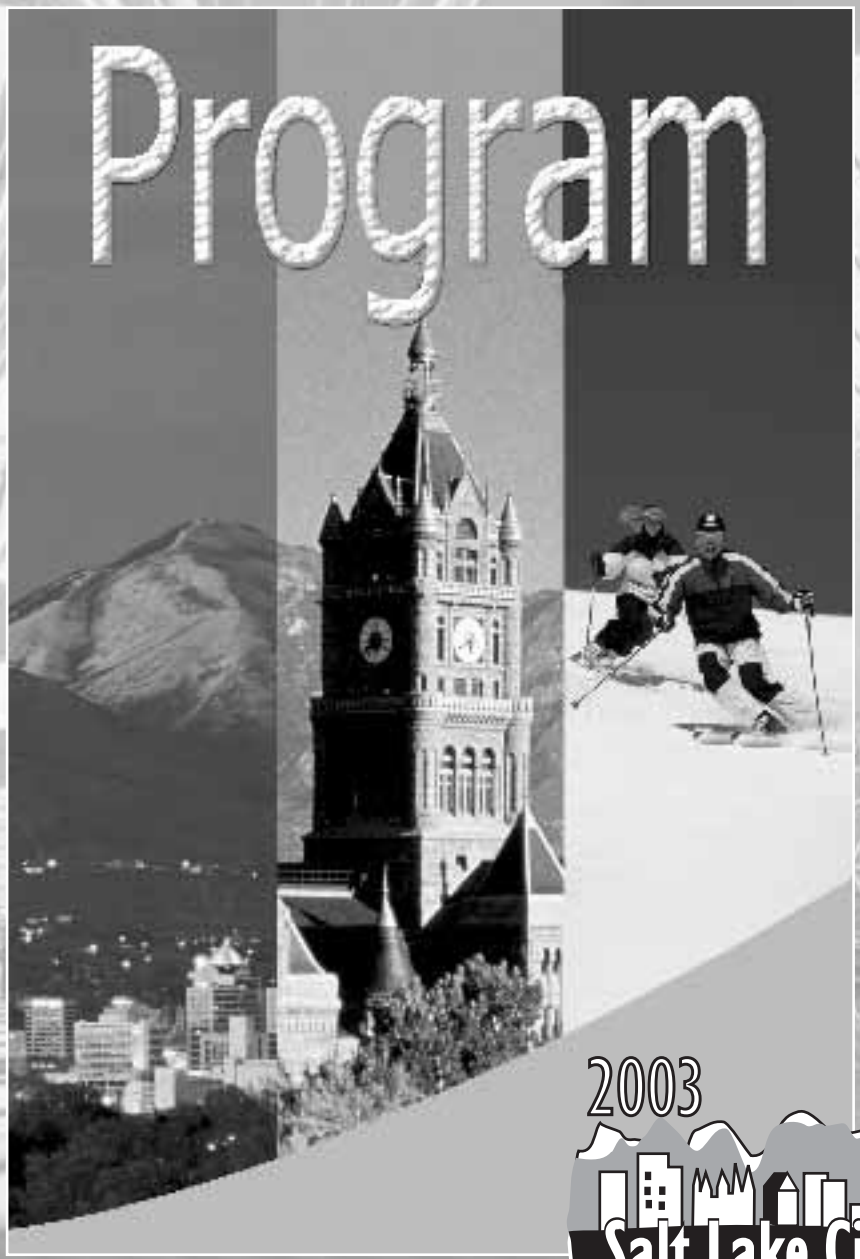
Society of Toxicology

42nd Annual Meeting & ToxExpo™



MARCH 9 • 10 • 11 • 12 • 13

Society of Toxicology

March 9–13, 2003

Salt Lake City

The Society of Toxicology is pleased you could join us in Salt Lake City for our 42nd Annual Meeting. The Program and Continuing Education Committees have done an outstanding job. Thanks to the active participation of our scientists, over 1900 abstracts will be presented at the 2003 SOT Annual Meeting.

Salt Lake City, home base for the 2002 Winter Olympics, offers the opportunity to combine cutting-edge science, comradery, and spring skiing—an unbeatable combination! Sharpen those edges and I will see you at the meeting and on the slopes.

William F. Greenlee
SOT President

2003 Salt Lake City

42nd Annual Meeting &

Photographers-Covers and throughout the Program publication and displayed at the Salt Palace Convention Center during the SOT Annual Meeting: Steve Greenwood (Salt Palace Convention Center and Lobby Concourse), Alan Yorgason (Salt Lake Skyline), Salt Lake Convention and Visitors Bureau (City and County Building), James Niehues (Salt Lake Area Resort Map).

Society of Toxicology

Contents

Program
42nd Annual Meeting

SOT Annual Meeting Information

Did You Know...

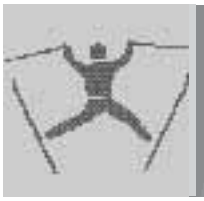
all the Annual Meeting information and forms you're interested in are available through the Society of Toxicology Web site?
Check it Out!

Visit the Society of Toxicology Web site today!

www.toxicology.org

Sessions Index

Continuing Education Courses



Program

SOT References

Sunday, March 9

CONTINUING EDUCATION
SUNRISE MINI-COURSE
7:00 AM–7:45 AM

1. Sunrise Mini-Course: Application of Stem Cells in Biomedical Research

CONTINUING EDUCATION
MORNING COURSES
8:15 AM–12:00 NOON

2. Essential Informatics for Toxicologists
3. Unfolding the Secrets in Culturing Brain Cells: Theory, Techniques, and Beyond
4. The Nuts and Bolts of Genetically Engineered Mice in Toxicology
5. Fundamentals of Risk Assessment and Applications of Recent Methodologies to Difficult Problems
6. Cutaneous Toxicity–Current Methods and Concepts in Safety Evaluation and Relevance to Human Exposure
7. Medicinal Herbals and Dietary Supplements

CONTINUING EDUCATION
AFTERNOON COURSES
1:15 PM–5:00 PM

8. Genomic and Proteomic Array Formats on the Cutting-Edge
9. Integrating Toxicologic Pathology into Compound Evaluation and Risk Assessment II
10. Choice and Application of Classical, Population or Physiologically-Based PK for Chemical Assessment and Pharmaceutical Development
11. Evaluation of Immunomodulation in Safety Assessment
12. The Effects of Non-Reproductive Hormones on the Reproductive System and the Implications for Toxicology
13. Epigenetics of Cancer

Monday, March 10

PLENARY LECTURE
8:30 AM–9:15 AM
Smallpox: The Death and Resurrection of a Virus.
Lecturer: Dr. Donald Henderson, Office of Public Health Preparedness, HHS

SYMPOSIA
9:30 AM–12:00 NOON
Understanding Mechanisms of Toxicity of Immunosuppressive Drugs to Improve Their Safety Profiles and Broaden the Scope of Their Use
9:30 AM–12:00 NOON
Use and Application of Stem Cells in Toxicology
1:30 PM–4:30 PM
Free Radicals in the Toxicity of Alcohols
1:30 PM–4:30 PM
Gene-Environment Interactions *In Utero*: The Fetal Basis of Adult Disease
1:30 PM–4:30 PM
Health Risk Assessment of Hexavalent Chromium in Drinking Water: Carcinogenicity, Research, and Regulation
1:30 PM–4:30 PM
World Trade Center Aftermath: Looking Back Towards the Future

WORKSHOPS
9:30 AM–12:00 NOON
Bioterrorism and Its Toxicological Effects
9:30 AM–12:00 NOON
Cumulative Risk Assessment: Getting from Toxicology to Quantitative Analysis
1:30 PM–4:30 PM
Dermal Exposure Leading to Respiratory Tract Sensitization and Disease: A Trivial or Critical Link?

MRC LECTURE
12:15 PM–1:15 PM
Prion Pathogenesis: A Journey Through Gut, Spleen, and Nerves
Lecturer: Dr. Adriano Aguzzi, Department of Pathology, University Hospital Zurich

PLATFORM SESSIONS
9:30 AM–12:00 NOON
Epigenetic Mechanisms in Carcinogenesis
Kidney I
Molecular Mechanisms of Oxidative Injury
Proteomic and Genomic Technologies in Biomarker Development
1:30 PM–4:30 PM
Characterization of Toxicant Signatures Using Gene Expression Microarrays
Deregulation of Signal Transduction Mechanisms by Toxicants
Mechanisms of Apoptosis

POSTER SESSIONS
9:30 AM–12:30 PM
Biological Models
Drinking Water Risk Assessment
Female Reproductive System
Hypersensitivity/Allergy
Metal Neurotoxicity I
Metal Toxicity
Minerals and Man-Made Fibers
Pharmaceutical Toxicity Testing
Respiratory Tract I
Role of Environmental Agents in Cardiovascular Disease
1:30 PM–4:30 PM
Carcinogenicity Bioassays
Cytochrome P450 Regulation by Xenotiotics
Genetic Polymorphism in Toxicity and Metabolism
Immunotoxicological Methods/Method Validation
Metal Neurotoxicity II
Multigeneration Reproductive Toxicity
Neurotoxicology: General
Oxidative Injury
Pesticides
Signal Transduction
Toxicogenomics and Proteomics I

Tuesday, March 11

SYMPOSIA
8:30 AM–11:30 AM
Effects of Bystander Cells: Implications for Low-Dose Extrapolation of Chemical and Radiation-Induced Cancer Risk
8:30 AM–11:30 AM
Genomics and Proteomics in Reproductive and Developmental Toxicity
8:30 AM–11:30 AM
Red Tides: A Recurring Public Health Problem
8:30 AM–11:30 AM
Stress Activated Signal Transduction Pathways
1:30 PM–4:30 PM
Advances in Toxicogenomics: NIEHS National Center for Toxicogenomics
1:30 PM–4:30 PM
Molecular Mechanisms of Cardiovascular Toxicity of Metals and Metalloids
1:30 PM–4:30 PM
Novel Insights into the Toxicology of Lung Oxidative Stress

WORKSHOPS
8:30 AM–11:30 AM
Metal Speciation in Toxicology: Determination and Importance for Risk Assessment
1:30 PM–4:30 PM
Challenges of the Developmental Neurotoxicity Study
1:30 PM–4:30 PM
Mode of Action in Assessing Human Relevance of Animal Tumors: Improving the Framework for Analysis

SPECIAL WORKSHOP
7:15 AM–8:15 AM
A Conversation with the Director of the NCER, U.S. EPA—Dr. Peter Preuss
7:15 AM–8:15 AM
A Conversation with the Director of the NIOSH—Dr. Albert Munson

DEBATE
12:00 NOON–1:00 PM
SOT/EUROTOX Debate
Motion: Pharmaceuticals in Drinking Water Pose a Risk to Human and Environmental Health

PLATFORM SESSIONS
8:30 AM–11:30 AM
Gene Expression Markers of Toxicity
Immunotoxicology I
Particles and Allergic Asthma
1:30 PM–4:30 PM
Developmental Toxicity Mechanisms
Immunotoxicology II
Methods to Evaluate Hypersensitivity/Allergy
Nuclear, Cytosolic and Membrane Receptor-Mediated Xenobiotic Signal Transduction I

POSTER SESSIONS
9:30 AM–12:30 PM
Chemical & Biological Weapons
Developmental Neurotoxicology
Disposition/Pharmacokinetics
Endocrine System
In Vitro Toxicology Models
Risk Assessment I
Toxicogenomics and Proteomics II
1:30 PM–4:30 PM
Environmental/Ecotoxicology
Epidemiology/Exposure Assessment
Genotoxicity: Damage and Repair
In Vitro Toxicity Models to Minimize Animal Use
Inhibition of Carcinogenesis
Liver/Gastrointestinal System
Metals: Genotoxicity, Gene Expression and Carcinogenicity
Physiologically Based Pharmacokinetic Models

Wednesday, March 12

SYMPOSIA

8:30 AM–11:30 AM
Children's Health Risk: What's So Special About the Developing Immune System?

8:30 AM–11:30 AM
Temporal Specific Expression of Toxicant-Metabolizing Enzymes: Implications for Life-Stage-Dependent Toxicity

1:30 PM–4:30 PM
Fundamentals of Protein Allergenicity: Why are Some Proteins Allergenic?

INNOVATIONS IN TOXICOLOGICAL SCIENCES

8:30 AM–11:30 AM
Beyond Genomics: Image Analyses and Computational Biology

INNOVATIONS IN APPLIED TOXICOLOGY

1:30 PM-4:30 PM
Genomic and Proteomic Analysis of Surrogate Tissues for Assessing Toxic Exposures and Disease States

WORKSHOPS

8:30 AM–11:30 AM
Occupational Lung Disease in Response to Mixed Exposures: Approaches to Identify the Toxicity of Process-Dependent Contaminants

1:30 PM–4:30 PM
Dose-Dependent Transitions in Toxic Mechanisms

1:30 PM–4:30 PM
Questions Surrounding Depleted Uranium Toxicity: Answers from the Clinic and the Laboratory

1:30 PM–4:30 PM
Vanilloid Receptors: Mediators of Respiratory Injury

ISSUES SESSION

12:00 NOON–1:00 PM
Toxicology: Ethical, Legal, and Social Issues

SPECIAL WORKSHOPS

7:00 AM–8:15 AM
Placement Committee Roundtable: Insulation and Repair of Your Professional Career

12:00 NOON–1:00 PM
A Conversation with the Assistant Administrator of the ATSDR—Dr. Henry Falk

12:00 NOON-1:00 PM
A Conversation with the Director of the NIEHS—Dr. Kenneth Olden

PLATFORM SESSIONS

8:30 AM–11:30 AM
Genotoxicity: Models, Mechanisms, and Mutagenicity
Hypersensitivity
TCDD & POPs

1:30 PM–4:30 PM
Burroughs Wellcome Fund New Investigator Session
Endocrine System
Gene-Environment Interactions in Cardiovascular Disease
In Vitro Models of Hepatotoxicity

POSTER SESSIONS

9:30 AM–12:30 PM
Biomarkers of Exposure and Effect
Cellular and Molecular Neurotoxicology
DNA and Protein Adducts as Biomarkers
Food Safety/Nutrition
Gene Expression I
Gene Expression II Toxicogenomics
In Vitro/Alternative Test Models for Developmental Toxicity
Male Reproductive System
Mechanisms of Carcinogenesis
Metals: Signal Transduction and Oxidative Stress

1:30 PM–4:30 PM
Biotransformation
Cytochrome P450-Mediated Metabolism of Xenobiotics II
Eye
Hydrocarbons I
Immunotoxicology III
Juvenile Toxicity, and Developmental Toxicity in Nonrodent Species
Metals and the Respiratory Tract
Methods in Inhalation Toxicology
Neurotoxicity, Pesticides
Reactive Intermediates and Bioactivation Pathways of Xenobiotics
Respiratory Tract II
Safety Evaluation I

Thursday, March 13

SYMPOSIA

8:30 AM–11:30 AM
Biomarkers of Efficacy of Chemopreventive Agents in Animal Models and in Humans

8:30 AM–11:30 AM
Environmental Modulation of Puberty

WORKSHOP

8:30 AM–11:30 AM
Methods for the Identification and Characterization of Chemical Respiratory Allergens

SPECIAL WORKSHOP

7:15 AM–8:15 AM
A Conversation with the Assistant Administrator of the Office of Research and Development, U.S. EPA—Dr. Paul Gilman

PLATFORM SESSIONS

8:30 AM–11:30 AM
Cytochrome P450-Mediated Metabolism of Xenobiotics I
Hydrocarbons II
Toxicogenomic Evaluation of Hepatototoxicity Mechanisms

POSTER SESSIONS

8:30 AM–11:30 AM
Apoptosis
Developmental Toxicity Testing
Glutathione
Immunotoxicology IV
Kidney II
Metal Exposure, Transport and Distribution
Natural Products
Nuclear, Cytosolic, and Membrane Receptor-Mediated Xenobiotic Signal Transduction II
Regulatory/Policy
Risk Assessment II
Safety Evaluation II
Skin
TCDD & POPs I
TCDD & POPs II

Special Events Sponsored by the Society of Toxicology

SATURDAY, MARCH 8

2:00 PM–5:00 PM
Committee Chair Meeting

4:00 PM–7:00 PM
Registration Desk Opens

5:30 PM–8:45 PM
Undergraduate Education Program for Minority Students

SUNDAY, MARCH 9

8:00 AM–5:00 PM
Undergraduate Education Program

5:15 PM–6:30 PM
Awards Presentation

6:30 PM–7:30 PM
Welcoming Reception

7:00 PM–8:00 PM
25-Year Member Reception

7:30 PM–8:30 PM
Student/Post-Doctoral Fellow Mixer

MONDAY, MARCH 10

8:00 AM–1:00 PM
Undergraduate Education Program for Minority Students

9:30 AM–11:45 AM
Poster Session for Visiting Students

12:00 NOON–1:00 PM
Regional Chapter Contacts for K–12 Education Meeting

4:30 PM-6:00 PM
Placement–Career Development Seminar: Putting It All Together Professionally

4:30 PM-5:30 PM
Undergraduate Toxicology Teaching Forum

4:30 PM–6:00 PM
Specialty Section Presidents Meeting

6:00 PM–7:30 PM
Specialty Section Receptions: Epidemiology, Immunotoxicology, Mechanisms, Occupational Health, Risk Assessment, Toxicologic and Exploratory Pathology

Various Times
Regional Chapter Meetings/Receptions

TUESDAY, MARCH 11

7:00 AM–8:30 AM
Regional Chapter Presidents Meeting

7:00 AM–8:30 AM
Student Advisory Committee Meeting

7:45 AM–4:30 PM
Paracelsus Goes to School Teacher Workshops

7:45 AM–11:45 AM
Mentor Training for K–12 Outreach

12:00 NOON–1:15 PM
In Vitro Toxicology Lecture and Luncheon

2:00 PM–4:00 PM
Grantsmanship Forum

4:30 PM–6:00 PM
Annual Business Meeting

6:00 PM–7:30 PM
Specialty Section Receptions: Biological Modeling, Carcinogenesis, Inhalations, Metals, Neurotoxicology, Regulatory and Safety Evaluation

Various Times
Regional Chapter Meetings/Receptions

WEDNESDAY, MARCH 12

7:15 AM–8:15 AM
Town Meeting: Meeting the Publication Needs of the Toxicology Community
Presiding: Marion Ehrich, Vice President

4:40 PM–5:30 PM
Council Meeting with Students/Post-Doctoral Fellows

5:30 PM–6:00 PM
SOT Council Meeting with Student Advisory Committee

6:00 PM–7:30 PM
Specialty Section Receptions: Comparative and Veterinary, Dermal, Food Safety, *In Vitro*, Molecular Biology, Reproductive and Developmental, Women In Toxicology

Various Times
Regional Chapter Meetings/Receptions

SOT Annual Meeting Events Calendar

Saturday — March 8, 2003

Events are listed alphabetically by the event start time.

8:00 AM to 1:00 PM
Council Meeting
Convention Center
Ken Knight Boardroom

12:00 NOON to 3:00 PM
IUTOX Executive Committee Meeting I
Marriott Downtown Hotel
Executive Boardroom

2:00 PM to 5:00 PM
Committee Chair Meeting
Convention Center
254 B

4:00 PM to 7:00 PM
Message Center/Lodging Information Booth
Convention Center
Registration Area

4:00 PM to 7:00 PM
Registration
Convention Center
Registration Area

4:00 PM to 7:00 PM
Speaker Ready Room
Convention Center
252 A

5:30 PM to 8:45 PM
Education Fellowship Interviews
Wyndham Hotel
Millcreek

5:30 PM to 6:00 PM
Undergraduate Education Program Orientation for SOT Hosts, Peer Mentors and Advisors
Wyndham Hotel
Wasatch Ballroom 2

6:15 PM to 7:00 PM
Continuing Education Walk-Through
Convention Center
250 A

6:30 PM to 8:45 PM
Undergraduate Education Program for Minority Students
Wyndham Hotel
Wasatch Ballroom

Sunday — March 9, 2003

Events are listed alphabetically by the event start time.

7:00 AM to 7:45 AM
Continuing Education Sunrise Mini-Course
(Ticket Required)
Convention Center
Ballroom A

7:00 AM to 5:00 PM
Message Center/Lodging Information Booth
Convention Center
Registration Area

7:00 AM to 5:00 PM
Registration
Convention Center
Registration Area

7:00 AM to 5:00 PM
SOT Office
Convention Center
254 A

7:00 AM to 5:30 PM
Speaker Ready Room
Convention Center
252 A

7:30 AM to 5:30 PM
Childcare Services
Marriott Downtown Hotel
Wasatch Room

7:30 AM to 2:30 PM
Concession Stands
Convention Center
Lower Level Concourse

8:00 AM to 4:30 PM
Guest Hospitality Center
Marriott Downtown Hotel
Park City

8:00 AM to 12:00 NOON
IUTOX Executive Committee Meeting II
Marriott Downtown Hotel
Executive Boardroom

8:00 AM to 10:00 AM
Placement Committee Meeting I
Convention Center
Ken Knight Boardroom

8:00 AM to 5:00 PM
ToxExpo™ Setup
Convention Center
Exhibit Hall

8:00 AM to 5:00 PM
Undergraduate Education Program
Wyndham Hotel
Wasatch Ballroom 1 & 2

8:15 AM to 12:00 NOON
Continuing Education Courses
(Ticket Required)
Convention Center
(See Pages 37-42 for Room Locations)

10:00 AM to 3:30 PM
Placement Services
(Registration Only)
Convention Center
255/256

11:45 AM to 1:15 PM
CE Luncheon for Speakers, Committee, and Students
(By Invitation Only)
Convention Center
254 B

12:00 NOON to 3:00 PM
Toxicological Sciences Editorial Board Meeting
Convention Center
Ken Knight Boardroom

1:00 PM to 4:00 PM
IART Semi-Annual Meeting
Wyndham Hotel
Millcreek

1:00 PM to 5:00 PM
TEF Board Meeting
Wyndham Hotel
Juniper

1:15 PM to 5:00 PM
Continuing Education Courses
(Ticket Required)
Convention Center
(See Pages 37-42 for Room Locations)

4:30 PM to 5:15 PM
Award Recipients Photographed
Convention Center
Ballroom B

5:15 PM to 6:30 PM
Awards Presentation
(All Attendees Welcome)
Convention Center
Ballroom B

6:30 PM to 7:30 PM
Welcoming Reception
(All Attendees Welcome)
Convention Center
Ballroom J

6:45 PM to 7:15 PM
Student Advisory Committee Meeting I
Convention Center
150 G

7:00 PM to 8:00 PM
25-Year Member Reception
(By Invitation Only)
Convention Center
254 B

7:00 PM to 10:00 PM
Gene Logic's Jazz Express Reception
Marriott Downtown Hotel
Sundance

7:30 PM to 9:00 PM
LRRI Reception for Past Employees
Marriott Downtown Hotel
Salon G

7:30 PM to 8:30 PM
Student/Post-Doctoral Fellow Mixer
(All Students and Post-Docs are Invited to Attend)
(Ticket Required)
Convention Center
151 G

8:00 PM to 10:30 PM
Arizona Night
Marriott Downtown Hotel
Deer Valley

SOT Annual Meeting Events Calendar (Continued)

Monday March 10, 2003

Events are listed alphabetically by the event start time.

6:30 AM to 8:00 AM
Metals Specialty Section Officers Meeting
Wyndham Hotel
Shula's Restaurant

6:30 AM to 8:00 AM
Regulatory Affairs and Legislative Assistance
Committee Meeting
Marriott Downtown Hotel
Salon A

7:00 AM to 8:00 AM
American Board of Veterinary Toxicology: Executive Board Meeting
Marriott Downtown Hotel
Cottonwood

7:00 AM to 8:00 AM
Biological Modeling Specialty Section Officers Meeting
Wyndham Hotel
Shula's Restaurant

7:00 AM to 8:30 AM
Committee on Public Communications Meeting
Convention Center
252 B

7:00 AM to 8:30 AM
Continuing Education Committee Meeting
Convention Center
Ken Knight Boardroom

7:00 AM to 8:30 AM
Mechanisms Specialty Section Officers Meeting
Marriott Downtown Hotel
Salon I

7:00 AM to 5:00 PM
Message Center/Lodging Information Booth
Convention Center
Registration Area

7:00 AM to 8:30 AM
Neurotoxicology Specialty Section Officers Meeting
Marriott Downtown Hotel
Salon G

7:00 AM to 8:30 AM
Past Presidents Breakfast
Marriott Downtown Hotel
Solitude

7:00 AM to 5:00 PM
Registration
Convention Center
Registration Area

7:00 AM to 8:30 AM
Regulatory and Safety Evaluation Specialty Section Officers Meeting
Marriott Downtown Hotel
Salon H

7:00 AM to 5:00 PM
SOT Office
Convention Center
254 A

7:00 AM to 5:00 PM
Speaker Ready Room
Convention Center
252 A

7:00 AM to 9:00 AM
Toxicologic and Exploratory Pathology Specialty Section Officers Meeting
Marriott Downtown Hotel
Salon B

7:30 AM to 5:00 PM
Childcare Services
Marriott Downtown Hotel
Wasatch Room

7:30 AM to 9:30 AM
Concession Stands
(Just Breakfast Items)
Convention Center
Lower Level Concourse

7:30 AM to 7:00 PM
Placement Services
Convention Center
255/256

7:30 AM to 8:30 AM
Program Committee Walk-Through
Convention Center
Ballroom B

8:00 AM to 4:30 PM
Guest Hospitality Center
Marriott Downtown Hotel
Park City

8:00 AM to 1:00 PM
Undergraduate Education Program for Minority Students
Wyndham Hotel
Wasatch Ballroom 3 & 4

8:30 AM to 9:15 AM
Plenary Lecture: Smallpox: The Death and Resurrection of a Virus
Dr. Donald Henderson
Convention Center
Ballroom J

9:30 AM to 10:30 AM
Complimentary Coffee in Exhibit Hall
Convention Center
Exhibit Hall

9:30 AM to 2:30 PM
Concession Stands
Convention Center
Exhibit Hall

9:30 AM to 12:30 PM
Poster Sessions
Convention Center
Exhibit Hall

9:30 AM to 12:00 NOON
Scientific Sessions
Convention Center
(See Program Description for Room Locations)

9:30 AM to 4:30 PM
ToxExpo™-Exhibits Open
Convention Center
Exhibit Hall

9:30 AM to 11:45 AM
Poster Session for Visiting Students
Convention Center
Exhibit Hall

10:15 AM to 3:00 PM
Informational Sessions
(Consult the ToxExpo™ Directory *for Session Times and Descriptions)*
Convention Center
Ballroom J

11:30 AM to 1:30 PM
Immunotoxicology Specialty Section Officers Meeting
Wyndham Hotel
Shula's Restaurant

11:30 AM–1:30 PM
Neurotoxicology Specialty Section (NTSS) 2003 Student and Post-Doctoral Fellow Poster Competition
Convention Center
254 B

12:00 NOON to 1:00 PM
Regional Chapter Contacts for K–12 Education
Committee Meeting
Wyndham Hotel
Cottonwood 1 & 2

12:00 NOON to 1:30 PM
Risk Assessment Specialty Section Officers Meeting
Convention Center
Ken Knight Boardroom

12:15 PM to 1:15 PM
MRC Lecture
Prion Pathogenesis: A Journey Through Gut, Spleen, & Nerves
Dr. Adriano Aguzzi
Convention Center
Ballroom B

1:00 PM to 4:00 PM
Undergraduate Education Program Focus Groups
Wyndham Hotel
Red Butte

1:30 PM to 4:30 PM
Poster Sessions
Convention Center
Exhibit Hall

1:30 PM to 4:30 PM
Scientific Sessions
Convention Center
(See Program Description for Room Locations)

1:30 PM to 2:30 PM
VIP ToxExpo™ Exhibit Hall Walk-Through
Convention Center
Exhibit Hall

4:30 PM to 6:00 PM
American Board of Toxicology Mixer/Open Meeting
Marriott Downtown Hotel
Solitude

4:30 PM to 6:00 PM
Placement Career Development Seminar: Putting It All Together Professionally
Convention Center
254 B

4:30 PM to 6:00 PM
Specialty Section Presidents and Vice-Presidents Meeting
Marriott Downtown Hotel
Salon AB

4:30 PM to 5:30 PM
Undergraduate Toxicology Teaching Forum
Wyndham Hotel
Red Butte

5:00 PM to 7:00 PM
Biotrin International Organ and Tissue Specific Biomarkers Meeting
Wyndham Hotel
Wasatch Ballroom 2

5:00 PM to 7:00 PM
EHP Toxicogenomics Annual Editorial Board Meeting
Wyndham Hotel
Parkeys 1

5:00 PM to 7:00 PM
Roundtable of Toxicology Consultants
Marriott Downtown Hotel
Salon D

5:30 PM to 7:00 PM
Taylor and Francis Author and Editor Reception
Marriott Downtown Hotel
Sundance

6:00 PM to 7:30 PM
Epidemiology Specialty Section Reception
Convention Center
150 D

6:00 PM to 7:30 PM
Immunotoxicology Specialty Section Reception
Convention Center
150 G

6:00 PM to 7:30 PM
Mechanisms Specialty Section Reception
Convention Center
Ballroom I

6:00 PM to 8:00 PM
Northeast Regional Chapter Reception
Marriott Downtown Hotel
Salon C

6:00 PM to 7:30 PM
Occupational Health Specialty Section Reception
Convention Center
151 A

6:00 PM to 7:30 PM
Risk Assessment Specialty Section Reception
Convention Center
Ballroom J

6:00 PM to 7:30 PM
TherImmune Research Corporation Reception
(By Invitation Only)
Marriott Downtown Hotel
Salon E

6:00 PM to 7:30 PM
Toxicologic and Exploratory Pathology Specialty Section Reception: Designer Mice in Drug Discovery: Using Genetically Engineered Mice to Prune the Product Portfolio
Dr. Brad Bolon
Convention Center
151 D

7:30 PM to 9:30 PM
Elsevier Science Reception
Wyndham Hotel
Wasatch Ballroom 3

7:30 PM to 9:00 PM
Texas A&M University Alumni Reception
Marriott Downtown Hotel
Salon G

9:00 PM to 11:00 PM
Gulf Coast Regional Chapter Reception
Marriott Downtown Hotel
Sundance

Tuesday March 11, 2003

Events are listed alphabetically by the event start time.

6:30 AM to 8:00 AM
Comparative and Veterinary Specialty Section Officers Meeting
Marriott Downtown Hotel
Salon G

7:00 AM to 8:30 AM
Food Safety Specialty Section Officers Meeting
Convention Center
252 B

7:00 AM to 8:30 AM
Molecular Biology Specialty Section Officers Meeting
Marriott Downtown Hotel
Salon H

7:00 AM to 8:30 AM
Occupational Toxicology Roundtable, Sponsored by Novartis
Marriott Downtown Hotel
Cottonwood

7:00 AM to 8:30 AM
Regional Chapter Presidents Meeting
Marriott Downtown Hotel
Salon AB

7:00 AM to 5:00 PM
Speaker Ready Room
Convention Center
252 A

7:00 AM to 8:30 AM
Student Advisory Committee Meeting II
Wyndham Hotel
Cottonwood 1

7:00 AM to 8:00 AM
ULM Toxicology Alumni Breakfast
Wyndham Hotel
Cedar

7:00 AM to 8:00 AM
Women In Toxicology Specialty Section Officers Meeting
Convention Center
Ken Knight Boardroom

7:15 AM to 8:15 PM
A Conversation with the Director of the NCER, U.S. EPA
Dr. Peter Preuss
Convention Center
Ballroom A

7:15 AM to 8:15 AM
A Conversation with the Director of the NIOSH
Dr. Albert Munson
Convention Center
250 A

7:30 AM to 5:00 PM
Childcare Services
Marriott Downtown Hotel
Wasatch Room

7:30 AM to 9:30 AM
Concession Stands
(Just Breakfast Items)
Convention Center
Lower Level Concourse

7:45 AM to 11:45 AM
Mentor Training For K–12 Outreach
Wyndham Hotel
Wasatch Ballroom 4

7:30 AM to 5:30 PM
Placement Services
Convention Center
255/256

7:45 AM to 4:30 PM
Paracelsus Goes to School
Wyndham Hotel
Wasatch Ballroom 4

8:00 AM to 4:30 PM
Guest Hospitality Center
Marriott Downtown Hotel
Park City

8:00 AM to 4:00 PM
Message Center/Lodging Information Booth
Convention Center
Registration Area

8:00 AM to 4:00 PM
Registration
Convention Center
Registration Area

8:00 AM to 4:00 PM
SOT Office
Convention Center
254 A

8:30 AM to 11:30 PM
Scientific Sessions
Convention Center
(See Program Description for Room Locations)

8:30 AM to 4:30 PM
ToxExpo-Exhibits Open
Convention Center
Exhibit Hall

9:30 AM to 10:30 AM
Complimentary Coffee in Exhibit Hall
Convention Center
Exhibit Hall

9:30 AM to 2:30 PM
Concession Stands
Convention Center
Exhibit Hall

9:30 AM to 12:30 PM
Poster Sessions
Convention Center
Exhibit Hall

10:15 AM to 3:00 PM
Informational Sessions
(Consult the ToxExpo™ Directory *for Session Times and Descriptions)*
Convention Center
Ballroom J

12:00 NOON to 1:30 PM
Dermal Specialty Section Officers Meeting
Convention Center
252 B

12:00 NOON to 1:15 PM
In Vitro Toxicology Lecture & Luncheon
In Vitro Methods: Are They Really Alternatives?
Dr. Rodger Curren
(Ticket Required)
Marriott Downtown Hotel
Salon DEF

12:00 NOON to 1:00 PM
SOT/EUROTOX Debate
Motion: Pharmaceuticals in Drinking Water Pose a Risk to Human and Environmental Health
Convention Center
Ballroom B

1:30 PM to 4:30 PM
Poster Sessions
Convention Center
Exhibit Hall

1:30 PM to 4:30 PM
Scientific Sessions
Convention Center
(See Program Description for Room Locations)

2:00 PM to 4:00 PM
Grantsmanship Forum
Convention Center
254 B

4:30 PM to 6:00 PM
Annual Business Meeting
(SOT Members Only)
Convention Center
250 D

4:45 PM to 6:00 PM
ToxExpo™ 2004 Exhibit Space Selection Meeting
Convention Center
250 A

6:00 PM to 7:30 PM
Biological Modeling Specialty Section Reception
Convention Center
150 A

6:00 PM to 7:30 PM
Carcinogenesis Specialty Section Reception
Convention Center
Ballroom I

6:00 PM to 8:00 PM
EHP Toxicogenomics Rollout Reception
Wyndham Hotel
Wasatch Ballroom 2 & 3

6:00 PM to 7:30 PM
Inhalation Specialty Section Reception
Convention Center
151 A

6:00 PM to 7:30 PM
Metals Specialty Section Reception
Convention Center
150 D

6:00 PM to 7:30 PM
Neurotoxicology Specialty Section Reception
Convention Center
Ballroom J

6:00 PM to 7:30 PM
Northern California Regional Chapter and University of California at Davis, Joint Reception
Marriott Downtown Hotel
Salon C

6:00 PM to 8:00 PM
PANWAT Regional Chapter Reception
Marriott Downtown Hotel
Deer Valley

6:00 PM to 7:30 PM
Regulatory and Safety Evaluation Specialty Section Reception
Convention Center
151 G

6:00 PM to 7:30 PM
Southern California Regional Chapter Reception
Marriott Downtown Hotel
Solitude

7:00 PM to 9:00 PM
Neurobehavioral Teratology Society Social
Marriott Downtown Hotel
Salon A

7:00 PM to 8:00 PM
South Central Regional Chapter Reception
Marriott Downtown Hotel
Salon A

7:30 PM to 10:00 PM
University of Rochester Alumni Reunion
Wyndham Hotel
Cottonwood 1 & 2

SOT Annual Meeting Events Calendar (Continued)

Wednesday March 12, 2003

Events are listed alphabetically by the event start time.

7:00 AM to 8:30 AM
Education Subcommittee for Minority Initiatives Meeting
Wyndham Hotel
Red Butte

7:00 AM to 8:30 AM
In Vitro Specialty Section Officers Meeting
Marriott Downtown Hotel
Executive Boardroom

7:00 AM to 8:15 AM
Placement Committee Roundtable: Insulation and Repair of Your Professional Career
Convention Center
Ballroom C

7:00 AM to 5:00 PM
Speaker Ready Room
Convention Center
252 A

7:00 AM to 8:30 AM
WWW Advisory Committee Meeting
Convention Center
254 A

7:15 AM to 8:30 AM
Animals in Research Committee Meeting
Convention Center
252 B

7:15 AM to 8:15 AM
Town Meeting: Meeting the Publication Needs of the Toxicology Community
Presiding: Marion Ehrich, Vice President
Convention Center
Ballroom A

7:30 AM to 5:00 PM
Childcare Services
Marriott Downtown Hotel
Wasatch Room

7:30 AM to 9:30 AM
Concession Stands
(Just Breakfast Items)
Convention Center
Lower Level Concourse

7:30 AM to 9:00 AM
Midwest Regional Chapter Breakfast
Convention Center
254 C

7:30 AM to 5:30 PM
Placement Services
Convention Center
255/256

8:00 AM to 10:00 AM
Board of Publications Committee Meeting
Convention Center
Ken Knight Boardroom

8:00 AM to 4:30 PM
Guest Hospitality Center
Marriott Downtown Hotel
Park City

8:00 AM to 4:00 PM
Message Center/Lodging Information Booth
Convention Center
Registration Area

8:00 AM to 4:00 PM
Registration
Convention Center
Registration Area

8:00 AM to 4:00 PM
SOT Office
Convention Center
254 A

8:30 AM to 11:30 PM
Scientific Sessions
Convention Center
(See Program Description for Room Locations)

8:30 AM to 4:30 PM
ToxExpo™-Exhibits Open
Convention Center
Exhibit Hall

9:30 AM to 10:30 AM
Complimentary Coffee in Exhibit Hall
Convention Center
Exhibit Hall

9:30 AM to 2:30 PM
Concession Stands
Convention Center
Exhibit Hall

9:30 AM to 12:30 PM
Poster Sessions
Convention Center
Exhibit Hall

11:30 AM to 1:30 PM
Education Subcommittee for K–12 Education Meeting
Convention Center
252 B

11:30 AM to 1:30 PM
Finance Committee Meeting
Convention Center
Ken Knight Boardroom

12:00 NOON to 1:00 PM
A Conversation with the Assistant Administrator of ASTDR
Dr. Henry Falk
Convention Center
250 A

12:00 NOON to 1:00 PM
A Conversation with the Director of the NIEHS
Dr. Kenneth Olden
Convention Center
Ballroom A

12:00 NOON to 1:00 PM
Inhalation Specialty Section Officers Meeting
Wyndham Hotel
Shula's Restaurant

12:00 NOON to 1:00 PM
Issues Session
Toxicology: Ethical, Legal and Social Issues
Convention Center
Ballroom C

1:30 PM to 2:30 PM
Students/Post-Doctoral Informal Session with the Director of NIEHS
Dr. Kenneth Olden
Convention Center
254 C

1:30 PM to 4:30 PM
Poster Sessions
Convention Center
Exhibit Hall

1:30 PM to 4:30 PM
Scientific Sessions
Convention Center
(See Program Description for Room Locations)

2:00 PM to 4:00 PM
Exhibit Liaison Committee Meeting
Convention Center
252 B

3:00 PM to 4:30 PM
Education Committee Meeting
Convention Center
Ken Knight Boardroom

4:40 PM to 5:30 PM
Council Meeting with Students/Post-Doctoral Fellows
Convention Center
250 D

5:00 PM to 6:30 PM
Mountain West Regional Chapter Reception
Marriott Downtown Hotel
Sundance

5:30 PM to 6:00 PM
Council Meeting with Student Advisory Committee
Convention Center
250 D

6:00 PM to 7:30 PM
Comparative and Veterinary Specialty Section Reception
Convention Center
150 D

6:00 PM to 7:30 PM
Dermal Specialty Section Reception
Convention Center
150 G

6:00 PM to 7:30 PM
Food Safety Specialty Section Reception
Convention Center
151 D

6:00 PM to 7:30 PM
In Vitro Specialty Section Reception
Convention Center
150 A

6:00 PM to 7:30 PM
Molecular Biology Specialty Section Reception
Convention Center
151 G

6:00 PM to 7:30 PM
Reproductive and Developmental Specialty Section Reception
Convention Center
Ballroom J

6:00 PM to 7:30 PM
Women In Toxicology Specialty Section Reception
Convention Center
Ballroom I

7:00 PM to 8:30 PM
President's Reception
(By invitation only)
Grand America Hotel
Venezia Garden Salon

SOT Annual Meeting Events Calendar (Continued)

Thursday — March 13, 2003

Events are listed alphabetically by the event start time.

7:00 AM to 11:30 AM
Speaker Ready Room
Convention Center
252 A

7:15 AM to 8:15 PM
A Conversation with the Assistant Administrator of the Office of Research and Development, U.S. EPA
Dr. Paul Gilman
Convention Center
Ballroom C

7:30 AM to 12:00 NOON
Childcare Services
Marriott Downtown Hotel
Wasatch Room

7:30 AM to 12:00 NOON
Concession Stands
Convention Center
Lower Level Concourse

7:30 AM to 8:30 AM
Membership Committee Meeting
Convention Center
Ken Knight Boardroom

7:30 AM to 12:00 NOON
Placement Services
(Message Center Only)
Convention Center
255/256

7:30 AM to 8:30 AM
Program Committee Meeting
Convention Center
252 B

8:00 AM to 11:30 PM
Guest Hospitality Center
Marriott Downtown Hotel
Park City

8:00 AM to 11:30 PM
Message Center/Lodging Information Booth
Convention Center
Registration Area

8:00 AM to 11:30 PM
Registration
Convention Center
Registration Area

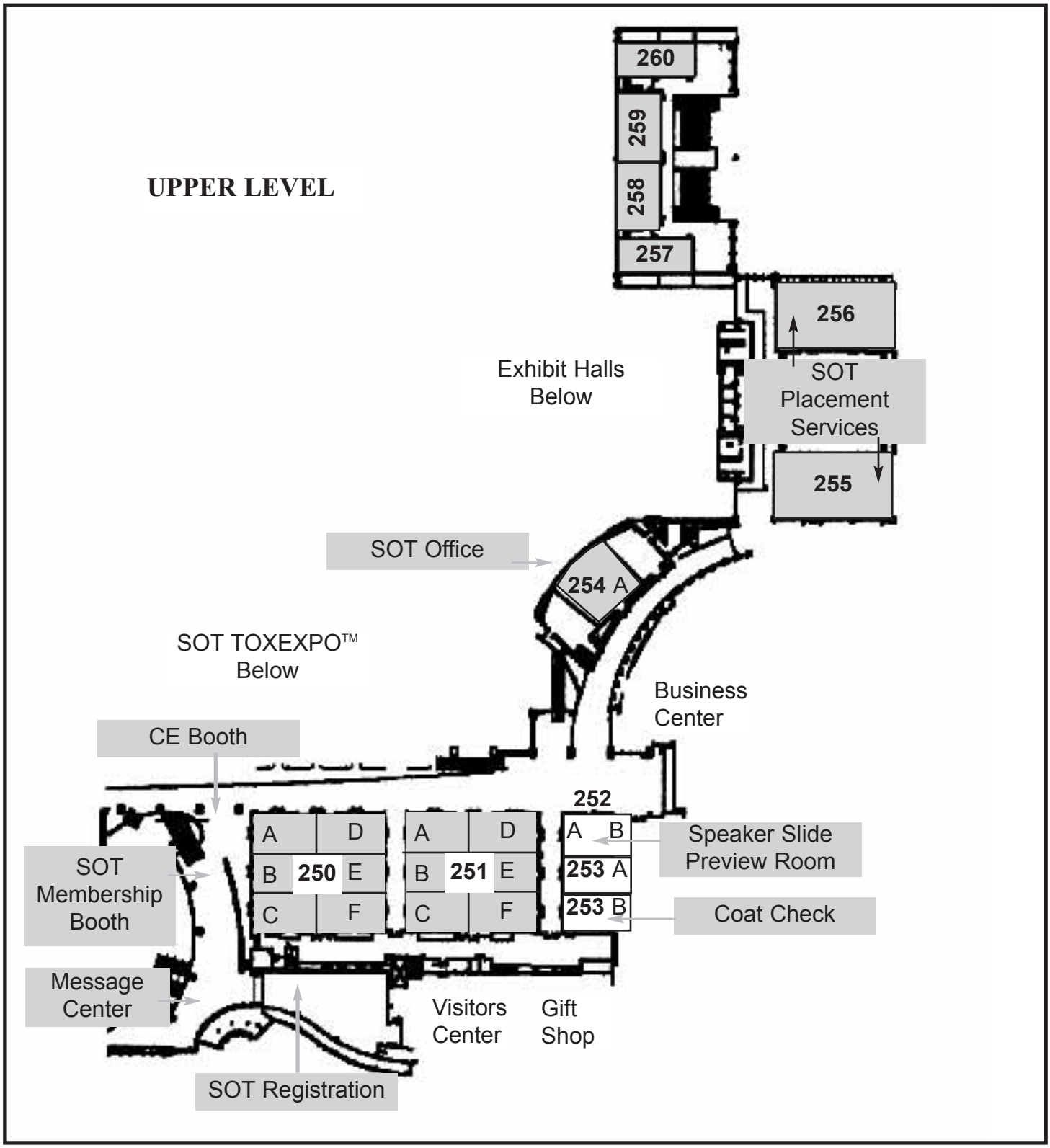
8:00 AM to 11:30 PM
SOT Office
Convention Center
254 A

8:30 AM to 11:30 AM
Poster Sessions
Convention Center
Convention Center Foyer

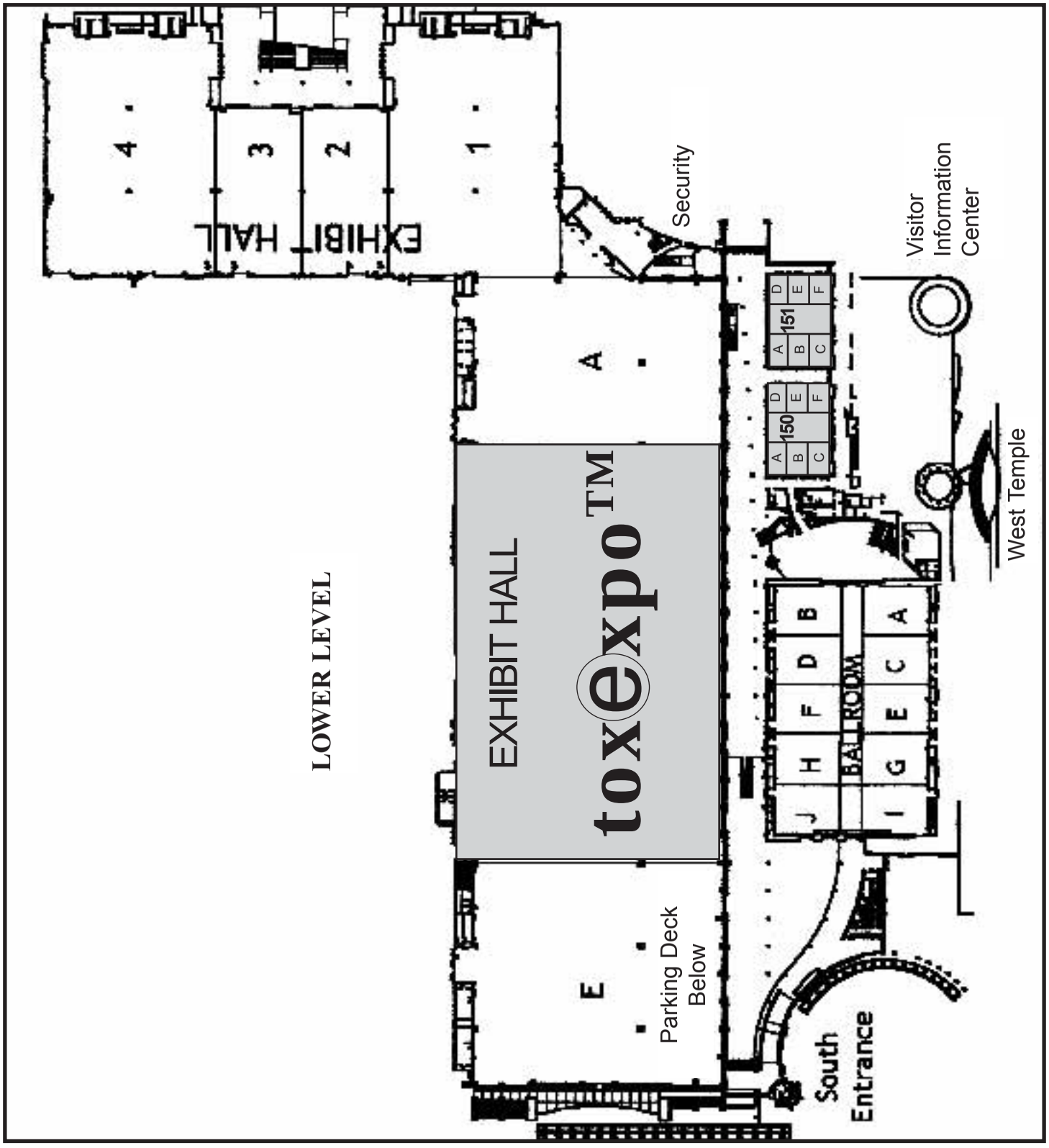
8:30 AM to 11:30 AM
Scientific Sessions
Convention Center
(See Program Description for Room Locations)

11:30 AM to 1:00 PM
Placement Committee Meeting II
Convention Center
Ken Knight Boardroom

Salt Palace Convention Center Map



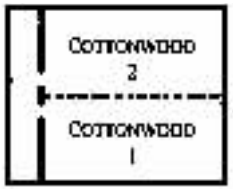
Salt Palace Convention Center Map



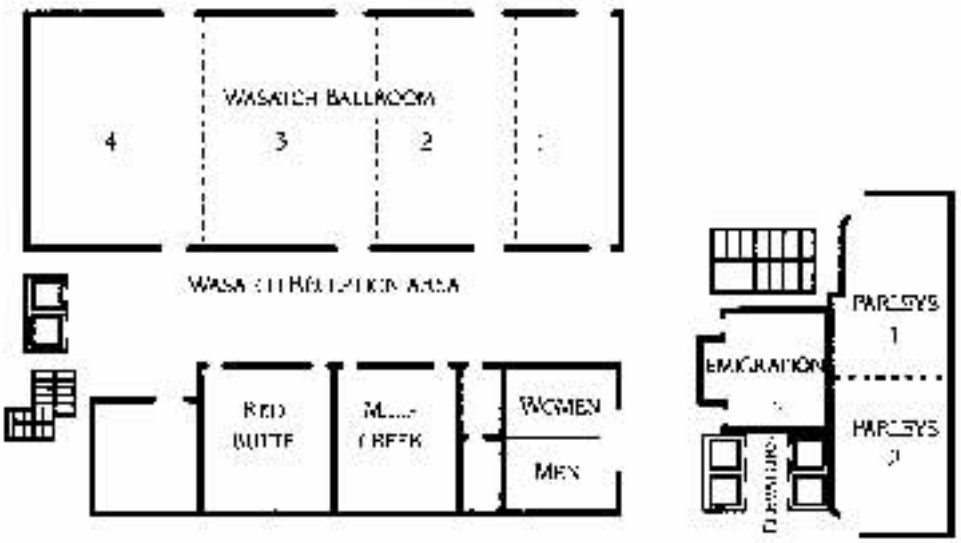
Wyndham Hotel Map

CONFERENCE/MEETING ROOMS

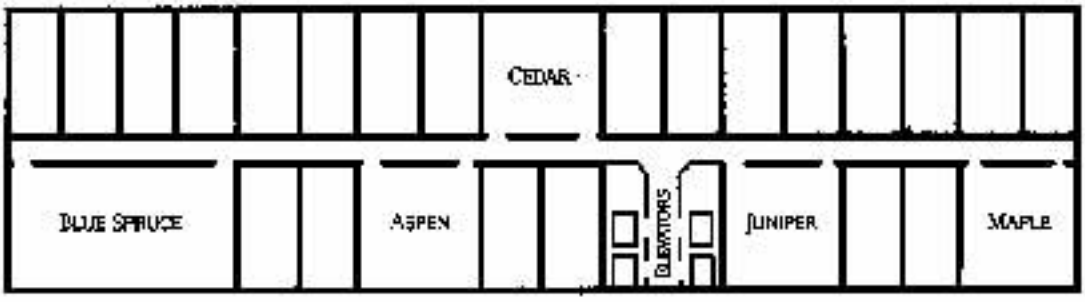
LOBBY LEVEL



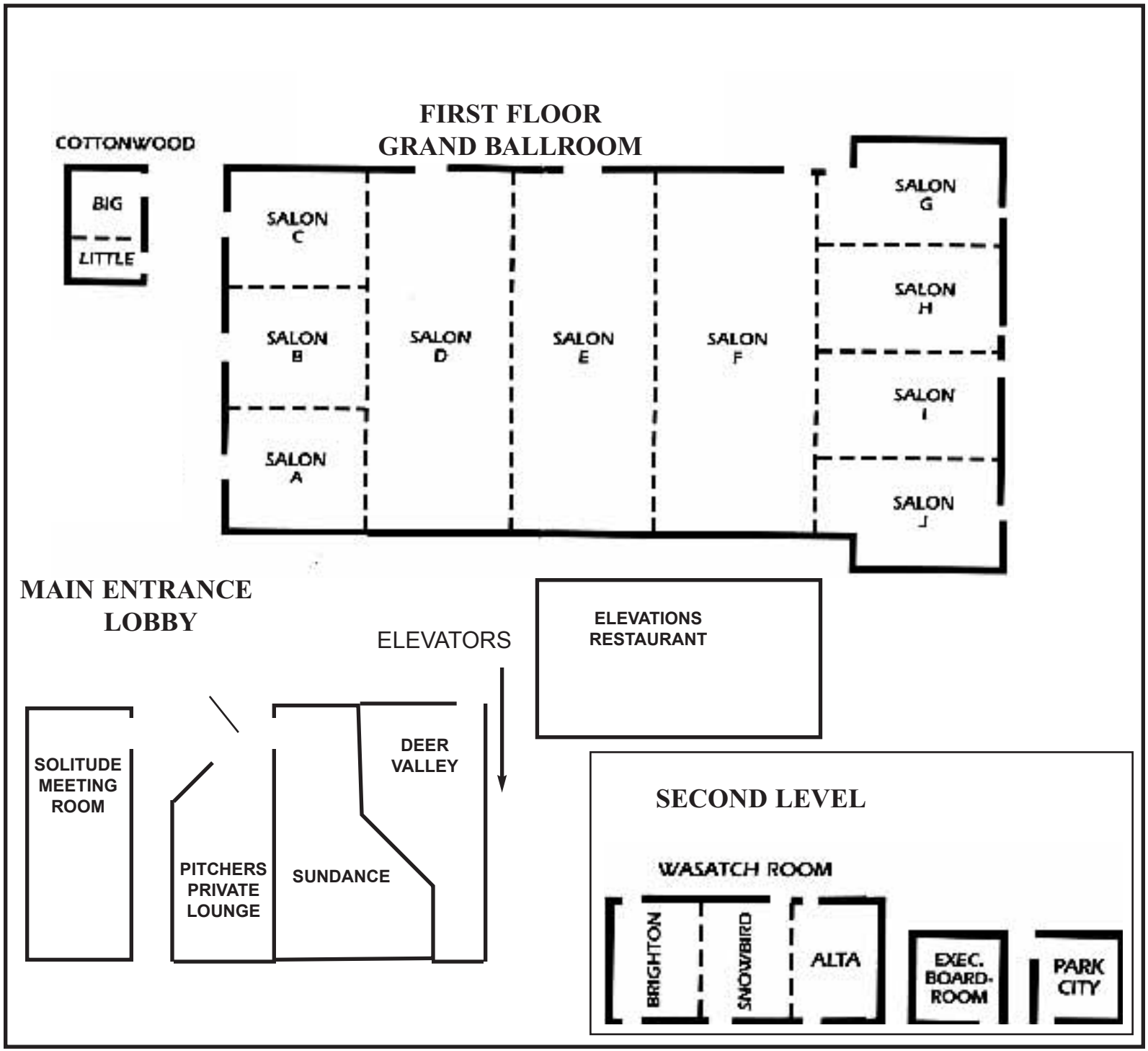
SECOND LEVEL



THIRD LEVEL



Marriott Hotel Map



Salt Lake City Restaurants

Restaurants Serving Breakfast, Lunch, and Dinner:

The Grand America Hotel—The Garden Café
7:00 AM–10:00 PM
(801) 258-6000 (3 fi blks from Salt Palace)

Hilton Hotel—Trofi
6:00 AM–10:00 PM
(801) 328-2000 (fi blk from Salt Palace)

Hotel Monaco—Bambara
7:00 AM–10:00 PM
(801) 363-5454 (1 fi blks from Salt Palace)

Lambs
7:00 AM–10:00 PM
(801) 364-7166 (1 blk from Salt Palace)

Little America Coffee Shop
5:00 AM–12:00 Midnight
(801) 363-6781 (3 fi blks from Salt Palace)

Market Street Grill
6:30 AM–10:00 PM
(801) 322-4668 (2 blks from Salt Palace)

Marriott Salt Lake City Downtown—Elevations
6:30 AM–2:00 PM/5:00 PM–11:00 PM
(801) 531-0800 (fi blk from Salt Palace)

Mo's Grill
7:00 AM–10:00 PM
(801) 359-0586 (1 fi blk from Salt Palace)

Salt Lake City Marriott City Center—Piastra
6:30 AM–2:00 PM/5:00 PM–10:00 PM
(801) 961-8700 (2 blks from Salt Palace)

Sheraton City Center—Olio
6:00 AM–10:00 AM/11:00 AM-2:00 PM/
5:00 PM–10:00 PM
(801) 532-3344 (3 blks from Salt Palace)

Wyndham—Shula's
6:30 AM–3:00 PM/5:00 PM–10:00 PM
(801) 521-7800 (1 fi blks from Salt Palace)

Restaurants Serving Lunch and Dinner Only:

Baci
11:30 AM–3:00 PM/5:00 PM–10:00 PM
(801) 328-1500 (1 fi blks from Salt Palace)

Café Pierpont
11:30 AM–10:00 PM
(801) 364-1222 (1 fi blks from Salt Palace)

Caffe Molise
11:30 AM–2:00 PM/5:30 PM–9:00 PM
(801) 364-8833 (fi blk from Salt Palace)

Inn At Temple Square—Passages
11:00 AM–2:30 PM/5:00 PM–9:00 PM
(801) 536-7200 (fi blk from Salt Palace)

New Yorker
11:30 AM–2:30 PM/5:30 PM–10:30 PM
(801) 363-0166 (2 blks from Salt Palace)

Olive Garden
11:00 AM–10:00 PM
(801) 537-6202 (fi blk from Salt Palace)

P.F. Changs
11:00 AM–10:00 PM
(801) 539-0500 (2 blks from Salt Palace)

Red Rock Brewing Company
11:00 PM–11:00 PM
(801) 521-7446 (1 fi blks from Salt Palace)

Samba Grill
11:00 AM–10:00 PM
(801) 456-2200 (3 blks from Salt Palace)

Skybox
11:00 AM–12:00 Midnight
(801) 456-1200 (3 blks from Salt Palace)

Squatter's Pub Brewery
10:30 AM–12:00 Midnight
(801) 363-2739 (2 fi blks from Salt Palace)

Salt Lake City Hotel Accommodations

1. **BEST WESTERN PLAZA SALT LAKE HOTEL**
   122 West South Temple
   Salt Lake City, UT 84101
   Phone: (801) 521-0130
   Fax: (801) 322-5057
   Across the Street from the Convention Center
   Shuttle Service: DJ's Executive Image
   Pick-up at Airport; Complimentary

2. **COURTYARD BY MARRIOTT**
   130 West 400 South
   Salt Lake City, UT 84101
   Phone: (801) 531-6000
   Fax: (801) 531-1273
   1.5 Blocks from the Convention Center
   Shuttle Service: Express Shuttle Services
   Service Desk at Airport; $6 pp.

3. **CRYSTAL INN DOWNTOWN**
   230 West 500 South
   Salt Lake City, Utah 84101
   Phone: (801) 328-4466
   Fax: (801) 328-4072
   5 Blocks from the Convention Center
   Shuttle Service: Crystal Inn Shuttle Service
   Use Airport Courtesy Telephone; Complimentary

4. **THE GRAND AMERICA HOTEL**
   555 South Main Street
   Salt Lake City, UT 84111
   Phone: (801) 258-6000
   Fax: (801) 258-6911
   5 blocks from the Convention Center
   Shuttle Service: Grand America Shuttle
   Use Airport Courtesy Telephone; Complimentary

5. **HILTON SALT LAKE CITY CENTER**
   255 South West Temple
   Salt Lake City, UT 84101
   Phone: (801) 328-2000
   Fax: (801) 532-1953
   Catty-Corner to the Convention Center
   Shuttle Service- Express Shuttle Service-
   Service Desk at Airport; $6 pp.

6. **HOTEL MONACO**
   15 West 200 South
   Salt Lake City, UT 84101
   Phone: (801) 595-0000
   Fax: (801) 532-8500
   One half block from the Convention Center
   Shuttle Service: Express Shuttle
   Service Desk at Airport; $6 pp.

7. **INN AT TEMPLE SQUARE**
   71 West South Temple
   Salt Lake City, UT 84116-3196
   Phone: (801) 531-1000
   Fax: (801) 536-7272
   1 Block from the Convention Center
   Shuttle Service: Inn at Temple Square Shuttle Service
   Use Airport Courtesy Telephone
   $ Gratuity Only

8. **THE LITTLE AMERICA HOTEL**
   500 South Main Street
   Salt Lake City, UT 84101
   Phone: (801) 363-6781
   Fax: (801) 596-5910
   5 Blocks from the Convention Center
   Shuttle Service: Little America Shuttle Service
   Use Airport Courtesy Telephone; Complimentary

9. **MARRIOTT SALT LAKE CITY DOWNTOWN**
   75 South West Temple
   Salt Lake City, UT 84101
   Phone: (801) 531-0800
   Fax: (801) 532-4127
   Across the street from the Convention Center
   Shuttle Service: DJ's Executive Image
   Pick-up at Airport; $7 one-way / $13 Round-trip

10. **QUALITY INN CITY CENTER**
    154 West 600 South
    Salt Lake City, UT 84101
    Phone: (801) 521-2930
    Fax: (801) 325-5302
    5 Blocks from the Convention Center
    Shuttle Service: Quality Inn City Center
    Use Airport Courtesy Telephone; Complimentary

11. **SALT LAKE CITY MARRIOTT CITY CENTER HOTEL**
    220 South State Street
    Salt Lake City, UT 84111
    Phone: (801) 961-8700
    Fax: (801) 961-8704
    3 Blocks from Convention Center
    Shuttle Service: City Center Marriott Shuttle
    Pick Up Door 5 or 10; $8 one-way.
    $14 Round-trip.

12. **SHERATON CITY CENTER**
    150 West 500 South
    Salt Lake City, UT 84101
    Phone: (801) 401-2000
    Fax: (801) 534-3450
    2 Blocks from the Convention Center
    Shuttle Service: Sheraton Shuttle
    Use Airport Courtesy Phone; Complimentary

13. **SHILO INN**
    206 South West Temple
    Salt Lake City, UT 84101
    Phone: (801) 521-9500
    Fax: (801) 359-6527
    Across the Street from the Convention Center
    Shuttle Service: Shilo Shuttle Service
    Use Airport Courtesy Telephone; Complimentary

14. **WYNDHAM**
    215 West South Temple
    Salt Lake City, UT 84101
    Phone: (801) 531-7500
    Fax: (801) 328-1289
    1 Block from the Convention Center
    Shuttle Service: DJ's Executive Image
    Pick-up at Airport; $7 one-way / $13 Round-trip

Airport Shuttles

- Hotels using Express Shuttle Services: Guest must check in at the Express Shuttle Service desk, located at the baggage claim areas of both terminals.
- Hotels using DJ's Executive Image Shuttle Services: Guests can load at the designated areas located curbside at doors 5 and 10. Departures to hotels are every half-hour.
- Hotels using other Shuttle Services: Use the courtesy telephones located in the baggage claim area to alert the hotel that a guest is waiting.

ToxExpo™ is Open:

Monday, March 10 .....9:30 AM–4:30 PM
Tuesday, March 11.....8:30 AM–4:30 PM
Wednesday, March 12.....8:30 AM–4:30 PM

2003 Exhibitors

Alphabetical Listing

(As of January 6, 2003)

Please visit **ToxExpo.com** *or the ToxExpo™ Directory for product/service descriptions, a map of booth locations, and other information.*

Company Name	Booth Number
American Board Of Toxicology (ABT)	345
ACLARA BioSciences	1334
AEgis Technologies Group Inc. (The)	326
Affymetrix, Inc.	844, 846
Agilent Technologies	347
Alabama Research & Development	1038
Allentown Caging Equipment Co., Inc.	1219
Althea Technologies	222
American Association for Laboratory Animal Science	205
American College of Toxicology (ACT)	220
American Conference of Governmental Industrial Hyg	111
ANI LYTICS, Inc.	834
Anilab, Inc.	1006
Animal Care Systems	127
Animal Identification and Marking System, Inc.	918
Animals In Research Booth (SOT)	120
Applied Biosystems	304
Applied Preclinical Services	1322
AppTec Laboratory Services	719
BAS - Evansville	727, 729
Battelle HHS	1211
Baxter Healthcare Corporation	227
Bayer Corporation	112
BBL Sciences	706, 708
BD Biosciences	442
Bench International	913
Bio Medic Data Systems Inc.	807, 809, 811
Bio-Rad	226
Bio-Serv Inc.	723
BIOAGRI PHARMA	943
BioDetection Systems B.V.	1639
Biological Test Center	619
BioReliance™	1010, 1012
Biosense Laboratories AS	1416
BioSTAT Consultants, Inc.	1422
BIOTECHNICS, Inc.	721
Biotrin International	237
Burdock Group	818
Buxco Electronics, Inc.	123
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Calvert Laboratories, Inc.	735, 737
Cambrex	335
CANTOX HEALTH SCIENCES INTERNATIONAL	1239
Cayman Chemical	1627
Cedra Corporation	338
Central Toxicology Laboratory - Syngenta	742
CEREP	1613
CH Technologies	130
ChanTest Inc.	1221
Charles River Laboratories	700, 702, 704
Charles River Laboratories Discovery & Development	701
Charles River Laboratories Discovery & Development	801
Charles River Laboratories Discovery & Development	901, 903, 905
Charles River Laboratories Discovery & Development	802
ChemSyn Laboratories	623
CIIT - Centers For Health Research	820
Ciphergen Biosystems, Inc.	945, 947
CIRES gmbh	1631
Colorado Histo-Prep	747
Comparative Ophthalmic Research Labs	301
CompuCyte	647
Cosmetic Ingredient Review	300
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CTBR (A Member of The Inveresk Research Group)	835, 837, 839
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Data Integrated Scientific Systems (D.I.S.S.)	406
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DaVinci Biomedical Research Products Inc.	344, 346
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Durect Corporation	907
Elm Hill Breeding Labs, Inc.	1343
Elsevier Science, Inc.	707, 709, 711
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ESG International Inc.	836
EUROTOX 2003	101
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Expression Analysis	847
Exygen Research	637
Fraunhofer ITEM	428, 430
Gene Logic, Inc.	744, 746
Gentronix Limited	247
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GMA Industries, Inc.	1426
GosNIIOKhT	118
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Gosniiokht	118
Gwathmey, Inc.	745
Hamilton Thorne Research	209
Hamilton-Kinder, LLC	239
Harlan	1018, 1020, 1022
HemoGenix LLC	739
Hill Top Research, Inc.	731
Hilltop Lab Animals, Inc.	838
Human Biologics International	736
Humana Press	243
Huntingdon Life Sciences	927
Hurley Consulting Associates Ltd.	1629
Ibex Preclinical	404
IDEXX Contract Research Services	235
IIT Research Institute	1223
Illumina, Inc.	200
IMAC Consulting Group, LLC	1345
In Vitro Technologies, Inc.	635
IN/US Systems, Inc.	1430
Incyte Genomics	819
Innovative Programming Associates, Inc.	822
Instech Solomon	713
Instem LSS	627
Institute For *In Vitro* Sciences, Inc.	1326
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International Union of Toxicology (IUTOX)	105
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IPS Therapeutique Inc.	1418
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ISIS BioComp	639
ITR Laboratories Canada, Inc.	400, 402
Jai Research Foundation (JRF)	116
John Wiley & Sons	201
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2003 Exhibitors (Continued)

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Korea Institute of Toxicology	128
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LAB Products, Inc.	806
LabCorp Preclinical	920
Lafayette Instrument Company	231
Leadscope Inc.	1008
LHASA Limited	1347
Liberty Research, Inc.	327
Lippincott Williams & Wilkins	305
Lomir Biomedical, Inc.	603, 605
Lovelace Respiratory Research Institute	1247
Marshall Farms USA, Inc.	827, 829
MAXXAM ANALYTICS INC	337, 339
MB Research Laboratories	738
McGraw-Hill	245
MD Biotech	320, 322
MDL Information Systems, Inc.	812
MDS Pharma Services	1042, 1044
MED Associates, Inc.	710
Membership Booth (SOT)	Registration Lobby
Metabometrix Ltd.	106
MetriGenix, Inc.	946
Midwest Research Institute	1235
Mitsubishi Chemical Safety Institute Ltd.	1611
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Modular Instruments, Inc.	1404
Molecular Mining Corporation	1438
MOLTOX	926
MPI Research	1309, 1311, 1313, 1408, 1410, 1412
National Institute of Environmental Health Sciences	1338
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Northern BioMedical Research, Inc.	743
Northview Biosciences	1318
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NOTOX Safety & Environmental Research B.V.	842
Nucro-Technics Incorporated	813
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Precision Plastics, Inc.	126
PreClinica - Eaton Publishing	1339
Preclinical Research Associates	1337
Primate Products Inc. (PPI)	601
Product Safety Labs	935
Promega Corporation	1227
Purina Mills LabDiet	1000, 1002
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Quintiles, Inc.	821,823
RASS (Risk Assessment Summer School)	103
RCC Ltd.	919, 921, 923
ReCathCo, LLC	446
Regulatory Affairs & Legislative Assistance (RALA)	110
Research Diets, Inc.	308
Research Triangle Institute	1301,1303
Ricerca Biosciences LLC	843, 845
Roche Applied Science	1444, 1446
ROCKLAND IMMUNOCHEMICALS, Inc.	1436
RTC, Research Toxicology Centre S.p.A.	928

Company Name	Booth Number
Rtpa At Afip	202
SafePharm Laboratories LTD.	1004
San Diego Instruments, Inc.	1317
Scantox	307
Scimagix, Inc.	228
SCIREQ Inc.	331
Sequani Limited	922
SGS U.S. Testing Company, Inc.	826
SITEK Research Laboratories	722
SkeleTech, Inc.	412
SNBL USA, Ltd.	319, 321, 323, 418, 420
Society of Quality Assurance (SQA)	108
Southern Research Institute	316, 318
Spring Valley Laboratories, Inc.	1331
Springborn Smithers Labs	311, 313
SRI International	718, 720
StemCell Technologies Inc.	343
Stillmeadow, Inc.	817
Suburban Surgical Company	717
SYRACUSE RESEARCH CORPORATION	1336
Taconic Quality Lab. Animals & Services	1229
Talos MSDS Authoring and Distribution Software	203
Taylor & Francis	906, 908
Tecniplast USA	1635
Teratology Society	122
The Baker Company	1617, 1619
The Medical Book Store	1623
The Toxicology Group, LLC	219
The WERCS, Ltd.	1434
TherImmune Research Corporation	937, 939
Thermogenic Imaging	216, 218
Third Wave Technologies, Inc.	129
Thoren Caging Systems, Inc.	1428
Tissue Transformation Technologies	1243, 1245
TissueInformatics.Inc	1420
TNO Pharma	1231
Toxicology Education Foundation (TEF)	121
Toxicology Excellence for Risk Assessment	1609
Toxicology Research Laboratory	1237
Toxicology/Regulatory Services, Inc. (TRS)	1320
Toxikon Corporation	1327, 1329
ToxWeb	1328, 1330
Transgenomic, Inc.	621
TSE - Technical & Scientific Equipment GmbH	1034, 1036
U.S. Environmental Protection Agency	831
Ventana Medical Systems Inc.	1319
VIEWPOINT LIFE SCIENCES	1621
Vitrocell Systems	131
Vitron, Inc.	1402
White Eagle Toxicology Labs	916
WIL Research Laboratories, Inc.	909, 911
Wildlife International Ltd.	712
Xenogen Corporation	334, 336
XenoTech, LLC	1046
Xybion Medical Systems	942, 944

Admittance to the Exhibit Hall is limited to attendees with full registration. Children under the age of 15 years of age are not allowed in the Exhibit Hall.

Please ask permission before taking pictures in the Exhibit Hall.

ToxExpo™ & Informational Sessions

ToxExpo™/Exhibits

For many of the science professionals who attend, the focus of the SOT Annual Meeting is the three-day SOT Exhibition. Here, state-of-the-art products and services directly relating to the advancement of research within toxicology and associated areas are displayed.

ToxExpo™ is Open:

Monday, March 10 .....9:30 AM–4:30 PM
Tuesday, March 11.....8:30 AM–4:30 PM
Wednesday, March 12.....8:30 AM–4:30 PM

At the SOT Exhibition, scientists have a first-hand opportunity to talk with the exhibitors, examine and learn about the products and services on display by more than 240 companies.

Reminder:

The ToxExpo™ Exhibition is considered to be part of the Annual Meeting scientific sessions. **Guests and children (under 15 years of age) are not allowed in the exhibit hall.** The Society requires approval of all photographic equipment used in the Exhibit Hall. For information or approval, contact Libby Jones at (703) 438-3115 Ext. 121 or e-mail: libby@toxicology.org.

Complimentary Coffee in Exhibit Hall

Complimentary coffee sponsored by the exhibitors and SOT will be provided in the Exhibit Hall from 9:30 AM to 10:30 AM, Monday through Wednesday.

Food Service in Exhibit Hall

Quick food service is available in the Exhibit Hall. Luncheon items will be available for purchase from 11:00 AM to 2:00 PM Monday through Wednesday. Coffee, soda, and snacks will be sold from 2:00 PM until the close of the Exhibit Hall, Monday through Wednesday afternoons.

Informational Sessions

An In Vitro Predictive Toxicogenomics Screen (PTS) for Hepatoxicity

Presented by: CuraGen Corporation

Monday, March 10
10:15 AM–11:15 AM
Ballroom J

CuraGen has developed an innovative technology, the Predictive Toxicogenomics Screen (PTS), capable of predicting a drug compound's potential for toxicity. PTS evaluates drug compound toxicities using very small quantities of compounds that are available immediately after high-throughput screening and well in advance of the expensive drug scale-up required for mammalian safety experiments.

High Throughput Systems Biology and Beyond: The ACLARA eTag ™ Assay System

Presented by: ACLARA

Monday, March 10
11:30 AM–12:30 PM
Ballroom J

ACLARA BioSciences' new eTag Assay System is a solution phase "mini-array" system for studying gene expression, protein expression, and cell surface antigens. It is also ideally suited for developing a variety of novel cell-based assays. The eTag Assay System is a universal "operating system" for high-throughput systems biology, designed for experiments involving the simultaneous measurement of 10s to 100s of genes and proteins per sample.

Predicting Human Toxicity

Presented by: Gene Logic

Monday, March 10
12:45 PM–1:45 PM
Ballroom J

Learn about Gene Logic's Predictive Toxicity Models that rank and screen compounds for potential human toxicity, providing powerful information for prioritizing development of compounds. Scientific discussions and specific examples will be shown describing the utility and power of toxicogenomics in drug development. Food will be served.

Exhibits & Informational Sessions (Continued)

Science and Security — Protecting Your People, Your Work, Your Facilities

Presented by: IMAC

Tuesday, March 11
10:15 AM–11:15 AM
Ballroom J

IMAC consultants will discuss increasingly important security issues with special emphasis on those directly impacting organizations involved in toxicological studies. The presentation will include components of a good security program ranging from new employee screening to vivarium protection. New technologies available to protect employees, animals and property will be reviewed.

Making Sense Out of Gene Expression Data

Presented by: Gene Logic

Tuesday March 11
11:30 AM–12:30 PM
Ballroom J

Confused and disillusioned about gene expression data generation and analysis? Then this workshop can help you understand some of the basic applied concepts for developing and managing gene expression databases. Discussions on standard data analysis and more advance analytical methods surrounding mining gene expression data will be presented.

Affymetrix GeneChip ® Expression Analysis Applied to Toxicology

Presented by: Affymetrix, Inc.

Tuesday, March 11
12:45 PM–1:45 PM
Ballroom J

Affymetrix GeneChip microarray technology is a powerful took for detecting changes in gene expression due to a toxic or stress-related response. By using GeneChip expression arrays, it is possible to better understand the molecular mechanism of how know genes interact to produce toxic endpoints.

SOT Information Booths

Animals In Research Booth—ToxExpo 120

The Society of Toxicology is committed to research of the highest quality and views the use of laboratory animals as necessary to protect human health and the environment, except where alternative techniques have been validated. Stop by the Animals in Research Committee booth for information supporting that position, including the SOT "Importance of Animals In Research" brochure, and SOT position statements. A variety of other materials will be on display.

K–12 Resources Booth—ToxExpo 117

Pick up tips for classroom mentors and the SOT career brochure. Investigate other high quality toxicology and environmental health sciences materials for teachers and toxicologists who visit classrooms. Come share with the K–12 Education Subcommittee what YOU are doing in your community.

SOT Membership Booth—Registration Area

The Society of Toxicology (SOT) is the largest association of professional toxicologists in the world. SOT provides the premier venue for toxicology discourse, including meetings, the official SOT journal *Toxicological Sciences*, and ToxExpo™. Its 5,200 members come from all parts of the United States and more than 40 other countries and enhance their careers through the benefits of SOT membership. Application is easy at **www.toxicology.org**. Stop by the exhibit to learn more about SOT.

Regulatory Affairs and Legislative Assistance Committee (RALA) Booth—ToxExpo 110

The Regulatory Affairs and Legislative Assistance Committee (RALA) is the SOT focus for activities that aid and support the scientifically-related functions of regulatory agencies and legislative and judicial bodies. RALA tracks new developments concerning funding of research in toxicology (and related sciences) and regulation of chemicals, drugs, biologics, and devices. Be sure to visit RALA's booth to write a letter to Congress.

Toxicology Education Foundation (TEF) Booth—ToxExpo 121

The Toxicology Education Foundation (TEF) exhibit will highlight "Is it Safe," a new campaign in partnership with NIEHS and others to provide audiovisual materials for health professionals to use in public presentations. The goal is to empower the public to make good decisions about risk associated with every day products. Information for projects funded though Toxicology in the Classroom will also be on view. Your contributions to TEF make these programs possible.

Web site: www.tox-edfoundation.org

General Information

Scientific Sessions and Special Events will be held at the Salt Palace convention center unless otherwise listed.

Registration Fees:

	On-Site
SOT Member (Full or Associate)	$310
Non-Member	$540
SOT Retired Member	$135
Post-Doctoral *(SOT Member or Non-Member)*	$155
Grad. or Undergrad. Student *(SOT Member or Non-Member)*	$130
SOT Associate	$ 0
Press	$ 0
Guest *(non-scientists: see page 22, "Guest Hospitality Center")*	$ 90

Continuing Education Course Fees: (per AM or PM course)

	On-Site
SOT Member/Associate/Retired	$145
Non-Member	$240
Post-Doctoral	$125
Graduate or Undergraduate Student	$ 80
Press	$ 0

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

	On-Site
SOT Member/Associate/Retired/Post-Doctoral	$ 45
Non-Member	$ 65
Graduate or Undergraduate Student	$ 15
Press	$ 0

The Registration Includes:

- Awards Presentation, Sunday, March 9 from 5:15 PM–6:30 PM.
- Welcoming Reception, Sunday, March 9 from 6:30 PM–7:30 PM.
- Plenary Lecture, Monday, March 10 from 8:30 AM–9:15 AM.
- All scientific sessions (see program descriptions beginning on page 43) 9:30 AM Monday, March 10 through 12:00 NOON Thursday, March 13.
- ToxExpo™ Exhibit Hall, 9:30 AM Monday, March 10 through 4:30 PM Wednesday, March 12.

Participants are also encouraged to register for the Continuing Education Courses. These are available during three time intervals on Sunday, March 9: 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—Upper Level Lobby

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–12:00 NOON

Registration Materials

When you arrive at the Salt Palace convention center, please go to the registration area to pick up your registration materials (you do not need to stand in line). Your 2003 Annual Meeting registration badge must be presented to obtain the registration materials (i.e., *The Toxicologist*, badge holder, the *ToxExpo™ Directory* and other supplementary materials).

Receipt of the Program and The Toxicologist

1. SOT Members in the U.S. and Canada will receive the *Program* prior to the meeting, as will U.S. and Canadian non-members who pre-register by January 13, 2003. *The Toxicologist* will be available in the registration area on-site.
2. SOT members and non-member pre-registrants outside the U.S. and Canada, as well as non-members in the U.S., who register after January 13, will receive the *Program* at the registration area on-site.
3. SOT members may request a copy of *The Toxicologist*, for receipt after the meeting, by sending their request *via* e-mail to sothq@toxicology.org.
4. The Annual Meeting Itinerary Planner will be available on the SOT Web site January–March. The Itinerary CD-Rom will not be available for the 2003 Annual Meeting.

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

General Information (Continued)

Air Transportation

Salt Lake International Airport is situated just west of Salt Lake City and about 10 minutes from downtown. The airlines serving Salt Lake City operate over 300 daily departures to 71 nonstop destinations throughout the U.S. and Canada. The U.S. Department of Transportation typically ranks Salt Lake City International Airport in the top 10 U.S. airports for on-time performance.

Salt Lake City serves as a major western hub for Delta AirLines. The following commercial airlines operate from Salt Lake City International Airport: America West, American, Continental, Delta, Frontier, JetBlue, Northwest/KLM, SkyWest, Southwest, TWA, and United.

SOT has established discounted rates through Delta and United Airlines for travel originating in the United States, Canada, and Puerto Rico. Be sure to use the following discount reference numbers when making your reservations.

Delta Airlines
(800) 241-6760
Reference # 188568A

United Airlines
(800) 521-4041
Reference # 515AJ

These rates provide savings of 5-10% off the lowest applicable fare or 10-15% off a full coach fare. By staying over a Saturday night, you can take advantage of additional savings with a two-night minimum stay. You can also receive great savings on discounted fares that do not require a Saturday night stay. You may make reservations directly or use NAVIGANT INTERNATIONAL.

Air Reservations through NAVIGANT INTERNATIONAL

NAVIGANT INTERNATIONAL is the official travel management firm for SOT's 42nd Annual Meeting. To take advantage of their services and savings, simply call toll-free (800) 525-6061 or direct (703) 276-2030 or (703) 276-2040 and select the airfare that is right for your plans. You may use the Travel Form (located on the SOT Web site), and fax your airline request directly to NAVIGANT INTERNATIONAL at (703) 276-2077. If you prefer to e-mail your request, you may do so to niki.markun@ne.navigant.com.

To obtain the maximum discounted fares, make your reservations at least 60 days prior to departure. A modified discounted fare is still obtainable up to 14 days in advance. These exceptional offers are available only to SOT attendees and their guests via the SOT discount reference numbers.

A. Complete the travel form and fax to NAVIGANT INTERNATIONAL at (703) 276-2077.

B. Call NAVIGANT INTERNATIONAL toll-free at (800) 525-6061 or direct (703) 276-2030 Monday through Friday, 9:00 AM–5:30 PM (Eastern Standard Time).

Before calling NAVIGANT INTERNATIONAL, please gather the following information:

- The desired dates of arrival to and departure from Salt Lake City.
- Your home city or originating airport.
- Your approximate time of departure from the originating airport.
- The number of persons traveling (adults/children).
- Your method of payment, either credit card or check.
- Your airline frequent flyer number(s).
- Identify yourself as a Society of Toxicology attendee. NAVIGANT INTERNATIONAL will find the best fare for you. Watch your mail. You will receive a folio containing your computerized itinerary.

C. Call the airline directly using the toll-free numbers. Provide the reservationist with the reference number listed to receive the discounted airfare.

Ground Transportation

Suitably known as the "Crossroads of the West," Salt Lake City is conveniently accessed by highway, air, and rail.

Highway—Major Interstates

Interstate 15 runs north to south through Utah providing an easy, accessible, route if traveling from as far north as Idaho and as far south as Nevada.

Interstate 80, which crosses the northern part of the state, runs west from Wyoming to Nevada.

Bus Service

The Utah Transit Authority provides public transportation with frequent bus stops strategically placed over a 1,800 square-mile area.

Greyhound Bus Lines offers service to Utah on its transcontinental route.

Light Rail

Contact the Utah Transit Authority (801) 287-4636 for information about "TRAX," a light rail system designed for commuter travel. Fares range from $1.25 for a full fare ticket, valid for two hours, to $2.50 for an all–day pass. A Free Fare Zone is located from the Courthouse TRAX Station to the Delta Center Station.

General Information (Continued)

Airport Shuttle Transportation

Please refer to the hotel information on page 14 for shuttle information for your hotel.

- Hotels using Express Shuttle Services: Guest must check in at the Express Shuttle Service desk, located at the baggage claim areas of both terminals.
- Hotels using DJ's Executive Image Shuttle Services: Guests can load at the designated areas located curbside at doors 5 and 10. Departures to hotels are every half-hour.
- Hotels using other Shuttle Services:
  Use the courtesy telephones located in the baggage claim area to alert the hotel that a guest is waiting.

Taxi

The estimated fare between the airport and downtown Salt Lake City is $12.50 to $15.

Car Rental

Avis Rent A Car System is the official car rental company for the 42nd Annual Meeting. SOT discounted rates, including unlimited mileage begin at $35.99 per day. Rates do not include any state and local surcharges, tax, optional coverage or gas fueling charges. Should a lower qualifying rate become available, Avis is pleased to present a 5% discount on that rate OR, if a car size is selected that is not available, Avis will discount the best available rate by 5%. To receive the SOT discount rates, contact Avis at (800) 331-1600 or on-line at **www.avis.com.** You must provide the Avis Worldwide Discount (AWD) number T534999 in order to receive the SOT discounted rate.

Parking

The garage/self-parking located at the Salt Palace convention center is $5 per day.

Hotel Accommodations and Reservations

The Salt Lake City area offers visitors a wide variety of hotels from well known chains to unique boutique accommodations. The Society has reserved a block of hotel rooms at hotels within walking distance of the Salt Palace convention center. Hotel room rates are 10% commissionable, with all commissions paid directly to SOT for support of long-range planing initiatives. A $3 rebate per room will be used to cover the costs of the Salt Palace convention center. A number of rooms have been blocked at special convention rates for SOT 2003 participants.

Arrangements for accommodations must be made through the Salt Lake City Housing Bureau no later than February 3, 2003.

Please use one of the following methods to make your reservation:

On-Line:
www.toxicology.org

Telephone:
Toll-Free (US): (800) 217-0002
International: (801) 521-9025

Fax:
U.S. and International: (801) 355-0250

Mail:
SLCVB/SOT HOUSING BUREAU
90 South West Temple
Salt Lake City, UT 84101

Accessibility for Persons with Disabilities

The Salt Palace convention center and most of the SOT hotels are accessible to persons with special needs. If you require special services, please mark the appropriate box on the Housing Request Form. Please refer to the Frequently asked Questions about Salt Lake City on the SOT Web site at **www.toxicology.org**. If you require more information about disabled access, please call SOT Headquarters and ask for Lori Ann Cook: (703) 438-3115, Ext. 311 or E-mail: loriann@toxicology.org.

Guest Hospitality Center

The SOT Guest Hospitality Center provides guest participants (non-scientists) with a place to meet and socialize with other guests. The Center will be located at the Marriott Hotel Downtown. The hours will be Sunday through Wednesday from 8:00 AM–4:30 PM and Thursday from 8:00 AM–12:00 NOON. Information on local attractions and tours will be available. Guests must register for the Annual Meeting using the same registration form as the person they are accompanying, to access the Hospitality Center. Guests are welcome to attend the Welcoming Reception, but will not have access to the scientific sessions or Exhibit Hall.

Concierge/Restaurant Reservations

A representative from the Salt Lake City convention center and visitors bureau will be located in the registration area to provide restaurant menus, entertainment guides, and arrange restaurant reservations for individuals and groups.

General Information (Continued)

Meeting Requests: Hospitality Suites and Ancillary Meetings

All requests for hospitality suites and ancillary meetings must be approved by SOT Headquarters. To reserve a meeting room, please fill out the Ancillary Meeting Form available on the SOT Web site. Ancillary functions may only be hosted by SOT Associates, Exhibitors, or organizations affiliated with SOT. Hospitality suites and ancillary meeting space books fast. Send your request now.

No hospitality functions or ancillary meetings may be scheduled during the following SOT events:

- Sunday 5:00 PM–7:30 PM
  SOT Awards Presentation and Welcoming Reception
- Monday – Thursday 8:00 AM–11:30 AM
  Morning SOT Scientific Sessions
- Monday – Wednesday 1:30 PM–4:30 PM
  Afternoon SOT Scientific Sessions
- Tuesday 4:30 PM–6:00 PM
  SOT Annual Business Meeting

The Ancillary Meeting Form serves as the initial request for "Approval" of meeting space during the SOT Annual Meeting. Once you submit your request, you will receive an "Approval Statement" with a coded event number from the SOT Headquarters Office. The Approval Statement will enable you to book meeting space at one of the SOT hotels. Please reference the Ancillary Meeting Form on the SOT Web site for the hotel listing and contact information.

The hotels are not permitted to book meeting space without the authorized approval statement and coded event number. The hotel Convention Service Manager will be able to discuss meeting room rental, food and beverage, and audio visual equipment requests. All coordination for your event should be done between the hotel Convention Service Manager and the Ancillary Function Organizer.

Message Center/Lodging Information Desk

Salt Palace Convention Center, Registration Area

The SOT Message Center/Lodging Information Desk will be located in the SOT registration area of the Salt Palace convention center and open during registration hours, Saturday – Thursday. Please inform your office and family of the Message Center/Lodging Information Desk number: (801) 534-4800. (The Message Center/Lodging Information Desk will not accept facsimiles.)

Annual Meeting Attendee lodging information will be available at the Message Center/Lodging Information Desk. The lodging list will be based on hotel information as of one week prior to the meeting. If you do not wish to have your lodging information made available to others, please visit the Message Center/Lodging Information Desk and have your name removed from the listing.

Convention Center First Aid and Security

If an emergency occurs at the Salt Palace, proceed to the nearest phone, dial 0, and ask the operator to connect you to security. State the telephone number and area from which you are calling as well as the nature and location of the incident. The Emergency Medical Team will arrive within minutes.

Should the fire alarm sound in the Salt Palace, please exit the building in an orderly manner through the clearly marked exits.

About Safety and Security

The possibility of demonstrators is very real for any large meeting such as ours. We recommend the following procedures in the event of demonstrations:

- Wear your name badge in the Salt Palace. When leaving the facility, it is wiser to remove it so as to blend in with other people.
- If you see a demonstration or protest beginning, please contact any member of the Annual Meeting staff. They will initiate SOT's Demonstration Response Plan. If you see actions that appear threatening, contact Hotel Security at once.
- Demonstrators are usually trying to attract media attention. Don't help them! It is best not to interact with them at all. Do not engage in debate or physical contact.
- Do not participate in news interviews or other media responses to the situation. SOT has designated representatives who are trained and prepared to respond.
- In the unlikely event that a scientific session or other event is disrupted by outsiders, SOT, in cooperation with security officials, has developed contingency plans. Please follow directions from the chairperson or moderator and avoid becoming involved in the situation.

Remember, safety first! If you see a situation that makes you uncomfortable, get away from it.

General Information (Continued)

SOT Headquarters Office

Salt Palace Convention Center, 254 A

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

Business Center at the Salt Palace

A Business Center is conveniently located in the Salt Palace.

- Copies
- Internet Access
- Fax Service
- Printing
- Office Supplies
- Document Creation

Saturday–Sunday .....9:00 AM–9:00 PM
Monday–Wednesday .....7:00 AM–10:00 PM
Thursday.....7:00 AM–2:00 PM

Contact Kim Barraclough at:
Tel: (801) 534-6301; Fax: (801) 534-6305;
E-mail: businesscenter@saltpalace.com
(On-line ordering is not available.)

Media Representative Registration/Media Workspace (SOT HQ Office)

Salt Palace Convention Center, 254 A

Sunday–Thursday, March 9–13 .....SOT Office Hours (listed above)

Registration fees are waived for working reporters and public information officers. Proof of credentials includes a recognized press card, business card, letter on official letterhead from an editor of a publication, or a producer of a program, certifying that you are covering the conference for their respective organizations.

There will be working space for the media in the SOT Office.

For more information, contact Lilly Richards, Media Contact, at (703) 438-3115, Ext. 121, or e-mail: lilly@toxicology.org.

Sponsorship Opportunities

SOT appreciates the generous contributions of the 2003 Annual Meeting Sponsors. There are five levels of sponsorship available: **Diamond** (over $10,000), **Platinum** ($5,000–$9,999), **Gold** ($2,500–$4,999), **Silver** ($1,000–$2,499), and **Contributor** ($500–$999).

The *Diamond* and *Platinum* sponsor are listed on the inside front cover—the *Gold* and *Silver* sponsors are listed on the inside back cover.

Placement Services

Placement Registration—Salt Palace, 255 BC

Placement Message Center—Salt Palace, 256 BC

Placement Job Posting Center—Salt Palace, 255 A

Placement Interview Room—Salt Palace, 256 A

SOT's on-line job bank makes it easy for candidates and employers alike to access the Placement Service from the SOT Web site at **www.toxicology.org**. Registrations are continuously processed and valid for six months. Once registered, candidates may search the listing of available jobs and employers may browse candidate profiles. During the registration period, users can update their listings or search the database as often as they wish. Communication with a desired employer or candidate can even be made *via* e-mail messages created within the system.

The Placement Center is an important part of the Annual Meeting, providing a coordinated service for information regarding career opportunities and qualified candidates. Please do your job and candidate searches before you arrive at the meeting. Access to the SOT job bank Web site in the Placement Center will be limited to the availability of 3-4 computers at the meeting. Employers and candidates will have access to computers, but computer use will be restricted to short searches for updates or new information.

Although pre-registration is encouraged, registrations will be accepted at the Annual Meeting. All users with current registrations at the time of the Annual Meeting will be permitted to use the service.

Sunday .....10:00 AM–3:30 PM
Monday.....7:30 AM–7:00 PM
Tuesday–Wednesday .....7:30 AM–5:30 PM

The Placement Service Message Center will be open Monday through Thursday. The Placement Service will not arrange interviews; however, interview cubicles will be available. Additional information is available on the SOT Web site or contact Nichelle Sankey at SOT Headquarters at (703) 438-3115, Ext. 303, or e-mail: nichelle@toxicology.org.

Speaker Slide Preview Room

Salt Palace, 252 A

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

2003 Award Winners

The Society of Toxicology
presented the following awards for the year 2003:

In recognition of distinguished toxicologists and students, SOT presents several prestigious awards each year. Award recipients receive a plaque and a generous stipend, are listed in the annual Membership Directory, *posted on the SOT Web site and are honored at a special Awards Presentation at the SOT Annual Meeting.*

Achievement

Lois D. Lehman–McKeeman

The Awards Committee of the Society of Toxicology is honored to have unanimously selected Dr. Lois Lehman-McKeeman as the recipient of the 2003 Achievement Award for significant contributions to the field of toxicology.

Dr. Lehman-McKeeman received her undergraduate degree in Toxicology from the Philadelphia College of Pharmacy and Science and subsequently a Ph.D. from the University of Kansas Medical Center in 1986. Following her graduate work she joined Procter and Gamble Company as a Biochemical Toxicologist, rising through the ranks to Principal Research Scientist. In 2001, Dr. Lehman-McKeeman joined Bristol-Myers Squibb Company where she is presently Research Fellow in Investigative Toxicology.

The importance of Dr. Lehman-McKeeman's scientific contributions have been internationally recognized for being directed towards investigating mechanisms by which chemicals cause toxicity and cancer in animals and the use of this information for evaluating human risk. Dr. Lehman-McKeeman has published extensively in and contributed significantly to the understanding of molecular mechanisms and the species specificity of α2u-globulin-mediated renal carcinogenesis. Her research in this area was critical for elucidating the mechanism by which chemicals cause this protein to accumulate in the male rat kidney and establishing the lack of human relevance of this syndrome. She has also expanded her research efforts to pursue biochemical and molecular mechanisms of rodent liver carcinogenesis and cell-specific lung toxicity and carcinogenesis. In many cases the scientific information she generated and published has guided regulatory policy in a highly politicized setting.

Dr. Lehman-McKeeman has also actively participated in service-related activity for SOT. She was first a member and then chairperson of the Continuing Education Committee, Director of the Placement Committee, and elected to serve as member of Council. She was also an Associate Editor of *Toxicological Sciences* until recently when she was named as Editor of the journal. Dr. Lehman-McKeeman has also participated on a number of advisory groups in which she was always a key contributor.

Dr. Lehman-McKeeman continues to make significant contributions to mechanistic toxicology using technological advances in both chemistry and molecular biology and is well deserving of this Award.

Arnold J. Lehman

Michael L. Dourson

Dr. Michael Dourson is internationally known for research, risk assessment and toxicology expertise, and leadership in developing scientific principles for chemical assessment and regulation. He founded Toxicology Excellence for Risk Assessment, a nonprofit corporation dedicated to the best use of toxicity data for estimating risk assessment values.

Dr. Dourson, Diplomate and past President of the American Board of Toxicology, has published over 70 risk assessment papers, 100-plus government risk assessment documents, and gave over 100 invited presentations.

Dr. Dourson held leadership roles at EPA, winning 4 Bronze medals. He chaired EPA's RfD Work Group, was a charter member of EPA's Risk Assessment Forum, and helped create IRIS.

2003 Award Winners
Continued

Board of Publications Best Paper Awards:

Toxicology and Applied Pharmacology

Identification of Butyrylcholinesterase Adducts after Inhibition with Isomalathion Using Mass Spectrometry: Difference in Mechanism Between (1R) – and (1S) – Stereoisomers. J. Doorn, M. Schall, D. Gage, T. Talley, C. Thompson, and R. Richardson. *TAAP* 176, 73–80, 2001.

In the work by Doorn et al. (2001), the authors explore the role of adduct formation in the inhibition of cholinesterases by malathion, a major component of the toxicity of this organophosphrus pesticide. The chemical activation of malathion produces potent inhibitors of cholinesterases, while thermal or photochemical isomerization of the pesticide can produce racemic isomalathion. By mass spectrometry, the authors find that isomer-specific cholinesterase adducts account for isomalathion inhibition of the enzyme. Furthermore, they demonstrate a difference in the mechanism of inactivation between specific isomers. The differences in the adducts appears to contribute to the aging process of this biochemical lesion, where the enzyme can no longer be reactivated. The work is elegantly done and directly addresses a toxic mechanism at the molecular level.

Toxicological Sciences

A PBPK Modeling-Based Approach to Account for Interactions in the Health Risk Assessment of Chemical Mixtures. S. Haddad, M. Beliveau, R. Tardif, and K. Krishnan. *ToxSci* 63, 125–131, 2001.

Haddad et al. (2001) presented a novel risk assessment methodology for chemical mixtures that accounts for the consequences of pharmacokinetic interactions among components. The authors used physiologically-based pharmacokinetic (PBPK) interaction models to simulate the change in tissue dose of chemicals during mixed exposures. The change in tissue dose of mixture components was used along with their "tissue dose-response" relationship to characterize the ensuing risk. Using this approach, an interaction-based hazard index was developed for mixtures of systemic toxicants whereas an interaction-based response addition was performed for mixtures of carcinogens. The applicability of these approaches was demonstrated by characterizing the change in tissue dose of toxic moiety of mixture components according to interaction mechanism and exposure concentrations. For various mixtures of volatile organic chemicals, such information was then used to characterize health risk resulting from mixed exposures.

The methodological approaches developed in this article facilitate, for the first time, the consideration of the impact of multichemical pharmacokinetic interactions at a quantitative level in mixture risk assessments.

Contributions to Public Awareness of the Importance of Animals in Toxicology Research

For the past 20 years, Dr. Michael J. Derelanko has been a consistent advocate of the importance of educating the public about the importance of animals in toxicological research and about the concepts of toxicology and dose-response relationships. Dr. Derelanko's audiences have ranged widely and include elementary, middle, and high school students, adults, and colleagues. His service to the North Jersey Regional Science Fair Committee and on the New Jersey Association for Biomedical Research has allowed him to address a range of audiences about the importance of animal research in toxicology. Dr. Derelanko has organized symposia and published papers about animals in research. Finally, Dr. Derelanko has influenced others in toxicology to talk with the public about animal research.

Michael J. Derelanko

Distinguished Lifetime Toxicology Scholar

Dr. Henry Pitot has been selected to receive the 2003 Distinguished Lifetime Toxicology Scholar Award for his substantial and seminal scientific contributions to the discipline of toxicology. Dr. Pitot is currently Professor Emeritus of Oncology and Pathology and Laboratory Medicine at the University of Wisconsin. He received both his M.D. and Ph.D. in Biochemistry from Tulane University after graduating from Virginia Military Institute. He completed post-doctoral training at the McArdle Laboratory at the University of Wisconsin and started his academic career in the Department of Pathology at the University of Wisconsin. Dr. Pitot ascended the professorial ranks at the University of Wisconsin and has served the University in many capacities throughout his career from Chairman of Pathology to the

Henry C. Pitot

Director of the McArdle Laboratory for Cancer Research.

Dr. Pitot's research interests have been directed towards understanding the multistage process of chemical carcinogenesis using morphological and biochemical approaches. He published his first two papers in 1954 and has since published over 500 high-quality and frequently-cited scientific papers. He is well known for his identification of the various stages in hepatocarcinogenesis that have provided models for both genotoxic and nongenotoxic carcinogens. His characterization of the heterogeneous nature of hepatic foci and methods for quantifying the number and size of these precursor lesions allowed the quantitative assessment of initiating and promoting potential of different chemicals. This work has had significant impact on regulatory agencies and public policy to benefit more accurate cancer risk assessment. He continues to make major contributions by incorporating molecular biology and the development and use of transgenic animals as tools in his investigations.

In addition to Dr. Pitot's outstanding research career, he serves the toxicology, pathology, and cancer research communities as a mentor, reviewer, and advisor. He is a great scholar and teacher who has encouraged and mentored many young investigators in these fields and is highly deserving of the Distinguished Lifetime Toxicology Scholar Award.

Education

Dr. Frederick W. Oehme, Professor of Toxicology, Pathobiology, Medicine and Physiology in the College of Veterinary Medicine at Kansas State University, has been selected as the 2003 Educator Award winner. Dr. Oehme has been an important and continuing part of toxicological education for many years. His efforts extend from his university, to SOT, and beyond to the international arena. His early efforts in building the graduate training program in toxicology at Kansas State are noteworthy as is his mentoring of over sixty graduate and post-doctoral students. The success of these students in examinations for accreditation by the American Board of Toxicology and/or the American Board of Veterinary Toxicology as well as in their subsequent careers is a fitting tribute to his efforts.

Frederick W. Oehme

Dr. Oehme's strong interest in continuing education and in SOT led him in 1980 to propose, organize, and present in 1980 the first SOT Continuing Education course. In the 23 years since then the Society's Continuing Education Courses have become a valuable source of information for toxicologists and an important part of SOT Annual Meetings.

Concern with professional standards in toxicology led to Dr. Oehme's involvement in the establishment of the American Board of Toxicology, including chairing the initial Constitution and By-Laws Committee and subsequent service on the Executive Committee. In the international arena he has been involved with training activities in many countries and has served as a toxicology consultant to FAO and WHO for the development of poisoning prevention programs around the world.

In summary, it can be said that Dr. Oehme's contributions to toxicology education have been many and varied and the result of a deep and abiding commitment. His impact on toxicology has been, and continues to be, important and valuable.

Enhancement of Animal Welfare

The 2003 Enhancement of Animal Welfare Award has been awarded to Dr. Ian Kimber and Dr. Frank G. Gerberick. They have been active in the field of toxicology for over 20 years, and they are both the authors or co-authors of over 300 publications on the subject of predictive testing in immunology.

Frank G. Gerberick

Ian Kimber

Frank Gerberick and Ian Kimber recently sponsored the Murine Local Lymph Node Assay for review by the Inter-Agency Coordinating Committee for the Validation of Alternative Methods Peer Review Panel The panel unanimously recommended that, with appropriate qualifications, the Local Lymph Node Assay was at least as accurate as current guinea pig methods for the hazard identification of strong to moderate chemical sensitizing agents and offered "several advantages with respect to animal use refinement compared to conventional

2003 Award Winners
Continued

guinea pig methods in that it involves less pain and distress". As a consequence, this assay is now accepted by many regulatory bodies, including the U.S. Food and Drug Administration, as a valid predictor of immune sensitization.

The Local Lymph Node Assay is an *in vivo* assay, which enhances the welfare of the laboratory animal by reduction of distress without compromise of data quality. This is a key goal of all scientists truly interested in animal welfare, while recognizing the need for their continued use.

Merit

Dr. M. W. "Drag" Anders is the recipient of the 2003 Merit Award. Drag is considered by his peers to be among a select group whose research in the field of drug and chemical bioactivation can be considered "distinguished." His work on the bioactivation, covalent binding, and toxicity of halogenated hydrocarbons is arguably the definitive body of work. When Drag entered research, the covalent binding hypothesis of toxicity was in its infancy, and the focus of the field was to elucidate the nature of the biologically reactive intermediates. In the 1970s, he carried out some of the earliest work on chloroform, dichloromethane, and carbon tetrachloride that actually proved the hypothesis by linking the biological response of the parent compound to the chemistry through the unequivocal structural identification of the reactive intermediates. He used his chemical knowledge to push electrons and with various techniques proved the nature of the involvement of reactive species in toxicity. This rigorous proof of mechanism through elegant and original experimental science coupled to a commitment to excellence in research is what has distinguished Drag's work throughout his career in toxicology. Drag has received a number of prestigious awards including the Bernard B. Brodie Award in Drug Metabolism and a MERIT (Method to Extend Research in Time) award from NIEHS. He has received and held distinguished chairs and lectureships positions as well as serving as the Chair of the Department of Pharmacology and then the Department of Pharmacology and Physiology after merger of these two departments at the University of Rochester. He has served in various advisory capacities in recognition of his stature in th field of toxicology. Drag's career is also distinguished by his record of training many outstanding students. Thus, Drag's career is truly distinguished, in his research, training, and service and most importantly in his character and personality.

M. W. Anders

Public Communications

Dr. Charlene McQueen has enjoyed a stellar career in toxicological research and teaching. At this time, however, she is being recognized as a leading communicator of toxicology to the general public as the recipient of the 2003 Public Communications Award. Her efforts in this regard have been extensive, many of them through SOT programs, others through the University of Arizona. The former include service on the K–12 Education Subcommittee, as well as participating in and obtaining NIEHS support for SOT-sponsored teacher training workshops. The latter include service as Director of Community Outreach and Education of the University of Arizona Health Sciences Center. Her use of web-based programs has communicated toxicological information and the basic concepts of toxicology to people in all parts of the world.

Charlene A. McQueen

American Chemistry Council Early Career Award in Inhalation Toxicology

Ilona Jaspers

The 2003 Early Career Award in Inhalation Toxicology is presented to Dr. Ilona Jaspers, Assistant Professor in the Department of Pediatrics, Division of Infectious Diseases, University of North Carolina at Chapel Hill. Dr. Jaspers' Award, which is the second of its kind to be awarded through SOT, will be used to support work under her proposal "Diesel-Induced Alterations of Influenza Pathogenesis." This work will seek to establish whether exposure to diesel exhaust particles renders airway epithelial cells more susceptible to influenza-induced pro-inflammatory responses and thus enhances the pathogenesis associated with influenza infections. In addition, this project will determine whether antiviral defense responses of airway epithelial cells are compromised by prior exposure to diesel exhaust particles, leading to an advantage of the invading virus over the host defense system. Dr. Jaspers obtained her Bachelor of Science degree in Biology at Seton Hall University, and was an NIEHS Pre-Doctoral Fellow at New York University where she earned her Ph.D. in Toxicology in 1997 under Dr. Lung Chi Chen. From 1997 to 1999, she was a Post-Doctoral Fellow with the Center of Environmental Medicine and Lung Biology at the University of North Carolina at Chapel Hill, working with Dr.. James M. Samet and Robert B. Devlin from the U.S. EPA Human Studies Division. From 1999 to 2000 Dr. Jaspers was a Research Associate with the Center of Environmental Medicine and Lung Biology and obtained her faculty appointment in the Department of Pediatrics, Division of Infectious Diseases in the summer of 2000.

This Early Career Award in Inhalation Toxicology—sponsored by the Long-Range Research Initiative of the American Chemistry Council and administered through the Society of Toxicology—is provided to encourage persons beginning their professional careers to conduct research on topics related to inhalation.

AstraZeneca Traveling Lectureship Award

William D. Atchison

The experience and accomplishments in neurotoxicology of Dr. William D. Atchison, Professor of Pharmacology and Toxicology at Michigan State University, make him an excellent fit for the role of 2003 AstraZeneca Traveling Lecturer. His experience in the classroom and in cutting-edge research make clear that both the style and substance of the lectures will be a pleasure to the audiences. The well-planned lecture itinerary will provide ample opportunities for scientific communication. The overall impact of Dr. Atchison's lecture tour will bring credit to him, to AstraZeneca, and to SOT.

Colgate-Palmolive Traveling Lectureship in Alternative Methods in Toxicology

Marc W. Fariss

This year's recipient of the Colgate-Palmolive Traveling Lectureship in Alternative Methods in Toxicology is Dr. Marc W. Fariss. Dr. Fariss is Associate Professor of Pharmaceutical Sciences and Pharmacotherapy at Washington State University. For his Traveling Lectureship, Dr. Fariss will spend several weeks with the Toxicology Program in the Department of Environmental Health at the University of Washington. Over the past decade, Dr. Fariss has developed novel *in vitro* techniques for determining the susceptibility of tissue to lipid peroxidation and mitochondrial oxidative damage. While at the University of Washington, he plans to work closely with Dr. Terrance Kavanagh to apply these *in vitro* techniques to study the role of mitochondrial antioxidants and mitochondrial oxidative damage in oxidative stress-induced toxicity. He will also provide some guest lectures in a Current Topics in Toxicology course at the UW, as well as provide a Departmental Seminar on his *in vitro* techniques.

Congratulations to all the Award Winners

Social Events

Awards Presentation

Sunday, March 9
5:15 PM– 6:30 PM
Salt Palace, Ballroom B

Join us as SOT honors our prestigious award winners at the Awards Presentation.

Student/Post-Doctoral Fellow Mixer

Sunday, March 9
7:30 PM–8:30 PM
Salt Palace, 151 G

All students and post-docs are invited to attend this fun-filled reception. Refreshments will be provided by SOT and sponsors — a cash bar will also be available. Meeting Badges and tickets are required.

Welcoming Reception

Sunday, March 9
6:30 PM– 7:30 PM
Salt Palace, Ballroom J

The Welcoming Reception is a great opportunity to renew old friendships and to make new acquaintances. Please join the Society in this inaugural event of the Annual Meeting.

Specialty Section Receptions

Monday, March 10 through Wednesday, March 12,
6:00 PM–7:30 PM
Salt Palace
(See Events Calendar on Pages 4–8)

Each of the 19 SOT Specialty Sections will hold a meeting/reception during the 2003 SOT Annual Meeting. All current and prospective SOT Specialty Section Members are encouraged to attend. Please check the *Program's* Event Calendar on pages 4–8, for a listing of times for all Specialty Section meetings and receptions.

25-Year Member Reception

Sunday, March 9
7:00 PM–8:00 PM
Salt Palace, 254 B

Have you been a member of the Society of Toxicology for 25 years (or more)? If so, please consider joining your colleagues in celebration and recognition of the scientists who established the Society.

Regional Chapter Receptions

Monday, March 10 through Wednesday, March 12,
7:00 PM–11:00 PM
Marriott Hotel
(See Events Calendar on Pages 4–8)

Many of the SOT Regional Chapters meet during the SOT Annual Meeting. A list of Regional Chapter receptions will be listed in the *Program's* Event Calendar on pages 4–8.

2002 SOT Fellowship Award Winners Making Presentations at the 2003 Annual Meeting

Colgate-Palmolive Post-Doctoral Fellowship in *In Vitro* Toxicology

(Awarded 2001, Renewed 2002)

Recipient:
Kevin Kerzee

University of Cincinnati

Abstract # 244
PRE-CLINICAL EVALUATION OF ITRACONAZOLE NANOSUSPENSION FOR INTRAVENOUS INJECTION

Covance Corporation Graduate Fellowship

Recipient:
Edward Williams

Texas A&M University

Abstract # 53
NF-κB DYSREGULATION IN ATHEROSCLEROTIC VASCULAR SMOOTH MUSCLE CELLS: COMPLEX COMPOSITION AND REDOX SENSITIVITY

Novartis Corporation Graduate Fellowship

Recipient:
Kartik Shankar

University of Louisiana at Monroe

Abstract # 946
PPAR—ACTIVATION IS ESSENTIAL FOR DIABETES-INDUCED RESISTANCE AGAINST ACETAMINOPHEN HEPATOTOXICITY

Procter & Gamble Company Graduate Fellowship

Recipient:
Kristin Horn

Indiana University School of Medicine

Abstract # 622
ACUTE ETHANOL EXPOSURE INCREASES CATALASE ACTIVITY, BUT DOES NOT ALTER GLUTATHIONE LEVELS IN POSTNATAL DAY 4 RAT PUPS

Scientific Sessions Index

CONTINUING EDUCATION COURSES

All courses will be held on Sunday, March 9, 2003, at the Salt Palace convention center. 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 the Continuing Education Information Booth, Upper Concourse Foyer, at the convention center on Sunday. The booth will be open 6:30 AM- 5:15 PM. Course descriptions are on pages 37–42.

7:00 AM–7:45 AM, Sunrise Mini-Course:

1.	Application of Stem Cells in Biomedical Research	Ballroom A

8:15 AM–12:00 NOON, Morning Courses:

2.	Essential Informatics for Toxicologists	254 A
3.	Unfolding the Secrets in Culturing Brain Cells: Theory, Techniques, and Beyond	150 G
4.	The Nuts and Bolts of Genetically Engineered Mice in Toxicology	250 D
5.	Fundamentals of Risk Assessment and Applications of Recent Methodologies to Difficult Problems	Ballroom A
6.	Cutaneous Toxicity—Current Methods and Concepts in Safety Evaluation and Relevance to Human Exposure	251 D
7.	Medicinal Herbals and Dietary Supplements	250 A

1:15 PM–5:00 PM, Afternoon Courses:

8.	Genomic and Proteomic Array Formats on the Cutting-Edge	Ballroom A
9.	Integrating Toxicologic Pathology into Compound Evaluation and Risk Assessment II	251 A
10.	Choice and Application of Classical, Population or Physiologically-Based PK for Chemical Assessment and Pharmaceutical Development	150 G
11.	Evaluation of Immunomodulation in Safety Assessment	251 A
12.	The Effects of Non-Reproductive Hormones on the Reproductive System and the Implications for Toxicology	251 D
13.	Epigenetics of Cancer	250 D

SYMPOSIA

Date/Time	Topic/Abstract #	Room	Page
Monday 9:30 AM	Understanding Mechanisms of Toxicity of Immunosuppressive Drugs to Improve Their Safety Profiles and Broaden the Scope of Their Use #14-18	251 A	45
Monday 9:30 AM	Use and Application of Stem Cells in Toxicology #19-23	Ballroom C	46
Monday 1:30 PM	Free Radicals in the Toxicity of Alcohols #265-270	Ballroom C	65
Monday 1:30 PM	Gene-Environment Interaction *In Utero*: The Fetal Basis of Adult Disease #271-276	Ballroom B	65
Monday 1:30 PM	Health Risk Assessment of Hexavalent Chromium in Drinking Water: Carcinogenicity, Research, and Regulation #277-282	250 D	66
Monday 1:30 PM	World Trade Center Aftermath: Looking Back Towards the Future #283-289	Ballroom F	67
Tuesday 8:30 AM	Effects of Bystander Cells: Implications for Low-Dose Extrapolation of Chemical and Radiation-Induced Cancer Risk #543-548	Ballroom C	88
Tuesday 8:30 AM	Genomics and Proteomics in Reproductive and Developmental Toxicity #549-554	Ballroom B	88
Tuesday 8:30 AM	Red Tides: A Recurring Public Health Problem #555-560	251 A	89
Tuesday 8:30 AM	Stress Activated Signal Transduction Pathways #561-565	Ballroom F	89
Tuesday 1:30 PM	Advances in Toxicogenomics: NIEHS National Center for Toxicogenomics #801-806	Ballroom F	107
Tuesday 1:30 PM	Molecular Mechanisms of Cardiovascular Toxicity of Metals and Metalloids #807-811	Ballroom C	108
Tuesday 1:30 PM	Novel Insights into the Toxicology of Lung Oxidative Stress #812-817	Ballroom B	108
Wednesday 8:30 AM	Children's Health Risk: What's So Special About the Developing Immune System? #1087-1092	Ballroom B	129

Scientific Sessions Index (Continued)

Date/Time	Topic/Abstract #	Room	Page
Wednesday 8:30 AM	Temporal Specific Expression of Toxicant-Metabolizing Enzymes: Implications for Life-Stage-Dependent Toxicity #1093-1098	Ballroom C	130
Wednesday 1:30 PM	Fundamentals of Protein Allergenicity: Why are Some Proteins Allergenic? #1348-1351	Ballroom C	149
Thursday 8:30 AM	Biomarkers of Efficacy of Chemopreventive Agents in Animal Models and in Humans #1610-1615	Ballroom C	169
Thursday 8:30 AM	Environmental Modulation of Puberty #1616-1620	Ballroom B	170

INNOVATIONS IN TOXICOLOGICAL SCIENCES

Date/Time	Topic/Abstract #	Room	Page
Wednesday 8:30 AM	Beyond Genomics: Image Analyses and Computational Biology #1081-1086	Ballroom F	129

INNOVATIONS IN APPLIED TOXICOLOGY

Date/Time	Topic/Abstract #	Room	Page
Wednesday 1:30 PM	Genomic and Proteomic Analysis of Surrogate Tissues for Assessing Toxic Exposures and Disease States #1342-1346	Ballroom F	148

WORKSHOPS

Date/Time	Topic/Abstract #	Room	Page
Monday 9:30 AM	Bioterrorism and Its Toxicological Effects #24-28	Ballroom B	46
Monday 9:30 AM	Cumulative Risk Assessment: Getting From Toxicology to Quantitative Analysis #29-34	250 D	47
Monday 1:30 PM	Dermal Exposure Leading to Respiratory Tract Sensitization and Disease: A Trivial or Critical Link? #290-294	251 A	67
Tuesday 8:30 AM	Metal Speciation in Toxicology: Determination and Importance for Risk Assessment #566-571	250 D	90
Tuesday 1:30 PM	Challenges of the Developmental Neurotoxicity Study #818-822	250 D	109
Tuesday 1:30 PM	Mode of Action in Assessing Human Relevance of Animal Tumors: Improving the Framework for Analysis #823-827	251 A	109
Wednesday 8:30 AM	Occupational Lung Disease in Response to Mixed Exposure: Approaches to Identify the Toxicity of Process-Dependent Contaminants #1099-1104	250 D	130
Wednesday 1:30 PM	Dose-Dependent Transitions in Toxic Mechanisms #1352-1357	Ballroom B	149
Wednesday 1:30 PM	Questions Surrounding Depleted Uranium Toxicity: Answers from the Clinic and the Laboratory #1358-1363	251 A	150
Wednesday 1:30 PM	Vanilloid Receptors: Mediators of Respiratory Injury #1364-1368	250 D	151
Thursday 8:30 AM	Methods for the Identification and Characterization of Chemical Respiratory Allergens #1621-1626	250 D	170

PLATFORM SESSIONS

Date/Time	Topic/Abstract #	Room	Page
Monday 9:30 AM	Epigenetic Mechanisms in Carcinogenesis #35-40a	Ballroom I	48
Monday 9:30 AM	Kidney I #41-46	Ballroom A	48
Monday 9:30 AM	Molecular Mechanisms of Oxidative Injury #47-55	251 D	49
Monday 9:30 AM	Proteomic and Genomic Technologies in Biomarker Development #56-64	250 A	49
Monday 1:30 PM	Characterization of Toxicant Signatures Using Gene Expression Microarrays #295-303	250 A	68
Monday 1:30 PM	Deregulation of Signal Transduction Mechanisms by Toxicants #304-312	Ballroom A	69
Monday 1:30 PM	Mechanisms of Apoptosis #313-321	251 D	69
Tuesday 8:30 AM	Gene Expression Markers of Toxicity #572-580	250 A	90
Tuesday 8:30 AM	Immunotoxicology I #581-589	251 D	91
Tuesday 8:30 AM	Particles and Allergic Asthma #590-597	Ballroom A	92

Scientific Sessions Index (Continued)

Date/Time	Topic/Abstract #	Room	Page
Tuesday 1:30 PM	Developmental Toxicity Mechanisms #828-836	Ballroom A	110
Tuesday 1:30 PM	Immunotoxicology II #837-844	Ballroom I	110
Tuesday 1:30 PM	Methods to Evaluate Hypersensitivity/ Allergy #845-852	251 D	111
Tuesday 1:30 PM	Nuclear, Cytosolic and Membrane Receptor-Mediated Xenobiotic Signal Transduction I #853-861	250 A	112
Wednesday 8:30 AM	Genotoxicity: Models, Mechanisms, and Mutagenicity #1105-1112	250 A	131
Wednesday 8:30 AM	Hypersensitivity #1113-1119	251 D	131
Wednesday 8:30 AM	TCDD & POPs #1120-1128	Ballroom A	132
Wednesday 1:30 PM	Burroughs Wellcome Fund New Investigator Session #1369-1373	Ballroom I	151
Wednesday 1:30 PM	Endocrine System I #1374-1382	250 A	152
Wednesday 1:30 PM	Gene-Environment Interactions in Cardiovascular Disease #1383-1391	251 D	152
Wednesday 1:30 PM	*In Vitro* Models of Hepatotoxicity #1392-1400	Ballroom A	153
Thursday 8:30 AM	Cytochrome P450-Mediated Metabolism of Xenobiotics I #1635-1631	251 D	171
Thursday 8:30 AM	Hydrocarbons II #1636-1643	Ballroom A	172
Thursday 8:30 AM	Toxicogenomic Evaluation of Hepatotoxicity Mechanisms #1644-1652	250 A	172

POSTER SESSIONS

All posters will be displayed from 9:30 AM – 12:30 PM (Monday – Wednesday) and 8:30 AM – 11:30 AM (Thursday) or 1:30 PM – 4:30 PM. Sessions indicated by an asterisk (*) will be attended from 9:30 AM – 11:00 AM or 1:30 PM – 3:00 PM (except Thursday morning when they will be displayed from 8:30 AM – 11:30 AM and attended from 8:30 AM – 10:00 AM). Those without an asterisk will be attended from 11:00 AM – 12:30 PM or 3:00 PM – 4:30 PM (except Thursday morning when they will be attended 10:00 AM – 11:30 AM). See directional signs throughout the ToxExpo™ Exhibit Hall for poster locations.

Date/Time		Topic/Abstract #	Room	Page
Monday 9:30 AM	*	Metal Toxicity #65-87a	Exhibit Hall	50
Monday 9:30 AM		Metal Neurotoxicity I #88-113	Exhibit Hall	52
Monday 9:30 AM	*	Female Reproductive System #114-129	Exhibit Hall	53
Monday 9:30 AM		Drinking Water Risk Assessment #130-141	Exhibit Hall	54
Monday 9:30 AM	*	Role of Environmental Agents in Cardiovascular Disease #142-173	Exhibit Hall	55
Monday 9:30 AM		Biological Models #174-185	Exhibit Hall	57
Monday 9:30 AM	*	Respiratory Tract I #186-205	Exhibit Hall	58
Monday 9:30 AM		Minerals and Man-Made Fibers #206-220	Exhibit Hall	60
Monday 9:30 AM	*	Pharmaceutical Toxicity Testing #221-244	Exhibit Hall	61
Monday 9:30 AM		Hypersensitivity/Allergy #245-263	Exhibit Hall	62
Monday 1:30 PM	*	Metal Neurotoxicity II #322-341	Exhibit Hall	70
Monday 1:30 PM		Neurotoxicology: General #342-360	Exhibit Hall	71
Monday 1:30 PM	*	Multigeneration Reproductive Toxicity #361-373	Exhibit Hall	73
Monday 1:30 PM		Oxidative Injury #374-399	Exhibit Hall	74

Scientific Sessions Index (Continued)

Scientific Sessions Index (Continued)

The Society of Toxicology expresses its gratitude to

DR. RICHARD S. WARITZ

Thank You

For the sixth year in a row, Dr. Waritz volunteered his own time to review and confirm the scientific terminology and consistency in the SOT Annual Meeting *Program*.

Continuing Education Courses

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.

Please Note: Each Continuing Education Course is offered in one of three time blocks: Sunrise (7:00 AM–7:45 AM), AM (8:15 AM–12:00 NOON) or PM (1:15 PM–5:00 PM).

Sunday Morning, March 9
7:00 AM to 7:45 AM

Application of Stem Cells in Biomedical Research

SUNRISE MINI-COURSE 1 — BASIC
Ballroom A

Chairperson(s): *Julio C. Davila, Pharmacia Corporation, St. Louis, MO.*

Endorsed by:
***In Vitro* Specialty Section**
Molecular Biology Specialty Section

In recent years stem cells are a subject of increasing scientific interest because of their potential utility in numerous biomedical applications. Stem cell technology has provided unprecedented opportunities not only for studying and understanding human development but also for changing the way we potentially will discover and develop new drugs, as well as test them for safety. This presentation will provide an overview on the evolving concept of applying stem cell technology to biomedical research, derivation of diverse tissue-specific cell types, and specific example of stem cell applications in biomedical research. This mini-course will be of interest to all toxicologists and related scientists from industry, academia, and government who are interested in the application of *in vitro* approaches using stem cells to predict the impact of drug exposure in humans as well as the generation of cells and tissues that could be used as therapies.

- **An Overview of Stem Cell Technology and Its Potential Applications,** Clive N. Svendsen, University of Wisconsin, Madison, WI.

Sunday Morning, March 9
8:15 AM to 12:00 NOON

Essential Informatics for Toxicologists

AM 2 — BASIC
251 A

Chairperson(s): *William B. Mattes, Pharmacia Corporation, Kalamazoo, MI.*

Endorsed by:
Molecular Biology Specialty Section

The combination of the Internet, automated data acquisition, and genomic information has transformed the role of the computer in the modern scientist's life. A familiarity with word processing and simple spreadsheets is simply not adequate preparation for dealing with large datasets such as those generated by toxicogenomics or high-throughput screens. Increasingly, the software tools used to deal with such data require an understanding of basic concepts in computer science, database design, bioinformatics and statistics. This basic level course hopes to provide the beginnings of such an understanding. Thus the first lecture will cover some of the essential concepts of operating systems, file and data concepts and programming concepts. This will be followed by a talk discussing the essentials of database design and use, contrasting flat-file and relational databases. A third lecture will provide an overview of how to work with protein and nucleic acid sequences: homology searching and sequence alignment. The final lecture will cover concepts of visual analysis of large data sets, and contrast some of the various approaches used. Hopefully after this course the student will be conversant in informatics to the level of effectively interacting with computer scientists, as well as collecting and manipulating datasets with reasonable skill. Exercises will be included, that the attendee can review and practice on their own computer, in order to better understand the principles discussed.

- **Basics of Operating Systems, Data, and Data Handling,** William B. Mattes, Pharmacia Corporation, Kalamazoo, MI.
- **Essentials of Database Principles and Use,** Lyle Burgoon, Michigan State University, East Lansing, MI.
- **Basic Sequence Alignment and Searching,** Russell Thomas, Kalypsys, Inc., La Jolla, CA.
- **Visual Analysis of Large Datasets,** Jennifer Fostel, Pharmacia Corporation, Kalamazoo, MI.

Unfolding the Secrets in Culturing Brain Cells: Theory, Techniques, and Beyond

AM 3 BASIC
150 G

Chairperson(s): *Timothy J. Shafer, U.S. EPA, Research Triangle Park, NC and Wei Zheng, Columbia University, New York, NY.*

Endorsed by:
***In Vitro* Specialty Section**
Mechanisms Specialty Section
Neurotoxicology Specialty Section

In vitro culture of selected cell types of the CNS is an indispensable tool in modern neuroscience research. Rapid development in theories and techniques has revolutionized the traditional way in culturing neurons, neuroglia, and brain barrier cells. For example, co-culture techniques make it possible to investigate molecular mechanisms underlying regeneration of neurons, interaction between neurons and neuroglia, and induction of brain barriers. Recent advancement in stem cell research provides an additional dimension toward the reproduction of nearly all brain cell types. The fast-paced progress in *in vitro* culture of brain cells has presented itself as the most dynamic and rapidly advancing field in neuroscience. It is for that matter that molecular mechanisms are rarely elucidated without evidence obtained from studies using cell cultures. This course will provide comprehensive reviews of cutting edge technology in culturing brain cells beginning with a brief introduction to tissue culture theory and practice. Subsequent lectures will focus on three major cell types of the CNS, *i.e.*, neurons, astrocytes, and barrier cells, and discuss in detail the techniques to establish a primary culture, to maintain an established cell line, and to create an immortalized cell line. The theory and practice of stem cell cultures in neurotoxicological studies will also be addressed. Application of these techniques in basic research, regulatory monitoring, and industrial R&D will be discussed. This course serves as an ideal introduction to students, postdoctoral fellows, and industrial researchers beginning in their culture research, and also is suitable to those who want to improve *in vitro* culture techniques in their own laboratories. For experienced researchers, the course will provide a comprehensive review of the most recent progress in cell culture techniques.

- **Introduction: Basic Principles of Tissue Culture,** Timothy J. Shafer, U.S. EPA, Research Triangle Park, NC.
- **Neurons: Primary and Clonal,** William R. Mundy, U.S. EPA, Research Triangle Park, NC.
- **Glial Cultures and Glial/Neuron Co-Cultures,** Michael Aschner, Wake Forest University School of Medicine, Winston-Salem, NC.
- **Brain Barriers in Test Tubes: Primary Culture, Immortalization, and Trans-Barrier Transport,** Wei Zheng, Columbia University, New York, NY.
- **The Utility of Stem Cells in Neurotoxicology and Other Disciplines,** Mark Noble, University of Rochester Medical Center, Rochester, NY.

The Nuts and Bolts of Genetically Engineered Mice in Toxicology

AM 4 BASIC
250 D

Chairperson(s): *Wanda M. Haschek-Hock, University of Illinois, Urbana, IL and Jeffrey I. Everitt, GlaxoSmithKline, Research Triangle Park, NC.*

Endorsed by:
Comparative and Veterinary Specialty Section
Toxicologic and Exploratory Pathology Specialty Section

The recent advent of genetic engineering techniques has allowed intentional engineering of novel animal models for human diseases. This has had a profound impact on basic biomedical research and has accelerated the pace at which pharmaceutical and biotechnology firms can discover new targets and innovative drug candidates. In addition it has greatly enhanced the study of mechanisms of toxicity. This course will provide an overview of how genetic engineering is used to create such models, specific issues related to management of such animals, the identification of phenotypic alterations and their evaluation in the development of models, and the use of these models in the pharmaceutical industry for discovering new targets for therapy interventions and developing new drug candidates. The course will be presented at the basic level and will provide information for scientists of all toxicology disciplines who are considering the use genetically engineered models in their research or need to understand the information provided by the use of such models. It will especially be of use to those who are not currently working with whole animals or such genetically engineered models.

- **Overview of Genetically Engineered Mice,** Niles W. Fox, Lilly Research Laboratories, Indianapolis, IN.
- **Management and Infectious Disease Issues in Genetically Engineered Mice,** Lela K. Riley, University of Missouri, Columbia, MO.
- **Phenotyping and Pathology Issues,** Charles A. Montgomery, ComPath, Conroe, TX.
- **Use of Genetically Engineered Rodents in Drug Discovery and Development,** Brad Bolon, Amgen, Inc., Thousand Oaks, CA.

Fundamentals of Risk Assessment and Applications of Recent Methodologies to Difficult Problems

AM 5 ADVANCED
Ballroom A

Chairperson(s): *Dennis J. Paustenbach, Exponent, Inc., Menlo Park, CA.*

Endorsed by:
Biological Modeling Specialty Section
Carcinogenesis Specialty Section
Food Safety Specialty Section
Neurotoxicology Specialty Section
Risk Assessment Specialty Section

The field of risk assessment has evolved at a fairly rapid pace over

the past 4-5 years. Fifteen years ago, it was not uncommon for risk assessments to be conservative descriptions of the plausible risks posed by chemicals; often the approach was dictated by regulatory guidance or criteria. Today, the approach to characterizing risks is more flexible than in years past. This course will include an introductory lecture on the fundamentals of risk assessment with an emphasis on the changes in risk assessment procedures that have occurred over the past five years (*e.g.*, new U.S. EPA cancer guidelines, children's health guidelines, monte carlo techniques, aggregate and cumulative risk, etc.). The four basic parts of a risk assessment will be described (hazard identification, dose-response assessment, exposure assessment, and risk characterization) and state-of-the-art approaches to each will be presented. This lecture is followed by three case studies. The first will discuss one of the most complex risk assessments ever conducted. It involves a former government facility which used and emitted both chemical and radiological agents. The second will present an analysis of the risks to children posed by CCA treated wood. The last case study will present several examples of how to evaluate some of the hazards posed by consumer products. Applicable regulatory guidance (both domestic and international) will be cited in the various talks.

- **Fundamentals of Risk Assessment,** Dennis J. Paustenbach, Exponent, Inc., Menlo Park, CA and Pamela Williams, Exponent, Inc., Boulder, CO.
- **Conducting a Retrospective Risk Assessment of a Site with Both Chemical and Nuclear Wastes,** Thomas E. Widner, ENSR International, Alameda, CA.
- **Conducting Risk Assessments of Consumer Products,** Gregory P. Broby, Exponent, Inc., Oakland, CA and Thomas Brennan, U.S. EPA, Washington, DC.
- **Assessing Arsenic Exposure to Children from Treated Wood,** Joyce S. Tsuji, Exponent, Inc., Bellevue, WA.

Cutaneous Toxicity-Current Methods and Concepts in Safety Evaluation and Relevance to Human Exposure

AM 6 BASIC
251 D

Chairperson(s): *Nancy A. Monteiro-Riviere, North Carolina State University, Raleigh, NC and Carol S. Auletta, Huntingdon Life Sciences, East Millstone, NJ.*

Endorsed by:
Dermal Toxicology Specialty Section
***In Vitro* Specialty Section**
Regulatory and Safety Evaluation Specialty Section

Humans are exposed to a large number of potentially toxic substances through the skin. Cutaneous exposure may occur intentionally, as with use of pharmaceuticals and consumer products, or accidentally, as a result of industrial or environmental exposure. Evaluation of the safety of these substances is an important function of toxicologists. It has been several years since SOT presented a continuing education course on this topic. The course will provide presentations and discussions of the current status of cutaneous toxicity safety evaluation, using *in vitro* and *in vivo* (animal model) systems as well as clinical evaluations in humans. Areas covered will include irritation, toxicity and phototoxicity. Regulatory aspects, current protocols, guidance on study design and interpretation of results will be discussed as will the relevance to human exposure. This would be a basic course of interest to toxicologists who may work with materials with a potential for cutaneous exposure (pharmaceuticals, consumer products, chemicals). It will provide an overview of the topic for those with little or no experience in this area and will provide updates, with information on current ideas and methods in the field, for those currently working in dermal toxicology. The presentation on *in vitro* assays will be of special interest to scientists specializing in this area. Presentations on human testing and CDER/U.S. FDA practice will be of interest to those with concerns in the areas of drug development and regulatory affairs.

- **Anatomical Considerations for Model Selection,** Nancy A. Monteiro-Riviere, North Carolina State University, Raleigh, NC.
- ***In Vitro* Assays: What's New? What Works? What Doesn't?,** Cynthia A. Ryan, Procter & Gamble Company, Cincinnati, OH.
- ***In Vivo* Assays — Current Protocols, Procedures and Animal Models,** Carol S. Auletta, Huntingdon Life Sciences, East Millstone, NJ.
- **Human Assays — Clinical Relevance of *In Vivo* and *In Vitro* Assays,** Ronald C. Wester, University of California at San Francisco, San Francisco, CA.
- **Regulatory Perspectives — U.S. FDA Guidance on Test Selection, Data Interpretation and Clinical Relevance,** Abigail C. Jacobs, U.S. FDA, Rockville, MD.

Medicinal Herbals and Dietary Supplements

AM 7 ADVANCED
250 A

Chairperson(s): *Alfred F. Fuciarelli, Battelle Toxicology Northwest, Richland, WA and William T. Allaben, National Center for Toxicological Research, Jefferson, AR.*

Endorsed by:
Food Safety Specialty Section
Regulatory and Safety Evaluation Specialty Section

Medicinal herbals and other dietary supplements are consumed by an estimated one-third of the U.S. population. Over 1500 botanicals are sold as dietary supplements or ethnic traditional medicines. Their use has increased substantially since passage of the 1994 Dietary Supplement Health and Education Act. Herbal formulations are not subjected to FDA pre-market toxicity testing to assure their safety or efficacy. However, there is an increased public awareness of the need to conduct toxicity studies on herbs and herbal ingredients and many government and private laboratories are contributing to this effort. Perhaps the largest single effort in this area is being conducted by the National Toxicology Program where studies are being conducted on the following medicinal herbals and compounds found in herbs: aloe vera gel, black cohash, comfrey, ginseng and ginsenosides, goldenseal, kava kava, pulegone, thujone, and extracts of grape seed, pine bark, black walnut, Echinacea purpurea, Ginkgo biloba and milk thistle. In this course, speakers will present information relevant to toxicity testing for safety and efficacy. Presentations describe the on-going efforts in chemical analyses and dosing/formulation issues; safety assessment including carcinogenicity, reproductive toxicity, immunotoxicity, neurotoxicity, and effects associated with acute exposure to high doses and chronic exposures to low doses; adverse human health effects with an emphasis on circumstances

under which the adverse reactions may occur; interactions with pharmaceutical products; and perspectives on research needs and priorities for safety assessment of herbal medicines and dietary supplements.

- **Characterization and Use of Herbal Medicines and Dietary Supplements in Bioassays,** Cynthia S. Smith, NIEHS, Research Triangle Park, NC.
- **Toxicity and Long-Term Effects of Herbal Medicines and Dietary Supplements,** Elizabeth A. Yetley, U.S. FDA, College Park, MD.
- **The Nature of Safety: Classification of Adverse Events to Botanical Dietary Supplements,** Joseph Betz, NIH, Bethesda, MD.
- **Natural Product-Drug Interactions,** Gayle N. Scott, Eastern Virginia Medical School, Norfolk, VA.

Genomic and Proteomic Array Formats on the Cutting-Edge

PM 8 ADVANCED
Ballroom A

Chairperson(s): *Mary Jane Cunningham, Molecular Mining Corporation, Kingston, ON, Canada.*

Endorsed by:
***In Vitro* Specialty Section**
Mechanisms Specialty Section
Molecular Biology Specialty Section

Microarrays are now being used to explore gene expression from a variety of tissues and cells on the scale of tens of thousands of genes. They have been used in toxicology over the past three to four years to investigate and predict toxic effects and explore the mechanisms of action by which compounds cause these effects. Several past courses and seminars have detailed the most common formats: oligonucleotide and cDNA arrays. In this course, new formats which are on the cutting-edge and in some cases, in development, will be explored. These formats include optic fiber, electronic, tissue and protein microarrays. Each format presented has its own advantages and limitations but can offer a more defined look at gene and protein expression compared to the current common formats. Optic fiber and electronic arrays offer instantaneous hybridization and detection. Protein arrays offer a quicker scan of protein activity with better resolution than the more traditional method of performing two-dimensional electrophoresis and annotating by mass spectroscopy. Tissue arrays are essentially a microarray of histology and can be used to detect DNA, RNA or protein. Each format will be presented in detail with how it is applied to current genomic and proteomic issues. Specific applications or perceived applications to issues in toxicology will be presented.

