 1Rutgers University, Piscataway, NJ and 2UMDNJ-Robert Wood Johnson Med Sch, Piscataway, NJ.

#1893

**Poster Board Number** .......................... 532
**MACROPHAGE ACTIVATION BY FACTORS RELEASED FROM NECROTIC HEPATOCYTES IN AN ACETAMINOPHEN MODEL OF HEPATOTOXICITY. POTENTIAL ROLE OF HMGBl.** A. Dragomir1, J. D. Laskin2 and D. L. Laskin1. 1Pharmacology and Toxicology, Rutgers University, Piscataway, NJ and 2UMDNJ-RW Johnson Med Sch, Piscataway, NJ.

Abstract #

#1894

**Poster Board Number** .......................... 534
**IN VITRO PHOTOCHEMICAL FORMATION OF KOJIC ACID-DNA ADDUCTS.** J. Duan, G. M. Williams, A. M. Jeffrey1, 2. 1University of North Carolina, Chapel Hill, NC and 2NIEHS, Durham, NC. Sponsor: N. Stewart.

#1895

**Poster Board Number** .......................... 535
**ROLE OF ESTROGEN RECEPTOR ALPHA IN DECREASED HEPATIC NUCLEOTIDE EXCISION REPAIR AFTER 17alpha-ETHINYLESTRADIOL EXPOSURE.** E. Notch1 and G. Mayer1. 1Biochemistry, Microbiology & Molecular Biology, University of Maine, Orono, ME and 2Environmental Toxicology, Texas Tech University, Lubbock, TX.

#1896

**Poster Board Number** .......................... 536
**FAILED BASE EXCISION REPAIR LEADS TO NECROTIC CELL DEATH THROUGH NAD+ DEPLETION.** E. M. Guellner and R. W. Sobol. Molecular Pharmacology & Chemical Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA. Sponsor: N. Stewart.

#1897

**Poster Board Number** .......................... 537
**INCREASED FORMATION OF GLYCIDAMIDE (GA)-HGB AND GA-DNA ADDUCTS IN DIET-INDUCED OBSESE MICE.** R. I. Ghanem1, M. I. Churchwell1, K. A. Woodling1, R. Babi1, D. R. Doerge1 and U. Hoffler1. 1LP, NIEHS/NIH, RTP, NC and 2NCRR/FDA, Jefferson, AR.

#1898

**Poster Board Number** .......................... 538
**CHILD-ADULT DIFFERENCES IN EVALUATION OF IN VIVO GENOTOXICITY OF ACRYLAMIDE.** M. Honma1, N. Koyama2, A. Kimura1, 2, Y. Kayasu1, S. Takami1, M. Takahashi1, T. Imai1, A. Yamamoto1, W. Kumita1, K. Masumura1, S. Masuda1, N. Kinze1, T. Matsuda1 and T. Nohmi1. 1Division of Genetics and Mutagenesis, NIH, Tokyo, Japan, 2Grad. Sch. of Nutr. and Environment Sci., University of Shizuoka, Shizuoka, Japan, 3Drag Saftey Research lab., SNBL, Kagoshima, Japan, 4Division of Pathology, NIH, Tokyo, Japan and 5Grad. Sch. of Global Environment, Kyoto University, Kyoto, Japan. Sponsor: M. Ema.

#1899

**Poster Board Number** .......................... 539
**DEVELOPMENT OF A CROSS-SPECIES MUTATION ASSAY BASED ON THE PIG-A GENE.** S. D. Dertinger, S. Phenothepswath, S. Bryce and J. Bemis. Litron Laboratories, Rochester, NY.
Program Description (Continued)

Abstract #

#1900  Poster Board Number ................................................. #1900  Poster Board Number .................................................
PREDICTIVITY COMPARISON BETWEEN PREDICTIVITY COMPARISON BETWEEN
SCREENING ASSAYS FOR BACTERIAL SCREENING ASSAYS FOR BACTERIAL
MUTAGENICITY FOR NATURAL MUTAGENICITY FOR NATURAL
COMPOUNDS: MICRO-AMES VS. AMES COMPOUNDS: MICRO-AMES VS. AMES
FLUCTUATION METHOD. G. Pappa, T. Wohler and FLUCTUATION METHOD. G. Pappa, T. Wohler and
Safety, DSM Nutritional Products Ltd, Basel, Safety, DSM Nutritional Products Ltd, Basel,
Switzerland. Sponsor: A. Davidovich.

#1901  Poster Board Number ................................................. #1901  Poster Board Number .................................................
A MODIFIED AMES ASSAY FOR RAPID A MODIFIED AMES ASSAY FOR RAPID
SCREENING OF CIGARETTE WHOLE SCREENING OF CIGARETTE WHOLE
SMOKE AND GAS VAPOR PHASE SMOKE AND GAS VAPOR PHASE
PREPARATIONS. R. D. Leverette. Lorillard, PREPARATIONS. R. D. Leverette. Lorillard,
Greensboro, NC.

#1902  Poster Board Number ................................................. #1902  Poster Board Number .................................................
DISPOSITION KINETICS OF BENZO(A) DISPOSITION KINETICS OF BENZO(A)
PYRENE (BAP) METABOLITES AND BAP- PYRENE (BAP) METABOLITES AND BAP-
DNA ADDUCTS IN OVARY OF F-344 RATS DNA ADDUCTS IN OVARY OF F-344 RATS
ORALLY EXPOSED TO BENZO(A)PYRENE. ORALLY EXPOSED TO BENZO(A)PYRENE.
A. Ramesh1, M. S. Niaz2 and A. E. Archibong2. A. Ramesh1, M. S. Niaz2 and A. E. Archibong2.
1Cancer Biology, Meharry Medical College, 1Cancer Biology, Meharry Medical College,
Nashville, TN and 2OB/GYN, Meharry Medical Nashville, TN and 2OB/GYN, Meharry Medical
College, Nashville, TN.

#1903  Poster Board Number ................................................. #1903  Poster Board Number .................................................
REMOVAL OF BULKY MITOCHONDRIAL REMOVAL OF BULKY MITOCHONDRIAL
DNA ADDUCTS FOLLOWING DNA ADDUCTS FOLLOWING
ULTRAVIOLET RADIATION EXPOSURE ULTRAVIOLET RADIATION EXPOSURE
INVOLVES MITOCHONDRIAL FUSION INVOLVES MITOCHONDRIAL FUSION
AND AUTOPHAGY. A. M. Smith1, M. C. Leung1, AND AUTOPHAGY. A. M. Smith1, M. C. Leung1,
A. Arrani2, A. Bernal2, C. L. Tracey2 and M. N. A. Arrani2, A. Bernal2, C. L. Tracey2 and M. N.
Joel. Joel. 1Nicholas School of the Environment and 1Nicholas School of the Environment and
Earth Sciences, Duke University, Durham, NC and Earth Sciences, Duke University, Durham, NC and
3Integrated Toxicology and Environmental Health Program, Duke University, Durham, NC.

#1904  Poster Board Number ................................................. #1904  Poster Board Number .................................................
IN VIVO MUTAGENESIS INDUCED BY IN VIVO MUTAGENESIS INDUCED BY
DIESEL EXHAUST IN THE TESTIS OF GPT DIESEL EXHAUST IN THE TESTIS OF GPT
DELTA TRANSGENIC MICE. Y. Aoki1, A. H. DELTA TRANSGENIC MICE. Y. Aoki1, A. H.
Hashimoto1, K. Amannna1, K. Masumura1 and Hashimoto1, K. Amannna1, K. Masumura1 and
T. Nohmi2. 1Research Center for Environmental T. Nohmi2. 1Research Center for Environmental
Risk, National Institute for Environmental, Risk, National Institute for Environmental,
Studies, Tsukuba, Ibaraki, Japan and 2Division of Genetics Studies, Tsukuba, Ibaraki, Japan and 2Division of Genetics
and Mutagenesis, National Institute of Health and and Mutagenesis, National Institute of Health and
Sciences, Setagaya, Tokyo, Japan.

#1905  Poster Board Number ................................................. #1905  Poster Board Number .................................................
MOLECULAR DOSIMETRY OF UVC- MOLECULAR DOSIMETRY OF UVC-
INDUCED CYCLOBUTANE PYRIMIDINE INDUCED CYCLOBUTANE PYRIMIDINE
DIMERS IN DNA OF MELANOMA CELL DIMERS IN DNA OF MELANOMA CELL
LINES. C. D. Sproul1, E. Gibbs-Flourney1 and LINES. C. D. Sproul1, E. Gibbs-Flourney1 and
M. Cordeiro-Stone1,2. 1Curriculum in Toxicology, M. Cordeiro-Stone1,2. 1Curriculum in Toxicology,
University of North Carolina, Chapel Hill, Chapel University of North Carolina, Chapel Hill, Chapel
Hill, NC. 2Biological and Biomedical Sciences Hill, NC. 2Biological and Biomedical Sciences
Program, University of North Carolina, Chapel Hill, Program, University of North Carolina, Chapel Hill, Chapel
Hill, NC and 3Department of Pathology and Hill, NC and 3Department of Pathology and
Laboratory Medicine, Lineberger Comprehensive Laboratory Medicine, Lineberger Comprehensive
Cancer Center, Center for Environmental Health and Cancer Center, Center for Environmental Health and
Susceptibility, University of North Carolina, Chapel Susceptibility, University of North Carolina, Chapel
Hill, Chapel Hill, NC.

Poster Board Number ................................................. #1906  Poster Board Number .................................................
Poster Board Number ................................................. #1906  Poster Board Number .................................................
1, N6-ETHENO-2'-DEOXYADENOSINE 1, N6-ETHENO-2'-DEOXYADENOSINE
(e6A) IN WEANLING AND ADULT RATS e6A) IN WEANLING AND ADULT RATS
EXPOSED TO 13C2-VINYL CHLORIDE EXPOSED TO 13C2-VINYL CHLORIDE
BY INHALATION L. Gao, P.B. Upton, BY INHALATION L. Gao, P.B. Upton,
ENVIRONMENTAL SCIENCES AND ENVIRONMENTAL SCIENCES AND
ENGINEERING, UNC-CHAPEL HILL. ENGINEERING, UNC-CHAPEL HILL.
CHAPEL HILL, NC. L. Gao, P. B. Upton, G. CHAPEL HILL, NC. L. Gao, P. B. Upton, G.
Boysen and J. A. Swenberg. environmental sciences Boysen and J. A. Swenberg. environmental sciences
and engineering, UNC-chapel Hill, Chapel Hill, NC.

Poster Board Number ................................................. #1907  Poster Board Number .................................................
Poster Board Number ................................................. #1907  Poster Board Number .................................................
ASSESSMENT OF ULTRAVIOLET LIGHT- ASSESSMENT OF ULTRAVIOLET LIGHT-
AND CHEMICAL-INDUCED UDS IN AND CHEMICAL-INDUCED UDS IN
VARIOUS CELL LINES USING FLOW VARIOUS CELL LINES USING FLOW
CYTOMETRY. J. Tao, W. Newhard, D. R. Cerven CYTOMETRY. J. Tao, W. Newhard, D. R. Cerven
and G. L. DeGeorge. MB Research Laboratories, and G. L. DeGeorge. MB Research Laboratories,
Sponsor: Spinerstown, PA.

Poster Board Number ................................................. #1908  Poster Board Number .................................................
Poster Board Number ................................................. #1908  Poster Board Number .................................................
4-ETHYLCATECHOL CAUSES DNA 4-ETHYLCATECHOL CAUSES DNA
DAMAGE RESPONSE AT LEVELS IN WINE DAMAGE RESPONSE AT LEVELS IN WINE
AND CIGARETTE SMOKE. M. R. Knight, M. D. AND CIGARETTE SMOKE. M. R. Knight, M. D.
Aitken and J. Nakamura. Environmental Science and Aitken and J. Nakamura. Environmental Science and
Engineering, University of North Carolina-Chapel Engineering, University of North Carolina-Chapel
Hill, Chapel Hill, NC.

Poster Board Number ................................................. #1909  Poster Board Number .................................................
Poster Board Number ................................................. #1909  Poster Board Number .................................................
SUBOPTIMAL DNA REPAIR CAPACITY SUBOPTIMAL DNA REPAIR CAPACITY
PREDISPOSES POLYCYCLIC AROMATIC PREDISPOSES POLYCYCLIC AROMATIC
HYDROCARBON EXPOSED WORKERS TO HYDROCARBON EXPOSED WORKERS TO
ACCUMULATE MORE CHROMOSOME ACCUMULATE MORE CHROMOSOME
DAMAGES IN PERIPHERAL DAMAGES IN PERIPHERAL
LYMPHOCYTES. J. Cheng1, S. Leng1, X. LYMPHOCYTES. J. Cheng1, S. Leng1, X.
Liang2, H. Lin2 and Y. Zheng2. 1National Institute of Liang2, H. Lin2 and Y. Zheng2. 1National Institute of
Occupational Health, China CDC, Beijing, China and Occupational Health, China CDC, Beijing, China and
2Institute of Industrial Health, Anshan Steel Industrial 2Institute of Industrial Health, Anshan Steel Industrial
Corporation, Anshan, Liaoning, China. Sponsor: Corporation, Anshan, Liaoning, China. Sponsor: W.
Zheng.

Poster Board Number ................................................. #1910  Poster Board Number .................................................
Poster Board Number ................................................. #1910  Poster Board Number .................................................
EFFECTS OF CRYOPRESERVATION ON EFFECTS OF CRYOPRESERVATION ON
ALKALINE AND FPG-MODIFIED COMET ALKALINE AND FPG-MODIFIED COMET
ASSAY IN WHOLE HUMAN BLOOD AND ASSAY IN WHOLE HUMAN BLOOD AND
ISOLATED LYMPHOCYES. X. Pu1, L. M. ISOLATED LYMPHOCYES. X. Pu1, L. M.
Komendulis and J. E. Kluitweg. Department of Komendulis and J. E. Kluitweg. Department of
Pharmacology and Toxicology, Indiana University Pharmacology and Toxicology, Indiana University
School of Medicine, Indianapolis, IN.

Poster Board Number ................................................. #1909  Poster Board Number .................................................
Program Description (Continued)

Abstract #

Wednesday Afternoon, March 18
1:30 PM to 2:30 PM
Room 316

SPECIAL SESSION: UPDATE FROM THE NIH CENTER FOR SCIENTIFIC REVIEW

Chairpersons: Kenneth S. Ramos, University of Louisville, Louisville, KY and Cheryl Lyn Walker, University of Texas MD Anderson Cancer Center, Smithville, TX

Speaker: Antonio Scarpa, National Institutes of Health, Center for Scientific Review, Bethesda, MD

Antonio Scarpa will provide Annual Meeting attendees with an update on important initiatives currently underway at NIH. Dr. Scarpa will also discuss the established Systemic Injury by Environmental Exposure (SIEE) Special Emphasis Panel (SEP) in the Digestive Health Integrative Review Group (IRG). This SIEE SEP will allow NIH grant proposals on toxicology to be reviewed by scientists familiar with the subject matter. This session also will provide an opportunity for a lively discussion of the importance of toxicology in advancing basic research and protecting public health and grants needed to support these efforts.

Wednesday Afternoon, March 18
1:30 PM to 4:15 PM
Ballroom III

SYMPOSIUM SESSION: BIOMARKERS: NEW BREAKTHROUGHS IN THE WORLD OF AIR POLLUTION STUDIES


Sponsor: Occupational and Public Health Specialty Section

Endorsed by: Inhalation and Respiratory Specialty Section

Mixtures Specialty Section

Biomarker measurement allows better understanding of the factors that influence the health outcomes from air pollutant exposures. In this session, new biomarker strategies will be highlighted to show the use of biomarkers to study health effects derived from air pollution and to provide updates on the utility of new biomarker techniques including ‘omics-type of analyses. Our panel of experts will focus on improved use of biomarkers of exposure, effects, and susceptibility are included in this session. Session highlights will include the use of select urinary PAHs to reflect exposure to petroleum-derived emissions that show similar body burdens across occupational and controlled exposure studies followed by use of susceptibility factors such as obesity and employment status to demonstrate increased biological responses (e.g., heart rate variability) and health effects (e.g., mortality). Finally, our experts will cover the use of genomics to improve the understanding of the likelihood of the development of asthma as well as proteomics to identify unique exposure biomarkers and potentially the cell types producing the markers.

#1911 1:30 BIOMARKERS: NEW BREAKTHROUGHS IN THE WORLD OF AIR POLLUTION STUDIES, M. C. Madden. ORD, NHEERL, HSD, Clinical Research Branch, U.S. EPA, Chapel Hill, NC.

Abstract #


2:11 COARSE PARTICULATE MATTER AIR POLLUTION AND HOSPITAL ADMISSIONS FOR CARDIOVASCULAR AND RESPIRATORY DISEASES AMONG MEDICARE PATIENTS. F. Dominici. Biostatistics, Johns Hopkins University, Baltimore, MD. Sponsor: M. Madden.


3:13 COMPARING URINARY BIOMARKERS OF EXPOSURE TO POLYCYCLIC AROMATIC HYDROCARBONS. J. R. Sobus1, M. D. McLean2, R. F. Herrick3, S. Waidyanatha1, J. A. Nylander-French1, L. L. Kupper3, S. Waidyanatha1, E. Hudgens1, L. Neas1, E. Hubal2 and J. Gallagher4. 1School of Public Health, University of North Carolina, Chapel Hill, NC, 1School of Public Health, University of North Carolina, Chapel Hill, NC, 2School of Public Health, University of North Carolina, Chapel Hill, NC, 3School of Public Health, University of North Carolina, Chapel Hill, NC, 4NCCT, U.S. EPA, Research Triangle Park, NC.

Program Description (Continued)

Abstract #

dioxin, which likely exerts its tumor promoting activities, in part, via its ability to inhibit apoptosis and senescence. Thus, it is important to focus on the molecular and cellular mechanisms involved in maintaining proper skin homeostasis and how environmental factors may impinge on these mechanisms and contribute to the development of not only skin cancer, but also to the progression of chronic disease states such as the heart, esophagus, and nervous system.

#1917 1:30 MECHANISTIC ANALYSES OF SKIN HOMEOSTASIS AND CARCINOGENESIS. H. Swanson¹, S. C. Smart¹, L. A. Hansen¹ and D. K. St. Clair¹. ¹Molecular and Biomedical Pharmacology, University of Kentucky, Lexington, KY. ²Environmental and Molecular Toxicology, North Carolina State University, Raleigh, NC. ³Biomedical Sciences, Creighton University, Omaha, NE and ⁴Graduate Center for Toxicology, University of Kentucky, Lexington, KY.

#1918 1:35 ACTIVATION OF THE AHR ALTERS CELL FATE DECISIONS AND SKIN HOMEOSTASIS. H. Swanson. Molecular and Biomedical Pharmacology, University of Kentucky, Lexington, KY.


#1920 2:35 MULTIFACETED ROLES FOR C/EBP PROTEINS REGULATING SKIN HOMEOSTASIS AND TUMORIGENESIS. R. C. Smart. Department of Environmental and Molecular Toxicology, North Carolina State University, Raleigh, NC.

#1921 3:11 MITOCHONDRIA AND SKIN CANCER: NEW FACET IN AN OLD PARTNERSHIP. D. K. St. Clair. Graduate Center for Toxicology, University of Kentucky, Lexington, KY.

#1922 3:43 MULTIFACETED ROLES FOR C/EBP PROTEINS IN THE DNA DAMAGE RESPONSE NETWORK AND SKIN TUMORIGENESIS. R. C. Smart. North Carolina State University, Raleigh, NC.

Wednesday Afternoon, March 18
1:30 PM to 4:15 PM
Ballroom IV

SYMPOSIUM SESSION: PULMONARY EFFECTS OF IN UTERO AND EARLY POSTNATAL EXPOSURE TO ARSENIC

Chairperson(s): R. Clark Lantz, University of Arizona, Tucson, AZ and Jie Liu, NIH, Research Triangle Park, NC.

Sponsor:
Metals Specialty Section

Endorsed by:
Inhalation and Respiratory Specialty Section
Occupational and Public Health Specialty Section
Risk Assessment Specialty Section

Arsenic has long been recognized as a human lung carcinogen. In addition, the health effects of arsenic ingestion in the drinking water have also been associated with significant non-cancerous chronic pulmonary disease. It has been postulated that a significant proportion of adult lung disease originates in utero or in early infancy. Growth and development requires the temporal and spatial coordinated expression of genes and gene products. During this critical time, in utero and early postnatal exposure to toxicants has the potential to affect gene expression, altering organ structure and physiological function which can lead to adult disease. The effect of in utero and early postnatal arsenic exposure on lung disease and the effects of arsenic exposure during lung development on human cancer and noncancerous lung disease in adults will be presented. The adverse health outcomes associated with in utero and postnatal exposures and will demonstrate the importance of understanding the mechanisms and targets of arsenic during these developmental time points will be provided as an overview. Further discussions will focus on gene-environment interactions in arsenic metabolism, metabolism and distribution of arsenic during fetal development and cancers and noncancerous animal models of in utero and early postnatal exposures. In order to fully understand the issues presenters, researchers will provide attendees with excellent examples and information from both population and laboratory based research that will indicate the importance of exposures during these sensitive developmental times. This symposium will be of interest to those involved in metal toxicology, developmental toxicology, public health, risk assessment, and regulatory management.

#1923 1:30 PULMONARY EFFECTS OF IN UTERO AND EARLY POSTNATAL EXPOSURE TO ARSENIC. R. Lantz, Cell Biology and Anatomy, University of Arizona, Tucson, AZ.

#1924 1:35 IMPACT OF IN UTERO AND CHILDHOOD EXPOSURE TO ARSENIC IN DRINKING WATER ON MORTALITY IN YOUNG ADULTS. A. Smith. School of Public Health, University of California, Berkeley, CA. Sponsor: R. Lantz.

#1925 2:05 GENETICS, INTRINSIC ENVIRONMENT AND EXTRINSIC ENVIRONMENT INFLUENCE HUMAN VARIABILITY OF ARSENIC METABOLISM. W. Klimecki. Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

#1926 2:35 ARSENIC METABOLISM AND DISTRIBUTION IN DEVELOPING ORGANISMS. D. Thomas. U.S. EPA, Research Triangle Park, NC.

#1927 3:05 FETAL ARSENIC EXPOSURE AND ADULT LUNG CANCER IN MICE; IMPLICATIONS AND POTENTIAL MECHANISMS. J. Liu. NIEHS, Research Triangle Park, NC.

#1928 3:35 ALTERATION IN PULMONARY STRUCTURE AND FUNCTION FOLLOWING IN UTERO AND EARLY POSTNATAL ARSENIC EXPOSURE. R. Lantz, Cell Biology and Anatomy, University of Arizona, Tucson, AZ.
**Program Description (Continued)**

**Featured Sessions**

**Wednesday Afternoon, March 18**
1:30 PM to 4:15 PM

**Ballroom I**

**INFLAMMATION AND DISEASE**

**SYMPOSIUM SESSION: THE ROLE OF INFLAMMATION DURING METABOLIC LIVER DISEASE AND DRUG-INDUCED LIVER TOXICITY: NOVEL INSIGHTS**

**Chairperson(s):** Shashi Ramaiah, Pfizer Global Research and Development, St. Louis, MO and Harmut Jaeschke, University of Kansas Medical Center, Kansas City, KS.

**Sponsor:** Toxicologic and Exploratory Pathology Specialty Section

**Endorsed by:**
- Drug Discovery Toxicology Specialty Section
- Immunotoxicology Specialty Section

Hepatic inflammation is a common finding during a variety of metabolic diseases and drug-induced liver toxicity. The inflammatory phenotype noted in the liver can be attributed to the innate immune response generated by Kupffer cells, monocytes, neutrophils and lymphocytes (T, NK and NKT cells). The adaptive immune system is also influenced by the innate immune system leading to liver damage. A major question that continues to be debated is the precise role of these immune cells to liver damage. Liver injury mediated by neutrophils has been reported in a number of animal models such as ischemia-reperfusion injury, endotoxemia, alcoholic hepatitis, obstructive cholestasis and drug induced liver damage such as by ANIT and aceterminophen toxicity. Similarly Kupffer cells and lymphocytes are also implicated for hepatic pathology. The role of autoimmunity (Th17 cell) in idiosyncratic liver toxicity is also an area of intense investigation. The role of each components of both innate and adaptive immune responses during hepatic inflammation in specific metabolic diseases and idiosyncratic liver toxicity will be discussed. The issues presented will span from fundamental, mechanistic studies to clinical investigations on the role of neutrophils, lymphocytes, Kupffer cells and immune responses in liver damage during metabolic diseases and drug-induced idiosyncratic liver toxicity.

#1929 1:30 **THE ROLE OF INFLAMMATION DURING METABOLIC LIVER DISEASE AND DRUG-INDUCED LIVER TOXICITY: NOVEL INSIGHTS.** S. Ramaiah and H. Jaeschke. Pfizer Global Research and Development, St. Louis, MO and University of Kansas Medical Center, Kansas City, KS.

#1930 1:35 **ROLE OF AUTOIMMUNITY (TH17 CELLS) IN DRUG-INDUCED LIVER INJURY.** J. Utrecht. Pharmacy and Medicine, University of Toronto, Toronto, ON, Canada. Sponsor: S. Ramaiah.

#1931 2:05 **IMMUNE REGULATION IN LIVER DISEASE.** D. Adams. Hepatology, University of Birmingham, Birmingham, United Kingdom. Sponsor: S. Ramaiah.

#1932 2:35 **ROLE OF HEPATIC MACROPHAGES IN DRUG-INDUCED LIVER INJURY.** C. Ju and M. Holt. SOP, UCHSC, Denver, CO.

#1933 3:05 **ROLE OF NEUTROPHILS IN MECHANISMS OF DRUG HEPATOTOXICITY.** H. Jaeschke. Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS.

#1934 3:35 **THE CONTRIBUTION OF OSTEOPONIN TO HEPATIC INFLAMMATION AND LIVER INJURY.** S. F. Ramaiah. Drug Safety Research and Development, Pfizer, St. Louis, MO.

