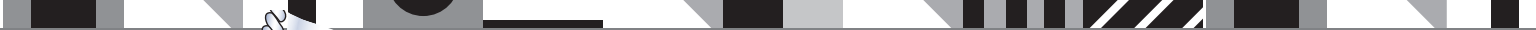
Society of Toxicology



PROGRAM

43RD ANNUAL MEETING & TOXEXPO™

March 21–25, 2004

Society of Toxicology

43RD ANNUAL MEETING AND ToxExpo™

Baltimore!™

March 21–25, 2004

The Society of Toxicology would like to invite you to join us in Baltimore for our 43rd Annual Meeting. Symposia, workshops, roundtables, and continuing education courses that cover a wide range of topics have been selected by the Program Committee and the Continuing Education Committee.

Baltimore offers the opportunity to combine cutting-edge science and comradery in a city known for its harbor and its National Aquarium. We look forward to seeing you there.

Marion Ehrich
SOT President

PROGRAM

Contents

Society of Toxicology

43RD ANNUAL MEETING & ToxExpo™

March 21–25, 2004

Baltimore!™

SOT Annual Meeting Events Calendar

Saturday March 20, 2004

Events are listed alphabetically by the event start time.

8:00 AM to 1:00 PM
Council Meeting
Renaissance Harborplace Baltimore Homeland

2:00 PM to 5:00 PM
Committee Chair Orientation
Baltimore Convention Center
301

4:00 PM to 7:00 PM
Message Center/Lodging Information Booth
Baltimore Convention Center
Charles Street Lobby

4:00 PM to 7:00 PM
Registration
Baltimore Convention Center
Charles Street Lobby

4:00 PM to 7:00 PM
Speaker Ready Room
Baltimore Convention Center
311

5:30 PM to 8:45 PM
Education Fellowship Interviews
Baltimore Convention Center
333

5:30 PM to 6:00 PM
Pre-Workshops Reception
(Ticket Required)
Baltimore Convention Center
314–317

5:30 PM to 6:00 PM
Undergraduate Education Program Orientation for SOT Hosts, Peer Mentors and Advisors
Baltimore Convention Center
336

6:00 PM to 8:30 PM
Career Workshops
(Ticket Required)
Baltimore Convention Center
(See Pages 45–46 for Room Locations)

6:00 PM to 9:00 PM
Undergraduate Education Program for Minority Students—Lecture & Reception
Baltimore Convention Center
337

6:15 PM to 7:00 PM
Continuing Education Walk-Through
Baltimore Convention Center
307

Sunday March 21, 2004

Events are listed alphabetically by the event start time.

7:00 AM to 8:30 PM
Coat Check
Baltimore Convention Center
Mezzanine

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

7:00 AM to 5:00 PM
Message Center/Lodging Information Booth
Baltimore Convention Center
Charles Street Lobby

7:00 AM to 8:00 PM
Registration
Baltimore Convention Center
Charles Street Lobby

7:00 AM to 5:00 PM
SOT Office
Baltimore Convention Center
305

7:00 AM to 5:30 PM
Speaker Ready Room
Baltimore Convention Center
311

7:30 AM to 5:30 PM
Childcare Services
Hyatt Regency Baltimore Chesapeake
(Contingent on Enrollment)

7:30 AM to 2:30 PM
Concession Stands
Convention Center
Main Terrace (Level 300)

8:00 AM to 4:30 PM
Guest Hospitality Center
Hyatt Regency Baltimore
Calvert/Pratt

8:00 AM to 5:00 PM
IUTOX Executive Committee Meeting I
Renaissance Harborplace Baltimore Homeland

8:00 AM to 10:00 AM
Placement Committee Meeting I
Baltimore Convention Center
304

8:00 AM to 5:00 PM
ToxExpo™ Set Up
Baltimore Convention Center
Exhibit Hall

8:00 AM to 5:00 PM
Undergraduate Education Program Session
Baltimore Convention Center
336

8:15 AM to 12:00 NOON
Continuing Education Courses
(Ticket Required)
Baltimore Convention Center
(See Signage for Room Locations)

10:00 AM to 3:30 PM
Placement Services: Office
(Registration Only)
Baltimore Convention Center
327

11:45 AM to 1:15 PM
CE Luncheon for Speakers, Committee and Students
(By Invitation Only)
Baltimore Convention Center
301

12:00 NOON to 3:00 PM
Toxicological Sciences Editorial Board Meeting
Hyatt Regency Baltimore
Annapolis

1:00 PM to 3:00 PM
IART Meeting
Hyatt Regency Baltimore
Douglass

1:00 PM to 4:00 PM
TEF Board Meeting
Baltimore Convention Center
304

1:15 PM to 5:00 PM
Continuing Education Courses
(Ticket Required)
Baltimore Convention Center
(See Signage for Room Locations)

4:30 PM to 5:15 PM
Awards Recipients Photographed
Baltimore Convention Center
307

5:15 PM to 6:30 PM
Award Presentation
(All Attendees Welcome)
Baltimore Convention Center
307

6:30 PM to 7:30 PM
Welcoming Reception
(All Attendees Welcome)
Baltimore Convention Center
Ballroom (Level 400)

6:45 PM to 7:15 PM
Student Advisory Committee Meeting I
Baltimore Convention Center
304

7:00 PM to 8:00 PM
25-Year Member Reception
(By Invitation Only)
Baltimore Convention Center
301

7:30 PM to 10:00 PM
Gene Logic's Jazz Express Reception
Hyatt Regency Baltimore
Atrium Level

7:30 PM to 9:30 PM
LRRI Reception for Former Employees
Sheraton Inner Harbor Hotel

7:30 PM to 8:30 PM
Student/Post-Doctoral Fellow Mixer
(All Students and Post-Docs are Invited to Attend)
(Ticket Required)
Baltimore Convention Center
324

8:00 PM to 10:30 PM
Arizona Night
Sheraton Inner Harbor Hotel
Camden Room

SOT Annual Meeting Events Calendar (Continued)

Monday March 22, 2004

Events are listed alphabetically by the event start time.

6:30 AM to 8:00 AM
Regulatory Affairs and Legislative Assistance Committee Meeting
Baltimore Convention Center
304

7:00 AM to 8:00 AM
American Board of Veterinary Toxicology: Executive Board Meeting
Sheraton Inner Harbor Hotel
Camden

7:00 AM to 8:30 PM
Coat Check
Baltimore Convention Center
Mezzanine

7:00 AM to 8:30 AM
Continuing Education Committee Meeting
Baltimore Convention Center
333

7:00 AM to 5:00 PM
Message Center/Lodging Information Booth
Baltimore Convention Center
Charles Street Lobby

7:00 AM to 8:00 AM
MPI Research - MPI Cardlon Breakfast Symposia
Hyatt Regency Baltimore
Constellation Ballroom

7:00 AM to 8:00 AM
Neurotoxicology Specialty Section Officers Meeting
Hyatt Regency Baltimore
Executive Board Room

7:00 AM to 8:30 AM
Past Presidents Breakfast
Baltimore Convention Center
302

7:00 AM to 5:00 PM
Registration
Baltimore Convention Center
Charles Street Lobby

7:00 AM to 8:30 AM
Regulatory & Safety Specialty Section Officers Meeting
Hyatt Regency Baltimore
Douglass

7:00 AM to 8:30 AM
Reproductive Specialty Section Officers Meeting
Hyatt Regency Baltimore
Camden

7:00 AM to 5:00 PM
SOT Office
Baltimore Convention Center
305

7:00 AM to 5:00 PM
Speaker Ready Room
Baltimore Convention Center
311

7:00 AM to 8:00 AM
Women in Toxicology Specialty Section Officers Meeting
Hyatt Regency Baltimore
Charles

7:30 AM to 5:00 PM
Childcare Services
Hyatt Regency Baltimore
Chesapeake

7:30 AM to 9:30 AM
Concession Stands
(Breakfast Items)
Baltimore Convention Center
Main Terrace (Level 300)

7:30 AM to 9:00 AM
Food and Safety Specialty Section Officers Meeting
Baltimore Convention Center
303

7:30 AM to 7:00 PM
Placement Services
Baltimore Convention Center
327-331

7:30 AM to 8:30 AM
Membership Committee Meeting
Baltimore Convention Center
336

7:30 AM to 8:30 AM
Program Committee Walk-Through
Baltimore Convention Center
306

7:30 AM to 9:30 AM
Risk Assessment Specialty Section Officers Meeting
Hyatt Regency Baltimore
Lombard

7:30 AM to 3:00 PM
Undergraduate Education Program for Minority Students
Baltimore Convention Center
337

8:00 AM to 4:30 PM
Guest Hospitality Center
Hyatt Regency Baltimore
Calvert/Pratt

8:30 AM to 9:15 AM
Plenary Lecture: Making Sense of Adverse Reactions and Interactions: Herbal Remedies, Nutraceuticals, and Drugs
Joe and Terry Graedon
Baltimore Convention Center
Ballroom (Level 400)

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

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

9:30 AM to 4:45 PM
Informational Sessions
(Consult the ToxExpo™ Directory *for Session Times and Descriptions)*
Baltimore Convention Center
301

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

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

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

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

12:15 PM to 1:15 PM
MRC Lecture: Gateways to Apoptosis, Stanley Korsmeyer
Baltimore Convention Center
307

12:15 PM to 1:15 PM
Student Symposium on Effective Presentations
Baltimore Convention Center
318

1:00 PM to 2:00 PM
Central States Regional Chapter Organizational Meeting
Baltimore Convention Center
306

1:00 PM to 5:00 PM
IUTOX Executive Committee Meeting II
Renaissance Harborplace Baltimore Homeland

1:00 PM to 3:00 PM
Undergraduate Education Program Focus Groups
Baltimore Convention Center
333

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

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

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

2:00 PM to 3:00 PM
Complimentary Refreshments in Exhibit Hall
Baltimore Convention Center
Exhibit Hall

4:30 PM to 6:00 PM
American Board of Toxicology Mixer/Open Meeting
Hyatt Regency Baltimore
Constellation

4:30 PM to 6:00 PM
Placement-Career Development Seminar: Job Search Skill Workshop
Baltimore Convention Center
Ballroom (Level 400)

4:30 PM to 6:00 PM
Specialty Section Presidents' Meeting
Baltimore Convention Center
306

4:30 PM to 5:30 PM
Undergraduate Toxicology Teaching Forum
Baltimore Convention Center
304

5:00 PM to 7:00 PM
Biotrin — Non Invasive Toxicity Biomarkers: New and Novel Biomarkers in *In Vitro* and *In Vivo* Toxicology Meeting
Sheraton Inner Harbor Hotel
Harborview

5:00 PM to 7:00 PM
Joint Reception of the Mountain West and Southern California Regional Chapters
Renaissance Harborplace Hotel
Homeland

5:00 PM to 7:00 PM
Roundtable of Toxicology
Hyatt Regency Baltimore
Constellation F

5:30 PM to 7:00 PM
Taylor and Francis Reception
Hyatt Regency Baltimore
Constellation

6:00 PM to 7:30 PM
Biological Modeling Specialty Section Reception
Baltimore Convention Center
301

6:00 PM to 7:30 PM
Carcinogenesis Specialty Section Reception
Baltimore Convention Center
325

6:00 PM to 7:30 PM
Inhalation Specialty Section Reception
Baltimore Convention Center
336

6:00 PM to 7:30 PM
Metals Specialty Section Reception
Baltimore Convention Center
324

6:00 PM to 7:30 PM
Neurotoxicology Specialty Section Reception
Baltimore Convention Center
337

6:00 PM to 8:00 PM
Northeast Regional Chapter Reception
Sheraton Inner Harbor Hotel
Camden Room

6:00 PM to 7:30 PM
Regulatory and Safety Evaluation Specialty Section Reception
Baltimore Convention Center
302

6:30 PM
Immunotoxicology Specialty Section Student and Post-Doc Mixer
Wharf Rat Brewery

7:30 PM to 9:00 PM
Gulf Coast Regional Chapter Reception
Hyatt Regency
Frederick

7:30 PM to 9:00 PM
Neurobehavioral Teratology Society Social
Renaissance Harborplace Hotel
Federal Hill

7:30 PM to 10:00 PM
Oxford University Press Dinner
(Location to be Announced)

SOT Annual Meeting Events Calendar

Tuesday March 23, 2004

Events are listed alphabetically by the event start time.

6:30 AM to 8:00 AM
Comparative and Veterinary Specialty Section Officers Meeting
Baltimore Convention Center
302

7:00 AM to 8:00 AM
Academy of Toxicological Sciences Board of Directors Breakfast Meeting
Hyatt Regency Baltimore
Frederick

7:00 AM to 8:00 PM
Coat Check
Baltimore Convention Center
Mezzanine

7:00 AM to 8:30 AM
Dermal Specialty Section Officers Meeting
Hyatt Regency Baltimore
Lombard

7:00 AM to 8:30 AM
Mechanisms Specialty Section Officers Meeting
Hyatt Regency Baltimore
Douglass

7:00 AM to 8:30 AM
Molecular Biology Specialty Section Officers Meeting
Hyatt Regency Baltimore
Columbia

7:00 AM to 8:30 AM
Regional Chapter Presidents' and Officers' Meeting
Baltimore Convention Center
306

7:00 AM to 5:00 PM
Speaker Ready Room
Baltimore Convention Center
311

7:00 AM to 8:30 AM
Student Advisory Committee Meeting II
Baltimore Convention Center
304

7:30 AM to 5:00 PM
Childcare Services
Hyatt Regency Baltimore
Chesapeake

7:30 AM to 9:30 AM
Concession Stands
(Breakfast Items)
Baltimore Convention Center
Main Terrace (Level 300)

7:30 AM to 5:30 PM
Placement Services
Baltimore Convention Center
327-331

7:30 AM to 8:15 AM
Regulatory Oversight of Research Involving Humans
Baltimore Convention Center
314

8:00 AM to 4:30 PM
Guest Hospitality Center
Hyatt Regency Baltimore
Calvert/Pratt

8:00 AM to 9:00 AM
In Vitro Specialty Section Officers Meeting
Hyatt Regency Baltimore
Camden

8:00 AM to 4:00 PM
Message Center/Lodging Information Booth
Baltimore Convention Center
Charles Street Lobby

8:00 AM to 4:30 PM
Paracelsus Goes to School
Baltimore Convention Center
336

8:00 AM to 4:00 PM
Registration
Baltimore Convention Center
Charles Street Lobby

8:00 AM to 4:00 PM
SOT Office
Baltimore Convention Center
305

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

8:30 AM to 3:45 PM
Informational Sessions
(Consult the ToxExpo™ Directory *for Session Times and Descriptions)*
Baltimore Convention Center
301

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

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

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

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

11:30 AM to 1:30 PM
Journal of Inhalation Toxicology Editorial Board Meeting
Hyatt Regency Baltimore
Columbia Room

11:45 AM to 1:15 PM
WWW Focus Group Luncheon
(By Invitation only)
Baltimore Convention Center
302

12:00 NOON to 1:15 PM
In Vitro Toxicology Lecture & Luncheon: *In Vitro* Methods for Dermatoxicology Studies
Dr. Robert L. Bronaugh
(Ticket Required)
Baltimore Convention Center
Ballroom (Level 400)

12:00 NOON to 1:00 PM
SOT/EUROTOX Debate
Nutraceuticals Should Be Regulated as Drugs
Baltimore Convention Center
307

12:00 NOON to 1:30 PM
St. John's University College of Pharmacy, Toxicology Alumni Luncheon
Hyatt Regency Baltimore
Annapolis

1:30 PM to 4:00 PM
Forum on Grantsmanship and Sources for Research Support
Baltimore Convention Center
325

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

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

2:00 PM to 3:00 PM
Complimentary Refreshments in Exhibit Hall
Baltimore Convention Center
Exhibit Hall

4:30 PM to 6:00 PM
Annual Business Meeting
(SOT Members Only)
Baltimore Convention Center
316

4:45 PM to 6:00 PM
ToxExpo 2005 Exhibit Space Selection Meeting
Baltimore Convention Center
307

5:30 PM to 7:30 PM
Journal of Immunotoxicology Editorial Board Meeting
Hyatt Regency Baltimore
Annapolis

5:30 PM to 6:30 PM
Regional Chapter Contacts for K–12 Education Committee Meeting
Baltimore Convention Center
304

6:00 PM to 7:30 PM
Comparative and Veterinary Specialty Section Reception
Baltimore Convention Center
338

6:00 PM to 7:30 PM
Dermal Specialty Section Reception
Baltimore Convention Center
324

6:00 PM to 7:30 PM
Food Safety Specialty Section Reception
Baltimore Convention Center
336

6:00 PM to 7:30 PM
Hispanic Organization for Toxicologists Specialty Section Organizational Meeting
Baltimore Convention Center
317

6:00 PM to 7:30 PM
In Vitro Specialty Section Reception
Baltimore Convention Center
301

6:00 PM to 7:30 PM
Molecular Biology Specialty Section Reception
Baltimore Convention Center
337

6:00 PM to 8:00 PM
Pacific Northwest Regional Chapter Meeting
Hyatt Regency
Frederick

6:00 PM to 7:30 PM
Reproductive and Developmental Specialty Section Reception
Baltimore Convention Center
325

6:00 PM to 7:30 PM
Women in Toxicology Specialty Section Reception
Baltimore Convention Center
302

7:00 PM to 9:00 PM
Joint Northern California Chapter, UC Davis Alumni Reception
Sheraton Inner Harbor Hotel
Potomac

7:30 PM to 10:00 PM
University of Rochester Alumni Reunion
Renaissance Harborplace Hotel
Federal Hill

9:00 PM to 11:00 PM
MCV/VCU Department of Pharmacology and Toxicology
Hyatt Regency Baltimore
Harborview

SOT Annual Meeting Events Calendar (Continued)

Wednesday March 24, 2004

Events are listed alphabetically by the event start time.

6:30 AM to 8:30 AM
Education Subcommittee for Minority Initiatives Meeting
Baltimore Convention Center
334

7:00 AM to 8:00 PM
Coat Check
Baltimore Convention Center
Mezzanine

7:00 AM to 5:00 PM
Speaker Ready Room
Baltimore Convention Center
311

7:00 AM to 9:00 AM
Toxicology & Exploratory Pathology Specialty Section Officers Meeting
Baltimore Convention Center
304

7:00 AM to 8:30 AM
WWW Advisory Committee Meeting
Baltimore Convention Center
302

7:15 AM to 8:30 AM
Animals in Research Committee Meeting
Hyatt Regency Baltimore
Executive Boardroom

7:15 AM to 8:15 AM
Town Meeting: SOT Endowment: Your Future
Presiding: Linda S. Birnbaum, Vice President
Baltimore Convention Center
318

7:30 AM to 5:00 PM
Childcare Services
Hyatt Regency Baltimore
Chesapeake

7:30 AM to 9:30 AM
Concession Stands
(Just Breakfast Items)
Baltimore Convention Center
Main Terrace (Level 300)

7:30 AM to 9:00 AM
Immunotoxicology Specialty Section Officers Meeting
Baltimore Convention Center
306

7:30 AM to 9:00 AM
Midwest Regional Chapter Members Breakfast
Marriott Inner Harbor
Patapsco Servern

7:30 AM to 5:30 PM
Placement Services
Baltimore Convention Center
327-331

8:00 AM to 4:30 PM
Guest Hospitality Center
Hyatt Regency Baltimore
Calvert/Pratt

8:00 AM to 4:00 PM
Message Center/Lodging Information Booth
Baltimore Convention Center
Charles Street Lobby

8:00 AM to 4:00 PM
Registration
Baltimore Convention Center
Charles Street Lobby

8:00 AM to 4:00 PM
SOT Office
Baltimore Convention Center
305

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

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

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

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

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

11:30 AM to 1:30 PM
Education Subcommittee for K–12 Education Meeting
Baltimore Convention Center
304

11:30 AM to 1:30 PM
Finance Committee Meeting
Baltimore Convention Center
333

11:30 AM to 1:30 PM
Toxicology Mechanisms and Methods Editorial Board Meeting
Hyatt Regency Baltimore
Columbia

12:00 NOON to 1:00 PM
A Conversation with the Directors
Baltimore Convention Center
318

12:00 NOON to 1:00 PM
Issues Session Toxicology: Does Funding Source Influence Research Integrity?
Baltimore Convention Center
307

1:30 PM to 3:00 PM
Education Committee Meeting
Baltimore Convention Center
304

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

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

2:00 PM to 3:00 PM
Complimentary Refreshments in Exhibit Hall
Baltimore Convention Center
Exhibit Hall

2:00 PM to 4:00 PM
Exhibit Liaison Committee Meeting
Baltimore Convention Center
334

2:00 PM to 3:30 PM
NIH/NIEHS an Informal Session for Students with the NIEHS Director
Hyatt Regency Baltimore
Baltimore

2:30 PM to 4:30 PM
Board of Publications Committee Meeting
Baltimore Convention Center
333

4:45 PM to 5:30 PM
Council Meeting with Students/Post-Doctoral Fellows
Baltimore Convention Center
309

5:30 PM to 6:00 PM
Council Meeting with Student Advisory Committee
Baltimore Convention Center
309

6:00 PM to 7:30 PM
Epidemiology Specialty Section Reception
Baltimore Convention Center
304

6:00 PM to 7:30 PM
Ethical, Legal, and Social Issues Specialty Section Reception
Baltimore Convention Center
333

6:00 PM to 7:30 PM
Immunotoxicology Specialty Section Reception
Baltimore Convention Center
302

6:00 PM to 7:30 PM
Mechanisms Specialty Section Reception
Baltimore Convention Center
337

6:00 PM to 7:30 PM
Occupational Health Specialty Section Reception
Baltimore Convention Center
301

6:00 PM to 7:30 PM
Risk Assessment Specialty Section Reception
Baltimore Convention Center
324

6:00 PM to 7:30 PM
Toxicologic and Exploratory Pathology Specialty Section Reception
Baltimore Convention Center
336

7:00 PM to 10:30 PM
Academy of Toxicological Sciences Reception/Banquet
Hyatt Regency Baltimore

7:00 PM to 8:30 PM
President's Reception
(By Invitation Only)
Renaissance Harborplace Baltimore
Baltimore Ballroom

7:30 PM
Immunotoxicology Specialty Section Mentor-Student Dinner
(Location To Be Announced at Immunotoxicology Specialty Section Reception)

SOT Annual Meeting Events Calendar

Thursday March 25, 2004

Events are listed alphabetically by the event start time.

7:00 AM to 1:00 PM
Coat Check
Baltimore Convention Center
Mezzanine

7:00 AM to 11:30 AM
Speaker Ready Room
Baltimore Convention Center
311

7:30 AM to 12:00 NOON
Childcare Services
Hyatt Regency Baltimore
Chesapeake
(Contingent on Enrollment)

7:30 AM to 12:00 NOON
Concession Stands
Baltimore Convention Center
Main Terrace (Level 300)

7:30 AM to 12:00 NOON
Placement Services
(Message Center Only)
Baltimore Convention Center
328

7:30 AM to 8:30 AM
Program Committee Meeting
Baltimore Convention Center
304

8:00 AM to 11:30 AM
Guest Hospitality Center
Hyatt Regency Baltimore
Calvert/Pratt

8:00 AM to 11:30 AM
Message Center/Lodging
Information Booth
Baltimore Convention Center
Charles Street Lobby

8:00 AM to 11:30 AM
Registration
Baltimore Convention Center
Charles Street Lobby

8:00 AM to 11:30 AM
SOT Office
Baltimore Convention Center
305

8:30 AM to 11:30 AM
Poster Sessions
Baltimore Convention Center
307

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

11:30 AM to 1:00 PM
Placement Committee Meeting II
Baltimore Convention Center
304

SOT 44th
ANNUAL MEETING

MARCH 6–10, 2005

Deadline for Proposals for SOT 2005 Annual Meeting Sessions is ***April 30, 2004.***

Visit the SOT Web Site for proposal and meeting information.

www.toxicology.org

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Baltimore City Restaurants

Afghan Kabab
37 S. Charles Street, Suite C
Phone: (410) 727-5511
(Afghan)

Babalu Grill
32 Market Place
Phone: (410) 234-9898
(Cuban)

Bistro 300
300 Light Street
Phone: (410) 528-1234
(American)

Burke's Cafe & Comedy Factory
36 Light Street
Phone: (410) 752-4189
(Seafood)

Cafe Bombay
114 E. Lombard Street
Phone: (410) 539-2233
(Indian)

Cafe Promenade
110 S. Eutaw Street
Phone: (410) 962-0202
(American)

California Pizza Kitchen
201 E. Pratt Street
Phone: (410) 783-9339
(American)

Capitol City Brewing Company
301 S. Light Street
Phone: (410) 539-7468
(American)

City Lights Seafood Restaurant
301 Light Street
Phone: (410) 244-8811
(Seafood)

Downtowne Sports Exchange
200 W. Pratt Street
Phone: (410) 659-5844
(American)

Hard Rock Cafe
601 E. Pratt Street
Phone: (410) 347-7625
(American)

J. Paul's Dining Saloon
301 Light Street
Phone: (410) 659-1889
(American)

Kawasaki Japanese Seafood Restaurant
413 N. Charles Street
Phone: (410) 659-7600
(Japanese)

Legal Sea Foods, Inc.
100 E. Pratt Street
Phone: (410) 332-7360
(Seafood)

Marconi's Restaurant
106 W. Saratoga Street
Phone: (410) 727-9522
(Continental)

Max's at Camden Yards
300 W. Pratt Street
Phone: (410) 234-8100
(American)

Morton's of Chicago
300 S. Charles Street
Phone: (410) 547-8255
(American)

Paolo's Ristorante
301 Light Street
Phone: (410) 539-7060
(Italian)

Phillips Harborplace Restaurant
301 Light Street
Phone: (410) 685-6600
(Seafood)

Pier 4 Kitchen & Bar
621 E. Pratt
Phone: (410) 659-1200
(Seafood)

Pisces
300 Light Street
Phone: (410) 605-2835
(Seafood)

Ruth's Chris Steak House
600 Water Street
Phone: (410) 783-0033
(Seafood)

Shogun Restaurant
316 N. Charles Street
Phone: (410) 962-1130
(Japanese)

Sotto Sopra, Inc.
405 N. Charles Street
Phone: (410) 625-0534
(Italian)

Tex Mex Grill
201 E. Pratt Street
Phone: (410) 783-2970
(Mexican)

The Green Room @ Andie Musik
409 N. Charles Street
Phone: (410) 385-2638
(Tea Rooms)

The Woman's Industrial Exchange
333 N. Charles Street
Phone: (410) 685-4388
(American)

Tug's Restaurant
222 St. Paul Place
Phone: (410) 244-7300
(American)

Wharf Rat - Camden Yards
206 W. Pratt Street
Phone: (410) 244-8900
(American)

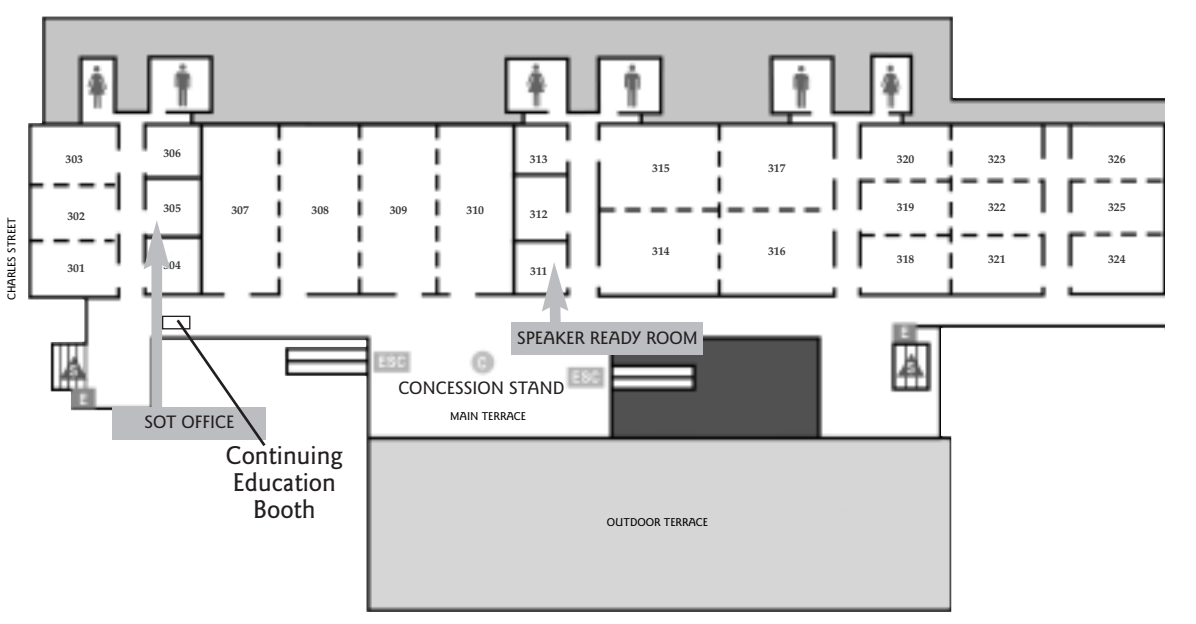
Windows Restaurant
202 E. Pratt Street
Phone: (410) 547-1200
(Seafood)

For more information about restaurants in Baltimore City visit the Restaurant Reservations Booth or ask the hotel concierge. (All restaurants listed are within 3 blocks of the Baltimore Convention Center.)