- **Fiberoptic Microarrays,** Jason Epstein, Tufts University, Medford, MA.
- **Electrokinetic Microarrays: The Advantages and Limitations,** Marc Madou, University of California, Irvine, CA.
- **Global Analysis of Biochemical Activities using Proteome Chips,** Paul Bertone, Yale University, New Haven, CT.
- **Tissue Microarrays: Histopathology Genomics,** Mark Basik, Université de Montreal, Bethesda, MD.

Integrating Toxicologic Pathology into Compound Evaluation and Risk Assessment II

PM 9 BASIC
251 A

Chairperson(s): *Douglas C. Wolf, U.S. EPA, Research Triangle Park, NC.*

Endorsed by:
Comparative and Veterinary Specialty Section
Toxicologic and Exploratory Pathology Specialty Section

The contribution of pathology assessment to toxicity assessment is invaluable but often not clearly understood. Pathology endpoints are the central response around which human health risk assessment is determined. Therefore, it is important that the general toxicology community understands current concepts and nomenclature of toxicologic pathology. Toxicologic pathology is a discipline that changes and adapts over time including methods of analysis and nomenclature of lesions. As risk assessments are reevaluated and updated on commodity chemicals, frequently the older literature must be evaluated. This course will present ideas on how to evaluate terminology and diagnoses in light of current standards, diagnostic drift, and changed interpretation. Then a continuation of a systems approach to toxicologic pathology assessment will continue with a review of the cardiovascular system, neuropathology, and the eye. Lectures will cover normal structure, function, diagnostic terminology, and specific case examples.

- **The Ebb and Flow of Diagnostic Drift,** Peter Mann, Experimental Pathology Laboratory Northeast, Galena, MD.
- **Integrating Cardiovascular Pathology into Toxicity Evaluation,** William Kerns, Pharma Consulting, Inc., Harvard, MA.
- **Integrating Central Nervous System Pathology into Toxicity Evaluation,** Andrew Fix, Procter & Gamble Company, Cincinnati, OH.
- **Integrating the Pathology of the Eye into Toxicity Evaluation,** Robert L. Peiffer, Merck Research Laboratories, West Point, PA.

Choice and Application of Classical, Population or Physiologically-Based PK for Chemical Assessment and Pharmaceutical Development

PM 10 ADVANCED
150 G

Chairperson(s): *John C. Lipscomb, U.S. EPA, Cincinnati, OH, and Rakesh Dixit, Merck Research Laboratories, West Point, PA.*

Endorsed by:
Biological Modeling Specialty Section
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

Both toxicity and therapeutic effectiveness are dictated by the delivery of a chemical to its target (pharmacokinetics, PK) and the response (pharmacodynamics, PD) which follows the molecular

interaction between xenobiotic and target molecule. This session will instruct participants in proper methods to conduct investigations and interpret PK findings. It will contain an overview of PK in risk and safety assessment and four lectures on topics critical to the identification of PK models and their proper application to derive toxicologically, risk and safety-relevant measures. Lecture content will be aimed at instructing the selection of therapeutic doses; identification of margins of safety; methods applicable to the extrapolation of doses; the separate benefits of classical versus physiologically-based PK models; and proper methodology to collect, interpret and employ measures of population PK variance. PK is a critical modulator of toxicity, and is a fundamental component in risk assessments, safety assessment and drug development. This advanced level course is intended to educate professionals who are considering or have recently begun to increase their studies of PK; it will guide the development of toxicity studies which can also collect useful PK information. The course has been designed to address the interests of scientists involved in the design of basic toxicity and pharmacokinetic studies, preclinical and clinical studies, and those scientists conducting safety and/or risk assessments.

- **Introduction and Overview,** John C. Lipscomb, U.S. EPA, Cincinnati, OH.
- **Pharmacokinetic Information in Drug Development,** Rakesh Dixit, Merck Research Laboratories, West Point, PA.
- **Population Pharmacokinetics: Methods, Interpretation of Results and Dose Prediction,** Samir Gupta, Schering-Plough Research Institute, Kenilworth, NJ.
- **The PBPK Approach in Species Dose and Route Extrapolation,** Hugh A. Barton, U.S. EPA, Research Triangle Park, NC.
- **Benefits of Classical and Physiologically-Based PK Models in the Assessment of Therapeutics,** David R. Plowchalk, Pfizer, Inc., Groton, CT.

Evaluation of Immunomodulation in Safety Assessment

PM 11 BASIC
250 A

Chairperson(s): *Dori R. Germolec, NIEHS, Research Triangle Park, NC and Robert V. House, DynPort Vaccine Company, Frederick, MD.*

Endorsed by:

Immunotoxicology Specialty Section

Assessment of adverse effects on the immune system is of considerable importance in the safety evaluation of investigational new drugs. This course will cover the practical aspects of immunotoxicology for pharmaceutical development and is targeted to toxicologists in the industry. Although it will focus on safety assessment of therapeutics, the concepts discussed are also applicable to a variety of test materials. The course will be introduced with a session on the historical role that immunotoxicology has played in drug development, the types of adverse events that have been reported in both clinical trials and non-clinical toxicology studies and the growing importance of this field of study in safety assessment. The second speaker will discuss basic methods for assessing immune function in rodents, including which tests may be combined with standard 28-day toxicity studies, assays to evaluate specific immune targets, as well as special studies that may be informative or necessary to conduct when immune effects are observed. The third speaker will cover immune assessment in non-human primates, and will focus on species selection, testing strategies, and technical issues specific to primates. The final speaker will discuss the current international regulatory requirements for immunotoxicology in submission of new drugs. Although this is a basic course, it is assumed that the participants will have a basic knowledge of immunology.

- **Past, Present, and Future: The Evolution of Immunotoxicology Assessment in Pharmaceutical Development,** Jack Dean, Sanofi-Synthelabo, Malvern, PA.
- **Assessment of Immunomodulation in Rodent Models,** Robert V. House, DynPort Vaccine Company, Frederick, MD.
- **Assessment of Immunomodulation in Non-Human Primates,** Jeanine Bussiere, Immunex Corporation, Seattle, WA.
- **Immunotoxicology in Drug Development: A Regulatory Perspective,** Kenneth Hastings, U.S. FDA, Rockville, MD.

The Effects of Non-Reproductive Hormones on the Reproductive System and the Implications for Toxicology

PM 12 ADVANCED
251 D

Chairperson(s): *Robert Chapin, Pfizer Global Research and Development, Groton, CT and Kimberley Treinen, Schering-Plough Research Institute, Lafayette, NJ.*

Endorsed by:

Reproductive and Developmental Specialty Section

More and more, we are coming to understand the degree of interconnectedness that ties together organ and hormone systems that were previously thought to be separate. This interconnectedness is important in both human health and in animal toxicology studies. The mammalian reproductive system undergoes basic activation events during development, and then constant fine-tuning as adults. This activation and fine-tuning rely on hormones and growth factors which can have both subtle and profound effects. This course is designed to give both the general and specialist audience a better appreciation of the impact of several different hormonal systems on male and female reproduction, and how we can use these to explain mechanisms of toxicity in the reproductive systems. John Meredith will provide a background understanding of the signaling events in reproductive tissues by reviewing normal mechanisms of endocrine interaction and signaling. Patricia Morris will then describe the complex and intriguing world of cytokines, with their pleiotropic effects on all aspects of mammalian reproduction. Paul Cooke will show how the thyroid hormones significantly impact the reproductive system both developmentally and in adults. Finally, Raphael Witorsch will explore what is known about the effects of glucocorticoids on various stages of reproduction. At the end of the course, the student will have an improved understanding of how these other hormone systems impinge on reproduction, and will be better able to determine their involvement in a lesion when puzzling out mechanisms of toxicity.

- **Basic and New Concepts in the Regulation of the Male and Female Reproductive Endocrine Axis,** John Meredith, Schering-Plough Research Institute, Lafayette, NJ.
- **Thyroid Hormone Regulation of Male and Female Gonadal Development and Function,** Paul Cooke, University of Illinois, Urbana, IL.

- **Physiologic Role and Toxicologic Effects of Glucocorticoids on Reproduction,** Raphael J. Witorsch, Medical College of Virginia, Richmond, VA.
- **Nonlactogenic Actions of Prolactin: A Review of the Most Versatile Pituitary Hormone,** Paul W. Sylvester, University of Louisiana at Monroe, Monroe, LA.

Epigenetics of Cancer

PM 13 BASIC
250 D

Chairperson(s): *Ruth Roberts, Aventis Pharma, Vitry sur Seine, France and Jay Goodman, Michigan State University, East Lansing, MI.*

Endorsed by:
Carcinogenesis Specialty Section

For the past few decades, research has focused on understanding the mechanisms of genotoxic or nongenotoxic carcinogenesis. However, recent evidence suggests that gene expression can be markedly altered *via* several epigenetic mechanisms that can lead to permanent or reversible changes in cellular behavior. Thus, cancer may develop as a result of interplay between genetic alteration and epigenetic changes. Developing an understanding of the role played by epigenetic modulation of gene expression is a key element in understanding the response of cells and organisms to toxicants, in particular carcinogens. This course will bring together several leading speakers in this area to address the different aspects of epigenetics ranging from methylation through to proposed non-genomic modes of action for transcription factors such as ER and PPAR. This is of interest to all toxicologists, particularly those interested in the mechanisms of rodent and human cancer. This basic course is intended to assist investigators who may want to incorporate a consideration of epigenetics into their research and/or teaching. Through the use of appropriate examples, emphasis will be placed upon the conceptual and theoretical basis of epigenetics. Furthermore, there will be a focus on practical aspects concerning safety assessment, *e.g.,* how an epigenetic mechanism of action might provide information concerning extrapolation from species to species and the shape of the dose-response curve at low doses.

- **Overview on the Interplay Between Genetics and Epigenetic Abnormalities in Cancer,** James Trosko, Michigan State University, East Lansing, MI.
- **Altered DNA Methylation — A Secondary Mechanism in Carcinogenesis,** Jay Goodman, Michigan State University, East Lansing, MI.
- **Regulating Gene Expression — Reading the Chromatin Code,** Jonathan Moggs, Syngenta Central Toxicology Laboratory, Macclesfield, United Kingdom.
- **Transcriptional and Notranscriptional Responses to PPAR Ligands,** Ruth Roberts, Aventis Pharma, Vitry sur Seine, France.

Program Descriptions

Saturday

Saturday Afternoon, March 8
2:00 PM to 5:00 PM
254 B

COMMITTEE CHAIR MEETING

If you are currently or will be a Committee Chairperson, please make plans now to attend the 2002–03 and 2003–04 Committee Chairperson Meeting scheduled for 2:00 PM–5:00 PM, Saturday, March 8. With new committee assignments taking effect on May 1, 2003, the meeting is intended to provide current and new chairpersons with the opportunity to discuss with Council the prioritization of the strategic plan and allocation of resources. The meeting also serves as an opportunity for chairpersons to develop stronger working relations with other Chairs and Council. For additional information, please contact SOT Headquarters.

Saturday Afternoon, March 8
5:30 PM to 9:15 PM
Wyndham Hotel, Wasatch Ballroom

UNDERGRADUATE EDUCATION PROGRAM FOR MINORITY STUDENTS

Chairperson: *Joy Cavagnaro, Access BIO, Leesburg, VA.*

Co-Chairperson: *Judy Zelikoff, New York University School of Medicine, Tuxedo, NY.*

Sponsored by
The Education Committee
The Education Subcommittee for Minority Initiatives

The objective of this program is to introduce minority undergraduate students and their advisors to toxicology and to encourage preparation for graduate study and pursuit of careers in the discipline. The opening session will provide an introduction to toxicology and promote interaction of the students with their peers, students who had participated in the program in the past, and SOT toxicologist hosts.

5:30 PM–6:00 PM	Orientation for SOT Hosts, Peer Mentors, and Advisors
6:00 PM–6:15 PM	Student Registration
6:30 PM–7:00 PM	Opening Event
7:00 PM–9:00 PM	Welcome of Students, Advisors, Peer Mentors, and SOT Hosts
7:15 PM–7:45 PM	Opening Lecture: The Science of Toxicology
	Marcus Iszard, Xavier University of Louisiana, LA
7:45 PM–8:45 PM	Dinner
8:45 PM–9:15 PM	Meeting of Advisors

Sunday

Sunday Morning, March 9
8:00 AM to 5:00 PM
Wyndham Hotel, Wasatch Ballrooms 1 & 2

UNDERGRADUATE EDUCATION PROGRAM

Chairperson: *Joy Cavagnaro, Access BIO, Leesburg, VA.*

Co-Chairperson: *Judy Zelikoff, New York University School of Medicine, Tuxedo, NY.*

Sponsored by:
The Education Committee
The Education Subcommittee for Minority Initiatives

A series of special introductory toxicology lectures will be presented to undergraduate students registered for this program, including the participants in the Undergraduate Minority Education Program for Minority Students. This will be followed by sessions providing information for successful application to graduate school, and the opportunity to meet with directors of academic toxicology programs and internship sponsors. The goal is to encourage undergraduate students to prepare for graduate study and pursuit of careers in toxicology.

8:00 AM–8:15 AM	Introduction and Welcome
Special Toxicology Lectures:	
8:15 AM–8:45 AM	How Chemicals Interact in the Body
	Craig Marcus, University of New Mexico, Albuquerque, NM
8:45 AM–9:15 AM	Public Health/Toxicology: Bridging Basic Science to Community Health
	Mary Ann Smith, University of Texas, Houston, TX
9:15 AM–9:45 AM	Woodburning: A Cozy Atmosphere or a Public Menace?
	Judy Zelikoff, New York University School of Medicine, Tuxedo, NY
9:45 AM–10:30 AM	Break and Discussion at Poster Boards with First Three Speakers
10:30 AM–11:00 AM	Perspectives on Forensic Toxicology
	Todd Grey, Utah Medical Examiner's Office, Salt Lake City, UT
11:00 AM–11:30 AM	Contaminants, Endocrine Disruption, and Wildlife: Lessons from the Swamp
	Lou Gillette, University of Florida, Gainesville, FL
11:30 AM–1:30 PM	Lunch and Discussion at Poster Boards with Previous Two Speakers

Preparation for Graduate School:

30-Minute, concurrent sessions, each repeated three times:
1:30 PM–2:00 PM; 2:00 PM–2:30 PM; 2:30 PM–3:00 PM

What Is Graduate School and What Can I Expect?

Marquea King, National Center for Environmental Assessment, Washington, D.C. and Adrian Nanez, Texas A&M, College Station, TX

An Academic Advisor's Perspective on How to Get into Graduate School

Scott Burchiel, University of New Mexico, Albuquerque, NM

Summer Internships: What Are They and Should I Do One?

Michael Aleo, Pfizer Global Research and Development, Groton, CT and Chudy Nduaka, Abbott Laboratories, Abbott Park, IL

2:00 PM—2:30 PM — For Advisors: Tips for Advising Prospective Graduate Students, Rick Schnellmann, Medical University of South Carolina, Charleston, SC

Toxicology Academic Programs and Internships:

3:00 PM—5:00 PM — Open Time with Academic Toxicology Program Directors and Internship Sponsors

Sunday Evening, March 9
5:15 PM to 6:30 PM
Salt Palace Ballroom B

AWARDS PRESENTATION

Join the Society in recognizing several distinguished toxicologists as they receive prestigious awards.

Sunday Evening, March 9
6:30 PM to 7:30 PM
Salt Palace Ballroom J

WELCOMING RECEPTION

Join us on **Sunday, March 9, 2003**, as SOT kicks-off its 42nd Annual Meeting. This will be a memorable evening of reminiscing with friends, good fun, and looking to the future of SOT. Please join the Society in this inaugural event of the Annual Meeting. Enjoy complimentary hors d'oeuvres; a cash bar will be available.

Sunday Evening, March 9
7:00 PM to 8:00 PM
Salt Palace 254 B

25-YEAR MEMBER RECEPTION

Have you been a member of the Society of Toxicology for 25 years (or more)? If so, please consider joining your colleagues in celebration and recognition of the scientists who established the Society.

Sunday Evening, March 9
7:30 PM to 8:30 PM
Salt Palace 151 G

STUDENT/POST-DOCTORAL FELLOW MIXER

All students and post-docs are invited to attend this fun-filled reception. Refreshments will be provided by SOT and sponsors — a cash bar will also be available. Meeting Badges and tickets are required.

Monday Morning

Monday Morning, March 10
8:00 AM to 1:00 PM
Wyndham Hotel, Wasatch Ballrooms 1 & 2

UNDERGRADUATE EDUCATION PROGRAM FOR MINORITY STUDENTS

Chairperson(s): *Joy Cavagnaro, Access BIO, Leesburg, VA.*

Co-Chairperson(s): *Javier Avalos, TopTox Consulting, Sacramento, CA.*

Sponsored by:
The Education Committee
The Education Subcommittee for Minority Initiatives

The participants in the Undergraduate Education Program for Minority students will meet their SOT hosts, attend the Plenary Session, and then review posters in a special session before the conclusion of the program. Some participants meet in focus groups for program evaluation in the afternoon.

7:30 AM–8:15 AM	Breakfast with Toxicology Hosts
8:30 AM–9:30 AM	SOT Plenary Session: The Death and Resurrection of a Virus, Donald Henderson, Office of Public Health Preparedness, Washington, DC
9:30 AM–11:45 AM	Poster Session for Visiting Students
12:00 NOON–1:00 PM	Closing Session
1:00 PM–3:00 PM	Focus Groups

Monday Morning, March 10
8:30 AM to 9:15 AM
Ballroom J

PLENARY LECTURE: SMALLPOX: THE DEATH AND RESURRECTION OF A VIRUS

Lecturer: *Dr. Donald Henderson, Office of Public Health Preparedness, HHS, Washington, DC.*

Donald A. Henderson, M.D., M.P.H. is a top scientific advisor to the Department of Heath and Human Services. In summer of 2002, Dr. Henderson was presented with a Presidential Medal of Freedom, the nation's highest civilian honor, for his distinguished service. A recognized expert on civilian biodefense matters, he has provided service to the federal government, including leadership of a national advisory council on public health preparedness. He is well known for his leadership of the World Health Organization's global smallpox eradication program (1966–1977). Dr. Henderson is the founding director of the Center for Civilian Biodefense Strategies at the Johns Hopkins Bloomberg School of Public Health. He was also dean of the School from 1977–1990. He is recipient of many awards, including the National Medal of Science, the National Academy of Sciences Public Welfare Medal, and the Japan Prize.

Monday Morning, March 10
9:30 AM to 12:00 NOON
Room 251 A

SYMPOSIUM SESSION: UNDERSTANDING MECHANISMS OF TOXICITY OF IMMUNOSUPPRESSIVE DRUGS TO IMPROVE THEIR SAFETY PROFILES AND BROADEN THE SCOPE OF THEIR USE

Chairperson(s): *Uwe Christians, University of Colorado Health Sciences Center, Denver, CO and Raymond Novak, Wayne State University, Detroit, MI.*

Endorsed by:
Immunotoxicology Specialty Section
Mechanisms Specialty Section
International Association of Therapeutic Drug Monitoring and Clinical Toxicology (IATDMCT)

Organ transplantation requires life-long prophylaxis with immunosuppressants to avoid rejection of the transplant organ. Today, calcineurin inhibitors are still the cornerstone of most immunosuppressive protocols. The propensity of these agents to ultimately damage the very organs they were intended to protect, especially the kidney, was always recognized, but largely tolerated due to the impressive ability to improve short-term outcomes. With mycophenolic acid and the TOR (target of rapamycin) inhibitor sirolimus, equally potent immunosuppressants that themselves are lacking the most important side effects of calcineurin inhibitors, such as nephrotoxicity and neurotoxicity, have become available. Although devoid of nephrotoxicity when administered alone, TOR inhibitors unexpectedly enhanced cyclosporine nephrotoxicity in clinical studies. Until recently, the biochemical mechanisms underlying immunosuppressant toxicity alone and in combination were poorly understood. Immunosuppressive drugs used in the prevention of transplant rejection have limited application in other fields such as autoimmune diseases due to the severe toxicities produced. Progress in pharmacogenomics, proteomics, and analytical technology such as magnetic resonance spectroscopy has led to a better understanding of the mechanisms of immunosuppressant toxicity and variability of their pharmacokinetics. The cyclosporine derivative ISATX247 is a good example for how the understanding of molecular toxicity mechanisms can result in the design of a calcineurin inhibitor with a significantly improved therapeutic index. Better knowledge of immunosuppressant pharmacodynamics will lead to (a) more effective clinical long-term management strategies of toxicity in transplant patients, (b) the development of potent immunosuppressants with better safety profiles, and (c) broadening of the scope of use of immunosuppressants used mainly in transplantation.

#14	9:30	**UNDERSTANDING MECHANISMS OF TOXICITY OF IMMUNOSUPPRESSIVE DRUGS TO IMPROVE THEIR SAFETY PROFILES AND BROADEN THE SCOPE OF USE.** U. Christians. Anesthesiology, University of Colorado Health Sciences Center, Denver, CO. Sponsor: *T. Kawabata*.
#15	9:35	**PHARMACODYNAMIC, PHARMACOKINETIC AND PHARMACOGENOMIC INVESTIGATIONS OF IMMUNOSUPPRESSANTS PROVIDE THE BASIS FOR SAFER AND MORE EFFECTIVE REJECTION PROPHYLAXIS.** L. M. Shaw. Department of Pathology and Laboratory Medicine, University of Pennsylvania Medical Center, Philadelphia, PA. Sponsor: *T. Kawabata*.

#16 10:05 **GENOTYPIC AND PHENOTYPIC EVALUATIONS IN CONNECTION WITH AZATHIOPRINE TOXICITY.** M. Oellerich , N. von Ahsen, M. Shipkova and V. W. Armstrong. Department of Clinical Chemistry, George-August-University , Güttingen, Germany. Sponsor: *U. Christians*.

#17 10:35 **MAGNETIC RESONANCE SPECTROSCOPY AS A TOOL TO IDENTIFY MECHANISMS OF IMMUNOSUPPRESSANT TOXICITY.** N. J. Serkova and U. Christians. Anesthesiology, University of Colorado Health Sciences Center, Denver, CO. Sponsor: *T. Kawabata*.

#18 11:05 **DEVELOPMENT OF THE NOVEL IMMUNOSUPPRESSIVE AGENT ISATX247 USING A PHARMACODYNAMIC APPROACH.** D. G. Freitag[1], M. D. Abel[1], L. J. Aspeslet[1], D. J. Trepanier[1], P. R. Mayo[1], P. F. Halloran[2], N. T. Kneteman[2], R. E. Morris[3], C. R. Gregory[4], R. T. Foster[1] and R. W. Yatscoff[1]. [1]Isotechnika , Edmonton, AB, Canada, [2]University of Alberta, Edmonton, AB, Canada, [3]Stanford University, Stanford, CA and [4]University of California, Davis, CA. Sponsor: *U. Christians*.

Monday Morning, March 10
9:30 AM to 12:00 NOON
Ballroom C

SYMPOSIUM SESSION: USE AND APPLICATION OF STEM CELLS IN TOXICOLOGY

Endorsed by:
***In Vitro* Specialty Section**
Molecular Biology Specialty Section

Recent published reports on the isolation and culturing of stem cells have created a great deal of interest and excitement in both the scientific and the public community. Stem cell technology holds great promise for advances in biomedical research, and will allow us to understand the complex events that occur during human development, provide new platforms for drug discovery and development, and replace organ-specific cell populations damaged by diseases. Embryonic stem cells are pluripotent cell populations with the ability to give rise to differentiated cells of the human body such as brain, heart, liver, bone and blood cells. Other stem cell types have been derived from fetal tissues, blood and bone marrow. Most isolated stem cells are capable of limitless division and undergo self-renewal. Thus, the cells can be maintained for extended periods of time in tissue culture making them a vital resource for biomedical research. The objective of this symposium is to provide information on the current status of efforts focused on derivation of stem cells and the application of tissue-specific stem cell types in toxicology. This symposium will be of interest to all toxicologists and related scientists from industry, academia, and government who are interested in the application of *in vitro* approaches using stem cells to predict the impact of drug exposure in humans as well as the generation of cells and tissues that could be used as therapies.

#19 9:30 **USE AND APPLICATION OF STEM CELLS IN TOXICOLOGY.** *G. N. Cosma*[1], M. A. Thiede[2], S. Strom[3], *J. A. Johnson*[4] and *J. E. Trosko*[5]. [1]Investigative Toxicology, Pharmacia Corporation, Kalamazoo, MI, [2]Discovery, Pharmacia Corporation, St. Louis, MO, [3]Pathology, University of Pittsburgh, Pittsburgh, PA, [4]Pharmacy School, University of Wisconsin, Madison, WI and [5]Pediatrics and Human Development, Michigan State University, East Lansing, MI.

#20 9:40 **EXPLOITING MARROW-DERIVED ADULT STEM CELLS FOR PRE-CLINICAL SAFETY EVALUATION.** M. A. Thiede. Discovery, Pharmacia Corporation, St. Louis, MO. Sponsor: *J. Davila*.

#21 10:10 **PRODUCTION OF HEPATOCYTES FROM HUMAN AMNIOTIC STEM CELLS FOR DRUG METABOLISM AND TOXICITY STUDIES.** S. Strom, T. Miki and H. Cai. Pathology, University of Pittsburgh, Pittsburgh, PA. Sponsor: *J. Davila*.

#22 10:40 **ANTIOXIDANT RESPONSE ELEMENT DRIVEN GENE EXPRESSION IN MULTIPOTENT HUMAN NEURAL PROGENITORS AND THE DIFFERENTIATED CELLS ARISING FROM THESE PROGENITORS.** *J. A. Johnson*[1,2,4], *J. Li*[1], D. A. Johnson[1], L. S. Wright[2] and C. N. Svendsen[2,3]. [1]School of Pharmacy, University of Wisconsin, Madison, WI, [2]Waisman Center, University of Wisconsin, Madison, WI, [3]Center for Neuroscience, University of Wisconsin, Madison, WI and [4]Molecular and Environmental Toxicology Center, University of Wisconsin, Madison, WI.

#23 11:10 **USE OF HUMAN ADULT PLURIPOTENT STEM CELLS TO SCREEN FOR GENOTOXIC/EPIGENETIC TOXICANTS.** *J. E. Trosko*. Pediatrics and Human Development/ National Food Safety Toxicology Center, Michigan State University, East Lansing, MI.

Monday Morning, March 10
9:30 AM to 12:00 NOON
Ballroom B

WORKSHOP SESSION: BIOTERRORISM AND ITS TOXICOLOGICAL EFFECTS

Chairperson(s): *David B. Warheit, DuPont Haskell Laboratory for Health and Environmental Sciences, Newark, DE and Deepak K. Bhalla, Wayne State University, Detroit, MI.*

Endorsed by:
Occupational Health Specialty Section
Risk Assessment Specialty Section
Toxicologic and Exploratory Pathology Specialty Section

The workshop is designed to present a basic primer on the timely topic of biological warfare agents. The first presentation will provide an overview of the major aspects of biological terror/warfare agents. A Center for Disease Control's classification of biological warfare agents will be presented, followed by a brief listing of 1) biological agents - including bacterial agents such as anthrax, cholera toxin, pneumonic plague and brucellosis; 2) viruses- such as smallpox, ebola, VEE, and VHF; 3) biological toxins - such as botulinum, Staph entero-B, ricin, and T-2 mycotoxins. In the second talk, Dr. Aileen Marty, a long-standing

pathology expert (pre 9/11) on bioterrorism/ infectious disease will discuss the development of plans and methods for defending against the deliberate use of biological agents. Dr. Marty has been presenting a course on bioterrorism at her institution for several years and, in addition to her expertise on infectious diseases, is an expert on forensic and legal issues related to bioterror agents. In the 3rd presentation, Dr. Elliott Kagan, will discuss bioregulators as naturally occurring compounds that regulate physiological processes and their potential for misuse in bioterrorism - included in this category are cytokines, eicosanoids, neurotransmitters, hormones, and plasma proteases. The final presentation will focus on current concepts related to the pathogenesis of infectious agents such as inhalation anthrax and smallpox disease. For example, the talk will discuss inhalation anthrax, a deadly disease in which spores attack the lung macrophage *via* a number of novel proteins, including protective antigen (misnamed), lethal factor and edema factor, which hijack the macrophage's defensive functions and direct the cellular machinery to secrete destructive levels of cytokines. This Workshop should provide basic information on the infectious agents that pose a potential threat in a bioterrorist attack.

#24 9:30 **BIOTERRORISM AND ITS TOXICOLOGICAL EFFECTS.** *D. B. Warheit*. DuPont Haskell Laboratories, Newark, DE.

#25 9:40 **BIOTERRORISM: AN OVERVIEW.** *D. K. Bhalla*. Wayne State University, Detroit, MI.

#26 10:10 **RECENT CHALLENGES IN INFECTIOUS DISEASE: BIOLOGICAL PATHOGENS AS WEAPONS AND EMERGING ENDEMIC THREATS.** *A. M. Marty*. Department of Pathology, Uniformed Services University of the Health Sciences, Bethesda, MD.

#27 10:40 **BIOREGULATORS AS INSTRUMENTS OF TERROR.** *E. Kagan*. Department of Pathology, Uniformed Services University of the Health Sciences, Bethesda, MD.

#28 11:10 **CURRENT CONCEPTS ON THE PATHOGENESIS OF SELECTED INFECTIOUS AGENTS.** *D. B. Warheit*. Pulmonary Toxicology, DuPont Haskell Lab., Newark, DE.

Monday Morning, March 10
9:30 AM to 12:00 NOON
Room 250 D

WORKSHOP SESSION: CUMULATIVE RISK ASSESSMENT: GETTING FROM TOXICOLOGY TO QUANTITATIVE ANALYSIS

Chairperson(s): *Hugh A. Barton, U.S. EPA, Research Triangle Park, NC and Carey Pope, Oklahoma State University, Stillwater, OK.*

Endorsed by:
Biological Modeling Specialty Section
Neurotoxicology Specialty Section
Risk Assessment Specialty Section

Assessment of the cumulative risk posed by exposure to multiple chemicals is a problem the U.S. EPA's Program and Regional Offices confront regularly. This session will focus on the interplay of toxicology studies and quantitative analysis to assess cumulative risk using a variety of case studies. The Food Quality Protection Act of 1996 directs the Office of Pesticide Programs to include in its assessments the risk associated with the cumulative effects of pesticides that have a common mode of action. Organophosphorus pesticides (OPs) have been the first class addressed, based on the common mechanism of acetylcholinesterase inhibition. The toxicology and mode of action of these compounds will be described, noting factors that may confound the assessment of cumulative effects. The quantitative cumulative risk analysis of OPs based on anti-cholinesterase relative potency will then be presented. The Air Office is concerned with mixtures of criteria air pollutants and volatile organic compounds. Physiologically based pharmacokinetic modeling of multiple volatile chemicals provides an example of a biologically-based approach to cumulative analysis. The Office of Water is concerned with risk from mixtures of disinfectant byproducts and balancing that risk, either as single chemicals or mixtures, against the risk associated with microbial agents in water. Development of toxicity study designs to address interactions of chemicals in mixtures of increasing complexity is a critical part of developing improved evaluations of cumulative risk, so recent developments will be described. This workshop provides an opportunity for toxicologists and others involved in experimental studies and the development and application of quantitative analytical methods to discuss recent and ongoing efforts in this important and challenging area. (This abstract does not reflect U.S. EPA policy.)

#29 9:30 **CUMULATIVE RISK ASSESSMENT: GETTING FROM TOXICOLOGY TO QUANTITATIVE ANALYSIS.** *H. A. Barton*[1] and *C. N. Pope*[2]. [1]ORD/NHEERL/ETD/PKB, U.S. EPA, Research Triangle Park, NC and [2]Department of Physiological Sciences, Oklahoma State University, Stillwater, OK.

#30 9:35 **TOXICITY STUDIES OF MIXTURES IMPACTING MULTIPLE TARGET ORGANS.** J. P. Groten, R. Stierum, D. Jonker and B. van Ommen. Department of Biomolecular Sciences , TNO Nutrition and Food Research, Zeist, Netherlands. Sponsor: *H. Barton*.

#31 10:00 **INTERACTIVE TOXICITY OF ORGANOPHOSPHORUS INSECTICIDES.** *C. N. Pope*. Physiological Sciences, Oklahoma State University, Stillwater, OK.

#32 10:25 **CUMULATIVE RISK ANALYSIS FOR ORGANOPHOSPHORUS PESTICIDES.** R. W. Setzer. NHEERL MD-74, U.S. EPA, Research Triangle Park, NC. Sponsor: *H. Barton*.

#33 10:50 **PHYSIOLOGICALLY-BASED PHARMACOKINETIC MODELING FOR MIXTURES.** *K. Krishnan*. Occupational and Environmental Health, Universite de Montreal, Montreal, QC, Canada.

#34 11:15 **DESIGNING STUDIES AND COLLECTING DATA USEFUL FOR CUMULATIVE RISK ASSESSMENT.** *J. Simmons*[1], C. Gennings[2], M. Casey[2], M. J. Plewa[3], E. D. Wagner[3], W. H. Carter[2], A. McDonald[1], Y. M. Sey[1] and L. K. Teuschler[4]. [1]NHEERL/ORD, U.S. EPA, Research Triangle Park, NC, [2]VCU, Richmond, VA, [3]University Illinois, Urbana, IL and [4]NCEA/ORD, U.S. EPA, Cincinnati, OH.

Monday Morning, March 10
9:30 AM to 12:00 NOON
Ballroom I

PLATFORM SESSION: EPIGENETIC MECHANISMS IN CARCINOGENESIS

Chairperson(s): *Jay Goodman, Michigan State University, East Lansing, MI and Deodutta Roy, University of Alabama, Birmingham, AL.*

#35 9:30 **BIPHASIC INFLUENCE OF ALCOHOL ON ESTROGEN-MEDIATED PERTURBATION OF THE CELL CYCLE IN BREAST CANCER CELLS.** A. Sharga, Q. Felty, *J. DuMond* and *D. Roy*. Environmental Health Sciences, UAB.

#36 9:50 **ROLE OF THE PEROXISOME PROLIFERATOR-ACTIVATED RECEPTOR ALPHA IN MODULATING THE EFFECTS OF FUMONISIN B1 IN MOUSE LIVER.** *K. Voss*[3], J. R. Owen[3], A. Laughter[2], C. Dunn[2], S. P. Anderson[5], *R. Riley*[3], D. Miller[4] and *J. C. Corton*[1]. [1]ToxicoGenomics, Chapel Hill, NC, [2]CIIT, Research Triangle Park, NC, [3]USDA, Athens, GA, [4]Carleton University, Ottawa, ON, Canada and [5]GlaxoSmithKline, Research Triangle Park, NC.

#37 10:10 **ABERRANT DNA METHYLATION IS A MECHANISM INVOLVED IN TUMOR PROMOTION.** *R. E. Watson*[2], *G. M. Curtin*[1], *D. J. Doolittle*[1] and *J. I. Goodman*[2]. [1]Pharmacology & Toxicology, Michigan State University, East Lansing, MI and [2]Toxicology Division, R.J. Reynolds , Winston-Salem, NC.

#38 10:30 **GLOBAL GENE EXPRESSION COMPARISONS AND PATHWAY ANALYSIS OF NONGENOTOXIC CARCINOGENS WITH DIFFERENT MECHANISMS OF ACTION.** *M. F. DeCristofaro*[1], D. A. McCabe[1], O. R. Crasta[1], R. W. Gerwien[1], *B. Wahle*[2], *B. Stuart*[2], T. A. Mansfield[1] and M. McKenna[1]. [1]Pharmacogenomics, CuraGen Corporation, New Haven, CT and [2]Toxicology, Bayer Corporation, Stilwell, KS.

#39 10:50 **TOXICOGENOMICS OF HUMAN CARCINOGENS.** *W. Luo*[2,1], H. Xie[1], P. Vouros[2] and *H. Zarbl*[1]. [1]Fred Hutchison Cancer Research Center, Seattle, WA and [2]The Barnett Institute of Chemical and Biological Analysis, Boston, MA.

#40 11:10 **MICROARRAY ANALYSIS OF COMMON GENE EXPRESSION CHANGES IN THE HUMAN KERATINOCYTE CELL LINE RHEK-1 MALIGNANTLY TRANSFORMED BY MULTIPLE CHEMICAL AGENTS.** J. A. Campain[1], *W. H. Hanneman*[1], J. S. Rhim[2], *R. S. Thomas*[3], *R. S. Yang*[1] and *D. Bae*[1]. [1]Environmental and Radiological Health Sciences, Colorado State University, Fort Collins, CO, [2]Center for Prostate Disease Research, Bethesda, MD and [3]Kalypsys, Inc., La Jolla, CA.

#40a 11:30 **RECENT ADVANCEMENT IN *IN VITRO* METAL TOXICOLOGY FOR REGULATORY PURPOSE.** *E. Sabbioni*. IHCP, European Commission, Ispra (VA), Italy.

Monday Morning, March 10
9:30 AM to 12:00 NOON
Ballroom A

PLATFORM SESSION: KIDNEY I

Chairperson(s): *Lawrence Lash, Wayne State University, Detroit, MI and Rick Schnellmann, Medical University of South Carolina, Charleston, SC.*

#41 9:30 **NOVEL PHYSIOLOGICAL AND TOXICOLOGICAL ROLES FOR ENDOPLASMIC RETICULUM BOUND CA^{2+}-INDEPENDENT PHOSPHOLIPASE A_2 (ER-$IPLA_2$) IN THE KIDNEY.** *B. S. Cummings*[1], M. Jane[2] and *R. G. Schnellmann*[1]. [1]Pharmaceutical Sciences, Medical University of South Carolina, Charleston, SC and [2]Pathology, St. Louis University, St. Louis, MO.

#42 9:50 **INTERACTIVE TOXICITY BETWEEN TRICHLOROETHYLENE AND INORGANIC MERCURY IN RAT AND HUMAN KIDNEY PROXIMAL TUBULE.** *L. H. Lash*, D. A. Putt, S. E. Hueni, S. G. Payton and J. Zwickyl. Pharmacology, Wayne State University, Detroit, MI.

#43 10:10 **DICHLOROVINYL-L-CYSTEINE (DCVC) CAUSES G2/M CELL CYCLE ARREST IN RENAL PROXIMAL TUBULAR CELLS.** C. H. Reich and *R. G. Schnellmann*. Pharmaceutical Sciences, Medical University of South Carolina, Charleston, SC.

#44 10:30 **DOSE RESPONSE EFFECTS OF EICOSAPENTAENOIC ACID ON EXPERIMENTAL IGA NEPHROPATHY INDUCED BY THE TRICHOTHECENE DEOXYNIVALENOL.** Y. Shi[1], J. J. Pestka[1,2,3] and *Q. Jia*[1]. [1]Food Science and Human Nutrition, Michigan State University, East Lansing, MI, [2]Microbiology and Molecular Genetics, Michigan State University, East Lansing, MI and [3]Institute for Environmental Toxicology, Michigan State University, East Lansing, MI.

#45 10:50 **MECHANISMS OF STIMULATED TISSUE REPAIR IN SURVIVAL FROM ACUTE RENAL TUBULAR NECROSIS: ROLE OF MAPK PATHWAY.** *V. S. Vaidya*[2], *K. Shankar*[2], *D. Dixon*[3], *E. A. Lock*[1] and *H. M. Mehendale*[2]. [1]Department of Toxicology, The University of Louisiana at Monroe, Monroe, LA, [2]Laboratory of Experimental Pathology, NIEHS, Research Triangle Park, NC and [3]Syngenta, CTL, Macclesfield, Cheshire, United Kingdom.

#46 11:10 **EFFICACY AND TOXICITY STUDY OF VANADIUM NICOTINATE IN ALLOXAN INDUCED DIABETIC RATS.** S. L. Bodhankar, K. Rameshkumar, S. N. Shah, D. B. Goswami and V. Mohan. Pharmacology, Poona College of Pharmacy, Pune, Maharashtra, India. Sponsor: *H. Mehendale*.

Monday Morning, March 10
9:30 AM to 12:00 NOON
Room 251 D

PLATFORM SESSION: MOLECULAR MECHANISMS OF OXIDATIVE INJURY

Chairperson(s): *William Slikker, National Center for Toxicological Research, Jefferson, AR and Bhupendra Kaphalia, University of Texas Medical Branch, Galveston, TX.*

#47 9:30 **MITOCHONDRIAL OXIDATIVE STRESS IS CAUSED BY NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITOR (NRTI) STAVUDINE (D4T) IN HEPG2 CELLS.** *B. J. Day*[1,2], M. Kovacevic[1], M. Goldstein[1], W. Lewis[3] and *L. W. Velsor*[1]. [1]Medicine, National Jewish Medical & Research Ctr, Denver, CO, [2]Pharmaceutical Sciences, University of Colorado Health Sciences Ctr, Denver, CO and [3]Pathology, Emory University, Atlanta, GA.

#48 9:45 **ROLE OF LIPID PEROXIDATION AS MECHANISM OF LIVER INJURY AFTER ACETAMINOPHEN OVERDOSE IN MICE.** *T. R. Knight*[1], *M. W. Fariss*[2] and *H. Jaeschke*[1]. [1]Pharmacology and Toxicology, University of Arkansas for Medical Sciences, Little Rock, AR and [2]Pharmaceutical Sciences, Washington State University, Pullman, WA.

#49 10:00 **OXIDANT STRESS PRECEDES LIVER INJURY AFTER ACETAMINOPHEN IN CULTURED MOUSE HEPATOCYTES.** *H. Jaeschke*[1], *T. R. Knight*[1], *J. J. Lemasters*[2] and M. Bajt[1]. [1]Pharmacology and Toxicology, University of Arkansas for Medical Sciences, Little Rock, AR and [2]Cell and Developmental Biology, University of North Carolina, Chapel Hill, NC.

#50 10:15 **DIVERGENT EFFECTS OF HYPEROXIA ON CC10 AND GLUTATHIONE REDUCTASE MESSENGER RNA LEVELS IN LUNGS OF MICE.** *S. E. Welty*, M. Park, L. K. Rogers, T. N. Hansen and *C. V. Smith*. Pediatrics, Columbus Children's Research Institute, Columbus, OH.

#51 10:30 **HYPEROXIC LUNG INJURY IN MICE WITH GENETIC DEFICIENCIES IN GLUTATHIONE REDUCTASE ACTIVITIES.** *C. V. Smith*, L. K. Rogers, M. Park, T. N. Hansen and *S. E. Welty*. Pediatrics, Columbus Children's Research Institute, Columbus, OH.

#52 10:45 **EXPRESSION AND LOCALIZATION OF P70 ALBUMIN PRECURSOR PROTEIN AND PHI AP3 IN OXIDATIVELY STRESSED VASCULAR SMOOTH MUSCLE CELLS.** M. T. Holderman, C. R. Partridge, R. Barhoumi and *K. S. Ramos*. Center for Environmental Health, Texas A&M University, College Station, TX.

#53 11:00 **NF-KB DYSREGULATION IN ATHEROSCLEROTIC VASCULAR SMOOTH MUSCLE CELLS: COMPLEX COMPOSITION AND REDOX SENSITIVITY.** *E. S. Williams*, E. Wilson and *K. S. Ramos*. Center for Environmental and Rural Health, Texas A&M University, College Station, TX.

#54 11:15 **ROLE OF BIP/GRP78 IN 11-DEOXY-16, 16-DIMETHYL PROSTAGLANDIN E2 MEDIATED CYTOPROTECTION IN RENAL EPITHELIAL CELLS.** *Z. Jia*[1], M. D. Person [1], J. Shen[2], S. C. Hensley[2], *J. L. Stevens*[3], *T. J. Monks*[1] and *S. S. Lau*[1]. [1]Center for Molecular and Cellular Toxicology, The University of Texas at Austin, Austin, TX, [2]UTMDACC, Science Park - Research Division, Smithville, TX and [3]Eli Lilly and Company, Greenfield, IN.

#55 11:30 **TBHQ PROTECTS NEURONAL CELLS FROM OXIDATIVE INJURY THROUGH UPREGULATION OF THE ANTIOXIDANT RESPONSIVE ELEMENT.** A. D. Kraft[1], D. A. Johnson[1] and *J. A. Johnson*[1,2,3]. [1]School of Pharmacy, University of Wisconsin, Madison, WI, [2]Molecular and Environmental Toxicology Center, University of Wisconsin, Madison, WI and [3]Center for Neuroscience, University of Wisconsin, Madison, WI.

MONDAY

Monday Morning, March 10
9:30 AM to 12:00 NOON
Room 250 A

PLATFORM SESSION: PROTEOMIC AND GENOMIC TECHNOLOGIES IN BIOMARKER DEVELOPMENT

Chairperson(s): *Rakesh Dixit, Merck & Co Inc, West Point, PA and Ruth Roberts, Aventis Pharma, Vitry Sur Seine, France.*

#56 9:30 **DEVELOPMENT OF A MICROARRAY ELISA FOR CHARACTERIZING POTENTIAL MARKERS OF BREAST CANCER IN NIPPLE ASPIRATE FLUID.** *R. C. Zangar*[1], R. L. Woodbury[1], S. M. Varnum[1], C. C. Covington[2] and R. D. Smith[1]. [1]Pacific Northwest National Laboratory, Richland, WA and [2]University of California School of Nursing, Los Angeles, CA.

#57 9:45 **FINDING NON-INVASIVE BIOMARKERS USING MICROARRAY TECHNOLOGY.** T. P. Ryan, W. H. Jordan, B. R. Berridge, P. C. May, D. O. Calligaro and G. H. Searfoss. Lilly Research Labs, Greenfield, IN. Sponsor: *C. Thomas*.

#58 10:00 **HIERARCHICAL CLUSTERING ANALYSIS OF 2-DIMENSIONAL PROTEIN GEL IMAGES: CORRELATION WITH TESTICULAR TOXICITY IN BEAGLE DOGS.** P. Liu, *J. W. Davis*, G. Mandakas, *J. M. McNulty*, L. A. Obert, R. J. Smith, F. M. Goodsaid and *I. Y. Rosenblum*. Schering-Plough Research Institute, Lafayette, NJ.

#59 10:15 **USE OF GENE EXPRESSION PROFILING TO UNDERSTAND THE TRANSCRIPTIONAL PROGRAMME ASSOCIATED WITH ESTROGEN-INDUCED UTERINE GROWTH: IMPLICATIONS FOR THE USE OF SURROGATE MOLECULAR MARKERS IN TOXICOLOGY.** G. Orphanides, J. G. Moggs, T. Spurway, H. Tinwell, *J. Ashby* and *I. Kimber*. HAES Research, Syngenta CTL, Macclesfield, Cheshire, United Kingdom.

#60 10:30 **PROTEOMIC INVESTIGATION OF BODY FLUIDS.** H. Licea-Perez[1], *R. F. Henderson*[1], S. I. Rennard[2] and R. W. Rubin[1]. [1]Lovelace Respiratory Research Institute, Albuquerque, NM and [2]University of Nebraska Medical Center, Omaha, NE.

#61 10:45 **USE OF PROTEOMIC TECHNOLOGIES FOR DISCOVERY OF NEW MARKERS OF SKIN IRRITATION *IN VITRO*.** S. T. Fletcher[1] and V. A. Baker[2]. [1]SEAC, Unilever, Bedfordshire, United Kingdom and [2]CuDoS Cellular Development Systems Ltd, Nottingham, United Kingdom. Sponsor: *C. Atterwill*.

#62 11:00 **CHARACTERIZATION OF A BILIARY PROTEOMIC INJURY SIGNATURE IN RATS EXPOSED TO 1, 1-DICHLOROETHYLENE.** J. A. Jones[1], *D. C. Liebler*[1] and M. T. Moslen[2]. [1]College of Pharmacy, University of Arizona, Tucson, AZ and [2]University of Texas Medical Branch, Galveston, TX.

#63 11:15 **A PROTEOMIC APPROACH TO IDENTIFY THE MOLECULAR TARGETS OF LEAD AND ACRYLAMIDE NEUROTOXICITY IN THE NEURONAL SNARE PROTEIN CIRCUITRY THAT UNDERLIES NEUROTRANSMITTER RELEASE.** M. Gillespie. St. John's University, Jamaica, NY. Sponsor: *F. Schanne*.

#64 11:30 **BIOMARKERS OF HUMAN GLIOMA CELL EXPOSURE TO ELECTROMAGNETIC FIELDS.** E. M. Hennessey[1], L. W. U'Ren[1], R. E. Savage[2], M. H. Kanitz[2], W. G. Lotz[2] and *W. H. Hanneman*[1]. [1]Department of Environmental & Radiological Health Sciences, Colorado State University, Fort Collins, CO and [2]NIOSH, Cincinnati, OH.

Monday Morning, March 10
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: METAL TOXICITY

Chairperson(s): *David Barber, University of Florida, Gainesville, FL and Bernard Jortner, Virginia Tech., Blacksburg, VA.*

Displayed: *9:30 AM–12:30 PM*

Attended: *9:30 AM-11:00 AM*

#65 **ORAL EXPOSURE TO INORGANIC MERCURY ALTERS T-LYMPHOCYTE PHENOTYPES AND CYTOKINE GENE EXPRESSION IN BALB/C MICE.** S. Kim[1], *V. J. Johnson*[2] and *R. P. Sharma*[1]. [1]Physiology and Pharmacology, University of Georgia, Athens, GA and [2]Toxicology and Molecular Biology Branch, NIOSH, Morgantown, WV.

#66 **INDUCTION OF HEPATIC METALLOTHIONEIN BY VANADIUM.** T. Hasegawa[1], K. Kobayashi[2], *M. Satoh*[3,4], S. Himeno[5] and Y. Seko[1]. [1]Environmental Biochemistry, Yamanashi Institute of Environmental Sciences, Fujiyoshida, Yamanashi, Japan, [2]Kissei Pharmaceutical Co. Ltd., Hotaka, Nagano, Japan, [3]Hygienics, Gifu Pharmaceutical University, Gifu, Japan, [4]Environmental Health Sciences, National Institute for Environmental Studies, Tsukuba, Ibaraki, Japan and [5]Public Health and Molecular Toxicology, Kitasato University, Tokyo, Japan.

#67 **ENHANCED GENOTOXICITY BY DIMETHYLARSINIC ACID IN METALLOTHIONEIN-I/II NULL MICE.** *M. Satoh*[1,2], J. Guang[2], N. Nishimura[2,3], *C. Tohyama*[2] and *H. Sone*[2]. [1]Department of Hygienics, Gifu Pharmaceutical University, Gifu, Japan, [2]Environmental Health Sciences Division, National Institute for Environmental Studies, Tsukuba, Japan and [3]Japan science and Technology Corporation, Kawaguchi, Japan.

#68 **METAL INDUCED ACTIVATION OF METALLOTHIONEIN GENE EXPRESSION.** *E. S. Craft* and J. H. Freedman. Nicholas School of the Environment, Duke University, Durham, NC.

#69 **MT-3 OVEREXPRESSION INCREASES CHEMOTHERAPEUTIC RESISTANCE AND AFFECTS THE GROWTH OF BREAST CANCER CELL LINES.** M. Sens, *V. Gurel*, S. Somji, *S. H. Garrett* and *D. A. Sens*. Pathology, university of north dakota, Grand Forks, ND.

#70 **THE INABILITY TO PRODUCE THE MAJOR FORMS OF METALLOTHIONEIN RENDERS MICE HYPERSENSITIVE TO THE CHRONIC TOXIC EFFECTS OF LEAD, INCLUDING RENAL HYPERPLASIA, WHILE PREVENTING INCLUSION BODY FORMATION.** *B. A. Diwan*[1] and *M. P. Waalkes*[2]. [1]SAIC, Frederick, MD and [2]Inorganic Carcinogenesis Section, LCC, NCI at NIEHS, Research Triangle Park, NC.

#71 **EFFECT OF METALLOTHIONEIN-3 EXPRESSION ON CADMIUM TOXICITY IN THE HUMAN PROXIMAL TUBULE CELL LINE HK-2.** S. Somji[1], *S. H. Garrett*[1], M. Sens[1] and *D. A. Sens*[2]. [1]Pathology, University of North Dakota, Grand Forks, ND and [2]Surgery, University of North Dakota, Grand Forks, ND.

#72 **EXPRESSION OF THE MT-3 PROTEIN IN THE NORMAL BREAST EPITHELIAL CELL LINE MCF-10 IS DEPENDANT UPON THE PRESENCE OF THE HEAVY METAL CADMIUM.** V. Gurel, M. Sens, S. Somji, *S. H. Garrett* and *D. A. Sens*. Pathology, University of North Dakota, Grand Forks, ND.

#73 **CADMIUM OR ZINC IS REQUIRED FOR THE EXPRESSION OF MT-3 PROTEIN IN THE MT-3 GENE TRANSFECTED UROTSA CELL LINE.** S. Park, *S. H. Garrett*, S. Somji, M. Sens and *D. A. Sens*. Pathology, University of North Dakota, Grand Forks, ND.

#74 **EXPRESSION OF METALLOTHIONEIN ISOFORMS IN THE NORMAL HUMAN PROSTATE EPITHELIAL CELL LINE, 267-B1, EXPOSED TO CADMIUM.** *S. H. Garrett*, S. Han, M. Neriyanuri, S. Somji, M. Sens and *D. A. Sens*. Pathology, University of North Dakota, Grand Forks, ND.

#75 **LEAD MODULATES BOTH OSTEOBLAST AND OSTEOCLAST ACTIVITY: A PARADIGM FOR ENHANCED BONE LOSS.** J. E. Puzas, R. J. O'Keefe, E. M. Schwarz, M. J. Zuscik and R. N. Rosier. Department of Orthopaedics, University of Rochester School of Medicine, Rochester, NY. Sponsor: *T. Gasiewicz*.

#76 **URANIUM AND CELL DEATH IN THE RAT KIDNEY.** *M. Pomeroy*[1], *B. Jortner*[1], *M. Ehrich*[1], J. Robertson[1] and *D. Barber*[2]. [1]Department of Biological Sciences and Pathobiology, Virginia Tech, Blacksburg, VA and [2]Department of Physiological Sciences, Center for Environmental and Human Toxicology, University of Florida, Gainesville, FL.

#77 **ARSENIC ALTERS HORMONE-MEDIATED POSITIVE, BUT NOT NEGATIVE, REGULATORY EFFECTS OF STEROID RECEPTORS.** *J. W. Hamilton*, J. E. Bodwell, L. A. Kingsley, C. S. Barnet and J. C. Davey. Pharmacology & Toxicology, Dartmouth Medical School, Hanover, NH.

#78 **ROLE OF THE CALPAIN PATHWAY IN ARSENITE-MEDIATED DECREASES IN CYP3A IN CULTURED RAT HEPATOCYTES.** *T. L. Noreault*[1], B. Dwyer[5,2], R. Nichols[5,3], H. Trask[4], *S. Wrighton*[6], P. Sinclair[5,4,1] and *J. Sinclair*[5,4,1]. [1]Pharmacology & Toxicology, Dartmouth Medical School, Hanover, NH, [2]Neurology, Dartmouth Medical School, Hanover, NH, [3]Microbiology/Immunology, Dartmouth Medical School, Hanover, NH, [4]Biochemistry, Dartmouth Medical School, Hanover, NH, [5]VA Medical Center, White River Junction, VT and [6]Lilly Research Laboratories, Indianapolis, IN.

#79 **INORGANIC ARSENIC INCREASES VASOCONSTRICTION THROUGH CALCIUM-SENSITIZATION IN VASCULAR SMOOTH MUSCLES.** *J. Chung*[1], M. Lee[1], Y. Lee[2], S. Chung[1] and O. Bae[1]. [1]College of Pharmacy, Seoul National University, Seoul, South Korea and [2]College of Medicine, Yonsei University, Seoul, South Korea.

#80 **ARSENIC-INDUCED DYSFUNCTION IN RELAXATION OF BLOOD VESSELS.** M. Lee, B. Jung, S. Chung, O. Bae and *J. Chung*. College of Pharmacy, Seoul National University, Seoul, South Korea.

#81 **CLONING, EXPRESSION, AND CHARACTERIZATION OF RAT S-ADENOSYL-L-METHIONINE: ARSENIC(III) METHYLTRANSFERASE (CYT19).** S. B. Waters[3], F. Walton[2], K. M. Herbin-Davis[1], M. Styblo[2] and *D. J. Thomas*[1]. [1]ORD/NHEERL/ETD/PTB, U.S. EPA, Research Triangle Park, NC, [2]Pediatrics, University of North Carolina, Chapel Hill, NC and [3]Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC.

#82 **INORGANIC AND METHYLATED TRIVALENT ARSENICALS INHIBIT GLUCOSE UPTAKE BY MURINE ADIPOCYTES.** F. S. Walton, D. S. Paul, A. W. Harmon, Y. M. Patel and M. Styblo. Departments of Pediatrics and Nutrition, University of North Carolina, Chapel Hill, NC. Sponsor: *D. Thomas*.

#83 **COMPENSATORY HEME PATHWAY RESPONSES IN INTERACTION STUDIES OF LEAD, CADMIUM AND ARSENIC TOXICITY.** G. Wang. Toxicology Program, University of Maryland, Baltimore, MD. Sponsor: *B. Fowler*.

#84 **SUBLETHAL ARSENIC EXPOSURE ALTERS FOCAL ADHESION AND CYTOSKELETAL ORGANIZATION IN CULTURED H9C2 CELLS.** S. L. Yancy[1], *E. A. Sheldon*[2] and *M. J. Welsh*[2]. [1]Toxicology, University of Michigan, Ann Arbor, MI and [2]Cell and Developmental Biology, University of Michigan Medical School, Ann Arbor, MI.

#85 **ARSENITE INHIBITION OF THE HOMOLOGS αKETOGLUTARATE DEHYDROGENASE AND PYRUVATE DEHYDROGENASE.** E. R. Berquist[1], K. D. Sugden[1,2] and B. Martin[1,2]. [1]Chemistry, University of Montana, Missoula, MT and [2]Center for Environmental Health Sciences, University of Montana, Missoula, MT. Sponsor: *H. Beall*.

#86 **CADMIUM PERTURBATION OF MICROTUBULES THROUGH ITS INTERACTION WITH PROTEIN SULFHYDRYLS.** Y. Zhao[1], W. Li[2] and *I. Chou*[1]. [1]Microbiology, Boston University School of Medicine, Boston, MA and [2]Biochemistry, Boston University School of Medicine, Boston, MA.

#87 **DOWNREGULATION OF TUBULIN AND MICROTUBULE-ASSOCIATED PROTEINS (MAPS) IN CULTURED LUNG FIBROBLASTS EXPOSED TO CADMIUM.** W. Li[1], Y. Zhao[2] and *I. Chou*[2]. [1]Biochemistry, Boston University School of Medicine, Boston, MA and [2]Microbiology, Boston University School of Medicine, Boston, MA.

#87a **CYTOTOXIC POTENTIALS OF NICKEL COMPOUNDS FOLLOWING *IN VITRO* EXPOSURE OF HUMAN BLOOD LYMPHOCYTES: ROLE OF SPECIATION.**P. M'Bemba-Meka, and S. K. Chakrabarti. Universite de Montreal, Montreal, QC, Canada.

Monday Morning, March 10
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: METAL NEUROTOXICITY I

Chairperson(s): *Evelyn Tiffany-Castiglioni, Texas A&M University, College Station, TX and Nasser Zawia, University of Rhode Island, Kingston, RI.*

Displayed: *9:30 AM–12:30 PM*

Attended: *11:00 AM–12:30 PM*

#88 **REGIONAL DISTRIBUTION OF URANIUM IN RAT BRAIN.** *D. S. Barber*[1] and M. J. Kopplin[2]. [1]Center for Environmental and Human Toxicology, University of Florida, Gainesville, FL and [2]Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

#89 **URANIUM UPTAKE IN RAT BRAIN ENDOTHELIAL CELLS AND THE POSSIBLE LINK TO DIVALENT METAL TRANSPORTER 1.** A. Lack, *K. M. Erikson*, *A. W. Dobson* and *M. Aschner*. Physiology and Pharmacology, Wake Forest University School of Medicine, Winston-Salem, NC.

#90 **BRAIN REGIONAL UPTAKE OF MANGANESE (Mn) AS AFFECTED BY SUBCHRONIC *IN VIVO* Mn EXPOSURE IN SPRAGUE-DAWLEY RATS.** R. Deane[1], D. J. Opler[2] and *W. Zheng*[2]. [1]Center for Aging and Developmental Biology, University of Rochester Medical Center, Rochester, NY and [2]School of Public Health, Columbia University, New York, NY.

#91 **HETEROGENEOUS MANGANESE ACCUMULATION IN THE IRON DEFICIENT DEVELOPING RAT BRAIN IS LINKED TO DIVALENT METAL TRANSPORTER LEVELS.** Q. Wu, *K. M. Erikson* and *M. Aschner*. Physiology and Pharmacology, Wake Forest University School of Medicine, Winston-Salem, NC.

#92 **INCREASED MANGANESE UPTAKE IN IRON DEPRIVED AND IRON OVERLOADED PRIMARY ASTROCYTE CULTURES IS DUE TO INCREASED DIVALENT METAL TRANSPORTER.** *K. M. Erikson*, *A. W. Dobson* and *M. Aschner*. Physiology and Pharmacology, Wake Forest University School of Medicine, Winston-Salem, NC.

#93 **MOLECULAR MECHANISM OF MANGANESE-INDUCED DISRUPTION OF IRON TRANSPORT AT THE BLOOD-CSF BARRIER.** G. Li, Q. Zhao, J. Pilsner, G. A. Freyer and *W. Zheng*. School of Public Health, Columbia University, New York, NY.

#94 **CHARACTERISTICS OF CARRIER-MEDIATED BRAIN MANGANESE UPTAKE IN ENDOTHELIAL CELL CULTURES AND INTO PERFUSED RAT BRAIN.** J. S. Crossgrove[1], K. R. Deibel[2] and *R. A. Yokel*[2,1]. [1]Graduate Center for Toxicology, University of Kentucky Medical Center, Lexington, KY and [2]College of Pharmacy, University of Kentucky Medical Center, Lexington, KY.

#95 **THE DIVALENT METAL TRANSPORTER-1 IS NOT ESSENTIAL FOR BRAIN MANGANESE UPTAKE.** *R. A. Yokel*[1,2] and J. S. Crossgrove[2]. [1]College of Pharmacy, University of Kentucky Medical Center, Lexington, KY and [2]Graduate Center for Toxicology, University of Kentucky Medical Center, Lexington, KY.

#96 **MANGANESE CELL CULTURE EXPOSURE PARAMETERS AND THEIR IMPLICATIONS FOR TOXICITY.** S. Gomes, C. Kwik-Uribe, S. Reaney and *D. Smith*. Environmental Toxicology, University of California, Sanat Cruz, CA.

#97 **2-D DIGE PROTEOMIC ANALSYES OF Mn EXPOSURE IN DOPAMINE AND GABA PRODUCING CELL LINES: IMPLICATIONS FOR Mn NEUROTOXICITY.** *D. R. Smith*[2], S. Whitman[1], S. Reaney[1,2], C. Kwik-Uribe[2], C. Arnold[2], R. Gwiazda[2] and T. Holman[1]. [1]Environmental Toxicology, University of California, Santa Cruz, CA and [2]Chemistry and Biochemistry, University of California, Santa Cruz, CA.

#98 **CHARACTERIZATION OF NIGRO-STRIATAL DEFICITS IN A MOUSE MODEL OF MANGANESE-INDUCED PARKINSONISM.** X. Liu, B. Lee and *R. Tjalkens*. Toxicology Program, Department of Integrative Biosciences, Texas A&M University, College Station, TX.

#99 **MANGANESE EXPOSURE INDUCES AN INCREASE IN INTRACELLULAR GABA IN IMMORTALIZED RODENT STRIATAL CELLS.** D. R. Crooks, N. Welch, S. H. Reaney, R. Gwiazda, C. M. Arnold and *D. R. Smith*. Environmental Toxicology, UC Santa Cruz, Santa Cruz, CA.

#100 **THE RELATIVE EFFECTS OF Mn(II) AND Mn(III) ON CELL FUNCTION.** S. H. Reaney[1,2] and *D. Smith*[2]. [1]Chemistry and Biochemistry Department, UCSC, Santa Cruz, CA and [2]Environmental Toxicology Department, UCSC, Santa Cruz, CA.

#101 **MANGANESE AUGMENTS CYTOKINE- AND LPS-INDUCED NO PRODUCTION IN GLIAL CELLS THROUGH ACTIVATION OF MAP KINASE AND NF-κB.** *R. Tjalkens*, J. Faske, X. Liu, M. Zhao and R. Mounemne . Toxicology Program, Department of Integrative Biosciences, Texas A&M University, College Station, TX.

#102 **TEMPORAL RESPONSES IN THE DISRUPTION OF Fe REGULATION BY Mn.** C. Kwik-Uribe, S. Reaney, Z. Zhu and *D. R. Smith*. Environmental Toxicology, University of California, Santa Cruz, CA.

#103 **INFLUENCE OF SUBACUTE AND SUBCHRONIC MANGANESE SULFATE ON GLIAL FIBRILLARY ACIDIC PROTEIN.** *H. L. Komiskey*[1], M. Choi[1,2], X. Chen[1], M. Zhou[1], V. Childress[1] and *C. S. Mehta*[1,2]. [1]College of Pharmacy, Xavier University of Louisiana, New Orleans, LA and [2]College of Pharmacy & Health, Texas Southern University, Houston, TX.

#104 **DIFFERENTIAL INDUCTION OF DNA REPAIR CAPACITY AFTER ARSENIC EXPOSURE ALLOWS FOR REGIONAL SPECIFIC ACCUMULATION OF DNA DAMAGE.** F. Cardozo-Pelaez, M. Pershouse and C. Bolin. Center for Environmental Health Science, University of Monatana, Missoula, MT. Sponsor: *A. Holian*.

#105 **DIMERCAPTOSUCCINIC ACID IS INEFFECTIVE IN THE TREATMENT OF ACUTE THALLIUM POISONING.** D. E. Rusyniak[1], L. W. Kao[1], K. A. Nanagas[1], *M. A. Kirk*[2], *B. R. Furbee*[1], E. J. Brizendine[3] and P. E. Wilmot[4]. [1]Emergency Medicine/Medical Toxicology, Indiana University, Indianapolis, IN, [2]Medical Toxicology, University of Virginia, Charlottesville , VA, [3]Biostatistics, Indiana University, Indianapolis, IN and [4]American Institute Toxicology, Indianapolis, IN.

#106 **DIFFERENT RESPONSES OF NEURONS AND GLIA TO Cu ELEVATION IN ROS GENERATION.** *Y. Qian*, L. Abraham, Y. Zheng and *E. Tiffany-Castiglioni*. Veterinary Anatomy and Public Health, Texas A&M University, College Station, TX.

#107 **AGE-RELATED VASCULAR CHANGES IN THE CEREBRAL WHITE MATTER OF DOGS.** T. Morita, Y. Mizutani, M. Sawada and *A. Shimada*. Department of Veterinary Pathology, Tottori University, Tottori, Tottori, Japan.

#108 **HEAVY METALS AND PCBS PROMOTE BETA-AMYLOID AGGREGATION AND ITS CYTOTOXCITY IN PC12 CELLS.** *M. R. Basha*, W. Wei and *N. H. Zawia*. Biomedical Sciences, University of Rhode Island, Kingston, RI.

#109 **ALUMINUM MALTOLATE-INDUCED CYTOTOXICITY IN NEURO-2a CELLS INVOLVES APOPTOSIS AND NECROSIS.** *R. P. Sharma*[1] and *V. J. Johnson*[1,2]. [1]Department of Physiology and Pharmacology, The University of Georgia, Athens, GA and [2]Toxicology and Molecular Biology Branch, Health Effects Laboratory Division, NIOSH, Morgantown, WV.

#110 **ALUMINUM-INDUCED NEURODEGENERATION INVOLVES DIFFERENTIAL REGULATION OF PROINFLAMMATORY CYTOKINE AND NEUROTROPHIN GENE EXPRESSION.** *V. J. Johnson*[1,2] and *R. P. Sharma*[1]. [1]Department of Physiology and Pharmacology, The University of Georgia, Athens, GA and [2]Toxicology and Molecular Biology Branch, Health Effect Laboratory Division, NIOSH, Morgantown, WV.

#111 **ALUMINUM IN DRINKING WATER PROMOTES NEURO-INFLAMMATORY INDICES *IN VIVO*.** A. Becaria, *S. C. Bondy*, K. Sharman and A. Campbell. Community & Environmental Medicine, University of California Irvine, Irvine, CA.

#112 **EFFECTS OF ALUMINUM ON MEMBRANE PROPERTIES AND BIOGENIC AMINE METABOLISM IN RESTING PC-12 CELLS.** *M. Tsunoda*[1,2], *V. J. Johnson*[2], *T. F. Murray*[2] and *R. P. Sharma*[2]. [1]Department of Public Health, Fukushima Medical University, Fukushima, Japan and [2]Department of Physiology and Pharmacology, The University of Georgia, Athens, GA.

#113 **VANADIUM INHALATION INDUCES NEURONAL ALTERATIONS IN *CORPUS STRIATUM*. AN EXPERIMENTAL MODEL IN MICE.** E. Montiel-Flores[2], M. Avila-Costa[2], P. Aley[2], I. Lopez[1], S. Acevedo[1], *L. Saldivar*[3], G. Espejel [3], A. Gonzalez[1], M. Avila-Casado[1], G. Nino[1], P. Bizarro[1], P. Mussali[1], D. Garcia-Morales[2], L. Colin-Barenque[2], V. Delgado[1] and *T. Fortoul*[1]. [1]Biología Celular y Tisular, UNAM, Mexico, D.F., Mexico, [2]Neuroscience, UNAM, Mexico, Mexico and [3]Facultad De Quimica, UNAM, UNAM, N/A, Mexico.

MONDAY

Monday Morning, March 10
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: FEMALE REPRODUCTIVE SYSTEM

Chairperson(s): *Susan Bielmeier, University of North Carolina, Durham, NC and Ali Faqi, Allergan Inc, Irvine, CA.*

Displayed: *9:30 AM–12:30 PM*

Attended: *9:30 AM–11:00 AM*

#114 **DIBROMOACETIC ACID-INDUCED ELEVATIONS OF ESTRADIOL IN BOTH CYCLING AND OVARIECTOMIZED/ESTRADIOL-IMPLANTED FEMALE RATS.** J. M. Goldman and A. S. Murr. Endocrinol. Br., RTD, NHEERL, ORD, U.S. EPA, Res. Triangle Pk., NC. Sponsor: *A. Cummings*.

#115 **THE EFFECTS OF CYCLOPHOSPHAMIDE (CPA) ON THE SYNTHESIS OF GLUTATHIONE (GSH) IN RAT OVARIES.** S. G. Lopez and *U. Luderer*. Center for Occupational and Environmental Health, University of California, Irvine, Irvine, CA.

#116 **CIGARETTE SMOKE EFFECTS HAMSTER OOCYTE CUMULUS COMPLEX PICKUP RATE, ADHESION, AND CILIARY BEAT FREQUENCY.** C. Gieseke[1,2] and *P. Talbot*[2,1]. [1]Environmental Toxicology Graduate Program, University of California, Riverside, CA and [2]Cell biology and Neuroscience, University of California, Riverside, CA.

#117 **LOCALIZATION OF GLUTAMATE CYSTEINE LIGASE CATALYTIC SUBUNIT (GCLC) PROTEIN IN IMMATURE RAT OVARY AFTER TREATMENT WITH PMSG.** *M. M. Tsai-Turton* and *U. Luderer*. Center for Occupational and Environmental Health, University of California Irvine, Irvine, CA.

#118 **BENZYL ISOTHIOCYANATE INDUCED FUNCTIONAL ABERRATION OF ISOLATED UTERINE STRIPS.** A. Adebiyi, R. Prasad and G. P. Adaikan. Obstetrics & Gynaecology, National University of Singapore, Singapore, Singapore. Sponsor: *M. Ehrich*.

#119 **NEONATAL ESTROGENIZATION INDUCES HYPOSPADIA AND INFERTILITY IN FEMALE RATS.** *A. S. Faqi*[1], N. Kozub[1], *J. A. Crowell*[2] and *D. L. McCormick*[1]. [1]Life Sciences Operation, IIT Research Institute, Chicago, IL and [2]Division of Cancer Prevention, National Cancer Institute, Bethesda, MD.

#120 **IDENTIFICATION OF COMPOUNDS IN CIGARETTE SMOKE THAT INHIBIT HAMSTER OVIDUCTAL FUNCTIONING.** *K. Riveles*, R. Roza and *P. Talbot*. Cell Biology & Neuroscience, UC Riverside, Riverside, CA.

#121 **FOLLICLE GROWTH IN THE MOUSE OVARY IS MEDIATED BY THE ARYL HYDROCARBON RECEPTOR.** *K. P. Miller*[1], *J. C. Benedict*[1], C. Greenfeld[1], *T. Lin*[2], J. K. Babus[1], *R. E. Peterson*[2] and *J. A. Flaws*[1]. [1]Program in Toxicology, University of Maryland-School of Medicine, Baltimore, MD and [2]University of Wisconsin-School of Pharmacy, Madison, WI.

#122 **GENE EXPRESSION PROFILE INDUCED BY 17-α-ETHYNYL ESTRADIOL IN THE PRE-PUBERTAL FEMALE REPRODUCTIVE SYSTEM OF THE RAT.** J. M. Naciff, G. J. Overmann, S. M. Torontali, G. J. Carr, J. P. Tiesman, B. D. Richardson and *G. P. Daston*. Miami Valley Laboratories, Procter & Gamble, Cincinnati, OH.

#123 **ALTERED GENE EXPRESSION IN THE MURINE UTERUS FOLLOWING DEVELOPMENTAL TREATMENT WITH GENISTEIN, A SOY PHYTOESTROGEN.** W. N. Jefferson[1,2], E. Padilla-Banks[1] and R. R. Newbold[1]. [1]Laboratory of Molecular Toxicology, National Institute of Environmental Health Sciences, Research Triangle Park, NC and [2]Department of Environmental and Molecular Toxicology, North Carolina State University, Raleigh, NC. Sponsor: *M. Cunningham*.

#124 **EXPOSURE TO 1-BROMOPROPANE DISRUPTS DEVELOPMENT OF OVARIAN FOLLICLES IN ADULT RATS.** T. Yamada[1], *G. Ichihara*[1], H. Wang[1], X. Yu[1], K. Maeda[2], H. Tsukamura[2], *M. Kamijima*[1], T. Nakajima[1] and Y. Takeuchi[1]. [1]Occupational and Environmental Health, Nagoya University Graduate School of Medicine, Nagoya, Aichi, Japan and [2]Nagoya University Graduate School of Agricultural Sciences, Nagoya, Japan.

#125 **METHOXYCHLOR MAY REGULATE ESTROGEN RECEPTOR LEVELS IN THE MOUSE OVARY.** *C. Borgeest*[1], D. Tomic[2], C. Greenfeld[3], J. K. Babus[2], D. Symonds[2] and *J. A. Flaws*[1,2]. [1]Program in Toxicology, University of Maryland, Baltimore, Baltimore, MD, [2]Epidemiology and Preventive Medicine, University of Maryland, Baltimore, Baltimore, MD and [3]Physiology, University of Maryland, Baltimore, Baltimore, MD.

#126 **EFFECTS OF BROMODICHLOROMETHANE (BDCM) ON *EX VIVO* LUTEAL FUNCTION IN THE PREGNANT F344 RAT.** *S. R. Bielmeier*[1], A. S. Murr[2], D. S. Best[2], J. M. Goldman[2] and M. G. Narotsky[2]. [1]Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC and [2]Reproductive Toxicology Division, NHEERL, ORD, U.S. EPA, Research Triangle Park, NC.

#127 **FTIR PATTERN SHIFT IN TOXICANTS INDUCED CYTOSKELETON REARRANGEMENT CAN IDENTIFY *IN SITU* AND INVASIVE CARCINOMA OF CERVICAL CELLS.** *P. Sinhaseni* [1,2], R. Sindhuphak [1], T. Posayanonda[2], V. Taechakitiroj [2], T. Suramana [2], N. Nuntharatanapong [2], S. B. Chichareon [3], K. Peeyananjarassri [3] and N. Dusitsin [1]. [1]The Institute of Health Research, Chulalongkorn University, Bangkok, Thailand, [2]Department of Pharmacology, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Bangkok, Thailand and [3]Department of Obstetric & Gynecology, Faculty of Medicine, Prince of Songkla University, Songkla, Thailand.

#128 ***IN VITRO* BIOACTIVATION OF 4-VINLYCYCLOHEXENE MONOEPOXIDE IN CULTURTED OVARIES FROM B6C3F1 MICE.** K. Rajapaksa[1], *E. A. Cannady*[2,1], P. J. Christian[1], *P. J. Devine*[1], *I. Sipes*[2] and *P. B. Hoyer*[1]. [1]Physiology, University of Arizona, Tucson, AZ and [2]Pharmacology and Toxicology , University of Arizona, Tucson, AZ.

#129 **APOPTOSIS AS A MECHANISM OF 8-MOP-INDUCED OVARIAN TOXICITY.** D. S. McDermott[1], *P. B. Hoyer*[2] and *M. M. Diawara*[1]. [1]Biology, University of Southern Colorado, Pueblo, CO and [2]Physiology, University of Arizona, Tuscon, AZ.

Monday Morning, March 10
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: DRINKING WATER RISK ASSESSMENT

Chairperson(s): *Julie Du, U.S. EPA, Washington, DC and John Lipscomb, U.S. EPA, Cincinnati, OH.*

Displayed: *9:30 AM–12:30 PM*

Attended: *11:00 AM–12:30 PM*

#130 **HUMAN HEALTH RISK ASSESSMENT FOR PHENYL GLYCIDYL ETHER TO DETERMINE DRINKING WATER ACTION LEVELS.** C. D. Gillilland, G. L. Ball, C. J. McLellan and M. C. Sanders. Toxicology Services, NSF International, Ann Arbor, MI. Sponsor: *M. Dourson*.

#131 **RISK ASSESSMENT OF IODINE FOR THE DEVELOPMENT OF DRINKING WATER ACTION LEVELS.** A. D. Phelka, L. L. Bestervelt, C. J. McLellan and M. C. Sanders. Toxicology Services, NSF International, Ann Arbor, MI. Sponsor: *M. Dourson*.

#132 **RISK ASSESSMENT OF ARSENIC IN DRINKING WATER FOR THE CALIFORNIA PUBLIC HEALTH GOAL.** J. P. Brown, *R. A. Howd*, *A. M. Fan*, A. Smith and P. Lopipero. University of California, Berkeley, CA.

#133 **HUMAN HEALTH RISK ASSESSMENT FOR t-BUTANOL TO DETERMINE DRINKING WATER ACTION LEVELS.** J. M. Russell, G. L. Ball, L. L. Bestervelt, C. J. McLellan, M. C. Sanders and A. P. Phelka. Toxicology Services, NSF International, Ann Arbor, MI. Sponsor: *M. Dourson*.

#134 **HEALTH RISK TO FETUSES, INFANTS AND CHILDREN FROM STAGE 1 DISINFECTANTS AND DISINFECTANT BY-PRODUCTS (D/DBPS).** A. T. Bathija. Office of Water, University.S.EPA, Washington, DC. Sponsor: *E. Ohanian*.

#135 **THE CUMULATIVE RISK OF DRINKING WATER DISINFECTION BY-PRODUCTS: ADEQUACY OF DATA AND APPROACH.** *J. C. Lipscomb*, G. E. Rice and L. K. Teuschler. ORD / National Center for Environmental Assessment, U.S. EPA, Cincinnati, OH.

#136 **HEALTH RISK ASSESSMENT FOR MONOCHLOROACETIC ACID (MCA).** *D. Wong*. Office of Water, OST/HECD, U.S. EPA, Washington, DC.

#137 **REGULATORY DETERMINATION FOR MANGANESE IN DRINKING WATER.** *J. T. Du*. Office of Water, U.S. EPA, Washington, DC.

#138 **EVALUATION OF THE ORAL REFERENCE DOSE FOR VANADIUM.** N. H. Chiu[1] and *L. H. Moilanen*[2]. [1]Office of Water, U.S. EPA, Washington, DC and [2]Syracuse Research Corp., Denver, CO.

#139 **ATSDR'S ACUTE MINIMAL RISK LEVEL FOR COPPER.** L. Ingerman[1] and A. S. Dorsey[2]. [1]Environmental Science Center, Syracuse Research Corp, Syracuse, NY and [2]ATSDR, Atlanta, GA. Sponsor: *P. McGinnis*.

#140 **SELECTION OF PRE-CONTAMINANT CANDIDATE LIST CHEMICALS FROM UNIVERSE OF DRINKING WATER CONTAMINANTS: A STRUCTURE-ACTIVITY APPROACH.** S. S. Kueberuwa. Office of Water, U.S. EPA, Washington, DC. Sponsor: *F. Adeshina*.

#141 **REGULATORY DETERMINATION FOR NAPHTHALENE IN DRINKING WATER.** J. M. Donohue[1] and *L. H. Moilanen*[2]. [1]Health and Ecological Criteria Division, U.S. EPA, Washington, DC and [2]Environmental Science Center, Syracuse, Denver, CO.

Monday Morning, March 10
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: ROLE OF ENVIRONMENTAL AGENTS IN CARDIOVASCULAR DISEASE

Chairperson(s): *Nigel Walker, NIEHS, Research Triangle Park, NC and Christopher Chengelis, WIL Research Laboratories Inc, Ashland, OH.*

Displayed: *9:30 AM–12:30 PM*

Attended: *9:30 AM–11:00 AM*

#142 **EXACERBATION OF CARDIOVASCULAR PATHOLGIES IN FEMALE SPRAGUE- DAWLEY RATS FOLLOWING CHRONIC TREATMENT WITH 3, 3, 4, 4, 5-PENTACHLOROBIPHENYL (PCB126) OR 2, 3, 7, 8-TETRACHLORODIBENZO-*p*-DIOXIN (TCDD).** M. P. Jokinen[1], *N. J. Walker*[5], A. E. Brix[2], D. M. Sells[3] and A. Nyska[4]. [1]Pathology Associates-A Charles River Company, Durham, NC, [2]EPL, Research Triangle Park, NC, [3]Battelle Columbus, Columbus, OH, [4]LEP, NIEHS, Research Triangle Park, NC and [5]ETP, NIEHS, Research Triangle Park, NC.

#143 **BONE INJURY IN A CHEMICALLY INDUCED RAT MODEL OF HUMAN HEMOLYTIC DISORDERS ASSOCIATED WITH THROMBOSIS - COMPARATIVE PATHOLOGICAL AND MRI INVESTIGATION.** A. Nyska[3], S. Shabat[1], P. H. Long[2], N. Ezov[4], T. Levin-Harrus[4], S. Paddada[5], M. Rehdlich[6], S. Yedgar[7] and M. Nyska[1]. [1]Laboratory of Experimental Pathology, NIEHS, Research Triangle Park, NC, [2]Orthopedic Surgery, Sapir Medical Center, Kfar - Saba, Israel, [3]Pathology Associates - A Charles River Company, West Chester, OH, [4]Harlan Biotech Israel Ltd, Rehovot, Israel, [5]Department of Statistics, University of Virginia, Charlottesville, VA, [6]Faculty of Dental Medicine, Hebrew University of Jerusalem, Jerusalem, Israel and [7]Department of Biochemistry, Hebrew University of Jerusalem, Jerusalem, Israel. Sponsor: *R. Maronpot*.

#144 **EFFECT OF FAMOTIDINE, H2 HISTAMINE BLOCKER, ON HERG CURRENT AND ACTION POTENTIAL OF CARDIAC VENTRICULAR MYOCYTES.** *R. Nagata*, J. Matsuo, Q. Gong, N. Uchimura, K. Kuwano, S. Nagayama and G. Kito. Shin Nippon Biomedical Laboratories (SNBL), Yoshida, Kagoshima, Japan.

#145 **THE ROLE OF GLUTATHIONE AND GLUTATHIONE S-TRANSFERASE INDUCED BY 3H-1, 2-DITHIOLE-3-THIONE IN PROTECTING RAT AORTIC SMOOTH MUSCLE CELLS AGAINST 4-HYDROXYNONENAL-MEDIATED CYTOTOXICITY.** Z. Cao, *D. Hardej*, *L. D. Trombetta* and Y. Li. Pharmaceutical Sciences., SJU, Jamaica, NY.

#146 **CHEMICAL INDUCTION OF ENDOGENOUS ANTIOXIDANTS IN RAT CARDIOMYOCYTES: PROTECTION AGAINST OXIDATIVE CELL INJURY.** X. Peng, *S. Cheng*, *L. D. Trombetta* and Y. Li. Pharmaceutical Sciences., St. John, Jamaica, NY.

#147 **INHALATION TOXICITY OF BREVETOXIN 2 IN SPONTANEOUSLY HYPERTENSIVE AND F344 RATS.** B. M. Tibbetts[1], M. J. Campen[1], *F. F. Hahn*[1], T. F. March[1], *A. J. Bourdelais*[2], J. Narr[2], *D. G. Baden*[2] and *J. M. Benson*[1]. [1]Lovelace Respiratory Research Institute, Albuquerque, NM and [2]Center for Marine Sciences, University of North Carolina at Wilmington, Wilmington, NC.

#148 **PHYSICAL CONDITIONING MODULATES CARDIAC VEGF GENE EXPRESSION AND NITRIC OXIDE LEVELS IN NO-DEFICIENT HYPERTENSIVE RATS.** *K. Husain*[1], *J. Matta*[1], S. R. Hazelrigg[2], T. Boley[2] and *S. M. Somani*[3]. [1]Pharmacology and Toxicology, Ponce School of Medicine, Ponce, Puerto Rico, [2]Surgery, SIU School of Medicine, Springfield, IL and [3]Pharmacology, SIU School of Medicine, Springfield, IL.

#149 **CONTROL REFERENCE DATA FOR DOPPLER ECHOCARDIOGRAPHY IN HEALTHY CYNOMOLGUS MONKEYS UNDER KETAMINE HYDROCHLORIDE SEDATION.** S. Mohr[1], U. Zuehlke[1], R. Strobel[2], U. Menzel[2], *M. Bopst*[2] and E. Schulze-Bahr[3]. [1]Covance Laboratories GmbH, Muenster, Germany, [2]Hoffmann-La Roche Ltd, Basel and [3]Department of Cardiology, University of Muenster, Muenster, Germany.

#150 **THE PROTECTIVE EFFECTS OF CHEMICALLY-INDUCED ENDOGENOUS GLUTATHIONE ON PEROXYNITRITE-MEDIATED TOXICITY IN VASCULAR CELLS.** Y. Li and Z. Cao. Pharmaceutical Sciences, St. John's University, Jamaica, NY. Sponsor: *L. Trombetta*.

#151 **MESENTERIC AND PANCREATIC VASCULAR INJURY INDUCED BY FENOLDOPAM IN SPRAGUE-DAWLEY (SD) RATS: EVIDENCE FOR MAST CELL MEDIATED PATHOGENESIS.** J. Zhang, R. Honchel, *E. H. Herman*, J. L. Weaver, A. Knapton and *F. D. Sistare*. Division of Applied Pharmacology Research, Center For Drug Evaluation and Research, U.S. FDA, Laurel, MD.

#152 **VALIDATION FOR QT PROLONGATION IN CONSCIOUS BEAGLE DOGS ADMINISTERED SOTALOL VIA THE ORAL ROUTE.** *C. M. Kelly*, M. Miyamoto and S. J. Gosselin. Safety Assessment, Huntingdon Life Sciences, East Millstone, NJ.

#153 **THE EFFECT OF THE NONSELECTIVE NOS INHIBITOR, L-NITRO-ARGININE ON THE CANINE PANCREAS.** *R. Bell*[1], *K. Kolaja*[1], D. Jenssen[1], P. Manning[2] and N. Khan[1]. [1]Global Toxicology, Pharmacia Corporation, Skokie, IL and [2]Discovery, Pharmacia Corporation, Chesterfield , MO.

#154 **VALIDATION OF THE IL 682 CO-OXIMETER FOR EVALUATION OF METHEMOGLOBIN IN THE SPRAGUE-DAWLEY RAT.** T. P. O'Neill[1], *C. P. Chengelis*[1], S. C. Haley[1] and *V. J. Piccirillo*[2]. [1]WIL Research Laboratories, Ashland, OH and [2]VJP Consulting, Ashburn, VA.

#155 **THE EFFECTS OF CISAPRIDE ON QT INTERVAL IN CONSCIOUS, TELEMETERED MALE BEAGLE DOGS.** B. M. Roche, L. R. Votaw and P. R. Atterson. Safety Pharmacology, Quintiles, Inc., Kansas City, MO. Sponsor: *R. Long*.

#156 **INDUCTION OF 5-LIPOXYGENASE IN VASCULAR ENDOTHELIAL CELLS IN RESPONSE TO ARSENIC EXPOSURE.** *M. Bunderson*[1,2], R. E. Hamilton[1,2], J. D. Coffin[1,2] and *H. D. Beall*[1,2]. [1]Pharmaceutical Sciences, University of Montana, Missoula, MT and [2]Center for Environmental Health Sciences, University of Montana, Missoula, MT.

#157 **PEROXYNITRITE GENERATION IN AORTIC ENDOTHELIAL CELLS EXPOSED TO ARSENIC IS INCREASED BY MANGANESE.** R. E. Hamilton, *M. Bunderson*, J. D. Coffin and *H. D. Beall*. Pharmaceutical Sciences, University of Montana, Missoula, MT.

#158 **CELL TYPE DEPENDENT SIGNALING WEBS OF OXIDATIVE STRESS.** S. E. Purdom[1], J. R. Coronella-Wood[2] and *Q. M. Chen*[2]. [1]Interdisciplinary Graduate Program for Genetics and Genomics, University of Arizona, Tucson, AZ and [2]Pharmacology, University of Arizona, Tucson, AZ.

#159 **cDNA SEQUENCE OF CHICK BETA-1-ADRENERGIC RECEPTOR MAY EFFECT RESPONSES TO CARDIOTOXIC XENOBIOTICS.** A. J. Hume[1], *M. K. Walker*[2] and *R. J. Sommer*[1]. [1]Biology Department, Bates College, Lewiston, ME and [2]College of Pharmacy, University of New Mexico, Albuquerque, NM.

#160 **ARE THERE SEX DIFFERENCES IN ACTION POTENTIAL DURATION RECORDED FROM CANINE PURKINJE FIBRES?** L. Patmore, K. Lansdell, S. Fraser, S. Laycock, D. Gallacher and A. Templeton. Preclinical Safety and Efficacy, Quintiles Ltd, Edinburgh, United Kingdom. Sponsor: *D. Mitchell*.

#161 **ENHANCEMENT OF NO RELEASE FROM S-NITROSOALBUMIN BY FATTY ACIDS: RELEVANCE TO OXIDATIVE/NITROSATIVE STRESS OF PREECLAMPSIA.** V. Tyurin[1], R. E. Gandley[2,1], C. A. Hubel[2], R. N. Taylor[3] and *V. E. Kagan*[1,2]. [1]Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA, [2]Magge-Womens Research Institute, University of Pittsburgh, Pittsburgh, PA and [3]Obstetrics/Gynecology and Reproductive Sciences, University of California, San Francisco, CA.

#162 **OPENING OF MITOCHONDRIAL PERMEABILITY PORES CAUSES ISCHEMIA/REPERFUSION-INDUCED KILLING OF CULTURED ADULT RAT MYOCYTES.** J. Kim, Y. Jin and *J. J. Lemasters*. UNC-Chapel Hill, Chapel Hill, NC.

#163 **UPREGULATION OF ENDOTHELIN SYSTEM IS INVOLVED IN NICOTINE-INDUCED CARDIOTOXICITY IN RATS WITH ACUTE MYOCARDIAL INFARCTION.** Y. Li[1], L. Cai[1], *Z. Zhou*[1] and *Y. Kang*[1,2]. [1]Medicine, University of Louisville, Louisville, KY and [2]Pharmacology & Toxicology, University of Louisville, Louisville, KY.

#164 **THE UTILITY OF THE HERG BINDING ASSAY TO ASSESS QT PROLONGATION AND A STRATEGY FOR THE DISCOVERY PROCESS.** E. Eddy. Drug Safety and Disposition, Millennium Pharmaceuticals Inc., Cambridge, MA. Sponsor: *C. Alden*.

#165 **CYCLOSPORIN A PROTECTION AGAINST pH-DEPENDENT ISCHEMIA/REPERFUSION INJURY TO NEONATAL MYOCYTES: ROLE OF Ca^{2+} AND GLYCOLYSIS.** *J. R. Blattner*[1], *W. E. Cascio*[2] and *J. J. Lemasters*[1]. [1]Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC and [2]Department of Medicine, University of North Carolina, Chapel Hill, NC.

#166 **CONSIDERATIONS FOR ANESTHETIZED CARDIOVASCULAR SAFETY PHARMACOLOGY STUDIES: EFFECT OF ISOFLURANE ANESTHESIA ON HEART RATE AND QT INTERVAL IN THE CYNOMOLGUS MONKEY.** M. Vézina, C. Copeman and P. Shaver-Walker. Infusion, Pharmacology and Neurotoxicology, CTBR, Senneville, QC, Canada. Sponsor: *D. Jones*.

#167 **HOMOCYSTEINE INDUCES PROLIFERATION, STIMULATION OF ERK1/2 AND CALCIUM INFLUX IN VSMC, WHICH ARE INHIBITED BY THE NMDA RECEPTOR ANTAGONIST MK801.** *G. Bennett*, M. Solomon and T. H. Rosenquist. Genetics, Cell Biology and Anatomy, University of Nebraska Medical Center, Omaha, NE.

#168 **BACKGROUND HEART RATE AND QT INTERVAL DATA IN THE ANESTHETIZED BEAGLE DOG.** P. Shaver-Walker, M. Vézina and C. Copeman. Infusion, Pharmacology and Neurotoxicology, CTBR, Senneville, QC, Canada. Sponsor: *D. Jones*.

#169 **MECHANISMS OF ARSENIC TOXICITY IN VASCULAR DEVELOPMENT.** W. He, *M. Bunderson*, *H. D. Beall* and J. D. Coffin. Center for Environmental Health Sciences, The University of Montana, Missoula, MT.

#170 **TELEMETRY MONITORING OF CARDIOVASCULAR AND RESPIRATORY FUNCTION IN MALE CYNOMOLGUS MONKEYS.** T. W. Beck, T. Kamenosono, D. Aïssat, S. Meyer, K. Fukuzaki and *R. Nagata*. SNBL USA, Ltd., Everett, WA.

#171 **CARDIOTOXICITY STUDY OF NSC-638850 (UCN-01) AND CYTOSTAR (ARA-C) GIVEN ALONE OR IN COMBINATION TO BEAGLE DOGS.** M. Stonerook[1], C. Hassler[1], P. Tosca[1], J. Merrill[1], D. Vasconcelos[1] and A. Smith[2]. [1]Battelle Memorial Institute, Columbus, OH and [2]National Cancer Institute, Bethesda, MD. Sponsor: *M. Brooker*.

#172 **ALLYLAMINE INDUCES VASOSPASM IN HUMAN CORONARY ARTERY BYPASS GRAFT BLOOD VESSELS *IN VITRO*: ROLE OF SEMICARBAZIDE-SENSITIVE AMINE OXIDASE.** *D. J. Conklin*[1], D. Kranig[1], H. Mueller[1], G. Johnson[2], R. Wiechmann[2], M. Trent[3] and *P. J. Boor*[3]. [1]Biology, University of Wisconsin-Eau Claire, Eau Claire, WI, [2]Cardiothoracic Surgery, Luther Hospital, Eau Claire, WI and [3]Pathology, University of Texas Medical Branch, Galveston, TX.

#173 **INHIBITION OF PEROXYNITRITE-INDUCED DAMAGE IS INVOLVED IN METALLOTHIONEIN PREVENTION OF DIABETIC CARDIOTOXICITY.** L. Cai[1], X. Sun[1], Y. Li[1], L. Wang[1] and *Y. Kang*[1,2,3]. [1]Medicine, University of Louisville, Louisville, KY, [2]Pharmacology & Toxicology, University of Louisville, Louisville, KY and [3]Jewish Hospital Heart and Lung Institute, Louisville, KY.

Monday Morning, March 10
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: BIOLOGICAL MODELS

Chairperson(s): *Thomas Lewandowski, Gradient Corporation, Mercer Island, WA and Julie Kimbell, CIIT, Research Triangle Park, NC.*

Displayed: *9:30 AM–12:30 PM*

Attended: *11:00 AM–12:30 PM*

#174 **APPLICATION OF REACTION NETWORK MODELING TO A PRIORITY CARCINOGENIC ENVIRONMENTAL POLLUTANT, BENZO(A)PYRENE.** *K. H. Liao*[1,2], W. Wei[3], M. T. Klein[3], K. F. Reardon[1,2] and *R. S. Yang*[1]. [1]Quantitative and Computational Toxicology Group, Center for Environmental Toxicology and Technology, Colorado State University, Fort Collins, CO, [2]Department of Chemical Engineering, Colorado State University, Fort Collins, CO and [3]Department of Chemical and Biochemical Engineering, Rutgers, The State University of New Jersey, Piscataway, NJ.

#175 **A REACTION NETWORK MODEL FOR CYP2E1-MEDIATED METABOLISM OF TOXICANTS.** B. Reisfeld[1,2], K. Reardon[2] and *R. Yang*[1]. [1]Environmental and Radiological Health Sciences, Colorado State University, Fort Collins, CO and [2]Chemical Engineering, Colorado State University, Fort Collins, CO.

#176 **A MATHEMATICAL MODEL TO DETERMINE *IN VITRO* CLEARANCE IN THE SANDWICH RAT HEPATOCYTE CULTURE.** N. Treijtel[1], J. C. van Eijkeren[2], *M. van den Berg*[1] and B. J. Blaauboer[1]. [1]Institute for Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands and [2]National Institute of Public Health and Environment, Bilthoven, Netherlands.

#177 **PARAMETERIZATON OF A BIOLOGICALLY BASED KINETIC (BBK) MODEL OF THE ISOLATED PERFUSED RAT LIVER (IPRL): BROMOSULPHOPHTHALEIN (BSP) AND CADMIUM (CD) KINETICS.** *J. Gearhart*[1], B. Foy[2], A. Soto[1], E. Ebel[1] and *J. Frazier*[1]. [1]AFRL/HEST, Dayton, OH and [2]Wright State University, Dayton, OH.

#178 **A NONSTEADY STATE MODEL FOR THE TIGHT-BINDING INHIBITION OF THYMIDYLATE SYNTHETASE BY 5-FLUOROURACIL.** *R. S. DeWoskin*[1] and R. W. Setzer[2]. [1]ORD/NCEA, U.S. EPA, Research Triangle Park, NC and [2]ORD/NHEERL, U.S. EPA, Research Triangle Park, NC.

#179 **EVALUATION OF INTERSPECIES VARIABILITY DURING NEOCORTICAL NEUROGENESIS USING BIOLOGICALLY BASED COMPUTATIONAL MODELS.** *J. M. Gohlke*, W. C. Griffith and *E. M. Faustman*. Institute for Risk Analysis and Risk Communication, University of Washington, Seattle, WA.

#180 **EFFECTS OF DIFFERENCES IN NASAL ANATOMY ON AIRFLOW DISTRIBUTION: A COMPARISON OF THREE INDIVIDUALS.** R. Segal[1], G. M. Kepler[2], D. L. Kalisak[1], R. B. Richardson[1] and *J. S. Kimbell*[1]. [1]CIIT Centers for Health Research, Research Triangle Park, NC and [2]Consultant, Chapel Hill, NC.

#181 **EFFECTS OF DIFFERENCES IN NASAL ANATOMY ON UPTAKE OF INHALED GASES: A COMPARISON OF THREE INDIVIDUALS.** *J. S. Kimbell*[1], R. A. Segal[1], D. L. Kalisak[1], R. B. Richardson[1] and G. M. Kepler[2]. [1]CIIT Centers for Health Research, Research Triangle Park, NC and [2]Consultant, Chapel Hill, NC.

#182 **BUILDING BBDR MODELS FOR CELL SIGNALING PATHWAYS USING TRANSGENIC ANIMAL MODELS.** W. C. Griffith, J. M. Gholke, *T. A. Lewandowski*, M. C. Mendoza, *R. A. Ponce* and *E. M. Faustman*. Institute for Risk Analysis and Risk Communication, University of Washington, Seattle, WA.

#183 **TUMOR INCIDENCE IN HUMANS AND RODENTS: EFFORTS TO RECONCILE THE OBSERVED DATA WITH BBDR MODEL PREDICTIONS.** C. S. Wells[1], L. R. Rhomberg[1] and *T. A. Lewandowski*[2]. [1]Gradient Corporation, Cambridge, MA and [2]Gradient Corporation, Seattle, WA.

#184 **QUANTITATIVE STRUCTURE ACTIVITY RELATIONSHIP (QSAR) EVALUATIONS OF THE PHARMACOLOGY AND TOXICOLOGY OF HISTONE DEACETYLASE INHIBITORS.** U. Schramm[1], H. Thomas[2], P. Atadja[2], S. Remiszewski[2] and *A. Wolf*[1]. [1]Integrative Compound and Product Profiling, Novartis Pharmacology AG, Basel, Switzerland , Switzerland and [2]Oncology Research, Novartis Pharmacology AG, East Hanover, NJ.

#185 **QUANTITATIVE MECHANISTIC MODELING OF MIXTURE INTERACTIONS: AN APPROACH FOR MANGANESE (Mn) AND ORGANOPHOSPHATES (OPs).** P. Robinson, *J. M. Gearhart* and E. A. Merrill. ManTech GeoCenters Joint Venture, Air Force Research Laboratory, Dayton, OH.

Monday Morning, March 10
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: RESPIRATORY TRACT I

Chairperson(s): *Alison Elder, University of Rochester, Rochester, NY and James Wagner, Michigan State, East Lansing, MI.*

Displayed: *9:30 AM–12:30 PM*

Attended: *9:30 AM–11:00 AM*

#186 **FROM CONCENTRATION TO DOSE: FACTORS INFLUENCING AIRBORNE PARTICULATE MATTER DEPOSITION IN HUMANS AND THE RAT-HUMAN DOSE EXTRAPOLATION.** F. Cassee and R. de Winter - Sorkina. Center for Environment and Health Research, National Institute for Public Health and the Environment, Bilthoven, Netherlands. Sponsor: *F. Cassee*.

#187 **SEASONAL EFFECTS OF ULTRAFINE, FINE, AND COARSE PARTICULATE MATTER(PM) ON HUMAN PRIMARY AIRWAY EPITHELIAL CELLS.** L. Dailey and *R. B. Devlin*. ORD/NHEERL/ETD, U.S. EPA, Research Triangle Park, NC.

#188 **AIRBORNE COARSE PARTICLES OF THE SAN JOAQUIN/SACRAMENTO VALLEY INDUCE INFLAMMATION IN THE LUNGS OF RATS.** *K. R. Smith*[1], S. Kim[2], C. Misra[2], J. J. Recendez[1], *A. E. Aust*[3], C. Sioutas[2] and *K. E. Pinkerton*[1]. [1]Center for Health and the Environment, University of California, Davis, CA, [2]Civil and Environmental Engineering, University of Southern California, Los Angeles, CA and [3]Chemistry and Biochemistry, Utah State University, Logan, UT.

#189 **REGIONAL AND LOBAR DEPOSITION OF FINE AND COARSE PARTICLES IN THE LUNGS OF RATS AND MICE.** B. A. Wong, E. W. Tewksbury, J. T. Kelly and B. Asgharian. CIIT Centers for Health Research, Research Triangle Park, NC. Sponsor: *O. Moss*.

#190 **THE COMPARATIVE TOXICITY STUDY OF KOREAN URBAN PM 2.5 AND PM 10 IN RAT LUNG EPITHELIAL CELLS.** J. Kim, J. Choi and *M. Cho*. Toxicology, College of Veterinary Medicine, Seoul, South Korea.

#191 **EVALUATION OF INORGANIC SOLUBLE SPECIES CONTENT IN PM10 FROM MEXICO CITY AND THEIR CYTOTOXICITY IN HUMAN BRONCHOEPITHELIUM CELLS.** M. E. Gutiérrez-Castillo[1], A. De Vizcaya-Ruiz, R. Ramos[2], A. Retama[2] and *M. E. Cebrián*. [1]CIIEMAD-IPN, México D.F., México D.F., Mexico and [2]SMA-DF-RAMA, México D.F., México D.F., Mexico.

#192 **CONCENTRATED AMBIENT PARTICULATE STUDIES IN HEALTHY AND COMPROMISED RODENTS.** W. P. Watkinson[1], L. B. Wichers[2], J. P. Nolan[1], D. W. Winsett[1], *U. P. Kodavanti*[1], M. J. Schladweiler[1], L. C. Walsh[1], E. R. Lappi[1], D. Terrell[1], R. Slade[1], A. D. Ledbetter[1] and *D. L. Costa*[1]. [1]ORD/NHEERL/ETD/PTB, U.S. EPA, Research Triangle Park, NC and [2]SPH, UNC, Chapel Hill, NC.

#193 **EFFECTS OF EXPOSURE TO CONCENTRATED AMBIENT PARTICULATES ON INDICES OF CARDIOPULMONARY AND THERMOREGULATORY FUNCTION IN HEALTHY AND MONOCROTALINE-TREATED SPRAGUE-DAWLEY RATS.** L. B. Wichers[2], J. P. Nolan[1], *U. P. Kodavanti*[1], M. J. Schladweiler[1], D. W. Winsett[1], *D. L. Costa*[1] and W. P. Watkinson[1]. [1]SPH, UNC, Chapel Hill, NC and [2]ORD/NHEERL/ETD/PTB, U.S. EPA, Research Triangle Park, NC.

#194 **CONSISTENT INFLAMMATORY RESPONSE FOLLOWING EXPOSURE TO CONCENTRATED AMBIENT PARTICLES (CAPs) DURING FALL SEASON IN WISTAR-KYOTO RATS.** *U. P. Kodavanti*, M. C. Schladweiler, A. D. Ledbetter, L. C. Walsh, P. S. Gilmour, *M. I. Gilmour*, W. P. Watkinson, J. P. Nolan, J. H. Richards, D. Andrews and *D. L. Costa*. ETD/NHEERL/ORD, U.S. EPA, Research Triangle Park, NC.

#195 **DIFFERENTIAL PULMONARY INFLAMMATION AND *IN VITRO* CYTOTOXICITY BY SIZE FRACTIONATED PARTICLES COLLECTED FROM COMBUSTED COAL EMISSIONS.** *I. Gilmour*[2], S. O'Connor[1], C. Dick[4], M. Daniels[2], A. Miller[3] and W. P. Linak[3]. [1]NHEERL, U.S. EPA, [2]NRMRL, U.S. EPA, Research Triangle Park, NC, [3]CEMLB, University of N Carolina, Research Triangle Park, NC and [4]Radiobiology , National Atomic Energy Commission, Buenos Aries, Argentina.

#196 **SPONTANEOUSLY HYPERTENSIVE RATS ARE SUSCEPTIBLE TO MICROVASCULAR THROMBOSIS IN RESPONSE TO PARTICULATE MATTER EXPOSURE.** P. S. Gilmour[1,2], M. C. Schladweiler[2], A. D. Ledbetter[2] and *U. P. Kodavanti*[2]. [1]CEMLB, UNC, Chapel Hill, NC and [2]NHEERL, PTB, U.S. EPA, Research Triangle Park, NC.

#197 **EFFECT OF EXPOSURE TO PARTICULATE MATTER AND DIESEL EXHAUST PARTICLES ON THE FREQUENCY OF DNA DELETIONS *IN VIVO* IN MICE.** *R. Reliene* and *R. Schiestl*. Pathology, UCLA, Los Angeles, CA.

#198 **CARDIOVASCULAR EFFECTS OF DIESEL EXHAUST INHALATION IN SPONTANEOUSLY HYPERTENSIVE (SH) RATS.** M. J. Campen[2], *A. Gigliotti*[2], B. Tibbets[2], C. Elliott[2], E. B. Barr[2], S. Sielkop[1], *M. D. Reed*[2], *J. L. Mauderly*[2] and *J. M. Benson*[2]. [1]Lovelace Respiratory Research Institute, Albuquerque, NM and [2]SKS Consulting, Siler City, NC.

#199 **COMPARISON OF PULMONARY RESPONSES TO AUTOMOBILE-GENERATED AND NIST STANDARD REFERENCE MATERIAL DIESEL PARTICULATE EMISSIONS IN MICE.** *P. Singh*[1], C. A. Dick[2], J. Richards[3], M. J. Daniels[3] and *I. Gilmour*[3]. [1]NCSU, Raleigh, NC, [2]UNC, Chapel Hill, NC and [3]Experimental Toxicology Division, U.S. EPA, ORD, NHEERL, Research Triangle Park, NC.

#200 **BAX EXPRESSION AND NITRIC OXIDE PRODUCTION IN MACROPHAGES J774A.1 AS BIOMARKERS OF GASOLINE EMISSION TOXICITY.** J. L. García-Tavera[1], F. Morales[1], R. A. Pérez[1], L. C. Acosta-Saavedra[1], A. Zambrano-García[2], J. L. Arriaga[2], U. González-Macías[2], *M. E. Cebrián*[1], E. S. Calderón-Aranda[1] and A. De Vizcaya-Ruiz[1]. [1]Toxicology, CINVESTAV-IPN, México, D.F., Mexico and [2]Instituto Mexicano del Petróleo, México, D.F., Mexico.

#201 ***MYCOPLASMA FERMENTANS* INFECTION AUGMENTS IL-6 RELEASE IN HUMAN LUNG CELLS EXPOSED TO RESIDUAL OIL FLY ASH (ROFA) AND TNF-β.** F. Gao and J. P. Fabisiak. Environmental & Occupational Health, University of Pittsburgh, Pittsburgh, PA. Sponsor: *M. Karol*.

#202 **CCSP DEFICIENCY ALTERS BASAL PULMONARY AND SYSTEMIC HUMORAL IMMUNITY.** *T. M. Watson*[1], S. D. Reynolds[2,1], *J. N. Finkelstein*[1] and B. R. Stripp[2,1]. [1]Department of Environmental Medicine, University of Rochester, Rochester, NY and [2]Department of Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA.

#203 **OVALBUMIN-INDUCED AIRWAY INFLAMMATION AND FIBROSIS IN INOS-DEFICIENT MICE: MECHANISMS AND CONSEQUENCES.** *J. A. Last*, N. J. Kenyon and K. Gohil. Pulmonary/Critical Care Medicine, University of California, Davis, CA.

#204 **RESPONSES TO *MYCOBACTERIUM CHELONAE* FROM METAL WORKING FLUIDS DIFFER FROM *SACCHAROPOLYSPORA RECTIVIRGULA* IN A MURINE MODEL OF HYPERSENSITIVITY PNEUMONITIS.** *P. S. Thorne*[1], B. Lester[1], A. Dodd[1], M. E. O'Neill[1] and C. Duchaine[2]. [1]College of Public Health, The University of Iowa, Iowa City, IA and [2]Laval University, Quebec, QC, Canada.

#205 **RESPIRATORY RESPONSE TO TOLUENE DIISOCYANATE AFTER DERMAL SENSITIZATION IN MICE.** J. Vanoirbeek, P. Hoet and *B. Nemery*. Pathophysiology; Pneumology - Lungtoxicology, KULeuven, Leuven, Belgium.

Monday Morning, March 10
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: MINERALS AND MAN-MADE FIBERS

Chairperson(s): *Andrea Hubbard, University of Connecticut, Storrs, CT and Edgar Kimmel, Naval Health Research Center, Dayton, OH.*

Displayed: *9:30 AM–12:30 PM*

Attended: *11:00 AM–12:30 PM*

#206 **PULMONARY FUNCTION FOLLOWING EXPOSURE TO CARBON-GRAPHITE/EPOXY COMPOSITE MATERIAL SMOKE.** *E. C. Kimmel*[1,2], J. E. Reboulet[2], D. L. Courson[3], G. S. Whitehead[4] and *P. G. Reinhart*[1]. [1]Inhalation/Pulmonary Effects Laboratory, Naval Health Research Center (Toxicology), Wright-Patterson AFB, OH, [2]Geo-Centers Inc., Wright-Patterson AFB, OH, [3]ManTech Environmental, Wright-Patterson AFB, OH and [4]Duke University, Raleigh, NC.

#207 **ACUTE TOXICITY OF CARBON-GRAPHITE/EPOXY COMPOSITE MATERIAL SMOKE: COMPARISON WITH N-GAS MODEL PREDICTIONS.** J. E. Reboulet[3], D. L. Courson[2], G. S. Whitehead[4], *P. G. Reinhart*[1] and *E. C. Kimmel*[1,3]. [1]Inhalation/Pulmonary Effects Laboratory, Naval Health Research Center (Toxicology), Wright-Patterson AFB, OH, [2]Man Tech Environmental, Wright-Patterson AFB, OH, [3]Geo Centers Inc., Wright-Patterson AFB, OH and [4]Duke University, Raleigh, NC.

#208 **INDUCTION OF STROMELYSIN BY PULMONARY INSTILLATION OF TOXIC DUST.** R. R. Mercer, L. Wang, *J. M. Antonini*, J. F. Scabilloni, V. Vallyathan and *V. Castranova*. HELD, NIOSH, Morgantown, WV.

#209 **ASSESSMENTS OF THE BARRIER EFFECTIVENESS OF PROTECTIVE CLOTHING FABRICS TO AEROSOLS OF CHRYSOTILE ASBESTOS FIBERS.** K. L. Reed and *D. B. Warheit*. Pulmonary Toxicology, DuPont Haskell Lab., Newark, DE.

#210 **SILICA EXPOSURE *IN VITRO* STIMULATES THE ACTIVITY AND EXPRESSION OF MATRIX METALLOPROTEINASES IN MOUSE MACROPHAGES.** S. Mowbray, M. Thibodeau *and* A. Hubbard. *University of Connecticut, Storrs, CT.*

#211 **BIOMATHEMATICAL MODELS OF EXPOSURE-DOSE-RESPONSE TO RESPIRABLE QUARTZ IN FISCHER 344 RATS, CYNOMOLGUS MONKEYS, AND HUMANS.** E. D. Kuempel[1] and L. Tran[2]. [1]CDC/NIOSH, Cincinnati, OH and [2]Institute of Occupational Medicine, Edinburgh, United Kingdom. Sponsor: *D. Dankovic*.

#212 **EVALUATION OF THE CHEMICAL AND PHYSICAL PROPERTIES OF CELLULOSE INSULATION AEROSOLS AND THE POTENTIAL ACUTE PULMONARY TOXICITY.** *D. L. Morgan*, J. A. Dill[1], Y. Su[1], B. Westerberg[1], H. C. Price[2], C. J. Shines and C. S. Smith. [1]Battelle Pacific Northwest Laboratories, Richland, WA and [2]ManTech Environmental Technology, Inc., Research Triangle Park, NC.

#213 **PULMONARY TOXICITY OF CARBON NANOTUBES IN MICE 7 AND 90 DAYS AFTER INTRATRACHEAL INSTILLATION.** *C. -. Lam*[1,2], *J. T. James*[1], R. McCluskey[1] and R. L. Hunter[3]. [1]Toxicology Division, Wyle Laboratories, Houston, TX, [2]Space Life Sciences, NASA Johnson Space Center, Houston, TX and [3]Department of Pathology, University of Texas Medical Center, Houston, TX.

#214 **INFLAMMATORY EFFECTS OF QUARTZ SAMPLES AFTER INTRATRACHEAL INSTILLATION IN RATS.** O. Creutzenberg[1], *G. Oberdürster*[2], S. G. Ampian[3], W. F. Moll[3], R. Hamilton[4] and *H. Muhle*[1]. [1]Toxicology, Fraunhofer Institute, Hannover, Lower Saxony, Germany, [2]Environmental Medicine, University of Rochester, Rochester, NY, [3]Sorptive Minerals Institute, Washington, DC and [4]Technical Center, Johns Manville Corp., Littleton, CO.

#215 **PULMONARY TOXICITY OF ADVANCED COMPOSITE MATERIAL COMBUSTION ATMOSPHERES IN RATS.** *P. G. Reinhart*[1], *E. C. Kimmel*[2], D. L. Courson[3], J. E. Reboulet[2], A. E. Jung[2] and J. T. Murray[1]. [1]Naval Health Research Center (Toxicology Detachment), Wright-Patterson AFB, OH, [2]Geo-Centers Inc., Wright-Patterson AFB, OH and [3]ManTech Environmental Technology Inc., Wright-Patterson AFB, OH.

#216 **ACUTE PULMONARY RESPONSE OF INDUCIBLE NITRIC OXIDE SYNTHASE KNOCKOUT *VERSUS* WILD TYPE MICE FOLLOWING ASPIRATION OF LIPOPOLYSACCHARIDE PLUS INTERFERON-γ OR QUARTZ.** *P. C. Zeidler*, *D. W. Porter* and *V. Castranova*. NIOSH, Morgantown, WV.

#217 **INTERACTION BETWEEN PRIMARY ALVEOLAR MACROPHAGES(AM) AND PRIMARY ALVEOLAR TYPE II (TII) CELLS UNDER BASAL CONDITIONS AND AFTER LIPOPOLYSACCHARIDE (LPS) OR QUARTZ EXPOSURE.** R. S. Kanj[1], J. L. Kang[2] and *V. Castranova*[1]. [1]Physiology & Pharmacology, NIOSH and West Virginia University, Morgantown, WV and [2]Ewha Woman's University, Seoul, South Korea.

#218 **CYTOTOXICITY OF SIZE-SELECTED MANVILLE CODE 100 (JM-100) GLASS FIBERS ON HUMAN ALVEOLAR MACROPHAGES.** *V. Castranova*[3], *P. C. Zeidler*[3], W. J. Calhoun[1], B. T. Ameredes[1], M. P. Clark[1], G. Deye[2], P. Baron[2] and T. Blake[3]. [1]AAARC, Pulmonary, Allergy, and CCM, University of Pittsburgh, Pittsburgh, PA, [2]Division of Applied Research and Technology, NIOSH, Cincinnati, OH and [3]Health Effects Laboratory Division, NIOSH, Morgantown, WV.

#219 **SILICA-INDUCED TOXICITY: *IN VITRO* AND *IN VIVO* PROTECTIVE EFFECTS OF TAURINE.** V. Vallyathan, D. Pack and S. Patel. NIOSH, Morgantown, WV. Sponsor: *V. Castranova*.

#220 **ASBESTOS AND RADIATION AS COMBINED EXPOSURES IN PULMONARY FIBROSIS.** T. K. Takaro[1,2], W. C. Griffith[1,2], K. Omri[2], H. Checkoway[1] and *E. M. Faustman*[1,2]. [1]Environmental Health, University of Washington, Seattle, WA and [2]CRESP, Institute for Responsible Management, New Brunswick, NJ.

Monday Morning, March 10
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: PHARMACEUTICAL TOXICITY TESTING

Chairperson(s): *Roy Forster, Centre International de Toxicologie CIT, Evreux, Cedex, France and Lloyd Dethloff, Pfizer Global Research & Development, Ann Arbor, MI.*

Displayed: *9:30 AM–12:30 PM*

Attended: *9:30 AM–11:00 AM*

#221 **EFFECTS OF AVASTIN , AN ANTI-ANGIOGENIC ANTIBODY TO VASCULAR ENDOTHELIAL GROWTH FACTOR, IN A RABBIT MODEL OF VENOUS THROMBOSIS.** *C. L. Zuch*[1], L. DeGuzman[2], S. Bullens[2], J. Beyer[1], *W. J. Leach*[1] and S. Bunting[2]. [1]Safety Assessment, Genentech, Inc., San Francisco, CA and [2]Physiology, Genentech, Inc., South San Francisco, CA.

#222 **TH9507: SAFETY STUDIES OF A GROWTH-HORMONE RELEASING FACTOR (GRF) ANALOGUE.** G. R. Washer[1], E. Ferdinandi[1], *B. Procter*[2], J. Praslicka[2], C. Parente[3], P. Dubreuil[4] and T. Abribat[1]. [1]Theratechnologies, Inc., Montreal, QC, Canada, [2]ITR, Montreal, QC, Canada, [3]CTBR, Montreal, QC, Canada and [4]P. Dubreuil Services Inc., Montreal, QC, Canada.

#223 **TWENTY-EIGHT DAY TOXICITY STUDY OF THE CANCER CHEMOPREVENTIVE AGENT 4-BROMOFLAVONE IN RATS.** R. Krishnaraj[1], R. L. Morrissey[2], *J. Crowell*[3], *B. S. Levine*[1] and J. Pezzuto[1]. [1]University of IL @ Chicago, Chicago, IL, [2]Pathology Associates , Chicago, IL and [3]NCI, Bethesda, MD.

#224 **STABILIZATION AND ANALYSIS OF PYROGALLOL (PG) IN RAT BLOOD AND IN RECEPTOR FLUID MEDIA.** J. Algaier[1], S. M. Barnes[1], B. A. Canham[1], K. Decker[1], A. J. Porter[1], R. K. Harris[1], A. P. Clark[1], D. Overstreet[2] and C. S. Smith[2]. [1]Midwest Research Institute, Kansas City, MO and [2]NIEHS, Research Triangle Park, NC. Sponsor: *M. Cunningham*.

#225 **PHARMACOKINETICS OF GT56-252, A NOVEL ORALLY AVAILABLE IRON CHELATOR IN RAT, DOG AND CYNOMOLGUS MONKEY.** *J. K. Marquis*[1], R. Aoude-Dagher[1], M. Bree[1], T. Appelqvist[2], P. Guillaumat[2] and *R. Forster*[2]. [1]GelTex Pharmaceuticals, Waltham, MA and [2]CIT, Evreux, France.

#226 **THE PROTEASOME INHIBITOR PS-341 INDUCES COX-2 IN MURINE AND HUMAN ENDOTHELIAL CELLS.** V. Csizmadia, J. Rottman, P. Bouchard, A. Raczynski, *M. Juedes*, P. White and V. Sasseville. Drug Safety and Disposition, Millennium Pharmaceuticals, Inc., Cambridge, MA.

#227 **INVESTIGATIVE CARDIOVASCULAR STUDY OF THE PROTEASOME INHIBITOR PS-341 IN THE MOUSE.** J. Rottman, V. Csizmadia, E. Ozkaynak, V. Kadambi, K. Ganley, K. Cardoza, *M. Juedes* and P. Bouchard. Millennium Pharmaceuticals, Inc., Cambridge, MA.

#228 **ENDOTHELIAL CELL-DERIVED NITRIC OXIDE MEDIATES SMOOTH MUSCLE CELL FAS EXPRESSION INDUCED BY PHOSPHODIESTERASE INHIBITION.** *R. Slim* , M. Albassam and *L. A. Dethloff*. Drug Safety Evaluation, Pfizer Global Research and Development, Ann Arbor, MI.

#229 **PYROLYTIC PRODUCTS OF METHAMPHETAMINE HYDROCHLORIDE AS POTENTIAL MARKERS FOR SMOKED METHAMPHETAMINE.** M. Sanga, B. J. Schuler, S. S. Wolfe, R. Carrier, P. S. Callery, T. Bland and T. S. Tracy. Basic Pharmaceutical Sciences, West Virginia University, Morgantown, WV. Sponsor: *M. Davis*.

#230 **CJC-1131, A LONG-ACTING GLP-1 ANALOGUE, EXHIBITS SAFETY AND TOLERABILITY IN DOGS.** S. Wen[1], *S. Wilson*[2], D. Trebec[1], K. Pham[1], J. Castaigne[1] and B. Lawrence[1]. [1]ConjuChem, Inc., Montreal, QC, Canada and [2]Milestone Biomedical Associates, Frederick, MD.

#231 **CALCIFICATION OF MUCOSA IN GLANDULAR STOMACH OBSERVED DURING WITHDRAWAL PERIOD AFTER SEVELAMER HYDROCHLORIDE TREATMENT IN RAT.** R. Takai, K. Adachi, T. Koizumi, K. Otabe, Y. Misawa, E. Fujii, K. Watanabe, T. Sugimoto and S. Chiba. Chugai Pharmaceutical Co., LTD, Gotenba-shi, Japan. Sponsor: *S. Tsuda*.

#232 **FLOW CYTOMETRY METHOD TO EVALUATE BONE MARROW TOXICITY IN THE RAT.** *S. Zhao*, J. E. Heward, G. L. Cockerell , *B. W. Mattes* and C. W. Johnson. Investigative Toxicology, Pharmacia, Kalamazoo, MI.

#233 **MEDIATORS OF INFLAMMATION IN PHOSPHODIESTERASE INHIBITOR-INDUCED MESENTERIC VASCULOPATHY IN RATS.** *L. A. Dethloff*, *R. Slim* and M. Albassam . Drug Safety Evaluation, Pfizer Global Research and Development, Ann Arbor, MI.

#234 **CJC-1131, A LONG-ACTING GLP-1 ANALOGUE, IS WELL TOLERATED IN RATS UP TO 14 DAYS.** B. Lawrence[1], S. Wen[1], D. Dunn[2], V. Iordanova[1] and J. Castaigne[1]. [1]ConjuChem, Inc., Montreal, QC, Canada and [2]Milestone Biomedical Associates, Frederick, MD. Sponsor: *S. Wilson*.

#235 **REPEATED DOSE SUBCUTANEOUS TOXICITY AND TOXICOKINETICS STUDY OF NAHBED IN BEAGLE DOGS.** *C. E. Frantz*, D. G. Fairchild, *C. E. Green*, P. Catz, S. Phillips, E. Payson and *C. Tyson*. Toxicology, SRI International, Menlo Park, CA.

#236 **RAT SPECIFIC MECHANISM OF SRA88O-INDUCED RHABDOMYOLYSIS.** M. Dominguez Estevez, U. Schramm and *A. Wolf*. Integrative Compound and Product Profiling, Novartis Pharmacology AG, Basel, Switzerland , Switzerland.

#237 **ABSENCE OF TOXICITY IN A 13-WEEK INTRAVENOUS INFUSION STUDY WITH INTERCEPT PLASMA IN SPRAGUE-DAWLEY RATS.** T. Sullivan[1], *V. Ciaravino*[1], T. McCullough[1] and V. A. Sharper[2]. [1]Cerus Corporation, Concord, CA and [2]Argus Research, A Division of Charles River Laboratories, Horsham, PA.

#238 **TOXIC EFFECTS OF HMG-COA REDUCTASE INHIBITIORS IN THE HUMAN SKELETAL MUSCLE PRIMARY CELL CULTURE.** *A. Wolf*[1], L. Ndountse-Tchapda[1], W. E. Trommer[2] and U. Schramm[1]. [1]Integrative Compound and Product Profiling, Novartis Pharmacology AG, Basel, Switzerland , Switzerland and [2]Department of Chemistry, University of Kaiserslautern, Kaiserslautern, Germany.

#239 **SAFETY AND ABSORPTION OF PULMONARY DELIVERED HUMAN INTERFERON BETA-1A IN THE NON-HUMAN PRIMATE.** *D. R. Demady*[1], D. L. Hutto[1], J. L. Lane[1], S. Vaidyanathan[1], P. L. Martin[1], D. Baker[1], N. Shepherd[2] and *J. D. Green*[1]. [1]Pharmacotoxicology, Biogen Inc., Cambridge, MA and [2]Covance Laboratories, Harrogate, United Kingdom.

#240 **EVALUATION OF SOMATROPIN INHALATION POWDER IN A SINGLE DOSE AND 4-WEEK MONKEY INHALATION TOXICOLOGY STUDY.** *M. A. Carfagna*[1], *D. O. Clarke*[1], M. E. Shaw[2], H. W. Smith[1], M. Stiff-Torvik[1] and *R. K. Wolff*[1]. [1]Eli Lilly and Company , Greenfield, IN and [2]Battelle, Columbus, OH.

#241 **LACK OF GENOTOXICITY WITH THE NOVEL ANTI-INFECTIVE PRODRUG DB289 AND ITS ACTIVE METABOLITE DB75, A 2, 4-DIPHENYL FURAN DIAMIDINE WITH DNA MINOR GROOVE BINDING ACTIVITIES.** P. M. Bak[1], *J. L. Allen*[1], G. L. Erexson[3], M. M. Mecchi[3], H. Murli[3], R. R. Tidwell[2] and D. W. Boykin[4]. [1]Immtech International, Inc., Vernon Hills, IL, [2]Covance Laboratories, Inc., Vienna, VA, [3]University of North Carolina, Chapel Hill, NC and [4]Georgia State University, Atlanta, GA.

#242 **SIMULTANEOUS DETERMINATION OF ACETYLSALICYLIC ACID NON-ENZYME MEDIATED OXIDATIVE PRODUCTS.** L. Zang. HELD/EAB, NIOSH, Morgantown, WV. Sponsor: *V. Castranova*.

#243 **OTOTOXICITY OF NORVANCOMYCIN: AN EXPERIMENTAL STUDY IN GUINEA PIGS.** W. Gao[1] and S. Zhang[2]. [1]Physiology, The Second Military Medical University, Shanghai, China and [2]Antibiotics, North China Pharmaceutic Company, Shijiazhuang, China. Sponsor: *B. Qian*.

#244 **PRE-CLINICAL EVALUATION OF ITRACONAZOLE NANOSUSPENSION FOR INTRAVENOUS INJECTION.** *R. D. White*[1], J. Wong[2], J. Kipp[2], T. Barber[1], J. Glosson[1], *J. Kerzee*[1], *N. Goud*[1], *J. N. Cammack*[1] and B. Rabinow[2]. [1]Technology Resources, Baxter Healthcare Corporation, Round Lake, IL and [2]Pharmaceutical R&D/Scientific Affairs, Baxter Healthcare Corporation, Round Lake, IL.

Monday Morning, March 10
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: HYPERSENSITIVITY/ALLERGY

Chairperson(s): *Jean Regal, University of Minnesota, Duluth, MN and Tai Guo, Virginia Commonwealth University, Richmond, VA.*

Displayed: *9:30 AM–12:30 PM*

Attended: *11:00 AM–12:30 PM*

#245 **POLYISOTYPIC ANTIBODY AND MIXED CYTOKINE RESPONSES TO THE MAJOR PEANUT ALLERGENS IN AN ORAL MOUSE FOOD ALLERGY MODEL.** F. van Wijk[1], S. Hartgring[1], L. M. Knippels[2] and R. Pieters[1]. [1]Immunotoxicology, IRAS , Utrecht, Netherlands and [2]Immunotoxicology, TNO , Zeist, Netherlands. Sponsor: *M. van den Berg*.

#246 **EVALUATION OF RESPIRATORY SENSITIZATION POTENTIAL OF PHTHALATE ESTERS.** *J. H. Butala*[1], *R. M. David*[2], G. Gans[3], *R. H. McKee*[4] and *K. L. White*[5]. [1]Toxicology Consultants Inc., Gibsonia, PA, [2]Consultant to Eastman Chemical Co, Kingsport, TN, [3]BASF, Washington, DC, [4]ExxonMobil Biomedical Sciences, Annandale, NJ and [5]ImmunoTox, Richmond, VA.

#247 **INDUCTION OF IgE ANTIBODY FOLLOWING SYSTEMIC EXPOSURE OF MICE TO RESPIRATORY SENSITIZING PROTEINS.** *I. Kimber*[1], *D. A. Basketter*[2], *K. Sarlo*[3] and R. J. Dearman[1]. [1]Syngenta CTL, Macclesfield, Cheshire, United Kingdom, [2]SEAC Unilever Colworth Laboratory, Sharnbrook, United Kingdom and [3]Procter & Gamble Miami Valley Laboratories, Cincinnati, OH.

#248 **THE PESTICIDE METARHIZIUM ANISOPLIAE HAS AN ADJUVANT EFFECT ON THE ALLERGIC RESPONSE TO OVALBUMIN IN MICE.** C. Instanes[1], *M. D. Ward*[2], E. Groeng[1] and G. Hetland[1]. [1]Environmental Immunology, Norwegian Institute of Public Health, Oslo, , Norway and [2]NHEERL, U.S. EPA, Triangle Park, NC.

#249 **PYROGALLOL INDUCES WEAK CONTACT SENSITIZATION BUT STRONG IRRITATION IN FEMALE BALB/C MICE.** *T. L. Guo*[1], L. X. Zhang[1], R. D. Brown[1], *D. R. Germolec*[2] and *K. L. White, Jr.*[1]. [1]Virginia Commonwealth University, Richmond, VA and [2]NIEHS, Research Triangle Park, NC.

#250 **GENE EXPRESSION CHANGES IN AN ANTIGEN-SPECIFIC SECONDARY RESPONSE USING A DENDRITIC CELL / T CELL CO-CULTURE.** *F. Gerberick*[1], *C. Ryan*[1], B. Hulette[1], R. Dearman[2] and *I. Kimber*[2]. [1]Procter & Gamble Company, Cincinnati, OH and [2]Syngenta CTL, Macclesfield, Cheshire, United Kingdom.

#251 **COMPARISON OF UREA-TYPE REACTION PRODUCTS OF METHYLENE DIPHENYL DIISOCYANATE (MDI) AND THE BIS-THIOCARBAMATE METHYLENE DIPHENYL DIISOCYANATE CYSTEINE METHYL ESTER (MDI-CME).** S. J. Stetson[2,1], G. J. Depree[1] and *P. D. Siegel*[1]. [1]ASB/HELD, NIOSH, Morgantown, WV and [2]Kettering University, Flint, MI.

#252 **CHARACTERIZATION OF LAMOTRIGINE-SPECIFIC T-CELLS FROM HYPERSENSITIVE PATIENTS.** D. J. Naisbitt[1], J. Farrell[1], J. E. Hopkins[1], G. Wong[1], W. J. Pichler[2], M. Pirmohamed[1] and K. Park[1]. [1]Pharmacology, The University of Liverpool, Liverpool, Merseyside, United Kingdom and [2]Immunology and Allergology, University of Bern, Bern, Switzerland. Sponsor: *I. Kimber*.

#253 **PATHOLOGIC AND IMMUNOLOGIC RESPONSES IN THE RESPIRATORY TRACT OF A/J MICE AFTER INTRANASAL SENSITIZATION AND CHALLENGE WITH TRIMELLITIC ANHYDRIDE.** *A. K. Farraj*[1], *J. R. Harkema*[2] and *N. E. Kaminski*[1]. [1]Pharmacology and Toxicology, Michigan State University, East Lansing, MI and [2]Pathobiology and Diagnostic Investigation, Michigan State university, East Lansing, MI.

#254 **AN *IN VITRO* SENSITIZATION TEST USING HUMAN CELL LINE, THP-1, FOR THE EVALUATION OF WATER INSOLUBLE CHEMICALS.** Y. Yoshida, Y. Ito, H. Sakaguchi, M. Okuda and H. Suzuki. Kao Corporation, Tochigi, Japan. Sponsor: *J. Avalos*.

#255 **CYTOKINE EXPRESSION IN A ASTHMATIC MURINE MODEL INDUCED BY TOLUENE DIISOCYANATE.** K. Zheng[1] and M. Ariizumi[1]. [1]Preventive Medicine, University of the Ryukyus, Okinawa, Okinawa, Japan and [2]Preventive Medicine, University of the Ryukyus, Nishihara, Okinawa, Okinawa, Japan. Sponsor: *W. Dong*.

#256 **OXIDATIVE STRESS AND PROSTAGLANDIN E2 RELEASE FROM AIR PARTICULATE PM1648 TREATED MACROPHAGES.** J. C. Schneider, A. Archer, G. Card and *A. Holian*. Center for Environmental Health Sciences, University of Montana, Missoula, MT.

#257 **TRIMELLITIC ANHYDRIDE (TMA)-INDUCED CELL INFILTRATION IN A MOUSE MODEL OF OCCUPATIONAL ASTHMA IS NOT COMPLEMENT DEPENDENT.** *J. F. Regal* and M. E. Mohrman. Pharmacology, University of Minnesota, Duluth, MN.

#258 **PARTIAL CHARACTERIZATION OF ALLERGENS IN EXTRACTS OF *STACHYBOTRYS CHARTARUM*.** *M. E. Viana*[1], *M. K. Selgrade*[2] and *M. D. Ward*[2]. [1]MBS CVM, NCSU, Raleigh, NC and [2]ORD NHEERL, U.S. EPA, Research Triangle Park, NC.

#259 **STRUCTURE ACTIVITY RELATIONSHIPS OF EPOTHILONE B AND ANALOGUES IN THE MURINE LLNA.** *P. Ulrich*, J. Streich, N. Runser, R. Schaffner, L. Mueller, M. Wartmann, K. Altmann and A. Floersheimer. Novartis Pharmacology AG, Basel, Basel, Switzerland.

#260 **DETECTION OF ANTI- R-SP-C ANTIBODIES IN SERA OF DOGS AND MONKEYS USING A SPECIFIC ELISA SYSTEM.** M. Mueller[1], W. Ise[2], M. Hecht[1], A. Braun[1], A. Emmendoerffer[1] and J. Kemkowski[2]. [1]Immunology / Allergology, Fraunhofer Institute of Toxicology and Aerosol Research, Hannover, Germany and [2]Institute for Pathology and Toxicology, Altana Pharmacology AG, Hamburg, Germany. Sponsor: *H. Muhle*.

#261 **THE RELATIONSHIP BETWEEN CELLULAR DISPOSITION AND CYTOKINE POLARIZATION FOR SIMPLE HAPTENS.** J. E. Hopkins[1], D. J. Naisbitt[1], R. J. Dearman[2], *I. Kimber*[2] and K. Park[1]. [1]Pharmacology, The University of Liverpool, Liverpool, Merseyside, United Kingdom and [2]Syngenta Central Toxicology Laboratory, Macclesfield, United Kingdom.

#262 **RELATIONSHIP OF CD86 SURFACE MARKER EXPRESSION AND CYTOTOXICITY ON DENDRITIC CELLS EXPOSED TO CHEMICAL ALLERGEN.** B. Hulette[1], N. Gilmour[2], *C. Ryan*[1], *D. Basketter*[2] and *F. Gerberick*[1]. [1]Procter & Gamble, Cincinnati, OH and [2]SEAC, Unilever Colworth Laboratory, Sharnbrook, United Kingdom.

#263 **THE CCR7 RECEPTOR IS UP-REGULATED BY HAPTENS ON HUMAN DENDRITIC CELLS.** F. Boisleve and *M. Pallardy*. Faculté de Pharmacie, INSERM U461, Chatenay-Malabry, France.

Monday Morning, March 10
9:30 AM to 11:45 AM
Exhibit Hall

POSTER SESSION FOR VISITING STUDENTS

Chairperson(s):*Javier Avalos, TopTox, Sacramento, CA.*

Co-Chairperson(s):*Chellu Chetty, Savannah State College, Savannah, GA.*

Sponsored by
The Education Committee
The Education Subcommittee for Minority Initiatives

Displayed: *9:30 AM–11:45 AM*

This poster session is part of the Undergraduate Education Program for Minority Students. All are welcome to view the specially selected presentations which provide an overview of research in toxicology and demonstrate the diversity within the discipline.

Monday Morning, March 10
10:15 AM to 11:15 AM
Ballroom J

INFORMATIONAL SESSION: AN *IN VITRO* PREDICTIVE TOXICOGENOMICS SCREEN (PTS) FOR HEPATOXICITY

CuraGen has developed an innovative technology, the Predictive Toxicogenomics Screen (PTS), capable of predicting a drug compound's potential for toxicity. PTS evaluates drug compound toxicities using very small quantities of compounds that are available immediately after high-throughput screening and well in advance of the expensive drug scale-up required for mammalian safety experiments.

Monday Morning, March 10
11:30 AM to 12:30 PM
Ballroom J

INFORMATIONAL SESSION: HIGH THROUGHPUT SYSTEMS BIOLOGY AND BEYOND: THE ACLARA E TAG™ ASSAY SYSTEM

ACLARA BioSciences' new eTag Assay System is a solution phase "mini-array" system for studying gene expression, protein expression, and cell surface antigens. It is also ideally suited for developing a variety of novel cell-based assays. The eTag Assay System is a universal "operating system" for high-throughput systems biology, designed for experiments involving the simultaneous measurement of 10s to 100s of genes and proteins per sample.

Monday Afternoon

Monday Afternoon, March 10
12:00 NOON to 1:00 PM
Wyndham Hotel, Cottonwood 1 & 2

REGIONAL CHAPTER CONTACTS FOR K–12 EDUCATION MEETING

Chairperson(s): *Marion Miller, University of California-Davis, Davis, CA.*

Sponsored by
The Education Committee
The Education Subcommittee for K–12 Education

SOT Regional Contacts for K–12 Education and interested SOT members are invited to an informal meeting to discuss K–12 education activities at the SOT Regional Chapters.