**Workshop Session: Food Allergy—Basic Mechanisms and Applications to Identifying Risks Associated with Plant Incorporated Pesticides and Other Genetically Modified Crops**

**Chairperson(s):** Mary Jane Selgrade, U.S. EPA, Research Triangle Park, NC and Susan Laessig, U.S. EPA, Washington, DC.

**Sponsor:** Immunotoxicology Specialty Section

**Endorsed by:**
- Food Safety Specialty Section
- Occupational and Public Health Specialty Section

Food allergy is a relatively new concern for toxicologists as a result of the incorporation of novel proteins into food crops in order to promote resistance to pests and other stresses, improve nutrition, or otherwise modify the phenotype. Food allergy can manifest as inflammation of the skin (hives), gut, and/or lung and in the most extreme cases can result in anaphylactic shock and death. Thus, although the technology to modify crops genetically has many advantages over more conventional approaches, there is some concern that introduction of a novel protein into the food supply could result in unintentional introduction of a new allergen and could pose a risk to susceptible individuals. A number of potential strategies have been proposed to assess this risk, but many questions regarding basic mechanisms underlying food allergy limit our ability to provide the public with information not only about potential allergenicity of transgenic proteins, Food allergy is a relatively new concern for toxicologists as a result of the incorporation of novel proteins into food crops in order to promote resistance to pests and other stresses, improve nutrition, or otherwise modify the phenotype. Food allergy can manifest as inflammation of the skin (hives), gut, and/or lung and in the most extreme cases can result in anaphylactic shock and death. Thus, although the technology to modify crops genetically has many advantages over more conventional approaches, there is some concern that introduction of a novel protein into the food supply could result in unintentional introduction of a new allergen and could pose a risk to susceptible individuals. A number of potential strategies have been proposed to assess this risk, but many questions regarding basic mechanisms underlying food allergy limit our ability to provide the public with information not only about potential allergenicity of transgenic proteins, but also about practices to limit the risks associated with conventional food allergens. The prevalence of food allergy is increasing, providing greater incentive to understand the process and an urgent need for better safety assessment tools. It is important to note that current regulatory approaches and recent research that has improved our understanding of host responses such as sensitization and oral tolerance, developed unique animal models of allergy, and applied structural data bases, global gene arrays, and serum screening to both explore mechanisms and develop hazard identification methods. This abstract does not reflect EPA policy.


#1936 1:35 **INTRODUCTION: FOOD ALLERGY-A TOXICOLOGISTS POINT OF VIEW.** M. Selgrade, U.S. EPA, NHEERL, Research Triangle Park, NC.
To improve the safety of marketed drugs and chemicals, new biomarkers are needed to identify unsafe compounds earlier, discover patients who are at risk of adverse events to specific drugs and chemicals prior to exposure, and provide tools for the management of patients that are or will undergo adverse events. Single nucleotide polymorphisms (SNPs) and gene expression alterations provide clues into a person’s response to xenobiotics thus enabling personalized medicine. Our panel of experts will highlight new approaches to drug safety assessment will be summarized.

Endorsed by:
Drug Discovery Toxicology Specialty Section
Regulatory and Safety Evaluation Specialty Section

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Abstract # 1:37 MODELING CHEMICAL TOXICITY IN THE POPULATION: MOUSE TO THE RESCUE. J. Rausch. Department of Environmental Sciences and Engineering, UNC, Chapel Hill, NC.


Abstract # 3:07 TRANSLATIONAL BIOMARKERS FOR KIDNEY TOXICITY. V. S. Vaidya. Medicine, Brigham and Women’s Hospital and Harvard Medical School, Boston, MA.


Abstract # 4:07 PANEL DISCUSSION.

Wednesday Afternoon, March 18
1:30 PM to 4:15 PM
Room 307

PLATFORM SESSION: BIOINFORMATICS AND COMPUTATIONAL TOXICOLOGY

Chairperson(s): James Rabinowitz, U.S. EPA, Research Triangle Park, NC and Min Ok Song, NIEHS, Durham, NC.

Abstract # 1:30 PHYSIOLOGICAL AND TOXICOLOGICAL TRANSCRIPTOME CHANGES IN HEPG2 CELLS EXPOSED TO COPPER. M. Song1, J. Li2 and J. H. Freedman2. LMT, NIEHS, Research Triangle Park, NC and 2Biostatistics Branch, NIEHS, Research Triangle Park, NC.

Abstract # 1:49 CHEMICAL GENOMICS OF CANCER CHEMOPREVENTIVE DITHIOLETHIONES. Q. T. Tran1,2, *, L. Xu1, V. Phan1, *, S. Goodwin1, *, M. Rahmani1, *, C. H. Sutter1, *, B. Roebeck1, *, T. K. Kessler1, *, E. George1,2, *, T. R. Sutter1, *, D. M. Rotroff1, *, and D. J. Dix1, *. Biology, The University of Memphis, Memphis, TN, 1Mathematical Sciences, The University of Memphis, Memphis, TN, 2Computer Science, The University of Memphis, Memphis, TN, 3Pharmacology and Toxicology, Dartmouth Medical School, Hanover, NH, 4Environmental Health Sciences, Johns Hopkins University Bloomberg School of Public Health, Hanover, MD and 5W. Harry Feinstone Center for Genomic Research, The University of Memphis, Memphis, TN.

Abstract # 2:08 INCORPORATION OF BIOCHEMICAL INTERACTION NETWORK INFORMATION HELPS IN IDENTIFICATION OF BIOLOGICALLY-RELEVANT PATHWAYS AND IMPROVES THE TOXICITY CLASSIFICATION OF CHEMICALS. R. Thomas, J. Golike, F. Piarham and C. Portier. Environmental Systems Biology, National Institute of Environmental Health Sciences, Research Triangle Park, NC.


**Program Description (Continued)**

**Abstract #
**

**#1965** 1:49 ATTENUATION OF HYPEROXIC LUNG INJURY IN NEWBORN WILD TYPE AND CYTOCHROME P450 (CYP)1A2-NULL MICE EXPOSED PRENATALLY TO THE CYPIA INDUCER, BETA-NAPHTHOFLAVONE (BNF), X. J. Courouchi, Y. W. Liang, W. Jiang, L. Wang and B. Moorthy. Pediatrics, Baylor College of Medicine, Houston, TX.

**#1966** 2:08 PERSISTENT INDUCTION OF CYP1A1 GENE EXPRESSION BY 3-METHYLCHOLANTHRENE (MC) IN HUMAN HEPATOMA CELLS IS MEDIATED BY SUSTAINED TRANSCRIPTIONAL ACTIVATION OF THE CYP1A1 PROMOTER. F. S. Inayat, W. Jiang, L. Wang and B. Moorthy. Pediatrics, Baylor College of Medicine, Houston, TX.

**#1967** 2:27 CAR-NULL MICE ARE SENSITIVE TO PARATHION, L. C. Mota and W. S. Baldwin. Environmental Toxicology, Clemson University, Pendleton, SC.

**#1968** 2:45 TETRAMETHYSTILBENE (TMS), AN INHIBITOR OF CYP1B1, DELAYS BENZO[A]PYRENE (BP) METABOLISM AND DOES NOT PREVENT BP-INDUCED DNA DAMAGE IN MCF-7 CELLS, T. L. Einem, M. C. Pointier and R. L. Divi. CDI / LCBG, NCI, Bethesda, MD.

**#1969** 3:03 CYTOCHROME P4501B1 PROVIDES A NEW LINK BETWEEN LEPTIN AND OBESITY. M. L. Larsen¹, S. Wang¹, J. R. Bushkofsky¹, Y. Tang², N. Sheibani¹ and C. R. Jeffcoat¹. Pharmacology, University of Wisconsin, Madison, WI and ¹Ophthalmology and Visual Sciences, University of Wisconsin, Madison, WI.

**#1970** 3:21 3-METHYLINDOLE-MEDIATED CYTOCHROME P450 INDUCTION IN PRIMARY NORMAL HUMAN BRONCHIAL EPITHELIAL CELLS. J. M. Weems and G. S. You, Department of Pharmacology and Toxicology, University of Utah, Salt Lake City, UT.

**#1971** 3:39 A NEW VERTEBRATE CYTOCHROME P450 1 SUBFAMILY, CYPID, AND CONSTITUTIVE EXPRESSION OF CYPID1 IN ZEBRAFISH. J. J. Stegeman¹, J. Goldstone¹, M. E. Jönsson¹, L. Behrendt¹, B. R. Woodin¹, M. J. Jenny¹ and D. R. Nelson¹. Biology, Woods Hole Oceanographic Institution, Woods Hole, MA and ¹University of Tennessee, Memphis, TN. Sponsor: M. Hahn.

**#1972** 3:57 CYTOCHROME P450 GENES IN ZEBRAFISH DEVELOPMENT. J. Goldstone¹, M. Jönsson¹, T. Parente¹, J. Zanette¹, A. McArthur², B. R. Woodin¹, D. R. Nelson¹ and J. J. Stegeman¹. Biology, Woods Hole Oceanographic Institution, Woods Hole, MA. ²Andrew McArthur Consulting, Hamilton, ON, Canada and ¹University of Tennessee, Memphis, TN. Sponsor: M. Hahn.

**Abstract #
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**#1973** 1:30 IMPACT OF THE BIOLOGICAL ENVIRONMENT ON NANOPARTICLE COATING AND CYTOTOXICITY. K. Phillips, L. K. Brayisch-Stolle, J. J. Schlegner and S. M. Hussain. 711 HPCI/RIPF, AFRL, Wright-Patterson AFB, OH.

**#1974** 1:51 DOSE AND RESPONSE METRICS IN ASSESSING IN VITRO AND IN VIVO NANOPARTICLE TOXICITY. X. Han¹, J. N. Fonkelstein¹, A. Elder², P. Biswas², J. Jiang³ and G. Oberdörster¹. Environmental Medicine, University of Rochester, Rochester, NY. ²Energy, Environmental and Chemical Engineering, Washington University in St. Louis, St. Louis, MO. ³Pediatrics, University of Rochester, Rochester, NY and ³Radiation Oncology, University of Rochester, Rochester, NY.

**#1975** 2:12 MECHANISMS OF INHALED MULTIWALLED CARBON NANOTUBE-INDUCED IMMUNOSUPPRESSION. L. Mitchell¹,², F. Lauër², S. Buchölf² and J. McDonald³. ¹Loveland Respiratory Research Institute, Albuquerque, NM and ²University of New Mexico, Albuquerque, NM.

**#1976** 2:33 NADPH OXIDASE REGULATES NEUTROPHILS AND FIBROSIS IN C57BL/6 MICE EXPOSED TO CARBON NANOTUBES. A. A. Shvedova⁴, E. E. Kisin⁴, A. R. Murray⁴, C. Kommineni⁴, V. Castranova¹,², F. Lauer², J. Jiang², M. Taylor⁴, J. Pounds¹ and G. Oberdörster¹. ¹Environmental Medicine, Karolinska Institutet, Stockholm, Sweden and ²Radiation Oncology, University of Rochester, Rochester, NY.

**#1977** 2:54 MODELING MOLECULAR INTERACTIONS BETWEEN MARCO AND NANOSILICATES. R. Lins, B. Thrall and J. Pounds. Pacific Northwest National Laboratory, Richland, WA.


Abstract #

#1980 3:55 QUANTITATIVE STRUCTURE ACTIVITY MODELING OF GOLD NANO PARTICLE TOXICITY IN A ZEBRAFISH DEVELOPMENTAL SYSTEM. A. Heredia-Langner1, R. Lins1, R. Tanguay2, S. Harper3, J. Hutchison1, J. Teegarden1, J. Pounds1, B. Webb-Robertson1 and B. Thrall3, 1Pacific Northwest National Laboratory, Richland, WA and 2The Oregon Nanoscience and Microtechnologies Institute, Corvallis, OR.

Wednesday Afternoon, March 18 1:30 PM to 4:15 PM Room 310

PLATFORM SESSION: SIGNAL TRANSDUCTION AND METAL-INDUCED TOXICITY

Chairperson(s): Kathryn Carlson, University of North Dakota, Grand Forks, ND and Scott H. Garrett, University of North Dakota, Grand Forks, ND.

#1981 1:30 THE EFFECT OF CADMIUM EXPOSURE ON CALCIUM HOMEOSTASIS AND SIGNALING PATHWAYS. B. Tvermoes1,2, G. S. Bird1, W. A. Boyd1 and J. H. Freedman1, 1NIERs, Research Triangle Park, NC and 2Duke University, Durham, NC.

#1982 1:49 MANGANESE TOXICITY IN CELLS THAT HYPER-ACCUMULATE PHOSPHATE INVOLVES PROTEIN TURNOVER EFFECTS OF THE PROTEOSOME. L. Rosenfeld, E. Leung, L. Jensen and V. Culotta. Environmental Health Sciences, Johns Hopkins School of Public Health, Baltimore, MD.

#1983 2:08 BIS(MALTOLATO)OXOVANADIUM ACTIVATES STAT-1 IN HUMAN LUNG FIBROBLASTS AND ANTAGONIZES IL-13-INDUCED STAT-6 SIGNALING. P. C. Bost and J. C. Bonner, Toxicology, North Carolina State University, Raleigh, NC.

#1984 2:27 SYSTEMS BIOLOGY-DEFINED CROSSTALK BETWEEN P53 AND NFkB SIGNALING AND MODULATION BY ARSENIC. K. Yu, S. Hong, R. T. Ng, H. Kim and E. M. Faustman, Environmental Health, IRARC, UW, Seattle, WA.

#1985 2:45 LEAD INHIBITS BRONCHODILATION THROUGH A SCLEROSTIN-DEPENDENT MECHANISM. J. Pucras, R. Ubayawardena, D. Dao and T. Sheu. Department of Orthopaedics, University of Rochester School of Medicine, Rochester, NY.

#1986 3:03 EPIDERMAL GROWTH FACTOR RECEPTOR DEPENDENT HYPOXIA INDUCIBLE FACTOR-1α EXPRESSION BY MONOMETHYLARSONOUS ACID (MMA III) IN HUMAN BLADDER CELLS. C. Chou, D. W. Hao, J. W. Regan and A. Gandolfi. Pharmacology and Toxicology, University of arizona, Tucson, AZ.

Abstract #

#1988 3:59 DISRUPTED POLYAMINE SYNTHESIS AND COBALAMIN TRANSPORT CONTRIBUTES TO ABERRANT METHYL METABOLISM DURING CHRONIC ARSENIC EXPOSURE. J. Coppin and M. P. Waltzke. ICS, LCC, NCI at NIEHS, Research Triangle Park, NC.

#1989 3:57 EFFECTS OF TUNGSTEN ON PHOSPHATE-DEPENDENT BIOCHEMICAL PROCESSES. D. R. Johnson1, C. Ang1, A. J. Bednar1 and L. S. Inouye2, 1Environmental Laboratory, U.S. Army Engineer Research & Development Center, Vicksburg, MS and 2Washington State Department of Ecology, Lacey, WA.

Wednesday Afternoon, March 18 4:30 PM to 5:45 PM Room 314

ROUNDTABLE SESSION: WHAT IS AN ADVERSE EFFECT IN THE AGE OF ‘OMICs?’

Chairperson(s): Rory Conolly, U.S. EPA, Research Triangle Park, NC and Barbara D. Beck, Gradient Corporation, Cambridge, MA.

Sponsor: Risk Assessment Specialty Section

Endorsed by:

Biological Modeling Specialty Section
Mechanisms Specialty Section
Regulatory and Safety Evaluation Specialty Section

Research in biology has recently been characterized by a switch in emphasis from reductionist studies that describe an organism based upon its biological components to more integrative ones that emphasize the processes through which these parts interact to produce the complex systems that form an organism. As it is applied to toxicology, this development has provided the opportunity to understand how perturbations of molecular-level signaling and regulatory pathways elicit apical toxic responses. In accord with these developments, the NRC (Toxicity Testing in the 21st Century: A Vision and a Strategy) has proposed a major paradigm shift. They believe that toxicity testing and risk assessment should involve characterization, with an emphasis on relevant levels of exposure and dose-time response surfaces for in vitro perturbation of toxicity pathways. Before this approach can become a standard practice in risk assessment, and potentially, in biomonitoring, substantial research and development is needed in the development of enhanced capabilities for characterization and prediction of both exposure and tissue dosimetry. Thus, a comprehensive set of toxicity pathways and cell culture systems that embody these pathways, delineation of adaptive responses from frankly toxic responses, and correlation of the in vitro dose-time response surfaces for perturbation of toxicity pathways with apical responses measured in vivo (i.e. responses that are either adverse or that represent critical steps on the route to adverse responses) should be specified. Finally, computational models of in vivo biology that will integrate toxicity pathway data obtained in vitro to predict in vivo dose-time response should be developed. The materials presented should enable us to consider a subset of these issues, highlighting some of the practical challenges posed by the NRC recommendation.


4:35 OVERVIEW. Rory B. Conolly

4:37 BIOLOGICAL PERTURBATIONS AND ADVERSITY: A PERSPECTIVE FROM THE NAS REPORT: TOXICITY TESTING IN THE 21st CENTURY. Melvin E. Andersen
Program Description (Continued)

Abstract #

4:44 IDENTIFICATION OF TOXICITY PATHWAYS AND THEIR USE IN EVALUATING ITS DATA. Christopher J. Portier

4:51 WHAT IS AN ADVERSE EFFECT FROM A CLINICAL PERSPECTIVE? Samuel M. Cohen

4:58 DISTINGUISHING NORMAL FROM TOXICOLOGIC PERTUBATIONS USING METABOLIC, Dean P. Jones

5:05 ADAPTIVE PHYSIOLOGY VERSUS TOXICITY: INTEGRATING ‘OMICS TECHNOLOGIES, DYNAMICS AND MATHEMATICAL MODELING INTO YOUR EXPERIMENTAL DESIGN PROCESS. Kevin T. Morgan

5:12 PANEL DISCUSSION.

Wednesday Afternoon, March 18
4:30 PM to 5:50 PM
Room 327

EDUCATION-CAREER DEVELOPMENT SESSION: CAREER OPPORTUNITIES AND TRANSITIONS IN TOXICOLOGY

Chairperson(s): Lauren Aleksunes, University of Kansas Medical Center, Kansas City, KS and Bernard Gadagbui, Toxicology Excellence for Risk Management, Cincinnati, OH.

Sponsor:
Postdoctoral Assembly Board

Endorsed by:
Career Resource and Development Committee
Student Advisory Council

It’s never too early, or too late, to think about where your career in toxicology will lead you next. Whereas students and postdocs are typically familiar with the ins and outs of pursuing an academic research career, opportunities to investigate non-academic careers in toxicology can be few and far between. Early-career scientists often ask ‘What careers are available to toxicologists? What skills and experiences do I need to be competitive for these positions?’ Such questions are also relevant to established toxicologists looking to expand their work experiences or embark upon a new career path. Toxicologists that practice in various work sectors are faced with the difficult and sometimes painful task of transitioning from one sector to another as each sector often demands unique skills. Most often, guides on career transitions are not readily available for these toxicologists. The material presented will provide participants with insight into toxicology careers in diverse settings, including industry, government, consulting groups, and nonprofit organizations, and provide information about career transitions across the various sectors. Our panel of experienced toxicologists will describe the paths that their careers have taken, intentional or otherwise. Both practical and applicable advice will be offered for those participants interested in pursuing similar avenues, or for those just wishing to step off the beaten path. The presenters will highlight their motivations, challenges, success stories, and lessons learned. Be sure to bring questions to ask our panel of seasoned toxicologists during the interactive question and answer period. Whether you are a graduate student ready to jump into a job search, or an established scientist looking to move your career in an unexpected direction, join us for an interactive and informative discussion designed to expand your awareness of unique and exciting scientific career opportunities for toxicologists and more importantly, how to successfully transition between sectors.

#1991 4:30 CAREER OPPORTUNITIES AND TRANSITIONS IN TOXICOLOGY. B. Gadagbui1 and L. M. Aleksunes2. ‘TERA, Cincinnati, OH and 2University of Kansas Medical Center, Kansas City, KS.

Abstract #

4:35 TOXICOLOGY POSITIONS IN CONSULTING. James C. Lamb, IV

4:50 LOOKING BEYOND YOUR CURRENT SECTOR. Myrtle A. Davis

5:05 OPPORTUNITIES AT A CONTRACT RESEARCH ORGANIZATION. Nancy Gillett

5:20 MAKING A SMOOTH TRANSITION. David Kram

5:35 TOXICOLOGISTS IN FOOD SAFETY. Jerry Hjelle

5:40 MAKING A SUCCESSFUL TRANSITION FROM GOVERNMENT TO NON-PROFIT SECTORS. Michael Dourson

5:45 PANEL DISCUSSION.

Wednesday Evening, March 18
6:00 PM to 7:30 PM
See room listings below.

SPECIALTY SECTION MEETINGS/RECEPTIONS:
BIOLOGICAL MODELING (ROOM 330), DRUG DISCOVERY TOXICOLOGY (ROOM 342), INHALATION AND RESPIRATORY (ROOM 337), METALS (ROOM 345), NANOTOXICOLOGY (ROOM 339), NEUROTOXICOLOGY (ROOM 343)
Program Description (Continued)

Abstract #

THURSDAY MORNING

Thursday Morning, March 19
7:30 AM to 8:50 AM
Room 309

ISSUES SESSION: THE ‘VISION’ FOR TOXICITY TESTING IN THE 21ST CENTURY: PROMISES AND CONUNDRUMS

Chairperson(s): Lois Lehman-McKeeman, Bristol-Myers Squibb Company, Princeton, NJ and Michael P. Holsapple, ILSI Health and Environmental Sciences Institute, Washington, DC.

Thursday Morning, March 19
7:30 AM to 8:50 AM
Room 308

ROUNDTABLE SESSION: PHOTOTOXICOLOGY: A PASSING FANCY OR ENDURING CONCERN?

Chairperson(s): P. Donald Forbes, Toxurus Inc., Malvern, PA and Robert E. Osterberg, Aclairo Pharmaceutical Development Group, Inc., Vienna, VA.

Sponsor: Dermal Toxicology Specialty Section

Endorsed by: Drug Discovery Toxicology Specialty Section

In Vitro and Alternative Methods Specialty Section

Regulatory and Safety Evaluation Specialty Section

Light is a necessary part of our existence as it is air and water. Light is central to our interactions with both natural and artificial environments. Therefore, we face a constant need to assess both risks and benefits, and to establish balanced guidelines for exposure in discussing this aspect of phototoxicology, which involves the influence of medications on biological responses to light (principally visible and ultraviolet radiation). Chronic phototoxicity is a proven precursor to skin cancer in human populations. Following up on earlier reports by R. Stern and others, a recent publication by Karagas and colleagues provided epidemiological evidence that reported use of photosensitizing drugs and chemicals mandates adequate characterization of drug interactions and heightened counseling on sun exposure. In 2002 and 2003, the Committee for Proprietary Medicinal Products (CPMP) and the US FDA published guidance documents describing their respective regulatory preferences for the testing of substances for phototoxicity and photo-co-carcinogenicity. The EU has adopted an in vitro test method for photocarcinogenicity testing. Technical specialists generally, and the pharmaceutical industry in particular, have described problems with this regulatory guidance, particularly with regard to the over-prediction of in vitro tests and the duration of the in vivo tests. In the US and other regions, the outcome of these tests may help to determine more appropriate wording that may be used in product labels to adequately characterize the risks of excess sun exposures. Thus, it is important that strategies for providing relevant safety information and novel testing approaches to provide useful shorter-term safety data to predict phototoxocities and photo-co-carcinogenicity be explored.

Abstract #

THURSDAY MORNING

Thursday Morning, March 19
7:30 AM to 8:50 AM
Room 307

INFORMATIONAL SESSION: LEAD: CHILDREN’S EXPOSURES AND CURRENT REGULATORY STANDARDS


Sponsor: Women in Toxicology Special Interest Group

Endorsed by: Metals Specialty Section

Occupational and Public Health Specialty Section

Reproductive and Developmental Toxicology Specialty Section

Recent news reports raise concerns about children’s exposure to lead in toys, paint, candy, and other everyday materials. While the toxicity of lead has been well studied and the use of lead in many materials has been reduced or eliminated over the past 30 years, the possibility of lead exposure in children from both past and current uses of lead remains a public health priority. While a major contributor to lead exposure in children continues to be from the home, 30% or more of children aged <6 years with lead poisoning are exposed to lead through sources other than residential lead paint such as cosmetics, folk and traditional medications, painted and metallic toys and trinkets, and ceramic food ware. Examples regarding lead exposure and risk assessments from sources such as lead based ceramics in schools and bioaccessibility of lead exposure in children’s products will be presented. Numerous agencies are involved in controlling lead exposure and enforcing regulations including the Centers for Disease Control and Prevention (CDC), U.S. Consumer Product Safety Commission (CPSC) and the US FDA. CPSC regulates more than 15,000 types of consumer products including the lead content of numerous products including paint and similar surface coatings on products and furniture intended for consumer use, including toys. The FDA is responsible for ensuring the safety of products as authorized in the Federal Food, Drug and Cosmetic Act. FDA has addressed lead issues for diverse products such as pesticides, metal food cans, lipstick and crystal baby bottles for infants. An overview of known mechanisms of
Program Description (Continued)

Abstract #

lead toxicity as well as newer research on the long term effects of lead will be presented. Examples will be provided of children’s exposures to lead and summarize efforts to reduce lead exposures. The session will conclude with those perspectives of regulatory agencies responsible for regulating lead-containing products, including discussion of pending legislation that could change how lead-containing consumer products are regulated and steps being taken to protect the public from excessive lead exposure.


7:35 INTRODUCTION. Stacie Wild

7:40 CHILDHOOD LEAD TOXICITY: PUBLIC HEALTH IMPLICATIONS PAST, PRESENT AND FUTURE. Michael McCabe

7:50 RECENT RISK EVALUATIONS AND LEAD EXPOSURES FROM CHILDREN’S PRODUCTS. Woodhall Stopford

8:00 CDC PERSPECTIVE—CHILDREN’S LEAD EXPOSURE. Marissa Scalia

8:10 CURRENT CPSC REGULATIONS TO LIMIT CHILDREN’S EXPOSURE TO LEAD. Kristina Hatlelid

8:20 CURRENT LEAD CONCERNS/REGULATIONS FOR FDA REGULATED PRODUCTS. Michael Kashlock

8:30 QUESTIONS FROM THE AUDIENCE. Panel Discussion

Thursday Morning, March 19
8:30 AM to 12:00 NOON

Ballroom I

EPIGENETICS

POSTER SESSION: EPIGENETICS

Chairperson(s): Sudheer Reddy Beedanagari, University of California Los Angeles, Los Angeles, CA and Vladimir Tyurin, University of Pittsburgh, Pittsburgh, PA.