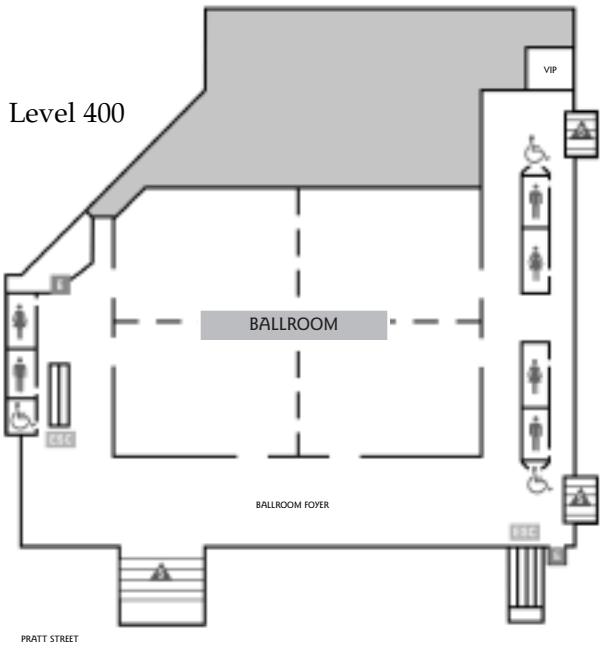
Baltimore Convention Center Map

Level 100

Level 300

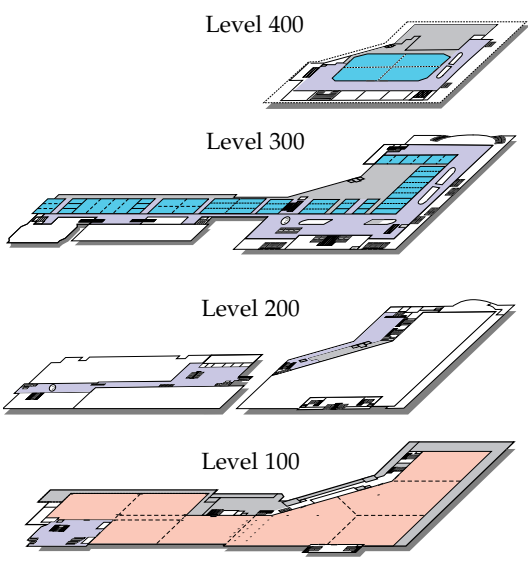


Baltimore Convention Center Map

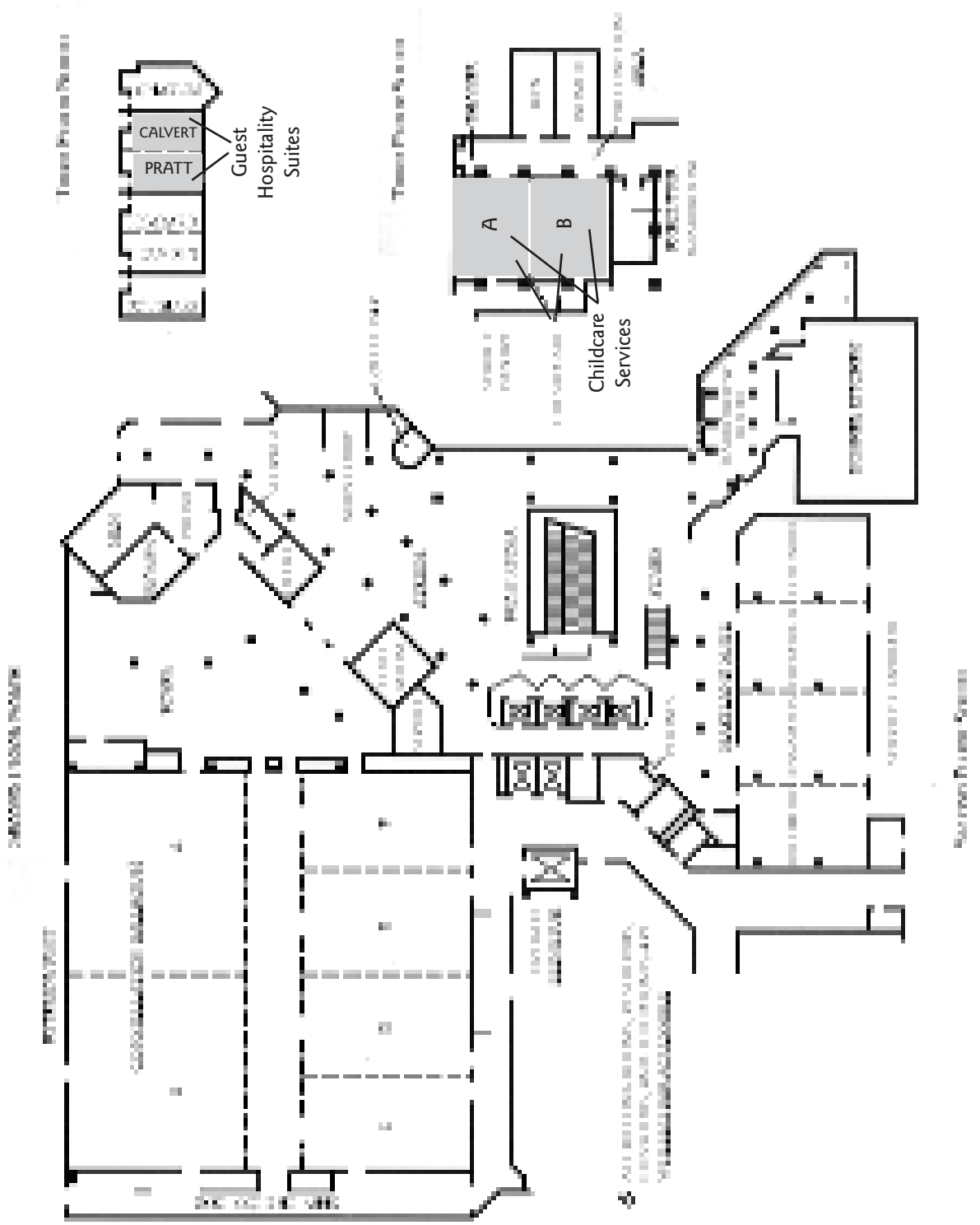


MAPS

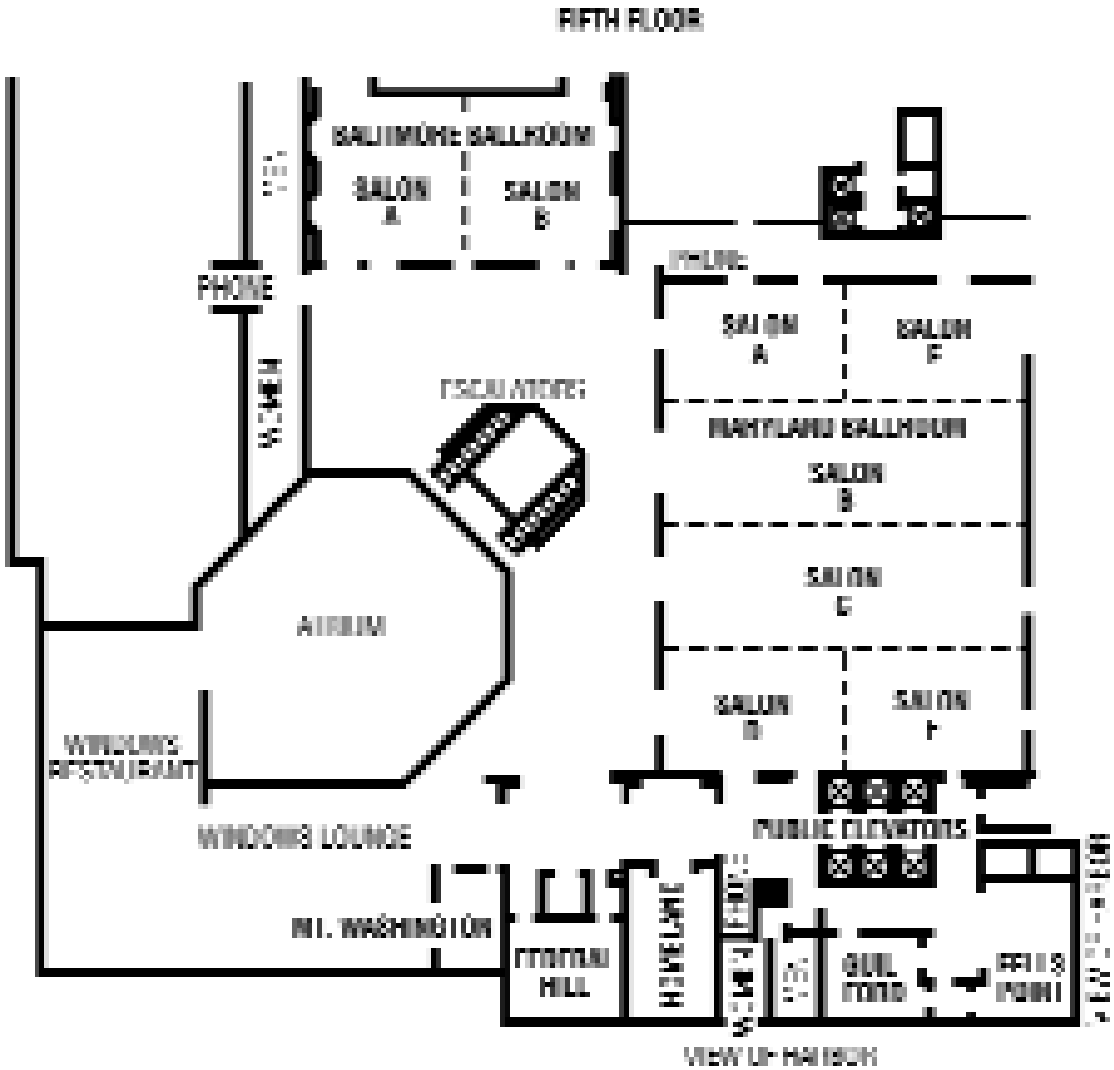
BALTIMORE CONVENTION CENTER OVERVIEW

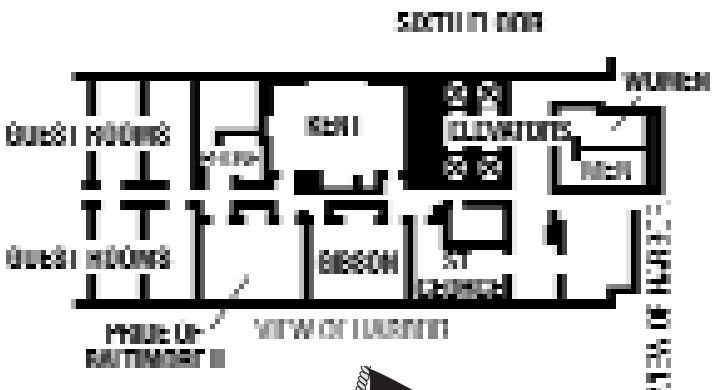


Hyatt Hotel Map



Renaissance Hotel Map





Baltimore City Hotel Accommodations

1. Brookshire Suites Hotel
120 East Lombard Street
Baltimore, MD 21202
Toll–Free: (866) 583–4162
Phone: (410) 625–1300
Fax: (410) 625–0912
Distance from Convention Center:
3 Blocks

2. Days Inn Inner Harbor
100 Hopkins Place
Baltimore, MD 21201
Phone: (410) 576–1000
Fax: (410) 576–9437
Distance from Convention Center:
Across Street

3. Hampton Inn & Suites Inner Harbor
131 East Redwood Street
Baltimore, MD 21202
Phone: (410) 539–7888
Fax: (410) 539-3345
Distance from Convention Center:
3.5 Blocks

4. Harbor Court Hotel
550 Light Street
Baltimore, MD 21202–6099
Toll–Free: (800) 824–0076
Phone: (410) 234–0550
Fax: (410) 659–5925
Distance from Convention Center:
2.5 Blocks

5. Holiday Inn Inner Harbor
301 W. Lombard Street
Baltimore, MD 21201
Phone: (410) 685–3500
Fax: (410) 727–6169
Distance from Convention Center:
1 Block

6. Hyatt Regency Baltimore*
300 Light Street
Baltimore, MD 21202
Phone: (410) 528–1234
Fax: (410) 605–2870
Distance from Convention Center:
Across Street

7. Marriott Inner Harbor
110 South Eutaw Street
Baltimore, MD 21201
Phone: (410) 962–0202
Fax: (410) 625–7892
Distance from Convention Center:
1.5 Blocks

8. Radisson Plaza Lord Baltimore Hotel
20 West Baltimore Street
Baltimore, MD 21201–3203
Phone: (410) 539–8400
Fax: (410) 332–4229
Distance from Convention Center:
3 Blocks

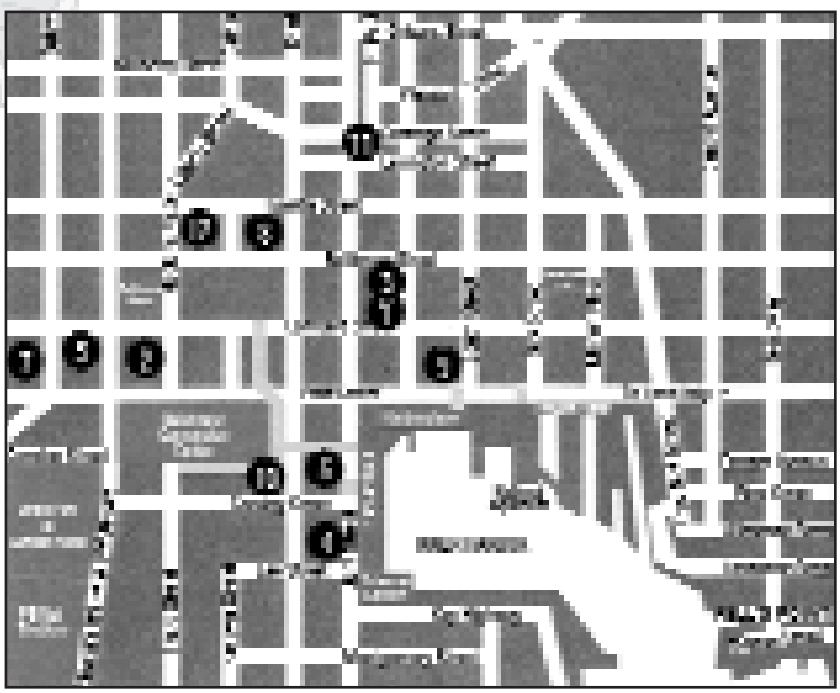
9. Renaissance Harborplace Hotel*
202 East Pratt Street
Baltimore, MD 21202
Phone: (410) 547–1200
Fax: (410) 783–9676
Distance from Convention Center:
3 Blocks

10. Sheraton Inner Harbor Hotel
300 South Charles Street
Baltimore, MD 21201
Phone: (410) 962–8300
Fax: (410) 962–8211
Distance from Convention Center:
Adjacent

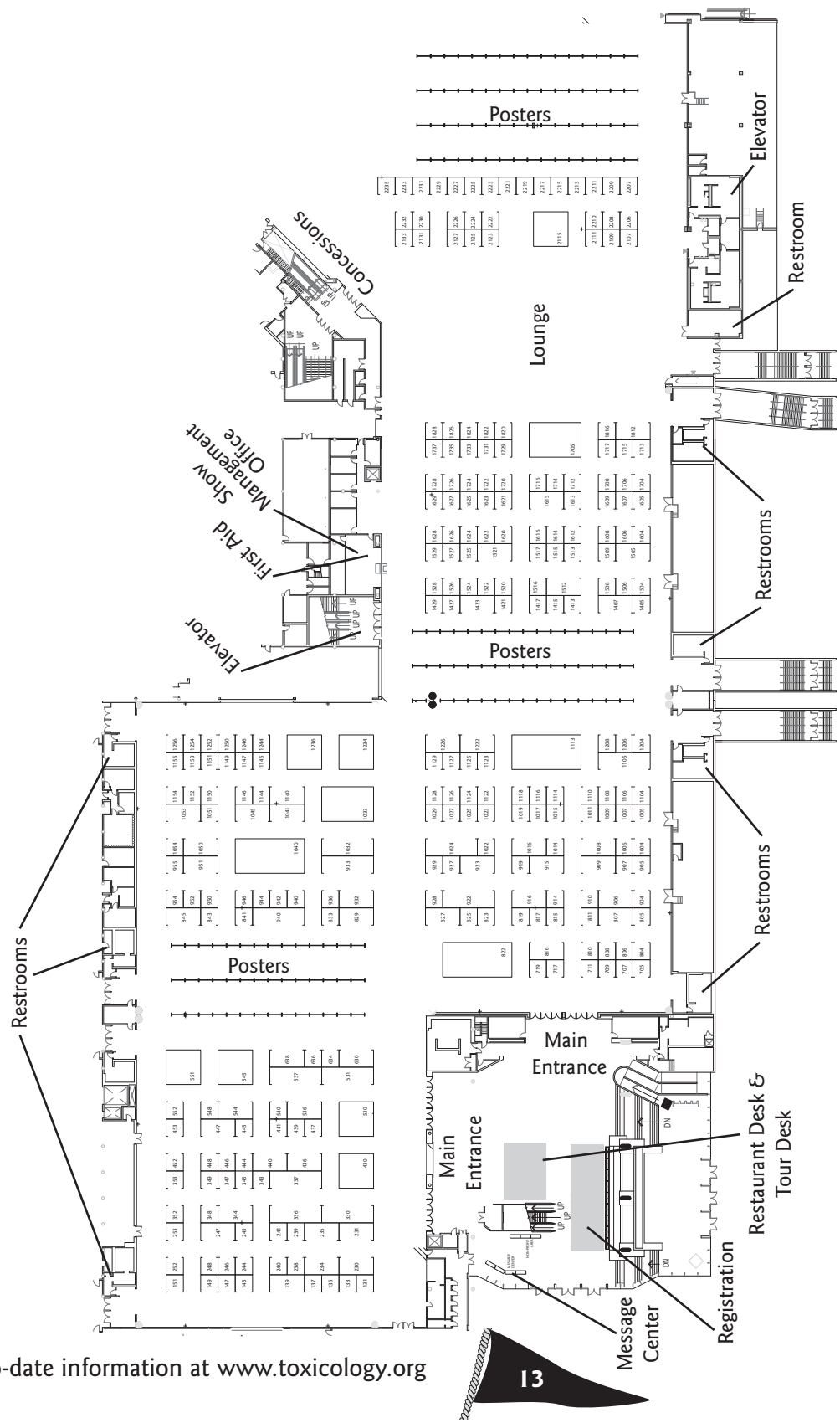
11. Tremont Plaza Hotel
222 St. Paul Place
Baltimore, MD 21202
Toll–Free: 1–800–Tremont
Phone: (410) 727–2222
Fax: (410) 685–4216
Distance from Convention Center:
5 Blocks

12. Wyndham Baltimore Inner Harbor
101 West Fayette Street
Baltimore, MD 21201
Phone: (410) 752–1100
Fax: (410) 752–0832
Distance from Convention Center:
2.5 Blocks

** Indicates an SOT Headquarter's Hotel*



ToxExpo™ in the Exhibit Hall



ToxExpo™ is Open:

Monday, March 22 .....9:30 AM–4:30 PM
Tuesday, March 23 .....8:30 AM–4:30 PM
Wednesday, March 24.....8:30 AM–4:30 PM

Please ask Show Management, Libby Jones, permission before taking pictures in the Exhibit Hall.

2004 Exhibitors

Alphabetical Listing

(As of January 6, 2004)

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

Company Name	Booth Number
AAALAC International	1145
Abraxis LLC	1106
AccessLAB	946
ACGIH	1222
ACS Publications	2232
AEgis Technologies Group Inc. (The)	841
AFFYMETRIX	1521
Agilent Technologies	1615
Alabama Research & Development	1405
ALLENTOWN CAGING EQUIPMENT CO. INC	638
Alternative Design Manufacturing & Supply, Inc.	1154
Althea Technologies	1629
ALZET® Osmotic Pumps	819
American Association for Laboratory Animal Science	2111
American Board of Toxicology (ABT)	1124
American College of Toxicology (ACT)	1110
Anew International	1816
Ani Lytics Inc	1023
Anilab, Inc.	131
Animal Identification and Marking Systems, Inc.	928
Animals In Research Booth -SOT	2222
Applied Biosystems	1505
Applied Preclinical Services	1004
AppTec Laborary Services	1429
Atsdr / Division of Toxicology	147
BAS - Evansville	816
Battelle HHS	551
BBL Sciences	807
BD Biosciences	1604, 1606
Bench International	437
Biologix Research Company	1007
Bio Medic Data Systems Inc.	337
Bio-Rad Laboratories, Informatics Division	1244
Bio-Serv Inc.	244
BIOAGRI PHARMA	833
Biological Test Center	904
BioReliance™	829
Biosense Laboratories AS	1413
BioSTAT Consultants Inc	1208
Biotechnics Inc	808
BioTechniques/Preclinica	1729
Biotrin International	806
Bristol–Myers Squibb	1733
Bruker Daltonics Inc.	1620, 1622
Burdock Group	448
Buxco Research Systems	1022
Calvert Laboratories, Inc.	909
Cambrex	1051
CANTOX HEALTH SCIENCE INTERNATIONAL	1421
CasellaUSA	805
Cayman Chemical	1508
CeeTox Inc.	1715
CELLnTEC Advanced Cell Systems	352
Central Toxicology Laboratory - Syngenta	955
CEREP	1609
CH Technologies	951
ChanTest, Inc.	1427
Charles River Laboratories	330
Charles River Laboratories Development Services	530
Charles River Laboratories Discovery & Development Services – Pathology	531
Charles River Laboratories Discovery Services	430
ChemRisk	1621
ChemSensing Inc.	950
Chenomx Inc.	1108
CIIT Centers for Health Research	1025
Ciphergen Biosystems, Inc.	636
CIT	344
Colorado Histo-Prep	445
COMPARATIVE BIOSCIENCES	1613
Comparative Ophthalmic Research Lab.	1608
CompuCyte	1720, 1724, 1722
CorDynamics	133
COSMETIC INGREDIENT REVIEW	1104
Coulbourn, Inc.	145
Covance	822
Covance Research Products Inc.	827
CTBR (A member of the Inveresic Research Group)	933
Daiyu-Kai Inst. Med. Sci.	1520
DATA INTEGRATED SCIENTIFIC SYSTEMS (D.I.S.S.)	253
Data Sciences International	230
DaVinci Biomedical Research Products	1246
Detroit R & D, Inc.	248
Dow Corning Corporation	1717
Druquest International, Inc	1515
Eastern Medical Publishers	1006
Eaton Publishing	1628
Elm Hill Breeding Labs, Inc.	1509
Elsevier Science	537
EMKA TECHNOLOGIES	1150
Environ International	1708
Environmental & Occupational Health Sciences Institute	1526
Environmental Health Perspectives	139
Enzo Life Sciences, Inc.	1605
EPL, Inc. (Experimental Pathology Laboratories)	1504, 1506
Expression Analysis	1525
EXYGEN RESEARCH	1153
Fraunhofer ITEM	1812
Gene Logic	1234
GeneXP Biosciences	1712
Genospecta, Inc.	1825
Gentronix Limited	552
GlobalTox	1045
GMA INDUSTRIES, INC.	1417
Gould Instrument Systems, Inc.	1029
Graham Laboratories	1614
GWATHMEY, INC.	907
H&T Corporation	1819
Hamilton Thorne Biosciences, Inc.	1737
Hamilton-Kinder, LLC	825
HARLAN	840
Hemo Genix LLC	1415
Hill Top Research, Inc.	1527
Hilltop Lab Animals Inc	932
Human Biologics International	1529
Humana Press	927
Huntingdon Life Sciences	1033
HURLEY CONSULTING ASSOCIATES LTD	1011
ICT-X	2107
IIABAT	1713
IDEXX CONTRACT RESEARCH SERVICES	548
IIT Research Institute	929
In Vitro Technologies Inc	914
IN/US SYSTEMS, INC.	940
Ina Research Inc.	1516
Instech Solomon	444
Instem Life Science Systems	545

2004 Exhibitors *(Continued)*

Company Name	Booth Number
INSTITUTE FOR *IN VITRO* SCIENCES, INC.	246
International Life Sciences Institute	1607
Inveresk Research	1032
IPS Therapeutique Inc.	1823
ISIS BioComp	1127
ITR LABORATORIES CANADA, INC.	906
IUTOX	2208
Jackson ImmunoResearch Laboratories, Inc	944
Jai Research Foundation (JRF)	252
K-12 Resources Booth-SOT	2131, 2133
Kent Scientific Corporation	151
Korea Institute of Toxicology	1123, 1125
LAB Pre-Clinical Research International	440
LAB Products, Inc.	336
LABCAT	823
LabCorp Preclinical	707
Leadscope Inc.	349
Lippincott Williams & Wilkins	1612
Loats Associates, Inc.	905
Lomir Biomedical, Inc.	234
Lovelace Respiratory Research Institute	1827
Marshall Farms USA, Inc.	922
MB Research Labs Inc	804
MD BIOTECH	1050
MDL Information Systems, Inc.	241
MDS Pharma Services	1423
Med Associates	845
Metabometrix Ltd	245
MetriGenix	1731
MIDWEST RESEARCH INSTITUTE	1118
Molecular Light Technology	1816
MPI RESEARCH	1113
MultiCase	446
N.I.E.H.S.	135
NALGENE Brand Products	1005
National Library of Medicine	919
National Toxicology Program	137
NEUROSCIENCE ASSOCIATES	1114
NIEHS Community Outreach and Education Program	2127
NORTHERN BIOMEDICAL RESEARCH, INC.	1524
Northview Biosciences	1517
Notocord Systems	709
NOTOX B.V.	540
Nucro-Technics Incorporated	817
Oxford University Press	1626
Paradigm Genetics	1716
Pathology Data Solutions Inc.	247
Pathology Solutions Inc	436
Pfizer Global Research and Development	1704
PharmQuest Corporation	1706
Phylonix	239
PJD PUBLICATIONS-RESEARCH COMMUNICATIONS	811
Popper & Sons, Inc.	942
Preclinical Research Associates	1735
Primate Products, Inc.	240
Product Safety Labs	717
Promega Corp	1019, 1017
Provident Preclinical Inc.	634
Puracyp, Inc.	1522
Purina Mills LabDiet	630
QBM Cell Science	1528
Quest Pharmaceutical Services	1009
Quintiles, Inc.	1024
Rallis India Limited	115
RASS (Risk Assessment Summer School)	2210
Razel Scientific Instruments, Inc.	1126
RCC Ltd	1105
RECATHCO, LLC	936

Company Name	Booth Number
Research Animal Diagnostic Lab. University of Miss	1147
Research Diets, Inc.	1116
Ricerca Biosciences	1140
Roche Applied Science	231
ROCKLAND IMMUNOCHEMICALS, Inc.	1627
Roundtable of Toxicology Consultants	1623
RTC, Research Toxicology Centre S.P.A.	347
RTI International	1016
Safepharm Laboratories, Ltd.	952
San Diego Instruments Inc.	815
Saronyx, Inc.	915
SCANTOX A/S	810
SCAW	1513
Schleicher & Schuell BioScience, Inc.	1616
SCIREQ INC.	1152
Sequani Limited	923
SFBC International	1146
Sinclair Research Center, Inc.	1027
SITEK RESEARCH LABORATORIES	1014
Skeletech, Inc	1512
SNBL USA, LTD.	1040
Smiths Medical MD, Inc.	238
SOT Membership	TBD
Southern Research Institute	1041
Spring Valley Laboratories, Inc.	1129
Springborn Smithers Labs	536
SRI International	1226
StemCell Technologies Inc.	1144
Stillmeadow Inc	711
SUBURBAN SURGICAL COMPANY	719
SYRACUSE RESEARCH CORPORATION	1625
Taconic	1122
Talos MSDS Authoring and Distribution Software	1149
Tandem Labs	341
TAYLOR & FRANCIS	1236
Tecniplast USA Inc.	544
The Baker Company	1053
The Jackson Laboratory	2123
Thoren Caging Systems, Inc.	1821
Tissue Transformation Technologies	351, 452
TissueInformatics Inc	1204, 1206
TNO	345
TOXCEL LLC	1151
Toxicology Education Foundation (TEF)	2224
Toxicology Regulatory Services Inc	705
Toxicology Research Laboratory	843
Toxikon Corporation	447
TSE - Technical & Scientific Equipment GmbH	1407
U.S. Environmental Protection Agency	235
Viking Medical/Used Caging.com	1015
Vitrocell Systems	954
Vitron, Inc	348
WIL Research Laboratories	916
Wildlife International Ltd.	439
Wiley	1128
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Xenobiotic Detection Systems	2109
Xenogen	1726, 1728
XenoTech, LLC	910
Xybion Medical Systems	1008
Zen-Bio, Inc	1054

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 Show Management 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 ToxExpo 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 22 .....9:30 AM–4:30 PM
Tuesday, March 23 .....8:30 AM–4:30 PM
Wednesday, March 24.....8:30 AM–4:30 PM

At the ToxExpo Exhibition scientists have a first-hand opportunity to talk with the exhibitors, and to 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. 1454 or e-mail: libby@toxicology.org.