Monday Afternoon, March 10
12:15 PM to 1:15 PM
Ballroom B

MEDICAL RESEARCH COUNCIL (J63) LECTURE: PRION PATHOGENESIS: A JOURNEY THROUGH GUT, SPLEEN, AND NERVES

Lecturer: *Dr. Adriano Aguzzi, Department of Pathology, University Hospital Zurich*

Prion neuroinvasion consists of an ordered sequence of events resulting in infection of the central nervous system. Successful oral challenge requires transepithelial migration of prions, which may be accomplished by M-cells. Depletion of lymphocytes from the intestinal mucosa by ablation of α_4B_7 integrins does not prevent pathogenesis, yet mice exhibiting reduced number of Peyer's patches are virtually uninfectible orally. After gaining access to the body from peripheral sites, prions colonize lymphoid organs of mice, humans, and sheep: the failure of peripherally administered prions to elicit disease in immune deficient mice indicates that this is crucial for pathogenesis. B-lymphocytes are required for neuroinvasion upon intraperitoneal administration, probably (but not necessarily only) because they provide lymphotoxins to secondary lymphoid organs, thereby maintaining follicular dendritic cells: genetic or pharmacological interference with lymphotoxin signaling effectively impairs pathogenesis. We have recently generated mice expressing lymphotoxins in lymphoid organs despite the absence of B lymphocytes: this should help determining the precise contribution of B lymphocytes to pathogenesis. The sympathetic nervous system appears to be involved in prion transfer to brain, since sympathectomy delays or prevents pathogenesis, whereas sympathetic hyperinnervation accelerates it. Topographic relationships between follicular dendritic cells and sympathetic endings in lymphoid organs control efficiency of pathogenesis: CXCR5 deficient mice, whose follicular dendritic cells are juxtaposed to sympathetic endings, effect neuroinvasion more efficiently than wild-type mice. Various components of the complement system are modifiers

of neuroinvasion efficiency, and their pharmacological or genetic ablation interferes with neuroinvasion. Although isogenic prions are immunologically inert, expression of anti-PrPC antibodies in transgenic mice has uncovered that (1) autoreactivity to PrPC does not necessarily tolerize B-cells, and (2) sustained anti-PrPC IgM titers can prevent peripheral prion.

#264 12:15 **PRION PATHOGENESIS: A JOURNEY THROUGH GUT, SPLEEN, & NERVES.** A. Aguzzi. Department of Pathology, University Hospital Zurich, Schmelzbergstrasse 12, SWITZERLAND, Switzerland. Sponsor: *M. Ehrich*.

Monday Afternoon, March 10
12:45 PM to 1:45 PM
Ballroom J

INFORMATIONAL SESSIONS: PREDICTING HUMAN TOXICITY

Learn about Gene Logic's Predictive Toxicity Models that rank and screen compounds for potential human toxicity, providing powerful information for prioritizing development of compounds. Scientific discussions and specific examples will be shown describing the utility and power of toxicogenomics in drug development. Food will be served.

Monday Afternoon, March 10
1:30 PM to 4:30 PM
Ballroom C

SYMPOSIUM SESSION: FREE RADICALS IN THE TOXICITY OF ALCOHOLS

Chairperson(s): *Ronald P. Mason, NIH, Research Triangle Park, NC and John J. Lemasters, University of North Carolina School of Medicine, Chapel Hill, NC.*

Endorsed by:
Mechanisms Specialty Section

Evidence exists supporting the postulate that alpha-hydroxylethyl free radical is involved in the toxicity of alcohols. This free radical has been detected in animal and human models by ESR and immunological techniques. Nonetheless, the metabolic origin of the oxygen free radical species responsible for this free radical formation remains obscure with evidence supporting the role of both hepatocytes and Kupffer cells. The purpose of this symposium is to bring together leading experts representing different viewpoints in this important area. Several investigators have combined detection of free radicals with ESR with knockout mice to provide new insights. Another investigator is transfecting cell lines with specific radical-generating enzymes. Another investigator is the world leader in antibodies to the alpha-hydroxyl ethyl radical in humans and rodent models. This symposium will address controversial issues in the area of free radicals and alcohol-induced hepatotoxicity.

#265 1:30 **FREE RADICALS IN THE TOXICOLOGY OF ALCOHOLS.** *R. P. Mason*[1] and *J. J. Lemasters*[2]. [1]Laboratory of Pharmacology and Chemistry, NIEHS, Research Triangle Park, NC and [2]Department of Cell Biology and Anatomy, University of North Carolina at Chapel Hill, Chapel Hill, NC.

#266 1:35 **PRONOUNCED HEPATIC FREE RADICAL FORMATION PRECEDES PATHOLOGICAL LIVER INJURY IN ETHANOL-FED RATS.** L. A. Reinke[1] and A. A. Nanji[2]. [1]Pharmaceutical Sciences, University of Oklahoma Health Sciences Center, Oklahoma City, OK and [2]Pathology, University of Hong Kong, Hong Kong, Hong Kong. Sponsor: *J. Lemasters*.

#267 2:05 **CYP2E1-DEPENDENT TOXICITY AND OXIDATIVE STRESS IN HEPG2 CELLS.** A. I. Cederbaum. Pharmacology and Biological Chemistry, Mount Sinai School of Medicine, New York, NY. Sponsor: *R. Mason*.

#268 2:35 **HYDROXYETHYL FREE RADICALS AS A TRIGGER FOR ALCOHOL-INDUCED IMMUNOTOXIC REACTIONS.** E. Albano. Medical Sciences, University of East Piedmont, Novara, Italy. Sponsor: *M. Ronald*.

#269 3:05 **AN *IN VIVO* ESR SPIN-TRAPPING STUDY: FREE RADICAL GENERATION IN RATS FROM METHANOL AND FORMATE INTOXICATION—ROLE OF THE FENTON REACTION.** *R. P. Mason*. NIEHS, Research Triangle Park, NC.

#270 3:35 **INFLAMMATORY CELL-DERIVED OXIDANTS IN ALCOHOLIC LIVER DISEASE: STUDIES *IN VIVO*.** *G. E. Arteel*. Pharmacology and Toxicology, University of Louisville, Louisville, KY.

Monday Afternoon, March 10
1:30 PM to 4:30 PM
Ballroom B

SYMPOSIUM SESSION: GENE-ENVIRONMENT INTERACTIONS *IN UTERO*: THE FETAL BASIS OF ADULT DISEASE

Chairperson(s): *Jerry Heindel, NIEHS, Research Triangle Park, NC and Kathleen T. Shiverick, University of Florida, Gainesville, FL.*

Endorsed by:
Molecular Biology Specialty Section
Reproductive and Developmental Specialty Section

The purpose of this symposium is to address an important and emerging area of developmental toxicology: the effect of *in utero* exposures that cause functional changes that are not overtly teratogenic but that result in increased susceptibility to disease/dysfunction later in life. It is becoming apparent that there is an environmental component to every disease. In some cases the environmental trigger is exposure to the adult. However, it is now clear that in many cases the fetus is more sensitive to the same environmental insults and that the effect of exposures during development may have a more detrimental effect on the etiopathology of the disease. Indeed, there is overwhelming epidemiological and clinical evidence that intrauterine conditions alter development of tissues and organs that lead to increased susceptibility to diseases. During development fetuses respond to adverse conditions by favoring the metabolic demands of the growing brain and heart at the expense of other tissues . The long-term consequences of this response are that the individual is protected from death but is more prone to diseases later in life. While epidemiology studies have identified the phenomenon of metabolic programming, little is known about mechanisms by which fetal insults lead to altered programming and to disease later in life. In addition, emphasis thus far has been on alterations in nutrition during development

with virtually no focus on the role that exposures to environmental agents either alone or in combination with alterations in nutrition might have on this phenomenon. This symposium will focus not only on the role of altered nutrition in fetal programming but will also show evidence that some environmental agents, especially those with endocrine agonist or antagonist activity, may alter developmental programming *via* alteration in gene expression or gene imprinting and that these changes will also result in increased susceptibility to disease later in life.

#271 1:30 **GENE-ENVIRONMENT INTERACTIONS *IN UTERO*: THE FETAL BASIS OF ADULT DISEASE.** *J. Heindel*[1] and *K. Shiverick*[2]. [1]Division of Extramural Research and Training, NIEHS, Research Triangle Park, NC and [2]Pharmacology and Therapeutics, University of Florida, Gainsville, FL.

#272 1:35 **PRENATAL PROGRAMMING OF ADULT CARDIOVASCULAR DISEASE.** K. Thornburg, M. Morton, G. Girard, A. Barbera, J. Maylie, S. Jonker, N. Sundgren, P. Ahmed, J. Shultz and L. Davis. Heart Research Center, Oregon Health & Science University, Portland, OR. Sponsor: *J. Heindel*.

#273 2:05 **MATERNAL-FETAL PROGRAMMING *IN UTERO*: ADULT METABOLIC DISEASE AND DIABETES.** *K. Shiverick* and T. Medrano. Department of Pharmacology, University of Florida, Gainsville, FL.

#274 2:35 **ENVIRONMENTAL EFFECTS ON PERINATAL RESPIRATORY/NEURAL DEVELOPMENT: LASTING CONSEQUENCES OF EARLY EXPOSURE.** *K. Pinkerton*[1], J. Joad[1], *F. Seidler*[2] and *T. Slotkin*[2]. [1]University of California, Davis, CA and [2]Duke University, Durham, NC.

#275 3:05 **EFFECTS OF ENVIRONMENTAL ANTIANDROGENS DURING FETAL REPRODUCTIVE DEVELOPMENT: CONSEQUENCES FOR THE ADULT.** *P. Foster*[1], *K. Turner*[2], M. Sar[2] and *N. Barlow*[2]. [1]Environmental Toxicology Program, NIEHS, Research Triangle Park, NC and [2]CIIT Centers for Health Research, Research Triangle Park, NC.

#276 3:35 **DIETHYLSTILBESTROL(DES) EXPOSURE DURING DEVELOPMENT ALTERS UTERINE GENE EXPRESSION: INFLUENCE ON CANCER LATER IN LIFE.** R. Newbold. Environmental Toxicology Program, NIEHS, Research Triangle Park, NC. Sponsor: *J. Heindel*.

Monday Afternoon, March 10
1:30 PM to 4:30 PM
Room 250 D

SYMPOSIUM SESSION: HEALTH RISK ASSESSMENT OF HEXAVALENT CHROMIUM IN DRINKING WATER: CARCINOGENICITY, RESEARCH, AND REGULATION

Chairperson(s): *Deborah M. Proctor, Exponent, Inc., Irvine, CA and Edward V. Ohanian, U.S. EPA, Washington, DC.*

Endorsed by:
Risk Assessment Specialty Section

It has been well established that hexavalent chromium [Cr(VI)] can cause lung and nasal cancer among workers exposed to high airborne concentrations in certain industries. However, the potential oral carcinogenicity of Cr(VI) has been a matter of controversy and conjecture in recent years. It is known that Cr(VI) is detoxified by reduction to Cr(III) in the acidic and reducing environment of the stomach. U.S. EPA cited the gastric reductive capacity in support of their decision to raise the chromium maximum contaminant level (MCL) from 50 ppb to 100 pbb. U.S. EPA and other agencies have also determined that there is insufficient evidence at this juncture to indicate that Cr(VI) poses an oral cancer risk. However, some uncertainties remain with respect to the quality of the available data, and as a result, the National Toxicology Program recently initiated a subchronic and chronic drinking water toxicity research project. The purpose of this study is to supplement the available animal pharmacokinetic and toxicity information. The potential hazards posed by Cr(VI) in drinking water, and the practical implications for assessing risk and setting health-based standards, depends on the weight of evidence from many scientific disciplines, including mechanistic and whole-animal toxicology, epidemiology, and kinetics. Significant new research in these fields has been conducted and will be discussed in this symposium. The use of new data for assessing the health risk from drinking water exposures, and the basis for setting health-based standards, will be presented with a case study of a recent risk assessment for Cr(VI) drinking water exposure in San Fernando Valley, California.

#277 1:30 **HEALTH RISK ASSESSMENT OF HEXAVALENT CHROMIUM IN DRINKING WATER: CARCINOGENICITY, RESEARCH, AND REGULATION.** *D. M. Proctor*[1] and *E. V. Ohanian*[2]. [1]Exponent, Irvine, CA and [2]Office of Water, U.S. EPA, Washington, DC.

#278 1:40 **MECHANISM OF HEXAVALENT CHROMIUM [(CR(VI)] TOXICITY AND CARCINOGENICITY.** *J. W. Hamilton*. Department of Pharmacology & Toxicology, Dartmouth Medical School and Center for Environmental Health Sciences, Dartmouth College, Hanover, NH.

#279 2:05 **CHROME EXPOSURE AND LUNG CANCER, STOMACH CANCER AND OTHER CAUSES OF DEATH: AN EPIDEMIOLOGIC META-ANALYSIS.** P. Cole[1] and B. Rodu[2]. [1]Department of Epidemiology, School of Public Health, University of Alabama , Birmingham, AL and [2]Department of Pathology, School of Medicine, University of Alabama , Birmingham, AL. Sponsor: *D. Proctor*.

#280 2:35 **REFINING THE PBPK MODEL FOR CHROMIUM(VI) IN HUMANS.** S. M. Hays[2], *D. M. Proctor*[1] and *D. J. Paustenbach*[2]. [1]Exponent, Irvine, CA and [2]Exponent, Menlo Park, CA.

#281 3:05 **NATIONAL TOXICOLOGY PROGRAM STUDIES OF HEXAVALENT CHROMIUM.** *J. R. Bucher* and K. Abdo. NIEHS, Research Triangle Park, NC.

#282 3:25 **RISK ASSESSMENT FOR HEXAVALENT CHROMIUM IN DRINKING WATER.** R. Sedman and *R. A. Howd*. Office of Environmental Health Hazard Assessment, California EPA, Oakland, CA.

Monday Afternoon, March 10
1:30 PM to 4:30 PM
Ballroom F

SYMPOSIUM SESSION: WORLD TRADE CENTER AFTERMATH: LOOKING BACK TOWARDS THE FUTURE

Chairperson(s): *Harold Zenick, U.S. EPA, Research Triangle Park, NC and Stephen Gavett, U.S. EPA, Research Triangle Park, NC.*

Endorsed by:
Epidemiology Specialty Section
Inhalation Specialty Section
Risk Assessment Specialty Section

The World Trade Center (WTC) disaster of September 11, 2001 galvanized the public health community to respond rapidly with environmental pollutant monitoring, exposure assessments, toxicological research, and health risk assessments. This symposium draws upon the WTC experience to better understand the major challenges that were presented, and the key response, research, and data needs that emerged. An effective public health response to environmental health emergencies requires a unified infrastructure of institutions with a coordinated communications strategy, preparedness response plans, and capacities in medical care, environmental monitoring, and surveillance. Exposure assessments of the general population and workers involved in recovery and cleanup utilize newly developed analysis and computational tools, monitoring databases, and personal exposure monitoring. The destruction of the WTC and associated fires caused the release of pollutants which are possibly unique in composition and toxicity. Toxicological assessment of particulate matter (PM) from the WTC relative to previously characterized emission and ambient air PM samples contributed to the health risk assessment of WTC-derived airborne pollutants. The human health risk assessment approach integrates information from compositional analysis, toxicological assessments, ambient air monitoring, modeling of the plume movement, and comparisons against historical pollutant levels and benchmark health values. As the WTC recovery effort moves into the indoor residential environment where cleaning efforts are ongoing, the long-term health risks to local residents are being addressed by establishing clearance criteria of contaminants of potential concern. This symposium provides an integrated view of the role of research in helping the Nation to better anticipate, prepare, detect and respond to environmental health threats in the future. [This abstract does not necessarily reflect U.S. EPA policy.]

#283 1:30 **WORLD TRADE CENTER AFTERMATH: LOOKING BACK TOWARDS THE FUTURE.** *H. Zenick* and *S. H. Gavett*. U.S. EPA NHEERL, Research Triangle Park, NC.

#284 1:40 **ON-THE-GROUND PUBLIC HEALTH RESPONSE TO THE WTC COLLAPSE: LESSONS LEARNED.** P. Meehan. National Center for Environmental Health, CDC, Atlanta, GA. Sponsor: *H. Zenick*.

#285 2:05 **PLUME RECONSTRUCTION AND MICROENVIRONMENTAL MODELING FOR ASSESSING EXPOSURES TO CONTAMINANTS ASSOCIATED WITH THE WTC FIRE AND COLLAPSE.** P. G. Georgopoulos. EOHSI (Environmental and Occupational Health Sciences Institute), UMDNJ - R. W. Johnson Medical School and Rutgers University, Piscataway, NJ. Sponsor: *H. Zenick*.

#286 2:35 **EXPOSURE ASSESSMENT OF WORKERS INVOLVED IN CLEANUP OPERATIONS AT THE WORLD TRADE CENTER DISASTER SITE.** A. S. Geyh[1], S. Chillrud[2], D. Williams[1], J. Herbstman[1], J. Symons[1], M. Watson[3] and P. Breysse[1]. [1]Environmental Health Sciences, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, [2]Lamont Doherty Earth Observatory, Columbia University, Palisades, NY and [3]International Brotherhood of Teamsters, Washington, DC. Sponsor: *H. Zenick*.

#287 3:00 **RESPIRATORY TOXICOLOGICAL EFFECTS OF WORLD TRADE CENTER FINE PARTICULATE MATTER IN MICE.** *S. H. Gavett*[1], N. Haykal-Coates[1], *L. Chen*[2], *M. D. Cohen*[2] and *D. L. Costa*[1]. [1]NHEERL U.S. EPA, Research Triangle Park, NC and [2]NYU Medical Center, Tuxedo, NY.

#288 3:30 **APPROACHES TO EVALUATION OF POTENTIAL HUMAN EXPOSURES AND HEALTH IMPACTS ASSOCIATED WITH AIRBORNE CONTAMINANTS FROM WORLD TRADE CENTER COLLAPSE/FIRES.** L. D. Grant[1], J. P. Pinto[1] and A. Galizia[2]. [1]NCEA/RTP, U.S. EPA, Research Triangle Park, NC and [2]Region 2, U.S. EPA, New York, NY. Sponsor: *H. Zenick*.

#289 4:00 **INDOOR AIR ASSESSMENT FOR THE WORLD TRADE CENTER SITE: SELECTING CONTAMINANTS OF POTENTIAL CONCERN AND SETTING HEALTH-BASED BENCHMARKS.** *M. A. Maddaloni*. U.S. EPA, Region II, New York, NY.

Monday Afternoon, March 10
1:30 PM to 4:30 PM
Room 251 A

WORKSHOP SESSION: DERMAL EXPOSURE LEADING TO RESPIRATORY TRACT SENSITIZATION AND DISEASE: A TRIVIAL OR CRITICAL LINK?

Chairperson(s): *Albert E. Munson, NIOSH, Morgantown, WV.*

Endorsed by:
Dermal Toxicology Specialty Section
Immunotoxicology Specialty Section
Occupational Health Specialty Section

Exposure to allergens resulting in respiratory tract sensitization has clas-

MONDAY

sically been considered to occur by inhalation. Increasing evidence from epidemiological and clinical studies and data from animal models support the hypothesis that dermal exposure may lead to respiratory sensitization and resultant alterations in pulmonary function. Permeation studies have demonstrated the potential for proteins as well as low molecular weight chemicals to penetrate the skin and mechanistic studies have demonstrated the skin to be a permissive site for the induction of Th2 responses. Animal models have been used to demonstrate specific and non-specific increases in airway hyper-reactivity following dermal exposure to allergens. Using latex allergy, chronic beryllium disease and allergy to low molecular weight chemicals as examples, these presentations will lay the ground-work for a discussion of the relevant clinical and experimental data and the mechanistic basis for the role of skin contact in the development of respiratory sensitization. Only by understanding the mechanisms of sensitization can effective intervention strategies be implemented to protect against respiratory allergens.

#290 1:30 **DERMAL EXPOSURE LEADING TO RESPIRATORY TRACT SENSITIZATION AND DISEASE: A TRIVIAL OR CRITICAL LINK?** *A. Munson* and *M. Luster*. NIOSH, Morgantown, WV.

#291 1:35 **INFLUENCE OF DERMAL EXPOSURE ON THE DEVELOPMENT OF SENSITIZATION OF THE RESPIRATORY TRACT TO CHEMICAL ALLERGENS.** *I. Kimber* and *R. J. Dearman*. Syngenta Central Toxicology Laboratory, Macclesfield, CHESHIRE, United Kingdom.

#292 2:05 **DERMAL EXPOSURE TO TRIMELLITIC ANHYDRIDE (TMA) POWDER INDUCES AIRWAY SENSITIZATION IN AN ANIMAL MODEL.** X. Zhang, J. Fedan, L. Millecchia, D. Lewis and *P. Siegel*. NIOSH, Cincinnati, OH.

#293 2:35 **THE ROLE OF DERMAL EXPOSURE IN THE DEVELOPMENT OF LATEX ALLERGY.** *J. Meade*[1], B. Hayes[2], *M. Howell*[1] and *M. Woolhiser*[3]. [1]NIOSH, Morgantown, WV, [2]School of Medicine, Boston University, Boston, MA and [3]Immunotoxicology, Dow Chemical Company, Midland, MI.

#294 3:05 **INCLUSION OF SKIN EXPOSURE REDUCTION IN A TOTAL HYGIENE PROGRAM TO REDUCE EXPOSURE TO BERYLLIUM: BACKGROUND AND RESULTS.** D. Deubner. Brush Wellman, Inc., Elmore, OH. Sponsor: *A. Munson*.

Monday Afternoon, March 10
1:30 PM to 4:30 PM
Room 250 A

PLATFORM SESSION: CHARACTERIZATION OF TOXICANT SIGNATURES USING GENE EXPRESSION MICROARRAYS

Chairperson(s): *Timothy Zacharewski, Michigan State University, East Lansing, MI and Serrine Lau, University of Texas at Austin, Austin, TX.*

#295 1:30 **GENOMIC MARKERS OF NEPHROTOXICITY IN FEMALE CYNOMOLGUS MONKEYS.** *J. W. Davis*, F. M. Goodsaid, *C. M. Bral*, G. Mandakas, L. A. Obert, C. E. Garner, R. J. Smith and *I. Y. Rosenblum*. Schering-Plough Research Institute, Lafayette, NJ.

#296 1:50 **EXPRESSION OF GENES ASSOCIATED WITH DRUG-INDUCED BILIARY HYPERPLASIA AND CELL PROLIFERATION IN CYNOMOLGUS MONKEYS.** *C. M. Bral*, F. M. Goodsaid, F. Poulet, *L. Li*, *W. Choy*, G. Mandakas, H. Zairov and *I. Y. Rosenblum*. Genetic and Molecular Toxicology, Schering-Plough Research Institute, Lafayette, NJ.

#297 2:10 **GENE EXPRESSION PROFILING OF NORMAL MAMMARY TISSUES FROM RAT STRAINS SENSITIVE AND RESISTANT TO MAMMARY CARCINOGENESIS.** A. S. Kim[1,2], H. Xie[1], A. M. Mikheev[1], R. C. Sullivan[1] and H. Zarbl[1,2]. [1]Human Biology, Fred Hutchinson Cancer Research Center, Seattle, WA and [2]Center for Ecogenetics and Environmental Health, University of Washington/ NIEHS, Seattle, WA. Sponsor: *T. Kavanaugh*.

#298 2:30 **USE OF AN EMPIRICAL BAYES SCREENING APPROACH AND GENE ONTOLOGY ANNOTATIONS TO FILTER AND INTERPRET MICROARRAY DATA FROM THE UTERI OF ESTROGEN-TREATED MICE.** *K. Fertuck*[1], J. E. Eckel[2], C. Gennings[2] and *T. R. Zacharewski*[1]. [1]Biochemistry & Molecular Biology, National Food Safety & Toxicology Center, and Institute for Environmental Toxicology, Michigan State University., East Lansing, MI and [2]Biostatistics, Virginia Commonwealth University., Richmond, VA.

#299 2:50 **IDENTIFICATION OF NRF2-DEPENDENT ARE-DRIVEN GENES CONFERRING PROTECTION AGAINST OXIDATIVE STRESS IN PRIMARY CORTICAL ASTROCYTES AND NEURONS: CELL TYPE SPECIFIC NRF2-DEPENDENT ARE-DRIVEN GENE EXPRESSION.** *J. Lee*[1,2], K. Chan[3], Y. Kan[3] and *J. Johnson*[1,2]. [1]School of Pharmacy, UW-Madison, Madison, WI, [2]Molecular and Environmental Toxicology Center, UW-Madison, Madison, WI and [3]Cardiovascular Research Institute, UCSF, San Fransisco, CA.

#300 3:10 **TRANSCRIPTIONAL PROGRAM OF NRF2 IN LUNG CONFERS PROTECTION AGAINST ENVIRONMENTAL TOXICANTS.** *T. Rangasamy*, R. K. Thimmulappa, K. Mai and *S. S. Biswal*. Environmental Health Sciences, Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD.

#301 3:30 **DIFFERENTIAL GENE EXPRESSION INDUCED BY PEROXISOME PROLIFERATOR, CI-924, IN RATS AND MICE.** A. H. Hofstra[2], P. H. Koza-Taylor[1] and *M. Lawton*[1]. [1]Drug Safety Evaluation, Pfizer Global Research, Groton, CT and [2]Drug Safety Evaluation, Pfizer Global Research, Sheridan Park, ON, Canada.

#302 3:50 **COMPARISON OF CELL PROLIFERATION ASSOCIATED GENE EXPRESSION BETWEEN REVERSIBLE AND IRREVERSIBLE LIVER PATHOLOGIES IN MALE WISTAR RATS TREATED WITH A SERIES OF HEPATOTOXIC COMPOUNDS AND DRUGS.** K.M. Hershman[1], H. E. Olsen[1], *M. F. DeCristofaro*[1], D. A. McCabe[1], O. R. Crasta[1], R. W. Gerwien[1], *B. Wahle*[2], *B. Stuart*[2], T. A. Mansfield[1] and M. McKenna[1]. [1]Pharmacogenomics Department, CuraGen Corporation, New Haven, CT and [2]Toxicology Department, Bayer Corporation, Stilwell, KS.

#303 4:10 **TOWARDS ESTABLISHING A TOXIC SIGNATURE FOR VARIOUS ASBESTOS FORMS-MICROARRAY ANALYSIS OF 900 TOXIC RESPONSE GENES.** M. Pershouse, C. Schwanke, K. Wallis and E. A. Putnam. Center for Environmental Health Sciences, University of Montana, Missoula, MT. Sponsor: *A. Holian*.

Monday Afternoon, March 10
1:30 PM to 4:30 PM
Ballroom A

PLATFORM SESSION: DEREGULATION OF SIGNAL TRANSDUCTION MECHANISMS BY TOXICANTS

Chairperson(s): *Jeffrey Laskin, UMDNJ, Piscataway, NJ and Harihara Mehendale, University of Louisiana at Monroe, Monroe, LA.*

#304 1:30 **OZONE TOXICITY UPREGULATES EXPRESSION OF THE P44/42 MAP KINASE IN ALVEOLAR MACROPHAGES.** *L. Fakhrzadeh*[1], T. DeSimone[1], *J. D. Laskin*[2] and *D. L. Laskin*[1]. [1]Pharmacology & Toxicology, Rutgers University, Piscataway, NJ and [2]Environmental & Comm. Med., UMDNJ-Robert W Johnson Med. Sch, Piscataway, NJ.

#305 1:50 **LOSS OF CYCLIN D1 DOES NOT INHIBIT THE PROLIFERATIVE RESPONSE OF MOUSE LIVER TO MITOGENIC STIMULI.** *A. Columbano*, M. Pibiri, C. Cossu, D. Concas, M. Tripodi and G. Ledda-Columbano. Toxicology, University, Cagliari, Sardinia, Italy.

#306 2:10 **FUNCTIONAL GENOMIC ANALYSIS OF STRESS-ACTIVATED PROTEIN KINASE SIGNALLING PATHWAYS.** J. G. Moggs[1], A. Hollis[2], C. A. Hazzalin[2], S. Thomson[2], L. C. Mahadevan[2], *I. Kimber*[1] and G. Orphanides[1]. [1]HAES Research, Syngenta CTL, Macclesfield, Cheshire, United Kingdom and [2]Department of Biochemistry, Oxford University, Oxford, Oxfordshire, United Kingdom.

#307 2:30 **ENHANCED LIVER TISSUE REPAIR IN DIET RESTRICTED RATS UPON TOXIC CHALLENGE: A BATTLE WON BY COOPERATION OF SIGNALING PATHWAYS.** *U. M. Apte*[1], *P. B. Limaye*[1], *S. Devi*[1], *F. A. Witzmann*[2] and *H. M. Mehendale*[1]. [1]Department of Toxicology, The University of Louisiana at Monroe, Monroe, LA and [2]Department of Cellular & Integrative Physiology, Indiana University School of Medicine, Indianapolis, IN.

#308 2:50 **SYNERGISTIC ACTIVATION OF ESTROGEN RECEPTOR TARGET GENES BY HORMONAL SIGNALS AND CHEMICAL STRESS.** D. G. Deavall, D. N. Hickinson, J. G. Moggs, J. W. Edmunds, *I. Kimber* and G. Orphanides. HAES Research, Syngenta CTL, Macclesfield, Cheshire, United Kingdom.

#309 3:10 **CHARACTERIZATION OF THE SPECIES-SPECIFICITY OF PEROXISOME PROLIFERATORS IN RAT AND HUMAN CELL LINES.** *S. O. Mueller*, M. Ammerschlaeger, M. Kling and *P. Kramer*. Institute of Toxicology, Merck KGaA, Darmstadt, Hessen, Germany.

#310 3:30 **THE COORDINATE ACTIVATION OF ERK AND P38 MAPK IS REQUIRED FOR HISTONE H3 PHOSPHORYLATION IN RESPONSE TO ROS-INDUCED DNA DAMAGE.** *J. Dong*, *S. Ramachandiran*, *K. Tikoo*, *S. S. Lau* and *T. J. Monks*. Center for Molecular and Cellular Toxicology, University of Texas at Austin, Austin , TX.

#311 3:50 **DIFFERENTIAL MODULATION OF STRESS AND UBIQUITINATION SIGNALING PATHWAYS BY CADMIUM, H_2O_2, AND SERUM WITHDRAWAL IN CULTURED MOUSE FIBROBLASTS.** *M. R. Garry*[1,2], J. S. Sidhu[1], *T. J. Kavanagh*[1] and *E. M. Faustman*[1]. [1]Environmental Health, University of Washington, Seattle, WA and [2]Exponent, Bellevue, WA.

#312 4:10 **REGULATION OF CYP1A1 TRANSCRIPTION ELONGATION BY AH RECEPTOR THROUGH INTERACTION WITH P-TEF B.** Y. Tian[1], S. Ke[1], M. Chen[1], A. B. Rabson[3], *M. A. Gallo*[2] and T. Sheng[1]. [1]Vet. Physiology and Pharmacology, Texas A&M University, College Station, TX, [2]EOHSI, UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ and [3]Center for Advanced Biotechnology and Medicine, UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ.

Monday Afternoon, March 10
1:30 PM to 4:30 PM
Room 251 D

PLATFORM SESSION: MECHANISMS OF APOPTOSIS

Chairperson(s): *David McConkey, University of Texas, Houston, TX and J. States, University of Louisville, Louisville, KY.*

#313 1:30 **INVOLVEMENT OF CASPASE-2 UPSTREAM OF MITOCHONDRIA DURING ETOPOSIDE-INDUCED APOPTOSIS.** *J. D. Robertson*, M. Enoksson, B. Zhivotovsky and *S. Orrenius*. Toxicology, Karolinska Institutet, Stockholm, Sweden.

#314 1:50 **DIFFERENTIAL SENSITIVITY OF LUNG AND BRAIN CELL LINES TO TETRAHYDROCANNABINOL-INDUCED MITOCHONDRIAL INJURY.** *T. A. Sarafian*[1], P. L. Carter[2], A. C. Howlett[2], K. Badal[1], D. Lin[1], D. P. Tashkin[1] and M. D. Roth[1]. [1]Medicine, UCLA, Los Angeles, CA and [2]Neuroscience/Drug Abuse Research Program, North Carolina Central University, Durham, NC.

MONDAY

#315 2:10 **MECHANISM OF CANNABINOID-INDUCED APOPTOSIS IN CELLS OF IMMUNE ORIGIN.** C. A. Lombard[1], *M. Nagarkatti*[1] and *P. S. Nagarkatti*[2]. [1]Microbiology and Immunology, MCV Campus, Virginia Commonwealth University, Richmond, VA and [2]Pharmacology and Toxicology, MCV Campus, Virginia Commonwealth University, Richmond, VA.

#316 2:30 **ARSENIC-INDUCED APOPTOSIS AND NECROSIS IN RAMOS B CELLS ARE DEPENDENT ON INTRACELLULAR CA2+ FLUXES.** *D. J. McConkey*, L. K. Nutt, J. C. Pahler and B. Mirnikjoo. Cancer Biology, University.T. M.D. Anderson Cancer Center, Houston, TX.

#317 2:50 **ARSENITE INDUCED MITOTIC ARREST IS P53 DEPENDENT.** *J. States*[1], S. C. McNeely[1], B. D. Beauerle[1] and *M. J. McCabe*[2]. [1]Pharmacology & Toxicology, University of Louisville, Louisville, KY and [2]Environmental Medicine, University of Rochester, Rochester, NY.

#318 3:10 **COORDINATE REGULATION OF BLEOMYCIN-INDUCED APOPTOSIS BY P53 TARGET GENES IN THE MURINE LUNG.** *D. W. Davis*[1], *A. B. Santamaria*[2], J. Lawler[3], *H. Ananthaswamy*[2] and *D. J. McConkey*[1]. [1]Cancer Biology, University.T. M.D. Anderson Cancer Center, Houston, TX, [2]Immunology, University.T. M.D. Anderson Cancer Center, Houston, TX and [3]Pathology, Beth Israel Deaconnes Medical Center and Harvard Medical School, Houston, TX.

#319 3:30 **TCDD-INDUCED LOSS OF MITOCHONDRIAL MEMBRANE POTENTIAL IN SPERMATOZOA IS INDEPENDENT OF FAS AND FASL.** M. Fisher[1], *P. S. Nagarkatti*[1] and *M. Nagarkatti*[2]. [1]Pharmacology and Toxicology, Virginia Commonwealth University, MVC Campus, Richmond, VA and [2]Microbiology and Immunology, Virginia Commonwealth University, MVC Campus, Richmond, VA.

#320 3:50 **IDENTIFICATION OF CASPASE-INDEPENDENT APOPTOSIS IN EPITHELIAL AND CANCER CELLS.** G. R. Kinsey, *B. S. Cummings* and *R. G. Schnellmann*. Pharmaceutical Sciences, Medical University of South Carolina, Charleston, SC.

#321 4:10 **THE COMBINATION OF THE PROTEASOME INHIBITOR, PS-341, AND DOCETAXEL INHIBITS ANGIOGENESIS AND OVERCOMES CELL-CYCLE MEDIATED RESISTANCE IN PANCREATIC CANCER.** S. T. Nawrocki, B. Sweeney-Gotsch, R. Takamori and *D. J. McConkey*. Cancer Biology, UT M.D. Anderson Cancer Center, Houston, TX.

Monday Afternoon, March 10
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: METAL NEUROTOXICITY II

Chairperson(s): *Francis Schanne, Saint John's University, Jamaica, NY and Arun Jadhav, Texas Southern University, Houston, TX.*

Displayed: *1:30 PM–4:30 PM*

Attended: *1:30 PM-3:00 PM*

#322 **EVALUATION OF CELL CYCLE KINETICS IN P53 MOUSE EMBRYONAL FIBROBLASTS: EFFECTS OF METHYL MERCURY.** E. J. Gribble, A. Mendoza, S. Hong, *J. Sidhu* and *E. M. Faustman*. Environmental Health, University of Washington, Seattle, WA.

#323 **METHYL MERCURY INDUCES DIFFERENTIAL UBIQUITIN-CONJUGATED PROTEIN LEVELS IN P53 VARIANT MOUSE EMBRYONAL FIBROBLASTS.** J. S. Sidhu, S. Hong, A. Erickson, A. Baker, J. Robinson, P. Vliet and *E. M. Faustman*. Env Health, University of Washington, Seattle, WA.

#324 **TOXICITY OF METHYLMERCURY IN CO-CULTURES OF ASTROCYTES AND NEURONS.** *T. Syversen*, T. S. Morken, B. Urfjell, H. Qu and U. Sonnewald. Department of Clinical Neuroscience, Norwegian University of Science and Technology, Trondheim, Norway.

#325 **EXPRESSION OF CALBINDIN D-28K CORRELATES WITH DECREASED METHYLMERCURY (MEHG) CYTOTOXICITY IN MYENTERIC PLEXUS NEURONS.** *J. R. Edwards* and *W. D. Atchison*. Department Pharmacology/Tox, Mich State University, East Lansing, MI.

#326 **EFFECTS OF PRE- AND POSTNATAL METHYLMERCURY EXPOSURE ON EXPRESSION OF EPHS AND EPHRINS IN THE MOUSE.** *D. T. Wilson*[1], *K. R. Reuhl*[1] and R. Zhou[2]. [1]Toxicology, Rutgers University, Piscataway, NJ and [2]Chem. Biol., Rutgers University, Piscataway, NJ.

#327 **ALTERED APOPTOTIC GENE EXPRESSION IN WHOLE CEREBELLA OF MICE EXPOSED TO METHYLMERCURY *IN VIVO*: A cDNA MICROARRAY ANALYSIS.** K. A. Thuett and L. C. Abbott. Veterinary Anatomy and Public Health, Texas A&M University / College of Veterinary Medicine, College Station, TX. Sponsor: *E. Castiglioni*.

#328 **REACTIVE OXYGEN SPECIES MEDIATE METHYLMERCURY-INDUCED NEUROTOXICITY IN ASTROCYTES: PROTECTIVE EFFECT OF ANTIOXIDANTS.** *G. Shanker*, L. A. Mutkus, *K. M. Erikson* and *M. Aschner*. Physiology and Pharmacology, Wake Forest University School of Medicine, Winston-Salem, NC.

#329 **CALCIUM HOMEOSTATIS AND REDOX STATUS ALTERATIONS IN SY5Y NEUROBLASTOMA CELLS EXPOSED TO INORGANIC MERCURY.** *E. Tiffany-Castiglioni* and K. A. Thuett. Veterinary Anatomy and Public Health, Texas A&M University / College of Veterinary Medicine, College Station, TX.

#330 **BLOCKAGE OF IL-6 SECRETION IN GLIA BY LEAD AND MERCURY.** N. M. Pourrajabi[1], *Y. Qian*[1], *R. Tjalkens*[1], *K. Ramos*[2] and *E. Tiffany-Castiglioni*[1]. [1]Veterinary Anatomy & Public Health, Texas A&M University, College Station, TX and [2]Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

#331 **NICOTINE REVERSES SPATIAL LEARNING DEFICITS IN PERINATALLY LEAD-EXPOSED RATS.** M. Zhou and *J. B. Suszkiw*. Mol&Cell Physiology, University.Cincinnati, Cincinnati, OH.

#332 **ACUTE LEAD EXPOSURE INCREASES THE RESPONSE TO N-METHYL-D- ASPARTATE IN MIDBRAIN DOPAMINE NEURONS OF THE RAT.** M. W. Lewis and D. K. Pitts. Pharmaceutical Sciences, Wayne State University, Detroit, MI. Sponsor: *G. Corcoran*.

#333 **DIFFERENTIAL MODULATION OF DOPAMINE AND GLUTAMATE RECEPTOR AGONISTS ON LEAD-INDUCED CHANGES IN NEUROTRANSMITTER RELEASE IN CULTURED CORTICAL AND HIPPOCAMPAL NEURONS.** *Y. Gedeon* and *A. L. Jadhav*. College of Pharmacy & Health Sciences, Texas Southern University, Houston, TX.

#334 **LOW LEVEL LEAD ENHANCES GLUTAMATE TRANSPORT BY ASTROCYTES.** M. M. Tsang and *F. A. Schanne*. Pharmaceutical Sciences, St. John's University, Jamaica, NY.

#335 **LOW LEVEL LEAD DISRUPTS PKC-MEDIATED REGULATION OF EVOKED GLUTAMATE RELEASE FROM HIPPOCAPAL PRESYNAPTIC NERVE TERMINALS.** J. A. Trejos and *F. A. Schanne*. Pharmaceutical Sciences, St. John's University, Jamaica, NY.

#336 **THE APP PROMOTER RESPONDS TO PB EXPOSURE IN TRANSFECTED PC12 CELLS.** *N. H. Zawia* and W. Wei. Biomedical Sciences, University of Rhode Island, Kingston, RI.

#337 **ZINC-INDUCED CHANGES IN HSP70 DISTRIBUTION AND ACTIN CYTOSKELETON IN CULTURED CULTURED CHOROID PLEXUS.** K. M. Kransler and *A. R. Villalobos*. Department of Environmental Medicine, University of Rochester, Rochester, NY.

#338 **EFFECT OF Zn ON THE ENERGY STATUS OF THE C6 GLIOMA AND THE HEPG2 CELLS.** *M. S. Yang*[1] and *R. C. Gupta*[2]. [1]Department of Biology, Hong Kong Baptist University, Kowloon, Hong Kong, China and [2]Toxicology Department, Murray State University, Hopkinsville, KY.

#339 **STRUCTURE-ACTIVITY RELATIONSHIP AMONG ORGANOTINS IN A MODEL OF NEURONAL DIFFERENTIATION AND PROGRAMMED CELL DEATH.** S. M. Jenkins[1,2], *L. D. White*[1] and *S. Barone*[1]. [1]Neurotox. Division, U.S. EPA, Research Triangle Park, NC and [2]Curriculum in Toxicology, UNC Chapel Hill, Chapel Hill, NC.

#340 **THE NEUROTOXICANT TRIMETHYLTIN STIMULATES APOPTOSIS VIA OXIDATIVE STRESS, CASPASE ACTIVATION AND P38 PROTEIN KINASE.** *L. D. White*[1], S. M. Jenkins[1,2] and *S. Barone*[1]. [1]Neurotox. Division, U.S. EPA, Research Triangle Park, NC and [2]Curriculum in Toxicology, UNC Chapel Hill, Chapel Hill, NC.

#341 **BEHAVIORAL IMPAIRMENTS FOLLOWING TRIMETHYLTIN-EXPOSURE ARE LINKED TO ALTERATIONS IN PSA-NCAM EXPRESSION.** A. K. Halladay[1], G. C. Wagner[2] and *K. R. Reuhl*[1]. [1]Neurotoxicology Labs, Rutgers University, Piscataway, NJ and [2]Psychology, Rutgers University, Piscataway, NJ.

Monday Afternoon, March 10
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: NEUROTOXICOLOGY: GENERAL

Chairperson(s): *Tomas Guilarte, Johns Hopkins University, Baltimore, MD and Wiliiam Boyes, U.S. EPA, Research Triangle Park, NC.*

Displayed: *1:30 PM–4:30 PM*

Attended: *3:00 PM-4:30 PM*

#342 **EFFECTS OF 7-NITROINDAZOLE ON KAINATE-INDUCED SEIZURES, NO AND ENERGY METABOLITES IN RAT BRAIN REGIONS.** *R. C. Gupta*[1] and W. Dettbarn[1]. [1]Toxicology, Murray State University, Hopkinsville, KY and [2]Pharmacology, Vanderbilt University, Nashville, TN.

#343 **ELEVATED BLOOD BETA-CARBOLINE ALKALOID CONCENTRATION IN ESSENTIAL TREMOR PATIENTS: A CASE-CONTROL STUDY.** E. D. Louis[1], U. P. Andersson[2] and *W. Zheng*[2,3]. [1]Neurology, Columbia University, New York, NY, [2]School of Public Health, Columbia University, New York, NY and [3]Pharmacology, Columbia University, New York, NY.

#344 **LEARNING IMPAIRMENT CAUSED BY INFUSION OF A TOXIN PRODUCED BY *PFIESTERIA PISCICIDA* INTO THE HIPPOCAMPUS OF RATS.** *E. D. Levin*[1], W. P. Blackwelder[1], H. B. Glasgow[2], J. M. Burkholder[2], P. R. Moeller[3] and J. S. Ramsdell[3]. [1]Department of Psychiatry and Behavioral Sciences, Duke University Med. Ctr, Durham, NC, [2]Center for Applied Aquatic Ecology, Department of Botany, North Carolina State University, Raleigh, NC and [3]Marine Biotoxins Program, NOAA-National Ocean Service, Charleston, SC.

#345 ***IN VIVO* BASAL AND AMPHETAMINE-STIMULATED STRIATAL DOPAMINE (DA) RELEASE IS SIMILAR IN ADULT SPONTANEOUSLY HYPERTENSIVE (SHR), WISTAR-KYOTO (WKY), AND SPRAGUE-DAWLEY (SD) MALE RATS.** *S. A. Ferguson* and B. J. Gough. Neurotoxicology, NCTR/FDA, Jefferson, AR.

#346 **TESTOSTERONE REVERSES THE EFFECTS OF ETHANOL ON NITRIC OXIDE SYNTHASE IN THE CORTEX OF CASTRATED RATS.** R. H. Khalil[1], M. A. King[1] and *M. R. Soliman*[2]. [1]Department of Neuroscience, College of Medicine & Brain Institute, University of Florida, Gainesville, FL and [2]College of Pharmacy, Florida A&M University, Tallahassee, FL.

#347 **12 WEEK EXPOSURE TO CARBONYL SULFIDE PRODUCES BRAIN LESIONS AND CHANGES IN BRAINSTEM AUDITORY (BAER) AND SOMATOSENSORY (SEP) EVOKED POTENTIALS IN FISCHER 344N RATS.** *D. W. Herr*[1], J. E. Graff[1], P. B. Little[2], N. George[3], *D. L. Morgan*[3] and R. C. Sills[3]. [1]Neurotoxicology, U.S. EPA, Durham, NC, [2]Pathology Associates, Research Triangle Park, NC and [3]NIEHS, Research Triangle Park, NC.

#348 **THROMBIN PRECONDITIONING PROVIDES NEUROBEHAVIORAL PROTECTION AGAINST A UNILATERAL 6-HYDROXYDOPAMINE LESION.** *J. R. Cannon*, G. Xi, T. Schallert, Y. Hua and R. F. Keep. The University of Michigan, Ann Arbor, MI.

#349 **PROSTAGLANDIN H SYNTHASE (PHS)-DEPENDENT OXIDATIVE STRESS AND DNA DAMAGE IN LONG-TERM AMPHETAMINE-INITIATED NEURODEGENERATION AND FUNCTIONAL DEFICITS.** A. Ramkissoon[1], *W. Jeng*[1] and *P. G. Wells*[1,2]. [1]Pharmacy, University of Toronto, Toronto, ON, Canada and [2]Pharmacology, University of Toronto, Toronto, ON, Canada.

#350 **NEUROPROTECTION AGAINST STEREOSELECTIVE 3, 4-METHYLENEDIOXYMETHAMPHETAMINE (MDMA, ECSTASY)-INITIATED OXIDATIVE STRESS AND DNA DAMAGE IN PROSTAGLANDIN H SYNTHASE-1 (PHS-1) KNOCKOUT MICE.** *W. Jeng*[1] and *P. G. Wells*[1,2]. [1]Pharmacy, University of Toronto, Toronto, ON, Canada and [2]Pharmacology, University of Toronto, Toronto, ON, Canada.

#351 **PERIPHERAL BENZODIAZEPINE RECEPTOR RESPONSE TO DEMYELINATION IN THE MOUSE BRAIN: ASSOCIATION WITH GLIAL CELL TYPES.** M. Chen and *T. R. Guilarte*. Environmental Health Sciences, Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD.

#352 **MORPHOMETRIC ANALYSIS OF γ-DIKETONE AXONOPATHY IN RAT SPINAL CORD.** *J. F. Ross*[2] and *R. M. LoPachin*[1]. [1]Anesthesiology, Albert Einstein College of Medicine, Bronx, NY and [2]The Health & Environmental Safety Alliance, Cincinnati, OH.

#353 **ACUTE NEUROTOXIC EFFECTS OF INHALED PERCHLOROETHYLENE ON PATTERN VISUAL EVOKED POTENTIALS AS A FUNCTION OF EXPOSURE AND ESTIMATED BLOOD AND BRAIN CONCENTRATION.** M. Bercegeay, *E. M. Kenyon* and *W. K. Boyes*. NHEERL, U.S. EPA, Research Triangle Park, NC.

#354 **DURATION ADJUSTMENT OF ACUTE EXPOSURE GUIDELINE LEVEL (AEGL) VALUES FOR TRICHLOROETHYLENE (TCE) USING A PHYSIOLOGICALLY- BASED PHARMACOKINETIC (PBPK) MODEL.** *W. K. Boyes*[1], C. R. Eklund[1], P. Janssen[2] and *J. E. Simmons*[1]. [1]EPA, Research Triangle Park, NC and [2]Centre of Substances and Risk Assessment, National Institute Public Health and the Environment, Bilthoven, Netherlands.

#355 **SENSITIVE HISTOLOGICAL INDICATORS OF DAMAGE REVEAL TREATMENT WITH SUPRAPHYSIOLOGICAL LEVELS OF CORTICOSTERONE AND HIGH DOSAGES OF KAINIC ACID PRODUCE LIMITED HIPPOCAMPAL DAMAGE IN A STRAIN OF MICE RESISTANT TO KAINATE NEUROTOXICITY.** S. A. Benkovic and *D. B. Miller*. Toxicology and Molecular Biology, CDC-NIOSH, Morgantown, WV.

#356 **METAL AND PESTICIDE INTERACTION: EFFECTS OF ALUMINIUM CHLORIDE AND ACEPHATE EXPOSURE FOR SHORT TERM AND SUB CHRONIC DURATION ON RAT BRAIN SEROTONINERGIC SYSTEM.** *K. Sripathirathan*. Department of Pharmacology and Environmental Toxicology, P.G. Institute of Basic Medical Sciences, University of Madras, Madras, TN, India.

#357 **DEMONSTRATION OF MURINE NEUROTOXIC RESPONSES TO 1, 2-DIACETYLBENZENE PREPARATORY TO TOXICOGENOMIC CHARACTERIZATION.** D. D. Tshala-Katumbay, V. S. Palmer, R. J. Kayton, *M. I. Sabri* and *P. S. Spencer*. CROET, Oregon Health & Science University, Portland, OR.

#358 **SUB-ACUTE SARIN EXPOSURE LEADS TO NEUROPATHOLOGICAL AND NEUROCHEMICAL CHANGES IN THE RAT BRAIN: DOSE-RESPONSE RELATIONSHIPS.** A. A. Abdel-Rahman, A. K. Shetty and *M. B. Abou-Donia*. Pharmacology and Cancer Biology, Duke University Medical Center, Durham, NC.

#359 **COMPARATIVE EFFECTS OF WEEKLY EXPOSURES TO ANATOXIN-A AND NICOTINE ON THE OPERANT PERFORMANCE OF RATS.** K. A. Jarema and *R. C. MacPhail*. NHEERL, U.S. EPA, Research Triangle Park, NC.

#360 **TEA EPIGALLOCATECHIN 3-GALLATE PREVENTS MPTP-INDUCED PARKINSON'S DISEASE THROUGH THE INHIBITION OF NEURONAL NITRIC OXIDE SYNTHASE EXPRESSION IN MICE.** J. Choi, *W. Chung*, S. Ryu and C. Park. Pharmacology, Inha University, Inchon, South Korea.

Monday Afternoon, March 10
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: MULTIGENERATION REPRODUCTIVE TOXICITY

Chairperson(s): *K Barry Delclos, National Center for Toxicological Research, Jefferson, AR and Moussa Diawara, University of Southern Colorado, Pueblo, CO.*

Displayed: *1:30 PM–4:30 PM*

Attended: *1:30 PM-3:00 PM*

#361 **FERTILITY & GENERAL REPRODUCTION TOXICITY STUDY OF A SURROGATE MURINE ANTI-CD11A ANTIBODY IN MICE.** *J. Clarke*, J. Beyer, S. Ortega, B. Wu, *A. Hoberman*, A. Brechbill and *B. Mounho*. Argus Research, Division of Charles River, Horsham, PA.

#362 ***IN UTERO* THROUGH LACTATIONAL EXPOSURE TO ETHINYL ESTRADIOL CAUSES ANOMALY OF THE FEMALE EXTERNAL GENITALIA AND LOSS OF REPRODUCTIVE CYCLICITY OF SD IGS RAT.** M. Sawaki[1], S. Noda[1], T. Muroi[1], H. Mitoma[1], S. Takakura[1], S. Sakamoto[1], K. Yamasaki[1] and *N. Ito*[2]. [1]Chemicals Evaluation and Research Institute, Hita, Oita, Japan and [2]Nagoya City University Medical School, Nagoya, Japan.

#363 ***IN UTERO* AND LACTATIONAL EXPOSURE TO 1R4F CIGARETTE SMOKE: EFFECTS ON NEONATAL DEVELOPMENT, GROWTH AND NEUROBEHAVIOR IN THE OFFSPRING RATS.** *C. L. Gaworski*[1], *A. S. Faqi*[2], N. Rajendran[2] and E. L. Carmines[1]. [1]Philip Morris USA, Richmond, VA and [2]IIT Research Institute, Chicago, IL.

#364 **DEVELOPMENTAL EFFECTS OF ZINC CHLORIDE IN RATS.** F. Johnson[1], L. Ogden[1], T. Graham[2], T. Thomas[1], E. Gilbreath[1], M. Hammersley[1], L. Wilson[1], Q. Knight[1] and B. DeJan[1]. [1]Biomedical Sciences, Tuskegee University, Tuskegee Institute, AL and [2]Pathobiology, Tuskegee University, Tuskegee Institute, AL. Sponsor: *R. Dalvi*.

#365 **MULTIGENERATIONAL EFFECTS OF ZINC CHLORIDE ON THE REPRODUCTIVE PERFORMANCE OF CD-1 MICE.** L. Ogden[1], T. Graham[2], A. Atkinson[2], F. Johnson[1], M. Mahommed[1] and H. Michael[1]. [1]Biomedical Sciences, Tuskegee University, Tuskegee Institute, AL and [2]Pathobiology, Tuskegee University, Tuskegee Institute, AL. Sponsor: *R. Dalvi*.

#366 **REPRODUCTIVE EFFECTS OF ZINC CHLORIDE IN SPRAGUE-DAWLEY RATS.** T. Graham[2], L. Ogden[1], A. Atkinson[2], F. Johnson[1], M. Hammersley[1], L. Wilson[1], B. DeJan[1] and Q. Knight[1]. [1]Biomedical Sciences, Tuskegee University, Tuskegee Institute, AL and [2]Pathobiology, Tuskegee University, Tuskegee Institute, AL. Sponsor: *R. Dalvi*.

#367 **CROSS-FOSTERING STUDY WITH ATOSIBAN IN CD RATS TO ELUCIDATE THE ROLE OF MATERNAL EFFECTS.** L. M. Burns[1] and *P. McAnulty*[2]. [1]Reproduction Toxicology, Sequani Limited, Ledbury, United Kingdom and [2]Ferring Pharmaceuticals A/S, Copenhagen, Denmark.

#368 **A FIVE GENERATION REPRODUCTIVE TOXICITY ASSESSMENT OF THE SOY ISOFLAVONE GENISTEIN IN CD SPRAGUE-DAWLEY RATS.** *K. B. Delclos*[1], C. C. Weis[1], G. Olson[2], T. J. Bucci[2] and R. R. Newbold[3]. [1]NCTR, Jefferson, AR, [2]Pathology Associates International, Jefferson, AR and [3]NIEHS, Research Triangle Park, NC.

#369 **MULTI-GENERATION REPRODUCTION STUDY OF AMMONIUM PERFLUOROOCTANOATE IN RATS.** *J. L. Butenhoff*[1], *G. L. Kennedy*[2], *J. C. O'Connor*[2] and *R. G. York*[3]. [1]3M, Saint Paul, MN, [2]Dupont, Newark, DE and [3]Argus Research, A Division of Charles River Laboratories, Horsham, PA.

#370 **A COMBINED REPEATED DOSE TOXICITY STUDY AND REPRODUCTION/DEVELOPMENTAL SCREENING STUDY IN SPRAGUE-DAWLEY RATS WITH ACETOPHENONE (OECD GUIDELINE NO. 422).** *R. W. Kapp*[1], *B. A. Thorsrud*[2], W. J. Moffatt[3] and L. Lawton[4]. [1]BioTox, Richmond, VA, [2]Springborn Laboratories, Inc., Spencerville, OH, [3]JLM Chemicals, Inc., Blue Island, IL and [4]Aceto Corporation, Lake Success, NY.

#371 **DOSE ADDITIVITY OF ATRAZINE AND BROMODICHLOROMETHANE IN CAUSING PREGNANCY LOSS IN F344 RATS.** M. G. Narotsky[1], D. S. Best[1], S. R. Bielmeier[2] and R. L. Cooper[1]. [1]Reproductive Toxicology Division, U.S. EPA, ORD, NHEERL, Research Triangle Park, NC and [2]Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC. Sponsor: *J. Andrews*.

#372 **EXPOSURE PARAMETERS FOR DELAYED PUBERTY AND MAMMARY GLAND DEVELOPMENT IN LONG-EVANS RATS EXPOSED *IN UTERO* TO ATRAZINE.** J. L. Rayner[1] and *S. E. Fenton*[2]. [1]DESE, UNC-Chapel Hill, Chapel Hill, NC and [2]RTD, NHEERL, ORD, U.S. EPA, Research Triangle Park, NC.

#373 **EFFECTS OF PERINATAL EXPOSURE OF FIVE PUTATIVE ENDOCRINE DISRUPTING CHEMICALS (EDCS), METHOXYCHLOR, GENISTEIN, DIISONONYLPHTHALATE 4-NONYLPHENOL AND BISPHENOL A, ON ENDOCRINE/REPRODUCTIVE SYSTEMS IN RATS.** H. Takagi[1,2], M. Shibutani[1], N. Masutomi[1], C. Uneyama[1], K. Mitsumori[3] and M. Hirose[1]. [1]Division Pathol., National Inst. Health Sciences., Tokyo, Japan, [2]United Graduate School of Veterinary Sciences, Gifu, Japan and [3]Lab. of Veterinary Pathology, Tokyo University of Agriculture and Technology, Tokyo, Japan. Sponsor: *S. TOMOYUKI*.

Monday Afternoon, March 10
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: OXIDATIVE INJURY

Chairperson(s): *Ramesh Gupta, Murray State University, Hopkinsville, KY and Dejan Milatovic, Vanderbilt University, Nashville, TN.*

Displayed: *1:30 PM–4:30 PM*

Attended: *3:00 PM-4:30 PM*

#374 **THE INDUCTION OF OXIDATIVE STRESS IN VARIOUS BRAIN REGIONS OF RATS FOLLOWING SUBCHRONIC EXPOSURE TO TCDD.** *E. A. Hassoun*, M. Al-Ghafri and A. Abushaban. Pharmacology, The University of Toledo, Toledo, OH.

#375 **FCCP-INDUCED TOXICITY AND OXIDATIVE STRESS IN RHABDOMYOSARCOMA CELLS.** *C. Hu*[1], L. M. Storck[1], S. K. Kuruvilla[2], *M. A. Tirmenstein*[1], P. K. Narayanan[1], H. C. Thomas[1] and *L. W. Schwartz*[1]. [1]Safety Assessment, GlaxoSmithKline, King of Prussia, PA and [2]Toxicogenomic Mechanisms, GlaxoSmithKline, Research Triangle Park, NC.

#376 **ROLE OF OXIDATIVE STRESS IN THE MODIFICATION ON RAT UTERINE CONTRACTION BY 2, 2'-DICHLOROBIPHENYL.** D. Chung and *R. Loch Caruso*. Environmental Health Sciences, University of Michigan, Ann Arbor, MI.

#377 **NITROTYROSINE AND SPLENIC TOXICITY OF ANILINE.** *M. F. Khan*, X. Wu, *P. J. Boor* and *G. S. Ansari*. University of Texas, Galveston, TX.

#378 **NITRIC OXIDE MEDIATES INCREASED SUSCEPTIBILITY TO DOPAMINERGIC DAMAGE IN NURR1 DEFICIENT MICE.** A. D. Disch[1], S. Z. Imam[1], J. Jankovic[2], J. T. Skinner[1], W. Xie[2], O. M. Conneely[2], W. Le[2] and *S. Ali*[1]. [1]Neurotoxicology, U.S. FDA/NCTR, Jefferson, AR and [2]Department Neurology, Baylor College of Medicine, Houston, TX.

#379 **COCAINE INDUCES A DOSE DEPENDENT ALTERATION IN GENE EXPRESSION OF APOPTOTIC CASCADE IN PC12 CELLS.** H. M. Duhart, S. Z. Imam, J. T. Skinner, *W. Slikker, Jr* and *S. Ali*. Neurotoxicology, U.S. FDA/NCTR, Jefferson, AR.

#380 **REPERFUSION DERIVED OXYGEN RADICAL DAMAGE IN ATLANTIC MENHADEN, *BREVORTIA TYRANNUS.*** *D. W. Lehmann*[1] and *J. M. Law*[2]. [1]Environmental and Molecular Toxicology, North Carolina State University, Raleigh, NC and [2]FAHRM, College of Veterinary Medicine, North Carolina State University, Raleigh, NC.

#381 **DFP-INDUCED OXIDATIVE STRESS IN SKELETAL MUSCLES OF RATS.** *D. Milatovic*[1], *R. C. Gupta*[2], T. J. Montine[1] and W. D. Dettbarn[3]. [1]Pathology, University of Washington, Seattle, WA, [2]Murray State University, Hopkinsville, KY and [3]Pharmacology, Vanderbilt University, Nashville, TN.

#382 **LOW DOSE OXIDATIVE INSULT PROMOTES APOPTOSIS IN DOPAMINERGIC CELLS VIA CASPASE-3 DEPENDENT PROTEOLYTIC ACTIVATION OF PKCδ: RELEVANCE TO ENVIRONMENTAL FACTORS AND PARKINSON'S DISEASE.** S. Kaul, V. Anantharam and *A. Kanthasamy*. Biomedical Sciences, Iowa State University, Ames, IA.

#383 **OXIDATION OF 4-HYDROXY-2-NONENAL BY SUCCINIC SEMIALDEHYDE DEHYDROGENASE (ALDH5A).** *M. J. Picklo*[1], K. Gibson[2] and T. C. Murphy[1]. [1]Pharmacology and Physiology, University of North Dakota School of Medicine, Gramd Forks, ND and [2]Molecular and Medical Genetics, Oregon Health Sciences University, Portland, OR.

#384 **MOTOR NEURONS FAIL TO UPREGULATE METALLOTHIONEIN DURING OXIDATIVE STRESS: A SOURCE OF VULNERABILITY TO DISEASE?** D. Taylor and *H. D. Durham*. Montreal Neurological Institute, McGill University, Montreal, QC, Canada.

#385 **THE USE OF PROTEOMIC ANALYSIS TO ASSESS OXIDATIVE INSULT, AND PROTECTION BY DEHYDROEPIANDROSTERONE, USING CELL MODEL SYSTEMS.** *S. Aldred* and H. R. Griffiths. Life and Health Sciences, Aston University, Birmingham, West Midlands, United Kingdom.

#386 **DETECTION OF CARBONYLATION AND 3-NITROTYROSINE AS PROTEIN OXIDATION BIOMARKERS.** M. Grant and H. Griffiths. Life and Health Sciences, Aston University, Birmingham, West Midlands, United Kingdom. Sponsor: *E. Lock*.

#387 **METABOLISM OF 4-OXONONENAL BY HUMAN CLASS 2 ALDEHYDE DEHYDROGENASE.** *J. A. Doorn*[1], T. D. Hurley[2] and *D. R. Petersen*[1]. [1]Pharmaceutical Sciences, University of Colorado Health Sciences Center, Denver, CO and [2]Biochemistry, Indiana University, Indianapolis, IN.

#388 **PROTEIN AND PEPTIDE CROSS-LINKING BY 4-OXONONENAL.** *D. R. Petersen*, *J. A. Doorn* and D. J. Claffey. Pharmaceutical Sciences, University of Colorado Health Sciences Center, Denver, CO.

#389 **REGULATION OF C-FOS PHOSPHORYLATION AND AP-1 ACTIVATION BY OXIDANTS IN CARDIOMYOCYTES.** J. Coronella-Wood, H. Sun and *Q. Chen*. Pharmacology, University of Arizona, Tucson, AZ.

#390 **GENERATION OF OXYGEN FREE RADICALS BY PEROXISOMICINE A1.** M. Zanatta-Calderon, *L. Garza-Ocañas*, *O. Torres-Alanis* and A. Piñeyro-Lopez. Pharmacology and Toxicology, University.A.N.L., Monterrey, Nuevo Leon, Mexico.

#391 **ROS-INDUCED HISTONE H3 PHOSPHORYLATION DOES NOT INVOLVE SITES NORMALLY ASSOCIATED WITH MITOTIC CHROMOSOMAL CONDENSATION.** *A. H. Palmer*, *K. A. Cox*, K. Tikoo, *S. S. Lau*, K. N. Dalby and *T. J. Monks*. Center for Molecular and Cellular Toxicology , The University of Texas at Austin, Austin, TX.

#392 **BIOLUMINESENT MEASUREMENT OF OXIDATIVE STRESS.** D. Jekic McMullen, *S. E. Malstrom*, D. West and L. Sambucetti. LPTA, Xenogen Corporation, Alameda, CA.

#393 **CIGARETTE SMOKE AND ARSENIC SYNERGISTICALLY INCREASE DNA OXIDATION IN THE LUNG.** A. M. Hays and *R. Lantz*. Cell Biology & Anatomy, University of Arizona, Tucson, AZ.

#394 **FEMALE MICE TRANSGENIC FOR MITOCHONDRIAL-DIRECTED CATALASE HAVE ALTERED GLUTATHIONE REDOX CYCLE ENZYME ACTIVITIES COINCIDENT WITH TISSUE SPECIFIC CATALASE EXPRESSION.** *S. Shi*[1], M. B. Hendsch[1], C. E. Ogburn[2], P. S. Rabinovitch[2], G. M. Martin[2] and *T. Kavanagh*[1]. [1]Environmental Health, University of Washington, Seattle, WA and [2]Pathology, University of Washington, Seattle, WA.

#395 **LIPID PEROXIDATION IN FATHEAD MINNOW GILLS.** *E. G. Spokas*[1], J. M. Levine[1], B. W. Spur[1], H. Smith[1], J. D. Bogden[2], F. W. Kemp[2], W. Li[2] and G. M. Cohen[3]. [1]Cell Biology, UMDNJ-School of Osteopathic Medicine, Stratford, NJ, [2]Preventive Medicine and Community Health, UMDNJ-New Jersey Medical School, Newark, NJ and [3]Biological and Environmental Sciences, Troy State University, Troy, AL.

#396 **FREE RADICAL FORMATION IN THE RAT KIDNEY INDUCED BY CYCLOSPORIN A: PREVENTION BY DIETARY GLYCINE, RENAL DENERVATION, AND GREEN TEA POLYPHENOLS.** Z. Zhong[1], H. D. Connor[2], R. P. Mason[2], N. Moss[3], *J. J. Lemasters*[1] and *R. G. Thurman*[4]. [1]Cell and Developmental Biology, University of North Carolina, Chapel Hill, NC, [2]NIEHS, Research Triangle Park, NC, [3]Physiology, University of North Carolina, Chapel Hill, NC and [4]Pharmacology, University of North Carolina, Chapel Hill, NC.

#397 **EFFECTS OF ORAL EXPOSURE TO METHYL *TERTIARY*-BUTYL ETHER ON REACTIVE OXYGEN SPECIES IN SPECIFIC RAT BRAIN REGIONS.** L. Forrester, E. Oriaku and *M. R. Soliman*. College of Pharmacy, Florida A&M University, Tallahassee, FL.

#398 **DOXORUBICIN INHIBITS FERRYLMYOGLOBIN-DEPENDENT LIPID PEROXIDATION.** G. Minotti, P. Menna, E. Salvatorelli and R. Giampietro. Department of Drug Sciences, University of Chieti School of Medicine, Chieti, Italy. Sponsor: *S. Aust*.

#399 **OXYGEN TOXICITY: A METABOLIC DISEASE.** J. Li[1], X. S. Gao[2], M. W. Qian[2] and J. W. Eaton[2]. [1]Dept. of Pharmacology and Toxicology, University of Louisville, Louisville, KY and [2]Dept. of Medicine, University of Louisville, Louisville, KY. Sponsor: *D. Hein*.

MONDAY

Monday Afternoon, March 10
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: CARCINOGENICITY BIOASSAYS

Chairperson(s): *Anthony DeAngelo, U.S. EPA, Research Triangle Park, NC and David Jacobson-Kram, BioReliance, Rockville, MD.*

Displayed: *1:30 PM–4:30 PM*

Attended: *1:30 PM-3:00 PM*

#400 **COMPARISON OF COMPOUND CLASSIFICATIONS DETERMINED FROM STRUCTURAL ALERTS FOR RODENT CARCINOGENICITY EXTRACTED FROM DIFFERENT DATABASES.** M. A. Cheeseman[2], N. Collazo-Braier[2], *M. L. Twaroski*[2], J. Mayer[2], C. Yang[1], G. J. Myatt[1] and P. E. Blower[1]. [1]LeadScope, Inc., Columbus, OH and [2]CFSAN, U.S. FDA, Washington D.C., DC.

#401 **DEVELOPMENT OF A DATABASE FOR QUANTITATIVE MODELING OF AGE-RELATED CARCINOGENICITY STUDIES.** M. K. MacGregor, T. A. McDonald, R. Schlag, *R. Tomar*, S. Yaghoubie, C. D. Sherman, *M. S. Sandy* and *L. Zeise*. Office of Environmental Health Hazard Assessment, Cal/EPA, Oakland, CA.

#402 **DIET OPTIMIZATION AND BODY WEIGHT GROWTH RATE IN RATS - EFFECTS ON SURVIVAL, TUMOR INCIDENCE AND HISTOPATHOLOGY.** *C. Auletta*, H. F. Bolte and S. J. Gosselin. Huntingdon Life Sciences, Huntingdon, United Kingdom.

#403 **TOXICITY EVALUATION OF A LIPOSOME-BASED FORMULATION OF SN38 IN MICE.** A. Sarkar, N. Kamath, D. Carbonaro, S. Sheikh, A. Zhang, S. Ali and I. Ahmad. NeoPharm Inc., Waukegan, IL. Sponsor: *S. Khan*.

#404 **THE LACK OF CARCINOGENICITY IN A 26-WEEK INTRAVENOUS STUDY WITH S-303-TREATED MOUSE RED BLOOD CELLS IN C57BL/6TAC-TRP53TML HETEROZYGOTE MICE.** *V. Ciaravino*[1], *T. McCullough*[1], T. Sullivan[1] and J. Ivett[2]. [1]Cerus Corporation, Concord, CA and [2]Covance Laboratories, Inc., Vienna, VA.

#405 **THE FAILURE OF CHLOROFORM ADMINISTERED IN THE DRINKING WATER TO INDUCE RENAL CELL CANCER IN THE F344/N RAT.** *A. B. DeAngelo*, M. H. George, S. Kilburn and D. R. Geter. NHEERL, U.S. EPA, Research Triangle Park, NC.

#406 **EFFECTS OF BISPHENOL A, AN ENDOCRINE DISRUPTOR, ON HEPATOCARCINOGENESIS AND REPRODUCTIVE SYSTEM PARAMETERS IN A MEDIUM-TERM LIVER BIOASSAY.** T. Ichihara[1,2], N. Imai[1], S. Tamano[1], K. Imaida[3] and *T. Shirai*[2]. [1]Daiyu-Kai Institute of Medical Science, Ichinomiya, Japan, [2]Department of Exp. Pathol. and Tumor Biol., Nagoya City University, Nagoya, Japan and [3]Department of Onco-Pathol., Kagawa Med. University, Kita, Japan.

#407 **INACTIVITY OF 2-HYDROXYESTRADIOL, 4-HYDROXYESTRADIOL, ESTRIOL, AND 4-HYDROXYESTRONE AS MAMMARY CARCINOGENS IN THE ACI RAT.** *V. K. Turan*[1], *A. H. Conney*[1,2], J. J. Li[4], S. A. Li[4], *K. R. Reuhl*[1,3] and P. E. Thomas[1,2]. [1]Joint Grad Prog in Toxicology, Ernest Mario School of Pharmacy, Rutgers University, Piscataway, NJ, [2]Lab. for Cancer Res, Ernest Mario School of Pharmacy, Rutgers University, Piscataway, NJ, [3]Pharmacol and Toxicology, Ernest Mario School of Pharmacy, Rutgers University, Piscataway, NJ and [4]Kansas Cancer Inst, University of Kansas Medical Center, Kansas City, KS.

#408 **THE ARYL HYDROCARBON RECEPTOR (AHR) REGULATES PROSTATE TUMOR PROGRESSION IN THE TRAMP MOUSE.** *W. A. Fritz*, *T. Lin*, *R. W. Moore* and *R. E. Peterson*. School of Pharmacy, University of Wisconsin, Madison, WI.

#409 **TIME TO FATAL TUMOR IN P53 KNOCKOUT MICE.** A. O. Chiu[1], C. Chen[1], N. Chiu[2], *D. Singh*[1], J. Beaubier[3] and L. Donehower[4]. [1]NCEA, ORD, U.S. EPA, Washington DC, DC, [2]OST, ODW, U.S. EPA, Washington, DC, [3]OPPT, U.S. EPA, Washington, DC and [4]Depts Mol Virol & Microb Mol Cell Biol, Baylor College Med., Houston, TX.

#410 **26-WEEK VALIDATION STUDY OF THE Tg.rasH2 MOUSE TEST SYSTEM USING THREE CARCINOGENS.** *D. Jacobson-Kram*[1], *D. Gulezian*[2], *M. L. Wenk*[1], *L. L. Lanning*[3] and *G. B. Smith*[1]. [1]Mammalian Toxicology, BioReliance Corporation, Rockville, MD, [2]Transgenic Models and Services, Taconic, Germantown, NY and [3]Subcontracted Pathologist, Middletown, MD.

#411 **EVALUATION OF ALTERNATE DOSE METRICS FOR BENZO[A]PYRENE INHALATION CANCER POTENCY USING A NASAL-PBPK HAMSTER MODEL.** A. G. Salmon, J. P. Brown, J. F. Collins and *M. A. Marty*. Office of Environmental Health Hazard Assessment, Cal/EPA, Oakland, CA.

#412 **TOXIC AND CARCINOGENIC EFFECTS IN THE LUNGS OF RATS AND MICE EXPOSED TO VANADIUM PENTOXIDE BY WHOLE-BODY INHALATION.** *N. B. Ress*[1], J. H. Roycroft[1], J. R. Hailey[1], J. K. Haseman[1], B. J. Chou[2], *R. A. Renne*[2], J. A. Dill[2], R. A. Miller[2] and *J. R. Bucher*[1]. [1]NTP, NIEHS, Research Triangle Park, NC and [2]Battelle Toxicology Northwest, Richland, WA.

#413 **EXPRESSION OF MUTANT HUMAN KI-ras INDUCES LUNG TUMORS IN BITRANSGENIC MICE.** H. S. Floyd[1], J. W. Tichelaar[2], S. T. Dance[1], *J. Everitt*[4], J. A. Whitsett[3] and *M. S. Miller*[1]. [1]Wake Forest University, [2]University of Cincinnati, Cincinnati, OH, [3]Children's Hospital Research Foundation, Cincinnati, OH and [4]CIIT, Research Triange Park, NC.

#414 **TUMORIGENICITY IN A/J AND RASH2 MICE FOLLOWING MAINSTREAM TOBACCO SMOKE INHALATION.** *G. M. Curtin*, M. A. Higuchi, *P. H. Ayres*, *J. E. Swauger* and *A. T. Mosberg*. Regulatory Toxicology, R.J. Reynolds Tobacco Company, Winston-Salem , NC.

#415 **A 30-WEEK DERMAL TUMOR PROMOTION ASSAY USING SENCAR MICE FOR THE COMPARATIVE EVALUATION OF CIGARETTE SMOKE CONDENSATES.** D. R. Meckley, J. R. Hayes, *A. T. Mosberg* and *J. E. Swauger*. Regulatory Toxicology, RJ Reynolds Tobacco Company, Winston-Salem, NC.

#416 **COMPARATIVE 30-WEEK DERMAL TUMOR PROMOTION STUDY USING SENCAR MICE: COMPARISON OF CIGARETTE SMOKE CONDENSATE FROM A REFERENCE CIGARETTE CONTAINING DIRECT-FIRE FLUE-CURED TOBACCO AND A TEST CIGARETTE CONTAINING HEAT-EXCHANGE FLUE-CURED TOBACCO.** *J. R. Hayes*[1], *M. S. Stavanja*[1], D. R. Meckley[1], K. R. Van Kampen[2], P. R. Nelson[1], *P. H. Ayres*[1], *A. T. Mosberg*[1] and *J. E. Swauger*[1]. [1]R.J. Reynolds Tobacco Company, Winston-Salem, NC and [2]The Van Kampen Group, Inc., Hoover, AL.

#417 **TOXICOLOGICAL EVALUATION OF HONEY AS AN INGREDIENT ADDED TO CIGARETTE TOBACCO.** *M. S. Stavanja*, *P. H. Ayres*, D. R. Meckley, B. R. Bombick, M. F. Borgerding, M. J. Morton, *A. T. Mosberg* and *J. E. Swauger*. R.J. Reynolds Tobacco Company, Winston-Salem, NC.

#418 **DETERMINATION OF THE SKIN CANCER POTENTIAL OF BENZO(a)PYRENE (BaP) AND A PETROLEUM REFINERY STREAM IN K6/ODC MICE.** *M. A. Amoruso*[2], R. C. Forgash[2], S. K. Gilmour[1] and *J. J. Freeman*[2]. [1]Toxicology and Environmental Sciences Division, ExxonMobil Biomedical Sciences, Inc., Annandale, NJ and [2]Lankenau Medical Center, Wynnewood, PA.

#419 **EVALUATION OF 2, 4–D PHOTOCARCINOGENIC ACTIVITY IN K6/ODC TRANSGENIC MICE.** *Y. Chen*, J. Bastien and T. G. O'Brien. ODC Mouse Group, Drexel Hill, PA.

#420 **DERMAL EXPOSURE OF MALE AND FEMALE HEMIZYGOUS Tg.AC AND FVB/N MICE FOR 52 WEEKS TO N-NITROSODIETHYLAMINE (DEN).** *G. Moser*[1], A. Elmore[1], J. Spalding[2], M. Streicker[1], *T. Goldsworthy*[1] and R. Cannon[2]. [1]Integrated Laboratory Systems, Research Triangle Park, NC and [2]NIEHS, Research Triangle Park, NC.

#421 **COMPARISON OF THE Tg.AC AND SENCAR DERMAL CARCINOGENESIS TEST SYSTEMS IN RESPONSE TO TPA PROMOTION FOLLOWING DMBA INITIATION OR VEHICLE TREATMENT.** *M. L. Wenk*, *D. Jacobson-Kram* and *G. B. Smith*. Mammalian Toxicology, BioReliance Corporation, Rockville, MD.

#422 **VEHICULAR EFFECTS OF DIMETHYL SULFOXIDE (DMSO) ON DERMAL CARCINOGENESIS IN TETRADECONYL PHORBOL ACETATE (TPA)-TREATED HEMIZYGOUS Tg.AC TRANSGENIC MICE.** *G. B. Smith*[1], *C. M. Keenan*[2], *M. L. Wenk*[1] and *D. Jacobson-Kram*[1]. [1]Mammalian Toxicology, BioReliance Corporation, Rockville, MD and [2]Adolor Corporation, Malvern, PA.

Monday Afternoon, March 10
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: PESTICIDES

Chairperson(s): *Derek Gammon, CAL-EPA, Sacramento, CA and Brian Lake, BIBRA International Ltd., Carshalton, United Kingdom.*

Displayed: *1:30 PM–4:30 PM*

Attended: *3:00 PM-4:30 PM*

#423 **THE MULTIDRUG RESISTANCE-ASSOCIATED PROTEIN 1 (MRP1/ABCC1) PROTECTS THE TESTICULAR TUBULES AGAINST METHOXYCHLOR DAMAGE.** *L. Bain*[1], R. H. Bruner[2] and T. E. Tribull[3]. [1]Biological Sciences, University of Texas at El Paso, El Paso, TX, [2]Biotechnics, Inc., Cincinnati, OH and [3]Environmental Toxicology, Clemson University, Pendleton, SC.

#424 **CHILDREN'S EXPOSURE TO DEET AND OTHER TOPICALLY-APPLIED INSECTICIDES.** *A. E. Brown* and K. S. Menon. University of Maryland, College Park, MD.

#425 **HUMAN EXPOSURE TO FIPRONIL FROM DOGS TREATED WITH FRONTLINE.** *R. J. Keller*[1], B. H. Atieh[1], K. A. Jennings[2], T. D. Canerdy[2], R. B. Doss[3] and *R. C. Gupta*[3]. [1]Department of Occupational Safety and Health, Murray State University, Murray, KY, [2]Department of Agriculture, Murray State University, Murray, KY and [3]Toxicology Department, Breathitt Veterinary Center, Murray State University, Murray, KY.

#426 **DEVELOPMENT AND APPLICATION OF A MULTI-COMPARTMENT KINETIC MODEL FOR PREDICTING THE FATE OF PARATHION AND ITS METABOLITES IN HUMANS.** *M. Bouchard*[1], N. H. Gosselin[1], R. C. Brunet[2], M. Dumoulin[1] and *G. Carrier*[1]. [1]Environmental and Occupational Health, Université de Montréal, Montreal, QC, Canada and [2]Département de mathématiques et de statistique, Université de Montréal, Montreal, QC, Canada.

#427 **A TOXICOKINETIC MODEL FOR THE RISK ASSESSMENT OF WORKER EXPOSURE TO TRICLOPYR THROUGH MEASUREMENTS IN URINE SAMPLES.** N. H. Gosselin[1], A. Dosso[1], *M. Bouchard*[1], R. C. Brunet[2] and G. Carrier[1]. [1]Environmental and Occupational Health, Université de Montréal, Montreal, QC, Canada and [2]Département de mathématiques et de statistique, Université de Montréal, Montreal, QC, Canada.

#428 **CHARACTERIZATION OF ATRAZINE METABOLISM BY HUMAN GLUTATHIONE S-TRANSFERASES (GSTs).** *E. L. Abel*[1], S. M. Opp[1], C. L. Verlinde[2], *T. K. Bammler*[1] and *D. L. Eaton*[1]. [1]Env Health, University of Washington, Seattle, WA and [2]Biochemistry, University of Washington, Seattle, WA.

#429 **COMPELLING EVIDENCE THAT FOMESAFEN CAUSES MOUSE LIVER TUMORS BY A MECHANISM OF PPARα ACTIVATION THAT IS NOT RELEVANT TO HUMANS.** R. C. Peffer[1], G. J. Moffat[2], S. C. Lloyd[2] and *R. A. Roberts*[3]. [1]Syngenta Crop Protection, Inc., Greensboro, NC, [2]Syngenta Ltd., Macclesfield, United Kingdom and [3]Aventis Pharmaceuticals, Paris, France.

#430 **EFFECTS OF CHLORPYRIFOS AND METHYL PARATHION ON HEPATIC CYTOCHROME P450 IN NEONATAL RATS.** R. E. Kramer, K. E. Schneider and R. C. Baker. Pharmacology and Toxicology, University Mississippi Medical Center, Jackson, MS. Sponsor: *I. Ho*.

#431 **EXPOSURE TO A COMMERCIAL HERBICIDE MIXTURE CAUSES A DECREASE IN LITTER SIZE IN MICE.** *F. Cavieres*[1], W. P. Porter[2] and J. Jaeger[2]. [1]Faculty of Pharmacy, University of Valparaíso, Valparaíso, Chile and [2]Zoology, University of Wisconsin-Madison, Madison, WI.

#432 **EFFECT OF PYRETHRINS ON RAT HEPATIC XENOBIOTIC METABOLISING ENZYME ACTIVITIES.** *B. G. Lake*[1], A. B. Renwick[1], R. J. Price[1], *K. L. Gabriel*[2], J. M. Finch[3] and *T. G. Osimitz*[4]. [1]TNO BIBRA International Ltd., Carshalton, Surrey, United Kingdom, [2]Con Toxicology Ltd, Fort Washington, PA, [3]Inveresk Research, Tranent, Scotland, United Kingdom and [4]Infoscience Inc., Charlottesville, VA.

#433 **MECHANISTIC TOXICITY STUDY IN RATS WITH PYRETHRINS: PATHOLOGIC EFFECTS.** J. M. Finch[1], *T. G. Osimitz*[2], *K. L. Gabriel*[3], *W. H. Butler*[4] and W. Henderson[1]. [1]Inveresk Research, Tranent, Scotland, United Kingdom, [2]Infoscientific Inc., Charlottesville, VA, [3]ConTox Ltd, Fort Washington, PA and [4]Consultant, Bletchingley, Surrey, United Kingdom.

#434 **MECHANISTIC TOXICITY STUDY IN RATS WITH PYRETHRINS: EFFECTS ON THYROID HORMONES.** *T. G. Osimitz*[2], *K. L. Gabriel*[3], *C. C. Capen*[4], J. M. Finch[1] and T. Martin[1]. [1]Inveresk Research, Tranent, Scotland, United Kingdom, [2]Infoscientific Inc., Charlottesville, VA, [3]ConTox Ltd., Fort Washington, PA and [4]Ohio State University, Columbus, OH.

#435 **EFFECTS OF PYRETHROID COMPOUNDS ON ALKALINE PHOSPHATASE ACTIVITY IN ESTROGEN RECEPTOR POSITIVE HUMAN BREAST CANCER CELLS.** I. Kim[1]. [1]Endocrine Toxicology Division, National Institute of Toxicological Research, Korea FDA, Seoul, South Korea and [2]National Institute of Toxicological Research, Korea FDA, Seoul, South Korea. Sponsor: *I-J. Yu*.

#436 **IDENTIFYING TRIAZINE HERBICIDES ON EPA DRINKING WATER CONTAMINANT CANDIDATE LIST (CCL) FOR COMMON MECHANISM OF TOXICITY AND CUMULATIVE RISK ASSESSMENT.** *F. Adeshina*[1], *T. Mast*[2], N. Moore[2], *A. Mahfouz*[1], A. Protzel[1] and *H. Choudhury*[1]. [1]U.S. EPA, Washington, DC and [2]Battelle-Pacific , Richland, WA.

#437 **EFFECT OF CHLORPYRIFOS ON THE EXPRESSION AND FUNCTION OF AN EFFLUX MEMBRANE TRANSPORTER IN INTESTINAL CELLS.** S. Agarwala, W. Chen and T. J. Cook. Department of Pharmaceutics, Rutgers, The State University of New Jersey, Piscataway, NJ. Sponsor: *E. Weyand*.

#438 **EFFECT OF CYP SUBSTRATES ON THE METABOLISM OF CHLORPYRIFOS IN HUMAN LIVER MICROSOMES.** T. Mullarkey, P. Shah and T. J. Cook. Department of Pharmaceutics, Rutgers, The State University of New Jersey, Piscataway, NJ. Sponsor: *E. Weyand*.

#439 **ESTROGENIC ACTIVITIES OF PYRETHROID COMPOUNDS IN MCF-7 BUS CELLS.** S. Han. Endocrine Toxicology Division, National Institute of Toxicological Research, Korea FDA, Seoul, South Korea. Sponsor: *I-J. Yu*.

#440 **INTESTINAL METABOLISM OF ORGANOPHOSPHATE INSECTICIDES: POTENTIAL FIRST-PASS METABOLISM.** H. Wu, *C. Timchalk*, *A. Kousba* and *T. S. Poet*. Molecular Biosciences, Pacific Northwest National Laboratory, Richland, WA.

#441 **HPLC ANALYSIS OF VINCLOZOLIN AND ITS METABOLITES IN SERUM.** *A. Sierra-Santoyo*[1,2], *H. A. Barton*[1] and *M. F. Hughes*[1]. [1]ETD, NHEERL, ORD, U.S. EPA, Research Triangle Park, NC and [2]Toxicology Section, CINVESTAV-IPN, Mexico, D.F., Mexico.

#442 **CHLOROPYRIFOS OXON AND CARBARYL INHIBITION OF TRANS-PERMETHRIN HYDROLYSIS IN HUMAN LIVER FRACTIONS.** J. Choi, *R. Rose* and *E. Hodgson*. Environmental and Molecular Toxicology, North Carolina State University, Raleigh, NC.

Monday Afternoon, March 10
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: TOXICOGENOMICS AND PROTEOMICS I

Chairperson(s): *Bala Gollapudi, Dow Chemical Company, Midland, MI and Rajendar Sharma, Astra Zeneca Pharmaceuticals, Wilmington, DE.*

Displayed: *1:30 PM–4:30 PM*

Attended: *1:30 PM-3:00 PM*

#443 **DEFINING MULTIGENE DOSE-RESPONSE RELATIONSHIPS BY MICROARRAY ANALYSIS.** *K. M. Towndrow*, T. K. Baker, D. J. Cummins, M. W. Farmen, *C. E. Thomas* and *J. L. Stevens*. Lilly Research Laboratories, Eli Lilly and Company, Greenfield, IN.

#444 **GENOMIC AND PROTEOMIC PROFILING IN A PARKINSONIAN MODEL OF NEURODEGENERATION.** K. Sriram and *J. P. O'Callaghan*. Centers for Disease Control & Prevention (CDC)-NIOSH, Morgantown, WV.

#445 **DIFFERENTIAL TRANSCRIPTION FACTOR ACTIVATION AND GENE EXPRESSION PROFILES IN HUMAN VASCULAR ENDOTHELIAL CELLS ON EXPOSURE TO RESIDUAL OIL FLY ASH (ROFA) AND VANADIUM.** S. S. Nadadur and *D. L. Costa*. Pulmonary Toxicology, U.S. EPA, Research Triangle Park, NC.

#446 **COMPARATIVE STUDY OF DNA MICROARRAY DATA ANALYSIS: PRINCIPAL COMPONENT ANALYSIS VERSES FISHER LINEAR DISCRIMINANT ANALYSIS.** M. D. Stevenson[1], *V. Chan*[2], S. Gustafson[4], *N. Kelley-Loughnane*[3], B. Harker[1], D. Rudnicki[1], S. Hussain[2,4], C. Wang[2] and *J. Frazier*[1]. [1]Operational Toxicology Branch, U.S. Air Force, Wright-Patterson AFB, OH, [2]ManTech Environmental Technology, Inc., U.S. Air Force, Wright-Patterson AFB, OH, [3]Geo-Centers, Inc., U.S. Air Force, Wright-Patterson AFB, OH and [4]Air Force Institute of Technology, U.S. Air Force, Wright-Patterson AFB, OH.

#447 **A DYNAMIC GENETIC NETWORK MEDIATES DOSE-DEPENDENT OXIDATIVE STRESS RESPONSES.** *C. N. Giroux*, A. Weiss, J. DelProposto and S. Stapels. Center for Molecular Medicine and Genetics, Wayne State University, Detroit, MI.

#448 **EXAMINATION OF THE POTENTIAL AH RECEPTOR AGONISM OF PHA-X673 AND PHA-X680 USING DNA MICROARRAYS.** *K. L. Kolaja*[1], M. E. Elrick[1], J. A. Kramer[3], P. Worboys[2], *W. Solis*[4] and *E. G. Blomme*[1]. [1]Toxicology, Pharmacia, Skokie, IL, [2]Drug Metabolism, Pharmacia, Skokie, IL, [3]Toxicology, Pharmacia, St. Louis, MO and [4]Toxicology, Sugen, S. San Francisco, CA.

#449 **FROM "OMICS" TO INSIGHT: THE USE OF A NOVEL COMPUTATIONAL APPROACH TO STUDY GENE-GENE INTERACTIONS.** C. D. Johnson[1], Y. Balagurunathan[1], M. Tadesse[2], M. H. Falahatpisheh[1], E. R. Dougherty[1], *M. K. Walker*[3] and *K. S. Ramos*[1]. [1]Center for Environmental and Rural Health, Texas A&M University, College Station, TX, [2]Statistics, Texas A&M University, College Station, TX and [3]Toxicology, University of New Mexico, Albuquerque, NM.

#450 **DIFFERENTIAL EXPRESSION OF BRAIN PROTEINS IN THE DEVELOPING MICE EXPOSED TO METHYLMERCURY AND PCB CONGENERS THROUGH PERINATAL TRANSFER: A PROTEOMICS APPROACH.** *S. Lee*[1], J. T. Belisle[2] and *R. Yang*[1]. [1]Environmental and Radiological Health Sciences, Colorado State University, Fort Collins, CO and [2]Microbiology, Immunology, and Pathology, Colorado State University, Fort Collins, CO.

#451 **MICROARRAY ANALYSIS TO EXAMINE CHANGES IN EXPRESSION LEVEL OF GENES AS A FUNCTION OF TIME OF DAY IN FISCHER 344 RAT LIVER.** V. G. Desai[1,2], C. L. Moland[1,2], W. S. Branham[1,2], P. H. Duffy[2], R. R. Delongchamp[3], H. Fang[4], C. A. Peterson[5], M. L. Beggs[5] and J. C. Fuscoe[1,2]. [1]Center for Functional Genomics, NCTR, Jefferson, AR, [2]DGRT, NCTR, Jefferson, AR, [3]Division of Biometry, NCTR, Jefferson, AR, [4]ROW, NCTR, Jefferson, AR and [5]University of Arkansas for Medical Sciences, Little Rock, AR. Sponsor: *M. Moore*.

#452 **VARIATION IN GENE EXPRESSION PROFILES FOR 17-α ETHINYL ESTRADIOL IN THE FATHEAD MINNOW, *PIMEPHALES PROMELAS*.** A. Miracle[1], D. Lattier[1], B. Aronow[2], C. Tomlinson[3] and G. Toth[1]. [1]Molecular Ecology Research Branch, U.S. EPA - NERL, Cincinnati, OH, [2]Division of Developmental Biology and Pediatric Informati, Children's Hospital Research Foundation and University of Cincinnati, Cincinnati, OH and [3]Genomics and Microarray Laboratory, Department of Environmental Health, University of Cincinnati, Cincinnati, OH. Sponsor: *G. Reddy*.

#453 **IDENTIFICATION OF TRANSCRIPTOME FINGERPRINTS FOR THE DNA DAMAGING AGENTS BLEOMYCIN AND HYDROGEN PEROXIDE IN L5178Y MOUSE LYMPHOMA CELLS.** S. D. Seidel, H. L. Kan, *W. T. Stott*, M. R. Schisler and *B. B. Gollapudi*. The Dow Chemical Co., Midland, MI.

#454 **GENE ARRAY ANALYSIS OF THE VENTRAL PROSTATE IN RATS EXPOSED TO EITHER VINCLOZOLIN OR PROCYMIDONE.** M. B. Rosen, *V. S. Wilson*, J. E. Schmid and *L. E. Gray Jr*. ORD/NHEERL/RTD, U.S. EPA, Research Triangle Park, NC.

#455 **TOXICOGENOMIC EFFECTS OF LOW-LEVEL AS (III) EXPOSURE TO HUMAN KIDNEY CELLS.** X. Zheng[1], G. S. Watts[2], S. E. Vaught[2] and *A. Gandolfi*[1]. [1]Pharmacology/Toxicology, University of Arizona, Tucson, AZ and [2]Arizona Cancer Center, The University of Arizona Health Sciences Center, Tucson, AZ.

#456 **HYDRAZINE AFFETCS EXPRESSION OF LIPID TRANSPORT AND METABOLISM GENES IN C57BL/6J MOUSE LIVER.** *V. E. Richards*, B. Chau and *C. A. McQueen*. Department of Pharmacology and Toxicology, The University of Arizona, Tucson, AZ.

#457 **PROTEOMICS CHARACTERIZATION OF THE EFFECTS OF A KINASE INHIBITOR ON PROTEIN EXPRESSION IN RAT LIVER.** J. Leonard[1], E. Boitier[1], M. Courcol[1], *R. A. Roberts*[1], *Z. Jayyosi*[2], *P. Rao*[2], M. Duchesne[3], F. Parker[3] and J. Gautier[1]. [1]Drug Safety Evaluation, Aventis Pharmacology, Vitry-sur-Seine, France, [2]Drug Safety Evaluation, Aventis Pharmacology, Bridgewater, NJ and [3]Functional Genomics, Aventis Pharmacology, Vitry-sur-Seine, France.

#458 **GENOMIC ANALYSIS OF ALACHLOR-INDUCED ONCOGENESIS IN RAT OLFACTORY MUCOSA.** *M. Genter*, D. M. Burman, S. Vijaykumar[1], C. L. Ebert[2] and B. J. Aronow[2]. [1]Medicine, Columbia University, New York, NY and [2]Pediatrics/Developmental Biology, Children's Hospital, Cincinnati, OH.

#459 **GENOMIC AND IMMUNOFLUORESCENCE ANALYSIS OF INTERACTIVE GENE NETWORKS IN OXIDANT-INDUCED ATHEROGENESIS.** C. R. Partridge[1], E. S. Williams[1], *K. P. Lu*[1], S. Chao[2], C. D. Johnson[1], R. Barhoumi[1], G. A. Meininger[2], E. Wilson[2,1] and *K. S. Ramos*[2,1]. [1]Center for Environmental and Rural Health, Texas A&M University, College Station, TX and [2]Medical Physiology, Texas A&M University System Health Science Center, College Station, TX.

#460 **DETERMINATION OF E3 PROTEIN INTERACTIONS: CLUES TO CLAM TUMORIGENESIS?** K. E. Harring[1], M. L. Kelley[2] and *R. J. Van Beneden*[1]. [1]University of Maine, Orono, ME and [2]University of Texas, Austin, TX.

#461 **IDENTIFICATION OF RAT LIVER CYTOSOL PROTEIN TARGETS OF ACRYLONITRILE *IN VIVO* USING TWO-DIMENSIONAL GEL ELECTROPHORESIS AND MASS SPECTROMETRY.** C. Campian, F. W. Benz, *D. E. Nerland* and J. Cai. Pharmacology and Toxicology, University of Louisville, Louisville, KY.

#462 ***IN SILICO* IDENTIFICATION OF ESTROGEN RESPONSE ELEMENTS IN HUMAN AND MOUSE SEQUENCES.** Y. Sun[1,2,3], *K. C. Fertuck*[1,2,3] and *T. R. Zacharewski*[1,2,3]. [1]Biochemistry and Molecular Biology, Michigan State University, East Lansing, MI, [2], National Food Safety and Toxicology Center, Michigan State University, East Lansing, MI and [3]Institute for Environmental Toxicology, Michigan State University, East Lansing, MI.

#463 **RECIPROCAL REGULATION OF CYTOCHROME P450 3A1 AND P-GLYCOPROTEIN IN RAT LIVERS BY CARBON TETRACHLORIDE AND CHLOROFORM.** T. D. Nolan and *A. P. Li*. PHASE-1 Molecular Toxicology, Inc., Santa Fe, NM.

#464 **CHEMICAL DISRUPTION OF GLOBAL GENE EXPRESSION DURING NEPHROGENESIS: ROLE OF ARYL HYDROCARBON RECEPTOR.** M. H. Falahatpisheh[1], C. D. Johnson[1], M. G. Tadesse[2] and *K. S. Ramos*[1]. [1]Center for Environmental and Rural Health, Texas A&M University, College Station, TX and [2]Statistics, Texas A&M University, College Station, TX.

#465 **DIFFERENTIAL MODULATION OF HEPATIC CASPASE GENE EXPRESSION BY TAMOXIFEN AND ESTRADIOL IN SPRAGUE-DAWLEY RATS.** U. Sankar and *A. P. Li*. PHASE-1 Molecular Toxicology Inc., Santa Fe, NM.

#466 **USE OF A TOXICOGENOMIC APPROACH AS A POTENTIAL MEANS TO INVESTIGATE IDIOSYNCRATIC HEPATOTOXICITY OF QUINOLONES AND THIAZOLIDINEDIONE COMPOUNDS.** M. J. Liguori[1], M. Heindel[1], R. Ciurlionis[1], C. Caccamo[1], B. Spear[1], S. Bukofzer[1], *C. Nduaka*[1], J. Retief[2] and J. F. Waring[1]. [1]Molecular Toxicology, Abbott Laboratories, Abbott Park, IL and [2]Affymetrix, Santa Clara, CA.

#467 **MICROARRAY ANALYSIS OF ADIPOGENESIS: USING TCDD AS A TOOL TO DETERMINE GENE CHANGES CRITICAL FOR DIFFERENTIATION.** *P. Hanlon*[2] and *C. R. Jefcoate*[2]. [1]University of Wisconsin, Madison, WI and [2]Molecular and Environmental Toxicology Center, University of Wisconsin, Madison, WI.

#468 **INVESTIGATION OF DNA REPAIR AND CELL CYCLE ARREST FOLLOWING AFLATOXIN B_1 TREATMENT IN YEAST EXPRESSING HUMAN CYTOCHROME P450 1A2.** *Y. Guo*[1,2], L. Jing[2], H. Xie[2], J. Sidorova[2], L. L. Breeden[2,1], *H. Zarbl*[2,1] and *D. L. Eaton*[1,2]. [1]Env Health, University of Washington, Seattle, WA and [2]Fred Hutchinson Cancer Research Center, Seattle, WA.

#469 **IMPACT OF THE PEROXISOME PROLIFERATOR CLOFIBRIC ACID ON CELLULAR STRUCTURE AND TRANSCRIPT PROFILE IN MOUSE LIVER UPON 1-WEEK IN FEED TREATMENT.** F. Staedtler[1], E. Persohn[1], M. Court[1], L. Meister[1], J. D. Retief[2], D. Finkelstein[2], P. Grass[1] and S. Chibout[1]. [1]Preclinical Safety, Novartis Pharmacology AG, Basel, Switzerland , Switzerland and [2]Affymetrix, Inc., Santa Clara, CA. Sponsor: *V. Nogues*.

#470 **CARCINOGENICITY PREDICTION BY PROTEOME ANALYSIS: 2D-DIGE-BASED EXPRESSION MONITORING.** H. Yamanaka, Y. Onuki, R. F. Whittier, T. Ohira, K. Watanabe and Y. Shinohara. R&D, Amersham Biosciences, Tokyo, Japan. Sponsor: *H. Yamanaka*.

#471 **THE EFFECTS OF POOLING RNA SAMPLES IN A DNA MICRO ARRAY TOXICOGENOMICS STUDY WITH CLOFIBRIC ACID IN MICE.** D. Finkelstein[1], J. D. Retief[1], P. Grass[2] and F. Staedtler[2]. [1]Affymetrix, Inc., Santa Clara, CA and [2]Preclinical Safety, Novartis Pharmacology AG, Basel, Switzerland , Switzerland. Sponsor: *V. Nogues*.

#472 **BACKGROUND AND CHEMICALLY INDUCED VARIATION IN CDNA MICROARRAY PROFILES: EVALUATION OF THE INFLUENCE OF RAT STRAIN AND DIET.** L. Kan[1], B. R. Sparrow[2], L. Gued[1], B. B. Gollapudi[1] and *W. T. Stott*[1]. [1]TERC, Dow Chemical Company, Midland, MI and [2]Battelle, Columbus, OH.

#473 **SIMULTANEOUS MULTIPLEXED TOXICOGENOMIC AND TOXICOPROTEOMIC PROFILING.** S. Singh, *D. Tabor*, T. Tian, L. Chen, L. Cao, S. Williams, T. Matray, A. Chenna and Y. Tan. ACLARA BioSciences, Mountain View, CA.

#474 **DATA INTEGRATION IN THE NEW ERA OF TOXICOGENOMICS.** B. Lu and *M. P. Lawton*. Molecular and Investigative Toxicology, Pfizer, Inc., Groton, CT.

Monday Afternoon, March 10
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: GENETIC POLYMORPHISM IN TOXICITY AND METABOLISM

Chairperson(s): *Kulbir Bakshi, National Academy of Sciences, Washington, DC.*

Displayed: *1:30 PM–4:30 PM*

Attended: *3:00 PM-4:30 PM*

#475 **THE ACUTE EFFECT OF ETHANOL ON CNS AND ITS DEPENDENCE ON ALDH2 POLYMORPHISM MEASURED BY THE SIMPLE LIGHT REACTION TIME USING ELECTROMYOGRAM.** *Y. Ogawa* and *R. Yoshida*. Work Stress Control, National Institute of Industrial Health, Kawasaki, Kanagawa, Japan.

#476 **HEPATOTOXICITY BY ACUTE ETHANOL INTAKE IN *ALDH2* GENE TARGETING MOUSE.** A. Matsumoto[1], K. Kitagawa[2], T. Isse[1], N. Kunugita[3], T. Oyama[1], K. Tomokuni[4] and *T. Kawamoto*[1]. [1]Environmental Health, University of Occupational and Environmental Health, Kitakyusyu, Fukuoka, Japan, [2]1st Department of Biochemistry, Hamamatsu University School of Medicine, Hamamatsu, Shizuoka, Japan, [3]School of Health Science, University of Occupational and Environmental Health, Kitakyusyu, Fukuoka, Japan and [4]Department of Environmental Medicine, Saga Medical School, Saga, Japan.

#477 **INFLUENCE OF METABOLIC GENOTYPES ON CHROMOSOME ABERRATIONS IN BUTADIENE EXPOSED WORKERS.** M. Warholm[1], A. Rannug[1], S. Fustinoni[2], P. Begemann[3], L. Soleo[4], R. Barale[5], H. Järventaus[6] and H. Norppa[6]. [1]Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Stockholm, Sweden, [2]Instituti Clinici di Perfezionamento, Milano, Italy, [3]University of North Carolina, Chapel Hill, NC, [4]University of Bari, Bari, Italy, [5]University of Pisa, Pisa, Italy and [6]Finnish Institute of Occupational Health, Helsinki, Finland. Sponsor: *G. Johanson*.

#478 **EXPLORATION OF ALTERNATIVE SPLICING OF MONOAMINE OXIDASE-B TRANSCRIPTS BY THE INTRON 13 POLYMORPHISM.** S. Kelada, P. Costa-Mallen, H. Checkoway and *L. G. Costa*. University of Washington, Seattle, WA.

#479 **GENETIC SUSCEPTIBILITY TO ASBESTOS-RELATED DISEASES.** E. A. Putnam[1], A. Groves[1], K. Wallis[1], J. Caruso[2] and M. A. Pershouse[1]. [1]Pharmaceutical Sciences, University of Montana, Missoula, MT and [2]Psychology, University of Montana, Missoula, MT. Sponsor: *A. Holian*.

#480 **GLUTAMATE CYSTEINE LIGASE CATALYTIC SUBUNIT TRINUCLEOTIDE REPEAT POLYMORPHISM AND TYPE I DIABETES.** *L. M. Bekris*, C. Shephard, M. Zarghami, F. Farin, W. Griffith, *T. Kavanagh* and A. Lernmark. Environmental Health, University of Washington, Seattle, WA.

#481 **MUTATION SCANNING OF THE COMPLETE FLAVIN-CONTAINING MONOOXYGENASE GENE FAMILY IN AFRICAN-AMERICANS.** B. Furnes[1], S. Sommer[2], J. Feng[2] and *D. Schlenk*[1]. [1]Department of Environmental Sciences, University of California, Riverside, Riverside, CA and [2]Department of Molecular Genetics, City of Hope National Medical Center, Duarte, CA.

#482 **HIGH ACETALDEHYDE LEVELS AFTER ETHANOL GAVAGES IN ALDEHYDE DEHYDROGENASE 2 (*ALDH2*) GENE TARGETING MICE.** T. Isse[1], K. Kitagawa[2], K. Matsuno[3], A. Matsumoto[1], T. Oyama[1], A. Yoshida[4] and *T. Kawamoto*[1]. [1]Environmental Health, University of Occupational and Environmental Health, Kitakyushu, Fukuoka, Japan, [2]First Department of Biochemistry, School of Medicine, Hamamatsu Medical University and Environmental Health, Shizuoka, Japan, [3]Research Center for Common Use, University of Occupational and Environmental Health, Kitakyushu, Fukuoka, Japan and [4]Beckman Research Institute of the City of Hope, Duarte, CA.

#483 **DIFFERENTIAL RESPONSE OF HUMAN CELL LINES TO ARSENIC: EVALUATION OF CANDIDATE GENES.** Y. He, H. R. Craven, D. K. Barnes and D. A. Bell. National Institute of Environmental Health Sciences, Research Triangle Park, NC. Sponsor: *C. Portier*.

#484 **GENOTYPING WITH TAQMAMA.** B. Li, I. Kadura and D. E. Watson. Eli Lilly and Company , Greenfield, IN. Sponsor: *C. Thomas*.

#485 **NEW POLYMORPHISMS IN THE HUMAN PARAOXONASE (PON1) GENE.** C. E. Furlong[1,2], M. J. Rieder[2], C. S. Carlson[2], D. A. Nickerson[2], R. L. Jampsa[1,2], *L. G. Costa*[3] and G. P. Jarvik[1]. [1]Medicine/Medical Genetics, University of Washington, Seattle, WA, [2]Genome Sciences, University of Washington, Seattle, WA and [3]Environmental Health, University of Washington, Seattle, WA.

#486 **CONTRIBUTION OF PARAOXONASE (PON1) LEVELS AND Q192R GENOTYPE TO ORGANOPHOSPHATE DETOXICATION: EVIDENCE FROM HUMANS AND "HUMANIZED" TRANSGENIC MICE.** T. B. Cole[1,2], B. J. Walter[1], *L. G. Costa*[1], R. J. Richter[2,3], C. Pettan-Brewer[2], D. M. Shih[4], A. Tward[4], A. J. Lusis[4] and C. E. Furlong[2,3]. [1]Environmental Health, University of Washington, Seattle, WA, [2]Medicine/Medical Genetics, University of Washington, Seattle, WA, [3]Genome Sciences, University of Washington, Seattle, WA and [4]Microbiology/Molecular Genetics, UCLA, Los Angeles, CA.

#487 **THE MODIFICATION OF CYSTIC FIBROSIS LUNG DISEASE BY A POLYMORPHISM IN A GLUTAMATE CYSTEINE LIGASE GENE.** J. Shao[1], E. F. Mckone[2], C. L. Keener[1], C. A. Shephard[1], F. M. Farin[1], M. L. Aitken[2] and *T. J. Kavanagh*[1]. [1]Environmental Health, University of Washington, Seattle, WA and [2]Division of Pulmonary and Critical Care Medicine, University of Washington, Seattle, WA.

Monday Afternoon, March 10
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: IMMUNOTOXICOLOGICAL METHODS/METHOD VALIDATION

Chairperson(s): *Michael Lynes, University of Connecticut, Storrs, CT and Peter Ulrich, Novartis Pharma AG, Basel, Switzerland.*

Displayed: *1:30 PM–4:30 PM*

Attended: *1:30 PM-3:00 PM*

#488 **CLASSIFICATION OF SKIN SENSITISATION POTENCY USING THE LOCAL LYMPH NODE ASSAY.** *D. A. Basketter*[1], N. Gilmour[1], *R. J. Dearman*[2], *I. Kimber*[2], *C. A. Ryan*[3] and *F. Gerberick*[3]. [1]SEAC, Unilever, Sharnbrook, Bedfordshire, United Kingdom, [2]Syngenta CTL, Alderley Park, Macclesfield, Cheshire, United Kingdom and [3]Human and Environmental Safety Division, Procter & Gamble, Cincinnati, OH.

#489 **CURRENT REGULATORY STATUS OF THE LOCAL LYMPH NODE ASSAY.** N. Gilmour[1], *D. A. Basketter*[1], *C. Ryan*[2], *F. Gerberick*[2], *R. Dearman*[3] and *I. Kimber*[3]. [1]SEAC, Unilever, Sharnbrook, Bedfordshire, United Kingdom, [2]Human and Environmental Safety Division, Procter & Gamble, Cincinnati, OH and [3]Central Toxicology Laboratory, Syngenta, Macclesfield, Cheshire, United Kingdom.

#490 **THE MOUSE LOCAL LYMPH NODE ASSAY: COMPARISON OF CELLULAR PROLIFERATION RESPONSE (CPR) USING VARIOUS VEHICLES.** *E. L. Blanchard*, L. A. Waterson and A. D. Bull. Huntingdon Life Sciences, Huntingdon, Cambridgeshire, United Kingdom.

#491 **AN EUROPEAN INTER-LABORATORY VALIDATION OF ALTERNATIVE ENDPOINTS OF THE MURINE LLNA.** J. Huesler[9], H. Vohr[2], T. Maurer[10], *P. Ulrich*[1], G. Ehling[3], M. Hecht[4], C. Wiemann[5], B. Griffon[6], H. van Loveren[8], L. Ullmann[7] and A. Heusener[11]. [1]Novartis Pharmacology AG, Basel, Basel, Switzerland, [2]Bayer AG, Wuppertal, Germany, [3]Aventis Pharmacology AG, Frankfurt, Germany, [4]ITA Fraunhofer Institute, Hannover, Germany, [5]BASF AG, Ludwigshafen, Germany, [6]CIT, Evreux, [7]RIVM, Utrecht, Netherlands, [8]University of Bern, Bern, Switzerland, [9]RCC, Fullingsdorf, Switzerland, [10]Swiss Agency for Therapeutic Products, Bern and [11]Merck, Darmstadt, Germany.

#492 **INTEGRATION OF PRIMARY IRRITATION WITH THE LLNA.** P. K. Anderson, *M. R. Woolhiser*, J. M. Rase and *M. P. Holsapple*. Toxicology & Environmental Research and Consulting, The Dow Chemical Company, Midland, MI.

#493 **DEVELOPMENT OF THE LOCAL LYMPH NODE ASSAY IN NON-HUMAN PRIMATES.** M. G. Wing, D. F. Lanham, E. L. Hunter, J. M. Bidgood and D. Spencer-Briggs. Huntingdon Life Sciences, Huntingdon, Cambridgeshire, United Kingdom. Sponsor: *C. Atterwill*.

#494 **INTER-RELATIONSHIPS BETWEEN DIFFERENT CLASSES OF CHEMICAL ALLERGENS.** R. W. Crevel[2], R. J. Dearman[1], *D. A. Basketter*[2] and *I. Kimber*[2]. [1]SEAC Unilever Colworth Laboratory, Sharnbrook, United Kingdom and [2]Syngenta CTL, Macclesfield, Cheshire, United Kingdom.

#495 **A HAZARD IDENTIFICATION MODEL FOR PROTEIN ALLERGENICITY: A MOUSE STRAIN COMPARISON.** *M. R. Woolhiser*, J. M. Rase, P. K. Anderson and *M. P. Holsapple*. Toxicology & Environmental Research and Consulting, The Dow Chemical Company, Midland, MI.

#496 **IMMUNOHISTOCHEMICAL ANALYSIS OF LOCAL LYMPH NODE ASSAY IN BALB/C MICE USING BROMDEOXYURIDINE.** J. Lee[1], J. Park[1], H. Kim[1], S. Chung[1], J. Eom[1], S. Park[1], *Y. Heo*[2] and H. Oh[1]. [1]Division of Immunotoxicology, National Institute of Toxicological Research, KFDA, Seoul, South Korea and [2]College of Natural Sciences, Daegu Catholic University, Daegu, South Korea.

#497 **DEVELOPMENT OF A NOVEL ANAPHYLAXIS MODEL IN MICE BY INTERMITTENT INTRAVENOUS INJECTIONS OF OVALBUMIN WITHOUT USE OF ADJUVANT.** H. Hattori, M. Miyamoto, T. Aoki, M. Kato and *K. Furuhama*. Drug Safety Research Laboratory, Daiichi Pharmaceutical Co., Ltd., Tokyo, Japan.

#498 **A 4-WEEK IMMUNOTOXICITY STUDY IN RATS TO VALIDATE IMMUNOLOGICAL ENDPOINTS.** G. Paul, D. Roman, E. Perentes, N. Runser, J. Streich, R. Schaffner and *P. Ulrich*. Novartis Pharmacology AG, Basel, Basel, Switzerland.

#499 **IMMUNOTOXICOLOGICAL ASSAYS: MEASURING AND REDUCING THE VARIABILITY.** G. F. Healey, R. J. Brammer and M. G. Wing. Huntingdon Life Sciences, Huntingdon, Cambridgeshire, United Kingdom. Sponsor: *C. Atterwill*.

#500 **COMPARATIVE STUDY OF THE IMMUNOTOXIC ACTIONS OF CYCLOSPORIN A, DEXAMETHASONE AND FUROSEMIDE IN THE RAT.** *R. Forster*, C. Mimouni, B. Griffon, J. Pavard and M. Attia. CIT, Evreux, France.

#501 **EVALUATION OF PRIMARY ANTIBODY RESPONSE TO KEYHOLE LIMPET HEMOCYANIN IN SPRAGUE-DAWLEY RATS.** J. R. Piccotti[1], J. D. Alvey[1], C. Y. Malinczak[1], L. A. Belisle[1], *T. T. Kawabata*[2] and *M. R. Bleavins*[1]. [1]Drug Safety Evaluation, Pfizer Global Research & Development, Ann Arbor, MI and [2]Drug Safety Evaluation, Pfizer Global Research & Development, Groton, CT.

#502 **DEVELOPMENT AND VALIDATION OF AN ASSAY TO EVALUATE THE CANINE T-DEPENDENT ANTIBODY RESPONSE.** D. Finco-Kent and *T. T. Kawabata*. DSE/MIT, Pfizer, Groton, CT.

#503 **VALIDATION OF AN ELISA PROCEDURE WITH NITROPHENYL-CHICKEN GAMMA GLOBULIN (NP-CγG) AND KEYHOLE LIMPET HEMOCYANIN (KLH) AS ANTIGENS FOR TESTING HUMORAL IMMUNOTOXICITY.** H. W. Smith, C. J. Winstead, B. W. Halstead and *D. Wierda*. Investigational Toxicology, Eli Lilly and Company, Greenfield, IN.

#504 **CHARACTERIZATION OF KEYHOLE LIMPET HEMOCYANIN (KLH) AS AN ALTERNATIVE T-DEPENDENT ANTIGEN FOR ELISA IMMUNOTOXICOLOGICAL EVALUATIONS IN MICE.** J. A. Shea, V. L. Peachee and *K. L. White*. Medical College of Virginia, Richmond, VA.

#505 **VALIDATION METHOD FOR THE DETECTION OF ANTI KEYHOLE LIMPET HEMOCYANIN ANTIBODIES IN SPRAGUE-DAWLEY RAT SERUM BY ELISA.** N. Rouleau, J. Jean-Baptiste, G. Desilets, R. Riffon and L. LeSauteur. Immunology Laboratories, CTBR, Senneville, QC, Canada. Sponsor: *D. Jones*.

#506 **VALIDATION METHOD FOR THE DETECTION OF ANTI-KEYHOLE LIMPET HEMOCYANIN ANTIBODIES IN CYNOMOLGUS MONKEY SERUM BY ENZYME LINKED IMMUNOSORBENT ASSAY (ELISA).** G. Desilets, N. Rouleau, J. Jean-Baptiste, R. Riffon and L. LeSauteur. Immunology Laboratories, CTBR, Senneville, QC, Canada. Sponsor: *D. Jones*.

#507 **INTERLABORATORY STUDY OF THE PRIMARY ANTIBODY RESPONSE TO SHEEP RED BLOOD CELLS IN OUTBRED RODENTS FOLLOWING EXPOSURE TO DEXAMETHASONE.** *S. E. Loveless*[1], *G. S. Ladics*[1], C. Smith[1], *M. P. Holsapple*[2], *M. R. Woolhiser*[2], P. K. Anderson[2], *K. L. White*[3], D. L. Musgrove[3], *R. J. Smialowicz*[4] and W. C. Williams[4]. [1]DuPont Haskell Lab., Newark, DE, [2]Dow Chemical Co, Midland, MI, [3]Virginia Commonwealth University, Richmond, VA and [4]U.S. EPA, ORD, NHEERL, Research Triangle Park, NC.

#508 **QUANTITATION OF ANTI-SHEEP RED BLOOD CELL (SRBC) MEMBRANE-SPECIFIC IGM: A NOVEL METHOD USING ABSORPTION OF SPECIFIC ANTIBODY.** D. B. Walker, T. E. Morey and J. R. Sibley. Clinical Pathology, Wyeth Research , Chazy, NY. Sponsor: *S-N. Marina*.

#509 **AUTOMATED MEASUREMENT OF LEUKOCYTE MIGRATION IN NORMAL AND OXIDATIVE ENVIRONMENTS.** N. Hadjout, X. Yin, D. A. Knecht and *M. A. Lynes*. Molecular and Cell Biology, University of Connecticut, Storrs, CT.

#510 **COMPARISON OF THE PHAGOCYTIC ACTIVITY IN RATS AND MONKEYS USING TWO COMMERCIAL KITS.** C. Cretinon[1], F. Condevaux[1], F. Horand[1] and *J. G. Descotes*[2]. [1]MDS Pharmacology Services, l'Arbresle, France and [2]Poison Center, E.Herriot Hospital, Lyon, France.

#511 **INTERLABORATORY STANDARDIZATION OF FLOW CYTOMETRY DATA ACQUISITION PRACTICES.** W. J. Komocsar, A. R. Cohen, J. E. Heward, C. W. Johnson, K. L. Kowalkowski, M. Mameli, D. Moneta, S. Zhao and *S. M. Furst*. Global Toxicology, Pharmacia, Skokie, IL.

Monday Afternoon, March 10
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: SIGNAL TRANSDUCTION

Chairperson(s): *Ying Xia, University of Cincinnati, Cincinnati, OH and Herbert Wiegand, Heinrich-Heine University, Düsseldorf, Germany.*

Displayed: *1:30 PM–4:30 PM*

Attended: *3:00 PM-4:30 PM*

#512 **SEX DIFFERENCE IN THE RESPONSE OF MOUSE LIVER TO CAR-MEDIATED INDUCTION OF CYP2B10 AND HEPATOCYTE PROLIFERATION.** G. M. Ledda-Columbano, M. Pibiri, F. Molotzu, D. Concas, G. Simbula, C. Cossu and *A. Columbano*. Toxicology, University, Cagliari, Sardinia, Italy.

#513 **ALTERATIONS IN AIRWAY INTRACELLULAR SIGNALING PATHWAYS FOLLOWING AIR POLLUTION PARTICLE (PM) EXPOSURE USING LASER CAPTURE MICRODISSECTION AND PROTEIN ARRAY TECHNOLOGIES.** E. S. Roberts[1], L. Charboneau[2], L. Liotta[2], E. Petricoin[3] and *K. L. Dreher*[4]. [1]College of Veterinary Medicine NC State University, Raleigh, NC, [2]National Institutes of Health, Bethesda, MD, [3]CBER, U.S. FDA, Rockville, MD and [4]NHEERL, U.S. EPA, Research Triangle Park, NC.

#514 **INSULIN-LIKE GROWTH FACTOR 1 - ESTROGEN RECEPTOR α CROSSTALK IN MCF 7 BREAST CANCER CELLS.** S. Zhang and *S. Safe*. Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

#515 **ROLE OF DIOXIN-INDUCED MAP KINASE SIGNALING IN ARYL HYDROCARBON RECEPTOR PHOSPHORYLATION.** Z. Tan, *A. Puga* and *Y. Xia*. Center for Environmental Genetics and Department of Environmental Health, University of Cincinnati Medical Center, Cincinnati, OH.

#516 **REGULATION OF HIF TRANSACTIVATION AND CAP43 EXPRESSION BY NICKEL COMPOUNDS THROUGH PI-3K/AKT-DEPENDENT, P70S6K-INDEPENDENT PATHWAY.** G. Davidson, J. Li, Y. Huang, *M. Costa* and C. Huang. Environmental Medicine, New York University School of Medicine , Tuxedo Park, NY.

#517 **INTERFERENCE OF POLYCHLORINATED BIPHENYLS WITH G-PROTEIN-COUPLED ATP-RECEPTOR SIGNAL TRANSDUCTION IN HUMAN MACROPHAGES.** *H. Wiegand*. Med. Inst. Environm. Hygiene, Duesseldorf, NRW, Germany.

#518 **DOWN REGULATION OF EGFR/MAPK SIGNALING IN THIOACETAMIDE TREATED DIABETIC RATS.** *S. S. Devi*, *M. C. Korrapati* and *H. M. Mehendale*. Toxicology, The University of Louisiana at Monroe, Monroe, LA.

#519 **LACTOFERRIN MODULATES IMMUNE RESPONSE THROUGH THE ACTIVATION OF MITOGEN-ACTIVATED PROTEIN KINASE IN RAW 264.7 CELLS.** Y. Na[1], S. Han[2], J. Kang[1], H. Kim[2] and *K. Yang*[1]. [1]Biological Sciences, KAIST, Daejeon, South Korea and [2]KRIBB, Daejeon, South Korea.

#520 **THE ROLE OF PHOSPHATIDYLCHOLINE PLC IN THE INHIBITION OF GAP JUNCTION COMMUNICATION, ACTIVATION OF MAPK, AND THE RELEASE OF ARACHIDONIC ACID BY SPECIFIC ISOMERS OF METHYLATED ANTHRACENES.** *B. L. Upham*[1], P. K. Tithof[2] and *J. E. Trosko*[1]. [1]Pediatrics &Human Development, Michigan State University, East Lansing, MI and [2]Department of Animal Science, University of Tennessee, Knoxville, TN.

#521 **HORMONAL REGULATION OF LACTATE DEHYDROGENASE-A IN BREAST CANCER CELLS IS DEPENDENT ON ACTIVATION OF PROTEIN KINASE C.** X. Li and *S. Safe*. Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

#522 **A POSSIBLE ROLE FOR ARSENIC AS A MEDIATOR FOR CARDIAC HYPERTROPHY.** Z. E. Derbyshire, U. M. Halfter and *R. R. Vaillancourt*. Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

#523 **MECHANISMS FOR SELECTIVE ACTIVATION OF SRC FAMILY KINASES AND JNK BY LOW LEVELS OF CHROMIUM(VI).** *K. A. O'Hara*, L. R. Klei and *A. Barchowsky*. Pharmacology and Toxicology, Dartmouth Medical School, Hanover, NH.

#524 **ROLE OF THE SERINE/THREONINE KINASE MEKK4 IN CYCLOOXYGENASE II REGULATION IN HUMAN KERATINOCYTES.** U. M. Halfter, Z. E. Derbyshire and *R. R. Vaillancourt*. Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

#525 ***IN VIVO* DETECTIONS OF MULTIPLEX PHOSPHOPROTEINS AND CYTOKINES WITH BIO-PLEX PROTEIN ARRAY SYSTEM.** *A. Zhang*, K. Simonyi, Q. Gao, C. Suen, M. Malit and I. Huang. Life Science Group, Bio-Rad Laboratories, Hercules, CA.

#526 **AH RECEPTOR-MEDIATED TRANSCRIPTIONAL SUPPRESSION OF INTERLEUKIN-6.** M. Chen, S. Ke, T. Sheng and Y. Tian. Vet. Physiology and Pharmacology, Texas A&M University, College Station, TX. Sponsor: *M. Gallo*.

Monday Afternoon, March 10
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: CYTOCHROME P450 REGULATION BY XENOBIOTICS

Chairperson(s): *Martin Ronis, University of Arkansas Medical Sciences, Little Rock, AR and Xinxin Ding, New York State Department of Health, Albany, NY.*

Displayed: *1:30 PM–4:30 PM*

Attended: *1:30 PM-3:00 PM*

#527 **EFFECTS OF ESTROUS CYCLE AND SOY ON CYTOCHROME P450 1B1 (CYP1B1) PROTEIN EXPRESSION IN FEMALE RAT ADRENAL GLANDS.** *X. Fu*[1], B. Blaydes[1], *D. W. Roberts*[1], C. Weis[1], *J. R. Latendresse*[2], L. Muskhelishvili[2], *T. R. Sutter*[3] and *B. Delclos*[1]. [1]Biochemical toxicology, National Center for Toxicological Research, Jefferson, AR, [2]Pathology Associates International, Jefferson, AR and [3]University of Memphis, Memphis, TN.

#528 **ORGAN SPECIFIC INDUCTION OF CYP1A1 AND 1B1 BY CARCINOGENIC POLYCYCLIC AROMATIC HYDROCARBONS IN ENGINEERED C57BL/6J MICE OF ARYLHYDROCARBON RECEPTOR GENE.** T. Shimada, T. Nakajima, E. Azuma, M. Hashimoto and K. Inoue. Pharmacology, Osaka Prefectural Institute of Public Health, Osaka, Japan. Sponsor: *F. Guengerich*.

#529 **DEVELOPMENT OF AN *IN VITRO* MODEL SYSTEM TO EVALUATE SWITCH-LIKE BEHAVIORS OF HEPATOCYTES IN RESPONSE TO ENZYME INDUCERS.** *C. T. French*, L. S. Chubb, *R. E. Billings*, *W. H. Hanneman* and *M. E. Andersen*. CIIT, Research Triangle Park, NC.

#530 **REGIONAL INDUCTION OF CYP1A1 PROTEIN AND MESSAGE IN RAT LIVER DURING TREATMENT WITH MIXTURES OF PCB126 AND PCB153.** L. Chubb[1], S. A. Benjamin[1], J. T. Painter[1], C. E. Dean, Jr[1], *C. T. French*[1] and *M. E. Andersen*[2]. [1]College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins, CO and [2]CIIT, Research Triangle Park, NC.

#531 **ANALYSIS OF TCDD-MEDIATED INDUCTION OF *CYP1A1* IN IKKβ$^{+/+}$ AND IKKβ$^{+/-}$ MICE.** D. E. Machemer[1], A. Galijatovic[1], D. J. Beaton[1], Z. Li[1], M. Karin[1] and *R. H. Tukey*[1,2]. [1]Department of Pharmacology, University of California San Diego, La Jolla, CA and [2]Department of Chemistry & Biochemistry, University of California San Diego, La Jolla, CA.

#532 **DEVELOPMENT OF A HUMAN *CYP1A1*-LUCIFERASE TRANSGENIC MOUSE MODEL.** A. Galijatovic[1], D. Beaton[1], R. Johnson[2] and *R. H. Tukey*[1,3]. [1]Department of Pharmacology, University of California, San Diego, La Jolla, CA, [2]Department of Biology, University of California, San Diego, La Jolla, CA and [3]Department of Chemistry & Biochemistry, University of California, San Diego, La Jolla, CA.

#533 **SMOKING INCREASES HUMAN NASAL EPITHELIAL CYTOCHROME P450 1A1 GENE TRANSCRIPTION.** R. Brundage[1], T. Rossignol[2], R. Hanshaw[1], M. Lucas[2], D. Fekedulegn[1], G. Opheim[2], M. Kashon[1], *V. Castranova*[1] and D. Weissman[1]. [1]ASB/HELD, NIOSH, Morgantown, WV and [2]Madigan Army Medical Center, Ft. Lewis, WA.

#534 **ROLES OF THE AH RECEPTOR IN OXYGEN-MEDIATED INDUCTION OF PULMONARY AND HEPATIC CYTOCHROME P4501A ENZYMES AND IN THE ATTENUATION OF HYPEROXIC LUNG INJURY.** *B. Moorthy*[1], *S. E. Welty*[2], *X. I. Couroucli*[1], R. Barios[3], S. R. Kondraganti[1] and W. Jiang[1]. [1]Pediatrics, Baylor College of Medicine, Houston, TX, [2]Pediatrics, The Ohio State University, Columbus, OH and [3]Pathology, Baylor College of Medicine, Houston, TX.

#535 **ALLEVIATION OF HYPEROXIC LUNG INJURY IN THE NEWBORN RAT BY RETINOIC ACID.** *X. I. Couroucli*[1], *W. Jiang*[1], *H. W. Strobel*[2] and *B. Moorthy*[1]. [1]Pediatrics, Baylor College of Medicine, Houston, TX and [2]Biochemistry, The University of Texas-Houston Medical School, Houston, TX.

#536 **EFFECTS OF LIGHT AND DARK BEERS ON HEPATIC CYTOCHROME P450 EXPRESSION IN MALE RATS RECEIVING ALCOHOLIC BEVERAGES AS PART OF TOTAL ENTERAL NUTRITION.** J. Badeaux[3], H. Hardy[3], N. Floyd[3], T. Fletcher[3], M. Ferguson[3], K. Hale[3], T. Dallari[3], *M. J. Ronis*[1,3] and *T. M. Badger*[2,3]. [1]Pediatrics, University of Arkansas for Medical Sciences, Little Rock, AR, [2]Physiology, University of Arkansas for Medical Sciences, Little Rock, AR and [3]Arkansas Children's Nutrition Center, Little Rock, AR.

#537 **EFFECTS OF CHRONIC ETHANOL ON HEPATIC CYP2C11 IN MALE RATS: INTERACTIONS WITH THE JAK2-STAT5B PATHWAY.** *T. M. Badger*[2,3], *M. J. Ronis*[1,3], Y. Chen[3] and L. He[3]. [1]Pediatrics, University of Arkansas for Medical Sciences, Little Rock, AR, [2]Physiology, University of Arkansas for Medical Sciences, Little Rock, AR and [3]Arkansas Children's Nutrition Center, Little Rock, AR.

#538 **A CELL-BASED ASSAY FOR SCREENING INDUCERS OF CYTOCHROME P450 3A4 AND ANALYZING TRANSCRIPTIONAL REGULATION BY PREGANE X RECEPTOR (PXR).** T. Sheng[1], W. Xie[2], M. Chen[1], P. E. Thomas[4], *M. A. Gallo*[3], S. Ke[1] and Y. Tian[1]. [1]Vet. Physiology and Pharmacology, Texas A&M University, College Station, TX, [2]College of Pharmacy, University of Pittsburg, Pittsburg, PA, [3]EOHSI, UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ and [4]College of Pharmacy, Rutgers University, Piscataway, NJ.

#539 **HEPATIC EFFECTS OF OCTAMETHYLCYCLOTETRASILOXANE (D4) IN FEMALE FISCHER 344 RATS AND FEMALE HARTLEY GUINEA PIGS FOLLOWING A 14-DAY ORAL ADMINISTRATION.** *P. A. Jean*[1], K. M. Carroll[2], *R. G. Meeks*[1] and *K. P. Plotzke*[1]. [1]Dow Corning Corporation, Midland, MI and [2]XenoTech, LLC, Lenexa, KS.

#540 **EPIGALLOCATECHIN GALLATE ELICITS SEX-DEPENDENT MODULATION OF CYP450 ISOFORMS IN THE SWISS WEBSTER MOUSE.** *M. G. Goodin* and *R. J. Rosengren*. Department of Pharmacology and Toxicology, University of Otago, Dunedin, New Zealand.

#541 **MULTIGENERATIONAL POSTMORTEM FINDINGS IDENTIFY TARGET ORGANS OF RATS EXPOSED TO LOW LEVELS OF CHLORDANE.** V. V. St. Omer, B. C. Datiri, M. M. Mansour, L. H. Billups, E. O. Abdullah, S. Lettsome, *R. R. Dalvi*, H. Goyal, P. S. Dalvi and K. Ali. Biomedical Sciences, Tuskegee University, Tuskegee, AL.

#542 **DEXAMETHASONE TREATMENT DECREASES HEPATIC ARACHIDONIC ACID EPOXYGENASE ACTIVITIES IN RATS AS A RESULT OF DECREASED CYP2C23 EXPRESSION.** *H. Kim*[1,3], Y. Yuan[1], S. Wei[2], *K. J. Woodcroft*[3], D. A. Putt[1], B. M. Barren[1], J. Chun[1], E. Diviney[1], *R. F. Novak*[3], J. H. Capdevila[2] and X. Ding[4]. [1]Detroit R&D, Inc., Detroit, MI, [2]Institute of Environmental Health Sciences, Wayne State University, Detroit, MI, [3]Department of Medicine, Vanderbilt University, Nashville, TN and [4]Wadsworth Center, New York State Department of Health, Albany, NY.

Monday Afternoon, March 10
4:30 PM to 6:00 PM
254 B

PLACEMENT-CAREER DEVELOPMENT SEMINAR: PUTTING IT ALL TOGETHER PROFESSIONALLY

Chairperson(s): *Mary Beth Genter, Ph.D., University of Cincinnati, Cincinnati, OH*

Sponsored by:
The Placement Committee

Getting started as a toxicologist — whether in academia, industry or government — requires basic skills and knowledge important for anyone seeking a job, as well as information specific to the field of toxicology. An understanding of how and why these skills are important will help junior toxicologists develop more sophisticated strategies for finding just the right job. This seminar will consist of presentations on effective writing skills for CVs, grants, and reports; targeting verbal communication to audiences; the value of completing a post-doctoral fellowship; highlights of critical interviewing and negotiation skills; and a discussion of certification (the process, benefits, value) by the American Board of Toxicology.

Monday Afternoon, March 10
4:30 PM to 5:30 PM
Wyndham Hotel, Red Butte

UNDERGRADUATE TOXICOLOGY TEACHING FORUM

Sponsored by:
The Education Committee

Academic, government, and industry toxicologists with interests in toxicology career recruitment and undergraduate toxicology curricula are invited to attend this roundtable discussion. An update on development of a clearinghouse for undergraduate toxicology teaching information will be presented, including SOT participation in the NSF-sponsored BioSci Network, a web portal drawing learners to resources made available by life science societies. Plans for SOT career materials, including the *Resource Guide to Careers in Toxicology,* will also be discussed.

Monday Afternoon, March 10
4:30 PM to 6:00 PM
Marriott Downtown Hotel, Salon AB

SPECIALTY SECTION PRESIDENTS MEETING

Monday Evening

Monday Evening, March 10
6:00 PM to 7:30 PM
See Events Calendar on Pages 4–8 for Room Listings

SPECIALTY SECTION MEETINGS: EPIDEMIOLOGY, IMMUNOTOXICOLOGY, MECHANISMS, OCCUPATIONAL HEALTH, TOXICOLOGIC AND EXPLORATORY PATHOLOGY, RISK ASSESSMENT

Monday Evening, March 10
6:00 PM to 11:00 PM
See Events Calendar on Pages 4–8 for Room Listings

REGIONAL CHAPTER MEETINGS/RECEPTIONS

Tuesday Morning

Tuesday Morning, March 11
7:00 AM to 8:30 AM
Marriott Downtown Hotel, Salon AB

REGIONAL CHAPTER PRESIDENTS MEETING

Tuesday Morning, March 11
7:00 AM to 8:30 AM
Wyndham Hotel, Cottonwood 1

STUDENT ADVISORY COMMITTEE MEETING

Members of the Student Advisory Committee will conduct their business meeting.

Tuesday Morning, March 11
7:15 AM to 8:15 AM
Ballroom A

A CONVERSATION WITH THE DIRECTOR OF THE NATIONAL CENTER FOR ENVIRONMENTAL RESEARCH (NCER), U.S. EPA – DR. PETER PREUSS

Tuesday Morning, March 11
7:15 AM to 8:15 AM
250 A

A CONVERSATION WITH THE DIRECTOR OF THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH) – DR. ALBERT MUNSON

Tuesday Morning, March 11
7:45 AM to 4:30 PM
Wyndham Hotel, Wasatch Ballroom 4

PARACELSUS GOES TO SCHOOL **TEACHER WORKSHOP**

Chairperson(s): *Michael Franklin, University of Utah, Salt Lake City, UT and Elaine Knight, Johnson & Johnson Pharmaceutical Research and Development, Raritan, NJ.*

Sponsored by:
The Education Committee
The Education Subcommittee for K–12 Education

This special program will be offered for local educators teaching grades K–12 and for interested SOT members. The main goal of the program is to enhance science education by stimulating ideas for incorporating multidisciplinary toxicology and environmental health science concepts

and teaching materials into classrooms. Lectures and interactive workshops will be tailored to the needs of different grade levels.

7:15 AM–7:45 AM	Registration
8:00 AM–8:15 AM	Opening and Welcome
8:15 AM–8:35 AM	The Diversity that is Toxicology
	Garold Yost, University of Utah, Salt Lake City, UT
8:35 AM–9:00 AM	Local Toxicology Research Highlights
	Athletes and Drugs
	The Center for Human Toxicology, University of Utah, Salt Lake City, UT
	Neurotoxicology from Drugs of Abuse
	Annette Fleckenstein, University of Utah, Salt Lake City, UT
	Toxicology—from Fungi to Turkeys
	Roger Coulombe, Jr., Utah State University, Logan, UT
9:05 AM–11:45 AM	Workshops Session I
	1) Grades K–3 ToxRAP "The Case of the Green Feathers"
	Laura Hemminger, University of Medicine and Dentistry of New Jersey Piscataway, NJ
	2) Grades 3–6 ToxRAP "Johnson Family"
	3) Grades 7–8 "Chemicals, the Environment and You: Explorations in Science and Human Health"
	Bill Mowckzo and David Vannier, NIH Office of Science Education, Bethesda, MD and Gregory Nichols, New Options Middle School, Seattle, WA
	4) Grades 9–12 "Hydroville Challenge" Kendra Mingo, Oregon State University, Corvalis, OR
11:45 AM–1:15 PM	Lunch for Teachers and Toxicology Mentors
1:15 PM–2:15 PM	Exhibits and Posters with Mentors
2:15 PM–3:45 PM	Workshops Session II
3:45 PM–4:15 PM	*Paracelsus* in Practice
4:15 PM–4:30 PM	Program Conclusion and Evaluation

Tuesday Morning, March 11
8:30 AM to 12:00 Noon
Wyndham Hotel, Wasatch Ballroom 4

MENTOR TRAINING FOR K–12 OUTREACH

Chairperson(s): *Michael Franklin, University of Utah, Salt Lake City, UT.*

Co-Chairperson(s): *John Wise, University of Southern Maine, Portland, ME and David Cragin, Cerexagri, King of Prussia, PA.*

Sponsored by:
The Education Committee
The Education Subcommittee for K–12 Education

How do you share you science in the classroom? What can you do to make your single classroom visit memorable for the students? What toxicology can you talk about with 1st graders vs. 3rd graders vs. high schoolers? How should you handle sensitive topics? If you've been interested in assisting in you local school, but aren't sure where to begin or if you've been doing it and would like to share your experiences with others, come to the K–12 Mentor Session! This session is open to everyone and also serves as an orientation for the toxicologists serving as mentors for teachers in the *Paracelsus* workshop.