Displayed: 8:30 AM-12:00 NOON

Author Attended: 8:30 AM-10:15 AM

#1994 Poster Board Number: .............................101

MULTIPLE GENES EXHIBIT PHENOBARBITAL (PB)-INDUCED CONSTITUTIVE ACTIVE/ANDROSTANE RECEPTOR (CAR)-MEDIATED DNA METHYLATION CHANGES DURING LIVER TUMORIGENESIS AND IN LIVER TUMORS. J. I. Goodman* and J. I. Goodman†. *Biochemistry and Molecular Biology, Michigan State University, East Lansing, MI and †Pharmacology and Toxicology, Michigan State University, East Lansing, MI.

#1995 EPIGENETIC ANALYSIS OF ALDH1A2 GENES IN JAPANESE MEDAKA DEVELOPMENTALLY EXPOSED TO ETHANOL. A. K. Dasmukhapatra1,2,3, Y. Hu1, K. L. Willer2,3, B. E. Scheffler4 and I. A. Khan1. 1National Center for Natural Product Research, University of Mississippi, University, MS; 2Department of Pharmacology, University of Mississippi, University, MS; 3Environmental Toxicology Research Program, University of Mississippi, University, MS and 4USDA-ARS Mid-South Area Genomics Laboratory, USDA, Stoneville, MS.

#1996 ROLE OF EPIGENETICS IN DIOXIN-INDUCED DIFFERENTIAL REGULATION OF THE HUMAN CYP1A1 AND CYP1B1 GENES. S. R. Beedanagari and O. Hankinson. Molecular Toxicology, UCLA, Los Angeles, CA.


#1998 ROLE OF EPIGENETIC ALTERATIONS IN FORMATION AND PROGRESSION OF GLUTATHIONE S TRANSFERASE PLC ACENT FORM (GSTP)-POSITIVE PRENEOPLASTIC FOCS DURING R AT HEPATOCARCINOCGENESIS. V. Tryndyak, L. Muskhelishvili, S. Shpleva, T. Bagnyukova, B. Montgomery, F. Beland and I. Pogribny. DBT, FDA-National Center for Toxicological Research, Jefferson, AR.

#1999 LOW-DOSE IONIZING RADIATION ALTERS THE FETAL EPIGENOME. A. Bernal1,2, D. C. Dolonoy3, D. Huang1 and R. L. Jirtle4. *Toxicology & Environmental Health, University Program in Genetics and Genomics, Duke University, Durham, NC, 1University of Michigan, Ann Arbor, MI and 2Department of Radiation Oncology, Duke University Medical Center, Durham, NC.

#2000 EPIGENETIC MECHANISM FOR POTENTIATION (“PRIMING”) OF PREGNANE X RECEPTOR-REGULATED GENE EXPRESSION BY DIMETHYL SULFOXIDE. Y. Xie, S. Ke and Y. Tian. VTTP, Texas A&M University, College Station, TX.

#2001 EPIGENETIC REGULATION OF LINE1 RETROTRANSPOSON. I. Teneng1,2, J. L. Quertermous3, D. E. Montoya-Durango1 and K. S. Ramos1,2. 1Department of Biochemistry and Molecular Biology, University of Louisville School of Medicine, Louisville, KY; 2Center for Genetics and Molecular Medicine, University of Louisville, Louisville, KY and 3Department of Medicine, University of Louisville, Louisville, KY.
Program Description (Continued)

Abstract #

#2002 Poster Board Number ..............................................109 AN LC-MS/MS BASED METHOD TO QUANTIFY N- FORMYLATION OF LYSINE, A PATHOLOGICAL SECONDARY MODIFICATION OF HISTONE PROTEINS. B. Edrissi1, K. Taghizadeh2 and P. Dedon1,2, 1Biological Engineering, MIT, Cambridge, MA and 2Center for Environmental Health Sciences, MIT, Cambridge, MA.


Thursday Morning, March 19
8:30 AM to 12:00 NOON
Ballroom I

POSTER SESSION: PERSISTENT ORGANIC COMPOUNDS

Chairperson(s): Daniele Staskal, ToxStrategies, LLC, Austin, TX.

Displayed: 8:30 AM – 12:00 NOON

Author Attended: 10:15 AM – 12:00 NOON

#2004 Poster Board Number ..............................................111 BIOLUMINESCENT BACTERIA AS BIOSENSORS FOR POLYCYCLIC AROMATIC HYDROCARBONS. V. De La Rosa and W. Lee. University of Texas at El Paso, El Paso, TX.

#2005 Poster Board Number ..............................................112 PERFLUOROETHYLEDICHLOROETHANES IN MUNICIPAL DRINKING WATER FROM CATALONIA, SPAIN: PUBLIC HEALTH IMPLICATIONS. J. L. Domingo1, I. Ericsson2, N. Ferre-Huguet1, M. Nadal1, B. van Bavel1 and G. Lindström1. Toxicology, Reus i Virgili University, Reus, Spain and ‘MTM Research Center, Örebro University, Örebro, Sweden.

#2006 Poster Board Number ..............................................113 PERFLUOROOCTANESULFONATE (PFOS) INCREASES DE NOVO TESTOSTERONE SYNTHESIS IN JUVENILE XENOPUS (SILURANA) TROPICALIS GONADS. D. J. Fort1, R. L. Rogers1, P. D. Guiney2 and J. A. Weeks2. 1Fort Environmental Laboratories, Stillwater, OK and 2S.C. Johnson & Son, Racine, WI.

#2007 Poster Board Number ..............................................114 CROSS-SPECIES GC-MS-BASED METABOLOMIC ANALYSIS OF HEPATIC LIPID COMPOSITION IN TCDD-TREATED C57BL/6 MICE AND SPRAGUE-DAWLEY RATS. B. D. Messi2, L. D. Burgoon2, M. M. Angrish1,2, D. R. Overhof2, A. Jones1 and T. R. Zacharewski2. 1Biochemistry and Molecular Biology and Center for Integrative Toxicology, Michigan State University. East Lansing, MI and 2National Food Safety & Toxicology Center, Michigan State University, East Lansing, MI.

#2008 Poster Board Number ..............................................115 CONCURRENT EXPOSURE OF PREGNANT MICE TO PFOS AND RESTRAINT STRESS: EFFECTS ON CORTICOSTERONE LEVELS IN THE OFFSPRING. D. Ribes1,2, M. Torrence1,2, S. Fuentes1,2, M. Colomina1,2 and J. L. Domingo1. 1Toxicology, Reus i Virgili University, Reus, Spain and 2CRAIC-Psychology, Reus i Virgili University, Tarragona, Spain.

#2009 Poster Board Number ..............................................116 DEVELOPMENTAL TOXICITY OF PERFLUORONONANOIC ACID IN THE MOUSE. C. Lou1, K. P. Das1, K. Tatum1, D. Zehr2, C. R. Wood1 and M. B. Rosen1. 1Reproductive Toxicology Division, NIEHS/ORD, US Environmental Protection Agency, Research Triangle Park, NC and 2Toxicology Curriculum, University of North Carolina, Chapel Hill, NC.


#2011 Poster Board Number ..............................................118 GENE PROFILING IN WILD-TYPE AND PPARz-NULL MICE EXPOSED TO PERFLUOROOCTANE SULFONATE. M. Rosen1, J. Corton1, J. Schmid1, R. Zehr1, K. Das1, H. Ren1, B. Abbott1 and C. Lou1. 1Reproductive Toxicology, U.S. EPA, Research Triangle Park, NC and 2Environmental Carcinogenesis, U.S. EPA, Research Triangle Park, NC.

#2012 Poster Board Number ..............................................119 PCB47: MORE THAN A CONSTITUTIVE ANDROSTANE RECEPTOR AGONIST. B. Wang1, K. Wang1, J. K. Lai1, L. W. Robertson1 and G. Ludwig1,2. 1Human Toxicology, the University of Iowa, Iowa City, IA, 2Occupational and Environmental Health, the University of Iowa, Iowa City, IA and 3Biostatistics, the University of Iowa, Iowa City, IA.

#2013 Poster Board Number ..............................................120 INDUCTION OF OXIDATIVE STRESS AND APOPTOSIS IN MOUSE CEREBELLAR GRANULE NEURONS BY VARIOUS PBB CONGENERS. S. C. Huang1, G. Giordano2 and L. G. Costa1,2. 1Department of Environmental and Occupational Health Sciences, University of Washington, Seattle, WA and 2Department of Human Anatomy, Pharmacology and Forensic Science, University of Parma Medical School, Parma, Italy.

#2014 Poster Board Number ..............................................121 ACTIVATION OF MITOCHONDRIAL TRANSCRIPTION IN THE LIVER OF PFOA TREATED RATS. M. Walters, J. A. Bjork and K. B. Wallace. Biochemistry and Molecular Biology, University of Minnesota Medical School, Duluth, MN.
Program Description (Continued)

Abstract #
#2019 Poster Board Number ......................................122
HUMAN ORGANIC ANION TRANSPORTING POLYPEPTIDE 1B1- AND 1B3-MEDIATED UPTAKE OF A PREDOMINANT POLYBROMINATED DIPHENYL CONGENER, BDE 47. E. Pacynaik, B. Hagenbuch and G. L. Guo. Pharmacology, Toxicology & Therapeutics, University of Kansas Medical Center, Kansas City, KS.

#2016 Poster Board Number ......................................123
IN VITRO STUDY OF THE AIR DELIVERY OF PARTICLE-BOUND PBDES TO LUNG CELLS. J. Kim¹, G. Luthe¹⁺², S. Flor, J. Klössner², T. M. Peters¹, L. W. Robertson¹⁺², P. S. Thorne¹ and G. Ludewig¹⁺². ¹Interdisciplinary Graduate Program in Human Toxicology, The University of Iowa, Iowa City, IA and ²Department of Occupational and Environmental Health, The University of Iowa, Iowa City, IA.

#2017 Poster Board Number ......................................124
DOES DIETARY SELENIUM INFLUENCE THE EFFECTS OF PCB126 ON RAT PARAOXONASE 1? H. Shen¹, J. Lai¹, L.-W. Robertson¹⁺² and G. Ludewig¹⁺². ¹Interdisciplinary Graduate Program in Human Toxicology, University of Iowa, Iowa City, IA and ²Occupational & Environmental Health, University of Iowa, Iowa City, IA.

#2018 Poster Board Number ......................................125
“POLYCHLORINATED DIPHENYL ETHERS (PBDEs) ARE INHIBITORS OF THE BREAST CANCER RESISTANCE PROTEIN (ABCG2) TRANSPORTER” K. D. Christy¹, A. Manzella¹, M. Morris¹ and J. Olson¹. ¹Pharmacology and Toxicology, University at Buffalo, Buffalo, NY and ²Pharmaceutical Sciences, University at Buffalo, Buffalo, NY.

#2019 Poster Board Number ......................................126
DIETARY EXPOSURE TO PBDES FROM A SUBSISTENCE DIET: FIRST NATIONS OF THE HUDSON BAY LOWLANDS, CANADA. E. N. Libecco¹, B. C. Wainman¹, I. Martin¹, A. LeBlanc¹ and L. J. Tsuji², ¹Environmental Resources, University of Waterloo, Waterloo, ON, Canada, ²Environmental Medicine, New York University, New York, ³Obstetrics and Gynecology, McMaster University, Hamilton, ON, Canada and ⁴Centre de Toxicologie de Quebec, Institut national de santé publique du Quebec, Quebec City, QC, Canada.

#2020 Poster Board Number ......................................127
FISH INTAKE AND POP S CONCENTRATIONS IN HUMAN MILK IN COASTAL CITIES IN CHINA. F. Kayama¹, J. Leng¹⁺², P. Wang¹, M. Nakamura¹, T. Nakata¹ and Y. Wang¹. ¹Department of Child, Adolescent and Women’s Health, School of Public Health, Peking University, Beijing, China, ²Environmental Medicine, Jichi Medical University, Shimotsuke, Tochigi, Japan, ³Department of Social Medicine and Health Education, School of Public Health, Peking University, Beijing, China and ⁴Chemical Research Section, Hiyoshi Corporation, Omiyachiman, Shiga, Japan. Sponsor: M. Denisson.

Abstract #
#2021 Poster Board Number ......................................128
SCREENING-LEVEL ASSESSMENT OF RISK ASSOCIATED WITH EXPOSURE TO PBDES IN VEHICLES. D. Staskal¹ and L. Birnbaum². ¹ToxStrategies, Austin, TX and ²NCEA, U.S. EPA, RTP, NC.

#2022 Poster Board Number ......................................129
RESULTS OF A NEW SURVEY SHOW INCREASING LEVELS OF PBDES IN U.S. FOOD. A. J. Schecter¹, J. A. Colacino¹, K. Kurunthachalam¹, S. Yun¹, O. Popke¹ and L. Birnbaum². ¹Environmental Sciences, University of Texas School of Public Health, Dallas, TX, ²Wadsworth Laboratory, State University of New York, Albany, NY, ³Eurofins, Hamburg, Germany and ⁴U.S. EPA, Research Triangle Park, NC.

Thursday Morning, March 19
8:30 AM to 12:00 NOON
Ballroom I

POSTER SESSION: REGULATIONS AND POLICY IMPLICATIONS IN TOXICOLOGY

Chairperson(s): Annette B. Santamaria, Environ, Houston, TX.

Displayed: 8:30 AM–12:00 NOON

Author Attended: 8:30 AM–10:15 AM

#2023 Poster Board Number ......................................131
EXPOSURE BASED WAIVING : THE APPLICATION OF THE TOXICOLOGICAL THRESHOLD OF CONCERN (TTC) TO INHALATION EXPOSURE FOR AEROSOL INGREDIENTS IN CONSUMER PRODUCTS. P. Carthew. Unilever, Bedford, United Kingdom. Sponsor: P. Hepburn.

#2024 Poster Board Number ......................................132
EVALUATION OF IN VITRO MAMMALIAN GENOTOXICITY TESTS IN THE CURRENT CONTEXT. R. K. Elespuru¹, R. Agarwal¹, A. Atrakchi¹, C. A. Bigger², R. H. Hellich¹, D. Jaganath¹, D. D. Levy¹, M. M. Moore¹, Y. Ouyang¹, T. W. Robison¹, R. Sotomayor³, M. C. Cimino¹ and K. L. Dearfield⁴. ¹CDRH, FDA, Silver Spring, MD, ²CBER, FDA, Silver Spring, MD, ³CVM, FDA, Rockville, MD, ⁴NCTR, FDA, Jefferson, AR, ⁵CFSAN, FDA, College Park, MD, ⁶OPPT, U.S. EPA, Washington, DC, ⁷OPHS, USDA, Washington, DC and ⁸Genetic Tox Reg & Training Services, (Consultant), Gaithersburg, MD.

#2025 Poster Board Number ......................................133
DEVELOPMENT OF A STRUCTURE ACTIVITY RELATIONSHIP PROCESS TO CHARACTERIZE ACUTE TOXICITY FOR GHS CLASSIFICATION. L. M. Milchak, P. H. Lieder, P. D. Heppner and R. S. Skoglund. ³M, St Paul, MN.

#2026 Poster Board Number ......................................134
SURVEY METHOD FOR CHEMICAL SUPPLY CHAINS UNDER REACH. T. Ancz¹ and P. Jenkinson¹. ¹Harlan Japan, Tokyo, Japan, ²School of Medicines, Showa University, Tokyo, Japan and ³SPL UK, Harlan SPL, Shardrow, United Kingdom.
Program Description (Continued)

Abstract #

#2027 POSTER BOARD NUMBER: 135

**POLICY, SCIENCE, AND COMMUNICATION TO PROTECTING CHILDREN FROM THE HEALTH EFFECTS OF LEAD.** S. Gilbert1 and H. Davies2. 1INND, Seattle, WA and 2Washington State, Department of Ecology, Olympia, WA.

#2028 POSTER BOARD NUMBER: 136


#2029 POSTER BOARD NUMBER: 137


#2030 POSTER BOARD NUMBER: 138


#2031 POSTER BOARD NUMBER: 139

**ICCVAM/NICEATM/ECVAM/JACVAM SCIENTIFIC WORKSHOP ON ACUTE CHEMICAL SAFETY.** J. Strickland1, M. Parisi2, D. Allen3, R. Tice4, H. Kojima5, M. Wind6, P. Prieto7 and W. Stokes8. 1ILS, Inc./NICEATM, NIEHS, Research Triangle Park, NC. 2NICEATM, NIEHS, Research Triangle Park, NC. 3JaCVAM, Tokyo, Japan. 4ECVAM, Ispra, Italy and 5CPS, Bethesda, MD.

#2032 POSTER BOARD NUMBER: 140


#2033 POSTER BOARD NUMBER: 141

**DETERMINATION OF THE DERIVED NO EFFECT LEVEL FOR STYRENE: AN EXERCISE IN INTERPRETING REACH GUIDANCE.** M. L. Kreider1 and E. Williams2. 1ChemRisk, Inc., Pittsburgh, PA and 2ChemRisk, Inc., Houston, TX.

#2034 POSTER BOARD NUMBER: 142


#2035 POSTER BOARD NUMBER: 143

**WEIGHT OF EVIDENCE PROCEDURES FOR SKIN NOTATION ASSIGNMENT IN OCCUPATIONAL HAZARD ASSESSMENT.** B. Gadagkari1, G. Dotson1, A. Maier1 and G. Talaska3. 1Toxicology Excellence for Risk Assessment (TERA), Cincinnati, OH. 2National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention (CDC), Cincinnati, OH and 3Department of Environmental Health, University of Cincinnati, Cincinnati, OH.

#2036 POSTER BOARD NUMBER: 144


#2037 POSTER BOARD NUMBER: 145

**LLNA: CURRENT REGULATORY ISSUES.** D. A. Basketter1, J. Kimber2, R. Dearman2, P. Gerberick3 and C. Ryan4. 1DABMEB Consultancy Ltd, Sharnbrook, United Kingdom, 2Faculty of Life Sciences, University of Manchester, Manchester, United Kingdom and 3Procter & Gamble, Cincinnati, OH.

Thursday, March 19

8:30 AM to 12:00 NOON

Ballroom I

POSTER SESSION: NON-CLINICAL SAFETY TESTING: BIOLOGICAL AND SMALL MOLECULE THERAPEUTICS

Chairperson(s): Debbie Hovik, Boehringer Ingelheim Pharmaceuticals Inc, Ridgefield, CT and Melissa Rhodes, GlaxoSmithKline, Research Triangle Park, NC.

Displayed: 8:30 AM–12:00 NOON

Author Attended: 10:15 AM–12:00 NOON

#2038 POSTER BOARD NUMBER: 146


#2039 POSTER BOARD NUMBER: 147

Program Description (Continued)

Abstract #  #2040 Poster Board Number  ......................................148   #2047 Poster Board Number  ......................................155  
AERODYNAMIC AND SAFETY PROFILES OF NEBULIZED ANTI-C5 MABS IN A GLP INHALATION TOXICOLOGY STUDY. M. D. Reed1, T. Peng1, S. Allen1, S. Liu-Chen1, D. Miano2, J. McDonald1, L. Li2 and Y. Wang2. Toxicology, Lovelace Respiratory Research Institute, Albuquerque, NM and 1Alexion Pharmaceuticals, Cheshire, CT.


NONCLONAL SAFETY EVALUATION OF XOMA 052, A MONOCLONAL ANTIBODY TARGETING IL-18, IN REPEAT DOSE TOXICITY STUDIES IN RATS AND CYMOMOLGS MONKEYS. K. E. Meyer1, K. Der1, J. Ma1, Y. Espinoza1, L. Cao1, C. Gasper1, R. Bauer1, C. Bectel1, S. Tchemov1 and C. Stewart1. Preclinical Safety Evaluation, XOMA (U.S.) LLC, Berkeley, CA, 1Charles River Laboratories, Renov, NV and 1MPI Research, Mattawan, MI.

SAFETY ASSESSMENT OF A NON-DEPLETING ANTI-CD4 MONOCLONAL ANTIBODY (MAB) IN BABAONS. K. P. Allemann1, J. C. Beyer1, E. G. Stefanich1, H. Scheeren1, N. Makori1, and S. Zuch de Zafra1. Genentech Inc., South San Francisco, CA and 1SNBL USA, Ltd., Everett, WA.

THE ANTIDiABETIC METFORMIN IS TOXIC TO LIVER MITOCHONDRIA OF ZUCKER DIABETIC FATTY (ZDF) RATS: A CELLULAR METABOLIC STUDY WITH 13C-LACTATE AND CARBON 13 NMR. G. Baverel1, C. Pinteur, G. Martin and C. Gauthier. Metabolomics and Metabolic Diseases, INSERM Unit # 820, Lyon Cedex 08, France.


PHARMACOLOGY AND TOXICOLOGY EVALUATION OF A METFORMIN INHIBITOR OF THE SODIUM-DEPENDANT GLUCOSE COTRANSPORTER 2 (SGLT2) IN MICE AND MONKEYS. T. Zanardi1, L. Shen1, A. Siwkowski1, E. Wancewicz2, S. Bhamot1, E. Ha2, E. Jeong1, Y. Kim1, S. Rime1, M. Park2 and S. P. Henry1. 1Isis Pharmaceuticals, Inc., Carlsbad, CA and 1Korea Institute of Toxicology, Dajeon, South Korea.

28-DAY EXPLORATORY DRUG-DRUG INTERACTION STUDY OF CP-690, 550 AND CELLECEPT® IN CYMOMOLGS MONKEYS. D. J. Ball and E. Floyd. Drug Safety R&D, Pfizer, Inc., Groton, CT.

IMMUNOTOXICITY TESTING IN RATS FOLLOWING 28-DAY ORAL EXPOSURE TO A NOVEL P38 MAP KINASE INHIBITOR. S. Chanda1, M. Lorenz2, B. Wong3, P. Weller1, J. Merson1, E. Padgett2, V. Peachee2, K. White2 and S. Plat2. Roche Palo Alto LLC, Palo Alto, CA, 2WIL Research Laboratories LLC, Ashland, OH and 3ImmunoTox, Richmond, VA.

REPRODUCTIVE TOXICITY ASSESSMENT OF PAMAPIMOD, A NOVEL P38 MAP KINASE INHIBITOR. M. Lorenz1, R. D. Hood2, N. Agnish2, V. Sharper1, P. Weller1, B. Wong3, K. Kolaja1, S. Plat2 and S. Chanda1. Roche Palo Alto, Palo Alto, CA, 1R D Hood & Associates, Toxicology Consultants, Tuscaloosa, AL, 1Consultant, West Milford, NJ and 1Charles River Laboratories, Hoshom, PA.

ZIDOVUDINE (AZT) ALTERS HEMATOLOGIC PARAMETERS AND HEPATIC MITOCHONDRIAL FUNCTION IN B6C3F1 MICE, V. G. Desai1, T. Lee2, C. L. Moland1, W. S. Branham1, S. M. Lewis3, J. E. Leakey1 and J. C. Fusco1. 1Division of Systems Toxicology, NCTR, Jefferson, AR, 2Department of Information and Mathematics, Korea University, Jochiwon, Chungnam, South Korea and 3Office of Scientific Coordination, NCTR, Jefferson, AR.


RODENT TOXICITY OF K777, A CANDIDATE THERAPEUTIC FOR TREATMENT OF CHAGAS DISEASE. L. L. Rauch1, J. Dobroff1, R. Corda1, S. Nolant1, D. Middaugh1, S. Smith1, J. McKerrow2 and J. Mirtsalis1. 1Toxicology and Pharmacokinetics, SRI International, Menlo Park, CA, and 2University of California San Francisco, San Francisco, CA.
Abstract #

#2054  Poster Board Number ......................................162  #2061  Poster Board Number ......................................169

#2055  Poster Board Number ......................................163  #2062  Poster Board Number ......................................170

#2056  Poster Board Number ......................................164  #2063  Poster Board Number ......................................171

#2057  Poster Board Number ......................................165  #2064  Poster Board Number ......................................172
HEMOSTATIC TEXTILE WOUND DRESSING STASILON™ EXHIBITS REDUCED SKIN ADHERENCE AND LOW TOXICITY. C. J. Smith1,2, K. Rosiello1,3 and T. H. Fischer1,2. 1Research & Development, Entegion, Inc., Research Triangle Park, NC, 2Pathology, UNC Chapel Hill School of Medicine, Chapel Hill, NC and 3Kross Engineering, Worcester, MA.

#2058  Poster Board Number ......................................166  #2065  Poster Board Number ......................................173
PRECLINICAL SAFETY ASSESSMENT OF INHALED XYLITOL: SUPPORTING STUDIES FOR CLINICAL TRIALS IN CYSTIC FIBROSIS. L. Durairaj2, S. Aimee1, P. S. Thorne1, J. Zabner2, M. J. Welsh1, J. McDonald1,2,2, J. E. Tomaszewski3 and S. V. Malhotra1. 1Laboratory of Synthetic Chemistry, SAIC-Frederick Inc./NCI Frederick, Frederick, MD, 2Laboratory of Human Toxicology and Pharmacology, SAIC-Frederick, Inc./NCI Frederick, Frederick, MD, 3Chemistry, AstraZeneca, Wilmington, DE

#2059  Poster Board Number ......................................167  #2066  Poster Board Number ......................................174
14-DAY TOXICITY STUDY OF METASTIN 45-54 (NSC-D741805) IN FISCHER 344 RATS. P. Verse1, P. Tosca1, J. Merrill1, M. Ryan1, B. Burback1, J. D. Johnson1, C. Briscoe1, S. Seminara1 and J. Tomaszewski2. 1Toxicology, Battelle, Columbus, OH, 2Reproductive Endocrine Unit, Massachusetts General Hospital, Boston, MA and 3Toxicology and Pharmacology Branch, National Cancer Institute, Bethesda, MD.