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

(All Informational Sessions will be held in Room 301 at the Baltimore Convention Center)

Real Time PCR Applications for Toxicology

Presented by Applied Biosystems

Monday, March 22
9:30 AM–10:30 AM

This seminar will illustrate new developments in real time PCR including: low cost instruments, low density real time arrays, and pre-designed TaqMan primer/probe sets for human, mouse, and rat genes. A range of applications will be presented, highlighting the flexibility of this technology including; RNAi validation, microarray hit validation, SNP Genotyping, and gene dosage.

Identification of Apptosis Markers in Plateable Cryopreserved Human Hepatocytes

Presented by* In Vitro *Technologies, Inc.

Monday, March 22
10:45 AM–11:45 AM

Isolated hepatocytes have been used *in vitro* to study the drug metabolism and toxicity of different drug candidates. However, the unpredictable availability of fresh tissue can make this a challenging model to work with. A solution to this has been the development of methods for the cryopreservation of hepatocytes. Cryopreserved hepatocytes have been successfully used in many of the same studies where fresh hepatocytes were previously used. Recently cryopreserved hepatocytes have been identified, which will form a monolayer when plated on collagen-coated tissue culture plates. These plateable cryopreserved human hepatocytes (PCHH) monolayers can be maintained for 5–7 days in culture, and have been used for induction and long-term (4-day) toxicity studies. PCHH have now been studied for their potential use in evaluating chemically-induced apoptosis. PCHH monolayers were incubated with compounds known to induce apoptotic pathways. Apoptosis was determined by measuring Caspase 3/7 and DNA fragmentation levels in the PCHH model. The results of these studies indicate that PCHH is a useful system for evaluating the ability of unknown compounds to initiate apoptosis in human hepatocytes.

Exhibits & Informational Sessions *(Continued)*

Potential Genomic Markers for Canine Liver Injury

Presented by Gene Logic

Monday, March 22,
12:00 NOON–1:00 PM

Gene Logic presents the first of two case study analyses. This study details the use of toxicogenomics in understanding species-specific liver injury by comparing gene expression data obtained from rats and canines treated with a proprietary compound. An overview of the analysis and the potential utility of such an approach will be discussed. A light lunch will be available.

Application of Gene Expression Signatures in Toxicology and Drug Development

Presented by Althea Technologies, Inc.

Monday, March 22
1:15 PM–2:15 PM

Althea Technologies will discuss the acceleration of drug development by providing a comprehensive portfolio of gene-based services.

P450-Glo(tm): A Luminescent Approach to the Analysis of CYP450 Activities in Recombinant or Native Fractions and Live Cells

Presented by Promega

Monday, March 22
2:30 PM–3:30 PM

P450-Glo™ assays overcome many of the limitations of fluorescent and non-optical methods by bringing the advantages of luminescence technology to the study of CYP450s. The assays provide a rapid, sensitive and accurate means of detecting CYP450 enzyme inhibition and gene induction.

Advancing Toxicity Assessment through Microarray Gene Expression Analysis

Presented by Paradigm Genetics and Agilent Technologies

Monday, March 22
3:45 PM–4:45 PM

Key experts from pharmaceutical, government and academic research laboratories will present case studies in gene expression research.

Anapharm Offers More than Standard Gioanalytical Method Validations

Presented by SFBC Anapharm

Tuesday, March 23
8:30 AM–9:30 AM

Bioanalytical services provided by Anapharm and a complete description of our bioanalytical method validation process will be presented during this informational session.

Unique Perspectives in Histopathology

Presented by Colorado Histo Prep

Tuesday, March 23
9:45 AM–10:45 AM

Colorado Histo-Prep will discuss GLP complaint histology and histopathology services for pharmaceutical and medical device industries viz., trimming blocking, and slide preparation, including serial sectioning.

Comparison of Liver Gene Dysregulation: Toxicant Treated Rats and Diseased Human Tissues

Presented by Gene Logic

Tuesday, March 23
11:00 AM–12:00 NOON

Gene Logic presents the second in a series of case analyses. This study will correlate gene dysregulation between models of animal toxicity and normal and diseased human tissues The cross species approach allows insights into mechanisms of toxicity and the pathogenesis of human disease. For example, the genes dysregulated by an agent capable of inducing inflammation in rats can be compared to that in human cirrhotic livers and similarities and differences in the gene expression profiles can be examined. A light lunch will be available.

Exhibits & Informational Sessions *(Continued)*

Affymetrix GeneChip Expression Analysis Applied To Toxicology

Presented by Affymetrix

Tuesday, March 23
12:15 PM–1:15 PM

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

What's New in Electronic Lab Animal Identification?

Presented by Bio Medic Data

Tuesday, March 23
1:30 PM–2:30 PM

Electronic identification has grown in the past 12 months with the addition of new technology. From wireless transmission to programmable chips, to accurate temperature, there are many exciting products to learn about. Come see how the new technology and new products can make your facilities more productive, more accurate and more compliant!

Getting to the Heart of the Matter

Presented by CorDynamics

Tuesday, March 23
2:45 PM–3:45 PM

Are you looking for a way to define cardiovascular safety for your lead compounds — accurately, quickly and affordably? Our own experiences in the pharmaceutical industry left us frustrated with the lack of facilities and expertise to perform this type of toxicological testing. We decided to find a way to provide the services needed to meet these demands.

SOT Informational Booths

Animals in Research Booth—ToxExpo 2222

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 2131, 2133

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—ToxExpo TBD

The Society of Toxicology (SOT) is the largest association of professional toxicologists in the world. 5,200 plus members from all parts of the United States and more than 40 other countries enhance their careers through the benefits of SOT membership. SOT provides the premier venues for toxicology discourse, including meetings, the official (and highly cited) SOT journal *Toxicological Sciences*, and ToxExpo™. Visit the booth to learn more about all member benefits and for a guided tour of the excellent and diverse resources available through the SOT Web site. Application for membership is easy at **www.toxicology.org.**

Toxicology Education Foundation Booth—ToxExpo 2224

The Toxicology Education Foundation exhibit will highlight "Is it Safe," a campaign in partnership with NIEHS and others to provide audiovisual resources 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 through Toxicology in the Classroom will also be on view. Your contributions to TEF make these programs possible. Learn more at **www.tox-edfoundation.org**.

Write to Congress (RALA)—ToxExpo 2125

The Society of Toxicology's Regulatory Affairs and Legislative Assistance (RALA) Committee is the focus for activities that aid and support the scientifically related functions of regulatory agencies and judicial bodies. If the regulation of chemicals and the funding of research in toxicology concern you, visit the Write to Congress booth.

General Information

Scientific Sessions and Special Events will be held at the Baltimore Convention Center unless otherwise listed.

Registration Fees:

	On-Site
SOT Member	$320
Non-Member	$560
SOT Retired Member	$145
Post-Doctoral SOT Member	$160
Post-Doctoral Non-Member	$240
Graduate Student Member	$140
Graduate Student Non-Member	$200
Student Undergraduate	$140
SOT Affiliate	$ 0
Press	$ 0
Guest (Non-Scientist)	$100

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

	On-Site
SOT Member/Retired/Corp Affiliate	$145
Non-Member	$240
Post-Doctoral *(SOT Member or Non-Member)*	$125
Graduate or Undergraduate Student *(SOT Member or Non-Member)*	$ 80
Press	$ 0

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

	On-Site
SOT Member/Retired/ Corp Affiliate/Post-Doctoral	$ 95
Non-Member	$115
Graduate or Undergraduate Student	$ 65
Press	$ 0

The Registration Includes:

- Saturday, March 20 evening reception and sessions addressing career strategies. (see program description on pages 45–46)
- Awards Presentation, Sunday, March 21 from 5:15 PM–6:30 PM.
- Welcoming Reception, Sunday, March 21 from 6:30 PM–7:30 PM.
- Plenary Lecture, Monday, March 22 from 8:30 AM–9:15 AM.
- All scientific sessions (see program descriptions beginning on page 45) 9:30 AM Monday, March 22 through 12:00 NOON Thursday, March 25.
- ToxExpo™ Exhibit Hall, 9:30 AM Monday, March 22 through 4:30 PM Wednesday, March 24.

Participants are also encouraged to register for the Continuing Education Courses. These are available during three time intervals on Sunday, March 21: 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—Charles Street Lobby

Saturday	4:00 PM–7:00 PM
Sunday	7:00 AM–8:00 PM
Monday	7:00 AM–5:00 PM
Tuesday	8:00 AM–4:00 PM
Wednesday	8:00 AM–4:00 PM
Thursday	8:00 AM–11:30 AM

Registration Materials

When you arrive at the Baltimore Convention Center, please go to the registration area to pick up your registration materials (you do not need to stand in line). Your 2004 Annual Meeting registration badge must be presented to obtain the registration materials (i.e., 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 printed *Program* and *The Toxicologist* on CD ROM (with *Itinerary Planner)* prior to the meeting, as will U.S. and Canadian non-members who pre-register by January 25, 2004. There will not be a printed version of *The Toxicologist*.
2. Non-members in the U.S. who register after January 25 will receive the *Program* and *The Toxicologist* on CD ROM (with *Itinerary Planner)* at the registration area on-site. There will not be a printed version of *The Toxicologist*.
3. The Annual Meeting *Itinerary Planner* will be available on the SOT Web site January-March.
4. There will be computer kiosks set up in the Exhibit Hall to search *The Toxicologist* on CD ROM at the Annual Meeting.

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

General Information *(Continued)*

Airport Transportation

Baltimore is serviced by three major airports: Baltimore-Washington International Airport (BWI) in Maryland, and Washington Dulles International Airport and Ronald Reagan Washington National Airport in Northern Virginia.

BWI is located 10 miles south of the city and is the primary airport for travelers to Baltimore. Nineteen carriers offer over 670 flights in and out of the airport daily. Airport transfers to Baltimore or Washington, DC are available *via* van, bus, taxi, Light Rail, Amtrak train, or limousine service.

Washington Dulles International Airport is 61 miles from Baltimore and Ronald Reagan Washington National Airport is 42 miles from Baltimore.

SOT has established discounted rates through Southwest 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.

SouthWest Airlines
(800) 433-5368
Reference # A0353

Savings of 10% off the lowest fare up to 7 days prior to the meeting.

United Airlines
(800) 521-4041
Reference # 524JC

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.

Air Reservations through NAVIGANT INTERNATIONAL

NAVIGANT INTERNATIONAL is the official travel management firm for SOT's 43rd 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 (available 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 at niki.markun@ne.navigant.com.

To obtain the maximum discounted fares, call NAVIGANT INTERNATIONAL 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.

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) 276-2030/2040 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 Baltimore
- 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. Or, call the airline directly using the toll-free numbers listed above. Provide the reservationists with the reference number listed to receive the discounted airfare.

Ground Transportation

Train

Trains arrive and depart from Penn Station, located at 1500 N. Charles Street in downtown Baltimore. Penn Station offers enclosed waiting areas, paid short-term and long-term parking, a restaurant, snack bar, taxi and transit service.

Amtrak trains run 24 hours a day, seven days a week, connecting Baltimore to cities along the Northeast Corridor. Amtrak also runs to BWI. For fares and schedules, call (800) 872-7245. The Penn Station, services the Baltimore area and a taxi fare from the station to downtown is approximately $5.

General Information *(Continued)*

Bus

The Mass Transit Administration (MTA) operates bus, Metro, Light Rail and MARC train services. The local bus system, which operates seven days a week, covers the downtown neighborhoods and parts of Baltimore's suburbs.

Metro

The Metro system operates 7 days a week and runs from Owings Mills in Baltimore County to John's Hopkins Hospital, located downtown.

Light Rail

The Light Rail system also operates seven days a week and runs from Hunt Valley in Baltimore County to the Cromwell Station in Anne Arundel County and also runs from Penn Station to BWI. MARC commuter trains operate weekdays from Baltimore to Washington, DC and depart from Penn Station. For fares and schedules, call (888) 218-2267 or (410) 539-5000.

Shuttle

The newest form of public transportation downtown is the Downtown Area Shuttle (DASH). Shuttle service is provided seven days a week and is a quick and convenient way to get to and from any major downtown attraction or business site. For fares and schedules, call (410)-244-1030.

Taxi

Baltimore's Penn Station is but a 7–minute taxi cab ride away, welcoming incoming train service from all points north and south into the City of Baltimore. When traveling from BWI Airport, the BWI taxi stand is located just outside of the baggage claim area of the Lower Level of the BWI Airport Terminal. Please note that this service is available from BWI only. An estimated rate to Baltimore Inner Harbor is between $20 and $25.

Car Rental

Avis Rent A Car System is the official car rental company for the 43rd Annual Meeting. SOT discounted rates, including unlimited mileage begin at $43.99 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 AVIS on-line. You must provide the Avis Worldwide Discount (AWD) number T534999 in order to receive the SOT discounted rate.

Water Transportation

An enjoyable way to travel around Baltimore's Inner Harbor as well as Little Italy, Fell's Point, Canton and Fort McHenry is by water shuttle. This method of transportation is a perfect way to cruise the city.

Harbor Boating and the Water Taxi
(800) 658-8947 or (410) 563-3901

Seaport Taxi
(410) 675-2900

Airport Shuttle Transportation

The BWI SuperShuttle will transport you from BWI Airport to Baltimore's Inner Harbor Hotel District for approximately $11 one way. Upon arrival head to the lower level and follow signs to the SuperShuttle desk located between baggage claims 6 and 7.

The ticket counter is open between the hours of 6:00 AM and 2:00 AM. During other times please call (888) 826-2700 to arrange service. Between 9:00 AM and 2:00 AM, go to lower level and follow signs to the Ground Transportation desk located between carousels 6 and 7.

Parking

Although the Baltimore Convention Center is unable to provide public parking to attendees, there are several options in the form of public lots and hotel parking garages located in the immediate area. Public parking can range from $6–$16 per day with the average rate being $9. For additional information on available parking visit **www.baltimore.org** or **www.godowntownbaltimore.com/parking.html.**

You can also download a parking map, courtesy of Downtown Partnership in Adobe format.

Hotel Accommodations and Reservations

The Baltimore area offers visitors a wide variety of hotels from well known chains to unique boutique accommodations. There are a total of 12 hotels in Downtown Baltimore where SOT has made arrangements for you to receive special convention rates during the SOT 2004 Annual Meeting. SOT has designated two properties as the Headquarters hotel — The Renaissance Harborplace and the Hyatt Regency. Hotel

General Information *(Continued)*

room rates are commissionable, with all commissions paid directly to SOT for support of long-range planning initiatives. A $3 rebate per room will be used to cover the costs of the Baltimore Convention Center. To learn more about the city of Baltimore visit **www.baltimore.org**. *(Note: Although not stated, triple and quad. occupancy can cost around $20 extra per night.)*

Housing reservation deadline: February 16, 2004

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

On-Line:
www.toxicolgy.org

Telephone:
Toll-Free (USA): (800) 676-5026
International: (702) 798-6380

Fax:
USA: (800) 667-6584
International: (702) 795-8767

Mail:
SOT/BACVA Housing Bureau
102 Light Street
12th Floor
Baltimore, MD 21201

Accessibility for Persons with Disabilities

The Baltimore 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. If you require more information about disabled access, please call SOT Headquarters and ask for Lisa Cebulash: (703) 438-3115 or e-mail: lisa@toxicology.org.

Guest Hospitality Center and Program

The SOT Guest Hospitality Center provides guest participants (non-scientists) with a place to meet and socialize with other guests. 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 Baltimore 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.

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 contact Lisa Cebulash, Meetings Manager. 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 8:30 AM–11:30 AM
  Morning SOT Scientific Sessions
- Monday – Thursday 1:30 PM–4:30 PM
  Afternoon SOT Scientific Sessions
- Tuesday 4:30 PM–6:00 PM
  SOT Annual Business 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 below for hotel listings 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

Baltimore Convention Center, Charles Street Lobby

The SOT Message Center/Lodging Information Desk will be located in the SOT registration area of the Baltimore Convention Center and open during registration hours, Saturday through Thursday. Please inform your office and family of the Message Center/Lodging Information Desk number: (410) 649-6314. (The Message Center/Lodging Information Desk will not accept facsimiles.)

General Information *(Continued)*

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 Baltimore Convention Center, proceed to the nearest phone, dial 7055, 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. First Aid Offices are located in the back section of Exhibit Hall D.

Should the fire alarm sound in the Baltimore Convention Center, 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 Baltimore Convention Center. 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.

SOT Headquarters Office

Baltimore Convention Center, 305

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 Baltimore Convention Center

A Business Center is conveniently located in the Baltimore Convention Center.

- 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 Mark Albany at:
Tel: (410) 649-7194; Fax: (410) 649-7196;
E-mail: malbany@abcimaging.com
(On-line ordering is not available.)

Media Representative Registration/Media Workspace (SOT HQ Office)

Baltimore Convention Center, 305

Sunday–Thursday, March 21–25 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. 1454, or e-mail: lilly@toxicology.org.

General Information *(Continued)*

Sponsorship Opportunities

SOT appreciates the generous contributions of the 2004 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, Silver, and Contributor sponsors are listed on the inside back cover.

Placement Services

Located at the Baltimore Convention Center

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 *(Registration Only)* .....10:00 AM–3:30 PM
Monday *(All Services)*.....7:30 AM–7:00 PM
Tuesday–Wednesday *(All Services)* .....7:30 AM–5:30 PM
Thursday *(Message Center Only)* .....7:30 AM–12:00 NOON

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. 1431, or e-mail: nichelle@toxicology.org.

Speaker Ready Room

Baltimore Convention Center, 311

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

Meeting Courtesy Policy

The use of photographic equipment is prohibited in all scientific sessions. Please contact Show Management, Libby Jones, for permission to take pictures in the Exhibit Hall. In addition, please turn off sound on all cellular phones while attending scientific sessions. Note that the entire Baltimore Convention Center is a smoke-free environment.

SOT Memorabilia

Shirts, portfolios and other items customized for SOT are available for ordering on-line for pick-up at the Annual Meeting. Visit the SOT Web site's 2004 Annual Meeting Section (**www.toxicology.org**) for full details.

2004 Award Winners

The Society of Toxicology presented the following awards for the year 2004:

Achievement

David Dorman

The Awards Committee of the Society of Toxicology is honored to have selected Dr. David Dorman as the recipient of the 2004 Achievement Award for significant contributions to the field of toxicology.

Dr. Dorman received his undergraduate degree in Chemistry from the University of San Diego. He received a DVM from Colorado State University and he completed a residency in Clinical Veterinary Toxicology and a Ph.D. in Toxicology (1990) at the University of Illinois at Urbana-Champaign. He was a postdoctoral fellow at CIIT and then converted to a staff scientist at the Institute in 1992. Dr. Dorman is a Diplomat, by examination, of both the American Board of Veterinary Toxicology and the American Board of Toxicology. He is currently Director of the Biological Sciences Division at CIIT Centers for Health Research.

Dr. Dorman is nationally recognized for his research on the nasal toxicity and pharmacokinetics of inhaled chemicals. Early in his career, Dr. Dorman conducted studies to evaluate the pharmacokinetics of inhaled methanol in normal and folate-deficient monkeys. His research also demonstrated that the neuroteratogenic effects of methanol in rodents are mediated through methanol and not formate, the metabolite responsible for methanol-induced acidosis and blindness in humans. Dr. Dorman's laboratory has also been characterizing the pathogenesis of hydrogen sulfide-induced olfactory neuronal loss in rodents. These studies have been used in the risk assessment for these chemicals. More recently, Dr. Dorman has been leading a multi-year effort to evaluate the pharmacokinetics and neurotoxicity of manganese. His research has focused on determining exposure conditions that lead to increased concentrations of the metal within the central nervous system. His laboratory has also developed a novel nasal occlusion model for examining the direct transport of inhaled compounds to the brain *via* the olfactory.

Dr. Dorman has been active in a number of professional societies making valuable contributions to both veterinary and toxicological societies through chairing committees and holding society offices. He served as President of the Comparative and Veterinary Specialty Section of SOT and co-chaired a SOT continuing education course that examined the use of animal in inhalation toxicology and a symposium examining the olfactory transport of inhaled metals. Dr. Dorman is currently President of the North Carolina Chapter of the SOT. Dr. Dorman has also been quite active in teaching. He received the Teacher of the Year Award (1992-1993) at the North Carolina State University College of Veterinary Medicine despite the fact that he served as an adjunct faculty member. He holds active adjunct faculty appointments with North Carolina State University, University of North Carolina-Chapel Hill and Duke University.

Dr. Dorman has made, and continues to make seminal contributions to the field of toxicology through his research, teaching, and service.

Arnold J. Lehman

Melvin E. Andersen

Dr. Melvin E. Andersen's career contributions reflect well the spirit of the Arnold J. Lehman Award. He is widely recognized for contributions in strengthening the scientific basis of chemical risk assessment. Over the past 25 years, he has pioneered use of physiologically based pharmacokinetic (PBPK) models in toxicology research and as tools to enhance regulatory decision making. His approaches have contributed to risk assessments for many individual chemicals. In addition, he has been a consistent advocate and role model for using sound scientific principles as the basis for improving dose-response assessments.

Dr. Andersen has published over 200 papers on PBPK modeling and its application to chemical risk assessment. The breadth of his career contribution is evident through involvement with industry, government, consulting, and academia in his 30 year career in toxicology. Dr. Andersen's influence in risk assessment, however, is best reflected by his activities as a teacher-mentor in expanding the use of PBPK dosimetry models in toxicology research and in chemical risk assessment.

2004 Award Winners
Continued

Board of Publications Best Paper Award

Toxicological Sciences

Inhaled Environmental Combustion Particles Cause Myocardial Injury in the Wistar Kyoto Rat. Urmila Kodavanti, Carolyn Moyer, Allen Ledbetter, Mette Schladweiler, Daniel Costa, Russ Hauser, David Christiani and Abraham Nyska (*ToxSci* 71, 237-245, 2003).

The Board of Publications has selected the paper entitled *Inhaled Environmental Combustion Particles Cause Myocardial Injury in the Wistar Kyoto Rat* as the best paper published in *Toxicological Sciences* during the past year. This paper represents comprehensive work that demonstrated cardiac effects due to particulate matter (PM) in rats under experimental conditions relevant to human exposure. The authors, representing a team of scientists with expertise in inhalation toxicology, cardiac pathology and occupational health, worked collaboratively in the characterization of the composition of the particles and identification of zinc as a potentially causative agent that laid the foundation for the hypothesis that might link exposure to PM containing bioavailable zinc to myocardial injury. The paper provides the first clear evidence of the effect of PM on the heart, and provides supportive evidence for epidemiological associations between exposure to ambient PM and cardiovascular morbidity. The paper has also laid the foundation for further mechanistic work, and a letter was submitted to the journal speculating on additional pathways of research to pursue the etiology of the myocardial injury.

The paper is an outstanding example of an inter-disciplinary, hypothesis-driven approach to address an important human health concern, and it represents how integration of innovative basic and applied science can help to enhance human and environmental health.

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

The Contributions to Public Awareness of the Importance of Animals in Toxicology Research Award is presented to two organizations in 2004: North Carolina Association for Biomedical Research (NCABR) and Americans for Medical Progress (AMP).