7:30 AM–7:45 AM	Registration
8:00 AM–8:15 AM	Opening and Welcome
8:15 AM–8:35 AM	The Diversity that is Toxicology
	Garold Yost, University of Utah, Salt Lake City, UT
	Local Toxicology Research Highlights
8:35 AM–9:00 AM	Athletes and Drugs, The Center for Human Toxicology, University of Utah, Salt Lake City, UT
	Neurotoxicology from Drugs of Abuse
	Annette Fleckenstein, University of Utah, Salt Lake City, UT
	Toxicology—from Fungi to Turkeys
	Roger Coulombe, Jr., Utah State University, Logan, UT
9:05 AM–11:45 AM	Mentor Orientation and Workshop
	Why Scientists Share Expertise and How to Be Effective
	Bruce Fuchs, NIH Office of Science Education, Bethesda, MD
	Classroom Resources from the Partnership for Environmental Education and Rural Health
	Larry Johnson, Texas A&M, College Station, TX
	Making Toxicology Interesting and Memorable for Kids K–12
	David Cragin, Cerexagri, King of Prussia, PA

Tuesday Morning, March 11
7:45 AM to 11:45 AM
Ballroom C

SYMPOSIUM SESSION: EFFECTS OF BYSTANDER CELLS: IMPLICATIONS FOR LOW-DOSE EXTRAPOLATION OF CHEMICAL AND RADIATION-INDUCED CANCER RISK

Chairperson(s): *Richard J. Bull, Washington State University, Pullman, WA and Roger O. McClellan, Toxicology and Human Health Risk Analysis, Albuquerque, NM.*

Endorsed by:
Biological Modeling Specialty Section
Carcinogenesis Specialty Section
Risk Assessment Specialty Section

Estimation of cancer risk at low doses of carcinogens has been dominated by the conceptualization of single cells as the target. Research has shown that some of the effects of ionizing radiation (including mutation) are seen not only in the cell that was hit by radiation, but in the neighboring cells (referred to as bystander effects). The fate of both hit and non-hit cells are diverse, ranging from cell death, cell cycle arrest and reproductive failure, mutation, or the development of an unstable genome. This symposium will focus on how bystander effects and other indirect effects contribute to two phenomena related to cancer, the adaptive response and genomic instability. The first presentation will provide an overview of bystander phenomena that have been observed in radiation biology and provide some insight into how they may be mediated. This will be followed by a demonstration of one mechanism by which selection pressures can give rise to an unstable genotype (via signals generated from mismatch repair). The subsequent talk will discuss the indirect mechanisms implicated in arsenic carcinogenesis and their implications for risk of cancer at low doses. The nature of dose-response curves that are plausibly generated through interactions between direct and indirect mechanisms of damage and adaptation will be discussed in the fourth presentation. The final presentation will discuss a general theory of carcinogenesis that includes genetic and epigenetic contributions to carcinogenesis in the context of the overall structure of the tissue. The symposium will provide a forum in which the necessity of addressing these phenomena in risk assessment and the difficulties in doing so can be discussed. The symposium should be of considerable interest to researchers interested in how basic biological responses observed at low doses should influence estimates of carcinogenic risk.

#543 8:30 **EFFECTS OF BYSTANDER CELLS: IMPLICATIONS FOR LOW-DOSE EXTRAPOLATION OF CHEMICAL AND RADIATION-INDUCED CANCER RISK.** *R. J. Bull*[1] and *R. O. McClellan*[2]. [1]Environmental Sciences, Washington State University, Richland, WA and [2]CIIT retired, Albuquerque, NM.

#544 8:35 **BYSTANDERS, ADAPTIVE RESPONSES AND GENOMIC INSTABILITY - POTENTIAL MODIFIERS OF LOW-DOSE CANCER RESPONSES.** R. J. Preston. Environmental Carcinogenesis Division, University.S Environmental Protection Agency, Research Triangle Park, NC. Sponsor: *R. Bull*.

#545 9:10 **THE SELECTION OF MISMATCH REPAIR DEFECTS: THINKING ABOUT EXPOSURE AND RISK ASSESSMENT.** R. Fishel. Kimmel Cancer Institute, Philadelphia, PA. Sponsor: *R. Bull*.

#546 9:45 **PROPOSED MECHANISMS FOR ARSENIC CARCINOGENECITY: IMPLICATIONS FOR THE SHAPE OF THE DOSE-RESPONSE CURVE.** *M. Luster*. Toxicology & Molecular Biology Branch, NIOSH, Morgantown, WV.

#547 10:20 **BIOLOGICAL IMPLICATIONS OF ADAPTIVE RESPONSES AND BYSTANDER EFFECTS FOR INDIVIDUAL AND POPULATION DOSE-RESPONSE CURVES.** *R. Conolly*. CIIT Centers for Health Research, Research Triangle Park, NC.

#548 10:55 **IMPLICATIONS OF EPIGENETIC EFFECTS FOR MODELING DOSE-RESPONSE.** *C. J. Portier*. ETP, NIEHS, Research Triangle Park, NC.

Tuesday Morning, March 11
8:30 AM to 11:30 AM
Ballroom B

SYMPOSIUM SESSION: GENOMICS AND PROTEOMICS IN REPRODUCTIVE AND DEVELOPMENTAL TOXICITY

Chairperson(s): *Kimberley Treinen, Schering Plough Research Institute, Lafayette, NJ.*

Endorsed by:
Reproductive and Developmental Specialty Section

The focus of this symposium is to provide examples where proteomic and/or genomic data have been applied to better understand mechanisms of reproductive and developmental processes/toxicities. Unlike many biochemical studies previously used to characterize the effects of toxicants which often generate apical endpoints, the promise of genomic and proteomic analyses is to understand the underlying mechanisms that cause the specific cellular responses that mediate or are associated with the effects. A major challenge is determining the relationship of genetic/proteomic alterations, particularly the temporal relationship (primary or secondary effect) and generalized nature and quantity of the genes affected, to the end toxicity. Thus, the role and function of the gene products in normal as well as abnormal physiology must be addressed. The use of genomics and proteomics to determine general alterations in genes/proteins have been conducted for a few years now. The intent of this symposium is to provide a forum where the genes/proteins altered by toxicant exposure are consistent to what is known with respect to the altered biology, and likely play a role in the mechanism of toxicity.

#549 8:30 **GENOMICS AND PROTEOMICS IN REPRODUCTIVE AND DEVELOPMENTAL TOXICITY.** *K. A. Treinen*[1] and E. S. Hunter[2]. [1]Reproductive Toxicology, Schering Plough Research Institute, Lafayette, NJ and [2]Developmental Biology Branch, NHEERL, U.S. EPA, Research Triangle Park, NC.

#550 8:35 **CYBERTERATOLOGY: INVESTIGATING THE PHYSIOLOGICAL STATE OF THE EMBRYO *IN SILICO.*** *T. B. Knudsen*. Department of Pathology, Anatomy and Cell Biology, Thomas Jefferson University, Philadelphia, PA.

#551 9:10 **ZEN AND THE ART OF TERATOGENICITY SCREEN DEVELOPMENT: APPLICATIONS OF MECHANISTIC PROBLEM SOLVING TO GENERATION OF TAILORED TERATOGENICITY SCREENS.** *K. Augustine*. Reproductive Toxicology, GlaxoSmithKline, King of Prussia, PA.

#552 9:45 **DISRUPTION OF PROSTATE GROWTH AND DEVELOPMENT BY DIOXIN.** *R. E. Peterson* and T. M. Lin. School of Pharmacy, University of Wisconsin, Madison, WI.

#553 10:20 **SAGA OF A NOVEL SPERM BIOMARKER : DISCOVERY TO PROOF OF CONCEPT.** *G. R. Klinefelter*. Reproductive Toxicology Division, NHEERL, U.S. EPA, Research Triangle Park, NC.

#554 10:55 **CONDUCTING PARALLEL GENOMICS AND PROTEOMICS STUDIES: COMPARATIVE RESPONSES IN GENE EXPRESSION.** *B. A. Merrick* and J. E. Hartis. National Center for Toxicogenomics, NIEHS, Research Triangle Park, NC.

Tuesday Morning, March 11
8:30 AM to 11:30 AM
Room 251 A

SYMPOSIUM SESSION: RED TIDES: A RECURRING PUBLIC HEALTH PROBLEM

Chairperson(s): *Daniel G. Baden, University of North Carolina at Wilmington, Wilmington, NC and Janet Benson, Lovelace Respiratory Research Institute, Albuquerque, NM.*

Endorsed by:
Inhalation Specialty Section

Red tide is a discoloring of coastal ocean waters caused by dense populations of dinoflagellates. Over 20 dinoflagellate species produce toxins that cause death or disease in marine animals. Red tide events occur world wide and are increasing in number and duration. The red tide occurring off the Gulf and Atlantic Coasts of Florida produces are the most extensive, long lived, and recurrent of all red tides. The dinoflagellate responsible for this red tide, *Karenia brevis*, produces potent neurotoxins called brevetoxins (PbTxs). In addition to causing Neurotoxic Shellfish Poisoning following ingestion, PbTxs aerosolized by wind and surf cause coughing, sneezing, watery eyes, rhinorrhea, and shortness of breath. There are anecdotal reports that inhalation exposure to PbTxs can trigger or exacerbate bronchoconstriction in asthmatics. Little is known about the long term health effects associated with inhalation of aerosolized PbTxs during red tide events. Examination of marine mammals dying as a result of a *K. breve* event suggest that the respiratory tract, nervous, immune, and hematopoietic systems are potential targets for toxicity upon repeated exposure, but dose-response relationships have not been established. An interdisciplinary group of scientists is working to evaluate health effects in occupationally and recreationally exposed individuals along *K. breve* affected beaches. In addition, laboratory studies are being conducted to determine inhalation toxicity in animal models, determine mechanisms of toxicity, and investigate potential antidotes to PbTx-induced health effects. This symposium will summarize the problem, approach to human exposure assessment and evaluation of human health effects as well as results of laboratory studies.

#555 8:30 **RED TIDES: A RECURRING PUBLIC HEALTH PROBLEM.** *D. G. Baden*[2] and *J. Benson*[1]. [1]Lovelace Respiratory Research Institute, Albuquerque, NM and [2]HABLAB, University of North Carolina, Wilmington, Wilmington, NC.

#556 8:40 **OVERVIEW OF HARMFUL ALGAL BLOOM TOXINS: POSSIBLE REASONS FOR PRODUCTION, AND RESULTS OF EXPOSURE.** *D. G. Baden*. Center Marine Science, UNCW, Wilmington, NC.

#557 9:10 **CHARACTERIZATION OF AIRBORNE BREVETOXINS.** Y. Cheng[1] and R. H. Pierce[2]. [1]Lovelace Respiratory Research Institute, Albuquerque, NM and [2]Mote Marine Laboratory, Sarasota, FL. Sponsor: *J. Benson*.

#558 9:40 **PATHOPHYSIOLOGIC AIRWAY RESPONSES TO INHALED RED TIDE BREVETOXIN IN ALLERGIC SHEEP.** W. M. Abraham[1], A. Ahmed[1], A. J. Bourdelais [2] and *D. G. Baden*[2]. [1]Research, Mount Sinai Medical Center, Miami Beach, FL and [2]Center for Marine Science, UNC Wilmington, Wilmington , NC.

#559 10:10 **BREVETOXIN-INDUCED ALTERATIONS IN NEURONAL Ca2+ DYNAMICS AND CELL SIGNALLING.** *T. F. Murray* and S. Dravid. University of Georgia, Athens, GA.

#560 10:40 **AN EPIDEMIOLOGIC APPROACH TO THE STUDY OF AEROSOLIZED BREVETOXINS DURING RED TIDE EVENTS.** L. E. Fleming[2] and L. C. Backer[1]. [1]National Center for Environmental Health, Centers for Disease Control and Prevention, Atlanta, GA and [2]Epidemiology and Public Health, University of Miami School of Medicine, Miami, FL. Sponsor: *J. Benson*.

Tuesday Morning, March 11
8:30 AM to 11:30 AM
Ballroom F

SYMPOSIUM SESSION: STRESS ACTIVATED SIGNAL TRANSDUCTION PATHWAYS

Chairperson(s): *Qin M. Chen, University of Arizona, Tucson, AZ and Jeffery A. Johnson, University of Wisconsin, Madison, WI.*

Endorsed by:
Mechanisms Specialty Section
Molecular Biology Specialty Section

An intriguing finding over the past few years is activation of the signal transduction pathways that are known traditionally as proliferative responses by a variety of chemical toxicants. Examples of these chemicals include, but are not limited to, oxidants, quinones, arsenic, heavy metals and aromatic hydrocarbons. Although the number of toxicants found to activate signal transduction pathways is increasing and the number of signaling molecules being activated by toxicants is expanding, the functional significance of these signaling events has been a puzzle. Progress has been made recently using state-of-the-art techniques in understanding the biological consequence of three families of stress activated kinases: MAP kinases, phosphoinositide 3-kinase (PI3K), and NF-kB inhibitory subunit kinases (IKKs). The application of gene array, transgenic and pharmacological approaches has resulted in elucidation of

the cascade of signaling events and dissection of transcription factors responsible for cell survival, apoptosis, or inflammatory response. This symposium will present novel and exciting findings in the field of signal transduction that are most relevant to the toxicological science. With an increased interest in using genomic approaches and kinase activities in profiling toxicants, this symposium will provide a timely update and important insights.

#561 8:30 **STRESS ACTIVATED SIGNAL TRANSDUCTION PATHWAYS.** *Q. M. Chen*. Pharmacology, University of Arizona, Tucson, AZ.

#562 8:40 **ROLE OF MAP KINASES IN AH RECEPTOR ACTIVATION.** *Y. Xia*, *A. Puga* and *Z. Tan*. Department of Environmental Health, University of Cincinnati, Cincinnati, OH.

#563 9:10 **FUNCTIONS OF APOPTOSIS SIGNAL-REGULATING KINASE-1 REVEALED BY RNA INTERFERENCE.** J. Kyriakis and D. N. Chadee. Diabetes Research Laboratory, Massachusetts General Hospital, Charlestown, MA. Sponsor: *Q. Chen*.

#564 9:40 **PI3K AND NRF2-DEPENDENT ARE-DRIVEN GENE EXPRESSION IN NEURONS AND ASTROCYTES: DEFINING PROGRAMMED CELL LIFE.** *J. A. Johnson*[1,2,3], *A. D. Kraft*[1], *J. Lee*[2] and D. A. Johnson[1]. [1]School of Pharmacy, University of Wisconsin, Madison, WI, [2]Molecular and Environmental Toxicology Center, University of Wisconsin, Madison, WI, [3]Waisman Center, University of Wisconsin, Madison, WI and [4]Kinsmen Laboratory of Neurological Research, University of British Columbia, Vancouver, BC, Canada.

#565 10:10 **IKK - A MASTER REGULATOR OF INNATE AND ADAPTIVE IMMUNE RESPONSES.** M. Karin. Department of Pharmacology, University of California at San Diego, La Jolla, CA. Sponsor: *Q. Chen*.

Tuesday Morning, March 11
8:30 AM to 11:30 AM
Room 250 D

WORKSHOP SESSION: METAL SPECIATION IN TOXICOLOGY: DETERMINATION AND IMPORTANCE FOR RISK ASSESSMENT

Chairperson(s): *Robert A. Yokel, University of Kentucky, Lexington, KY and Stephen M. Lasley, University of Illinois, Peoria, IL.*

Endorsed by:
Metals Specialty Section
Neurotoxicology Specialty Section
Risk Assessment Specialty Section

Speciation can influence the handling of metals (toxicokinetics) and their toxicity (toxicodynamics) and should be considered in quality risk assessment. The speciation of metals will be defined, as valence state and associated ligand. The metals that have only one biologically relevant valence state, for which speciation is a function of the associated ligand, will be identified. Metals that have more than one biologically relevant valence state, for which speciation is a function of both valence state and the associated ligand, will also be identified. An overview of the five presentations will be provided and the audience reminded that there will be time for discussion at the end of the workshop.

#566 8:30 **METAL SPECIATION IN TOXICOLOGY: DETERMINATION AND IMPORTANCE FOR RISK ASSESSMENT - INTRODUCTION.** *R. A. Yokel*[1,2]. [1]College of Pharmacy, University of Kentucky Medical Center, Lexington, KY and [2]Graduate Center for Toxicology, University of Kentucky, Lexington, KY.

#567 8:35 **THE ROLE OF METAL SPECIATION IN TOXICOLOGY: METAL TOXICOKINETICS.** *R. A. Yokel*[1,2]. [1]College of Pharmacy, University of Kentucky Medical Center, Lexington, KY and [2]Graduate Center for Toxicology, University of Kentucky, Lexington, KY.

#568 9:00 **THE ROLE OF METAL SPECIATION IN TOXICOLOGY: METAL TOXICODYNAMICS.** *S. M. Lasley*. Biomedical & Therapeutic Sciences, University of Illinois College of Medicine, Peoria, IL.

#569 9:25 **SEPARATION AND DETECTION METHODS TO SPECIATE TOXIC METALS.** J. A. Caruso. Chemistry, University of Cincinnati, Cincinnati, OH. Sponsor: *R. Yokel*.

#570 9:55 **MODELING METHODS TO DETERMINE Al AND Mn SPECIATION FOR TOXICITY ASSESSMENT.** W. R. Harris. Chemistry and Biochemistry, University of Missouri-St. Louis, St. Louis, MO. Sponsor: *R. Yokel*.

#571 10:25 **METAL SPECIATION IN HUMAN HEALTH RISK ASSESSMENT: CHALLENGES POSED BY MANGANESE, IRON, AND OTHER ESSENTIAL NUTRIENTS.** *D. C. Dorman*. CIIT Centers for Health Research, Research Triangle Park, NC.

Tuesday Morning, March 11
8:30 AM to 11:30 AM
Room 250 A

PLATFORM SESSION: GENE EXPRESSION MARKERS OF TOXICITY

Chairperson(s): *George Corcoran, Wayne State University, Detroit, MI and Timothy Dalton, University of Cincinnati, Cincinnati, OH.*

#572 8:30 **APPLICATION OF LASER CAPTURE MICRODISSECTION FOR THE CHARACTERIZATION OF GENOMIC MARKERS FOR KETOCONAZOLE TOXICITY IN DOG LIVER.** *J. McNulty*, F. M. Goodsaid, C. Pisani, L. Obert, G. Mandakas, R. Smith, H. Zairov and *I. Y. Rosenblum*. Genetic and Molecular Toxicology, Schering-Plough Research Institute, Lafayette, NJ.

#573 8:50 **ALTERATIONS IN THE EXPRESSION OF TRANSLATION FACTORS AS MOLECULAR MARKERS OF CARCINOGENESIS AND CHEMICAL TOXICITY.** *P. Joseph*, Y. Lei, C. O'Kernick and T. Ong. NIOSH, Morgantown, WV.

#574 9:10 **MURINE EMBRYONIC STEM CELLS AS A MODEL TO IDENTIFY BIOMARKER PROFILES OF PPAR ACTIVATORS, THIAZOLIDINEDIONES AND FIBRATES.** *A. Vickers*[1], Y. Kim[2], N. Paladini[1], K. Rose[1], *P. Bentley*[1] and H. Snodgrass[2]. [1]Novartis Institute for Biomedical Research, Novartis, E Hanover, NJ and [2]VistaGen Therapeutics, Burlingham, CA.

#575 9:30 **REGULATION OF THE HUMAN *CYP3A4* GENE IN LUNG CELLS.** *J. S. Biggs* and *G. S. Yost*. Pharmacology & Toxicology, University of Utah, Salt Lake City, UT.

#576 9:50 **MULTIPLEX PCR AND TOXICOGENOMICS.** G. Vansant and P. Pezzoli. Althea Technologies, San Diego, CA. Sponsor: *F. Ferre* .

#577 10:10 **ROLE OF CONSTITUTIVE ANDROSTANE RECEPTOR IN THE INDUCTION OF XENOBIOTIC TRANSPORTERS BY *trans*-STILBENE OXIDE.** *A. L. Slitt*, *N. J. Cherrington* and *C. D. Klaassen*. Pharmacology, Toxicology, & Therapeutics, University of Kansas Medical Center, Kansas City, KS.

#578 10:30 **NRF2 DEFICIENCY IS LINKED TO LUPUS-LIKE AUTOIMMUNE DISEASE.** *J. Li*[1], T. D. Stein[2] and *J. A. Johnson*[1,3,4]. [1]UW School of Pharmacy, Madison, WI, [2]Neuroscience Training Program, University of Wisconsin, Madison, WI, [3]Environmental Toxicology Center, University of Wisconsin, Madison, WI and [4]Waisman Center, University of Wisconsin, Madison, WI.

#579 10:50 **ALTERATION OF PACLITAXEL DISPOSITION IN RATS BY ANTISENSE MORPHOLINO OLIGOMERS TARGETED TO CYTOCHROME P450 3A2.** V. Arora, D. L. Weller and *P. L. Iversen*. Research & Development, AVI BioPharma, Inc., Corvallis, OR.

#580 11:10 **BUCCAL-LUNG COMPARISON OF QUANTITATIVE EXPRESSION OF CARCINOGEN AND OXIDANT METABOLISM GENES IN HUMAN SUBJECTS.** R. Jain[1], S. D. Spivack[1], S. Varma[1] and G. J. Hurteau[2,1]. [1]Human Toxicology, Wadsworth Center, NYS Department of Health, Albany, NY and [2]University Colorado Health Science Center, Denver, CO. Sponsor: *L. Kaminsky*.

Tuesday Morning, March 11
8:30 AM to 11:30 AM
Room 251 D

PLATFORM SESSION: IMMUNOTOXICOLOGY I

Chairperson(s): *James Pestka, Michigan State University, East Lansing, MI and John Barnett, West Virginia University, Morgantown, WV.*

#581 8:30 **UV RADIATION ENHANCES *MYCOBACTERIUM ULCERANS* INFECTION IN A Crl:IAF(HA)-hrBR HAIRLESS GUINEA PIG MODEL OF BURULI ULCER DISEASE.** *R. B. Cope*[1], J. Hartman[2], W. Haschek[2], C. Morrow[2] and P. Small[3]. [1]Veterinary Basic Sciences, Oregon State University, Corvalis, OR, [2]College of Veterinary Medicine, University of Illinois, Urbana, IL and [3]Department of Microbiology, University of Tennessee, Knoxville, TN.

#582 8:50 **CELL CYCLE DISRUPTION BY HYDROQUINONE AND CATECHOL.** *J. McCue*, S. Lazis and *B. Freed*. School of Medicine, University of Colorado Health Sciences Center, Denver, CO.

#583 9:10 **PERINATAL EXPOSURE TO ATRAZINE SUPPRESSES JUVENILE IMMUNE FUNCTION IN MALE, BUT NOT FEMALE SPRAGUE-DAWLEY RATS.** A. A. Rooney[2], *R. W. Luebke*[1] and R. A. Matulka[3]. [1]U.S. EPA, Research Triangle Park, NC, [2]Department of Anatomy, Physiological Sciences, and Radiology, NCSU/U.S. EPA, Raleigh, NC and [3]Curriculum in Toxicology, UNC, Chapel Hill, NC.

#584 9:30 **PROPANIL (DICHLOROPROPIONANILIDE; DCPA) REDUCES NORMAL MACROPHAGE FUNCTION.** *J. B. Barnett*, L. Frost, *K. Brundage* and *R. Schafer*. Micro, Immun & Cell Biol., West Virginia University, Morgantown, WV.

#585 9:50 **THE EFFECT OF DICHLOROPROPIONANILIDE (DCPA) ON C-JUN.** *K. M. Brundage*, *R. Schafer* and *J. B. Barnett*. Microbiology, Immunology and Cell Biology, West Virginia University, Morgantown, WV.

#586 10:10 **PESTICIDE MIXTURES INCREASED IMMUNOTOXICITY IN C57BL/6 MICE, IN VIVO.** *S. Olgun*[1], *F. Adeshina*[2], *H. Choudhury*[3] and *H. P. Misra*[1,4]. [1]Veterinary Medicine, Virginia Tech, Blacksburg, VA, [2]U.S. EPA, Washington, DC, [3]U.S. EPA, Cincinnati, OH and [4]Edward Via Virginia College of Osteopathic Medicine, Blacksburg, VA.

#587 10:30 **HCK- AND PKR-DEPENDENT MITOGEN-ACTIVATED PROTEIN KINASE PHOSPHORYLATION AND AP-1, C/EBP AND NF-KAPPAB ACTIVATION PRECEDE DEOXYNIVALENOL-INDUCED TNF-ALPHA AND MIP-2 EXPRESSION.** *J. J. Pestka* and *H. Zhou*. Michigan State University, East Lansing, MI.

#588 10:50 **ROLE OF AROMATIC HYDROCARBON (Ah) RECEPTORS IN MURINE SPLEEN CELL MITOGENESIS AND RESPONSES TO BENZO(a)PYRENE (BaP) AND ITS MAJOR METABOLITES.** *S. W. Burchiel*, F. T. Lauer, S. Dunaway, *C. B. Marcus* and *M. K. Walker*. College of Pharmacy Toxicology Program, The University of New Mexico, Albuquerque, NM.

#589 11:10 **PRENATAL AND LACTATIONAL EXPOSURE OF C57BL/6 MICE TO 2, 3, 7, 8 TETRACHLORODIBENZO-*p*-DIOXIN IMPAIRS THE IMMUNE RESPONSE TO INFECTION WITH INFLUENZA A VIRUS.** *B. A. Vorderstrasse*[1] and *B. Lawrence*[1,2]. [1]Phar Sciences, Pharmacology/Tox Prog., Washington State University, Pullman, WA and [2]Pharmacology/Toxicology Program, Washington State University, Pullman, WA.

Tuesday Morning, March 11
8:30 AM to 11:30 AM
Ballroom A

PLATFORM SESSION: PARTICLES AND ALLERGIC ASTHMA

Chairperson(s): *Arthur Penn, Louisiana State University, Baton Rouge, LA and M Ian Gilmour, U.S. EPA, Research Triangle Park, NC.*

#590 8:30 **SHORT-TERM EXPOSURE TO INHALED DIESEL EXHAUST PARTICLES ENHANCES ASTHMA-LIKE SYMPTOMS IN THE LOW IGE RESPONDER C57BL/6 MOUSE.** *M. J. Whitekus*[1], *O. Hankinson*[1] and D. Diaz-Sanchez[2]. [1]Department of Pathology and Laboratory Medicine and Jonsson Comprehensive Cancer Center, UCLA, Los Angeles, CA and [2]Division of Clinical Immunology and Allergy at UCLA School of Medicine, UCLA, Los Angeles, CA.

#591 8:50 **EFFECTS OF CO-EXPOSURES OF CONCENTRATED AMBIENT PARTICLES AND ALLERGEN ON THE LUNGS OF BROWN NORWAY RATS.** *J. Wagner*[1], *J. Harkema*[1], C. Sioutas[2], E. Timm[1], *N. Kaminski*[1], M. Kleinman[2] and J. Froines[2]. [1]Pathobiology, Michigan State University, East Lansing, MI and [2]Southern California Particle Center and Supersite, Los Angeles, CA.

#592 9:10 **ENVIRONMENTAL TOBACCO SMOKE (ETS) ELICITS A TIME-DEPENDENT ALLERGIC AIRWAY RESPONSE TO INHALED ANTIGEN.** *A. Penn*[1], D. Paulsen[2], K. Bowles[2], C. Leblanc[2], M. Littlefield-Chaubaud[2], T. Ahlert[1], S. Pourciau[2], K. Ahlert[1], E. Boykin[1] and D. Horohov[2]. [1]CBS, LSU School of Vet. Med., Baton Rouge, LA and [2]PBS, LSU School of Vet. Med., Baton Rouge, LA.

#593 9:30 **RESPIRATORY ALLERGY AND INFLAMMATION DUE TO AMBIENT PARTICLES (RAIAP), A EUROPEAN-WIDE ASSESSMENT. ALLERGY SCREENING.** T. Lovdal, E. Groeng, *E. Dybing* and M. Lovik. Division of Environmental Medicine, Norwegian Institute of Public Health, Oslo, Norway.

#594 9:50 **INHALATION DOSIMETRY DIFFERENCES IN BALB/C AND B6C3F1 MICE INFLUENCE AIRWAY RESPONSIVENESS TO METHACHOLINE CHALLENGE.** *O. R. Moss* and *M. P. DeLorme*. CIIT Centers for Health Research, Research Triangle Park, NC.

#595 10:10 **INCREASED LUNG DISEASE TO RESPIRATORY SYNCYTIAL VIRUS BY INHALED DIESEL ENGINE EMISSIONS.** K. S. Harrod, J. A. Berger, *M. D. Reed* and J. D. McDonald. Asthma and Pulmonary Immunology, Lovelace Respiratory Research Institute, Albuquerque, NM.

#596 10:30 **AIRWAY REACTIVITY IN ALLERGIC MICE AND RATS AFTER SHORT-TERM EXPOSURE TO CONCENTRATED AMBIENT PARTICULATE MATTER.** *H. van Loveren*, F. Cassee, J. Dormans, A. Boere and P. Steerenberg. National Institute for Public Health and the Environment, Bilthoven, Netherlands.

#597 10:50 **EXACERBATION OF BRONCHIAL HYPERRESPONSIVENESS (BHR) BY URBAN PARTICULATE MATTER.** J. Cramton, A. J. Archer, *J. C. Pfau* and *A. Holian*. Center for Environmental Health Sciences, University of Montana, Missoula, MT.

Tuesday Morning, March 11
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: DEVELOPMENTAL NEUROTOXICOLOGY

Chairperson(s): *Kevin Crofton, U.S. EPA, Research Triangle Park, NC and Larry Sheets, Bayer, Stilwell, KS.*

Displayed: *9:30 AM–12:30 PM*

Attended: *9:30 AM–11:00 AM*

#598 **MOTOR ACTIVITY IN DEVELOPMENTAL NEUROTOXICITY TESTING: A CROSS-LABORATORY COMPARISON OF CONTROL DATA.** *K. C. Raffaele*[1], *W. F. Sette*[1], *S. L. Makris*[1], *V. C. Moser*[2] and *K. M. Crofton*[2]. [1]OPP, U.S. EPA, Washington, DC and [2]NHEERL, ORD, U.S. EPA, Research Triangle Park, NC.

#599 **LACK OF EFFECT OF PERINATAL EXPOSURE TO A POLYBROMINATED DIPHENYL ETHER MIXTURE (DE-71) ON THE HABITUATION OF MOTOR ACTIVITY IN ADULT RATS.** *R. MacPhail*, J. D. Farmer, B. K. Padnos and *K. M. Crofton*. Neurotoxicology Division, U.S. EPA, Research Triangle Park, NC.

#600 **PERSISTENT IMPAIRMENTS IN SHORT-TERM, BUT ENHANCED LONG-TERM, SYNAPTIC PLASTICITY IN HIPPOCAMPAL AREA CA1 FOLLOWING DEVELOPMENTAL HYPOTHYROIDISM.** L. Sui[2,1], W. L. Anderson[1] and *M. E. Gilbert*[1]. [1]Neurotoxicology, U.S. EPA, Research Triangle Park, NC and [2]National Research Council, Washington, DC.

#601 **DEVELOPMENTAL HYPOTHYROIDISM IMPAIRS HIPPOCAMPAL LEARNING AND SYNAPTIC TRANSMISSION *IN VIVO*.** *M. E. Gilbert*[1] and L. Sui[2,1]. [1]Neurotoxicology, U.S. EPA, Research Triangle Park, NC and [2]National Research Council, Washington, DC.

#602 **PERINATAL EXPOSURE TO A POLYBROMINATED DIPHENYL ETHER MIXTURE (DE-71): DISRUPTION OF THYROID HOMEOSTASIS AND NEUROBEHAVIORAL DEVELOPMENT.** M. M. Taylor[1], J. M. Hedge[2], *M. E. Gilbert*[2], *M. J. DeVito*[3] and *K. Crofton*[2]. [1]Department Environmental Medicine, University of Rochester, Rochester, NY, [2]Neurotoxicology Division, U.S. EPA, Research Triangle Park, NC and [3]Experimental Toxicology Division, U.S. EPA, Research Triangle Park, NC.

#603 **DEVELOPMENTAL NEURO- AND CARDIOTOXICITY OF TERBUTALINE: DNA SYNTHESIS AND NEURAL BIOMARKERS.** M. C. Garofolo, *F. J. Seidler* and *T. A. Slotkin*. Pharmacology & Cancer Biology, Duke University Med. Ctr, Durham, NC.

#604 **SHORT-TERM NICOTINE EXPOSURE IN ADOLESCENT RATS ELICITS BRAIN CELL DAMAGE.** Y. Abreu-Villaça, *F. J. Seidler* and *T. A. Slotkin*. Pharmacology & Cancer Biology, Duke University Med. Ctr, Durham, NC.

#605 **FETAL CHLORPYRIFOS EXPOSURE: ADVERSE EFFECTS ON BRAIN CELL DEVELOPMENT AND CHOLINERGIC BIOMARKERS.** D. Qiao, *F. J. Seidler* and *T. A. Slotkin*. Pharmacology & Cancer Biology, Duke University Med. Ctr, Durham, NC.

#606 **CHANGES IN SEROTONIN RECEPTORS IN BRAIN REGIONS OF RATS AFTER NEONATAL EXPOSURE TO CHLORPYRIFOS.** J. E. Aldridge, *F. J. Seidler* and *T. A. Slotkin*. Pharmacology & Cancer Biology, Duke University Med. Ctr, Durham, NC.

#607 **PRENATAL EXPOSURE TO DIOXIN AND INHALED BENZO(a)PYRENE: REDUCED CAPACITY FOR LONG-TERM POTENTIATION IN THE F1 GENERATION.** *D. Wormley*[1], S. Chirwa[2], W. Zhang[1], *T. Nayyar*[1], M. Greenwood[1], F. F. Ebner[3] and *D. B. Hood*[1,3]. [1]Pharmacology, Meharry Medical College, Nashville, TN, [2]Anatomy and Physiology, Meharry Medical College, Nashville, TN and [3]Institute for Developmental Neuroscience, Vanderbilt University, Nashville, TN.

#608 **METABOLISM OF INHALED BENZO(a)PYRENE IN THE DEVELOPING CENTRAL NERVOUS SYSTEM AND PARTIAL ABLATION OF LONG-TERM POTENTIATION IN F1 GENERATION ANIMALS.** *D. B. Hood*, J. Wu, *A. Ramesh*, D. Wormley, *T. Nayyar* and M. Greenwood. Pharmacology, Meharry Medical College, Nashville, TN.

#609 **BENZO(a)PYRENE AND DIOXIN INDUCED DOWNREGULATION OF HIPPOCAMPAL NMDAR1 EXPRESSION AND DEFICITS IN FIXED-RATIO PERFORMANCE IN F1 GENERATION RATS.** J. Wu, *T. Nayyar*, T. Tu, S. Johnson, M. Greenwood and *D. B. Hood*. Pharmacology, Meharry Medical College, Nashville, TN.

#610 **EYEBLINK CLASSICAL CONDITIONING OF RABBITS AS A POTENTIAL POSTNATAL BEHAVIORAL-FUNCTIONAL EVALUATION.** J. F. Barnett Jr. , E. M. Lewis, *A. M. Hoberman* and *M. S. Christian*. Argus Research - A CRL-DDS Division, Horsham, PA.

#611 **EVALUATION OF THYROID FUNCTION USING SERUM T3, T4 AND TSH LEVELS (OBTAINED BY USING RIA KITS) IN CRL IGS MATERNAL, FETAL AND NEONATAL RATS.** E. M. Lewis, N. Trenton, *A. M. Hoberman* and *M. S. Christian*. Argus Research - A CRL-DDS Division, Horsham, PA.

#612 **LOW DOSE PERINATAL VINCLOZOLIN EXPOSURE IN THE LE RAT ALTERS *EX COPULA* PENILE ERECTIONS AND REDUCES PUP SIRING FOLLOWING GROUP MATING.** N. C. Pelletier, A. J. Tarr and *V. P. Markowski*. Psychology, University of Southern Maine.

#613 **NEONATAL PBDE 99 EXPOSURE CAUSES DOSE-RESPONSE RELATED BEHAVIORAL DERANGEMENTS THAT ARE NOT SEX OR STRAIN SPECIFIC IN MICE.** H. Viberg, A. Fredriksson and *P. Eriksson*. Department Environmental Toxicology, Uppsala University, Uppsala, Sweden.

#614 **PRENATAL LEAD (Pb) EXPOSURE AND SCHIZOPHRENIA: PRELIMINARY FINDINGS.** M. G. Opler[4,1], *W. Zheng*[1], A. Brown[4,2], M. Desai[3], P. Factor-Litvak[2], *J. Graziano*[1], M. Bresnahan[2] and E. Susser[2,4]. [1]Environmental Health Sciences, Columbia University, New York, NY, [2]Epidemiology, Columbia University, New York, NY, [3]Biostatistics, Columbia University, New York, NY and [4]Psychiatry, Columbia University, New York, NY.

#615 **INTERACTIONS OF PRE/POSTNATAL LEAD (Pb) EXPOSURE AND MATERNAL STRESS.** *D. A. Cory-Slechta*, M. R. Bauter, M. B. Virgolini and M. J. Thiruchelvam. Environmental Medicine, University of Rochester Medical School, Rochester , NY.

#616 **DEVELOPMENTAL EFFECTS OF MATERNAL EXPOSURE TO NICOTINE AND CHLORPYRIFOS, ALONE AND IN COMBINATION IN RATS.** *M. B. Abou-Donia*, A. M. Dechkovskia, X. Guan, A. A. Abdel-Rahman, L. B. Goldstein, S. L. Bullman and W. A. Khan. Pharmacology and Cancer Biology, Duke University Medical Center, Durham, NC.

#617 **MULTIGENERATIONAL IN-LIFE DATA IDENTIFY TARGET ORGANS/SYSTEMS OF RATS EXPOSED TO CHLORDANE AT ENVIRONMENTAL LEVELS.** B. C. Datiri, V. V. St. Omer, M. M. Mansour, E. O. Abdalla and S. Lettsome. Biomedical Sciences, Tuskegee University, Tuskegee, AL. Sponsor: *R. Dalvi*.

#618 ***IN VIVO* ETHANOL DECREASES PHOSPHORYLATED MAPK AND P70S6 KINASE IN THE DEVELOPING RAT BRAIN.** R. Tsuji[1,2], *M. Guizzetti*[1] and *L. G. Costa*[1,3]. [1]Environmental Health, University of Washington, Seattle, WA, [2]Environmental Health Science Laboratory, Sumitomo Chemical, Osaka, Osaka, Japan and [3]Pharmacology and Physiology, University of Roma La Sapienza, Roma, Roma, Italy.

#619 **EFFECTS OF REPEATED DEVELOPMENTAL EXPOSURE TO CHLORPYIFOS AND METHYL PARATHION ON CHOLINE ACETYLTRANSFERASE AND MUSCARINIC RECEPTORS IN RATS.** *C. A. Moore*, J. Baravik, *E. C. Meek*, *J. R. Richardson*, *R. L. Carr* and *J. E. Chambers*. Center for Environmental Health Sciences, Mississippi State University, Mississippi State, MS.

#620 **BRAIN β1 INTEGRIN PROTEIN EXPRESSION IN RAT PUPS EXPOSED TO MONOMETHYLTIN (MMT).** H. N. Owen, *V. C. Moser* and J. E. Royland. Neurotoxicology Division, U.S. EPA, Research Triangle Park, NC.

#621 **DEVELOPMENTAL EXPRESSION, PHOSPHORYLATION AND BINDING ACTIVITY OF CREB IN LEAD EXPOSED RAT BRAIN.** *C. D. Toscano* and *T. R. Guilarte*. Environmental Health Sciences, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD.

#622 **ACUTE ETHANOL EXPOSURE INCREASES CATALASE ACTIVITY, BUT DOES NOT ALTER GLUTATHIONE LEVELS IN POSTNATAL DAY 4 RAT PUPS.** *K. H. Horn*[1], *L. M. Kamendulis*[2], C. R. Goodlett[1,3] and *J. E. Klaunig*[1,2]. [1]Program in Medical Neurobiology, Indiana University School of Medicine, Indianapolis, IN, [2]Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN and [3]Psychology, Indiana University School of Medicine, Indianapolis, IN.

#623 **SUCCIMER CHELATION SIGNIFICANTLY AMELIORATES THE LASTING COGNITIVE AND AFFECTIVE DYSFUNCTION PRODUCED BY EARLY LEAD EXPOSURE IN A RODENT MODEL.** D. Stangle[1], M. Strawderman[1], *D. Smith*[2] and *B. J. Strupp*[1]. [1]Cornell University, Ithaca, NY and [2]University of California, Santa Cruz, CA.

#624 **INFLUENCE OF CAGE DESIGN ON MEASUREMENT OF MOTOR ACTIVITY IN PRE-WEANLING RAT PUPS.** L. A. Malley, N. P. Betts, P. Mukerji and *R. M. Parker*. DuPont Haskell Laboratory for Health and Environmental Science, Newark, DE.

#625 **MATERNAL AND FETAL ACETYLCHOLINESTERASE ACTIVITIES AFTER REPEATED DERMAL EXPOSURE OF PREGNANT RATS TO METHYL PARATHION.** R. C. Baker, K. E. Schneider, S. E. Wellman and R. E. Kramer. Pharmacology and Toxicology, University Mississippi Medical Center, Jackson, MS. Sponsor: *I. Ho*.

#626 **ASSESSING NEURODEVELOPMENTAL EFFECTS OF ENVIRONMENTAL EXPOSURES TO ANTI-THYROID AGENTS: HOW RELEVANT ARE HIGH DOSE RAT STUDIES?** *R. C. Pleus*, G. M. Bruce and M. K. Peterson. Intertox, Inc., Seattle, WA.

#627 **A ZEBRAFISH MODEL FOR STUDYING THE NEUROBEHAVIORAL IMPACTS OF DEVELOPMENTAL CHLORPYRIFOS EXPOSURE.** H. Swain[1], S. Donerly[2], E. Chrysanthis[1], K. Yacsin[2], E. Linney[2] and *E. D. Levin*[1]. [1]Department of Psychiatry and Behavioral Sciences, Duke University Med. Ctr, Durham, NC and [2]Department of Molecular Genetics and Microbiology, Duke University Med. Ctr, Durham, NC.

#628 **THE MORRIS MAZE AS A TEST OF LEARNING AND MEMORY IN RATS - A CASE STUDY DEMONSTRATING THE VALUE OF RE-TESTING THE SAME SET OF ANIMALS.** D. P. Myers, S. D. Renaut and M. J. Collier. Huntingdon Life Sciences, Huntingdon, Cambridgeshire, United Kingdom. Sponsor: *E. Blanchard*.

Tuesday Morning, March 11
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: ENDOCRINE SYSTEM

Chairperson(s): *Diane Heck, Rutgers University, Piscataway, NJ and Ann DePeyster, San Diego State University, San Diego, CA.*

Displayed: *9:30 AM–12:30 PM*

Attended: *11:00 AM–12:30 PM*

#629 **ESTABLISHMENT AND PERSPECTIVES OF AN AGING PRIMATE COLONY FOR THE STUDY OF GERIATRIC DISEASES.** R. Korte[1], M. Stanley[2], E. Buse[1], W. Mueller[1], F. Vogel[1] and G. F. Weinbauer[1]. [1]Covance Laboratories GmbH, Muenster, Germany and [2]Bioculture Mauritius Ltd, Senneville Riviere des Anguilles, Mauritius. Sponsor: *P. Thomas*.

#630 **COMPARISON OF DUAL-ENERGY X-RAY ABSORPTIOMETRY AND PERIPHERAL QUANTITATIVE COMPUTED TOMOGRAPHY FOR BONE MINERAL DENSITY ANALYSIS IN THE CYNOMOLGUS MONKEY.** M. Niehoff, S. Mohr and G. F. Weinbauer. Covance Laboratories GmbH, Muenster, Germany. Sponsor: *P. Thomas*.

#631 **IMPACT OF BODY WEIGHT (BW) CHANGE ON THE EDSTAC TIER I MALE AND FEMALE PUBERTAL PROTOCOLS.** R. L. Cooper, T. E. Stoker, J. Ferrell, K. Leffler, K. Bremser and S. C. Laws. RTD, NHEERL, ORD, U.S. EPA, Research Triangle Park, NC. Sponsor: *R. Kavlock*.

#632 **CALCIUM LIABILITY OF THE VITAMIN D ANALOG RO 65-2299 (BAL2299) IS INDEPENDENT OF THE DIETARY VITAMIN D3 INTAKE IN THE RAT.** T. Pfister[1] and H. Urwyler[2]. [1]Preclinical Drug Safety (PRNS), F. Hoffmann-La Roche, Basel, Switzerland and [2]Toxicology, Basilea Pharmaceutica, Basel, Switzerland. Sponsor: *M. Gueldner*.

#633 **BROWN ADIPOSE TISSUE PROLIFERATIVE RESPONSE TO XENOBIOTICS: THE NEGLECTED ENDOCRINE TISSUE.** *M. J. Iatropoulos*[1], *G. M. Williams*[1] and J. Seng[2]. [1]Pathology, New York Medical College, Valhalla, NY and [2]Charles River Redfield Laboratories, Redfield, AR.

#634 **CYPROHEPTADINE ALTERS TRANSLATION INITIATION IN RINm5F CELLS.** *B. S. Hawkins* and *L. J. Fischer*. Department of Pharmacology and Toxicology and Institute for Environmental Toxicology, Michigan State University, East Lansing, MI.

#635 **ADRENOCORTICOTROPIC HORMONE-LOADING TEST IN CONSCIOUS CYNOMOLGUS MONKEYS.** H. Tsusaki[1], H. Sameshima[1], M. Masuyama[1] and *R. Nagata*[1,2]. [1]Shin Nippon Biomedical Laboratories, Japan, Kagoshima, Japan and [2]Shin Nippon Biomedical Laboratories, USA, Everett, WA.

#636 **TH9507: EMBRYOFETAL AND FERTILITY STUDIES OF A GROWTH HORMONE-RELEASING FACTOR (GRF) ANALOGUE.** E. Ferdinandi[1], G. Washer[1], L. Pinsonneault[2], K. Robinson[2] and T. Abribat[1]. [1]Theratechnologies, Inc., Montreal, QC, Canada and [2]CTBR, Montreal, QC, Canada. Sponsor: *G. Lulham*.

#637 **NON-SPECIFIC ALTERATION OF STEROIDOGENESIS IN MA-10 LEYDIG CELLS BY SUPRA-PHYSIOLOGICAL CONCENTRATIONS OF THE SURFACTANT IN ROUNDUP⟩ HERBICIDE*.** *W. F. Heydens*[1], *S. L. Levine*[1], D. R. Farmer[1], Z. Han[2], C. T. Wall[2] and *V. Papadopoulos*[2]. [1]Toxicology/Product Safety Center, Monsanto and [2]Cell Biology and Pharmacology, Georgetown University Medical Center, Washington, DC.

#638 **EVALUATION OF THE MALE PUBERTAL ASSAY TO DETECT EFFECTS OF *p, p'*-DDE AND KETOCONAZOLE IN CD RATS.** *T. Yamada*, T. Kunimatsu, S. Ueda, S. Yabushita, S. Kawamura, T. Seki, Y. Okuno and N. Mikami. Environmental Health Science Laboratory, Sumitomo Chemical Co., Ltd., Osaka, Japan.

#639 **COMPARISON OF THE EFFECTS OF TWO AR ANTAGONISTS ON TISSUE WEIGHTS AND HORMONE LEVELS IN MALE RATS AND ON EXPRESSION OF THREE ANDROGEN DEPENDENT GENES IN THE VENTRAL PROSTATE.** *V. S. Wilson*, C. R. Wood, G. A. Held, C. S. Lambright, J. S. Ostby, J. R. Furr and *L. E. Gray*. RTD, U.S. EPA, ORD, NHEERL, Research Triangle Park, NC.

#640 **INCREASED EXPRESSION AND ACTIVATION IN ADULTHOOD OF CASPASE-3 AND -6 IN RAT GERM CELLS EXPOSED *IN UTERO* TO FLUTAMIDE.** M. Benahmed[1], A. Omezzine[1], S. Chater[1], C. Mauduit[1], A. Florin[1], E. Tabone[1], F. Chuzel[2] and R. Bars[2]. [1]INSERM University 407, Faculté de Médecine Lyon-Sud, Oullins, France and [2]Experimental Toxicology, Bayer Cropscience, Sophia-Antipolis, France. Sponsor: *A-M. Blacker*.

#641 ***IN VITRO*/*IN VIVO* EVALUATION OF THE ANTI-ANDROGENIC ACTIVITY OF BENZO(a)PYRENE AND METHOXYCHLOR.** *M. S. Marty*, *G. D. Charles*, L. Kan, M. R. Schisler, *B. B. Gollapudi* and *E. W. Carney*. Toxicology & Environmental Research, The Dow Chemical Company, Midland, MI.

#642 **RAINBOW TROUT ANDROGEN RECEPTOR ALPHA AND HUMAN ANDROGEN RECEPTOR: COMPARISONS IN THE COS WHOLE CELL BINDING ASSAY.** M. C. Cardon, P. C. Hartig, *L. Gray* and *V. S. Wilson*. ORD, NHEERL, RTD, U.S. EPA, Research Triangle Park, NC.

#643 **INVESTIGATION OF HORMONAL CHANGES IN TESTICULAR TOXICITY INDUCED BY NEFIRACETAM IN DOGS.** K. Shimomura, M. Shimada, M. Hagiwara, S. Harada, M. Kato and *K. Furuhama*. Daiichi Pharmaceutical Co., Ltd., Drug Safety Research Laboratory, Tokyo, Japan.

#644 **EFFECT OF ETHYL *t*-BUTYL ETHER (ETBE) ON TESTOSTERONE IN MALE RATS.** B. Stanard, C. Westover, B. Hirakawa, J. Gonzalez and *A. de Peyster*. Graduate School of Public Health, San Diego State University, San Diego, CA.

#645 **ORGANOTIN COMPOUNDS ALTER ENDOCRINE FUNCTIONS OF HUMAN PLACENTAL CELLS.** T. Nakanishi[1], N. Itoh[1], N. Utoguchi[2] and K. Tanaka[1]. [1]Grad Sch of Pharmacology Sciences, Osaka University, Suita, Osaka, Japan and [2]Sch of Pharmacology Sciences, Teikyo University, Sagamiko, Kanagawa, Japan. Sponsor: *G. Cherian*.

#646 **THE ANTIESTROGENIC EFFECTS OF MOTORCYCLE EXHAUST PARTICULATE *IN VITRO* AND *IN VIVO*.** *T. Ueng*, H. Wang, Y. Hwang and C. Hung. Institute of Toxicology, National Taiwan University College of Medicine, Taipei, Taiwan.

#647 **EFFECT OF ATRAZINE ON THE ESTROGEN AND PROGESTERONE INDUCED LUTEINIZING HORMONE SURGE AND GNRH NEURONAL ACTIVITY.** *T. S. McMullin*[1], R. J. Handa[3], *W. H. Hanneman*[1] and *M. E. Andersen*[2]. [1]Environmental and Radiological Health Sciences, Colorado State University, Fort Collins, CO, [2]Biological Sciences, Colorado State University, Fort Collins, CO and [3]CIIT, Centers for Health Research, Research Triangle Park, NC.

#648 **EFFECTS OF POLYBROMINATED DIPHENYLETHER (PBDE) ON REPRODUCTIVE ORGAN AND BRAIN DEVELOPMENT AND GENE EXPRESSION IN RATS.** W. Lichtensteiger, R. Ceccatelli, O. Faass, I. Fleischmann and M. Schlumpf. Institute of Pharmacology and Toxicology, University of Zurich, Zurich, Switzerland. Sponsor: *R. Peterson*.

#649 **ENDOCRINE ACTIVITY AND DEVELOPMENTAL TOXICITY OF UV FILTERS.** M. Schlumpf, S. Durrer, K. Maerkel, R. Ma, M. Conscience, I. Fleischmann and W. Lichtensteiger. Institute of Pharmacology and Toxicology, University of Zurich, Zurich, Switzerland. Sponsor: *R. Peterson*.

#650 **ASSESSMENT OF DEMERSAL AND CULTURED FLATFISH SPECIES FOR EXPOSURE AND ADVERSE EFFECTS RESULTING FROM EXPOSURE TO ENVIRONMENTAL ESTROGENS IN THE SOUTHERN CALIFORNIA BIGHT.** W. Hwang[1], L. Roy[1], J. Armstrong[2], S. Steinert[3], K. Sakamoto[2], K. Kahara[1], S. Reddy[4], B. Brownawell[4], E. Sapozhnikova[1] and *D. Schlenk*[1]. [1]UC- Riverside, Riverside, CA, [2]Orange County Sanitation District, Fountain Valley, CA, [3]CSC Biomarkers, San Diego, CA and [4]Stonybrook University, Stony Brook, NY.

#651 **INTERACTION ANALYSIS OF SYNTHETIC XENOESTROGENS AND PHYTOESTROGENS *IN VIVO*.** *G. D. Charles*[1], C. Gennings[2], *T. R. Zacharewski*[3], *B. B. Gollapudi*[1] and *E. W. Carney*[1]. [1]The Dow Chemical Company, Midland , MI, [2]Biostatistics, Virginia Commonwealth University, Richmond, VA and [3]Biochemistry & National Food Safety & Toxicology Center, Michigan State University, East Lansing, MI.

#652 **SPECIES DIFFERENCES IN THE CYTOCHROME P450 (CYP)-DEPENDENT METABOLISM OF 3, 3'-DIINDOLYLMETHANE (DIM): EFFECTS ON ESTROGENICITY.** *S. C. Tilton*[1], M. H. van Lipzig[2], N. E. Vermeulen[2], J. N. Meerman[2] and *D. E. Williams*[1]. [1]Environmental and Molecular Toxicology and The Marine/Freshwater Biomedical Sciences Center, Oregon State University, Corvallis, OR and [2]Leiden/Amsterdam Center for Drug Research, Department of Pharmacochemistry, Section of Molecular Toxicology and Design, Vrije Universiteit Amsterdam, Amsterdam, Netherlands.

#653 **REGULATION OF UTERINE HSP90α, HSP72 AND HSF-1 EXPRESSION IN B6C3F1 MICE BY β–ESTRADIOL AND BISPHENOL A: INVOLVEMENT OF THE ESTROGEN RECEPTOR AND PROTEIN KINASE C.** *A. D. Papaconstantinou*[1], *P. L. Goering*[2], *T. H. Umbreit*[2] and *K. M. Brown*[1]. [1]Biological Sciences, George Washington University, Washington, DC and [2]Center for Devices and Radiological Health, U.S. FDA, Rockville, MD.

#654 **ESTROGENIC AND ANTIESTROGENIC ACTIVITIES OF BISPHENOL A AND RELATED BISPHENOLS IN ISHIKAWA CELLS.** H. L. Esch, E. Pfeiffer and *M. Metzler*. Institute of Food Chemistry and Toxicology, University of Karlsruhe, Karlsruhe, Germany.

#655 **MCF-7 CELL MITOGENS DIFFERENTIALLY AFFECT MAPK ACTIVATION AND ESTROGEN RECEPTOR-α PHOSPHORYLATION.** *S. L. Brower*[1] and *M. R. Miller*[1,2]. [1]West Virginia University, Morgantown, WV and [2]NIOSH, Morgantown, WV.

#656 **IDENTIFICATION OF ERβ-RESPONSIVE GENES IN THE OVARIES OF ESTROGEN RECEPTOR α KNOCKOUT MICE.** *C. Q. Sheeler*[1], K. Walker[2], *S. H. Safe*[2] and *K. W. Gaido*[1]. [1]CIIT Centers for Health Research, Research Triangle Park, NC and [2]Texas A&M University, College Station, TX.

#657 **MECHANISM OF ESTROGEN RECEPTOR α/SP1-MEDIATED ACTIVATION OF GC-RICH PROMOTERS BY ESTROGENS AND ANTIESTROGENS.** K. Kim, T. Nguyen, B. Saville and *S. Safe*. Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

#658 **ANTI-ESTROGENIC ACTIVITY OF POLYCYCLIC MUSKS IN THE ZEBRAFISH (*DANIO RERIO*).** R. Schreurs[1], J. Legler[2], P. Lanser[2], W. Seinen[1] and B. v.d. Burg[2]. [1]Institute for Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands and [2]Netherlands Institute of Developmental Biology, Utrecht, Netherlands. Sponsor: *M. van den Berg*.

#659 **ASSESSMENT OF DE-71, A COMMERCIAL POLYBROMINATED DIPHENYL ETHER (PBDE)MIXTURE, IN THE EDSP MALE PUBERTAL PROTOCOL.** T. E. Stoker[1], J. Ferrell[1], J. M. Hedge[2], *K. M. Crofton*[2], R. L. Cooper[1] and S. C. Laws[1]. [1]RTD, NHEERL, ORD, U.S. EPA, Research Triangle Park, NC and [2]NTD, NHEERL, ORD, U.S. EPA, Research Triangle Park, NC.

#660 **THE EFFECTS OF DE-71, A COMMERCIAL POLYBROMINATED DIPHENYL ETHER MIXTURE, ON FEMALE PUBERTAL DEVELOPMENT AND THYROID FUNCTION.** S. C. Laws[1], J. M. Ferrell[1], J. M. Hedge[2], *K. M. Crofton*[2], R. L. Cooper[1] and T. E. Stoker[1]. [1]Reprod. Toxicology. Division, NHEERL, ORD, U.S. EPA, Research Triangle Park, NC and [2]Neurotox. Division, NHEERL, ORD, U.S. EPA, Research Triangle Park, NC.

#661 **PERFLUOROOCTANE SULFONATE (PFOS) DISRUPTS THE THYROID STATUS IN LABORATORY RODENTS.** C. Lau, J. R. Thibodeaux, R. G. Hanson, B. E. Grey and *J. M. Rogers*. Reproductive Toxicology Division, NHEERL, ORD, U.S. EPA, Research Triangle Park, NC.

#662 **ASSESSMENT OF THYROID MODULATING ACTIVITY AND ITS APPLICATION IN PRECLINICAL DRUG DEVELOPMENT: METHODS AND MECHANISMS.** *J. L. Ambroso*[1], *J. Giridhar*[2] and R. T. Miller[1]. [1]Safety Assessment, GlaxoSmithKline, Research Triangle Park, NC and [2]International Nonclinical Registration-Regulatory Affairs, GlaxoSmithKline, Research Triangle Park, NC.

#663 **ANALYSIS OF THYROID HORMONE AND RELATED IODINATED COMPOUNDS BY HPLC-ICP/MS.** P. A. Kosian, A. M. Cotter, S. J. Degitz and J. E. Tietge. Mid-Continent Ecology Division, U.S. EPA, Duluth, MN. Sponsor: *J. Nichols*.

#663a **EFFECT OF *IN UTERO* EXPOSURE TO COPLANAR PCBs ON THE THYROID HORMONE LEVELS AND LIVER MICOROSOMAL T4-UDP-GT IN THE RAT.** F. Akahori1; K. Orito1; M. Yamamoto2; K. Arishima2 and M. Shirai1. 1Azabu University, Sagamihara, Kanagawa, JP and 2. Azabu University, Sagamihara, Kanagawa, JP. Sponsor: *R. Nagata*

Tuesday Morning, March 11
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: RISK ASSESSMENT I

Chairperson(s): *Michael Dourson, Toxicology Excellence for Risk Assessment, Cincinnati, OH and Melissa Beck, WIL Research Laboratories Inc, Ashland, OH.*

Displayed: *9:30 AM–12:30 PM*

Attended: *9:30 AM–11:00 AM*

#664 **A FRAMEWORK FOR EVALUATING RELATIVE POTENCY DATA IN THE DEVELOPMENT OF TOXICITY EQUIVALENCY FACTORS (TEFS).** *K. T. Connor*[1] and B. L. Finley[2]. [1]Exponent, Inc., Natick, MA and [2]Exponent, Inc., Santa Rosa, CA.

#665 **A SCREENING-LEVEL RISK ASSESSMENT APPROACH FOR EVALUATING INTERACTIONS IN CHEMICAL MIXTURES.** K. Price and *K. Krishnan*. Occupational and Environmental Health, Universite de Montreal, Montreal, QC, Canada.

#666 **STATISTICAL ANALYSIS OF AN INTERACTION THRESHOLD IN CHEMICAL MIXTURES ALONG A FIXED-RATIO RAY.** A. K. Hamm[1], C. Gennings[1], H. Carter[1], K. Liao[2] and *R. S. Yang*[2]. [1]Biostatistics, Virginia Commonwealth University, MCV Campus, Richmond, VA and [2]Quantitative and Computational Toxicology Group, Center for Environmental Toxicology and Technology, Colorado State University, Fort Collins, CO.

#667 **DO 'ESTROGEN EQUIVALENTS' MAKE SENSE FOR RISK ASSESSMENT?** *C. J. Borgert*[1,2], *R. J. Witorsch*[3] and L. S. McCarty[4]. [1]Applied Pharmacology and Toxicology, Inc., Alachua, FL, [2]Department Physiological Sciences, University FL College of Veterinary Medicine, Gainesville, FL, [3]Department Physiology, Medical College of Virginia, Virginia Commonwealth University, Richmond, VA and [4]L.S. McCarty Scientific Research & Consulting, Markham, ON, Canada.

#668 **CRITICAL REVIEW OF PRINCIPLES, PRACTICE AND TOXICOLOGY OF CHEMICAL MIXTURES: IMPLICATIONS FOR RISK ASSESSMENT.** L. S. McCarty[3] and *C. J. Borgert*[2,1]. [1]Applied Pharmacology and Toxicology, Inc., Alachua, FL, [2]L.S. McCarty Scientific Research & Consulting, Markham, ON, Canada and [3]Physiological Sciences, University FL College of Veterinary Medicine, Gainesville, FL.

#669 **TOXICITY ASSESSMENT OF COMPLEX MIXTURES REMAINS A GOAL.** *K. Donnelly*[1], *E. Castiglioni*[1], *K. Ramos*[1] and *M. Mumtaz*[2]. [1] , Texas A&M University, College Station, TX and [2]ATSDR, Atlanta, GA.

#670 **ASSESSMENT OF WEIGHT-OF-EVIDENCE METHOD USING MIXTURES OF BENZENE, LEAD, METHYL MERCURY, AND TCE.** *M. M. Mumtaz*[1], H. A. El-Masri[1], C. T. De Rosa[1], D. B. Moffett[1], P. Durkin[2], E. D. Schoen[3], D. Jonker[3], J. P. Groten[3] and J. A. van Zorge[4]. [1]ATSDR/CDC, Atlanta, GA, [2]SERA Inc., Syracuse, NY, [3]Nutrition and Food Research, TNO, Zeist, Netherlands and [4]Ministry of Environment and Spatial Planning, The Hague, Netherlands.

#671 **HEPATOTOXICITY OF CHLOROFORM, ALLYL ALCOHOL, AND TRICHLOROETHYLENE TERNARY MIXTURE IS LESS THAN ADDITIVE.** *S. S. Anand*[1], *V. S. Vaidya*[1], *B. Murali*[1], *M. M. Mumtaz*[2] and *H. M. Mehendale*[1]. [1]Department.of Toxicology, College of Pharmacy, The University of Louisiana at Monroe, Monroe, LA and [2]ATSDR, CDC, Atlanta, LA.

#672 **EVALUATION OF MODE OF ACTION IN ASSESSMENT OF CANCER RISK ASSOCIATED WITH EXPOSURE TO 1, 4-DICHLOROBENZENE.** M. Odin, S. Bosch, *M. Osier* and *P. McGinnis*. Environmental Science Center, Syracuse Research Corp, Syracuse, NY.

#673 **A THRESHOLD LINKAGE BETWEEN CHLOROFORM-INDUCED CELLULAR DAMAGE AND CYTOLETHALITY PROVIDES A BETTER FIT TO HEPATIC LABELING INDEX DATA THAN A LINEAR LINKAGE.** Y. Tan[1], *B. Butterworth*[2] and *R. Conolly*[1]. [1]CIIT Centers for Health Research, Research Triangle Park, NC and [2]Butterworth Consulting, Raleigh, NC.

#674 **NONMONOTONIC DOSE-RESPONSE RELATIONSHIPS: MECHANISTIC BASIS, KINETIC MODELING, AND IMPLICATIONS FOR RISK ASSESSMENT.** *W. K. Lutz*[1], D. W. Gaylor[2] and *R. B. Conolly*[3]. [1]Toxicology, University of Wurzburg, Wurzburg, Germany, [2]Sciences International, Inc., Little Rock, AR and [3]CIIT Centers for Health Research, Research Triangle Park, NC.

#675 **A RISK ASSESSMENT FOR INHALED ARSENIC BASED ON URINARY ARSENIC CONCENTRATION USING A PHARMACOKINETIC MODEL.** *H. Clewell*[1], K. Crump[1], T. Covington[1], R. Gentry[1] and J. Yager[2]. [1]ENVIRON, Ruston, LA and [2]EPRI, Palo Alto, CA.

#676 **ESTIMATION OF METHYLMERCURY EXPOSURES IN US WOMEN OF CHILD-BEARING AGE USING MARKOV CHAIN MONTE CARLO ANALYSIS WITH A PHYSIOLOGICALLY BASED PHARMACOKINETIC MODEL.** B. Allen[1], *H. Clewell*[1], E. Hack[1], K. Crump[1] and J. Yager[2]. [1]ENVIRON, Ruston, LA and [2]EPRI, Palo Alto, CA.

#677 **FURTHER DEVELOPMENT OF A PBPK MODEL FOR GASOLINE USING A CHEMICAL LUMPING APPROACH.** J. E. Dennison[1], *I. D. Dobrev*[1], *M. M. Mumtaz*[2], *M. E. Andersen*[3] and *R. S. Yang*[1]. [1]Center for Environmental Toxicology and Technology, Colorado State, Ft Collins, CO, [2]Agency for Toxic Substances and Disease Registry, Atlanta, GA and [3]Centers for Health Research, Research Triangle Park, NC.

#678 **IDENTIFICATION OF GASOLINE-RELATED AIR POLLUTANTS WITH HIGH EXPOSURE POTENTIAL AND/OR TOXICOLOGICAL CONCERN.** S. M. Hoover, E. W. Fanning, M. K. MacGregor and *M. S. Sandy*. OEHHA, Cal/EPA, Oakland, CA.

#679 **APPLICATION OF A PHYSIOLOGICALLY-BASED PHARMACOKINETIC (PBPK) MODEL TO THE CALCULATION OF A REFERENCE CONCENTRATION (RfC) FOR XYLENES.** *M. Osier* and P. McClure. Environmental Science Center, Syracuse Research Corp, Syracuse, NY.

#680 **A CADMIUM PHARMACOKINETICS/PHARMACODYNAMICS (PKPD) MODEL FOR USE IN RISK ASSESSMENT.** *G. L. Diamond*[1], *H. Choudhury*[2] and W. C. Thayer[1]. [1]Environmental Science Center, Syracuse Research Corp, Syracuse, NY and [2]U.S. EPA, National Center for Environmental Assessment, Cincinnati, OH.

#681 **THE CONCEPT OF BENCHMARK INTERNAL CONCENTRATION (BMIC) IN RISK ASSESSMENT.** D. W. Gaylor[2], *J. A. Moore*[3] and *J. L. Butenhoff*[1]. [1]3M, Saint Paul, MN, [2]Gaylor and Associates, LLC, Little Rock, AR and [3]Hollyhouse, Inc., Arlington, VA.

#682 **ABSORPTION, DISTRIBUTION AND CLEARANCE OF 2, 6-DI-*TERT*-BUTYL-4-NITROPHENOL (DBNP), A SUBMARINE ATMOSPHERIC CONTAMINANT.** *K. R. Still*[1], *G. D. Ritchie*[2], A. E. Jung[2], R. J. Godfrey[3] and G. B. Briggs[2]. [1]Toxicology Detachment, Naval Health Research Center, Wright-Patterson AFB, OH, [2]Geo-Centers, Inc., Wright-Patterson AFB, OH and [3]Man-Tech Environmental, Wright-Patterson AFB, OH.

#683 **EVALUATION OF THE GENOTOXIC POTENTIAL OF STYRENE.** *E. R. Nestmann* and *B. Lynch*. Cantox Health Sciences Inc., Mississauga, ON, Canada.

#684 **STYRENE TOXICITY IN HEPG2 AND HEP3B CELLS.** D. Maurici, V. Campi, I. Malerba, G. Bowe and L. Gribaldo. ECVAM, Joint Research Centre- IHCP, Ispra , Varese, Italy. Sponsor: *E. Sabbioni*.

#685 **USING MECHANISTIC DATA FOR ASSESSING CANCER MODE OF ACTION: 1, 3-DICHLOROPROPENE AS A CASE STUDY.** *A. Maier*[1], *L. T. Haber*[1], *M. L. Dourson*[1] and *W. T. Stott*[2]. [1]Toxicology Excellence for Risk Assessment (TERA), Cincinnati, OH and [2]The Dow Chemical Company, Midland, MI.

#686 **ESTIMATION OF THE CARCINOGENIC POTENTIAL OF POLYCYCLIC AROMATIC HYDROCARBONS.** J. B. Faust, A. G. Salmon, C. D. Sherman, *M. S. Sandy* and *L. Zeise*. Office of Environmental Health Hazard Assessment, California Environmental Protection Agency, Oakland, CA.

#687 **DEVELOPMENT OF CANCER POTENCY ESTIMATES FOR CALIFORNIA'S PROPOSITION 65.** T. A. McDonald, S. M. Hoover, J. B. Faust, J. Rabovsky, M. K. MacGregor, C. D. Sherman, *M. S. Sandy* and *L. Zeise*. OEHHA, California EPA, Oakland, CA.

#688 **USE OF BENCHMARK CONCENTRATION METHODOLOGY IN RISK ASSESSMENT FOR AIR TOXICS.** J. F. Collins, A. G. Salmon, J. P. Brown, D. C. Lewis, D. E. Dodge, *M. A. Marty* and *G. V. Alexeeff*. Office of Environmental Health Hazard Assessment, Cal/EPA, Oakland, CA.

#689 **NEW APPROACHES FOR DERIVING A REFERENCE CONCENTRATION FOR METHYL ETHYL KETONE.** M. H. Follansbee, P. R. McClure and *P. McGinnis*. Environmental Science Center, Syracuse Research Corp, Syracuse, NY.

#690 **UPDATED PHENOL REFERENCE DOSE: CONSIDERATIONS IN APPLYING IMMUNOTOXICITY DATA AND THE ROLE OF ENDOGENOUS PRODUCTION.** *M. A. Barron*, *L. Haber* and *M. Dourson*. Office of Solid Waste, U.S. EPA, Washington, D.C., DC.

#691 **SHORT-TERM INHALATION TOXICITY BENCHMARK FOR NICKEL OXIDE.** L. H. Fraiser[1] and *I. Chaudhuri*[2]. [1]ENSR International, Austin, TX and [2]ENSR International, Westford, MA.

#692 **ACUTE AND CANCER RISK ASSESSMENT VALUES FOR *TERT*-BUTYL ACETATE.** J. D. Budroe, A. G. Salmon and *M. A. Marty*. Air Toxicology and Epidemiology Section, Office of Environmental Health Hazard Assessment (OEHHA), Oakland, CA.

#693 **CYCLIC ACID ANHYDRIDES AS OCCUPATIONAL SENSITISERS - A NORDIC EXPERT GROUP CRITERIA DOCUMENT.** *G. Johanson*[1], H. Keskinen[2] and J. Järnberg[3]. [1]Work Environment Toxicology, Inst of Environ Med., Karolinska Institutet, Stockholm, Sweden, [2]Finnish Inst of Occup Health, Helsinki, Finland and [3]Nat Inst for Working Life, Stockholm, Sweden.

#694 **PROVISIONAL TOXICITY VALUES FOR 0-NITROTOLUENE FOR THE HEALTH EFFECTS ASSESSMENT SUMMARY TABLE (HEAST).** M. E. Fransen[1], M. Odin[1] and *H. Choudhury*[2]. [1]Environmental Science Center, Syracuse Research Corp, Syracuse, NY and [2]Office of Research and Development, National Center for Environmental Assessment, Cincinnati, OH.

#695 **COMPARISON OF THE NUTRITIONAL REQUIREMENT AND RISK ASSESSMENT FOR ESSENTIAL TRACE ELEMENTS (ETES) BY THE INSTITUTE OF MEDICINE (IOM) AND THE U.S. EPA: ZINC A CASE STUDY.** K. A. Poirier[1], J. Cicmanec[2], *C. O. Abernathy*[3] and J. M. Donohue[3]. [1]TERA, Cincinnati, OH, [2]U.S. EPA, Cincinnati, OH and [3]U.S. EPA, Washington, DC.

#696 **CROSS SPECIES MODE OF ACTION INFORMATION ASSESSMENT FOR BISPHENOL A.** S. Y. Euling and B. Sonawane. NCEA, U.S. EPA, Washington, DC. Sponsor: *C. Kimmel*.

#697 **ANALYSIS OF NESTED DATA FROM DEVELOPMENTAL STUDIES: A RE-EVALUATION OF AZINPHOSMETHYL DEVELOPMENT STUDIES.** *Q. J. Zhao* and *M. Dourson*. Toxicology Excellence for Risk Assessment (TERA), Cincinnati, OH.

#698 **HOW DIETARY IODINE AFFECTS THE DOSE-RESPONSE FOR PERCHLORATE INHIBITION OF IODIDE UPTAKE BY THE THYROID: A MODELING ANALYSIS OF CLINICAL EXPOSURE DATA.** *G. Goodman*. Intertox, Inc., Seattle, WA.

#699 **WEIGHT-OF-EVIDENCE CHARACTERIZATION OF THE ENDOCRINE-MODULATING EFFECTS OF ATRAZINE: IMPLICATIONS FOR HUMAN HEALTH RISK ASSESSMENT.** *A. M. Mahfouz*[1], *B. R. Stern*[2] and *L. T. Haber*[3]. [1]Office of Water, U.S. EPA, Washington, DC, [2]BR Stern Associates, Annandale, VA and [3]TERA, Cincinnati, OH.

#699a **CANCER RISK ASSESSMENT OF ACRYLAMIDE IN FOODS.** T. Sanner[1] and *E. Dybing*[2]. [1]Institute of Cancer Research, The Norwegian Radium Hospital, Oslo, Norway and [2]Division of Environmental Medicine, Norwegian Institute of Public Health, Oslo, Norway.

Tuesday Morning, March 11
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: DISPOSITION/PHARMACOKINETICS

Chairperson(s): *Kelly Dix, Lovelace Respiratory Research Institute, Albuquerque, NM and Gregory Blumenthal, ICF Consulting, Durham, NC.*

Displayed: *9:30 AM–12:30 PM*

Attended: *11:00 AM–12:30 PM*

#700 **FEASIBILITY OF LONG-TERM CONTINUOUS INTRAVENOUS INFUSION IN UNRESTRAINED MARMOSET MONKEYS.** S. Korte, U. Zuehlke, P. Nowak, S. Tippkoetter, A. Wiederhold, B. Niggemann, G. F. Weinbauer, W. Mueller and F. Vogel. Covance Laboratories GmbH, Muenster, Germany. Sponsor: *P. Thomas*.

#701 **A PHARMACOKINETIC STUDY OF CJC-1008, A NOVEL OPIOID, IN MONKEYS USING DUAL ISOTOPE LABELING DEMONSTRATES A LONG ELIMINATION HALF-LIFE AND DISTRIBUTION IN PERIPHERAL TISSUES.** V. Iordanova[1], D. Dunn[2], *T. Zoetis*[2], S. Wen[1], C. Gagnon[1], J. Castaigne[1] and B. Lawrence[1]. [1]ConjuChem, Inc., Montreal, QC, Canada and [2]Milestone Biomedical Associates, Frederick, MD.

#702 **ORAL BIOAVAILABILITY OF DICHLOROACETATE IN HUMAN SUBJECTS.** *I. Schultz*[1], *S. Saghir*[1] and R. Shangraw[2]. [1]Battelle PND, Sequim, WA and [2]Anesthesiology, Oregon Health Sciences University, Portland, OR.

#703 **TOLERABILITY AND REPEAT-DOSE PHARMACOKINETICS (PK) OF ACETAMINOPHEN (APAP) AT 4, 6, AND 8 G /DAY IN HEALTHY ADULTS.** C. K. Gelotte, J. F. Auiler, J. M. Lynch, *A. R. Temple* and D. L. Bowen. Research & Development, McNeil Consumer & Specialty Pharmaceuticals, Fort Washington, PA.

#704 **THE USE OF A VALIDATED METHOD FOR THE ANALYSIS OF THUJONE IN PRELIMINARY TOXICOKINETIC RODENT PLASMA AND BRAIN SAMPLES.** B. L. Burback[1], S. Graves[1], C. Smith[2] and *L. Fomby*[1]. [1]Toxicology Columbus, Battelle, Columbus, OH and [2]NIEHS, Research Triangle Park, NC.

#705 **ABSORPTION, ELIMINATION AND METABOLISM OF 1-PHENOXY-2-PROPANOL IN RATS?** *S. A. Saghir*, K. A. Brzak, M. J. Bartels and *P. J. Spencer*. Toxicology & Environmental Research & Consulting, The Dow Chemical Company, Midland, MI.

#706 **CORTICOSTERONE IN DRINKING WATER ALTERED THE TIME AND PLASMA CONCENTRATION CURVE OF A SINGLE ORAL DOSE OF CORTICOSTERONE AND LEVELS OF PLASMA SODIUM, ALBUMIN, GLOBULIN, AND TOTAL PROTEIN.** *T. Pung*, K. Zimmerman, D. Moore, K. Fuhrman and *M. Ehrich*. Virginia-Maryland Regional College of Veterinary Medicine, Virginia Tech, Blacksburg, VA.

#707 **COMPARATIVE DISPOSITION OF N, N-DIMETHYL-*p*-TOLUIDINE (DMPT) IN MALE F344 RATS AND B6C3F$_1$ MICE.** *K. J. Dix*, M. W. Gurule, B. M. Hedtke and K. Ghanbari. Lovelace Respiratory Research Institute, Albuquerque, NM.

#708 **IODINE KINETIC BEHAVIOR IN TISSUES OF PND10 MALE AND FEMALE PUPS FOLLOWING ORAL DOSING.** *K. O. Yu*, R. A. Clewell, *D. A. Mahle*, *J. M. Gearhart* and *D. R. Mattie*. Operational Toxicology, U.S. Air Force, Wright-Patterson AFB, OH.

#709 **PHARMACOKINETICS OF GENISTEIN FOLLOWING INTRAVENOUS AND ORAL ADMINISTRATION TO ADULT FEMALE SPRAGUE-DAWLEY RATS.** A. Upmeier, B. A. Elswick, H. D. Parkinson, W. L. Krol and *S. J. Borghoff*. Division of Biological Sciences, CIIT Centers for Health Research, Research Triangle Park, NC.

#710 **TRANSPLACENTAL TRANSFER OF GENISTEIN AND CONJUGATED METABOLITES IN SPRAGUE-DAWLEY RATS.** *S. Borghoff*, C. C. Willams, H. D. Parkinson and A. Upmeier. CIIT Centers for Health Research, Research Triangle Park, NC.

#711 **DISPOSITION OF JUGLONE IN MALE F344 RATS.** E. H. Lebetkin, L. Chen and *L. T. Burka*. LPC, NIEHS, Research Triangle Park, NC.

#712 **DISPOSITION OF 5-NITROACENAPHTHENE IN F-344 RATS.** *A. F. Austin* and *A. M. Nyanda*. Pharmacology, Meharry Medical College, Nashville, TN.

#713 **SULFURYL FLUORIDE: PHARMACOKINETICS AND METABOLISM IN F344 RATS.** A. L. Mendrala[1], *D. L. Eisenbrandt*[2], D. A. Markham[1], A. J. Clark[1], S. M. Krieger[1], C. E. Houtman[1] and D. L. Rick[1]. [1]The Dow Chemical Company, Midland, MI and [2]Dow AgroSciences LLC, Indianapolis, IN.

#714 **INCREASED ORAL BIOAVAILABILITY OF PYRIDOSTIGMINE BROMIDE FOLLOWING DERMAL CO-EXPOSURE TO DEET AND/OR PERMETHRIN IN RATS.** A. W. Abu-Qare[1], A. A. Abdel-Rahman[1], *G. M. Blumenthal*[2] and *M. B. Abou-Donia*[1]. [1]Pharmacology and Cancer Biology, Duke University Medical Center, Durham, NC and [2]ICF Consulting, Durham, NC.

#715 **DISPOSITION OF DECAMETHYLCYCLOPENTASILOXANE IN F344 RATS FOLLOWING A SINGLE ORAL DOSE.** *M. L. Jovanovic*, D. A. McNett, J. M. Regan and *K. P. Plotzke*. Health and Environmental Sciences, Dow Corning Corporation, Midland, MI.

#716 **PHARMACOKINETICS OF PERFLUOROOCTANOIC ACID IN MALE AND FEMALE RATS.** *R. A. Kemper* and *G. W. Jepson*. Biochemical and Molecular Toxicology, Haskell Laboratory for Health and Environmental Sciences, Newark, DE.

#717 **COMPARATIVE TISSUE DISTRIBUTION AND URINARY EXCRETION OF INORGANIC ARSENIC (IAs) AND ITS METHYLATED METABOLITES IN MICE FOLLOWING ORAL ADMINISTRATION OF ARSENATE (AsV) AND ARSENITE (AsIII).** *E. M. Kenyon*[1], *L. Del Razo*[2] and *M. F. Hughes*[1]. [1]ORD/NHEERL/ETD/PKB, U.S. EPA, Research Triangle Park, NC and [2]CINVESTAV-IPN, Mexico City, Mexico.

#718 **TOXICOKINETICS OF AZT WHEN ADMINISTERED IN COMBINATION WITH TRIMETHOPRIM AND SULFAMETHOXAZOLE TO MICE.** *J. L. Valentine*[1], S. A. Anderson[1], Y. Yueh[1], D. R. Brine[1], C. M. Sparacino[1] and B. J. Collins[2]. [1]RTI, Research Triangle Park, NC and [2]NIEHS, Research Triangle Park, NC.

#719 **DISTRIBUTION OF PCB 84 ATROPISOMERS IN FEMALE C57BL/6 MICE.** H. Lehmler[1], D. J. Price[2], W. Garrison[3], W. J. Birge[2] and *L. W. Robertson*[1]. [1]Graduate Center for Toxicology, University of Kentucky, Lexington, KY, [2]School of Biological Sciences, University of Kentucky, Lexington, KY and [3]U.S. EPA, Athens, GA.

#720 **CHLOROTRIAZINE KINETICS IN FEMALE RATS FOLLOWING A SINGLE ORAL GAVAGE DOSE OF ATRAZINE OR ITS CHLORINATED METABOLITES.** J. Brzezicki, B. K. Cranmer, J. D. Tessari and *M. E. Andersen*. Environmental and Radiological Health Science, Colorado State University, Fort Collins, CO.

#721 **USE OF WHOLE-ORGANISM CHEMICAL RESIDUE ANALYSIS AND LASER SCANNING CONFOCAL MICROSCOPY TO DESCRIBE THE DISTRIBUTION OF PBTS IN FISH EARLY LIFE STAGES.** *M. Hornung*, P. M. Cook and *J. W. Nichols*. NHEERL, MED, U.S. EPA, Duluth, MN.

Tuesday Morning, March 11
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: TOXICOGENOMICS AND PROTEOMICS II

Chairperson(s): *Daniel Liebler, University of Arizona, Tucson, AZ and Kenneth Voss, USDA, Athens, GA.*

Displayed: *9:30 AM–12:30 PM*

Attended: *9:30 AM–11:00 AM*

#722 **MACROPHAGE ACTIVATOR GENE EXPRESSION PROFILE DETERMINED USING cDNA MICROARRAYS.** A. M. Leone[1], J. B. Parker[1], M. McMillian[1], A. Nie[1], M. Kemmerer[1], S. Bryant[1], J. Herlich[1], L. Yieh[2], A. Bittner[2], X. Liu[2], J. Wan[2] and *M. D. Johnson*[1]. [1]Drug Discovery Support, Johnson & Johnson Pharmaceutical Research & Development, L.L.C., Raritan, NJ and [2]Bioinformatics, Johnson & Johnson Pharmaceutical Research & Development, L.L.C., La Jolla, CA.

#723 **AROCLOR 1254 INDUCED TRANSCRIPT PROFILES IN RAT.** J. D. Retief[2], J. Martin[2], C. Wanke[1], H. Martus[1], S. Chibout[1] and F. Staedtler[1]. [1]Preclinical Safety, Novartis Pharmacology AG, Basel, Switzerland , Switzerland and [2]Genomic Collaborations, Affymetrix, Inc., Santa Clara, CA. Sponsor: *V. Nogues*.

#724 **A COMPARISON OF ARRAY HYBRIDIZATION, MRNA DIFFERENTIAL DISPLAY, AND REAL-TIME PCR IN THE EVALUATION OF THE EFFECTS OF TROGLITAZONE ON GENE EXPRESSION IN PRIMARY HUMAN HEPATOCYTES.** L. Tang[1], B. Komoroski[2], K. Tiegler[1], J. Tibbits[1], T. Nolan[1], R. Suizu[1], *R. Neft*[1], L. Kier[1], S. Strom[2] and *A. P. Li*[1]. [1]Phase-1 Molecular Toxicology, Inc., Santa Fe, NM and [2]Pathology, University of Pittsburgh, Pittsburgh, PA.

#725 **A SEARCH FOR MOLECULAR TARGETS OF LEAD: A NOVEL PROTEOMIC APPROACH.** F. I. Carvalho and M. E. Gillespie. Pharmaceutical Sciences, St. John's University, New York, NY. Sponsor: *F. Schanne*.

#726 **CLUSTER ANALYSIS OF GENE EXPRESSION IN PRIMARY HUMAN HEPATOCYTES AND HEPG2 CELLS TREATED WITH HEPATOTOXICANTS AND HEPATOCARCINOGENS.** A. J. Harris[1], S. Dial[1] and *D. A. Casciano*[2]. [1]Center for Hepatotoxicity, NCTR, Jefferson, AR and [2]Office of the Director, NCTR, Jefferson, AR.

#727 **IDENTIFYING POST-TRANSLATIONAL MODIFICATIONS INDUCED BY CHEMICAL TREATMENT USING MALDI-MS AND HPLC-ESI-MS/MS.** M. D. Person , H. Lo, K. Tikoo, *T. J. Monks* and *S. S. Lau*. Center for Molecular and Cellular Toxicology, The University of Texas at Austin, Austin, TX.

#728 **THE COMPARATIVE TOXICOGENOMICS DATABASE (CTD).** C. J. Mattingly[1], G. T. Colby[1], J. N. Forrest[2,1] and J. L. Boyer[2,1]. [1]Bioinformatics, MDI Biological Laboratory, Salsbury Cove, ME and [2]Medicine, Yale University School of Medicine, New Haven, CT. Sponsor: *W. Toscano*.

#729 **SOURCES OF VARIABILITY IN TRANSCRIPT PROFILING EXPERIMENTS.** D. M. Zimmer, J. M. Fostel, *Y. Gu*, P. R. Harbach, J. W. Davis and *W. B. Mattes*. Investigative Toxicology, PCD Genomics, Pharmacia, Kalamazoo, MI.

#730 **ADDUCTION AND INHIBITION OF HUMAN GSTP1-1 BY ACROLEIN: A PARALLEL PROTEOMICS APPROACH.** *A. L. Ham*, C. R. Orton and *D. C. Liebler*. Southwest Environmental Health Sciences Center, College of Pharmacy, University of Arizona, Tucson, AZ.

#731 **DEVELOPMENT OF A RAT LIVER GENE EXPRESSION REAL-TIME PCR DATABASE FOR TOXICOGENOMICS USING RAT TOXICOLOGY CARDS.** R. Neft[1], B. Breitinger[2], S. Amur[2] and L. Kier[1]. [1]Phase-1 Molecular Toxicology, Inc., Santa Fe, NM and [2]Applied Biosystems, Inc., Foster City, CA. Sponsor: *A. Li*.

#732 **REFINEMENT OF A HIGH-THROUGHPUT 2D-PAGE TECHNIQUE FOR THE EVALUATION OF UBIQUITIN-CONJUGATED PROTEIN STATUS INDUCED BY DEVELOPMENTAL TOXICANTS.** S. Hong, J. S. Sidhu, E. Kim and *E. M. Faustman*. Env Health, University of Washington, Seattle, WA.

#733 **GENE EXPRESSION BIOMARKERS THAT ACCURATELY PREDICT KIDNEY TUBULAR NECROSIS.** L. Kier and T. Nolan. Phase-1 Molecular Toxicology, Inc., Santa Fe, NM. Sponsor: *A. Li*.

#734 **ACUTE SARIN EXPOSURE-INDUCES EARLY AND PERSISTENT ALTERED GENE EXPRESSION IN THE NERVOUS SYSTEM: A MICROARRAY STUDY-BASED MODEL IN RATS.** *T. V. Damodaran*, A. G. Patel, H. A. Dressman, S. A. Lin and *M. B. Abou-Donia*. Pharmacology and Cancer Biology, Duke University Medical Center, Durham, NC.

#735 **GENE EXPRESSION PROFILES: EVALUATION OF ANALYTICAL AND BIOLOGICAL NOISE IN CELL LINES.** M. C. Miller[1], G. S. Pittman[1], J. B. Collins[2], S. F. Grissom[2], C. J. Tucker[2], P. R. Bushel[2], R. S. Paules[2] and D. A. Bell[1]. [1]DIR LCBRA GR, NIEHS, Research Triangle Park, NC and [2]DIR OSD OSD MA, NIEHS, Research Triangle Park, NC. Sponsor: *C. Portier*.

#736 **MECHANISM OF RAT RENAL TOXICITY PRODUCED BY A KINASE INHIBITOR: A TOXICOGENOMIC APPROACH.** *Z. Jayyosi*[1], M. Hower[1], M. Wojke[1], J. Dwyer[1], M. Wang[2], N. Ge[3], M. Valerio[1], *T. Monticello*[1], *K. Morgan*[1] and *P. Rao*[1]. [1]Drug Safety Evaluation, Aventis Pharmaceuticals, Bridgewater, NJ, [2]Bioinformatics, Aventis Pharmaceuticals, Bridgewater, NJ and [3]Biostatistics, Aventis Pharmaceuticals, Bridgewater, NJ.

#737 **PROTEOMIC PROFILING OF SUMO-1 AND SUMO-2/3 PROTEIN CONJUGATION IN HEK 293 CELLS FOLLOWING EXPOSURE TO 4-HYDROXYNONENAL.** L. L. Manza and *D. C. Liebler*. Southwest Environmental Health Sciences Center, University of Arizona, Tucson, AZ.

#738 **ANALYSIS OF GENE EXPRESSION PATTERNS IN LARGEMOUTH BASS THROUGHOUT THEIR REPRODUCTIVE CYCLE AND WITH EXPOSURE TO p, p' DDE USING GENE ARRAYS.** P. M. Larkin[1,2], *T. Sabo-Attwood*[3], J. Kelso[2] and *N. D. Denslow*[2,4]. [1]EcoArray LLC, Alachua, FL, [2]Biotechnology Program, University of Florida, Gainesville, FL, [3]Interdisciplinary Program in Pharmacology and Therapeutics, University of Florida, Gainesville, FL and [4]Department of Biochemistry and Molecular Biology, University of Florida, Gainesville, FL.

#739 **DIFFERENTIAL EXPRESSION OF PROTEINS DURING EARLY MOUSE LIVER CARCINOGENESIS INDUCED BY NON-GENOTOXIC MODEL CARCINOGENS OXAZEPAM AND WYETH-14, 643.** M. E. Bruno, *B. A. Merrick*, M. Iida, C. H. Anna, J. E. Hartis, J. R. Dubin, K. B. Tomer, R. C. Sills and T. R. Devereux. NCT, NIEHS, Research Triangle Park, NC.

#740 **GENE MODULATION PATTERNS ASSOCIATED WITH AROMATIC GAMMA-DIKETONE NEUROTOXICITY.** M. Kim[1], M. Lasarev[1], S. B. Hashemi[1], S. Nagalla[2], *M. I. Sabri*[1] and *P. S. Spencer*[1]. [1]CROET, Oregon Health & Science University, Portland, OR and [2]Pediatrics, School of Medicine, Oregon Health & Science University, Portland, OR.

#741 **IDENTIFICATION OF MOLECULAR TARGETS OF HEPATOTOXICANT THIOACETAMIDE USING 2-DIMENSIONAL ELECTROPHORESIS AND MALDI-MS.** *H. M. Mehendale*[1], *U. M. Apte*[1], *J. Li*[2], H. Coppage[2], N. Pedrick[2] and *F. A. Witzmann*[2]. [1]Department of Toxicology, The University of Louisiana at Monroe, Monroe, LA and [2]Department of Cellular and Integrative Physiology, Indiana University School of Medicine, Indianapolis, IN.

#742 **DBZACH: AN INTEGRATIVE TOXICOGENOMIC SUPPORTIVE RELATIONAL DATABASE SYSTEM.** S. S. Pai[2,4], *L. D. Burgoon*[1,3,4], P. C. Boutros[2,4], E. Dere[2,4], Y. Sun[2,4], R. Aiyar[2,4], J. Vakharia[2,4] and *T. Zacharewski*[2,3,4]. [1]Pharmacology & Toxicology , Michigan State University, East Lansing, MI, [2]Biochemistry & Molecular Biology, Michigan State University, East Lansing, MI, [3]Institute for Environmental Toxicology, Michigan State University, East Lansing, MI and [4]National Food Safety & Toxicology Center, Michigan State University, East Lansing, MI.

#743 **TOXICANT CLASS SEPARATION USING GENE EXPRESSION PROFILES DETERMINED BY cDNA MICROARRAY.** J. B. Parker[1], A. M. Leone[1], M. McMillian[1], A. Nie[1], M. Kemmerer[1], S. Bryant[1], J. Herlich[1], L. Yieh[2], A. Bittner[2], X. Liu[2], J. Wan[2] and *M. D. Johnson*[1]. [1]Drug Discovery Support, Johnson & Johnson Pharmaceutical Research & Development, LLC, Raritan, NJ and [2]Bioinformatics, Johnson & Johnson Pharmaceutical Research & Development, LLC, La Jolla, CA.

Tuesday Morning, March 11
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: *IN VITRO* TOXICOLOGY MODELS

Chairperson(s): *Jill Merrill, Institute for In Vitro Sciences, Gaithersburg, MD and Kathleen Cater, Dial Corporation, Scottsdale, AZ.*

Displayed: *9:30 AM–12:30 PM*

Attended: *11:00 AM–12:30 PM*

#744 **SUPPRESSION OF INDUCIBLE NITRIC OXIDE SYNTHASE AND TUMOR NECROSIS FACTOR-A EXPRESSION BY BISPHENOL A *VIA* NUCLEAR FACTOR-KB INACTIVATION IN MACROPHAGES.** J. Kim[1] and *H. Jeong*[1,2]. [1]Pharmacy, Chosun University, Kwangju, Kwangju, South Korea and [2]Research Center for Proteineous Materials, Chosun University, Kwangju, South Korea.

#745 **USE OF THE MCF-7 FOCUS ASSAY TO CHARACTERIZE PCB ESTROGENIC MODULATION.** *K. F. Arcaro*[3], D. D. Vakharia[1], Y. Yang[1] and *J. F. Gierthy*[1,2]. [1]Wadsworth Center, New York State Department of Health, Albany, NY, [2]School of Public Health, State University of New York at Albany, Albany, NY and [3]UMass, Amherst, MA.

#746 **MEASUREMENT OF FREE CONCENTRATION WITH ND-SPME IN AN *IN VITRO* ASSAY FOR ESTROGENIC ACTIVITY.** M. B. Heringa[1], R. Schreurs[1], *B. van der Burg*[2] and J. L. Hermens[1]. [1]Institute for Risk Assessment Sciences (IRAS), Utrecht University, Utrecht, Netherlands and [2]Netherlands Institute of Developmental Biology, Utrecht, Netherlands.

#747 **OPTIMIZATION OF HUMAN LIVER AND KIDNEY SLICE INCUBATION IN DYNAMIC ORGAN CULTURE.** *R. Fisher*[1] and *A. Vickers*[2]. [1]Vitron, Inc., Tucson, AZ and [2]Novartis Institute for Biomedical Research, East Hanover, NJ.

#748 **A COMPARISON OF CYTOTOXICITY INDUCED BY SULFUR MUSTARD AND LEWISITE.** H. Meier. USAMRICD, APG, MD. Sponsor: *S. Baskin*.

#749 **OPTIMIZATION AND VALIDATION OF THE MCF-7 FOCUS ASSAY FOR ESTROGEN MODULATORS.** *J. F. Gierthy*[1,2], *K. F. Arcaro*[3], *A. Li*[4], *P. Silber*[4], S. Lloyd[4] and Y. Yang[1]. [1]Wadsworth Center, New York State Department of Health, Albany, NY, [2]School of Public Health, State University of New York at Albany, Albany, NY, [3]University of Massachusetts, Amherst, MA and [4]In Vitro Technologies, Inc., Baltimore, MD.

#750 **DIMETHYL SULFOXIDE AND ETHANOL, ORGANIC SOLVENTS MOST COMMONLY USED AS VEHICLES *IN VITRO*, AFFECT PRECISION-CUT LIVER SLICE VIABILITY.** *J. B. Ulreich*, M. H. French, W. Ho and P. Z. Nakazato. Surgery, University of Arizona, Tucson, AZ.

#751 **DETOXIFICATION AND MUTAGENIC RESPONSE IN MEDAKA (ORYZIAS LATIPES) EXPOSED TO 3-CHLORO-4-(DICHLOROMETHYL)-5-HYDROXY-2-[5H]-FURANONE (MX).** D. R. Geter[3,1], J. W. Fournie[2], M. H. Brouwer[3], *A. B. DeAngelo*[1] and W. E. Hawkins[3]. [1]NHEERL, U.S. EPA, Research Triangle Park, NC, [2]NHEERL, U.S. EPA, Gulf Breeze, FL and [3]Gulf Coast Research Laboratory, Ocean Springs, MS.

#752 **ACTIVITY OF BIOTRANSFORMATION ENZYMES IN EMBRYONIC TURKEY LIVER AND BIOACTIVATION OF 2-ACETYLAMINOFLUORENE.** C. E. Perrone[1], J. D. Duan[1], *A. M. Jeffrey*[1], *G. M. Williams*[1], U. Schmidt[2], H. J. Ahr[2] and H. G. Enzmann[2]. [1]Pathology, New York Medical College, Valhalla, NY and [2]Institute of Toxicology, Bayer A.G., Wuppertal, Germany.

#753 ***IN VITRO* CYTOTOXICITY TESTING WITH CULTURED NORMAL AND IMMORTAL HUMAN MAMMARY CELLS.** *F. A. Barile*, V. M. Abramoff and V. Wong. Pharmaceutical Sciences, St. John's University College of Pharmacy & Allied Health Professions, Jamaica, NY.

#754 **SYNERGISTIC INTERACTION IN SIMULTANEOUS EXPOSURE TO *STREPTOMYCES CALIFORNICUS* AND *STACHYBOTRYS CHARTARUM*.** K. J. Huttunen[2,1], J. J. Jussila[2] and M. Hirvonen[2]. [1]Division of Environmental Health, National Public Health Institute, Kuopio, Finland and [2]University of Kuopio, Kuopio, Finland. Sponsor: *M. Viluksela*.

#755 **E-LLNA: AN ENHANCED, FLOW CYTOMETRY-BASED LOCAL LYMPH NODE ASSAY WITH IMMUNOPHENOTYPE ANALYSIS.** D. Kim, *E. J. Yurkow*, T. L. Ripper, T. L. Fox, S. H. Young, A. C. Gilotti and *G. DeGeorge*. MB Research Laboratories, Spinnerstown, PA.

#757 **PHOTO-LLNA: AN ALTERNATIVE PHOTOSENSITIZATION TEST USING FLOW CYTOMETRY AND IMMUNOPHENOTYPIC MARKERS TO IDENTIFY AND CHARACTERIZE PHOTOALLERGENS.** *G. L. DeGeorge*, T. L. Ripper, T. L. Fox, *E. J. Yurkow* and *D. R. Cerven*. MB Research Laboratories, Spinnerstown, PA.

#758 **EVALUATION OF MTT METABOLISM AS A MEANINGFUL INDICATOR OF VIABILITY IN HUMAN CORNEAL EPITHELIAL TISSUE MODELS.** M. D. Hines, *B. C. Jones* and *S. D. Gettings*. Avon Products Inc., Suffern, NY.

#759 **APPLICATION OF AMPHITOX ASSAY TO DETERMINE THE TOXICITY OF DICHLOROACETIC AND TRICHLOROACETIC ACIDS.** J. Herkovits[1], L. M. Munoz[1], C. M. Asorey[1] and *J. C. Lipscomb*[2]. [1]Fundacion PROSAMA, Instituto de Ciencias Ambientales y Salud, Buenos Aires, Argentina and [2]ORD / National Center for Environmental Assessment, U.S. EPA, Cincinnati, OH.

#760 **ESTABLISHMENT OF RAT LD50 REFERENCE VALUES FOR CHEMICALS TESTED IN A VALIDATION STUDY OF *IN VITRO* CYTOTOXICITY ASSAYS.** M. W. Paris[1,2], J. A. Strickland[1,2], *R. R. Tice*[1,2] and *W. S. Stokes*[2]. [1]ILS, Inc., Research Triangle Park, NC and [2]NICEATM, NIEHS, Research Triangle Park, NC.

#761 **DESIGN OF A VALIDATION STUDY TO EVALUATE *IN VITRO* CYTOTOXICITY ASSAYS FOR PREDICTING RODENT AND HUMAN ACUTE SYSTEMIC TOXICITY.** J. A. Strickland[1,2], *W. S. Stokes*[2], S. Casati[3], M. W. Paris[1,2], A. P. Worth[3], H. Raabe[4], C. Cao[5], R. Clothier[6], J. Harbell[4], *R. Curren*[4], J. Haseman[7] and *R. R. Tice*[1,2]. [1]ILS, Inc., Research Triangle Park, NC, [2]NICEATM, NIEHS, Research Triangle Park, NC, [3]JRC, ECVAM, Ispra, Italy, [4]IIVS, Inc., Gaithersburg, MD, [5]Edgewood Chemical Biological Center, U.S. Army, APG, MD, [6]University of Nottingham, Nottingham, United Kingdom and [7]NIEHS, Research Triangle Park, NC.

#762 **CHARACTERIZATION OF DRUG METABOLIZING ENZYMES IN LLC-PK1 CELLS.** *J. B. Tarloff* and R. J. Gonzalez. Pharmaceutical Sciences, University of the Sciences in Philadelphia, Philadelphia, PA.

#763 **ICCVAM/NICEATM EXPERT PANEL RECOMMENDATIONS FOR THE STANDARDIZATION AND VALIDATION OF *IN VITRO* ESTROGEN RECEPTOR (ER) AND ANDROGEN RECEPTOR (AR) BINDING ASSAYS.** *R. R. Tice*[1,2], *G. Daston*[3], T. Brown[4], *B. S. Shane*[1,2], C. J. Inhof[1,2], *E. Zeiger*[5] and *W. S. Stokes*[2]. [1]ILS, Inc., Research Triangle Park, NC, [2]NICEATM, NIEHS, Research Triangle Park, NC, [3]Procter & Gamble, Cincinnati, OH, [4]Johns Hopkins University, Baltimore, MD and [5]Errol Zeiger Consulting, Chapel Hill, NC.

#764 **ASSESSMENT OF PROTOCOL VARIABLES IN CYTOTOXICITY ASSAYS UTILIZING BALB/C 3T3 CELLS AND NORMAL HUMAN KERATINOCYTES.** *R. D. Curren*, G. O. Moyer, N. Wilt, M. L. Clear, A. M. Sizemore and G. Mun. Institute for In Vitro Sciences, Inc., Gaithersburg, MD.

#765 **HUMAN MICROVASCULAR ENDOTHELIAL CELLS AND COCAETHYLENE-INDUCED VASCULAR TOXICITY.** *D. P. Tacker*, *G. S. Ansari* and A. O. Okorodudu. Pathology, University of Texas Medical Branch, Galveston, TX.

#766 **PROGRESS REPORT ON THE DSSTOX DATABASE NETWORK: NEWLY LAUNCHED WEBSITE, APPLICATIONS, FUTURE PLANS.** A. M. Richard[1] and C. R. Williams[1,2]. [1]NHEERL, U.S. EPA, Research Triangle Park, NC and [2]NC Central University, Durham, NC. Sponsor: *L. King*.

#767 **ASSESSMENT OF COLONY NUMBER AND MORPHOLOGY HIGHLIGHTS TOXICITY FOR HEMATOPOIETIC AND MESENCHYMAL PROGENITORS.** E. Clarke and J. E. Damen. Contract Assay, Stem Cell Technologies Inc., Vancouver, BC, Canada. Sponsor: *M. Ehrich*.

#768 **EPIDERM™ FULL THICKNESS (EPIDERM-FT), A DERMAL-EPIDERMAL SKIN MODEL WITH A FULLY DEVELOPED BASEMENT MEMBRANE.** *P. J. Hayden*, J. Kubilus, B. Burnham, G. R. Jackson and *M. Klausner*. MatTek Corp., Ashland, MA.

#769 **VALIDATION AND AUTOMATION OF AN *IN VITRO* TOXICITY SCREEN USING ACTIVTOX C3A HEPATOCYTE CELL LINE ON A FAMILY OF NSAIDS.** M. Walterscheid[2], A. V. Rizvi[1], T. L. Guthrie[1], J. Kelly[2] and T. M. Fletcher[1]. [1]Cancer Therapeutics and Immunology, Southern Research Institute, Birmingham, AL and [2]Amphioxus Cell Technologies, Houston, TX. Sponsor: *J. Page*.

#769a **EVALUATION OF THE METABOLISM OF TOXIN T514 (PEROXISOMICINE) IN HEPATOCYTES AND LIVER MICROSOMES.** M. Gomez-Silva, *L. Garza-Ocanas*, N. Waksman de Torres and A. Pineyro-Lopez. Pharmacology and Toxicology, Medicine School, Universidad Autónoma de Nuevo León, Monterrey, Nuevo León, Mexico.

Tuesday Morning, March 11
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: CHEMICAL & BIOLOGICAL WEAPONS

Chairperson(s): *Sharon Meyer, University of Louisiana at Monroe, Monroe, LA and Robert Casillas, Battelle's Medical Research and Evaluation Facility, Columbus, OH.*

Displayed: *9:30 AM–12:30 PM*

Attended: *9:30 AM–11:00 AM*

#770 **LOW-LEVEL CYCLO-SARIN (GF) VAPOR EXPOSURE IN RATS: EFFECT OF EXPOSURE CONCENTRATION AND DURATION ON PUPIL SIZE.** C. Whalley[1], B. Benton[1], J. Manthei[1], R. Way[1], E. Jakubowski[1], D. Burnett[1], B. Gaviola[1], J. Scotto[2], J. Forster[1], R. Crosier[1], D. Sommerville[1], D. Miller[2], C. Crouse[2], K. Matson[2], W. Muse[1], *R. Mioduszewski*[1] and *S. Thomson*[1]. [1]Edgewood Chemical Biological Center, Aberdeen Proving Ground, MD and [2]Geo-Centers INC., Gunpowder, MD.

#771 **INHALATION TOXICITY OF SARIN (GB) VAPOR IN THE GOTTINGEN MINIPIG: LOW-LEVEL THRESHOLD EFFECTS.** S. Hulet[1,2], R. B. Crosier[1], D. R. Sommerville[1], B. J. Benton[1], J. S. Forster[1], J. H. Manthei[1], D. B. Miller[2], J. A. Scotto[1], R. A. Way[1], W. T. Muse[1], C. L. Crouse[2], K. L. Matson[2], R. J. Mioduszewski[1] and *S. A. Thomson*[1]. [1]Toxicology, U.S. Army -SBCCOM, Aberdeen Proving Grounds, MD and [2]Geo-Centers, Inc., Aberdeen Proving Grounds, MD.

#772 **SUBCLINICAL DOSES OF THE NERVE GAS SARIN IMPAIR T CELL RESPONSES THROUGH THE AUTONOMIC NERVOUS SYSTEM.** R. Kalra, S. P. Singh, S. R. Boroujerdi, R. Langley, *R. F. Henderson* and M. L. Sopori. Pathophysiology, Lovelace respiratory research institute, Albuquerque, , NM.

#773 **FLUORIDE ION REGENERATION OF GB FROM MINIPIG TISSUE AND FLUIDS AFTER GB INHALATION EXPOSURE.** E. M. Jakubowski[1], R. Mioduszewski[1], S. Hulet[1], J. Manthei[1], B. Benton[1], J. Forster[1], D. Burnett[1], R. Way[1], B. Gaviola[1], J. Edwards[2], W. Muse[1], J. Anthony[1], K. Matson[2], D. Miller[2], C. Crouse[2] and *S. Thomson*[1]. [1]Operational Toxicology, U.S. Army SBCCOM, APG-EA, MD and [2]Geo-Centers, Edgewood, MD.

#774 **ACUTE EXPOSURE GUIDELINE LEVELS (AEGLS) FOR HYDROGEN CYANIDE.** S. Talmage[1], G. Rodgers[2], D. Krewski[3], *K. Bakshi*[4] and R. Garrett[5]. [1]Oak Ridge National Laboratory, Oak Ridge, TN, [2]University of Louisville, Louisville, KY, [3]University of Ottawa, Ottawa, ON, Canada, [4]National Research Council, Washington, DC and [5]U.S. EPA, Washington, DC.

#775 **ACUTE EXPOSURE GUIDELINE LEVELS (AEGLS) FOR NERVE AGENTS.** A. P. Watson[1], *R. Young*[1], D. Opresko[1], V. Hauschild[2], *G. Leach*[2], J. Hinz[3], *L. Koller*[4], W. Bress[5], *K. Still*[6], D. Krewski[7], *K. Bakshi*[8] and R. Garrett[9]. [1]Oak Ridge National Laboratory, Oak Ridge, TN, [2]US Army CHPPM, APG, MD, [3]US Air Force AFIERA, Brooks AFB, TX, [4]Environmental Health and Toxicology, Corvallis, OR, [5]Vermont Department Health, Burlington, VT, [6]US Navy NHRC, Wright-Patterson AFB, OH, [7]University of Ottawa, Ottawa, ON, Canada, [8]National Research Council, Washington , DC and [9]U.S. EPA, Washington , DC.

#776 **ACUTE EXPOSURE GUIDELINE LEVELS (AEGLS) FOR SULFUR MUSTARD (AGENT HD).** D. Opresko[1], *R. Young*[1], A. Watson[1], *K. Still*[2], V. Hauschild[3], *G. Leach*[3], D. Krewski[4], *K. Bakshi*[5] and R. Garrett[6]. [1]Oak Ridge National Laboratory, Oak Ridge, TN, [2]NHRC, U.S. Navy, Wright-Patterson AFB, OH, [3]CHPPM, U.S. Army, APG, MD, [4]University of Ottawa, Ottawa, ON, Canada, [5]National Research Council, Washington, DC and [6]U.S. EPA, Washington, DC.

#777 **ACUTE EXPOSURE GUIDELINE LEVELS (AEGLS) FOR ARSINE.** *R. Young*[1], *R. Thomas*[2], R. Garrett[3], D. Krewski[4] and *K. Bakshi*[5]. [1]ORNL, Oak Ridge, TN, [2]INTERCET, Ltd., McLean, VA, [3]U.S. EPA, Washington, DC, [4]University of Ottawa, Ottawa, ON, Canada and [5]National Research Council, Washington, DC.

#778 **ACUTE EXPOSURE GUIDELINE LEVELS (AEGLS) FOR PHOSGENE.** C. Bast[1], W. Bress[2], R. Garrett[3], D. Krewski[4] and *K. Bakshi*[5]. [1]Oak Ridge National Laboratory, Oak Ridge, TN, [2]Vermont Department of Health, Burlington, VT, [3]U.S. EPA, Washington, DC, [4]University of Ottawa, Ottawa, ON, Canada and [5]National Research Council, Washington, DC.

#779 **EXPOSURE OF HUMAN EPIDERMAL KERATINOCYTES TO SULFUR MUSTARD INDUCES THE FORMATION OF HIGH MOLECULAR WEIGHT PROTEIN AGGREGATES CONTAINING KERATIN 5 AND KERATIN 14.** J. F. Dillman , K. L. McGary and *J. J. Schlager*. Applied Pharmacology, USAMRICD, Aberdeen Proving Ground, MD.

#780 **ACUTE ORAL TOXICITY OF NITROSO DEGRADATION PRODUCTS OF HEXAHYDRO-1, 3, 5-TRINITRO-1, 3, 5-TRIAZINE (RDX).** *S. A. Meyer*[1], A. J. Marchand[1], J. L. Hight[1] and D. K. MacMillan[2]. [1]Toxicology, University of Louisiana-Monroe, Monroe, LA and [2]US Army Corps of Engineers, Engineer Research and Development Center, Omaha, NE.

#781 **VARIATION OF SERUM BUTYRYLCHOLINESTERASE IN A MILITARY POPULATION.** *N. Johnson*[1], J. Labit[2], K. Johnson[2], R. Wills[3], H. Chambers[4] and *J. Chambers*[1]. [1]Center for Environmental Health Sciences, Miss. St. University, Miss. St., MS, [2]14th Medical Group, CAFB, MS, [3]Department of Pathobiology and Population Medicine , Miss. St. University, Miss. St. , MS and [4]Department of Entomology and Plant Medicine, Miss. St. University, Miss. St. , MS.

#782 **RELATIONSHIP BETWEEN THE DOSE-RESPONSE CURVES FOR LETHALITY AND SEVERE EFFECTS FOR CHEMICAL WARFARE NERVE AGENTS.** D. R. Sommerville. U.S. Army Edgewood CB Center, Aberdeen Proving Ground, MD. Sponsor: *S. Thomson*.

#783 **INHALATION MEDIAN LETHAL DOSES OF *BACILLUS ANTHRACIS*, AMES, AND VOLLUM STRAINS IN THE RHESUS MONKEY.** J. E. Estep[1], R. Barnewall[1], R. DeBell[2] and N. Niemuth[1]. [1]Medical Research & Evaluation Facility, Battelle Memorial Institute, Columbus, OH and [2]Battelle Crystal City, Arlington, VA. Sponsor: *R. Casillas*.

#784 **EFFECTS OF SULFUR MUSTARD ON SKIN TOXICITY IN COX-1- AND COX-2-DEFICIENT MICE.** R. Langenbach[1], A. Nyska[2], B. Brodsky[3] and *U. Wormser*[3]. [1]Laboratory of Molecular Carcinogenesis, National Institute of Environmental Health Sciences, NIH, Research Triangle Park, NC, [2]Laboratory of Experimental Pathology, National Institute of Environmental Health Sciences, NIH, Research Triangle Park, NC and [3]Institute of Life Sciences, The Hebrew University, Jerusalem, Israel.

#785 **PROTECTIVE EFFECTS OF TOPICAL IODINE CONTAINING ANTI-INFLAMMATORY DRUGS AGAINST SULFUR MUSTARD-INDUCED SKIN LESIONS.** *U. Wormser*[1], B. Brodsky[1], A. Sintov[2], R. P. Casillas[3] and A. Nyska[4]. [1]Institute of Life Sciences, The Hebrew University, Jerusalem, Israel, [2]Institutes for Applied Research, Ben Gurion University of the Negev, Beer-Sheva, Israel, [3]Medical Research and Evaluation Facility, Battelle, Columbus, OH and [4]Laboratory of Experimental Pathology, National Institute of Environmental Health Sciences, NIH, Research Triangle Park, NC.

#786 **SOY PHYTOESTROGENS PROTECT AGAINST GAMMA IRRADIATION.** *M. R. Landauer*, V. Srinivasan, A. M. Nguyen and T. M. Seed. Radiation Casualty Managemnet Team, Armed Forces Radiobiology Research Institute, Bethesda, MD.

#787 **A 7-DAY MOUSE MODEL TO ASSESS PROTECTION FROM SULFUR MUSTARD (SM) SKIN INJURY.** *M. C. Babin*[1,2], M. Y. Gazaway[1], R. C. Kiser[2], I. Koplovitz[1], N. Krogel[1], L. W. Mitcheltree[1], D. M. Moore[2], N. A. Niemuth[2], K. M. Ricketts[1], K. Skvorak[1], R. E. Sweeney[1] and *R. P. Casillas*[2]. [1]US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD and [2]Medical Research & Evaluation Facility, Battelle Memorial Institute, Columbus, OH.

#788 **ANTI-INFLAMMATORY EFFECT OF PARENTERALLY INJECTED H2A HISTONE FRAGMENT AGAINST SULFUR MUSTARD-INDUCED SKIN LESIONS.** B. Brodsky and *U. Wormser*. Institute of Life Sciences, The Hebrew University, Jerusalem, Israel.

#789 **MODULATION OF CYTOKINE GENE EXPRESSION BY ANTI-INFLAMMATORY AGENTS FOLLOWING *IN VIVO* SULFUR MUSTARD INJURY.** *C. L. Sabourin*[1], M. L. Stonerock[1], N. A. Niemuth[1], R. C. Kiser[1], S. L. Casbohm[1], *R. P. Casillas*[1], *M. C. Babin*[1] and *J. C. Schlager*[2]. [1]Medical Research & Evaluation Facility, Battelle Memorial Institute, Columbus, OH and [2]Pharmacology Division, U.S. Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD.

#790 **TEMPORAL AND DOSE ANALYSIS OF MURINE GENE EXPRESSION BY MICROARRAY DURING CUTANEOUS SULFUR MUSTARD INJURY.** *J. Schlager*[1], Y. W. Choi[2], R. C. Kiser[2], *R. P. Casillas*[2], *M. C. Babin*[2] and *C. L. Sabourin*[2]. [1]Pharmacology Division, U.S. Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD and [2]Medical Research & Evaluation Facility, Battelle Memorial Institute, Columbus, OH.

#791 **GENE EXPRESSION CHANGES FOLLOWING LOW-LEVEL EXPOSURE TO SARIN (GB) VAPOR.** *J. W. Sekowski*[2], J. R. Bucher[2], D. Menking[2], J. J. Valdes[2], R. Mioduszewski[2], S. Thomson[2], C. E. Whalley[2], M. Vahey[1] and M. Nau[1]. [1]ECBC, U.S. Army SBCCOM, APG-EA, MD and [2]US Army WRAIR, Rockville, MD.

#792 **TEMPORAL TRANSCRIPTIONAL CHANGES IN RAT LUNG TISSUE FOLLOWING AN INTRAVENOUS EXPOSURE TO SULFUR MUSTARD (SM).** *A. M. Sciuto*, C. Philips, T. Moran, Z. Hess and *J. Schlager*. Pharmacology Division, U.S. Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD.

#793 **FURTHER EVIDENCE THAT VANILLOIDS MODULATE CUTANEOUS SULFUR MUSTARD INJURY *IN VIVO*.** *R. P. Casillas*[1], S. T. Hobson[2], R. C. Kiser[1], D. Smithson[2], J. Boeckers[2] and *M. C. Babin*[1]. [1]Medical Research & Evaluation Facility, Battelle Memorial Institute, Columbus, OH and [2]US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD.

#794 **ANALYSIS OF 2-IMINOTHIAZOLIDINE-4 CARBOXYLIC ACID (ITCA) AS A METHOD FOR CYANIDE MEASUREMENT.** *S. I. Baskin*[1], J. S. Kurche[1], *I. Petrokovics*[1] and *W. L. James*[2]. [1]Pharmacology Division, U.S. Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD and [2]Medical Pharmacology & Toxicology, Texas A&M University, College Station, TX.

#795 **IDENTIFICATION OF BIOTOXIN VARIANTS AND VIRAL SIGNATURES USING THE HAND PORTABLE μCHEMLAB™/CB DETECTION SYSTEM.** *J. A. West*, B. A. Horn, T. W. Lane and J. A. Fruetel. Microfluidics, Sandia National Laboratories, Livermore , CA.

#796 **SYSTEM OF DECONTAMINATION OF RADIOACTIVE EFFLUENTS.** P. Gerisimo[2], *A. H. Hall*[1], J. Blomet[3] and L. Mathieu[3]. [1]Department of Emergency Medicine, Texas Tech University Health Sciences Center, El Paso, TX, [2]Service de Protection Radiologique, Armees Francais, Clamart, France and [3]Laboratoire Prevor, Laboratoire Prevor, Valmondois, France.

#797 **ASSESSMENT OF RSDL AS A DECONTAMINANT AGAINST SULFUR MUSTARD AND VX.** *T. H. Snider*[1], T. L. Hayes[1], R. J. Jarvis[1], M. C. Matthews[1] and D. K. Liu[2]. [1]Medical Research & Evaluation Facility, Battelle Memorial Institute, Columbus, OH and [2]US Army Medical Materiel Development Activity, Fort Detrick, MD.

#798 **INVESTIGATING THE *AEDES AEGYPTI* MOSQUITO LARVAE AS AN *IN VIVO* BIOASSAY FOR CHEMICAL AND BIOLOGICAL WEAPONS AGENTS (CBWA).** R. S. Mackie, *B. W. Gutting* and A. Rayms-Keller. Chemical Biological Systems Technology Division, Naval Surface Warfare Center, Dahlgren, VA.

#799 **EVALUATING THE THREAT OF CHEMICAL AND BIOLOGICAL WARFARE *VIA* MAIL OR DRINKING WATER DELIVERY SYSTEMS.** J. S. Duffy, J. Fessler, T. Gauthier, J. Greene, S. Medhekar, R. Mongia, *B. Murphy* and *D. Paustenbach*. Exponent, Tampa, FL.

#800 ***IN VITRO* STUDIES OF DIPHOTERINE FOR DECONTAMINATION OF ORGANOPHOSPHORUS COMPOINDS, INCLUDING DFP AND THE NERVE AGENTS SOMAN AND VX.** *A. H. Hall*[1], J. Blomet[2], B. Viala[2], P. Masson[3] and M. Froment[3]. [1]Department of Emergency Medicine, Texas Tech University Health Sciences Center-El Paso, El Paso, TX, [2]Prevor Laboratories, Valmondois, France, [3]Prevor Laboratories, Valmondois, France, [4]CRSSA, La Tronche, France and [5]CRSSA, La Tronche, France.

Tuesday Afternoon, March 11
10:15 AM to 11:15 AM
Ballroom J

INFORMATIONAL SESSION: SCIENCE AND SECURITY – PROTECTING YOUR PEOPLE, YOUR WORK, YOUR FACILITIES

Tuesday Afternoon, March 11
11:30 AM to 12:30 PM (Event time has changed to 2:00 PM to 3:00 PM)
Ballroom J

INFORMATIONAL SESSION: MAKING SENSE OUT OF GENE EXPRESSION DATA

Confused and disillusioned about gene expression data generation and analysis? Then this workshop can help you understand some of the basic applied concepts for developing and managing gene expression databases. Discussions on standard data analysis and more advance analytical methods surrounding mining gene expression data will be presented.

Tuesday Afternoon

Tuesday Afternoon, March 11
12:00 Noon to 1:15 PM
Marriott Downtown Hotel, Salon DEF

***IN VITRO* TOXICOLOGY LECTURE: *IN VITRO* METHODS: ARE THEY REALLY ALTERNATIVES?**

Rodger Curren, Ph.D., President, Institute for *In Vitro* Sciences, Inc. is the speaker for the student luncheon hosted by the Colgate-Palmolive Company. The lecture will examine how *in vitro* methods have struggled to gain respectability within the toxicological community, and how companies now routinely use *in vitro* data as they make major product development and safety assessment decisions. Dr. Curren will discuss how several new *in vitro* test procedures have gained international regulatory approval, which he believes will make *in vitro* methods an "alternative" no longer. Students register for this event on the Annual Meeting Registration Form; $5 deposit per ticket is required and will be exchanged for the ticket at the luncheon. Seating is limited.

Tuesday Afternoon, March 11
12:00 Noon to 1:00 PM
Ballroom B

SOT/EUROTOX DEBATE

Motion: Pharmaceuticals in Drinking Water Pose A Risk to Human and Environmental Health.

Sponsored by:
SOT
EUROTOX (European Societies for Toxicology)

Debaters:
Discussant for the Motion EUROTOX: John Fawal, Flackwell Health, United Kingdom

Discussant against the Motion SOT: Edward Sargent, Merck & Co.Whitehouse Station, NJ

Tuesday Afternoon, March 11
12:45 PM to 1:45 PM
Ballroom J

INFORMATIONAL SESSION: AFFYMETRIX GENECHIP 〉 EXPRESSION ANALYSIS APPLIED TO TOXICOLOGY

Affymetrix GeneChip microarray technology is a powerful took for detecting changes in gene expression due to a toxic or stress-related response. By using GeneChip expression arrays, it is possible to better understand the molecular mechanism of how know genes interact to produce toxic endpoints.

Tuesday Afternoon, March 11
1:30 PM to 4:30 PM
Ballroom F

SYMPOSIUM SESSION: ADVANCES IN TOXICOGENOMICS: NIEHS NATIONAL CENTER FOR TOXICOGENOMICS

Chairperson(s): *Raymond Tennant, National Center for Toxicogenomics, Research Triangle Park, NC and Sam Wilson, NIEHS, Research Triangle Park, NC.*

Endorsed by:
Carcinogenesis Specialty Section

Toxicogenomics represents the interface between toxicology and gene expression technology; it combines studies of genetics, genomic-scale mRNA expression, cell and tissue-wide protein expression, metabolite profiling and bioinformatics in order to understand the role of gene-environment interactions in disease. The NIEHS National Center for Toxicogenomics was established to facilitate research to improve our understanding of mechanisms underlying toxic responses of environmental agents and to develop an extensive knowledge-base of Chemical Effects in Biological Systems (CEBS). In order to catalyze these efforts the NCT has established a Toxicogenomics Research Consortium, comprised of six institutions including Duke University, MIT, Oregon Health Sciences Center, University of North Carolina, The Fred Hutchinson Cancer Center and the NIEHS Microarray Center. Studies conducted by this consortium will facilitate the development of the field of toxicogenomics.

#801	1:30	**ADVANCES IN TOXICOGENOMICS: NIEHS NATIONAL CENTER FOR TOXICOGENOMICS.** *R. Tennant*[1] and *S. Wilson*[2]. [1]Division of Intramural Research, NIEHS, Research Triangle Park, NC and [2]Office of Deputy Director, NIEHS, Research Triangle Park, NC.
#802	1:45	**INTEGRATION OF GENOMIC AND PROTEOMIC APPROACHES TO STUDY TOXICOLOGICAL PHENOTYPES.** S. Nagalla[1], G. Kisby[2], P. Pattee[1], B. Searles[1] and D. Sproles[1]. [1]Department of Pediatrics, Oregon Health and Sciences University, Portland, OR and [2]CROET, Oregon Health Sciences University, Portland, OR. Sponsor: *R. Tennant*.
#803	2:10	**COMPLEX RESPONSES TO ALKYLATING AGENTS.** *L. Samson*. Center for Environmental Health Sciences, MIT, Cambridge, MA.
#804	2:35	**AN APPROACH TO THE CLASSIFICATION OF TOXICOLOGICAL EFFECTS USING MICROARRAY AND PROTEOMIC TECHNOLOGIES.** *R. Tennant*. National Center for Toxicogenomics, NIEHS, Research Triangle Park, NC.
#805	3:00	**USING TOXICOGENOMIC ANALYSIS TO ASSESS THE PROTECTIVE EFFECTS OF ENHANCED GLUTATHIONE SYNTHESIS IN GLUTAMATE-CYSTEINE LIGASE TRANSGENIC MICE.** *T. Kavanagh*[1], S. Shi[1], D. Botta[1], C. White[1], M. Dabrowski[1], C. Shephard[1], S. Quigley[1], F. Farin[1], R. Beyer[1], R. Pierce[2], C. Franklin[1], H. Zarbl[3] and T. Bammler[1]. [1]University of Washington, Seattle, WA, [2]Medical Center, University of Rochester, Rochester, NY and [3]Fred Hutchinson Cancer Research Center, Seattle, WA.
#806	3:25	**DISSECTING THE ROLE OF PLEIOTROPIC TOXICANTS AND CELL TYPE SPECIFIC RESPONSES USING DNA MICROARRAYS.** C. M. Perou. Lineberger Comprehensive Cancer Center, University of North Carolina , Chapel Hill, NC. Sponsor: *R. Tennant*.

Tuesday Afternoon, March 11
1:30 PM to 4:30 PM
Ballroom C

SYMPOSIUM SESSION: MOLECULAR MECHANISMS OF CARDIOVASCULAR TOXICITY OF METALS AND METALLOIDS

Chairperson(s): *Y. James Kang, University of Louisville, Louisville, KY and Michael P. Waalkes, National Cancer Institute at NIEHS, Research Triangle Park, NC.*

Endorsed by:
Metals Specialty Section

Cardiovascular toxicity of metals and metalloids has long been recognized. However, molecular mechanisms leading to cardiovascular injury

by these agents are not understood. A major reason for the lack of this knowledge is that toxicologists have not investigated cardiovascular toxicology in general to the same extent as the toxicology of the liver, kidneys, lungs, or brain. As a result, cardiovascular toxicology is extremely under-represented in the discipline of toxicology. Advances in molecular biology of cardiovascular system have provided tremendous opportunities to explore cardiovascular toxicology at cellular and molecular levels. Improved understanding of signaling pathways and molecular mechanisms leading to cardiovascular diseases such as acute myocardial infarction, heart failure and hypertension requires expanding our knowledge to the interaction between the myocardium and environmental agents including metals and metalloids. There is no doubt that environmental and medical exposure to metals and metalloids play a significant role in cardiovascular diseases. Interactions between toxic metals such as cadmium with essential minerals such as calcium and zinc can directly interfere with signal transduction and gene expression. Crucial molecules such as vital protein thiols in the cardiovascular system are very sensitive to toxic metalloid arsenic. The role of toxic metals and metalloids in activation of transcription factors and post-translation modifications is also of great concerns in cardiovascular medicine. A comprehensive discussion of up-to-date understanding of these molecular and cellular events involved in cardiovascular toxicity of metals and metalloids will thus provide novel insights into the role of metals and metalloids in the development of cardiovascular diseases.

#807 1:30 **MOLECULAR MECHANISMS OF CARDIOVASCULAR TOXICITY OF METALS AND METALLOIDS.** *Y. Kang*[1] and *M. P. Waalkes*[2]. [1]Medicine, University of Louisville School of Medicine, Louisville, KY and [2]NIEHS, Research Triangle Park, NC.

#808 1:40 **NOVEL INSIGHTS INTO THE CARDIOVASCULAR TOXICITIES OF METALS AND METALLOIDS.** *M. P. Waalkes*. NIEHS, Research Triangle Park, NC.

#809 2:15 **INTERACTIONS OF NICKELS AND CADMIUM WITH CARDIAC SR CALCIUM RELEASE CHANNELS.** J. A. Wasserstrom, J. E. Kelly and R. G. Tsushima. Department of Medicine, Northwestern Medical School, Chicago, IL. Sponsor: *Y. Kang*.

#810 2:50 **MYOCARDIAL APOPTOSIS AND CARDIOMYOPATHY INDUCED BY ARSENIC.** *Y. Kang*, Y. Li and X. Sun. Medicine, University of Louisville School of Medicine, Louisville, KY.

#811 3:25 **SIGNALING PATHWAYS INVOLVED IN ARSENIC-INDUCED VASCULAR DISEASE.** *A. Barchowsky*[1], L. R. Klei[1], *M. Ihnat*[2], C. Kamat[2] and *N. V. Soucy*[1]. [1]Pharmacology and Toxicology, Dartmouth Medical School, Hanover, NH and [2]Cell Biology, University of Oklahoma Health Sciences Center, Oklahoma City, OK.

Tuesday Afternoon, March 11
1:30 PM to 4:30 PM
Ballroom B

SYMPOSIUM SESSION: NOVEL INSIGHTS INTO THE TOXICOLOGY OF LUNG OXIDATIVE STRESS

Chairperson(s): *Michael C. Madden, U.S. EPA, Chapel Hill, NC and Maria Kadiiska, NIEHS, Research Triangle Park, NC.*

Endorsed by:
Inhalation Specialty Section

Oxidative stress is derived from an overproduction of oxidants such as reactive oxygen and nitrogen species relative to the detoxification of the oxidants. The increased production of such oxidants can lead on one hand to fairly nonspecific damage to lipids, proteins, and DNA as well as to rather specific changes related to receptor binding and signal transduction. Oxidative stress is present in all lung disease states and has been associated with toxicity induced by radiation and most, if not all, lung toxicants. Lung oxidative stress can be derived from both endogenous sources (*e.g.,* induction of inflammation and disruption of normal O_2 metabolism) and exogenous sources (*e.g.,* exposure to gaseous and particulate air pollutants). The possibility exists that extrapulmonary organ systems can be affected by lung oxidative stress as increased production of oxidant species in the lung can lead to transport of the oxidant species or reaction products outside the lung with possible biological effects. The focus of this session will be to present recent advances in the measurement of oxidative stress primarily in the lung as well as new insights related to the pathobiology of oxidant formation within this organ. Findings that will be presented will range from the detection of endogenously and exogenously derived oxidants in pulmonary and extrapulmonary tissue, to involvement of oxidants in lung responses and clinical disease. The role of oxidant-induced activation of important lipid signaling pathways related to acute lung injury and strategies to attenuate the injury will be described. Validation studies of air pollutant biomarkers of exposure and effects using ozone and other lung toxicants will be shown. Relevant to the great interest in particulate matter (PM) toxicology, the mechanisms by which lung cells transport and metabolize transition metals on PM will be discussed, as will early markers of oxidant production with PM using cobalt as a model PM. [This abstract does not necessarily reflect EPA policy.].

#812 1:30 **NOVEL INSIGHTS INTO THE TOXICOLOGY OF LUNG OXIDATIVE STRESS.** *M. C. Madden*[1] and *M. Kadiiska*[2]. [1]ORD, NHEERL, HSD, Clinical Research Branch, U.S. EPA, Chapel Hill, NC and [2]Laboratory of Pharmacology and Chemistry, NIEHS, Research Triangle Park, NC.

#813 1:40 **ROLE OF OXIDATIVELY MODIFIED PHOSPHOLIPIDS IN ACUTE LUNG INJURY.** T. McIntyre[1,2,4], G. A. Zimmerman[1,3,2], A. S. Weyrich[1,3] and S. M. Prescott[3,2]. [1]Program in Human Molecular Biology and Genetics, University of Utah, Salt Lake City, UT, [2]Department of Medicine, University of Utah, Salt Lake City, UT, [3]Huntsman Cancer Institute, University of Utah, Salt Lake City, UT and [4]Department of Experimental Pathology, University of Utah, Salt Lake City, UT. Sponsor: *M. Madden*.

#814 2:10 **USE OF OXYGEN-18 ISOTOPE LABELING FOR MEASUREMENT OF OXIDATIVE STRESS.** *G. E. Hatch*. Pulmonary Toxicology. Branch, U.S. EPA, Research Tri. Park, NC.

#815 2:40 **OXIDATIVE DAMAGE INDUCED BY CCL4 AND OZONE: VALIDATION OF BIOMARKERS.** *M. B. Kadiiska*. NIEHS, Research Triangle Park, NC.

#816 3:10 **MODULATION OF TRANSITION METAL-INDUCED INJURY BY METAL TRANSPORT PROTEINS.** A. Ghio. NHEERL\HSD\Clinical Research Branch, U.S. EPA, Research Triangle Park, NC. Sponsor: *M. Madden*.

#817 3:40 **ACTIVATION OF THE HEXOSE MONOPHOSPHATE SHUNT: AN EARLY MARKER OF OXIDATIVE STRESS CAUSED BY COBALT PARTICLES.** P. H. Hoet, G. Roesems and *B. Nemery*. Pneumologie - Longtoxicologie, K.U.Leuven, Leuven, Belgium.

Tuesday Afternoon, March 11
1:30 PM to 4:30 PM
Room 250 D

WORKSHOP SESSION: CHALLENGES OF THE DEVELOPMENTAL NEUROTOXICITY STUDY

Chairperson(s): *Susan Makris, U.S. EPA, Washington, DC and Myra Weiner, FMC Corporation, Princeton, NJ.*

Endorsed by:
Neurotoxicology Specialty Section
Regulatory and Safety Evaluation Specialty Section
Reproductive and Developmental Specialty Section

The developmental neurotoxicity (DNT) study is a key study for identification of potential damage to the nervous system of the developing organism. In this study, exposure to the test substance occurs during fetal and postnatal development. Neurobehavioral and neuropathological assessments are performed on treated individuals in early life, and as adults following a period without exposure. These evaluations include functional observational battery, motor activity, auditory startle, and cognitive (learning and memory) testing, and histopathology of nervous system tissues, including morphometry of several areas of the brain. This Workshop will summarize the evolution of the DNT study as a regulatory guideline and the use of the rat model as a predictive species for nervous system effects in the young human. Some of the challenges of conducting a study with its inherent complexity in terms of the number of animals evaluated, the number and types of neurological tests, and the large amounts of data to process and interpret, will also be included. Finally, the use of the DNT study for hazard identification and risk assessment of new chemicals will be discussed in light of the current regulatory framework. Ample time will be allotted for a full discussion of the technical and regulatory challenges involved in conducting and interpreting the DNT.

#818 1:30 **INTRODUCTION: CHALLENGES OF THE DEVELOPMENTAL NEUROTOXICITY STUDY.** *S. L. Makris*[1] and *M. L. Weiner*[2]. [1]OPPTS/OPP/HED (7509C), U.S. EPA, Washington, DC and [2]FMC Corporation, Princeton, NJ.

#819 1:40 **OVERVIEW OF THE DEVELOPMENTAL NEUROTOXICITY (DNT) STUDY.** *C. A. Kimmel*. NCEA/ORD, U.S. EPA, Washington, DC.

#820 2:05 **COMPARATIVE SCHEDULES OF DEVELOPMENT IN RATS AND HUMANS: IMPLICATIONS FOR DEVELOPMENTAL NEUROTOXICITY TESTING.** J. Buelke-Sam. Toxicology Services, Greenfield, IN. Sponsor: *M. Weiner*.

#821 2:30 **EXPERIENCE CONDUCTING THE DEVELOPMENTAL NEUROTOXICITY STUDY.** *L. P. Sheets*. Toxicology, Bayer Corporation, Stilwell, KS.

#822 2:55 **APPLICATION OF THE DNT STUDY RESULTS TO RISK ASSESSMENT UNDER FQPA.** *E. A. Doyle*. OPP/OPPTS, U.S. EPA, Washington, DC.

Tuesday Afternoon, March 11
1:30 PM to 4:30 PM
Room 251 A

WORKSHOP SESSION: MODE OF ACTION IN ASSESSING HUMAN RELEVANCE OF ANIMAL TUMORS: IMPROVING THE FRAMEWORK FOR ANALYSIS

Chairperson(s): *Penelope A. Fenner-Crisp, ILSI Risk Science Institute, Washington, DC and Samuel M. Cohen, University of Nebraska Medical Center, Omaha, NE.*

Endorsed by:
Carcinogenesis Specialty Section
Risk Assessment Specialty Section

Developing an understanding of the mode(s) of action (MOA) by which chemicals induce tumors in animals has become a key element in determining whether or not the tumors observed are relevant/applicable for use in human cancer risk assessment, and, if so, what might be the characteristics of the human dose response. This workshop, the product of an ILSI Risk Science Institute-administered project funded by U.S. EPA and Health Canada, includes 1) Discussion of proposed enhancements to the IPCS MOA Framework and EPA's MOA Framework in its 1999 draft cancer guidelines to strengthen the building of the bridge from "I think I understand the animal MOA(s)" to "I am able to articulate the importance of this animal tumor and its MOA(s) for the human, " 2) Implications of the Human Relevance Framework for cancer risk assessment, using several well-examined tumor types as examples; 3) An update on the understanding of the MOA(s) by which PPARα agonists induce liver and other tumors in rodents; and 4) Application of the enhanced Framework to PPARα agonist-induced tumors as an example of a newly-developed consensus on MOA.