#2060  Poster Board Number ......................................168  #2067  Poster Board Number ......................................175


#2062  Poster Board Number ......................................170  AN IN-VITRO MOTILITY ASSAY AS A PREDICTIVE MODEL OF GASTROINTESTINAL ADVERSE DRUG REACTIONS. J. Valentine1, C. Keating2, S. Gibbons3, V. Martinez2 and D. Grundy2. Safety Assessment - Safety Pharmacology, AstraZeneca R&D, Macclesfield, United Kingdom and 3Department of Biomedical Sciences, University of Sheffield, Sheffield, United Kingdom. Sponsor: J. Valentine.

#2063  Poster Board Number ......................................171  ASSESSMENT OF HERG PARAMETERS IN LQT PREDICTIONS. C. E. Laurent, J. Caye, E. Beauchemin, G. Laprise and D. Salvail. IPSTherapeutique, Sherbrooke, QC, Canada.


#2065  Poster Board Number ......................................173  NESTIN STAINING AS A MARKER OF NEUROMUSCULAR JUNCTION (MNJ) INTEGRITY IN ROUTINE TOXICOLOGY STUDIES. F. Reno1, E. Drevon-Gaillot2, M. Perron2 and R. Burnett3. Toxicology Consultant, Merritt Island, FL, and MDS Pharmacology Services, St Germain sur l’Arbresle, France.


#2067  Poster Board Number ......................................175  CYTOTOXICITY STUDIES OF IONIC LIQUIDS FOR POTENTIAL ANTICANCER DRUG THERAPY. V. Kumar1, R. E. Parchment1, J. Lee2, P. E. Noker1, R. N. Misra2, V. L. Narayanan1, J. E. Tomaszewski1 and S. V. Malhotra1. Laboratory of Synthetic Chemistry, SAIC-Frederick Inc./NCI Frederick, Frederick, MD. 1Laboratory of Human Toxicology and Pharmacology, SAIC-Frederick, Inc./NCI Frederick, Frederick, MD, 2Developmental Therapeutics Program, National Cancer Institute, Bethesda, MD and 3Southern Research Institute, Birmingham, MD.
Abstract # Poster Board Number ......................................176 THE EXTRACTABLES AND LEACHABLES SAFETY INFORMATION EXCHANGE (ELSiE): DEVELOPING AN EXTRACTABLES/LEACHABLES DATABASE, D. J. Boll1, S. L. Beck2 and A. J. Shaw3. 1Drug Safety R&D, Pfizer, Inc., Groton, CT; 2Safety Assessment, GlaxoSmithKline Ltd., Ware, United Kingdom and 3Analytical R&D, Pfizer, Inc., Groton, CT.

#2069 Poster Board Number ......................................177 LACTOSE POWDER PHARMACEUTICAL ACTIVE BLENDS; BEHAVIOR IN RODENT AND NON-RODENT INHALATION EXPOSURE SYSTEMS AND EFFECT OF INCREASING ANIMAL NUMBERS, C. J. Hardy1, S. A. Moore1, D. W. Coombs1 and J. M. Domanskii2. 1Inhalation, Huntingdon Life Sciences, Huntingdon, United Kingdom and 2Inhalation, Huntingdon Life Sciences, East Millstone, NJ.

#2070 Poster Board Number ......................................178 ROLE OF ACADEMIA IN A GLOBALLY COMPETITIVE DRUG DEVELOPMENT MARKET, D. P. Waller1, P. J. Baneux2 and T. Welsh3. 1University of Illinois at Chicago, Chicago, IL and 2Northwestern University, Chicago, IL. Sponsor: J. Herman.

#2071 Poster Board Number ......................................179 TEN HELAS3 CELLS CAN BE TUMORGENIC IN SUPER IMMUNODEFICIENT NOD MICE, Y. Ohnishi1, K. Machida1, H. Suemizu1, K. Kawai1, R. Sawada1, T. Ishikawa1 and T. Tsuchiya1. 1Biomedical Research Department, Central Institute for Experimental Animals, Kawasaki, Japan, 2Testing Services Department, Central Institute for Experimental Animals, Kawasaki, Japan, 3Pathology Research Department, Central Institute for Experimental Animals, Kawasaki, Japan, 4Division of Medical Devices, National Institute of Health Sciences, Tokyo, Japan. Sponsor: M. Kurata.

#2072 Poster Board Number ......................................180 PRECLINICAL TOXICOLOGY OF 2, 2, 5, 7, 8-PENTAMETHYL-6-CHROMANOL, A NOVEL CHEMOPREVENTIVE AGENT, IN RATS AND DOGS, K. K. Kabrotov2, I. M. Kapetanovic2, M. Lindeblad1, D. M. Tesster1 and A. V. Lyubimov1. 1University of Illinois at Chicago, Chicago, IL and 2National Cancer Institute, Bethesda, MD.

#2073 Poster Board Number ......................................201 ROLE OF HUMAN CYP450 ENZYMES IN MDMA METABOLISM AND CYTOTOXICITY, I. Antolino Lobo1, S. M. Nijmeijer1, M. Van den Berg1, J. Meulenbelt2 and M. B. van Duerssen1. 1Institute for Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands and 2National Poisons Information Centre, National Institute for Public Health and the Environment, Bilthoven, Netherlands.

Abstract # Poster Board Number ......................................202 PROTECTION OF RED BLOOD CELL ACETYLCOLINESTERASE BY ORAL HUPERZINE A AGAINST EX VIVO SOMAN EXPOSURE: NEXT GENERATION PROPHYLAXIS AND SEQUESTRING OF ACHE OVER BCHE, J. Haigh1, P. Mattern1, P. Aisen2, G. Garcia3, B. Doctor4 and R. Gordon5. 1Department of Regulated Activities, Walter Reed Army Institute of Research, Silver Spring, MD and 2Neurology, Georgetown University Med Center, Washington, DC. Sponsor: S. Baskins.

#2075 Poster Board Number ......................................203 EFFECTS OF A REDUCED DARK-CYCLE ON THE GROWTH, FOOD INTAKE AND GENERAL CONDITION OF CD-1 MICE DURING A CHRONIC STUDY, D. Farrell and G. Washer. LAB Research Inc., Laval, QC, Canada.


#2077 Poster Board Number ......................................205 EVALUATION OF CORTICOSTERO AND METABOLITES IN A CHRONIC MILD STRESS RAT MODEL, K. Navetta, T. Swanson, R. Chapin and J. Colangelo. Drug Safety Research and Development, Pfizer, Groton, CT.

#2078 Poster Board Number ......................................206 THE DETECTION OF NK CELLS FOLLOWING THE ADMINISTRATION OF BIOENGINEERED MONOCONAL ANTIBODIES TO NON-HUMAN PRIMATES, S. Fraser, N. Hiatt and P. Lappin. Charles River Laboratories, Reno, NV. Sponsor: S. Chuang.

#2079 Poster Board Number ......................................207 AMIODARONE INDUCES PRO-FIBROTIC AGENTS IN RAT PLEURAL MESOTHELIAL CELLS, U. Doshi and J. M. Cerreta. PHS, St. John’s University College of Pharmacy and Allied Health Professions, Queens, NY. Sponsor: L. Trombetta.
Program Description (Continued)

Abstract #  #2080

Thursday Morning, March 19
8:30 AM to 12:00 NOON
Ballroom I

POSTER SESSION: CARDIOPULMONARY TOXICITY

Chairperson(s): Anne Chappelle, Sunoco, Inc., Lester, PA.

Displayed: 8:30 AM–12:00 NOON

Author Attended: 8:30 AM–10:15 AM

#2080  Poster Board Number 209

EFFECT OF PARTICLE SIZE ON THE REGIONAL DEPOSITION OF TECHNITIUM-99M LABELED PARTICLES IN RODENTS. P. Kuehl1, T. Anderson, F. Holmes2, B. Gershman3, D. Irwin1, E. Thompson1, J. Norenberg1 and J. McDonald1. 1LRRI, Albuquerque, NM and 2University of New Mexico Center for Isotopes in Medicine, Albuquerque, NM.

#2081  Poster Board Number 210

ADHESION MOLECULE EXPRESSION AND CYTOTOXICITY IN DIACETYL EXPOSED RAT LUNGS. D. W. Gardiner2, W. Goldsmith2, J. Morris1, L. A. Battelli1, S. Friend1, V. Castранова2, and A. Hubbs2. 1CSU, Fort Collins, CO, 2NIOSH, Morgantown, WV and 3University of North Carolina at Chapel Hill, Chapel Hill, NC.

#2082  Poster Board Number 211

REPEATED EXPOSURE OF HUMAN BRONCHIAL EPITHELIAL CELLS TO OZONE SUPPRESSES THEIR RESPONSE TO STAPHYLOCOCCUS AUREUS. S. J. Snow1, S. Kendall2 and J. Jaspers3. 1Toxicology, University of North Carolina at Chapel Hill, Chapel Hill, NC, 2Center for Environmental Medicine, Ashtam, and Lung Biology, and Department of Pediatrics, University of North Carolina at Chapel Hill, Chapel Hill, NC and 3Cystic Fibrosis/Pulmonary Research and Treatment Center, University of North Carolina at Chapel Hill, Chapel Hill, NC.

#2083  Poster Board Number 212

OZONE-INDUCED EXACERBATION OF ACUTE LIVER INJURY IN MICE. D. Ibrahim Abo1,2, J. Stokes1, N. Birmingham1, J. Maddox1,2, R. Roth1, J. R. Harkema1,2 and P. Ganey1, 1, 2Center for Integrative Toxicology, Michigan State University, East Lansing, MI, 1Pathobiology, Michigan State University, East Lansing, MI, 1Pharmacology and Toxicology, Michigan State University, East Lansing, MI and 1Pharmacology, Michigan State University, East Lansing, MI.

#2084  Poster Board Number 213


#2085  Poster Board Number 214


#2086  Poster Board Number 215

SYSTEMIC DISPOSITION OF INHALED NITRIC OXIDE, A SIGNIFICANT COMPONENT OF VEHICULAR EMISSIONS. T. L. Knuckles1, A. K. Lund1, M. Madden2, S. N. Lucas1 and J. J. Campen1. 1Toxicology, Lovelace Respiratory Research Institute, Albuquerque, NM and 2Human Studies Division, US. EPA, Chapel Hill, NC.

#2087  Poster Board Number 216

HYPOXIA INDUCIBLE FACTOR 1 ALPHA (HIF1α) MEDIATES OZONE-INDUCED LUNG INJURY IN MICE. Y. Saini1,2, D. I. Adho1, K. Y. Kim1, J. R. Harkema1,3 and J. J. LaPres1,2. 1Genetics, Michigan State University, East Lansing, MI, 2Center for Integrative Toxicology, Michigan State University, East Lansing, MI, 3Biochemistry and Molecular Biology, Michigan State University, East Lansing, MI, 1Department of Pathobiology and Diagnostic Investigation, Michigan State University, East Lansing, MI and 2The National Food Safety and Toxicology Center, Michigan State University, East Lansing, MI.

#2088  Poster Board Number 217

ROLE OF MITOGEN ACTIVATED PROTEIN KINASE-1 (MAPK) IN HYPOXIA-INDUCED OXIDATIVE STRESS IN MACROPHAGES. A. Jankowski Connor1, Y. Liu1, J. D. Laskin1 and D. L. Laskin1. 1Rutgers University, Piscataway, NJ and 2UMDNJ-Robert Wood Johnson Med Sch, Piscataway, NJ.

#2089  Poster Board Number 218

NQO1 MODULATES LUNG RESPONSES TO OZONE IN ADULT AND NEONATAL MICE. E. N. Potts1, N. Mason2, R. L. Auten2 and W. Foster4. 1Pulmonary Division, Duke University Medical Center, Durham, NC and 2Pulmonary, Duke University Medical Center, Durham, NC.

#2090  Poster Board Number 219


#2091  Poster Board Number 220

CYTOTOXICITY AND NECROTIC CELL DEATH IN HUMAN BRONCHOALVEOLAR AS40 CELLS FOLLOWING EXPOSURE TO FINE PARTICULATE MATTER (PM2.5) COLLECTED IN SOUTHEASTERN LOUISIANA. B. Bourgeois, V. Rangan and D. Owens. Environmental Toxicology, Southern University, Baton Rouge, LA. Sponsor: R. Upu, Ph.D.
Abstract # | Poster Board Number | Abstract # | Poster Board Number
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#2092 | #221 | #2100 | #229
#2093 | #222 | #2101 | #230
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**Poster Sessions**

- CholesterolSeocaldehyde activates phospholipase A2 and causes barrier dysfunction in vascular endothelial cells: implications in vascular diseases, N.L. Parimandi1, M. Ahmad2, A.C. Raghaovanemon2, S. Silman3, S. Butler4, S.I. Sherwani1 and R.M. Uppal. 1Davis Heart & Lung Research Institute, The Ohio State University College of Medicine, Columbus, OH and 2Environmental Toxicology and the Health Research Center, Southern University and A&M College, Baton Rouge, LA.
- Poster Board Number #2093

**Symposia Sessions**

- Fibroblast/endothelial cell co-cultures to assess the effects of chemical and microbial toxins on angiogenic responses, J.P. Fabiaski, C. Mathias, R.A. Braun and K. Stalter. Environmental & Occupational Health, University of Pittsburgh, Pittsburgh, PA.
- Poster Board Number #2094

**Workshop Sessions**

- Poster Board Number #2095

**Thematic Sessions**

- Poster Board Number #2096

**Regional Interest Sessions**

- Endothelial cell-specific Aryl hydrocarbon receptor null mice display low systemic blood pressure at modest altitude. L. Agbor, M.T. Walsh and M.K. Walker. Pharmacy, University of New Mexico, Albuquerque, NM.
- Poster Board Number #2097

**Roundtable Sessions**

- Benzopyrene and α-naphthoflavone induced cardiac toxicity in Fundulus embryos. W. Dong, C. Thornton and K. Willett. pharmacology, The University of Mississippi, University, MS.
- Poster Board Number #2098

**Poster Board Number**

- The importance of assessing the pharmacological effects of novel chemical entities on left ventricular pressure and contractility. K. Norton and M. Vezina. Toxicology, Charles River, Sennville, QC, Canada.
- #2106

- Transplacental exposure to arsenic induces hepatic changes in a poe-1 mice. N.N. Ngalamo, J. I. Arteel, G.E. Arteel and J. States. Pharmacology/Toxicology, University of Louisville, Louisville, KY.
Abstract #

#2107
Poster Board Number ........................................236
EXTRAPULMONARY EFFECTS OF INHALED OZONE IN A RODENT MODEL. L. B. Joseph1, C. Michael2, A. Groves3, A. J. Gow1, J. D. Laskin1 and D. L. Laskin1. Rutgers University, Piscataway, NJ and 3UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ.

#2108
Poster Board Number ........................................237
COMPARISONS OF DIFFERENT LUNG MORPHOMETRY METHODS OF MEAN LINEAR INTERCEPT AND MEAN CHORD LENGTH IN QUANTIFYING MILD MOUSE EMPHYSEMA. K. M. Gideon1, D. Kobayashi2 and K. M. Lee3. Toxicology Northwest, Battelle, Richland, WA and 2Division of Pulmonary & Critical Care Medicine, Washington University St. Louis School of Medicine, St. Louis, MO.

#2109
Poster Board Number ........................................238
BLEOMYCIN-INDUCED PULMONARY FIBROSIS: COMPARATIVE TOXICOLOGY AND PATHOLOGY FROM IT VS. INHALATION. M. Doyle-Eisele1, J. McDonald and A. Gigliotti. Lovelace Respiratory Research Institute, Albuquerque, NM.

#2110
Poster Board Number ........................................239
PROLONGED AIRWAY HYPERRESPONSIVENESS AFTER SUB-CHRONIC INHALATION EXPOSURE TO BREVETOXINS. W. M. Abraham1, J. Zaias1, A. J. Bourdelais2 and D. G. Baden2. Research, Mount Sinai Medical Center, Miami Beach, FL, 2Pathology, U Miami, Miami, FL and 3Center for Marine Sciences, UNC, Wilmington, NC.

#2111
Poster Board Number ........................................240
NONINVASIVE AND INVASIVE PULMONARY FUNCTION IN MICE WITH OBSTRUCTIVE AND RESTRICTIVE RESPIRATORY DISEASES. J. A. Vanoirbeek1, M. Rinaldi2, V. De Vooght1, S. Haenen1, B. Nemery1, W. Janssens2 and P. H. Hoet1. 1Lung Toxicology Research Unit, K.U.Leuven, Leuven, Belgium and 2Pulmonary Medicine Research Unit, K.U.Leuven, Leuven, Belgium.

#2112
Poster Board Number ........................................241
CALIFORNIA 2008 WILDFIRES: MOUSE LUNG RESPONSE TO PM EXPOSURE. T. C. Wegsesser1, K. E. Pinkerton2 and J. A. Last3. 1Pulmonary/Critical Care Medicine, University of California, Davis, Davis, CA and 2Department of Pediatrics, University of California, Davis, Davis, CA.

#2113
Poster Board Number ........................................242
THE AMOUNT OF BODY FAT IS RELATED TO EXPOSURE OF PERSISTENT ORGANIC POLLUTANTS IN SWEDISH MEN FROM THE GENERAL POPULATION. M. P. Lind1, K. Michaelsson2, A. Wolk1, L. Lind3 and A. Glynn4. 1Institute of Environmental Medicine, Karolinska institutet, Stockholm, Sweden, 2Department of Surgical Sciences, Uppsala University Hospital, Uppsala, Sweden, 3Department of Medicine, Uppsala University Hospital, Uppsala, Sweden and 4Toxicology Division, Swedish National Food Administration, Uppsala, Sweden.

#2114
Poster Board Number ........................................243

#2115
Poster Board Number ........................................244
INTERSPECIES EXTRAPOLATION OF TOXICITY DATA IN ECOLOGICAL RISK ASSESSMENT: ISSUES AND SOLUTIONS. A. Pingst and M. Stelljes. SLR International Corp, Bothell, WA.

#2116
Poster Board Number ........................................245
A MECHANISTIC STUDY ON THE AMIDARONE-INDUCED PULMONARY TOXICITY IN RATS. B. Al-shammary, M. Khalifa and S. Albakheet. Pharmacology, King Saud University, Riyadh, Saudi Arabia. Sponsor: N. Zawia.

Program Description (Continued)

Thursday Morning, March 19
8:30 AM to 12:00 noon
Ballroom I

POSTER SESSION: NEUROTOXICITY—PESTICIDES

Chairperson(s): Richard Gordon, The Geneva Foundation, Lakewood, WA.

Displayed: 8:30 AM–12:00 noon

Author Attended: 10:15 AM–12:00 noon

#2117
Poster Board Number ........................................246
INCREASE OF DOPAMINE LEVELS AFTER FIPRONIL TREATMENT. A. Anudon1, M. A. Martinez, R. Pita2, M. Martinez, V. Caballero, I. Ares, E. Ramos and M. R. Martinez-Larrañaga. Department of Toxicology and Pharmacology, Faculty of Veterinary Medicine, Universidad Complutense, Madrid, Spain.

#2118
Poster Board Number ........................................247
MULTIMODAL BIOSENSOR FOR ANALYSIS OF BLOOD ESTERASES, G. F. Makhaev1, I. N. Kurochkin1, A. V. Eremenko2, M. V. Pors2, G. V. Dubacheva2, L. V. Sigolaeva2, I. I. Kurochkin1, N. P. Bolteveva2, E. V. Rudakova2 and K. J. Richardson3. 1Institute of Physiologically Active Compounds RAS, Chernogolovka, Russian Federation, 2Chemistry Department, Moscow State University, Moscow, Russian Federation and 3Environmental Health Sciences/Toxicology, University of Michigan, Ann Arbor, MI.

#2119
Poster Board Number ........................................248
KINETIC DIFFERENCES IN THE INTERACTIONS OF CHLORPYRIFOS OXON WITH BUTYRYLCHOLINESTERASE AND ACETYLCOLINESTERASE. J. Shenouda1, P. Green2 and L. Sultatos3. 1Pharmacology and Physiology, UMDNJ - Graduate School of Biomedical Sciences, Newark, NJ and 2Pharmacology and Physiology, UMDNJ - New Jersey Medical School, Newark, NJ.
Program Description (Continued)

Abstract #

#2120
Poster Board Number ......................................249
DOSE-RESPONSE EVALUATION OF C57BL/6 MICE FOR NEUROPATHOLOGY AND PARKINSON-PATTERNED NEUROPATHOLOGY AFTER PARAQUAT AND MANEB EXPOSURE. J. J. McIntosh1, J. P. Callaghan2, S. A. Benkovic2, D. B. Miller2, R. Patterson1, M. J. Collier1, R. C. Switzer1, S. Werent3 and A. A. Li1. Exponent, Inc., Menlo Park, CA, 1Molecular Neurotoxicology Laboratory, Centers for Disease Control, Morgantown, WV, 2Huntingdon Life Sciences, Reproductive Studies Group, Eye, Suffolk, United Kingdom, 3Huntingdon Life Sciences, Behavioural Group, Eye, Suffolk, United Kingdom and 4NeuroSciences Associates, Knoxville, TN.

#2121
Poster Board Number ......................................250

#2122
Poster Board Number ......................................251
DELAYED EFFECTS OF ACUTE EXPOSURE TO CHLORPYRIFOS IN AN ANIMAL MODEL (TG2576) OF ALZHEIMER’S DISEASE. J. G. Salazar1, A. Bogliani1, D. Ribes1, F. Sanchez-Santed2, J. L. Domingo2 and M. Colomina2, 1Toxicology, Rovira i Virgili University, Reus, Spain, 2CRAMC-Psychology, Rovira i Virgili University, Reus, Spain, 3Neurotoxicology, University of Almeria, Almeria, Spain and 4Toxicology & Pharmacology, University of Los Andes, Merida, Venezuela.

#2123
Poster Board Number ......................................252
COMPARATIVE SENSITIVITY OF EEG AND THE PHOTIC AFTERDISCHARGE (PHAD) TO BRAIN CHOLINESTERASE (CHE) INHIBITION BY CARBARYL, D. F. Lyke1, J. Mwaanza1, J. E. Graff2 and D. W. Herr3, 1Toxicology, U.S. EPA, RTP, NC and 2NC State University, Raleigh, NC.

#2124
Poster Board Number ......................................253
NEONATAL PARATHION EFFECTS ON COGNITIVE FUNCTION IN AGING RATS. O. A. Timofeeva1, L. Yang1, F. J. Seidler1, T. A. Slotkin1,2 and E. D. Levin1,2. Psychiatry and Behavioral Sciences, Duke University Medical Center, Durham, NC and 1Pharmacology and Cancer Biology, Duke University Medical Center, Durham, NC.

#2125
Poster Board Number ......................................254
CRITICAL WINDOWS OF EXPOSURE FOR DEVELOPMENTAL CHLORPYRIFOS EFFECTS ON BEHAVIORAL FUNCTION IN ZEBRAFISH. D. Sledge1, J. Yen1, T. Morton1, L. Dishaw1, K. Shuler1, S. Donnelly3, E. Linney2 and E. D. Levin1. Psychiatry and Behavioral Sciences, Duke University Medical Center, Durham, NC.

Abstract #

#2126
Poster Board Number ......................................255
RELATIVE POTENCIES OF TYPE I AND TYPE II PYRETHROIDS FOR INHIBITION OF SPONTANEOUS FIRING IN NEURONAL NETWORKS. S. Losa2, A. M. Johnstone1 and T. J. Shafer1, 1Neurotoxicology Division U.S. EPA, RTP, NC and 2NC State University, Raleigh, NC.

#2127
Poster Board Number ......................................256
TYPE I AND TYPE II PYRETHROID ALTERATIONS IN SPONTANEOUS BURSTING PARAMETERS IN RAT CORTICAL NETWORKS MEASURED USING MULTIELECTRODE ARRAY RECORDINGS. A. M. Johnstone1, S. Losa2 and T. J. Shafer1, 1Neurotoxicology Division U.S. Environmental Protection Agency, Research Triangle Park, NC and 2NC State University, Raleigh, NC.

#2128
Poster Board Number ......................................257
INFLUENCE OF PYRETHROID INSECTICIDES ON SODIUM AND CALCIUM INFLUX IN NEOCORTICAL NEURONS. Z. Cao1, T. J. Shafer1 and T. F. Murray2. Department of Pharmacology, Creighton University School of Medicine, Omaha, NE and 2Neurotoxicology Division, U.S. Environmental Protection Agency, Research Triangle Park, NC.

#2129
Poster Board Number ......................................258
STRUCTURE ACTIVITY RELATIONSHIP OF PYRETHROIDS ON THE HUMAN T-TYPE VOLTAGE-SENSITIVE CALCIUM CHANNEL. N. R. Catlin1, E. Mutanguha1 and S. B. Symington2, 1Biology and Biomedical Science, Salve Regina University, Newport, RI and 2Pathology and Laboratory Medicine, Brown University, Providence, RI. Sponsor: K. Boxelbecher.

#2130
Poster Board Number ......................................259
ULTRASTRUCTURAL STUDY OF CHROMATOLYTIC AND VACUOLAR CHANGES IN SENSORY NEURONS IN ORGANOPHOSPHATE-INDUCED DELAYED NEUROTOXICITY (OPIDN). M. Burgess, S. K. Hancock, J. Hinckley, T. Rogers-Cotrone, K. Lowe, M. F. Ehrich and B. S. Jortner. Laboratory for Neurotoxicity Studies, Virginia Tech, Blacksburg, VA.

#2131
Poster Board Number ......................................260
COMBINATIONS OF NEUROTOXICANTS (MALATHION AND LEAD ACETATE) DISRUPT THE BLOOD BRAIN BARRIER (BBB) BY REDUCING TIGHT JUNCTION PROTEINS. P. Balbuena, W. Li and M. Ehrich. Virginia Maryland Regional College of Veterinary Medicine, Blacksburg, VA.