NC Association for Biomedical Research (NCABR)

Karen S. Hoffman, NCABR President

The NCABR works to promote public understanding of the importance of biomedical research, particularly the role that animals play in the research process. The NCABR was founded in 1989 as a positive counter to the animal rights movement that was gaining momentum regionally and nationally. The NCABR has developed a K–12 teacher workshop program entitled *Rx for Science Literacy: The What, Where, How and Why of Health Science Research* that instructs educators in the benefits of biomedical research and regulations pertaining to the care and use of laboratory animals. Since the program began in 1994, more than 2,000 teachers have participated in this workshop program with 270 of these returning for a second time to attend programs on either toxicology or genetics. The impact of this program is enormous. Teachers have come from 88 of the state's 100 counties and represent a wide array of backgrounds. By the end of the current school year (2003-2004) a total of 24 toxicology workshops for over 400 middle and high school teachers will have been held. When one considers that each North Carolina middle and high school teacher interacts with 100 or more students each year, this program has the potential of indirectly reaching thousands of impressionable students that are forming opinions about animal use and toxicology.

In addition to the teacher workshops, the NCABR has produced high quality educational publications and information resources for the general public. These materials have also highlighted the use of animals in toxicology research and training and has contributed substantially to the public understanding in this highly political arena. The NCABR has also hosted or co-sponsored symposia and exhibits at state and national conferences and has held public forums to address controversial issues in the biosciences, including symposia for

journalists that have proven extremely useful in advancing public understanding towards the use of animals in biomedical research.

Americans for Medical Progress (AMP)

Jacqueline Calnan, AMP President

Americans for Medical Progress (AMP) is a non-profit organization whose mission is to protect society's investment in biomedical research. To that end, AMP promotes public understanding of and support for the appropriate role of animals in medical research so that scientists are able to continue their quest for cures and improved methods of treatment for illness, injury and disease. AMP achieves this goal *via* the following methods:

AMP is involved in timely dissemination of information to the news media, the research community and others concerning animal-based research, activist opposition to such research and developments concerning the use of and replacement of animals in research.

AMP promotes fair and accurate media coverage of the use of animals in biomedical research.

AMP continues to bolster public understanding and support of scientists' biomedical research with animals.

AMP provides services to individuals and organizations that help manage crisis inflicted by animal rights groups.

AMP plays a partnership role with numerous other institutions and brings together research advocates, institutions and corporations. One good example is, in 2001 AMP co-sponsored a national forum on cancer research with American Association for the Advancement of Science.

In short, there are extensive contributions AMP has provided to the field of toxicology

Distinguished Lifetime Toxicology Scholar Award

Gerald N. Wogan

Dr. Gerald N. Wogan has been selected to receive the 2004 Distinguished Lifetime Toxicology Scholar Award for his substantial and seminal scientific contributions to the discipline of toxicology. Dr. Wogan is Professor of Toxicology and Professor of Chemistry at the Massachusetts Institute of Technology. He received his Ph.D. degree in physiology from the University of Illinois, Urbana, and has spent most of his professional career at MIT where he has held a number of positions, including appointment as the Underwood-Prescott Professor and Director, Division of Toxicology, Whitaker College of Health Sciences and Technology and as the Director of the Environmental Health Sciences Center.

Dr. Wogan has led a concerted, long-term effort to elucidate the fundamentals of chemical carcinogenesis and is truly a pioneer in the field of environmental toxicology. Dr. Wogan's research interests have long been focused on understanding the chemistry and toxicology of aflatoxins, which are food contaminants that affect the health and well being of millions of people worldwide and are among the most potent liver carcinogens known. Dr. Wogan's combined synthetic and structure-activity studies of aflatoxins demonstrated the utility of chemical approaches to understand mechanisms of toxicity. In other work, he elucidated the structure of the major DNA-aflatoxin adducts, which provided the basis for investigations on the biological effects of aflatoxin exposure. Dr. Wogan's studies have had direct relevance to public health, and he has developed methods for risk identification and remediation through his participation in epidemiological studies in Thailand, China, and Africa.

Dr. Wogan has served as a pre- and postdoctoral mentor to over 100 trainees. He was elected to the National Academy of Sciences in 1977 and was one of the first researchers in the environmental health sciences to be elected to the NAS and to the IOM. He is also the recipient of the Founders' Award of the Chemistry Industry Institute of Toxicology along with a range of other honors and awards. Finally, Dr. Wogan is an individual of great scientific and personal integrity and has provided leadership at MIT and through his participation on many national and international committees. Dr. Wogan is highly deserving of the Distinguished Lifetime Toxicology Scholar Award.

2004 Award Winners
Continued

Education Award

A. Jay Gandolfi

Dr. Jay Gandolfi is a Professor of Anesthesiology, Pharmacology, and Toxicology in the Department of Pharmacology & Toxicology at the College of Pharmacy of the University of Arizona. He has also served in several administrative positions at the University. Throughout his academic career he has maintained a strong focus on education, research, and collaborative programs. For over 25 years, Dr. Gandolfi has taught toxicology to undergraduate, graduate, and professional students. Dr. Gandolfi has been an advisor to over 55 graduate students, served as a committee member for another 70 graduate students, and directed 25 research Fellows. His students have attained important positions in academia, industry, and government. Besides his research publications, Dr. Gandolfi has contributed to educational texts, reviews, and has co-edited the Comprehensive Toxicology series. Dr. Gandolfi has served on numerous SOT national and specialty section committees including being a member of the SOT Education Committee, as well as the Secretary of the Society. Dr. Gandolfi's letters of support clearly demonstrate that he is held in high regard by his former students and colleagues. One student comments that the first thing that comes to mind when describing Jay's role in education is … "extraordinary mentorship to graduate and medical students, postdoctoral fellows, and colleagues." It was also pointed out that "when faced with a delicate or thorny situation, I often ask myself, what would Jay do?" This years' recipient of the Education Award brings great credit to his University and the SOT.

2004

Merit

Robert Goyer

Dr. Robert Goyer is the recipient of the 2004 Merit Award. Dr. Goyer, a clinical pathologist, is an internationally recognized expert in health effects of toxic and nutritionally essential metals. He has a special interest in pediatric pathology, toxicology and research in health effects of toxic metals. After serving in the US Navy at the end of World War II, he graduated from the College of the Holy Cross and the St. Louis University School of Medicine, interned at St. Francis Hospital in Hartford Connecticut and completed a residency in pathology at the St. Louis University Hospitals. He held a National Foundation Research Fellowship and was a postdoctoral research fellow in the Medical Unit of University College Hospital Medical School, London, England. Professional appointments included Director of Laboratories at the Cardinal Glennon Hospital for Children in St. Louis, Professor of Pathology at the University of North Carolina at Chapel Hill, and Deputy Director of the National Institute of Environmental Health Sciences at Research Triangle Park, NC. He also served two terms as Professor and Chairman of the Department of Pathology at the University of Western Ontario, London, Canada. Dr. Goyer has published over 170 research papers, reviews and book chapters on toxicity of metals and interactions of toxic metals with nutritionally essential metals. He has co-edited 3 books on toxicology of metals. Dr. Goyer was one of the first to demonstrate the relationship of nutritional deficiencies of iron and calcium and the toxicity of lead. These studies were followed by mechanism of lead toxicity, especially in the kidney and the formation of lead-induced nuclear inclusion bodies. His vision and broad experience permitted him not only to uncover new facts but also to recognize their significance and synthesize them into a better understanding of metal actions. He has made important scientific discoveries in the field of nuclear ultrastructural alterations and the role of specific proteins in metal toxicology. He has served on numerous committees for US and International Health Agencies including the National Institutes of Health, the Environmental Protection Agency, the National Research Council of the National Academy of Sciences and The World Health Organization International Programme for Chemical Safety. Dr. Goyer was recognized at an International Conference on Metal-Binding Proteins in 1998 for his outstanding lifetime contribution to the understanding

of the actions and effects of metals on living organisms. In 2001 he was designated a lifetime National Associate of the National Academy of Science for extraordinary service to the National Academies as advisor to the nation in matters of science, engineering and health. Dr. Goyer is retired as Professor Emeritus of Pathology University of Western Ontario but continues to contribute to various national and international agencies on matters of health effects of metals. Dr. Goyer is highly respected as a teacher in toxicology and for his worldwide influence in the assessment of health risks from toxic metals.

Public Communications

Kenneth Olden

Dr. Kenneth Olden, Director of the National Institute of Environmental Health Sciences and the National Toxicology Program, is the 2004 recipient of the Public Communications Award. Dr. Olden is a distinguished research investigator, teacher, and outstanding articulator of the role sound science should play in guiding critical public and environmental health decisions. His exemplary leadership of the NIEHS has fostered a strong human disease outcome focus to guide environmental health research and has served as a model for effective integration and focusing of bench research on human and environmental health issues. Dr. Olden's seminal contributions to cell and cancer biology during his tenure at Howard University as Director of the Cancer Center and Professor and Chairman of the Department of Oncology, and his leadership of the NIEHS resulted in his election to membership in the Institute of Medicine of the National Academy of Sciences in 1994, the City of Medicine Award in 1996, and in 1997 the inaugural award for public policy leadership in protecting health and the environment by the National Association of Physicians for the Environment. Dr. Olden, a Fellow of the Academy of Toxicological Sciences, has championed a strong relationship between the NIEHS and the Society of Toxicology (SOT) through many initiatives that include teacher training workshops, underrepresented minority education programs, and NIEHS sponsored symposia at SOT annual meetings. His ability to reach all audiences and tireless commitment to bettering the health of the public-at-large make him one of our discipline's most effective advocates and communicators. The Society is pleased and honored to recognize Dr. Olden's outstanding contributions.

SOT/ACC Early Career Award in Neurotoxicology

Nikolay Filipov

The 2004 SOT/ACC Early Career in Neurotoxicology Award is presented to Nikolay Filipov. Dr. Filipov was selected for his proposed research entitled *Dopaminergic Toxicity of Chronic Exposure to the Herbicide Atrazine Interfaced with Short-Term Exposure to Maneb*.

Dr. Filopov plans to his research on susceptibility of the aged to environmental chemicals, an area very important for risk assessment. In addition, he proposes to work with two chemicals of environmental interest: atrazine and maneb. The endpoints he proposes to explore are also directly relevant to the human condition: indicators of dopaminergic degeneration.

This Early Career Award, sponsored by the Long–Range Research Initiative of the American Chemistry Council (ACC) and administered through the Society of Toxicology—is provided to encourage persons beginning their professional careers to conduct research on topics related to Neurotoxicology.

2004Award Winners
Continued

AstraZeneca Traveling Lectureship

Charlene A. McQueen

This year's recipient of the AstraZeneca Traveling Lectureship Award is Dr. Charlene McQueen. Dr. McQueen is a professor in the Department of Pharmacology and Toxicology, College of Pharmacy at the University of Arizona. Dr. McQueen's research focus is currently on fundamental studies of the role of genetic variation in susceptibility to aromatic amine and hydrazine toxicity. Along with numerous accomplishments, Dr. McQueen most recently received the 2003 SOT Public Communication Award. Dr. McQueen's Traveling Lectureship is designed to continue and expand her collaborations with European scientists and to initiate several new collaborative ventures. The scientists at the proposed sites are all highly renowned scientists working in fields that complement Dr. McQueen's current and future research efforts. These include Dr. Edith Sim at the University of Oxford, England, Dr. Ann Daly at the University of Newcastle in England, Dr. Jean-Marie Dupret at the Faculte de Medicine Pitie Salpetriere in Paris, Dr. Urs Meyer at the University of Basel, Switzerland, and Dr. Michael Eichelbaum at the Fischer Bosche Institute of Clinical Pharmacology in Stuttgart Germany. There is no doubt that Dr. McQueen will learn significant and exciting new research modalities and methods from the tour.

Colgate-Palmolive Traveling Lectureship in Alternative Methods in Toxicology

Snorri S. Thorgeirsson

This year's recipient of the Colgate-Palmolive Traveling Lectureship in Alternative Methods in Toxicology is Dr. Snorri S. Thorgeirsson, Laboratory Chief, of the Laboratory of Experimental Carcinogenesis, National Cancer Institute. For his Traveling Lectureship, Dr. Thorgeirsson will be hosted by Harihara M. Mehendale, and faculty in the Department of Toxicology, School of Pharmacy, College of Health Sciences, The University of Louisiana at Monroe, LA. His visit will be for 4 to 5 days and will encompass daily laboratory demonstrations as well as lectures. Dr. Thorgeirsson, a Member of the Society of Toxicology, is a widely recognized senior scientist with a wealth of experience in the use of *in vitro* alternative methods. He will demonstrate hepatocyte and stem cell culture including aspects of the role of stem cells in tissue repair. Of particular interest, are the future possibilities of using stem cells as predictive models and tools for use in alternative methods to replace the use or at least minimize the use of animals in research. Dr. Thorgeirsson's visit and lecture/ demonstration series will benefit the graduate students, post-doctoral fellows and members of the faculty engaged in research as well as in research training.

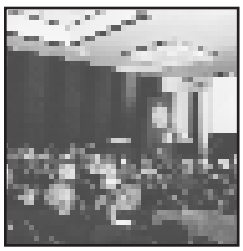
SOT/IUTOX AstraZeneca Travel Award

Reciepients: Xianping Ying (China), P. K. Gupta (India), Salmaan Inayat-Hussain (Malaysia), and Christina Bolaton (Phillipines).

2004

Social Events

Awards Presentation

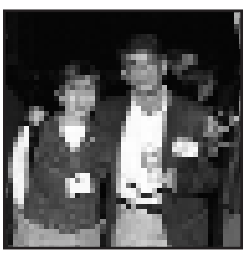


Sunday, March 21, 5:15 PM–6:30 PM
Baltimore Convention Center
Room 307

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

Welcoming Reception

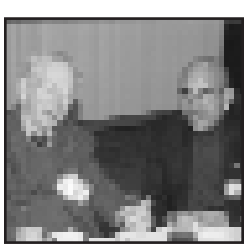
Sunday, March 21, 6:30 PM– 7:30 PM
Baltimore Convention Center
Ballroom (Level 400)



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.

25-Year (or More) Member Reception

Sunday, March 21, 7:00 PM–8:00 PM
Baltimore Convention Center
Room 301



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

Student/Post-Doctoral Fellow Mixer

Sunday, March 21, 7:30 PM–8:30 PM
Baltimore Convention Center
Room 324

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 are required.

Specialty Section Receptions

Monday, March 22 through Wednesday, March 24,
6:00 PM–7:30 PM
Baltimore Convention Center
(*See Events Calendar on pages 2–6 for more details.*)

Each of the 19 SOT Specialty Sections will hold a meeting/reception during the 2004 SOT Annual Meeting. All current and prospective SOT Specialty Section Members are encouraged to attend. Please check the *Program's* Event Calendar for a listing of times for all Specialty Section meetings and receptions.

Regional Chapter Receptions

Monday, March 22 through Wednesday, March 24,
7:00 PM–11:00 PM
(*See Events Calendar on pages 2–6 for more details.*)

Many of the SOT Regional Chapters meet during the SOT Annual Meeting. A list of Regional Chapter receptions is listed in the *Program's* Event Calendar.

Colgate-Palmolive Post-Doctoral Fellowship in In Vitro Toxicology

Recipient:
Kimberly Miller

Abstract: 358

Title: *Metabolic Mechanisms of Methoxychlor Toxicity in Mouse Antral Ovarian Follicles*

Graduate Student Fellowships

Novartis Corporation Graduate Fellowship

Recipient:
Sachin Devi

Abstract: 1502

Title: *Impaired Tissue Repair in Thioacetamide Treated Diabetic Rats: NF-KB as a Ringmaster*

Covance Corporation Graduate Fellowship

Recipient:
Winnie Jeng

Abstract: 2004

Title: *Free Radical Determinants of Amphetamine Neurodegeneration: Prostaglandin H Synthase (PHS)-Catalyzed Free Radical Formation and Reactive Oxygen Species (ROS)-Mediated Oxidative DNA Damage in Neuronal Degeneration and Functional Deficits*

Visit the SOT Web site for upcoming Award details and deadlines at...

www.toxicology.org

Scientific Sessions Index

Continuing Education Courses

All courses will be held on Sunday, March 21, 2004, at the Baltimore Convention Center. Please check the signage in the registration area (Charles Street Lobby) for room assignments. Note: Your course materials will be available in the room immediately prior to the course (they will not be available at the registration area). If you have your course ticket, go directly to the assigned course room. If you have not received your course ticket or have not registered, please go to the registration area on Saturday afternoon/evening or on Sunday morning. If you have misplaced your ticket, please go to the Continuing Education Booth, Level 300, at the Baltimore Convention Center on Sunday. The booth will be open from 6:30 AM–5:15 PM. Course descriptions are on pages 39–44.

7:00 AM–7:45 AM, Sunrise Mini-Course:

1. Herbals and Dietary Supplements in Athletic Performance Enhancement: Fact vs. Fiction

8:15 AM–12:00 NOON, Morning Courses:

2. Basic Neurotoxicology
3. Tools for Functional Genomics (Repeats as PM10)
4. Of Mice and Magnets: Metabonomics Technology in Safety Assessment
5. Functional Flow Cytometry: Applications in Toxicology (Repeats as PM12)
6. Understanding Lifespan Changes in Form and Function of the Female Reproductive System to Assess and Interpret Toxicity
7. The Safety Assessment of Proteins Developed through Biotechnology

1:15 PM–5:00 PM, Afternoon Courses:

8. Safety Pharmacology after ICH S7A & S7B
9. Skin Sensitization and Allergic Contact Dermatitis
10. Tools for Functional Genomics (Repeat of AM03)
11. Computational Biology and Dose and Response
12. Functional Flow Cytometry: Applications in Toxicology (Repeat of AM05)
13. Adrenal Gland: Mechanisms of Toxicity and Carcinogenesis

Symposia

Scientific Sessions Index (Continued)

Date/Time	Topic/Abstract #	Room	Page
Thursday 8:30 AM	Assessing the Biological and Environmental Risks of Nanoparticulates #1850–1855	Room 302	176
Thursday 8:30 AM	Molecular Profiling and Computer Modeling in Early Detection and Treatment of Cancer #1856–1860	Room 321	177

Innovations in Toxicological Sciences

Date/Time	Topic/Abstract #	Room	Page
Monday 9:30 AM	Lipomics, an Important Component of Metabolomics, and Possible Use in Toxicology Studies #48–52	Room 307	50

Workshops

Date/Time	Topic/Abstract #	Room	Page
Saturday 6:00 PM	Life as a Toxicologist. A Graduate Student and Post-Doc Primer to Careers in Toxicology #14–19	Room 316	45
Saturday 6:00 PM	Taking Command of Your Career #20–25	Room 314	46
Monday 9:30 AM	Assurance of Animal Welfare in Research: Coexistence of Toxicology Studies with Humane Endpoints #31–36	Room 318	48
Monday 9:30 AM	Electrophysiology Applied to Neurotoxicity Evaluation of Promising New Drugs #37–41	Room 314	49
Monday 1:30 PM	Current Status and Future Considerations for the Development of Skin Toxicology Alternative Methods #331–336	Room 314	69
Monday 1:30 PM	Diesel Emissions: New Horizons in the Chemistry, Health Effects and Regulations #337–341	Room 318	70
Monday 1:30 PM	Nutraceuticals as Double-Edged Swords: Weighing Benefits and Risks of Dietary Chemicals to Human Health #342–346	Room 307	70
Tuesday 8:30 AM	The Role of Methylation in Arsenic Toxicity and Risk: The Enigma Continues #623–627	Room 318	91
Tuesday 1:30 PM	Systemic Drug Allergy: Frequency, Challenges, Mechanisms and Need for Predictive Models #947–951	Room 314	114
Wednesday 8:30 AM	Agricultural Chemical Safety Assessment: A Multi-Sector, International Proposal #1232–1236	Room 309	134
Wednesday 8:30 AM	Histomorphology and Beyond: Correlating Non-Clinical Immune Modulation with Clinical Data #1237–1241	Room 316	134
Wednesday 8:30 AM	Zebrafish—A Model Organism for Assessing Developmental Toxicity in Drug Discovery/Environmental Risk Assessment #1242–1247	Room 321	135
Wednesday 1:30 PM	Biomarkers: Development, Evaluation, and Use #1544–1548	Room 309	156
Wednesday 1:30 PM	Hormone Replacement Therapy: A Challenge of Risks and Benefits #1549–1553	Room 307	156
Wednesday 1:30 PM	Strategies to Identify Bioactive Substances in Complex Air Pollutant Mixtures #1554–1559	Room 316	157
Thursday 8:30 AM	Novel Approaches to Engaging Toxicologists in K–12 Science Education and Outreach #1861–1865	Room 314	177
Thursday 8:30 AM	The National Children's Study: Progress Developing Methods Appropriate for Assessing Children's Exposure, Biomarkers, and Genetic Susceptibility #1866–1871	Room 318	178

Roundtables

Date/Time	Topic/Abstract #	Room	Page
Monday 9:30 AM	Low-Dose Extrapolation: Time for a Fresh Look at an Old Problem #42–47	Room 309	49
Monday 12:15 PM	Student Symposium on Effective Presentations #316–319	Room 318	68
Tuesday 8:30 AM	Contribution of Neurobehavioral Assessment of Offspring to Hazard Identification and Characterization #628–631	Room 314	92
Tuesday 1:30 PM	Science in the Legislative Process: A Congressional and Scientific View #952	Room 309	114
Thursday 8:30 AM	Developing the Use of Threshold Concept for Protein Allergens #1872–1877	Room 316	178

Scientific Sessions Index (Continued)

Platform Sessions

Date/Time	Topic/Abstract #	Room	Page
Monday 9:30 AM	Immunotoxicity #53–61	Room 315	50
Monday 9:30 AM	Mechanisms of Hepatotoxicity I #62–70	Room 326	51
Monday 9:30 AM	Pharmaceutical Safety Evaluation—Cancer and Biologicals #71–79	Room 316	52
Monday 9:30 AM	Respiratory Tract—PM and the Cardiovascular System #80–86	Room 317	52
Monday 9:30 AM	TCDD #87–95	Room 324	53
Monday 1:30 PM	Cytochrome P450: Expression and Function #347–355	Room 315	71
Monday 1:30 PM	Mechanisms of Ovarian and Uterine Toxicity #356–364	Room 316	71
Monday 1:30 PM	Safety Biomarkers: Application of "Omics" #365–373	Room 317	72
Tuesday 8:30 AM	BWF/SOT New Investigator-Reprograming Gene Expression in Response to Insult #632–637	Room 315	92
Tuesday 8:30 AM	Carcinogenesis Models and Mechanisms #638–646	Room 316	92
Tuesday 8:30 AM	Gene Expression: Liver #647–655	Room 317	93
Tuesday 8:30 AM	Hypersensitivity I #656–663	Room 324	94
Tuesday 8:30 AM	Mechanisms of Phase I and Phase II Biotransformation I #664–672	Room 326	94
Tuesday 1:30 PM	Ah Receptor #953–961	Room 315	115
Tuesday 1:30 PM	Analysis of Genetic Polymorphisms #962–970	Room 317	115
Tuesday 1:30 PM	Mechanisms of Oxidative Injury #971–980	Room 316	116
Wednesday 8:30 AM	Biomarkers of Exposure and Effects #1248–1256	Room 315	136
Wednesday 8:30 AM	Hypersensitivity II #1257–1264	Room 317	136
Wednesday 8:30 AM	Omics Technologies: Application in Toxicology #1265–1273	Room 326	137
Wednesday 8:30 AM	Respiratory Tract V—Tobacco Smoke and COPD #1274–1280	Room 324	137
Wednesday 1:30 PM	Fish Models #1560–1568	Room 315	157
Wednesday 1:30 PM	Gene Expression: Oxidant Stress #1569–1576	Room 317	158
Thursday 8:30 AM	Animal Alternative Models #1878–1886	Room 317	179
Thursday 8:30 AM	Chemical & Biological Warfare #1887–1894	Room 324	179
Thursday 8:30 AM	DNA Damage and Repair #1895–1903	Room 326	180

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	*	Disposition/Pharmacokinetics #96–127	Exhibit Hall	54
Monday 9:30 AM		Genotoxicity #128–158	Exhibit Hall	55
Monday 9:30 AM	*	Receptor I #159–176	Exhibit Hall	57
Monday 9:30 AM		Developmental Toxicity #177–203	Exhibit Hall	59
Monday 9:30 AM	*	Hypersensitivity/Allergy #204–237	Exhibit Hall	60
Monday 9:30 AM		*In Vitro*/Animal Alternative Models I #238–259	Exhibit Hall	62
Monday 9:30 AM	*	Metal Genotoxicity and Induction of Gene Expression #260–293	Exhibit Hall	63
Monday 9:30 AM		Neurotoxicity, General I #294–315	Exhibit Hall	66
Monday 1:30 PM	*	Metal Exposure and Metabolism #374–393	Exhibit Hall	73
Monday 1:30 PM		Neurotoxicity of Manganese #394–410	Exhibit Hall	74
Monday 1:30 PM	*	Neurotoxicity, General II #411–432	Exhibit Hall	75
Monday 1:30 PM		Kidney #433–456	Exhibit Hall	77
Monday 1:30 PM	*	Chemical-Induced Immunomodulation #457–486	Exhibit Hall	78
Monday 1:30 PM		Mechanisms of Hepatotoxicity II #487–515	Exhibit Hall	80
Monday 1:30 PM	*	Exposure/Epidemiology #516–532	Exhibit Hall	82

Scientific Sessions Index (Continued)

Scientific Sessions Index (Continued)

Notes

Notes:

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). Check the signage in the SOT registration area (Charles Street Lobby) for room assignments.

****The Primary Endorser***

Sunday Morning, March 21
7:00 AM to 7:45 AM

HERBALS AND DIETARY SUPPLEMENTS IN ATHLETIC PERFORMANCE ENHANCEMENT: FACT *VS.* FICTION

SUNRISE MINI-COURSE 1

Chairperson(s): *Alfred F. Fuciarelli, Battelle, Richland, WA.*

Herbal products and dietary supplements have been used for years in an attempt to enhance athletic performances. However, this usage has not always been based on scientific data. Recent tragic cases, such as those involving ephedra supplements, have highlighted the need for an unbiased assessment of available data and additional research into their actions and effects. This presentation will discuss the various products used for athletic performance enhancement such as ephedra, androstenedione and androgens, creatine, gamma hydroxybutyrate, dimethylglycine, and others. Their promoted uses, purported mechanism of action, adverse effects/toxicities, and available clinical data will be presented to provide a perspective of what is known and areas in need of additional research. Additionally, the current regulatory status will be discussed and what factors may impact upon changes in this status.

- **Herbals and Dietary Supplements in Athletic Performance Enhancement: Fact *vs.* Fiction,** Timothy S. Tracy, University of Minnesota, Minneapolis, MN.