#823 1:30 **MODE OF ACTION IN ASSESSING HUMAN RELEVANCE OF ANIMAL TUMORS: IMPROVING THE FRAMEWORK FOR ANALYSIS.** *P. A. Fenner-Crisp* and *S. M. Cohen*. Pathology/Microbiology, University of Nebraska Medical Center, Omaha, NE.

#824 1:35 **UPDATING CANCER ASSESSMENT PRINCIPLES: AN EPA PERSPECTIVE.** V. L. Dellarco. U.S. EPA, Washington, DC. Sponsor: *P. Fenner-Crisp*.

#825 2:15 **DEVELOPING THE HUMAN RELEVANCE FRAMEWORK.** *S. M. Cohen*. Pathology/Microbiology, University of Nebraska Medical Center, Omaha, NE.

#826 2:55 **THE MODE(S) OF ACTION FOR PPARα AGONIST-INDUCED RODENT TUMORS.** *R. Roberts*. Aventis Pharmacology, Paris, France.

#827 3:35 **APPLICATION OF THE FRAMEWORK TO THE PPARα AGONIST CASE EXAMPLE.** *J. E. Klaunig*. Indiana University School of Medicine, Indianapolis, IN.

Tuesday Afternoon, March 11
1:30 PM to 4:30 PM
Ballroom A

PLATFORM SESSION: DEVELOPMENTAL TOXICITY MECHANISMS

Chairperson(s): *Barbara Abbott, U.S. EPA, Research Triangle Park, NC and Steven Holladay, Virginia Tech, Blacksburg, VA.*

#828 1:30 **EVIDENCE FOR EGFR PATHWAY MEDIATION OF CLEFT PALATE INDUCTION BY TCDD.** *B. D. Abbott*, A. R. Buckalew and K. E. Leffler. RTD, NHEERL, ORD, U.S. EPA, Research Triangle Park, NC.

#829 1:50 **DIVERSE NON-SPECIFIC MATERNAL IMMUNE ACTIVATION PROCEDURES REDUCE SEVERITY OF DIABETIC EMBRYOPATHY IN MICE.** K. Punareewattana[1], *S. D. Holladay*[1] and L. Sharova[1]. [1]Veterinary Medicine, Virginia Tech, Blacksburg, VA and [2]Veterinary Medicine, Virginia Tech, Blacksburg, VA.

#830 2:10 **PERINATAL EXPOSURE TO THE PESTICIDE HEPTACHLOR PRODUCES ALTERATIONS IN IMMUNE FUNCTION PARAMETERS IN SPRAGUE-DAWLEY RATS.** R. A. Matulka[1], A. A. Rooney[3], W. Williams[2], C. B. Copeland[2] and *R. J. Smialowicz*[2]. [1]Curriculum in Toxicology, UNC, Research Triangle Park, NC, [2]ITB, ETD, NHEERL, U.S. EPA, Research Triangle Park, NC and [3]CVM, Anatomy, Physiological Sciences and Radiology, NCSU, Raleigh, NC.

#831 2:30 **MATERNAL IMMUNE STIMULATION REDUCES BOTH PLACENTAL MORPHOLOGIC DAMAGE AND DOWN-REGULATED PLACENTAL GROWTH-FACTOR AND CELL CYCLE GENE EXPRESSION CAUSED BY URETHANE: ARE THESE EVENTS RELATED TO REDUCED TERATOGENESIS?** *S. D. Holladay*, L. Sharova, A. Sharov, P. Sura, *R. M. Gogal* and B. J. Smith. Veterinary Medicine, Virginia Tech, Blacksburg, VA.

#832 2:50 **FUMONISIN-INDUCED NEURAL TUBE DEFECTS: DISRUPTION OF SPHINGOLIPIDS AND FOLATE TRANSPORT.** *J. B. Gelineau-van Waes*[1], *R. Riley*[2], *K. Voss*[2], J. Maddox[1], *G. Bennett*[1] and L. Starr[1]. [1]Department of Genetics, Cell Biology & Anatomy, University of Nebraska Medical Center, Omaha, NE and [2]Toxicology & Mycotoxin Research Unit, Russell Research Center, USDA-ARS, Athens, GA.

#833 3:10 **MICROARRAY ANALYSIS OF STRAIN-SPECIFIC RESPONSES TO ETHANOL.** *K. Rozett Nemeth*, J. H. Charlap and T. B. Knudsen. Anatomy, Pathology and Cell Biology, Thomas Jefferson University, Philadelphia, PA.

#834 3:30 **THE PRESENCE OF XENOBIOTIC TRANSPORTERS IN RAT PLACENTA.** *T. M. Leazer* and *C. D. Klaassen*. Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS.

#835 3:50 **AN EMBRYO-FETAL DEVELOPMENT STUDY IN CYNOMOLGUS MONKEYS WITH RITUXIMAB, AN ANTI-CD20 ANTIBODY.** *K. P. McKeever*[1], J. Beyer[1], S. Ortega[2], D. Combs[3] and *H. Tsusaki*[4]. [1]Safety Assessment, Genentech, Inc., San Francisco, CA, [2]Development Sciences Operations, Genentech, Inc., San Francisco, CA, [3]Clinical and Experimental Pharmacology, Genentech, Inc., San Francisco, CA and [4]Drug Safety Research Laboratories, SNBL, Kagoshima, Japan.

#836 4:10 **AMBIENT OXYGEN REGULATES INTRACELLULAR REDOX POTENTIAL AND TRANSCRIPTION FACTOR ACTIVITY IN CULTURE PRIMARY HUMAN MYOBLASTS.** *J. M. Hansen*[1], *C. Harris*[2] and M. Csete[1]. [1]Anesthesiology, Emory University, Atlanta, GA and [2]Environmental Health Sciences, University of Michigan, Ann Arbor, MI.

Tuesday Afternoon, March 11
1:30 PM to 4:30 PM
Ballroom I

PLATFORM SESSION: IMMUNOTOXICOLOGY II

Chairperson(s): *Brian Freed, University of Colorado, Denver, CO and Judith Zelikoff, New York University School of Medicine, Tuxedo, NY.*

#837 1:30 **EXPRESSION OF MHC CASS II PROTEINS ON SPLENOCYTES AS A BIOMARKER FOR MODELING AND PREDICTING THE EFFECTS OF CHEMICAL STRESSORS.** *S. B. Pruett*, R. Fan and Q. Zheng. Cell. Biol. & Anatomy, LSU Health Sciences. Center, Shreveport, LA.

#838 1:50 **MODELING AND PREDICTING IMMUNOSUPPRESSION BY CHEMICAL STRESSORS IN MICE USING BLOOD PARAMETERS.** C. Schwab, Q. Zheng, R. Fan, *P. Hébert*, *P. Myers*, L. Smart and *S. B. Pruett*. Cell. Biol. & Anatomy, LSU Health Sciences. Center, Shreveport, LA.

#839 2:10 **ETHANOL SUPPRESSES SIGNALING THROUGH TOLL-LIKE RECEPTOR 3 (TLR 3).** Q. Zheng, R. Fan and *S. B. Pruett*. Cell. Biol. & Anatomy, LSU Health Sciences. Center, Shreveport, LA.

#840 2:30 **ETHANOL SUPPRESSES CYTOKINE PRODUCTION INDUCED BY LIGANDS FOR TOLL-LIKE RECEPTOR (TLR) 9 AND TLR 6.** K. Matthews, P. Thompson and *S. B. Pruett*. Cell. Biol. & Anatomy, LSU Health Sciences. Center, Shreveport, LA.

#841 2:50 **SUPPRESSION OF INFLAMMATORY CYTOKINE PRODUCTION BY CIGARETTE SMOKE IS MEDIATED BY ACROLEIN.** *B. M. Freed*[3], *Y. Ouyang*[3], T. G. Rosano[2], *J. McCue*[3], J. Zheng[1], Y. Yang[1], *D. W. Pyatt*[1], S. Lazis[3] and *R. D. Irons*[1]. [1]Medicine, University Colorado Health Sciences Center, Denver, CO, [2]Pharmaceutical Sciences, University Colorado Health Sciences Center, Denver, CO and [3]Pathology and Laboratory Medicine, Albany Medical Center, Albany, NY.

#842 3:10 **PARTICLE SIZE AND COMBINATION WITH ANTIGEN ARE IMPORTANT IN MACROPHAGE ACTIVATION BY PARTICULATE MATTER.** C. de Haar, D. Huttenhuis, I. Hassing, R. Bleumink and *R. Pieters*. Immunotoxicology, IRAS, Utrecht, Utrecht, Netherlands.

#843 3:30 **NEUROTOXICITY AND IMMUNOTOXICITY ASSESSMENT IN CBA/J MICE WITH CHRONIC *TOXOPLASMA GONDII* INFECTION AND MULTIPLE LOW DOSE EXPOSURES TO METHYLMERCURY.** *M. D. King*[2], D. S. Lindsay[1], *S. D. Holladay*[1] and *M. Ehrich*[1]. [1]Virginia-Maryland Regional College of Veterinary Medicine, Virginia Tech, Blacksburg, VA and [2]U.S. EPA, Washington, DC.

#844 3:50 **THE ROLE OF METABOLISM IN BENZO(a)PYRENE-INDUCED IMMUNOSUPPRESSION IN A FISH MODEL.** *E. Carlson*, Y. Li and *J. T. Zelikoff*. Environmental Medicine, New York University School of Medicine, Tuxedo, NY.

Tuesday Afternoon, March 11
1:30 PM to 4:30 PM
Room 251 D

PLATFORM SESSION: METHODS TO EVALUATE HYPERSENSITIVITY/ALLERGY

Chairperson(s): *Rebecca Dearman, AstraZeneca CTL, Macclesfield, Cheshire, United Kingdom and David Basketter, Unilever Research* U.S. *Inc, Sharnbrook, Bedfordshire, United Kingdom.*

#845 1:30 **ALLERGEN-INDUCED GENE CHANGES IN MURINE LYMPH NODE CELLS.** C. J. Betts, *R. J. Dearman*, N. Ashraf and *I. Kimber*. Syngenta CTL, Macclesfield, Cheshire, United Kingdom.

#846 1:50 **EXAMINATION OF GENE EXPRESSION CHANGES IN PERIPHERAL BLOOD-DERIVED DENDRITIC CELLS FOLLOWING EXPOSURE TO A CONTACT ALLERGEN.** *C. Ryan*[1], B. C. Hulette[1], R. J. Dearman[2], *I. Kimber*[2] and *F. Gerberick*[1]. [1]Procter & Gamble Company, Cincinnati, OH and [2]Syngenta CTL, Macclesfield, Cheshire, United Kingdom.

#847 2:10 **DIVERGENT CYTOKINE RESPONSES ELICITED IN MICE BY PEANUT LECTIN AND PURIFIED PROTEIN DERIVATIVE (PPD).** B. F. Flanagan[2], C. J. Betts[1], H. T. Caddick[1], *R. J. Dearman*[1] and *I. Kimber*[1]. [1]Syngenta CTL, Macclesfield, Cheshire, United Kingdom and [2]Department of Immunology, University of Liverpool, Liverpool, United Kingdom.

#848 2:30 **BONE MARROW-DERIVED DENDRITIC CELLS UTILIZE DIFFERENT INTERNALIZATION PATHWAYS FOR UPTAKE OF THE NATIVE AND RECOMBINANT FORMS OF LACTOFERRIN.** M. Cumberbatch, *R. J. Dearman* and *I. Kimber*. Immunology, Syngenta CTL, Macclesfield, Cheshire, United Kingdom.

#849 2:50 **ANALYSIS OF DRAINING LYMPH NODE DENDRITIC CELL ACCUMULATION PROVOKED IN MICE BY CHEMICAL CONTACT AND RESPIRATORY ALLERGENS.** K. Clelland, M. Cumberbatch, *R. J. Dearman* and *I. Kimber*. Immunology, Syngenta CTL, Macclesfield, Cheshire, United Kingdom.

#850 3:10 **EVALUATION OF PROTEIN ALLERGENIC POTENTIAL IN MICE : INTER-LABORATORY COMPARISONS.** R. J. Dearman[1], C. Herouet[2], E. Debruyne[2] and *I. Kimber*[1]. [1]Syngenta CTL, Macclesfield, Cheshire, United Kingdom and [2]Bayer CropScience, Sophia Antipolis, France.

#851 3:30 **NONRADIOISOTOPIC MEASUREMENT OF LYMPHOCYTE PROLIFERATION.** N. Humphreys, R. J. Dearman and *I. Kimber*. Syngenta CTL, Macclesfield, Cheshire, United Kingdom.

#852 3:50 **EVALUATION OF PROTEIN ALLERGENIC POTENTIAL IN MICE : DOSE RESPONSES.** S. Stone[1], R. J. Dearman[1], H. T. Caddick[1], *D. A. Basketter*[2] and *I. Kimber*[1]. [1]Syngenta CTL, Macclesfield, Cheshire, United Kingdom and [2]SEAC Unilever Colworth Laboratory, Sharnbrook, United Kingdom.

Tuesday Afternoon, March 11
1:30 PM to 4:30 PM
Room 250 A

PLATFORM SESSION: NUCLEAR, CYTOSOLIC AND MEMBRANE RECEPTOR-MEDIATED XENOBIOTIC SIGNAL TRANSDUCTION I

Chairperson(s): *Gary Perdew, Penn State University, University Park, PA and Jack Vanden Heuvel, Penn State University, University Park, PA.*

#853 1:30 **THE 90 KDA HEAT SHOCK PROTEIN ASSOCIATES WITH PPARα AND DIFFERENTIALLY REGULATES TRANSCRIPTIONAL ACTIVITY COMPARED WITH PPARβ OR PPARγ.** *W. K. Sumanasekera*, *E. Tien*, *G. H. Perdew* and *J. P. Vanden Heuvel*. Veterinary Science and Center for Molecular Toxicology and Carcinogenesis, Penn State University, State College, PA.

#854 1:50 **EVIDENCE THAT PPARα IS COMPLEXED WITH THE 90 KDA HEAT SHOCK PROTEIN AND THE HEPATITIS VIRUS B X-ASSOCIATED PROTEIN 2 (XAP2).** *G. H. Perdew*, *W. K. Sumanasekera*, *E. Tien* and *J. P. Vanden Heuvel*. Veterinary Science and the Center for Molecular Toxicology and Carcinogenesis, Penn State University, University Park, PA.

#855 2:10 **PPARα-DEPENDENT REGULATION OF TUMOR SUPPRESSORS P19 AND C-ABL BY PEROXISOME PROLIFERATORS AND PHORBOL ESTERS.** *J. P. Gray* and *J. P. Vanden Heuvel*. Center for Molecular Toxicology and Carcinogenesis, Pennsylvania State University, University Park, PA.

#856 2:30 **THE ROLE OF LIGAND INDUCED CONFORMATION CHANGES IN PEROXISOME PROLIFERATOR ACTIVATED RECEPTOR α COREGULATOR RECRUITMENT.** E. Tien and *J. P. Vanden Heuvel*. Center for Molecular Toxicology and Carcinogenesis, Pennsylvania State University, University Park, PA.

#857 2:50 **TRANS-ACTIVATION OF PXR BY PHTHALATE MONOESTERS.** *C. H. Hurst* and D. J. Waxman. Biology, Boston University, Boston, MA.

#858 3:10 **EFFECT OF CAR AND PXR ACTIVATORS ON TESTOSTERONE CLEARANCE IN CASTRATED MALE SPRAGUE-DAWLEY RATS.** M. Wyde[1], T. M. Baughman[2], Z. Zhao[2] and *L. You*[1]. [1]CIIT Centers for Health Research, Research Triangle Park, NC and [2]GlaxoSmithKline, Research Triangle Park, NC.

#859 3:30 **THE E3 UBIQUITIN LIGASE CARBOXYL TERMINUS OF HSC70-INTERACTING PROTEIN (CHIP) CAN MEDIATE HUMAN ARYL HYDROCARBON RECEPTOR PROTEIN TURNOVER.** *J. L. Morales*[1] and *G. H. Perdew*[2]. [1]Graduate Program in Biochemistry and Molecular Biology, The Pennsylvania State University, University Park, PA and [2]Center for Molecular Toxicology and Carcinogenesis, The Pennsylvania State University, University Park, PA.

#860 3:50 **ESTABLISHMENT AND CHARACTERIZATION OF SIMIAN VIRUS 40 IMMORTALIZED AHR-NULL MOUSE HEPATOCYTES AND THEIR USE TO ASSESS THE ROLE OF THE AH RECEPTOR IN GENE REGULATION.** R. K. Reen[1], *P. Ramadoss*[1], *P. M. Jeffrey*[1], *F. J. Gonzalez*[2] and *G. H. Perdew*[1]. [1]Centre for Molecular Toxicology and Carcinogenesis, Pennsylvania State University, State College, PA and [2]Laboratory of Metabolism, National Cancer Institute, Bethesda, MD.

#861 4:10 **ADRENERGIC RECEPTOR CROSSTALK DURING DEVELOPMENT: ADVERSE EFFECT OF TOCOLYTICS?** M. L. Kreider, *F. J. Seidler* and *T. A. Slotkin*. Pharmacology & Cancer Biology, Duke University Med. Ctr, Durham, NC.

Tuesday Afternoon, March 11
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: PHYSIOLOGICALLY-BASED PHARMACOKINETIC MODELS

Chairperson(s): *Jeffrey Fisher, University of Georgia, Athens, GA and Matthew Himmelstein, DuPont Haskell Laboratories, Newark, DE.*

Displayed: *1:30 PM–4:30 PM*

Attended: *1:30 PM-3:00 PM*

#862 **ADULT TO CHILD EXTRAPOLATION OF THE PHARMACOKINETICS OF ANAESTHETICS USING AGE-SPECIFIC PHYSIOLOGICAL MODELS.** G. Balagopal and *K. Krishnan*. Occupational and Environmental Health, Universite de Montreal, Montreal, QC, Canada.

#863 **PHYSIOLOGICALLY-BASED PHARMACOKINETIC MODELING OF 1-PROPANOL (CAS # 71-23-8) IN HUMANS AND RATS.** *L. M. Sweeney* and *M. L. Gargas*. The Sapphire Group, Dayton, OH.

#864 **MODELING THE INFLUENCE OF ALCOHOL DEHYDROGENASE GENETIC POLYMORPHISMS IN ETHANOL DISPOSITION IN HUMANS.** *E. J. Flynn*[1], *G. M. Pastino*[2] and *L. G. Sultatos*[1]. [1]Pharmacology and Physiology, New Jersey Medical School, Newark, NJ and [2]Schering-Plough Research Institute, Lafayette, NJ.

#865 **ESTIMATING INTERINDIVIDUAL VARIATION IN PHYSIOLOGICALLY BASED PHARMACOKINETIC (PBPK) MODELING PARAMETERS FOR DICHLOROMETHANE METABOLISM IN HUMAN VOLUNTEERS.** C. R. Kirman[1], *L. M. Sweeney*[2], *D. Morgott*[3] and *M. L. Gargas*[2]. [1]The Sapphire Group, Dayton, OH, [2]The Sapphire Group, Dayton, OH and [3]Health and Environment Laboratories, Eastman Kodak Company, Rochester, NY.

#866 **PBPK MODEL ANALYSIS OF INTRATHYROIDAL IODIDE TRANSPORT IN HUMANS.** E. A. Merrill[2], R. A. Clewell[2], *J. M. Gearhart*[1] and P. J. Robinson[1]. [1]Geo-Centers, Inc., Wright-Patterson AFB, OH and [2]ManTech Environ Technology, Inc., Wright-Patterson AFB, OH.

#867 **PHYSIOLOGICALLY BASED PHARMACOKINETIC MODELING OF SPECIES-SPECIFIC EFFECTS OF PLASMA BINDING OF TRICHLOROACETIC ACID FROM TRICHLOROETHYLENE IN MICE, RATS, AND HUMANS.** *M. H. Lumpkin*[2,1], *C. E. Dallas*[1], *J. V. Bruckner*[1] and *J. W. Fisher*[1]. [1]Interdisciplinary Toxicology Program, University of Georgia, Athens, GA and [2]Clayton Group Services, Inc., Kennesaw, GA.

#868 **DEVELOPMENT OF A PBPK MODEL FOR PROPYLENE GLYCOL MONOMETHYL ETHER AND ITS ACETATE FOR RATS, MICE AND HUMANS.** *R. A. Corley*, R. A. Gies and H. Wu. Pacific Northwest National Laboratory, Richland, WA.

#869 **COMPARISON OF THE DERMAL AND INHALATION ROUTES OF EXPOSURE ON THE ABSORPTION OF TOLUENE IN HUMAN VOLUNTEERS.** *K. D. Thrall*, K. K. Weitz and A. D. Woodstock. Battelle, Pacific Northwest Laboratory, Richland, WA.

#870 **INCORPORATION OF AGE-, GENDER-, AND SPECIES-SPECIFIC DATA ON THE METABOLISM, PROTEIN BINDING AND RENAL CLEARANCE OF 2-BUTOXYETHANOL AND ITS METABOLITE, BUTOXYACETIC ACID, INTO A PBPK MODEL.** J. J. Soelberg[1], *D. M. Grant*[2], E. Farris[1], K. K. Weitz[1], *K. D. Thrall*[1] and *R. A. Corley*[1]. [1]Pacific Northwest National Laboratory, Richland, WA and [2]BIOGEN, Cambridge, MA.

#871 **DEVELOPMENT OF A PRELIMINARY PHYSIOLOGICALLY BASED PHARMACOKINETIC MODEL FOR 1, 2-DIETHYLBENZENE IN THE F344 RAT.** K. E. Lewis[1], A. D. Woodstock[2] and *K. D. Thrall*[2]. [1]Energy Pre-Service Teacher Research Fellowship, Washington State University, Pullman, WA and [2]Battelle, Pacific Northwest Laboratory, Richland, WA.

#872 **DEVELOPMENT OF A PHYSIOLOGICALLY-BASED PHARMACOKINETIC MODEL FOR THE STUDY OF 2-METHYLIMIDAZOLE KINETICS.** M. Easterling[1] and *C. J. Portier*[2]. [1]Analytical Sciences, Inc., Durham, NC and [2]NIEHS, Research Triangle Park, NC.

#873 **A PHYSIOLOGICALLY BASED PHARMACOKINETIC MODEL FOR GAVAGE AND I.V. ADMINISTRATION OF METHYLEUGENOL IN F344/N RATS AND B6C3F1 MICE.** S. Y. Whitaker, P. J. Koken and *C. J. Portier*. Laboratory of Computational Biology and Risk Analysis, NIH/NIEHS, Research Triangle Park, NC.

#874 **UTILIZATION OF A PBPK MODEL TO PREDICT THE DISTRIBUTION OF 2, 3, 7, 8-TETRACHLORODIBENZO-*p*-DIOXIN (TCDD) IN HUMANS DURING CRITICAL WINDOWS OF DEVELOPMENT.** *C. Emond*[1], *M. J. DeVito*[2] and *L. S. Birnbaum*[2]. [1]National Research Council PKB ETD NHEERL ORD, U.S. EPA, Research Triangle Park, NC and [2]PKB ETD NHEERL ORD, U.S. EPA, Research Triangle Park, NC.

#875 **IMPROVED PBPK LACTATION/NEONATAL MODEL FOR PERCHLORATE-INDUCED INHIBITION OF ENDOGENOUS AND RADIOIODIDE UPTAKE IN THE RAT.** R. A. Clewell[1], E. A. Merrill[1], *J. M. Gearhart*[2] and P. J. Robinson[2]. [1]Geo-Centers, Inc., Wright-Patterson AFB, OH and [2]ManTech Environmental Technology, Int., Wright-Patterson AFB, OH.

#876 **PHYSIOLOGICALLY BASED PHARMACOKINETIC (PBPK) MODELING OF GENISTEIN IN RATS.** *P. M. Schlosser*[1], *S. J. Borghoff*[1], N. G. Coldham[2], H. T. Tran[3], A. Upmeier[1] and *M. G. Zager*[1,3]. [1]CIIT Centers for Health Research, Research Triangle Park, NC, [2]Department of Bacterial Diseases, Veterinary Laboratories Agency, Surrey, United Kingdom and [3]Department of Mathematics, NCSU, Raleigh, NC.

#877 **INTERSPECIES PHYSIOLOGICALLY BASED PHARMACOKINETIC MODELING OF GENISTEIN.** J. F. Young[1], R. H. Luecke[2] and D. R. Doerge[3]. [1]Biometry & Risk Assessment, NCTR, Jefferson, AR, [2]Chemical Engineering, University of Missouri - Columbia, Columbia, MO and [3]Biochemical Toxicology, NCTR, Jefferson, AR. Sponsor: *D. Hansen*.

#878 **AGE-RELATED DIFFERENCES IN HEART RATE, BUT NOT BODY TEMPERATURE, IN RATS PERFORMING OPERANT TASKS AT EQUIVALENT TRIAL RATES IN AIR AND WHILE INHALING TOLUENE.** W. M. Oshiro, T. E. Samsam, Q. T. Krantz, W. P. Watkinson and *P. J. Bushnell*. NHEERL, U.S. EPA, Research Triangle Park, NC.

#879 **A PHYSIOLOGICAL PHARMACOKINETIC MODEL BASED ON CLEARANCE AND VOLUME OF DISTRIBUTION.** M. Beliveau and *K. Krishnan*. Occupational and Environmental Health, Universite de Montreal, Montreal, QC, Canada.

#880 **A NOVEL APPROACH FOR PBPK MODELING OF METABOLIC INTERACTIONS IN CHEMICAL MIXTURES.** *K. Krishnan* and K. Price. Occupational and Environmental Health, Universite de Montreal, Montreal, QC, Canada.

#881 **LOW-DOSE VALIDATION OF A PHYSIOLOGICALLY BASED PHARMACOKINETIC MODEL FOR TRICHLOROETHYLENE IN THE RAT.** D. A. Keys, *J. V. Bruckner*, S. Muralidhara and *J. W. Fisher*. Interdisciplinary Toxicology Program, University of Georgia, Athens, GA.

#882 **PBPK MODELING OF THE METABOLIC INTERACTIONS OF CARBON TETRACHLORIDE AND TETRACHLOROETHYLENE IN B6C3F1 MICE.** *J. W. Fisher*[1], *M. Lumpkin*[1], J. Boyd[1], *D. Mahle*[2], *J. Bruckner*[1] and *H. El-Masri*[3]. [1]Interdisciplinary Toxicology Program, University of Georgia, Athens, GA, [2]Operational Toxicology Branch, AFB, Dayton, OH and [3]Division of Toxicology, ATSDR, Atlanta, GA.

#883 **USE OF SENSITIVITY ANALYSIS ON A PHYSIOLOGICALLY BASED PHARMACOKINETIC (PBPK) MODEL FOR CHLOROFORM IN RATS TO DETERMINE AGE-RELATED TOXICITY.** C. R. Eklund[1], *J. E. Simmons*[1] and *M. V. Evans*[2]. [1]ORD, NHEERL, ETD, PKB, U.S. EPA, Research Triangle Park, NC and [2]ORD, NERL, HEASD, U.S. EPA, Research Triangle Park, NC.

#884 **DOSE-RESPONSE ANALYSIS OF BETA-CHLOROPRENE INDUCED CARCINOGENICITY USING PBTK MODELING.** *M. W. Himmelstein*[1], *P. M. Hinderliter*[1], S. C. Carpenter[1] and *R. Valentine*[2]. [1]Biochemical Molecular Toxicology, DuPont Haskell Laboratory, Newark, DE and [2]Inhalation Toxicology, DuPont Haskell Laboratory, Newark, DE.

#885 **EVALUATING A PHYSIOLOGICALLY-BASED PHARMACOKINETIC MODEL FOR USE IN RISK ASSESSMENT.** L. H. Clark, *H. A. Barton* and R. W. Setzer. U.S. EPA, ORD, NHEERL, ETD, Research Triangle Park, NC.

#886 **USE OF PHYSICO-CHEMICAL PROPERTIES AND *IN VITRO*-DERIVED DATA IN PHYSIOLOGICALLY-BASED BIOKINETIC MODELING: MINIMUM DATA REQUIREMENTS.** B. J. Blaauboer. Institute for Risk Assessment Sciences, Urecht University, Utrecht, Utrecht, Netherlands. Sponsor: *M. Vandenberg*.

#887 **PHYSIOLOGICAL PARAMETERS IN DEVELOPING RATS AND MICE.** *L. Haber*[1], P. Gentry[2], *Q. Zhao*[1], T. McDonald[2], P. Nance[1], H. Bartow[2], C. VanLandingham[2], *G. Foureman*[3], *H. A. Barton*[4], *R. S. DeWoskin*[3] and *J. C. Lipscomb*[5]. [1]TERA, Cincinnati, OH, [2]Environ, Princeton, NJ, [3]U.S. EPA/NCEA, Research Triangle Park, NC, [4]U.S. EPA/NHEERL, Research Triangle Park, NC and [5]U.S. EPA/NCEA, Cincinnati, OH.

#888 **AN INTEGRATED MODEL OF LIFE STAGE-SPECIFIC CHANGES IN PHYSIOLOGICAL PARAMETERS OF FEMALE RATS.** K. Sokoloff and *K. Krishnan*. Occupational and Environmental Health, Universite de Montreal, Montreal, QC, Canada.

Tuesday Afternoon, March 11
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: EPIDEMIOLOGY/EXPOSURE ASSESSMENT

Chairperson(s): *RuthAnn Rudel, Silent Spring Institute, Newton, MA and Brent Kerger, Health Science Resource Integration Inc, Tallahassee, FL.*

Displayed: *1:30 PM–4:30 PM*

Attended: *3:00 PM-4:30 PM*

#889 **EVALUATION OF TWO IMMUNOASSAYS FOR ANALYSIS OF METHAMPHETAMINE CONTAMINATION ON INDOOR SURFACES.** *C. B. Salocks*[1], M. J. Vona[2], R. A. Haas[3], R. R. Chang[4] and B. P. Simmons[4]. [1]Office of Environmental Health Hazard Assessment, California Environmental Protection Agency, Sacramento, CA, [2]Department of Toxic Substances Control, California Environmental Protection Agency, Sacramento, CA, [3]Office of Environmental Health Hazard Assessment, California Environmental Protection Agency, Oakland, CA and [4]Department of Toxic Substances Control, California Environmental Protection Agency, Berkeley, CA.

#890 **AN ANALYTICAL METHOD FOR MEASURING DERMAL EXPOSURE TO HEXAMETHYLENE DIISOCYANATE.** C. B. Trent, A. Gold, H. Koc, L. M. Ball and *L. A. Nylander-French*. Environmental Sciences and Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC.

#891 **PERCHLOROETHYLENE EXPOSURE ASSESSMENT FOR GOVERNMENT INSPECTORS AT DRY-CLEANING FACILITIES.** *B. D. Kerger*[1], M. J. Fedoruk[2] and R. F. Bronstein[3]. [1]HSRI, Inc., Tallahassee, FL, [2]Center for Occupational and Environmental Health, University of California, Irvine, Irvine, CA and [3]Safety Health West, Chino, CA.

#892 **AUTOMOBILE BRAKE MAINTENANCE AND AIRBORNE CHRYSOTILE FIBER EXPOSURES.** M. Banasik[1], D. R. Van Orden[2], C. Blake[3] and *R. D. Harbison*[1]. [1]Department of Environmental and Occupational Health, University of South Florida, Tampa, FL, [2]RJ Lee Group, Inc., Monroeville, PA and [3]Clayton Group Services, Inc., Kennesaw, GA.

#893 **ARSENIC DRINKING WATER EXPOSURE AND URINARY EXCRETION AMONG ADULTS IN THE YAQUI VALLEY, SONORA, MEXICO.** M. M. Meza[1], M. J. Kopplin[2] and *A. Gandolfi*[2]. [1]Department of Research and Graduate Studies, Institute Technological of Sonora, Cd. 0bregon, Sonora, Mexico and [2]Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

#894 **DRINKING WATER ARSENIC EXPOSURE IS ASSOCIATED WITH DECREASED DNA REPAIR GENE EXPRESSION.** *A. S. Andrew*[1], M. R. Karagas[1], L. Klei[2] and *J. W. Hamilton*[2]. [1]Community and Family Medicine, Dartmouth Medical School, Lebanon, NH and [2]Pharmacology and Toxicology, Dartmouth Medical School, Hanover, NH.

#895 **HAZ-MAP: OCCUPATIONAL HEALTH INFORMATION FOR THE PUBLIC.** H. F. Chang, V. W. Hudson and G. F. Hazard. National Library of Medicine, National Institute of Health, Bethesda, MD. Sponsor: *G. Fonger*.

#896 **HOUSEHOLD EXPOSURE TO PHTHALATES, PESTICIDES, ALKYLPHENOLS, PBDES, AND OTHER ENDOCRINE ACTIVE COMPOUNDS.** *R. Rudel*[1], D. Camann[2], J. D. Spengler[4], D. Barr[3] and J. G. Brody[1]. [1]Silent Spring Institute, Newton, MA, [2]SWRI, San Antonio, TX, [3]HSPH, Boston, MA and [4]USCDC, Atlanta, GA.

#897 **DIOXIN LEVELS IN HUMANS AND FOOD FROM AGENT ORANGE SPRAYED AND NON-SPRAYED AREAS OF LAOS AND VIETNAM COMPARED TO THE USA, GERMANY AND CANADA.** *A. Schecter*[1], M. Pavuk[1], R. Malisch[2], O. Paepke[3], J. Ryan[4], H. Phoupaseuth[5], L. Dai[6] and J. D. Constable[7]. [1]Environmental Sciences, University of Texas School of Public Health, Dallas, TX, [2]State Institute for Chemical and Veterinary Analysis of Food, Freiburg, Germany, [3]ERGO Research, Hamburg, Germany, [4]Health Canada, Ottawa, AB, Canada, [5]Center for Laboratory and Epidemiology, Ministry of Public Health, Vientiane, Lao, [6]Vietnam Red Cross, Hanoi, Viet Nam and [7]Harvard Medical School, Boston, MA.

#898 **USING COTTON T-SHIRTS AS A SURROGATE FOR CHILDREN'S HOME EXPOSURE FROM FLEA CONTROL COLLARS CONTAINING CHLORPYRIFOS.** *J. S. Boone*, J. Tyler, K. Davis and *J. E. Chambers*. CEHS, College of Veterinary Medicine, Mississippi State University, Mississippi State, MS.

#899 **BIOMARKER MEASUREMENTS IN A FISH-EATING POPULATION EXPOSED TO ORGANOCHLORINES.** *P. Ayotte*[1,2], *D. Pereg*[2], C. Larochelle[2], E. Dewailly[1,2] and M. Feeley[3]. [1]Social and Preventive Medicine, Laval University, Ste-Foy, QC, Canada, [2]Public Health Research Unit, CHUQ-Laval University Medical Centre, Ste-Foy, QC, Canada and [3]Health Canada, Ottawa, ON, Canada.

#900 **CONCENTRATIONS OF PERSISTENT ORGANIC POLLUTANTS IN HUMAN MILK FROM NUNAVIK (ARCTIC QUEBEC, CANADA): CHANGES OBSERVED FROM 1989 TO 2001.** *D. Pereg*[1], *P. Ayotte*[1], G. Muckle[1], J. J. Ryan[2], S. Gingras[1] and É. Dewailly[1]. [1]Public Health Research Unit, CHUQ-Laval University Medical Center, Ste-Foy, QC, Canada and [2]Health Canada, Ottawa, ON, Canada.

#901 **ELEVATED BLOOD LEAD FROM GUNSHOT UP TO ONE YEAR AFTER INJURY.** J. L. McQuirter[1], S. J. Rothenberg[2,1], G. A. Dinkins[1], V. S. Kondrashov[1], M. Manalo[1] and A. C. Todd[3]. [1]Oral and Maxillofacial Surgery, Drew University of Medicine & Science, Los Angeles, CA, CA, [2]Center for Research in Population Health, National Institute of Public Health, Cuernavaca, Morelos, Mexico and [3]Community and Preventive Medicine, Mt. Sinai School of Medicine, New York, NY. Sponsor: *M. Soliman*.

#902 **U.S. EPA'S RESPONSE ACTIVITIES TO THE WORLD TRADE CENTER DISASTER.** A. Galizia. U.S. EPA, Edison , NJ. Sponsor: *S. Gavett*.

#903 **PREDICTING RISK OF HOSPITAL ADMISSIONS USING AN AIR POLLUTION MODEL.** *M. R. Francois*[1], P. C. Grivas[1], J. Studnicki[2] and *R. D. Harbison*[1]. [1]Center for Environmental/Occupational Risk Analysis and Management, College of Public Health, University of South Florida, Tampa, FL and [2]Center for Health Outcomes Research, College of Public Health, University of South Florida, Tampa, FL.

#904 **BLOOD HOMOCYSTEINE (HCY) LEVELS IN NON-SMOKERS EXPOSED TO ENVIRONMENTAL TOBACCO SMOKE (ETS) AND THE EFFECT OF POLYMORPHISMS IN THE GLUTATHIONE-S-TRANSFERASE M (GSTM), GLUTATHIONE-S-TRANSFERASE T (GSTT) AND NAD(P)H QUINONE OXIDOREDUCTASE (NQO1) GENES.** N. J. Martin[2], L. A. Bowen[1], G. Cutter[3], S. Clodfelter[3] and *C. A. Pritsos*[1,2]. [1]Nutrition, University of Nevada, Reno, NV, [2]Environmental Sciences and Engineering, University of Nevada, Reno, NV and [3]Department of Internal Medicine, University of Nevada, Reno, NV.

#905 **SERUM OXIDIZED LDL LEVELS ARE INCREASED IN NONSMOKERS EXPOSED TO ENVIRONMENTAL TOBACCO SMOKE (ETS) AND ASSOCIATED WITH GENETIC POLYMORPHISMS IN GST-T, GST-M, AND NQO1.** L. D. Bowen[1], G. Cutter[3], S. Clodfelter[3] and *C. A. Pritsos*[1,2]. [1]Nutrition, University of Nevada, Reno, NV, [2]Environmental Sciences and Engineering, University of Nevada, Reno, NV and [3]Internal Medicine, University of Nevada, Reno, NV.

#906 **ASSOCIATION BETWEEN URINARY PORPHYRINS, MERCURY, SYMPTOMS, AND MOOD.** N. Heyer[1], *D. Echeverria*[1,2], *J. S. Woods*[1,2] and C. Garabedian[1]. [1]Battelle CPHRE, Seattle, WA and [2]Environmental Health, University of Washington, Seattle, WA.

#907 **ASSOCIATION OF TAMOXIFEN (TAM) AND TAM METABOLITE CONCENTRATIONS WITH SELF-REPORTED SIDE EFFECTS OF TAM IN WOMEN WITH BREAST CANCER.** L. Gallicchio[1], L. Lewis[1], K. Tkaczuk[2] and *J. A. Flaws*[1,2]. [1]Epidemiology and Preventive Medicine, University of Maryland at Baltimore, Baltimore, MD and [2]The Greenebaum Cancer Center, University of Maryland School of Medicine, Baltimore, MD.

#908 **DIETARY EXPOSURE ASSESSMENT OF CADMIUM CLOSE TO THE CURRENT PROVISIONAL TOLERABLE WEEKLY INTAKE AND ITS EFFECTS ON RENAL BIOMARKERS AMONG FEMALE FARMERS IN JAPAN.** F. Kayama[2,1], H. Horiguchi[2,1], E. Oguma[2,1], S. Sasaki[3], K. Miyamoto[2], Y. Ikeda[2] and M. Machida[2]. [1]Health Science, Jichi Medical School, Kawachi-Gun, Tochigi, Japan, [2]Nutrition, National Institute of Health and Nutrition, Tokyo, Tokyo, Japan and [3]CREST, JST, Kawaguchi, Saitama, Japan. Sponsor: *T. Yoshida*.

#909 **ISCHEMIC HEART DISEASE AMONG MINERS.** B. Sjügren[1], L. Barlow[2] and J. Weiner[3]. [1]Work Environment Toxicology, Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden, [2]Centre for Epidemiology, National Board of Health and Welfare, Stockholm, Sweden and [3]Swedish Work Environment Authority, Solna, Sweden. Sponsor: *G. Johanson*.

#910 **USE OF THE GLOBAL ASSESSMENT SYSTEM FOR HUMANS IN MILITARY VETERANS TO DISCRIMINATE PERFORMANCE DEFICITS.** M. Y. Bekkedal[1], G. D. Ritchie[1], F. J. McDougle[1], S. M. McInturf[1], J. Rossi III[1] and . [1]Neurobehavioral Effects Laboratory, Naval Health Research Center Detachment-Toxicology, Wright-Patterson AFB, OH and [2]Veterans Administration Medical Center, Dayton, OH. Sponsor: *E. Kimmel*.

#911 **RISK FACTORS IN CARBON MONOXIDE POISONING.** *D. D. Petersen*[1] and D. Kobb[2]. [1]Research & Development, U.S. EPA, Cincinnati, OH and [2]Hyperbaric Medicine, University of Cincinnati, Cincinnati, OH.

#912 **ILLNESSES ASSOCIATED WITH A NOV. 1999 SPRINKLER APPLICATION OF METAM SODIUM IN EARLIMART, CA.** M. O'Malley[1], T. Barry[2], M. Verder-Carlos[1] and *A. L. Rubin*[3]. [1]Worker Health & Safety Branch, Department of Pesticide Regulation, Cal-EPA, Sacramento, CA, [2]Environmental Monitoring Branch, Department of Pesticide Regulation, Cal-EPA, Sacramento, CA and [3]Medical Toxicology Branch, Department of Pesticide Regulation, Cal-EPA, Sacramento, CA.

Tuesday Afternoon, March 11
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: ENVIRONMENTAL/ECOTOXICOLOGY

Chairperson(s): *Howard Mielke, Xavier University of Louisiana, New Orleans, LA and Tara Sabo-Attwood, University of Florida, Gainesville, FL.*

Displayed: *1:30 PM–4:30 PM*

Attended: *1:30 PM-3:00 PM*

#913 **COMPARATIVE ACUTE AND COMBINATIVE TOXICITY OF AFLATOXIN B1 AND FUMONISIN B1 IN ANIMALS AND HUMAN CELLS.** Y. Liu[1,2], L. Tang[1,2], M. Lian[1,2], C. McKean[1,2], H. Wu[1,2], H. Liu[1,2], C. W. Theodorakis[1,2], R. J. Kendall[1,2] and *J. Wang*[1,2]. [1]Environmental Toxicology, Texas Tech University, Lubbock, TX and [2]The Institute of Environmental and Human Health, Texas Tech University, Lubbock, TX.

#914 **FOOD CONTAMINATION OF FUMONISIN B1 IN HIGH-RISK AREA OF ESOPHAGEAL AND LIVER CANCER.** *J. Wang*[1,2], S. Wang[3], J. Su[5], T. Huang[5], X. Hu[4], J. Yu[5], Z. Wei[6], Y. Liang[6], Y. Liu[1,2], H. Luo[1,2] and G. Sun[3]. [1]Environmental Toxicology, Texas Tech University, Lubbock, TX, [2]The Institute of Environmental and Human Health, Texas Tech University, Lubbock, TX, [3]Southeast University School of Public Health, Nanjing, China, [4]CDC Haian Branch, Huaian, China, [5]Guangxi Cancer Institute, Nanning, China and [6]Fusui Liver Cancer Institute, Fusui, China.

#915 **ANTIBODIES AGAINST MOLDS AND MYCOTOXINS AFTER EXPOSURE TO TOXIGENIC FUNGI IN A WATER-DAMAGED BUILDING.** *A. Vojdani*. CEO, Immunosciences Lab Inc, Beverly Hills, CA.

#916 **INHIBITION OF CERAMIDE SYNTHASE IN CORN SEEDLINGS INFECTED WITH *FUSARIUM VERTICILLIOIDES* OR EXPOSED DIRECTLY TO FUMONISIN B1 IN SOIL.** *L. Williams*[2,1], A. Glenn[2], C. Bacon[2], J. Showker[2] and *R. Riley*[2]. [1]College of Agriculture and Environmental Sciences, University of Georgia, Athens, GA and [2]UDSA/ARS, Athens, GA.

#917 **TRICLOSAN AS INHIBITOR OF THE SULFONATION AND GLUCRUONIDATION OF 3-HYDROXY-BENZO(a)PYRENE IN HUMAN LIVER.** L. Wang and *M. O. James*. Department of Medicinal Chemistry, College of Pharmacy, University of Florida, Gainesville, FL.

#918 **SHORT TERM FEEDING OF 2, 4-HEXADIENAL (HX) ALTERS STOMACH GROWTH IN IMMEDIATE POST-NATAL SPRAGUE-DAWLEY RATS.** *P. Lee*[1,2] and C. Picchiottino[1]. [1]Pediatrics, Medical College of Wisconsin, Milwaukee, WI and [2]Pharmacology & Toxicology, Medical College of Wisconsin, Milwaukee, WI.

#919 **EXPOSURE TO CARBON MONOXIDE AT ALTITUDE.** *J. J. McGrath*. Physiology, Texas Tech University School of Medicine, Lubbock, TX.

#920 **MORPHOLOGICAL CHANGES AND METAL ACCUMULATION IN THE LUNG OF AGED DOGS.** *A. Shimada*[1], M. Oshima[1], M. Sawada[1], T. Morita[1], T. Hasegawa[2] and Y. Seko[2]. [1]Department of Veterinary Pathology, Tottori University, Tottori, Japan and [2]Environmental Biochemistry, Yamanashi Institute of Environmental Sciences, Fujiyoshida, Yamanashi, Japan.

#921 **DIESEL SOOT BINDS IL-8 IN A BIOACTIVE FORM.** J. Seagrave, C. Knall and *J. L. Mauderly*. Lovelace Respiratory Research Institute, Albuquerque, NM.

#922 **MECHANISMS OF NITROGEN DIOXIDE-MEDIATED CYTOTOXICITY.** V. N. Ayyagari, A. Januszkiewicz and J. Nath. Respiratory Research, Walter Reed Army Institute of Research, Silver Spring, MD. Sponsor: *N. Gorbunov*.

#923 **PHOTOCHEMCIAL REACTIONS OF URBAN AIR POLLUTION MIXTURES ENHANCE INFLAMMATORY RESPONSES IN LUNG CELLS.** *I. Jaspers*[1], H. E. Jeffries[2], K. G. Sexton[2], R. M. Kamens[2] and M. Doyle[2]. [1]CEMALB, University of North Carolina, Chapel Hill, NC and [2]Env. Sciences. & Engineering, University of North Carolina, Chapel Hill, NC.

#924 **GEOCHEMICAL SOLUBILITY OF ASBESTOS TOXICOLOGICAL STANDARDS IN SIMULATED LUNG FLUIDS.** *T. L. Ziegler*, T. K. Hinkley, P. J. Lamothe, G. P. Meeker, S. J. Sutley, H. Lowers, I. K. Brownfield and G. S. Plumlee. USGS, Denver, CO.

#925 **THE CHEMICAL COMPOSITION AND REACTIVITY OF DUSTS DEPOSITED BY THE 9/11/2001, WORLD TRADE CENTER COLLAPSE.** G. S. Plumlee, P. L. Hageman, G. P. Meeker, P. J. Lamothe, P. Theodorakos, S. J. Sutley, R. N. Clark, S. A. Wilson, G. A. Swayze, T. M. Hoefen, J. Taggart, M. Adams and *T. L. Ziegler*. USGS, Denver, CO.

#926 **POLYCYCLIC AROMATIC HYDROCARBONS AND METALS IN SOILS OF TWO NEW ORLEANS COMMUNITIES.** *H. W. Mielke*[1], G. Wang[2], C. R. Gonzales[1], E. Powell[1], B. Le[2] and V. N. Quach[1]. [1]College of Pharmacy, Xavier University, New Orleans, LA and [2]Department of Chemistry, Xavier University, New Orleans, LA.

#927 **METALLOTHIONEIN AND GLUTAMATE-CYSTEINE LIGASE GENE EXPRESSION IN METAL-EXPOSED SMALL MAMMALS.** H. Barrus[1], S. Srinouanprachanh[1], M. J. Hooper[2], S. T. McMurry[2], G. P. Cobb[2] and *T. J. Kavanagh*[1]. [1]University of Washington, Seattle, WA and [2]Texas Tech University, Lubbock, TX.

#928 **EFFECTS OF CHROMATED COPPER ARSENIC (CCA) TREATED WOOD EFFLUENTS ON RATS.** L. Wilson[1], L. Ogden[1], T. Graham[2], L. Billups[2], F. Johnson[1], Q. Knight[1] and M. Hammersley[1]. [1]Biomedical Sciences, Tuskegee University, Tuskegee Institute, AL and [2]Pathobiology, Tuskegee University, Tuskegee Institute, AL. Sponsor: *R. Dalvi*.

#929 **UTILIZATION OF A HOMING PIGEON (*COLUMBA LIVIA*) MODEL TO ASSESS THE EFFECTS OF NON-LETHAL EXPOSURES TO MINE WASTES AND PESTICIDES IN MIGRATORY BIRDS.** J. M. Brasel[1,2], R. Cooper[1,2] and *C. A. Pritsos*[1,2]. [1]Nutrition, University of Nevada , Reno, NV and [2]Environmental Sciences and Engineering, University of Nevada, Reno, NV.

#930 **REGIONAL, NOT TROPHIC, FORAGING PATTERNS SUBSTANTIATE DIFFERENCES IN CONTAMINANT LEVELS BETWEEN TWO NORTH PACIFIC ALBATROSS SPECIES.** M. E. Finkelstein[1], D. A. Croll[1], B. Tershy[1], B. S. Keitt[1], W. Jarman[2], T. Lowe[2], C. Bacon[2] and *D. R. Smith*[1]. [1]Environmental Toxicology, University of California, Santa Cruz, CA and [2]Energy and Geoscience Institute, University of Utah, Salt Lake City, UT.

#931 **ESTROGEN RECEPTOR ALPHA, BUT NOT BETA OR GAMMA EXPRESSION IS INDUCED BY ESTRADIOL AND XENOESTROGENS IN FISH LIVER TISSUE.** *T. L. Sabo-Attwood*[1] and *N. D. Denslow*[2]. [1]Pharmacology and Therapeutics, University of Florida, Gainesville, FL and [2]Biochemistry and Molecular Biology, University of Florida, Gainesville, FL.

#932 **RELATIVE BINDING AFFINITY OF ENDOCRINE DISRUPTING CHEMICALS TO ESTROGEN RECEPTOR IN TWO SPECIES OF FRESHWATER FISH.** J. S. Denny[1] and *T. R. Henry*[2]. [1]Mid-Continent Ecology Division, U.S. EPA, Duluth, MN and [2]Experimental Toxicology Division, U.S. EPA, Duluth, MN.

#933 **EFFECTS OF ATRAZINE ON REPRODUCTIVE SUCCESS IN THE MARINE FISH, CUNNER (Tautogolabrus adspersus).** *L. J. Mills*[1,2], R. E. Gutjahr-Gobell[1], D. Borsay Horowitz[1] and G. E. Zaroogian[1]. [1]Atlantic Ecology Division, U.S. EPA, NHEERL, Narragansett, RI and [2]Biomedical Sciences, University of Rhode Island, Kingston, RI.

#934 **LABORATORY FISH GONADAL SEX DIFFERENTIATION: A COMPARISON OF THE FATHEAD MINNOW (*PIMEPHALES PROMELAS*), SHEEPSHEAD MINNOW (*CYPRINODON VARIGATUS*) AND ZEBRA FISH (*DANIO RERIO*).** N. T. Wallis[1], F. M. Smith[1], T. Hutchinson[2] and G. Panter[2]. [1]Research Pathology, Syngenta. Central Toxicology Laboratory, Macclesfield, Cheshire, United Kingdom and [2]Ecotoxicology, AstraZeneca, Brixam Environmental Laboratory, Brixham, Devon, United Kingdom. Sponsor: *I. Kimber*.

#935 **ENDOCRINE DISRUPTION AND PERSISTENT BIOACCUMULATIVE CONTAMINANTS IN COLUMBIA RIVER WHITE STURGEON.** D. T. Gundersen[1], M. Plumlee[1], C. Wong[1], J. Paar[1], C. B. Schreck[2], G. W. Feist[2], M. A. Webb[2], A. G. Maule[3], *E. Foster*[4] and M. S. Fitzpatrick[4]. [1]Environmental Science Program, Pacific University, Forest Grove, OR, [2]Oregon Cooperative Fishery Research Unit, Department of Fisheries & Wildlife, Oregon State University, Corvallis, OR, [3]Columbia River Research Laboratory, USGS-Biological Resources Division, Cook, WA and [4]Department of Environmental Quality, Portland, OR.

#936 **THE EFFECTS OF 2, 3, 7, 8-TETRACHLORODIBENZO-*P*-DIOXIN (TCDD) ON ORNITHINE DECARBOXYLASE (ODC) INDUCTION IN THE GONAD OF THE EASTERN OYSTER (*CRASSOSTREA virginica*).** *M. L. Wintermyer* and *K. R. Cooper*. Toxicology, Rutgers University, New Brunswick, NJ.

#937 **MERCURY IN THE ENVIRONMENT OF NORTHWEST ALABAMA.** *A. C. Nichols*[1] and T. P. Murray[2]. [1]Physical and Earth Sciences, Jacksonville State University, Jacksonville, AL and [2]Chemistry, University of North Alabama, Florence, AL.

#938 **MERCURY DISTRIBUTION IN SEDIMENTS AND UPTAKE INTO THE AQUATIC FOOD WEB AT COTTAGE GROVE RESERVOIR, OREGON.** D. L. Morgans[1,2] and *L. R. Curtis*[2]. [1]Environmental, CH2M HILL, Corvallis, OR and [2]Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR.

TUESDAY

Tuesday Afternoon, March 11
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: LIVER/GASTROINTESTINAL SYSTEM

Chairperson(s): *Hartmut Jaeschke, University of Arizona College Of Medicine, Tucson, AZ and Peter Harvison, University of the Sciences in Philadelphia, Philadelphia, PA.*

Displayed: *1:30 PM–4:30 PM*

Attended: *3:00 PM-4:30 PM*

#939 **1, 1-DICHLOROETHYLENE-INDUCED MITOCHONDRIAL PERMEABILITY TRANSITION IN MURINE LIVER.** *E. J. Martin*[1], W. J. Racz[2] and *P. Forkert*[1]. [1]Anatomy and Cell Biology, Queen's University, Kingston, ON, Canada and [2]Pharmacology and Toxicology, Queen's University, Kingston, ON, Canada.

#940 **MECHANISM OF PERFLUORINATED CARBOXYLIC ACID INDUCED MITOCHONDRIONOPATHY *IN VITRO*.** *T. M. O'Brien* and *K. B. Wallace*. Biochemistry & Molecular Biology, Toxicology Graduate Program, University of Minnesota, Duluth, MN.

#941 **MITOCHONDRIAL-MEDIATED CELL KILLING BY BILE ACIDS.** *C. M. Palmeira*[1], A. P. Rolo[1] and *K. B. Wallace*[2]. [1]Center for Neurosciences and Cell Biology of Coimbra, Department of Zoology , University of Coimbra, Coimbra, Coimbra, Portugal and [2]Department of Biochemistry and Molecular Biology, University of Minnesota School of Medicine, Duluth, MN.

#942 **ROLE OF MITOCHONDRIAL DYSFUNCTION IN COMBINED BILE ACID-INDUCED APOPTOSIS.** A. P. Rolo[1], *C. M. Palmeira*[1], J. M. Holy[2] and *K. B. Wallace*[3]. [1]Center for Neurosciences and Cell Biology of Coimbra, Department of Zoology, University of Coimbra, Coimbra, Portugal, [2]Department of Anatomy and Cell Biology, University of Minnesota School of Medicine, Duluth, MN and [3]Department of Biochemistry and Molecular Biology, University of Minnesota School of Medicine, Duluth, MN.

#943 **GALACTOSAMINE INDUCED ONCOTIC NECROSIS AND CASPASE-DEPENDENT APOPTOSIS IN RAT LIVER.** *J. S. Gujral*[1], A. Farhood[2] and *H. Jaeschke*[1]. [1]Pharmacology and Toxicology, University of Arkansas for Medical Sciences, Little Rock, AR and [2]Pathology, University of Texas, Houston, TX.

#944 **MITOCHONDRIAL AUTOPHAGY DURING REMODELING OF CULTURED HEPATOCYTES.** S. Rodriguez and *J. J. Lemasters*. Department of Cell and Developmental Biology, UNC at Chapel Hill, Chapel Hill, NC.

#945 **S-ADENOSYLMETHIONINE PROTECTS AGAINST ACUTE ALCOHOL INDUCED HEPATOTOXICITY.** Z. Song[1], *Z. Zhou*[1], *T. Chen*[2], D. Hill[1], *J. Y. Kang*[1,2,3], S. Barve[1] and C. J. McClain[1,2,3]. [1]Medicine, University of Louisville, Louisville, KY, [2]Pharmacology and Toxicology, University of Louisville, Louisville, KY and [3]VAMC and Jewish Hospital, Louisville, KY.

#946 **PPAR-α ACTIVATION IS ESSENTIAL FOR DIABETES-INDUCED RESISTANCE AGAINST ACETAMINOPHEN HEPATOTOXICITY.** *K. Shankar*[1], *V. S. Vaidya*[1], *J. E. Manautou*[2], *J. C. Corton*[3], *T. J. Bucci*[4], *J. Liu*[5], *M. P. Waalkes*[5] and *H. M. Mehendale*[1]. [1]Toxicology, University of Louisiana at Mornoe, Monroe, LA, [2]Department of Pharmacology Sciences, University of Connecticut, Storrs, CT, [3]Toxicogenomics, Toxicology Consultant, Chapel Hill, NC, [4]Pathology Associates Intl., NCTR, Jefferson, AR and [5]NCI at NIEHS, Inorganic Carcinogenesis Section, Research Triangle Park, NC.

#947 **UROPORPHYRIA CAUSED BY ETHANOL IN Hfe(-/-) MICE; ROLE OF HEPATIC IRON ACCUMULATION.** P. Sinclair[1,6,7], N. Gorman[1,6], H. Trask[1,6], W. Bement[1], J. Szakacs[3], G. Elder[1,5], D. Balestra[1], *J. Sinclair*[1,6,7] and G. Gerhard[1,2]. [1]VA Med. Center, [2]Pathology, Dartmouth Medical School, Hanover, NH, [3]Pathology, University of Utah Medical School, Salt Lake City, UT, [4]Medical Biochemistry, University of Wales Medical School, Cardiff, Wales, United Kingdom, [5]Medicine, Dartmouth Medical School, Hanover, NH, [6]Biochemistry, Dartmouth Medical School, Hanover, NH and [7]Pharmacology/Toxicology, Dartmouth Medical School, Hanover, NH.

#948 **CARBAMOYL PHOSPHATE SYNTHETASE I: CHRONIC ETHANOL EXPOSURE AFFECTS ENZYME ACTIVITY IN HEPATOCYTES VIA A 4-HYDROXYNONENAL MECHANISM.** B. P. Sampey, M. I. Panagiotidis and *D. R. Petersen*. PharmSci/Toxicology, University of Colorado Health Sciences Center, Denver, CO.

#949 **SUBSTRATE MODIFICATION BY 4-HYDROXYNONENAL MODULATES DEGRADATION BY THE 26S PROTEASOME.** *D. L. Carbone*, *J. A. Doorn* and *D. R. Petersen*. Pharmaceutical Sciences, University of Colorado HSC, Denver, CO.

#950 **WHY DOES INJURY PROGRESS EVEN AFTER TOXICANT IS GONE? A NOVEL MECHANISM.** *P. B. Limaye*[1], *U. M. Apte*[1], *T. J. Bucci*[2], *A. Warbritton*[2] and *H. M. Mehendale*[1]. [1]Department of Toxicology, The University of Louisiana at Monroe, Monroe, LA and [2]Pathology Associates Inc., NCTR, Jefferson, AR.

#951 **STUDIES ON THE SUSCEPTIBILITY OF TRANSPORT DEFICIENT (TR^-) HYPERBILIRUBINEMIC RATS TO ACETAMINOPHEN HEPATOTOXICITY.** *V. M. Silva*[1], *G. E. Hennig*[3], *M. S. Thibodeau*[1], H. E. Whiteley[2] and *J. E. Manautou*[1]. [1]Pharmaceutical Sciences, University of Connecticut, Storrs, CT, [2]Veterinary Medicine, University of Illinois, Urbana, IL and [3]Pathobiology, University of Connecticut, Storrs, CT.

#952 **INCREASED HEPATOTOXICITY OF ACETAMINOPHEN IN HSP 70I KNOCKOUT MICE.** *J. K. Tolson*[1], *D. J. Dix*[2], R. W. Voellmy[3] and *S. M. Roberts*[1]. [1]Center for Environmental & Human Toxicology, University of Florida, Gainesville, FL, [2]NHEERL, U.S. EPA, Research Triangle Park, NC and [3]Department of Biochemistry, University of Miami, Miami, FL.

#953 **PROTECTIVE ROLE OF KUPFFER CELLS IN ACETAMINOPHEN-INDUCED HEPATIC INJURY IN MICE.** C. Ju[1], *T. Reilly*[1], *M. Bourdi*[1], M. Radonovich[2], J. Brady[2], J. George[1] and *L. Pohl*[1]. [1]NHLBI, NIH, Bethesda, MD and [2]NCI, NIH, Bethesda, MD.

#954 **INVESTIGATING THE POLYGENIC CONTROL OF SUSCEPTIBILITY TO DRUG-INDUCED LIVER DISEASE (DILD) USING VARIED STRAINS OF MICE.** *K. Welch*[1], *T. Reilly*[1], J. Brady[2], C. Pise-Masison[2], M. Radonovich[2] and *L. Pohl*[1]. [1]NHLBI, NIH/HHS, Bethesda, MD and [2]NCI, NIH/HHS, Bethesda, MD.

#955 **SCAVENGING PEROXYNITRITE WITH GLUTATHIONE ENHANCES SURVIVAL AND PROMOTES REGENERATION AFTER ACETAMINOPHEN OVERDOSE IN MICE: ROLE OF IL-6.** M. Bajt, *T. Knight* and *H. Jaeschke*. Pharmacology and Toxicology, University of Arkansas for Medical Sciences, Little Rock, AR.

#956 **MECHANISM OF ENHANCED CCL_4-INDUCED HEPATOTOXICITY IN TYPE 2 DIABETES: ROLE OF TISSUE REPAIR.** *S. P. Sawant*[1], *A. V. Dnyanmote*[1], *J. R. Latendresse*[2] and *H. M. Mehendale*[1]. [1]Department.of Toxicology, College of Pharmacy, The University of Louisiana at Monroe, Monroe, LA and [2]Pathology, NCTR, Jefferson, AR.

#957 **MULTIPLE DRUG RESISTANCE GENE MODULATION BY STREPTOZOTOCIN.** *J. M. Brady*, *A. L. Slitt* and *C. D. Klaassen*. Department of Pharmacology and Toxicology, University of Kansas Medical Center, Kansas City, KS.

#958 **INDUCTION OF FACIT COLLAGENS XII AND XIV DURING CARBON TETRACHLORIDE-INDUCED HEPATIC FIBROSIS.** *D. R. Gerecke*, B. Liu, *L. A. Morio*, P. Zhou, R. A. Hahn, *J. D. Laskin*, *D. L. Laskin* and *M. K. Gordon*. Joint Graduate Program in Toxicology, Rutgers University and UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ.

#959 **ANALYSIS OF GENDER DIFFERENCES IN EXPRESSION OF IGF-1, CYP1A2 AND CYP3A1 IN HUMAN LIVER.** S. Dial[1], A. Cromwell[2] and A. J. Harris[1]. [1]Center for Hepatotoxicity, NCTR, Jefferson, AR and [2]Biology Department, Hendrix College, Conway, AR. Sponsor: *Y. Dragan*.

#960 **GLIBENCLAMIDE AND TROGLITAZONE INHIBIT THE CUMULATIVE UPTAKE AND BILIARY EXCRETION OF TAUROCHOLATE (TC) IN SANDWICH-CULTURED RAT HEPATOCYTES (SCRH).** D. C. Kemp and K. Brouwer. Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC. Sponsor: *J. lemasters*.

#961 **FIBRATES INDUCE PEROXISOMAL AND MITOCHONDRIAL PROLIFERATION IN CYNOMOLGUS MONKEYS WITHOUT CAUSING CELL CYCLE ALTERATIONS OR OXIDATIVE STRESS.** *C. W. Qualls*[1], *D. J. Hoivik*[1], *M. J. Santostefano*[1], H. R. Brown[1], S. P. Anderson[1], R. J. Ott[1], B. R. Oliver[1], P. N. Mudd[1], R. C. Mirabile[2], C. L. Kimbrough[1] and R. T. Miller[1]. [1]GlaxoSmithKline, Research Triangle Park, NC and [2]GlaxoSmithKline, Upper Marion, PA.

#962 **EFFECT OF ILEAL RESECTION OR CHOLESTYRAMINE TREATMENT ON SERUM TRANSAMINASES IN RATS.** R. Duan, C. Wilker, K. Gal, M. Gralinski, B. Keller, N. Napawan, E. Krul and E. Blomme. Toxicology, Pharmacia, Skokie, IL. Sponsor: *M. Schlosser*.

#963 **ALTERED SUBCELLULAR DISTRIBUTION OF HEAT SHOCK PROTEIN 90 (HSP90) IN LIVER OF DIELDRIN-FED RAINBOW TROUT.** *L. R. Curtis*, D. L. Villeneuve and J. Lee. Env. and Molec. Toxicology, Oregon State University, Corvallis, OR.

#964 **LATE ADMINISTRATION OF COX-2 INHIBITORS MINIMIZE HEPATIC NECROSIS IN CHLOROFORM INDUCED LIVER INJURY.** C. Begay and *A. Gandolfi*. Pharmacology & Toxicology, University of Arizona, Tucson, AZ.

#965 **TOXICOKINETICS OF THIOACETAMIDE EXPLAINS LACK OF DOSE-RESPONSE FOR LIVER INJURY IN *AD LIBITUM* AND DIET-RESTRICTED RATS.** *J. Chilakapati*[1], *K. Shankar*[1], R. A. Hill[2] and *H. M. Mehendale*[1]. [1]Toxicology, University of Louisiana at Monroe, Monroe, LA and [2]Basic Pharmaceutical Sciences, University of Louisiana at Monroe, Monroe, LA.

#966 **KAVA INDUCES HEPATOTOXICITY IN MALE B6C3F1 MICE.** D. J. Smith, *L. M. Kamendulis* and *J. E. Klaunig*. Department of Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN.

#967 ***o*-HYDROXYPHENYLACETALDEHYDE (*o*-HPA) DETOXIFICATION IS A MAJOR DETERMINANT OF COUMARIN-INDUCED HEPATOTOXICITY.** J. D. Vassallo[1], *G. P. Daston*[1] and *L. D. Lehman-Mckeeman*[2]. [1]Procter & Gamble, Cincinnati, OH and [2]Bristol-Myers Squibb, Wilmington, DE.

#968 **EFFECTS OF STRUCTURAL MODIFICATIONS ON THE HEPATOTOXICITY OF 3-(3, 5-DICHLOROPHENYL)-2, 4-THIAZOLIDINEDIONE (DCPT) IN FISCHER 344 RATS.** N. N. Patel, R. Tchao, *E. L. Kennedy* and *P. J. Harvison*. University of the Sciences in Philadelphia, Philadelphia, PA.

#969 **RESPONSE OF LIVER SLICES TO HEPATOXICANTS ASSESSED USING TRADITIONAL CLINICAL CHEMISTRY MARKERS.** H. P. Behrsing and *C. A. Tyson*. Toxicology Laboratory, SRI International, Menlo Park, CA.

#970 **TEMPORAL EXPRESSION PATTERNS OF GENES IN THE LIVERS OF IMMATURE, OVARIECTOMIZED MICE TREATED WITH ETHYNYL ESTRADIOL.** D. R. Boverhof, *K. C. Fertuck*, L. D. Burgoon, R. S. Aiyar and *T. R. Zacharewksi*. Biochemistry & Molecular Biology, National Food Safety & Toxicology Center, and Institute for Environmental Toxicology, Michigan State University, East Lansing , MI.

#971 **PROTECTION BY NITRIC OXIDE AND CGMP AGAINST ISCHEMIA/REPERFUSION INJURY IN CULTURED RAT HEPATOCYTES.** S. Ohshima, J. Kim and *J. J. Lemasters*. UNC-Chapel Hill, Chapel Hill, NC.

#972 **ACTIVATION OF SIGNAL TRANSDUCTION PATHWAYS IN HEPATIC PARENCHYMAL CELLS ARE REQUIRED FOR NEUTROPHIL-DEPENDENT KILLING.** B. L. Copple, B. Woolley, C. Rondelli, *P. E. Ganey* and *R. A. Roth*. Pharmacology and Toxicology, Michigan State University, East Lansing, MI.

#973 **NITRIC OXIDE-MEDIATED SUPPRESSION OF FLAVIN-CONTAINING MONOOXYGENASE (FMO) ACTIVITIES IN CULTURED PRIMARY RAT HEPATOCYTES BY DESTABILIZING THE MRNA AND S-NITROSYLATION OF FMO1.** S. Ryu, *W. Chung*, J. Kang and C. Park. Pharmacology, National Institute of Toxicological Research, Seoul, South Korea.

#974 **INVOLVEMENT OF PHOSPHATIDYLINOSITOL 3-KINASE IN HEPATIC STELLATE CELL ACTIVATION AND ANTIOXIDANT RESPONSE ELEMENT-REGULATED GENE INDUCTION.** *J. F. Reichard*, M. S. Taylor and *D. R. Petersen*. Pharmaceutical Sciences, UCHSC, Denver, CO.

#975 **THE ROLE OF THE ALPHA$_1$ ADRENERGIC RECEPTOR IN THE RESTRAINT-INDUCED PHOSPHORYLATION OF STAT3.** E. A. Johnson[1], *J. P. O'Callaghan*[2] and *D. B. Miller*[1]. [1]Chronic Stress and Neurotoxicology Laboratory, Toxicology and Molecular Biology Branch, NIOSH-CDC, Morgantown, WV and [2]Molecular Neurotoxicology Laboratory, Toxicology and Molecular Biology Branch, NIOSH-CDC, Morgantown, WV.

#976 **15-DEOXY-PROSTAGLANDIN J2 ENHANCES ALLYL ALCOHOL-INDUCED TOXICITY IN RAT HEPATOCYTES.** J. Maddox, *R. A. Roth* and *P. E. Ganey*. Michigan State University, East Lansing, MI.

#977 **MODEST INFLAMMATION RENDERS RANITIDINE HEPATOTOXIC: IS THERE A RELATIONSHIP TO DRUG IDIOSYNCRASY?** *J. P. Luyendyk*[1], *J. F. Maddox*[1], *G. N. Cosma*[2], *P. E. Ganey*[1], G. L. Cockerell[2] and *R. A. Roth*[1]. [1]Department of Pharmacology and Toxicology, Institute for Environmental Toxicology, National Food Safety and Toxicology Center, Michigan State University, East Lansing, MI and [2]Investigative Toxicology, Pharmacia Corp., Kalamazoo, MI.

#978 **ENDOTOXIN, NOT OXIDATIVE STRESS, MEDIATES ACUTE ETHANOL-INDUCED HEPATIC TNF-ALPHA PRODUCTION.** *Z. Zhou*[1], L. Wang[1], Z. Song[1], J. C. Lambert[1,2], *C. J. McClain*[1,2] and *J. Y. Kang*[1,2,3]. [1]Medicine, University of Louisville, Louisville, KY, [2]Pharmacology & Toxicology, University of Louisville, Louisville, KY and [3]Jewish Hospital Heart and Lung Institute, Louisville, KY.

#979 **THE ROLE OF THE COAGULATION SYSTEM IN SYNERGISTIC LIVER INJURY CAUSED BY MONOCROTALINE AND BACTERIAL ENDOTOXIN COEXPOSURE.** *S. B. Yee*, *P. E. Ganey* and *R. A. Roth*. Department of Pharmacology and Toxicology, National Food Safety and Toxicology Center, and Institute for Environmental Toxicology, Michigan State University, East Lansing, MI.

#980 **MATRIX METALLOPROTEINASES IN MONOCROTALINE-INDUCED LIVER INJURY.** *U. M. Hanumegowda*[1], B. L. Copple[1], M. Shibuya[2], *P. E. Ganey*[1] and *R. A. Roth*[1]. [1]Department of Pharmacology and Toxicology, Michigan State University and [2]Institute of Medical Science, University of Tokyo, Tokyo, Japan.

#981 **S-ADENOSYL-L-METHIONINE ABSORPTION AND TRANSPORT BY CACO-2 CELLS.** *J. McMillan*, K. McKelvey, K. Walle and T. Walle. Pharmacology, Medical University of South Carolina, Charleston, SC.

#982 **RESILIENCY OF F344 RATS TO CHLORDECONE POTENTIATED CCL_4 HEPATOTOXICITY AND LETHALITY IS AGE-DEPENDENT.** *B. Murali*, *M. C. Korrapati*, *S. S. Anand* and *H. M. Mehendale*. Toxicology, University of Louisiana at Monroe, Monroe, LA.

#983 **QUANTITATION OF INDIVIDUAL BILE ACIDS IN PLASMA BY LC/MS/MS.** C. A. Fritz, C. A. Drupa, *M. D. Aleo* and J. Colangelo. Drug Safety Evaluation, Pfizer Global R&D, Groton, CT.

#984 **LEVAMISOLE ATTENUATES DICLOFENAC-INDUCED ENTEROPATHY IN RATS.** *B. K. Shipp*[1], L. Kaphalia[2], *C. R. Atchison*[3], *L. R. Pohl*[4], J. F. Aronson[2] and *M. T. Moslen*[2]. [1]Gradient Corporation, Cambridge, MA, [2]University of Texas Medical Branch, Galveston, TX, [3]US Army Medical Research Institute of Chemical Defense, APG, MD and [4]NIH, Bethesda, MD.

Tuesday Afternoon, March 11
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: GENOTOXICITY: DAMAGE AND REPAIR

Chairperson(s): *James Swauger, RJR Tobacco Company, Winston Salem, NC and Quanxin Meng, Lovelace Respiratory Research Institute, Albuquerque, NM.*

Displayed: *1:30 PM–4:30 PM*

Attended: *1:30 PM-3:00 PM*

#985 **DNA DAMAGE AS A CONSEQUENCE OF CHLOROFORM-INDUCED CYTOTOXICITY IN MALE F 344 RAT AND B6C3F1 MOUSE HEPATOCYTES *IN VITRO*.** *Y. Zhang*, H. B. Hoffman, V. A. Wong and *G. L. Kedderis*. CIIT Centers for Health Research, Research Triangle Park, NC.

#986 **METALLOTHIONEIN-III PROTECTS AGAINST THE HYDROGEN PEROXIDE-INDUCED CYTOTOXIC AND DNA DAMAGE.** D. Oh [2], H. You[2] and *H. Jeong*[1,2]. [1]Pharmacy, Chosun University, Kwangju, Kwangju, South Korea and [2]Research Center for Proteineous Materials, Chosun University, Kwangju, South Korea.

#987 **STRUCTURE-ACTIVITY RELATIONSHIPS FOR GENOTOXICITY AMONG A SERIES OF SULFONIC ACID ESTERS.** L. Mueller, S. Glowienke, W. Frieauff, *W. Suter* and H. Martus. Novartis Pharmacology AG, Basel, Switzerland.

#988 **CYTOTOXICITY AND GENOTOXICITY OF BENZOQUINONE IN HUMAN BONE MARROW CD34+ PROGENITOR CELLS.** D. J. Abernethy, B. Faiola, E. Kleymenova, J. Rose and L. Recio. CIIT Centers for Health Research, Research Triangle Park, NC. Sponsor: *J. Everitt*.

#989 **DOES FLUMEQUINE HAVE A GENOTOXIC POTENTIAL TO THE LIVER OF MICE?** T. Watanabe[1], Y. Kashida[1], Y. Sasaki[2], A. Takahashi[1] and K. Mitsumori[1]. [1]Laboratory of Veterinary Pathology, Tokyo University of Agriculture and Technology, Fuchu, Japan and [2]Laboratory of Genotoxicity, Faculty of Chemical and Biological Engineering, Hachinohe National College of Technology, Hachinohe, Japan. Sponsor: *M. Takahashi*.

#990 **A COMPARISON OF *IN VITRO* TOXICITIES OF CIGARETTE SMOKE CONDENSATE FROM FOUR COMMERCIALLY AVAILABLE ULTRA LOW-TAR CIGARETTES.** *J. W. Foy*, B. R. Bombick, *D. W. Bombick*, *D. J. Doolittle*, *A. T. Mosberg* and *J. E. Swauger*. R.J. Reynolds Tobacco Co., Winston-Salem, NC.

#991 **COLLABORATIVE ASSESSMENT OF THE YEAST GENOTOXICITY SCREEN.** P. A. Weale[1], P. M. Collins[1], M. G. Barker[2], P. Cahill[2] and R. M. Walmsley[2]. [1]MIT, Sequani Ltd, Herefordshire, United Kingdom and [2]Biomolecular Sciences, UMIST, Manchester, United Kingdom. Sponsor: *D. Mitchell*.

#992 **TOXIC AND MUTAGENIC EFFECTS OF BASE ANALOGS.** R. M. Schaaper, R. L. Dunn and Y. I. Pavlov. Molecular Genetics, NIEHS, Research Triangle Park, NC. Sponsor: *J. Simmons*.

#993 **TOXICITY OF CHRONIC AZATHIOPRINE ADMINISTRATION IN SOMATIC AND GERM CELLS OF C57BL/6 MICE.** *S. Bendre*[1,2], R. E. Patton[1], J. G. Shaddock[1], V. N. Dobrovolsky[1] and R. H. Heflich[1,2]. [1]Genetic Toxicology, NCTR and [2]Pharmacology and Toxicology, University of Arkansas for Medical Sciences, Little Rock, AR.

#994 **MUCOCHLORIC ACID INDUCES PARP ACTIVATION.** *E. Bodes*, J. Nakamura and *J. A. Swenberg*. Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC.

#995 **OXIDIZED GUANINE LESIONS IN THE NF-κB REGULATORY ELEMENT ARE SHIELDED FROM REPAIR BY FAPY GLYCOSYLASES WHEN THE TRANSCRIPTION FACTOR IS BOUND.** K. Morrison, B. Martin and K. D. Sugden. Chemistry, University of Montana, Missoula, MT. Sponsor: *H. Beall*.

#996 **SYNTHESIS, CHARACTERIZATION, *IN VITRO* AND CALF THYMUS DNA IDENTIFICATION OF N^7-GUANINE ADDUCTS OF 1- AND 2-BROMOPROPANE.** E. Lee[1], Y. Moon[1], L. Zhao[1], E. Kim[1], H. Lim[1], A. Basnet[1], *T. Jeong*[1] and W. Chae[2]. [1]College of Pharmacy, Yeungnam University, Kyongsan, Kyongbuk, South Korea and [2]School of Medicine, Catholic University of Daegu, Daegu, South Korea.

#997 **CONVERSION OF TRIS(8-QUINOLINOLATO-N1, O8) ALUMINUM (ALQ) TO 8-HYDROXYQUINOLINE (8OHQ) AND ACTIVITY IN BACTERIAL REVERSE MUTATION ASSAYS.** *J. C. English* and K. S. Roser. Eastman Kodak Company, Rochester, NY.

#998 **EXAMINATION OF DNA DAMAGE IN ENDOTHELIAL CELLS FOLLOWING TREATMENT WITH 2-BUTOXYETHANOL USING THE SINGLE CELL GEL ELECTROPHORESIS (COMET) ASSAY.** *J. M. Reed*, *L. M. Kamendulis* and *J. E. Klaunig*. Department of Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN.

#999 **EXPOSURE OF MICE TO HC RED NO. 3 DID NOT INDUCE DNA DAMAGE IN THE COMET AND MICRONUCLEUS ASSAYS.** S. Pfuhler[1], M. Vasquez[2] and *R. R. Tice*[2]. [1]Wella Corp., Woodland Hills, CA and [2]ILS, Durham, NC.

#1000 ***IN VITRO* GENOTOXICITY OF FORMALDEHYDE-RELEASING BIOCIDAL AGENTS IS NOT PREDICTIVE OF *IN VIVO* GENOTOXIC POTENTIAL.** *R. A. Budinsky*[1], *G. D. Charles*[1], P. J. Spencer[1], M. Cifone[2] and *B. B. Gollapudi*[1]. [1]The Dow Chemical Company, Midland, MI and [2]Covance Laboratories Inc., Vienna, VA.

#1001 **LACK OF *IN VIVO* GENOTOXICITY OF A DIETARY SOY SUPPLEMENT.** *B. M. Francis*[2], *C. A. Northcott*[1] and A. Rayburn[1]. [1]Entomology, University of Illinois at Urbana-Champaign, Urbana, IL, [2]Crop Sciences, University of Illinois at Urbana-Champaign, Urbana, IL and [3]Crop Sciences, University of Illinois at Urbana-Champaign, Urbana, IL.

#1002 **HYPOTHERMIA FOLLOWING TREATMENT OF MICE WITH PHENOL IS NOT REVERSED BY THERMOREGULATORY SUPPORT: IMPLICATIONS FOR MICRONUCLEUS (MN) FORMATION.** *P. J. Spencer*[1], J. G. Grundy[1], *B. B. Gollapudi*[1], *J. M. Waechter*[1], *R. R. Gingell*[2], *S. S. Dimond*[3] and *B. J. Dunn*[4]. [1]The Dow Chemical Company, Midland, MI, [2]Shell Chemical Company, Houston, TX, [3]GE Plastics, Pittsfield, MA and [4]Honeywell, Morristown, NJ.

#1003 **STRUCTURE-DEPENDENT INCISION OF STEREOISOMERIC BPDE ADDUCTS BY *B. CALDOTENAX* UNIVERSITYvrABC EXCISION NUCLEASE.** *G. Jiang*[1], M. Skorvaga[2], B. van Houten[2], N. Geacintov[3] and *J. States*[1]. [1]Pharmacology & Toxicology, University of Louisville, Louisville, KY, [2]NIEHS, Research Triangle Park, NC and [3]Chemistry, New York University, New York, NY.

#1004 **EFFECTS OF EXTRACELLULAR AND INTRACELLULAR FACTORS ON CHROMIUM (III) AND CHROMIUM (VI) GENOTOXICITY.** *Z. Kirpnick* and *R. Schiestl*. Pathology, UCLA, Los Angeles, CA.

#1005 **COMPARISON OF DIFFERENT METHODS OF MEASURING CYTOTOXICITY FOR GENOTOXICITY TESTING IN CHL CELLS.** M. Clare[1], A. O. Asita[1], S. K. Obuya[2], M. R. Budda[2], L. Allais[1], S. R. Wilkins[1] and M. Wing[1]. [1]Huntingdon Life Sciences, Huntingdon, Cambridgeshire, United Kingdom and [2]Science and Mathematics, Sheffied Hallam University, Sheffield, Yorkshire, United Kingdom. Sponsor: *C. Atterwill*.

#1006 **MINIATURIZED CHROMOSOME ABERRATION TESTING (MINICAT).** J. Lin and R. J. Proudlock. Genetic Toxicology, CTBR, Senneville, QC, Canada. Sponsor: *L. Dostal*.

#1007 **PHOTOSTABILITY AND PHOTOGENOTOXICITY OF RETINYL PALMITATE.** P. P. Fu[1], Q. Xia[1], L. G. Blankenship[1], P. J. Webb[1], W. G. Wamer[2] and P. C. Howard[1]. [1]Biochemical Toxicology Division, NCTR, Jefferson, , AR and [2]Center for Food Safty and Applied Nutrition, U.S. FDA, College Park, MD. Sponsor: *B. Delclos*.

#1008 **GENOTOXICANT RESPONSE IN TELOMERASE IMMORTALIZED HUMAN FIBROBLASTS.** *P. C. Porter* and *J. States*. Pharmacology & Toxicology, University of Louisville, Louisville, KY.

#1009 **MUTAGENICITY AT THE *HPRT* LOCUS IN SPLENIC T-LYMPHOCYTES OF FEMALE B6C3F1 MICE AND F344 RATS AFTER INHALATION EXPOSURE TO *MESO*-1, 2, 3, 4-DIEPOXYBUTANE AND 1, 2-DIHYDROXY-3-BUTENE.** *Q. Meng*, L. Long, D. M. Walker, *R. F. Henderson* and *V. E. Walker*. Lovelace Respiratory Research Institute, Albuquerque, NM.

#1010 **THE LACK OF MUTAGENICITY FOR THPI (TETRAHYDROPHTHALIMIDE) IN BACTERIAL POINT MUTATION ASSAYS.** *E. B. Gordon*[1], *J. H. Kinzell*[2] and Y. Guo[1]. [1]Scientific Affairs, Makhteshim-Agan of North America Inc., New York, NY and [2]Registration & Regulatory Affairs, Arvesta Corporation, San Francisco, CA.

#1011 **DETECTION OF SPONTANEOUS AND CHEMICAL-INDUCED DELETION MUTATIONS IN YEAST GENOMIC DNA UNDER NON-SELECTIVE CONDITIONS.** D. E. Watson and B. Li. Eli Lilly and Company, Greenfield, IN. Sponsor: *C. Thomas*.

#1012 **DNA REPAIR AND BREAST CANCER SUSCEPTIBILITY IN PUERTO RICAN WOMEN.** *J. L. Matta*[1], R. Colen[1], A. Ruiz[1], J. M. Ramos[1], N. Fernandez[2] and L. Grossman[3]. [1]Pharmacology and Toxicology, Ponce School of Medicine, Ponce, Puerto Rico, [2]Internal Medicine, St. Luke, Ponce, Puerto Rico and [3]Biochemistry, Johns Hopkins University, Baltimore, MD.

#1013 **GENETIC TOXICOLOGY OF 8-2 TELOMER B ALCOHOL.** *G. L. Kennedy*[1], R. Jung[2], H. Iwai[3], S. Shinya[4], S. Murphy[6], N. Drouot[5], C. Finlay[1], M. Donner[1], G. Erexson[7] and L. Stankowski, Jr[7]. [1]DuPont Haskell Laboratory, Newark, DE, [2]Clariant , Frankfurt, Germany, [3]Daikin Industries, Osaka, Japan, [4]Asahi Glass, Co., Ltd., Tokyo, Japan, [5]Atofina Chemicals, Paris, France, [6]Atofina Chemicals, Philadelphia, PA and [7]Covance Laboratories, Vienna, VA.

#1014 **PREVENTION OF ARIPIPRAZOLE–INDUCED HYPOTHERMIA AND HYPOTHERMIA–RELATED MICRONUCLEUS INDUCTION IN MICE.** T. Awogi[2], T. Shiragiku[2], Y. Hirao[2], T. Osumi[2], N. Takahashi[2], K. Nagano[2], *N. Browder*[1], L. Yotti[4] and M. Dominick[3]. [1]Otsuka Maryland Research Institute, Rockville, MD, [2]Otsuka Pharmaceutical Co., Ltd., Tokushima, Japan, [3]Bristol-Myers Squibb, Mount Vernon, IN and [4]Bristol-Myers Squibb, Syracuse, NY.

#1015 **BIOACTIVATION OF NITROCOMPOUNDS BY PATHOGENIC MICROORGANISMS.** J. J. Espinosa[1,2], R. Camacho-Carranza[1], D. Escobar-García[1], V. Dorado[2], I. Pérez[2], L. Cancino-Badías[3], S. Ibarraran[1] and R. Burgos[1]. [1]Genetic Toxicology, Instituto de Investigaciones Biomédicas, UNAM., México, Distrito Federal, Mexico, [2]Torre de Investigación Dr. Joaquín Cravioto., Instituto Nacional de Pediatría., México, Distrito Federal, Mexico and [3]CIBIOMED, ICBP "Victoria de Girón"., Universidad de la Habana, Cd. de la Habana, Cuba. Sponsor: *M. Gonsebatt*.

Tuesday Afternoon, March 11
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: INHIBITION OF CARCINOGENESIS

Chairperson(s): *Mark Miller, Wake Forest University School of Medicine, Winston-Salem, NC and Greg Reed, University of Kansas Medical Center, Kansas City, KS.*

Displayed: *1:30 PM–4:30 PM*

Attended: *3:00 PM-4:30 PM*

#1016 **EFFECTS OF CHLOROPHYLLIN ON TRANSPORT OF DIBENZO[*A, L*]PYRENE, 2-AMINO-1-METHYL-6-PHENYLIMIDAZO-[4, 5-*B*]PYRIDINE, AND AFLATOXIN B_1 ACROSS CACO-2 CELL MONOLAYER.** *J. E. Mata*[1], *R. J. Rodriguez*[1,2], Y. Zhen[2,3], J. E. Gray[1] and *D. E. Williams*[2,3,4]. [1]Pharmaceutical Sciences, Oregon State University, Corvallis, OR, [2]Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR, [3]Linus Pauling Institute, Oregon State University and [4]Marine/Freshwater Biomedical Science Center, Oregon State University, Corvallis, OR.

#1017 **DIBENZOYLMETHANE INDUCES PHASE 2 ENZYMES VIA NRF2 ACTIVATION AND INHIBITS BENZO(a)PYRENE INDUCED DNA ADDUCTS IN MICE LUNGS.** R. K. Thimmulappa, *T. Rangasamy*, K. H. Mai and *S. Biswal*. Environmental Health Science, Johns Hopkins University, Baltimore, MD.

#1018 **EFFECTS OF PHYTOCHEMICALS ON AFLATOXIN B_1-MEDIATED GENOTOXICITY IN HEPG2 CELLS.** *K. M. Bradley*, *K. Gross-Steinmeyer* and *D. L. Eaton*. Env Health, University of Washington, Seattle, WA.

#1019 **EXPOSURE TO SOIL CONTAMINATED WITH AN ENVIRONMENTAL PCB/PCDD/PCDF MIXTURE INHIBITS ULTRAVIOLET RADIATION-INDUCED NON-MELANOMA SKIN CARCINOGENESIS IN THE CRL:SKH1-HRBR HAIRLESS MOUSE.** C. Morrow[2], K. Imsilp[2], J. Hartman[2], D. Schaeffer[2], *L. Hansen*[2] and *R. B. Cope*[1]. [1]Veterinary Basic Sciences, Oregon State University, Corvalis, OR and [2]Veterinary Basic Sciences, University of Illinois, Urbana, IL.

#1020 **TWENTY-EIGHT DAY TOXICITY STUDY OF THE CANCER CHEMOPREVENTIVE AGENT 4-BROMOFLAVONE IN DOGS.** *B. S. Levine*[1], R. Krishnaraj[1], R. Morrissey[2], *I. Kapetanovic*[3], *J. Crowell*[3] and J. M. Pezzuto[1]. [1]University of IL @ Chicago, Chicago, IL, [2]Pathology Associates, Chicago, IL and [3]NCI, Bethesda, MD.

#1021 **TOXICITY EVALUATION OF HALICHONDRIN B ANALOG IN MICE AND BEAGLE DOGS FOLLOWING MULTIPLE INTRAVENOUS EXPOSURES.** L. Bollinger[1], P. Tosca[1], M. Ryan[1], *M. Brooker*[1], I. Grossi[1] and A. Smith[2]. [1]Battelle Memorial Institute, Columbus, OH and [2]National Cancer Institute, Bethesda, MD.

#1022 **ADMINISTRATION OF 1-O-OCTADECYL-2-0-METHYL-SN-GLYCERO-1-D-DEOXY-MYO-INOSITOL (OMDPI) IN A HYDROXYPROPYL-B-CYCLODEXTRIN VEHICLE REDUCES TOXICITY.** J. Merrill[1], *M. Brooker*[1], I. Grossi[1] and A. Smith[2]. [1]Battelle Memorial Institute, Columbus, OH and [2]National Cancer Institute, Bethesda, MD.

#1023 **INHIBITION OF HUMAN BREAST TUMOR CELL GROWTH BY CONTROLLING MITOCHONDRIAL BIOGENESIS.** Q. H. Felty, *K. P. Singh* and *D. Roy*. Environmental Health Sciences, University of Alabama at Birmingham, Birmingham, AL.

#1024 **CALORIC RESTRICTION REDUCES BODY FAT, LEAN BODY MASS, AND PALPABLE MASSES WHILE INCREASING THE 24-MONTH SURVIVAL RATE IN SPRAGUE-DAWLEY RATS.** *J. F. Harriman*, *E. L. Padgett*, *D. T. Kirkpatrick*, M. C. Haas, J. T. Wilkinson and *C. P. Chengelis*. WIL Research Laboratories, Inc., Ashland, OH.

#1025 **COMPARISON OF ONSET AND PROGRESSION OF FOUR COMMON LESIONS/ TUMORS IN *AD LIBITUM* AND RESTRICTED FEEDING REGIMENS FOR CHRONIC STUDIES USING THE SPRAGUE-DAWLEY RAT.** S. McPherson, L. Kangas and P. Batham. General Toxicology, CTBR, Senneville, QC, Canada. Sponsor: *L. Dostal*.

#1026 **EFFECTS OF DIETARY GLYCINE ON THE GROWTH OF PRENEOPLASTIC HEPATIC LESIONS IN MALE F344 RATS.** *P. J. Klein*, *L. M. Kamendulis* and *J. E. Klaunig*. Division of Toxicology, Department of Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN.

#1027 **CHEMOTHERAPEUTIC EFFECTS OF PERILLYL ALCOHOL (POH) ON LUNG CANCER CELL LINES.** M. Xu[1], *H. S. Floyd*[1], S. M. Greth[1], W. L. Chang[2], J. P. Vaughn[1], K. Lohman[1], R. Stoyanova[2], G. L. Kucera[1], M. C. Willingham[1] and *M. S. Miller*[1]. [1]Wake Forest University and [2]Fox Chase Cancer Center, Philadelphia, PA.

#1028 **INHIBITION AND REVERSAL OF CELLULAR TRANSFORMATION BY THE HISTONE DEACETYLASE INHIBITOR TRICHOSTATIN A.** T. Kluz, Q. Zhang, *K. Salnikow* and *M. Costa*. Environmental Medicine, New York University School of Medicine, Tuxedo, NY.

#1029 **CAFFEIC ACID PHENETHYL ESTER (CAPE) INHIBITS ARSENITE-INDUCED HUMAN CELL TRANSFORMATION AND INDUCES G2/M PHASE ARREST OF ARSENITE-TRANSFORMED HUMAN CELLS.** *C. Yang*[1,2] and K. Frenkel[2]. [1]Center for Experimental Therapeutics and Department of Pharmacology, University of Pennsylvania School of Medicine, Philadelphia, PA and [2]Environmental Medicine, New York University, New York, NY.

#1030 **INDUCTION OF DIFFERENTIATION BY KAEMPHEROL IN GJIC-SUFFICIENT BUT NOT IN GJIC-DEFICIENT COLON CANCER CELLS.** *Y. Nakamura*[2], C. C. Chang[1], T. Mori[3], K. Sato[2], K. Ohtsuki[2], *B. L. Upham*[1] and *J. E. Trosko*[1]. [1]Pediatrics &Human Development, Michigan State University, East Lansing, MI, [2]Food Sciences and Nutritional Health, Kyoto Prefectural University, Kyoto and [3]Nara Medical School, Kashihara, Japan.

#1031 **INHIBITION OF GAP JUNCTIONAL INTERCELLULAR COMMUNICATION BY CHLOROHYDROXYFURANONES IN BALB/C 3T3 CELLS.** P. Hakulinen[1], J. Mäki-Paakkanen[1], L. Kronberg[2] and H. Komulainen[1]. [1]Department of Environmental Health, National Public Health Institute, Kuopio, Finland and [2]Department of Organic Chemistry, Åbo Akademi University, Turku, Finland. Sponsor: *M. Viluksela*.

#1032 **A COX-2 INHIBITOR INHIBITS POST-INITIATION PHASE OF N-NITROSOBIS(2-OXOPROPYL)AMINE-INDUCED PANCREATIC CARCINOGENESIS IN HAMSTERS.** A. Nishikawa[1], F. Furukawa[1], T. Umemura[1], K. Kanki[1], K. Wakabayashi[2] and *M. Hirose*[1]. [1]Pathology, NIHS, Tokyo, Japan and [2]Cancer Prevention, NCCRI, Tokyo, Japan.

#1033 **COLON CANCER AND VITAMIN E SUPPLEMENTATION IN YOUNG AND OLD RATS.** E. H. South[1], *J. H. Exon*[1], *M. W. Fariss*[2] and *J. G. Zhang*[2]. [1]Food Science and Toxicology, University of Idaho, Moscow, ID and [2]Pharmaceutical Science, Washington State University, Pullman, WA.

#1034 **EFFECT OF LOW DOSE MATERNAL DIETARY VITAMIN E ON EMBRYONIC OXIDATIVE DNA DAMAGE IN P53 KNOCKOUT MICE.** *C. S. Chen*[1] and *P. G. Wells*[1,2]. [1]Faculty of Pharmacy, University of Toronto, Toronto, ON, Canada and [2]Pharmacology, University of Toronto, Toronto, ON, Canada.

#1035 **SELENOMETHIONINE AND VITAMIN E IN SMOKERS: A PHASE I STUDY OF A POTENTIAL CHEMOPREVENTIVE REGIMEN.** *G. Reed*[1], H. Smith[1], K. Peterson[1], L. Wesselius[2], M. Plautz[2], K. Bailey[2], *J. Crowell*[3] and A. Hurwitz[1]. [1]University of Kansas Medical Center, Kansas City, KS, [2]VA Medical Center, Kansas City, MO and [3]NCI, Rockville, MD.

Tuesday Afternoon, March 11
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: METALS: GENOTOXICITY, GENE EXPRESSION AND CARCINOGENICITY

Chairperson(s): *Walter Prozialeck, Midwestern University, Downers Grove, IL and Maryka Battacharyya, Argonne National Laboratory, Argonne, IL.*

Displayed: *1:30 PM–4:30 PM*

Attended: *1:30 PM-3:00 PM*

#1036 **ARSENIC AS A DEVELOPMENTAL TOXICANT: LOW DOSE EXPOSURE *IN UTERO* INDUCES ABERRANT GENE EXPRESSION IN THE EMBRYONIC LUNG.** *J. S. Petrick*[1] and *R. Lantz*[2,3]. [1]Pharmacology and Toxicology, The University of Arizona, Tucson, AZ, [2]Cell Biology and Anatomy, The University of Arizona, Tucson, AZ and [3]The Center for Toxicology, The University of Arizona, Tucson, AZ.

#1037 **ABERRANT GENE EXPRESSION IN LIVER AND LIVER TUMORS INDUCED BY TRANSPLACENTAL EXPOSURE TO INORGANIC ARSENIC.** *M. P. Waalkes*[1], H. Chen[1], Y. Xie[1], *B. A. Diwan*[2] and *J. Liu*[1]. [1]Inorganic Carcinogenesis Section, LCC, NCI at NIEHS, Research Triangle Park, NC and [2]SAIC Frederick, Frederick, MD.

#1038 **TOXICOGENOMIC ANALYSIS OF ABERRANT GENE EXPRESSION IN LIVER AND LIVER TUMORS INDUCED BY TRANSPLACENTAL EXPOSURE TO INORGANIC ARSENIC IN MICE.** *J. Liu*[1], Y. Xie[1], J. M. Ward[2], *B. A. Diwan*[3] and *M. P. Waalkes*[1]. [1]Inorganic Carcinogenesis Section, LCC, NCI at NIEHS, Research Triangle Park, NC, [2]National Cancer Institute at Frederick, Frederick, MD and [3]SAIC Frederick, Frederick, MD.

#1039 **TOXICOKINETIC AND GENOMIC ANALYSIS OF CHRONIC ARSENIC EXPOSURE IN MULTIDRUG-RESISTENCE DOUBLE KNOCKOUT MICE.** Y. Xie[1], *J. Liu*[1], Y. Liu[1], *C. D. Klaassen*[2] and *M. P. Waalkes*[1]. [1]Inorganic Carcinogenesis Section, LCC, NCI at NIEHS, Research Triangle Park, NC and [2]University of Kansas Medical Center, Kansas City, KS.

#1040 **CHROMOSOME ALTERATIONS AND HYPERPROLIFERATION ASSOCIATED WITH CHRONIC ARSENIC EXPOSURE.** *H. Chen* and *M. P. Waalkes*. Inorganic Carcinogenesis Section, LCC, NCI at NIEHS, Research Triangle Park, NC.

#1041 **MALIGNANT TRANSFORMATION AND DNA HYPOMETHYLATION IN HUMAN PROSTATE EPITHELIAL CELLS CHRONICALLY EXPOSED TO INORGANIC ARSENITE.** E. M. Brambila[1], *W. E. Achanzar*[2], *B. A. Diwan*[3], *H. Chen*[2], M. M. Webber[4] and *M. P. Waalkes*[2]. [1]Universidad Autonoma de Puebla, Puebla, Mexico, [2]Inorganic Carcinogenesis Section, LCC, NCI at NIEHS, Research Triangle Park, NC, [3]SAIC Frederick, Frederick, MD and [4]Michigan State University, East Lansing, MI.

#1042 **ALTERED GENE EXPRESSION ASSOCIATED WITH ARSENITE-INDUCED MALIGNANT TRANSFORMATION OF HUMAN PROSTATE EPITHELIAL CELLS.** L. Benbrahim-Tallaa[1], *W. E. Achanzar*[1], E. M. Brambila[2], M. M. Webber[3] and *M. P. Waalkes*[1]. [1]Inorganic Carcinogenesis Section, LCC, NCI at NIEHS, Research Triangle Park, NC, [2]Universidad Autonoma de Puebla, Puebla, Mexico and [3]Michigan State University, East Lansing, MI.

#1043 **SPECIFIC CHANGES IN CADHERIN EXPRESSION AND LOCALIZATION ARE ASSOCIATED WITH CADMIUM-INDUCED MALIGNANT TRANSFORMATION OF HUMAN PROSTATE EPITHELIAL CELLS.** *W. E. Achanzar*[1], P. C. Lamar[2], *W. C. Prozialeck*[2], M. M. Webber[3] and *M. P. Waalkes*[1]. [1]Inorganic Carcinogenesis Section, LCC, NCI at NIEHS, Research Triangle Park, NC, [2]Midwestern University, Downers Grove, IL and [3]Michigan State University, East Lansing, MI.

#1044 **MICROARRAY ANALYSIS OF BONE CELL GENE EXPRESSION EARLY AFTER CADMIUM GAVAGE IN MICE.** *M. Bhattacharyya*[1], A. Regunathan[1], D. Glesne[1] and A. Wilson[2]. [1]Argonne National Laboratory, Argonne, IL and [2]Benedictine University, Lisle, IL.

#1045 **METAL RESPONSE ELEMENT BINDING TRANSCRIPTION FACTOR-1 (MTF1) IS ESSENTIAL FOR ACQUIRED RESISTANCE TO CADMIUM TOXICITY.** *L. He*, *T. P. Dalton* and *D. W. Nebert*. Environmental Health, University of Cincinnati, Cincinnati, OH.

#1046 **ABERRANT ONCOGENE EXPRESSION ASSOCIATED WITH CADMIUM-INDUCED MALIGNANT TRANSFORMATION IN RAT LIVER CELLS.** *W. Qu*[1], *B. A. Diwan*[2] and *M. P. Waalkes*[1]. [1]Inorganic Carcinogenesis Section, LCC, NCI at NIEHS, Research Triangle Park, NC and [2]SAIC Frederick, Frederick, MD.

#1047 **INCREASED EXPRESSION OF THE ECT2 ONCOGENE IN NICKEL COMPOUND INDUCED, TRANSFORMED 10T1/2 MOUSE EMBRYO FIBROBLAST CELL LINES.** F. Clemens, J. Ramnath, R. Verma and *J. Landolph*. Molecular Microbiology and Immunology, University of Southern California, Los Angeles, CA.

#1048 **ANALYSIS OF CHROMATIN STRUCTURE IN NICKEL SILENCED G12 CHINESE HAMSTER CELLS.** Y. Yan, T. Kluz, P. Zhang, H. Chen and *M. Costa*. Environmental Medicine, Nelson Institute, NYU School of Medicine, Tuxedo, NY.

#1049 **GENOTOXICITIES OF NICKEL SAMPLES IN C3H/10T1/2 MOUSE EMBRYO FIBROBLASTS: PREDICTIONS OF CARCINOGENIC POTENTIALS OF NICKEL CARCINOGENESIS.** R. Verma, F. M. Clemens and *J. R. Landolph*. Cancer Center, Keck School of Medicine, Los Angeles, CA.

#1050 **DIFFERENT MECHANISMS IN SUPPRESSING MTH EXPRESSION BY NICKEL CHLORIDE AND COBALT CHLORIDE.** H. Chen, Y. Yan, T. Kluz and *M. Costa*. Environmental Medicine, New York University, Tuxedo, NY.

#1051 **REACTION OF URANYL ACETATE WITH ASCORBATE PRODUCES DNA STRAND BREAKS *IN VITRO*.** M. Yazzie, S. L. Gamble, D. M. Stearns and E. R. Civitello. Department of Chemistry, Northern Arizona University, Flagstaff, AZ. Sponsor: *J. Wise*.

#1052 **LEAD CHROMATE GENOTOXICITY IS MEDIATED BY PARTICLE DISSOLUTION AND NOT PARTICLE INTERNALIZATION.** *H. Xie*[1], *S. S. Wise*[1], A. L. Holmes[1], M. E. Ketterer[2], W. J. Hartsock[2] and *J. P. Wise*[1]. [1]Bioscience Research Institute, University of Southern Maine, South Portland, ME and [2]Chemistry, Northern Arizona University, Flagstaff, AZ.

#1053 **CHROMIUM IS THE PROXIMATE GENOTOXIC SPECIES IN LEAD CHROMATE-INDUCED GENOTOXICITY IN HUMAN BRONCHIAL CELLS.** *S. S. Wise*[1], A. L. Holmes[1], M. E. Ketterer[2], W. J. Hartsock[2], E. Fomchenko[1,3], *S. P. Katsifis*[3] and *J. P. Wise*[1]. [1]Bioscience Research Institute, University of Southern Maine, South Portland, ME, [2]Chemistry, Northern Arizona University, Flagstaff, AZ and [3]Biology, University of Bridgeport, Bridgeport, CT.

#1054 **THE PHASE OF LEAD CHROMATE INDUCED CELL CYCLE ARREST IS CONCENTRATION DEPENDENT.** J. A. Moreland[1], *S. S. Wise*[1], A. L. Holmes[1], M. E. Ketterer[2], W. J. Hartsock[2], R. A. Thomas[3], E. Fomchenko[1,4], *S. P. Katsifis*[4] and *J. P. Wise*[1]. [1]Bioscience Research Institute, University of Southern Maine, South Portland, ME, [2]Chemistry, Northern Arizona University, Flagstaff, AZ, [3]NPE Systems, Pembroke Pines, FL and [4]Biology, University of Bridgeport, Bridgeport, CT.

#1055 **DNA DAMAGE INDUCED BY CHROMIUM PICOLINATE.** A. M. Luke, B. E. Baker, J. A. Hager, W. K. K and D. M. Stearns. Department of Chemistry, Northern Arizona University, Flagstaff, AZ. Sponsor: *J. Wise*.

#1056 **COMPARATIVE GENOTOXICITY OF TWO PARTICULATE HEXAVALENT CHROMIUM COMPOUNDS IN HUMAN BRONCHIAL CELLS.** A. L. Holmes[1], *S. S. Wise*[1], J. H. Shuler[1,3], M. E. Ketterer[2], W. J. Hartsock[2], *H. Xie*[1], *S. P. Katsifis*[3] and *J. P. Wise*[1]. [1]Bioscience Research Institute, University of Southern Maine, South Portland, ME, [2]Chemistry, Northern Arizona University, Flagstaff, AZ and [3]Biology, University of Bridgeport, Bridgeport, CT.

#1057 **BARIUM CHROMATE IS CYTOTOXIC AND CLASTOGENIC TO HUMAN BRONCHIAL CELLS.** J. H. Shuler[1,2], *S. S. Wise*[1], *S. P. Katsifis*[2] and *J. P. Wise*[1]. [1]Bioscience Research Institute, University of Southern Maine, South Portland, ME and [2]Biology, University of Bridgeport, Bridgeport, CT.

#1058 **INHIBITION OF PHASE I AND PHASE II METABOLIC ENZYMES *IN VITRO* BY NICKEL CHLORIDE.** *T. L. Davidson*, *K. Salnikow* and *M. Costa*. Department of Env. Med., New York University, Tuxedo, NY.

#1059 **CYTOTOXICITY AND CLASTOGENICITY OF ARSENIC, CADMIUM AND CHROMIUM IN HUMAN BRONCHIAL CELLS.** *J. E. Little*, *S. S. Wise*, *M. J. Slotnick* and *J. P. Wise*. Bioscience Research Institute, University of Southern Maine, South Portland, ME.

Tuesday Afternoon, March 11
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: *IN VITRO* TOXICITY MODELS TO MINIMIZE ANIMAL USE

Chairperson(s): *Robert Dunn, Pharmacia Corporation, Kalamazoo, MI and Alison Vickers, Novartis Pharmaceuticals Corporation, East Hanover, NJ.*

Displayed: *1:30 PM–4:30 PM*

Attended: *3:00 PM-4:30 PM*

#1060 **THE MECHANISM OF RETINOL INDUCED IRRITATION AND ITS APPLICATION TO DEVELOPMENT OF ANTI-IRRITANTS.** B. Kim[1,2], Y. Sim[1] and *K. Kang*[2]. [1]Pacific R&D Center, Yongin-si, Gyeonggi-do, South Korea and [2]Seoul National University, Seoul, South Korea.

#1061 **PREDICTION OF THE LOCAL IRRITATION POTENTIAL OF VARIOUS PHARMACEUTICAL VEHICLES AND BUFFERS USING A NEONATAL RAT MYOCYTE ASSAY *IN VITRO*: COMPARISON WITH RESULTS OBTAINED IN PIGS *IN VIVO*.** *P. A. McAnulty*[1], C. N. Edwards[2], P. Glerup[2], A. Makin[2] and M. Skydsgaard[2]. [1]Ferring International Center, Ferring Pharmaceuticals, Copenhagen S, Denmark and [2]Scantox, Lille Skensved, Denmark.

#1062 **AN *IN VITRO* TECHNOLOGY FOR FAST IDENTIFICATION OF LESS ALLERGENIC PROTEIN VARIANTS.** E. L. Roggen[1], E. P. Friis[2], N. K. Soni[1] and S. Ernst[1]. [1]Protein Screening, Novozymes A/S, Bagsvaerd, Denmark and [2]Protein Design, Novozymes A/S, Bagsvaerd, Denmark. Sponsor: *K. Sarlo*.

#1063 **ALTBIB: ALTERNATIVES TO ANIMAL TESTING DATABASE.** V. W. Hudson, H. F. Chang and B. Mashayekhi. National Library of Medicine , National Institute of Health, Bethesda, MD. Sponsor: *G. Fonger*.

#1064 **EXPLORATORY *IN VITRO* EYE IRRITATION STUDY OF MARKETED ALKALINE DRY LAUNDRY DETERGENTS BY BCOP ASSAY AND PH/RESERVE ALKALINITY (RA) PARAMETERS.** *K. C. Cater*[1], G. Mun[2], G. Moyer[2], *J. Merrill*[2] and J. Harbell[2]. [1]The Dial Corporation, Scottsdale, AZ and [2]IIVS, Gaithersburg, MD.

#1065 **APPROACHES TO MINIMISING DOG USE IN PHARMACEUTICAL SAFETY ASSESSMENT: AN INDUSTRY/ ANIMAL WELFARE INITIATIVE.** *M. Stephan-Gueldner*[1], D. Smith[2], *G. Descotes*[3], R. Hack[4], K. Krauser[5], R. Pfister[6], B. Phillips[7], Y. Rabemampianina[8], S. Sparrow[9], S. D. Jacobsen[10], R. Combes[11], L. Lammens[12], J. Kemkowski[13] and F. von Landenberg[14]. [1]Non-clinical Development - Drug safety, Hoffmann-La Roche, Basel, Switzerland, [2]AstraZeneca, Cheshire, United Kingdom, [3]Servier, Courbevoie, France, [4]Aventis, Hattersheim, Germany, [5]Schering, Berlin, Germany, [6]Novartis, Basel, Switzerland, [7]RSPCA, Horsham, United Kingdom, [8]Pfizer, Amboise, France, [9]GlaxoSmithKline, Ware, United Kingdom, [10]NovoNordisk, Maaloev, Denmark, [11]FRAME, Nottingham, United Kingdom, [12]Johnson&Johnson, Beerse, Belgium, [13]Altana, Konstanz, Germany and [14]Merck, Darmstadt, Germany.

#1066 **EVALUATING THE IRRITANCY POTENTIAL OF SODIUM PERCARBONATE: A CASE STUDY USING THE BOVINE CORNEAL OPACITY AND PERMEABILITY (BCOP) ASSAY.** B. P. Gran[1], J. E. Swanson[1], *J. C. Merrill*[2] and J. W. Harbell[2]. [1]S.C. Johnson & Son, Inc., Racine, WI and [2]Institute for In Vitro Sciences, Inc., Gaithersburg, MD.

#1067 **COMPARATIVE ASSESSMENT OF TWO EYE AREA COSMETIC FORMULATIONS THROUGH EVALUATION OF ALTERNATIVE EYE IRRITATION METHODS RELATIVE TO ENDPOINTS MEASURED IN A HUMAN CLINICAL SUB-ACUTE STUDY DESIGN.** J. D. Burdick[2], Y. Gao[3], B. Kanengiser[3], *J. C. Merrill*[1] and J. W. Harbell[1]. [1]Institute for In Vitro Sciences, Gaithersburg, MD, [2]Bath & Body Works, Reynoldsburg, OH and [3]Clinical Research Laboratories, Piscataway, NJ.

#1068 **EVALUATING OXIDIZING/REACTIVE CLEANING PRODUCTS IN THE BOVINE CORNEAL OPACITY AND PERMEABILITY (BCOP) ASSAY.** J. E. Swanson[1], B. T. White[1], B. P. Gran[1], *J. C. Merrill*[2] and J. W. Harbell[2]. [1]S.C. Johnson & Son, Inc., Racine, WI and [2]Institute for In Vitro Sciences, Inc., Gaithersburg, MD.

#1069 **AN IMPROVED PRIMARY SERTOLI CELL-GONOCYTE CO-CULTURE SYSTEM FROM NEONATE RAT: *IN VITRO* MODEL FOR THE ASSESSMENT OF MALE REPRODUCTIVE TOXICITY.** *E. M. Faustman*, *X. Yu*, S. Hong and J. S. Jidhu. Environ Health, University of Washington, Seattle, WA.

#1070 **EVALUATING THE OCULAR IRRITATION POTENTIAL OF 54 TEST ARTICLES USING THE EPIOCULAR HUMAN TISSUE CONSTRUCT MODEL (OCL-200).** *M. E. Blazka*[1], J. W. Harbell[2], *M. Klausner*[3], *J. C. Merrill*[2], J. Kubilus[3], C. Kloos[1] and *D. M. Bagley*[1]. [1]Product Safety, Colgate Palmolive, Piscataway, NJ, [2]Institute for In Vitro Sciences, Gaithersburg, MD and [3]MatTek Corp., Ashland, MA.

#1071 **ICCVAM/NICEATM EXPERT PANEL RECOMMENDATIONS FOR THE STANDARDIZATION AND VALIDATION OF *IN VITRO* ESTROGEN RECEPTOR (ER) AND ANDROGEN RECEPTOR (AR) TRANSCRIPTIONAL ACTIVATION (TA) ASSAYS.** *B. S. Shane*[1,2], *J. Stegeman*[3], E. M. Wilson[4], C. J. Inhof[1,2], *R. R. Tice*[1,2], *E. Zeiger*[5] and *W. S. Stokes*[2]. [1]ILS, Inc., Research Triangle Park, NC, [2]NICEATM, NIEHS , Research Triangle Park, NC, [3]Woods Hole Oceanographic Institute, Woods Hole, MA, [4]University of N. C., Chapel Hill, NC and [5]Errol Zeiger Consulting, Chapel Hill, NC.

#1072 **ICCVAM PROPOSED SUBSTANCES FOR THE VALIDATION OF *IN VITRO* ESTROGEN RECEPTOR (ER) AND ANDROGEN RECEPTOR (AR) BINDING AND TRANSCRIPTIONAL ACTIVATION (TA) ASSAYS.** *W. S. Stokes*[1], *B. S. Shane*[1,2], C. J. Inhof[1,2], *R. R. Tice*[1,2], D. Hattan[3] and M. Wind[4]. [1]NICEATM, NIEHS, Research Triangle Park, NC, [2]ILS, Inc., Research Triangle Park, NC, [3]U.S. FDA, Washington, DC and [4]CPSC, Washington, DC.

#1073 **A NON-ANIMAL ALTERNATIVE CARCINOGENICITY ASSAY USING FERTILIZED AVIAN EGGS: THE *IN OVO* CARCINOGENICITY ASSAY (IOCA).** *D. R. Cerven*[1], *G. L. DeGeorge*[1], *M. J. Iatropoulos*[2], *G. M. Williams*[2], C. Perrone[2] and H. Enzmann[3]. [1]MB Research Laboratories, Spinnerstown, PA, [2]New York Medical College, Valhalla, NY and [3]Institute of Toxicology, Bayer AG, Wuppertal, Germany.

#1074 **REGULATION OF ANGIOGENESIS FACTORS BY ULTRAVIOLET RADIATION (UVR) OR H2O2 IN THE EPIDERM *IN VITRO* HUMAN SKIN EQUIVALENT.** T. J. Last, J. Kubilus, *M. Klausner*, J. E. Sheasgreen and *P. J. Hayden*. MatTek Corp., Ashland, MA.

#1075 **A SYNTHETIC NON-ANIMAL MODEL OF SKIN PENETRATION.** *J. M. Blonder*[1], B. Lin[1], S. Cook[1], R. Remington[1], L. Webster[1], M. Sarkari[1], J. Etter[1], R. Ulmer[2] and *G. J. Rosenthal*[1]. [1]RxKinetix, Inc., Louisville, CO and [2]InVitro International, Irvine, CA.

Tuesday Afternoon, March 11
2:00 PM to 4:00 PM
254 B

GRANTSMANSHIP FORUM

Chairperson(s): *Elaine Faustman, University of Washington, Seattle, WA.*

Sponsored by:
The Education Committee

Hear the latest tips from public and private funding insiders about current sources of, and priorities for, funding for toxicology research.

Tuesday Afternoon, March 11
2:00 PM to 3:00 PM
Ballroom J

INFORMATIONAL SESSION: MAKING SENSE OUT OF GENE EXPRESSION DATA

See page 106 for event details.

Tuesday Afternoon, March 11
4:30 PM to 6:00 PM
250 D

ANNUAL BUSINESS MEETING

Chaired by: *William F. Greenlee, SOT President*
SOT Members Only.

Members are invited and encouraged to attend the 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 financial summary and a review of the 2002-2003 activities, as well as plans for the future.

Tuesday Evening

Tuesday Evening, March 11
6:00 PM to 7:30 PM
See Events Calendar on Pages 4–8 for Room Listings

SPECIALTY SECTION MEETINGS: BIOLOGICAL MODELING, CARCINOGENESIS, INHALATIONS, METALS, NEUROTOXICOLOGY, REGULATORY AND SAFETY EVALUATION

Tuesday Evening, March 11
7:00 PM to 8:30 PM
See Events Calendar on Pages 4–8 for Room Listings

REGIONAL CHAPTER MEETINGS/RECEPTIONS

Wednesday Morning

Wednesday Morning, March 12
7:00 AM to 8:15 AM
Ballroom C

PLACEMENT COMMITTEE ROUNDTABLE: INSULATION AND REPAIR OF YOUR PROFESSIONAL CAREER

Chairperson(s): *Chair: Michael L. Biehl, Pfizer Global Research and Development, New London, CT and Mary F. Kanz, University of Texas, Galveston, TX.*

Sponsored by:
The Placement Committee

Endorsed by:
Mid-Atlantic, Northeast
Ohio Valley Regional Chapters
Comparative and Veterinary Specialty Sections
Women in Toxicology Specialty Section
American Board of Veterinary Toxicology

#1076	7:00	**INSULATION AND REPAIR OF YOUR PROFESSIONAL CAREER: INTRODUCTION.** *M. L. Biehl*. Pfizer Global Res. & Dev., New London, CT.
#1077	7:05	**CAREER PLANNING FOR TOXICOLOGISTS. STRATEGIES FOR PREPARATION AND RESPONSE TO CHANGING CIRCUMSTANCES.** T. Leyden. Career Marketing Associates, Greenwood Village, CO. Sponsor: *M. Biehl*.
#1078	7:20	**FINANCIAL STRATEGIES FOR THE UNEXPECTED CIRCUMSTANCES.** J. D. Strunk. Salomon Smith Barney, Mystic, CT. Sponsor: *M. Biehl*.
#1079	7:35	**HANDLING STRESS ASSOCIATED WITH JOB UNCERTAINTIES.** R. G. Weigel. University Counseling Center, University of Utah, Salt Lake City, UT. Sponsor: *M. Biehl*.
#1080	7:50	**CAREER DURING CHAOS: AN INSIDERS PERSPECTIVE.** *J. A. Popp*. Purdue Pharmacology L.P., Ardsley, NY.

Wednesday Morning, March 12
7:15 AM to 8:15 AM
Ballroom A

TOWN MEETING: MEETING THE PUBLICATION NEEDS OF THE TOXICOLOGY COMMUNITY

Presiding: *Marion Ehrich, Vice President*

Dr. Ehrich invites you to the Town Meeting, open to all members, for a forum to discuss the future publication needs of the toxicology community. Please bring your comments and suggestions; we will do our best to give each member who is present the opportunity to be heard on this topic as well as on any other issues on your mind, as time permits.

Wednesday Morning, March 12
8:30 AM to 11:30 AM
Ballroom F

INNOVATIONS IN TOXICOLOGICAL SCIENCES: BEYOND GENOMICS: IMAGE ANALYSES AND COMPUTATIONAL BIOLOGY

Chairperson(s): *Kenneth S. Ramos, Texas A&M University, College Station, TX and Cheryl L. Walker, University of Texas MD Anderson Cancer Center, Smithville, TX.*

Endorsed by:
Mechanisms Specialty Section
Molecular Biology Specialty Section

The reductionist approaches used historically in toxicology to understand the nature of cellular functions, and the processes that collectively constitute the molecular basis of the toxic response, can be overly simplistic. Instead, altered cellular structure and function must be studied in a holistic manner that embraces the immense complexity of biological networks. High-throughput genomic technologies are now allowing scientists to pave the way to a deeper understanding of biological systems and their disruption by chemical and physical agents. This symposium brings together toxicologists, engineers, and mathematicians to evaluate the usefulness of genomic and computational approaches to characterize complex biological networks in health and disease, to dissect complex toxicological responses into cogent, contextually relevant processes and to develop mathematical principals governing biological systems.

#1081	8:30	**BEYOND GENOMICS: IMAGE ANALYSIS AND COMPUTATIONAL BIOLOGY.** *K. S. Ramos*[1] and *C. L. Walker*[2]. [1]Center for Environmental and Rural Health, Texas A&M University, College Station, TX and [2]Department of Carcinogenesis, The University of Texas M. D. Anderson Cancer Center, Houston, TX.
#1082	8:35	**EPISTEMOLOGY OF CLUSTERING.** E. R. Dougherty. Electrical Engineering , Texas A&M University, College Station, TX. Sponsor: *K. Ramos*.
#1083	9:00	**MODELING GENETIC REGULATORY NETWORKS WITH PROBABILISTIC BOOLEAN NETWORKS: FROM INFERENCE TO INTERVENTION.** I. Shmulevich. MD Anderson Cancer Center, Houston, TX. Sponsor: *K. Ramos*.
#1084	9:25	**APPLICATION OF CLUSTERING METHODOLOGIES TO THE ANALYSIS OF ALTERED CELLULAR PHENOTYPES INDUCED BY OXIDATIVE STRESS.** *K. S. Ramos*[1], C. D. Johnson[1], M. H. Falahatpisheh[1], T. Thomas[1], P. Beremand[1], M. Tadesse[1], *K. P. Lu*[1], Y. Balagurunathan[1], C. A. Afshari[2] and . R. Dougherty[1]. [1]Center for Environmental and Rural Health, Texas A&M University, College Station, TX and [2]Microarray Center, National Institute of Environmental Health Sciences, Research Triangle Park, NC.
#1085	9:50	**BAYESIAN CLASSIFICATION TOOLS IN TOXICOLOGY.** *C. A. Bradfield*. McArdle Laboratory for Cancer Research, University of Wisconsin, Madison, WI.

#1086 10:15 **TOXICOGENOMICS AND THE QUEST FOR PREDICTIVE TOXICOLOGY.** R. S. Paules[1], H. K. Hamadeh[1], C. A. Afshari[1], *R. W. Tennant*[2] and P. R. Bushel[1]. [1]NIEHS Microarray Center, National Institute of Environmental Health Sciences, Research Triangle Park, NC and [2]National Center for Toxicogenomics, National Institute of Environmental Health Sciences, Research Triangle Park, NC.

Wednesday Morning, March 12
8:30 AM to 11:30 AM
Ballroom B

SYMPOSIUM SESSION: CHILDREN'S HEALTH RISK: WHAT'S SO SPECIAL ABOUT THE DEVELOPING IMMUNE SYSTEM?

Chairperson(s): *Michael P. Holsapple, Dow Chemical Company, Midland, MI and Leigh Ann Burns Naas, Pfizer Global Research and Development, San Diego, CA.*

Endorsed by:
Immunotoxicology Specialty Section

In recent years, there has been increasing regulatory pressure to protect the health of children, with the basic tenet being that children differ significantly from adults in their biological and/or physiological responses to chemical exposures. In a regulatory context, this has been translated to mean a requirement for an additional 10-fold safety factor for environmental contaminants, specialized tests, or both. Much of the initial focus has been on the developing endocrine and nervous systems but increasingly the developing immune system has been identified as a potential target organ for chemically mediated toxicity. More recently, the question has been raised regarding whether the current state of the science supports the creation of developmental immunotoxicology (DIT) test guidelines. What is needed is a risk-based evaluation of the biology associated with the proposed differential sensitivity between children and adults and the impact of that assessment on additional regulatory measures to protect children in risk assessment analyses. Additionally, an understanding of whether the developing immune system shows greater susceptibility, either qualitatively or quantitatively, to chemical perturbation is critical.

#1087 8:30 **CHILDREN'S HEALTH RISK: WHAT'S SO SPECIAL ABOUT THE DEVELOPING IMMUNE SYSTEM?** *L. Burns Naas*[1] and *M. P. Holsapple*[2]. [1]Drug Safety Evaluation, Pfizer Global Research & Development, San Diego, CA and [2]Toxicology, Environmental Research & Consulting, The Dow Chemical Company, Midland, MI.

#1088 8:35 **ASSESSING THE HAZARD TO CHILDREN OF LOW LEVEL ENVIRONMENTAL EXPOSURES.** *D. J. Paustenbach*. Exponent, Boulder, CO.

#1089 9:05 **DIFFERENTIAL SENSITIVITY OF CHILDREN AND ADULTS TO CHEMICAL TOXICITY - BIOLOGY, RISK, AND REGULATION.** *G. Charnley*. HealthRisk Strategies, Washington, DC.

#1090 9:35 **THE DEVELOPING HUMAN IMMUNE SYSTEM: A CLINICAL PERSPECTIVE.** L. J. West. Hospital for Sick Children/University of Toronto, Toronto, AB, Canada. Sponsor: *L-A. Burns Naas*.

#1091 10:05 **EVOLUTION OF THE SCIENCE OF DEVELOPMENTAL IMMUNOTOXICITY.** *M. I. Luster*. TMBB/HELD, NIOSH/CDC, Morgantown, WV.

#1092 10:35 **SUSCEPTIBILITY OF THE DEVELOPING IMMUNE SYSTEM TO IMMUNOSUPPRESSIVE AGENTS: DIFFERENTIAL RISK ACROSS LIFE STAGES.** *R. R. Dietert* [1] and J. Lee[2]. [1]Department of Microbiology, Cornell University, Ithaca, NY and [2]Institute of Comparative and Environmental Toxicology, Cornell University, Ithaca, NY.

Wednesday Morning, March 12
8:30 AM to 11:30 AM
Ballroom C

SYMPOSIUM SESSION: TEMPORAL SPECIFIC EXPRESSION OF TOXICANT-METABOLIZING ENZYMES: IMPLICATIONS FOR LIFE-STAGE-DEPENDENT TOXICITY

Chairperson(s): *Ronald N. Hines, Medical College of Wisconsin, Milwaukee, WI.*

Endorsed by:
Reproductive and Developmental Specialty Section

Substantial changes in toxicokinetics and toxicodynamics occur during human development that contribute to differential susceptibility. Although certainly not the only component, the temporal-specific expression of toxicant metabolizing enzymes contribute significantly to these changes. A better knowledge of these processes and their underlying mechanisms will be required if we wish to understand and predict the dynamic dose-response relationships that occur during ontogeny and develop strategies that would prevent developmental toxicity. The objective of this symposium is to present recent advances in our understanding of how developmental, genetic, and environmental factors interact to define the risk from toxicant exposure. The symposium will cover research results on longitudinal pediatric phenotyping and present a dramatic example of the importance of phenotyping in identifying potential risk. Studies also will be presented on the characterization of both phase I and phase II developmental expression patterns in the human and animal models, explore molecular mechanisms underlying the regulation of such expression patterns, and begin to explore how genetic factors might contribute to both interindividual differences in expression as a function of age.

#1093 8:30 **TEMPORAL SPECIFIC EXPRESSION OF TOXICANT-METABOLIZING ENZYMES: IMPLICATIONS FOR LIFE-STAGE-DEPENDENT TOXICITY.** *R. N. Hines*. Pediatrics & Pharmacology/Toxicology, Medical College of Wisconsin, Milwaukee, WI.

#1094 8:35 **PEDIATRIC PHARMACOGENETICS: DEVELOPMENTAL "PHENOTYPES" AND THEIR POTENTIAL CONSEQUENCES.** J. Leeder. Developmental Pharmacology and Experimental Therapeutics, Children's Mercy Hospital, Kansas City, MO. Sponsor: *R. Hines*.

#1095 9:10 **MOLECULAR MECHANISMS REGULATING *FMO* TEMPORAL-SPECIFIC EXPRESSION.** *R. N. Hines*, S. B. Koukouritaki, K. Hopp and *Z. Luo*. Pediatrics & Pharmacology/Toxicology, Medical College of Wisconsin, Milwaukee, WI.

#1096 9:45 **HUMAN CYP2E1 DEVELOPMENTAL EXPRESSION: A ROLE IN FETAL & PEDIATRIC SUSCEPTIBILITY TO TOXICANTS?** *D. McCarver*, E. K. Johnsrud and S. B. Koukouritaki. Birth Defects Research Center, Department of Pediatrics, Medical College of Wisconsin, Milwaukee, WI.

#1097 10:20 **DEVELOPMENTAL EXPRESSION OF HUMAN HEPATIC CYP3A AND 2B ENZYMES.** J. C. Stevens[1], S. A. Marsh[1], M. J. Zaya[1], J. R. Manro[1], S. B. Koukouritaki[2] and *R. N. Hines*[2]. [1]Global Drug Metabolism, Pharmacia Corp., Kalamazoo, MI and [2]Department of Pediatrics, Medical College of Wisconsin, Milwaukee, WI.

#1098 10:55 **DEVELOPMENTAL CHANGES IN N-ACETYLTRANSFERASES: IMPLICATIONS FOR 4-AMINOBIPHENYL (4ABP) TOXICITY.** *C. A. McQueen*. Department of Pharmacology and Toxicology, The University of Arizona, Tucson, AZ.

Wednesday Morning, March 12
8:30 AM to 11:30 AM
Room 250 D

WORKSHOP SESSION: OCCUPATIONAL LUNG DISEASE IN RESPONSE TO MIXED EXPOSURES: APPROACHES TO IDENTIFY THE TOXICITY OF PROCESS-DEPENDENT CONTAMINANTS

Chairperson(s): *Vincent Castranova, NIOSH, Morgantown, WV and Terry Gordon, New York University, School of Medicine, Tuxedo, NY.*

Endorsed by:
Inhalation Specialty Section
Neurotoxicology Specialty Section
Occupational Health Specialty Section

To date, the majority of exposure limits set by OSHA or EPA have been for individual particulate agents or chemical compounds. However, modern industrial operations generate complex mixed aerosols, the components of which are often process dependent. For example, the chemical composition of welding fume varies with the type of shielding and electrode used, while microbial contamination of organic dusts or used metal working fluids can dramatically alter the biological response upon exposure to these materials. In addition, the types and amounts of organic chemicals adsorbed onto the carbon core of particles generated by diesel engines can depend on engine speed, load, and the type of fuel consumed. There is increasing awareness that the toxicity of a mixed exposure may not simply be the additive effects of its components. Indeed, synergistic effects, involving soluble metals, adsorbed organics, surface acidity, microbial contamination and particle size or surface area may occur. For this reason, NIOSH has listed "mixed exposures" as a priority area in its National Occupational Research Agenda that must be addressed to allow appropriate and complete risk assessment in complex occupational settings. The objective of this symposium is to elucidate the various interactions among components of mixed exposures that are possible and to characterize the mechanisms involved in these interactions, using real-world occupational aerosols as examples.

#1099 8:30 **OCCUPATIONAL LUNG DISEASE IN RESPONSE TO MIXED EXPOSURES: APPROACHES TO IDENTIFY THE TOXICITY OF PROCESS - DEPENDENT CONTAMINANTS.** *V. Castranova* and *T. Gordon*. HELD, NIOSH, Morgantown, WV.

#1100 8:40 **ISSUES THAT MUST BE ADDRESSED FOR RISK ASSESSMENT OF MIXED EXPOSURES: EPA EXPERIENCE WITH AMBIENT AIR QUALITY.** *D. L. Costa*. U.S. EPA, Research Triangle Park, NC.

#1101 9:10 **METAL WORKING FLUIDS AS COMPLEX MIXTURES.** *T. Gordon*. Environmental Medicine, NYU School of Medicine, Tuxedo, NY.

#1102 9:40 **PULMONARY RESPONSES TO WELDING FUMES: ROLE OF METAL CONSTITUENTS.** *J. M. Antonini*. NIOSH, Morgantown, WV.

#1103 10:10 **THE ROLE OF BACTERIAL AND FUNGAL CONTAMINANTS IN AGRICULTURAL RESPIRATORY DISEASES.** *P. Thorne*. Occupational & Environmental Health, University. Iowa, Iowa City, IA.

#1104 10:40 **EFFECT OF DIESEL EXHAUST PARTICLES (DEP) ON IMMUNE RESPONSES: CONTRIBUTION OF THE ORGANIC COMPONENT.** P. D. Siegel[1], R. K. Saxena[1,2], Q. B. Saxena[1,3], J. Ma[4], J. Ma[1], *V. Castranova*[1] and D. M. Lewis[1]. [1]HELD, NIOSH, Morgantown, WV, [2]Jawaharlal Nehru University, New Delhi, India, [3]Indian Council of Medical Research, New Delhi, India and [4]West Virginia University, Morgantown, WV.

Wednesday Morning, March 12
8:30 AM to 11:30 AM
Room 250 A

PLATFORM SESSION: GENOTOXICITY: MODELS, MECHANISMS AND MUTAGENICITY

Chairperson(s): *Vernon Walker, Lovelace Respiratory Research Institute, Albuquerque, NM and Leslie Recio, CIIT, Research Triangle Park, NC.*

#1105 8:30 **EVALUATION OF MCASE-ES USING A TEST PANEL OF PHARMACEUTICAL STRUCTURES.** G. Mandakas, F. M. Goodsaid and *I. Y. Rosenblum*. Molecular Toxicology, Schering-Plough Research Institute, Lafayette, NJ.

#1106 8:50 **A YEAST RAD54-GFP GENOTOXICITY ASSAY, IS EFFECTIVE IN IDENTIFYING DIRECT ACTING MUTAGENS IN ADDITION TO CLASTOGENS NOT DETECTED BY BACTERIAL TESTS.** R. M. Walmsley[1,3], N. Billinton[1], L. Walsh[1], M. G. Barker[1], A. W. Knight[1] and P. A. Cahill[1]. [1]Biomolecular Sciences, UMIST, Manchester, England, United Kingdom, [2]UVL, UMIST, Manchester, England, United Kingdom and [3]Gentronix Ltd, Manchester, England, United Kingdom. Sponsor: *B. Burlinson*.

#1107 9:10 **POSSIBLE ROLE FOR CHEMOTHERAPEUTIC AGENTS IN THE INDUCTION OF MITOCHONDRIAL DNA MUTATIONS AND INCREASED FREE RADICAL GENERATION.** J. Carew, Y. Zhou, M. J. Keating and P. Huang. MD Anderson Cancer Center, Houston, TX. Sponsor: *D. McConkey*.

#1108 9:30 **MUTAGENICITY AT THE *HPRT* LOCUS OF T-CELLS FOLLOWING EXPOSURE OF WILD-TYPE AND CYTOCHROME P4502E1-NULL MICE TO ACRYLONITRILE.** *V. Walker*[1] and *B. Ghanayem*[2]. [1]Lovelace Respiratory Research Institute, Albuquerque, NM and [2]NIEHS, Research Triangle Park, NC.

#1109 9:50 **EFFECTS OF BENZENE ON HEMATOPOIETIC STEM CELLS.** B. Faiola, E. S. Fuller, V. A. Wong, D. Abernethy, L. Pluta, K. Roberts, L. Recio and *J. I. Everitt*. CIIT Centers for Health Research, Research Triangle Park, NC.

#1110 10:10 **MECHANISTIC DIFFERENCES OF BENZENE-INDUCED LEUKEMOGENESIS: GENOTOXIC IN P53-DEFICIENCY *VS.* EPIGENETIC IN THE WILD TYPE.** Y. Hirabayashi[1], B. Yoon[1], G. Li[1], Y. Kawasaki[1], Y. Kodama[1], T. Kaneko[1], J. Kanno[1], S. Aizawa[2] and T. Inoue[3]. [1]Division of Cellular & Molecular Toxicology, Natõl. Inst. of Health Sciences, Tokyo, Japan, [2]Lab. for Vertebrate Body Plan, Riken Center for Developmental Biology, Kobe, Japan and [3]Center for Biological Safety and Research, National Inst. of Health Sciences, Tokyo, Japan. Sponsor: *H. Ono*.

#1111 10:30 ***IN VIVO* ANALYSIS OF ALACHLOR MUTAGENESIS.** D. M. Burman, K. Dixon, M. Medvedovic and *M. Genter*. Environmental Health/Center for Environmental Gentetics, University of Cincinnati, Cincinnati, OH.

#1112 10:50 **IDENTIFICATION OF CARCINOGENS USING TRP53 HETEROZYGOUS NULL MICE AND LOSS OF HETEROZYGOSITY AT THE TRP53 LOCUS.** *J. E. French*. NIEHS, NIH, Research Triangle Park, NC.

Wednesday Morning, March 12
8:30 AM to 11:30 AM
Room 251 D

PLATFORM SESSION: HYPERSENSITIVITY

Chairperson(s): *Katherine Sarlo, Procter & Gamble Company, Cincinnati, OH and G Frank Gerberick, Procter & Gamble Company, Cincinnati, OH.*

#1113 8:30 **A PROSPECTIVE CLINICAL EVALUATION OF TYPE I SENSITIZATION AND DERMAL COMPATIBILITY OF A BACILLUS SERINE PROTEASE IN A BODY LOTION.** *G. M. Adamson*, L. Babcock, V. Hollis, D. B. Kirchner, *J. D. Innis* and *K. Sarlo*. Procter & Gamble Company, Cincinnati, OH.

#1114 8:50 **EVIDENCE OF ALLERGIC ANTIBODY TO A BACILLUS SERINE PROTEASE IN ATOPIC WOMEN: A RETROSPECTIVE EVALUATION.** *K. Sarlo*, *G. M. Adamson*, *R. Stachlewitz*, D. B. Kirchner and *J. D. Innis*. Procter & Gamble Company, Cincinnati, OH.

#1115 9:10 **EVALUATION OF THE SENSITIZATION POTENTIAL OF TWO LUBRICANT ADDITIVES, PHENYL-ALPHA-NAPHTHYLAMINE AND ALKYLATED PHENYL-ALPHA-NAPHTHYLAMINE: A COMPARISON OF DATA FROM THE LOCAL LYMPH NODE ASSAY, THE BUEHLER GUINEA PIG ASSAY, AND HUMAN REPEAT INSULT PATCH TEST.** *S. Azadi*[2], *J. Meade*[2], M. L. Kashon[2], *P. T. Bailey*[1] and *C. L. Mann*[1]. [1]ExxonMobil Biomedical Sciences, Inc., Annandale, NJ and [2]NIOSH, Morgantown, WV.