#2132
Poster Board Number ......................................261
STRUCTURE-DEPENDENT EFFECTS OF DIELDRIN ANALOGS ON DOPAMINE CATABOLISM. E. M. Allen, J. Yudan and J. A. Doorn. Medicinal and Natural Products Chemistry, University of Iowa, Iowa City, IA.

#2133
Poster Board Number ......................................262
DELTAMETHRIN EXPOSURE CAUSES CASPASE-3 MEDIATED APOPTOSIS IN SK-N-AS NEUROBLASTOMA CELLS. M. M. Hossain and J. Richardson. RWJMS, Piscataway, NJ.
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#2134 Poster Board Number .................................. 263
SAFETY OF PRA LIDOXIME ADMINISTERED IN A RAT MODEL OF METHOXYL TOXICITY, F. J. Baud , P. Houéz y and A. David . 1 Université Paris 7, Paris, France and 7Toxicological Laboratory, Faculty of Pharmacy, Paris, France.

#2135 Poster Board Number .................................. 264
LONG TERM EFFECTS OF SARIN EXPOSURE ON COGNITION. T. V. Damodaran 3, M. B. Abou-Donia 1 and W. H. Meck 2 . 1 Pharmacology and Cancer Biology, Duke University Medical Center, Durham, NC, 2Psychological and Brain Sciences, Duke University Medical Center, Durham, NC and 3Medicine, Duke University Medical Center, Durham, NC.

#2136 Poster Board Number .................................. 265
EXPOSURE OF C. ELEG ANS TO THE GLYPHOSATE-CONTAINING PESTICIDE ROUN DPUP LEADS TO DOPAMINERGIC NEURONAL DEGENERATION AND MITOCHONDRIAL INHIBITION. A. N. Justice, R. E. Barnett, A. L. Valente and V. A. Fitsanakis. Biology, King College, Bristol, TN.

#2137 Poster Board Number .................................. 266
TREATMENT OF CAENORHABDITIS ELEG ANS WITH ROUN DPUP AND MANZATE SUGGESTS LETHALITY MEDIATED BY MITOCHONDRIAL INHIBITION. R. Negga, R. E. Barnett, D. A. Rudd, N. S. Davis, H. E. Hatfield, J. Stuart and V. A. Fitsanakis. Biology, King College, Bristol, TN.

#2138 Poster Board Number .................................. 267
EVALUATION OF PRO-2-PRALIDO XIME (PRO-2-PAM) FOR BRAIN PROTECTION AGAINST ORGANOPHOSPHATE AGENT EXPOSURE IN GUINEA PIGS. J. Demar 2, R. Ratcliffe 1, M. Medynets 3 and R. Gordon 1 . 1Regulated Laboratories, Walter Reed Army Institute of Research, Silver Spring, MD and 2GCD, The Geneva Foundation, Lakewood, WA. Sponsor: S. Baskins.

#2139 Poster Board Number .................................. 268
EVALUATE THE ROLE OF DIQUAT IN NIGRAL NEURODEGENERATIVE DISORDER. S. S. Karuppagounder, U. Subramaniam, V. Suppiramaniam and M. Dhana sekaran. Pharmacal Sciences, Auburn University, Auburn, AL.

#2140 Poster Board Number .................................. 269
DEVELOPMENT OF AN IN VITRO ASSAY FOR THE CONVERSION OF PRO-2-PAM TO 2-PAM. F. Khan 2, A. Campbell 1, S. Thangavelu 2 and R. Gordon 1 . 1Department Regulated Laboratories, Walter Reed Army Institute of Research, Silver Spring, MD and 2GCD, The Geneva Foundation, Lakewood, WA. Sponsor: S. Baskins.

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#2141 Poster Board Number .................................. 270
CHOLINESTERASE INHIBITION IN CHLORPYRIFOS WORKERS IN RELATION TO URINARY 3, 5, 6-TRICHLORO-2-PYRIDINOL, L. L. Alyward 3, D. H. Garabrant 1 , S. Berrent 2, Q. Chen 2, C. Timchalk 2, C. J. Burns 2, S. M. Hays 2 and J. W. Albers 3 . 3Summit Toxicology, LLP, Falls Church, VA, 1University of Michigan, Ann Arbor, MI, 3The Dow Chemical Company, Midland, MI and 3Battelle Pacific Northwest Division, Richland, WA.

Thursday Morning, March 19
8:30 AM to 12:00 NOON
Ballroom I

POSTER SESSION: CHEMICAL-INDUCED NEUROTOXICITY

Chairperson(s): Stanley A. Benkovic, CDC NIOSH, Morgantown, WV.

Displayed: 8:30 AM–12:00 NOON

Author Attended: 8:30 AM–10:15 AM

#2142 Poster Board Number .................................. 271
2, 5-HEXANEDIONE ADDUCTION IMPAIRS NEUROFILAMENT SUBUNIT INTERACTION WITH CYTOSKELETAL POLYMER. L. Zhang 1, R. M. LoPachin 1, A. Sean 1 and D. P. Anthony 2 . 1Anesthesiology, Albert Einstein College of Medicine, Bronx, NY and 2Environmental Health Sciences, University of Massachusetts, Amherst, MA.

#2143 Poster Board Number .................................. 272

#2144 Poster Board Number .................................. 273
PROTEIN POST-TRANSLATIONAL MODIFICATIONS MEDIATE THE PATHOGENESIS OF α-DI KETO ACEONOPATHY. D. Tshala-Katumbay 1,2, P. Desjardins 1, M. Sabri 1, R. Butterworth 1 and P. Spencer 1,3 . 1Neurology, Oregon Health & Science University, Portland, OR, 2Neuroscience Research Unit, Université de Montréal, Montréal, QC, Canada and 3CROET, Oregon Health & Science University, Portland, OR.

#2145 Poster Board Number .................................. 274
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Abstract # 2146  
**Poster Board Number**: 275  
**Title**: OXIDATIVE STRESS AND ANTIOXIDANT MECHANISMS IN THE PARAQUAT-MANE MODEL – A GENDER COMPARISON.  
A. A. Baker, B. K. Barlow and M. Thuravelum.  
Environmental and Occupational Health Sciences Institute, Joint Institute of the University of Medicine and Dentistry of New Jersey-Robert Wood Johnson Medical School and Rutgers, The State University of New Jersey, Piscataway, NJ.

Abstract # 2147  
**Poster Board Number**: 276  
**Title**: MOUSE CEREBELLAR ASTROCYTES PROTECT CEREBELLAR GRANULE NEURONS AGAINST TOXICITY OF THE POLYBROMINATED DIPHENYL ETHER (PBDE) MIXTURE DE-71.  
G. Giordano1, T. J. Kavanagh1 and L. G. Costa2, 1Department of Environmental and Occupational Health Sciences, University of Washington, Seattle, WA and 2Department of Human Anatomy, Pharmacology and Forensic Science, University of Parma Medical School, Parma, Italy.

Abstract # 2148  
**Poster Board Number**: 277  
**Title**: CYTOXOTOXICITY OF DINITROBENZENE ISOMERS ON C6 GLIOMA CELLS.  
B. Rivera and R. T. Miller.  
Biological Sciences, University of Texas at El Paso, El Paso, TX.

Abstract # 2149  
**Poster Board Number**: 278  
**Title**: AGING AND LIFE-STAGE SUSCEPTIBILITY: TOLUENE EFFECTS ON PROTEIN CARBONYL CONTENT IN FRONTAL CORTEX AND CEREBELLUM OF BROWN NORWAY RATS.  
P. R. Kodavanti1, J. E. Royland1, J. H. Richards2, J. Bexa3 and R. C. MacPhail4.  
1Neurotoxicology Division, U.S. EPA, RTP, NC and 2Department of Human Anatomy, Pharmacology and Forensic Science, University of Parma Medical School, Parma, Italy.

Abstract # 2150  
**Poster Board Number**: 279  
**Title**: POSTNATAL EXPOSURE TO METHYLMERCURY ENHANCES DEVELOPMENT OF PARALYTIC PHENOTYPE IN SO1-G3A FEMALE MICE.  
F. Johnson and W. Atchison.  
Pharmacology and Toxicology, Michigan State University, East Lansing, MI.

Abstract # 2151  
**Poster Board Number**: 280  
**Title**: CRUCIFEROUS NUTRACEUTICALS 3H-1, 2-DITHIOLE-3-THIONE PROTECTS HUMAN PRIMARY ASTROCYTES AGAINST NEUROCYTOTOXICITY ELICITED BY MPP+, 6-OHDA, ACROLEIN AND HNE.  
Z. Jia, H. Zhu, H. P. Misra and T. Li.  
Edward Via Virginia College of Osteopathic Medicine, Blacksburg, VA.

Abstract # 2152  
**Poster Board Number**: 281  
**Title**: ACUTE METHAMPHETAMINE (METH) INITIATED OXIDATIVE STRESS AND NEUROTOXICITY ARE NOT MODULATED BY NUCLEAR FACTOR-E2-RELATED FACTOR 2 (NRF2).  
A. Ramkisson1 and P. G. Wells1, 1Department of Pharmaceutical Sciences, University of Toronto, Toronto, ON, Canada and 2Department of Pharmacology and Toxicology, University of Toronto, Toronto, ON, Canada.

Abstract # 2153  
**Poster Board Number**: 275  
**Title**: NEUROTOXICITY STUDIES OF ORTHO, META AND PARA-N-1-PHENYL SUBSTITUTED SPIROHYDANTOIN ANTICONVULSANT COMPOUNDS.  
Department of Pharmaceutical Sciences, Saint John’s University, Jamaica, NY.

Abstract # 2154  
**Poster Board Number**: 276  
**Title**: THE HUNTINGTON’S DISEASE MUTATION LEADS TO AN ALTERATION IN MANGANESE TRANSPORT OR STORAGE.  
B. B. Williams1,2, B. K. Vadodaria1, J. G. Anderson1, G. F. G Kwakye1,2, D. D. Li1,2, H. L. Tanner1, K. M. Erikson1 and A. B. Bowman1,2.  
Neurology, Vanderbilt University, Nashville, TN.  
Kennedy Center for Research on Human Development, Vanderbilt University, Nashville, TN and Nutrition, The University of North Carolina Greensboro, Greensboro, NC.

Abstract # 2155  
**Poster Board Number**: 277  
**Title**: CUPRIZONE INDUCED-DEMELINATION ALTERS THE EXPRESSION OF GENES INVOLVED IN ARACHIDONIC ACID METABOLISM IN THE MOUSE BRAIN.  
C. D. Toscano1, S. Palumbo and F. Bosetti.  
NIH, Bethesda, MD.

Abstract # 2156  
**Poster Board Number**: 278  
**Title**: CORTICOSTERONE ATTENUATES HIPPOCAMPAL NEUROTOXICITY AND REACTIVE GLIOSIS THROUGH REGULATION OF THE BLOOD-BRAIN BARRIER IN C57BL/6J MICE TREATED WITH KAINIC ACID.  
S. A. Benkovic, J. P. O’Callaghan and D. B. Miller.  
TMCC, CDC-NIOSH, Morgantown, WV.

Abstract # 2157  
**Poster Board Number**: 279  
**Title**: CYANIDE-MEDIATED INCREASE IN CA2+ AND NITRIC OXIDE IS ASSOCIATED WITH CYTOCHROME OXIDASE INHIBITION.  
Medicinal Chemistry and Molecular Pharmacology, Purdue University, West Lafayette, IN.

Abstract # 2158  
**Poster Board Number**: 280  
**Title**: INDUCTIBLE EXPRESSION OF BNIP3 IN CLONAL MESENCEPHALIC CELLS LEADS TO NECROPTOTIC DEATH.  
Purdue University, West Lafayette, IN.

Abstract # 2159  
**Poster Board Number**: 281  
**Title**: EARLY LETHAL EPILEPSY IN MICE WITH COMBINED GLUTAMATE-CYSTEINE LIGASE MODIFIER SUBUNIT L-GULONOLACTONE OXIDASE DEFICIENCY.  
1Department of Environmental Health, University of Cincinnati, Cincinnati, OH and 2Department of Neurology, Cincinnati Children’s Hospital, Cincinnati, OH.
Program Description (Continued)

Abstract #

#2160  Poster Board Number ......................................309
OXIDATIVE STRESS PRODUCTS
4-HYDROXY-2-NONENAL AND MALONDLALDEHYDE ARE INHIBITORS
OF CELLULAR ALDEHYDE
DEHYDROGENASES AND REDUCTASES
INVOLVED IN DOPAMINE CATABOLISM. Y. 
Jinsna, V. R. Florang and J. A. Doorn. University of 
Iowa, Iowa City, IA.

#2161  Poster Board Number ......................................310
UNCOUPLING PROTEIN 2 ENHANCEMENT
OF CYANIDE NEUROTOXICITY:
INVOLVEMENT OF MITOCHONDRIAL
NITRIC OXIDE SYNTHASE. L. Li, X. Zhang, 
L. Zhang, S. Mukhopadhyay, H. B. Leavesley, J. L. 
Borowitz and G. E. Isom. Medicinal Chemistry & 
Molecular Pharmacology, Purdue University, West 
Lafayette, IN.

#2162  Poster Board Number ......................................311
REACTIVE OXYGEN SPECIES
PRODUCED BY MITOCHONDRIAL
RESPIRATORY INHIBITORS POTENTIATES
EXCITOTOXICITY-INDUCED CELL DEATH
IN ORGANOTYPIC HIPPOCAMPAL SLICE 
CULTURES. R. A. Schub1,2 and P. Fishman1,2.
1Research, VA Maryland Health Care System, 
Baltimore, MD and 2Neurology, University of 
Maryland School of Medicine, Baltimore, MD.

#2163  Poster Board Number ......................................312
NEUROTOXIC INPLICATION OF GLIAL
INFLAMMATORY RESPONSE BY HISTONE 
DEACETYLASE INHIBITORS. B. Viviani, 
M. Boraso, I. Lotterio, S. Rubisse, E. Corsini, 
A. De Francesco, S. Bellosta, C. L. Galli and 
M. Marinovich. Department of Pharmacological 
Sciences, University of Milan, Milan, MI, Italy.

#2164  Poster Board Number ......................................313
DIFFERENTIAL RESPONSE OF BRAIN AND 
LIVER FREE FATTY ACIDS FOLLOWING 
ADMINISTRATION OF A SYNTHETIC 
ANALOG OF CERULENIN, C-75 IN CD-1 
MICE. Z. K. Binienda1, I. A. Ross2, B. Gough1, T. 
Riccio1, S. F. Aloi1 and C. S. Kim1. Neurotoxicology, 
FDA/NCTR, Jefferson, AR and 2DOT/GARS, 
FDA/CFSAN, Laurel, MD.

Thursday Morning, March 19
8:30 AM to 12:00 NOON
Ballroom I

POSTER SESSION: NEW APPLICATIONS IN ANIMAL MODELS

Chairperson(s): Janet Gould, Bristol Myers Squibb Company, New 
Brunswick, NJ.

Displayed: 8:30 AM–12:00 NOON

Author Attended: 10:15 AM–12:00 NOON

#2165  Poster Board Number ......................................316
CONTINUOUS INTRAVENOUS INFUSION IN 
THE MOUSE: A SUITABLE ALTERNATIVE 
SAFETY ASSESSMENT MODEL TO AVOID 
HISTAMINERCIC REACTION IN THE RAT? 
H. van Wijk and C. Springall. Covance Laboratories 
Ltd, Harrogate, United Kingdom.

#2166  Poster Board Number ......................................317
HAEMATOLOGY AND SERUM CHEMISTRY 
PARAMETERS IN CYNOMOLGUS 
MONKEYS (MACACA FASCICULARIS):
COMPARISON BETWEEN PURPOSE-BRED 
AND CAPTURED ANIMALS. P. Colombo, U. 
Bonfanti, D. Lamparelli and C. Bernardi. Preclinical 
Development, Accela – Nerviano Medical Sciences 
srl, Nerviano, Milano, Italy. Sponsor: M. Brughera.

#2167  Poster Board Number ......................................318
TRANSGENIC RASHI R MOUSE: A MODEL 
FOR DERMAL CARCINOGENESIS. M. 
Paranjpe1, M. L. Wenk2, D. Brecha1 and G. B. Smith2, 
1BioReliance Corporation, Rockville, MD and 
2Vertex Pharmaceuticals, Inc., Cambridge, MA.

#2168  Poster Board Number ......................................319
CONTINUOUS BLOOD PRESSURE 
MEASUREMENT IN CONSCIOUS, 
UNRESTRAINED CYNOMOLGUS 
MONKEYS VIA AN IMPLANTED PA-C10 
(MOUSE) TRANSMITTER. A. Mitchell, A. C. 
Jenkins and R. D. Sarazan. Safety Pharmacology, 
Covance Laboratories Inc., Madison, WI.

#2169  Poster Board Number ......................................320
AMIODARONE EXPOSURE DURING 
MOSTEIN INFLAMMATION INDUCES 
IDIOSYNCRASY-LIKE LIVER INJURY IN 
RATS. J. Lu1, R. A. Roth2,3 and P. E. Ganes2,3. 
1Department of Biochemistry and Molecular 
Biology, Michigan State University, East Lansing, MI, 
2Department of Pharmacology and Toxicology, 
Michigan State University, East Lansing, MI and 
3Center for Integrative Toxicology, Michigan State 
University, East Lansing, MI.

#2170  Poster Board Number ......................................321
ROLE OF CANNABINOID RECEPTORS 
AND 2 IN OVA-INDUCED ALLERGIC 
AIRWAY RESPONSES IN C57BL/6 MICE. P. 
W. Karmaws1,2, J. E. Oberdick1, B. L. Kaplan1, N. P. 
Birmingham1, J. R. Harke1,2 and N. E. Kaminski1,2. 
1Cell and Molecular Biology, Michigan State 
University, East Lansing, MI and 2Center for Integrative 
Toxicology, MSU, East Lansing, MI.

#2171  Poster Board Number ......................................322
A TECHNIQUE FOR SUBRETINAL 
ADMINISTRATION IN RABBITS. M. Vézina 
and M. Bussières. Toxicology, Charles River, 
Sennville, QC, Canada.

#2172  Poster Board Number ......................................323

#2173  Poster Board Number ......................................324

#2174  Poster Board Number ......................................325

#2175  Poster Board Number ......................................326

#2176  Poster Board Number ......................................327

#2177  Poster Board Number ......................................328

#2178  Poster Board Number ......................................329

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#2180  Poster Board Number ......................................331

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#2182  Poster Board Number ......................................333
### Program Description (Continued)

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**Poster Board Number 2173**

**CLINICAL PATHOLOGY REFERENCE INTERVALS IN CYNOMOLGUS MACAQUES (MACACA FASCICULARIS):**

**ERYTHROCYTE INDICES DIFFER BETWEEN INDONESIAN, INDOCHINESE AND MAURITIUS POPULATIONS.**


**Poster Board Number 2174**

**TUMOR GROWTH OF NEGATIVE AND POSITIVE CONTROL CELL LINES FOR TUMORIGENICITY STUDIES IN IMMUNOCOMPROMISED MICE.**


**Poster Board Number 2175**

**THE INFLUENCE OF A HIGH SALT DIET ON A RAT MODEL OF ISOPROTERENOL-INDUCED HEART FAILURE.**


**Poster Board Number 2176**

**MOUSE MODEL FOR TREATING METASTATIC HUMAN OVARIAN CANCER WITH HYPERTHERMIC INTRAPERITONEAL CHEMOTHERAPY.**

V. A. States, J. H. Masters, C. S. Muenyi, J. States and C. Helm. Pharmacology & Toxicology, University of Louisville, Louisville, KY and 'Brown Cancer Center, University of Louisville, Louisville, KY.

**Poster Board Number 2177**

**A RAT MODEL OF IDIOSYNCRATIC HEPATOXICITY: CONVERTING CARBAMAZEPINE TO A HEPATOXICANT.**


**Poster Board Number 2178**

**2-ACETYLAMINOFLUORENE EFFECTS ON CELL PROLIFERATION AND DNA ADDUCT FORMATION IN LIVERS OF LEAN AND DIET-INDUCED OBESE MICE.**


**Poster Board Number 2179**

**GENDER-DEPENDANT REACTIVE OXYGEN SPECIES-MEDIATED NEURODEGENERATION IN UNTREATED AGED ACATALASEMIC MICE.**

A. Shapiro, J. Perslin and P. G. Wells. 'Department of Pharmaceutical Science, University of Toronto, Toronto, ON, Canada and 'Department of Pharmacology and Toxicology, University of Toronto, Toronto, ON, Canada.

**Poster Board Number 2180**

**COMPARATIVE INTRAOCULAR PRESSURE MEASUREMENTS IN MULTIPLE SPECIES USING 2 HANDHELD TONOMETERS.**

M. Bussières and M. Vécina. Toxicology, Charles River, Senneville, QC, Canada.

**Poster Board Number 2181**

**TOXICITY OF ORALLY ADMINISTERED POLYETHYLENE GLYCOL (PEG-400) VEHICLE FORMULATIONS IN TRANSGENIC MICE.**


**Poster Board Number 2182**

**ADOPTIVE TRANSFER OF B-LYMPHOCYTES IN A MOUSE MODEL OF CHEMICAL-INDUCED ASTHMA.**


**Poster Board Number 2183**

**FEASIBILITY AND VARIABILITY OF TESTICULAR VOLUME MONITORING IN THE MARMOSET MONKEY (CALLITRICH JACCHUS).**


**Poster Board Number 2184**

**EFFECTS OF ORAL ALUMINUM EXPOSURE IN NEUROGENESIS AND BEHAVIOR IN A MOUSE MODEL OF ALZHEIMER DISEASE.**

M. Colomina, D. Ribes, P. Vicens and J. L. Domingo. Toxicology, Rovira i Virgili University, Reus, Spain and 'CRAAMC-Psychology, Rovira i Virgili University, Tarragona, Spain.

**Poster Board Number 2185**

**THE USE OF THE TG.RASH2 MOUSE IN CARCINOGENICITY STUDIES.**


**Poster Board Number 2186**

**HUMAN CONSTITUTIVE ANDROSTANE RECEPTOR(CAR) SUPPORTS THE HYPERTROPHIC BUT NOT THE HYPERPLASTIC RESPONSE TO THE MURINE NON-GENOTOXIC CARCINOGEN PHENOBARBITAL (PB) IV INJC.**

C. R. Elcombe, J. Ross, N. Scheer, A. Rode and C. Wolf. 'CXR Biosciences, Dundee, United Kingdom and 'TaconicArtemis GmbH, Cologne, Germany.
Thursday Morning, March 19  
8:30 AM to 12:00 NOON  
Ballroom I  

**NANOTECHNOLOGY**  

**POSTER SESSION: TOXICOLOGY OF CARBON NANOTUBES**  

Chairperson(s): Ernesto Alfaro-Moreno, Instituto Nacional de Cancerologa, Mexico, Mexico.  

Displayed: 8:30 AM–12:00 NOON  

Author Attended: 8:30 AM–10:15 AM  

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**Poster Board Number** .................#2187  

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**Poster Board Number** .................#2188  

**Abstract #**  

**Poster Board Number** .................#2189  

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**Poster Board Number** .................#2190  

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**Poster Board Number** .................#2192  

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**Poster Board Number** .................#2193  

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**Poster Board Number** .................#2199  

**Abstract #**
Program Description (Continued)

Abstract #  Poster Board Number ..................................352
#2200 PULMONARY AND SYSTEMIC
INHALATION TOXICITY OF MULTI-
WALLED AND SINGLE WALL CARBON
NANOTUBES. J. D. McDonald1, L. Mitchell1,2, S.
Burchiel2 and A. Gigliotti1. 1Lovelace Respiratory
Research Institute, Albuquerque, NM and 2University
of New Mexico, Albuquerque, NM.

#2201 Poster Board Number ..................................353
SINGLE-WALLED CARBON NANOTUBES:
SKIN EXPOSURES. A. R. Murray1,2, E. Kislin1,
S. S. Leonard1, S. H. Young1, C. Kommineni1, V.
E. Kagan1, V. Castranova2 and A. A. Shvedova2,3.
1PPRB, NIOSH, Morgantown, WV, 2Department of
Physiology/Pharmacology, WVU, Morgantown, WV
and 3Department of Environmental and Occupational
Health, University of Pittsburgh, Pittsburgh, PA.

#2202 Poster Board Number ..................................354
PULMONARY EFFECTS OF SINGLE-
WALLED CARBON NANOTUBES:
INHALATION VS ASPIRATION. E. Kislin1, A. R.
Murray1, A. F. Habs1, R. R. Mercer1, P. Krokhavong1,
N. Sussman1, B. T. Chen1, G. Deye2, V. Castranova3,
P. A. Baron1, V. E. Kagan1 and A. A. Shvedova1,3.
1PPRB, NIOSH, Morgantown, WV, 2DART, NIOSH,
Cincinnati, OH and 3Department of Environmental
and Occupational Health, University of Pittsburgh,
Pittsburgh, PA.

#2203 Poster Board Number ..................................355
SINGLE-WALLED CARBON NANOTUBES
INDUCE PULMONARY AND
VASCULAR RESPONSE FOLLOWING
INTRATRACHEAL INSTILLATION. M. C.
Schladweiler1, J. H. Shannahoff1, R. F. Thomas1,
R. Saxena1, M. Gilmore1 and U. P. Kodavanti1.
1NHEERL/ETD/PTB, U.S. EPA, Durham, NC and
2Curriculum in Toxicology, UNC-Chapel Hill,
Chapel Hill, NC.

#2204 Poster Board Number ..................................356
PULMONARY EFFECTS FROM ACUTE
EXPOSURE TO AEROSOLIZED SINGLE-
WALLED CARBON NANOTUBES. A. K. Madl1,
K. Durinick, A. Lam, T. Guo, S. V. Teague, Y. Qu,
and K. E. Pinkerton1. University of California, Davis,
Davis, CA.