Sunday Morning, March 21
8:15 AM to 12:00 PM

BASIC NEUROTOXICOLOGY

AM02 BASIC

Chairperson(s): *Evelyn C. Tiffany-Castiglioni, Texas A&M University, College Station, TX and William Slikker, Jr., National Center for Toxicological Research, Jefferson, AR.*

Endorsed by:
Mechanisms Specialty Section
Metals Specialty Section
Neurotoxicology Specialty Section*

Neurotoxicity may be defined as any adverse effect on the structure or function of the central and/or peripheral nervous system by a biological, chemical, or physical agent. Adverse effects can include both unwanted effects and any alteration from baseline that diminishes the ability of an organism to survive, reproduce or adapt to its environment. Neurotoxic effects may be permanent or reversible, and may result from direct or indirect actions on the nervous system. A multidisciplinary approach is necessary to assess neurotoxicity due to the complex and diverse functions of the nervous system. Many of the relevant effects can be measured by neurobiological, neurophysiological, neuropathological or behavioral techniques, as well as epidemiological approaches. After a general overview of neurotoxicity assessment from genes to human response, this basic course will present in greater depth the methods used to study populations, individual animals, cells, and genomes. Each speaker will review the basic concepts underlying the methodological approach presented. Selected neurotoxicants, including heavy metals, polyaromatic hydrocarbons, and drugs of abuse, will be used to illustrate principles. The first two lectures will address neurotoxic effects as studied by epidemiology in human populations and behavioral assessment in animal models, respectively. The next lecture will address the cellular responses of neurons, astrocytes, and oligodendrocytes to neurotoxicants. The course will be concluded with a description of a molecular approach to neurotoxicology including genomics. This course will be of interest to a broad range of scientists including drug developers, pharmacologists, neuroscientists, psychologists, regulators, and toxicologists.

- **Basic Neurotoxicology Overview: From Genes to Cognition,** William Slikker, Jr., National Center for Toxicological Research, Jefferson, AR.
- **Assessing Neurotoxicity of Methyl Mercury and PCBs in Humans: The Epidemiological Perspective,** Susan L. Schantz, University of Illinois Urbana, Urbana, IL.
- **Specific Behavioral Measures in Identifying Chemically-Induced Cognitive Dysfunction in Animal Models: Relevance to Humans,** Merle G. Paule, National Center for Toxicological Research, Jefferson, AR.
- **Cell-Specific Responses to Lead and Other Neurotoxicants,** Evelyn C. Tiffany-Castiglioni, Texas A&M University, College Station, TX.
- **Molecular Strategies for Neurotoxicity Assessment: Beyond the One Compound, One Mechanism Approach,** James P. O'Callaghan, CDC-NIOSH, Morgantown, WV.

Sunday Morning, March 21
8:15 AM to 12:00 PM

TOOLS FOR FUNCTIONAL GENOMICS (REPEATS AS PM10)

AM03 ADVANCED

Chairperson(s): *Hollie I. Swanson, University of Kentucky, Lexington, KY.*

Endorsed by:
Molecular Biology Specialty Section*

The goal of this course is to discuss cutting-edge tools and techniques that may be used in ascribing hierarchical, functional analyses of gene products following DNA microarray experiments. First, we will discuss the advantages and disadvantages of a variety of pharmacological and molecular tools (i.e., antagonists, dominant negative approaches, siRNA). We will also discuss the means by which the molecular tools may be introduced into the cell or animal model, including the use of retro- and adenoviruses. Our second presentation will use data obtained in the laboratory to demonstrate the approaches that are typically used for determining whether the observed changes in mRNA of the gene product of interest occurs at the transcriptional or post-transcriptional levels. The third presentation will focus on use of the chromatin immunoprecipitation (CHIP) assay to demonstrate whether candidate transcription factors are involved in the regulation of the gene product of interest. Finally, our last presentation will introduce a novel approach, chemical genetics, that may be used to either activate or inactivate target gene products in able to discern their functional role(s) either the toxic or disease-related events.

- **Overview,** Hollie I. Swanson, University of Kentucky, Lexington, KY.
- **Approaches to be Used to Discriminate Between Transcriptional and Post-Transcriptional Gene Regulation,** E. David Thompson, University of Kentucky, Lexington, KY.
- **Analysis of Gene Regulation Using the Chromatin Immunoprecipitation Assay,** Yanan Tian, Texas A&M University, College Station, TX.
- **Use of Chemical Genetics in Functional Genomics,** Kyung Bo Kim, University of Kentucky, Lexington, KY.

Sunday Morning, March 21
8:15 AM to 12:00 PM

OF MICE AND MAGNETS: METABONOMICS TECHNOLOGY IN SAFETY ASSESSMENT

AM04 BASIC

Chairperson(s): *Donald G. Robertson, Pfizer Global Research & Development, Ann Arbor, MI and Lois D. Lehman-McKeeman, Bristol Myers Squibb Company, Princeton, NJ.*

Endorsed by:
Molecular Biology Specialty Section*
Risk Assessment Specialty Section

Although metabonomics as a technology has been in the literature for over a decade, it is only in the past 3 to 4 years that the technology has gained widespread attention within the industrial sector. Metabonomics as a topic was introduced to the Society in a well-received sunrise mini-course in 2000. This was followed by a highly attended IAT symposium and poster session on metabonomics at the 2002 meeting. The technology has reached the level of maturity such that a full CE course is called for. The objectives of this basic level course will be to introduce the technology to SOT meeting attendees unfamiliar with it, emphasizing the strengths and weaknesses of the technology in a practical way. The presentations will be from a toxicologist's perspective – communicating essential principles, but will avoid NMR and statistical jargon. The course will be primarily from a pharmaceutical development point of view, but will be broad enough to provide useful information for anyone interested in the technology.

- **Metabonomics and the Evaluation of Drug Safety,** Donald G. Robertson, Pfizer Global Research & Development, Ann Arbor, MI.
- **Metabonomic Applications in Mechanistic and Predictive Toxicology,** Lois D. Lehman-McKeeman, Bristol Myers Squibb Company, Princeton, NJ.
- **Now That I Have a Metabonomics Data—What Does it Mean?,** John D. Baker, Pfizer, Inc., Ann Arbor, MI.
- **Regulatory Perspective on Incorporation of New Technologies into Safety Assessment,** Daniel A. Casciano, National Center for Toxicological Research, Jefferson, AR.

Sunday Morning, March 21
8:15 AM to 12:00 PM

FUNCTIONAL FLOW CYTOMETRY: APPLICATIONS IN TOXICOLOGY (REPEATS AS PM12)

AM05 ADVANCED

Chairperson(s): *Leigh Ann Burns Naas, Pfizer Global Research and Development, San Diego, CA and Nancy I. Kerkvliet, Oregon State University, Corvallis, OR.*

Endorsed by:
Immunotoxicology Specialty Section*

Flow cytometry provides a powerful tool for analyzing multiple characteristics of individual cells in a complex mixture of cell types without having to physically separate the cells. Yet, even though each cell is examined individually, the flow cytometer can process thousands of cells within a few seconds, allowing superior sampling of the population as compared to microscopic counting. The myriad of phenotypic and functional characteristics of cells that can be measured by flow cytometry continues to expand with the development of novel fluorescent probes to a variety of cellular components. The field of immunotoxicology has been greatly influenced by the use of flow cytometry with applications ranging from screening for toxic effects on immune cells to elucidating the mechanisms of toxic action on specific subpopulations of cells. However, other areas of toxicology are beginning to recognize the value of flow cytometry for mechanistic investigations as well. To address this growing interest, the intent of this course is to introduce the audience to novel applications of flow cytometry that have been used to assess tissue injury and mechanisms of toxicity at the whole animal, cellular, and biochemical levels. Although the context of many of the examples will emanate from immunotoxicology studies, each speaker will focus less on the immunology and more on the methods used in their studies that are broadly applicable to other areas of toxicology. Examples of methods to be covered include: apoptosis, oxidative stress, membrane integrity and fluidity, cell cycling using carboxyfluorescein (CFSE), and cell signaling.

- **Introduction to Flow Cytometry,** Carl D. Bortner, NIEHS, Research Triangle Park, NC.
- **Assessment of Macrophage-Induced Tissue Injury in Liver/Lung by Flow Cytometry,** Debra Laskin, Rutgers University, Piscataway, NJ.
- ***In Vivo* Assessment of T Cell Activation Using Flow Cytometry,** Nancy I. Kerkvliet, Oregon State University, Corvallis, OR.
- **Flow Cytometric Approaches to Understanding Mechanisms of Toxicant Action,** Scott W. Burchiel, University of New Mexico, Albuquerque, NM.

Sunday Morning, March 21
8:15 AM to 12:00 PM

UNDERSTANDING LIFESPAN CHANGES IN FORM AND FUNCTION OF THE FEMALE REPRODUCTIVE SYSTEM TO ASSESS AND INTERPRET TOXICITY

AM06 BASIC

Chairperson(s): *Barbara J. Davis, NIEHS, Research Triangle Park, NC and Kimberley A. Treinen, Schering Plough Research Institute, Lafayette, NJ.*

Endorsed by:
Reproductive and Developmental Toxicology Specialty Section*

This course reviews the basic morphology and endocrinology of the female reproductive system in rodents and primates as a basis for interpreting toxicity. Each of the 4 lectures will emphasize fundamental changes and vulnerabilities of the reproductive tract over the lifespan of the female. Both rodent and nonhuman primates will be discussed with respect to relevance to humans. The first lecture covers embryological development of the female reproductive system and will include key developmental and molecular events with an emphasis on timing of events in rodents and primates and potential periods of susceptibility to toxicity. The second lecture details the morphology and endocrinology of the female reproductive tract in rodents and will relate hormones and histology of the adult rodent reproductive tract from the onset of puberty to reproductive senescence and important sites of toxicity. The third lecture details the morphology and endocrinology of the female reproductive tract in nonhuman primates with emphasis on similarities and differences to rodents. The final lecture will combine the information of the first lectures and analyze issues of study design, endpoints to examine and interpretation of results in assessing female reproductive toxicity data.

- **Embryological Development of the Female Reproductive System,** Philip M. Iannaccone, Northwestern University Feinberg School of Medicine and Children's Memorial Institute for Education and Research, Chicago, IL.
- **Morphology and Endocrinology of the Female Reproductive Tract in Rodents,** Pamela E. Blackshear, Integrated Laboratory Systems, Inc., Research Triangle Park, NC.
- **Morphology and Endocrinology of the Female Reproductive Tract in Nonhuman Primates,** J. Mark Cline, Wake Forest University School of Medicine, Winston-Salem, NC.
- **Interpreting Female Reproductive Toxicity Data,** Patrick J. Wier, GlaxoSmithKline, King of Prussia, PA.

Sunday Morning, March 21
8:15 AM to 12:00 PM

THE SAFETY ASSESSMENT OF PROTEINS: APPLICATIONS TO AGRICULTURAL BIOTECHNOLOGY

AM07 BASIC

Chairperson(s): *Bruce G. Hammond, Monsanto Company, Saint Louis, MO.*

Endorsed by:
Food Safety Specialty Section*
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

Biotechnology has made it possible to introduce proteins into food crops to achieve desired biological effects. Introduced proteins can impart important agronomic properties such as tolerance to topically applied herbicides to control weeds or protection of food crops against insect pest damage. Enzymes can be introduced into food crops that enhance the existing production of essential nutrients, or introduce nutrients into food crops that have potential health benefits. Proteins are also produced by microorganisms via fermentation such as enzymes used in food processing or pharmaceuticals (i.e. somatotropins) used to enhance the efficiency of milk production in dairy cows. A group of experts in the field of protein safety assessment will share their experience and learnings. The subject of protein allergy assessment will not be covered in this course as it has been thoroughly addressed in other courses and workshops held at SOT meetings. Toxicologists who attend this course will have a better understanding of the safety assessment strategies that have been developed for proteins in relationship to food safety. These strategies will differ in some respect from traditional safety testing approaches used for chemical xenobiotics that come in contact with food.

- **ILSI Expert Scientific Paper on Protein Safety Assessment,** Barbara Petersen, Exponent, Inc., Washington, DC.
- **Safety Assessment of Protein Plant-Incorporated Protectants,** John Kough, USEPA, Washington, DC.
- **Evaluating the Safety of Enzymes Used in Food Processing,** Michael Pariza, University of Wisconsin-Madison, Madison, WI.
- **The Safety Assessment of Proteins Introduced into Food/Feed Crops,** James D. Astwood, Monsanto Company, St Louis, MO.

Sunday Afternoon, March 21
1:15 PM to 5:00 PM

SAFETY PHARMACOLOGY AFTER ICH S7A & S7B

PM08 BASIC

Chairperson(s): *Lewis B. Kinter, AstraZeneca Pharmaceuticals, Wilmington, DE and Alan Bass, Schering Plough Research Institute, Kenilworth, NJ.*

Endorsed by:
Comparative and Veterinary Specialty Section*
Regulatory and Safety Evaluation Specialty Section

Safety Pharmacology evaluations for human pharmaceuticals are dramatically redefined following implementation of International Conference on Harmonization Guidances S7A (2000), and finalization of S7B (anticipate in 2003). Those guidelines mandate evaluations for new drugs for unintended effects on cardiovascular, respiratory, and central nervous system functions (S7A core battery), renal and electrophysiological aspects of the cardiac repolarization (S7B) in support of phase I (first in man) programs. This introductory course will familiarize participants with rationale and tactics for modern safety pharmacology evaluations for expeditious development of human pharmaceuticals. An international faculty will present strategies for successful implementation of the core battery evaluations, including critical experimental endpoint, criteria for species selection, study design alternatives, dose selection, data analysis and interpretation, Animal Welfare and Good Laboratory Practice (GLP) issues. The Course will be of broad interest to both academic and industrial SOT meeting attendees engaged in pharmaceutical safety assessment and risk management.

- **Safety Pharmacology after ICH S7A & S7B,** Alan Bass, Schering Plough Research Institute, Kenilworth, NJ.
- **Safety Pharmacology Core Evaluations (1): Cardiovascular/Cardiac Assessment,** Peter Siegl, Merck Research Labs, West Point, PA.
- **Safety Pharmacology Core Evaluations (2): Pulmonary/Respiratory Assessment,** Dennis J. Murphy, GlaxoSmithKline, King of Prussia, PA.
- **Safety Pharmacology Core Evaluations (3): Central Nervous System/Neuromuscular Assessment,** Silvana Lindgren, AstraZeneca Pharmaceuticals, Sodertalje, Sweden.
- **Safety Pharmacology Evaluation: The Renal System,** Lewis B. Kinter, AstraZeneca Pharmaceuticals, Wilmington, DE.

Sunday Afternoon, March 21
1:15 PM to 5:00 PM

SKIN SENSITIZATION AND ALLERGIC CONTACT DERMATITIS

PM09 BASIC

Chairperson(s): *G. Frank Gerberick, Procter & Gamble Company, Cincinnati, OH and Ian Kimber, Syngenta, Macclesfield, Cheshire, United Kingdom.*

Endorsed by:
Dermal Toxicology Specialty Section*
Immunotoxicology Specialty Section

Skin sensitization resulting in allergic contact dermatitis is a very common occupational and environmental health problem and is without doubt the most common manifestation of an immunotoxic response. As a consequence there is a need to identify and characterize skin sensitization hazards and for accurate risk assessment paradigms. The last decade has witnessed very significant advances in our understanding of the cellular and molecular mechanisms that are associated with, and required for, the induction of skin sensitization and the elicitation of allergic contact dermatitis. In parallel there has been a growing appreciation of the characteristics that confer on chemicals the ability to cause allergic sensitization and the nature of apparent inter-individual differences in susceptibility. Such advances have translated into new opportunities for hazard identification, for assessment of relative skin sensitizing potency and for the development of new approaches to risk assessment. This basic continuing education course will describe for a general audience the immunobiology and chemistry of skin sensitization and clinical aspects of allergic contact dermatitis. This will be followed by a description of the methods available for hazard identification and for the determination of potency, approaches to risk assessment and the current global regulatory environment. This course will be of interest to immunotoxicologists, dermatotoxicologists, those involved in the safety assessment of chemicals and regulatory toxicologists. The course is sponsored jointly by the Dermal Toxicity and Immunotoxicology.

- **The Basic Biology and Immunology of Skin Sensitization and Allergic Contact Dermatitis,** Ian Kimber, Syngenta, Macclesfield, Cheshire, United Kingdom.
- **Skin Sensitization: Predictive Tests and Hazard Identification,** David A. Basketter, Unilever Research US Inc., Sharnbrook, Bedfordshire, United Kingdom.
- **Relative Potency, Exposure and Risk Assessment,** G. Frank Gerberick, Procter & Gamble Company, Cincinnati, OH.
- **The Global Regulatory Environment,** Denise M. Sailstad, USEPA, Research Triangle Park, NC.

Sunday Afternoon, March 21
1:15 PM to 5:00 PM

TOOLS FOR FUNCTIONAL GENOMICS (AM03 REPEATED)

PM10 ADVANCED

Chairperson(s): *Hollie I. Swanson, University of Kentucky, Lexington, KY.*

Endorsed by:
Molecular Biology Specialty Section*

The goal of this course is to discuss cutting-edge tools and techniques that may be used in ascribing hierarchical, functional analyses of gene products following DNA microarray experiments. First, we will discuss the advantages and disadvantages of a variety of pharmacological and molecular tools (i.e., antagonists, dominant negative approaches, siRNA). We will also discuss the means by which the molecular tools may be introduced into the cell or animal model, including the use of retro- and adenoviruses. Our second presentation will use data obtained in the laboratory to demonstrate the approaches that are typically used for determining whether the observed changes in mRNA of the gene product of interest occurs at the transcriptional or post-transcriptional levels. The third presentation will focus on use of the chromatin immunoprecipitation (CHIP) assay to demonstrate whether candidate transcription factors are involved in the regulation of the gene product of interest. Finally, our last presentation will introduce a novel approach, chemical genetics, that may be used to either activate or inactivate target gene products in able to discern their functional role(s) either the toxic or disease-related events.

- **Overview,** Hollie I. Swanson, University of Kentucky, Lexington, KY.
- **Approaches to be Used to Discriminate Between Transcriptional and Post-Transcriptional Gene Regulation,** E. David Thompson, University of Kentucky, Lexington, KY.
- **Analysis of Gene Regulation Using the Chromatin Immunoprecipitation Assay**, Yanan Tian, Texas A&M University, College Station, TX.
- **Use of Chemical Genetics in Functional Genomics,** Kyung Bo Kim, University of Kentucky, Lexington, KY.

Sunday Afternoon, March 21
1:15 PM to 5:00 PM

COMPUTATIONAL BIOLOGY, DOSE & RESPONSE

PM11 ADVANCED

Chairperson(s): *Melvin E. Andersen, CIIT Centers for Health Research, Research Triangle Park, NC and Jeffrey W. Fisher, University of Georgia, Athens, GA.*

Endorsed by:
Biological Modeling Specialty Section*

The past 40 years witnessed increasing emphasis on development of computational simulation models, including physiologically based pharmacokinetic (PBPK) and, on a more limited scale, physiologically based pharmacodynamic (PBPD) models for biological responses. The fidelity of model parameters with actual biological processes has steadily increased in concert with the explosion of basic biological information. Today computational biology and computational toxicology are undergoing rapid evolution to keep pace with the enormous expansion of our biological knowledge base. A variety of new computational tools and new software are available for computation and the breadth of problems accessible to computational analysis in biology has also increased. The insights derived from computational approaches in biology will influence research strategies to develop biologically based dose-response (BBDR) models in toxicology/pharmacology and undoubtedly form the basis of the next generation of mechanistic approaches for risk and safety assessments. This session consists of 4 talks covering (1) recent progress in PBPK modeling of xenobiotic and endogenous compounds, (2) development of new computational tools to examine cellular signaling networks, (3) modeling approaches for examining

relationships between cellular circuitry and cellular function and (4) the possibility that cellular circuits may be regarded as targets for toxic responses. The session is designed to capture the status, current directions and future opportunities of computational biology that are likely to influence toxicological research strategies and risk and safety assessment.

- **Physiologically Based Pharmacokinetic Modeling,** Jeffrey W. Fisher, University of Georgia, Athens, GA.
- **The Computational Biology Tool Box—2004,** Mark Craven, University of Wisconsin, Madison, WI.
- **Molecular Circuits and Biological Function,** David McMillen, University of Toronto at Mississauga, Mississauga, Canada.
- **Biological Switches and Molecular Circuits as Molecular Targets for Toxic Response,** Melvin E. Andersen, CIIT Centers for Health Research, Research Triangle Park, NC.

Sunday Afternoon, March 21
1:15 PM to 5:00 PM

FUNCTIONAL FLOW CYTOMETRY: APPLICATIONS IN TOXICOLOGY (AM05 REPEATED)

PM12 ADVANCED

Chairperson(s): *Leigh Ann Burns Naas, Pfizer Global Research and Development, San Diego, CA and Nancy I. Kerkvliet, Oregon State University, Corvallis, OR.*

Endorsed by:
Immunotoxicology Specialty Section*

Flow cytometry provides a powerful tool for analyzing multiple characteristics of individual cells in a complex mixture of cell types without having to physically separate the cells. Yet, even though each cell is examined individually, the flow cytometer can process thousands of cells within a few seconds, allowing superior sampling of the population as compared to microscopic counting. The myriad of phenotypic and functional characteristics of cells that can be measured by flow cytometry continues to expand with the development of novel fluorescent probes to a variety of cellular components. The field of immunotoxicology has been greatly influenced by the use of flow cytometry with applications ranging from screening for toxic effects on immune cells to elucidating the mechanisms of toxic action on specific subpopulations of cells. However, other areas of toxicology are beginning to recognize the value of flow cytometry for mechanistic investigations as well. To address this growing interest, the intent of this course is to introduce the audience to novel applications of flow cytometry that have been used to assess tissue injury and mechanisms of toxicity at the whole animal, cellular, and biochemical levels. Although the context of many of the examples will emanate from immunotoxicology studies, each speaker will focus less on the immunology and more on the methods used in their studies that are broadly applicable to other areas of toxicology. Examples of methods to be covered include: apoptosis, oxidative stress, membrane integrity and fluidity, cell cycling using carboxyfluorescein (CFSE), and cell signaling.

- **Introduction to Flow Cytometry,** Carl D. Bortner, NIEHS, Research Triangle Park, NC.
- **Assessment of Macrophage-Induced Tissue Injury in Liver/Lung by Flow Cytometry,** Debra Laskin, Rutgers University, Piscataway, NJ.
- ***In Vivo* Assessment of T Cell Activation Using Flow Cytometry,** Nancy I. Kerkvliet, Oregon State University, Corvallis, OR.
- **Flow Cytometric Approaches to Understanding Mechanisms of Toxicant Action,** Scott W. Burchiel, University of New Mexico, Albuquerque, NM.

Sunday Afternoon, March 21
1:15 PM to 5:00 PM

ADRENAL GLAND: MECHANISMS OF TOXICITY AND CARCINOGENESIS

PM13 BASIC

Chairperson(s): *Jon C. Cook, Pfizer Global Research & Development, Groton, CT.*

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

The adrenal gland is a common target organ in safety assessment studies. Many times adrenal changes are attributed to "stress," because this organ produces glucocorticoid hormones and catecholamines. However, that simplistic interpretation ignores the complexity of this organ, of which a fuller understanding will facilitate the ability of toxicologists to investigate potential alternative mechanisms of action. For instance, the adrenal gland has a cortex with three defined zones (zona glomerulosa which produces mineralcorticoids; zona fasciculate which produces glucocorticoids; and, zona reticularis which produces sex steroids) and a medulla which contains chromaffin cells which synthesize catecholamines (predominantly epinephrine and norepinephrine). The goal of this continuing education course is to illustrate the various physiological roles of the adrenal gland, to provide several examples of toxicity including carcinogenicity, and to illustrate the tools necessary to investigate mechanisms of adrenal toxicity. The first speaker will review the physiology of the adrenal gland, focusing on the hypothalamic-pituitary-adrenal axis that regulates adrenal cortical function and the sympathetic control of adrenal medullary function. In addition, the comparative anatomy of the adrenal gland will be discussed, focusing on the common species used in toxicology studies (mouse, rat, dog, primate). The second and third speakers will build upon the physiology of the adrenal by describing mechanisms for adrenal cortical and medullary toxicity and carcinogenesis. These speakers will highlight mechanisms of toxicity, illustrate methods to assess adrenal toxicity, and discuss human relevance. The last speaker will provide a case study where the mechanism of adrenal cortical tumors induced by a selective estrogen receptor modulator (SERM) was elucidated and how this information was applied in assessing risk to patients.

- **Physiology and Comparative Anatomy of the Adrenal Gland,** George L. Foley, Pfizer Global Research & Development, Ann Arbor, MI.
- **Mechanisms of Adrenal Cortical Toxicity and Carcinogenesis,** Charles C. Capen, Ohio State University, Columbus, OH.
- **Mechanisms of Adrenal Medullary Toxicity and Carcinogenesis,** Arthur S. Tischler, Tufts New England Medical Center, Boston, MA.
- **A Case Study of Adrenal Tumorigenesis in Drug Development: Selective Estrogen Receptor Modulator (SERM),** John D. Obourn, Pfizer Global Research & Development, Groton, CT.
- **An Overview of Stem Cell Technology and Its Potential Applications,** Clive N. Svendsen, University of Wisconsin, Madison, WI.

Notes

Program Descriptions

The Primary Endorser

Saturday

Saturday Afternoon, March 20
2:00 PM to 5:00 PM
Room 301

COMMITTEE CHAIR MEETING

If you will be a Committee Chairperson in 2004–2005, please make plans to attend the Committee Chairperson Meeting scheduled for 2:00 PM–5:00 PM, Saturday, March 20. With new committee assignments taking effect on May 1, 2004, the meeting is intended to provide new (and current, if desired) chairpersons with a basic tutorial on the SOT structure, operation, and strategic direction. For additional information, please contact SOT Headquarters.

Saturday Afternoon, March 20
5:30 PM to 9:00 PM
Room 336–337

UNDERGRADUATE EDUCATION PROGRAM FOR MINORITY STUDENTS

Chairperson(s): *Judy Zelikoff, New York University School of Medicine, Tuxedo, NY and Alice Villalobos, University of Rochester, Rochester, NY.*

Sponsored by:
Education Committee
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
6:15 PM–7:00 PM	Opening Event
7:15 PM	Dinner
7:45 PM–8:30 PM	Opening Lecture: What is Toxicology?
	Craig Marcus, University of New Mexico, Albuquerque, NM
8:30 PM–9:00 PM	Dessert and Networking

Saturday Afternoon, March 20
6:00 PM to 8:30 PM
Room 316

WORKSHOP SESSION: LIFE AS A TOXICOLOGIST. A GRADUATE STUDENT AND POST-DOC PRIMER TO CAREERS IN TOXICOLOGY

Chairperson(s): *Denise Robinson, Pfizer Global Research & Development, New London, CT and Ronald Gerson, Endo Pharmaceuticals Inc., Chadds Ford, PA.*

Endorsed by:
Placement Committee
Regulatory and Safety Evaluation Specialty Section*
Women in Toxicology Specialty Section

The proposed course will familiarize graduate students and post-docs with the day-to-day responsibilities, scientific challenges and activities of practicing Toxicologists in various professional fields of employment. The symposium will include presentations by Toxicologists from the Chemical/Agro Chemical, Pharmaceutical, Contract & Consulting arenas as well as Toxicologists from the EPA and FDA. The purpose of these presentations will be to familiarize aspiring Toxicologists with the specific activities and scientific challenges associated with these careers in Toxicology and provide perspective on career choices in Toxicology. Each presentation will include specific case studies of how Toxicology data are used and integrated within the specific career discipline. This course offering is designed to provide insight to Toxicology graduate students and post-docs as they begin to ponder their careers following their graduate/post-graduate education. A reception will precede the workshop in rooms 314–317. (Admission is free of charge but a ticket is required to attend. Use the SOT Annual Meeting Registration Form to register for this workshop.)