#1116 9:30 **FACTORS AFFECTING BINDING OF NATURAL RUBBER LATEX (NRL) PROTEINS TO GLOVE DUSTING POWDER.** V. J. Tomazic-Jezic, A. D. Lucas and B. A. Sanchez. Center for Devices and Radiological Heath, Food & Drug Administration, Rockville, MD. Sponsor: *T. Umbreit*.

#1117 9:50 **EFFECT OF SULFUR DIOXIDE INHALATION ON THE POPULATION AND FUNCTION OF PERIPHERAL BLOOD LEUKOCYTES AND PULMONARY CELLS IN CATTLE.** *L. A. Komarnisky*[1], *R. W. Coppock*[2], *A. A. Khan*[3] and R. J. Christopherson[1]. [1]Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [2]Consultant , Vegreville, AB, Canada and [3]Toxicology Business Unit, Alberta Research Council, Vegreville, AB, Canada.

#1118 10:10 **ENDOTOXIN AND ALLERGY: LPS IS A STRONG ADJUVANT FOR CAT ALLERGEN Fel d 1-SPECIFIC IgE RESPONSE IN A MOUSE SUBCUTANEOUS IMMUNIZATION MODEL.** H. Ormstad[1], E. Groeng[1], O. Duffort[2] and M. Lovik[1]. [1]Division Environmental Medicine, Norwegian Institute of Public Health, Oslo, Norway and [2]ALK-Abello S.A., Madrid, Spain. Sponsor: *E. Dybing*.

#1119 10:30 **RESPIRATORY ALLERGY ASSAY IN BROWN-NORWAY RATS EXPOSED TO DIPHENYL METHANE-4, 4'-DIISOCYANATE (MDI).** *J. Pauluhn*. Toxicology, Bayer AG, Wuppertal, Germany.

Wednesday Morning, March 12
8:30 AM to 11:30 AM
Ballroom A

PLATFORM SESSION: TCDD & POPS

Chairperson(s): *B Paige Lawrence, Washington State University, Pullman, WA and Mitzi Nagarkatti, Virginia Commonwealth University, Richmond, VA.*

#1120 8:30 **EXPOSURE TO 2, 3, 7, 8-TETRACHLORODIBENZO-*p*-DIOXIN (TCDD) IMPAIRS MAMMARY GLAND DIFFERENTIATION IN PREGNANT C57BL/6 MICE AND PREVENTS PUP SURVIVAL.** *B. Lawrence*[1,3,4], *B. A. Vorderstrasse*[1], *S. E. Fenton*[2] and A. A. Bohn[4]. [1]Phar Sciences, Pharmacology/Tox Prog., Washington State University, Pullman, WA, [2]RTD, NHEERL U.S. EPA, Research Triangle Park, NC, [3]Pharmacology/Toxicology Program, Washington State University, Pullman, WA and [4]Veterinary Clinical Sciences, Washington State University, Pullman, WA.

#1121 8:50 **2, 3, 7, 8-TETRACHLORODIBENZO-*p*-DIOXIN (TCDD) INHIBITS PROSTATIC EPITHELIAL BUD FORMATION IN THE UROGENITAL SINUS (UGS) OF C57BL/6J MICE WITHOUT INHIBITING ANDROGEN SIGNALING.** K. Ko and *R. E. Peterson*. School of Pharmacy, University of Wisconsin at Madison, Madison, WI.

#1122 9:10 **EFFECT OF 2, 3, 7, 8-TETRACHLORODIBENZO-*p*-DIOXIN (TCDD) ON THE IMMUNOLOGICAL STATUS OF C57BL/6 PREGNANT MICE.** *I. A. Camacho*[1], *M. Nagarkatti*[1] and *P. S. Nagarkatti*[2]. [1]Department of Microbiology and Immunology, Virginia Commonwealth University, Richmond, VA and [2]Department of Pharmacology and Toxicology, Virginia Commonwealth University, Richmond, VA.

#1123 9:30 **THE EFFECTS OF 2, 3, 7, 8-TETRACHLORODIBENZO-*p*-DIOXIN ON TRIGGERED- AFTERDEPOLARIZATIONS IN ISOLATED RAT VENTRICULAR MYOCYTES.** A. Xie[1], *N. J. Walker*[2] and D. Wang[1]. [1]Basic Pharmaceutical Sciences, College of Pharmacy University of South Carolina, Columbia, SC and [2]Environmental Toxicology Program, NIEHS, Research Triangle Park, NC.

#1124 9:50 **DIOXIN INDUCES GROWTH ARREST AND REDUCES CELL CYCLE GENE EXPRESSION IN THE FETAL MURINE HEART.** *M. K. Walker*[1], C. D. Johnson[2], M. Tadesse[3], *K. S. Ramos*[2], *I. D. Steele*[1] and *E. A. Thackaberry*[1]. [1]College of Pharmacy Toxicology Program, University of New Mexico, Albuquerque, NM, [2]Center for Environmental and Rural Health, Texas A&M University, College Station, TX and [3]Department of Statistics, Texas A&M University, College Station, TX.

#1125 10:10 **TCDD-INDUCED CHANGES IN GENE EXPRESSION PROFILES IN DEVELOPING PAWS OF MICE.** *N. F. Alejandro*, A. I. Brooks and *T. A. Gasiewicz*. Department of Environmental Medicine, University of Rochester, Rochester, NY.

#1126 10:30 **EFFECT OF TCDD AND RETINOIC ACID ON MATRIX METALLOPROTEINASE EXPRESSION IN NORMAL HUMAN KERATINOCYTES.** K. Murphy, C. M. Villano, R. Dorn, E. A. Myers and *L. A. White*. Biochemistry and Microbiology, Rutgers University, New Brunswick, NJ.

#1127 10:50 **LACTATIONAL NOT *IN UTERO* EXPOSURE TO 2, 3, 7, 8-TETRACHLORODIBENZO-*p*-DIOXIN DISRUPTS THYROID HORMONE HOMEOSTASIS IN HOLTZMAN RATS.** N. Nishimura[1], *J. Yonemoto*[1,2], C. Yokoi[1,2], Y. Yakeuchi[1,2], S. Ikushiro[3] and *C. Tohyama*[1,2]. [1]NIES, Tsukuba, Japan, [2]CREST, JST, Japan and [3]HIT, Himeji, Japan.

#1128 11:10 **SPECIES-SPECIFIC TRANSCRIPTIONAL ACTIVITY OF SYNTHETIC FLAVONOIDS IN GUINEA PIG AND MOUSE CELLS AS A RESULT OF DIFFERENTIAL INTERACTION OF ARYL HYDROCARBON RECEPTORS WITH DIOXIN RESPONSIVE ELEMENTS.** *J. Zhou*[1], *E. C. Henry*[1], *C. M. Palermo*[1], *S. D. Dertinger*[2] and *T. A. Gasiewicz*[1]. [1]University of Rochester, Rochester, NY and [2]Litron Laboratory Ltd., Rochester, NY.

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

POSTER SESSION: MECHANISMS OF CARCINOGENESIS

Chairperson(s): *Myrtle Davis, Eli Lilly & Company, Greenfield, IN and Lori White, Rutgers University, New Brunswick, NJ.*

Displayed: *9:30 AM–12:30 PM*

Attended: *9:30 AM–11:00 AM*

#1129 **EFFECTS OF THE DOSE OF DIMETHYLARSINIC ACID (DMA) ON THE URINARY CONCENTRATION OF DIMETHYLARSINOUS ACID (DMA^{III}).** *L. L. Arnold*[1], M. Cano[1], *S. M. Cohen*[1], X. C. Le[2] and X. Lu[2]. [1]Path/Micro, University of Nebraska Med. Ctr., Omaha, NE and [2]University of Alberta, Edmonton, AB, Canada.

#1130 **PERSISTENT INDUCTION OF HEPATIC AND PULMONARY PHASE II ENZYME EXPRESSION BY THE CARCINOGEN 3-METHYLCHOLANTHRENE IN THE RAT.** S. R. Kondraganti, W. Jiang and *B. Moorthy*. Pediatrics, Baylor College of Medicine, Houston, TX.

#1131 ***IN VITRO* CHARACTERIZATION OF A RECOMBINANT ADENOVIRUS EXPRESSING UDP-GLUCURONOSYL TRANSFERASE 1A7.** L. J. Webb, F. K. Kessler and *J. K. Ritter*. Pharmacology and Toxicology, Virginia Commonwealth University, Medical College of Virginia Campus, Richmond, VA.

#1132 **REGIOSPECIFICITY AND GLUCURONIDATING ACTIVITIES OF MAJOR RAT LIVER UGT1A FORMS TOWARD BENZO(a)PYRENE METABOLITES.** F. K. Kessler and *J. K. Ritter*. Pharmacology and Toxicology, Virginia Commonwealth University, Medical College of Virginia Campus, Richmond, VA.

#1133 **GLUTATHIONE REDOX POTENTIAL ALTERS CARCINOGEN METABOLISM ENZYME EXPRESSION AS MEASURED BY SELDI ANALYSIS OF TRANSCRIPTIONAL PROTEINS.** S. R. Bischoff, M. D. Powell and W. G. Kirlin. Morehouse School of Medicine, Atlanta, GA. Sponsor: *D. Jones*.

#1134 **ALTERED METHYLATION AS A POSSIBLE BIOMARKER OF TOXICITY.** J. M. McKim[2], *R. E. Watson*[1], G. L. Cockerell[2] and *J. I. Goodman*[1]. [1]Pharmacology & Toxicology, Michigan State University, East Lansing, MI and [2]Research & Development, Pharmacia, Kalamazoo, MI.

#1135 **EFFECT OF BROMODICHLOROMETHANE AND DIBROMOACETIC ACID ON THE METHYLATION OF DNA AND THE IGF-II GENE IN MICE AND RATS.** *L. Tao*[1], W. Wang[1], L. Li[1], A. S. Bridges[2], S. Yang[1] and *M. A. Pereira*[1]. [1]Pathology, Medical College of Ohio, Toledo, OH and [2]Pathology, University of North Carolina, Chapel Hill, NC.

#1136 **CHROMATE INDUCES THE HGPRT GENE SILENCING BY DNA METHYLATION: A NEW EPIGENETIC MECHANISM FOR CHROMATE CARCINOGENESIS.** Q. Zhang, T. Kluz, *K. Salnikow* and *M. Costa*. Department of Environmental Medicine, NYU School of Medicine, Tuxedo, NY.

#1137 **THE ANALYSIS OF TRANSCRIPTIONAL REGULATION OF NICKEL-INDUCIBLE GENE CAP43.** *K. Salnikow*, P. Zhang and *M. Costa*. Environmental Medicine, New York University School of Medicine, Tuxedo, NY.

#1138 **DOWNREGULATION OF A ZINC FINGER PROTEIN-ZFP61 BY Ni IN MOUSE CELLS *IN VITRO* AND *IN VIVO*.** P. Zhang and *M. Costa*. NYU Medical Center, New York, NY.

#1139 **DOWN REGULATION OF A SERINE PROTEINASE INHIBITOR BY NI AND CO IS DEPENDENT ON HYPOXIA INDUCIBLE FACTOR SIGNALLING.** J. Zhao, Y. Yan and *M. Costa*. Nelson Institute of Environmental Medicine, New York University School of Medicine, Tuxedo, NY.

#1140 **SCREENING NICKEL CARCINOGENS FOR INDUCTION OF MITOTIC RECOMBINATION IN D MELANOGASTER.** A. J. Katz, A. O. Chiu, *D. X. Singh*, N. Chiu, J. Beaubier and X. Shi. NCEA, ORD, U.S. EPA, Washington, DC.

#1141 **MOLECULAR PROFILING OF GENES SHOWING ALTERED EXPRESSION IN THE LIVERS OF RATS TREATED WITH NON-GENOTOXIC CARCINOGENS FOR 28 DAYS.** M. Shibutani, T. Arimura, T. Kobayashi, N. Takahashi, H. Takagi, C. Uneyama and M. Hirose. Division Pathol., National Inst. Health Sciences., Tokyo, Japan. Sponsor: *T. Shirai*.

#1142 **EXPRESSION OF MUTANT K-RASV12 IN MOUSE LUNG EPITHELIAL CELLS INCREASES GENERATION OF PEROXIDES THROUGH COX-2, RESULTING IN DNA DAMAGE.** A. E. Maciag[1], G. Sithanandam[2], K. S. Kasprzak[1] and *L. M. Anderson*[1]. [1]Laboratory of Comparative Carcinogenesis, National Cancer Institute at Frederick, Frederick, MD and [2]SAIC Frederick, Frederick, MD.

#1143 **ESTROGEN-INDUCED STIMULATION OF MACROPHAGES LEADING TO THE GENERATION OF REACTIVE OXYGEN SPECIES IN THE TARGET ORGAN OF CANCER.** S. Venkat, Q. Felty and *D. Roy*. Environmental Health Sciences, University of Alabama at Birmingham, Birmingham, AL.

#1144 **ESTROGEN REGULATES AH RESPONSIVENESS IN MCF-7 BREAST CANCER CELLS.** *D. C. Spink*, B. H. Katz, M. M. Hussain, B. T. Pentecost, Z. Cao and B. C. Spink. New York State Department of Health, Wadsworth Center, Albany, NY.

#1145 **PCB METABOLITES AS INITIATING AGENTS IN HEPATOCARCINOGENESIS.** P. Espandiari, H. J. Lehmler, *D. Stemm*, *H. P. Glauert* and *L. W. Robertson*. University of Kentucky, Lexington, KY.

#1146 **EFFECT OF MIXTURES OF POLYCYCLIC AROMATIC HYDROCARBONS ON HUMAN CELLS IN CULTURE.** H. Parsons[1], B. Mahadevan[1], T. Musafia[1], A. K. Sharma[2], S. Amin[2] and *W. Baird*[1]. [1]Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR and [2]American Health Foundation, Valhalla, NY.

#1147 **EXPLORATION OF TOXICOLOGICAL INTERACTIONS BETWEEN JET A FUEL AND BENZO(a)PYRENE (BaP) ON MALIGNANT TRANSFORMATION OF HUMAN KERATINOCYTES.** Y. Zhang, C. Battaglia, O. Lohitnavy, *J. Campain* and *R. Yang*. Quantitative and Computational Toxicology Group, Center for Environmental Toxicology and Technology, Department of Environmental and Radiological Health Sciences, Colorado State University, Fort Collins, CO.

#1148 **EFFECT OF 2, 2', 4, 4', 5, 5'-HEXACHLOROBIPHENYL (PCB-153) ON GENE EXPRESSION IN MICE DEFICIENT IN THE P50 SUBUNIT OF NF-κB.** Z. Lu, *L. W. Robertson*, B. T. Spear and *H. P. Glauert*. University of Kentucky, Lexington, KY.

#1149 **BENZO(a)PYRENE, DISTILLATE MARINE DIESEL FUEL AND A MIXTURE OF 5 POLYAROMATIC HYDROCARBONS, SINGLY AND IN COMPLEX MIXTURES, INDUCED CYTOTOXICITY AND MALIGNANT TRANSFORMATION IN HUMAN KEROTINOCYTES, RHEK-1.** O. S. Lohitnavy, C. R. Battaglia, *R. S. Yang* and *J. A. Campain*. Environmental and Radiological Health Sciences, Colorado State University, Fort Collins, CO.

#1150 **POLYCYCLIC AROMATIC HYDROCARBONS WITH BAY-LIKE STRUCTURES INHIBITED GAP JUNCTIONAL INTERCELLULAR COMMUNICATION IN IMMORTALIZED HUMAN PANCREATIC DUCTAL EPITHELIAL CELLS.** M. Tai, *B. L. Upham* and *J. E. Trosko*. Pediatrics &Human Development, Michigan State University, East Lansing, MI.

#1151 **EVALUATION OF EVIDENCE TO EXPLAIN THE LUNG TUMORIGENESIS IN A/J MICE INDUCED BY EXPOSURE TO AN ENVIRONMENTAL TOBACCO SMOKE SURROGATE.** C. Knoerr[1], W. Stinn[1], P. Vanscheeuwijck[2], R. Kindt[1] and *H. Haussmann*[1]. [1]INBIFO GmbH, Cologne, Germany and [2]CRC B.V.B.A., Zaventem.

#1152 **EFFECT OF 2, 3, 7, 8-TETRACHLORODIBENZO-*p*-DIOXIN (TCDD) EXPOSURE ON NORMAL HUMAN MELANOCYTES AND MELANOMA CELL LINES.** C. M. Villano, A. G. Cardoso, A. Akintobi, R. Dorn and *L. A. White*. Biochemistry and Microbiology, Rutgers University, New Brunswick, NJ.

#1153 **REGULATION OF EGR-1 BY TCDD IN HUMAN LUNG EPITHELIAL CELLS.** J. M. Martinez[1], S. Baek[2], T. E. Eling[2] and *N. J. Walker*[1]. [1]Laboratory of Computational Biology and Risk Analysis, NIEHS, Research Triangle Park, NC and [2]Laboratory of Molecular Carcinogenesis, NIEHS, Research Triangle Park, NC.

#1154 **OVEREXPRESSION OF THE INTEGRIN-LINKED-KINASE PATHWAY IN HCB-TREATED FEMALE RATS.** *I. Plante*, *D. G. Cyr* and *M. Charbonneau*. INRS-Institut Armand-Frappier, Montreal, QC, Canada.

#1155 **SPECIES DIFFERENCES IN THE INDUCTION OF HEPATOCELLULAR DNA SYNTHESIS BY DIETHANOLAMINE.** *L. M. Kamendulis*, D. J. Smith, Z. Jiao and *J. E. Klaunig*. Department of Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN.

#1156 **INHIBITION OF PANCREATIC CANCER CELL GROWTH BY PEROXISOME PROLIFERATOR-ACTIVATED RECEPTOR γ AGONISTS.** C. Qin[1], I. Samudio[2], J. Stewart[1], J. Lee[1] and *S. Safe*[1]. [1]Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX and [2]Institute of Biosciences & Technology, Texas A&M University Health Science Center, Houston, TX.

#1157 **IPRODIONE-INDUCED RAT LEYDIG CELL TUMORS ARE MEDIATED BY TRANSIENT DECREASES IN PLASMA TESTOSTERONE.** *J. Oberdoerster*[1], A. Percy[2], F. Schorsch[2], P. Kennel[2] and R. Bars[2]. [1]Toxicology, Bayer CropScience, Research Triangle Park, NC and [2]Toxicology, Bayer CropScience, Sophia-Antipolis, Alpes Maritime, France.

#1158 **IPRODIONE INHIBITS TESTOSTERONE BIOSYNTHESIS IN LEYDIG CELLS THROUGH A RAPID AND REVERSIBLE MECHANISM.** A. Percy[2], *J. Oberdoerster*[1], M. Benahmed[3] and R. Bars[2]. [1]Toxicology, Bayer CropScience, Research Triangle Park, NC, [2]Toxicology , Bayer CropScience, Sophia-Antipolis, Alpes Maritime, France and [3]INSERM, Lyon, Rhone Alpes, France.

#1159 **THE EFFECTS OF THE BENZENE METABOLITES PHENOL AND CATECHOL ON C-MYB AND PIM-1 SIGNALLING IN HD-3 CELLS.** J. Wan[1] and *L. M. Winn*[1,2]. [1]Pharmacology and Toxicology, Queen's University, Kingston, ON, Canada and [2]School of Environmental Studies, Queen's University, Kingston, ON, Canada.

#1160 **THE EFFECT OF PHENOBARBITAL ON CELL PROLIFERATION IN MICE DEFICIENT IN THE P50 SUBUNIT OF NF-κB.** J. C. Tharappel, *H. P. Glauert* and B. T. Spear. Grad. Center for Nutritional Sciences, University of Kentucky, Lexington, KY.

#1161 **DIETHYLSTILBESTROL INDUCES CASPASE 6 ACTIVITY IN FEMALE ACI RATS.** L. R. Gued, *R. D. Thomas* and M. Green. Pharmacy & Pharmaceutical Sciences, Florida A&M University, Tallahassee, FL.

#1162 **ALTERED RESPONSE OF TSC2-NULL RENAL EPITHELIAL CELLS TO THE PHORBOL ESTER TPA.** *T. M. Kolb*, L. Duan and *M. A. Davis*. Pathology, University of Maryland School of Medicine, Baltimore, MD.

#1163 **NNK RESTORED THE CAP-DEPENDENT PROTEIN TRANSLATION BLOCKED BY RAPAMYCIN.** J. Kim[1,2] and *M. Cho*[1,2]. [1]Toxicology, College of Veterinary Medicine, Seoul National University, Seoul, South Korea and [2]Toxicology, School of Agricultural Biotechnology, Seoul National University, Seoul, South Korea.

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

POSTER SESSION: BIOMARKERS OF EXPOSURE AND EFFECT

Chairperson(s): *Jia Sheng Wang, Texas Tech University, Lubbock, TX and Donna Mendrick, Gene Logic Inc, Gaithersburg, MD.*

Displayed: *9:30 AM–12:30 PM*

Attended: *11:00 AM–12:30 PM*

#1164 **DISSOCIATION OF PRIMARY PATHOLOGIC CHANGES FROM SECONDARY INFLAMMATORY EFFECTS IN PHOSPHODIESTERASE INHIBITOR-INDUCED VASCULOPATHY.** *D. Robertson* , *R. Slim* , M. Albassam , M. D. Reily, D. Wells, J. Provost and *L. A. Dethloff*. Drug Safety Evaluation and Discovery Technologies, Pfizer Global Research and Development, Ann Arbor, MI.

#1165 **IDENTIFICATION OF BIOMARKERS FOR WITHERING SYNDROME IN RED ABALONE USING NMR-BASED METABONOMICS.** M. R. Viant, E. S. Rosenblum and *R. S. Tjeerdema*. Environmental Toxicology, University of California, Davis, CA.

#1166 **GLOBAL PROTEOMICS FOR HUMAN BLOOD SERUM I: MULTIDIMENSIONAL SEPARATION OF PEPTIDES COUPLED WITH MASS SPECTROMETRY.** J. N. Adkins[1], S. P. Varnum[1], K. J. Auberry[1], R. J. Moore[1], N. H. Angell[2], D. S. Wunschel[1], R. D. Smith[1], *D. L. Springer*[1] and *J. G. Pounds*[1]. [1]Biological Sciences, Pacific Northwest National Laboratory, Richland, WA and [2]Human Genome Science, Rockville, MD.

#1167 **IDENTIFICATION OF DOXORUBICIN-INDUCED CHANGES IN PROTEIN FEATURES IN RAT SERA USING CLUSTER ANALYSIS AND EXPRESSION PROFILING.** P. Pine[1], *E. H. Herman*[1], J. Zhang[1], A. D. Knapton[1], G. Holt[2] and *F. D. Sistare*[1]. [1]DAPR, CDER, U.S. FDA, Laurel, MD and [2]Oxford Glycosciences, Ltd, Abingdon, United Kingdom.

#1168 **MEASUREMENT OF BLOOD BREVETOXIN LEVELS BY RADIOIMMUNOASSAY OF BLOOD COLLECTION CARDS AFTER ACUTE, LONG-TERM AND LOW DOSE EXPOSURE IN MICE.** J. Ramsdell[1], R. Woofter[1], M. Bottein Dechraoui[1], I. Garthwaite[2], N. R. Towers[2] and C. J. Gordon[3]. [1]Marine Biotoxins Program, NOAA, Charleston, SC, [2]Food Science Ruakura, AgResearch, Hamilton, New Zealand and [3]NEEHRL, U.S. EPA, Research Triangle Park, NC. Sponsor: *E. Levin*.

#1169 **COMPARATIVE ANALYSIS OF REACTIVE OXYGEN SPECIES IN HUMAN PLASMA AND BLOOD.** *R. Sams*, C. Carty, M. Schmitt, J. Inmon, S. Rhoney, E. Hudgens, R. Calderon and J. Gallagher. Human Studies Division, U.S. EPA, Research Triangle Park, NC.

#1170 **BIOAVAILABILITY OF BISPHENOL A: PREDICTION OF ESTROGEN DISRUPTION IN HUMANS.** *H. D. Luu*[1], C. S. Kim[2], P. P. Sapienza[2], I. A. Ross[2], W. D. Johnson[2] and J. C. Hutter[1]. [1]CDRH, U.S. FDA, Rockville, MD and [2]CFSAN, U.S. FDA, Laurel, MD.

#1171 **BIOLOGICAL MONITORING OF BISPHENOL A IN A KOREAN POPULATION.** *M. Yang*[2], S. Park[2], C. Kim[2], S. Kim[3] and *T. Kawamoto*[1]. [1]Preventive Medicine, Seoul National University, Seoul, South Korea, [2]Preventive Medicine, Eulji University, Daejon, South Korea and [3]Environmental Health, University of Occupational and Environmental Health, Kitakyushu, Japan.

#1172 **PITFALLS OF BROAD-BASED CHEMICAL SCREENING OF FIRE RESPONDERS IN CALIFORNIA: A FALSE ALARM ON CYANAZINE HERBICIDE.** M. J. Fedoruk[2] and *B. D. Kerger*[1]. [1]HSRI, Inc., Tallahassee, FL and [2]Center for Occupational and Environmental Health, University of California, Irvine, Irvine, CA.

#1173 **VALIDATION OF FUMONISIN BIOMARKERS IN HIGH-RISK POPULATION OF LIVER CANCER.** M. Lian[1,2], Y. Yang[1,2], J. Su[3], T. Huang[3], Z. Wei[4], Y. Liang[4], H. Luo[1,2], S. Wang[5], G. Sun[5] and *J. Wang*[1,2]. [1]Environmental Toxicology, Texas Tech University, Lubbock, TX, [2]The Institute of Environmental and Human Health, Texas Tech University, Lubbock, TX, [3]Guangxi Cancer Institute, Nanning, China, [4]Fusui Liver Cancer Institute, Fusui, China and [5]Southeast University School of Public Health, Nanjing, China.

#1174 **ANALYSIS OF URINARY 1, 1, 2, 2-TETRACHLOROETHYLENE (PERC) METABOLITES BY HPLC ELECTROSPRAY IONIZATION TANDEM MASS SPECTROMETRY (ESI-MS/MS) AS POTENTIAL EXPOSURE BIOMARKERS.** *K. L. Cheever*, K. Marlow, A. Ruder, C. Forrester, L. Taylor and M. Butler. NIOSH, Cincinnati, OH.

#1175 **LEVELS OF POLYCYCLIC AROMATIC HYDROCARBONS IN AMNIOTIC FLUID SAMPLES FROM SMOKERS AND NONSMOKERS.** *S. R. Myers*, C. Cunningham and J. Weeks. Pharmacology and Toxicology, Center for Environmental and Occupational Health Sciences, University of Louisville, Louisville, KY.

#1176 **HYPOURICOSURIA, A BIOMARKER OF INORGANIC ARSENIC EXPOSURE.** *L. M. Del Razo*[1], E. A. Garcia-Montalvo[1], O. L. Valenzuela[1] and M. B. Cruz-Gonzalez[2]. [1]Toxicology, Cinvestav-IPN, Mexico City, Mexico and [2]Health Services, SSA, Pachuca, , Hidalgo, Mexico.

#1177 **MONITORING OF OCCUPATIONAL EXPOSURE TO METHYLENE CHLORIDE: SAMPLING PROTOCOL AND STABILITY OF URINE SAMPLES.** *E. Hoffer*[1,2], A. Tabak[1], I. Shcherb[1], S. Schwartz[3] and Y. Bentur[1,2]. [1]Rambam Medical Center, Israel Poison Information, Haifa, Israel, [2]Faculty of Medicine, Technion, Haifa, Israel and [3]Israel Defence Forces, Occupational Medicine, Haifa, Israel.

#1178 **ANALYSIS OF PLASMA AND URINE FOR METABOLITES FOLLOWING INHALATION EXPOSURE OF FEMALE AND MALE MICE AND RATS TO 1, 3-BUTADIENE OR 1, 2-DIHYDROXY-3-BUTENE.** D. Walker, *R. Henderson*, J. McDonald, D. Kracko, W. Blackwell and *V. Walker*. Lovelace Respiratory Research Institute, Albuquerque, NM.

#1179 **URINARY (2-METHOXYETHOXY)ACETIC ACID: AN EFFECTIVE GAS CHROMATOGRAPHIC TEST METHOD FOR QUANTIFICATION.** C. B'Hymer, M. Butler and *K. L. Cheever*. DART, National Institute of Occupational Safety and Health, Cincinnati, OH.

#1180 **DETERMINATION OF PLATELET ACTIVATION LEVELS AND TIME COURSE IN CYNOMOLGUS MONKEYS.** J. M. Gunther, S. Nechev, *A. J. Jabbour*, B. Lee, R. Klein, *K. Okasaki*, S. Meyer and K. Fukuzaki. SNBL USA, Ltd., Everett, WA.

#1181 **SENSITIVITY OF SPECIFIC BIOCHEMICAL MARKERS TO PREDICT CATECHOLAMINE INDUCED CARDIOMYOPATHY IN CYNOMOLGUS MONKEYS.** *J. C. Resendez* and G. Elliott. Toxicology, Sierra Biomedical, A Charles River Company, Sparks, NV.

#1182 **MECHANISM-BASED URINARY BIOMARKERS OF RENAL PHOSPHOLIPIDOSIS AND INJURY.** *M. D. Aleo*[1], K. A. Navetta[1], *S. Emeigh Hart*[2], J. M. Harrell[1], J. L. Whitman-Sherman[1], D. L. Krull[1], M. B. Wilhelms[1], G. G. Boucher[1] and A. B. Jakowski[1]. [1]Drug Safety Evaluation, Pfizer Global R&D, Groton, CT and [2]Global Safety Assessment, AstraZeneca Pharmaceuticals LP, Wilmington, DE.

#1183 **ELECTROENCEPHALOGRAPHIC RESPONSE TO ACUTE 3-NITROPROPIONIC ACID (3-NPA) EXPOSURE.** Z. K. Binienda[1], R. D. Skinner[2], J. L. Summage[1], B. T. Thorn[3] and *W. Slikker*[1]. [1]Neurotoxicology, NCTR/FDA, Jefferson, AR, [2]Anatomy, UAMS, Little Rock, AR and [3]ROW, Jefferson, AR.

#1184 **A COMPARATIVE RELIABILITY STUDY OF THREE TEST BATTERIES: THE BEHAVIORAL EVALUATION FOR EPIDEMIOLOGY STUDIES (BEES), THE NEUROBEHAVIORAL EVALUATION SYSTEM2 (NES2) AND THE BEHAVIORAL ASSESSMENT AND RESEARCH SYSTEM (BARS).** *J. S. Woods*[1,2], *D. Echeverria*[1,2] and N. Heyer[1]. [1]Battelle CPHRE, Seattle, WA and [2]Environmental Health, University of Washington, Seattle, WA.

#1185 **LIVER TOXICITY PREDICTION AND CLASSIFICATION USING MICROARRAY DATA: APPLICATION OF REFERENCE DATA-TRAINED MODELS TO CUSTOMERS' DATA SETS.** A. L. Castle, K. R. Johnson, B. W. Higgs, M. W. Porter, M. Elashoff, *C. G. Chang* and *D. Mendrick*. Toxicology, Gene Logic, Gaithersburg, MD.

#1186 **COMPARISON OF MICROARRAY DATA GENERATED FROM THE SAME RNA AT 15 DIFFERENT PROCESSING SITES.** M. W. Porter, A. L. Castle, K. R. Johnson, B. W. Higgs, M. Elashoff, *C. G. Chang* and *D. Mendrick*. Toxicology, Gene Logic, Gaithersburg, MD.

#1187 **USING GENE MARKERS IDENTIFIED FROM A LARGE DATABASE BUILT WITH PRIMARY RAT HEPATOCYTES FOR PREDICTION OF HUMAN HEPATOTOXICITY.** *D. Mendrick*, B. W. Higgs, M. W. Porter, A. L. Castle and M. S. Orr. Toxicology, Gene Logic, Gaithersburg, MD.

#1188 **CHANGES OF GENE EXPRESSION PROFILES IN STABLE RENAL TUBULE EPITHELIAL CELL LINES AS BIOMARKERS OF DRUG-SPECIFIC TOXICITIES.** Y. S. Kim[1]. [1]Cell Biology, VistaGen Therapeutics, Burlingame, CA and [2]School of Medicine, Mount Sinai Medical Center, New York, NY. Sponsor: *R. Snodgrass*.

#1189 **MICROARRAY ANALYSIS OF NRF2 PATHWAY AND NOVEL CO-REGULATED GENES INDUCED BY ACETAMINOPHEN.** M. S. Orr, D. Fox, L. Dong and *D. Mendrick*. Toxicology, Gene Logic, Gaithersburg, MD.

#1190 **IDIOSYNCRATIC DRUG REACTIONS: INVESTIGATING THE ROLE OF THE DANGER SIGNAL** *M. Popovic* and *J. Uetrecht*. Pharmaceutical Sciences, University of Toronto, Toronto, ON, Canada.

#1191 **ESTABLISHMENT OF BIOASSAY SYSTEM FOR ENVIRONMENTAL SAMPLES USING pERE-MCF-7 CELLS AND p1A1-HEPA I CELLS.** Y. Y. Sheen[1], K. E. Joung[1], Y. W. Kim[1] and K. H. Chung[2]. [1]Pharmacy, Ewha Womans University, Seoul, Seoul, South Korea and [2]Sungkyunwhan University, Suwon, AL. Sponsor: *Y. Cha*.

#1192 **AN ENZYMATIC TISSUE DIGESTION METHOD FOR RECOVERY OF NYLON RFP FROM THE LUNGS OF EXPOSED RATS: VALIDATION STUDIES.** T. R. Webb, K. L. Reed, G. L. Kennedy and *D. B. Warheit*. Pulmonary Toxicology, DuPont Haskell Lab., Newark, DE.

#1193 **DETERMINANTS OF URINARY PORPHYRINS AND MERCURY AMONG DENTAL PERSONNEL.** *D. Echeverria*[1,2], *J. S. Woods*[1,2], N. Heyer[1] and C. Garabedian[1]. [1]Battelle CPHRE, Seattle, WA and [2]Environmental Health, University of Washington, Seattle, WA.

#1194 **AN INTERVENTION ANALYSIS FOR THE REDUCTION OF EXPOSURE TO METHYLMERCURY FROM THE CONSUMPTION OF SEAFOOD.** *C. D. Carrington* and *M. Bolger*. Center for Food Safety and Applied Nutrition, U.S. FDA, College Park, MD.

#1195 **QUANTITATIVE DISEASE PREVENTION AND COST UTILITY CONSIDERATIONS FOR A SUITE OF BIOMARKERS FOR CHRONIC BERYLLIUM DISEASE.** N. L. Judd, W. C. Griffith, T. K. Takaro and *E. M. Faustman*. Institute for Risk Analysis and Risk Communication, University of Washington, Seattle, WA.

#1196 **ATSDR'S INTERMEDIATE-DURATION ORAL MINIMAL RISK LEVEL FOR COBALT.** H. Abadin[2], *M. Osier*[1], O. Faroon[2], C. Smith[2] and C. De Rosa[2]. [1]Agency for Toxic Substances and Disease Registry, Atlanta, GA and [2]Environmental Science Center, Syracuse Research Corp, Syracuse, NY.

#1197 **BIOAVAILABILITY OF SILVER COMPOUNDS IN RATS.** P. J. Deisinger and *J. C. English*. Health & Environment Laboratories, Eastman Kodak Company, Rochester, NY.

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

POSTER SESSION: *IN VITRO*/ALTERNATIVE TEST MODELS FOR DEVELOPMENTAL TOXICITY

Chairperson(s): *James Andrews, U.S. EPA, Research Triangle Park, NC and Dennis Lynch, NIOSH, Cincinnati, OH.*

Displayed: *9:30 AM–12:30 PM*

Attended: *9:30 AM–11:00 AM*

#1198 **TERATOGENICITY OF CYANOBACTERIAL EXTRACTS TO FETAX EMBRYOS.** E. O'Brien, S. Altheimer, N. Kreke and *D. R. Dietrich*. Environmental Toxicology, University of Konstanz, Konstanz, Germany.

#1199 **A RELIABLE SCORING SYSTEM TO ASSESS DEVELOPMENTAL TOXICITY OF ENVIRONMENTAL CONTAMINANTS USING ZEBRAFISH EMBRYOS.** C. Willett, T. Fremgen, P. McGrath and C. Zhang. Phylonix Pharmaceuticals, Inc., Cambridge, MA. Sponsor: *P. Mayeux*.

#1200 **DEVELOPMENTAL TOXICITY OF MIXTURES OF DI- AND TETRACHLOROETHANE AND DICHLOROPROPANE IN EMBRYO CULTURE.** *J. Andrews*, H. Nichols and E. Hunter. RTD, NHEERL, ORD, U.S. EPA, Research Triangle Park, NC.

#1201 **ZEBRAFISH BIOASSAYS FOR ASSESSING SUBSTANCE ABUSE.** C. Parng, N. Anderson and P. McGrath. Phylonix Pharmaceuticals, Inc., Cambridge, MA. Sponsor: *J. McCullough*.

#1202 **TEST RESULTS WITH EIGHT CHEMICALS IN A DROSOPHILA-BASED DEVELOPMENTAL TOXICITY PRESCREEN.** *D. W. Lynch*. DART, BHAB, NIOSH, Cincinnati, OH.

#1203 **ZEBRAFISH AS A PREDICTIVE MODEL FOR ASSESSING TOXICITY OF CHEMOTHERAPEUTICS.** P. McGrath, T. Fremgen, C. Zhang and C. Willett. Phylonix Pharmaceuticals, Inc., Cambridge, MA. Sponsor: *P. Mayeux*.

#1204 **THE TERATOGENIC EFFECTS OF ENVIRONMENTAL ETHANOL EXPOSURE.** E. J. Loucks[1,2], T. Rubenstein[2] and *M. J. Carvan*[1,2]. [1]Biological Sciences, University of Milwaukee-Wisconsin, Milwaukee, WI and [2]Great Lakes WATER Institution, Milwaukee, WI.

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

POSTER SESSION: DNA AND PROTEIN ADDUCTS AS BIOMARKERS

Chairperson(s): *Timothy Fennell, RTI International, Research Triangle Park, NC and James Swenberg, University of North Carolina, Chapel Hill, NC.*

Displayed: *9:30 AM–12:30 PM*

Attended: *11:00 AM–12:30 PM*

#1205 **CARBONYL PROTEIN ADDUCTS AS A BIOMARKER OF CIGARETTE SMOKE EXPOSURE IN MAMMALIAN CELLS AND HUMANS.** D. W. Bombick[1], *D. J. Doolittle*[2] and M. W. Ogden[1]. [1]Biological Chemistry Division, R. J. Reynolds Tobacco Company, Winston-Salem, NC and [2]Product Evaluation, R. J. Reynolds Tobacco Company, Winston-Salem, NC.

#1206 **HEMOGLOBIN ADDUCTS FROM *N*-METHYLOLACRYLAMIDE IN RATS: COMPARISON WITH THOSE FORMED BY ACRYLAMIDE.** *T. Fennell*[1], R. Snyder[1], W. Krol[1], *M. A. Friedman*[2] and *S. C. Sumner*[1]. [1]CIIT Centers for Health Research, Research Triangle Park, NC and [2]UMDNJ, Newark, NJ.

#1207 **CYCLIC N-TERMINAL HEMOGLOBIN ADDUCT AS A BUTADIENE DIEPOXIDE BIOMARKER.** *N. I. Georgieva*, K. Jayaraj, H. Koc, P. Begemann, A. Gold and *J. A. Swenberg*. Environmental Sciences and Engineering, University of North Carolina, Chapel Hill, NC.

#1208 **LC-ESI-MS/MS QUANTITATION OF HEXENAL-DERIVED 1, N^2-PROPANODEOXYGUANOSINE ADDUCTS.** *M. D. Stout*[1], R. Sangaiah[2], H. Koc[2] and *J. A. Swenberg*[1,2]. [1]Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC and [2]Environmental Sciences and Engineering, University of North Carolina, Chapel Hill, NC.

#1209 **IDENTIFICATION OF ADDUCTS FORMED BY THE REACTION OF ISOPRENE MONOEPOXIDES WITH 2'-DEOXYADENOSINE.** P. Begemann[1], *N. I. Georgieva*[1], R. Sangaiah[1], A. Gold[1], H. Koc[1], D. Zhang[2], B. T. Golding[2] and *J. A. Swenberg*[1]. [1]Environmental Sciences and Engineering, University of North Carolina, Chapel Hill, NC and [2]Chemistry, Newcastle University, Newcastle upon Tyne, United Kingdom.

#1210 **CHARACTERIZATION OF 1, N^2-PROPANODEOXYGUANOSINE ADDUCTS FORMED BY HYDROXYMETHYLVINYL KETONE.** *M. W. Powley*[1], K. Jayaraj[2], A. Gold[2] and *J. A. Swenberg*[1,2]. [1]Pathology and Laboratory Medicine, UNC, Chapel Hill, NC and [2]Environmental Sciences and Engineering, UNC, Chapel Hill, NC.

#1211 **DEVELOPMENT OF NOVEL INTERNAL STANDARD DNA FOR DNA ADDUCT ASSAYS.** Y. Jeong and *J. A. Swenberg*. University of North Carolina, Chapel Hill, NC.

#1212 **A NOVEL ASSAY TO QUANTIFY OXIDATIVE DAMAGE USING BASE EXCISION REPAIR ENZYME 8-OXOGUANINE N-GLYCOSYLASE.** I. M. Baskerville, A. Molinelli, J. Nakamura and *J. Swenberg*. Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC.

#1213 **DETERMINATION OF DNA-ADDUCTS IN LIVER SAMPLES OF B6C3F1 MICE EXPOSED TO ETHYLENE OXIDE.** H. U. Käfferlein and *T. R. Fennell*. CIIT Centers for Health Research, Research Triangle Park, NC.

#1214 **FORMATION OF DHP-DERIVED DNA ADDUCTS FROM METABOLIC ACTIVATION OF CLIVORINE, A REPRESENTATIVE OTONECINE-TYPE PYRROLIZIDINE ALKALOID, AND *LIGULARIA HODGSONNII* HOOK PLANT EXTRACT.** Q. Xia[1], M. W. Chou[1], G. Lin[2] and P. P. Fu[1]. [1]Biochemical Toxicology Division, NCTR, Jefferson, AR and [2]Pharmacology, The Chinese University of Hong Kong, Hong Kong, Special Administrative Region, China. Sponsor: *B. Delclos*.

#1215 **ASSESSMENT OF DNA STRAND BREAKS IN LEUKOCYTES OF WORKERS OCCUPATIONALLY EXPOSED TO 1-BROMOPROPANE.** *M. Toraason*[1], *D. W. Lynch*[1], *D. G. DeBord*[1], N. Singh[2] and J. Nemhauser[1]. [1]NIOSH, Cincinnati, OH and [2]University of Washington, Seattle, WA.

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

POSTER SESSION: FOOD SAFETY/NUTRITION

Chairperson(s): *Wanda Haschek-Hock, University of Illinois Urbana, Urbana, IL and Jay Vodela, USDA, Washington, DC.*

Displayed: *9:30 AM–12:30 PM*

Attended: *9:30 AM–11:00 AM*

#1216 **THE OCCURRENCE OF SEVERE ALLERGIC REACTIONS TO FOOD IN NORWAY, BASED ON DOCTORS REPORTS TO THE NORWEGIAN REGISTER OF SEVERE ALLERGIC REACTIONS TO FOOD.** H. G. Wiker[1], M. Løvik[1], R. Kjelkevik[2], B. A. Stensby[1] and B. Gondrosen[2]. [1]Department of Environmental Immunology, Norwegian Institute of Public Health, Oslo, Norway and [2]Norwegian Food Control Authority, Oslo, Norway. Sponsor: *E. Dybing*.

#1217 **REDUCTION OF FUMONISIN MYCOTOXINS IN BT. CORN.** *B. Hammond*[1], K. Campbell[2], T. Degooyer[2], A. Robinson[2], J. Richard[3], J. Segueira[4], C. Rubinstein[4], J. Cea[5], M. Plancke[6], L. Pinson[7], C. Radu[8], H. Esin[8], F. Tatli[9] and R. Grogna[10]. [1]Monsanto, St. Louis, MO, [2]Monsanto, Monmouth, IL, [3]Romer Labs, Union, MO, [4]Monsanto, Buenas Aires, Argentina, [5]Lab. Tech of Uruguay, Montevideo, Uruguay, [6]Monsanto, Paris, France, [7]INRA, Paris, France, [8]Monsanto, Ankara, Turkey, [9]Adana Crop Protection Res Inst, Adana, Turkey and [10]Monsanto, Brussels, Belgium.

#1218 **SAFETY EVALUATION OF AN α-AMYLASE ENZYME PREPARATION DERIVED FROM THE ARCHAEAL GENUS *THERMOCOCCALES* EXPRESSED IN *PSEUDOMONAS FLUORESCENS* BIOVAR I.** *T. D. Landry*[1], M. Bartels[1], L. Chew[2], J. Davis[1], N. Frawley[3], S. Stelman[4], J. Thomas[1], J. Wolt[4] and D. S. Hanselman[5]. [1]Toxicology, Dow, Midland, MI, [2]Industrial Biotechnology, Dow, San Diego, CA, [3]Analytical, Dow, Midland, MI, [4]AgroSciences, Dow, Indianapolis, IN and [5]INNOVASE LLC, San Diego, CA.

#1219 **CONTAMINATION RESPONSE SYSTEM AS FOOD SAFETY TOOL.** M. K. Hoffman, *J. Vodela*, *A. M. Kadry* and *C. Maczka*. USDA/FSIS, Washington DC, DC.

#1220 **ANTIMICROBIAL RESIDUES IN THE UNITED STATES HORSE, SHEEP AND GOAT MEAT.** *A. M. Kadry*, D. Gallagher, J. Kause and *C. Maczka*. Risk Assessment Division, Office of Public Health and Sciences, Food Safety and Inspection Service Department of Agriculture, Washington, DC.

#1221 **URINARY METABOLITES OF AFLATOXIN IN DOGS AND DIETARY PROTECTION BY CLAY AGAINST CANINE AFLATOXICOSIS.** A. K. Bingham, *T. D. Phillips*, *H. J. Huebner* and J. E. Bauer. College of Vet. Med., Texas A&M University, College Station, TX.

#1222 **MATERNAL AND DEVELOPMENTAL ASSESSMENT OF MONTMORILLONITE CLAYS COMMONLY ADDED TO ANIMAL FEEDS: TOXICITY EVALUATION AND METAL BIOAVAILABILITY IN THE PREGNANT RAT.** M. C. Wiles, *H. J. Huebner*, E. Afriyie-Gyawu, R. J. Taylor, G. R. Bratton and *T. D. Phillips*. Faculty of Toxicology, Veterinary Anatomy & Public Health, College of Veterinary Medicine, Texas A & M University, College Station, TX.

#1223 **ENHANCED CLAY-BASED ENTEROSORBENT FOR THE PREVENTION OF AFLATOXICOSIS: *IN VITRO* AND *IN VIVO* CHARACTERIZATION.** E. Afriyie-Gyawu, T. D. Phillips, *H. J. Huebner* and *T. D. Phillips*. Faculty of Toxicology, Veterinary Anatomy & Public Health, College of Veterinary Medicine, Texas A&M University, College Station, TX.

#1224 **CLINICOPATHOLOGIC CHARACTERIZATION OF FUMONISIN B_1 (FB1) INDUCED HEPATO-, NEPHRO- AND NEURO-TOXICITY IN HORSES.** *W. M. Haschek*[1], A. L. Waggoner[1], *S. Hsiao*[1], *G. W. Smith*[2,1], M. E. Tumbleson[3], R. M. Eppley[4], J. H. Foreman[3] and P. D. Constable[3]. [1]Veterinary Pathobiology, University of Illinois, Urbana, IL, [2]Veterinary Clinical Medicine, University of Illinois, Urbana, IL, [3]Veterinary Biosciences, University of Illinois, Urbana, IL and [4]U.S. FDA, Washington, DC.

#1225 **DETERMINATION OF ZEARALENONE IN SOME CEREALS, NUTS AND DRIED FRUITS COLLECTED FROM ALEXANDRIA MARKETS.** *S. A. Soliman*[1], N. S. Ahmed[1], K. A. Osman[1] and M. S. Ibraheem[1]. [1]Pesticide Chemistry, Alexandria University, Alexandria, Egypt, [2]Pesticide Chemistry, Alexandria University, Alexandria, Egypt, [3]Pesticide Chemistry, Alexandria University, Alexandria, Egypt and [4]Pesticide Chemistry, Alexandria University, Alexandria, Egypt.

#1226 **EFFECTS OF COOKING ON THE BIOLOGICAL ACTIVITY OF FUMONISINS.** *K. A. Voss*[1], *W. P. Norred*[1], F. I. Meredith[1], *R. T. Riley*[1], C. W. Bacon[1] and *S. Saunders*[2]. [1]Toxicology & Mycotoxin Research Unit, USDA-Agricultural Research Service, Athens, GA and [2]Department of Food Safety, Frito-Lay Inc., Plano, TX.

#1227 **FATE OF FUMONISIN IN MAIZE DURING NIXTAMALIZATION AND TORTILLA PRODUCTION BY MAYAN COMMUNITIES IN GUATEMALA.** *R. T. Riley*[1], E. Palencia[2], O. Torres[2], W. Hagler[3], F. Meredith[1] and *L. Williams*[4,1]. [1]USDA/ARS, Athens, GA, [2]Instituto de Nutricion de Centro America y Panama, Guatemala City, Guatemala, [3]North Carolina State University, Raleigh, NC and [4]College of Agriculture and Environmental Sciences, University of Georgia, Athens, GA.

#1228 **FUMONISIN B_1 TOXICITY IN THE BRAIN DURING COEXISTING LIPOPOLYSACCHARIDE-RELATED ENDOTOXEMIA IN BALB/C MICE.** M. F. Osuchowski, Q. He and *R. P. Sharma*. Physiology and Pharmacology, The University of Georgia, Athens, GA.

#1229 **SUBCHRONIC TOXICITY IN RATS FED CULTURE MATERIALS OF FUMONISIN-PRODUCING AND MONILIFORMIN-PRODUCING FUNGAL ISOLATES.** *J. R. Owen*[1,2], R. D. Plattner[3], G. E. Rottinghaus[4], *R. T. Riley*[1,2], R. L. Tackett[2] and *K. A. Voss*[1,2]. [1]Toxicology & Mycotoxin Research Unit, USDA-Agricultural Research Service, Athens, GA, [2]College of Pharmacy, University of Georgia, Athens, GA, [3]National Center for Agricultural Utilization Research, USDA-Agricultural Research Service, Peoria, IL and [4]University of Missouri, Columbia, MO.

#1230 **KINETICS OF DEOXYNIVALENOL (VOMITOXIN) DISTRIBUTION AND CLEARANCE FOLLOWING ORAL EXPOSURE IN THE MOUSE.** P. Yordanova, Z. Islam and *J. J. Pestka*. Michigan State University, East Lansing, MI.

#1231 **HUMAN CYTOKINE mRNA RESPONSE TO DEOXYNIVALENOL (VOMITOXIN) USING WHOLE BLOOD CULTURES.** K. M. Penner, J. S. Gray and *J. J. Pestka*. Michigan State University, East Lansing, MI.

#1232 **INTERACTIONS BETWEEN MACROPHAGES AND NONPARENCHYMATOUS LIVER CELLS IN RESPONSE TO FUMONISIN TREATMENT *IN VITRO.*** N. Sharma, Q. He and *R. P. Sharma*. Physiology and Pharmacology, University of Georgia, Athens, GA.

#1233 **CHRONIC DIETARY TOXICITY STUDY OF DAG (DIACYLGLYCEROL) IN BEAGLE DOGS.** *C. P. Chengelis*[1], J. B. Kirkpatrick[1], G. B. Marit[1], O. Morita[2], Y. Tamaki[2] and H. Suzuki[2]. [1]WIL Research Laboratories, Inc., Ashland, OH and [2]Kao Corporation, Haga Tochigi, Japan.

#1234 **BISPHENOL A INTERFERES WITH MICROTUBULES IN CULTURED HUMAN FIBROBLASTS.** L. Lehmann and *M. Metzler*. Institute of Food Chemistry and Toxicology, University of Karlsruhe, Karlsruhe, Germany.

#1235 **FUMONISIN B_1 (FB1) ALTERS SPHINGANINE (SA) AND SPHINGOSINE (SO) CONCENTRATIONS IN SERUM, TISSUE, URINE AND CEREBROSPINAL FLUID (CSF) OF HORSES.** M. E. Tumbleson[1], *W. M. Haschek*[2], A. L. Waggoner[2], P. D. Constable[3], *G. W. Smith*[3], J. H. Foreman[3] and R. M. Eppley[4]. [1]Veterinary Biosciences, University of Illinois, Urbana, IL, [2]Veterinary Pathobiology, University of Illinois, Urbana, IL, [3]Veterinary Clinical Medicine, University of Illinois, Urbana, IL and [4]U.S. FDA, Washington, DC.

#1236 **TUMOR NECROSIS FACTOR-α INDUCTION IN FUMONISIN B_1-TREATED PORCINE RENAL EPITHELIAL CELLS IS MEDIATED VIA ACTIVATION OF PROTEIN KINASE C-α AND NUCLEAR FACTOR-κB.** *N. V. Gopee* and *R. P. Sharma*. University of Georgia, Athens, GA.

#1237 **90-DAY CHRONIC TOXICITY STUDY OF A NOVEL (-)-HYDROXYCITRIC ACID EXTRACT OF *GARCINIA CAMBOGIA.*** S. E. Ohia, *S. J. Stohs*, M. Shara, T. Yasmin, A. Chatterjee, *M. Bagchi*, A. Zardetto-Smith, A. Kincaid and *D. Bagchi*. School of Pharmacy & Health Professions, Creighton University Medical Center, Omaha, CA.

#1238 **INDUCTION OF THE PROCARCINOGEN-ACTIVATING CYP1A2 BY A HERBAL DIETARY SUPPLEMENT IN RATS AND HUMANS.** *W. Chung* and S. Ryu . Pharmacology, Inha University, Inchon, South Korea.

#1239 **SAFETY OF A NOVEL BOTANICAL EXTRACT FORMULATION FOR AMELIORATING *ALLERGIC RHINITIS.*** *D. Bagchi*[1], V. S. Saxena[2], N. Pratibha[2], A. Amit[2] and *M. Bagchi*[1]. [1]School of Pharmacy & Health Professions, Creighton University Medical Center, Omaha, CA and [2]R & D, Natural Remedies Research Center, Bangalore, India.

#1240 **TRANS-10, CIS-12 CONJUGATED LINOLEIC ACID INHIBITS DIFFERENTIATION IN 3T3-L1 ADIPOCYTES AND DECREASES PEROXISOME PROLIFERATOR ACTIVATED RECEPTOR γ EXPRESSION IN MICE.** K. Kang[1,2], W. Liu[2], K. J. Albright[2] and M. W. Pariza[1,2]. [1]Food Microbiology and Toxicology, University of Wisconsin-Madison, Madison, WI and [2]Food Research Institute, Madison, WI. Sponsor: *R. Peterson*.

#1241 **TOXICOLOGY STUDIES ON CONJUGATED LINOLEIC ACID (CLA).** S. O'Hagan. Safety &Environmental Assurance Department, Unilever Colworth, Bedford, United Kingdom. Sponsor: *P. Hepburn*.

#1242 **LACK OF ESTROGENIC OR ANTI-ESTROGENIC ACTIVITY OF THE ANTIOXIDANT NAO FOUND IN SPINACH.** *L. Lomnitski*[3], E. Padilla-Banks[2], W. N. Jefferson[2], A. Nyska[1], S. Grossman[3] and *R. R. Newbold*[2]. [1]Laboratory of Experimental Pathology, NIEHS, Research Triangle Park, NC, [2]Laboratory of Molecular Toxicology, NIEHS, Research Triangle Park, NC and [3]Institute of Life Sciences, Bar-Ilan University, Ramat-Gan, Israel.

#1243 ***IN VIVO* EXPOSURE TO AN EPHEDRA CONTAINING METABOLIC NUTRITION SYSTEM DOES NOT ALTER SERUM BIOCHEMISTRY AND HISTOPATHOLOGY OF SEVEN VITAL TARGET ORGANS OF B6C3F1 MICE.** *S. Stohs*[1], S. Gross[3], C. Patel[3], R. Hackman[2] and *S. Ray*[3]. [1]Sch. of Pharmacology & Hlth. Profs., Creighton University, Omaha, NE, [2]Department of Nutrition., University of California, Davis, CA and [3]Toxicology Program, Coll. of Pharmacology/LIU, Brooklyn, NY.

#1244 **A SUBCHRONIC FEEDING STUDY OF ANNATTO EXTRACT (NORBIXIN), A NATURAL FOOD COLOR EXTRACTED FROM THE SEED COAT OF ANNATTO (*BIXA ORELLANA* L.), IN SPRAGUE-DAWLEY RATS.** H. Yoshino[1,2], A. Hagiwara[1], N. Imai[1], S. Tamano[1], H. Aoki[3], K. Yasuhara[3], T. Koda[3], M. Nakamura[3] and *T. Shirai*[2]. [1]Daiyu-Kai Institution of Medical Science, Ichinomiya, Japan, [2]Department of Experiment Pathology and Tumor Biology, Nagoya City University, Nagoya, Japan and [3]San-Ei Gen F.F.I., Inc., Toyonaka, Japan.

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

POSTER SESSION: GENE EXPRESSION I

Chairperson(s): *Mary Beth Genter, University of Cincinnati, Cincinnati, OH and John McNulty, Schering Plough Research Institute, Lafayette, NJ.*

Displayed: *9:30 AM–12:30 PM*

Attended: *11:00 AM–12:30 PM*

#1245 **TRANSCRIPTIONAL RESPONSES OF AAG KNOCKOUT MOUSE EMBRYONIC STEM CELLS UPON EXPOSURE TO ME-LEX.** K. Kobayashi, L. B. Meira and L. D. Samson. Biological Engineering, MIT, Cambridge, MA. Sponsor: *J. Sugimoto*.

#1246 **ROLE OF NITRIC OXIDE IN ROTENONE-INDUCED NIGRO-STRIATAL INJURY.** *S. Ali*[1], Y. He[2], Z. Dong[2], J. Jankovic[2], S. H. Appel[2], W. Le[2], *W. Slikker, Jr*[1] and S. Z. Imam[1]. [1]Neurotoxicology, U.S. FDA/NCTR, Jefferson, AR and [2]Department Neurology, Baylor College of Medicine, Houston, TX.

#1247 **CHROMIUM EXPOSURE DISRUPTS TRANSCRIPTION FROM PAH-INDUCIBLE PROMOTERS.** Y. Wei[1], *A. Puga*[1] and K. Tepperman[2]. [1]Department of Environmental Health, University of Cincinnati Medical Center, Cincinnati, OH and [2]Department of Biological Sciences, University of Cincinnati, Cincinnati, OH.

#1248 **ARYL HYDROCARBON RECEPTOR REGULATION AND TRANSACTIVATION DURING OSTEOBLAST DIFFERENTIATION.** E. P. Ryan[1,2], *T. A. Gasiewicz*[2] and J. E. Puzas[1,2]. [1]Orthopaedics, University of Rochester , Rochester, NY and [2]Environmental Medicine, University of Rochester, Rochester, NY.

#1249 **TEMPORAL GENE EXPRESSION CHANGES FOLLOWING TREATMENT WITH ANTHRACYCLINES IN MALE RATS.** *C. I. Nduaka*[1], L. T. Russell[2], L. Gallenberg[1], D. Weddle[1] and J. Waring[1]. [1]Drug Safety Evaluation, Abbott Laboratories, Abbott Park, IL and [2]Department of Pharmacology, University of Maryland, Baltimore, MD.

#1250 **EXPRESSION AND REGULATION OF THE PLANT STEROL HALF TRANSPORTER GENES ABCG5 AND ABCG8 IN RATS.** *M. Z. Dieter* and *C. D. Klaassen*. University of Kansas Medical Center, Kansas City, KS.

#1251 **TISSUE AND GENDER-SPECIFIC EXPRESSION OF THE MULTIDRUG RESISTANCE-ASSOCIATED PROTEINS 1-6 IN MICE.** J. M. Maher, *N. J. Cherrington* and *C. D. Klaassen*. Pharmacology, KU Medical Center, Kansas City, KS.

#1252 **TISSUE DISTRIBUTION OF MOUSE ORGANIC ANION TRANSPORTING POLYPEPTIDES.** X. Cheng, *N. J. Cherrington* and *C. D. Klaassen*. University of Kansas Medical Center, Kansas City, KS.

#1253 ***TERT*-BUTYL HYDROQUINONE (TBHQ) PROTECTS AGAINST ARSENITE-INDUCED CYTOTOXICITY.** S. Kann, M. Huang, *Y. Yang*, *Y. Chen*, *T. P. Dalton* and *A. Puga*. Department of Environmental Health, University of Cincinnati Medical Center, Cincinnati, OH.

#1254 **INDUCTION OF UDP-GLUCURONOSYLTRANSFERASE 1A AND 2B mRNA LEVELS IN RAT LIVER AND DUODENUM BY CLASSES OF MICROSOMAL ENZYME INDUCERS THAT ACTIVATE VARIOUS TRANSCRIPTIONAL PATHWAYS.** M. K. Shelby and *C. D. Klaassen*. University of Kansas Medical Center, Kansas City, KS.

#1255 **ROLE OF TRANSCRIPTION FACTORS IN LPS-INDUCED DECREASE OF MOUSE ORGANIC ANION TRANSPORTING POLYPEPTIDE (OATP) 4 EXPRESSION.** N. Li, *M. Z. Dieter* and *C. D. Klaassen*. University of Kansas Medical Center, Kansas City, KS.

#1256 **ROLE OF THE TGF-BETA PATHWAY IN THE PATHOGENESIS OF STREPTOZOTOCIN-INDUCED DIABETIC NEPHROPATHY.** J. Yan[1], L. Song[2], M. Brej[1], J. Kachur[2], Z. Guan[2] and *E. A. Blomme*[1]. [1]Global Toxicology, Pharmacia Corp., Skokie, IL and [2]Skokie Discovery Biology, Pharmacia Corp., Skokie, IL.

#1257 **CONSTITUTIVE EXPRESSION OF VARIOUS XENOBIOTIC AND ENDOBIOTIC TRANSPORTER mRNAS IN THE CHOROID PLEXUS OF ADULT SPRAGUE-DAWLEY RATS.** *S. Choudhuri*[2,1], *N. Cherrington*[1], N. Li[1] and *C. D. Klaassen*[1]. [1]Pharmacology Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS and [2]U.S. FDA, College Park, MD.

#1258 **INDUCTION OF MULTIDRUG RESISTANCE PROTEIN 3 (Mrp3) *IN VIVO* IS INDEPENDENT OF CONSTITUTIVE ANDROSTANE RECEPTOR.** *N. Cherrington*[1], *A. L. Slitt*[1], J. M. Maher[1], Y. Y. Wan[2], J. Zhang[3], W. Huang[3], D. M. Moore[3] and *C. D. Klaassen*[1]. [1]Pharmacology Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS, [2]Harbor-UCLA Medical Center, Torrance, CA and [3]Baylor College of Medicine, Houston, TX.

#1259 **SPECIES AND GENDER DIFFERENCES IN ORGANIC ANION TRANSPORTER mRNA.** S. C. Buist and *C. D. Klaassen*. University of Kansas Medical Center, Kansas City, KS.

#1260 **COACTIVATION OF ESTROGEN RECEPTOR α BY DRIP 205 IN HUMAN BREAST CANCER CELLS.** Q. Wu and *S. Safe*. Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

#1261 **CELL CONTEXT-DEPENDENT DIFFERENCES IN THE MECHANISM OF HORMONAL ACTIVATION OF E2F1 IN BREAST CANCER CELLS.** S. Ngwenya and *S. Safe*. Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

#1262 **ESTROGEN RECEPTOR/Sp1 COMPLEXES ARE REQUIRED FOR INDUCTION OF *CAD* GENE EXPRESSION BY 17β-ESTRADIOL IN BREAST CANCER CELLS.** S. Khan, M. Abdelrahim, I. Samudio and *S. Safe*. Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

#1263 **TRANSCRIPTIONAL REGULATION OF HUMAN *CYP2F1* LUNG SPECIFIC EXPRESSION.** J. Wan, B. Carr and *G. Yost*. Pharmacology & Toxicology, University of Utah.

#1264 **MECHANISMS OF ARYL HYDROCARBON RECEPTOR-MEDIATED DISRUPTION OF ANDROGEN RECEPTOR FUNCTION IN LNCAP CELLS.** *S. J. Barnes*, C. Tomlinson, M. Sartor, M. Medvedovic and *A. Puga*. Department of Environmental Health, University of Cincinnati Medical Center, Cincinnati, OH.

#1265 **REGULATION OF CYCLOOXYGENASE 2 BY 2, 3, 7, 8-TETRACHLORODIBENZO-*p*-DIOXIN.** C. J. Broccardo, *M. E. Legare* and *W. H. Hanneman*. Environmental and Radiological Health Sciences, Colorado State University, Fort Collins, CO.

#1266 **STEROIDOGENIC ACUTE REGULATORY PROTEIN (STAR PROTEIN) ACTIVITY IN FISH.** J. Kocerha[1], K. K. Kroll[2] and *N. D. Denslow*[1,2]. [1]Biochemistry and Molecular Biology, University of Florida, Gainesville, FL and [2]Interdisciplinary Center for Biotechnology Research, University of Florida, Gainesville, FL.

#1267 **EFFECT OF SYNTHETIC ANTIOXIDANTS ON ALPHA CLASS GLUTATHIONE S-TRANSFERASE GENE EXPRESSION AND GLUTATHIONE BIOSYNTHESIS IN HUMAN LIVER SLICES.** C. M. Huisden[1], *R. L. Fisher*[2] and *E. P. Gallagher*[1]. [1]Physiological Sciences, University of Florida, Gainesville, FL and [2]Vitron Inc., Tucson, AZ.

#1268 **EXAMINATION OF THE ROLE OF P53-ASSOCIATED CELL CYCLE GENE EXPRESSION INDUCED BY METHYLMERCURY IN MOUSE EMBRYONAL FIBROBLASTS.** C. C. Tin, J. S. Sidhu, S. Hong, E. Kim and *E. M. Faustman*. Environmental Health, University of Washington, Seattle, WA.

#1269 **INTERACTION BETWEEN THE ARYL HYDROCARBON RECEPTOR AND TRANSCRIPTION FACTOR E2F LEADS TO GENE REPRESSION.** *J. Marlowe*, X. Chang, Y. Wei and *A. Puga*. Department of Environmental Health, University of Cincinnati Medical Center, Cincinnati, OH.

#1270 **TRAPPING GENES ASSOCIATED WITH TOBACCO USE.** A. F. Flint, *C. T. French*, J. M. Brzeziski, *M. E. Legare* and *W. H. Hanneman*. Environmental and Radiological Health Science, Colorado State University, Fort Collins, CO.

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

POSTER SESSION: GENE EXPRESSION II TOXICOGENOMICS

Chairperson(s): *James McDougal, Wright State University School of Medicine, Dayton, OH and John Davis, II, Schering Plough Research Institute, Lafayette, NJ.*

Displayed: *9:30 AM–12:30 PM*

Attended: *9:30 AM–11:00 AM*

#1271 **HEPATOBILIARY TRANSPORTER INDUCTION IN ALTERED THYROID HORMONE HOMEOSTASIS: A MICROARRAY ANALYSIS.** *G. Falls*, *B. Gemzik*, *B. D. Car* and *L. D. Lehman-McKeeman*. Discovery Toxicology, Bristol-Myers Squibb Co., Wilmington, DE.

#1272 **GENE EXPRESSION IN RAT SKIN FOLLOWING DERMAL EXPOSURE TO JP-8 JET FUEL.** C. M. Garrett[1,2], J. Rogers[1,2] and *J. N. McDougal*[3]. [1]Geo-Centers, Inc., Wright-Patterson AFB, OH, [2]Wright-Patterson, AFB, Wright-Patterson AFB, OH and [3]Wright State University, Dayton, OH.

#1273 **UNRAVELLING THE MOLECULAR MECHANISMS UNDERLYING HYDROXYUREA GENOTOXICITY IN MOUSE LYMPHOMA L5178Y CELLS USING TOXICOGENOMICS.** E. Boitier, J. Marchandeau, M. Flor, *R. A. Roberts*, J. Gautier and V. Thybaud. Drug Safety Evaluation, Aventis Pharmacology SA, Vitry sur Seine, France.

#1274 **LIVER-TARGETING PRODRUG OF PMEA INDUCES A MUCH MORE FAVORABLE KIDNEY AND LIVER TOXICOLOGICAL GENE EXPRESSION IN RATS COMPARED TO BISPOM-PMEA.** C. Fang, C. Lim, P. Srivastava, J. Y. Lau and *C. Lin*. Research and Development, Ribapharm Inc., Costa Mesa, CA.

#1275 **THE EFFECT OF GLUTATHIONE REGULATION ON GENE EXPRESSION IN RAT PRIMARY HEPATOCYTES.** N. Kelley-Loughnane[1], A. Soto[2], *S. M. Hussain*[2], V. Chan[2], D. C. Rudnicki[3] and *J. M. Frazier*[3]. [1]Geo-Centers, Inc., Wright-Patterson Air Force Base, OH, [2]ManTech Environmental Technology, Inc., Wright-Patterson AFB, OH and [3]Operational Toxicology Branch, AFRL/HEST, Wright-Patterson AFB, OH.

#1276 **DEVELOPMENT OF A GENE-EXPRESSION ARRAY FOCUSING ON THE HYPOTHALAMUS-PITUITARY-THYROID AXIS IN XENOPUS LAEVIS.** J. Korte, S. J. Degitz and J. E. Tietge. MED, NHEERL, ORD, U.S. EPA, Duluth, MN. Sponsor: *J. Nichols*.

#1277 **IDENTIFYING NOVEL DIOXIN-INDUCIBLE GENE TARGETS IN NEURONAL CELL LINES.** *M. S. von Maier*, *M. E. Legare* and *W. H. Hanneman*. Department of Environmental & Radiological Health Sciences, Colorado State University, Fort Collins, CO.

#1278 **TRANSCRIPTIONAL CHANGES IN NORMAL HUMAN LIVER CELLS EXPOSED TO TETRACHLOROETHYLENE METABOLITE USING MICROARRAY ANALYSIS.** N. Keshava and T. Ong. Toxicology and Molecular Biology Branch, National Institute for Occupational Safety and Health, Morgantown, WV. Sponsor: *P. Joseph*.

#1279 **SPERM RNA AMPLIFICATION FOR GENE EXPRESSION PROFILING BY DNA MICROARRAY TECHNOLOGY.** H. Ren, *K. E. Thompson*, J. E. Schmid and *D. J. Dix*. Reproductive Toxicology Division, NHEERL, Office of Research and Development, U.S. EPA, Research Triangle Park, NC.

#1280 **A PRACTICAL EXPERIMENTAL DESIGN TO CORRECT FOR DYE BIAS IN DUAL-LABELED CDNA MICROARRAY EXPERIMENTS WITHOUT SACRIFICING PRECISION.** B. A. Rosenzweig[1], P. S. Pine[1], O. E. Domon[2], S. Morris[2] and *F. D. Sistare*[1]. [1]CDER, U.S. FDA, Laurel, MD and [2]NCTR, Jefferson, AR.

#1281 **EVOLUTIONARILY CONSERVED RESPONSES TO ARSENIC IN YEAST AND HUMAN CELLS.** A. Haugen[1], *H. K. Hamadeh*[2], J. Collins[1], P. Bushel[1], J. Miller[1], C. J. Tucker[1], D. A. Gordenin[1], G. Karthikeyan[1], *C. Afshari*[2] and B. Van Houten[1]. [1]Laboratory of Mol.Gen., NIEHS, Research Triangle Park, NC and [2]Amgen Inc., Thousand Oaks, CA.

#1282 **TEMPORAL GENE EXPRESSION PROFILES OF HUMAN FETAL ASTROCYTE SVG CELLS TREATED WITH A NEUROTOXICANT, 6-AMINONICOTINAMIDE.** T. Yamada[1,2], *L. D. Burgoon*[1,3], K. Y. Kwan[1,2], *M. R. Fielden*[1,2], *J. E. Trosko*[2,4] and *T. R. Zacharewski*[1,2]. [1]Biochemistry and Molecular Biology, Michigan State University, East Lansing, MI, [2]National Food Safety and Toxicology Center, Michigan State University, East Lansing, MI, [3]Pharmacology and Toxicology, Michigan State University, East Lansing, MI and [4]Pediatrics and Human Development, Michigan State University, East Lansing, MI.

#1283 **ALTERATIONS IN GENE EXPRESSION BY TRIVALENT CHROMIUM IN HEPG2 CELLS AND MOUSE LIVER.** *W. Baldwin*, *L. Bain* and B. Romero. Biological Sciences, University of Texas at El Paso, El Paso, TX.

#1284 **CHARACTERIZATION OF TCDD-RESPONSIVE GENES IDENTIFIED BY CDNA MICROARRAY ANALYSIS.** *H. M. Handley*[1], *J. J. Stegeman*[1] and M. C. Fishman[2,3]. [1]Biology, Woods Hole Oceanographic Institution, Woods Hole, MA, [2]Cardiovascular Research Center, Massachusetts General Hospital, Charlestown, MA and [3]Novartis Institute for Biomedical Research, Inc., Cambridge, MA.

#1285 **DIFFERENTIATION BETWEEN SENSITIZERS AND IRRITANTS IN THE LOCAL LYMPH NODE ASSAY USING A MINIMAL TRANSCRIPT SET.** *C. M. Glatt*[1], C. Smith[1], W. Foster[2] and G. Ladics[1]. [1]Haskell Laboratory, DuPont, Newark, DE and [2]Bristol Myers Squibb Co., Wilmington, DE.

#1286 **COMPARATIVE GENE EXPRESSION PROFILING IN FEMALE RATS TREATED SUBCHRONICALLY AND CHRONICALLY WITH PCB126, PCB153, AND TCDD.** *C. Vezina*[1], R. L. Malek[2], H. Sajadi[2], D. A. Brazeau[3] and *J. R. Olson*[1]. [1]Pharmacology and Toxicology, University at Buffalo, Buffalo, NY, [2]The Institute for Genomic Research, Rockville, MD and [3]Pharmaceutics, University at Buffalo, Buffalo, NY.

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

POSTER SESSION: CELLULAR AND MOLECULAR NEUROTOXICOLOGY

Chairperson(s): *Mary Gilbert, U.S. EPA, Research Triangle Park, NC and Louis Trombetta,* St. *John's University, Jamaica, NY.*

Displayed: *9:30 AM–12:30 PM*

Attended: *11:00 AM–12:30 PM*

#1287 **ESTROGEN INCREASES DOPAMINE BETA HYDROXYLASE ACTIVITY AND PROTEIN EXPRESSION IN CATH.A CELLS.** H. L. Rincavage and C. M. Kuhn. Pharmacology, Duke University, Durham, NC. Sponsor: *T. Slotkin*.

#1288 **USE OF A PLANAR MICROELECTRODE ARRAY SYSTEM TO MEASURE TOXICANT INDUCED CHANGES IN THE ELECTRICAL ACTIVITY OF ACUTE BRAIN SLICES FROM BLUEGILL SUNFISH (*LEPOMIS MACROCHIRUS*).** J. Rossi III, S. M. McInturf, F. J. McDougle, M. Y. Bekkedal and G. D. Ritchie. Neurobehavioral Effects Laboratory, Naval Health Research Center Detachment-Toxicology, Wright-Patterson AFB, OH. Sponsor: *R. Carpenter*.

#1289 **USE OF A PLANAR MICROELECTRODE ARRAY SYSTEM TO MEASURE EFFECTS OF CHEMICAL CHALLENGES ON AN ACUTE TISSUE SLICE PREPARATION FROM MOUSE CEREBELLUM.** G. D. Ritchie, J. Rossi III, F. J. McDougle, S. M. McInturf and M. Y. Bekkedal. Neurobehavioral Effects Laboratory, Naval Health Research Center Detachment-Toxicology, Wright-Patterson AFB, OH. Sponsor: *R. Carpenter*.

#1290 **POLYCHLORINATED BIPHENYLS INHIBIT DOPAMINE UPTAKE IN HUMAN NEUROBLASTOMA CELLS STABLY EXPRESSING THE HUMAN DOPAMINE TRANSPORTER.** *J. R. Richardson* and *G. W. Miller*. Center for Neurodegenerative Disease and Department of Occupational and Environmental Health, Rollins School of Public Health, Emory University, Atlanta, GA.

#1291 **THE INDUCTION OF MITOCHONDRIAL SP60 IN RAT HIPPOCAMPAL ASTROCYTES BY DIETHYLDITHIOCARBAMATE.** *A. Almiroudis* and *L. D. Trombetta*. St. John's University, Jamaica , NY.

#1292 **INTERLEUKIN-1β ENHANCES NMDA RECEPTOR-MEDIATED $[CA^{2+}]_I$ INCREASE IN PRIMARY RAT HIPPOCAMPAL NEURONS: ROLE IN NEUROTOXICITY.** *B. Viviani*[1], S. Bartesaghi[1], A. Vezzani[2], M. Binaglia[1], *C. L. Galli*[1] and M. Marinovich[1]. [1]Department of Pharmacological Sciences, University of Milan, Milan, Italy and [2]Department of Neuroscience, Mario Negri Inst for Pharmacology Res, Milan, Italy.

#1293 **ACCUMULATION OF THE PERSISTENT ENVIRONMENTAL TOXICANTS METHYLMERCURY OR POLYCHLORINATED BIPHENYLS IN *IN VITRO* MODELS OF RAT NEURONAL TISSUE.** C. A. Meacham[1], T. M. Freudenrich[1], W. L. Anderson[1], L. Sui[2], *S. Barone Jr*[1], *M. E. Gilbert*[1], *W. R. Mundy*[1] and *T. J. Shafer*[1]. [1]Neurotoxicology Division, NHEERL, ORD, U.S. EPA, Research Triangle Park, NC and [2]National Research Council, Research Triangle Park, NC.

#1294 **PERCHLOROETHYLENE (PERC) INHIBITS FUNCTION OF VOLTAGE-GATED CALCIUM CHANNELS IN PHEOCHROMOCYTOMA CELLS.** *T. J. Shafer*. Neurotoxicology Division, NHEERL, ORD, U.S. EPA, Research Triangle Park, NC.

#1295 **INHIBITORY EFFECTS OF PERCHLOROETHYLENE ON HUMAN NEURONAL NICOTINIC ACETYLCHOLINE RECEPTORS.** A. S. Bale, *P. J. Bushnell* and *T. J. Shafer*. Neurotoxicology Division, NHEERL, ORD, U.S. EPA, Research Triangle Park, NC.

#1296 **BROMINATED FLAME RETARDANTS; OXIDATIVE STRESS AND CELL DEATH USING CEREBELLAR GRANULE CELLS AND GRANULOCYTES.** *F. Fonnum*[1], T. Reistad[1] and E. Mariussen[2]. [1]Norwegian Defence Research Establishment, N 2027 Kjeller, Norway and [2]Norwegian Institute for Air Research, n 2027-Kjeller, Norway.

#1297 **ORTHO-SUBSTITUTED 2, 2', 3, 3', 4, 4', 5-HEPTACHLOROBIPHENYL (PCB170) ALTERS NEUROPLASTICITY IN ACUTE HIPPOCAMPAL SLICE.** K. Kim[1], T. E. Albertson[2] and *I. N. Pessah*[1]. [1]Molecular Biosciences: VM, University.C. Davis, Davis, CA and [2]Pulmonary and Critical Care Medicine, University.C. Davis, Sacramento, CA.

#1298 **ORGANOPHOSPHORUS COMPOUNDS SELECTIVELY INHIBIT ESTERASE ACTIVITY AND GROWTH FACTOR-INDUCED CELL GROWTH IN AN *IN VITRO* BLOOD BRAIN BARRIER MODEL.** *D. K. Parran*[1,2], W. Li[1], *L. Correll*[1], *B. Jortner*[1,2] and *M. Ehrich*[1,2]. [1]Department of Biomedical Sciences and Pathobiology, Virginia Tech, Blacksburg, VA and [2]Laboratories for Neurotoxicity Studies, Virginia Tech, Blacksburg, VA.

#1299 ***IN SITU* EFFECTS OF ORGANOPHOSPHATE (OP) COMPOUND EXPOSURE ON ATP PRODUCTION IN HUMAN NEUROBLASTOMA CELLS.** *L. Correll*[1], *C. Massicotte*[2], C. van der Schyf[3] and *M. Ehrich*[1]. [1]Virginia-Maryland Regional College of Veterinary Medicine, Virginia Tech, Blacksburg, VA, [2]School of Veterinary Medicine, University of Pennsylvania, Philadelphia, PA and [3]School of Pharmacy, Texas Tech University, Amarillo, TX.

#1300 **cAMP AND RETINOIC ACID INDUCED DIFFERENTIATION OF HUMAN SVG CELLS: MORPHOLOGIC AND TRANSCRIPTIONAL EFFECTS.** *L. D. Burgoon*[1,3,4], K. Y. Kwan[2,4], *J. E. Trosko*[3,4,5] and *T. Zacharewski*[2,3,4]. [1]Pharmacology & Toxicology , Michigan State University, East Lansing, MI, [2]Biochemistry & Molecular Biology, Michigan State University, East Lansing, MI, [3]Institute for Environmental Toxicology, Michigan State University, East Lansing, MI, [4]National Food Safety & Toxicology Center, Michigan State University, East Lansing, MI and [5]Pediatrics & Human Development, Michigan State University, East Lansing, MI.

#1301 **MODULATION OF THIOL STATUS BY MANEB IN NEURONAL CELLS.** *D. W. Lee*, *D. A. Cory-Slechta* and *L. A. Opanashuk*. Department of Environmental Medicine, University of Rochester School of Medicine and Dentistry, Rochester, NY.

#1302 **DOPAMINERGIC TOXICITY OF THE HERBICIDE ATRAZINE IN *EX VIVO* STRIATAL SLICES.** *N. M. Filipov*, M. Stewart, *R. L. Carr* and S. S. Sistrunk. CEHS, Basic Sciences, Mississippi State University, Miss. State, MS.

#1303 **THE DITHIOCARBAMATE PROPINEB DEPOLYMERIZES ACTIN AND INCREASES ACETYLCHOLINE RELEASE IN DIFFERENTIATED PC12 CELLS.** M. Marinovich, M. Binaglia, *B. Viviani*, S. Bartesaghi and *C. L. Galli*. Department of Pharmacological Sciences, University of Milan, Milan, MI, Italy.

#1304 **CHLORPYRIFOS INHIBITS AXON OUTGROWTH IN PRIMARY CULTURES OF PERIPHERAL NEURONS THROUGH INHIBITION OF THE MORPHOGENIC ACTIVITY OF ACHE.** *A. S. Howard*[1], R. Bucelli[2], *D. A. Jett*[1] and *P. J. Lein*[1]. [1]Environmental Health Sciences, Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD and [2]Biology, Canisius College, Buffalo, NY.

#1304a **1,3-DINITROBENZENE INTERACTION WITH nNOS, PEROXYNITRITE FORMATION AND APPARENT INCREASE IN CEREBELLAR TYROSINE NITRATION.** T. J. Joshua J. and T. Miller. University of Kentucky, Lexington, KY.

#1304b **EFFECTS OF ORGANOPHOSPHORUS TOXICANTS ON G-PROTEIN COUPLED RECEPTOR KINASE 2-MEDIATED PHOSPHORYLATION OF M2 RECEPTORS.** C. N. Pope[1] and L. Zou[2]. [1]Oklahoma State University, Stillwater, OK and [2]Shenyang Medical College, Shenyang, Liaoning, CN.

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

POSTER SESSION: METALS: SIGNAL TRANSDUCTION AND OXIDATIVE STRESS

Chairperson(s): *Dori Germolec, NIEHS, Research Triangle Park, NC and James Woods, University of Washington, Seattle, WA.*

Displayed: *9:30 AM–12:30 PM*

Attended: *9:30 AM–11:00 AM*

#1305 **INCREASED UBIQUINATION OF THE KINASE TAK1 FOLLOWING As (III) EXPOSURE IN HEK293 CELLS.** *D. S. Kirkpatrick*[1,2], *R. R. Vaillancourt*[1,2], Z. E. Derbyshire[1,2] and *A. J. Gandolfi*[1,2]. [1]Superfund Basic Research Program, University of Arizona, Tucson, AZ and [2]Center for Toxicology, University of Arizona, Tucson, AZ.

#1306 **ARSENIC IMPACTS NRF2 TRANSCRIPTION FACTOR AND RELATED GENE EXPRESSION IN CULTURED KERATINOCYTE CELLS.** J. Pi[1], *Q. Wei*[1], M. P. Waalkes[1] and Y. Kumagai[2]. [1]Inorganic Carcinogenesis Section, LCC, NCI at NIEHS, Research Triangle Park, NC and [2]Department of Environmental Medicine, Inst. of Community Medicine, University of Tsukuba, Tsukuba, Japan.

#1307 **P53 SIGNALING PATHWAY INVOLVED IN ARSENITE-INDUCED HOS CELL TRANSFORMATION AND ITS PREVENTION BY CAFFEIC ACID PHENETHYL ESTER(CAPE).** J. Wu, J. Eckard, *T. G. Rossman*, C. Yang and K. Frenkel. Department of Environmental Medicine, NYU School of Medicine, New York, NY.

#1308 **EFFECT OF CADMIUM ON P53 AND MITOGEN-ACTIVATED PROTEIN KINASES IN A MURINE MACROPHAGE CELL LINE: RELATION TO APOPTOSIS.** J. Kim[1], S. Kim[1], *V. J. Johnson*[2] and *R. P. Sharma*[1]. [1]Physiology/Pharmacology, University of Georgia, Athens, GA and [2]Chronic Inflammatory & Immune Disease Team, NIOSH/CDC, Morgantown, WV.

#1309 **MITOGEN AND STRESS SIGNAL TRANSDUCTION PATHWAYS CONTRIBUTE TO SODIUM ARSENITE-INDUCED CYCLOOXYGENASE-2 EXPRESSION IN NORMAL HUMAN EPIDERMAL KERATINOCYTES.** *K. J. Trouba*, K. M. Geisenhoffer and *D. R. Germolec*. NIEHS, Research Triangle Park, NC.

#1310 **ACTIVATION OF ERK SIGNALING PATHWAY AND AP-1 IN UROTSA CELLS BY INORGANIC AND METHYLATED TRIVALENT ARSENICALS.** Z. Drobna, *I. Jaspers* and M. Styblo. Department of Pediatrics and The Center for Environmental Medicine and Lung Biology, University of North Carolina, Chapel Hill, NC.

#1311 **ARSENIC TRIOXIDE-INDUCED APOPTOSIS REQUIRES JNK ACTIVITY.** *K. K. Mann*, K. Davison and W. H. Miller. Lady Davis Institute for Medical Research, McGill University, Montreal, QC, Canada.

#1312 **INHIBITION OF NUCLEAR FACTOR κB (NF-κB) PROMOTES APOPTOSIS OF KIDNEY EPITHELIAL CELLS VIA MITOCHONDRIAL CYTOCHROME C RELEASE AND CASPASE 3 ACTIVATION.** *F. J. Dieguez-Acuna*, *J. S. Woods*, *M. E. Ellis*, *P. L. Simmonds* and *J. V. Kushleika*. Environmental Health, University of Washington, Seattle, WA.

#1313 **ARSENITE INDUCED ACTIN CYTOSKELETON AND VINCULIN DISRUPTIONS CAN BE BLOCKED BY PROTEIN SYNTHESIS INHIBITORS.** T. Suramana [1], J. M. Murray [2], N. Nuntharatanapong[1], K. Hu[2], T. Posayanonda [1], R. Sindhuphak [3], N. Dusitsin [3] and *P. Sinhaseni* [1,3]. [1]Department of Pharmacology, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Bangkok, Thailand, [2]Department of Cell and Developmental Biology, University of Pennsylvania School of Medicine, Philadelphia, PA and [3]The Institute of Health Research, Chulalongkorn University, Bangkok, Thailand.

#1314 **DNA DAMAGE INDUCED BY METHYLATED TRIVALENT ARSENICALS IS MEDIATED BY REACTIVE OXYGEN SPECIES.** S. Nesnow[1], B. C. Roop[1], G. Lambert[1], M. Kadiiska[2], *R. P. Mason*[2], W. R. Cullen[3] and M. J. Mass[1]. [1]Environmental Carcinogenesis Division, U.S. EPA, Research Triangle Park, NC, [2]Laboratory of Pharmacology and Chemistry, NIEHS, Research Triangle Park, NC and [3]Department of Chemistry, University of British Columbia, Vancouver, BC, Canada.

#1315 **DEFEROXAMINE SYNERGISTICALLY ENHANCING IRON-INDUCED STIMULATION OF ACTIVATOR PROTEIN-1 THROUGH INCREASED ERKS PHOSPHORYLATION.** J. Dai, C. Huang and *X. Huang*. Environmental Medicine, New York University School of Medicine, New York, NY.

#1316 **INVOLVEMENT OF OXIDATIVE STRESS IN THE METALLOTHIONEIN SYNTHESIS INDUCED BY MITOCHONDRIAL INHIBITORS.** *M. Sato*, N. Futakawa, M. Kondoh, M. Higashimoto and M. Takiguchi. Faculty of Pharmacy, Tokushima Bunri University, Tokushima, Japan.

#1317 **EFFECTS OF CADMIUM ON THIOREDOXIN AND THIOREDOXIN REDUCTASE IN HUMAN PULMONARY FIBROBLASTS.** R. Watkin and *B. Hart*. Biochemistry, University of Vermont, Burlington, VT.

#1318 **CALCITE IS A LIKELY ANTAGONISTIC FACTOR AGAINST BIOAVAILABLE IRON-CONTAINING COAL-INDUCED TOXICOLOGICAL EFFECTS.** Q. Zhang and *X. Huang*. Environmental Medicine , NYU School of Medicine, New York, NY.

#1319 **THE EFFECT OF TRACE ELEMENT MIXTURES ON THE INDUCTION OF δ-AMINOLEVULINIC ACID:A 90-DAY DRINKING WATER STUDY IN RATS.** M. H. Whittaker, M. Lipsky, G. Wang, X. Chen and *B. A. Fowler*. Toxicology Program, Department of Epidemiology & Preventive Medicine, The University of Maryland, Baltimore, MD.

#1320 **DISTRIBUTION OF IRON IN TISSUES AND CELLS OF RATS EXPOSED TO SILICA.** J. Stonehuerner and A. Ghio. U.S. EPA, Chapel Hill, NC. Sponsor: *M. Madden*.

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

POSTER SESSION: MALE REPRODUCTIVE SYSTEM

Chairperson(s): *Barry McIntyre, Schering Plough Research Institute, Lafayette, NJ and Katie Turner, CIIT, Research Triangle Park, NC.*

Displayed: *9:30 AM–12:30 PM*

Attended: *11:00 AM–12:30 PM*

#1321 **FEASIBILITY OF SCROTAL ULTRASOUND EVALUATION IN THE CYNOMOLGUS MONKEY.** G. F. Weinbauer[1] and A. Kamischke[2]. [1]Covance Laboratories GmbH, Muenster, Germany and [2]Institute of Reproductive Medicine of the University, Muenster, Germany. Sponsor: *P. Thomas*.

#1322 **ANALYSIS OF ANDROGEN- AND EGF-RECEPTOR EXPRESSION IN THE FETAL RAT PHALLUS AFTER EXPOSURE TO VINCLOZOLIN.** C. J. Wolf[1,2], *B. Abbott*[1], *G. A. LeBlanc*[2] and *L. E. Gray*[1]. [1]ORD, RTD, U.S. EPA, Research Triangle Park, NC and [2]Environmental and Molecular Toxicology, NCSU, Raleigh, NC.

#1323 **EFFECTS OF ENDOCRINE DISRUPTING CHEMICALS (EDCS) ON FETAL TESTES HORMONE PRODUCTION.** C. R. Lambright, *V. S. Wilson*, J. R. Furr, C. J. Wolf, N. Noriega and *L. E. Gray*. ORD/NHEERL/RTD, U.S. EPA, Research Triangle Park, NC.

#1324 **PROGRESSIVE LOSS OF SPERMATOGENESIS IN LYSOPHOSPHATIDIC ACID RECEPTORS KNOCKOUT MICE.** X. Ye[1], J. J. Contos[1], M. Skinner[2], S. Kawamura[1], C. McGiffert[3], S. Miyamoto[1], J. H. Brown[1] and J. Chun[1]. [1]Department of Pharmacology, University of California, San Diego, La Jolla, CA, [2]Center for Reproductive Biology, Washington State University, Pullman, WA and [3]Neuroscience Program, University of California, San Diego, La Jolla, CA. Sponsor: *D. Eastmond*.

#1325 **IDENTIFICATION OF PROTEINS INVOLVED IN TESTICULAR TOXICITY INDUCED BY HALOACID BY-PRODUCTS OF DRINKING WATER DISINFECTION.** E. Kaydos[1], M. Holmes[2], J. Suarez[3], N. Roberts[3] and *G. Klinefelter*[3]. [1]Department of Environmental and Molecular Toxicology, NC State University, Raleigh, NC, [2]Center for Biomedical Research, Population Council, NY, NY and [3]Reproductive Toxicology Division, U.S. EPA, ORD, NHEERL , Research Triangle Park, NC.

#1326 **DI(*n*-BUTYL) PHTHALATE INTERFERES WITH FETAL TESTICULAR STEROIDOGENESIS AT THE LEVEL OF CHOLESTEROL TRANSPORT AND CLEAVAGE.** C. Thompson, S. M. Ross and *K. W. Gaido*. CIIT Centers for Health Research, Research Triangle Park, NC.

#1327 **EFFECTS OF METHOXYCHLOR (M) OR ITS ACTIVE METABOLITE, 2, 2-BIS(*p*-HYDROXYPHENYL)-1, 1, 1-TRICHLOROETHANE (HPTE), ON TESTOSTERONE (T) FORMATION BY CULTURED NEONATAL (FETAL) LEYDIG CELLS (LC).** E. P. Murono and R. C. Derk. Pathology and Physiology Research Branch, CDC/NIOSH, Morgantown, WV. Sponsor: *V. Castranova*.

#1328 **EVIDENCE FOR THE PRESENCE AND ACTIVITY OF SOLUBLE EPOXIDE HYDROLASE IN THE RAT EPIDIDYMIS AND SPERM.** *S. B. DuTeaux*[1], J. W. Newman[2], C. Morisseau[2], E. A. Fairbairn[1], *B. D. Hammock*[2] and *M. G. Miller*[1]. [1]Environmental Toxicology, University of California, Davis, CA and [2]Entomology, University of California, Davis, CA.

#1329 **IDENTIFICATION OF TRICHLOROETHYLENE AND ITS METABOLITES IN HUMAN SEMINAL FLUID OF WORKERS EXPOSED TO TRICHLOROETHYLENE.** *P. Forkert*[1], *L. Lash*[2], *R. Tardif*[3], N. Tanphaichitr[4], C. VanderVoort[5] and M. Moussa[6]. [1]Anatomy & Cell Biology, Queen's University, Kingston, ON, Canada, [2]Department of Pharmacology, Wayne State University School of Medicine, Detroit, MI, [3]Department of Environmental and Occupational Health, University of Montreal, Montreal, QC, Canada, [4]Hormones/Growth/Development Research Group, Ottawa Health Research Institute, Ottawa, ON, Canada, [5]California National Primate Research Center, University of California, Davis, CA and [6]Department of Pathology, London Health Sciences Centre, London, ON, Canada.

#1330 **2, 3, 7, 8-TETRACHLORODIBENZO-*P*-DIOXIN (TCDD) INHIBITS PROSTATIC EPITHELIAL BUD FORMATION IN THE UROGENITAL SINUS (UGS) OF C57BL/6J MICE VIA MESENCHYMAL BUT NOT EPITHELIAL ARYL HYDROCARBON RECEPTOR (AHR).** *R. W. Moore*, K. Ko, N. T. Rasmussen and *R. E. Peterson*. School of Pharmacy, University of Wisconsin at Madison, Madison, WI.

#1331 **EFFECTS OF METHYL MERCURY AND CADMIUM ON STRESS SIGNALING AND UBIQUITINATION PATHWAYS IN A PRIMARY SERTOLI CELL-GONOCYTE CO-CULTURE SYSTEM.** *X. Yu*, *E. M. Faustman*, S. Hong and J. S. Sidhu. Environ Health, University of Washington, Seattle, WA.

#1332 **RECOMMENDED APPROACHES FOR THE EVALUATION OF TESTICULAR AND EPIDIDYMAL TOXICITY.** *L. Lanning*[1], D. M. Creasy[2], *R. E. Chapin*[3], *P. C. Mann*[4], *N. J. Barlow*[5], K. S. Regan[6] and *D. G. Goodman*[7]. [1]Otsuka Maryland Research Institute, Rockville, MD, [2]Huntingdon Life Sciences, Huntingdon, United Kingdom, [3]Pfizer Inc., Groton, CT, [4]Experimental Pathology Laboratory NorthEast, Galena, MD, [5]CIIT Centers for Health Research, Research Triangle Park, NC, [6]Regan Path/Tox Services, Ashland, OH and [7]Covance Laboratories Inc., Vienna, VA.

#1333 **MALE RATS EXPOSED TO LORATADINE FROM GESTATION DAY 12 TO POSTNATAL DAY 4 DO NOT EXHIBIT ALTERATIONS IN ANDROGEN-MEDIATED REPRODUCTIVE DEVELOPMENT.** *B. McIntyre*, *P. Vancutsem*, *K. Treinen* and *R. Morrissey*. Schering-Plough Research Institute, Lafayette, NJ.

#1334 **DECREASED ANOGENITAL DISTANCE (AGD) AND UNDESCENDED TESTES IN FETUSES OF RATS GIVEN MONOBENZYL PHTHALATE (MBEP) DURING PREGNANCY.** *M. Ema* and E. Miyawaki. Division of Risk Assessment, National Institute of Health Sciences, Tokyo, Tokyo, Japan.

#1335 **MOLECULAR CHARACTERIZATION OF THE DEVELOPING RAT WOLFFIAN DUCTS FOLLOWING *IN UTERO* EXPOSURE TO DI(*n*-BUTYL) PHTHALATE.** *P. M. Foster*[1], *K. J. Turner*[2], M. Sar[2], *N. J. Barlow*[2], *K. W. Gaido*[2] and *C. J. Bowman*[2]. [1]NIEHS, Research Triangle Park, NC and [2]CIIT, Centers for Health Research, Research Triangle Park, NC.

#1336 **EFFECTS OF *IN UTERO* EXPOSURE TO FINASTERIDE ON ANDROGEN-DEPENDENT REPRODUCTIVE DEVELOPMENT IN THE MALE RAT.** *C. J. Bowman*[1], *N. J. Barlow*[1], *K. J. Turner*[1], D. G. Wallace[1] and *P. M. Foster*[2]. [1]CIIT, Centers for Health Research, Research Triangle Park, NC and [2]NIEHS, Research Triangle Park, NC.

#1337 **EFFECTS OF *IN UTERO* EXPOSURE T0 LINURON ON RAT WOLFFIAN DUCT DEVELOPMENT.** *K. J. Turner*[1], *B. S. McIntyre*[1], S. L. Phillips[1], *N. J. Barlow*[1], *C. J. Bowman*[1] and *P. M. Foster*[2]. [1]CIIT Centers for Health Research, Research Triangle Park, NC and [2]NIEHS, Research Triangle Park, NC.

#1338 **EFFECTS FROM GESTATIONAL EXPOSURE TO A MIXTURE OF ATRAZINE AND ITS BIOLOGICAL METABOLITES IN MALE LONG-EVANS RATS.** R. Enoch[1], S. Greiner[2], G. Youngblood[2], C. Davis[2] and *S. E. Fenton*[2]. [1]Biology, NCCU, Durham, NC and [2]RTD, NHEERL, ORD, U.S. EPA, Research Triangle Park, NC.

#1339 **UVA EXPOSURE INCREASES XANTHOTOXIN-INDUCED GAMETE DNA DAMAGE IN MALE RATS.** *M. M. Diawara*, J. Carsella and D. Caprioglio. Biology, University of Southern Colorado, Pueblo, CO.

#1340 **FETAL TESTICULAR GENE EXPRESSION FOLLOWING *IN UTERO* EXPOSURE TO DI(n-BUTYL) PHTHALATE: ALTERATION OF KEY ANDROGEN-RELATED GENES.** *N. J. Barlow*[1], S. L. Phillips[1], D. G. Wallace[1], M. Sar[1], *K. W. Gaido*[1] and *P. M. Foster*[2]. [1]CIIT Centers for Health Research, Research Triangle Park, NC and [2]NIEHS, Research Triangle Park, NC.

Wednesday Afternoon

Wednesday Afternoon, March 12
12:00 Noon to 1:00 PM
Ballroom C

ISSUES SESSION: TOXICOLOGY: ETHICAL, LEGAL, AND SOCIAL ISSUES

Chairperson(s): *Steven G. Gilbert, Institute of Neurotoxicology and Neurological Disorders, Seattle, WA and Elaine Faustman, University of Washington, Seattle, WA.*

Endorsed by:
Neurotoxicology Specialty Section
Reproductive and Developmental Specialty Section
Risk Assessment Specialty Section

#1341 12:00 **TOXICOLOGY: ETHICAL, LEGAL, AND SOCIAL ISSUES.** *S. G. Gilbert*[1], W. Burke[3], *E. Faustman*[2], J. R. Botkin[4] and P. Gilman[5]. [1]INND, Seattle, WA, [2]Department of Environmental Health, University of Washington, Seattle, WA, [3]Department of Medical History & Ethics, University of Washington, Seattle, WA, [4]Department of Pediatrics and Medical Ethics, University of Utah, Salt Lake City, UT and [5]U.S. EPA, Washington, DC.

Wednesday Afternoon, March 12
12:00 Noon to 1:00 PM
250 A

A CONVERSATION WITH THE ASSISTANT ADMINISTRATOR OF THE AGENCY FOR TOXIC SUBSTANCE AND DISEASE REGISTRY (ATSDR) – DR. HENRY FALK

Wednesday Afternoon, March 12
12:00 Noon to 1:00 PM
Ballroom A

A CONVERSATION WITH THE DIRECTOR OF THE NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES (NIEHS) – DR. KENNETH OLDEN

Wednesday Afternoon, March 12
1:30 PM to 4:30 PM
Ballroom F

INNOVATION IN APPLIED TOXICOLOGY: GENOMIC AND PROTEOMIC ANALYSIS OF SURROGATE TISSUES FOR ASSESSING TOXIC EXPOSURES AND DISEASE STATES

Chairperson(s): *David J. Dix, U.S. EPA, Research Triangle Park, NC and John C. Rockett, U.S. EPA, Research Triangle Park, NC.*

Endorsements:
Mechanisms Specialty Section
Molecular Biology Specialty Section
Reproductive and Developmental Specialty Section

Genomics and proteomics have made it possible to define molecular physiology in exquisite detail, when tissues are accessible for sampling. However, many tissues are not accessible for human diagnostic evaluations or experimental studies, creating the need for surrogates that afford insight into exposures and effects in such tissues. Surrogate tissue analysis (STA) incorporating contemporary genomic and proteomic technologies may be useful in determining toxicant exposure and effect, or disease state, in target tissues at the pre- or early clinical stage. In this symposium, speakers will discuss various applications of STA, including the use of peripheral blood lymphocytes (PBLs) as a source of biomarkers for radiation exposure; the use of PBLs and hair follicles to monitor the impact of toxicants on organs such as liver and testis; the use of mRNA in sperm to determine genetic and environmental effects on male fertility; and the use of serum protein profiles to monitor for ovarian cancer. The symposium will conclude with a discussion of the challenges of validating surrogate tissue fidelity and sensitivity. This is an abstract of a proposed symposium and does not necessarily reflect EPA policy.

#1342 1:30 **GENOMIC AND PROTEOMIC ANALYSIS OF SURROGATE TISSUES FOR ASSESSING TOXIC EXPOSURES AND DISEASE STATES.** *D. J. Dix* and *J. Rockett*. Reproductive Toxicology, NHEERL, ORD, U.S. EPA, Research Triangle Park, NC.

#1343 1:45 **GENE EXPRESSION PROFILING OF ACCESSIBLE SURROGATE TISSUES TO MONITOR MOLECULAR CHANGES IN INACCESSIBLE TARGET TISSUES FOLLOWING TOXICANT EXPOSURE.** *J. C. Rockett*, C. Blystone, A. Goetz, R. Murrell and *D. J. Dix*. Reproductive Toxicology Division, U.S. EPA, Research Triangle Park, NC.

#1344 2:15 **THE MALE GAMETE AS A PATERNAL MARKER OF GENETIC INSULT.** S. A. Krawetz[1,2,3], G. Ostermeier[1], *K. E. Thompson*[4], *D. J. Dix*[4], D. Miller[5], R. Goodrich[1,2,3] and M. P. Diamond[1,3]. [1]Department of Ob/Gyn, Wayne State University, Detroit, MI, [2]Molecular Medicine and Genetics, Institute of Science and Computing, Wayne State University, Detroit, MI, [3]NICHD Reproductive Medicine Network, Wayne State University, Detroit, MI, [4]Reproductive Toxicology Division, NHEERL, ORD, U.S. EPA, Research Triangle Park, NC and [5]Department of Ob/Gyn, University of Leeds, Leeds, Yorkshire, United Kingdom.

#1345 2:45 **GENE EXPRESSION IN RESPONSE TO LOW DOSE IONIZING RADIATION: A FUNCTIONAL GENOMICS APPROACH.** A. J. Fornace, S. A. Amundson, C. Koch-Paiz and R. Lee. Center for Cancer Research, National Cancer Institute, Bethesda, MD. Sponsor: *J. Rockett*.

#1346 3:15 **SERUM PROTEOMIC PATTERN DIAGNOSTICS: USE OF ARTIFICIAL INTELLIGENCE BIOINFORMATICS TO DISCOVER SURROGATE MARKERS FOR EARLY DISEASE.** E. Petricoin. Center for Biologics Evaluation and Research, FDA, Bethesda, MD. Sponsor: *J. Rockett*.

#???? 4:00 **CLASS PREDICTION OF SOLID TUMOR STATUS *IN VIVO* USING EXPRESSION PROFILES IN THE SURROGATE TISSUE OF PERIPHERAL BLOOD:** M. E. Burczynski, Wyeth Research, Andover, MA.

Wednesday Afternoon, March 12
1:30 PM to 4:30 PM
Ballroom C

SYMPOSIUM SESSION: FUNDAMENTALS OF PROTEIN ALLERGENICITY: WHY ARE SOME PROTEINS ALLERGENIC?

Chairperson(s): *Ian Kimber, Syngenta Central Toxicology Laboratory, Macclesfield, Cheshire, United Kingdom and Katherine Sarlo, Procter & Gamble Company, Cincinnati, OH.*

Endorsed by:
Immunotoxicology Specialty Section

For a variety of reasons the toxicology of protein allergenicity has assumed greater significance. There is an increasing prevalence of atopic diseases in westernized populations, the use of protein and peptides in therapeutics and in consumer products is growing, and evaluation of potential allergenicity is a major issue in the safety assessment of novel foods, including foods derived from genetically modified crops. The questions that must be addressed are whether proteins and peptides have the inherent potential to cause sensitization and whether under the likely conditions of exposure this intrinsic hazard will translate into a risk of human allergic disease. With respect to the first of these questions a pivotal consideration is definition of the characteristics that confer on proteins the ability to cause allergic sensitization, or alternatively, what distinguishes protein allergens from other foreign proteins that despite being potentially immunogenic fail to induce sensitization. Among the features that are believed to influence sensitizing properties are: size, stability, glycosylation status and the way in which the protein is recognized, internalized and processed by the immune system. The purpose here is to examine the contribution of these variables to inherent sensitizing potential as a basis for future safety assessment strategies. With respect to the second question, one must consider how the allergenic potential and potency of the protein in combination with exposure translates into a risk for developing allergy.

#1347 1:30 **FUNDAMENTALS OF PROTEIN ALLERGENICITY: WHY ARE SOME PROTEINS ALLERGENIC?** *K. Sarlo*[1] and *I. Kimber*[2]. [1]Procter & Gamble Co., Cincinnati, OH and [2]Syngenta Central Toxicology Laboratory, Macclesfield, United Kingdom.

#1348 1:40 **IMMUNOBIOLOGY OF SENSITIZATION BY PROTEIN ALLERGENS.** *I. Kimber* and *R. J. Dearman*. Syngenta Central Toxicology Laboratory, Macclesfield, CHESHIRE, United Kingdom.

#1349 2:10 **STRUCTURAL BIOLOGY OF PROTEIN ALLERGENS.** R. C. Aalberse. Immunopathology, Sanquin Research at CLB, Amsterdam, Noord Holland, Netherlands. Sponsor: *I. Kimber*.

#1350 2:40 **FOOLING MOTHER NATURE: CAN PROTEIN ALLERGENS BE MADE HYPOALLERGENIC?** F. A. Harding. Immunology, Genencor International, Palo Alto, CA. Sponsor: *K. Sarlo*.

#1351 3:10 **PROTEIN ALLERGENICITY: CHALLENGES FOR THE TOXICOLOGIST.** *K. Sarlo*. Procter & Gamble Co., Cincinnati, OH.

Wednesday Afternoon, March 12
1:30 PM to 4:30 PM
Ballroom B

WORKSHOP SESSION: DOSE-DEPENDENT TRANSITIONS IN TOXIC MECHANISMS

Chairperson(s): *William Slikker, Jr., National Center for Toxicological Research U.S. FDA, Jefferson, AR and Kendall B. Wallace, University of Minnesota School of Medicine, Duluth, MN.*

Endorsed by:
Mechanisms Specialty Section
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

As experience with dose-response and mechanism expands, it is evident that multiple mechanisms may exist for any given agent as the full dose-response curve is explored. It is highly likely that critical, limiting steps in any given mechanistic pathway may become overwhelmed with increasing exposures, signaling the emergence of new modalities of toxic tissue injury at these higher doses. Therefore, dose-dependent transitions in the principal mechanism of toxicity may occur and could have significant impact on the interpretation of data sets for risk assessment. The purpose of this Workshop is to serve as a reference around the principle that each saturable or inducible process that occurs as part of the overall chemical disposition and biological response represents a potential point of departure from linearity in the dose-response relationship. Major

objectives are to document and establish methods for identifying that dose-dependent transitions in mechanism can occur and to discuss potential impacts of this phenomenon on the risk assessment process. Individual case studies that exemplify this phenomenon including butadiene, vinyl chloride, vinylidene chloride, vinyl acetate, formaldehyde and progesterone will be presented. The impact of these and other examples on risk assessment procedures will be presented. This timely topic should be of interest to basic researchers, modelers and risk assessors.

#1352 1:30 **DOSE-DEPENDENT TRANSITIONS IN TOXIC MECHANISMS.** *W. Slikker*[1] and *K. B. Wallace*[2]. [1]Division of Neurotoxicology, NCTR/U.S. FDA, Jefferson, AR and [2]Department of Biochem & Mol Bio, University of Minnesota, Duluth, MN.

#1353 1:40 **DOSE, TISSUE AND SPECIES TRANSITIONS IN BIOMARKERS.** *J. A. Swenberg*. Environmental Sciences and Engineering, University of North Carolina, Chapel Hill, NC.

#1354 2:10 **CASE STUDIES OF FORMALDEHYDE AND HYDROXYFLUTAMIDE: EVIDENCE FOR DOSE-DEPENDENT TRANSITIONS IN MECHANISMS DUE TO ALTERED HOMEOSTASIS AND RECEPTOR MEDIATED INTERACTIONS.** *R. Conolly*. CIIT Centers for Health Research, Research Triangle Park, NC.

#1355 2:40 **DOSE-DEPENDENT TRANSITIONS IN VINYL ACETATE AND VINYLIDENE CHLORIDE TOXICITY: TWO CASE EXAMPLES SUGGESTIVE OF IMPACTS ON BIOLOGICAL RESERVE CAPACITY.** *M. S. Bogdanffy* and *R. A. Kemper*. Haskell Laboratory, DuPont, Newark, DE.

#1356 3:10 **DOSE-DEPENDENT TRANSITIONS IN TOXIC MECHANISMS: IMPLICATIONS FOR RISK ASSESSMENT.** D. W. Gaylor. Gaylor and Associates, Little Rock, AR. Sponsor: *W. Slikker*.

#1357 3:40 **STRATEGIES TO IDENTIFY SATURABLE AND/OR INDUCIBLE KINETIC AND DYNAMIC STAGES OF DOSE-DEPENDENT TRANSITIONS IN TOXIC MECHANISM.** *K. B. Wallace*[1] and *W. Slikker*[2]. [1]Biochemistry & Molecular Biology, University of Minnesota, Duluth, MN and [2]Division of Neurotoxicology, NCTR/FDA, Jefferson, AR.

Wednesday Afternoon, March 12
1:30 PM to 4:30 PM
Room 251 A

WORKSHOP SESSION: QUESTIONS SURROUNDING DEPLETED URANIUM TOXICITY: ANSWERS FROM THE CLINIC AND THE LABORATORY

Chairperson(s): *Katherine S. Squibb, University of Maryland School of Medicine, Baltimore, MD and David Jacobson-Kram, BioReliance, Rockville, MD.*

Endorsed by:
Metals Specialty Section

The use of depleted uranium (DU) by U.S. military forces in the Gulf War created a unique exposure scenario by which soldiers were exposed to a metal well known for its chemical toxicity in workers in the nuclear industry. However, exposure during the Gulf War occurred either for a short period of time *via* inhalation of aerosolized uranium oxide, or as a chronic exposure in injured soldiers left with embedded uranium fragments. Questions regarding the long-term health effects of these two types of exposures have fueled considerable debate, raising questions regarding continued use of DU weapons by the military and liability of the government for health problems in the Gulf War veteran population. DU, used in munitions because of its high density and low cost, is a by-product of the uranium enrichment process. DU has a lower U^{235} content than natural uranium, with a U^{235}/U^{238} ratio of 0.245 versus 0.721 for natural uranium. Research to address questions of exposure and toxicity has moved forward on a number of fronts, including clinical surveillance of vets with DU shrapnel, ICP-MS exposure assessment techniques for differentiating between DU *versus* natural Uranium excretion, *in vivo* animal toxicity and carcinogenicity studies using embedded DU metal, and genotoxicity studies of the chemical *versus* radiological hazards associated with DU. Results of these studies provide mechanistic and clinical toxicity information needed for assessing risk associated with exposure to DU during the Gulf War and emphasize the importance of the basic toxicological principles of dose, duration and route of exposure. Mechanistic studies begin to provide an understanding of the chemical *versus* radiological toxicity of this unique metal.

#1358 1:30 **QUESTIONS SURROUNDING DEPLETED URANIUM TOXICITY: ANSWERS FROM THE CLINIC AND THE LABORATORY.** *K. S. Squibb*[1] and *D. Jacobson-Kram*[2]. [1]Program in Toxicology, University of Maryland School of Medicine, Baltimore, MD and [2]BioReliance, Rockville, MD.

#1359 1:35 **HEALTH EFFECTS OF DEPLETED URANIUM ON EXPOSED GULF WAR VETERANS.** *M. A. McDiarmid*. Department of Medicine, University of Maryland School of Medicine, Baltimore, MD.

#1360 2:05 **DETECTION OF DEPLETED URANIUM (DU) IN URINES OF GULF WAR VETERANS.** R. H. Gwiazda[1], *K. Squibb*[2], *M. McDiarmid*[2] and *D. Smith*[1]. [1]Environmental Toxicology, University of California, Davis, CA and [2]School of Medicine, University of Maryland, Baltimore, MD.

#1361 2:35 ***HPRT* MUTATIONS IN T-CELLS IN GULF WAR VETERANS EXPOSED TO DEPLETED URANIUM (DU).** R. J. Albertini[1], *D. Jacobson-Kram*[2], L. M. Sullivan[1], P. Gucer [3] and *M. A. McDiarmid*[3]. [1]University of Vermont, Burlington, VT, [2]Bioreliance, Rockville, MD and [3]University of Maryland, Baltimore, MD.

#1362 3:05 **DEPLETED URANIUM METAL IMPLANTS ARE CARCINOGENIC IN RATS.** *F. F. Hahn*[1] and R. A. Guilmette[2]. [1]Lovelace Respiratory Research Institute, Albuquerque, NM and [2]Los Alamos National Laboratory, Los Alamos, NM.

#1363 3:35 **RADIATION-INDUCED EFFECTS OF DEPLETED URANIUM *IN VITRO*: THE INVOLVEMENT OF BYSTANDERS AND INSTABILITY.** A. Miller[1], J. Kalinich[1], S. Hodge[1], B. Le Blanc[1], K. Brooks[1], M. Stewart[1], S. Marino[2], T. Hei[2] and D. McClain[1]. [1]Applied Cellular Radiobiology, Armed Forces Radiobiology Research Institute, Bethesda, MD and [2]Center for Radiological Research, Columbia University, New York, NY. Sponsor: *K. Squibb*.

Wednesday Afternoon, March 12
1:30 PM to 4:30 PM
Room 250 D

WORKSHOP SESSION: VANILLOID RECEPTORS: MEDIATORS OF RESPIRATORY INJURY

Chairperson(s): *Garold S. Yost, University of Utah, Salt Lake City, UT and John B. Morris, University of Connecticut, Storrs, CT.*

Endorsed by:
Inhalation Specialty Section
Mechanisms Specialty Section
Neurotoxicology Specialty Section

Vanilloid receptors (members of the superfamily of TRP non-voltage-gated cation channels) are the recently identified cation channels that are critical for sensory neuronal nociception to painful and tissue-damaging stimuli, including physico-chemical (heat, cold, hypoosmolarity, and surface charge) and chemical (acids and capsaicinoids) insult. Cloning, expression, and characterization of a variety (at least six members) of related ion channel proteins, that are responsive to noxious environmental stimulants, have provided a cornucopia of molecular targets that mediate physiological responses. These receptors are highly expressed in dorsal root ganglia, and significant expression of several of the TRP proteins has also been demonstrated in respiratory tissues of animals and man. Activation of these respiratory receptors by a surprisingly diverse array of irritants, including particulate matter from ambient air, has been associated with toxic sequelae in the respiratory tract. However, the mechanisms responsible for receptor regulation, activation, and responsiveness in respiratory epithelial and neuronal cells have not been adequately elucidated. This workshop will present a highly focused, mechanistic evaluation of the chemical, biochemical, cellular, and toxicological factors that regulate vanilloid receptor-mediated toxicities in the respiratory tract. Topics of the workshop will include structure/function characterization of TRPV receptors, human lung epithelial cell sensitization to capsaicinoids by over-expression of the recombinant human vanilloid receptor TRPV1, stimulation of respiratory sensory nerve reflex responses to inspired acidic aerosols in rodents, and TRPV1 receptor activation in human lung epithelial cells by particulate matter-mediated cytokine production that is correlated to surface charge. Mechanistic research into the activation and regulation of the vanilloid receptors may provide precise molecular descriptors of respiratory injury that can be used to achieve exciting new therapeutic modalities.

#1364 1:30 **VANILLOID RECEPTORS: MEDIATORS OF RESPIRATORY INJURY.** *G. S. Yost*[1] and *G. S. Yost*[1]*J. B. Morris*[2]*J. B. Morris*[2]. [1]Pharmacology and Toxicology, University of Utah, Salt Lake City, UT and [2]Toxicology Program, University of Connecticut, Storrs, CT.

#1365 1:40 **TRPV ION CHANNEL PROTEINS: CANDIDATE MEDIATORS OF DIVERSE VISCERAL SENSORY PROCESSES.** M. J. Caterina. Biol. Chem. and Neurosc., Johns Hopkins University School of Medicine, Baltimore, MD. Sponsor: *G. Yost*.

#1366 2:15 **ENHANCED CYTOTOXICITY OF CAPSAICINOIDS TO TRPV1-OVEREXPRESSING HUMAN LUNG CELLS.** *G. S. Yost* and *C. A. Reilly*. Pharmacology and Toxicology, University of Utah, Salt Lake City, UT.

#1367 2:50 **IMMEDIATE RESPIRATORY TRACT RESPONSES TO INSPIRED IRRITANTS: SENSORY NERVES AND VANILLOID RECEPTORS.** *J. B. Morris* and P. T. Symanowicz. Toxicology Program and Pulmonary Research Consortium, University of Connecticut, Storrs, CT.

#1368 3:25 **THE SURFACE CHARGE OF PARTICULATE MATTER (PM) ACTIVATES VANILLOID (VR1) RECEPTORS.** *B. Veronesi*[1], *B. Veronesi*[1], W. Bernt[2] and W. Bernt[2]G. Wei[4]G. Wei[4]M. Oortgiesen[3]M. Oortgiesen[3]. [1]U.S. EPA, Research Triangle Park, NC, [2]PCL, Novato, CA, [3]NRC, Washington, DC and [4]Cato Research Ltd, Research Triangle Park, NC.

Wednesday Afternoon, March 12
1:30 PM to 4:30 PM
Ballroom I

PLATFORM SESSION: BURROUGHS WELLCOME FUND NEW INVESTIGATOR SESSION

Chairperson(s): *Barbara Hales, McGill University, Montreal, Quebec, CANADA and Stephen Safe, Texas A&M University, College Station, TX.*

#1369 1:30 **A DNA REPAIR ROLE FOR RECQ AND TOPOISOMERASES III AND IV IN *E. COLI.*** E. L. Zechiedrich[1,2], C. R. Lopez[1,2], S. Yang[1], R. W. Deibler[1,2], S. A. Ray[2], J. Pennington[2,3], R. J. DiGate[4], P. J. Hastings[3] and S. M. Rosenberg[1,2,3]. [1]Molecular Virology & Microbiology, Baylor College of Medicine, Houston, TX, [2]Interdepartmental Program in Cell & Molecular Biology, Baylor College of Medicine, Houston, TX, [3]Molecular & Human Genetics, Baylor College of Medicine, Houston, TX and [4]Pharmaceutical Sciences, University of Maryland School of Pharmacy, Baltimore, MD. Sponsor: *J. Kramarik*.

#1370 2:05 **MECHANISMS OF DNA DAMAGE-INDUCED MUTAGENESIS.** *Z. Wang*, D. Guo, Y. Zhang, X. Wu and Z. Xie. University of Kentucky, Lexington, KY.

#1371 2:40 **A REQUIREMENT FOR REPLICATION IN ACTIVATION OF THE ATR-DEPENDENT DNA DAMAGE CHECKPOINT.** K. A. Cimprich, P. J. Lupardus, T. Byun, M. Yee and M. Hekmat-Nejad. Molecular Pharmacology, Stanford University, Stanford, CA. Sponsor: *J. Kramarik*.

#1372 3:15 **I) MECHANISMS OF NITRIC OXIDE-INDUCED HOMOLOGOUS RECOMBINATION IN *E. COLI* AND II) FLUORESCENCE DETECTION OF HOMOLOGOUS RECOMBINATION IN MICE.** *B. P. Engelward*[1], C. A. Hendricks[1], E. J. Spek[1], V. Jonnalagadda[1], K. H. Almeida[1] and *M. G. Marinus*[2]. [1]Biological Engineering, MIT, Cambridge, MA and [2]Department of Pharmacology and Molecular Toxicology, UMASS Medical School, Worcester, MA.

#1373 3:50 **MUTAGENESIS AND DNA STRAND SCISSION AT 2-DEOXYRIBONOLACTONE OXIDATIVE DNA DAMAGE LESIONS.** T. L. Sheppard and Y. Zheng. Department of Chemistry, Northwestern University, Evanston, IL. Sponsor: *J. Kramarik*.

Wednesday Afternoon, March 12
1:30 PM to 4:30 PM
Room 250 A

PLATFORM SESSION: ENDOCRINE SYSTEM I

Chairperson(s): *Martin Vandenberg, University of Utrecht, Utrecht, The Netherlands and Leon Gray, Jr., U.S. EPA, Research Triangle Park, NC.*

#1374 1:30 **MODULATION OF AROMATASE ACTIVITY IN PRIMARY CULTURE OF HUMAN MAMMARY FIBROBLASTS.** M. Heneweer[1], *M. van den Berg*[1], P. C. de Jong[3], A. Bergman[2] and J. T. Sanderson[1]. [1]Institute for Risk Assessment Sciences (IRAS), Utrecht University, Utrecht, Netherlands, [2]Department of Internal Medicine, St. Antonius Hospital, Nieuwegein, Netherlands and [3]Department of Environmental Chemistry, Stockholm University, Stockholm, Sweden.

#1375 1:50 **PRENATAL EXPOSURE TO THE FUNGICIDE PROCHLORAZ ALTERS THE ONSET OF PARTURITION IN THE DAM AND SEXUAL DIFFERENTIATION IN MALE RAT OFFSPRING.** N. Noriega, *E. Gray*, *J. Ostby*, *C. Lambright* and *V. Wilson*. RTD, NHEERL, ORD, U.S. EPA, Research Triangle Park, NC.

#1376 2:10 **TRANSGENERATIONAL EFFECTS OF DI(2-ETHYLHEXYL) PHTHALATE IN THE MALE RAT.** *L. E. Gray*[1], *N. J. Barlow*[2], J. R. Furr[1], J. Brock[3], M. J. Silva[3], D. B. Barr[3] and J. S. Ostby[1]. [1]ORD, NHEERL, RTD, EB, U.S. EPA, Research Triangle Park, NC, [2]CIIT, Research Triangle Park, NC and [3]CDC, Atlanta, GA.

#1377 2:30 **ANDROGEN RECEPTOR MRNA IS UPREGULATED BY ESTROGEN IN MOUSE PROSTATE PRIMARY CELL CULTURE.** C. A. Richter[1], R. L. Ruhlen[1], W. V. Welshons[2] and F. S. vom Saal[1]. [1]Biological Sciences, University of Missouri, Columbia, MO and [2]Veterinary Biomedical Sciences , University of Missouri, Columbia, MO. Sponsor: *M. Denison*.

#1378 2:50 **TRUNCATED ESTROGEN RECEPTOR PRODUCT (TERP-1) EXPRESSION IN THE RAT VAGINA.** G. Schoenfelder, K. Friedrich, B. Flick, M. Paul and I. Chahoud. Department of Toxicology, Universitaetsklinikum Benjamin Franklin, Berlin, Berlin, Germany. Sponsor: *R. Stahlmann*.

#1379 3:10 **PHYTOCHEMICALS CAN ALTER CATECHOL-O-METHYLTRANSFERASE (COMT) ACTIVITY IN CYTOSOLIC FRACTIONS FROM HUMAN MAMMARY TISSUES.** M. B. van Duursen[1], M. Kraaij[1], J. T. Sanderson[1], P. C. de Jong[2] and *M. van den Berg*[1]. [1]Institute for Risk Assessment Sciences (IRAS), Utrecht University, Utrecht, Netherlands and [2]Department of Internal Medicine, St. Antonius Hospital, Nieuwegein, Netherlands.

#1380 3:30 **REGULATION OF METHOXYCHLOR-INDUCED OXIDANT PRODUCTION BY CHOLINERGIC SIGNALING.** *D. E. Heck* and F. Rezai. Pharmacology & Toxicology, Rutgers University, Piscataway, NJ.

#1381 3:50 **STEROID AND THYROID HORMONAL RECEPTOR GENE TRANSCRIPTION ASSAY AND ONE-GENERATION REPRODUCTION STUDY OF BUTYLATED HYDROXYANISOLE.** *S. Jeong*, B. Kim, S. Kim, J. Cho and O. Kim. Toxicology Division, National Veterinary Research & Quarantine Service, Anyang, KyungGi, South Korea.

#1382 4:10 **MOLECULAR CHARACTERIZATION OF THYROID TOXICITY: ANCHORING GLOBAL GENE EXPRESSION PROFILES WITH BIOCHEMICAL AND PATHOLOGICAL ENDPOINTS.** *D. Delker*, N. Everds, *J. O'Connor*, S. Frame and *C. M. Glatt*. Haskell Laboratory, DuPont, Newark, DE.

Wednesday Afternoon, March 12
1:30 PM to 4:30 PM
Room 251 D

PLATFORM SESSION: GENE-ENVIRONMENT INTERACTIONS IN CARDIOVASCULAR DISEASE

Chairperson(s): *Mary Walker, University of New Mexico, Albuquerque, NM and Jordan Holtzman, University of Minnesota, Minneapolis, MN.*

#1383 1:30 **OCT-1: A KEY PLAYER IN VASCULAR BIOLOGY - IMPLICATIONS FOR CARDIOVASCULAR TOXICITY.** T. Thum and J. Borlak. Drug Research, Fraunhofer Institute, Hannover, Lower Saxony, Germany. Sponsor: *H. Muhle*.

#1384 1:50 **ARTERIAL CARCINOGEN METABOLISM COULD INITIATE THE ACCELERATED ATHEROSCLEROSIS SEEN IN SMOKERS.** *J. L. Holtzman*[1,3], L. M. Dunning[1,3], W. Carter[2] and R. Edwards[4]. [1]Pharmacology, University of Minnesota, Minneapolis, MN, [2]Imperial College, London, United Kingdom, [3]Therapeutics Section, VA Medical Center, Minneapolis, MN and [4]Plastic Surgeons, Edina, MN.

#1385 2:10 **REGULATION OF ACTIVATOR PROTEIN-1 (AP-1) BY 8-ISO-PGE2 IN A THROMBOXANE A2 RECEPTOR-DEPENDENT AND -INDEPENDENT MANNER.** *T. Weber*. Molecular Biosciences, Battelle, Richland, WA.

#1386 2:30 **HYPERTENSION IN ARYL HYDROCARBON RECEPTOR NULL MICE CORRELATES WITH PLASMA ENDOTHELIN-1, BUT NOT ANGIOTENSIN II.** A. K. Lund and *M. K. Walker*. College of Pharmacy Toxicology Program, University of New Mexico, Albuquerque, NM.

#1387 2:50 **EMBRYONIC CARDIAC HYPERTROPHY AND NEONATAL MACROSOMIA IS DEPENDENT ON AHR MATERNAL GENOTYPE.** *E. A. Thackaberry*[1], M. Goens[2], D. Gabaldon[1], S. M. Smith[3] and *M. K. Walker*[1]. [1]College of Pharmacy Toxicology Program, University of New Mexico, Albuquerque, NM, [2]Department of Pediatrics, University of New Mexico, Albuquerque, NM and [3]Molecular and Environmental Toxicology Center, University of Wisconsin, Madison, WI.

#1388 3:10 **QUANTITATIVE GENE EXPRESSION CHANGES IN PERIPHERAL BLOOD LEUKOCYTES (PBL) OF RATS WITH FENOLDOPAM–INDUCED VASCULAR INJURY.** F. M. Goodsaid[1], R. Smith[1], G. Mandakas[1], *I. Y. Rosenblum*[1], J. Zhang[2], R. Honchel[2], A. Knapton[2], B. A. Rosenzweig[2] and *F. D. Sistare*[2]. [1]Genetic and Molecular Toxicology, Schering-Plough Research Institute, Lafayette, NJ and [2]Center for Drug Evaluation and Research, U.S. FDA, Laurel, MD.

#1389 3:30 **IDENTIFICATION OF GENES LINKED TO DOXORUBICIN CARDIOTOXICITY AND TO THE CARDIOPROTECTANT EFFECT OF DEXRAZOXANE IN RATS.** K. Thompson[1], B. A. Rosenzweig[1], P. Pine[1], J. Zhang[1], *E. H. Herman*[1], A. D. Knapton[1], R. Honchel[1], B. Shimada[2], S. Kassam[2], D. B. Finkelstein[2], J. Lescallet[2], J. D. Retief[2] and *F. D. Sistare*[1]. [1]DAPR, CDER, U.S. FDA, Laurel, MD and [2]Affymetrix Inc., Santa Clara, CA.

#1390 3:50 **THE ROLE OF GLUTATHIONE S-TRANSFERASE A4-4 IN ENDOTHELIAL CELL DEFENSE AGAINST CYTOTOXICITY DUE TO OXIDATIVE STRESS.** Y. Yang[1], Y. Yang[2], N. He[3], M. B. Trent[1], *Y. C. Awasthi*[2] and *P. J. Boor*[1]. [1]Pathology, University of Texas Medical Branch, Galveston, TX, [2]Human Biological Chemistry and Genetics, University of Texas Medical Branch, Galveston, TX and [3]Sealy Center for Cancer Cell Biology, University of Texas Medical Branch, Galveston, TX.

#1391 4:10 **SYNERGISTIC TOXICITY INDUCED BY DOXORUBICIN AND ANTI-ERBB2 IN RAT NEONATAL CARDIOMYOCYTES.** K. L. Gabrielson[1], M. Servinsky[1], N. Peterson[1], W. Shi[1], M. Akao[2], E. Marban[2], S. Barber[1] and R. Becker[1]. [1]Comparative Medicine, Johns Hopkins University, Baltimore, MD and [2]Medicine, Johns Hopkins University, Baltimore, MD. Sponsor: *J. Yager*.

Wednesday Afternoon, March 12
1:30 PM to 4:30 PM
Ballroom A

PLATFORM SESSION: *IN VITRO* MODELS OF HEPATOTOXICITY

Chairperson(s): *Yvonne Dragan, National Center for Toxicological Research, Jefferson, AR and Manashi Bagchi, InterHealth Research Center, Benicia, CA.*

#1392 1:30 ***IN VITRO* INVESTIGATION OF DRUG-INDUCED HEPATIC STEATOSIS: BIOCHEMICAL AND GENOMIC APPROACHES.** J. D. Tugwood[1], L. E. Hollins[2] and M. J. Cockerill[2]. [1]Safety Assessment UK, AstraZeneca Pharmaceuticals, Macclesfield, Cheshire, United Kingdom and [2]School of Biological Sciences, University of Manchester, Manchester, United Kingdom. Sponsor: T. Orton.

#1393 1:50 **COMPARATIVE *IN VITRO* TOXICITY STUDIES BETWEEN PRIMARY RAT HEPATOCYTES AND RAT HEPATIC CELL LINES USING GENE EXPRESSION ANALYSIS.** *S. Hussain*[1], V. Chan[1], D. Rudnicki[2] and *J. M. Frazier*[2]. [1]Toxicology, ManTech Environmental Technology, Inc., Dayton, OH and [2]Wright-Patterson AFB, OH, USA, Dayton, OH.

#1394 2:10 **EVALUATION OF HEPATOCYTE SPHEROIDS AS A MODEL FOR TOXICITY STUDIES.** *R. T. Dunn* and M. T. Leininger. Investigative Toxicology, Pharmacia Corporation, Kalamazoo, MI.

#1395 2:30 ***IN VITRO* HEPATOTOXICITY STUDY OF BARAKOL USING HUMAN HEPATOMA CELL LINE HEP G2.** S. Lawanprasert[1], C. Chaichantipyuth[1], S. Unchern[1], Y. Lawanprasert[3] and *D. St. Clair*[2]. [1]The Institute of Health Research, Chulalongkorn University, Bangkok, Thailand, [2]Drug Control Division, Office of FDA, Bangkok, Thailand and [3]Graduate Center for Toxicology, University of Kentucky, Lexington, KY.

#1396 2:50 **IDENTIFYING EARLY APOPTOTIC EVENTS IN RAT HEPATOMA (H4IIE) AND KIDNEY EPITHELIAL (NRK-52E) CELLS USING CELLOMICS^{TM} ARRAYSCAN$^{\rangle}$ II.** P. C. Wilga, D. K. Petrella, J. F. Pregenzer, R. K. Patel, J. J. Keckeissen, D. D. Baker, G. L. Cockerell and *J. M. McKim, Jr.* Investigative Toxicology, Pharmacia, Kalamazoo, MI.

#1397 3:10 **ASSESSMENT OF HIGH PRECISION RAT LIVER SLICES AS AN *IN VITRO* MODEL FOR UPTAKE AND ACTIVITY OF PHOSPHORODIAMIDATE MOPHOLINO OLIGOMERS.** D. A. Leibelt, M. L. Cate, *P. L. Iversen* and V. Arora. Research & Development, AVI BioPharma, Inc., Corvallis, OR.

#1398 3:30 **AN *IN VITRO* PREDICTIVE TOXICOGENOMICS SCREEN (PTS) FOR HEPATOTOXICITY.** R. W. Gerwien[1], J. F. Simons[1], O. R. Crasta[1], D. M. Dziuda[1], C. Hyde[1], H. E. Olsen[1], K. M. Hershman[1], J. S. Bader[1], H. Ellinger-Ziegelbauer[2], M. J. Czar[1], *M. F. DeCristofaro*[1], M. M. Lakkis[1], T. A. Lohret[1], D. A. McCabe[1], J. J. DeClement[1], T. A. Mansfield[1], *H. J. Ahr*[2], W. Kroll[3] and M. McKenna[1]. [1]Pharmacogenomics, CuraGen Corporation, New Haven, CT, [2]Research Toxicology, Bayer AG, Elberfeld and [3]Bayer Corporation, West Haven, CT.

#1400 3:50 **USE OF HIGH THROUGHPUT METHOD FOR SCREENING THE MEIC GROUP IN THE HUMAN LIVER C3A CELL LINE TO EVALUATE THE RELEVANCE AND RELIABILITY OF THE ACTIVTOX SYSTEM FOR PREDICTING ACUTE SYSTEMIC TOXICITY.** T. M. Fletcher[1], A. Rizvi[1], T. Guthrie[1], M. Walterschied[2] and J. Kelly[2]. [1]Cancer Therapeutics and Immunology, Southern Research Institute, Birmingham, AL and [2]Amphioxus Cell Technologies, Houston, TX. Sponsor: *J. Page*.

Wednesday Afternoon, March 12
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: RESPIRATORY TRACT II

Chairperson(s): *Willie McKinney, Philip Morris-USA, Richmond, VA and Michael DeLorme, DuPont Haskell Laboratories, Newark, DE.*

Displayed: *1:30 PM–4:30 PM*

Attended: *1:30 PM-3:00 PM*

#1401 **COMPARATIVE DOSE-RELATED EFFECTS OF INHALED CARBON BLACK PARTICLES IN THE LUNGS OF RATS, MICE, AND HAMSTERS.** *A. Elder*[1], N. Corson[1], R. Gelein[1], P. Mercer[1], *J. Finkelstein*[2], P. Keng[3], *J. Harkema*[4], *K. Driscoll*[5] and *G. Oberdorster*[1]. [1]Environmental Medicine, University of Rochester, Rochester, NY, [2]Pediatrics, University of Rochester, Rochester, NY, [3]Radiation Oncology, University of Rochester, Rochester, NY, [4]Veterinary Pathology, Michigan State University, East Lansing, MI and [5]Procter & Gamble Co., Cincinnati, OH.

#1402 **INFLAMMATORY RESPONSES IN THE MOUSE EXPOSED INTRATRACHEALLY TO CARBON BLACK, POLYSTYRENE PARTICULATE, AND DIFFERENT SIZE OF COAL FLY ASH.** I. Nishimura and T. Negishi. Central Research Institute of Electric Power Industry, Abiko, Chiba, Japan. Sponsor: *Y. Aoki*.

#1403 **RATS, BUT NOT HAMSTERS, HAVE PERSISTENT ALVEOLITIS AND TYPE II CELL PROLIFERATION AFTER CHRONIC INHALATION OF CARBON BLACK PARTICLES.** *J. R. Harkema*[1], *J. G. Wagner*[1], J. A. Simon[1], S. McBride[1], *A. C. Elder*[2], *K. Driscoll*[3] and *G. Oberdorster*[2]. [1]Pathobiology, Michigan State University, East Lansing, MI, [2]Environmental Medicine, University of Rochester, Rochester, NY and [3]Procter & Gamble Co., Cincinnati, OH.

#1404 **AMBIENT AIR PARTICLES OF DIFFERENT SIZE FRACTIONS CAUSES RELEASE OF INFLAMMATORY CYTOKINES, CELL TOXICITY AND APOPTOSIS IN EPITHELIAL LUNG CELLS.** R. Hetland [2], F. Cassee[1], M. Refsnes[2], P. Schwarze[2], M. Låg[2], A. Boere[1] and *E. Dybing*[2]. [1]National Institute for Public Health and the Environment, Bilthoven, Netherlands and [2]Department of Air Pollution and Noise, Norwegian Institute of Public Health, Oslo, Norway.

#1405 **INDUCTION OF TUMOR NECROSIS FACTOR α (TNFα) SIGNALING GENES IN ALVEOLAR MACROPHAGES (MΦ)AFTER EXPOSURE TO ULTRAFINE PARTICLES (UFP).** B. Chin and *B. D. Thrall*. Molecular Biosciences, Pacific Northwest Laboratory/Battelle, Richland, WA.