#2205 Poster Board Number ..................................357
INHALED MULTI-WALLED CARBON
NANOTUBES STIMULATE A PLEURAL
INFLAMMATORY RESPONSE IN THE
LUNGS OF MICE. J. C. Bonner1, J. P. Ryman-
Rasmussen1, M. F. Cesta1,2, A. R. Brody1, J. K.
Shipley-Phillips1, J. Everitt1, E. W. Tewsbury1,
O. R. Moss1, B. A. Wong1, D. E. Dodd1 and M.
E. Andersen1. 1Environmental and Molecular
Toxicology, North Carolina State University, Raleigh,
NC, 2Molecular and Biomedical Sciences, North
Carolina State University, Raleigh, NC, 3Population
Health and Pathobiology, North Carolina State
University, Raleigh, NC, 4The Hanner Institutes
for Health Sciences, Research Triangle Park, NC,
5Experimental Pathology, NIEHS, Research Triangle
Park, NC and 6GlaxoSmithKline, Research Triangle
Park, NC.

#2206 Poster Board Number ..................................358
COMPARATIVE PROTEOMICS, GENOMICS
AND PULMONARY TOXICITY OF
INSTILLED SINGLE WALL CARBON
NANOTUBES, CROCIDOLITE ASBESTOS
AND ULTRAFINE CARBON BLACK IN
MICE. J. Teegarden1, K. Waters1, B. Webb-
Robertson1, S. Varnum1, J. Jacobs1, R. Zanger1,
E. Kislin1, A. Murray1, A. Shvedova1 and J. Pounds1.
1Pacific Northwest National Laboratory, Richland,
WA and 2National Institute of Occupational Health
and Safety, Morgantown, WV.

#2207 Poster Board Number ..................................359
PERMEABILITY OF THE BLOOD-CSF
BARRIER IN THE CHOROID PLEXUS AS
AFFECTED BY SINGLE-WALLED CARBON
NANOTUBES, IN VITRO. S. Peterson and W.
Zheng1. Health Sciences, Purdue University, West
Lafayette, IN.

#2208 Poster Board Number ..................................360
ENHANCED OCCUPATIONAL EXPOSURE
TO NANOMATERIALS WHEN MIXED
IN ENVIRONMENTALLY-RELEVANT
MATRICES. D. R. Johnson1, A. J. Kennedy1, J.
A. Steevens3 and M. M. Methner3. 1Environmental
Laboratory, U.S. Army Engineer Research &
Development Center, Vicksburg, MS and 2
Nanotechnology Research Center, National Institute
of Occupational Safety and Health, Cincinnati, OH.

#2209 Poster Board Number ..................................361
IN VITRO BIOCOMPATIBILITY OF SILVER
NANOPARTICLES ANCHORED ON MULTI-
WALLED CARBON NANOTUBES. A. B.
Castle1, E. E. Gracia-Espin02, C. Nieto-Delgados2,
H. Terrones1, M. Terrones3 and S. M. Hassain1.
1711 HPW; RHPB, Air Force Research Labs, Wright
Patterson, OH and 2Advanced Materials Department
and Laboratory for Nanoscience and Nanotechnology
Research, IPICYT, San Luis Potosí, Mexico.

#2210 Poster Board Number ..................................362
H-1β REGulates THE EXPRESSION OF
MIP-1α AND MIP-1β INDUCED BY CARBON
NANOTUBES IN A MULTIPLE CELLULAR
CO-CULTURE SYSTEM. E. Alfaro-Moreno1,2,
B. Vanaudenaerde1, B. Nemery1 and P. Hoet2.
1Investigacion Basica, Instituto Nacional de
Cancerologia, Mexico, D.F., Mexico and 2Lung
Toxicology Unit, K.U. Leuven, Leuven, Belgium.

#2211 Poster Board Number ..................................363
FUNCTIONALIZATION-DEPENDENT
CYTOTOXICITY OF SINGLE- AND MULTI-
WALLED CARBON NANOTUBES. L. Manzo1,2,
E. Roda1, D. Sarigiannis3, C. Nieto-Delgados2,
P. Mustarelli1, A. Profumo1 and T. Coccini1,2.
1University of Pavia, Pavia, Italy, 2Department of
Toxicology, Maugeri Foundation Hospital, Pavia,
Italy and 3Joint Research Centre, European
Commission, Ispra, Italy.

#2212 Poster Board Number ..................................364
THE IMPORTANCE OF CELL TYPE FOR IN
VITRO TESTING OF CARBON NANOFIBERS
USING CELL COLONY FORMATION AS
ENDPOINT. T. Syversen1, K. Gellein, S. Hoel and
L. Evje. Department of Neuroscience, Norwegian
University of Science and Technology, Trondheim,
Norway.
Program Description (Continued)

Thursday Morning, March 19
8:30 AM to 12:00 NOON
Ballroom I

POSTER SESSION: SIGNAL TRANSDUCTION: KINASES

Chairperson(s): Elizabeth Wattenberg, University of Minnesota, Minneapolis, MN.

Displayed: 8:30 AM–12:00 NOON

Author Attended: 10:15 AM–12:00 NOON

**Poster Board Number: #2213**

Abstract # 365

A COMPARATIVE STUDY OF EFFECTS OF SINGLE-WALL CARBON NANOTUBES AND CROCIDOLITE ASBESTOS IN HUMAN BEAS-2B CELLS. M. Pucaruri, V. Castranova, S. Friend, V. Robinson and V. Vallyathan. CDC/NIOSH/HELD, Morgantown, WV.

**Poster Board Number: #2214**

Abstract # 366


**Poster Board Number: #2215**

Abstract # 367

COMPARISON OF CARBON NANOTUBE-INDUCED CYTOTOXICITY IN A549 AND NORMAL HUMAN BRONCHIAL EPITHELIAL (NHBE) CELLS. V. Walker, T. Hulderman and P. P. Simeonova. Health Effects Laboratory Division, NIOSH/CDIC, Morgantown, WV.

**Featured Sessions**

10:15 AM–12:00 NOON

**Featured Session: Single-Wall Carbon Nanotube-Induced Cytotoxicity**

**Chairperson(s):** Elizabeth Wattenberg, University of Minnesota, Minneapolis, MN.

**Displayed: 10:15 AM–12:00 NOON**

**Author Attended: 10:15 AM–12:00 NOON**

**Poster Board Number: #2216**

Abstract # 369

CELLULAR AND MOLECULAR MECHANISMS OF BROMATE-INDUCED TOXICITY IN RAT AND HUMAN KIDNEY CELLS. X. Zhang1, R. J. Bull2, J. A. Cotruvo1, J. Fisher3 and B. S. Cummings4. 1Department of Pharmaceutical and Biomedical Sciences, University of Georgia, Athens, GA, 2MoBull Consulting, Richland, WA, 3Joseph Cotruvo & Associates, LLC, Washington, DC and 4Department of Environmental Health Sciences, University of Georgia, Athens, GA.

**Poster Board Number: #2217**

Abstract # 370

THE NOVEL TUMOR PROMOTER Palytoxin ACTIVATES EXTRACELLULAR SIGNAL REGULATED KINASE 5 THOUGH A Na+, K+-ATPASE-DEPENDENT PATHWAY. E. Wattenberg and A. T. Charlson. Division of Environmental Health Sciences, University of Minnesota, Minneapolis, MN.

**Poster Board Number: #2218**

Abstract # 371

INHIBITION OF CALCIUM-INDEPENDENT PHOSPHOLIPASE A, ACTIVATES MAP KINASE SIGNALING PATHWAYS DURING CYTOTOXICITY IN PROSTATE CANCER CELLS. B. Sun, X. Zhang and B. Cummings. Pharmaceutical and Biomedical Sciences, UGA, Athens, GA.

**Featured Session: Ion Channel Function and Regulation**

**Chairperson(s):** Elizabeth Wattenberg, University of Minnesota, Minneapolis, MN.

**Displayed: 10:15 AM–12:00 NOON**

**Author Attended: 10:15 AM–12:00 NOON**

**Poster Board Number: #2219**

Abstract # 372

THE TUMOR SUPPRESSOR GENE TSC-2 MODULATES TRANSLATION INITIATION OF CYCLIN D1 THROUGH ERK CROSSSTALK WITH 4EBP1. J. D. Cohen1, J. M. Gard2, R. B. Nagle2, T. J. Monks3 and S. S. Lau4. 1Pharmacology and Toxicology, University of Arizona, Tucson, AZ and 2AZCC, U of A, Tucson, AZ.

**Poster Board Number: #2220**

Abstract # 373


**Poster Board Number: #2221**

Abstract # 374

KEY ROLES OF ANNEXINS AND PHOSPHOLIPASES IN TOXICANT INDUCED REGULATION OF CELL SIGNALING RELEVANT TO CANCER. B. L. Upshur1, P. Babica1, J. Park1, F. Sovadino1, L. Blaha1, D. A. Whitten2, C. G. Wilkerson3 and J. E. Tressko4. 1Pediatrics and Human Development, Michigan State University, East Lansing, MI and 2AZCC - Proteomic Core, Michigan State University, East Lansing, MI.

**Featured Session: Ion Channel Function and Regulation**

**Chairperson(s):** Elizabeth Wattenberg, University of Minnesota, Minneapolis, MN.

**Displayed: 10:15 AM–12:00 NOON**

**Author Attended: 10:15 AM–12:00 NOON**

**Poster Board Number: #2222**

Abstract # 375

DIFFERENTIAL REGULATION OF MITOGEN-ACTIVATED PROTEIN KINASES BY ACETAMINOPHEN AND ITS REGIOISOMER 3'-HYDROXYACETANILIDE IN TAMH CELLS. B. Stamper1, F. Farin2, T. K. Bammler2, R. P. Beyer2, N. Fausto3 and S. D. Nelson4. 1Medicinal Chemistry, University of Washington, Seattle, WA, 2Environmental Health, University of Washington, Seattle, WA and 3Pathology, University of Washington, Seattle, WA.

**Poster Board Number: #2223**

Abstract # 376

HEMATOPOIETIC CELL KINASE (HCK) ACTIVATES P38 VIA APOPTOSIS SIGNALING KINASE 1 (ASK1) AND MAP KINASE KINASE 6 (MKK6) DURING THE DEOXYNIVALEOL-INDUCED RIBOTOXIC STRESS RESPONSE. H. Bae1,2,3, J. M. Gard4, T. J. Monks3 and S. Li4. 1Food Science and Human Nutrition, Michigan State University, East Lansing, MI, 2Center for Integrative Toxicology, Michigan State University, East Lansing, MI, 3Microbiology and Molecular Genetics, Michigan State university, East Lansing, MI and 4Medicine, University of Massachusetts Medical School, Worcester, MA.

**Poster Board Number: #2224**

Abstract # 377

NON-COPLANAR PCBs INDUCE APOPTOSIS RELATED GENES AND INHIBIT CELL PROLIFERATION IN NORMAL LIVER EPITHELIAL CELLS BUT PROMOTE FOCI FORMATION IN INITIATED LIVER EPITHELIAL CELLS. B. V. Madhukar and G. Chen. Pediatrics/Human Development, Michigan State University, East Lansing, MI.
Heat shock proteins (HSPs) are protein chaperones that facilitate protein folding and function. HSPs are induced by heat stress, oxidative stress and multiple classes of toxins. In order to fully understand HSP, it is important to review the latest research on HSP biology in inflammation, metal toxicity, cardiac physiology, neurodegeneration, and endoplasmic reticulum stress. During inflammation, HSP70 is important in antigen presentation. HSP70 interacts with lipids and proteins and binds to its own message to change the mRNA stability to modulate inflammatory response. During metal toxicity, signal transduction pathways induced by metals are tightly linked to protec-

tive heat shock protein pathways. HSP gene expression can be induced pharmacologically by novel agents currently being tested to induce protec-
tion against toxicities. For cancer therapy, HSP90 inhibitors are currently being tested in clinical trials. In cancer cells, inhibition of HSP90 is attrac-
tive since HSP90 chaperones multiple proteins including erbB2 and Akt, telomerase, endothelial nitric oxide synthase, channels, hormone receptors like glucocorticoid receptor, and transcription factors like HIF1a and AhR. It is not yet known whether HSP90 inhibitors will induce sufficient cancer cell death without inducing toxic side effects. Conversely, HSP90 inhibitors are proposed to reduce neurodegeneration, yet inhibition of HSP90 function in cardiomyocytes or endothelial cells in vitro is detrimental to cellular function. Finally, the unfolded protein response (UPR) is a common stress response in various toxicities (from insecticides to metals). This exquisite pathway links endoplasmic reticulum and nucleus to influence cellular fate. The latest findings of the role of HSPs in the response to toxicities, inflammation and cellular degeneration will be presented.

**HEAT SHOCK PROTEINS AND THE TOXICOCLOGICAL RESPONSE.** K. Gabrielson1, Y. Kang2, A. De Maio3 and L. Hendershot4. 1Molecular and Comparative Pathobiology, Johns Hopkins University, Baltimore, MD, 2Department of Surgery, University of California, San Diego, CA, 3Department of Medicine, University of Louisville, Louisville, KY and 4Genetics Tumor Cell Biology, St. Jude Hospital, Memphis, TN.

**HEAT SHOCK PROTEIN IMMUNOMODULATORY RESPONSE.** A. De Maio1, K. L. Gabrielson1, Y. Kang2 and L. Hendershot4. 1Surgery, University of California, San Diego, CA, 2Medicine, University of Louisville, Louisville, KY, 3Molecular and Comparative Pathobiology, Johns Hopkins University, Baltimore, MD and 4Genetics/Tumor Cell Biology, St. Jude’s Children’s Hospital, Memphis, TN.

**HEAT SHOCK PROTEIN 90 EXPRESSION AND FUNCTION IN NEURODEGENERATION AND CARDIAC DEGENERATION: CLINICAL IMPLICATIONS OF HSP90 INHIBITORS.** K. L. Gabrielson1, A. De Maio1, Y. Kang2 and L. Hendershot4. 1Surgery, University of California, San Diego, CA, 2Medicine, University of Louisville, Louisville, KY, 3Molecular and Comparative Pathobiology, Johns Hopkins University, Baltimore, MD and 4Genetics / Tumor Cell Biology, St. Jude’s Children’s Hospital, Memphis, TN.

**CROSS TALK OF HEAT SHOCK AND HEAVY METAL REGULATORY PATHWAYS.** Y. Kang2, K. L. Gabrielson1, A. De Maio3 and L. Hendershot4. 1Surgery, University of California, San Diego, CA, 2Medicine, University of Louisville, Louisville, KY, 3Molecular and Comparative Pathobiology, Johns Hopkins University, Baltimore, MD and 4Genetics/ Tumor Cell Biology, St. Jude’s Children’s Hospital, Memphis, TN.
Program Description (Continued)

Abstract #
Thursday Morning, March 19
9:00 AM to 11:45 AM
Room 307

# INFLAMMATION AND DISEASE

WORKSHOP SESSION: BIOMARKERS FOR ASSESSING THE SYSTEMIC INFLAMMATORY RESPONSE SYNDROME IN TOXICOLOGY STUDIES
Chairperson(s): Calvert Louden, Johnson and Johnson Pharmaceuticals, Raritan, NJ and Denise Bounous, Bristol-Myers Squibb Company, Princeton, NJ.
Sponsor:
Toxicologic and Exploratory Pathology Specialty Section
Endorsed by:
Drug Discovery Toxicology Specialty Section
Immunotoxicology Specialty Section

Systemic inflammatory response syndrome (SIRS) is a state of whole body inflammation that can result in multiple organ dysfunction (MOD), circulatory collapse and even death. SIRS is considered as a self-defense mechanism to non-specific insults that arise from chemical, necrotic (as a result of tissue damage), ischemic, or infectious stimuli that induce organ pathology. SIRS and MOD are complex processes that involve hemodynamic, humoral and cellular responses, complement activation and cytokine cascade. SIRS and MOD develops in stages that are mediated in part through acute phase proteins, cytokine dysregulation and hemodynamic events. In toxicology studies, safety evaluation of xenobiotics, pharmacologically active immune stimulants and immunosuppressants can induce SIRS and MOD in rats, dogs and non-human primates and therefore measurement of circulating mediators as biomarkers of SIRS and MOD will enable clinicians to avoid a potentially severe catastrophic event. Furthermore chemically-induced pathology resulting from events such as ischemia, extensive tissue damage and necrosis, activation and release of stress hormones all can induce SIRS and MOD as a secondary toxic response. Whole body SIRS is considered an adverse finding in pre-clinical toxicology studies. Therefore, knowledge and use of the appropriate inflammatory biomarkers that reflects this pathological process is quite useful both preclinically and clinically. Additionally, pre-clinical and clinical monitoring of biomarkers that are early predictors or reporters of SIRS are valuable to the toxicologist and body burdens associated with altered immune function. This workshop will provide context for the discussions of rodent data that follow. The animal data will address propose modes of action for PFOA and PFOS, as well as human data from a highly exposed population. The human immunologic and body burden data from a highly exposed population will provide a better understanding of the potential to cause a pro-inflammatory response. To adequately explore these issues, we will highlight the progress and challenges of SIRS.

#2233 9:00 BIOMARKERS FOR ASSESSING THE SYSTEMIC INFLAMMATORY RESPONSE SYNDROME IN TOXICOLOGY STUDIES.
C. Louden. Pathology, Johnson & Johnson, Alderley Park, United Kingdom.

#2234 9:05 CURRENT CONCEPTS AND AN OVERVIEW OF THE PATHO-PHYSIOLOGY OF CYTOKINE STORM, SIRS AND MOD.
S. D. Burdett1 and C. Louden2. 1Wright State University, Dayton, OH and 2Pathology, Johnson & Johnson, Raritan, NJ.

#2235 9:45 DIAGNOSIS OF SYSTEMIC INFLAMMATORY RESPONSE IN PRECLINICAL DRUG DEVELOPMENT.
W. Shao1 and C. Louden2. 1Safety Assessment, Merck & Co., West Point, PA and 2Toxicologic Pathology, Johnson & Johnson, Raritan, NJ.

Thursday Morning, March 19
9:00 AM to 11:45 AM
Room 310

WORKSHOP SESSION: IS MODULATION OF THE IMMUNE SYSTEM BY PERFLUOROALKYL ACIDS A HUMAN HEALTH CONCERN?
Chairperson(s): Jamie C. DeWitt, East Carolina University, Greenville, NC and Robert W. Luebke, U.S. EPA, Research Triangle Park, NC.
Sponsor:
Immunotoxicology Specialty Section
Endorsed by:
Mechanisms Specialty Section
Risk Assessment Specialty Section

Perfluoralkyl acids (PFAAs) used to manufacture myriad consumer products and are present in the environment, humans and wildlife. PFAAs undergo degradation to a limited number of extremely stable products, including PFOA and PFOS; both are reported to alter immune function. Human immunologic and body burden data from a highly exposed population will provide context for the discussions of rodent data that follow. The animal data will address propose modes of action for PFOA and PFOS, and body burdens associated with altered immune function. This workshop will appeal to a broad range of meeting attendees, including immunotoxicologists, risk assessors, and molecular, and regulatory toxicologists. The immunomodulation of PFOA and PFOS reported in rodent models has increased the level of regulatory concern regarding these chemicals. The doses of PFOA or PFOS administered in rodent studies result in serum concentrations that are 100-200 fold greater or slightly below, respectively, the amounts reported in serum of occupationally exposed humans. The corresponding suppression in antibody responses of the dosed rodents suggests that PFOA or PFOS may be immunomodulatory in highly-exposed humans.

#2236 10:15 IN VITRO APPROACHES TO INVESTIGATING CYTOKINE RELEASE FOLLOWING POTENTIAL AGONIST IMMUNOSTIMULATION.
C. J. Betts1, M. Jacobsen1 and C. Louden1. 1AstraZeneca Safety Assessment, Macclesfield, United Kingdom and 2Pathology, Johnson & Johnson, Raritan, NJ.

#2237 10:35 MONOCLONAL ANTIBODY INDUCED CYTOKINE RELEASE SYNDROME: PRECLINICAL SCREENING.
P. J. Bugelski1 and C. Louden1. 1Pathology, Johnson & Johnson, Alderley Park, United Kingdom and 2Centocor R&D, Radnor, PA.

#2238 11:00 OPPORTUNITIES AND CHALLENGES FOR SAFETY EVALUATION OF SMALL AND LARGE MOLECULE HIGH RISK TARGETS.
H. Parmar1 and C. Louden2. 1AstraZeneca Pharmaceuticals, Loughborough, Leicestershire, United Kingdom and 2Pathology, Johnson & Johnson, Raritan, NJ.

11:30 PANEL DISCUSSION/Q&A.
Program Description (Continued)

Abstract #

#2241 9:40 PFOA-INDUCED IMMUNOMODULATION IN MICE: AN OVERVIEW. J. DeWitt and R. Luehrke. Pharmacology and Toxicology, East Carolina University, Greenville, NC and ORD/NHEERL/ETD/ITB, U.S. EPA, RTP, NC.

#2242 10:05 ADJUVANCY AND IMMUNOSUPPRESSION: MECHANISMS OF IMMUNOMODULATION FOLLOWING DERMAL EXPOSURE TO PFOA IN MICE. S. Anderson, L. Butterworth, L. G. Jackson, F. Franch, J. Franko and B. J. Meade. NIOSH, Morgantown, WV.

#2243 10:30 SUPPRESSION OF IMMUNE FUNCTION IN MICE AFTER DEVELOPMENTAL EXPOSURE TO PFOS. M. Peden-Adams. Department of Pediatrics and Marine Biomedicine and Environmental Science Center, Medical University of South Carolina, Charleston, SC.

#2244 10:55 EVALUATION OF THE IMMUNE SYSTEM IN RATS AND MICE ADMINISTERED AMMONIUM PERFLUOROOCANOATE (APFO). S. E. Loveless. DuPont Haskell Global Centers for Health and Environmental Sciences, Newark, DE.

11:20 PANEL DISCUSSION/Q&A.

Thursday Morning, March 19
9:00 AM to 11:45 AM
Room 308

WORKSHOP SESSION: THE MOLECULAR MECHANISM OF ALPHA, BETA-UNSATURATED CARBONYL TOXICITY: GETTING IN TOUCH WITH THE SOFT SIDE OF CHEMISTRY

Chairpersons: Richard M. LoPachin, Montefiore Medical Center, Bronx, NY and Daniel J. Conklin, University of Louisville, Louisville, KY.

Sponsor:
Mechanisms Specialty Section

Endorsed by:
Neurotoxicology Specialty Section

Acrolein, acrylamide, 4-hydroxy-2-nonenal (HNE) and other α, β-unsaturated carbonyl compounds are members of a large class of chemicals known as the type-2 alkenes. These chemicals are characterized by a conjugated structure that is formed when an electron-withdrawing group is linked to an alkene. α, β-unsaturated carbonyl derivatives are used extensively in various industries and these chemicals are recognized as significant environmental pollutants and dietary contaminants. Consequently, human exposure to the conjugated alkenes is pervasive and has been associated with toxicity of major organ systems. There is also substantial evidence that endogenous production of acrolein and HNE is an important component of diseases that involve cellular oxidative stress and lipid peroxidation; e.g., Alzheimer’s disease and atherosclerosis. Clearly, type-2 alkene exposure has diverse pathogenic implications therefore the potential role of these chemicals in human disease processes and environmentally acquired toxicities will be discussed. The conjugated α, β-unsaturated carbonyl structure of the type-2 alkenes is a soft electrophile that forms adducts with soft biological nucleophiles; i.e., cysteine sulfhydryl groups. In addition, amine groups on lysine and histidine residues are potential targets for adduct formation with these bifunctional chemicals. Accordingly, focus on the emerging recognition that type-2 alkenes produce toxicity through a common molecular mechanism involving the formation of adducts on functionally critical proteins will be a focal point of discussion. We will also consider how relative electrophilic reactivity and the route of intoxication determine the toxicological outcome of type-2 alkene exposure (e.g., hepatotoxicity, neurotoxicity). The leading researchers in the toxicity of α, β-unsaturated carbonyl compounds will provide unique information at the interface of chemistry and toxicology. Such information could offer insight into how the chemical environment impacts human health and might identify efficacious remediation strategies.

Abstract #

#2245 9:00 SESSION OVERVIEW. D. R. Petersen. Toxicology, University of Colorado, Denver, CO.


#2247 9:30 ATHEROGENIC EFFECTS OF ENALS. S. Srivastava and D. J. Conklin. Cardiovascular Medicine, University of Louisville, Louisville, KY.

#2248 10:00 OVERVIEW OF PROTEIN TARGETS MODIFIED BY THE α, β-UNSATURATED ALDEHYDE 4-HYDROXYNONENAL: INSIGHTS INTO MOLECULAR MECHANISMS PREDISPOSING PROTEINS TO MODIFICATION. D. R. Petersen. Toxicology, University of Colorado, Denver, CO.

#2249 10:30 TYPE-2 ALKENES PRODUCE NERVE TERMINAL DAMAGE: RELEVANCE TO NEUROTOXICITY AND NEOGENERATIVE DISEASES. R. M. LoPachin. Anesthesiology, Albert Einstein College of Medicine, Bronx, NY.

#2250 11:00 USING CARBONYL SCAVENGERS TO PROBE THE TOXICOLOGICAL SIGNIFICANCE OF ACROLEIN-MEDIATED PROTEIN ADDUCTION IN LUNG CELLS. P. C. Burcham. Pharmacology, University of Western Australia, Nedlands, WA, Australia.

11:30 PANEL DISCUSSION.

THURSDAY AFTERNOON AND FRIDAY MORNING

Thursday Afternoon, March 19
2:00 PM to 7:00 PM
Friday Morning, March 20
8:00 AM to 12:00 NOON
Hilton Johnson Room

SATELLITE MEETING: DEVELOPMENT OF TOXICOLOGICAL AND ENVIRONMENTAL PUBLIC HEALTH INFRASTRUCTURES IN AFRICA: UNDERSTANDING THE PREMISE AND MAPPING THE APPROACH

Presented by: African Society of Toxicological Sciences

Purpose of Meeting: The primary goal of the meeting is to bring experts, stakeholders, and interested parties together to discuss toxicological challenges and begin the development of policy framework for integrating the practice of toxicology in African countries. A special focus will be placed on expanding on earlier ASTS-sponsored sessions of defining/prioritizing toxicological challenges in Africa, expanding on the concepts of feasible risk management options, and building resource capacity for governmental entities, scientists and students in Africa.