#14	6:00	**LIFE AS A TOXICOLOGIST—A GRADUATE STUDENT AND POSTDOC PRIMER TO CAREERS IN TOXICOLOGY.** *D. Robinson*[2] and *R. J. Gerson*[1]. [1]Endo Pharmaceuticals, Chadds Ford, PA and [2]Worldwide Safety Sciences, Pfizer Global R&D, New London, CT.
#15	6:05	**THE ROLES OF A TOXICOLOGIST IN A PHARMACEUTICAL COMPANY.** *M. V. Kindt*. Safety Assessment, Merck & Co., West Point, PA.
#16	6:35	**THE ROLE OF TOXICOLOGY IN THE DEVELOPMENT OF HUMAN THERAPEUTICS—AN FDA PERSPECTIVE.** *A. Weir*. FDA/Center for Drug Evaluation and Research/ODE VI, Rockville, MD.
#17	7:05	**ENVIRONMENTAL PROTECTION AGENCY: SCIENTIFIC CHALLENGES.** *V. Dellarco*. Office of Pesticide Programs, USEPA, Washington DC, DC.
#18	7:35	**LIFE AS A TOXICOLOGIST IN THE CHEMICAL AND AGROCHEMICAL INDUSTRY.** *M. S. Bogdanffy*. DuPont Haskell Laboratory, Newark, DE.
#19	8:05	**ON THE SERVICES SIDE: LIFE AS CRO SCIENTIST AND CONSULTANT.** *D. J. Kornbrust*. Consultant, Reno, NV.

Saturday Afternoon, March 20
6:00 PM to 8:30 PM
Room 314

WORKSHOP SESSION: TAKING COMMAND OF YOUR CAREER

Chairperson(s): *William Toscano, University of Minnesota, Minneapolis, MN and Lisa Kamendulis, Indiana University School of Medicine, Indianapolis, IN.*

Endorsed by:
Education Committee
Placement Committee*
Women in Toxicology Specialty Section

An important mission of the Placement committee is to expand the traditional service role to that of a resource for career development issues for mid-career stages. This career development workshop, targeted at mid-career SOT members, addresses issues related to setting and achieving career goals in a dynamic and technical field. Many mechanisms exist for career advancement, however, the tools and skills needed to advance are not always realized. The technical tools and prowess to keep on the cutting edge may often times get lost as increased managerial demands and other responsibilities are placed on individuals. The presentations in this workshop will focus on: How to take charge of your career to assure success, how to challenge oneself intellectually and scientifically in a subject matter for which one has both expertise and interest, how to garner and maintain the tools and skills necessary skills to make career advancements, and anticipating future trends in Toxicology. An interactive panel discussion, directed by questions from the audience will follow the presentations. A reception will precede the workshop in rooms 314–317. (Admission is free of charge but a ticket is required to attend. Use the SOT Annual Meeting Registration Form to register for this workshop.)

#20	6:00	**TAKING COMMAND OF YOUR CAREER.** *L. M. Kamendulis*[1] and *W. A. Toscano*[2]. [1]Division of Toxicology, Indiana University School of Medicine, Indianapolis, IN and [2]Division of Environmental and Occupational Health, University of Minnesota School of Public Health, Minneapolis, MN.
#21	6:05	**KEEPING SKILLS UP TO DATE.** *J. E. Manautou*. School of Pharmacy, University of Connecticut, Storrs, CT.
#22	6:30	**SEEKING MID AND LONG TERM CAREER GOALS: PERSPECTIVES OF AN INDUSTRY TOXICOLOGIST.** *J. Bus*. TERC, Dow Chemical Co., Midland, MI.
#23	6:55	**LEADERSHIP—STEERING YOUR CAREER TO ACHIEVE SOCIETAL AND PERSONAL GOALS AND THE WONDERFUL THINGS YOU LEARN ABOUT YOURSELF ALONG THE WAY.** V. P. Wilson. Brown University, Providence, RI. Sponsor: *W. Toscano*.
#24	7:20	**MAINTAINING TECHNICAL SKILLS WHILE RISING THROUGH MANAGEMENT.** *L. D. Lehman-McKeeman*. Discovery Toxicology, Bristol-Myers Squibb, Princeton, NJ.
#25	7:45	**TRANSDISCIPLINARY RESEARCH: RIDE THE WAVE.** *J. Barrett*, *J. S. Wiest* and *L. Bennett*. Center for Cancer Research, National Cancer Institute, National Institutes of Health, Bethesda, MD.

Sunday

Sunday Morning, March 21
8:00 AM to 5:00 PM
Room 336

UNDERGRADUATE EDUCATIONAL PROGRAM

Sponsored by:
Education Committee
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	Special Toxicology Lectures
8:15 AM–8:45 AM	The Effects of Alcohol on the Immune System—an Example of Research in Immunotoxicology Stephen B. Pruett, LSU Health Sciences Center, Shreveport, LA
8:45 AM–9:15 AM	Public Health/Toxicology: Bridging Basic Science in Community Health Mary Ann Smith, University of Texas, Houston, TX
9:15 AM–9:45 AM	Chemical and Biological Terrorism: How Does Toxicology Help? Stephen R. Channel, US Air Force, Bel Air, MD
9:45 AM–10:30 AM	Break and Discussion at Poster Boards with First Three Speakers
10:30 AM–11:00 AM	Forensic Toxicology TBA
11:00 AM–11:30 PM	Contaminates, Endocrine Disruption, and Wildlife: Lessons from the Swamps Lou Gillette, University of Florida, Gainesville, FL
11:30 AM–12:30 PM	Lunch and Discussion at Poster Boards
For Students	
12:30 PM–2:45 PM	Break out Sessions, 40-minute concurrent sessions, each repeated three times A) What is Graduate School and What Can I Expect? Marquea King, National Center for Environmental Assessment, Washington, DC Adrian Nanez, University of Louisville, Louisville, KY B) An Academic Advisor's Perspective on How to Get into Graduate School

	Scott Burchiel, University of New Mexico, Albuquerque, NM
	C) Summer Research Internships: What Are They and Should I Do One?
	Chudy Nduaka, Pfizer Global Research and Development, Groton, CT
For Advisors	
12:30 PM–1:30 PM	Tips for Advising Prospective Graduate Students
	TBA
1:45 PM–2:45 PM	Training Opportunities for Students and Institutions
	Carol Schreffler, NIEHS, Research Triangle Park, NC
All Participants	
3:00 PM–5:00 PM	Open Time with Academic Toxicology Program Directors and Internship Sponsors

Sunday Evening, March 21
5:15 PM to 6:30 PM
Room 307

AWARDS PRESENTATION

Join the Society in recognizing and honoring distinguished toxicologists as they receive prestigious awards at the SOT Awards Presentation.

Sunday Evening, March 21
6:30 PM to 7:30 PM
Ballroom (Level 400)

WELCOMING RECEPTION

Join us on Sunday, March 21, 2004, as SOT kicks-off its 43rd 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 21
7:00 PM to 8:00 PM
Room 301

25-YEAR (OR MORE) 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 21
7:30 PM to 8:30 PM
Room 324

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

Monday Morning, March 22
7:30 AM to 3:00 PM
Room 337

UNDERGRADUATE EDUCATION PROGRAM FOR MINORITY STUDENTS

Chairperson(s): *Judy Zelikoff, New York University School of Medicine, Tuxedo, NY and Rosita Proteau, Oregon State University, Corvallis, OR.*

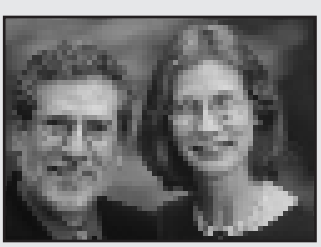
Sponsored by:
Education Committee
Education Subcommittee for Minority Initiatives

7:30 AM–8:00 AM	Breakfast for Students, Advisors, Peer Mentors, and SOT Hosts
8:15 AM–9:15 AM	Plenary Lecture: Joe and Terry Graedon, The People's Pharmacy
9:30 AM–11:30 AM	Special Poster Session for Visiting Students
12:00 NOON–1:00 PM	Closing Session
1:00 PM–3:00 PM	Evaluation Focus Groups

Monday Morning, March 22
8:30 AM to 9:15 AM
Ballroom (Level 400)

PLENARY LECTURE: MAKING SENSE OF ADVERSE REACTIONS AND INTERACTIONS: HERBAL REMEDIES, NUTRACEUTICALS, AND DRUGS

Lecturers: *Joe and Terry Graedon, The People's Pharmacy, Durham, NC.*



What can be learned from pharmaceutical interactions with other compounds such as herbal remedies and nutraceuticals? Patients frequently take multiple prescription medications in addition to over-the-counter drugs, vitamins, minerals, dietary supplements and herbs. Such combinations can be extremely complex, but physicians, pharmacists and nurses are learning how to recognize the markers for toxicity and intervene before serious harm can occur. Genetically-determined polymorphism is increasingly a factor in such strategies. The pharmaceutical industry is beginning to consider the mechanisms behind adverse effects and interactions so that they can be predicted and prevented.

Monday Morning, March 22
9:30 AM to 12:00 PM
Room 321

SYMPOSIUM SESSION: STEROID INACTIVATION: ALTERNATIVE MECHANISMS OF ENDOCRINE TOXICITY

Chairperson(s): *Gerald LeBlanc, North Carolina State University, Raleigh, NC and Li You, CIIT Centers for Health Research, Research Triangle Park, NC.*

Endorsed by:
Mechanisms Specialty Section
Molecular Biology Specialty Section
Reproductive and Developmental Toxicology Specialty Section*

Normal reproductive development depends on the action of steroid hormones at specific tissue sites. Agents interfering with this process can elicit malformation or malfunction in the reproductive tract or other organs that rely on steroids to maintain normal physiology. While effects mediated by the steroid receptors have thus far been most extensively studied as targets for xenobiotic endocrine modulation, the consequences of increased or decreased inactivation of hormone ligands in relation to overall endocrine functions are less known. Many of the enzymes that control steroid biotransformation are responsive to xenobiotic induction. These enzymes include steroid hydroxylases that are members of the cytochrome P450 (CYP) family and the conjugation enzymes of sulfotransferases (ST) and uridine diphosphate-glucuronosyltransferases (UGT). Cloning and characterization of the nuclear receptor CAR and PXR in recent years have greatly improved the understanding of how some key members in the CYP enzyme family are transcriptionally regulated. Exposure to CAR and PXR receptor activators leads to up-regulation of CYP2B and 3A, which utilize steroid hormones as substrates. Similarly, xenobiotics can cause changes in the transcriptional control of ST, leading to alteration of its regulation on the bioavailability of free steroids. While these enzymatic changes may account for enhanced steroid metabolism, the physiological and toxicological consequences of such enzyme effects will require more assessment.

#26	9:30	**STEROID INACTIVATION: ALTERNATIVE MECHANISMS OF ENDOCRINE TOXICITY.** *L. You*. CIIT Centers for Health Research, Research Triangle Park, NC.
#27	9:35	**XENOBIOTIC INTERFERENCE WITH HORMONE TRANSPORT PROCESSES.** *G. A. LeBlanc*. Environmental & Molecular Toxicology, North Carolina State University, Raleigh, NC.
#28	10:10	**THE NUCLEAR RECEPTOR CAR IN REGULATION OF ESTROGEN METABOLISM.** M. Negishi. LRDT, NIEHS, Research Triangle Park, NC. Sponsor: *L. You*.
#29	10:45	**MOLECULAR REGULATION OF HEPATIC SULFOTRANSFERASES.** *M. Runge-Morris*. Inst. Environment Health Sciences., Wayne State University, Detroit, MI.
#30	11:20	**NUCLEAR RECEPTOR PXR- AND CAR-MEDIATED INDUCTION OF STEROID BIOTRANSFORMATION ENZYMES AND RELATIONSHIP WITH REPRODUCTIVE DEVELOPMENT.** *L. You*, H. B. Hoffman, A. R. Laughter, E. J. Bartolucci-Page, S. Kirwan and M. E. Wyde. CIIT Centers for Health Research, Research Triangle Park, NC.

Monday Morning, March 22
9:30 AM to 12:00 PM
Room 318

WORKSHOP SESSION: ASSURANCE OF ANIMAL WELFARE IN RESEARCH: COEXISTENCE OF TOXICOLOGY STUDIES WITH HUMANE ENDPOINTS

Chairperson(s): *Jeff Everitt, GlaxoSmithKline, Research Triangle Park, NY and Stephen Lasley, University of Illinois College of Med., Peoria, IL.*

Endorsed by:
Animals in Research Committee*
Neurotoxicology Specialty Section

In the performance of toxicology studies, whether for purposes of product safety testing or identifying mechanisms of toxicant action, it is necessary to incorporate multiple regulatory, scientific, humane, and ethical factors into the use and care of laboratory animals. This Workshop will provide a forum for discussion of these various factors from different vantage points to better inform the audience, particularly with respect to utilization of humane endpoints. These issues are of timely importance because of continually increasing regulatory oversight of animal care and use, and thus this forum will be of broad interest to toxicologists. Consideration of these factors will be addressed from the standpoint of regulatory requirements and the types of data that must be submitted (Schechtman). A veterinary medicine perspective will be presented, highlighting the development of humane endpoints and their use to determine when study interventions are necessary (Stokes). The role of the IACUC will be defined, particularly in the refinement of the project experimental design and optimization of the proposed numbers of animals (Brown). The conduct of toxicology studies will also be presented from the viewpoint of the investigator, who must balance these factors to produce sound and reliable data (Mattsson). The final presentation will provide a European Union perspective, highlighting the manner in which approaches to these animal care issues are addressed differently in those countries, and indicating trends in regulatory oversight that may soon reach North America (Donovan).

#31	9:30	**ASSURANCE OF ANIMAL WELFARE IN RESEARCH: COEXISTENCE OF TOXICOLOGY STUDIES WITH HUMANE ENDPOINTS.** *S. M. Lasley*[1] and *J. I. Everitt*[2]. [1]Department of Biomedical & Therapeutic Sciences, University of Illinois College of Medicine, Peoria, IL and [2]Comparative Medicine & Investigator Support, GlaxoSmithKline, Research Triangle Park, NC.
#32	9:35	**ASSURANCE OF ANIMAL WELFARE IN RESEARCH: COEXISTENCE OF TOXICOLOGY STUDIES AND HUMANE ENDPOINTS—ISSUES IN TOXICITY TESTING FOR REGULATORY PURPOSES.** *L. M. Schechtman*. NCTR/WO/HFT-10, US Food and Drug Administration, Rockville, MD.
#33	10:05	**ASSURANCE OF ANIMAL WELFARE IN RESEARCH: COEXISTENCE OF TOXICOLOGY STUDIES WITH HUMANE ENDPOINTS—VETERINARY MEDICINE AND ANIMAL WELFARE ISSUES.** *W. S. Stokes*. DHHS/NIH/NIEHS, National Toxicology Program, Research Triangle Park, NC.
#34	10:35	**THE IACUC AS A VALUE-ADDED COMPONENT OF TOXICOLOGY RESEARCH.** M. J. Brown. Animal Welfare and Training, Charles River Laboratories, Wilmington, MA. Sponsor: *J. Everitt*.
#35	11:05	**ANIMAL TESTING: THE DICHOTOMY BETWEEN NATURAL TOXICANTS IN FOOD AND SYNTHETIC PESTICIDES POINTS TO A PROBLEM.** *J. L. Mattsson*. Dow AgroSciences LLC, Indianapolis, IN.

#36 11:35 **EUROPEAN PERSPECTIVES ON ANIMAL WELFARE AND SCIENTIFIC ENDPOINTS IN ANIMAL STUDIES.** J. C. Donovan. BioResources, Wyeth Research, Collegeville, PA. Sponsor: *J. Everitt*.

Monday Morning, March 22
9:30 AM to 12:00 PM
Room 314

WORKSHOP SESSION: ELECTROPHYSIOLOGY APPLIED TO NEUROTOXICITY EVALUATION OF PROMISING NEW DRUGS

Chairperson(s): *Alan Bass, Schering Plough Research Institute, Kenilworth, NJ.*

Endorsed by:
Neurotoxicology Specialty Section*

Neurons differ in their vulnerabilities to toxic agents, thus techniques that can selectively evaluate functional neuronal systems fill an important role in neurotoxicology. Electrophysiologic recording has long played such a role. Neuroelectrophysiology techniques add important information to studies that have pathology and/or behavior as outcome measures. Electrophysiologic recordings are able to detect toxic effects on the nervous system that may occur without morphologic correlates. In addition, techniques can be applied specifically to a functional neuronal system, allowing study of just that system. Data are quantifiable, reproducible and can be obtained repeatedly from an individual animal. The same techniques can be used in clinical studies, forming a stable bridge in determination of human risk. Furthermore, the extensive history of electrophysiology creates a strong database which can be used to provide perspective for data on new drugs. While these similarities are shared among the various techniques, there are important differences in evaluation of neuronal systems that can influence the interpretation of data, and there are different sensitivities to detection of abnormal results. The speakers in this workshop will discuss the strengths of electrophysiologic recording and factors critical to data interpretation in various functional systems, including the peripheral nervous system, sensory systems, hippocampal function and cortical dysfunction. This integrated examination of neuronal system functions using electrophysiology will provide insight into these data in the evaluation of new chemical entities, and their place in human risk assessment.

#37 9:30 **THE IMPORTANCE OF ELECTROPHYSIOLOGY IN NEUROTOXICOLOGY EVALUATION.** *C. G. Markgraf* and *A. Bass*. Safety Pharmacology, Schering-Plough, Lafayette, NJ.

#38 9:40 **NEUROPHYSIOLOGICAL EVALUATION OF SENSORY SYSTEM FUNCTION.** *D. W. Herr*. Neurotoxicology, USEPA, ORD/NHEERL, Research Triangle Park, NC.

#39 10:20 **NEUROELECTROPHYSIOLOGICAL ENDPOINTS IN SAFETY STUDIES AND SAFETY PROGRAMS.** *J. F. Ross*. Ross Toxicology Services, LLC, Cincinnati, OH.

#40 11:00 **USE OF ELECTROENCEPHALOGRAPHY (EEG) IN DETECTING NEUROTOXIC EFFECTS.** J. C. Arezzo and M. S. Litwak. Neuroscience, Albert Einstein College of Medicine, Bronx, NY. Sponsor: *A. Bass*.

#41 11:40 **ASSESSING HIPPOCAMPAL CHANGES INDICATIVE OF NEUROTOXIC EFFECTS.** *M. E. Gilbert*. Neurotoxicology, USEPA, Research Triangle Park, NC.

Monday Morning, March 22
9:30 AM to 12:00 PM
Room 309

ROUNDTABLE SESSION: LOW-DOSE EXTRAPOLATION: TIME FOR A FRESH LOOK AT AN OLD PROBLEM

Chairperson(s): *Rogene Henderson, Lovelace Respiratory Research Institute, Albuquerque, NM and James Bus, Dow Chemical Company, Midland, MI.*

Endorsed by:
Inhalation Specialty Section
Occupational Health Specialty Section
Risk Assessment Specialty Section*

The basic tenet of toxicology is that the dose makes the poison. Thus, characterization of the dose-response remains a foundational element in the translation of animal toxicity information to estimation of potential human health hazard and risk. However, due to the significant impact of regulatory and product stewardship interventions over the last 30 years, animal toxicity observed over the range of conventionally-determined dose-response evaluations is becoming increasingly disparate from real-world exposures to many environmental chemicals. Given these growing disparities, toxicologists are increasingly challenged to provide rational methods and mechanisms to understand true adverse human health outcomes associated with these low-level chemical exposures. In order for these approaches to be scientifically credible, toxicologists must direct attention to how such mechanisms can differentiate health effects associated with low-dose environmental exposures to synthetic chemicals from those that might be due to the many thousands of toxicologically similar, but likely health beneficial natural compounds present in everyday diets. Future low-dose extrapolation paradigms failing to address this important issue will result in scientifically indefensible decisions regarding strategies designed to protect public health from adverse consequences of low-dose chemical exposures, be they synthetic or natural.

#42 9:30 **LOW-DOSE EXTRAPOLATION: TIME FOR A FRESH LOOK AT AN OLD PROBLEM, OVERVIEW.** *J. Bus*[1] and *R. Henderson*[2]. [1]TERC, Dow Chemical Co., Midland, MI and [2]Inhalation Toxicology Research Institute, Albuquerque, NM.

#43 9:40 **HISTORICAL DEVIATIONS FORM THE LNT MODEL: HARMONIZATION OF CANCER AND NONCANCER ENDPOINTS.** *M. L. Dourson*. Toxicology Excellence for Risk Assessment (TERA), Cincinnati, OH.

#44 9:50 **USE OF MECHANISTIC DATA TO HELP DEFINE DOSE-RESPONSE CURVES.** J. Preston. Environmental Carcinogenesis Division, University.S.Environmental Protection Agency, Research Triangle Park, NC. Sponsor: *R. Henderson*.

#45 10:00 **NEW DATA SUPPORT REVISED LOW DOSE EXTRAPOLATION MODELS.** B. R. Scott. Lovelace Respiratory Research Institute, Albuquerque, NM. Sponsor: *R. Henderson*.

#46 10:10 **BIOLOGICAL BASIS FOR AND CONCEPTUAL APPROACHES TO LOW-DOSE NONLINEARITY.** *R. Conolly*. CIIT Centers for Health Research, Research Triangle Park, NC.

#47 10:20 **HORMESIS: ITS IMPLICATIONS FOR HAZARD AND RISK ASSESSMENT.** *E. J. Calabrese*. Environmental Health Sciences, University of Massachusetts, Amherst, MA.

Monday Morning, March 22
9:30 AM to 12:00 PM
Room 307

INNOVATIONS IN TOXICOLOGICAL SCIENCES SESSION: LIPOMICS, AN IMPORTANT COMPONENT OF METABOLOMICS, AND POSSIBLE USE IN TOXICOLOGY STUDIES

Chairperson(s): *David White, University of Tennessee, Knoxville, TN and Michael Madden, USEPA, Chapel Hill, NC.*

Endorsed by:
Inhalation Specialty Section*
Molecular Biology Specialty Section

Metabolites of endogenous biochemical substances can be considered to represent the ultimate organ and cellular responses to toxicants or other changes in an organism's environment. An important fraction of these endogenously produced metabolites are lipids; the comprehensive study of the production of these lipids is termed lipomics or liponomics. Lipids of various chemical classes have been implicated in mediating human diseases in the lung, cardiovascular, brain, and other organ systems. The emphasis of this session will be to provide an overview of strategies for quantifying lipids and key lipid metabolic steps, and subsequently organizing the resulting data into more usable and understandable formats. A brief overview of the biological relevance of lipids will initiate the session. A presentation on lipid chemistry and analytical chemistry strategies (along with the associated strengths and shortcomings) will follow in order to provide the audience with insights on some of the technologies needed to perform the first step involved in lipomics. Additional presentations will show: comprehensive lipid analyses (>400 lipids) of mice treated with the anti-hyperlipidemic agent rosiglitazone and subsequent data manipulation into a informative database; alterations of lung lipids collected in breath condensate from humans and animals models (mice, pigs) of lung disease; and using lipomics to monitor microbial biomass and composition for use in environmental remediation strategies, microbial ecology studies, and minimizing microbial populations in occupational settings. Use of lipomics, in combination with proteomics and genomics, can provide a more complete view of cellular responses. Monitoring of these responses can be used to assist in optimizing drug therapies, examining effects from toxicant exposures, determining the influence of nutrition on responses, and screening of the environment for microbial populations. [This abstract may not represent official EPA policy.]

#48 9:30 **LIPOMICS, AN IMPORTANT COMPONENT OF METABOLOMICS, AND POSSIBLE USE IN TOXICOLOGY STUDIES.** *M. C. Madden*. NHEERL\Human Studies Division, USEPA, Chapel Hill, NC.

#49 9:40 **LIPIDS: A PRIMER ON MEASUREMENT, CLASSIFICATION AND FUNCTION.** J. Jackman[1] and *D. C. White*[2]. [1]Applied Physics Laboratory, Johns Hopkins University, Laurel, MD and [2]Center for Biomarker Analysis, University of Knoxville, Knoxville, TN.

#50 10:10 **LIPOMIC PROFILING APPLICATIONS IN TOXICOLOGY.** S. M. Watkins. Lipomics Technologies, Inc., West Sacramento, CA. Sponsor: *M. Madden*.

#51 10:40 **LIPIDS FROM BREATH CONDENSATE AS NON-INVASIVE BIOMARKERS FOR RESPIRATORY PATHOPHYSIOLOGY.** *D. C. White*[1], R. Geyer[1], J. Cantu[1], S. Mani[2], M. Jett[2], J. Jackman[3] and M. Karlstad[4]. [1]Center for Biomarker Analysis, University of Tennessee, Knoxville, TN, [2]Walter Reed Army Institute of Research, Silver Spring, MD, [3]Applied Physics Laboratory, Johns Hopkins University, Laurel, MD and [4]Medical Center, University of Tennessee, Knoxville, TN.

#52 11:10 **LIPID ANALYSES OF MICROBIAL COMMUNITIES- APPLICATIONS FOR ENVIRONMENTAL REMEDIATION, MICROBIAL ECOLOGY, AND MEDICINE.** E. Sobek and A. D. Peacock. Microbial Insights, Rockford, TN. Sponsor: *M. Madden*.

Monday Morning, March 22
9:30 AM to 12:00 PM
Room 315

PLATFORM SESSION: IMMUNOTOXICITY

Chairperson(s): *Prakash Nagarkatti, Virginia Commonwealth, Richmond, VA and Emanuela Corsini, Universtiy of Milan, Italy.*

#53 9:30 **DEVELOPMENTAL IMMUNOTOXIC EFFECTS OF PRENATAL ATRAZINE EXPOSURE.** A. M. Rowe[1], *K. M. Brundage*[1, 2], *R. Schafer*[1] and *J. B. Barnett*[1, 2]. [1]Microbiology, Immunology and Cell Biology, West Virginia University, Morgantown, WV and [2]Mary Babb Randolph Cancer Center, West Virginia University, Morgantown, WV.

#54 9:45 **EFFECTS OF PRENATAL EXPOSURE TO CIGARETTE SMOKE ON TUMOR SURVEILLANCE IN THE OFFSPRING.** S. P. Ng, S. P. Doherty and *J. T. Zelikoff*. Environ Med., New York University School of Medicine, Tuxedo, NY.

#55 10:00 **THE EFFECTS OF CANNABINOID EXPOSURE ON TUMOR GROWTH AND THE ANTI-TUMOR IMMUNE RESPONSE.** *R. McKallip*[1], *M. Nagarkatti*[1] and *P. S. Nagarkatti*[2]. [1]Department of Microbiology and Immunology, VCU, Richmond, VA and [2]Department of Pharmacology and Toxicology, VCU, Richmond, VA.

#56 10:15 **MOLECULAR MECHANISM OF ACTION OF THE FUNGICIDE MANCOZEB ON THE INHIBITION OF CYTOKINE PRODUCTION.** *E. Corsini*[1], S. Birindelli[2], M. Marinovich[1], C. Colosio[2] and *C. L. Galli*[1]. [1]Department Pharmacological Sciences, University of Milan, Milan, Italy and [2]ICPS, International Centre for Pesticide Safety, Busto Garolfo, Italy.