#1406 **EXPOSURE OF RAT LUNG MACROPHAGES TO JP-8 JET FUEL.** D. L. Courson[1], *E. C. Kimmel*[2], J. E. Reboulet[2], A. E. Jung[2] and *P. G. Reinhart*[3]. [1]ManTech Environmental, Wright-Patterson AFB, OH, [2]Geo-Centers Inc., Wright-Patterson AFB, OH and [3]Naval Health Research Center (Toxicology Detachment), Wright-Patterson AFB, OH.

#1407 **FINE DUST PARTICULATE MATTER INDUCES POTENT CYTOKINE RELEASE THROUGH TRPV1 ACTIVATION IN LUNG CELLS.** C. R. Langelier, J. M. Veranth, M. M. Veranth, D. L. Lanza and *G. S. Yost*. Pharmacology & Toxicology, University of Utah, Salt Lake City, UT.

#1408 **OVERLAPPING MOLECULAR TACHYKININERGIC EFFECTS IN F344 RATS FOLLOWING SIDESTREAM CIGARETTE SMOKE EXPOSURE.** N. N. Sun[1], S. S. Wong[1], I. M. Keith[2] and *M. L. Witten*[1]. [1]Center for Toxicology, University of Arizona, Tucson, AZ and [2]School of Veterinary Medicine, University of Wisconsin, Madison, WI.

#1409 **LACK OF ROLE OF VR1 IN RESPIRATORY RESPONSES TO IRRITANTS.** *J. B. Morris*[2,1], P. T. Symanowicz[2,1] and *G. Gianutsos*[1]. [1]Toxicology Program, University of Connecticut, Storrs, CT and [2]Pulmonary Research Consirtium, University of Connecticut, Storrs, CT.

#1410 **TACHYKININ SUBSTANCE P SIGNALING INVOLVES IN DIESEL EXHAUST (DE)-INDUCED BRONCHOPULMONARY NEUROGENIC INFLAMMATION IN RATS.** S. S. Wong[1], N. N. Sun[1], I. M. Keith[2], C. Kweon[3], D. E. Foster[3], J. J. Schauer[4] and *M. L. Witten*[1]. [1]Center for Toxicology, University of Arizona, Tucson, AZ, [2]Department of Comparative Biosciences, The University of Wisconsin School of Veterinary Medicine, Madison, WI, [3]Engine Research Center, The University of Wisconsin, Madison, WI and [4]Wisconsin College of Engineering and State Laboratory of Hygiene, The University of Wisconsin, Madison, WI.

#1411 **13-WEEK INHALATION TOXICITY STUDY OF BITUMEN FUMES IN WISTAR(WU) RATS.** R. Fuhst, W. Bartsch, H. Ernst, G. Pohlmann and A. Preiss. Fraunhofer Institute of Toxicology and Aerosol Research, Drug Research and Clinical Inhalation, Hannover, Germany. Sponsor: *H. Muhle*.

#1412 **FOUR-WEEK INHALATION TOXICITY OF N-VINYL CARBAZOLE IN RATS, FURTHER STUDIES.** D. P. Kelly, G. T. Makovec and *G. S. Ladics*. Haskell Laboratory, DuPont Company, Newark, DE.

#1413 **VP 14637: TWO-WEEK INHALATION TOXICITY STUDY IN NEONATAL DOGS.** W. W. Lee[1], *M. H. Davies*, A. Viau[1], *J. R. Hincks*, G. Rhodes, A. Adjiri-Awere[2], J. A. Nash[3] and C. Gordon[1]. [1]Inhalation Toxicology, CTBR, Senneville, QC, Canada, [2]Pathology, CTBR, Senneville, QC, Canada and [3]DMPK, CTBR, Senneville, QC, Canada.

#1414 ***IN VIVO* AND *IN VITRO* RESPIRATORY TRACT INHIBITION OF RAT CYP450 FOLLOWING EXPOSURE TO *m*-XYLENE AND METABOLITES.** A. Vaidyanathan, *J. D. Foy* and *R. A. Schatz*. Toxicology, Northeastern University, Boston, MA.

#1415 **EVALUATION OF ACUTE RESPIRATORY EFFECTS IN HEALTHY ADULTS FOLLOWING CONTROLLED ENVIRONMENTAL EXPOSURES TO FRAGRANCED INCENSE STICKS.** R. Rogers[1], R. Ibach[1], C. Jeng[1], N. Prasad[2] and J. Burdick[3]. [1]Toxcon Health Science Research Centre, Edmonton Alberta, AB, Canada, [2]University of Alberta, Edmonton Alberta, AB, Canada and [3]White Barn Candle Co., Reynoldsburg, OH. Sponsor: *J. Merrill*.

#1416 **EXPOSURE CHARACTERIZATION FROM A FRAGRANCED PLUG-IN AIR FRESHENER.** D. Isola[1], *L. W. Smith*[1], R. Ansari[2] and M. S. Black[3]. [1]Research Institute for Fragrance Materials, Inc., Hackensack, NJ, [2]Quest International Fragrances Company, Mount Olive, NJ and [3]Air Quality Sciences, Marietta, GA.

#1417 **SIMULTANEOUS ANALYSIS OF ACETONE CONCENTRATION IN THE NASOPHARYNGEAL AND EXHALED BREATH OF HUMAN VOLUNTEERS.** R. E. Schwartz[1], *G. L. Foureman*[2], *C. Timchalk*[3], K. K. Weitz[3], J. J. Soelberg[3] and *K. D. Thrall*[3]. [1]Otolaryngology, Richland, WA, [2]U.S. EPA, NCEA, Research Triangle Park, NC and [3]Battelle, Pacific Northwest Laboratory, Richland, WA.

#1418 **DEVELOPMENT OF A MODEL SYSTEM TO EVALUATE VINYL ACETATE-INDUCED INTRACELLULAR ACIDIFICATION IN NASAL EPITHELIUM.** J. M. Orozco[1], M. S. Bogdanffy[2] and *R. Lantz*[1,2]. [1]Pharmacology and Toxicology, University of Arizona, Tucson, AZ, [2]Department of Cell Biology and Anatomy, University of Arizona, Tucson, AZ and [3]DuPont Haskell Laboratory, Newark, DE.

#1419 **INHIBITION OF HEAT SHOCK PROTEIN INDUCTION IN MOUSE OLFACTORY EPITHELIUM BY *IN VIVO* ADMINISTRATION OF PURINERGIC RECEPTOR ANTAGONISTS.** *C. C. Hegg*, K. Davis and M. T. Lucero. Physiology, University of Utah, Salt Lake City , UT.

#1420 **SENSORY IRRITATION AND ODOR FROM BRIEF EXPOSURES TO GLUTARALDEHYDE VAPOR.** W. S. Cain, R. Schmidt and A. A. Jalowayski. Otolaryngology, University of California San Diego, La Jolla, CA. Sponsor: *J. Cometto-Muñiz*.

#1421 **MUCOUS CELL METAPLASIA IN RAT NASAL EPITHELIUM AFTER A 13-WEEK EXPOSURE TO CARBON BLACK PARTICLES.** P. Santhanam[1], *J. R. Harkema*[1], *J. G. Wagner*[1], L. A. Bramble[1], *A. C. Elder*[2] and *G. Oberdorster*[2]. [1]Pathobiology, Michigan State University, East Lansing, MI and [2]Environmental Medicine, University of Rochester, Rochester, NY.

#1422 **QUANTIFICATION OF A 3-METHYLINDOLE MERCAPTURATE ADDUCT IN THE URINE OF CIGARETTE SMOKERS.** D. Lanza[1], S. S. Hecht[2] and *G. S. Yost*[1]. [1]Pharmacology & Toxicology, University of Utah, Salt Lake City, UT and [2]Laboratory Medicine & Pathology, University of Minnesota Cancer Center, Minneapolis, MN.

#1423 **INHALATION OF CADMIUM AT A CONCENTRATION ASSOCIATED WITH SIDESTREAM CIGARETTE SMOKE ALTERS ANTIMICROBIAL HOST DEFENSE.** *J. T. Zelikoff*, G. Chee, K. Schermerhorn, C. Prophete and *M. D. Cohen*. Environmental Medicine, New York University School of Medicine, Tuxedo, NY.

#1424 **TOBACCO SMOKE EXPOSURE AND BONE STRENGTH IN MICE.** M. P. Akhter[1], D. J. Wells[1] and *C. Gairola*[2]. [1]Creighton University, Omaha, NE and [2]University of Kentucky, Lexington, KY.

#1425 **PYRIDINES THAT INHIBIT DIVERSE BIOLOGICAL PROCESSES ARE MORE CONCENTRATED IN SIDESTREAM THAN MAINSTREAM SMOKE SOLUTIONS FROM COMMERCIAL BRAND CIGARETTES.** R. J. Roza[1], *K. Riveles*[1], D. Kwan[1], *J. Arey*[2] and *P. Talbot*[1]. [1]Cell Biology & Neuroscience, UC Riverside, Riverside, CA and [2]Environmental Sciences, UC Riverside, Riverside, CA.

#1426 **EFFECTS OF THE ADDITION OF BENZYL ALCOHOL TO TOBACCO ON THE CHEMICAL COMPOSITION AND BIOLOGICAL ACTIVITY OF CIGARETTE SMOKE.** L. Merriman[1], E. L. Carmines[1], *C. L. Gaworski*[1], B. Gerstenberg[2], T. Meisgen[2], H. Schramke[2] and E. Van Miert[3]. [1]Philip Morris USA, Richmond, VA, [2]INBIFO, Cologne, Germany and [3]CRC, Zaventem.

#1427 **CHARACTERIZATION AND VALIDATION OF A RODENT NOSE-ONLY EXPOSURE SYSTEM FOR ACUTE TOXICITY EVALUATION OF POLYMER AND TOBACCO COMBUSTION PRODUCTS.** *R. Lemus*[1], *K. M. Lee*[2] and M. S. Werley[1,3]. [1]Philip Morris USA, Richmond, VA, [2]Battelle Toxicology NW, Richland, WA and [3]Present address Chrysalis Technologies, Inc., Richmond, VA.

#1428 **COMPARATIVE ANALYSIS OF BRONCHOALVEOLAR LAVAGE (BAL) FLUID BIOMARKERS IN MICE FOLLOWING ACUTE CIGARETTE SMOKE EXPOSURE.** *C. J. Obot*[1], A. F. Fuciarelli[2], *M. K. Lee*[2], R. B. Westerberg[2] and *W. J. Mckinney*[1]. [1]Philip Morris, Richmond, VA and [2]Battelle Toxicology . NW, Richland, WA.

Wednesday Afternoon, March 12
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: METHODS IN INHALATION TOXICOLOGY

Chairperson(s): *Per Gerde, Institute of Environmental Medicine, Stockholm, Sweden and Elizabeth Gross, CIIT, Research Triangle Park, NC.*

Displayed: *1:30 PM–4:30 PM*

Attended: *3:00 PM-4:30 PM*

#1429 **VALIDATION OF A NEW LUNG FUNCTION METHOD IN ORALLY INTUBATED MICE USING A MODEL FOR RESPIRATORY ALLERGENICITY.** A. Braun[1], M. Rott[2], M. Hecht[1], T. Glaab[2], J. M. Hohlfeld[1,2], N. Krug[1] and H. G. Hoymann[1]. [1]Fraunhofer Institute of Toxicology and Aerosol Research, Hannover, Germany and [2]Department of Respiratory Medicine, Hannover Medical School, Hannover, Germany. Sponsor: *H. Muhle*.

#1430 **ASSESSMENT OF A SINGLE CONTROLLED VENTILATION INHALATION EXPOSURE TO A THERAPEUTIC PEPTIDE IN CYNOMOLGUS MONKEYS.** B. Sparrow[1], L. Baird[2], A. Koester[1], R. Moutvic[1], R. Beihn[3], K. Gumbhir-Shah[4], *M. Brooker*[1] and I. Grossi[1]. [1]Medical Research & Evaluation Facility, Battelle Memorial Institute, Columbus, OH, [2]Dyax, Corp, Cambridge, MA, [3]Scintiprox, Inc., Indianapolis, IN and [4]PharmaConsult, Inc., Basking Ridge, NJ.

#1431 **EXPOSING THE ISOLATED PERFUSED RAT LUNG TO RESPIRABLE AEROSOLS OF DRUGS AND POLLUTANTS.** *P. Gerde*, L. Låstbom, P. Ewing and Å. *Ryrfeldt*. Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Stockholm, Sweden.

#1432 **THE ASSESSMENT OF PULMONARY INFLAMMATION IN RODENTS USING EXHALED BREATH.** E. Bermudez[1], J. Jackman[2] and *O. R. Moss*[1]. [1]CIIT, Research Triangle Park, NC and [2]Johns Hopkins University Applied Physics Laboratory, Laurel, MD.

#1433 **ARGININE METABOLISM IN LUNG TISSUE: IMPLICATIONS FOR MEASUREMENT OF NOS ACTIVITY.** K. Fang, *A. Gunnison* and C. Nadziejko. Environmental Medicine, NYU School of Medicine, Tuxedo, NY.

#1434 **IDENTIFYING POTENTIAL RESPIRATORY SENSITIZERS: PROTEINS.** J. A. Hotchkiss, S. M. Krieger, J. M. Rase, *M. R. Woolhiser*, *T. D. Landry* and *M. P. Holsapple*. Toxicology, Environmental Research and Consulting, The Dow Chemical Company, Midland, MI.

#1435 **OBSERVATIONS AND RECOMMENDATIONS REGARDING THE BUXCO AEROSOL DELIVERY/UNRESTRAINED PLETHYSMOGRAPH SYSTEMS.** J. McDonald[1], L. Bowen[1], *J. Mauderly*[1] and *M. Lomask*[2]. [1]Toxicology, Lovelace Respiratory Research Institute, Albuquerque, NM and [2]Buxco Electronics, Inc., Sharon, CT.

#1436 **EVALUATION OF THE EFFECTS OF INTERMITTENT EXPOSURE TO ELEVATED INHALED CO_2 CONCENTRATIONS UPON BLOOD GAS AND HEMATOLOGIC PARAMETERS IN THE CANINE.** M. Shaw, R. Moutvic, *M. Brooker* and I. Grossi. Battelle Memorial Institute, Columbus, OH.

#1437 **GENERATION OF LIFE-LIKE RODENT NASAL MODELS.** *E. A. Gross*, J. T. Kelly, D. R. Joyner, C. S. Dunn, *J. S. Kimbell* and *B. Asgharian*. CIIT Centers for Health Research, Research Triangle Park, NC.

#1438 **AN AUTOMATED AEROSOL SYSTEM THAT USES REAL-TIME DOSIMETRY FOR INHALATION EXPOSURES WITH PRIMATES.** *C. J. Roy* and J. M. Hartings. Aerobiology and Product Evaluation, USAMRIID, Fort Detrick, MD.

#1439 **1, 3BUTADIENE SOOT (BDS) AS A STANDARD REFERENCE MATERIAL FOR INHALATION TOXICOLOGY STUDIES.** W. J. Catallo, S. Barker, W. Henk and *A. Penn*. CBS, LSU School of Vet. Med., Baton Rouge, LA.

#1440 **OXYGEN TENSION AFFECTS PHENOTYPE IN CULTURED BONE MARROW-DERIVED MACROPHAGES.** *J. C. Pfau*, A. Archer, J. Reeves, J. C. Schneider and *A. Holian*. Center for Environmental Health Sciences, University of Montana, Missoula, MT.

#1441 **ELIMINATION OF CARBON MONOXIDE IN AWAKE RATS.** Z. Gu and A. J. Januszkiewicz. Respiratory Research, Walter Reed Army Institute of Research, Silver Spring, MD. Sponsor: *P. DelValle*.

#1442 **INHALATION NOSE-ONLY EXPOSURE OF NEONATAL AND JUVENILE RATS.** M. Stoute[1], A. Viau[1], K. Robinson[2] and C. Banks[1]. [1]Inhalation Toxicology, CTBR, Senneville, QC, Canada and [2]Reproductive Toxicology, CTBR, Senneville, QC, Canada. Sponsor: *L. Dostal*.

Wednesday Afternoon, March 12
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: METALS AND THE RESPIRATORY TRACT

Chairperson(s): *James Antonini, NIOSH, Morgantown, WV and Janet Benson, Lovelace Respiratory Research Institute, Albuquerque, NM.*

Displayed: *1:30 PM–4:30 PM*

Attended: *1:30 PM-3:00 PM*

#1443 **CYTOTOXICITY AND CYTOKINE PRODUCTION IN LUNG EPITHELIAL CELLS *IN VITRO* FOLLOWING CHROMIUM AND MANGANESE EXPOSURE.** D. M. Tessier and L. E. Pascal. Environmental & Occupational Health Sciences, University of Illinois Chicago, Chicago, IL.

#1444 **EFFECTS OF EXPOSURE TO DIESEL EXHAUST PARTICLES (DEP) ON PULMONARY ACTIVATION OF MUTAGENIC AGENTS.** *J. Y. Ma*[1], H. W. Zhao[1], M. W. Barger[1], J. K. Ma[2] and *V. Castranova*[1]. [1]HELD, NIOSH, Morgantown, WV and [2]School of Pharmacy, WVU, Morgantown, WV.

#1445 **EXPOSURE OF CULTURED MYOCYTES TO ZINC RESULTS IN ALTERED BEAT RATE AND INTERCELLULAR COMMUNICATION.** D. W. Graff[1], *R. B. Devlin*[1], J. A. Brackhan[2], B. J. Muller-Borer[2], J. S. Bowman[2] and W. E. Cascio[2]. [1]NHEERL, U.S. EPA, Research Triangle Park, NC and [2]Division of Cardiology, University of North Carolina, Chapel Hill, NC.

#1446 **IRON-MEDIATED AMIODARONE RADICAL FORMATION.** *J. W. Card*, *L. L. Bedard*, L. A. Bourne, S. L. Graham, W. J. Racz, J. F. Brien and *T. E. Massey*. Pharmacology and Toxicology, Queen's University, Kingston, ON, Canada.

#1447 **EFFECTS OF SOLUBLE AND INSOLUBLE FRACTIONS OF A STAINLESS STEEL MANUAL METAL ARC WELDING FUME ON FREE RADICAL PRODUCTION AND LUNG INJURY AND INFLAMMATION.** *M. D. Taylor*, *J. R. Roberts*, S. S. Leonard, X. Shi and *J. M. Antonini*. HELD/PPRB, NIOSH, Morgantown, WV.

#1448 **PULMONARY TOXICITY STUDIES WITH TiO2 PARTICLES CONTAINING VARIOUS COMMERCIAL COATINGS.** *D. B. Warheit*, T. R. Webb and K. L. Reed. Pulmonary Toxicology, DuPont Haskell Lab., Newark, DE.

#1449 **DEVELOPMENT OF A RAT MODEL OF INHALATION FUME FEVER.** *B. R. Laurence*, K. L. Reed, *R. Valentine*, T. R. Webb and D. B. Warheit. Pulmonary Toxicology, DuPont Haskell Lab., Newark, DE.

#1450 **RECOVERY OF MANUAL METAL ARC-STAINLESS STEEL WELDING FUME EXPOSURE INDUCED LUNG FIBROSIS IN SPRAGUE-DAWLEY RATS.** K. Song[1,2], *I. Yu*[1,2], H. Chang[3], J. Han[1], Y. Chung[1], K. Han[2], K. Chung[2] and H. Chung[1]. [1]Center for Occupational Toxicology, OSRHI/Korean OSHA, Daejeon, South Korea, [2]College of Pharmacy, Sung Kyun Kwan University, Suwon, South Korea and [3]Department of Pathology, Kosin University, Busan, South Korea.

#1451 **MECHANISMS OF NICKEL INDUCED LUNG CANCER—NICKEL SUBSULFIDE *VS* NICKEL SULFATE.** *J. Benson*[1], T. H. March[1], *K. K. Divine*[1], J. Seagrave[1], S. A. Belinsky[1] and *A. R. Oller*[2]. [1]Lovelace Respiratory Research Institute, Albuquerque, NM and [2]Nickel Producers Environmental Research Association, Inc., Durham, NC.

#1452 **EFFECTS OF ARSENITE ON INFLAMMATORY RESPONSES OF HUMAN BRONCHIAL EPITHELIAL CELLS.** *A. R. Molinelli*[1] and *M. C. Madden*[2]. [1]Curriculum in Toxicology, University of North Carolina - Chapel Hill, Chapel Hill, NC and [2]NHEERL , U.S. EPA, Research Triangle Park, NC.

#1453 **VANADIUM CONCENTRATIONS IN LUNG, LIVER, KIDNEY, TESTES AND BRAIN AFTER THE INHALATION OF 0.02M OF V2O5. AN EXPERIMENTAL MODEL IN MICE.** I. Sanchez[1], I. Lopez[1], P. Mussali[1], P. Bizarro[1], G. Niño[1], *L. Saldivar*[3], G. Espejel[3], M. Avila[1], D. Morales[2], L. Colin[2], V. Delgado[1], S. Acevedo[1], A. Gonzalez[1], M. Avila-Costa[3] and *T. I. Fortoul*[1]. [1]Biologia Celular y Tisular, UNAM, Mexico City, Mexico, [2]Neurociencias, UNAM, Mexico City, Mexico City, Mexico and [3]Facultad De Quimica, UNAM, Mexico City, Mexico City, Mexico.

#1454 **DIFFERENTIAL *IN VITRO* IMMUNOLOGICAL RESPONSES TO ZINC (ZN), AN ACTIVE COMPONENT OF URBAN PARTICULATE MATTER (PM).** R. J. Mitkus, J. Powell, M. Akkerman and *K. Squibb*. Epidemiology and Preventive Medicine, University of Maryland School of Medicine, Baltimore, MD.

Wednesday Afternoon, March 12
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: SAFETY EVALUATION I

Chairperson(s): *Claus Peter Siegers, PJD Publications Ltd Medical University of Lüb, Lübeck, Germany and Gerard Descotes, Servier, Rueil Malmaison, France.*

Displayed: *1:30 PM–4:30 PM*

Attended: *3:00 PM-4:30 PM*

#1455 **A CASE OF DRUG-INDUCED PURE RED CELL APLASIA IN RATS.** F. Goldfain-Blanc[1], A. Beamonte[1], D. Bazot[1], H. Bertheux[1], N. Casadevall[2] and *G. Descotes*[1]. [1]Drug Safety Assessment, Servier, Fleury les Aubrais Cédex, France and [2]Hopital de l'Hotel-Dieu, Paris, France.

#1456 **TOXIC, ALLERGIC OR IDIOSYNCRATIC TOXICITY OF KAVA PYRONES - RELATION TO REGULATORY DECISIONS.** *C. Siegers* and J. Schulze. Institute of Experimental and Clinical Pharmacology and Toxicology, University of Luebeck, Luebeck, Germany.

#1457 **CORRELATION OF PCB BURDEN MEASURED IN AIR OR BLOOD.** J. Schulze and *C. Siegers*. Institute of Experimental and Clinical Pharmacology and Toxicology, University of Luebeck, Luebeck, Germany.

#1458 **PRECLINICAL SAFETY OF BG00001, A REPLICATION DEFECTIVE ADENOVIRAL VECTOR EXPRESSING THE HUMAN INTERFERON-β (HIFNβ) GENE, FOLLOWING INTRAPROSTATIC DOSING IN RHESUS MONKEYS.** *C. Sachs*[1], M. Parr[1], C. T. Chutkowski[1], J. Barsoum[1], C. Chan[2], M. Walker[2], C. Farman[2], D. L. Hutto[1], P. L. Martin[1] and *J. D. Green*[1]. [1]Biogen, Inc., Cambridge, MA and [2]Sierra Biomedical, Sparks, NV.

#1459 **MULTIPARAMETER HYPOTHESIS FOR IDIOSYNCRATIC DRUG TOXICITY.** *A. P. LI*. Phase-1 Molecular Toxicology, Inc., Santa Fe, NM.

#1460 **EVALUATION OF THE TOXICITY OF BROMOCHLOROACETIC ACID ADMINISTERED FOR 26 WEEKS IN DRINKING WATER TO B6C3F1 MICE AND F344 RATS .** M. George[1], A. Murr[1], J. Goldman[1], *C. Herbert*[2], R. Joe[3], R. Melnick[3], D. Geter[1] and *A. B. DeAngelo*[1]. [1]NHEERL, U.S. EPA, Research Triangle Park, NC, [2]Southern Research Institute, Birmingham, AL and [3]NTP, NIEHS, Research Triangle Park, NC.

#1461 **SAFETY, BIODISTRIBUTION AND PERSISTENCE EVALUATION OF EP HIV-1090 DNA VACCINE IN RABBITS.** *H. H. He*[1], *C. E. Frantz*[1], S. Lin[1], S. Phillips[1], E. Payson[1], M. Newman[2], B. Livingston[2], D. McKinney[2] and P. Y. Chang[1]. [1]Biopharmaceutical , SRI International, Menlo Park, CA and [2]Epimmune Inc., San Diego, CA.

#1462 **SUBCHRONIC, DEVELOPMENTAL, AND REPRODUCTIVE TOXICITY OF A FLUOROALKYLETHYL PHOSPHATE SURFACTANT.** *J. C. Stadler*, *D. A. Delker*, G. T. Makovec, J. E. Hansen, S. M. Munley and *E. Mylchreest*. DuPont Haskell Laboratory for Health and Environmental Sciences, Newark, DE.

#1463 **A DERMAL SAFETY EVALUATION OF *p*-(*t*-BUTYL)-α-METHYLHYDROCINNAMIC ALDEHYDE (BMHCA).** J. Cocchiara and *A. Api*. Research Institute for Fragrance Materials, Inc., Woodcliff Lake, NJ.

#1464 **EVALUATION OF POTENTIAL EXPOSURE TO VOLATILE ORGANIC COMPOUNDS EMITTED FROM A SPRAY GRADE CONTACT CEMENT.** C. W. Jarand, C. A. Robbins and *B. J. Kelman*. GlobalTox, Redmond, WA.

#1465 **RODENT RESPIRATORY SAFETY PHARMACOLOGY STUDIES: A BREATH-SIMULATED MODEL AND ADDITIONAL *IN VIVO* VALIDATION.** S. Mason[1], H. Penton[1], A. Viau[2] and P. Dominic[2]. [1]Safety Pharmacology, CTBR, Senneville, QC, Canada and [2]Inhalation Toxicology, CTBR, Senneville, QC, Canada. Sponsor: *D. Jones*.

#1466 **SAFETY PHARMACOLOGY STUDIES FOR THE ASSESSMENT OF COMPOUND-RELATED EFFECTS ON THE GASTROINTESTINAL SYSTEM.** A. Adamou[1] and S. Mason[2]. [1]General Toxicology, CTBR, Senneville, QC, Canada and [2]Safety Pharmacology, CTBR, Senneville, QC, Canada. Sponsor: *D. Jones*.

#1467 **A DERMAL SAFETY EVALUATION OF CINNAMIC ALCOHOL.** *A. Api* and J. Cocchiara. Research Institute for Fragrance Materials, Inc., Woodcliff Lake, NJ.

#1468 **PATHWAYS OF TOXICITY:AN EARLY SCREENING APPROACH.** *P. S. Rao*, M. Wojke, J. Dwyer, M. Hower and Z. Jayyosi. Drug Safety Evaluation, Aventis, Bridgewater, NJ.

#1469 **INHIBITION OF VITAMIN K1 2, 3-EPOXIDE REDUCTASE BY PHARMACEUTICALS AND XENOBIOTICS.** *C. R. Wilson*, L. J. Likens, M. P. Ward and *S. B. Hooser*. Animal Disease Diagnostic Laboratory, Purdue University, West Lafayette, IN.

#1470 **ANTIMICROBIAL RESISTANCE AND TRICLOSAN.** G. Goodfellow[1], V. Lee-Brotherton[1], *J. Daniels*[1,2], A. Roberts[1] and *E. Nestmann*[1,2]. [1]Cantox Health Sciences International, Mississauga, ON, Canada and [2]CanTox Inc., Bridgewater, NJ.

#1471 **A SINGLE-DOSAGE OCULAR AND CUTANEOUS PHOTOTOXICITY SCREEN FOR ORAL DRUGS.** C. P. Sambuco, *D. B. Learn*, *P. D. Forbes*, M. Arocena, M. L. Matticoli and *A. M. Hoberman*. Argus Research, Horsham, PA.

#1472 **TOXICITY COMPARISON OF LIPOSOMES COMPRISED OF DIOLEOYLTRIMETHYLAMMONIUM PROPANE:DIOLEOYLPHOSPHATIDYLETHANOL AMINE (DOTAP:DOPE) OR DIMETHYLDIOCTADECYLAMMONIUM BROMIDE:DIOLEOYLPHOSPHATIDYLETHANOL AMINE (DDAB:DOPE) FOLLOWING MULTIPLE IV INJECTIONS IN FISCHER 344 RATS.** P. Tosca[1], I. Grossi[1], *M. Brooker*[1], N. Turner[1], E. Chang[2] and S. Donohue[3]. [1]Battelle Memorial Institute, Columbus, OH, [2]Georgetown University, Washington, DC and [3]National Cancer Institute, Bethesda, MD.

#1473 **COMPARISON OF HUMAN *VERSUS* CYNOMOLGUS MONKEY PLATELET AGGREGATION INDUCED BY FIVE DIFFERENT AGENTS.** Y. Mori, *K. Okasaki*, B. Lee, S. Meyer, K. Fukuzaki and *R. Nagata*. SNBL USA, Ltd., Everett, WA.

#1474 **APPLICATION OF EXPERIMENTAL CARDIAC SENSITIZATION RESULTS IN PHYSIOLOGICALLY-BASED PHARMACOKINETIC MODELS.** *W. J. Brock*[1], *H. J. Trochimowicz*[2], M. Cisneros[3] and *G. M. Rusch*[4]. [1]Environ, Princeton, NJ, [2]Delaware Toxicology Associates, Newark, DE, [3]Great Lakes Chemical Corp., West Lafayette, IN and [4]Honeywell Corp., Morristown, NJ.

#1475 **ACUTE TOXICITY OF POLYACRYLAMIDE AND SOL-GEL NANOPARTICLES IN RATS.** R. J. Schneider[1], R. L. Lightle[1], R. G. Reddy[2], A. Rehemtulla[3,2,1], B. D. Ross[4,2], R. Kopelman[5] and *M. A. Philbert*[1]. [1]Environmental Health Sciences, University of Michigan, Ann Arbor, MI, [2]Molecular Therapeutics, Inc., Ann Arbor, MI, [3]Radiation Oncology, University of Michigan, Ann Arbor, MI, [4]Radiology, University of Michigan, Ann Arbor, MI and [5]Chemistry, University of Michigan, Ann Arbor, MI.

WEDNESDAY

Wednesday Afternoon, March 12
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: NEUROTOXICITY, PESTICIDES

Chairperson(s): *Bernard Jortner, Virginia Tech, Blacksburg, VA and Jan Oberdoerster, Bayer CropScience, Research Triangle Park, NC.*

Displayed: *1:30 PM–4:30 PM*

Attended: *1:30 PM-3:00 PM*

#1476 **A SIX-WEEK INHALATION NEUROTOXICITY STUDY OF METHYL BROMIDE IN DOGS.** *G. J. Schaefer*[1], *D. T. Kirkpatrick*[1], *J. F. Holson*[1], *C. P. Chengelis*[1], K. S. Regan[2] and *V. J. Piccirillo*[3]. [1]WIL Research Laboratories, Inc., Ashland, OH, [2]Regan Pathology/Toxicology Services, Inc., Ashland, OH and [3]VJP Consulting, Inc., Ashburn, VA.

#1477 **SEX DIFFERENCES IN EXPRESSION OF PERIPHERAL BENZODIAZEPINE RECEPTOR (PBR) BINDING SITES IN RAT BRAIN AFTER THE ADMINISTRATION OF HEPTACHLOR AND HEPTACHLOR EPOXIDE DURING DEVELOPMENT.** E. F. Garcia, B. J. Baliwas, T. T. Tran and *D. E. Woolley*. Neurobiology, Physiology and Behavior, University of California at Davis, Davis, CA.

#1478 **EFFECTS OF CHRONIC DERMAL EXPOSURE TO NONLETHAL DOSES OF METHYL PARATHION ON BRAIN REGIONAL ACETYLCHOLINESTERASE (ACHE) AND MUSCARINIC CHOLINERGIC RECEPTORS IN FEMALE RATS.** *T. Ma*, R. E. Kramer, R. C. Baker, L. Fan and *I. K. Ho*. Pharmacology & Toxicology, University of Mississippi Medical Center, Jackson, MS.

#1479 **MODULATION OF MUSCARINIC RECEPTORS IN THE RAT BRAIN DURING THE DEVELOPMENT OF TOLERANCE TO METHYL PARATHION.** T. Sun, *T. Ma* and *I. K. Ho*. Pharmacology and Toxicology, University of Mississippi Medical Center, Jackson, MS.

#1480 **BRAIN ESTERASE ACTIVITIES IN RATS GIVEN MULTIPLE DOSES OF ORGANOPHOSPHORUS (OP) COMPOUNDS OVER 63 DAYS WITH 30 DAYS RECOVERY.** *M. Ehrich*, S. P. Hancock, L. Flory and *B. S. Jortner*. Virginia-Maryland Regional College of Veterinary Medicine, Virginia Tech, Blacksburg, VA.

#1481 **NEUROPATHOLOGICAL STUDY OF THE INTERACTIONS OF STRESS AND TWO NEUROTOXIC ORGANOPHOSPHATES IN RATS.** *B. S. Jortner*, S. Hancock, J. Hinckley, L. Florey and *M. Ehrich*. Department of Biological Sciences and Pathobiology, Virginia Tech, Blacksburg, VA.

#1482 **THE TOXICOKINETICS OF PERIPHERAL CHOLINESTERASE INHIBITION FROM ORALLY ADMINISTERED CARBOFURAN IN RATS.** *J. D. McCarty*[1], S. A. Anderson[2] and *K. L. Li*[1]. [1]Toxicology, FMC Corporation, Princeton, NJ and [2]RTI, Research Triangle Park, NC.

#1483 **DEVELOPMENT OF A NEONATAL RAT PHYSIOLOGICALLY BASED PHARMACOKINETIC/PHARMACODYNAMIC (PBPK/PD) MODEL FOR CHLORPYRIFOS.** *C. Timchalk*, *A. Kousba* and *T. S. Poet*. Molecular Biosciences, Pacific Northwest National Laboratory, Richland, WA.

#1484 **POTENTIAL UTILITY OF SALIVA BIOMONITORING FOR ORGANOPHOSPHATE INSECTICIDE DOSIMETRY AND ESTERASE INHIBITION.** *A. Kousba*, *T. S. Poet* and *C. Timchalk*. Molecular Biosciences, Pacific Northwest National Laboratory, Richland, WA.

#1485 **DEVELOPMENT OF A PHYSIOLOGICALLY BASED PHARMACOKINETIC AND PHARMACODYNAMIC (PBPK/PD) MODEL FOR THE ORGANOPHOSPHATE PESTICIDE, DIAZINON.** *T. S. Poet*, *A. Kousba*, H. Wu, S. L. Dennison and *C. Timchalk*. Molecular Biosciences, Pacific Northwest National Laboratory, Richland, WA.

#1486 **MASS SPECTRAL EVIDENCE THAT MIPAFOX-INHIBITED NEUROPATHY TARGET ESTERASE (NTE) DOES NOT UNDERGO DEALKYLATION.** T. J. Kropp[1], P. Glynn[2] and *R. J. Richardson*[1]. [1]Environmental Health Sciences, University of Michigan, Ann Arbor, MI and [2]MRC Toxicology Unit, University of Leicester, Leicester, United Kingdom.

#1487 **TENTATIVE MODELS FOR THE THREE-DIMENSIONAL STRUCTURE OF THE NTE ESTERASE DOMAIN (NEST): PREDICTIONS FROM THREADING AND DOCKING.** J. Wang and *R. J. Richardson*. Environmental Health Sciences, University of Michigan, Ann Arbor, MI.

#1488 **DECREASE OF 5-HT LEVELS AFTER PYRETHROID TREATMENT.** *A. Anadon*, M. A. Martínez, M. Martínez, M. J. Díaz, M. T. Frejo, V. J. Castellano and M. R. Martínez-Larranaga. Department of Toxicology and Pharmacology, Faculty of Veterinary Medicine, Complutense University.

#1489 **CONVERSION OF DELTA PH AND ELLMAN VALUES FOR CHOLINESTERASES.** *B. W. Wilson*[1], J. D. Henderson[1], D. E. Arrieta[1], S. A. McCurdy[2] and R. Reitstetter[3]. [1]Environmental Toxicology, University of California, Santa Cruz, CA, [2]Epidemiology and Preventive Medicine, University of California, Davis, CA and [3]Clinical Investigation, Brooke Army Medical Center, San Antonio, TX.

#1490 **DIFFERENTIAL PROFILES OF CHOLINESTERASE INHIBITION AND NEUROBEHAVIORAL EFFECTS IN RATS EXPOSED TO FENAMIPHOS AND PROFENOPHOS.** K. L. McDaniel, P. M. Phillips and *V. C. Moser*. NHEERL, U.S. EPA, Research Triangle Park, NC.

#1491 **CHRONIC DIETARY EXPOSURE WITH INTERMITTENT SPIKE DOSES OF CHLORPYRIFOS FAILS TO ALTER BRAINSTEM AUDITORY EVOKED RESPONSES (BAERS) IN RATS.** J. E. Graff, *D. W. Herr*, R. S. Marshall and D. L. Hunter. Neurotoxicology, U.S. EPA, Durham, NC.

#1492 **COMPARATIVE EFFECTS OF METHYL PARATHION (MPS) AND ITS METABOLITE METHYL PARAOXON (MPO) ON ACETYLCHOLINE (ACH) RELEASE AND MUSCARINIC AUTORECEPTORS IN JUVENILE AND ADULT RATS.** *G. Wang*[1,2], *J. Liu*[1], *H. Zhang*[1,3] and *C. N. Pope*[1]. [1]Oklahoma State University, Stillwater, OK, [2]Baylor College of Medicine, Houston, TX and [3]University of Rochester, Rochester, NY.

#1493 **PYRIDOSTIGMINE BLOCKS PARAOXON-INDUCED BLOOD-BRAIN BARRIER LEAKAGE.** *X. Song*[1], *C. N. Pope*[1], *R. Murthy*[2], *J. Shaikh*[1] and *J. Bressler*[2]. [1]Physiological Sciences, Oklahoma State University, Stillwater, OK and [2]Kennedy Krieger Institute, Johns Hopkins School of Public Health, Baltimore, MD.

#1494 **INTERACTIVE TOXICITY OF CHLORPYRIFOS AND PARATHION IN NEONATAL RATS.** R. Kacham, *S. Karanth* and *C. N. Pope*. Physiological Sciences, Oklahoma State University, Stillwater, OK.

#1495 **AGE AND STRAIN COMPARISONS OF CARBACHOL-STIMULATED INOSITOLPHOSPHATE (IP) RELEASE IN RAT RETINA AND FRONTAL CORTEX.** J. Perez, L. D. Sutton and *A. M. Geller*. Neurotoxicology, U.S. EPA, Research Triangle Park, NC.

#1496 **DIFFERENTIAL SENSITIVITY TO ANTICHOLINESTERASE PESTICIDES IN THE JUVENILE RAT: EFFECTS ON THERMOREGULATION.** C. M. Mack and C. J. Gordon. U.S. EPA, Research Triangle Park, NC. Sponsor: *D. Herr*.

#1497 **INDUCTION AND PROMOTION OF DELAYED POLYNEUROPATHY BY PHOSPHOROAMIDATES. *IN VITRO* AND *IN VIVO* STUDIES.** G. Gardiman, *A. Moretto* and *M. Lotti*. Environmental Medicine & Public Health, University of Padua, Padua, Italy.

#1498 **EXPLORING THE EXPLANATION OF AGE-RELATED SENSITIVITY TO A PYRETHROID INSECTICIDE, DELTAMETHRIN, IN RATS.** *W. Haines*[1,2], R. S. Marshall[2], D. L. Hunter[2] and *S. Padilla*[2]. [1]UNC Toxicology, Research Triangle Park, NC and [2]Neurotoxicology Division, U.S. EPA, Research Triangle Park, NC.

#1499 **DOES CHRONIC CHLORPYRIFOS TOXICITY COMPROMISE DOPAMINERGIC FUNCTION IN THE RAT STRIATUM?** S. L. Oxendine[1,2], S. Southerland[2], R. Marshall[1], D. Hunter[1], *R. Mailman*[2] and *S. Padilla*[1,2]. [1]Neurotox., U.S. EPA, Research Triangle Park, NC and [2]Curr.in Toxicology., UNC-CH, Chapel Hill, NC.

#1500 **INHIBITION OF CHOLINESTERASE AND CARBOXYLESTERASE FOLLOWING *IN VIVO* EXPOSURE OF RATS TO MIXTURES OF PARATHION AND AZINPHOSMETHYL.** *E. C. Meek*, *R. L. Carr*, H. W. Chambers, M. Burnett, R. Coker and *J. E. Chambers*. Center for Environmental Health Sciences, Mississippi State University, Mississippi State , MS.

#1501 **INVESTIGATION OF THE COMBINED TOXICITY OF A MIXTURE OF CHLORPYRIFOS AND METHYL PARATHION.** J. A. Kamykowski[1], *J. E. Chambers*[1], H. W. Chambers[2] and *R. L. Carr*[1]. [1]Center for Environmental Health Sciences, College of Veterinary Medicine, Mississippi State University, Mississippi State, MS and [2]Department of Entomology and Plant Pathology, Mississippi State University, Mississippi State, MS.

#1502 **THE EFFECT OF EARLY POSTNATAL EXPOSURE TO CHLORPYRIFOS AND CHLORPYRIFOS-OXON ON NEUROTROPHIN LEVELS IN THE RAT FOREBRAIN.** *A. Betancourt* and *R. L. Carr*. Center for Environmental Health Sciences, College of Veterinary Medicine, Mississippi State University, Mississippi State, MS.

#1503 **ROUTE OF EXPOSURE, NITROGEN SUBSTITUTION AND ACID STABILITY INFLUENCE THE HAZARDS AND COVALENT PROTEIN MODIFICATIONS PRODUCED BY DITHIOCARBAMATES.** *W. M. Valentine*, *R. W. Thompson*, *E. G. Tonkin*, K. Amarnath, V. Amarnath and H. L. Valentine. Pathology, Vanderbilt University Medical Center, Nashville, TN, TN.

#1504 **FIPRONIL BLOCK OF GLUTAMATE-ACTIVATED CHLORIDE CURRENTS IN COCKROACH NEURONS.** T. Ikeda[3,2], *X. Zhao*[3], V. Salgado[1], Y. Kono[2], J. Z. Yeh[3] and *T. Narahashi*[3]. [1]Bayer CropScience, Monheim, Germany, [2]Institute of Agriculture and Forestry, Tsukuba, Japan and [3]Molecular Pharmacology and Biological Chemistry, Northwestern University Medical School, Chicago, IL.

#1505 **STATE-DEPENDENT BLOCK OF MAMMALIAN AND INSECT SODIUM CHANNELS BY THE INSECTICIDES INDOXACARB AND DECARBOMETHOXY-INDOXACARB.** *X. Zhao*[1], T. Ikeda[1], V. Salgado[2], J. Z. Yeh[1] and *T. Narahashi*[1]. [1]Molecular Pharmacology and Biological Chemistry, Northwestern University Medical School, Chicago, IL and [2]Bayer CropScience, Monheim, Germany.

#1506 **THE INTERACTION OF PARAOXON WITH HUMAN RECOMBINANT ACETYLCHOLINESTERASE.** *C. A. Rosenfeld* and *L. G. Sultatos*. Pharmacology and Physiology, New Jersey Medical School, Newark, NJ.

#1507 **TOXICOKINETIC-TOXICODYNAMIC RELATIONSHIPS IN CASES OF CYHALOTHRIN EXPOSURE.** M. R. Martinez-Larrañaga, M. A. Martínez, M. Martínez, M. J. Díaz, M. T. Frejo, V. J. Castellano, G. Isea and *A. Anadon*. Department of Toxicology and Pharmacology, Faculty of Veterinary Medicine, Complutense University.

#1508 **COMBINED EXPOSURE TO DIETHYLDITHIOCARBAMATE (DDC) AND IRON (FE): EFFECTS ON THE NIGROSTRIATAL DOPAMINERGIC SYSTEM.** *M. Thiruchelvam* , S. E. Mayson, E. K. Richfield and *D. A. Cory-Slechta*. Department of Environmental Medicine, University of Rochester School of Medicine & Dentistry, Rochester, NY.

#1509 **NEUROBEHAVIORAL EVALUATION OF HOUSEHOLD EXPOSURE TO DURSBAN.** *R. M. Singer*. Independent, Santa Fe, NM.

Wednesday Afternoon, March 12
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: EYE

Chairperson(s): *Michael Aleo, Pfizer Global Research & Development, Groton, CT and Philip Casterton, Access Business Group ILL, Ada, MI.*

Displayed: *1:30 PM–4:30 PM*

Attended: *3:00 PM-4:30 PM*

#1510 **CHARACTERIZATION OF A MONKEY MODEL OF LASER-INDUCED CHOROIDAL NEOVASCULARIZATION (CNV).** *B. J. Christian*[1], T. Nork[2], R. A. Leedle[1], J. M. Miller[1] and *C. A. O'Neill*[3]. [1]Covance Laboratories, Inc., Madison, WI, [2]Comparative Ophthalmic Research Laboratories, University of Wisconsin, Madison, WI and [3]Genentech Inc., South San Francisco, CA.

#1511 **LASER-INDUCED CHOROIDAL NEOVASCULARIZATION IN DRUG DEVELOPMENT—EXPERIENCES WITH THE PRIMATE MODEL.** *M. C. Wills*[1] and *W. H. Bee*[2]. [1]Sierra Biomedical, a division of Charles River, Sparks, NV and [2]Scios, Inc., Sunnyvale, CA.

#1512 **ENHANCED EXPRESSION OF VASCULAR COAGULATION ADHESION MOLECULE (VCAM–1) IN 2-BUTOXYETHANOL-INDUCED HEMOLYSIS AND THROMBOSIS IN FEMALE RATS.** C. R. Moomaw, J. F. Foley and A. Nyska. Laboratory of Experimental Pathology, NIEHS, Research Triangle Park, NC. Sponsor: *R. Maronpot*.

#1513 **D2 AGONIST INDUCED RETINAL DEGENERATION CONFINED TO ALBINO RATS.** A. B. Mauz, S. J. Platz and S. Pollentier. Boehringer Ingelheim Pharmacology KG, Biberach, Germany. Sponsor: *S. Platz*.

#1514 **THE CYNOMOLGUS MONKEY AS A MODEL FOR OCULAR TOXICITY TESTING: INCIDENCE AND CHARACTERIZATION OF SPONTANEOUS LESIONS IN THE OCULAR FUNDUS.** B. Niggemann, U. Korte, G. F. Weinbauer and F. Vogel. Covance Laboratories GmbH, Muenster, Germany. Sponsor: *P. Thomas*.

#1515 **EVALUATING THE EYE IRRITANCY OF SOLVENTS IN A SIMPLE FRAGRANCE MIXTURE WITH THE BOVINE CORNEAL OPACITY AND PERMEABILITY (BCOP) ASSAY.** N. Cuellar[1], P. H. Lloyd[2], J. E. Swanson[1], *J. C. Merrill*[3], M. L. Clear[3], G. Mun[3], J. W. Harbell[3] and K. L. Bonnette[4]. [1]S.C. Johnson & Son, Inc., Racine, WI, [2]SCJ EURAFNE Ltd., Egham, Surrey, United Kingdom, [3]Institute for In Vitro Sciences, Gaithersburg, MD and [4]Springborn Laboratories, Inc., Spencerville, OH.

#1516 **CORNEAL PERMEABILITY IN AN IMPROVED HOLDER FOR THE BOVINE CORNEA OPACITY AND PERMEABILITY (BCOP)ASSAY.** *P. L. Casterton*[1], J. Ditlev[2] and J. L. Ubels[2]. [1]Access Business Group, Alticor Corp., Ada, MI and [2]Biology, Calvin College, Grand Rapids, MI.

Wednesday Afternoon, March 12
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: BIOTRANSFORMATION

Chairperson(s): *Wolfgang Dekant, University of Würzburg, Würzburg, Germany and Mohammed Farooqui, University of Texas Pan American, Edinburg, TX.*

Displayed: *1:30 PM–4:30 PM*

Attended: *1:30 PM-3:00 PM*

#1517 **ISOLATION AND CHARACTERIZATION OF UDP-GLUCURONOSYLTRANSFERASES FROM FEMALE RHESUS MONKEY.** *B. Dean*[1], S. Chang[1], *P. E. Thomas*[2] and *C. King*[3]. [1]Drug Metabolism, Merck & Co., Inc., Rahway, NJ, [2]Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ and [3]Drug Metabolism, Merck & Co., Inc., San Diego, CA.

#1518 **EFFECTS OF MICROSOMAL ENZYME INDUCERS ON THYROID HORMONE GLUCURONIDATION: CHARACTERIZATION OF THE ROLE OF UDP-GLUCURONOSYLTRANSFERASE 1A FAMILY OF ENZYMES.** *T. A. Couch* and *C. D. Klaassen*. University of Kansas Medical Center, Kansas City, KS.

#1519 **NUCLEAR RECEPTOR PXR IS REQUIRED FOR INDUCTION OF UDP-GLUCURONOSYLTRANSFERASES IN MOUSE LIVER BY PREGNENOLONE-16α-CARBONITRILE.** *C. Chen*[1], J. L. Staudinger[2] and *C. D. Klaassen*[1]. [1]University of Kansas Medical Center, Kansas City, KS and [2]University of Kansas, Lawrence, KS.

#1520 **STABLE AND UNSTABLE GLUCURONIDES IN CURCUMIN METABOLISM.** E. Pfeiffer[1], S. Hühle[1], *A. M. Solyom*[2], *B. N. Timmermann*[2] and *M. Metzler*[1]. [1]Institute of Food Chemistry and Toxicology, University of Karlsruhe, Karlsruhe, Germany and [2]Arizona Center for Phytomedicine Research, University of Arizona, Tucson, AZ.

#1521 **EFFECT OF ESTRAGOLE, SAFROLE AND MYRISTICIN ON *IN VITRO* HUMAN CYP3A4, CYP2D6 AND CYP1A ACTIVITIES.** L. V. Iyer, S. E. LeValley, L. H. Sharp, W. M. Shinn, S. S. Nath, P. G. Catz, R. R. Swezey and *C. E. Green*. Metabolism and Pharmacokinetics, SRI International, Menlo Park, CA.

#1522 ***IN VITRO* DETERMINATION OF KINETIC CONSTANTS FOR 1, 3-DICHLOROPROPANE, 2, 2-DICHLOROPROPANE, AND 1, 1-DICHLOROPROPENE IN RAT LIVER MICROSOMES AND CYTOSOL.** R. Tornero-Velez[1], J. Laskey[2] and *M. Evans*[3]. [1]ESE, UNC, Chapel Hill, NC, [2]SEE, Research Triangle Park, NC and [3]NHEERL/ETD/PK, U.S. EPA, Research Triangle Park, NC.

#1523 **METABOLISM OF RUTAECARPINE BY RAT LIVER MICROSOMES: A PARTIAL CHARACTERIZATION OF METABOLITES.** S. Lee[1], J. Lee[2], T. Jeon[1], D. Kim[2], E. Lee[1], H. Chang[1], Y. Jahng[1] and *T. Jeong*[1]. [1]Pharmacy, Yeungnam University, Kyungsan, Kyungbuk, South Korea and [2]BBRC, KIST, Seoul, South Korea.

#1524 **BIOTRANSFORMATION OF *N*-ETHYL-*N*-(2-HYDROXYETHYL)PERFLUOROOCTANESULFONAMIDE (N-ETFOSE) BY RAT LIVER MICROSOMES, CYTOSOL, AND SLICES.** L. xu[1], *A. M. Seacat*[2], *J. L. Butenhoff*[2] and *M. W. Anders*[1]. [1]Pharmacology & Physiology, University of Rochester, Rochester, NY and [2]3M Medical Department, 3M Corp., St. Paul, MN.

#1525 ***IN VITRO* DETOXICATION OF ORGANOPHOSPHATES AND THEIR MIXTURES BY RAT LIVER AND SERUM ESTERASES.** H. W. Chambers[2] and *J. E. Chambers*[2]. [1]Entomology and Plant Pathology, Mississippi State University, Mississippi State, MS and [2]Center for Environmental Health Sciences, Mississippi State University, Mississippi State, MS.

#1526 **COMPARISON OF HEPATIC *IN VITRO* METABOLISM OF THE PYRROLIZIDINE ALKALOID SENECIONINE IN SHEEP AND CATTLE.** *J. M. Duringer*[1], *M. Craig*[1] and *D. Buhler*[2]. [1]Biomedical Sciences, Oregon State University, Corvallis, OR and [2]Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR.

#1527 **MECHANISM(S) OF DIFFERENTIAL INHIBITION OF HEPATIC AND PANCREATIC FATTY ACID ETHYL ESTER SYNTHASE ACTIVITY BY TRI-*o*-TOLYL PHOSPHATE METABOLITES.** *B. S. Kaphalia*, *K. A. Mericle* and *G. Ansari*. Pathology, The University of Texas Medical Branch, Galveston, TX.

#1528 **MODULATION OF FATTY ACID METHYL ESTER FORMATION IN RATS USING TRI-*o*-TOLYLPHOSPHATE.** *K. A. Mericle*, *B. S. Kaphalia* and *G. Ansari*. Experimental Pathology, University of Texas Medical Branch, Galveston, TX.

#1529 **BIOTRANSFORMATION OF 1, 1, 1, 3-TETRACHLOROPROPANE IN RATS AFTER INHALATION EXPOSURE.** *W. Dekant* and T. Bayer. Department of toxicology, University of Wuerzburg, Wuerzburg, Germany.

#1530 **ALIPHATIC NITRILES: EFFECT OF ALCOHOL ON TOXICITY AND METABOLISM IN MALE SPRAGUE-DAWLEY RATS.** *M. Y. Farooqui*. Biology, University of Texas Pan American, Edinburg, TX.

#1531 **MUTAGENICITY STUDIES OF URINARY METABOLITES FROM RATS TREATED ORALLY WITH LOCAL ANESTHETICS.** J. M. Sanders[1,2], A. Abu-Shakra[3], *L. T. Burka*[1] and *M. L. Cunningham*[1]. [1]NIEHS, Research Triangle Park, NC, [2]NCSU, Raleigh, NC and [3]NCCU, Durham, NC.

#1532 **EFFECTS OF CALORIC INTAKE ON ETHANOL METABOLISM IN PREGNANT RATS: ROLE OF ALCOHOL DEHYDROGENASE AND ALDEHYDE DEHYDROGENASE.** *M. J. Ronis*[1,3], M. Zipperman[3], B. Gardner[3], T. Fletcher[3], *T. M. Badger*[2,3], M. Ferguson[3], K. Hale[3] and R. Haley[3]. [1]Pediatrics, University of Arkansas for Medical Sciences, Little Rock, AR, [2]Physiology, University of Arkansas for Medical Sciences, Little Rock, AR and [3]Arkansas Children's Nutrition Center, Little Rock, AR.

#1533 **EFFECT OF POLYUNSATURATED FATTY ACIDS ON DNA ADDUCT FORMATION BY HETEROCYCLIC AROMATIC AMINES IN HCA-7 CELLS.** H. J. Moonen[1], M. van Zwam[2], M. van Herwijnen[1], J. Kleinjans[1] and T. de Kok[1]. [1]Health Risk Analysis & Toxicology, Maastricht University, Maastricht, Netherlands and [2]Toxicology, Wageningen University, Wageningen, Netherlands. Sponsor: *M. van den Berg*.

#1534 **SPECIES DIFFERENCES IN THE METABOLISM OF DI(2-ETHYLHEXYL)PHTHALATE (DEHP) IN SEVERAL ORGANS FROM MOUSE, RAT AND MARMOSET.** Y. Ito[1], H. Yokota[2], R. Wang[3], O. Yamanoshita[4], *G. Ichihara*[1], H. Wang[1], Y. Kurata[5] and T. Nakajima[1]. [1]Occupational and Environmental Health, Nagoya University Graduate School of Medicine, Nagoya, Aichi, Japan, [2]Rakuno Gakuen University, Hokkaido, Japan, [3]National Institute of Industrial Health, Kanagawa, Japan, [4]Shinshu University School of Medicine, Matsumoto, Japan and [5]Mitsubishi Research Institute, Tokyo, Japan.

#1535 **REDOX-CYCLING OF 7H-DIBENZO[C, G]CARBAZOLE-3, 4-DIONE AND SUPEROXIDE FORMATION.** *D. Warshawsky* and W. Xue. Environmental Health, University of Cincinnati, Cincinnati, OH.

#1536 **METHAMPHETAMINE METHYLATION IN AQUEOUS SOLUTIONS OF FORMALDEHYDE.** P. Tirumalai, P. M. Gannett, P. S. Callery, T. M. Bland and T. S. Tracy. Basic Pharmaceutical Sciences, WVU-HSC, Morgantown, WV. Sponsor: *M. Davis*.

#1537 **COMPARATIVE METABOLISM AND DRUG RESIDUES IN PHEASANTS, BOBWHITE QUAIL, PARTRIDGE AND CHICKENS.** K. A. Cortright, I. T. Taylor and *A. L. Craigmill*. Environmental Toxicology, UC Davis, Davis, CA.

#1538 **SYNTHESIS OF RETINYL PALMITATE- AND RETINOL-DERIVED PHOTOCHEMICAL, OXIDATIVE, AND DEHYDRATION PRODUCTS.** V. M. Samokyszyn. Pharmacology and Toxicology, University of Arkansas for Medical Sciences, Little Rock, AR. Sponsor: *J. Hinson*.

Wednesday Afternoon, March 12
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: CYTOCHROME P450-MEDIATED METABOLISM OF XENOBIOTICS II

Chairperson(s): *Bhagavatula Moorthy, Baylor College of Medicine, Houston, TX and Paul Jean, Dow Corning Corporation, Midland, MI.*

Displayed: *1:30 PM–4:30 PM*

Attended: *3:00 PM-4:30 PM*

#1539 **FURTHER STUDIES ON THE SELECTIVITY AND INHIBITORY MECHANISM OF AZAMULIN, A NEW CYP3A CHEMICAL INHIBITOR PROBE.** *D. M. Stresser*, M. I. Broudy, S. S. Dehal, C. J. Patten and *C. L. Crespi*. BD Biosciences, Woburn, MA.

#1540 **OXIDATIVE STRESS STIMULATES THE FORMATION OF CYTOCHROME P450 3A PROTEIN CONJUGATION IN A PROCESS THAT IS INHIBITED BY SUBSTRATE.** A. L. Kimzey, N. Bollinger, S. Shen and *R. C. Zangar*. Pacific Northwest National Laboratory, Richland, WA.

#1541 **CYTOCHROME P450 CYP2E1 AND CYP 3A4 ACTIVITIES IN HEPATITIS C PATIENTS.** *S. I. Shedlofsky*[1], R. Tosheva[1], K. Anderson[2] and R. Blouin[3]. [1]GCRC, University of Kentucky, Lexington, KY, [2]GCRC, UTMB, Galveston, TX and [3]College of Pharmacy, University of Kentucky, Lexington, KY.

#1542 **CYP2E1 IS NOT SPECIFIC FOR FORMATION OF 6-HYDROXYCHLORZOXAZONE *IN VIVO*.** *K. K. Wolf*[1], S. Wood[3], J. Bement[3], W. Bement[3], *S. Wrighton*[4], *E. Jeffery*[5], F. Gonzalez[6], P. Sinclair[3,2,1] and *J. Sinclair*[3,2,1]. [1]Pharmacology and Toxicology, Dartmouth Medical School, Hanover, NH, [2]Biochemistry, Dartmouth Medical School, Hanover, NH, [3]VA Medical Center, White River Junction, VT, [4]Lilly Research Laboratories, Indianapolis, IN, [5]Food Science/ Human Nutrition, University of Illinois, Urbana, IL and [6]NIH, Bethesda, MD.

#1543 **VALIDATION AND AUTOMATION OF AN ASSAY ENABLING RAPID SCREENING FOR POTENTIAL TOXICOLOGICAL IMPLICATIONS OF CYP2E1 INHIBITION.** A. V. Rizvi[1], O. V. Trubetskoy[2], T. L. Guthrie[1], J. O. Watson[2] and T. M. Fletcher[1]. [1]Cancer Therapeutics and Immunology, Southern Research Institute, Birmingham, AL and [2]Panvera Corporation, Madison, WI. Sponsor: *J. Page*.

#1544 **IDENTIFICATION OF P450 ENZYMES INVOLVED IN THE METABOLISM AND TOXICITY OF CARBON DISULFIDE.** P. S. Dalvi, T. Wilder-Kofie, B. Mares, C. Lane, *R. R. Dalvi* and L. H. Billups. Biomedical Sciences, Tuskegee University, Tuskegee, AL.

#1545 **COMPARATIVE METABOLISM OF *cis* AND *trans* CROTONONITRILE (CRN) TO CYANIDE USING CYTOCHROME P405 2E1-NULL AND WILD TYPE MICE.** *B. I. Ghanayem*, L. El Hadri, B. Chanas, L. C. Ferguson and *L. T. Burka*. Laboratory of Pharmacology and Chemistry, NIH/NIEHS, Research Triangle Park, NC.

#1546 **INHIBITION OF URETHANE METABOLISM AND BIOACCUMULATION IN CYTOCHROME P450 2E1-NULL MICE.** U. Hoffler[1,2] and *B. I. Ghanayem*[1,2]. [1]Meharry Medical College, Nashville, TN and [2]NIEHS, Research Triangle Park, NC.

#1547 **RELIABILITY OF CHLORZOXAZONE AS AN *IN VIVO* PROBE OF CYP2E1 ACTIVITY IN HUMANS.** L. Ernstgård, A. Rannug, M. Warholm and *G. Johanson*. Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden.

#1548 **COMPARATIVE METABOLISM OF ACRYLONITRILE AND METHACRYLONITRILE TO CYANIDE: STUDIES USING CYTOCHROME P4502E1 (CYP2E1)- AND MICROSOMAL EPOXIDE HYDROLASE (MEH)-NULL MICE.** L. El Hadri, B. Chanas and *B. I. Ghanayem*. NIEHS, Research Triangle Park, NC.

#1549 **THE EFFECT OF ETHYL-*TERT.*-BUTYL ETHER INHALATION ON CYTOCHROME P450 ISOZYMES AND *IN VITRO* MEASUREMENT OF ENZYME ACTIVITY IN RAT LIVER, LUNG, AND NASAL MUCOSA.** *K. M. Broadwell* and *R. A. Schatz*. Toxicology, Northeastern University, Braintree, MA.

#1550 **INACTIVATION OF CYP2F1 IMPARTS DOSE-DEPENDENT DECREASE IN SUSCEPTIBILITY OF LUNG CELLS TO 3-METHYLINDOLE.** *W. K. Nichols*, *B. A. Carr*, D. L. Lanza and *G. S. Yost*. Pharmacology &Toxicology, University of Utah, Salt Lake City, UT.

#1551 ***IN VITRO* METABOLISM OF MYRISTICIN BY RAT AND HUMAN LIVER.** R. Swezey, S. E. LeValley, L. H. Sharp, M. N. Ho and *C. E. Green*. Metabolism and Pharmacokinetics, SRI International, Menlo Park, CA.

#1552 **EXTRAHEPATIC METABOLISM OF BIOCHANIN A AND FORMONONETIN AND METABOLITE INHIBITION OF CYTOCHROME P450 1B1.** *D. W. Roberts*, W. H. Tolleson, M. I. Churchwell and D. R. Doerge. Biochemical Toxicology, Nat Center Toxicology. Research, Jefferson, AR.

#1553 **P450 INHIBITION BY METHYLENEDIOXYPHENYL COMPOUNDS PRESENT IN GOLDENSEAL.** *P. Chatterjee*, R. N. Havea and *M. R. Franklin*. Pharmacology and Toxicology, University of Utah, Salt Lake City, UT.

#1554 **HYDROXYL RADICAL FORMATION BY HETEROLOGOUSLY EXPRESSED MICROSOMAL ENZYMES.** P. E. Thomas and V. M. Mishin. Laboratory for Cancer Research, Rutgers, The State University of New Jersey, Piscataway, NJ. Sponsor: *G. Witz*.

#1555 **LUMINESCENT CYTOCHROME P450 ASSAYS THAT UTILIZE D-LUCIFERIN DERIVATIVES AS PROBE SUBSTRATES.** J. J. Cali[1], S. Ho[1], D. Ma[1], D. H. Klaubert[2], D. Simpson[1], W. Daily[2] and *R. F. Bulleit*[1]. [1]Promega Corp., Madison, WI and [2]Promega Biosciences Inc., San Luis Obispo, CA.

#1555a **RAT PULMONARY CYP1A1 INDUCTION IS INHIBITED BY RESPIRABLE COAL DUST EXPOSURE.** M. Ghanem[2, 1];D. Porter[1]; L. Battelli[1, 2]; M. Kashon[1]; M. Barger[1]; J. Y. Ma[1]; V. Vallyathan[1]; J. Nath[2] and A. Hubbs[1]. [1]NIOSH, Morgantown, WV and [2]West Virginia University, Morgantown, WV.

Wednesday Afternoon, March 12
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: REACTIVE INTERMEDIATES AND BIOACTIVATION PATHWAYS OF XENOBIOTICS

Chairperson(s): *James Yager, Johns Hopkins University, Baltimore, MD and David Ross, University of Colorado, Denver, CO.*

Displayed: *1:30 PM–4:30 PM*

Attended: *1:30 PM-3:00 PM*

#1556 **METABOLITE OF PNU-142721 FORMS SELECTIVE ADDUCT WITH CYS125 OF RAT BETA-GLOBIN.** R. Voorman[1], E. B. Smith[1], W. J. Adams[1], R. L. Heinrikson[2], G. S. Cavey[3], J. W. Leone[2] and P. E. Sanders[1]. [1]Global Drug Metabolism, Pharmacia Corp, Kalamazoo, MI, [2]Biochemistry, Pharmacia Corp, Kalamazoo, MI and [3]Analytical Chemistry, Pharmacia Corp, Kalamazoo, MI. Sponsor: *G. Cosma*.

#1557 **EQUINE CATECHOL ESTROGEN 4-HYDROXYEQUILENIN IS A SUBSTRATE AND AN INHIBITOR OF CATECHOL-O-METHYLTRANSFERASE.** *J. Yao*[1], Y. Li[1], M. Chang[1], H. Wu[1], J. E. Goodman[2,3], *X. Liu*[1], H. Liu[1], A. D. Mesecar[1], R. B. van Breemen[1], *J. D. Yager*[2] and *J. L. Bolton*[1]. [1]University of Illinois at Chicago, Chicago, IL, [2]Johns Hopkins University, Baltimore, MD and [3]NIH, Bethesda, MD.

#1558 **INHIBITION OF BAX TRANSLOCATION AND NECROSIS WITH BCL-XL OVEREXPRESSION IN A WELL CHARACTERIZED CELL CULTURE MODEL FOR TETRAFLUOROETHYLCYSTEINE-INDUCED NEPHROTOXICITY.** H. K. Ho[1], Z. Hu[3], S. Tzung[4], D. M. Hockenbery[4], N. Fausto[2], *S. D. Nelson*[1] and *S. A. Bruschi*[1]. [1]Medicinal Chemistry, University of Washington, Seattle, WA, [2]Pathology, University of Washington, Seattle, WA, [3]Molecular Biology, Immunex Corp, Seattle, WA and [4]Fred Hutchinson Cancer Research Center, Seattle, WA.

#1559 **THE PROTECTIVE EFFECT OF FLAVONOIDS AGAINST OXIDATIVE DAMAGE INDUCED BY OCHRATOXIN A IN PROXIMAL TUBULAR CELLS.** Y. Simarro Doorten, S. M. Nijmeijer and J. Fink-Gremmels. Vet. Pharmacy, Pharmacology and Toxicology, Utrecht University, Fac. of Veterinary Medicine, Utrecht, Utrecht, Netherlands. Sponsor: *M. Vandenberg*.

#1560 **ELUCIDATION OF REACTIVE METABOLITES OF 4-IPOMEANOL BY LIQUID CHROMATOGRAPHY-TANDEM MASS SPECTROMETRY (LC-MS/MS).** T. M. Alvarez-Diez, and *J. Zheng,* Pharmaceutical Sciences, Northeastern University, Boston, MA.

#1561 **HYDROQUINONE AND CATECHOL METABOLITES OF BENZENE INCREASE ENDOTHELIAL IL8 PRODUCTION BY HUMAN BONE MARROW ENDOTHELIAL CELLS.** *D. Ross*, *J. A. Moran* and K. B. Leader. Pharmaceutical Sciences, UCHSC School of Pharmacy, Denver, CO.

#1562 **HEMATOPOIETIC STEM CELLS AS TARGETS FOR TRANSPLACENTAL TOXICANTS.** *E. P. Gallagher*[1], *J. L. Gardner*[1], C. M. Huisden[1], *A. M. Doi*[2] and C. G. Moneypenny[1]. [1]Physiological Sciences, University of Florida, Gainesville, FL and [2]National Toxicology Program, NIEHS, Research Triangle Park, NC.

#1563 **EFFECTS OF DIALLYL SULFIDE ON THIOACETAMIDE-INDUCED HEPATOTOXICITY: A POSSIBLE ROLE OF CYTOCHROME P450 2E1.** J. Kim, N. Kim, S. Lee, C. Kim, S. Hyun, T. Jeon and *T. Jeong*. Pharmacy, Yeungnam University, Kyungsan, Kyungbuk, South Korea.

#1564 **DICHLOROACETYLATED PROTEIN ADDUCTS IN LUNG AND LIVER OF MICE TREATED WITH TRICHLOROETHYLENE.** B. Millen[1], *J. Parker*[2] and *P. Forkert*[1]. [1]Anatomy & Cell Biology, Queen's University, Kingston, ON, Canada and [2]National Center for Environmental Assessment, U.S. EPA, Washington, DC.

#1565 **BIOTRANSFORMATION OF ZAFIRLUKAST BY CYTOCHROME P450 3A4.** *K. W. Skordos* and *G. S. Yost*. Pharmacology and Toxicology, University of Utah, Salt Lake City, UT.

Wednesday Afternoon, March 12
1:30 PM to 4:00 PM
Exhibit Hall

POSTER SESSION: HYDROCARBONS I

Chairperson(s): *Aramandla Ramesh, Meharry Medical College, Nashville, TN and Burra Madhukar, Michigan State University, East Lansing, MI.*

Displayed: *1:30 PM–4:00 PM*

Attended: *3:00 PM-4:30 PM*

#1566 **DETERMINATION OF TRACE LEVELS OF DICHLOROACETIC ACID (DCA) IN RAT LIVER BY LIQUID CHROMATOGRAPHY AND MASS SPECTROMETRY (LC/MS).** A. M. Dixon, D. C. Delinsky, S. Muralidhara, *J. V. Bruckner*, *J. W. Fisher* and M. G. Bartlett. Pharmaceutical and Biomedical Sciences, University of Georgia, Athens, GA.

#1567 **CHLOROETHANE METABOLISM COMPARED WITH TOXIC THRESHOLD ACTIVITIES.** *J. W. Holder*. U.S. EPA, Washington, DC.

#1568 **HEXACHLOROBENZENE INCREASES UROPORPHYRIA IN MICE WITHOUT INCREASING CYP1A2.** N. Gorman[1,2], H. Trask[1,2], W. Bement[1], *J. Sinclair*[1,2,3], G. Gerhard[1,4], *A. Smith*[5], F. Gonzalez[6] and P. Sinclair[1,2,3]. [1]VA Medical Center, White River Junction, VT, [2]Biochemistry, Dartmouth Medical School, Hanover, NH, [3]Pharmacology/Toxicology, Dartmouth Medical School, Hanover, NH, [4]Pathology, Dartmouth Medical School, Hanover, NH, [5]MRC Toxicology Unit, University of Leicester, Leicester, United Kingdom and [6]NIH, Bethesda, MD.

#1569 **INTERACTION BETWEEN A BROMINATED FLAME-RETARDANT (PBBE 99) AND AN *ORTHO*-SUBSTITUTED PCB (PCB 52) ENHANCES DEVELOPMENTAL NEUROTOXIC EFFECTS.** *P. Eriksson*, C. Fischer, H. Karlsson and A. Fredriksson. Environmental Toxicology, Uppsala University, Uppsala, Sweden.

#1570 **COMPARISON OF PCB SPECIFIC CONGENER PROFILES IN SKIN AND EAR OF MICE EXPOSED TO AN ENVIRONMENTAL PCB/PCDF MIXTURE.** *K. IMSILP*, *L. G. Hansen* and *R. B. Cope*. Veterinary Biosciences, University of Illinois, Urbana, IL.

#1571 **EXPRESSION OF CYCLOOXYGENASE-2 IN HL-60 CELLS EXPOSED TO POLYCHLORINATED BIPHENYLS.** S. A. Bezdecny[1,2,3], *R. A. Roth*[1,2,3] and *P. E. Ganey*[1,2,3]. [1]Department of Pharmacology and Toxicology, Michigan State University, [2]Institute for Environmental Toxicology, Michigan State University, East Lansing, MI and [3]National Food Safety and Toxicology Center, Michigan State University, East Lansing, MI.

#1572 **CO-ELEVATION OF HEPATIC GLUTATHIONE S-TRANSFERASE ACTIVITY WITH UROPORPHYRIN CONCENTRATION IN PORPHYRIC MICE.** *M. R. Franklin*[1], L. A. Johnson[1], J. D. Phillips[2] and J. P. Kushner[2]. [1]Pharmacology and Toxicology, University of Utah, Salt Lake City, UT and [2]Medicine, University of Utah, Salt Lake City, UT.

#1573 **PCB-INDUCED INHIBITION OF MONOAMINE TRANSPORTERS PREDICTS RAT SYNAPTOSOMAL TISSUE AND MEDIA DOPAMINE AND DOPAC CONCENTRATIONS.** J. Bemis[1] and *R. F. Seegal*[1,2]. [1]School of Public Health, University at Albany, Albany, NY and [2]Wadsworth Center, NY State Department of Health, Albany, NY.

#1574 **A DIORTHOCHLORINATED PCB CONGENER 2, 2', 4, 4'-TETRACHLOROBIPHENYL (TCB) ACTIVATES EXTRACELLULAR SIGNAL REGULATED KINASES (ERKS) INDEPENDENT OF PROTEIN KINASE C (PKC) IN JB6 MOUSE EPIDERMAL CELLS.** *B. V. Madhukar* and O. Hernandez-Maldonado. Pediatrics/Human Development, Michigan State University, East Lansing, MI.

#1575 **EFFECTS OF COMPLEX PAH MIXTURES AND 7H-BENZO(*c*)FLUORENE ON DNA ADDUCT FORMATION IN MICE.** L. Cizmas, G. Zhou, T. McDonald, *S. Safe* and *K. C. Donnelly*. Texas A&M University, College Station, TX.

#1576 **PAH REGULATION OF CYP1 GENE IN ZR-75-1 HUMAN BREAST CANCER CELLS.** K. N. Min, Y. Y. Sheen, J. Y. Kim and M. J. Cho. Pharmacy, Ewha Womans University, Seoul, Seoul, South Korea. Sponsor: *Y. Cha*.

#1577 **BINDING OF PAHS AND THEIR METABOLITES TO THE ESTROGEN RECEPTOR: A COMPARISON OF THREE ASSAYS.** J. M. Gozgit[1], K. M. Nestor[1], B. T. Pentecost[2] and *K. F. Arcaro*[1]. [1]Environmental Sciences and Veterinary and Animal Sciences, University of Massachusetts, Amherst, MA and [2]Division of Genetic Disorders, Wadsworth Center, NYSDOH, Albany, NY.

#1578 **ARYL HYDROCARBON HYDROXYLASE (AHH) ACTIVITY AND BENZO(a)PYRENE (BaP) METABOLITE CONCENTRATIONS IN F-344 RATS SUBCHRONICALLY EXPOSED TO INHALED BaP.** *A. Ramesh*, M. Greenwood, F. Inyang, M. Niaz, P. Kopsombut, *D. B. Hood*, A. E. Archibong and *A. M. Nyanda*. OB/GYN, Meharry Medical College, Nashville, TN.

#1579 **CHARACTERIZATION OF GENETIC CHANGES ASSOCIATED WITH BENZO(a)PYRENE IN NORMAL HUMAN EPIDERMAL KERATINOCYTES: APPLICATION OF MICROARRAY TECHNOLOGY.** D. S. Perez, *R. S. Yang* and J. A. Campain. Department of Environmental & Radiological Health Sciences, Colorado State University, Fort Collins, CO.

Wednesday Afternoon, March 12
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: JUVENILE TOXICITY, AND DEVELOPMENTAL TOXICITY IN NONRODENT SPECIES

Chairperson(s): *Linda Carlock, Amgen, Inc., Thousand Oaks, CA and Melissa Beck, WIL Research Laboratories Inc, Ashland, OH.*

Displayed: *1:30 PM–4:30 PM*

Attended: *1:30 PM-3:00 PM*

#1580 **ESTIMATION OF CANCER POTENCY FOR TAMOXIFEN BASED ON STUDIES IN ADULT RATS AND NEONATAL RATS AND MICE.** *R. S. Tomar*, T. A. McDonald and *M. S. Sandy*. OEHHA, Cal/EPA, Oakland, CA.

#1581 **CROSS FOSTERING OF MINIPIGS FOR JUVENILE TOXICOLOGY STUDIES: RESULTS OF A VALIDATION STUDY.** A. Makin, Z. El-Salanti, A. Christensen and *R. J. Harling*. Toxicology and Pharmacology, Scantox A/S, Lille Skensved, Denmark.

#1582 **FLOW CYTOMETRY IN REPRODUCTIVE TOXICOLOGICAL STUDIES : IMMUNE SYSTEM ASSESSMENT.** W. C. Congdon, K. Fukuzaki, S. Meyer, *R. Nagata*, *J. Jabbour*, R. Klein and B. Melton. SNBL USA Ltd, Everett, WA.

#1583 **AN ASSESSMENT OF THE WEANLING BEAGLE DOG AS A MODEL FOR SCREENING PHARMACEUTICALS INTENDED FOR INTRAVENOUS INFUSION TO PEDIATRIC POPULATIONS.** S. Groom[1], C. Copeman[1], I. Tourigny[1] and K. Robinson[2]. [1]Infusion, Pharmacology and Neurotoxicology, CTBR, Senneville, QC, Canada and [2]Reproductive Toxicology, CTBR, Senneville, QC, Canada. Sponsor: *L. Dostal*.

#1584 **AN ASSESSMENT OF THE EFFECTS OF HUMAN SOLUBLE IL-4 RECEPTOR ON REPRODUCTION AND NEONATAL DEVELOPMENT WHEN ADMINISTERED INTRAVENOUSLY TO PREGNANT CYNOMOLGUS MONKEYS.** *L. L. Carlock*[1], S. Oneda[2] and *J. L. Bussiere*[1]. [1]Toxicology, Amgen Inc., Seattle, WA and [2]SNBL USA, Everett, WA.

#1585 **CLOSER RESIDENTIAL PROXIMITY TO TRICHLOROETHYLENE-EMITTING SITES INCREASES RISK OF OFFSPRING CONGENITAL HEART DEFECTS AMONG OLDER WOMEN.** J. Yauck[1], M. Malloy[1], K. Blair[2], P. Simpson[3] and *D. McCarver*[1]. [1]Pediatrics, Medical College of Wisconsin, Milwaukee, WI, [2]City of Milwaukee Health Department, Milwaukee, WI and [3]Pediatrics, University of Arkansas for Medical Sciences, Little Rock, AR.

#1586 **CONTINUOUS INFUSION AS A ROUTE OF ADMINISTRATION IN EMBRYO/FETAL DEVELOPMENT STUDIES IN THE RABBIT.** *M. J. Beck*, T. R. Gleason, C. A. Wally, *C. P. Chengelis*, *D. G. Stump* and M. D. Nemec. WIL Research Laboratories, Inc., Ashland, OH.

Wednesday Afternoon, March 12
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: IMMUNOTOXICOLOGY III

Chairperson(s): *Jerry Exon, University of Idaho, Moscow, ID and Steven Myers, University of Louisville, Louisville, KY.*

Displayed: *1:30 PM–4:30 PM*

Attended: *3:00 PM-4:30 PM*

#1587 **SODIUM METHYLDITHIOCARBAMATE MODULATES CYTOKINES *IN VIVO* IN B6C3F1 MICE WITH VARIOUS STIMULI.** *L. P. Myers*, R. Fan, Q. Zheng and *S. B. Pruett*. Department of Cellular Biology and Anatomy, Louisiana State University Health Sciences Center, Shreveport, LA.

#1588 **SUPPRESSION OF INTERLEUKIN-2 GENE EXPRESSION IN EL4.IL-2 CELLS BY ALKENYLBENZENES IS PARALLELED BY AN INHIBITION OF NF-AT.** S. Yea[1,2], H. Jeong[1], W. Jang[1,2], Y. Yang[1,3], K. Paik[1] and C. Yun[4]. [1]The Paik-Inje Memorial Institute for Biomedical Science, Inje University, Pusan, South Korea, [2]Department of Biochemistry, College of Medicine, Inje University, Pusan, South Korea, [3]Department of Pathology, College of Medicine, Inje University, Pusan, South Korea and [4]Department of Genetic Engineering, Pai-Chai University, Taejon, South Korea. Sponsor: *H-M. Kim*.

#1589 **Δ^9-TETRAHYDROCANNABINOL (THC) INCREASES INTRACELLULAR CALCIUM IN A CANNABINOID RECEPTOR-DEPENDENT MANNER IN T CELLS.** G. K. Rao and *N. E. Kaminski*. Pharmacology & Toxicology, Michigan State University, East Lansing, MI.

#1590 **INHIBITION OF INTERLEUKIN-2 (IL-2) BY THE ENDOGENOUS CANNABINOID, 2-ARACHIDONYL GLYCEROL, IS PARTLY MEDIATED THROUGH PEROXISOME PROLIFERATOR-ACTIVATED RECEPTOR-γ (PPAR-γ).** C. E. Rockwell and *N. E. Kaminski*. Pharmacology & Toxicology, Michigan State University, East Lansing, MI.

#1591 **THE EFFECTS OF SPHINGOMYELIN, CONJUGATED LINOLEIC ACID AND BUTYRATE ALONE OR IN COMBINATIONS ON IMMUNE FUNCTION AND COLON CANCER IN RATS.** *J. H. Exon*, E. H. South and S. N. Nichenametla. Food Science and Toxicology, University of Idaho, Moscow, ID.

#1592 ***IN VITRO* AND *IN VIVO* IMMUNOLOGICAL EFFECTS OF DOK DIN DAENG (*AEGINETIA INDICA* ROXB.) AN HERBAL DRUG OF THAILAND.** W. Auttachoat[1], B. Chitsomboon[1], M. Matsumura[2], V. Peachee[3] and *K. White*[3]. [1]Suranaree University of Technology, Nakhon Ratchasima, Thailand, [2]University of Tsukuba, Ibaraki, Japan and [3]Virginia Commonwealth University, Richmond, VA.

#1593 **SILYMARIN INHIBITS INTERLEUKIN-1β AND PROSTAGLANDIN E2 SYNTHESIS AND PROTECTS AGAINST LIPOPOLYSACCHARIDE-INDUCED SEPSIS.** J. Kang[1], Y. Jeon[2], Y. Na[1], S. Park[3], *K. Yang*[3,1] and H. Kim[3]. [1]Department of Biological Sciences, Korea Advanced Institute of Science and Technology, Taejon, South Korea, [2]Department of Pharmacology, Chosun University, Kwangju, South Korea and [3]Korea Research Institute of Bioscience and Biotechnology, Taejon, South Korea.

#1594 **ACUTE EFFECTS OF 2-BROMOPROPANE AND 1, 2-DIBROMOPROPANE ON THE ANTIBODY RESPONSE IN FEMALE BALB/C MICE.** *T. Jeong*[1], N. Kim[1], C. Kim[1], J. Kim[1], T. Jeon[1], D. Kim[3], E. Lee[1] and W. Chae[2]. [1]Pharmacy, Yeungnam University, Kyungsan, Kyungbuk, South Korea, [2]Medicine, Catholic University of Daegu, Daegu, South Korea and [3]BBRC, KIST, Seoul, South Korea.

#1595 **ALTERATIONS IN THE IMMUNE SYSTEM AFTER EXPOSURE TO THE TRIAZINE HERBICIDE ATRAZINE.** R. Cain, *R. Schafer*, *J. B. Barnett* and *K. M. Brundage*. Microbiology, Immunology and Cell Biology, West Virginia University, Morgantown, WV.

#1596 **PHENOTYPIC DIFFERENCES IN THE HEMATOPOIETIC BONE MARROW COMPARTMENT BETWEEN ARYL HYDROCARBON RECEPTOR DEFICIENT AND CONTROL C57BL/6 MICE AS REVEALED BY FLOW CYTOMETRY.** R. Garrett and *T. A. Gasiewicz*. Environmental Medicine, University of Rochester School of Medicine & Dentistry, Rochester, NY.

#1597 **CHARACTERIZATION OF IMMUNE CELL INFILTRATES IN LIVER AND SPLEEN BY FLOW CYTOMETRY FOLLOWING TREATMENT WITH AN ANTISENSE OLIGODEOXYNUCLEOTIDE.** *H. S. Younis*, *A. A. Levin*, T. Condon and *S. P. Henry*. Toxicology/PKM, Isis Pharmaceuticals, Carlsbad, CA.

#1598 **UPREGULATION OF TREM-1 BY ENDOTOXIN IN MOUSE LIVER MACROPHAGES.** L. Chen[1], M. Gordon[1], *J. D. Laskin*[2] and *D. L. Laskin*[1]. [1]Pharmacology & Toxicology, Rutgers University, Piscataway, NJ and [2]Environ Comm. Med., UMDNJ-Robert W Johnson Med. Sch, Piscataway, NJ.

#1599 **IMMUNOMODULATION BY DIETHYLSTILBESTEROL IS DOSE AND GENDER LINKED: INFLUENCE ON THYMIC APOPTOSIS AND MITOGEN-INDUCED PROLIFERATION IN CD-1 MICE.** J. B. Calamine[2], *R. M. Gogal*[1,2], A. J. Lengi[2], P. Sponenberg[2] and S. Ahmed[2]. [1]Biomedical Sciences, EVVCOM, Va Tech, Blacksburg, VA and [2]Biomedical Sciences and Pathobiology, VMRCVM, Va Tech, Blacksburg, VA.

#1600 **THE GENERATION OF REACTIVE OXYGEN SPECIES DURING EXPOSURE OF PESTICIDE MIXTURES TO IMMUNE CELLS, *IN VITRO.*** V. Vemireddi[1] and *H. P. Misra*[1,2]. [1]Biomedical Sciences and Pathobiology, Virginia Maryland Regional College of Veterinary Medicine, Virginia Tech , Blacksburg, VA and [2]Edward Via Virginia College of Osteopathic Medicine, Blacksburg, VA.

#1601 **DEOXYNIVALENOL-INDUCED APOPTOSIS MEDIATED BY P38 MAPK-DEPENDENT P53 GENE INDUCTION IN RAW 264.7 MACROPHAGES.** H. Zhou[1] and *J. J. Pestka*[1,2,3]. [1]Food Science and Human Nutrition, Michigan State University, East Lansing, MI, [2]Department of Microbiology and Molecular Genetics, Michigan State University, East Lansing, MI and [3]Institute for Environmental Toxicology, Michigan State University, East Lansing, MI.

#1602 **JP-8 JET FUEL DOES NOT ALTER SERUM CYTOKINE LEVELS IN B6C3F1 MICE FOLLOWING 7-DAY ORAL OR DERMAL EXPOSURE.** *D. E. Keil*[1], C. Adams[2], L. Butterworth[1], J. EuDaly[2] and *M. M. Peden-Adams*[2]. [1]NIOSH, Morgantown, WV and [2]Department of Health Professions, Medical University of South Carolina, Charleston, SC.

#1603 **HEPATIC PHASE I AND II ENZYME PROFILES AFTER 7-DAY DERMAL OR ORAL EXPOSURE TO JP-8 JET FUEL.** C. Mikell[1], *M. M. Peden-Adams*[2], S. Dabra[2], J. EuDaly[2] and *D. E. Keil*[1]. [1]NIOSH, Morgantown, WV and [2]Department of Health Professions, Medical University of South Carolina, Charleston, SC.

#1604 **EFFECT OF CYCLOOXYGENASE (COX) INHIBITORS ON HUMAN LEUKOCYTE MIGRATION THROUGH ENDOTHELIAL CELL MONOLAYERS.** L. Fan, K. N. Khan, W. J. Komocsar and *S. M. Furst*. Global Toxicology, Pharmacia, Skokie, IL.

#1605 **ROLE OF IL-1BETA IN LPS POTENTIATION OF DEOXYNIVALENOL-INDUCED LEUKOCYTE APOPTOSIS IN MICE.** Z. Islam[1] and *J. J. Pestka*[1,2,3]. [1]Michigan State University, East Lansing, MI, [2]Department of Microbiology and Molecular Genetics, Michigan State University, East Lansing, MI and [3]Institute of Environmental Toxicology, Michigan State University, East Lansing, MI.

#1606 **ALTERATIONS OF MATERNAL/FETAL CYTOKINE CONCENTRATIONS IN SMOKERS AND NON SMOKERS AT CHILDBIRTH.** C. R. Cunningham, T. L. Wright, P. Lederer and *S. R. Myers*. Pharmacology and Toxicology, Center for Environmental and Occupational Health Sciences, University of Louisville, Louisville, KY.

#1607 **TARGETED DELETION OF CD44V7 EXON LEADS TO DECREASED IL-2-INDUCED ENDOTHELIAL CELL TOXICITY AND VASCULAR LEAK SYNDROME.** R. McKallip[1], M. Fisher[2], A. K. Szakal[3], U. Gunthert[4], *P. S. Nagarkatti*[2] and *M. Nagarkatti*[1]. [1]Microbiology and Immunology, Virginia Commonwealth University, Richmond, VA, [2]Pharmacology and Toxicology, Virginia Commonwealth University, Richmond, VA, [3]Anatomy, Virginia Commonwealth University, Richmond, VA and [4]Institute for Medical Microbiology, University of Basel, Basel, Switzerland.

#1608 **DIFFERENTIAL REGULATION OF IL-2 GENE TRANSCRIPTION BY TGF-β1 IN NAIVE AND EFFECTOR/MEMORY CD4$^+$ T CELLS.** *S. C. Mckarns* and R. H. Schwartz. Laboratory of Cellular and Molecular Immunology, NIAID/NIH, Bethesda, MD.

#1609 **A NOVEL RIBOFLAVIN-BASED PATHOGEN REDUCTION SYSTEM DOES NOT INTRODUCE NEOANTIGENS IN HUMAN PLATELETS.** *J. T. Piper*[1], M. D. Woolum[1], *F. G. Burleson*[2], *G. R. Burleson*[2] and R. P. Goodrich[1]. [1]Gambro BCT, Inc., Lakewood, CO and [2]BRT - Burleson Research Technologies, Raleigh, NC.

Wednesday Afternoon, March 12
4:40 PM to 5:30 PM
250 D

SOT COUNCIL MEETING WITH STUDENTS/POST-DOCTORAL FELLOWS

All students and post-doctoral fellows are encouraged to attend this meeting, which serves as a two-way dialog between SOT Council and students.

Wednesday Evening

Wednesday Evening, March 12
5:30 PM to 6:00 PM
250 D

SOT COUNCIL MEETING WITH STUDENTS ADVISORY COMMITTEE

Members of the Student Advisory Committee meet with Council at the conclusion of the open student meeting.

Wednesday Evening, March 12
6:00 PM to 7:30 PM
Salt Palace

SPECIALTY SECTION MEETINGS: COMPARATIVE AND VETERINARY, DERMAL, FOOD SAFETY, *IN VITRO*, MOLECULAR BIOLOGY, REPRODUCTIVE AND DEVELOPMENTAL, WOMEN IN TOXICOLOGY

Wednesday Evening, March 12
7:00 PM to 8:30 PM
Marriott Hotel

REGIONAL CHAPTER MEETINGS/RECEPTIONS

Many of the SOT Regional Chapters meet during the SOT Annual Meeting. A list of Regional Chapter receptions will be listed in the *Program's* Event Calendar.

Thursday Morning

Thursday Morning, March 13
7:15 AM to 8:15 AM
Ballroom C

A CONVERSATION WITH THE ASSISTANT ADMINISTRATOR OF THE OFFICE OF RESEARCH AND DEVELOPMENT, U.S. EPA–DR. PAUL GILMAN

Thursday Morning, March 13
8:30 AM to 11:30 AM
Ballroom C

SYMPOSIUM SESSION: BIOMARKERS OF EFFICACY OF CHEMOPREVENTIVE AGENTS IN ANIMAL MODELS AND IN HUMANS

Chairperson(s): *Gary D. Stoner, The Ohio State University, Columbus, OH and Thomas W. Kensler, Johns Hopkins University, Baltimore, MD.*

This symposium will summarize recent developments in the use of biochemical, molecular and morphometric biomarkers to assess the efficacy of chemopreventive agents in animal models and in humans. The discussion will include efficacy biomarkers for agents that inhibit both the initiation and promotion/progression stages of carcinogenesis. This topic is significant in that the field of cancer chemoprevention is rapidly emerging as a major area of research activity in the cancer field, and significant efforts are currently being made to identify appropriate biomarkers to assess the efficacy of chemopreventive agents. This symposium will be of interest to members of the SOT who have an interest in chemoprevention, as well as members of the carcinogenesis and molecular biology specialty sections.

#1610	8:30	**BIOMARKERS OF EFFICACY OF CHEMOPREVENTIVE AGENTS IN ANIMAL MODELS AND IN HUMANS.** *G. D. Stoner*[2], S. S. Hecht[1], *M. A. Pereira*[3], J. DiGiovanni[4] and *T. W. Kensler*[5]. [1]University of Minnesota Cancer Center, Minneapolis, MN, [2]School of Public Health, The Ohio State University, Columbus, OH, [3]Department of Pathology, Medical College of Ohio, Toledo, OH, [4]Department of Carcinogenesis Science Park Research Division, UT MD Anderson Cancer Center, Smithville, TX and [5]Department of Environmental Health Sciences, Johns Hopkins School of Hygiene, Baltimore, MD.
#1611	8:35	**APPLICATION OF CARCINOGEN BIOMARKERS IN STUDIES OF LUNG CANCER CHEMOPREVENTION.** S. S. Hecht. Cancer Center, University of Minnesota, Minneapolis, MN. Sponsor: *G. Stoner*.
#1612	9:05	**BIOMARKERS OF CHEMOPREVENTION IN THE RAT ESOPHAGUS.** *G. D. Stoner*, R. M. Aziz, P. S. Carlton and L. A. Kresty. Environmental Health Sciences, Ohio State University, Columbus, OH.

#1613 9:35 **MODULATION OF THE METHYLATION OF DNA AND GENES AS SURROGATE END-POINT BIOMARKERS FOR CHEMOPREVENTION OF COLON AND LUNG CANCER.** *M. A. Pereira* and *L. Tao*. Patholgy, Medical College of Ohio, Toledo, OH.

#1614 10:05 **USE OF AFLATOXIN BIOMARKERS TO EVALUATE STRATEGIES FOR PREVENTION OF LIVER CANCER.** *T. W. Kensler*. Environmental Health Sciences, Johns Hopkins University, Baltimore, MD.

#1615 10:35 **TARGETS FOR CHEMOPREVENTION OF EPITHELIAL CANCERS IN TRANSGENIC MICE.** *J. DiGiovanni*, K. Kiguchi, R. Klein and S. M. Fischer. The University of Texas M. D. Anderson Cancer Center, Science Park - Research Division, Smithville, TX.

Thursday Morning, March 13
8:30 AM to 11:30 AM
Ballroom B

SYMPOSIUM SESSION: ENVIRONMENTAL MODULATION OF PUBERTY

Chairperson(s): *Barbara J. Davis, NIEHS, Research Triangle Park, NC and Suzanne Fenton, U.S. EPA, Research Triangle Park, NC.*

The onset of puberty represents the orchestration of significant physiological events conducted by both genetic and environmental factors. Emerging data suggest that chemicals in the environment may be among the factors that influence pubertal characteristics and/or age of onset. This may be a particular concern for chemicals that advance the age of puberty in girls because of the emotional and physical complications associated with early puberty and because early age of menarche is a consistent risk factor for development of breast and uterine cancers later in life. This complex issue will be addressed by reviewing current knowledge of pubertal characteristics in humans and by analyzing evidence linking chemical exposures and puberty modulation. The current knowledge of neuroendocrine controls of puberty will be detailed using transgenic animal models, and we will explore recent developments in pubertal and in utero/lactational protocols for initial screening and testing of environmental contaminants.

#1616 8:30 **ENVIRONMENTAL MODULATION OF PUBERTY.** *B. J. Davis*[1] and *S. Fenton*[2]. [1]Laboratory of Women, NIEHS, Research Triangle Park, NC and [2]U.S. EPA, Research Triangle Park, NC.

#1617 8:40 **THE NEUROENDOCRINE CONTROL OF FEMALE PUBERTY AS REVEALED BY TRANSGENIC AND GENOMIC APPROACHES.** S. R. Ojeda, S. Heger, V. Prevot, A. Mungenas, A. Lomniczi, H. Jung and G. Smiley. Oregon National Primate Research Center-, Oregon Health Sciences University , Beaverton, OR. Sponsor: *B. Davis*.

#1618 9:15 **A LONGER PUBERTY IN HUMANS: WHAT IN THE WORLD WILL BECOME OF IT?** M. R. Forman. Cancer Prevention Studies Branch, NCI, Bethesda, MD. Sponsor: *B. Davis*.

#1619 9:50 **PUBERTAL DEVELOPMENT AND EXPOSURE TO POLYBROMINATED BIPHENYLS (PBBs).** M. Marcus. Emory University, Atlanta , GA. Sponsor: *B. Davis*.

#1620 10:25 **MAMMARY GLAND DEVELOPMENT: EARLY LIFE EFFECTS FROM THE ENVIRONMENT.** *S. Fenton*. Reproductive Toxicology Division, U.S. EPA, Research Triangle Park, NC.

Thursday Morning, March 13
8:30 AM to 11:30 AM
Room 250 D

WORKSHOP SESSION: METHODS FOR THE IDENTIFICATION AND CHARACTERIZATION OF CHEMICAL RESPIRATORY ALLERGENS

Chairperson(s): *Scott E. Loveless, DuPont Haskell Laboratory, Newark, DE and Ian Gilmour, U.S. EPA, Research Triangle Park, NC.*

Endorsed by:
Immunotoxicology Specialty Section
Inhalation Specialty Section

Chemical respiratory allergy (CRA) is an important occupational health problem because exposure to certain chemicals in the workplace can cause long-lasting effects, the symptoms of which can range from shortness of breath to life threatening anaphylactic shock. Currently, however, the prospective identification of chemicals likely to cause CRA is hampered by a lack of validated test methods. Accompanying the better understanding of the cellular interactions in allergic responses has come the realization that an essential molecule or pattern of molecules in this process may be identified that could serve as a predictor of potential respiratory allergens. The relevancy of route of exposure has been debated, with some scientists arguing that exposure of test animals to chemicals must occur *via* the respiratory tract by intranasal, intratracheal or inhalation exposure, while others claim that contact and respiratory allergens can induce differential immune responses following dermal exposure only. In January 1999, the chemical industry, through the American Chemistry Council (ACC) and the European Chemical Industry Council (CEFIC), committed more than $100 million over five years to health and environmental research related to chemical use. Respiratory allergy was identified in a global industry-wide survey as an important concern. Therefore, Immunotoxicology and Allergy research teams in both the U.S. and Europe committed to sponsor a 3-year research program designed to develop methods to identify and characterize potential chemical respiratory allergens. Investigators at four laboratories were selected using a peer reviewed competitive process: Michigan State, Harvard, TNO Nutrition and Food Research Institute, and Syngenta (Central Toxicology Laboratory). This workshop will bring together investigators from all four laboratories to discuss the progress of their research. In addition, the current regulatory status and issues around predicting CRA will be discussed.

#1621 8:30 **METHODS FOR THE IDENTIFICATION AND CHARACTERIZATION OF CHEMICAL RESPIRATORY ALLERGENS.** *S. E. Loveless*[2] and *M. I. Gilmour*[1]. [1]DuPont Haskell Laboratory for Health and Environmental Sciences, Newark, DE and [2]U.S. EPA, Research Triangle Park, NC.

#1622 8:40 **AIRWAY CYTOKINE GENE EXPRESSION AS A BIOMARKER OF CHEMICAL-INDUCED AIRWAY ALLERGENICITY.** *N. E. Kaminski*[1], *A. K. Farraj*[2] and *J. R. Harkema*[2]. [1]Pharmacology & Toxicology, Michigan State University, East Lansing, MI and [2]Department of Pathobiology & Diagnostic Investigation, Michigan State University, East lansing, MI.

#1623 9:10 **CAN NON-INVASIVE PLETHYSMOGRAPHY PREDICT RESPIRATORY ALLERGY TO CHEMICALS?** L. Kobzik. Environmental Health, Harvard University, Boston, MA. Sponsor: *S. Loveless*.

#1624 9:40 **IDENTIFICATION AND CHARACTERIZATION OF CHEMICAL RESPIRATORY ALLERGENS IN RODENTS.** *R. J. Dearman* and *I. Kimber*. Syngenta CTL, Macclesfield, Cheshire, United Kingdom.

#1625 10:10 **APPROACHES TO INDUCE RESPIRATORY ALLERGY IN THE RAT: IMPACT OF ROUTE, INTENSITY OF EXPOSURE, AND THE ROLE OF IRRITANCY AND IRRITANT-INDUCED INFLAMMATION.** J. H. Arts[1], N. Bloksma[3,2] and C. F. Kuper[1]. [1]TNO Nutrition and Food Research Institute, Zeist, Netherlands, [2]Utrecht Institute for Pharmaceutical Sciences, Utrecht University, Netherlands and [3]Faculty of Biology, Utrecht University, Netherlands. Sponsor: *V. Feron*.

#1626 10:40 **CURRENT STATE OF PREDICTING THE RESPIRATORY ALLERGY POTENTIAL OF CHEMICALS: WHAT ARE THE ISSUES?** *I. Gilmour*[1] and *S. E. Loveless*[2]. [1]NHEERL, U.S. EPA and [2]Dupont Haskell Laboratory, Newark, DE.

Thursday Morning, March 13
8:30 AM to 11:30 AM
Room 251 D

PLATFORM SESSION: CYTOCHROME P450-MEDIATED METABOLISM OF XENOBIOTICS I

Chairperson(s): *Richard Zangar, Pacific Northwest National Laboratory, Richland, WA and Burhan Ghanayem, NIEHS, Research Triangle Park, NC.*

#1627 8:30 **NMR EVIDENCE FOR SIMULTANEOUS BINDING OF MIDAZOLAM WITH ALPHA-NAPHTHOFLAVONE OR TESTOSTERONE WITHIN THE ACTIVE SITE OF CYP3A4.** M. D. Cameron, K. E. Allen, B. Wen, A. P. Campbell and *S. D. Nelson*. Medicinal Chemistry, University of Washington, Seattle, WA.

#1628 8:50 **THE EFFECT OF CHRONIC ETHANOL FEEDING ON THE PROTEIN LEVEL AND ACTIVITIES OF CYP3A ENZYMES IN THE LIVER OF MALE AND FEMALE SPRAGUE-DAWLEY RATS.** V. M. Mishin, C. M. Busch, Y. Jan and P. E. Thomas. Laboratory for Cancer Research, Rutgers, The State University of New Jersey, Piscataway, NJ. Sponsor: *M. Iba*.

#1629 9:10 **4-IPOMEANOL: MECHANISM-BASED INACTIVATOR OF CYP3A4.** T. M. Alvarez-Diez and *J. Zheng*. Pharmaceutical Sciences, Northeastern University, Boston, MA.

#1630 9:30 **QUANTIFICATION OF ROS PRODUCTION AND ENZYME INACTIVATION OF CYP1A BY CHLORINATED BIPHENYLS AND DIBENZO-*p*-DIOXINS.** J. Goldstone[1], N. V. Blough[2] and *J. J. Stegeman*[1]. [1]Biology, Woods Hole Oceanographic Institution, Woods Hole, MA and [2]Chemistry and Biochemistry, University of Maryland, College Park, MD.

#1631 9:50 **FUNCTIONAL ANALYSIS OF POLYMORPHISMS IN THE PROMOTER OF HUMAN CYTOCHROMES P450 1A1 AND 1B1.** W. Han[1] and S. D. Spivack[1]. [1]Human Toxicology, Wadsworth Center, NYS Department of Health, Albany, NY and [2]Human Toxicology, Wadsworth Center, NYS Department of Health, Albany, NY. Sponsor: *L. Kaminsky*.

#1632 10:10 **LACK OF A ROLE FOR CYP1A2 IN THE ACTIVATION OF 4-AMINOBIPHENYL INTO DNA-REACTIVE METABOLITES IN MICE.** C. D. Clay, Y. Tsuneoka, *T. P. Dalton*, *H. G. Shertzer*, M. L. Miller and *D. W. Nebert*. Center for Environmental Genetics and Department of Environmental Health, University of Cincinnati Medical Center, Cincinnati, OH.

#1633 10:30 **P450-MEDIATED METABOLISM OF CAPSAICIN DECREASES CYTOTOXICITY TO LUNG AND LIVER CELLS.** C. A. Reilly and *G. S. Yost*. Pharmacology and Toxicology, University of Utah, Salt Lake City, UT.

#1634 10:50 **EFFECTS OF NATURAL AND SYNTHETIC FLAVONOIDS ON AROMATASE (CYP19) ACTIVITY IN H295R HUMAN ADRENOCORTICAL CARCINOMA CELLS.** *T. Sanderson*[1], *M. S. Denison*[2], M. Kurth[3], M. H. Nantz[3], M. Springsteel[3] and *M. van den Berg*[1]. [1]Institute for Risk Assessment Sciences, University of Utrecht, Utrecht, NL, Netherlands, [2]Department of Environmental Toxicology, University of California, Davis, CA and [3]Department of Chemistry, University of California, Davis, CA.

#1635 11:10 **A MOUSE MODEL WITH LIVER-SPECIFIC DELETION OF THE NADPH-CYTOCHROME P450 REDUCTASE GENE.** *X. Ding*[1,2], *J. Gu*[1], L. Wu[1], Y. Weng[2,1], K. Kluetzman[1], H. Cui[1], Q. Zhang[1] and W. Yang[1]. [1]Wadsworth Center, New York State Department of Health, Albany, NY and [2]School of Public Health, State University of New York at Albany, Albany, NY.

Thursday Morning, March 13
8:30 AM to 11:30 AM
Ballroom A

PLATFORM SESSION: HYDROCARBONS II

Chairperson(s): *Leena Nylander-French, University of North Carolina, Chapel Hill, NC and Scott Burchiel, University of New Mexico, Albuquerque, NM.*

#1636 8:30 **GENE EXPRESSION PROFILING OF SKIN CARCINOGENESIS IN MICE USING CDNA MICROARRAYS.** K. Ridd[1], S. Dhir[1], R. Davies[1], J. Riley[1], D. J. Judah[1], A. Wolfreys[2], V. Baker[2], T. W. Gant[1] and *A. G. Smith*[1]. [1]MRC Toxicology Unit, Leicester, Leicestershire, United Kingdom and [2]Unilever Research Colworth, Bedford, Bedfordshire, United Kingdom.

#1637 8:50 **DMBA INDUCED DISRUPTION OF BONE MARROW HYPOCELLULARITY IS TNF-α DEPENDENT.** T. J. Page[1,3], *C. R. Jefcoate*[2,3], P. S. MacWilliams[1], M. Suresh[1] and *C. J. Czuprynski*[1,3]. [1]Department of Pathobiological Sciences, University of Wisconsin, Madison, WI, [2]Department of Pharmacology, University of Wisconsin, Madison, WI and [3]Environmental Health Science Center, University of Wisconsin, Madison , WI.

#1638 9:10 **NATURALLY OCCURRING COUMARINS INHIBIT HUMAN CYTOCHROMES P450 AND BLOCK BENZO(a)PYRENE AND 7, 12-DIMETHYLBENZ[A]ANTHRACENE DNA ADDUCT FORMATION IN MCF-7 CELLS.** *H. E. Kleiner*, M. J. Reed and *J. DiGiovanni*. Carcinogenesis, UT MD Anderson Cancer Center, Smithville, TX.

#1639 9:30 **SUPPRESSION OF FERTILITY AND ITS REGULATORY HORMONES BY INHALED BENZO(a)PYRENE (BaP).** A. E. Archibong[1], M. Niaz[2], M. Greenwood[2], F. Inyang[2], *A. Ramesh*[2], P. Kopsombut[2], *D. B. Hood*[2] and *A. M. Nyanda*[2]. [1]OB/GYN, Meharry Medical College, Nashville, TN and [2]Pharmacology, Meharry Medical College, Nashville, TN.

#1640 9:50 **BENZO(a)PYRENE DIONES PREVENT EGF WITHDRAWAL-INDUCED APOPTOSIS IN HUMAN MAMMARY EPITHELIAL CELLS THROUGH THE REACTIVE OXYGEN SPECIES (ROS)-DEPENDENT ACTIVATION OF AKT.** *A. D. Burdick*[1], K. Liu[1], *J. W. Davis*[2] and *S. W. Burchiel*[1]. [1]College of Pharmacy Toxicology Program, University of New Mexico, Albuquerque, NM and [2]Department of Genetic and Molecular Toxicology, Schering Plough Research Institute, Lafayette, NJ.

#1641 10:10 **BROMODICHLOROMETHANE TOXICOKINETICS: LINKING METABOLISM TO EFFECT.** R. A. Pegram[1], M. K. Ross[2], *A. B. DeAngelo*[1], J. W. Allis[1] and G. Zhao[2]. [1]NHEERL, U.S. EPA, Research Triangle Park, NC and [2]Curriculum in Toxicology, UNC, Chapel Hill, NC.

#1642 10:30 **UPTAKE AND DISPOSITION OF 1, 1, 1-TRIFLUOROETHANE IN MAN.** S. Gunnare, L. Ernstgård, B. Sjügren and *G. Johanson*. Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Stockholm, Sweden.

#1643 10:50 **STANDARDIZATION OF THE TAPE-STRIP SAMPLE BY DETERMINATION OF KERATIN IN THE SAMPLE AFTER EXPOSURE TO JET FUEL.** Y. Chao and *L. A. Nylander-French*. Environmental Sciences & Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC.

Thursday Morning, March 13
8:30 AM to 11:30 AM
Room 250 A

PLATFORM SESSION: TOXICOGENOMIC EVALUATION OF HEPATOTOTOXICITY MECHANISMS

Chairperson(s): *Michael Cunningham, NIEHS, Research Triangle Park, NC and Rupesh Amin, Merck & Co Inc, West Point, PA.*

#1644 8:30 **IDENTIFICATION OF BIOMARKERS AND MECHANISMS OF THE ACUTE PHASE RESPONSE IN LIVER USING A CANINE MICROARRAY.** M. A. Higgins, B. R. Berridge, B. J. Mills, A. E. Schultze, H. Gao, G. H. Searfoss, T. K. Baker and T. P. Ryan. Lilly Research Labs, Greenfield, IN. Sponsor: *C. Thomas*.

#1645 8:50 **SEPARATING GENES BETWEEN CHEMICAL SPECIFIC RESPONSES AND GENERAL STRESS RESPONSES BASED ON EXPRESSION PROFILES IN RAT HEPATOCYTES EXPOSED TO CADMIUM AND HYDRAZINE.** V. Chan[1], N. Kelley-Loughnane[2], B. Harker[1], D. Rudnicki[3], S. Hussain[1], C. Wang[1] and *J. Frazier*[3]. [1]ManTech Environmental Inc., Wright-Patterson AFB, OH, [2]Geo-Center Inc., Wright-Patterson AFB, OH and [3]Operational Toxicology Branch, AFB, Wright-Patterson AFB, OH.

#1646 9:10 **ALTERED PROTEIN / DNA INTERACTIONS OF LIVER ENRICHED TRANSCRIPTION FACTORS AS PREDICTORS FOR TOXICITY - IMPLICATIONS FOR TOXICOGENOMIC RESEARCH.** J. Borlak, A. Sowa and M. Niehof. Drug Research and Medical Biotechnology, Fraunhofer Institute ITA, Hannover, Lower Saxony, Germany. Sponsor: *H. Muhle*.

#1647 9:30 **TOXICOGENOMICS OF BROMOBENZENE-INDUCED HEPATOTOXICITY.** W. H. Heijne[1], R. H. Stierum[1], B. Van Ommen[1], R. Lamers[2] and *P. J. Van Bladeren*[3]. [1]Biomolecular Sciences, TNO Nutrition and Food Research, ZEIST, Utrecht, Netherlands, [2]Food and Food Supplement Analysis, TNO Nutrition and Food Research, ZEIST, Utrecht, Netherlands and [3]Toxicology, Wageningen University and Research Centre, Wageningen, Utrecht, Netherlands.

#1648 9:50 **GENE EXPRESSION CHANGES IN F344 RATS FOLLOWING A PHARMACOLOGICAL DOSE OF ACETAMINOPHEN.** R. Irwin, *G. A. Boorman*, R. Paules, A. Heinloth, *R. W. Tennant*, M. L. Snell and *M. L. Cunningham*. NIH/NIEHS, Research Triangle Park, NC.

#1649 10:10 **IDENTIFICATION OF LIVER TOXICITY USING CLINICAL CHEMISTRY *VERSUS* GENE EXPRESSION MICROARRAY FACTORS.** M. Elashoff, W. Zeng, A. L. Castle, K. R. Johnson, B. W. Higgs, M. W. Porter, *C. G. Chang* and *D. Mendrick*. Toxicology, Gene Logic, Gaithersburg, MD.

#1650 10:30 **PPAR ALPHA-DEPENDENT ALTERATIONS IN CHEMICAL-INDUCED STRESS AND LONGEVITY CORRELATES WITH INCREASED EXPRESSION OF HEAT SHOCK PROTEINS.** *J. C. Corton*[1], S. P. Anderson[2], *A. J. Stauber*[4], A. Laughter[3], C. Swanson[3], S. Xiao[3], J. Everitt[2,3] and *K. Voss*[5]. [1]ToxicoGenomics, Chapel Hill, NC, [2]GlaxoSmithKline, Research Triangle Park, NC, [3]CIIT, Research Triangle Park, NC, [4]Lilly, Greenfield, IN and [5]USDA, Athens, GA.

#1651 10:50 **IDENTIFICATION OF GENE EXPRESSION PROFILES PREDICTIVE OF SPECIFIC MODES OF HEPATOTOXICITY *IN VIVO*.** T. A. Mansfield[1], M. M. Lakkis[1], R. W. Gerwien[1], H. Ellinger-Ziegelbauer[2], M. J. Czar[1], *M. F. DeCristofaro*[1], K. M. Hershman[1], T. A. Lohret[1], H. E. Olsen[1], D. A. McCabe[1], J. J. DeClement[1], O. R. Crasta[1], D. M. Dziuda[1], C. Hyde[1], J. S. Bader[1], *B. Stuart*[3], *B. Wahle*[3], W. Bomann[3], *H. J. Ahr*[2], W. Kroll[4] and M. McKenna[1]. [1]Pharmacogenomics, CuraGen Corporation, New Haven, CT, [2]Research Toxicology, Bayer AG, Elberfeld, Germany, [3]Toxicology, Bayer Corporation, Stilwell, KS and [4]Bayer Corporation, West Haven, CT.

#1652 11:10 **PPAR ALPHA PLAYS A MAJOR ROLE IN DETERMINING THE GENE EXPRESSION PROFILE ALTERED BY CALORIC RESTRICTION.** S. P. Anderson[2], C. Swanson[2], *J. Everitt*[2,3] and *J. C. Corton*[1]. [1]ToxicoGenomics, Chapel Hill, NC, [2]GlaxoSmithKline, Research Triangle Park, NC and [3]CIIT, Research Triangle Park, NC.

Thursday Morning, March 13
8:30 AM to 11:30 AM
South Foyer Lobby

POSTER SESSION: DEVELOPMENTAL TOXICITY TESTING

Chairperson(s): *Jon Cook, Pfizer, Inc., Groton, CT and Julia George, Research Triangle Institute, Research Triangle Park, NC.*

Displayed: *8:30 AM–11:30 AM*

Attended: *8:30 AM–10:00 AM*

#1653 **DIMETHYLSULFOXIDE ANTAGONIZES THE CLEFT PALATE-INDUCING EFFECT OF SECALONIC ACID D IN MICE BY NEGATING ITS EFFECTS ON THE EMBRYONIC PALATAL CYCLIC AMP PATHWAY.** V. C. Dhulipala[1], *U. M. Hanumegowda*[2], *G. Balasubramanian*[3] and *C. S. Reddy*[1]. [1]Vet.Biomedical sciences, Uni of Missouri, Columbia, MO, [2]National Food Safety and Toxicology Center, Michigan State University, E.Lansing, MI and [3]Merck Research Laboratories, West Pointe, PA.

#1654 **DEVELOPMENTAL TOXICITY OF THIODIGLYCOL IN RATS.** J. T. Houpt[2], *G. Reddy*[1] and L. C. Crouse[2]. [1]Health Effects Research Program, U.S. Army Center for Health Promotion and Preventive Medicine, Aberdeen Proving Ground, MD and [2]Toxicity Evaluation Program, U.S. Army Center for Health Promotion and Preventative Medicine, Aberdeen Proving Ground, MD.

#1655 **DEVELOPMENTAL TOXICITY EVALUATION OF EMODIN IN RATS AND MICE.** *J. D. George*[1], *C. J. Price*[1], M. C. Marr[1], C. B. Myers[1] and G. D. Jahnke[2]. [1]Life Sciences and Toxicology, RTI International, Research Triangle Park, NC and [2]Sciences International Inc., Alexandria, VA.

#1656 **DEVELOPMENTAL TOXICITY EVALUATION OF GOLDENSEAL ROOT POWDER (GRP) IN MICE.** *C. J. Price*[1], *J. D. George*[1], M. C. Marr[1], C. B. Myers[1] and G. D. Jahnke[2]. [1]RTI, Research Triangle Park, NC and [2]Sciences International Inc., Alexandria, VA.

#1657 **EFFECTS OF CALORIC INTAKE AND ETHANOL METABOLISM ON FETAL ETHANOL TOXICITY IN RATS.** M. Zipperman[3], B. Gardner[3], T. Fletcher[3], M. Ferguson[3], K. Hale[3], *T. M. Badger*[2,3] and *M. J. Ronis*[1,3]. [1]Pediatrics, University of Arkansas for Medical Sciences, Little Rock, AR, [2]Physiology, University of Arkansas for Medical Sciences, Little Rock, AR and [3]Arkansas Children's Nutrition Center, Little Rock, AR.

#1658 **MATERNAL AND DEVELOPMENTAL TOXICITY OF PERFLUOROOCTANE SULFONATE (PFOS) IN THE MOUSE.** J. Thibodeaux, R. G. Hanson, B. E. Grey, B. D. Barbee, J. H. Richards[1], *J. L. Butenhoff*[2], *J. M. Rogers* and C. Lau. [1]ETD, NHEERL, ORD, U.S. EPA, Research Triangle Park, NC and [2]Med. Department, 3M, St. Paul, MN.

#1659 **EMBRYO-FETAL DEVELOPMENT STUDY OF HYDROXYPROPYL METHYLCELLULOSE ACETATE SUCCINATE (HPMCAS) IN RATS.** G. D. Cappon[1], T. L. Fleeman[1], *M. S. Rocca*[2], *J. C. Cook*[1] and *M. E. Hurtt*[1]. [1]Drug Safety Evaluation, Pfizer Global Research and Development, Groton, CT and [2]TherImmune Research Corporation, Gaithersburg, MD.

#1660 **EMBRYO-FETAL DEVELOPMENT STUDY OF HYDROXYPROPYL METHYLCELLULOSE ACETATE SUCCINATE (HPMCAS) IN RABBITS.** T. L. Fleeman[1], G. D. Cappon[1], *M. S. Rocca*[2], *J. C. Cook*[1] and *M. E. Hurtt*[1]. [1]Drug Safety Evaluation, Pfizer Global Research and Development, Groton, CT and [2]TherImmune Research Corporation, Gaithersburg, MD.

#1661 **METHAMPHETAMINE ENHANCES OXIDATIVE DNA DAMAGE IN MURINE EMBRYONIC AND FETAL BRAIN AND LIVER.** *A. Wong*[1], *W. Jeng*[1], R. Ting-A-Kee[2] and *P. G. Wells*[1,2]. [1]Faculty of Pharmacy, University of Toronto, Toronto, ON, Canada and [2]Department of Pharmacology, University of Toronto, Toronto, ON, Canada.

#1662 **EFFECTS OF *I.P.* MATERNAL VITAMIN E ADMINISTRATION ON FETAL DEVELOPMENT AND PHENYTOIN EMBRYOPATHIES.** M. Sit[2], *C. S. Chen*[1] and *P. G. Wells*[1,2]. [1]Faculty of Pharmacy, University of Toronto, Toronto, ON, Canada and [2]Pharmacology, University of Toronto, Toronto, ON, Canada.

#1663 **PROTECTION BY OXOGUANINE GLYCOSYLASE 1 (OGG1) AGAINST METHAMPHETAMINE-INITIATED DNA OXIDATION IN FETAL BRAIN IN OGG1 KNOCKOUT MICE.** *P. G. Wells*[1,2], *W. Jeng*[1] and *A. W. Wong*[1]. [1]Faculty of Pharmacy, University of Toronto, Toronto, ON, Canada and [2]Department of Pharmacology, University of Toronto, Toronto, ON, Canada.

#1664 **SINGLE INTRAMUSCULAR INJECTIONS OF BOTOX⟩ ARE NOT DEVELOPMENTALLY TOXIC IN RATS.** *E. Chow*[1], *J. A. Wisler*[1], *A. M. Hoberman*[2], *M. S. Christian*[2] and *B. G. Short*[1]. [1]Toxicology, Allergan, Inc., Irvine, CA and [2]Argus Res. Lab., Charles River Research Lab., Horsham, PA.

#1665 **LACK OF EMBRYO-FETAL TOXICITY WITH THE ANTI-INFECTIVE DB289 AND ITS ACTIVE METABOLITE DB75, A DIAMIDINE WITH DNA MINOR GROOVE BINDING ACTIVITY.** *J. L. Allen*[1], A. A. Bottomley[3], S. M. Fulcher[3], *S. A. Ruckman*[3], D. W. Boykin[4] and R. R. Tidwell[2]. [1]Immtech International, Inc., Vernon Hills, IL, [2]Huntingdon Life Sciences Ltd, Huntingdon, Cambridgeshire, United Kingdom, [3]Georgia State University, Atlanta, GA and [4]University of North Carolina, Chapel Hill, NC.

Thursday Morning, March 13
8:30 AM to 11:30 AM
South Foyer Lobby

POSTER SESSION: NATURAL PRODUCTS

Chairperson(s): *Thomas Murray, University of Georgia, Athens, GA and Shashank Dravid, University of Georgia, Athens, GA.*

Displayed: *8:30 AM–11:30 AM*

Attended: *10:00 AM–11:30 AM*

#1666 **CHEMICAL CHARACTERIZATION OF PINE BARK AND GRAPE SEED EXTRACTS.** H. A. Weber[1], A. E. Hodges[1], L. A. Moody[1], B. M. O'Brien[1], J. R. Guthrie[1], R. K. Harris[1], A. P. Clark[1], D. Overstreet[2] and C. S. Smith[2]. [1]Midwest Research Institute, Kansas City, MO and [2]NIEHS, Research Triangle Park, NC. Sponsor: *M. Cunningham*.

#1667 **ANALYTICAL METHOD VALIDATION OF *GINKGO BILOBA* L. POWDER EXTRACT DOSED IN 0.5% (W/V) AQUEOUS METHYLCELLULOSE.** B. M. O'Brien[1], D. Messer[1], A. Porter[1], K. Brackman[1], R. K. Harris[1], A. P. Clark[1], J. W. Algaier[1], D. Overstreet[2] and C. S. Smith[2]. [1]Midwest Research Institute, Kansas City, MO and [2]NIEHS, Research Triangle Park, NC. Sponsor: *M. Cunningham*.

#1668 **A RAPID EXTRACTION AND ISOLATION METHOD FOR THE DETERMINATION OF PYRROLIZIDINE ALKALOIDS IN COMFREY.** D. Gray[1], G. Rottinghaus[2], A. Porter[1], N. Oberlies[3], N. Kim [3], R. McGivney[3], R. Harris[1], A. Clark[1], D. Overstreet[4] and C. Smith[4]. [1]Midwest Research Institute, Kansas City, MO, [2]University of Missouri, Columbia, MO, [3]Research Triangle Institute, Research Triangle Park, NC and [4]NIEHS, Research Triangle Park, NC. Sponsor: *M. Cunningham*.

#1669 **CHARACTERIZATION OF GINSENG FOR USE IN TOXICITY STUDIES.** S. Graves[1], B. Burback[1] and C. Smith[2]. [1]Toxicology Columbus, Battelle, Columbus, OH and [2]NIEHS, Research Triangle Park, NC. Sponsor: *M. Hejtmancik*.

#1670 **CYTOTOXICITY OF SELECTED PTERINS IN MCF-7 CELLS.** J. L. Lord[1], R. P. Metzger[2] and *A. de Peyster*[1]. [1]Graduate School of Public Health, San Diego State University, San Diego, CA and [2]Department of Chemistry, San Diego State University, San Diego, CA.

#1671 **EPIGALLOCATHECHIN 3-GALLATE ATTENUATES BRAIN DAMAGE INDUCED BY 3-HYDROXYKYNURENINE.** E. S. Park[1], J. H. Jeong[1] and *J. D. Park*[2]. [1]Pathology, Chung-Ang University, Seoul, South Korea and [2]Preventive Medicine, Chung-Ang University, Seoul, South Korea.

#1672 **BREVETOXIN AUGMENTS NMDA RECEPTOR SIGNALING IN MURINE CEREBROCORTICAL NEURONS.** S. Dravid[1], *D. G. Baden*[2] and *T. F. Murray*[1]. [1]Physiology and Pharmacology, University of Georgia, Athens, GA and [2]Center for Marine Research, University of North Carolina, Wilmington, Wilmington, NC.

#1673 **HEPATOPROTECTIVE EFFECTS OF THE RADIX OF *PLATYCODON GRANDIFLORUM* ON CARBON TETRACHLORIDE-INDUCED LIVER INJURY IN MICE.** *H. Jeong*[1,2]. [1]Pharmacy, Chosun University, Kwangju, Kwangju, South Korea and [2]Pharmacy and Research Center for Proteineous, Chosun University, Kwangju, South Korea.

#1674 **THE RADIX OF PLATYCODON GRANDIFLORUM REDUCES HEPATIC FIBROSIS IN RATS INDUCED BY DIMETHYLNITROSAMINE OR CARBON TETRACHLORIDE.** K. Lee [2] and *H. Jeong*[1,2]. [1]Pharmacy, Chosun University, Kwangju, Kwangju, South Korea and [2]Research Center for Proteineous Materials, Chosun University, Kwangju, South Korea.

#1675 **EVALUATION OF THE HEPATOPROTECTIVE AND ANTIOXIDANT ACTIVITY OF 18B-GLYCYRRHETINIC ACID.** S. Park[2] and *H. Jeong*[1,2]. [1]Pharmacy, Chosun University, Kwangju, Kwangju, South Korea and [2]Research Center for Proteineous Materials, Chosun University, Kwangju, South Korea.

#1676 **INHIBITORY EFFECT OF THE ROOTS OF *PLATYCODON GRANDIFLORUM* ON OXIDATIVE DAMAGE INDUCED BY BUTYL HYDROPEROXIDE IN RAT LIVER.** C. Choi [1] and *H. Jeong*[1,2]. [1]Pharmacy, Chosun University, Kwangju, Kwangju, South Korea and [2]Research Center for Proteineous Materials, Chosun University, Kwangju, South Korea.

#1677 **RUBRATOXIN B INDUCED THE SECRETIONS OF M-CSF AND GM-CSF IN HEPATOCYTE-DERIVED CELL LINE HEPG2.** H. Nagashima, K. Nakamura and T. Goto. National Food Research Institute, Tsukuba, Ibaraki, Japan. Sponsor: *M. Fukayama*.

#1678 **ACTIVATION OF PERITONEAL MACROPHAGE FUNCTIONS AND NUCLEAR FACTOR-KB-DEPENDENT GENE EXPRESSION BY AQUEOUS EXTRACT OF *PLATYCODON GRANDIFLORUM*.** J. Seo[2], J. Kim[1] and *H. Jeong*[1]. [1]Pharmacy, Chosun University, Kwangju, Kwangju, South Korea and [2]R&D, Jangsaeng Doraji Co., Ltd., , Chinju, South Korea.

#1679 ***IN VIVO* EFFECTS OF MYRIOCIN ON SPHINGOLIPID METABOLISM AND C-*MYC* EXPRESSION IN MOUSE LIVER.** *Q. He*, *V. J. Johnson*, *M. F. Osuchowski* and *R. P. Sharma*. Department Physiol. Pharmacology, The University of Georgia, Athens, GA.

#1680 **ACTIVATION OF NF-KB/REL AND P38 IN CHITOSAN-STIMULATED MACROPHAGES.** Y. J. Jeon. Pharmacology, Chosun University College of Medicine, Kwangju, South Korea. Sponsor: *H. Kim*.

#1681 **CDNA MICROARRAY ANALYSIS OF MATRIX METALLOPROTEINASE GENE EXPRESSION IN RAT MICROGLIA EXPOSED TO THE MARINE TOXIN DOMOIC ACID.** A. M. Mayer[1], M. J. Fay[1], M. Hall[1] and A. M. Romanic[2]. [1]Pharmacology, Midwestern University, Downers Grove, IL and [2]Cardiovascular Pharmacology, Glaxo SmithKline, King of Prussia, PA. Sponsor: *W. Prozialeck*.

#1682 **ST. JOHN'S WORT REDUCES TRIBROMOETHANOL-INDUCED SLEEP TIMES IN MICE.** A. C. Protain, H. J. Protain, M. R. Palic, *C. S. Gardiner* and *G. K. DeKrey*. Biology, University of Northern Colorado, Greeley, CO.

Thursday Morning, March 13
8:30 AM to 11:30 AM
South Foyer Lobby

POSTER SESSION: KIDNEY II

Chairperson(s): *Monica Valentovic, Marshall University School of Medicine, Huntington, WV and Alan Parrish, Texas A&M University, College Station, TX.*

Displayed: *8:30 AM–11:30 AM*

Attended: *8:30 AM–10:00 AM*

#1683 **ALTERATIONS IN HUMAN AND PORCINE RENAL CELLS AFTER REPEATED EXPOSURE TO OTA AND OTB.** A. H. Heussner[1], E. O'Brien[1], M. E. Stack[2] and *D. R. Dietrich*[1]. [1]Environmental Toxicology, University of Konstanz, Konstanz, Germany and [2]Center for Food Safety and Applied Nutrition, U.S. FDA, College Park, MD.

#1684 **STRUCTURE-NEPHROTOXICITY RELATIONSHIPS AMONG THE CHLOROANILINES IN ISOLATED RENAL CORTICAL CELLS FROM FISCHER 344 RATS.** *G. O. Rankin*, D. K. Anestis, T. W. Crislip, A. S. Casto and H. Sun. Pharmacology, Marshall University, Huntington, WV.

#1685 **PYRUVATE REDUCES MYOGLOBIN *IN VITRO* TOXICITY IN RENAL CORTICAL SLICES.** *M. Valentovic*. Pharmacology, Marshall University School of Medicine, Huntington, WV.

#1686 **ADRENERGIC MODULATION OF ETHYLENE DIBROMIDE-INDUCED TOXICITY.** D. I. Mosquera[1], T. Stedeford[2,1,3], M. Banasik[2,3], C. Muro-Cacho[4] and *R. D. Harbison*[2]. [1]Department of Neurology, University of South Florida, Tampa, FL, [2]Department of Environmental and Occupational Health, University of South Florida, Tampa, FL, [3]ICC, Polish Academy of Sciences, Gliwice, Poland and [4]Department of Interdisciplinary Oncology, H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL.

#1687 **HEAT SHOCK PROTEINS AND URANIUM NEPHROTOXICITY.** J. W. Munson[1], *J. K. Tolson*[1], *B. S. Jortner*[2], *S. M. Roberts*[1] and *D. S. Barber*[1]. [1]Center for Environmental and Human Toxicology, University of Florida, Gainesville, FL and [2]Laboratory for Neurotoxicity Studies, Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA.

#1688 **CELLULAR PROFILES OF BENZO(a)PYRENE-INDUCED NEPHROPATHY.** A. Nanez, N. F. Alejandro, M. H. Falahatpisheh, M. G. Tadesse and *K. S. Ramos*. Center for Environmental and Rural Health, Texas A&M University, College Station, TX.

#1689 **NEPHROPROTECTION FROM *S*-1, 2-DICHLOROVINYL-$_L$-CYSTEINE IN DIABETIC MICE.** *A. V. Dnyanmote*, *S. P. Sawant*, *E. A. Lock*[1], *J. R. Latandresse*[2] and *H. M. Mehendale*. [1]CTL, Syngenta, Macclesfield, Cheshire, United Kingdom and [2]Pathology Associates International, NCTR, Jefferson, AR.

#1690 **CELLULAR AND MOLECULAR MECHANISMS UNDERLYING OCHRATOXIN A-INDUCED *IN VITRO* NEPHROTOXICITY.** A. Gennari, M. Boveri, P. Pazos, R. Callaghan, J. Casado and P. Prieto. European Commission, JRC, IHCP, ECVAM, Ispra (VA), Italy. Sponsor: *E. Sabbioni*.

#1691 **MODULATION OF RENAL CYCLOOXYGENASE-2 (COX-2) BY DIET AND STAGE OF ESTROUS IN CD SPRAGUE-DAWLEY RATS.** B. Blaydes[1], L. Muskhelishvili[2], *J. R. Latendresse*[2] and *K. B. Delclos*[1]. [1]NCTR, Jefferson, AR and [2]Pathology Associates International, Jefferson, AR.

#1692 **DECREASED N- AND KSP-CADHERIN EXPRESSION ASSOCIATED WITH HGCL2-INDUCED ACUTE RENAL FAILURE IS RELATED TO THE SPATIAL EXPRESSION PATTERN OF CADHERINS ALONG THE NEPHRON.** *J. Jiang*[1], D. Dean[2], *R. C. Burghardt*[2] and *A. R. Parrish*[1]. [1]Medical Pharmacology and Toxicology, Texas A&M University System HSC, College Station, TX and [2]Veterinary Anatomy and Public Health, Texas A&M University , College Station, TX.

#1693 **INFLUENCE OF EDTA AND CITRATE ON HEMOLYSIS INDUCED BY OXALATE.** C. Guo and *K. McMartin*. Pharmacology, LSU Health Sciences Center, Shreveport, LA.

#1694 **DEGRADATION OF AC2993 (SYNTHETIC EXENDIN-4) IN MICE, RAT, RABBIT AND MONKEY KIDNEY MEMBRANE PREPARATIONS.** K. McCowen, K. Copley and *R. Hiles*. Amylin Pharmaceuticals, San Diego, CA.

#1695 **CADMIUM NEPHROTOXICITY IS ASSOCIATED WITH ALTERATIONS IN THE PATTERN OF CADHERIN LOCALIZATION IN THE PROXIMAL TUBULE EPITHELIUM.** *W. C. Prozialeck*, P. C. Lamar and S. M. Lynch. Midwestern University, Downers Grove, IL.

#1696 **SERIALLY-AGITATED DILUTE SOLUTIONS OF CDCL2 FAIL TO PROTECT AGAINST THE ACUTE CYTOTOXIC EFFECTS OF CD2+ IN LLC-PK1 CELLS.** P. C. Lamar and *W. C. Prozialeck*. Midwestern University, Downers Grove, IL.

#1697 **CADMIUM ADVERSELY AFFECTS CHOLINE UPTAKE AND THE CYTOSKELETON IN OPOSSUM KIDNEY CELLS.** J. R. Pennell and *A. R. Villalobos*. Department of Environmental Medicine, University of Rochester, Rochester, NY.

Thursday Morning, March 13
8:30 AM to 11:30 AM
South Foyer Lobby

POSTER SESSION: GLUTATHIONE

Chairperson(s): *Stephen Welty, Ohio State University, Columbus, OH and Timothy Dalton, University of Cincinnati, Cincinnati, OH.*

Displayed: *8:30 AM–11:30 AM*

Attended: *10:00 AM–11:30 AM*

#1698 **INITIAL CHARACTERIZATION OF THE GLUTAMATE-CYSTEINE LIGASE MODIFIER SUBUNIT *Gclm(-/-)* KNOCKOUT MOUSE: NOVEL MODEL SYSTEM FOR A SEVERELY COMPROMISED OXIDATIVE STRESS RESPONSE.** *Y. Yang*[1], *Y. Chen*[1], *M. Z. Dieter*[2], *H. G. Shertzer*[1], *D. W. Nebert*[1] and *T. P. Dalton*[1]. [1]Department of Environmental Health, University of Cincinnati Medical Center, Cincinnati, OH and [2]Department of Pharmacology, Toxicology, and Therapeutics, University of Kansas Medical Center, Kansas City, KS.

#1699 **HEPATOCYTE-SPECIFIC KNOCKOUT OF GLUTAMATE-CYSTEINE LIGASE CATALYTIC SUBUNIT IN MOUSE: EARLY DEATH WITH PROGRESSIVE LIVER DEGENERATION AND RESCUE BY N-ACETYLCYSTEINE.** *T. P. Dalton*, M. L. Miller, *H. G. Shertzer*, *D. W. Nebert* and *Y. Yang*. Department of Environmental Health, University of Cincinnati Medical Center, Cincinnati, OH.

#1700 **ACETAMINOPHEN HEPATOTOXICITY IS NOT ENHANCED IN GENETICALLY ALTERED MICE (GR1A1NEU) WITH DIMINISHED GLUTATHIONE REDUCTASE ACTIVITIES.** L. K. Rogers, M. Park, *S. E. Welty*, T. N. Hansen and *C. V. Smith*. Pediatrics, Columbus Children's Research Institute, Columbus, OH.

#1701 **CHLORDANE EFFECTS ON HEPATIC GLUTATHIONE LEVELS IN DAMS, PUPS AND VIRGIN RATS.** M. M. MANSOUR[1], M. Mahboob[2], V. V. St. Omer[1] and B. C. Datiri[1]. [1]Biomedical Sciences, Tuskegee University, Tuskegee, AL and [2]Toxicology Unit, Biology Division, Indian Institute of Chemical Technology, Hyderadad-500 007, India. Sponsor: *R. Dalvi*.

#1702 **PROTECTION OF MICE FROM ACETAMINOPHEN-INDUCED HEPATOTOXICITY BY A SULFHYDRYL-PROTECTED PRODRUG OF GLUTATHIONE.** D. L. Crankshaw[3,1], L. I. Berkeley[1], J. F. Cohen[2] and *H. T. Nagasawa*[1,2]. [1]Medical Research Service, VA Medical Center, Minneapolis, MN, [2]Medicinal Chemistry, University of Minnesota, Minneapolis, MN and [3]Food Science and Nutrition, University of Minnesota, Minneapolis, MN.

#1703 **TOXICITY OF PHENOLIC COMPOUNDS: DIRECT DETECTION OF GLUTATHIONYL RADICALS PRODUCED BY MYELOPEROXIDASE-CATALYZED METABOLISM IN CELLS.** G. G. Borisenko[1], I. Martin[2], Q. Zhao[1], J. Jiang[1] and *V. E. Kagan*[1]. [1]Department of Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA and [2]King's College London, London, United Kingdom.

#1704 **A ROLE FOR ASCORBATE AND PROTEIN-GLUTATHIONE MIXED DISULFIDES IN CELLULAR PROTECTION AND GSSG/GSH REDOX REGULATION.** J. Ehrhart[1,2] and G. D. Zeevalk[2]. [1]White Eagle Toxicology, Doylestown, PA and [2]Neurology, UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ. Sponsor: *K. Reuhl*.

#1705 **ROLE OF GLUTATHIONE DEPLETION IN TOXICANT-INDUCED INJURY TO CLARA CELLS.** *A. Phimister* and *C. G. Plopper*. VM:APC, University California, Davis, CA.

#1706 **FORMATION OF A GLUTATHIONE ADDUCT WITH A COCAINE PYROLYSIS PRODUCT, ANHYDROECGONINE METHYL ESTER.** A. L. Myers, S. S. Wolfe, P. M. Gannett, T. S. Tracy and P. S. Callery. Basic Pharmaceutical Sciences, West Virginia University, Morgantown, WV. Sponsor: *M. Davis*.