Confirmed Speakers: Peter Spencer, Edmond Creppy, Mike Dourson

More Information: Telephone Dr. Sanmi Areola, Ph.D. at (615) 340-2161, sanmi.areola@nashville.gov or visit www.africansocietyfortoxicological-sciences.org.
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Silvia Barros, Member (2008–2009)
Vicki L. Dellarco, Member (2008–2009)
Braulio Jimenez, Member (2008–2009)
Sunao Manabe, Member (2008–2009)
John Morris, Member (2008–2009)
Prakash Nagarkatti, Member (2006–2009)
Ken S. Ramos*
Shawn Douglas Lamb**
Historian
Ernest Hodgson, Chair (2004–2011)
Lawrence R. Curtis*
Clarissa Russell Wilson**

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Jack H. Dean, Member (2007–2010)
James A. Popp, Member (2007–2010)
Kenneth S. Ramos, Member (2007–2010)
Cheryl Lyn Walker*, Member (2007–2010)
Shawn Douglas Lamb**

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Erica Marie Sparkenbaugh, Chair-Elect, Michigan (2008–2009)
Melanie B. Weed, Secretary, North Carolina (2008–2009)
Ofek Bar-Ilan, Midwest (2008–2009)
Susanne Marie Brander, Northern California (2008–2009)
Patricia Gillespie, Mid-Atlantic (2008–2009)
Sarah Gilpin, Northland (2008–2009)
Michael P. Holt, Mountain West (2008–2009)
Natalie Malek Johnson, Gulf Coast (2008–2009)
Ebany J. Martinez-Finley, Mountain West (2008–2009)
Ronald B. Pringle, South Central (2008–2009)
Amy Shaw Delong, National Capital Area Chapter (2008–2009)
George B. Corcoran*
Betty Eidemiller**

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Lauren M. Aleksunes, Councilor (2008–2009)
Ronald N. Hines*
Betty Eidemiller**

Research Funding Committee
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Matthew J. Campen, Member (2008–2009)
Serrine S. Lau, Member (2008–2009)
Jeffrey Maurice Peters, Member (2008–2010)
Alvaro Puga, Member (2008–2011)
Martin A. Philbert*
Betty Eidemiller**

Professional Needs Assessment Task Force
Daniel Acosta, Jr., Chair (2008–2009), Member (2008–2010)
Kerry Thomas Blanchard, Jr., Member (2008–2011)
J. Kevin Kerzee, Member (2008–2010)
Elaine Valerie Knight, Member (2008–2009)
Lawrence R. Curtis*
Marcia G. Lawson**

Scientific Liaison Task Force
Thomas B. Knudsen, Member (2008–2011)
John B. Morris, Member (2008–2011)
Moiz Mumtaz, Member (2008–2009)
Gary H. Perdew, Member (2008–2009)
Thomas R. Sutter, Member (2008–2010)
Jeffrey I. Everitt, ad hoc (2008–2011)
Kim Boekelheide*
Marcia G. Lawson**
Appointed Committees (Continued)

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Member (2008–2010)
Cynthia A. Afshari, Member (2008–2011)
Michael Aschner, Member (2007–2010)
Matthew S. Bogdanffy, Member (2006–2009)
William J. Brock, Member (2007–2010)
Harvey J. Clewell, III, Member (2006–2009)
Sally P. Darney, Member (2006–2009)
Myrtle A. Davis, Member (2008–2011)
Charlene A. McQueen, Member (2007–2010)
Terrence J. Monks, Member (2008–2010)
Richard S. Pollenz, Member (2008–2011)
Katherine Sarlo, Member (2006–2009)
Hollie I. Swanson, Member (2007–2010)
Nichelle Sankey**

Specialty Section Graduate Committee (SS-GC)
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Sheppard Allen Martin, Chair-Elect, Risk Assessment
(2008–2009)
Daniel J. Hochman, Secretary, Ethical, Legal,
Derek A. Drechsel, Neurotoxicology (2008–2009)
Daher Ibrahim Aibo, Toxicologic and Exploratory Pathology (2008–2009)
Sheung P. Ng, Reproductive and Developmental (2008–2009)
Susan Ritger, Biological Modeling (2008–2009)
Marc-André Verner, Mixtures (2008–2009)
Sarah Elizabeth Wilson, Molecular Biology (2008–2009)
Li Xu, Food Safety (2008–2009)
Wei Zou, Comparative and Veterinary (2008–2009)
George B. Corcoran*
Betty Eidemiller**

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Member (2008–2009)
Erica Marie Sparkenbaugh, President-Elect (2008–2009),
Member (2008–2010)
Kristina DeSmet, Secretary/Treasurer (2008–2009)
Sheppard Allen Martin, Secretary/Treasurer-Elect
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Daniel S. Hochman, Member (2008–2009)
George B. Corcoran*
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ToxLearn Work Group, Education Committee
Phil Wexler, Chair (2004–2009), Member (2004–2009)
Sue Ford, Member (2006–2009)
John Duffus, Member (2004–2009)
Tammy Dugas, Member (2006–2009)
Jane Huggins, Member (2006–2009)
Michael A. Kamrin, Member (2004–2009)
Paul Wright, Member (2004–2009)
Sid Ray, Education Committee Liaison (2007–2009)
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Toxicology History Room Task Force, Communications Committee
Dori R. Germolec, Member (2008–2011)
Antoinette Hayes, Member (2008–2011)
Ernest Hodgson, Member (2008–2011)
Richard W. Lane, Member (2008–2011)
Asish Mohapatra, Member (2008–2011)
Elizabeth Walker, Member (2008–2011)
Martha Lindauer**

World Wide Web Task Force, Communications Committee
Laine Peyton Myers, Chair (2008–2009), Member (2008–2009)
Stacey E. Anderson, Member (2008–2009)
Betina J. Lew, Member (2008–2009)
Mark W. Powley, Member (2008–2009)
Phil Wexler, Member (2008–2009)
Martha Lindauer**
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Thomas A. Kocarek, Councilor
Bjorn Agmund Thorsrud, Councilor
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Jane A. Fagerland, Councilor
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Brante P. Sampey, Postdoctoral Representative
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Susanne Marie Brander, Student Representative

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Nathan R. Pechacek, Councilor
Sarah Gilpin, Student Representative

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Sumitra Sengupta, Student Representative

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Yunfeng Zhao, Treasurer
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Yi Jin, Councilor
Hanna Hongchin Ng, Councilor

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Sanjay Chanda, Vice President
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Chellu S. Chetty, Treasurer
Madhusudan G Soni, Past President
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Brinda Mahadevan, Councilor
Gunda Reddy, Councilor
Rangaprasad Sarangarajan, Councilor
Viny Srinivasan, Councilor
Binu K. Philip, Postdoctoral Representative

Hispanic Organization for Toxicologists  (58*)
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Braulio D. Jimenez-Velez, Vice President
Ofelia A. Olivero, Secretary/Treasurer
Javier Avalos, Councilor
Ranulfo Lemus Olalde, Councilor
Minerva Mercado Feliciano, Postdoctoral Representative
Enrique Fuentes-Mattei, Student Representative

Korean Toxicologists Association in America  (36*)
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Woon-Gye Chung, Vice President
Sookwang Lee, Secretary/Treasurer
Tae-Won Kim, Past President
Il Je Yu, Councilor

Toxicologists of African Origin  (36*)
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Marquea D. King, Vice President
Anthony M. Ndifor, Secretary/Treasurer
Abraham Dalu, Councilor
Mildred M. Williams-Johnson, Councilor
Antonio T. Baines, Councilor

Women in Toxicology  (362*)
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Laura Andrews, President-Elect
Suzanne Compton Fitzpatrick, Vice President
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Jennifer D. Cohen, Student Representative

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Susan Ritger, Student Representative

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Ivan Rusyn, Councilor
Susan C. Tilton, Past President
Supraja Narasimhan, Student Representative

**Comparative and Veterinary** (84*)
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Kathleen Gabrielson, Vice President-Elect
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Ramesh Chandra Gupta, Councilor
Wei Zou, Student Representative

**Dermal Toxicology** (132*)
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George DeGeorge, President-Elect
Carol L. Sabourin, Secretary/Treasurer
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Dae J. Kim, Postdoctoral Representative
Michael G. Borland, Student Representative

**Drug Discovery Toxicology** (324*)
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William A. Frez, Councilor
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Kathryn R. Mahaffey, Councilor
Stanley T. Omaye, Councilor
Daniel M. Wilson, Councilor
Li Xu, Student Representative

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Marc J. Pallardy, Councilor
Stacey E. Anderson, Postdoctoral Representative
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Renee M. Gardner, Councilor
Kristina Wolf, Postdoctoral Representative
Ann-Marie G. Matei, Student Representative
Haitian Lu, Vice Student Representative

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Annette C. Rohr, Councilor
Jeffrey S. Tepper, Councilor
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Alvaro Puga, Councilor
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Walter C. Prozialeck, Councillor
Erik J. Tokar, Postdoctoral Representative
Amy L. Albrecht, Student Representative

Mixtures (66*)
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Margaret H. Whittaker, Councillor
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Russell S. Thomas, Councilor
Sarah Elizabeth Wilson, Student Representative

Nanotoxicology (231)
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David B. Warheit, Interim Vice President
Paul C. Howard, Interim Secretary/Treasurer

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Mark Vezina, Interim Vice President
Anne G. Wiese, Interim Secretary/Treasurer
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Jaishree Bankoti, Student Representative

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Dahir Ibrahim Albo, Student Representative

* Membership Totals as printed in the most recent Membership Directory
Society of Toxicology Awards and Honors

In recognition of distinguished toxicologists and students, SOT presents Honorary Membership and awards each year. In addition to receiving a plaque, recipients are honored at a special Awards Ceremony at the SOT Annual Meeting and their names are listed in SOT publications. The deadline for 2010 Honorary Membership and award nominations is October 9, 2009.

SOT Council reviews nominations for Honorary Membership and the Awards Committee reviews applications for SOT Awards and most Sponsored Awards. The Best Paper Awards are reviewed by the Board of Publications. The Education Committee selects the recipients of the Pfizer Undergraduate Travel Award and the Committee on Diversity Initiative selects the other undergraduate student travel recipients.

Nominations for most awards must be submitted by a sponsor and a seconder who are Full members of SOT using the On-Line Award Nomination Form. The supporting documentation must indicate the candidate’s achievements in toxicology and is critical in the review of each application. See the award description for the additional requirements for some of the awards, including the Sponsored Awards. There are specific applications for Fellowships and Graduate Travel Support.

Other graduate student and postdoctoral fellow awards are available through Regional Chapters, Specialty Sections, and Special Interest Groups. A student or postdoc may apply for any award for which he or she is eligible and may apply for and receive multiple awards, whether SOT, Regional Chapters, Specialty Sections, or Special Interest Groups, sponsor the awards. Policies related to travel support are determined by the sponsor (SOT, Regional Chapter, Special Interest Groups, or Specialty Section). Students may only receive one SOT National travel award.

Full descriptions of all awards, awards no longer being offered, application procedures, and names of past recipients may be found on the SOT Web site at www.toxicology.org.

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.

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 Omenn
2009 ...... John E. Walker

*Deceased

Indicates an SOT Sponsored Award
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 Annual Meeting of the Society of Toxicology) and who has 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*
1973 (No Award)
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*
1981 (No Award)
1982 Frederick P. Guengerich
1983 (No Award)
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
2005 (No Award)
2006 Jose E. Manautou
2007 Jeffrey M. Peters
2008 Ivan Rusyn
2009 Russell S. Thomas

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
1997 (No Award)
1998 Helmut Alfred Greim
1999 (No Award)
2000 Carole A. Kimmel, Janardan K. Reddy
2001 Samuel M. Cohen
2002 Dennis Paustenbach
2003 Michael L. Dourson
2004 Melvin E. Andersen
2005 Rory B. Conolly
2006 Kathryn R. Mahaffey
2007 Harvey J. Clewell
2008 Vicki Dellarcio
2009 Michael Bolger
Best Postdoctoral Publication Awards

The Best Postdoctoral Publication Awards were created by the Postdoctoral Assembly to 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 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 ...... Jeffercy Card
Kembra Howdeshell
Lewis Shi

Board of Publications 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. At least six papers will be considered for the Board of Publications Award. This award consists of a plaque and a cash stipend. (This award was formerly known as the Frank R. Blood Award.)

Best Paper in Toxicological Sciences
(formerly published as Fundamental and Applied Toxicology)

Award Recipients

1995 ...... J. L. Larson, D. C. Wolf, B. E. Butterworth


1996 ...... B. C. Allen, R. J. Kavlock, C. A. Kimmel, E. M. Faustman


2001 ...... Jinqiang Chen, Yunbo Li, Jackie A. Lavigne, Michael A. Trush, James 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 ...... Abraham Nyska, Carolyn Moyer, Allen Ledbetter, David Christiani, Mette Schlasweiler, Daniel Costa, Russ Hauser, Urmila Kodavanti,

2005 ...... Nicole V. Soucy, Michael A. Ihnat, Linda Hess, Chandrashekhar D. Kamat, Aaron Barchowsky, Mark J. Post, Linda R. Klei, Callie Clark

2006 ...... Hiroshi Sawada, Kenji Takami, Satoru Ashai


2008 ...... Sarah Snykers, Tamara Vanhaecke, Peggy Papelue, Aernout Luttun, Yuehua Jiang, Yvan Vander Heyden, Catherine Verfaillie, Vera Rogiers

2009 ...... Qian Yang, Tomokazu Nagano, Yatrik Shah, Connie Cheung, Shinji Ito, Frank J. Gonzalez

Best Paper in Toxicology and Applied Pharmacology

Award Recipients

1995 ...... M. F. Denny, M. F. Ware, W. D. Atchison
1999 ...... S. K. Ramaiah, M. G. Soni, T. J. Bucci, H. M. Mehendale,
1999 ...... C. L. Zuch, D. J. O’Mara, D. A. Cory-Slechta
Society of Toxicology Awards and Honors (Continued)

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 the 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 both to ensure and enhance the quality of human and animal health and the environment. The award consists of a plaque and a cash stipend.

Award Recipients

2000 Allegheny-Erie 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. (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

Frank R. Blood Award

Award Recipients

1974 Yves Alarie
1975 Donald J. Ecobichon, G. J. Johnstone, O. Hutzinger
1976 Richard D. Brown
1977 J. Dedinas, George D. DiVincenzo, C. J. Kaplan
1980 Jerold A. Last, Peter F. Moore, Otto G. Raabe, Brian K. Tarkington
1981 Yves Alarie, Martin Brady, Christine Dixon, Meryl Karol
1982 Melvin E. Andersen, Michael L. Gargas, Lawrence J. Jenkins, Jr., Robert A. Jones
1983 Henry D. Heck
1984 Erik Dybing, Sidney Nelson, Erik Soderlund, Christer Von Bahr
1985 Nobumasa Imura, Masae Inokawa, Kyoko Miura
1986 Calvin C. Wilhite, M. I. Dawson, K. J. Williams
1987 John Kao, Frances K. Patterson, Jerry Hall
1988 Debra L. Laskin, Sungchul Ji, Anne M. Pilaro
1991 Jay Babcock Silkworth, Daryll Cutler, LuAnn Antrim, Don Houston, Casimir Tumasonis, Laurence S. Kaminsky
1992 Donald A. Fox, Steve D. Rubinstein, Pauline Hsu
1993 Thomas Mably, Robert W. Moore, Robert W. Goy, Richard E. Peterson
1994 Susan J. Borghoff, William H. Lagarde

Society of Toxicology 2009
Society of Toxicology Awards and Honors (Continued)

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 ....... Haribara 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

Enhancement of Animal Welfare Award

The Enhancement of Animal Welfare Award is presented annually to a member of the Society in recognition of the 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. This award recognizes outstanding/significant contributions made by members of the Society of Toxicology to the sound and responsible use of animals in scientific research. The achievement recognized may be either a seminal piece of work or a long-term contribution to toxicological science and animal welfare. The 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

Founders Award

The SOT Founders Award is presented to a 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.

Award Recipient
2008 ....... John Doull
2009 ....... Roger O. McClellan
Society of Toxicology Awards and Honors (Continued)

Graduate Student Travel Support

Graduate Student Travel Support defrays expenses for 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.

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.

Award Recipients
2009 ...... John Katzenellenbogen

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. Hayes*
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 McClellan
2006 ...... A. Wallace Hayes
2007 ...... James A. Swenberg
2008 ...... Hanspeter Witschi
2009 ...... Gary M. Williams

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 a 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 Web site.

Public Communications Award

The Public Communications Award is presented by the Society of Toxicology to recognize 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. The award consists of a plaque and a cash stipend.

Awards 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

SOT AstraZeneca IUTOX Fellowship

The AstraZeneca, Ltd. 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), Mariza Rojas Martini (Venezuela), Choon-Nam Ong (Singapore), W. Wasowicz (Poland), Ping-kun Zhou (China)
2003 ...... Jian-Hui Liang (China), Marjan G. Vracko (Slovenia), Eman A. Seif (Egypt)
2004 ...... Cristina Bolaton (Philippines), P.K. Gupta (India), Salmaan Inayat-Hussain (Malaysia), Xianping Ying (China)
2005 ...... Diana B. Apostolova (Bulgaria), Marite Aria Bake (Latvia), Teresa I. Fortuouli (Mexico), Mary Gulumian (South Africa), He Jiliang (China), Khalidya Khamidulina (Russia), L. Orish Orisakwe (Nigeria), Songsuk 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 Baig (Czech Republic), Ismet Çök (Turkey), Carlos Garcia (Peru), Wenceslao Kiat (Philippines), Calivarathan Latchoumycandane (Singapore), Fatehaya Metwally (Egypt), Hilmi Orhan (Turkey), Nwoha Umunna (Nigeria)
Society of Toxicology Awards and Honors (Continued)

2008

- Jin-Ho Chung (Korea),
- Lyndy McGaw (South Africa),
- Kemal Buyukguzel (Turkey),
- Hande Gurur-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)
- Kingsley C. Patrick-Iwuanyanwu (Nigeria)
- Betsabet Quintanilla-Vega (Mexico)
- Suresh V.S. Rana (India)
- Jalila Ben Salah (Tunisia)
- Suleeporn Sangrajang (Thailand)

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.).

Award Recipients

2009

- Thomas W. Kensler

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 a 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 Web site). 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 Web site.

SOT Regional Chapter Awards

Most SOT Regional Chapters provide awards to recognize outstanding students, postdoctoral fellows, or scientists throughout their career. Application requirements and deadlines vary. For more details refer to the award descriptions on the SOT Web site 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 fellows, or scientists throughout their career. Application requirements and deadlines vary. For more details refer to the award descriptions on the SOT Web site 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 fellows, 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 Web site at www.toxicology.org, under Specialty Sections or the Awards and Fellowships section.
Sponsored Award Descriptions

AstraZeneca Traveling Lectureship Awards

The AstraZeneca Traveling Lectureship Awards are presented through the Society of Toxicology to recognize excellence in research and service in toxicology. AstraZeneca, Ltd., provides one or two awards annually to promote greater collaboration between European and North American toxicologists and to enable North American toxicologists to undertake a three–four week lecture tour of Europe. The awards are intended to familiarize recipients with research and regulatory issues in Europe as well as bring a North American perspective to these issues. Candidates for these awards 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. The awards are given each year in the amount of $6,000 each.

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 Pugo
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

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. Up to five awards, at $3,500 each, are available. Deadlines for applications are February 15, June 15, and October 9.

Graduate Students: 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, 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. The overall goal is to support the replacement, reduction, or refinement of currently used animal models in toxicology research and testing. Awards of up to $3,500 per student will defray travel, per diem, and training expenses.

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. Nascarela
2005 ...... Vishaka Bhave, Ankur Dnyanmote, Johnathan Maher
2006 ...... Mary Hassani, Prajakta Palkar
2007 ...... Renee Gardner, Prajakta Palkar, Rohit Singhal, René Vinas
2008 ...... Kimberly A. Hays, Haitian Lu
2009 ...... Jennifer Cole
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. Awards are made as a single lump payment. An expert panel from the SOT In Vitro and Alternative Methods Specialty Section will recommend a prioritized list of applicants for funding, with the final awards designated by the SOT Awards Committee. Awardees can apply again for funding.

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. Cerven, Duncan C. Ferguson, Shashi K. Ramaiah
2009 ...... Qin Chen, Timothy Shafer, Mehmet Uzumcu

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 in alternate years and includes stipend and research-related costs (up to $38,500) for one year. The award may be extended for an additional year upon agreement between Colgate-Palmolive and the postdoctoral fellow. 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. Applications are due in even calendar years and the fellowship is awarded for the following year. The next application deadline: October 9, 2009.

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
Colgate-Palmolive Traveling Lectureship in Alternative Methods in Toxicology Award

The Colgate-Palmolive Company sponsors the Colgate-Palmolive Traveling Lectureship in Alternative Methods in Toxicology Award annually through the Society of Toxicology. This award covers expenses for an individual scholar to visit institution(s) for the dissemination of knowledge and for stimulating research that takes advantage of modern \textit{in vitro} toxicology approaches. The overall goal of this program is to make scientists aware of the benefits of modern \textit{in vitro} toxicology approaches and to stimulate research for the replacement, reduction, or refinement of currently used animal models.

Lecturing scholars should be established, mid-career through late-career scientists who are members of SOT and who are developing collaborative relationships with scientists at other institutions.

Requests for funds can be made by the individual scholar or by a host from an academic institution, SOT Regional Chapter, SOT Special Interest Group, SOT Specialty Section, or another toxicology organization. Up to $15,000 is available for all the awards. The Awards Committee reviews the applications, which must be accompanied by a statement detailing the applicant’s expertise in alternative methods, a brief overview of the techniques to be discussed in the lecture, the budget request, and a letter from the host indicating interest in serving as host and the potential benefits to the institution.

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: Narendra Singh
2001 ...... Medical College of Wisconsin  
Visiting Professor: Garold Yost
2003 ...... Washington State University  
Visiting Professor: Marc W. Fariss
2004 ...... Snorri S. Thorgeirsson  
Institution to be Visited: University of Louisiana at Monroe
2008 ...... George Michalopoulos  
Institution to be Visited: University of Louisiana at Monroe
Graduate Student Fellowship Award—Novartis Award

The Graduate Student Fellowship—Novartis Award is available for Student members of the SOT engaged in full-time graduate study towards a Ph.D. degree 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

Pfizer Undergraduate Student Travel Award

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 Annual 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 SOT Annual Meeting.

Awards 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

(Recipients of Graduate Fellowship Awards no longer offered may be found on the SOT Web site at www.toxicology.org.)
Society of Toxicology 2009

Endowment Fund

Mission of the SOT Endowment Fund
The SOT Endowment Fund has a mission of assisting in advancing the science of toxicology by providing financial support for the Society’s programs. The vision for the SOT Endowment Fund is to establish and increase in net worth a set of Endowment Funds that will provide significant, stable, long-term financial support that complements the Society’s revenue from dues and other sources, to aid in achieving the Society’s strategic objectives. Additional information on the Endowment Fund is available at www.toxicology.org/ai/csot/contribute.asp.

A Family of Funds
The SOT Endowment is in reality a family of Funds of two major types; (a) General Purpose Funds, and (b) Specific Purpose Funds. In developing the SOT Endowment Fund, it was recognized that the Society of Toxicology has multiple needs. Moreover, it has been recognized that individual SOT members and other individuals or organizations, as prospective donors, have varied interests and would like the opportunity to have their gift matched with their interests. In response to these needs and interests, a family of Funds has been created that is expected to grow over time.

General Purpose Funds
The four General Purpose Funds, whose purposes are aligned with the long-term strategic priorities of the SOT, are described below. When these General Purpose Funds were created, it was anticipated that they would soon attract sufficient contributions such that they would be designated as Permanently Restricted Net Asset Fund and continued in perpetuity.

Education Fund
Educational activities have been a cornerstone of the SOT since its founding. Early activities focused on graduate education. Later educational efforts expanded to include postdoctoral fellow training and continuing education. More recently, activities have been expanded to include kindergarten through grade 12 and education of the public. Proceeds from this Fund will be used, at the discretion of the SOT Council, to enhance focused targets of opportunity for enhancing the SOT’s educational initiatives.

International Activities Fund
The SOT has always had a strong international orientation and been open to members from around the world. Today, one of every 8 members of the SOT is from outside the United States attesting to the international nature of the Society. Science, including the science of toxicology, had global dimensions long before it became fashionable to refer to a global economy. Proceeds from this Fund will be used, at the discretion of the SOT Council, to help the Society provide global leadership for advancing the science of toxicology.

SOT Priority Needs Fund
The proceeds from this Fund will be used to create a margin of excellence in advancing priority needs for advancing the SOT and advancing the science of toxicology as identified by the SOT Council.

Student Travel Fund
From the early years of the SOT to the present, there has been strong support from the SOT membership for assisting in meeting the costs of student participation in SOT meetings. Hundreds of students, many of them now leaders in the SOT, attended their first SOT meeting with support provided by the Society. There is still a great need for support for student travel. The proceeds from this Fund, at the discretion of the SOT Council, can help meet that need on a targeted basis.
**Specific Purpose Funds**

Specific Purpose Funds, as the name implies, are created for specific purposes as specified by the donor. In most cases, the purpose of each Specific Purpose Fund is reflected in the name of the Fund. In addition, the name of the Fund may include the name of the donor, be it an individual, a family or an organization. In some cases, the name of the Specific Purpose Fund may include the name of an individual that a donor or group of donors would like to honor. The name and purpose of each Specific Purpose Fund must be approved by the Endowment Fund Board and ratified by the SOT Council. The Specific Purpose Funds that currently exist are briefly described on the following pages.

*The individual Specific Purpose Funds are listed in alphabetical order.*

**Mary Amdur Student Award Fund**  
*Fund Established October 2007*

This Fund was initiated by students and colleagues of the late Mary Amdur to memorialize her substantial contributions to the science of inhalation and respiratory toxicology and to encourage students to pursue a career in this field. The Amdur Student Award Fund is aligned with the Inhalation and Respiratory Specialty Section. Proceeds from this Fund are used to provide stipends that accompany the student awards of the Inhalation and Respiratory Specialty Section.