#57 10:30 **IMMUNOTOXICITY OF SILICA: T CELL ACTIVATION AND BAL CELL ANTI-APOPTOTIC PHENOTYPE PRECEDE GRANULOMA FORMATION IN CHRONIC SILICOSIS.** *R. J. Langley*, N. Mishra and *M. Sopori*. Immunology, LRRI, Albuquerque, NM.

#58 10:45 **GENE EXPRESSION PROFILES IN HEXACHLOROBENZENE-INDUCED TOXICITY.** J. Ezendam[1, 2], F. Staedtler[3], J. Pennings[2], R. Vandebriel[2], *R. Pieters*[1], J. Harleman[3] and *J. Vos*[2]. [1]Immunotoxicology, IRAS, Utrecht, Netherlands, [2]National Institute for Public Health and the Environment, Bilthoven, Netherlands and [3]Novartis Pharmacology AG, Basel, Switzerland.

#59 11:00 **DENDRITIC CELLS ARE A SENSITIVE TARGET OF THIMEROSAL AND ETHYLMERCURY.** S. R. Goth, R. A. Chu and *I. N. Pessah*. Department of Molecular Biosciences and the Center for Children's Environmental Health and Disease Prevention, UC Davis, Davis, CA.

#60 11:15 **INORGANIC MERCURY INCREASES SEVERITY AND FREQUENCY OF AUTOIMMUNE MYOCARDITIS IN MICE.** J. F. Nyland[1, 2], D. Fairweather[3], N. R. Rose[1, 2, 3] and *E. K. Silbergeld*[1]. [1]EHS, JHU Bloomberg School of Public Health, Baltimore, MD, [2]MMI, JHU BSPH, Baltimore, MD and [3]Pathology, JHU School of Medicine, Baltimore, MD.

#61 11:30 **EFFECTS OF MERCURY (HG) EXPOSURE ON BIOMARKERS OF AUTOIMMUNITY IN HUMANS POPULATIONS.** *E. K. Silbergeld*[1], L. Burek[2], N. Rose[2], J. M. Souza[3], E. C. Santos[3], J. Graber[1] and I. Silva[4, 1]. [1]Environmental Health Science, Johns Hopkins University Bloomberg School Public Health, Baltimore, MD, [2]JH Medical School, Baltimore, MD, [3]Evandro Chagas Institute, Para Belem, Brazil and [4]Institute Molecular Cell Biology, Porto, Portugal.

Monday Morning, March 22
9:30 AM to 12:00 PM
Room 326

PLATFORM SESSION: MECHANISMS OF HEPATOTOXICITY I

Chairperson(s): *Lance Pohl, NIH, Bethesda, MD and Harihara Mehendale, University LA at Monroe, Monroe, LA.*

#62 9:30 **METABONOMIC EVALUATION OF IDIOSYNCRASY-LIKE LIVER INJURY IN RATS COTREATED WITH RANITIDINE AND LIPOPOLYSACCHARIDE.** *J. F. Maddox*[1], *J. P. Luyendyk*[1], *G. N. Cosma*[2], A. P. Breau[3], G. G. Harrigan[4], R. H. Bible[3], R. Goodacre[5], *P. E. Ganey*[1], *G. H. Cantor*[2], G. L. Cockerell[2] and *R. A. Roth*[1]. [1]Pharmacology and Toxicology, Michigan State University, East Lansing, MI, [2]Investigative Toxicology, Pharmacia Corporation, Kalamazoo, MI, [3]Global Drug Metabolism, Pharmacia Corporation, Skokie, IL, [4]HTS Metabolic Profiling, Pharmacia Corporation, Chesterfield, MO and [5]Department of Chemistry, University of Manchester Institute of Science and Technology, Manchester, United Kingdom.

#63 9:46 **CALPASTATIN EXPRESSION: A NEW LINE OF DEFENSE AGAINST PROGRESSION OF TOXICANT-INDUCED INJURY.** *P. Limaye*[1], *P. S. Palkar*[1], *University. M. Apte*[1], *J. C. Latendresse*[2], S. Yu[3], P. Kashireddy[3], *J. K. Reddy*[3] and *H. M. Mehendale*[1]. [1]Department of Toxicology, University of Louisiana at Monroe, Monroe, LA, [2]Pathology Associates Intl., NCTR, Jefferson, AR and [3]Department of Pathology, Feinberg School of Medicine, Northwestern University, Chicago, IL.

#64 10:02 **MECHANISMS OF DIFFERENTIAL HEPATIC TOXICITY BETWEEN TROGLITAZONE AND ROSIGLITAZONE.** H. M. Rhee[1], B. J. Song[2] and M. Bae[2]. [1]Metabolic Endocrine Drug Products, Food and Drug Administration, Rockville, MD and [2]Lab. Membrane Biochemistry and Biophysics, NIH, NIAAA, Rockville, MD. Sponsor: *J. Colerangle*.

#65 10:18 **GENOMIC AND PROTEOMIC INVESTIGATIONS INTO THE IDENTIFICATION OF SUSCEPTIBILITY FACTORS IN DRUG-INDUCED LIVER DISEASE (DILD).** *K. Welch*[1], *T. Reilly*[2], B. Wen[3], T. Hays[1], J. Brady[4], C. Masison[4], M. Radonovich[4], D. Goodlett[5], E. Yi[5], H. Lee[5], *S. Nelson*[3] and *L. Pohl*[1]. [1]LMI, NHLBI/NIH/HHS, Bethesda, MD, [2]Bristol-Myers Squibb, Syracuse, NY, [3]University of Washington, Seattle, WA, [4]NCI/NIH/HHS, Bethesda, MD and [5]Institute for Systems Biology, Seattle, WA.

#66 10:34 ***IN SILICO* PREDICTION OF HEPATOTOXICITY OF DRUGS IN HUMANS USING POST-MARKET DATA AND MCASE SOFTWARE.** E. J. Matthews, N. L. Kruhlak, R. D. Benz and *J. F. Contrera*. USFDA, Rockville, MD.

#67 10:50 **GENOMIC ANALYSIS OF THE HEPATOPROTECTIVE ROLE OF N-ACETYL-L-CYSTEINE.** *M. L. Adams*[1], M. F. Radonovich[2], J. N. Brady[2] and *L. R. Pohl*[1]. [1]Molecular and Cellular Toxicology Section, Laboratory of Molecular Immunology, National Heart Lung & Blood Institute, National Institutes of Health, Department of Health & Human Services, Bethesda, MD and [2]Virus Tumor Biology Section, National Cancer Institute, National Institutes of Health, Department of Health & Human Services, Bethesda, MD.

#68 11:06 **PATHWAYS OF FIBROSIS CHARACTERIZED *IN VITRO* WITH ORGAN SLICES FROM RAT AND HUMAN TISSUE.** *A. E. Vickers*[1], M. J. Saulnier[1], R. Fisher[2], E. Cruz[1], K. Rose[1] and P. Olinga[3]. [1]Biomarker Development, Novartis Pharmaceuticals Corp, E Hanover, NJ, [2]Vitron Inc., Tucson, AZ and [3]Department of Pharmacokinetics & Drug Delivery, University of Groningen, Groningen, Netherlands.

#69 11:22 **COMPLEMENTARY ROLES OF FARNESOID X RECEPTOR, PREGNANE X RECEPTOR, AND CONSTITUTIVE ANDROSTANE RECEPTOR IN PROTECTION AGAINST BILE ACID TOXICITY.** *G. L. Guo*[1], G. lambert[2], *M. Negishi*[3], *J. M. Ward*[4], H. Brewer[5], S. A. Kliewer[6], C. J. Sinal[1, 7] and F. J. Gonzalez[1]. [1]Laboratory of Metabolism, NCI\NIH, Bethesda, MD, [2]INSERM U539, Nantes, France, [3]Pharmacogenetics Section, Laboratory of Reproductive and Developmental Toxicology, NIEHS/NIH, Research Triangle Park, MD, [4]Veterinary and Tumor Pathology Section, NCI\NIH, Frederick, MD, [5]Molecular Disease Branch, NHLBI\NIH, Bethesda, MD, [6]University of Texas Southwestern Medical Center, Dallas, TX and [7]Dalhousie University, Halifax, NS, Canada.

#70 11:38 **UROPORPHYRIA CAUSED BY ETHANOL IN HFE(-/-) MICE OF DIFFERENT GENETIC BACKGROUNDS.** P. Sinclair[1, 2], N. Gorman[1, 2], H. Trask[1, 2], W. Bement[1], A. Zaharia[1, 2], J. Szakacs[3], G. Elder[4], D. Balestra[2], *J. Sinclair*[1, 2] and G. Gerhard[5]. [1]VA Medical Center, White River Junction, VT, [2]Dartmouth Medical School, Hanover, NH, [3]Pathology, University of Utah Medical School, Salt Lake City, UT, [4]Medical Biochemistry, University of Wales Medical Schl, Heath Park, Wales, United Kingdom and [5]Weis Ctr Research, Danville, PA.

Monday Morning, March 22
9:30 AM to 12:00 PM
Room 316

PLATFORM SESSION: PHARMACEUTICAL SAFETY EVALUATION—CANCER AND BIOLOGICALS

Chairperson(s): *Thomas Horn, IIT Research Institute, Chicago, IL and Drew Badger, Allergan, Irvine, CA.*

#71 9:30 **PREDICTING THE CARCINOGENIC POTENTIAL OF PHARMACEUTICALS AND CHEMICALS USING MOLECULAR SIMILARITY, E-STATE INDICES AND MDL-QSAR SOFTWARE.** *J. F. Contrera*[1]. [1]Office of Pharmaceutical Science, USFDA Center for Drugs, Rockville, MD, [2]Office of Pharmaceutical Science, USFDA Center for Drugs, Rockville, MD and [3]Office of Pharmaceutical Science, USFDA Center for Drugs, Rockville, MD.

#72 9:46 **A MODEL TO ASSESS THE TUMORIGENIC POTENTIAL OF NATALIZUMAB (NAT), A RECOMBINANT HUMANIZED ANTI-α4 INTEGRIN ANTIBODY.** *J. V. Rutkowski*[1], D. Lepage[1], D. Hutto[1], N. Wehner[2], Y. Maxuitenko[3], J. Heath[3], M. Koratich[3], *C. Tenhoor*[1] and *J. Green*[1]. [1]Biogen, Cambridge, MA, [2]Elan Pharmaceuticals, San Diego, CA and [3]Southern Research Institute, Birmingham, AL.

#73 10:02 **ORAL TOXICITY AND ANGIOSTATIC POTENCY OF ANTI-VEGF DRUGS ZD-6474, ZK 222584, AND SU11248 IN MICE.** *D. A. Badger*[1], *J. M. Holland*[1], T. C. Malone[3], S. R. Vanapalli[1], J. L. Edelman[2] and G. W. DeVries[2]. [1]Safety Evaluation, Allergan, Irvine, CA, [2]Biological Sciences, Allergan, Irvine, CA and [3]Medicinal Chemistry, Allergan, Irvine, CA.

#74 10:18 **SUBCHRONIC ORAL TOXICITY/ENZYME MODULATION STUDY OF FARNESOL IN RATS.** *T. Horn*[1], L. Long[1], M. Cwik[1], *W. Johnson*[1], R. Morrissey[2], I. Kapetanovic[3] and *D. McCormick*[1]. [1]IIT Research Institute, Chicago, IL, [2]Pathology Associates, Chicago, IL and [3]National Cancer Institute, Bethesda, MD.

#75 10:34 **A TOXICITY EVALUATION OF HUMANIZED ANTI-CD20 ANTIBODY PRO70769.** *K. P. McKeever*[1], *T. Watson*[1], J. Beyer[1], L. Nguyen[1], B. Wu[1], P. Fielder[1], K. Howell[1], F. Qureshi[1], *D. Auyeung*[2], H. Lowman[1] and Y. Vugmeyster[1]. [1]Genentech, Inc., South San Francisco, CA and [2]CRL DDS Sierra Division, Sparks, NV.

#76 10:50 **EFFECTS OF CHRONIC PERTUZUMAB-MEDIATED HER2 PATHWAY INHIBITION.** *K. M. Towndrow*[1], N. Dybdal[1], L. Nguyen[1], D. Allison[1], F. Qureshi[1], L. Bernier[2] and *K. P. McKeever*[1]. [1]Genentech, Inc., S. San Francisco, CA and [2]Covance, Inc., Vienna, VA.

#77 11:06 **PRECLINICAL SAFETY ASSESSMENT OF A HUMAN LYMPHOTOXIN BETA RECEPTOR IMMUNOGLOBULIN FUSION PROTEIN IN CYNOMOLGUS MONKEYS FOLLOWING REPEATED INTRAVENOUS AND SUBCUTANEOUS DOSING.** *C. Sachs*[1], *G. Beattie*[2], J. Gommerman[1], *C. Chan*[2], J. Browning[1], W. Meier[1], P. L. Martin[1] and *J. D. Green*[2]. [1]Biogen, Cambridge, MA and [2]Charles River DDS Sierra Division, Sparks, NV.

#78 11:22 **SAFETY AND BIODISTRIBUTION OF A MULTIPLE STRAIN EBOLA GENE DNA PLASMID VACCINE (VRC-EBODNA012-00-VP) IN THE NEW ZEALAND WHITE RABBIT.** *T. S. Manetz*[1], J. Stein[3], R. Sheets[2], *G. Wolfe*[1], C. Duffy[4] and P. Gomez[2]. [1]Gene Logic, Gaitherburg, MD, [2]Vaccine Research Center of NIH/NIAID, Bethesda, MD, [3]Consultant to the Vaccine Research Center, Ann Arbor, MI and [4]Althea Technologies, Inc., San Diego, CA.

#79 11:38 **A LONG-TERM IMMUNOGENICITY AND SAFETY STUDY OF AN IMMUNONEUTRALIZING VACCINE TARGETED TO INHIBIT CHOLESTERYL ESTER TRANSFER PROTEIN (CETP) IN RABBITS.** *L. J. Thomas*, M. D. Picard, E. G. Linnetz, K. M. Borrelli, R. A. Hammond and C. W. Rittershaus. AVANT Immunotherapeutics, Needham, MA.

Monday Morning, March 22
9:30 AM to 12:00 PM
Room 317

PLATFORM SESSION: RESPIRATORY TRACT—PM AND THE CARDIOVASCULAR SYSTEM

Chairperson(s): *Bob Devlin, USEPA, Chapel Hill, NC and Authur Penn, LSU Vet. Med., Baton Rouge, LA.*

#80 9:30 **EFFECT OF OIL COMBUSTION PARTICLE BIOAVAILABLE CONSTITUENTS ON *EX VIVO* VASCULAR FUNCTION OF AORTAE RECOVERED FROM HEALTHY AND EARLY TYPE 2 DIABETIC RATS.** *K. Dreher*[1], S. E. Kelly[2], S. D. Proctor[2] and J. C. Russell[2]. [1]USEPA, Research Triangle Park, NC and [2]University of Alberta, Edmonton, AB, Canada.

#81 9:50 **VANADIUM EXPOSURE ALTERS SPONTANEOUS BEAT RATE AND GENE EXPRESSION OF CULTURED CARDIAC MYOCYTES.** D. W. Graff[1], *R. B. Devlin*[1], L. A. Dailey[1] and W. E. Cascio[2]. [1]NHEERL, USEPA, Research Triangle Park, NC and [2]Cardiology, University of North Carolina, Chapel Hill, NC.

#82 10:10 **SUBCHRONIC HEALTH EFFECTS OF CONCENTRATED AMBIENT PARTICULATE MATTER (CAP).** *L. Chen*[1], J. Hwang[1, 2], *C. Nadziejko*[1] and M. Lippmann[1]. [1]Environ Med., NYUSOM, Tuxedo, NY and [2]Statistical Science, Academia Sinica, Taipei, Taiwan.

#83 10:30 **EFFECTS OF INSTILLED EMISSION PARTICULATE MATTER (EPM) ON ELECTROCARDIOGRAPHIC INDICES AND HEART RATE VARIABILITY (HRV) IN SPONTANEOUSLY HYPERTENSIVE (SH) RATS.** *L. Wichers*[1], J. P. Nolan[2], W. H. Rowan[2], M. J. Campen[3], T. P. Jenkins[4], *D. L. Costa*[2] and W. P. Watkinson[2]. [1]SPH, UNC, Chapel Hill, NC, [2]ORD/NHEERL/ETD/PTB, USEPA, Research Triangle Park, NC, [3]LRRI, Albuquerque, NM and [4]Brody SOM, ECU, Greenville, NC.

#84 10:50 **ASSESSMENT OF TOXICITY OF OIL COMBUSTION EMISSION EXPOSURE IN NORMAL AND HYPERTENSIVE RATS.** *M. I. Gilmour*[1], *University. Kodavanti*[1], *K. Dreher*[1], M. Daniels[1], M. Schladweiller[1], Q. krantz[1], W. P. Linak[2], C. Miller[2] and *D. L. Costa*[1]. [1]NHEERL, USEPA, Research Triangle Park, NC and [2]NRMRL, USEPA, Research Triangle Park, NC.

#85 11:10 **MYOCARDIAL AND CARDIOVASCULAR EFFECTS FOLLOWING PULMONARY EXPOSURE TO ZINC.** P. S. Gilmour[1, 2], A. Nyska[2], M. C. Schladweiler[3], A. D. Ledbetter[3] and *University. P. Kodavanti*[3]. [1]CEMALB, UNC, Durham, NC, [2]NIEHS, Research Triangle Park, NC and [3]PTB, USEPA, Durham, NC.

#86 11:30 **ULTRAFINE PARTICLE (UFP) EFFECTS ON EXPERIMENTAL THROMBOSIS: THE EAR VEIN MODEL.** *V. M. Silva*, N. Corson, *A. Elder*, R. Gelein and *G. Oberdorster*. Environmental Medicine, University of Rochester, Rochester, NY.

Monday Morning, March 22
9:30 AM to 12:00 PM
Room 324

PLATFORM SESSION: TCDD

Chairperson(s): *Claude Emond, NAS, Washington, DC and Nigel Walker, NIEHS, Research Triangle Park, NC.*

#87 9:30 **TCDD FROM AGENT ORANGE IS CURRENTLY AS ELEVATED IN VIETNAM AS DURING SPRAYING 30-40 YEARS AGO: A CASE STUDY ILLUSTRATING THE PERSISTENCE OF POPS.** *A. Schecter*[2], H. T. Quynh[1], O. Paepke[3], R. Malisch[4], J. D. Constable[5], M. Pavuk[2] and K. Tung[2]. [1]Cancer Research Center, Hanoi, Viet Nam, [2]Environmental Sciences, University of Texas School of Public Health, Dallas, TX, [3]ERGO Research Laboratory, Hamburg, Germany, [4]State Laboratory for Chemical & Veterinary Analysis, Freiburg, Germany and [5]Massachusetts General Hospital, Harvard Medical School, Boston, MA.

#88 9:46 **PBPK MODELED CHANGES IN TCDD BASED ON ESTIMATED COMMUNITY EXPOSURES THROUGH SEAFOOD CONSUMPTION: A CASE STUDY IN PUBLIC HEALTH ASSESSMENT.** D. B. Moffett[1, 2] and H. A. El-Masri[1]. [1]Computational Toxicology Laboratory/Division of Toxicology, CDC/ATSDR, Atlanta, GA and [2]United States Public Health Service, Atlanta, GA. Sponsor: *B. Fowler*.

#89 10:02 **THE INFLUENCE OF VARIABLE ELIMINATION RATE AND BODY FAT MASS IN A PBPK MODEL FOR TCDD IN PREDICTING THE SERUM TCDD CONCENTRATIONS FROM VETERANS OF OPERATION RANCH HAND.** *C. Emond*[2], *M. J. DeVito*[1], *L. S. Birnbaum*[1] and J. E. Michalek[3]. [1]ORD/NHEERL/ETD, USEPA, Research Triangle Park, NC, [2]NRC, NAS, Washington, DC and [3]HEDB, AFRL, Brooks City-Base, TX.

#90 10:18 **SERUM 2, 3, 7, 8-TETRACHLORODIBENZO-P-DIOXIN (TCDD) LEVELS AND SLEEP DISORDERS IN US AIR FORCE VETERANS OF THE VIETNAM WAR.** Y. Liu[2, 1], J. E. Michalek[3] and *L. T. Frame*[1]. [1]Pharmacology and Neuroscience, Texas Tech Health Sciences Center, Lubbock, TX, [2]The Institute of Environmental and Human Health, Texas Tech University, Lubbock, TX and [3]Air Force Research Laboratory, US Air Force, Brooks City-Base, TX.

#91 10:34 **LOW DOSE *IN VIVO* EXPOSURE TO 2, 3, 7, 8 TETRACHLORODIBENZO-P-DIOXIN (TCDD OR DIOXIN) ALTERS EXPRESSION OF THE CLOCK-ASSOCIATED PROTEIN, PERIOD, IN THE SUPRACHIASMATIC NUCLEUS (SCN) AND LIVER OF C57B6 MICE.** W. Li, *R. L. Dickerson* and *L. T. Frame*. Pharmacology and Neuroscience, Texas Tech Health Sciences Center, Lubbock, TX.

#92 10:50 **EFFECT OF 2, 3, 7, 8-TETRACHLORODIBENZO-P-DIOXIN (TCDD) ON POSITIVE AND NEGATIVE SELECTION OF T CELLS IN THE THYMUS.** M. Fisher, *M. Nagarkatti* and *P. S. Nagarkatti*. Virginia Commonwealth University, Medical College of Virginia Campus, Richmond, VA.

#93 11:06 ***IN VIVO* MOLECULAR MECHANISMS OF TCDD-INDUCED CELL DEATH IN THE THYMUS: EVIDENCE FOR AHR-DEPENDENT APOPTOSIS VIA ACTIVATION OF MITOCHONDRIAL AND DEATH-RECEPTOR PATHWAYS.** *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.

#94 11:22 **CHRONIC TOXICITY AND CARCINOGENICITY OF DIOXIN-LIKE COMPOUNDS IN FEMALE HARLAN SPRAGUE-DAWLEY RATS.** *N. J. Walker*[1], A. Nyska[1], C. Alden[1], A. E. Brix[2], *L. T. Burka*[1], J. R. Hailey[1], J. K. Haseman[1], *M. R. Hejtmancik*[4], M. P. Jokinen[3], D. P. Orzech[1], D. Sells[4], *C. S. Smith*[1], M. E. Wyde[1] and *J. R. Bucher*[1]. [1]NIEHS, Research Triangle Park, NC, [2]Experimental Pathology Laboratories, Research Triangle Park, NC, [3]Pathology Associates -A Charles River Company, Durham, NC and [4]Battelle Columbus, Columbus, OH.

#95 11:38 **HEPATIC GENE EXPRESSION PROFILING OF HAHS AND THE IDENTIFICATION OF NOVEL DIOXIN-RESPONSIVE GENES.** B. J. Ovando[1], R. J. Foxenberg[1], *C. M. Vezina*[2] and *J. R. Olson*[1]. [1]Pharmacology and Toxicology, University at Buffalo, Buffalo, NY and [2]Pharmacy, University of Wisconsin, Madison, WI.

Monday Morning, March 22
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: DISPOSITION/PHARMACOKINETICS

Chairperson(s): *Mary Treien-Moslen, University of Texas Medical Branch, TX and Kelly Dix, Lovelace Respriatory Research Institute, Albuquerque, NM.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 9:30 AM–11:00 AM*

#96 **MOLECULAR STRUCTURE-BASED PREDICTION OF THE STEADY-STATE BLOOD CONCENTRATIONS OF INHALED ORGANICS IN RATS.** M. Beliveau and *K. Krishnan*. Occupational and Environmental Health, Universite de Montreal, Montreal, QC, Canada.

#97 **TISSUE DISTRIBUTION OF NUCLEOSIDE TRANSPORTERS IN MALE AND FEMALE RATS AND MICE.** H. Lu, *C. Chen* and *C. Klaassen*. University of Kansas Medical Center, Kansas City, KS.

#98 **METABOLISM AND DISPOSITION OF [2-^{14}C]-2-METHYL-1, 3-PROPANEDIOL (MPDIOL® GLYCOL) IN SPRAGUE-DAWLEY RATS FOLLOWING ORAL GAVAGE ADMINISTRATION.** R. J. Boatman[1], H. B. Lantum[1], *J. C. English*[1], M. Thomas[2], W. D. Faber[4] and *M. I. Banton*[3]. [1]Health and Environment Laboratories, Eastman Kodak Company, Rochester, NY, [2]Lyondell Chemical Company, Maidenhead, United Kingdom, [3]Lyondell Chemical Company, Houston, TX and [4]WFTC, LLC, Victor, NY.

#99 **RAT MULTIDRUG RESISTANCE PROTEIN 4: MOLECULAR CLONING AND CHARACTERIZATION OF REGULATION.** *C. Chen*, *A. L. Slitt*, *M. Z. Dieter* and *C. D. Klaassen*. University of Kansas Medical Center, Kansas City, KS.

#100 **DISPOSITION AND METABOLISM OF 1-BROMOPROPANE IN RATS.** *C. Garner*, J. Davis, J. Burgess, Y. Yeuh, A. Jeffcoat, *T. Fennel* and J. Mathews. Drug Metabolism/Pharmacokinetics, RTI, Research Triangle Park, NC.

#101 **COMPARATIVE DISPOSITION OF 2-METHYL-TETRAHYDROFURAN (MTHF) IN MALE F344 RATS AND B6C3F1 MICE.** *R. F. Henderson*, M. W. Gurule, J. D. McDonald, D. A. Kracko, B. M. Hedtke, K. Ghanbari and *K. J. Dix*. Lovelace Respiratory Research Institute, Albuquerque, NM.

#102 **EFFECT OF NASAL ADMINISTRATION OF NICOTINE ON THE BRAIN DELIVERY THROUGH THE OLFACTORY BULBS IN RATS.** *H. J. Kim*[1], S. H. Chang[2] and H. S. Kim[2]. [1]Preventive Medicine, Daegu Haany University, Daegu, South Korea and [2]Preventive Medicine, Keunkook University, Chungju, South Korea.

#103 **PRELIMINARY TOXICOKINETIC STUDY AND BIOLOGICAL SAMPLE ANALYSIS METHOD DEVELOPMENT/VALIDATION FOR DICHLOROACETIC ACID.** J. D. Johnson[1], S. W. Graves[1], D. Emmerling[1], B. Burback[1], J. Merrill[1] and *C. Smith*[2]. [1]Toxicology, Battelle, Columbus, OH and [2]NIEHS, NIH, Research Triangle Park, NC.

#104 **EFFECT OF DIFFERENT DOSING PARADIGMS ON THE BODY BURDEN OF CHLORPYRIFOS (CPF) IN NEONATAL SPRAGUE-DAWLEY RATS.** J. Y. Domoradzki[1], *M. S. Marty*[1], S. C. Hansen[1], *C. Timchalk*[2] and *J. L. Mattsson*[3]. [1]The Dow Chemical Co., Midland, MI, [2]Battelle, Richland, WA and [3]Dow AgroSciences, LLC, Indianapolis, IN.

#105 **MORE RENAL AND LESS INTESTINAL ADDUCTION BY THE NSAID DICLOFENAC IN MRP2-DEFICIENT RATS.** *M. Treinen-Moslen*[1], L. Kaphalia[1], L. Lemley[1], B. A. Rampy[1], *C. R. Atchison*[2] and *M. F. Kanz*[1]. [1]Pathology, University of Texas Medical Branch, Galveston, TX and [2]HQ's USAMRMC, Fort Detrick, MD.