#1707 **EXPRESSION AND STABLE TRANSFECTION IN NRK-52E CELLS OF THE MITOCHONDRIAL 2-OXOGLUTARATE CARRIER (OGC), A GLUTATHIONE TRANSPORTER.** F. Xu[1], *L. H. Lash*[1], D. A. Putt[1], B. Sun[1] and L. H. Matherly[2,1]. [1]Pharmacology, Wayne State University, Detroit, MI and [2]Karmanos Cancer Institute, Wayne State University, Detroit, MI.

Thursday Morning, March 13
8:30 AM to 11:30 AM
South Foyer Lobby

POSTER SESSION: APOPTOSIS

Chairperson(s): *Prakash Nagarkatti, Virginia Commonwealth University, Richmond, VA and John Richburg, University of Texas at Austin, Austin, TX.*

Displayed: *8:30 AM–11:30 AM*

Attended: *8:30 AM–10:00 AM*

#1708 **ROTENONE AND/OR CHLORPYRIFOS EXPOSURE OF HUMAN DOPAMINERGIC NEUROBLASTOMA CELLS (SH-SY5Y) AND CORTICAL NEURONS INDUCES ACTIVATION OF c-JUN N-TERMINAL KINASE (JNK) AND p38 MAPK, MITOCHONDRIAL TRANSLOCATION OF BAX, CYTOCHROME C RELEASE, AND APOPTOSIS.** K. M. Newhouse, A. Caughlan, R. Persinger, S. Chang and *Z. Xia*. University of Washington, Seattle, WA.

#1709 **MITOCHONDRIAL TRANSLOCATION OF PROTEIN KINASE C-DELTA PROMOTES PROTEOLYTIC DEGRADATION OF BCL-2 DURING ENVIRONMENTAL NEUROTOXIC INSULTS IN DOPAMINERGIC CELLS.** *M. Kitazawa* and *A. G. Kanthasamy*. Biomedical Sciences, Iowa State University, Ames, IA.

#1710 **RNAI-MEDIATED KNOCK-DOWN (GENE SILENCING) OF PRO-APOPTOTIC PKCδ *IN VITRO* MODELS OF PARKINSON'S DISEASE.** Y. Yang, V. Anantharam and *A. Kanthasamy*. Biomedical Science, Iowa State University, Ames, IA.

#1711 **CASPASE INHIBITION SWITCHES THE MODE OF DEATH PRODUCED BY CYANIDE IN CORTICAL NEURONS.** K. Prabhakaran, *L. Li*, J. L. Borowitz and *G. E. Isom*. Medicinal Chemistry and Molecular Pharmacology, Purdue University, West Lafayette, IN.

#1712 **INVOLVEMENT OF CASPASE-3 PROTEASE IN DOPAMINERGIC DEGENERATION FOLLOWING EXPOSURE TO METHYLCYCLOPENTADIENYL MANGANESE TRICARBONYL (MMT).** *P. G. Gunasekar*[1], *G. T. Ramesh*[2], K. Prabhakaran[3] and *J. E. Klaunig*[1]. [1]Pharmacology and Toxicology, Indiana University School of Medicine (IUPUI), Indianapolis, IN, [2]Biology, Texas Southern University, Houston, TX and [3]Medicinal Chemistry and Molecular Pharmacology, Purdue University, West Lafayette, IN.

#1713 **METHYLCYCLOPENTADIENYL MANGANESE TRICARBONYL (MMT) INDUCES APOPTOSIS BY PKCδ DEPENDENT ACTIVATION OF NF-κB IN MESENCEPHALIC DOPAMINERGIC NEURONAL CELLS.** A. Kanthasamy, *M. Kitazawa*, S. Kaul, V. Anantharam and *A. G. Kanthasamy*. Biomedical Sciences, Iowa State University, Ames, IA.

#1714 **LACK OF PHOSPHATIDYLSERINE EXTERNALIZATION IN ETOPOSIDE-INDUCED APOPTOTIC CELLS IS RELATED TO ITS ANTIOXIDANT PROTECTION OF PHOSPHATIDYLSERINE OXIDATION.** Y. Y. Tyurina[1], B. F. Serinkan[1], V. A. Tyurin[1], J. C. Yalowich[2], B. Fadeel[4] and *V. E. Kagan*[1,2,3]. [1]EOH, University of Pittsburgh, Pittsburgh, PA, [2]Pharmacology, University of Pittsburgh, Pittsburgh, PA, [3]Cancer Research Institute, University of Pittsburgh, Pittsburgh, PA and [4]Division of Toxicology, Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden.

#1715 **FAS-TRIGGERED OXIDATION OF PHOSPHATIDYLSERINE IS ESSENTIAL FOR ITS EXTERNALIZATION DURING APOPTOSIS IN LUNG EPITHELIAL CARCINOMA A-549 CELLS UNDERGOING FAS-MEDIATED APOPTOSIS.** J. Jiang, B. F. Serinkan and *V. E. Kagan*. Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA.

#1716 **DIRECT INHIBITION OF I KAPPA KINASE ACTIVITY BY BENZENE METABOLITES SENSITIZES BONE MARROW CELLS TO CYTOKINE-INDUCED APOPTOSIS.** P. J. Kerzic[1], *D. W. Pyatt*[1], T. Zheng[1], A. T. Le[1], S. A. Gross[1] and *R. D. Irons*[1,2]. [1]Toxicology, University of Colorado Health Sciences Center, Denver, CO and [2]Sino-U.S. Joint Clinical Molecular Laboratory, Fudan University-Fenglin Campus, Shanghai, China.

#1717 **CASPASE ACTIVATION AND APOPTOSIS IN SILICA-INDUCED LUNG INJURY.** *M. Thibodeau*, *S. Mowbray*, *C. Giardina* and *A. Hubbard*. University of Connecticut, Storrs, CT.

#1718 **CROSS-TALK BETWEEN DEATH RECEPTOR-MEDIATED AND MITOCHONDRIAL PATHWAYS OF APOPTOSIS INDUCED BY DES IN JURKAT CELLS.** N. C. Brown[1], *M. Nagarkatti*[1] and *P. Nagarkatti*[2]. [1]Microbiology/Immunology, Virginia Commonwealth University, Richmond, VA and [2]Pharmacology/Toxicology, Virginia Commonwealth University, Richmond, VA.

#1719 **DES MEDIATES APOPTOSIS IN HEMATOPOIETIC STEM CELLS AND DEVELOPING THYMOCYTES LEADING TO IMMUNE DYSFUNCTION.** Y. Do[1], *M. Nagarkatti*[1] and *P. S. Nagarkatti*[2]. [1]Microbiology and Immunology, Virginia Commonwealth University Campus, Medical College of Virginia, Richmond, VA and [2]Pharmacology and Toxicology, Virginia Commonwealth University Campus, Medical College of Virginia, Richmond, VA.

#1720 **COMPETING CELL SURVIVAL AND CELL DEATH SIGNALS IN TGHQ TREATED HL-60 CELLS.** *M. Yang*, *S. S. Lau* and *T. J. Monks*. Center for Molecular and Cellular Toxicology, The University of Texas at Austin, Austin, TX.

#1721 **MODULATION OF LIPOCALIN 24P3 EXPRESSION AS AN APOPTOTIC MECHANISM FOR MK886.** Z. Tong, X. Wu and *J. P. Kehrer*. Center for Molecular and Cellular Toxicology, University of Texas at Austin, Austin, TX.

#1722 **CHANGES IN CELLULAR OXIDANT PRODUCTION IN RESPONSE TO PEROXISOME PROLIFERATOR ACTIVATED RECEPTOR (PPAR)α AND γ AGONISTS AND THE PPAR ANTAGONIST MK886.** *E. B. Atarod* and *J. P. Kehrer*. Center for Molecular and Cellular Toxicology, University of Texas at Austin, Austin, TX.

#1723 **GLUTATHIONE AND THIOREDOXIN REDOX STATES ARE INDEPENDENTLY REGULATED DURING DIFFERENTIATION, APOPTOSIS, AND OXIDATIVE STRESS.** *W. H. Watson*, Y. S. Nkabyo and *D. P. Jones*. Biochemistry, Emory University, Atlanta, GA.

#1724 **ELEVATED LEVELS OF PHOSPHORYLATED CA2+/CAMP RESPONSE ELEMENT BINDING PROTEIN (PCREB) IN ISOLATED BRAIN MITOCHONDRIA FOLLOWING FOREBRAIN ISCHEMIA.** *R. A. Schuh*, T. Kristian and G. Fiskum. Anesthesiology, University of Maryland, Baltimore, MD.

#1725 **GLUCOSE TRANSPORT IN JURKAT CELL: CONCENTRATION-DEPENDENT REGULATION.** *W. S. Koh*, K. D. Shin, J. W. Lee and S. S. Han. Korea Institute of Toxicology, Daejeon, South Korea.

#1726 **PHOSPHATIDYLSERINE IS REQUIRED ALONG WITH OXIDIZED PHOSPHOLIPIDS ON CELL SURFACE FOR SYNERGISTIC ENHANCEMENT OF PHAGOCYTOSIS BY MACROPHAGES.** V. A. Kini, Y. Y. Tyurina, G. G. Borisenko and *V. E. Kagan*. EOH, University of Pittsburgh, Pittsburgh, PA.

#1727 **P53 PHOSPHORYLATION REGULATES HYPOXIA-MEDIATED APOPTOTIC DEATH IN TUMOR CELLS.** *A. Nieminen*, E. Schneider and F. Agani. Anatomy, Case Western Reserve University, Cleveland, OH.

#1728 **MECHANISM-BASED COMPARISON OF *IN VITRO* AND *IN VIVO* CELL DEATH PATHWAYS IN RETINAL PHOTORECEPTOR CELLS EXPOSED TO THE 2-NITROIMIDAZOLE RADIOSENSITIZER, CI-1010.** *T. J. Miller*[1], *L. A. Dethloff*[2] and *M. A. Philbert*[1]. [1]Environmental Health Sciences, University of Michigan, Ann Arbor, MI and [2]Pfizer, Inc., Ann Arbor, MI.

#1729 **BENZO(a)PYRENE 7, 8-DIHYDRODIOL-INDUCED APOPTOSIS IS AH RECEPTOR DEPENDENT AND REQUIRES MITOGEN ACTIVATED PROTEIN KINASES.** S. Chen[1], N. Nguyen[1], J. Park[1], M. Karin[1] and *R. H. Tukey*[1,2]. [1]Department of Pharmacology, University of California, San Diego, La Jolla, CA and [2]Department of Chemistry & Biochemistry, University of California, San Diego, La Jolla, CA.

#1730 **RESCUE OF CORTICAL NEURONS FROM CYANIDE-INDUCED APOPTOSIS: DEMANSTRATES BAX TRANSLOCATION IN THE APOPTOTIC PROCESS.** *L. Li*, K. Prabhakaran, J. L. Borowitz and *G. E. Isom*. Medicinal Chemistry and Molecular Pharmacology, Purdue University, West Lafayette, IN.

#1731 **INHIBITION OF THE MITOCHONDRIAL PERMEABILITY TRANSITION IN THE MECHANISM OF HEAT SHOCK PROTECTION.** L. He and *J. J. Lemasters*. Cell and Developmental Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC.

#1732 **EVALUATION OF DR5 MEMBRANE LOCALIZATION IN THE RODENT TESTIS USING FLOW CYTOMETRIC ANALYSIS.** *Y. Chandrasekaran*, *C. J. Giammona* and *J. H. Richburg*. College of Pharmacy, The University of Texas at Austin, Austin, TX.

#1733 **THE EXPRESSION OF TNF-RELATED APOPTOSIS INDUCING LIGAND (TRAIL) IN RODENT SERTOLI CELLS.** *Y. Ye*, *C. J. Giammona*, P. Sawhney and *J. H. Richburg*. College of Pharmacy, The University of Texas at Austin, Austin, TX.

#1734 **ORGANIC ANION TRANSPORT INHIBITORS ATTENUATE GLUTATHIONE RELEASE DURING FAS-MEDIATED APOPTOSIS IN HEPG2 CELLS.** C. L. Hammond, M. S. Madejczyk and *N. Ballatori*. Environmental Medicine, University of Rochester, Rochester, NY.

#1735 **VITAMIN E INDUCED CASPASE-8 MEDIATED APOPTOSIS OCCURS INDEPENDENTLY OF DEATH RECEPTOR ACTIVATION IN NEOPLASTIC MAMMARY EPITHELIAL CELLS.** *S. Shah* and P. W. Sylvester. Pharmaceutical Sciences, University of Louisiana at Monroe (ULM), Monroe, LA.

#1736 **1, 2, 3, 4-DIEPOXYBUTANE INDUCES P53 DEPENDENT APOPTOSIS IN HUMAN LYMPHOBLASTS.** S. Seemanapalli and P. M. Muganda. Environmental Toxicology Ph.D Program, Southern University, Baton Rouge, LA. Sponsor: *F. Spencer*.

#1737 **THE ROLE OF TNF-α RECEPTOR 2 IN BLEOMYCIN-INDUCED APOPTOSIS IN ALVEOLAR MACROPHAGES.** H. W. Zhao[1], S. Y. Hu[2], M. W. Barger[1], J. K. Ma[2], *V. Castranova*[1] and *J. Y. Ma*[1]. [1]HELD, NIOSH, Morgantown, WV and [2]School of Pharmacy, WVU, Morgantown, WV.

#1738 **APOPTOTIC ALVEOLAR MACROPHAGES PLAY A ROLE IN THE DEVELOPMENT OF PULMONARY INFLAMMATORY DISEASE IN RATS.** L. Wang[1], J. Scabilloni[1], *J. Antonini*[1], Y. Rojanasakul[2], *V. Castranova*[1], B. Lu[2] and R. R. Mercer[1]. [1]PPRB, NIOSH, Morgantown, WV and [2]West Virginia University Health Sciences Center, Morgantown, WV.

#1739 **C2-CERAMIDE *VS.* TNF-α INDUCED CYTOTOXICITY AND APOPTOSIS IN A RAT HEPATOMA (H4IIE) CELL LINE.** J. F. Pregenzer, P. C. Wilga, D. K. Petrella, R. K. Patel and *J. M. McKim, Jr.* Investigative Toxicology, Pharmacia, Kalamazoo, MI.

#1740 **MECHANISMS OF OCHRATOXIN A-INDUCED INHIBITION OF HUMAN LYMPHOCYTE PROLIFERATION.** H. Assaf[1,2], H. Azouri[2] and *M. Pallardy*[1]. [1]Faculty of Pharmacy, INSERM U461, Châtenay-Malabry, France and [2]Faculty of Pharmacy, Laboratory of Toxicology, Beyrouth, Lebanon.

#1741 **CHANGES IN LYMPHOCYTE SUBSETS AND APOPTOSIS IN LYMPHOID TISSUES OF NIVALENOL-TREATED MICE.** A. Poapolathep[1], T. Nagata[1], Y. Sugita-Konishi[3], S. Kumagai[2] and K. Doi[1]. [1]Department of Vet. Pathol., The University of Tokyo, Tokyo, Japan, [2]Division of Microbiol., National Inst. of Health Sciences., Tokyo, Japan and [3]Department of Vet. Public Health, The University of Tokyo, Tokyo, Japan. Sponsor: *K. Ebino*.

#1742 **EFFECTS OF T-2 TOXIN ON KERATINOCYTE PRIMARY CULTURES.** *S. M. Albarenque*, K. Suzuki, H. Nakayama and K. Doi. Veterinary Pathology, The University of Tokyo, Tokyo, Japan.

#1743 **SUBCYTOTOXIC INORGANIC ARSENIC AFFECTS MITOCHONDRIA IN HK-2 HUMAN PROXIMAL TUBULAR CELLS: POTENTIAL FOR APOPTOTIC CELL DEATH.** *M. A. Peraza*, *D. E. Carter* and *A. Gandolfi*. Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

#1744 **ARSENITE STIMULATES APOPTOSIS IN MYELOID LEUKEMIA CELLS DURING G2/M PHASE.** *G. McCollum* and *M. J. McCabe*. Department of Environmental Medicine, University of Rochester, Rochester, NY.

#1745 **COPPER-INDUCED CASPASE-3 ACTIVATION AND APOPTOSIS IN RAT HEPATOMA CELL LINE (H4IIE).** R. Nino-Fong[1], C. Fuentealba[1], A. Cribb[2], B. P. Esparza-Gonzalez[1] and *M. Cherian*[1]. [1]Pathology, University of Western Ontario, London, ON, Canada and [2]Anatomy and Physiology, University of Prince Edward Island, Charlottetown, PE, Canada.

#1746 **EFFECTS OF DIETHYDITHIOCARBAMATE (DDC) ON RAT HIPPOCAMPAL ASTROCYTES ON CASPASE-1, C-MYC, BCL-2 AND P53 WITH AND WITHOUT GLUTATHIONE (GSH).** *L. D. Trombetta* and *J. A. Mlockier-Audrain*. St. John's University, Jamaica, NY.

#1747 **EFFECT OF ACUTE MERCURY VAPOR EXPOSURE TO MURINE THYMUS.** M. Sawada[1], Y. Sunagawa[1], *A. Shimada*[1], T. Morita[1] and *M. Yoshida*[2]. [1]Department of Veterinary Pathology, Tottori University, Tottori, Tottori, Japan and [2]Department of Chemistry, St. Marianna University, Kawasaki, Kanagawa, Japan.

#1748 **POSSIBLE INVOLVEMENT OF CALPAIN/P35/CDK5 CASCADE IN METHYLMERCURY-INDUCED DEATH OF CEREBELLAR NEURONS.** M. Kunimoto, M. Okazaki and M. Sakaue. Kitasato University School of Pharmaceutical Sciences, Minato-ku, Tokyo, Japan. Sponsor: *N. Imura*.

#1749 **TRAIL AND DEATH RECEPTOR RESPONSE IN RODENT TESTIS AFTER CISPLATIN EXPOSURE.** P. Sawhney, *C. J. Giammona*, F. C. Seaman, *Y. Ye* and *J. H. Richburg*. College of Pharmacy, The University of Texas at Austin, Austin, TX.

#1750 **6(5*H*)-PHENANTHRIDINONE ATTENUATES THE HEPATOTOXICITY OF CARBON TETRACHLORIDE.** T. Stedeford[1,2,4], M. Banasik[1,4], P. Su[1], D. I. Mosquera[2], C. Muro-Cacho[3], J. Sanchez-Ramos[2,5] and *R. D. Harbison*[1]. [1]Department of Environmental and Occupational Health, University of South Florida, Tampa, FL, [2]Department of Neurology, University of South Florida, Tampa, FL, [3]Department of Interdisciplinary Oncology, H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL, [4]ICC, Polish Academy of Sciences, Gliwice, Poland and [5]Research Services, James A. Haley Veterans' Hospital, Tampa, FL.

#1751 **QUANTIFICATION OF HEPATOCYTE PROLIFERATION AND APOPTOSIS IN RATS TREATED FOR FIVE DAYS WITH VARIOUS HEPATOCARCINOGENS.** E. Blomme[1], J. Kramer[2], S. Williams[1], R. Duan[1], R. Bunch[1] and K. L. Kolaja[1]. [1]Global Toxicology, Pharmacia, Skokie, IL and [2]Global Toxicology, Pharmacia, St. Louis, MO. Sponsor: *M. Schlosser*.

#1752 **ACUTE ETHANOL (ETOH) EXPOSURE *IN VIVO* POTENTIATES ACETAMINOPHEN (AAP)-INDUCED HEPATOCELLULAR APOPTOSIS BY MODULATING OXIDATIVE STRESS AND EXPRESSION OF BCL-XL AND P53 GENES IN THE LIVER.** *S. Phadke*, *R. Raje* and *S. Ray*. Molecular Toxicol. Program, A& M Schwartz College of Pharmacy and Health Scs., Long Island University, Brooklyn, NY.

Thursday Morning, March 13
8:30 AM to 11:30 AM
South Foyer Lobby

POSTER SESSION: TCDD & POPS I

Chairperson(s): *Michael DeVito, U.S. EPA, Research Triangle Park, NC and Jouko Tuomisto, National Public Health Institute, Kuopio, Finland.*

Displayed: *8:30 AM–11:30 AM*

Attended: *10:00 AM–11:30 AM*

#1753 **DIFFERENCES IN ACUTE TOXICITY SYNDROMES OF TCDD AND HEXACHLORODIBENZO-*p*-DIOXIN IN RATS.** U. Simanainen[1,2], M. Niittynen[1], J. T. Tuomisto[1], R. Pohjanvirta[1,3], *M. Viluksela*[1] and *J. Tuomisto*[1,2]. [1]Environmental Health, National Public Health Institute, Kuopio, Finland, [2]University of Kuopio, Kuopio, Finland and [3]National Food and Veterinary Research Institute, Kuopio, Finland.

#1754 **DIFFERENTIAL REVERSIBILITY OF CYP1A1 INDUCTION IN TCDD VERSUS HxCDD TREATED RATS.** C. R. Croutch[1], M. Lebofsky[1], *N. J. Cherrington*[1], *C. D. Klaassen*[1] and *K. K. Rozman*[1,2]. [1]University of Kansas Medical Center, Kansas City, KS and [2]GSF-Institut fur Toxikologie, Neuherberg, 81, Germany.

#1755 **THE EFFECT OF TCDD AND LEPTIN ON mRNA EXPRESSION OF NEUROPEPTIDES REGULATING FOOD INTAKE IN HYPOTHALAMUS.** J. Lindén[1,2], S. Lensu[3,4], M. Korkalainen[4], *J. Tuomisto*[4] and R. Pohjanvirta[1,2]. [1]Department of Food and Environmental Hygiene, University of Helsinki, Helsinki, Finland, [2]Veterinary and Food Research Institute, Helsinki, Finland, [3]Department of Pharmacology, University of Kuopio, Kuopio, Finland and [4]Department of Environmental Health, National Public Health Institute, Kuopio, Finland.

#1756 **2, 3, 7, 8-TETRACHLORODIBENZO-*p*-DIOXIN (TCDD)-INDUCED ACCUMULATION OF BILIVERDIN AND HEPATIC PELIOSIS IN RATS.** M. Niittynen[1], J. T. Tuomisto[1], S. Auriola[2], R. Pohjanvirta[1,3,4], P. Syrjälä[3], U. Simanainen[1], *M. Viluksela*[1] and *J. Tuomisto*[1]. [1]Department of Environmental Health, National Public Health Institute, Kuopio, Finland, [2]Department of Pharmaceutical Chemistry, University of Kuopio, Kuopio, Finland, [3]National Food and Veterinary Research Institute, Kuopio, Finland and [4]Department of Food and Environmental Hygiene, University of Helsinki, Helsinki, Finland.

#1757 **CHARACTERIZATION OF BRONCHIAL METAPLASIA IN RATS EXPOSED TO 3, 3, 4, 4, 5-PENTACHLOROBIPHENYL (PCB 126).** A. E. Brix[1], M. P. Jokinen[3], *N. J. Walker*[2], D. M. Sells[5] and A. Nyska[2]. [1]Laboratory of Experimental Pathology, NIEHS, Research Triangle Park, NC, [2]Pathology Associates - A Charles River Company, Durham, NC, [3]EPL, Research Triangle Park, NC, [4]NIEHS, Research Triangle Park, NC and [5]Battelle Columbus, Columbus, OH.

#1758 **EXPOSURE TO TCDD RENDERS VIRUS-SPECIFIC CD8+ T CELLS UNRESPONSIVE DURING PRIMARY INFECTION AND DELAYS THEIR EXPANSION FOLLOWING REINFECTION.** *K. A. Mitchell*, J. A. Cundiff, *B. A. Vorderstrasse* and *B. Lawrence*. Phar Sciences, Pharmacology/Tox Prog., Washington State University, Pullman, WA.

#1759 **THYMOCYTE ALTERATIONS IN CD2-DRIVEN CONSTITUTIVELY ACTIVE ARYLHYDROCARBON RECEPTOR (AHR) TRANSGENIC MICE.** K. Nohara[1,2], S. Tsukumo[1,2], T. Ito[1,2], M. Yamamoto[2,3], H. Motohashi[3], A. Hida[3], Y. Fujii-Kuriyama[2,3], K. Inouye[1,4], H. Nagai[1,5] and *C. Tohyama*[1,2]. [1]Environmental Health Sciences Division, National Institute for Environmental Studies, Tsukuba, Japan, [2]CREST, JST, Kawaguchi, Japan, [3]TARA Center, University of Tsukuba, Tsukuba, Japan, [4]JSPS, Tokyo, Japan and [5]RIBS, Science University of Tokyo, Noda, Japan.

#1760 **INDUCTION OF OXIDATIVE STRESS IN THE REPRODUCTIVE SYSTEM OF RATS AFTER SUBCHRONIC EXPOSURE TO 2, 3, 7, 8-TETRACHLORODIBENZO-*p*-DIOXIN.** *O. S. El-Tawil* and E. M. Elsaieed. Toxicology and Forensic Medicine, Faculty of Veterinary Medicine, Cairo University, Cairo, Egypt.

#1761 **BONE STATUS AND ALL-TRANS-RETINOIC ACID (ATRA) HOMEOSTASIS IN MICE LACKING CELLULAR RETINOL-BINDING PROTEIN I (CRBPI-KO) BEFORE AND AFTER CHEMICAL INSULT BY TCDD.** P. Hoegberg[1], *M. Lind*[1], N. Stern[1], A. Thomassen[2], R. Blomhoff[2], T. Jämsä[3], *J. Tukkanen*[3], N. B. Ghyselinck[4] and *H. Håkansson*[1]. [1]Environmental Medicine, Karolinska Institute, Stockholm, Stockholm, Sweden, [2]Institute for Nutrition Research, University of Oslo, Oslo, Norway, [3]Department of Anatomy and Cell biology, University of Oulu, Oulu, Finland and [4]CNRS-INSERM-ULP, Illkirch, France.

#1762 **REGULATION OF CYCLIN D1 GENE EXPRESSION IN THE MOUSE UTERUS BY ESTROGEN AND 2, 3, 7, 8-TETRACHLORODIBENZO-*p*-DIOXIN.** K. B. Walker[1], *R. C. Burghardt*[2] and *S. Safe*[1]. [1]Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX and [2]Veterinary Anatomy & Public Health, Texas A&M University, College Station, TX.

#1763 **HEPATIC RETINOID LEVELS IN A TCDD-SENSITIVE (LONG-EVANS) AND TCDD-RESISTANT (HAN/WISTAR) RAT STRAIN FOLLOWING LONG-TERM LOW-DOSE TCDD EXPOSURE.** N. Fletcher[1], C. Schmidt[4], N. Stern[1], M. Viluksela[2], J. T. Tuomisto[2], R. Pohjanvirta[3], J. Tuomisto[2], H. Nau[4] and *H. Håkansson*[1]. [1]Institute of Environmental Medicine, Karolinska Institutet, Stockhlom, Sweden, [2]Department of Environmental Health, National Public Health Institute, Kuopio, Finland, [3]Department of Food and Environmental Hygiene, University of Helsinki, Helsinki and [4]Department of Food Toxicology, School of Veterinary Medicine, Hannover, Germany.

#1764 **USE OF CYP1A2 (-/-) KNOCKOUT AND CYP1A2 (+/+) C57BL/6N PARENTAL STRAINS OF MICE TO COMPARE METABOLISM OF 2, 3, 7, 8-TETRACHLORODIBENZO-*p*-DIOXIN (TCDD).** J. J. Diliberto[1] and H. Hakk[2]. [1]PKB, ETD, NHEERL ORD, U.S. EPA, Research Triangle Park, NC and [2]BRL, ARS, USDA, Fargo, ND. Sponsor: *L. Birnbaum*.

#1765 **A COMPARISON OF THE METABOLISM OF METHOXYRESORUFIN, ACETANILIDE AND CAFFEINE IN RAT AND HUMAN CYP1A2 SUPERSOMES AND THEIR INHIBITION BY 2, 3, 7, 8-TETRACHLORODIBENZO-*p*-DIOXIN (TCDD).** *D. Staskal*[1], D. G. Ross[2], *L. S. Birnbaum*[2] and *M. J. DeVito*[2]. [1]Curriculum in Toxicology, UNC- Chapel Hill, Hillsborough, NC and [2]ETD, NHEERL, ORD, U.S. EPA, Research Triangle Park, NC.

#1766 **INFLUENCE OF DIABETES, OBESITY AND 2, 3, 7, 8-TETRACHLORODIBENZO-*p*-DIOXIN (TCDD)EXPOSURE ON THE EXPRESSION OF HEPATIC CYP1A2 IN A MURINE MODEL OF TYPE II DIABETES.** S. J. Godin[1,2], V. M. Richardson[2], J. J. Diliberto[2], *L. S. Birnbaum*[2,1] and *M. J. DeVito*[2]. [1]Curriculum in Toxicology, University of North Carolina at Chapel Hill, Chapel Hill, NC and [2]ETD/NHEERL/ORD, U.S. EPA, Research Triangle Park, NC.

#1767 **INFLUENCE OF TYPE II DIABETES AND OBESITY ON THE DISPOSITION AND ELIMINATION OF TCDD IN MICE.** *M. J. DeVito*[1], J. J. Diliberto[1], D. G. Ross[1], *C. Emond*[2], V. M. Richardson[1] and *L. S. Birnbaum*[1]. [1]ORD/NHEERL/ETD, U.S. EPA, Research Triangle Park, NC and [2]National Research Council, National Academy of Sciences, Washington, DC.

#1768 **COMPARING ENVIRONMENTALLY RELEVANT PCBs TO TCDD.** D. E. Burgin[1,2], J. J. Diliberto[2] and *L. S. Birnbaum*[2]. [1]Toxicology, UNC, Research Triangle Park, NC and [2]ETD/NHEERL/ORD, U.S. EPA, Research Triangle Park, NC.

#1769 **EVALUATION OF PCB EXPOSURE ROUTES IN ANNISTON, ALABAMA: ASSESSMENTS OF FISH CONSUMPTION USING PBPK MODELING OF PCB CONGENERS IN LOCALLY-CAUGHT FISH.** C. J. Welsh, D. Moffett, H. El-Masri, D. Fowler and S. Moore. ATSDR, Atlanta, GA. Sponsor: *J. Wheeler*.

#1770 **ACUTE EFFECTS OF *ortho*-PCB CONGENERS ON THE HYPOTHALAMO-PITUITARY-THYROID AXIS.** M. A. Khan and *L. G. Hansen*. University of Illinois, Urbana, IL.

#1771 **LIPID PEROXIDATION AND ANTIOXIDANT ENZYMES IN TESTES OF RATS TREATED WITH 2, 2', 4, 4', 5, 5'-HEXACHLOROBIPHENYL (PCB-153) AND EFFECTS OF CORN OIL, MEDIUM-CHAIN TRIGLYCERIDE (MCT) OIL AND OLIVE OIL.** *Z. A. Fadhel*, P. R. Bunaciu, *H. P. Glauert*, *L. W. Robertson* and *G. Ludewig*. University of Petra, Amman, Jordan.

#1772 **COMPARATIVE STUDY OF PCB, PBB, AND PBDE MIXTURES ON SERUM PARAMETERS IN THE RAT.** *G. Ludewig*, *N. M. Tampal* and *L. W. Robertson*. Occupational & Environmental Health, University of Iowa, Iowa City, IA.

#1773 **CONTAMINATION OF DIOXINS AND CO-PLANAR PCBS IN WHALE MEAT PRODUCTS FROM JAPANESE MARKET.** K. Haraguchi[1] and *T. Endo*[2]. [1]Clinical Toxicology & Metabolism, Health Sciences University of Hokkaido, Ishikari-Tobetsu, Hokkaido, Japan and [2]Clinical Toxicology & Metabolism, Health Sciences University of Hokkaido, Ishikari-Tobetsu, Hokkaido, Japan.

Thursday Morning, March 13
8:30 AM to 11:30 AM
South Foyer Lobby

POSTER SESSION: TCDD & POPS II

Chairperson(s): *Michel Charbonneau, Université Du Québec, Montréal (Pointe-Claire), Québec, Canada and Chiharu Tohyama, National Institute for Environmental Studies, Tsukuba, Ibaraki,* Japan.

Displayed: *8:30 AM–11:30 AM*

Attended: *8:30 AM–10:00 AM*

#1774 **INCREASED LEVEL AND ASYMMETRICAL LOCALIZATION OF SECRETED FRIZZLED-RELATED PROTEIN 2 (SFRP2) MRNA IN THE MURINE FETAL BRAIN PERINATALLY EXPOSED TO 2, 3, 7, 8-TETRACHLORODIBENZO-*p*-DIOXIN.** H. Zaha[1,2], *H. Sone*[1,2], *J. Yonemoto*[1,2], S. Hisano[4], S. Maeda[2,3] and *C. Tohyama*[1,2]. [1]Environmental Health Sciences Division, National Institute for Environmental Studies, Tsukuba, Ibaraki, Japan, [2]CREST, Japan Science and Technology Corporation (JST), Kawaguchi, Saitama, Japan, [3]The First Department of Biochemistry, Yamanashi Medical University, Nakakoma, Yamanashi, Japan and [4]Laboratory of Neuroendocrinology, University of Tsukuba, Tsukuba, Ibaraki, Japan.

#1775 **DIOXIN ALTERS DEVELOPMENT OF THE COMMON CARDINAL VEIN IN THE ZEBRAFISH EMBRYO.** S. M. Bello, W. Heideman and *R. E. Peterson*. Pharmacy, University of Wisconsin - Madison, Madison, WI.

#1776 **MORPHOLINO KNOCKDOWN OF AHR2 IN THE ZEBRAFISH EMBRYO PROTECTS AGAINST TCDD DEVELOPMENTAL TOXICITY.** A. L. Prasch, S. A. Carney, W. Heideman and *R. E. Peterson*. Pharmacy, UW-Madison, Madison, WI.

#1777 **INVOLVEMENT OF HEDGEHOG SIGNALING IN IMPAIRED JAW DEVELOPMENT BY 2, 3, 7, 8-TETRACHLORODIBENZO-*p*-DIOXIN IN DEVELOPING ZEBRAFISH.** *H. Teraoka*[1], W. Dong[1], H. Iwasa[1], Y. Okuhara[1], A. Kawakami[2], N. Ueno[3] and *J. J. Stegeman*[4]. [1]Department of Toxicology, Rakuno Gakuen University, Ebetsu, Japan, [2]Department of Biological Science, University of Tokyo, Tokyo, Japan, [3]Department of Developmental Biology, National Institute for Basic Biology, Okazaki, Japan and [4]Department of Biology, Woods Hole Oceanographic Institution, Woods Hoole, MA.

#1778 **MICROARRAY ANALYSIS FOR MOUSE FETUS GENES ALTERED BY 2, 3, 7, 8-TETRACHLORODIBENZO-*p*-DIOXIN (TCDD) EXPOSURE ON GESTATIONAL DAY 13.** S. Ohsako[1,2], R. Ishimura[1,2] and *C. Yohyama*[1,2]. [1]Environmental Health Sciences Division, National Institute of Environmental Studies, Tsukuba, Ibaraki, Japan and [2]CREST, JST, Kawaguchi, Saitama, Japan.

#1779 **TEMPORAL EFFECTS OF AH RECEPTOR LIGANDS ON CH12LX MURINE B-CELL LYMPHOMA CELL GENE EXPRESSION: CDNA MICROARRAY ANALYSIS, REAL-TIME PCR VERIFICATION AND BIOINFORMATIC ASSESSMENT.** *M. R. Fielden*, D. R. Boverhof and *T. R. Zacharewski*. Biochemistry & Molecular Biology, National Food Safety & Toxicology Center, and Institute for Environmental Toxicology, Michigan State University, East Lansing, MI.

#1780 **TRANSCRIPTIONAL REGULATION OF THE HS4 DOMAIN THROUGH A DRE AND κB MOTIF.** C. Sulentic[1], Y. Na[2], S. Fintushel[1] and *N. Kaminski*[1]. [1]Pharmacology & Toxicology, Michigan State University, East Lansing, MI and [2]Korea Advanced Institute of Science and Technology, Daejon, South Korea.

#1781 **THE VASCULAR ENDOTHELIUM OF THE BLOOD-BRAIN BARRIER AS A TARGET FOR DIOXIN TOXICITY.** *C. R. Filbrandt* and *T. A. Gasiewicz*. Environmental Medicine, University of Rochester, Rochester, NY.

#1782 **ARYL HYDROCARBON RECEPTOR GENE SILENCING WITH SMALL INHIBITORY RNA DIFFERENTIALLY MODULATES Ah-RESPONSIVENESS IN MCF-7 AND HEPG2 CANCER CELLS.** M. Abdelrahim[1], R. Smith[2] and *S. Safe*[1]. [1]Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX and [2]Veterinary Pathobiology, Texas A&M University, College Station, TX.

#1783 **A CONSTITUTIVELY ACTIVE ARYL HYDROCARBON RECEPTOR INDUCES GROWTH INHIBITION BY CELL CYCLE ARREST AND APOPTOSIS IN JURKAT T CELLS.** T. Ito[1,2], S. Tsukumo[1,2], M. Yamamoto[2,3], H. Motohashi[3], N. Suzuki[3], Y. Fujii-Kuriyama[2,3], J. Mimura[3], *C. Tohyama*[1,2] and K. Nohara[1,2]. [1]Environmental Health Sciences Division, National Institute for Environmental Studies, Tsukuba, Japan, [2]CREST, JST, Kawaguchi, Japan and [3]TARA Center, University of Tsukuba, Tsukuba, Japan.

#1784 **THE ARYL HYDROCARBON RECEPTOR MEDIATES DEGRADATION OF THE ESTROGEN RECEPTOR α THROUGH ACTIVATION OF PROTEASOMES.** M. Wormke[1], *M. Stoner*[1], B. Saville[1], K. B. Walker[1], M. Abdelrahim[1], *R. Burghardt*[2] and *S. Safe*[1]. [1]Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX and [2]Veterinary Anatomy & Public Health, Texas A&M University, College Station, TX.

#1785 **ARYL HYDROCARBON RECEPTOR AGONISTS INHIBIT HORMONE-INDUCED TRANSACTIVATION IN PROSTATE CANCER CELLS.** D. Morrow and *S. Safe*. Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

#1786 **CROSS TALK BETWEEN DIOXIN AND HYPOXIA SENSING PATHWAYS: A GENE ARRAY STUDY.** *K. N. De Abrew*[2,1] and K. K. Graven[1,2]. [1]Medicine, University of Wisconsin, Madison, WI and [2]Molecular and Environmental Toxicology Center, University of Wisconsin, Madison, WI.

#1787 **ARYL HYDROCARBON RECEPTOR-MEDIATED INHIBITION OF ESTROGEN RECEPTOR-NEGATIVE BREAST CANCER CELL GROWTH.** L. Kotha and *S. Safe*. Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

#1788 **TCDD INDUCES A SUPPRESSION OF PPARγ EXPRESSION THAT INHIBITS ADIPOCYTE DIFFERENTIATION.** M. Cimafranca[1] and *C. R. Jefcoate*[2]. [1]Molecular & Environmental Toxicology Center, University of Wisconsin, Madison, WI and [2]Pharmacology, University of Wisconsin, Madison, WI.

#1789 **TCDD INDUCES INCREASED EXPRESSION OF RETINOIC ACID METABOLIZING GENES: POSSIBLE ROLE IN ALTERING PROLIFERATION AND DIFFERENTIATION IN HUMAN KERATINOCYTES.** J. Zhang, *S. Ray* and *H. I. Swanson*. Molecular and Biomedical Pharmacology, University of Kentucky, Lexington, KY.

#1790 **EFFECT OF ARYL HYDROCARBON RECEPTOR (AhR) AGONISTS ON THE ACTIVATION OF TELOMERASE IN HUMAN MAMMARY EPITHELIAL CELLS.** R. M. Audet[1], *S. Girard*[1], G. Lassonde[1], D. Desaulniers[2] and *M. Charbonneau*[1]. [1]INRS-Institut Armand-Frappier, INRS, Université du Québec, Montreal, QC, Canada and [2]Health Canada, Ottawa, ON, Canada.

#1791 **THE ROLE OF DNA OXIDATION IN TCDD-INDUCED HOMOLOGOUS RECOMBINATION.** C. Y. Chan[1], *P. M. Kim*[1,2] and *L. M. Winn*[1,2]. [1]Pharmacology and Toxicology, Queen's University, Kingston, ON, Canada and [2]School of Environmental Studies, Queen's University, Kingston, ON, Canada.

#1792 **METABOLIC DEGRADATION OF A SUGGESTED ENDOGENOUS ARYLHYDROCARBON RECEPTOR LIGAND, THE TRYPTOPHAN PHOTOPRODUCT 6-FORMYLINDOLO[3, 2-B]CARBAZOLE.** A. Rannug[1], L. Bergander[2], W. Alworth[3] and U. Rannug[2]. [1]Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden, [2]Department of Genetic and Cellular Toxicology, Stockholm University, Stockholm, Sweden and [3]Department of Chemistry, Tulane University, New Orleans, LA. Sponsor: *G. Johanson*.

#1793 **2, 3, 7, 8 TETRACHLORODIBENZO-*p*-DIOXIN (TCDD) INCREASES MITOMYCIN C (MMC) TOXICITY AND ALTERS METABOLISING ENZYMES THROUGH ARYL HYDROCARBON RECEPTOR (AHR) INTERACTION.** A. C. Collier[1,2] and *C. A. Pritsos*[1,2]. [1]Nutrition, University of Nevada, Reno, NV and [2]Environmental Sciences and Engineering, University if Nevada, Reno, NV.

#1794 **AGONISTIC AND ANTAGONISTIC EFFECTS OF POLYBROMINATED DIPHENYL ETHERS (PBDE) IN MCF7 CELLS.** L. Peters[1], T. Sanderson[1], *A. Bergman*[2] and *M. van den Berg*[1]. [1]Institute for Risk Assessment Sciences, University Utrecht, Utrecht, Netherlands and [2]Department of Environmental Chemistry, University of Stockholm, Stockholm, Sweden.

#1795 **SPECTRAL INTERACTIONS OF POLYCHLORINATED BIPHENYLS (PCBS) WITH RAT HEPATIC MICROSOMAL CYTOCHROME P450 ENZYMES.** *S. M. Bandiera* and E. G. Hrycay. Faculty of Pharmaceutical Sciences, University of British Columbia, Vancouver, BC, Canada.

Thursday Morning, March 13
8:30 AM to 11:30 AM
South Foyer Lobby

POSTER SESSION: NUCLEAR, CYTOSOLIC AND MEMBRANE RECEPTOR-MEDIATED XENOBIOTIC SIGNAL TRANSDUCTION II

Chairperson(s): *Jeffrey Peters, Penn State University, University Park, PA and Thomas Gasiewicz, University of Rochester, Rochester, NY.*

Displayed: *8:30 AM–11:30 AM*

Attended: *10:00 AM–11:30 AM*

#1796 **CYP1B1 INDUCTION BY TCDD OR CELL SUSPENSION REQUIRES SMALL PROPORTION OF NUCLEAR AHR IN MEF 10T1/2 CELLS.** Y. Cho[1]. [1]Pharmacology, UW-Madison and [2]Pharmacology, UW-Medical School, Madison, WI. Sponsor: *C. Jefcoate*.

#1797 **THE EFFECTS OF GREEN TEA CATECHINS ON ARYL HYDROCARBON RECEPTOR-MEDIATED GENE REGULATION.** *C. M. Palermo* and *T. A. Gasiewicz*. Department of Environmental Medicine, University of Rochester, Rochester, NY.

#1798 **CHARACTERIZATION OF REGULATORY ELEMENTS IN THE HUMAN AH RECEPTOR PROMOTER.** J. Racky, H. Kauffmann, H. Schmitz and *D. Schrenk*. Food Chemistry and Environmental Toxicology, University of Kaiserslautern, Kaiserslautern, RLP, Germany.

#1799 **ROLE OF PEROXISOME PROLIFERATOR-ACTIVATED RECEPTOR β (PPARβ) IN MOUSE KERATINOCYTE PROLIFERATION AND DIFFERENTIATION.** *D. J. Kim*[1,2] and *J. M. Peters*[1,2]. [1]Department of Veterinary Science and The Center for Molecular Toxicology and Carcinogenesis, Pennsylvania State University, University Park, PA and [2]Graduate Program in Cellular and Molecular Mechanisms of Toxicity, Life Sciences Consortium, Pennsylvania State University, University Park, PA.

#1800 **THE ROLE OF PEROXISOME PROLIFERATOR-ACTIVATED RECEPTOR ALPHA IN CELL CYCLE REGULATION.** K. A. Burns. Center for Molecular Toxicology and Carcinogenesis, The Pennsylvania State University, University Park, PA. Sponsor: *J. Vanden Heuvel*.

#1801 **THE PROTECTIVE EFFECT OF GW4064X ON ALPHA-NAPHTHYLISOTHIOCYANATE (ANIT)-INDUCED HEPATOTOXICITY IN MICE: ROLE OF ACTIVATED FXR.** Y. Liu[1], *S. A. Jones*[1] and J. Binz[2]. [1]High throughput Biology, GlaxoSmithKline, Research Triangle Park, NC and [2]Metabolic Diseases, GlaxoSmithKline, Research Triangle Park, NC.

#1802 **INDUCTION OF THE TRUNCATED ERYTHROPOIETIN RECEPTOR BY CHLORAMPHENICOL IN MOUSE BONE MARROW.** M. Otieno, A. Katein, L. Foster-Brown, D. Bounous and F. Pognan. Safety Assessment US, AstraZeneca Pharmaceuticals, Wilmington, DE. Sponsor: *P. Ciaccio*.

#1803 **SNURF AND MMS19 AS COACTIVATORS OF ESTROGEN RECEPTOR α-MEDIATED GENE EXPRESSION IN BREAST CANCER CELLS.** K. J. Higgins[2], B. Saville[1] and *S. Safe*[1]. [1]Biochemistry & Biophysics, Texas A&M University, College Station, TX and [2]Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

#1804 **VITAMIN D RECEPTOR INTERACTING PROTEIN 150 (DRIP 150) AS A COACTIVATOR OF ESTROGEN RECEPTOR α.** J. Lee and *S. Safe*. Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

#1805 **PREGNANE X RECEPTOR (PXR) INTERACTS WITH THE NUCLEAR COREPRESSOR SMRT TO REPRESS BASAL CP3A4 GENE EXPRESSION.** *D. R. Johnson*[1], L. Chen[2], J. H. Li[2], D. Kupfer[2] and D. Chen[2]. [1]Medicine, University Massachusetts Medical School, Worcester, MA and [2]Biochemistry and Molecular Pharmacology, University Massachusetts Medical School, Worcester, MA.

Thursday Morning, March 13
8:30 AM to 11:30 AM
South Foyer Lobby

POSTER SESSION: IMMUNOTOXICOLOGY IV

Chairperson(s): *Ruth Roberts, Aventis Pharma, Vitry Sur Seine, France and Emanuela Corsini, University of Milan, Milan, Italy.*

Displayed: *8:30 AM–11:30 AM*

Attended: *8:30 AM–10:00 AM*

#1806 **RESISTANCE TO SILICA-INDUCED LUNG FIBROSIS IN SENESCENT RATS: ROLE OF TNF-ALPHA AND FAS-L.** *C. L. Galli*[1], L. Lucchi[1], P. Sergio[2], *B. Viviani*[1], M. Marinovich[1] and *C. Emanuela*[1]. [1]Department Pharmacological Sciences, University of Milan, Milan, Italy and [2]RBM, Ivrea, Italy.

#1807 **IMMUNOGLOBULIN RESPONSE TO SILICA EXPOSURE IN LUPUS PRONE NEW ZEALAND MIXED MICE.** J. Brown, M. Hassani, *J. C. Pfau* and *A. Holian*. CEHS, University of Montana, Missoula, MT.

#1808 **IMMUNOREGULATORY ADJUVANT EFFECT OF NO IN DRUG-INDUCED IMMUNOSENSITIZATION.** R. Pieters and S. Nierkens. IRAS-IT UU, Utrecht, Utrecht, Netherlands. Sponsor: *M. van den Berg*.

#1809 **COSTIMULATORY CD80, CD86 AND CTLA-4 SIGNALING ARE REQUIRED IN TYPE-2 BUT INDISPENSIBLE IN TYPE-1 IMMUNE RESPONSES ELICITED BY AUTOIMMUNOGENIC DRUGS.** S. Nierkens[1], M. Aalbers[1], L. Boon[2] and R. Pieters[1]. [1]IRAS-IT, Utrecht, Netherlands and [2]MacroZyme, Amsterdam, Netherlands. Sponsor: *M. van den Berg*.

#1810 **PENICILLAMINE (PA)-INDUCED AUTOIMMUNITY: NEW INSIGHT INTO THE MECHANISM OF COVALENT BINDING *IN VIVO*.** B. Seguin[1], C. Ju[2], *L. Pohl*[2] and *J. Uetrecht*[1]. [1]Pharmaceutical Sciences, University of Toronto, Toronto, ON, Canada and [2]NIH, Bethesda, MD.

#1811 **EFFECT OF TWO PEDIATRIC VACCINES ON INSULIN-DEPENDENT DIABETES MELLITUS (IDDM) IN FEMALE NOD MICE.** G. Ravel[1,2], M. Christ[1], R. Burnett[1] and *J. Descotes*[2]. [1]MDS Pharmacology Services, l'Arbresle and [2]Poison Center, E.Herriot Hospital, Lyon, France.

#1812 **HCB-INDUCED IMMUNOPATHOLOGY IS PARTLY MEDIATED BY T CELLS.** J. Ezendam, *J. G. Vos* and R. Pieters. IRAS, Utrecht, Netherlands.

#1813 **ACCELERATION OF THE DEVELOPMENT OF LUPUS IN NZBXNZWF1 MICE BY CHLORDECONE.** *S. M. Roberts* and E. Sobel. University of Florida, Gainesville, FL.

#1814 **OMEGA-3 FATTY ACIDS FROM FISH OIL SUPPRESS IGA NEPHROPATHY INDUCED BY THE MYCOTOXIN DEOXYNIVALENOL.** Q. Jia[1], H. Zhou[1], Z. Islam[1] and *J. J. Pestka*[1,2,3]. [1]Food Science and Human Nutrition, MSU, East Lansing, MI, [2]Department of Microbiology and Molecular Genetics, MSU, East Lansing, MI and [3]Institute for Environmental Toxicology, MSU, East Lansing, MI.

#1815 **SUPPRESSION OF DEOXYNIVALENOL-INDUCED IL-6 BY FISH OIL AND RELATIONSHIP TO MITOGEN-ACTIVATED PROTEIN KINASE ACTIVATION.** Y. Moon and *J. J. Pestka*. FSHN, MSU, East Lansing, MI.

#1816 **EFFECTS OF DIETARY OMEGA-3 FATTY ACIDS ON DEOXYNIVALENOL-INDUCED GLOBAL GENE EXPRESSION *IN VIVO*.** *S. Kinser*[1], Q. Jia[1], A. Laughter[2], *P. Cornwell*[2], *C. Corton*[2] and *J. Pestka*[1]. [1]Department of Food Science, Michigan State University, East Lansing, MI and [2]CIIT Centers for Health Research, Research Triangle Park, NC.

#1817 **DEVELOPMENTAL EXPOSURE TO DI-n-BUTYLTIN DICHLORIDE (DBTC): IMMUNOTOXIC AND NEUROTOXIC EVALUATION.** *B. Luebke*[1], *S. Barone*[2], C. Copeland[1], *L. White*[2] and S. Jenkins[1]. [1]Immunotoxicology Branch, U.S. EPA, ORD, NHEERL, ETD, Research Triangle Park, NC and [2]Cellular and Molecular Toxicology Branch, U.S. EPA, ORD, NHERL, NTD, Research Triangle Park, NC.

#1818 **DEVELOPMENTAL IMMUNOTOXICITY OF COCAINE AND KETAMINE IN POSTNATAL RATS.** *H. Rofael*[1], *R. Turkall*[1,2] and *M. Abdel-Rahman*[1]. [1]Pharmacology & Physiology, GSBS, UMDNJ and [2]Clinical Laboratory Sciences, School of Health Related Professions, UMDNJ, Newark, NJ.

#1819 **LIFETIME EXPOSURE TO TRICHLOROETHYLENE (TCE) MODULATES IMMUNE FUNCTION.** C. Adams[2], *D. Keil*[1,2], K. Meyers[2], A. EuDaly[2], J. Smythe[2], J. EuDaly[2], G. Gilkeson[3] and *M. M. Peden-Adams*[2]. [1]NIOSH, Morgantown, WV, [2]Department of Health Professions, Medical University of South Carolina, Charleston, SC and [3]Department of Rheumatology, Medical University of South Carolina, Charleston, SC.

#1820 **IMMUNOTOXICOLOGICAL ASSESSMENT OF A P38 MAP KINASE INHIBITOR.** *S. M. Furst*[1], W. J. Komocsar[1], F. C. Burleson[2] and V. Peachee[3]. [1]Pharmacia Corporation, Skokie, IL, [2]BRT Inc., Raleigh, NC and [3]Immunotox Inc., Richmond, VA.

#1821 **EFFECT OF DIESEL EXHAUST PARTICULATE (DEP) ON BACILLUS CALMETTE-GUERIN (BCG) LUNG INFECTION IN MICE.** D. M. Lewis[1], Q. B. Saxena[3,1], D. N. Weissman[1], J. P. Simpson[1], T. A. Bledsoe[1] and R. K. Saxena[2,1]. [1]ASB/HELD, NIOSH, Morgantown, WV, [2]School of Life Sciences, Jawaharlal Nehru University, New Delhi, India and [3]Indian Council of Medical Research, New Delhi, India. Sponsor: *P. Siegel*.

#1822 **ROLES OF REACTIVE OXYGEN SPECIES, HEME OXYGENASE-1, AND NITRIC OXIDE IN DIESEL EXHAUST PARTICLE-MEDIATED PULMONARY IMMUNE RESPONSES TO *LISTERIA MONOCYTOGENES* IN RATS.** X. Yin[1], *J. Ma*[2], *J. M. Antonini*[2] and J. Ma[1]. [1]School of Pharmacy, West Virginia University, Morgantown, WV and [2]NIOSH, Morgantown, WV.

#1823 **EXACERBATION OF RESPIRATORY SYNCYTIAL VIRUS INFECTION BY ULTRAFINE CARBON BLACK PARTICLE EXPOSURE.** *A. L. Lambert*[1], J. B. Mangum[1], *M. P. DeLorme*[2] and *J. I. Everitt*[1]. [1]CIIT Centers for Health Research, Research Triangle Park, NC and [2]DuPont Haskell Laboratory for Health and Environmental Sciences, Newark, DE.

#1824 **VARIED EXPOSURE REGIMES TO METHYL MERCURY (MEHG) DURING POSTNATAL DEVELOPMENT LEADS TO DIFFERENT IMMUNE RESPONSES.** *M. M. Peden-Adams*[1], C. Adams[1], K. Meyers[1], A. EuDaly[1], J. Smythe[1], J. EuDaly[1] and *D. E. Keil*[2,1]. [1]Department of Health Professions, Medical University of South Carolina, Charleston, SC and [2]NIOSH, Morgantown, WV.

#1825 **MERCURY (Hg) ACCELERATES AUTOIMMUNE DISEASE IN MICE.** *E. K. Silbergeld*[1], I. Silva[1], C. S. Via[3], M. Afanasyeva[2], J. Nyland[2], P. Nguyen[3] and N. R. Rose[2]. [1]Environmental Health Sciences, Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD, [2]Johns Hopkins School of Medicine, Baltimore, MD and [3]Medicine, University of Maryland School of Medicine, Baltimore, MD.

#1826 **EFFECT OF INORGANIC MERCURY ON PRIMARY MOUSE AND HUMAN MONOCYTE FUNCTION.** *J. Koropatnick*[1], W. Kennette[1] and *R. K. Zalups*[2]. [1]Oncology, University of Western Ontario, London, Ontario, ON, Canada and [2]Division of Basic Medical Sciences, Mercer University School of Medicine, Macon, GA.

#1827 ***IN VITRO* EXPOSURE TO SODIUM ARSENITE INCREASED INTRACELLULAR CA^{2+} LEVELS IN PHYTOHAEMAGGLUTININE STIMULATED HUMAN T LYMPHOCYTES.** R. C. Goytia-Acevedo[2,1], L. C. Acosta-Saavedra[1], *M. E. Cebrián*[1] and E. S. Calderón-Aranda[1]. [1]Sección de Toxicología, CINVESTAV, México, D F, Mexico and [2]Facultad de Medicina, UJED, Gómez Palacio, Dgo, Mexico.

#1828 **ARSENIC-INDUCED ALTERATIONS IN CONTACT HYPERSENSITIVITY.** R. M. Patterson[1], L. Vega-Lloyo[2], *K. J. Trouba*[1], J. A. Teague[1] and *D. R. Germolec*[1]. [1]LMT, NIEHS, Research Triangle Park, NC and [2]Cinvestav, National Polytechnical Institute, Mexico City, Mexico.

#1829 **ALTERATION ON IMMUNE CELLS SUBPOPULATIONS AND LYMPHOCYTE PROLIFERATION BY ARSENIC EXPOSURE IN INFANT POPULATIONS.** G. Soto[1], A. Luna[1], L. Acosta-Saavedra[1], P. Conde[1], E. Vera[1], B. Cruz[2], *M. Cebrián*[1], E. Calderón-Aranda[1] and L. Vega[1]. [1]Toxicology, CINVESTAV, México D.F., D.F., Mexico and [2]Coordinación de Investigación, SSA, Hidalgo, Mexico.

#1830 **FUNCTIONAL ACTIVITY OF TH1 AND MACROPHAGES FROM CHILDREN ENVIRONMENTALLY EXPOSED TO ARSENIC.** A. L. Luna[1], L. C. Acosta-Saavedra[1], P. C. Conde[1], E. Vera[1], M. B. Cruz[2], M. Bastida[2], A. Gómez-Muñoz[1], L. López-Carrillo[3], *M. E. Cebrián*[1] and E. S. Calderón-Aranda[1]. [1]Sección de Toxicología, CINVESTAV, México, D.F., Mexico, [2]Secretaría de Salud, Pachuca, Hidalgo, Mexico and [3]Instituto Nacional de Salud Pública, Cuernavaca, Morelos, Mexico.

#1831 **LEAD INTERACTION WITH ANTIGEN PRESENTING CELLS: A MECHANISM UNDERLYING Pb ALLO-ENHANCEMENT.** D. G. Farrer and *M. J. McCabe*. Environmental Health and Science Center, University of Rochester, Rochester, NY.

#1832 **METALLOTHIONEIN INTERACTIONS AT LEUKOCYTE PLASMA MEMBRANES.** E. Canpolat[1], J. Pedersen-Lane[3], D. A. Lawrence[3], L. K. Silbart[2] and *M. A. Lynes*[1]. [1]Department of Molecular and Cell Biology, University of Connecticut, [2]Department of Animal Sciences, University of Connecticut, Storrs, CT and [3]Wadsworth Center, NY State Department of Health, Albany, NY.

#1833 **INHIBITORY EFFECTS OF NICOTINE ON INFLAMMATION AND LEUKOCYTE MIGRATION.** S. Razani-Boroujerdi, R. Kalra, C. Knall, F. F. Hahn, S. P. Singh, J. Pena-Philippides, R. J. Langley and *M. L. Sopori*. Asthma and Pulmonary Immunology Program, Lovelace Respiratory Research Institute, Albuquerque, NM.

Thursday Morning, March 13
8:30 AM to 11:30 AM
South Foyer Lobby

POSTER SESSION: SKIN

Chairperson(s): *Jim Riviere, North Carolina State University, Raleigh, NC and Gunda Reddy,* U.S. *Army, Aberdeen Proving Ground, MD.*

Displayed: *8:30 AM–11:30 AM*

Attended: *10:00 AM–11:30 AM*

#1834 **ROLE OF P38 MAP KINASE IN REGULATING THE INHIBITORY EFFECTS OF UVB LIGHT ON CYCLOOXYGENASE-2 EXPRESSION IN MOUSE MACROPHAGES.** *J. D. Laskin*[1], R. Sur[1], T. M. Mariano[1], *L. L. Debra*[2] and *D. E. Heck*[2]. [1]Environmental & Comm. Medicine, UMDNJ-Robert W Johnson Med. Sch, Piscataway, NJ and [2]Pharmacology & Toxicology, Rutgers University, Piscataway, NJ.

#1835 **COMPARISON OF THE ALLERGENIC POTENCY OF ALPHA-HEXYLCINNAMALDEHYDE (HCA) AND 2-MERCAPTOBENZOTHIAZOLE (MBT) IN SIX STRAINS MICE IN MURINE LOCAL LYMPH NODE ASSAY (LLNA).** L. G. Ullmann, S. J. Corney, G. Arcelin and W. Wang-Fan. Toxicology Division, RCC Ltd, Itingen, Switzerland. Sponsor: *K. Sachsse*.

#1836 **INFLAMMATORY RESPONSE AND FREE RADICAL FORMATION IN SKIN OF B63CF1 MICE WITH DIMINISHED LEVELS OF GLUTATHIONE AFTER PHENOL EXPOSURE.** *A. A. Shvedova*[1,2], E. R. Kisin[1], *A. R. Murray*[1], C. Kommineni[1], M. R. Gunther[2], M. K. Rao[1] and *V. Castranova*[1]. [1]NIOSH, Morgantown, WV and [2]West Virginia University, Morgantown, WV.

#1837 **EVALUATION OF THE PHOTOTOXIC AND PHOTOALLERGIC POTENTIAL OF METHYL N-METHYL ANTHRANILATE.** C. Letizia and A. Api. Research Institute for Fragrance Materials, Inc., Hackensack, NJ. Sponsor: *A-M. Api*.

#1838 **GENE EXPRESSION IN RAT SKIN FOLLOWING CUTANEOUS EXPOSURE TO XYLENE, SODIUM LAURYL SULFATE AND LIMONENE.** *J. N. McDougal*[1], C. M. Garrett[2] and J. V. Rogers[2,1]. [1]Pharmacology and Toxicology, Wright State University School of Medicine, Dayton, OH and [2]Geo-Centers Inc., Air Force Research Laboratory, Wright-Patterson AFB, OH.

#1839 **VEHICLE COMPOSITION INFLUENCES THE PHARMACOLOGIC EFFECTS AND KINETICS OF CAPSAICIN IN HUMAN SKIN.** L. K. Pershing[1], C. A. Reilly[2] and D. J. Crouch[2]. [1]Dermatology, University of Utah, Salt Lake City, UT and [2]Center for Human Toxicology, University of Utah, Salt Lake City, UT. Sponsor: *G. Yost*.

#1840 **EVALUATION OF DERMAL ABSORPTION OF AQUEOUS TOLUENE IN F344 RATS USING REAL-TIME BREATH ANALYSIS AND PHYSIOLOGICALLY BASED PHARMACOKINETIC MODELING.** A. D. Woodstock and *K. D. Thrall*. Battelle, Pacific Northwest Laboratory, Richland, WA.

#1841 **A MATHEMATICAL MODEL OF THE PERMEATION KINETICS OF THE MEMBRANE-COATED FIBER TECHNIQUE ACCOUNTING FOR PARTITION, DIFFUSION AND BOUNDARY LAYER FACTORS.** X. R. Xia, *R. E. Baynes*, *N. A. Monteiro-Riviere* and *J. E. Riviere*. Center for Cutaneous Toxicology and Research Pharmacokinetics, North Carolina State University, Raleigh, NC.

#1842 **PHYSIOLOGICAL MODELING OF THE DERMAL ABSORPTION OF OCTAMETHYLCYCLOTETRASILOXANE (D4).** M. B. Reddy[1], R. J. Looney[2], M. J. Utell[2], M. L. Jovanovic[3], J. M. McMahon[3], D. A. McNett[3], *I. D. Dobrev*[1], *K. P. Plotzke*[3] and *M. E. Andersen*[4]. [1]Quantitative and Computational Toxicology Group, Center for Environmental Toxicology and Technology, Colorado State University, Fort Collins, CO, [2]University of Rochester School of Medicine, Rochester, NY, [3]Toxicology, Health and Environmental Sciences, Dow Corning Corporation, Midland, MI and [4]CIIT Centers for Health Research, Research Triangle Park, NC.

#1843 **MEASUREMENT OF THE *IN VITRO* RATE OF PERCUTANEOUS ABSORPTION OF [^{14}C]DIOCTYL TEREPHTHALATE (DOTP) THROUGH HUMAN SKIN.** T. Guerin[1], L. M. Taylor[1], *J. C. English*[1] and *K. M. Ruble*[2]. [1]Health and Environment Laboratories, Eastman Kodak Company, Rochester, NY and [2]Eastman Chemical Company, Kingsport, TN.

#1844 ***IN VITRO* PERCUTANEOUS ABSORPTION OF ACRYLAMIDE AND STYRENE IN HUMAN SKIN.** M. E. Kraeling and *R. L. Bronaugh*. U.S. FDA, Laurel, MD.

#1845 **COMPARISON OF *IN VITRO* MODELS OF PERCUTANEOUS ABSORPTION.** G. Pugh[1], H. A. Raabe[2], G. O. Moyer[2], J. W. Harbell[2] and *D. M. Bagley*[1]. [1]Colgate-Palmolive Company, Piscataway, NJ and [2]Institute for In Vitro Sciences, Inc., Gaithersburg, MD.

#1846 **METHYLEUGENOL SKIN ABSORPTION IN HUMAN AND FUZZY RAT SKIN.** *J. J. Yourick* and *R. L. Bronaugh* . Cosmetics Toxicology Branch, U.S. FDA, Laurel, MD.

#1847 **THE INFLUENCE OF STORAGE TIME AND ARTIFICIAL SWEAT ON THE PERCUTANEOUS ABSORPTION OF EXPLOSIVES FROM SOILS.** *W. Reifenrath*[1], *G. Reddy*[2], M. Major[2] and *G. Leach*[2]. [1]Stratacor, Inc., Richmond, CA and [2]US Army CHPPM, Aberdeen Proving Ground, MD.

#1848 **THE INFLUENCE OF SWEAT ON THE PERCUTANEOUS ABSORPTION OF CHLORPYRIFOS FROM NYLON CARPET FIBERS.** *R. L. Williams*[1], *W. G. Reifenrath*[2] and *R. I. Krieger*[1]. [1]Entomology, University of California, Riverside, CA and [2]Stratacor, Inc., Richmond, CA.

#1849 **DERMAL DISPOSITION OF TRIAZINE IN CUTTING FLUID MIXTURES.** *R. E. Baynes*, J. D. Brooks, B. M. Barlow and *J. E. Riviere*. Center for Cutaneous Toxicology and Research Pharmacokinetics, North Carolina State University, Raleigh, NC.

#1850 **ABSORPTION OF 14C- RDX FROM SOILS THROUGH HUMAN SKIN.** *G. Reddy*[1], N. A. Allen[2] and *M. A. Major*[1]. [1]Health Effects Research Program, U.S. Army Center for Health Promotion and Preventive Medicine, Aberdeen Proving Ground, MD and [2]Oak Ridge Institute for Science and Education, Aberdeen Proving Ground, MD.

#1851 **DERMAL ABSORPTION OF TOLUENE FROM ENAMEL PAINT IN F344 RATS.** M. R. Kania[1], A. D. Woodstock[2] and *K. D. Thrall*[2]. [1]Energy Research Undergraduate Laboratory Fellowship, University of Washington, Seattle, WA and [2]Battelle, Pacific Northwest Laboratory, Richland, WA.

#1852 **SKIN PENETRATION AND EVAPORATION OF p-MENTHANE-3, 8-DIOL IN ETHANOL AND IN LOTION FORMULATION AFTER TOPICAL APPLICATION TO EXCISED PIG AND RAT SKIN: A MODEL FOR HUMAN DERMAL ABSORPTION.** *J. J. Olson*[1], *T. G. Osimitz*[2], U. Vedula[1] and *W. G. Reifenrath*[3]. [1]S. C. Johnson & Son, Inc., Racine, WI, [2]Infoscientific.com Inc., Charlottesville, VA and [3]Stratacor, Inc., Richmond, CA.

#1853 **INDUCTION OF ADIPOSE DIFFERENTIATION RELATED PROTEIN AND NEUTRAL LIPID DROPLETS ACCUMULATION IN KERATINOCYTES BY SKIN IRRITANTS.** *E. Corsini*, O. Zancanella, L. Lucchi, F. Visioli, *B. Viviani*, S. Bartesaghi, M. Marinovich and *C. L. Galli*. Department Pharmacological Sciences, University of Milan, Milan, Italy.

#1854 **DERMAL ABSORPTION AND TOXICITY STUDY OF ACETONE-BASED SKIN COATINGS IN MINIATURE SWINE.** *K. C. Norbury*[1], B. Bhatt[1], *M. Marshall*[1], M. A. Hanes[2], M. Javors[2], G. Kennedy[1] and G. Siegel[1]. [1]Biomedical Development Corporation, San Antonio, TX and [2]University of Texas Health Science Center, San Antonio, TX.

#1855 **ACUTE TOXICITY ASSESSMENT OF BREAKFREE CLP〉: A SMALL ARMS CLEANING COMPOUND.** *D. P. Arfsten*[1], E. W. Johnson[1], A. R. Thitoff[1], *W. W. Brinkley*[2], *D. Schaeffer*[3] and *K. R. Still*[1]. [1]Toxicology Detachment, Naval Health Research Center, Wright-Patterson AFB, OH, [2]Operational Toxicology, Air Force Research Laboratory, Wright-Patterson AFB, OH and [3]University of Illinois, Urbana, IL.

#1856 **DERMAL PERMEATION OF THE SULFATED FATTY ACID, RICINOLEIC ACID, IS INHIBITED BY COMPLEX MIXTURE ADDITIVES.** *J. E. Riviere*, J. D. Brooks, B. M. Barlow and *R. E. Baynes*. Center for Cutaneous Toxicology and Research Pharmacokinetics, North Carolina State University, Raleigh, NC.

#1857 **PERCUTANEOUS ABSORPTION OF 2, 6-DI-*TERT*-BUTYL-4-NITROPHENOL (DBNP) IN ISOLATED PERFUSED PORCINE SKIN.** A. O. Inman[1], *R. L. Carpenter*[2], B. Briggs[2], J. D. Brooks[1] and *N. A. Monteiro-Riviere*[1]. [1]Center for Cutaneous Toxicology and Research Pharmacokinetics, North Carolina State University, Raleigh, NC and [2]Naval Health Research Center Detachment, Wright Patterson Air Force Base, OH.

#1858 **ABSORPTION THROUGH PORCINE SKIN EXPOSED TO VARIOUS DOSES OF JET FUEL MARKER COMPONENTS DETERMINED WITH GC-FID USING HEAD SPACE SPME FIBER.** F. Muhammad, *R. E. Baynes*, *N. A. Monteiro-Riviere*, X. R. Xia and *J. E. Riviere*. Center for Cutaneous Toxicology and Research Pharmacokinetics, North Carolina State University, Raleigh, NC.

#1859 **THE CYTOTOXICITY OF JET FUEL AROMATIC HYDROCARBONS AND DOSE-RELATED INTERLEUKIN-8 RELEASE FROM HUMAN EPIDERMAL KERATINOCYTES.** *N. A. Monteiro-Riviere*, *C. Chou* and *J. E. Riviere*. Center for Cutaneous Toxicology and Research Pharmacokinetics, North Carolina State University, Raleigh, NC.

#1860 **CYTOTOXICITY OF THE JP-8 JET FUEL COMPONENTS *m*-XYLENE, 1-METHYLNAPHTHALENE, AND *n*-NONANE IN KERATINOCYTES.** J. Rogers[1,4], G. Siegel[2], D. Pollard[3] and *J. McDougal*[4]. [1]GEO-CENTERS, Inc., Wright-Patterson AFB, OH, [2]Operational Toxicology Branch, Wright-Patterson AFB, OH, [3]ManTech, Wright-Patterson AFB, OH and [4]Wright State University, Dayton, OH.

Thursday Morning, March 13
8:30 AM to 11:30 AM
South Foyer Lobby

POSTER SESSION: SAFETY EVALUATION II

Chairperson(s): *George Thomas, Calvert Preclinical Services, Inc., Olyphant, PA, United States and Sumsullah Khan, NeoPharm Inc, Waukegan, IL.*

Displayed: *8:30 AM–11:30 AM*

Attended: *8:30 AM–10:00 AM*

#1861 **SIX MONTH SAFETY AND IMMUNOLOGY STUDY IN BABOONS OF ALLOGENEIC BABOON MESENCHYMAL STEM CELLS LABELED WITH FLUORESCENT DYE.** *A. V. Lyubimov*[1], A. M. Bartholomew[2], K. R. McIntosh[3] and *B. S. Levine*[1]. [1]Toxicology Research Laboratory, University of Illinois at Chicago, Chicago, IL, [2]Surgery, University of Illinois at Chicago, Chicago, IL and [3]Osiris Therapeutics, Inc., Baltimore, MD.

#1862 **PAROTID GLAND BASOPHILIC FOCI IN MICE ADMINISTERED THE PEPTIDE AC2993 (SYNTHETIC EXENDIN-4) BY SUBCUTANEOUS INJECTION FOR PERIODS OF 13 TO 26 WEEKS.** *R. Hiles*[1], T. Slone[2] and *D. Serota*[2]. [1]Amylin Pharmaceuticals, Inc., San Diego, CA and [2]MPI Research, Inc., Mattawan, MI.

#1863 **A REVIEW OF MORTALITY PATTERNS IN CD-1 MOUSE TUMORIGENICITY STUDIES CONDUCTED OVER THE PERIOD OF 1985 TO 2001.** W. N. Hooks. Huntingdon Life Sciences, Huntingdon, Cambridgeshire, United Kingdom. Sponsor: *E. Blanchard*.

#1864 **EVALUATING HEALTH IMPLICATIONS OF LUBRICATING OIL ON ORTHOPEDIC MEDICAL IMPLANT DEVICES.** *M. Seeley*[1], *T. A. Lewandowski*[2] and *B. D. Beck*[1]. [1]Gradient Corporation, Cambridge, MA and [2]Gradient Corporation, Seattle, WA.

#1865 **BLOOD CONCENTRATION AND TISSUE DISTRIBUTION OF 14C-DI(2-ETHYLHEXYL) PHTHALATE (DEHP) IN JUVENILE AND ADULT COMMON MARMOSET.** Y. Kurata[1], F. Makinodan[1], M. Okada[1], T. Kawasuso[1], R. M. David[2], G. Gans[3], J. F. Regnier[4] and M. Katoh[1]. [1]Kashima Laboratory, Mitsubishi Chemical Safety Institute Ltd., Kashima, Ibaraki, Japan, [2]Consultant to Eastman Chemical Company, Rochester, NY, [3]BASF AG, Ludwigshafen, Germany and [4]Atofina SA, Paris, France. Sponsor: *M. Tsuchitani*.

#1866 **TESTICULAR TOXICITY STUDY OF DI(2-ETHYLHEXYL)PHTHALATE (DEHP) IN JUVENILE COMMON MARMOSET.** Y. Tomonari[1], Y. Kurata[1], T. Kawasuso[1], R. M. David[2], G. Gans[3], *M. Tsuchitani*[1] and M. Katoh[1]. [1]Kashima Laboratory, Mitsubishi Chemical Safety Institute Ltd., Kashima, Ibaraki, Japan, [2]Consultant to Eastman Chemical Company, Rochester, NY and [3]BASF AG, Ludwingshafen, Germany.

#1867 **COMPARATIVE TOXICITY STUDY OF 3-AMINOPHENOL IN NEWBORN AND YOUNG RATS.** M. Koizumi[1], N. Nishimura[2], T. Enami[2], M. Sunaga[3], H. Horikawa[3], E. Kamata[1], *M. Ema*[1] and R. Hasegawa[1]. [1]National Institute of Health Sciences, Tokyo, Japan, [2]Bozo Research Center Inc., Gotemba Laboratory, Shizuoka, Japan and [3]Safety Research Institute for Chemical Compounds Co., Ltd., Sapporo, Japan.

#1868 **EVALUATION OF CO2/O2 ANESTHESIA DURING THE JUGULAR BLEEDING PROCEDURE IN RATS.** N. A. Sharpe[1], N. Collins[2], L. DeGroat[1], D. Sauer[1], E. Evans[2] and *R. E. Morrissey*[1]. [1]Toxicology, Schering-Plough Research Institute, Lafayette, NJ and [2]Clinical Pathology, Schering-Plough Research Institute, Lafayette, NJ.

#1869 **CANINE PURKINJE FIBER ACTION POTENTIAL DURATION: INFLUENCE OF STIMULATION FREQUENCIES AND EFFECTS OF DMSO CONCENTRATIONS.** G. P. Thomas, B. P. Klatt and *C. B. Spainhour*. Calvert Preclinical, Olyphant, PA.

#1870 **COMPARISON OF LASER MICRODISSECTION TECHNIQUES FOR CELL COLLECTION AND MOLECULAR ANALYSIS.** M. Taurino, M. Wojke, X. Ying, *Z. Jayyosi*, *P. Rao* and *T. Monticello*. Drug Safety Evaluation, Aventis Pharmaceuticals, Bridgewater, NJ.

#1871 **INDUCTION AND CHARACTERIZATION OF GRANULOMAS INDUCED BY INTRATHECAL OPIATES IN DOGS.** *J. W. Allen*, D. Cizkova and *T. L. Yaksh*. Anesthesiology, University CA-San Diego, La Jolla, CA.

#1872 **TOXICITY OF THE FIBROBLAST GROWTH FACTOR RECEPTOR TYROSINE KINASE INHIBITOR, PD176067, IN 11-MONTH OLD FEMALE RATS.** *A. P. Brown*[1], C. L. Courtney[1], *L. M. King*[2], S. Groom[2] and *M. J. Graziano*[1]. [1]Drug Safety Evaluation, Pfizer Global Research and Development, Ann Arbor, MI and [2]Drug Safety Evaluation, Pfizer Global Research and Development, Groton, CT.

#1873 **LIPOSOME BASED FORMULATION OF SN-38 (LE-SN38): A FOUR-CYCLE TOXICITY EVALUATION IN BEAGLE DOGS.** *S. Khan*, S. Ali, D. Carbonaro, A. Ahmad, A. Zhang and I. Ahmad. R&D, NeoPharm, Inc., Waukegan, IL.

#1874 **TOXICITY OF THE FIBROBLAST GROWTH FACTOR INHIBITOR, PD 176067, IN JUVENILE AND ADULT DOGS.** *K. Datta*[1], *M. J. Graziano*[1] and C. L. Courtney[1]. [1]Drug Safety Evaluation, Pfizer Global R&D, Ann Arbor, MI and [2]Drug Safety Evaluation, Pfizer Global R&D, Ann Arbor, MI.

#1875 **EXPERIENCES WITH VAGINAL OR PENILE ADMINISTRATION IN TOXICITY STUDIES.** E. M. Donald[1], A. Danks[1] and *R. J. Greenough*[1]. [1]Inveresk Research Ltd, Tranent, East Lothian, United Kingdom, [2]Inveresk Research Ltd, Tranent, East Lothian, United Kingdom and [3]Inveresk Research Ltd, Tranent, East Lothian, United Kingdom.

#1876 **RARE GASTRIC MUCOSAL DAMAGE FOLLOWING ACUTE ADMINISTRATION OF MELANOCORTIN RECEPTOR LIGANDS IN FISHER 344 RATS.** *T. M. Williams* and K. B. Donnelly. Lilly Research Laboratories, Eli Lilly and Company, Greenfield, IN.

#1877 **A COMPARATIVE TOXICITY EVALUATION OF MITOXANTRONE AND ITS LIPOSOME BASED FORMULATION IN BEAGLE DOGS.** S. Ali, *S. Khan*, A. K. Sarkar, S. Sheikh and I. Ahmad. NeoPharm Inc., Waukegan, IL.

#1878 **EFFECTS OF THE ADDITION OF LICORICE EXTRACT TO TOBACCO ON THE CHEMICAL COMPOSITION AND BIOLOGICAL ACTIVITY OF CIGARETTE SMOKE.** E. L. Carmines[1], *R. Lemus*[1], *C. L. Gaworski*[1], T. Meisgen[2], K. Rustemeier[2], E. Van Miert[3] and D. Veltel[2]. [1]Philip Morris USA, Richmond, VA, [2]INBIFO - Institut fuer biologische Forschung, Cologne, Germany and [3]CRC - Contract Research Center, Zaventem, Belgium.

#1879 **A SUMMARY OF THE TOXICOLOGICAL AND CHEMICAL DATA RELEVANT TO THE TOXICOLOGICAL EVALUATION OF DRY ICE EXPANDED TOBACCO (DIET).** *E. H. Theophilus*, D. B. Poindexter, D. R. Meckley, B. B. Bombick, *P H. Ayres*, M. A. Higuchi, *A. T. Mosberg* and *J. E. Swauger*. Research and Development, RJ Reynolds Tobacco Company, Winston-Salem, NC.

#1880 **FOUR-WEEK TOXICITY STUDY OF A SURROGATE MURINE ANTI-CD11A ANTIBODY IN MICE.** *B. Mounho*[1], J. Beyer[1], S. Ortega[1], B. Wu[1], *A. Hoberman*[2], A. Brechbill[2] and *J. Clarke*[1]. [1]Safety Assessment, Genentech, Inc., S. San Francisco, CA and [2]Argus Research, a Division of Charles River, Horsham, PA.

#1881 **DEVELOPMENTAL TOXICITY TESTING OF FOUR VACCINES.** P. C. Barrow[1] and *F. Verdier*[2]. [1]MDS Pharmacology Services, LArbresle, France and [2]Aventis Pasteur, Marcy LEtoile, France.

#1882 **EVALUATION OF THE SUBCHRONIC, REPRODUCTIVE, AND DEVELOPMENTAL TOXICITY OF A FLUOROALKYLETHYL ETHOXYLATE SURFACTANT.** *S. A. MacKenzie*, E. Mylchreest, S. Munley, J. Stadler, J. Hansen and N. Everds. DuPont Haskell Laboratory for Health and Environmental Sciences, Newark, DE.

#1883 **A COMPARISON OF MULTIPLE TOXICITIES FOLLOWING DEVELOPMENTAL EXPOSURE TO PESTICIDES: NEUROTOXICITY, IMMUNOTOXICITY, AND REPRODUCTIVE TOXICITY.** *V. C. Moser*[1], *S. Padilla*[1], *S. Barone*[1], *R. J. Smialowicz*[1], M. W. Harris[2] and *R. E. Chapin*[3]. [1]NHEERL, U.S. EPA, Research Triangle Park, NC, [2]NTP, NIEHS, Research Triangle Park, NC and [3]Pfizer, Groton, CT.

#1884 **MULTIDOSE TOXICITY STUDIES OF TNK-TPA IN NORMAL BEAGLE DOGS.** Q. Lu, L. Wen, Y. Li, Y. Chen and S. Guo. Department of Pharmacology, Beijing Institute of Radiation Medicine, Beijing, Beijing, China. Sponsor: *P. Zhou*.

#1884a **EVALUATION OF INTRAVENOUS EXPOSURE TO DI-(2-ETHYLHEXYL)PHTHALATE IN MALE NEONATAL RATS.** J. N. Cammack[1]; R. D. White[1]; D. Gordon[1]; J. Gass[1]; L. Hecker[2]; D. Conine[2]; S. Uma[2]; M. Friedman[2]; C. Echols[3]; T. Y. Yeh[3]; and D. M. Wilson[4]. [1]Baxter Healthcare Corporation, Round Lake, IL, [2]Abbott Laboratories, Abbott Park, IL, [3]Allegiance, McGaw Park, IL and [4]Baxter Healthcare, Round Lake, IL.

Thursday Morning, March 13
8:30 AM to 11:30 AM
South Foyer Lobby

POSTER SESSION: RISK ASSESSMENT II

Chairperson(s): *Gunnar Johanson, Work Environment Toxicology, Stockholm, Sweden and Gary Diamond, Syracuse Research Corporation, Syracuse, NY.*

Displayed: *8:30 AM–11:30 AM*

Attended: *10:00 AM–11:30 AM*

#1885 **BEEFING UP — REVISED BODY WEIGHTS AND SKIN SURFACE AREA ESTIMATES.** *S. Roy*[1], *J. K. Tolson*[1], K. M. Portier[2] and *S. M. Roberts*[2]. [1]Center for Environmental & Human Toxicology, University of Florida, Gainesville, FL and [2]Department of Statistics, University of Florida, Gainesville, FL.

#1886 **ESTIMATION OF CHEMICAL-SPECIFIC INTERINDIVIDUAL UNCERTAINTY FACTORS USING PHYSIOLOGICALLY-BASED PHARMACOKINETIC (PBPK) ALGORITHMS.** A. Nong and *K. Krishnan*. Occupational and Environmental Health, Universite de Montreal, Montreal, QC, Canada.

#1887 **CHILDRENS HEALTH RISK CHARACTERIZATION FROM EXPOSURE TO TETRACHLORETHYLENE.** *N. Beck*[1] and *B. Sonawane*[2]. [1]Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC and [2]National Center for Environmental Assessment, U.S. EPA, Washington, DC.

#1888 **EMPIRICALLY IDENTIFYING AN INTERSPECIES UNCERTAINTY FACTOR FOR MILD ACUTE INHALATION EXPOSURES.** *G. V. Alexeeff*, R. Broadwin and D. Wang. OEHHA, Cal/EPA, Oakland, CA.

#1889 **REFERENCE DOSES (RfDs): FACTORS IN THE SELECTION OF HUMAN INTRASPECIES UNCERTAINTY FACTOR (UFH) WHEN USING HUMAN DATA.** *C. O. Abernathy*[1], J. M. Donohue[1], J. Cicmanec[2] and K. A. Poirier[3]. [1]HECD, University. S. EPA, Washington, DC, DC, [2]NRMRL, ORD, U.S. EPA, Cincinnati, OH and [3]TERA, Cincinnati, OH.

#1890 **USING TOXICOKINETIC DATA FOR KINETIC COMPONENTS OF THE INTERSPECIES AND INTERINDIVIDUAL UNCERTAINTY FACTORS FOR THE BORON REFERENCE DOSE.** C. L. Smallwood, J. C. Swartout and *J. C. Lipscomb*. NCEA, ORD, U.S. EPA, Cincinnati, OH.

#1891 **INTER-SPECIES DIFFERENCES IN SUSCEPTIBILITY TO PERCHLORATE: A CRITICAL CONSIDERATION FOR HUMAN HEALTH RISK ASSESSMENT.** *T. A. Lewandowski*, *M. R. Seeley* and *B. D. Beck*. Gradient Corporation, Cambridge, MA.

#1892 **HIGHER SUSCEPTIBILITY OF NEWBORN RATS TO 3-METHYLPHENOL THAN YOUNG RATS.** R. Hasegawa[1], M. Koizumi[1], A. Noda[2], Y. Ito[2], M. Furukawa[3], S. Fujii[3], E. Kamata[1] and *M. Ema*[1]. [1]National Institute of Health Sciences, Tokyo, Japan, [2]Research Institute for Animal Science in Biochemistry and Toxicology, Kanagawa, Japan and [3]Safety Research Institute for Chemical Compounds Co., Ltd., Sapporo, Japan.

#1893 **ASSESSMENT OF THE SKIN ABSORPTION OF MALATHION.** J. Scharf[1], M. Martinez[2], T. Stedeford[2], G. Hahn[3] and *R. Harbison*[2]. [1]Department of Anesthesiology, James A. Haley Veterans' Administration Hospital, Tampa, FL, [2]Center for Environmental/Occupational Risk Analysis & Management, College of Public Health, University of South Florida, Tampa, FL and [3]Ecology & Environment, Inc., Buffalo, NY.

#1894 **PHYSICAL ACTIVITY PRIOR TO EXPOSURE INCREASES HUMAN ABSORBED DOSE TO SURFACE RESIDUES OF CHLORPYRIFOS (CP).** *R. I. Krieger*[1], L. S. Aston[2] and *R. L. Williams*[1]. [1]Entomology, University of California, Riverside, CA and [2]Pacific Toxicology Laboratories, Woodland Hills, CA.

#1895 **ORGANOPHOSPHATE CUMULATIVE ASSESSESSMENT USING CARES (CUMULATIVE AND AGGREGATE RISK EVALUATION SYSTEM).** M. Pandian[1], J. L. Phillips[3], *J. Driver*[1], I. Kelley[3], G. Mihlan[3], *C. Breckenridge*[2], K. Schnelle[4] and J. Zabik[4]. [1]infoscientific.com, Las Vegas, NV, [2]Syngenta, Greensboro, NC, [3]Bayer CropScience, Research Triangle Park, NC and [4]Dow AgroSciences, Indianapolis, IN.

#1896 **METHYL ISOTHIOCYANATE (MITC): RISK TO HUMANS FOLLOWING AGRICULTURAL APPLICATIONS OF METAM SODIUM (MS).** *A. L. Rubin*[1], T. Thongsinthusak[2] and *K. F. Pfeifer*[1]. [1]Medical Toxicology Branch, Department of Pesticide Regulation, Cal-EPA, Sacramento, CA and [2]Worker Health & Safety Branch, Department of Pesticide Regulation, California Environmental Protection Agency, Sacramento, CA.

#1897 **FRAMEWORK FOR ASSESSING DIETARY CHEMICAL THREATS.** *P. M. Bolger*, *C. Carrington* and R. Canady. Department of Health and Human Services, U.S. FDA, College Park, MD.

#1898 **RISK CHARACTERIZATION MODEL-1.1 AND AN ASSESSMENT AND CHARACTERIZATION FOR A RIOT-CONTROL AGENT.** *M. Dourson*[1], *P. M. Nance*[1], *A. Maier*[1], *B. Hakkinen*[1], *P. Price*[2], *B. Klauenberg*[3] and *T. Dayton*[4]. [1]Toxicology Excellence for Risk Assessment (TERA), Cincinnati, OH, [2]LifeLine, Inc., Cape Elizabeth, ME, [3]USDoD/HEDR, Brooks AFB, TX and [4]Veridian Engineering, Brooks AFB, TX.

#1899 **A RISK ASSESSMENT-BASED TOXICOLOGICAL WEIGHTING OF CIGARETTE SMOKE CONSTITUENTS.** C. Euchenhofer, J. Diekmann, B. Gerstenberg, R. Stabbert, K. Rustemeier and *H. Haussmann*. INBIFO GmbH, Cologne, Germany.

#1900 **FEASIBILITY OF TESTING INGREDIENTS ADDED TO CIGARETTES.** *D. M. Byrd*, N. J. Emenaker, M. C. Falk, R. S. Feldman, C. J. Klein, K. D. Lewis, N. Pour-Moghaddam and J. Smith. Life Sciences Research Office, Bethesda, MD.

#1902 **ACRYLAMIDE: A CASE STUDY IN HAZARD ASSESSMENT OF GENETIC TOXICITY.** S. H. Humphreys, *P. M. Bolger* and R. A. Canady. Division of Risk Assessmente, Center for Food Safety and Applied Nutrition, College Park, MD.

#1903 **RISK ASSESSMENT OF ORAL EXPOSURE TO DIISONONYL PHTHALATE (DINP) FROM CHILDREN'S PRODUCTS.** *M. A. Babich*, M. A. Greene, S. Chen, W. K. Porter, C. T. Kiss, T. P. Smith and M. L. Wind. U.S. Consumer Product Safety Commission, Bethesda, MD.

#1904 **CHEMICAL-SPECIFIC HEALTH CONSULTATION FOR CHROMATED COPPER ARSENATE (CCA) SPILL.** J. Colman[1], *L. Ingerman*[1], S. Chou[2] and C. Tylenda[2]. [1]Environmental Science Center, Syracuse Research Corp, Syracuse, NY and [2]Agency for Toxic Substances and Disease Registry, Atlanta, GA.

#1905 **COMPARATIVE EXPOSURE ASSESSMENT FOR THIMEROSAL MERCURY.** *C. A. Williams*[1], *R. W. Freeman*[1] and T. Herring[2]. [1]Ecology & Environment, Inc., Tallahassee, FL and [2]Ecology & Environment, Inc., Lancaster, NY.

#1906 **ESTIMATED CHILDREN'S EXPOSURE TO DECABROMODIPHENYL OXIDE IN THE US.** C. A. Cushing[1], K. C. Holicky[1], D. W. Pyatt[1], D. Staskal[2], B. L. Finley[3], *D. J. Paustenbach*[4] and S. M. Hays[1]. [1]Exponent, Boulder, CO, [2]Exponent, Oakland, CA, [3]Exponent, Santa Rosa, CA and [4]Exponent, Menlo Park, CA.

#1907 **DOSE-RESPONSE INVESTIGATION OF TRICRESYL PHOSPHATES POTENTIALLY PRESENT IN AIRPLANE CABIN AIR FROM JET ENGINE OILS.** G. M. Bruce, *R. C. Pleus* and M. K. Peterson. Intertox, Inc., Seattle, WA.

#1908 **EPIDEMIOLOGICAL VALIDATION OF ENVIRONMENTAL CANCER RISK ASSESSMENTS: A CASE STUDY IN POPULATIONS EXPOSED TO POLYCYCLIC AROMATIC HYDROCARBONS.** M. Camus[2], *A. Vyskocil*[1] and *C. Viau*[1]. [1]Environmental and Occupational Health, Université de Montréal, Montreal, QC, Canada and [2]Environmental Health Sciences Bureau, Health Canada, Montreal, QC, Canada.

#1909 **AN ESTIMATION OF CANCER RISKS POSED BY EXPOSURE TO PARTICULATE MATTER IN AIR IN SANTIAGO, CHILE.** H. Ochoa-Acuna and *S. M. Roberts*. University of Florida, Gainesville, FL.

#1910 **RISK COMPARISONS OF EXHAUST EMISSIONS FROM SCHOOL BUSES IN COMPRESSED NATURAL GAS, LOW-EMITTING DIESEL, AND CONVENTIONAL DIESEL ENGINE CONFIGURATIONS.** *C. Lapin*[1], *T. W. Hesterberg*[2], *W. B. Bunn*[2] and *C. R. Clark*[3]. [1]Lapin and Associates, Glendale, CA, [2]International Truck and Engine Corporation, Chicago, IL and [3]ConocoPhillips, Tempe, AZ.

#1911 **POTENTIAL HEALTH IMPACTS OF A MAJOR TIRE FIRE AT WESTLEY, CA IN SEPTEMBER 1999.** R. J. Blaisdell[1], M. Lipsett[1], *M. A. Marty*[1], K. Stroud[2] and G. Zimmerman[2]. [1]Office of Environmental Health Hazard Assessment, Oakland, CA and [2]California Air Resources Board, Sacramento, CA.

#1912 **RISK ASSESSMENT OF POLYCHLORINATED BIPHENYLS AT HAZARDOUS WASTE SITES.** *M. J. Wade* and B. K. Davis. Department Toxic Substances Control, Cal EPA, Sacramento, CA.

#1913 **RISKS TO CHILDREN FROM EXPOSURE TO LEAD IN AIR DURING REMEDIAL OR REMOVAL ACTIVITIES AT SUPERFUND SITES: A CASE STUDY OF THE RSR LEAD SMELTER SUPERFUND SITE.** G. A. Khoury[1] and *G. L. Diamond*[2]. [1]U.S. EPA, Kansas City, KS and [2]Environmental Science Center, Syracuse Research Corp, Syracuse, NY.

#1914 **HUMAN HEALTH RISK EVALUATION OF STRUCTURAL SURFACES CONTAMINATED WITH METALS.** *K. W. DiBiasio* and K. Klein. Toxic Substances Control, CalEPA, Sacramento, CA.

#1915 **THE EFFECT OF CENSORED DATA ON THE PERFORMANCE OF TECHNIQUES FOR CALCULATING 95% UPPER CONFIDENCE LIMITS (95% UCLS) ON THE MEAN.** *C. J. Saranko*[1], *C. F. Mills*[1], *J. K. Tolson*[2], *S. M. Roberts*[2] and K. M. Portier[2]. [1]GeoSyntec Consultants, Tampa, FL and [2]University of Florida, Gainesville, FL.

#1916 **COMPARISON OF TECHNIQUES FOR CALCULATING 95% UPPER CONFIDENCE LIMITS (95% UCLS) ON THE MEAN.** *C. F. Mills*[1], *C. J. Saranko*[1], *J. K. Tolson*[2], *S. M. Roberts*[2] and K. M. Portier[2]. [1]GeoSyntec Consultants, Tampa, FL and [2]University of Florida, Gainesville, FL.

#1917 **HEALTH RISKS FOR CONSTRUCTION WORKERS IN INDUSTRIAL REDEVELOPMENT: A MAJOR RISK DRIVER?** S. Schettler, *M. R. Seeley* and *B. D. Beck*. Gradient Corporation, Cambridge, MA.

#1918 **DERIVATION OF AIR ACTION LEVELS FOR USE IN MONITORING DURING SITE REMEDIATION.** L. Beyer and *B. D. Beck*. Gradient Corp., Cambridge, MA.

#1919 **RISK-BASED ACTION LEVELS FOR FENCE-LINE MONITORING PROGRAMS.** *L. J. Bradley* and K. Sullivan. ENSR, Westford, MA.

#1920 **A SOIL CONCENTRATION LIMIT FOR LEAD BASED ON ACUTE EXPOSURE IN CHILDREN.** *B. K. Gadagbui*[1], *J. G. Pounds*[2], *T. W. Simon*[3] and *S. M. Roberts*[1]. [1]University of Florida, Gainesville, FL, [2]Pacific Northwest Laboratory, Richland, WA and [3]U.S. EPA Region 4, Atlanta, GA.

#1921 **EVALUATING THE BIOAVAILABILITY OF METALS IN SOILS FOR USE IN HUMAN HEALTH RISK ASSESSMENT.** *M. J. Beringer*[1] and *P. C. Grevatt*[2]. [1]U.S. EPA, Kansas City, KS and [2]U.S. EPA, Washington, DC.

#1922 **DEVELOPMENT OF CHILD-SPECIFIC HEALTH CRITERIA FOR SCHOOL SITE RISK ASSESSMENT.** *S. A. Knadle*[1], D. W. Chan[1] and K. E. Stewart[1,2]. [1]Office of Environmental Health Hazard Assessment, California EPA, Sacramento, CA and [2]Environmental Toxicology, University of California, Davis, CA.

Thursday Morning, March 13
8:30 AM to 11:30 AM
South Foyer Lobby

POSTER SESSION: REGULATORY/POLICY

Chairperson(s): *Joel Mattsson, Dow AgroSciences, Indianapolis, IN and Michelle Catlin, National Research Council, Washington, DC.*

Displayed: *8:30 AM–11:30 AM*

Attended: *8:30 AM–10:00 AM*

#1923 **MINERALOGICAL DILEMMAS IN EVALUATING THE HUMAN HEALTH IMPACTS OF ASBESTOS IN COMMERCIAL MINERAL DEPOSITS.** B. S. Van Gosen, G. P. Meeker, G. S. Plumlee and *T. L. Ziegler*. USGS, Denver, CO.

#1924 **DISSOLVED ORGANIC CONSTITUENTS IN COAL-ASSOCIATED WATERS, AND IMPLICATIONS FOR HUMAN AND ECOSYSTEM HEALTH.** *A. B. Santamaria*[2] and J. Fisher[1]. [1]Environmental, Exponent, Tulsa, OK and [2]Health Risk Assessment, Exponent, Houston, TX.

#1925 **COMMUNICATION OF WORKPLACE HAZARDS - TOPIC CENTRE GOOD PRACTICE, SYSTEMS AND PROGRAMMES.** *K. Savolainen*[1], K. Kumpulainen[1], C. Roberts[2] and T. Tregenza[2]. [1]Department of Industrial Hygiene and Toxicology, Finnish Institute of Occupational Health, Helsinki, Helsinki, Finland and [2]European Agency for Safety and Health at Work, Bilbao, Spain.

#1926 **CATEGORIZATION OF THE ASSOCIATIONS BETWEEN EXPOSURE TO THE HERBICIDES USED IN VIETNAM OR THEIR CONTAMINANTS AND HEALTH OUTCOMES.** *M. C. Catlin*, J. A. Cohen and A. B. Staton. Institute of Medicine, The National Academies, Washington, DC.

#1927 **MORE THAN 10, 000 ANIMALS ARE REQUIRED FOR THE REGISTRATION OF A SINGLE PESTICIDE - THIS PARADIGM MUST BE CHANGED.** *J. L. Mattsson*[1], *D. L. Eisenbrandt*[1] and J. E. Doe[2]. [1]Dow AgroSciences, Indianapolis, IN and [2]Syngenta CTL, Alderley Park, Cheshire, United Kingdom.

#1928 **EVALUATION OF HUMAN PESTICIDE NOAEL STUDIES FOR CONSISTENCY WITH U.S. FEDERAL POLICY FOR THE PROTECTION OF HUMAN SUBJECTS (THE COMMON RULE).** J. Patterson[1] and *G. Charnley*[2]. [1]Toxicology Excellence for Risk Assessment (TERA), Cincinnati, OH and [2]HealthRisk Strategies, Washington, DC.

#1929 **A COMPARISON OF THE NUMBER OF RISK VALUES DERIVED BY DIFFERENT ORGANIZATIONS FOR 20 PRIORITY HAZARDOUS SUBSTANCES AND FOR CHEMICALS IN THE INTERNATIONAL TOXICITY ESTIMATES FOR RISK *(ITER)* DATABASE.** A. Wullenweber, *A. Maier* and M. Barkhurst. Toxicology Excellence for Risk Assessment (TERA), Cincinnati, OH.

#1930 **IDLH DOCUMENTATION REVIEW.** *R. McCartney*[1], L. Jackson[1], *P. McGinnis*[1], *A. Maier*[3] and H. A. Ahlers[2]. [1]Environmental Science Center, Syracuse Research Corp, Syracuse, NY, [2]Toxicology Excellence for Risk Assessment, Cincinnati, OH and [3]National Institute for Occupational Safety and Health, Cincinnati, OH.

#1931 **DATABASES YIELDING RISK ASSESSMENTS AS ONGOING PROCESSES.** *C. N. Aldous*. Department Pesticide Regulation, Cal-EPA, Sacramento, CA.

#1932 **THE ACTIVITIES AND PERSPECTIVES OF THE KOREAN NATIONAL TOXICOLOGY PROGRAM.** *I. Yu*[1], K. Yang[2], D. Cho[2], K. Kil[2] and Y. Chung[1]. [1]Center for Occupational Toxicology, OSRHI/Korean OSHA, Daejeon, South Korea and [2]National Institute of Toxicological Research, Korea FDA, Seoul, South Korea.

#1933 **PROMOTION OF CHEMICAL SAFETY AWARENESS: INTERNET DATABANK ON RISK MANAGEMENT TOOLS OF DANGEROUS SUBSTANCES.** K. Kumpulainen[1], T. Tregenza[2] and *K. Savolainen*[1]. [1]Department of Industrial Hygiene and Toxicology, Finnish Institute of Occupational Health, Helsinki, Helsinki, Finland and [2]European Agency for Safety and Health at Work, Bilbao, Spain.

Thursday Morning, March 13
8:30 AM to 11:30 AM
South Foyer Lobby

POSTER SESSION: METAL EXPOSURE, TRANSPORT AND DISTRIBUTION

Chairperson(s): *Lawrence Lash, Wayne State University, Detroit, MI and Wei Zheng, Columbia University, New York, NY.*

Displayed: *8:30 AM–11:30 AM*

Attended: *10:00 AM–11:30 AM*

#1934 **THE RELATIVE BIOAVAILABILITY OF METALS FROM SOIL TO ECOLOGICAL RECEPTORS.** Y. W. Lowney[1], M. V. Ruby[1], J. Salatas[2] and R. Pastorok[2]. [1]Exponent, Irvine, CA and [2]Exponent, Bellevue, WA. Sponsor: *L. Yost*.

#1935 **THE TOXICITY OF LEACHATES FROM A MUNICIPAL SOLID WASTE LANDFILL IS DEPENDENT ON CADMIUM AND MODULATED BY NICKEL.** *J. Olivero-Verbel* and C. Padilla-Bottet. Environmental and Computational Chemistry Group, University of Cartagena, Cartagena, Colombia.

#1936 **RENAL TOXICITY IN RATS AFTER ORAL ADMINISTRATION OF MERCURY-CONTAMINATED BOILED WHALE LIVERS MARKETED FOR HUMAN CONSUMPTION.** *T. Endo*[1], K. Haraguchi[2], Y. Hotta[1] and M. Sakata[1]. [1]Clinical Toxicology & Metabolism, Health Sciences University of Hokkaido, Ishirari-Tobetsu, Hokkaido, Japan and [2]Environmental Health & Chemistry, Daiichi College of Pharmaceutical Sciences, Fukuoka, Fukuoka, Japan.

#1937 **SKELETAL LEAD CAUSES AN ARTIFACT IN BONE MINERAL DENSITY MEASUREMENTS BY DEXA.** R. N. Rosier, J. Campbell, R. J. O'Keefe, E. M. Schwarz, M. J. Zuscik and J. E. Puzas. Department of Orthopaedics, University of Rochester School of Medicine, Rochester, NY. Sponsor: *T. Gasiewicz*.

#1938 **PERINATAL LEAD EXPOSURE IN THE ROMAN EMPIRE: ARCHEOMETRIC EVIDENCE FROM ISOTOPE ANALYSIS.** *F. A. de Wolff*[1], E. Smits[2], J. L. Fischer[3,4], F. Vanhaecke[3] and L. Moens[3]. [1]Toxicol Lab., Leiden University Med. Ctr, Leiden, Netherlands, [2]Amsterdam Archaeol Ctr, University Amsterdam, Amsterdam, Netherlands, [3]Lab. Anal Chem, Ghent University, Ghent, Belgium and [4]Department Chem Biochem, Rand Afrikaans University, Aucklandpark, South Africa.

#1939 **A NOVEL ISOTOPIC APPROACH FOR DETERMINING THE CONTRIBUTION OF LEAD FROM BONE TO BLOOD IN CHILDREN.** C. Campbell[2], R. H. Gwiazda[1] and *D. Smith*[1]. [1]Environmental Toxicology, University of California, Davis, CA and [2]Children's Hospital, Philadelphia, PA.

#1940 **EFFECT OF OCCUPATIONAL EXPOSURE TO MANGANESE ON STEADY-STATE SERUM CONCENTRATIONS OF IRON, ZINC, COPPER, SOD, AND MDA AMONG WELDERS.** L. Lu[1,2], L. Zhang[1], P. Wu[2], J. Deng[2], W. Guo[1], G. Li[2,3] and *W. Zheng*[3]. [1]Fengtai Distric Surveillance Station of Public Hygiene, Beijing, China, [2]School of Public Health & Family Medicine, Capital University of Med. Sciences, Beijing, China and [3]School of Public Health, Columbia University, New York, NY.

#1941 **DIETARY CADMIUM ABSORPTION IS ACCELERATED IN YOUNG WOMEN WITH LOW SERUM FERRITIN LEVELS AMONG FEMALE JAPANESE FARMERS.** H. Horiguchi[1,2], E. Oguma[1,2], S. Sasaki[3], K. Miyamoto[1], Y. Ikeda[1,2], M. Machida[1] and F. Kayama[1,2]. [1]Health Science, Jichi Medical School, Tochigi, Japan, [2]CREST, JST, Kawaguchi, Japan and [3]National Institute of Health and Nutrition, Tokyo, Japan. Sponsor: *T. Yoshida*.

#1942 **AMINOLEVULINIC ACID DEHYDRATASE GENOTYPE DISTRIBUTION IN LEAD EXPOSED CHILDREN IN TORREON COAHUILA, NORTHERN MEXICO.** G. G. Garcia-Vargas[1,2], I. Mijares[1], P. Lopez[6], J. L. Rosado[4,6], J. Alatorre[5], *B. Quintanilla-Vega*[3] and *M. E. Cebrian*[3]. [1]Facultad de Medicina, Investigacion, Universidad Juarez del Estado de Durango, Gomez Palacio, Durango, Mexico, [2]Facultad de Medicina, CIB, Universidad Autonoma de Coahuila, Gómez Palacio, Durango, Mexico, [3]Seccion Externa Toxicologia, CINVESTAV-IPN, Mexico, D.F., Mexico, [4]Universidad Autonoma de Queretaro, Queretaro, Queretaro, Mexico, [5]Universidad Autonoma de Mexico, Mexico, D.F., Mexico and [6]Instituto Nacional de Ciencias Médicas y Nutricion, Mexico, D.F., Mexico.

#1943 **TRANSPORT OF MERCURIC-THIOL CONJUGATES IN BASOLATERAL MEMBRANE VESICLES FROM RAT KIDNEY: EFFECT OF COMPENSATORY RENAL CELLULAR HYPERTROPHY.** D. A. Putt[1], S. E. Hueni[1], *R. K. Zalups*[2] and *L. H. Lash*[1]. [1]Pharmacology, Wayne State University, Detroit, MI and [2]Basic Medical Sciences, Mercer University, Macon, GA.

#1944 **TRANSPORT OF DICYSTEINYLMERCURY IN MADIN-DARBY CANINE KIDNEY (MDCK) CELLS OVEREXPRESSING SYSTEM $B^{0,+}$.** C. C. Bridges[1], C. Bauch[2], F. Verrey[2], *D. W. Barfuss*[3] and *R. K. Zalups*[1]. [1]Basic Medical Sciences, Mercer University School of Medicine, Macon, GA, [2]Physiology, University of Zurich, Zurich, Switzerland and [3]Biology, Georgia State University, Atlanta, GA.

#1945 **BASOLATERAL TRANSPORT OF THE MERCURIC CONJUGATE, CYS-HG-CYS, IN NON-PERFUSED S1, S2, AND S3 SEGMENTS OF THE RABBIT RENAL PROXIMAL TUBULE.** *D. W. Barfuss*[1], Z. Azarbaeijani[1] and *R. K. Zalups*[2]. [1]Biology, Georgia State University, Atlanta, GA and [2]Division of Basic Medical Sciences, Mercer University School of Medicine, Macon, GA.

#1946 **MADIN-DARBY CANINE KIDNEY (MDCK) CELLS GAIN THE ABILITY TO TRANSPORT MERCURIC CONJUGATES OF CYSTEINE (CYS) OR N-ACTEYLCYSTEINE (NAC) AFTER BEING STABLY TRANSFECTED WITH OAT1.** *D. K. Zalups*[1], A. Aslamkhan[2], *D. W. Barfuss*[3] and *S. Ahmad*[1]. [1]Basic Medical Sciences, Mercer University School of Medicine, Macon, GA, [2]NIEHS, Research Triangle Park, NC and [3]Biology, Georgia State University, Atlanta, GA.

#1947 **ROLE OF ORGANIC ANION TRANSPORTER 1 (OAT1) AND AMINO ACID TRANSPORTERS IN THE UPTAKE OF THIOL-CONJUGATES OF METHYLMERCURY IN MADIN-DARBY CANINE KIDNEY (MDCK) CELLS.** *S. Ahmad* and *R. K. Zalups*. Basic Medical Sciences, Mercer University School of Medicine, Macon, GA.

#1948 **P-GLYCOPROTEIN MEDIATED TRANSPORT OF CADMIUM IN CULTURE RENAL EPITHELIAL CELL LINE, LLC-PK$_1$** O. Kimura, *T. Endo*, Y. Hotta and M. Sakata. Clinical Toxicology & Metabolism, Health Sciences University of Hokkaido, Ishikari-Tobetsu, Hokkaido, Japan.

#1949 **EFFECT OF DMT1 KNOCKDOWN ON IRON, CADMIUM, AND LEAD UPTAKE IN CACO-2 CELLS.** *D. I. Bannon*[1], *J. P. Bressler*[3,2], R. Abounader[4] and P. S. Lees[3]. [1]Center for Health Promotion and Preventive Medicine, U.S. Army Aberdeen Proving Ground, Edgewood, MD, [2]Department of Neurology, Kennedy Krieger Institute, Baltimore, MD, [3]Department of Environmental Health Sciences, Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD and [4]Department of Neurology, School of Medicine, Johns Hopkins University, Baltimore, MD.

#1950 **DIETARY IRON REGULATES INTESTINAL CADMIUM ABSORPTION THROUGH DMT1 IN RATS.** *J. D. Park*[1], M. Kwon[1], B. S. Choi[1], E. S. Park[2] and Y. P. Hong[1]. [1]Preventive Medicine, Chung-Ang University, Seoul, South Korea and [2]Pathology, Chung-Ang University, Seoul, South Korea.

#1951 **ZINC SUPPLEMENTATION MAY DECREASE HEPATIC COPPER ACCUMULATION IN LEC RAT: A MODEL OF WILSON'S DISEASE.** B. P. Esparza-Gonzalez, R. Nino-Fong, I. Fuentealba and *M. Cherian*. Pathology, University of Western Ontario, London, ON, Canada.

#1952 **EFFECT OF SELENITE ON THE DISPOSITION OF ARSENATE AND ARSENITE IN RATS.** *Z. Gregus* and I. Csanaky. Department of Pharmacology and Pharmacotherapy, University of Pecs, Pecs, Hungary.

#1953 **RELATION OF URINARY TRIVALENT METABOLITES OF INORGANIC ARSENIC WITH ARSENIC-SKIN LESIONS IN HUMANS.** O. L. Valenzuela[1], G. G. Garcia-Vargas[2], E. S. Calderon-Aranda[1], V. H. Borja-Aburto[3] and *L. M. Del Razo*[1]. [1]Toxicology, Cinvestav-IPN, Mexico City, Mexico, [2]Medicine School, UJED, Gomez Palacio, Durango, Mexico and [3]Health in the Work, IMSS, Mexico City, Mexico.

#1954 **DOSE-RESPONSE ALTERATION IN THE URINARY PATTERN OF TRIVALENT ARSENIC SPECIES IN MICE EXPOSED TO ARSENITE.** E. A. Garcia-Montalvo, C. Aguilar and *L. M. Del Razo*. Toxicology, Cinvestav-IPN, Mexico City, Mexico.

#1955 **COMPARISON OF THIMEROSAL AND METHYL MERCURY DISTRIBUTION IN NEONATAL MICE.** G. Zareba[1], E. Cernichiari[1], R. Hojo[1], J. Kai[1], *M. Mumtaz*[2], *D. Jones*[2], *B. Weiss*[1] and *T. Clarkson*[1]. [1]Department of Environmental Medicine, University of Rochester, Rochester, NY and [2]Agency for Toxic Substances and Disease Registry, Atlanta, GA.

Author Index

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Miyun M. Tsai-Turton, Student Representative

Society of Toxicology Awards

In recognition of distinguished toxicologists and students, SOT presents several 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. The deadline for the 2004 award nominations is October 9, 2003.

The Awards Committee reviews applications for SOT Awards and Sponsored Awards for scientists. Nominations for most of these awards must be submitted by a sponsor and a seconder who are Full members of SOT using the 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. The Best Paper Awards are reviewed by the Board of Publications.

Student awards, both SOT and Sponsored awards, are reviewed by the Education Committee, and application procedures are specific for each award. Other student awards are available through Regional Chapters and Specialty Sections. A student may apply for any award for which he or she is eligible and may apply for and receive multiple awards, whether SOT, Regional Chapters, or Specialty Sections sponsor the awards. Policies related to travel awards are determined by the sponsor (SOT, Regional Chapter, or Specialty Section).

Full descriptions of each award, application procedures, and names of past recipients may be found on the SOT Web site at ***www.toxicology.org****.*

Award Descriptions

Achievement Award

The Achievement Award is presented to a member of the Society of Toxicology who has less than 15 years experience since obtaining his/her highest earned degree (in the year of the 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 Ramos
1997 .....Kevin E. Driscoll
1998 .....Rick G. Schnellmann
1999 .....Michel Charbonneau
2000 .....Christpher Bradfield
2001 .....Martin Philbert
2002 .....Ruth Roberts
2003 .....Lois D. Lehman-McKeeman

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 a SOT member. This award consists of a plaque and a cash stipend.

Indicates SOT Award

Society of Toxicology Awards (Continued)

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 and Janardan K. Reddy
2001 .....Samuel M. Cohen
2002 .....Dennis Paustenbach
2003 .....Michael L. Dourson

AstraZeneca Fellowship

Three (3) fellowship awards are available to senior scientists from a country where toxicology is underrepresented to assist with travel to attend the 2003 Society of Toxicology meeting in Salt Lake City, Utah, USA, March 9–13, 2003. The awards are sponsored by AstraZeneca.

Award Recipients

2002 .....Christophor Dishovsky (Bulgaria),
.....Zoltan Gregus (Hungary),
..... Maritza Rojas Martini (Venezuela),
.....Choon-Nam Ong (Singapore),
.....W. Wasowicz (Poland),
.....Ping-kun Zhou (China)

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 3–4 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

Board of Publications Award

The Board of Publications Awards for the Best Paper in Toxicology and Applied Pharmacology and the Best Paper in Toxicological Sciences are presented to the author(s) of the best paper published in each of the official SOT publications 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 per journal award. In addition, the titles of no more than six papers to be considered for each award are submitted by the editors of each official SOT publication. All papers submitted will be evaluated by the Board of Publications. This award consists of a plaque and a cash stipend.

Best Paper in Fundamental and Applied Toxicology and Toxicological Sciences

Award Recipients

1995 .....J. L. Larson, D. C. Wolf, B. E. Butterworth
1995 .....M. I. Luster, C. Portier, D. G. Pait, G. J. Rosenthal,
.....D. R. Germolec, E. Corsini, B. L. Blaylock,
.....P. Pollock, Y. Kouchi, W. Craig, K. L. White,
..... A. E. Munson, C. E. Comment

Society of Toxicology Awards (Continued)

1996 ..... B. C. Allen, R. J. Kavlock, C. A. Kimmel, ... E. M. Faustman
1997 .....F. L. Fort, H. Ando, T. Suzuki, M. Yamamoto, ... T. Hamashima, S. Sato, T. Kitazaki, ...M. C. Matony, G. D. Hodgen
1998 .....D. D. Parrish, M. J. Schlosser, J. C. Kapeghian, ... V. M. Traina
1999 .....C. A. Franklin, M. J. Inskip, C. L. Baccanale, ...C. M. Edwards, W. I. Manton, E. Edwards, ... E. J. O'Flaherty
2000 .....H.A Boulares, C. Giardina, C.L. Navarro, ... E.A. Khairallah, S.D. Cohen
2001 .....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

Best Paper in Toxicology and Applied Pharmacology

Award Recipients

1995 .....M. F. Denny, M. F. Ware, W. D. Atchison
1996 .....T. A. Slotkin, C. Lau, E. C. McCook, S. E. Lappi, ... F. J. Seidler
1997 .....P. R. S. Kodavanti, T. R. Ward, J. D. McKinney, ... C. L. Waller, H. A. Tilson
1998 .....J. S. Landin, S. D. Cohen, E. A. Khairallah
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
2000 .....J.E. Staples, N.C. Fiore, D.E. Frazier, Jr., ... T.A. Gasiewicz, A.E. Silverstone
2001 .....Barbara J. Mounho, Brian D. Thrall
2002 .....G.S. Ratra, S.G. Kamita, J.E. Casida
2003 .....J. Doorn, M. Schall, D. Gage, T. Talley, ...C. Thompson, R. Richardson

Burroughs Wellcome Fund Toxicology Scholar Award

The Burroughs Wellcome Fund Toxicology Scholar Award offered five-year scholar awards to support career development in toxicology. These awards were intended to identify and encourage the development of established, independent investigators whose work will advance the understanding of toxicological processes on both fundamental and physiologic levels. (This award is no longer being offered.)

Award Recipients

1981 .....Alan P. Poland
1982 .....Curtis D. Klaassen
1983 .....Frederick P. Guengerich, R. Craig Schnell
1984 .....Philip Guzelian
1985 .....I. Glenn Sipes
1986 .....Daniel Acosta
1987 .....Bruce D. Hammock, Richard P. Mailman
1988 .....Harihara M. Mehendale
1989 .....Stephen H. Safe
1990 .....Mahin D. Maines
1991 .....Robert A. Roth
1992 .....Janice E. Chambers
1993 .....Debra Lynn Laskin, Leona Samson
1994 .....Kim Boekelheide, Dennis Thiele
1995 .....Ellen Li, Curtis J. Omiecinski
1996 ..... Christopher Bradfield, Bennett Van Houten
1997 .....Titia de Lange

Colgate-Palmolive Post-Doctoral Fellowship Award in In Vitro Toxicology

The Colgate-Palmolive Company sponsors the Colgate-Palmolive Post-Doctoral 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 $33,000) for one year. The award may be extended for an additional year upon agreement between Colgate-Palmolive and the post-doctoral fellow. Post-doctoral trainees in their first year of study beyond the Ph.D., M.D. or D.V.M. degree who are employed by academic institutions, federal/national laboratories or research institutes worldwide may apply. The Education Committee reviews applications, which are due in even calendar years, and the fellowship is awarded for the following year. The next application deadline: October 9, 2003.

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

Society of Toxicology Awards (Continued)

Colgate-Palmolive/SOT Awards for Student Research Training in Alternative Methods

The purpose of the Colgate-Palmolive/SOT 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 Education Committee will present the awards to graduate students or to institutions that provide research internships. Up to six awards, at $2,500 each, are available. Applications received after October 9 will be accepted until all funds are committed.

Graduate Students: The award will help to defray expenses for graduate students in toxicology to visit an off-site laboratory for the purpose of gaining knowledge about and developing *in vitro* or alternative toxicology techniques that will support the student's dissertation research. The overall goal of this program is to support the replacement, reduction or refinement of currently used animal models in toxicology research and testing.

Institutions: Awards will also be made to institutions that propose a 10-week research experience for students (at any level) involving *in vitro* toxicology or alternative methods to reduce, replace, or refine, the use of animals in toxicology research.

Award Recipients

2000 .....Jason Gross
2001 .....Jason Biggs, Victoria Richards
2002 ....Kartik Shankar, Chad M. Vezina, and Ryan L. Williams

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 *in vitro* toxicology approaches. The overall goal of this program is to make scientists aware of the benefits of modern *in vitro* toxicology approaches and to stimulate research for the replacement, reduction or refinement of currently used animal models. The scholar may be asked to make a special presentation at the SOT Annual Meeting.

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 organizations such as universities, colleges, SOT Specialty Sections and SOT Regional Chapters, and other toxicology organizations that are interested in inviting the scholar. Up to $15,000 is available. The Awards Committee reviews the applications, which must be accompanied by a statement of the applicant's experience, a brief overview of the techniques to be discussed in the lecture, and a letter from the hosting institution(s) indicating their 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,
.....Graduate School of Public Health,
Visiting Professor: .....Robert Chapin
2000 .....Yale University, School of Medicine
Visiting Professor: .....Narendre Singh
2001 .....Medical College of Wisconsin
Visiting Professor: .....Garold Yost
2003 .....Washington State University
Visiting Professor: .....Marc W. Fariss

Society of Toxicology Awards (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

Distinguished Lifetime Toxicology Scholar Award

The Distinguished Toxicology Scholar Award, formerly the Scientific Achievement Award, is presented to a member of SOT who has made substantial and seminal scientific contributions to the discipline of toxicology. The prime consideration for this new award is scientific accomplishments and not necessarily service to the Society. This award consists of a plaque and a cash stipend.

Award Recipients

2003 .....Henry C. Pitot

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
1978 .....(No Award)
1979 .....Sheldon D. Murphy
1980 .....Herbert H. Cornish
1981 .....Frederick Sperling
1982 .....Lloyd W. Hazleton
1983 .....Julius M. Coon
1984 .....Frank Guthrie, Ernest Hodgson
1985 .....William B. Buck
1986 .....Robert I. Krieger
1987 .....Gabriel L. Plaa
1988 .....John Autian
1989 ..... Tom S. Miya
1990 .....Charles H. Hine
1991 .....Hanspeter R. Witschi
1992 .....Dean E. Carter
1993 .....Curtis D. Klaassen
1994 .....Robert A. Neal
1995 .....William Carlton
1996 .....Robert Snyder
1997 .....Albert E. Munson
1998 .....David J. Holbrook
1999 .....Jules Brodeur
2000 .....Gary Carlson
2001 .....Harihara Mehendale
2002 .....Joseph Borzelleca
2003 .....Frederick W. Oehme

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 scientifically sound and responsible use of animals in 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 .....Frank G. Gerberick, Ian Kimber

Society of Toxicology Awards (Continued)

Frank R. Blood Award

The Frank R. Blood Award was presented to the author(s) of the best paper published in official SOT publications during a 12-month period terminating with the June issue of the calendar year preceding the Annual Meeting at which the award was presented. This award has been replaced by Best Paper 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
1978 .....Perry J. Gehring, E. O. Madrid, G. R. McGowan, ...Philip G. Watanabe
1979 .....R. Fradkin, E. J. Ritter, W. J. Scott, James G. Wilson
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
1989 .....R. G. Cuddihy, W. C. Griffith, Rogene F. Henderson, ...Joe L. Mauderly, Roger O. McClellan, M. D. Snipes, ...Ronald K. Wolff
1990 .....William P. Beierschmitt, Joseph T. Brady, ...John B. Bartolone, D. Stuart Wyand, ...Edward A. Khairallah, Steven D. Cohen
1991 .....Jay Babcock Silkworth, Daryl 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

Graduate Student Fellowship Awards

The Graduate Student Fellowship Awards are provided by generous sponsors including Covance and Novartis Corporation and are open to student members of the SOT engaged in full-time graduate study towards a Ph.D. degree in toxicology. The major professor must be a SOT member. The Education Committee's 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.

Covance Corporation Graduate Fellowship

Award Recipients

1984 .....Patricia Ganey
1985 .....Kevin Gaido
1986 .....Lisa Naser
1987 .....Marjorie Romkes
1988 .....Caroline J. Decker
1989 .....Lorraine E. Twerdok
1991 .....Dale Morris
1993 .....Michael F. Denny
1995 .....Michael DiMatteo
1998 .....Rebecca Laposa
2000 .....Susan McKarns
2001 .....Kirsten Fertuck
2002 .....Edward Williams

Novartis Corporation Graduate Fellowship

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

Society of Toxicology Awards (Continued)

Procter & Gamble Company Graduate Fellowship

Award Recipients

1979 .....Paul W. Ferguson
1980 .....Anthony P. De Capri
1981 .....Cheng Wang
1982 .....Samson Chow
1983 .....Laurie Basting
1984 .....Philip Bartholomew
1985 .....Russell Esterline
1986 .....Leonard Sauers
1987 .....Randall Ruch
1988 .....Lawrence J. Dahm
1989 .....Christopher M. Weghorst
1990 .....Enrique Chacon
1991 .....Janice Thornton-Manning
1992 .....Melecita Archuleta
1993 .....Regina Donohoe
1994 .....Gary Miller
1995 .....Sanjay Jain
1996 .....Weston Porter
1997 .....Louise Winn
1998 .....Kristin Williamson
1999 .....James Kerzee
2000 .....Jeffrey Card
2001 .....Elizabeth Tonkin
2002 .....Kristin Horn

Graduate Student Travel Awards

Graduate Student Travel Awards defray expenses for students presenting platform talks or posters at the annual meeting. To be eligible, the student must be a SOT member (or have submitted a membership application), who has not previously received a graduate student travel award. Each institution may rank and submit applications from up to three students.

Honorary Membership

The Society of Toxicology recognizes non-members who embody outstanding and sustained achievements in the field of toxicology with the Honorary Member Award. Candidates are nominated by two voting 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

.....Bernard B. Brodie*
.....Ethel Browning*
.....John E. Casida
.....Jud Coon
.....Gertrude B. Elion*
.....Ronald W. Estabrook
.....George H. Hitchings*
.....Eugene M.K. Geiling*
.....Charles S. Lieber
.....Michel Mercier
.....Herbert Needleman
.....Norton Nelson*
.....W. F. Von Oettingen*
.....Sten G. Orrenius
.....Dennis Parke
.....Herbert Remmer
.....William O. Robertson
.....Findlay Russell
.....Roger W. Russell*
.....Torald H. Sollman*
.....Takashi Sugimura
.....Wendell W. Weber
.....R. Tecwyn Williams*
.....Hyman J. Zimmerman*
.....* Deceased

Society of Toxicology Awards (Continued)

Merit Award

The Merit Award is presented to a member of the Society of Toxicology in recognition of a distinguished career in toxicology. This award consists of a plaque and a cash stipend.

Award Recipients

1966 .....Henry F. Smyth, Jr.
1967 .....Arnold J. Lehman
1968 .....R. T. Williams
1969 .....Harold C. Hodge
1970 .....Don D. Irish
1971 .....Kenneth P. DuBois
1972 .....O. Garth Fitzhugh
1973 .....Herbert E. Stokinger
1974 .....William B. Deichmann
1975 .....Frederick Coulston
1976 .....Verald K. Rowe
1977 .....Harry W. Hays
1978 .....Julius M. Coon
1979 .....David W. Fassett
1980 .....Bernard L. Oser
1981 .....John H. Weisburger
1982 .....Harold M. Peck
1983 .....Perry J. Gehring
1984 .....Tom S. Miya
1985 .....Carrol S. Weil
1986 .....Ted A. Loomi
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

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 under-represented in the sciences (African American, American Indian or Hispanic American) and for their advisors. 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 registration and an expense stipend. The program is supported in part by NIH-MARC, Pfizer, and Johnson & Johnson.

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: books, brochures, continuing education courses, data bases, extension bulletins, magazines, newspapers (local or national), 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

Society of Toxicology Awards (Continued)

Regional Chapter Awards

Most SOT Regional Chapters provide awards to recognize outstanding students. Application requirements and deadlines vary. Visit the Regional Chapter or Awards and Fellowship sections on the SOT Web site for full details.

Robert L. Dixon International Travel Award

The Robert L. Dixon Award, sponsored by the Toxicology Education Foundation, takes applications from graduate students in the area of reproductive toxicology. The award carries a stipend of $2,000 for travel costs to enable a student to attend the International Congress of Toxicology meeting. It is available every three years. (Next application date is October 9, 2003.)

Award Recipients

1989 .....Kevin L. Stark
1992 .....Daland Richard Juberg
1995 .....Xuelin Li
1998 .....Jeeyeon Bee
2001 .....Mark Fielden

Scientific Achievement Award

The Scientific Achievement Award is presented to a member of SOT who has made substantial and seminal scientific contributions to the discipline of toxicology. The prime consideration for this new award is scientific accomplishments and not necessarily service to the Society. This award consists of a plaque and a cash stipend. This award has been replaced by the Distinguished Lifetime Toxicology Scholar Award.

Award Recipients

2001 .....James E. Trosko

Society of Toxicology/ American Chemistry Council Early Award in Inhalation Toxicology

The Society of Toxicology and the American Chemistry Council Early Award in Inhalation Toxicology of up to $100,000 is designed to encourage persons beginning their professional careers to conduct research that will improve the scientific basis for risk assessment and decision making with respect to the potential inhalation toxicity of chemicals.

Award Recipients

2003 .....Ilona Jaspers

Society of Toxicology/ American Chemistry Council Early Award in Neurotoxicology

The Society of Toxicology/American Chemistry Council Early Award in Neurotoxicology of up to $100,000 is designed to encourage persons beginning their professional careers to conduct research that will improve the scientific basis for risk assessment and decision making with respect to the potential neurotoxicity of chemicals.

Award Recipients

2002 .....Ronald Tjalkens

Specialty Section Student Awards

Most SOT Specialty Sections provide awards to recognize outstanding student presentations 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 sections.

Toxicology Specialists

The Society of Toxicology has established a Toxicology Specialists Program to assist journalists in identifying or locating expert toxicologists who can provide factual information on issues of public concern. The Toxicology Specialists provide information based on their own credentials and do not represent the views of the Society of Toxicology. Nominations are accepted twice a year: June 1 and December 1. Applications may be found on the SOT Web site (**www.toxicology.org**). If you require further information, please contact SOT Headquarters at (703) 438-3115.

Specialties:

Carcinogenesis
James Bond
Richard Bull
David L Eaton
James E. Klaunig
Michael McClain
Charlene A. McQueen
Henry Pitot
James Popp
Robert Rubin
Jacqueline H. Smith
Cheryl Lyn Walker

Comparative and Veterinary
Roger McClellan

Epidemiology
Ellen Silbergeld

General Toxicology
Linda Birnbaum
David L. Eaton
Sidney Green
James E. Klaunig
Robert Krieger
Michael McClain
Kendall B. Wallace

Genetic Toxicology
Sidney Green
James E. Klaunig
Charlene A. McQueen
Cheryl Lyn Walker

Immunotoxicology
Scott Burchiel
Jack Dean
Jay Gandolfi (hypersensitivity)
Nancy Kerkvliet
Kathleen Rodgers
Mary Jane Selgrade

In Vitro
Daniel Acosta, Jr.
Jay Gandolfi
Kenneth S. Ramos
Rick Schnellmann
Jacqueline H. Smith

Inhalation/ Pulmonary
Barbara Beck
James Bond
Gary Boorman (pulmonary pathology)
Robert Drew
Roger McClellan
John Morris
Robert Phalen
Gary Yost

Kidney Toxicity
William Berndt
Steven D. Cohen
Mary Davis
Ernest Foulkes
Jay Gandolfi
Robin Goldstein
Lois D. Lehman-McKeeman
Rick Schnellmann

Liver Toxicity
Steven D. Cohen
George B. Corcoran
Mary Davis
Jay Gandolfi
Robin Goldstein
James E. Klaunig
Hari Mehendale

Mechanisms
Daniel Acosta, Jr.
William Berndt
Linda Birnbaum
George B. Corcoran
Jay Gandolfi
James E. Klaunig
Lois D. Lehman-McKeeman
Hari Mehendale
James Popp
Kenneth S. Ramos
Stephen Safe
Rick Schnellmann
Ellen Silbergeld
Kendall B. Wallace
Gary Yost

Metabolism/ Toxicokinetics
Linda Birnbaum
George B. Corcoran
Lois D. Lehman-McKeeman
Raymond Novak

Molecular
William Greenlee
Henry Pitot
Kenneth S. Ramos
Robert Rubin
Raymond Novak (cell signaling, gene expression)
Kendall B. Wallace
Gary Yost

Neurotoxicity
Robert Krieger
Joel Mattsson
Ellen Silbergeld
William Slikker
Hugh Tilson

Regulatory Toxicology/ Regulatory Affairs/ Safety Evaluation
Daniel Acosta, Jr. (drugs/addictive agents)
Gregory Allgood
Richard Bull
Jack Dean (drugs)
Michael Dourson
Robin Goldstein (drugs)
James Lamb (pesticides and industrial chemicals)
Michael McClain (drugs)
Kathleen Rodgers (drugs)
Robert Rubin

Reproductive/ Developmental
Robert Chapin
George Daston
Carole A. Kimmel
James Lamb
Hugh Tilson (developmental neurotoxicology)

Risk Assessment
Barbara Beck
Michael Bolger
James Bond
Richard Bull
John Christopher
Rory Conolly
Michael Dourson
Jay I. Goodman
Carole A. Kimmel
James Lamb
Roger McClellan
Robert Rubin
Jacqueline H. Smith

Toxicology Specialists (Continued)

ISSUES:

Air Pollution
James Bond
Robert Drew (air quality standards)
Roger McClellan (air quality standards-environmental and occupational)
John Morris
Robert Phalen
Mary Jane Selgrade

Animal Studies/ Animals in Research
Gary Boorman
Stephen DiZio
Robert Phalen

Biotechnology/ Biopharmaceutical Toxicology
Scott Burchiel

Chemical-Chemical Interactions
Steven D. Cohen
Jay Gandolfi

Chlorine-Based Compounds
Richard Bull
Rory Conolly
Jay Gandolfi (also fluorine compounds)
James E. Klaunig
H. B. Matthews
Hugh Tilson (PCBs)

Dioxins
Michael Bolger
Rory Conolly
David L. Eaton
William Greenlee
Nancy Kerkvliet
Kenneth S. Ramos
Ellen Silbergeld
Hugh Tilson

Endocrine Disrupters
Linda Birnbaum
Michael Bolger
James S. Bus
Robert Chapin
Rory Conolly
Michael Gallo
Nancy Kerkvliet
James Lamb
Cheryl Lyn Walker

Food Additives/ Food Safety/ Food Toxins
Gregory Allgood
Michael Dourson
David L. Eaton (especially aflatoxins)
Robert Rubin

Free Radicals/ Oxidative Stress/ Antioxidants
Gregory Allgood
James Kehrer
James E. Klaunig
Kendall B. Wallace

Industrial Chemical Toxicology
James S. Bus
Kendall B. Wallace

Medical Devices
Scott Burchiel
Kathleen Rodgers
Stephen Safe

Metals
Barbara Beck
William Berndt
Michael Bolger
Ernest Foulkes
Jay Gandolfi
Hugh Tilson (lead, methyl mercury)

Natural Toxins
Michael Bolger
Joel Mattsson

Pesticides
James S. Bus
Marion F. Ehrich
Robert Krieger
James Lamb
H. B. Matthews
Kathleen Rodgers
Stephen Safe

Radiation
Gary Boorman (EMF exposure)
Mary Jane Selgrade

Solvents
Mary Davis
Kendall B. Wallace

Validation of Alternative Methods
Sidney Green

Water Pollution
Richard Bull

SOT Chapter Geographical Distribution:

Central States
William Berndt (NE)
Kendall B. Wallace (MN)

Gulf Coast (Texas)
James Kehrer
Kenneth S. Ramos
Stephen Safe
William Slikker
Cheryl Lyn Walker

Michigan
James S. Bus
George B. Corcoran
Jay I. Goodman
Joel Mattsson
Raymond Novak

Mid-Atlantic
Jack Dean (PA)
Michael Gallo (NJ)
Robin Goldstein (NJ)
Michael McClain (NJ)
James Popp (PA)
Jacqueline H. Smith (NJ)

Midwest
James E. Klaunig
Henry Pitot (WI)

Mountain West
Scott Burchiel (NM)
Jay Gandolfi (AZ)
Roger McClellan (NM)
Charlene A. McQueen (AZ)
Gary Yost (UT)

National Capital
Michael Bolger (DC)
Robert Drew (DC)
Sidney Green (DC)
Carole A. Kimmel (DC)
James Lamb (VA)
Robert Rubin (MD)
Ellen Silbergeld (MD)

North Carolina
Linda Birnbaum
James Bond
Gary Boorman
Robert Chapin
Rory Conolly
William Greenlee
H. B. Matthews
Roger McClellan
Mary Jane Selgrade
Hugh Tilson

Northeast
Barbara Beck (MA)
Steven D. Cohen (CT)
John Morris (CT)

Northern California
John Christopher

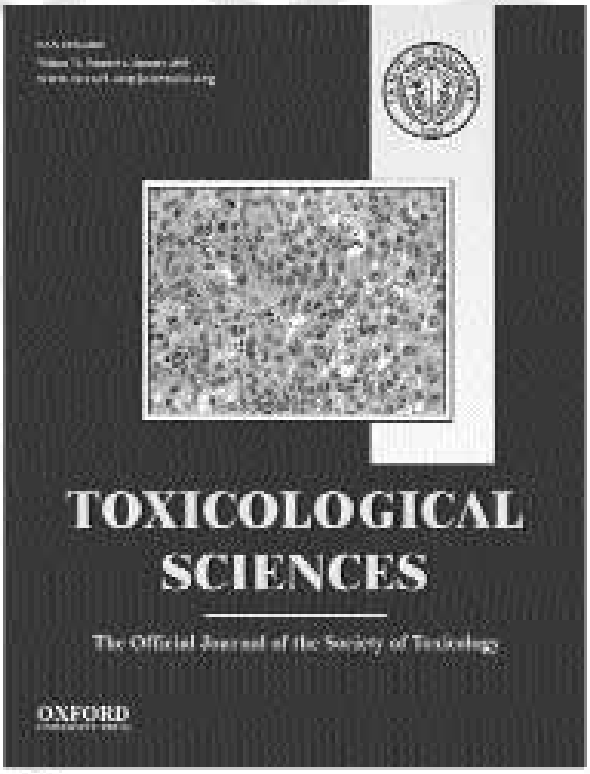
Ohio Valley or Allegheny-Erie
Daniel Acosta, Jr. (OH)
Gregory Allgood (OH)
George Daston (OH)
Mary Davis (WV)
Michael Dourson (OH)
Ernest Foulkes (OH)
Lois D. Lehman-McKeeman (OH)

Pacific Northwest
Richard Bull (WA)
David L. Eaton (WA)
Nancy Kerkvliet (OR)

South Central
Hari Mehendale (LA)

Southeastern
Rick Schnellmann (SC)

Southern California
Robert Krieger
Robert Phalen
Kathleen Rodgers
Stephen DiZio



Editor:
Lois D. Lehman-McKeeman, Ph.D.

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2003 Salt Lake City

Society of Toxicology
42ND ANNUAL MEETING
MARCH 9–23, 2003

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MEMBERSHIP

SOT

For complete information about membership in the Society of Toxicology, visit our Membership Booth in the Registration Area of the ToxExpo™ at the Annual Meeting, or go to the SOT Web site, www.toxicology.org, and select Member Services. Look for the link to Membership Information.

www.toxicology.org