**Young Soo Choi Student Scholarship Award Fund**  
*Fund Established July 2008*

The Young Soo Choi Student Scholarship Award Fund has been created with an initial generous gift from Young Soo Choi. Proceeds from the Young Soo Choi Student Scholarship Fund will be used to provide a scholarship for graduate training in toxicology to a Korean student (having been born in Korea or, if born in the United States, having one or more parents of Korean descent). The Fund is aligned with the Korean Toxicologists Association in America (KTAA), an SOT Special Interest Group. The Choi Scholarship Fund recipient will be selected by a Committee appointed by the KTAA. The initial scholarship will be given when the Choi Fund has assets of $25,000 and thus, recognition as a Permanently Restricted Net Asset Fund. Young Soo Choi was born in Korea, received her graduate education in the United States and had a distinguished career as a Toxicologist/Expert Pharmacologist at the U.S. Food and Drug Administration.

**Angelo Furgiuele Young Investigator Technology Award Fund**  
*Fund Established July 2008*

The Angelo Furgiuele Young Investigator Technology Award Fund was created with an initial generous gift from Angelo and Christine Furgiuele. The Fund is aligned with the Reproductive and Developmental Specialty Section. Proceeds from the Fund will be used for an Award to be presented to a Young Investigator in the field of reproductive and developmental toxicology to purchase technological enhancements such as computer hardware, software, or analytical equipment that will facilitate the conduct of research by the Award Recipient. The first Angelo Furgiuele Award will be given after the Fund has achieved assets of $25,000 and thus, recognition as a Permanently Restricted Net Asset Fund.
Perry J. Gehring Biological Modeling Student Award Fund
Fund Established July 2008
This Fund was created to honor the legacy of Perry J. Gehring and to encourage students to pursue careers that utilize biological modeling to advance the science of toxicology. The Fund is aligned with the Biological Modeling Specialty Section. This Fund was established with initial generous contributions from the family of the late Perry J. Gehring and his long-time friends, Joe and Teri LeBeau.

Perry J. Gehring Diversity Student Travel Award Fund
Fund Established July 2008
This Fund was created to honor the legacy of Perry J. Gehring and to encourage students from ethnic groups underrepresented in toxicology to pursue careers in toxicology. Proceeds from the Fund will be used to fund one or more Awards to be given to students from an ethnic group underrepresented in toxicology (African American, Hispanic, Native American, or Pacific Islander) thereby assisting the Award Recipients in their participation in the Annual Meeting of the Society of Toxicology. The Committee on Diversity Initiatives will select award recipients based on merit identifying students who have the potential for achieving excellence as a graduate student and ultimately, as a member of the scientific community. This Fund was established with initial generous contributions from the family of the late Perry J. Gehring and his long-time friends, Joe and Teri LeBeau.

Perry J. Gehring Risk Assessment Student Award Fund
Fund Established July 2008
This Fund was created to honor the legacy of Perry J. Gehring and to encourage students to pursue careers that utilize modern toxicological science in risk assessment. The Perry J. Gehring Risk Assessment Student Award Fund is aligned with the Risk Assessment Specialty Section. The Fund was created with initial generous gifts from Barbara Gehring and children and Joe and Teri LeBeau to memorialize Perry J. Gehring’s contributions to toxicology.

Health and Environmental Science Institute Immunotoxicology Young Investigator Student Award Fund
Fund Established July 2008
This Fund, created in July 2008 with an initial generous gift from the International Life Sciences Institute—Health and Environmental Sciences Institute, is intended to advance the education and training of young investigators in the field of Immunotoxicology. Proceeds from the Fund will be used to provide travel stipends to meritorious applicants to assist in the awardees attending and participating in the Annual Meeting of the Society of Toxicology. The Fund is aligned with the Immunotoxicology Specialty Section.

Vera W. Hudson and Elizabeth K. Weisburger Scholarship Fund
Fund Established October 2007
The Vera W. Hudson and Elizabeth K. Weisburger Scholarship Fund was created with a generous gift from Elizabeth K. Weisburger, a long-time member of the SOT. Elizabeth created the Fund to honor the memory of her deceased long-time friend and professional associate, Vera W. Hudson. Proceeds from the Vera W. Hudson and Elizabeth K. Weisburger Fund will be used to fund scholarships for individuals, with preference to women, pursuing graduate studies in Toxicology. The Scholarship Fund is open to receive contributions from other donors who would like to honor Vera and Elizabeth and encourage women in the field of toxicology.

Frank C. Lu Food Safety Student Award Fund
Fund Established November 1998
This Fund, aligned with the Food Safety Specialty Section, predates the establishment of the Endowment Fund and is now a part of the SOT Endowment Fund. It was created with an initial generous contribution from Frank C. Lu, a Charter Member of the SOT. Proceeds from the Fund are used for the stipends that accompany student awards of the Food Safety Specialty Section. These awards have served to foster the interest of students in food safety issues.
Jean Lu Student Scholarship Award Fund
Fund Established July 2008
The Jean Lu Student Scholarship Award Fund was established with an initial generous gift from Frank C. Lu, a Charter Member of the SOT, in memory of his wife, Jean Lu. The fund was created to provide a lump sum scholarship each year to a Chinese student (having been born in China or, if born in the United States, having one or more parents of Chinese descent), who is interested in graduate training in toxicology. The Fund is aligned with the American Association of Chinese in Toxicology, an SOT Special Interest Group.

Harihara Mehendale Association of Scientists of Indian Origin Student Award Fund
Fund Established July 2008
This Fund was created with an initial generous gift from Harihara and Rekha Mehendale. Proceeds from the Fund will be used to fund Awards that will encourage graduate students and postdoctoral fellows, who are individuals of Indian origin, to pursue advanced studies in the field of toxicology. The Fund is aligned with the Association of Scientists of Indian Origin (ASIO) Special Interest Group.

Roger O. McClellan Student Award Fund
Fund Established October 2007
This Fund was created to encourage individuals trained in Veterinary Medicine to pursue careers in biomedical research including comparative toxicology and pathology. The McClellan Student Award Fund is aligned with the Comparative and Veterinary Specialty Section and the Toxicology and Exploratory Pathology Specialty Section. The Fund was created with an initial generous gift from Roger and Kathleen McClellan. Proceeds from the Fund will be used to provide cash stipends to Award recipients selected on the basis of the scientific merit of papers proposed for presentation at the Annual Meeting. Special consideration will be given to papers that exemplify the role of comparative medicine in evaluating the safety/risks of exposure to chemicals or physical agents. Nominees for the Award(s) must be individuals enrolled in a program leading to a Doctor of Veterinary Medicine (D.V.M.) degree or in a post-D.V.M. residency or graduate program.

Molecular Biology Student Award Fund
Fund Established October 2007
A generous gift from Thomas R. Sutter, when he was Vice President of the Molecular Biology Specialty Section, has stimulated the creation of this Fund. When the total assets in the Fund reach $25,000, as a result of contributions plus matching funds, proceeds from the Fund will be used for stipends to accompany Student Awards given by the Molecular Biology Specialty Section at each SOT Annual Meeting.

Emil A. Pfitzer Drug Discovery Student Award Fund
Fund Established January 2008
This Fund was created to honor the legacy of Emil A. Pfitzer and to encourage students to apply modern toxicologic science in the field of drug discovery. The Fund is aligned with the Drug Discovery Specialty Section. The Fund was created with initial generous contributions from Hoffmann-LaRoche, the Research Institute for Fragrance Materials (RIFM) and the family and friends of Emil Pfitzer. Proceeds from the Emil A. Pfitzer Fund will be used for awards to well-qualified students applying modern toxicology to enhancing the discovery of new drugs and ensuring their safety. The awards will be given based on the quality of scientific papers proposed for presentation at the SOT Annual Meeting and the need for financial assistance for travel to participate in SOT meetings.
Regulatory and Safety Evaluation Student Award Fund  
*Fund Established October 2007*

The Regulatory and Safety Evaluation Specialty Section is in the early stages of developing a Fund with the proceeds to be used to support stipends to accompany student awards given by the Specialty Section at the SOT Annual Meeting.

Renal Toxicology Award Fund  
*Fund Established December 2008*

The Renal Toxicology Fellowship Award Fund was created to provide stipends for students and postdoctoral fellow recipients of this award for excellence in understanding mechanisms of renal toxicity. This Fund is aligned with the Mechanisms Specialty Section. This Fund was established by a group of SOT members who have actively conducted research on the mechanisms of renal toxicity for many years. The donors are interested in fostering the continued advancement of the field of renal toxicology through mechanistic research and have requested that the proceeds from the Fund be used to encourage students and postdoctoral fellows within the first three years of training to conduct research in this field.

The goal of the Renal Toxicology Fellowship Award Fund is that initial contributions and associated matching funds will soon result in the Fund having assets of $25,000 or more, thereby qualifying it as a Permanently Restricted Net Asset Fund.

Robert J. Rubin Student Travel Award Fund  
*Fund Established July 2008*

The Robert J. Rubin Student Travel Fund was created by an initial generous gift from one of his former students, Mark R. Montgomery. Proceeds will be used to provide travel awards to one or more graduate students to participate in the Annual Meeting of the SOT. Recipients of the Rubin Award will be selected by a Committee jointly appointed by the leadership of the Mechanisms Specialty Section and the Risk Assessment Specialty Section, the two Specialty Sections with which the Fund is aligned. The award recipient(s) will be selected based on the scientific quality of the abstract of a presentation that applies mechanistic toxicology to risk assessment and that has been accepted for presentation at an Annual Meeting of the Society of Toxicology.

Dharm V. Singh Association of Scientists of Indian Origin Student Award Fund  
*Fund Established February 2008*

This fund was created with an initial generous gift from Dharm V. Singh to provide awards to students of Indian Origin to encourage them to pursue a career in toxicology. The Fund is aligned with the Association of Scientists of Indian Origin (ASIO) Special Interest Group.

Carl C. Smith Mechanisms Student Award Fund  
*Fund Established March 1983*

This Fund, aligned with the Mechanisms Specialty Section, predates the establishment of the SOT Endowment Fund and is now a part of the Endowment Fund. In many ways, it has served as a template for many of the new Special Purpose Funds. It was created in large part through the leadership and financial support of Carl C. Smith and his wife, Thelma. Through the years, the proceeds of the Fund have provided the financial stipends that have accompanied student awards of the Mechanisms Specialty Section; awards given in recognition of excellence to encourage students to conduct research on mechanisms of action of toxic agents.
Endowment Fund (Continued)

Employer Matching Funds
Some SOT members are employed by corporations that have programs for matching employee contributions to charitable organizations like the Society of Toxicology. Individuals are encouraged to check and see if their employer has such a program and if so, make that known to the SOT when making their contributions to the Endowment Fund.

SOT Matching Funds
To stimulate the growth of the Endowment Fund, the Endowment Fund Board, the Finance Committee, and Council all took necessary steps to enable the SOT to use unrestricted SOT funds to match donor contributions to the SOT Endowment Fund. The Matching Program, as ratified by Council, identified as the “SOT 50th Anniversary Match.”

Through Matching Fund program, the match represents a doubling of the value of the donor contribution and thus, twice the assets available to provide long-term funding to the activities supported by the Fund to which they contribute.

Endowment Fund Recognition Levels
The SOT Endowment Fund has tiered recognition levels intended to encourage contributions to the Endowment Fund.

### Individual Contributions

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<thead>
<tr>
<th>Recognition Level</th>
<th>Contribution in a Fiscal Year</th>
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<tr>
<td>Paracelsus Circle</td>
<td>$500 or more</td>
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<tr>
<td>Gold</td>
<td>$250–$499</td>
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<tr>
<td>Silver</td>
<td>$100–$249</td>
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<tr>
<td>Bronze</td>
<td>$40–$99</td>
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Corporate/Institutional Recognition Levels for the SOT Endowment Fund are the same as those used by the SOT for corporate contributors to the Annual Meeting and are shown below:

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<tr>
<th>Recognition Level</th>
<th>Contribution in a Fiscal Year</th>
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</thead>
<tbody>
<tr>
<td>Diamond</td>
<td>$10,000 or more</td>
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<tr>
<td>Platinum</td>
<td>$5,000–$9,999</td>
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<tr>
<td>Gold</td>
<td>$2,500–$4,999</td>
</tr>
<tr>
<td>Silver</td>
<td>$1,000–$2,499</td>
</tr>
</tbody>
</table>

MAKE A CONTRIBUTION

Please consider making a contribution to one of the Funds within the SOT Endowment Fund. In making a contribution, you will be joining more than 350 individuals, families, and organizations who have already made contributions. You can select one of the 24 different Funds within the Endowment Fund as a gifting option. Alternatively, if you are interested in personally creating a new Fund or providing leadership within a Specialty Section or Special Interest Group for creation of a new Fund, contact Roger O. McClellan, Chair, SOT Endowment Fund Board.

A gift to the SOT Endowment Fund is a marvelous way to honor or memorialize a mentor, colleague, or family member. For senior members of the SOT, a contribution to the Endowment Fund is a way of recognizing the benefits gained from being a member of the SOT. The proceeds from many of the Funds support student awards; your gift will help encourage students who represent the future of toxicology.

You can use the form on the next page to make a contribution at this meeting by dropping it off at the SOT Office (Room 332). Alternatively, you can fax or mail the form to SOT Headquarters.

YOUR GIFT TO THE SOT ENDOWMENT WILL HELP BUILD THE FINANCIAL FUTURE OF THE SOT!
DONOR CONTRIBUTION FORM

DCM09

The SOT Endowment Fund is a family of Funds created to match the interests of Donors with the future financial needs of the SOT Special Interest Groups and its Specialty Sections. The individual Funds and Recognition Levels are briefly described on the reverse side of this form. This form is also available on-line on the SOT Web site.

Contribution
☐ I wish to contribute to the Fund(s) marked in the amount(s) noted. If a specific Fund is not marked, your gift will be credited to the SOT Priority Needs Fund. I understand that my gift will be matched, dollar for dollar, by unrestricted SOT funds (Council has currently authorized the matching of up to $500,000 in total contributions, nearly $300,000 has been used as of 7/01/2008).

Name: ____________________________________________

Affiliation: _______________________________________

Address: _________________________________________

Telephone Number: _______________________________

E-mail: __________________________________________

Donor is a  ☐ Member  ☐ Non-Member
☐ I wish to be identified by name as an Endowment Fund Donor by Recognition Level, as shown on the reverse side, in the SOT Endowment Fund Annual Report and other reports.

Payment
☐ Enclosed is a check for $ _________________________

☐ American Express  ☐ Visa  ☐ MasterCard
Credit Card Number: ______________________________
Expiration Date: _________________________________
CCV Number: _______ (3 or 4 digit numbers on the back/front of credit card)
Name on Card: ________________________________
Signature: _____________________________________
Date: _________________________________________

☐ Other means of payment, contact SOT Headquarters (Clarissa Wilson, (703) 438-3115 with details).

Donor Information

Name(s) for acknowledgement of contribution:

Joint contributor (if applicable) is a  ☐ Member  ☐ Non-Member
☐ I do not want to be publicly identified as a Donor, I wish to remain anonymous.

Recognition of Others: I am giving my gift in memory/honor of the following individual:

☐ In memory of: ____________________________________

☐ In honor of: _____________________________________

Paracelsus Circle Lifetime Member
☐ I intend to contribute $5,000 or more within ten years in order to be a lifetime member of the Paracelsus Circle.

Matching Contribution
☐ My employer will match my contribution. (Please enclose your employer’s Matching Gift Form if it is available.)

Employer: _______________________________________

Additional Information

Please contact me concerning the following:

☐ To assist in arranging a Corporate Gift or other assets

☐ Purchasing a Charitable Gift Annuity

☐ Naming the SOT Endowment Fund in my Will or Trust

☐ Establishing a new Fund

☐ Contributing securities, property, etc.

☐ Other (please provide detail) ______________________

Mail or Fax to:
Society of Toxicology Endowment Fund
1821 Michael Faraday Drive, Suite 300 Reston, VA 20190
Fax: (703) 438-3113

up-to-date information at www.toxicology.org
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.

GENERAL PURPOSE 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.
- Student Travel: Proceeds from this Fund will be used to support student travel.

SPECIFIC PURPOSE STUDENT AWARD FUNDS: These Funds provide proceeds to support Student Awards linked to the various Specialty Sections (SS).
- Mary Amdur—Inhalation and Respiratory SS
- Young Soo Choi—Korean Toxicologists Association in America SIG
- Angelo Furguiele Young Investigator Technology—Reproductive and Developmental SS
- Perry J. Gehring—Biological Modeling SS
- Perry J. Gehring—Committee on Diversity Initiatives
- Perry J. Gehring—Risk Assessment SS
- Health and Environmental Science Institute—Immunotoxicology SS
- Frank C. Lu—Food Safety SS
- Jean Lu—American Association of Chinese in Toxicology SIG
- Roger O. McClellan—Comparative and Veterinary SS and Toxicologic & Exploratory Pathology SS
- Harihara Mehendale—Association of Scientists of Indian Origin SIG
- Molecular Biology SS
- Emil A. Pfitzer—Drug Discovery SS
- Regulatory and Safety Evaluation SS
- Renal Toxicology Fellowship—Mechanisms SS
- Robert J. Rubin—Mechanisms SS and Risk Assessment SS
- Dharm V. Singh—Association of Scientists of Indian Origin SIG
- Carl C. Smith—Mechanisms SS

OTHER SPECIFIC PURPOSE FUNDS
- Founders Award—Founders Award recipient selected by Awards Committee.
- Vera W. Hudson and Elizabeth K. Weisburger Scholarship—Scholarship recipient selected by Awards Committee. Preference given to women.

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 the SOT Endowment Fund Chair, Roger O. McClellan by telephone: (505) 296-7083 or e-mail: roger.o.mcclellan@att.net or Clarissa Wilson at SOT Headquarters by telephone: (703) 438-3115 or e-mail: cwilson@aim-hq.com.

<table>
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<th>Recognition Levels</th>
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<td><strong>Individual Recognition Level (Cumulative Contributions)</strong></td>
</tr>
<tr>
<td>Benefactor—Cumulative contributions of $10,000 or more</td>
</tr>
<tr>
<td>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.</td>
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<tr>
<td><strong>Individual Recognition Levels (Based on Fiscal Year Giving)</strong></td>
</tr>
<tr>
<td>Paracelsus Circle—$500 or more</td>
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<tr>
<td>Gold—$250–$499 or more</td>
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<tr>
<td>Silver—$100–$249 or more</td>
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<tr>
<td>Bronze—$40–$99 in a given year</td>
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<tr>
<td><strong>Corporate/Institutional Recognition Levels (Based on Fiscal Year Giving)</strong></td>
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<tr>
<td>Diamond—Over $10,000</td>
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<td>Platinum—$5,000–$9,999</td>
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<td>Gold—$2,500–$4,999</td>
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<tr>
<td>Silver—$1,000–$2,499</td>
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</tbody>
</table>

Donors who give $40 or more will be identified by name in the SOT Endowment Fund Annual Report and other Fund literature unless they wish to remain anonymous. In the case of couples who are both members of the SOT, the Recognition Level is based on the contribution of each individual. Thus, a $500 joint contribution from a couple who are both members of the SOT is recognized at the Gold Level and a $1,000 joint contribution is recognized at the Paracelsus Circle Level.

501(c)3 Charitable Organization

The SOT Endowment Fund is part of the Society of Toxicology, a Charitable, 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.
SOT Affiliates

Abbott Laboratories
Abbott Park, Illinois

AEGis Technologies Group, The
Orlando, Florida

Agilent Technologies, Inc.
Wilmington, Delaware

Alcon Research LTD
Fort Worth, Texas

American Chemistry Council
Arlington, Virginia

American Petroleum Institute
Washington, D.C.

Ani Lytics, Inc.
Gaithersburg, Maryland

AstraZeneca R&D
Södertälje, Sweden

BASi Evansville
Mount Vernon, Indiana

Battelle
Columbus, Ohio

Bayer
Stilwell, Kansas

Bayer HealthCare Pharmaceuticals
Montville, New Jersey

Biogen Idec, Inc.
Cambridge, Massachusetts

Boehringer Ingelheim Pharmaceuticals, Inc.
Ridgefield, Connecticut

Bristol-Myers Squibb Company
Princeton, New Jersey

CANTOX
Mississauga, Ontario, Canada

Celsis In Vitro Technologies
Baltimore, Maryland

Charles River
Wilmington, Massachusetts

Chevron Corporation
Richmond, California

Chlorine Chemistry Division
Arlington, Virginia

Colgate-Palmolive Company
Piscataway, New Jersey

Covance Laboratories Inc.
Madison, Wisconsin

Daichi Sankyo Company Limited
Shizuoka, Japan

Dial Corporation,
A Henkel Company, The
Scottsdale, Arizona

Dow Chemical Company, The
Midland, Michigan

Dow Corning Corporation
Midland, Michigan

DuPont Haskell Global Centers for Health and Environmental Sciences, The
Newark, Delaware

ExxonMobil Biomedical Sciences, Inc.
Annandale, New Jersey

Genentech, Inc.
San Francisco, California

GlaxoSmithKline
King of Prussia, Pennsylvania

Hammer Institutes for Health Sciences, The
Research Triangle Park, North Carolina

Harlan Laboratories, Inc.
Indianapolis, Indiana

Hoffmann-La Roche, Inc.
Nutley, New Jersey

Honeywell International, Inc.
Morristown, New Jersey

J&J Pharma R&D Companies
(Centocor, J&JPRD, Tibotec)
Raritan, New Jersey

Lilly Research Laboratories
Indianapolis, Indiana

Merck & Co., Inc.
West Point, Pennsylvania

Millennium Pharmaceuticals, Inc.
Cambridge, Massachusetts

MPI Research
Mattawan, Michigan

Novartis Pharmaceuticals Corporation
East Hanover, New Jersey

Pfizer Inc
Groton, Connecticut

Procter & Gamble Company
Cincinnati, Ohio

RTC Research Toxicology Centre S.P.A.
Pomezia, Italy

sanofi-aventis
Bridgewater, New Jersey

Schering-Plough Research Institute
Kenilworth, New Jersey

Sequani, Ltd.
Ledbury, Herefordshire, United Kingdom

Suburban Surgical Company, Inc.
Wheeling, Illinois

WIL Research Laboratories, LLC
Ashland, Ohio

Wyeth Research
Collegeville, Pennsylvania
### Headquarters Staff

**Society of Toxicology Headquarters**  
1821 Michael Faraday Drive, Suite 300, Reston, Virginia 20190  
Tel: (703) 438-3115 • Fax: (703) 438-3113 • E-mail: sothq@toxicology.org • Web site: www.toxicology.org

<table>
<thead>
<tr>
<th>Staff Contact</th>
<th>Extension</th>
<th>E-mail</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shawn Douglas Lamb</td>
<td>1444</td>
<td><a href="mailto:shawnl@toxicology.org">shawnl@toxicology.org</a></td>
<td>Executive Director</td>
</tr>
<tr>
<td>Clarissa Russell Wilson</td>
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<td><a href="mailto:clarissa@toxicology.org">clarissa@toxicology.org</a></td>
<td>Deputy Executive Director</td>
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<tr>
<td>Rosibel Alvarenga</td>
<td>1432</td>
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<td>Membership Services</td>
</tr>
<tr>
<td>Allison Branco Maxwell</td>
<td>1437</td>
<td><a href="mailto:allison@toxicology.org">allison@toxicology.org</a></td>
<td>Membership Services, Regional Chapters, Special Interest Groups</td>
</tr>
<tr>
<td>Donna Breskin</td>
<td>1440</td>
<td><a href="mailto:donna@toxicology.org">donna@toxicology.org</a></td>
<td>Administration</td>
</tr>
<tr>
<td>Chris Cerniglia</td>
<td>1445</td>
<td><a href="mailto:chris@toxicology.org">chris@toxicology.org</a></td>
<td>Publications/World Wide Web</td>
</tr>
<tr>
<td>Sue Curran</td>
<td>1445</td>
<td><a href="mailto:sue@toxicology.org">sue@toxicology.org</a></td>
<td>Publications</td>
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<tr>
<td>Jim Dailey</td>
<td>1428</td>
<td><a href="mailto:jimd@toxicology.org">jimd@toxicology.org</a></td>
<td>Endowment/Registration</td>
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<tr>
<td>Betty Eidemiller</td>
<td>1430</td>
<td><a href="mailto:bettye@toxicology.org">bettye@toxicology.org</a></td>
<td>Education, Committee on Diversity Initiatives, Membership Services, Postdoctoral Assembly, Research Funding, Student Advisory Council</td>
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<tr>
<td>Veronica Fisher</td>
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<td><a href="mailto:vfisher@toxicology.org">vfisher@toxicology.org</a></td>
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<td>Krystle Gulley</td>
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<td>Nancy Holahan</td>
<td>1438</td>
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Easy on-line membership application takes approximately 15 minutes to complete.

Special Offer to Non-Member SOT 2009 Annual Meeting Attendees:

• Apply for SOT membership between January 15, 2009, and the May 1, 2009, deadline, and if accepted, SOT will waive your 2009 dues.
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1. To present new developments in toxicology.
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3. To provide attendees an opportunity to learn about the emerging fields and how they apply to toxicology.

**SESSION TYPES**

- **Continuing Education**—Emphasis on quality presentations of generally accepted, state-of-the-art 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

You can now submit your proposal on-line at [www.toxicology.org](http://www.toxicology.org)

**2010 Thematic Approach**

The Scientific Program Committee will continue the thematic approach for the 2010 Annual Meeting. All proposal submissions will be reviewed for their relevance under the following themes—Cell Signaling, Gene-Environment Interactions, Metabolic Disease, Mitochondrial Basis of Disease, Toxicity Testing in the 21st Century, and Translational Toxicology for the 2010 meeting. Please note that while we are actively soliciting proposals for the themes listed above, all proposal submissions will be reviewed under the current criteria for their timeliness and relevance to the field of toxicology.

Please refer to the Scientific Program Overview on the fold-out cover for a list of 2009 sessions highlighted under the thematic approach.
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