#106 **COMPARISON OF PARTITION COEFFICIENTS FOR A MIXTURE OF VOLATILE ORGANIC COMPOUNDS IN RATS AND HUMANS AT DIFFERENT LIFE STAGES.** *D. A. Mahle*[1], C. C. Grigsby[2], R. J. Godfrey[1], *J. M. Gearhart*[1], *H. A. Barton*[3], *J. C. Lipscomb*[4] and R. S. Cook[2]. [1]ManTech Environmental Technology, Inc., Wright-Patterson AFB, OH, [2]AFRL/HEST, Wright-Patterson AFB, OH, [3]USEPA/ORD/NHEERL, Research Triangle Park, NC and [4]USEPA/ORD/NCEA, Cincinnati, OH.

#107 **ETHANOL PHARMACOKINETICS ARE ALTERED BY PREGNANCY AND CALORIC INTAKE IN FEMALE RATS.** M. Hidestrand[1], *K. Shankar*[1], L. Humphrey[2], R. Haley[2], M. Zipperman[2], *T. M. Badger*[3, 2] and *W. D. McGuinn*[4]. [1]Pharmacology & Toxicology, University of Arkansas for Med. Sciences, Little Rock, AR, [2]Arkansas Children's Nutrition Center, Arkansas Children's Hospital, Little Rock, AR, [3]Physiology, University of Arkansas for Med. Sciences, Little Rock, AR and [4]NA, Columbia, MD.

#108 **DOSE-DEPENDENCY OF ASPIRIN-TRICHLOROETHYLENE INTERACTION.** K. Kim, S. Muralidhara, S. Lee and *J. Bruckner*. Department of Pharmaceutical and Biomedical Sciences, The University of Georgia, Athens, GA.

#109 **BIO-DISTRIBUTION OF BISPHENOL A IN THE NEUROENDOCRINE ORGANS OF FEMALE RATS.** *H. M. Luu*[2], W. Johnson[1], J. C. Hutter[2], C. S. Kim[1], I. A. Ross[1] and P. P. Sapienza[1]. [1]Toxicology, US Food and Drug Administration, Laurel, MD and [2]Radiological Health, USFDA, Rockville, MD.

#110 **PRELIMINARY TOXICOKINETIC STUDY AND BIOLOGICAL SAMPLE ANALYSIS METHOD DEVELOPMENT/VALIDATION FOR 2-METHYLTETRAHYDROFURAN.** B. L. Burback[1], *L. Fomby*[1], B. Harritos[1], G. W. Steven[1] and *S. S. Cynthia*[2, 3]. [1]Battelle Memorial Institute, Columbus, OH, [2]NIH, Research Triangle Park, NC and [3]NIEHS, Research Triangle Park, NC.

#111 **DISPOSITION OF DODECAMETHYLCYCLOHEXASILOXANE (D6) IN FISCHER 344 RATS FOLLOWING A SINGLE ORAL DOSE.** *K. P. Plotzke*, J. Durham, *M. L. Jovanovic* and J. M. Regan. Dow Corning Corporation, Midland, MI.

#112 **PHARMACOKINETIC INTERACTION BETWEEN BUPRENORPHINE AND DESMETHYLFLUNITRAZEPAM IN RATS.** S. Pirnay[1, 2], B. Megarbane[2], S. Bouchonnet[3], C. Monier[2], P. Risede[2], I. Ricordel[1] and *F. J. Baud*[2]. [1]Laboratoire de Toxicologie de la Prefecture de Police, Paris, France, [2]INSERM U26, Hopital Fernand Widal, Paris, France and [3]DCMR, Ecole Polytechnique, Palaiseau, France.

#113 **DETERMINATION AND QUANTITATION OF ANTHRAQUINONE URINARY METABOLITES.** S. Graves[1], S. Runyon[1] and C. S. Smith[2]. [1]Toxicology Columbus, Battelle, Columbus, OH and [2]NIEHS, NIH, Research Triangle Park, NC. Sponsor: *M. Hejtmancik*.

#114 ***IN VIVO* PERCUTANEOUS ABSORPTION OF DECAMETHYLCYCLOPENTASILOXANE (D5) IN FISCHER 344 RATS.** *M. L. Jovanovic*, J. McMahon and *K. P. Plotzke*. Dow Corning Corporation, Midland, MI.

#115 **DISPOSITION OF DERMALLY ADMINISTERED 5-AMINO-O-CRESOL (AOC) IN FEMALE F344 RATS.** *K. J. Dix* and B. M. Hedtke-Weber. Lovelace Respiratory Research Institute, Albuquerque, NM.

#116 **MOGCHOAECK REDUCES ETHANOL CONCENTRATION ELEVATED BY ALCOHOL INGESTION IN RATS.** T. W. Jeon[2] and *H. J. Kim*[1]. [1]Preventive Medicine, Daegu Haany University, Daegu, South Korea and [2]Toxicology, Youngnam University, Daegu, South Korea.

#117 **STUDIES OF THE UPTAKE, DISTRIBUTION, AND ELIMINATION OF ^{14}C IN SPRAGUE-DAWLEY RATS GIVEN ^{14}C-LABELED N-ACETYL-L-CYSTEINE BY ORAL GAVAGE.** A. E. Jung, A. J. Bobb, A. R. Thitoff, E. W. Johnson, S. L. Lohrke and *D. P. Arfsten*. Naval Health Research Center Toxicology Detachment, Wright-Patterson AFB, OH.

#118 **A PHARMACOKINETIC STUDY OF CJC-1131, A NOVEL GLP-1 ANALOGUE, IN RATS USING DUAL ISOTOPE LABELING DEMONSTRATES A LONG ELIMINATION HALF-LIFE.** B. Lawrence[1], S. Wen[1], *S. Wilson*[2], V. Iordanova[1] and J. Castaigne[1]. [1]ConjuChem, Montreal, QC, Canada and [2]Milestone Biomedical Associates, Frederick, MD.

#119 **EFFECT OF DOSE AND ROUTE OF EXPOSURE ON THE TOXICOKINETICS OF 1, 1-DICHLOROETHYLENE (DCE) IN RATS.** *C. Hines*, C. White, *S. Muralidhara*, *C. Dallas* and *J. Bruckner*. University of Georgia, Athens, GA.

#120 **BIOAVAILABILITY OF PHENANTHRENE FROM SOIL: CORRELATION BETWEEN A RAT MODEL AND A PHYSIOLOGICALLY BASED EXTRACTION TEST.** *X. Pu*[1], *G. P. Carlson*[1], R. Galinsky[3] and L. Lee[2]. [1]School of Health Sciences, Purdue University, West Lafayette, IN, [2]Department of Agronomy, Purdue University, West Lafayette, IN and [3]Department of Industrial and Physical Pharmacy, Purdue University, West Lafayette, IN.

#121 **TISSUE DISTRIBUTION OF 2, 2′, 4, 4′-TETRABROMODIPHENYL ETHER FOLLOWING SINGLE AND MULTIPLE DOSES TO MALE F344 RATS.** J. M. Sanders[1, 2], *M. L. Cunningham*[1] and *L. T. Burka*[1]. [1]LPC, NIEHS, Research Triangle Park, NC and [2]Toxicology, N.C. State University, Raleigh, NC.

#122 **DISPOSITION OF 2, 2′, 4, 4′, 5-PENTABROMODIPHENYL ETHER IN MALE F344 RATS.** E. H. Lebetkin, J. M. Sanders and *L. T. Burka*. LPC, NIEHS, Research Triangle Park, NC.

#123 **INFLUENCE OF DIET RESTRICTION ON THE TOXICOKINETICS OF THIOACETAMIDE.** *J. Chilakapati*[1], *K. Shankar*[2], *M. korrapati*[1] and *H. M. Mehendale*[1]. [1]Toxicology, University of Louisiana at Monroe, Monroe, LA and [2]UAMS, Little Rock, AR.

#124 **PRELIMINARY DISTRIBUTION, EXCRETION AND PHARMACOKINETICS OF POLYACRYLAMIDE NANOPARTICLES IN MALE RATS AFTER A SINGLE I.V. INJECTION.** *R. J. Schneider*[1], R. Reddy[2], *T. Kropp*[1], B. Martin[1], M. Sherman[3] and *M. Philbert*[1]. [1]Environmental Health Sciences, University of Michigan, Ann Arbor, MI, [2]Molecular Therapeutics, Inc., Ann Arbor, MI and [3]MPI Research, Inc., Mattawan, MI.

#125 **BLOOD KINETICS AND PULMONARY RESPONSE OF INHALED ETHANOL IN RATS.** J. D. Field[1, 2], *R. Tardif*[1] and J. Nash[2]. [1]Environmental and Occupational Health, University of Montreal, Montreal, QC, Canada and [2]DMPK, CTBR BioResearch, Senneville, QC, Canada.

#126 **DETERMINATION OF DICHLOROACETIC ACID (DCA) BY LIQUID CHROMATOGRAPHY AND MASS SPECTROMETRY (LC/MS) IN RATS DOSED WITH TRICHLOROETHYLENE (TCE).** *A. M. Dixon*[1], D. C. Delinsky[1], S. Muralidhara[1], *J. W. Fisher*[2], *J. V. Bruckner*[1] and M. G. Bartlett[1]. [1]Pharmaceutical and Biomedical Sciences, University of Georgia, Athens, GA and [2]Environmental Health Sciences, Univesity of Georgia, Athens, GA.

#127 ***IN VIVO* PHARMACODYNAMICS AND SUB-CELLULAR DISTRIBUTION OF A 2′-MOE MODIFIED ANTISENSE OLIGONUCLEOTIDE (ASO), ISIS 116847, TARGETING PUTATIVE PROTEIN TYROSINE PHOSPHATASE (PTEN) MNRA IN MICE AND RATS.** *R. Yu*, E. J. McArdle, R. Gina, K. Hoc, *K. C. Nishihara*, T. A. Watanabe, *S. Bhanot* and R. S. Geary. ISIS Pharmaceuticals, Carlsbad, CA.

Monday Morning, March 22
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: GENOTOXICITY

Chairperson(s): *Martha Moore, NCTR, Jefferson, AR.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 11:00 AM–12:30 PM*

#128 **STRUCTURAL FACTORS THAT INFLUENCE THE PERFORMANCE OF MULTICASE IN THE ASSESSMENT OF MUTAGENICITY.** B. J. Braunstein, G. Mandakas, F. M. Goodsaid, R. D. Snyder and *I. Y. Rosenblum*. Molecular Toxicology, Schering-Plough Research Institute, Lafayette, NJ.

#129 **UTILIZATION OF SAR FILTERS, CHEMICAL SIMILARITY AND HT SAFETY SCREENS TO ENHANCE COMPOUND SELECTION FROM COMBINATORIAL LIBRARIES.** *N. Greene*[1], *J. Aubrecht*[1], J. J. Osowski[1] and D. L. Grossman[2]. [1]Safety Sciences - Groton, Pfizer Global Research and Development, Groton, CT and [2]Department of Biology, Cedar Crest College, Allentown, PA.

#130 **CONTROLLED VOCABULARY DEVELOPMENT FOR GENETIC TOXICITY TO MAXIMIZE INFORMATION INTEGRATION OF DATABASES.** D. Benz[1], C. Yang[3], G. Hollingshaus[2], W. Johnson[3], G. Myatt[3] and E. Zeiger[4]. [1]Center for Drug Evaluation and Research, USFDA, Rockville, MD, [2]E.I. DuPont de Nemours & Co., Newark, DE, [3]Leadscope, Inc., Columbus, OH and [4]Errol Zeiger Consulting, Chapel Hill, NC. Sponsor: *D. Johnson*.

#131 **DETECTION OF *N*-METHYL-*N'*-NITRO-*N*-NITROSOGUANIDINE-INDUCED MUTATIONS IN GILL AND HEPATOPANCREAS OF *rpsL* TRANSGENIC ZEBRAFISH.** K. Amanuma, T. Nakamura and *Y. Aoki*. National Institute for Environmental Studies, Tsukuba, Japan.

#132 **FINDING THE OPTIMUM APPROACH FOR GENETIC TOXICOLOGY SCREENING.** J. Kitching[1] and G. Barker[2]. [1]Experimental Biology, Huntingdon Life Sciences, Huntingdon, United Kingdom and [2]Gentronix, Manchester, United Kingdom. Sponsor: *C. Atterwill*.

#133 **THE UTILITY OF THE DEL ASSAY IN SACCHAROMYCES CEREVISIAE FOR DETECTION OF CHROMOSOME ABERRATIONS *IN VITRO*.** *Z. Kirpnick*[1, 2, 3], N. Howlett[4], M. Repnevskaya[1, 2, 3], M. Homiski[5], E. Rubitski[5], *J. Aubrecht*[5] and *R. H. Schiestl*[1, 2, 3]. [1]Pathology, David Geffen School of Medicine at UCLA, Los Angeles, CA, [2]Radiation Oncology, David Geffen School of Medicine at UCLA, Los Angeles, CA, [3]Environmental Health Sciences, UCLA School of Public Health, Los Angeles, CA, [4]Pediatric Oncology, Dana-Farber Cancer Institute, Boston, MA and [5]Pfizer Inc., Groton, CT.

#134 **THREE-COLOR LABELING SCHEME FOR FLOW CYTOMETRY-BASED SCORING OF RODENT AND HUMAN PERIPHERAL BLOOD MICRONUCLEATED RETICULOCYTES.** *S. D. Dertinger*[1], *D. Torous*[1], M. Bishop[2], Y. Chen[3], *R. K. Miller*[4], C. Tometsko[1] and *J. T. MacGregor*[5]. [1]Litron Laboratories, Rochester, NY, [2]FDA-NCTR, Jefferson, AR, [3]Radiation Oncology, University of Rochester Medical Center, Rochester, NY, [4]Obstetrics and Gynecology, University of Rochester Medical Center, Rochester, NY and [5]FDA-NCTR, Rockville, MD.

#135 **OXYFLOW: DETECTION OF OXIDATIVE DNA DAMAGE TO HEMATOPOIETIC CELLS RESULTING FROM *IN VITRO* AGENT ADMINISTRATION USING FLOW CYTOMETRY.** I. N. Rich[1], M. Shaw[2] and C. G. Kilty[2]. [1]HemoGenix LLC, Colorado Springs, CO and [2]Biotrin International, Ltd., Dublin, Ireland. Sponsor: *M. McKenna*.

#136 **INCREASED FREQUENCIES OF MICRONUCLEATED RETICULOCYTES AND 8-OHDG LEVELS IN ALDH2 KNOCKOUT MICE.** N. Kunugita[1], T. Isse[2], T. Oyama[2], K. Kitagawa[3], M. Ogawa[2], T. Yamaguchi[2], R. Suzuki[2], T. Kinaga[2], A. Yoshida[4], I. Uchiyama[5] and *T. Kawamoto*[2]. [1]School of Health Sciences, University of Occupational and Environmental Health, Kitakyushu, Japan, [2]Department of Environm Health, University of Occupational and Environmental Health, Kitakyushu, Japan, [3]First Department of Biochemistry, Hamamatsu Medical University, Hamamatsu, Japan, [4]Beckman Research Institute of the City of Hope, Duarte, CA and [5]Graduate School of Engineering, Kyoto University, Kyoto, Japan.

#137 **QUANTITATIVE LONG PCR ANALYSIS OF DNA DAMAGE INDUCED BY PROSTAGLANDIN H2 SYNTHASE FORM-2: NORMALIZATION OF REPLICATION BY AN INTERNAL CONTROL.** *H. Kim*[1, 2], D. J. Kaplan[1], Y. Yuan[1], D. A. Putt[1] and B. Zhang[1]. [1]Detroit R&D, Inc., Detroit, MI and [2]Institute of Environmental Health Sciences, Wayne State University, Detroit, MI.

#138 **TIME COURSE OF *CII* GENE MUTANT FREQUENCIES AND MUTATION SPECTRA IN THE BONE MARROW OF *N*-ETHYL-*N*-NITROSOUREA-TREATED TRANSGENIC MICE.** J. Wang[1, 2], *N. Mei*[1], X. Liu[1], *M. M. Moore*[1, 2] and *T. Chen*[1]. [1]DGRT, NCTR, Jefferson, AR and [2]Pharmacology and Toxicology, University of Arkansas for Medical Sciences, Little Rock, AR.

#139 **AGE-DEPENDENT SENSITIVITY OF BIG BLUE TRANSGENIC MICE TO THE MUTAGENICITY OF ETHYLNITROSOUREA (ENU) IN LIVER.** *N. Mei*, *J. Wang*, R. H. Heflich, *M. M. Moore* and *T. Chen*. Division of Genetic and Reproductive Toxicology, NCTR/FDA, Jefferson, AR.

#140 **EFFECT OF OVARIECTOMY ON MUTATIONS INDUCED BY 7, 12-DIMETHYLBENZ(*A*)ANTHRACENE (DMBA) IN THE LIVER *CII* GENE OF BIG BLUE TRANSGENIC RATS.** *T. Chen*[1], R. C. Hutts[2], *N. Mei*[1], M. E. Bishop[1], S. Shelton[1], M. G. Manjanatha[1] and A. Aidoo[1]. [1]Division of Genetic and Reproductive Toxicology, NCTR/FDA, Jefferson, AR and [2]Center for Toxicology and Environmental Health, Little Rock, AR.

#141 **IDENTIFICATION OF *IN VIVO* MUTATION FOR THE ΦX174 TRANSGENIC MUTATION ASSAY USING THE FORWARD MUTATION ASSAY OF GENE *A*.** C. R. Valentine[1], J. L. Raney[1] and R. R. Delongchamp[2]. [1]Division of Genetic and Reproductive Toxicology, NCTR, USFDA, Jefferson, AR and [2]Division of Biometry, NCTR, USFDA, Jefferson, AR. Sponsor: *J. Valentine*.

#142 **POTENTIAL FOR PHENOL TO DISRUPT THE SPINDLE APPARATUS AS EVALUATED IN THE MOUSE BONE MARROW MICRONUCLEUS TEST (MNT).** *P. J. Spencer*[1], V. A. Linscombe[1], J. G. Grundy[1], *B. B. Gollapudi*[1], J. M. Waechter[1] and *S. S. Dimond*[2]. [1]Toxicology & Environmental Research & Consulting, The Dow Chemical Company, Midland, MI and [2]Health and Environmental Safety, GE Plastics, Huntersville, NC.

#143 **INHIBITION OF DNA REPAIR AS A MECHANISM OF ARSENIC CARCINOGENESIS.** *S. Liu*, E. Kopras, M. Medvedovic, *G. G. Oakley* and *K. Dixon*. Environmental Health, University of Cincinnati, Cincinnati, OH.

#144 **DISCOVERY AND FUNCTIONAL ANALYSIS OF XPA POLYMORPHISMS.** *P. C. Porter*[1], I. Mellon[2] and *J. States*[1]. [1]Pharmacology & Toxicology, University of Louisville, Louisville, KY and [2]Pathology, University of Kentucky, Lexington, KY.

#145 **DIFFERENCES IN DNA REPAIR ACTIVITY AND INHIBITION OF REPAIR BY ALFLATOXIN B_1 CORRELATES WITH SUSCEPTIBILITY TO CARCINOGENESIS IN MOUSE.** *L. Bedard*[1], M. Alessi[2], S. K. Davey[3] and *T. E. Massey*[1]. [1]Pharmacology and Toxicology, Queen's University, Kingston, ON, Canada, [2]Chemistry, Queen's University, Kingston, ON, Canada and [3]Cancer Research Laboratories, Queen's University, Kingston, ON, Canada.

#146 **CHARACTERIZATION OF DNA REPAIR MECHANISMS FOLLOWING AFLATOXIN B_1 TREATMENT IN YEAST EXPRESSING HUMAN CYTOCHROME P450 1A2.** *Y. Guo*[1], *H. Zarbl*[3, 1], L. L. Breeden[3], B. D. Preston[2] and *D. L. Eaton*[1, 3]. [1]Environ Occup Hlth Sciences, University Washington, Seattle, WA, [2]Pathology, University Washington, Seattle, WA and [3]Fred Hutchinson Cancer Research Cntr, Seattle, WA.

#147 **MUCOCHLORIC ACID INDUCES SINGLE STRAND BREAKS IN XRCC1 DEFICIENT CELLS.** *E. Bodes*, J. Nakamura, *A. Molinelli*, Y. Li, B. Pachkowski and *J. A. Swenberg*. University of North Carolina, Chapel Hill, NC.

#148 **METHYL NITROSOUREA INDUCES LEUKEMOGENESIS WITH PRACTICAL THRESHOLD IN WILD TYPE MICE WHEREAS NONTHRESHOLD IN P53 DEFICIENT MICE.** Y. Hirabayashi[1], K. Yoshida[2], Y. Kodama[1], J. Kanno[1], Y. Kurokawa[3], I. Yoshimura[4] and *T. Inoue*[5]. [1]Cellular & Molecular Toxicology. Division, NIHS, Tokyo, Japan, [2]Division of Biology and Oncology, NIRS, Chiba, Japan, [3]Sasaki Research Institute, Tokyo, Japan, [4]Faculty of Engineering, Tokyo University of Science, Tokyo, Japan and [5]Center for Biological Safety & Research, NIHS, Tokyo, Japan.

#149 **SEASONAL UV DOSE AND DNA REPAIR CAPACITY PREDICT NON-MELANOMA SKIN CANCER RISK.** *J. L. Matta*[1], A. Ruiz[1], R. A. Armstrong[2], Y. Detres[2] and J. M. Ramos[1]. [1]Pharmacology and Toxicology, Ponce School of Medicine, Ponce, Puerto Rico and [2]Marine Sciences, University of Puerto Rico, Mayaguez, Puerto Rico.

#150 **ALTERATION OF CHEMOTHERAPEUTIC-INDUCED DNA DAMAGE BY A COMMON HEALTH FOOD SUPPLEMENT.** W. Trinachartvanit[1], *B. M. Francis*[2] and A. Rayburn[3]. [1]Animal Biology, University of Illinois, Urbana, IL, [2]Entomology, University of Illinois, Urbana, IL and [3]Crop Sciences, University of Illinois, Urbana, IL.

#151 **MODE OF ACTION FOR THE *IN VITRO* MUTAGENICITY OF BIOBAN CS-1246 AND IMPLICATIONS FOR ITS *IN VIVO* MUTAGENIC POTENTIAL.** *B. B. Gollapudi*[1], *G. Charles*[1], M. R. Schisler[1], *M. Cifone*[2], *R. A. Budinsky*[1] and *P. J. Spencer*[1]. [1]The Dow Chemical Company, Midland, MI and [2]Covance Labs, Vienna, VA.

#152 **GENOTOXICITY EVALUATION OF THIODIGLYCOLND.** *G. Reddy*, M. A. Major and *G. J. Leach*. Directorate of Toxicology, US Army Center for Health Promotion and Preventive Medicine, Aberdeen Proving Ground, MD.

#153 **DNA DAMAGE IN HUMAN LEUKOCYTES INDUCED *IN VITRO* BY 1- OR 2-BROMOPROPANE.** *M. Toraason*[1], *N. P. Singh*[2] and *D. W. Lynch*[1]. [1]NIOSH, Cincinnati, OH and [2]University of Washington, Seattle, WA.

#154 **GENOTOXICITY EVALUATION OF THE CHLOROHYDRIN HYDROLYSIS PRODUCT OF BISPHENOL A DIGLYCIDYL ETHER (BADGE-2HCL).** J. M. Waechter, V. A. Linscombe, M. R. Schisler, K. M. Jackson and *P J. Spencer*. Toxicology & Environmental Research and Consulting, The Dow Chemical Co., Midland, MI.

#155 **INDUCTION OF DNA DAMAGE (COMET ASSAY) BY BISPHENOL A IN CHINESE HAMSTER OVARY (CHO) CELLS.** *K. Rao*. Toxicology, MicaGenix, Greenfield, IN.

#156 **PHOTOMUTAGENICITY OF BERGAMOTTIN AND ISOPIMPINELLIN.** J. Cocchiara and *A. Api*. Research Institute for Fragrance Materials, Inc., Woodcliff Lake, NJ.

#157 **BACTERIAL MUTAGENICITY OF CIGARETTE SMOKE GAS/VAPOR PHASE.** F. J. Tewes and T. J. Meisgen. PHILIP MORRIS Research Laboratories GmbH, Cologne, Germany. Sponsor: *H. Haussmann*.

#158 **GENOTOXICITIES OF SAMPLES FROM NICKEL REFINERIES: PREDICTIONS OF CARCINOGENIC POTENTIALS.** R. Verma and *J. Landolph*. Cancer Research Laboratory, Depts. of Mol. Microbiol. and Immunol., Path., and Mol. Pharmacology/Toxicol., USC/Norris Cancer Center, Keck School of Medicine/School of Pharmacy, University of Southern California, Los Angeles, CA.

Monday Morning, March 22
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: RECEPTOR I

Chairperson(s): *Matthew Stoner, Penn State University, University Park, PA and Jack Vanden Heuvel, Penn State University, University Park, PA.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 9:30 AM–11:00 AM*

#159 **AMINO TERMINUS-DELETED CONSTITUTIVE ANDROSTANE RECEPTOR VARIANTS ARE EXPRESSED FROM DOWNSTREAM AUG AND CUG START CODONS.** *M. A. Stoner*[1], *S. S. Auerbach*[2] and *C. J. Omiecinski*[1]. [1]Department of Veterinary Science, The Pennsylvania State University, University Park, PA and [2]Department of Pharmacology, University of Washington, Seattle, WA.

#160 **FUNCTIONAL ASSESSMENT OF A PUTATIVE PHOSPHORYLATION SITE IN A VARIANT ISOFORM OF HUMAN CAR.** *S. S. Auerbach*[2], *M. A. Stoner*[1] and *C. J. Omiecinski*[1]. [1]The Pennsylvania State University, University Park, PA and [2]Department of Pharmacology, University of Washington, Seattle, WA.

#161 **ROLE OF CONSTITUTIVE ANDROSTANE RECEPTOR IN THE INDUCTION OF CYP2B AND XENOBIOTIC TRANSPORTERS BY OLTIPRAZ.** L. Bird[1], *A. L. Slitt*[2], W. Huang[3], D. D. Moore[3], *C. D. Klaassen*[2] and *N. J. Cherrington*[1]. [1]University of Arizona, Tucson, AZ, [2]University of Kansas Medical Center, Kansas City, KS and [3]Baylor College of Medicine, Houston, TX.

#162 **CONSTITUTIVE ANDROSTANE RECEPTOR (CAR) INVOLVEMENT IN THE INDUCTION OF UDP-GLUCURONOSYLTRANSFERASE (UGT) IN RAT LIVER BY PHENOBARBITAL AND OTHER CYP2B INDUCERS.** M. K. Shelby[1], *A. L. Slitt*[1], *N. J. Cherrington*[2] and *C. D. Klaassen*[1]. [1]University of Kansas Medical Center, Kansas City, KS and [2]University of Arizona, Tucson, AZ.

#163 **RESPONSE OF MAJOR HISTOCOMPATIBILITY COMPLEX (MHC) CLASS II PROMOTER REGION TO DEX AND RIFAMPICIN IN TRANSFECTED G3A CELLS AND PRIMARY RAT HEPATOCYTES WITH HUMAN PREGNANE X RECEPTOR (SXR).** E. Fuentes[1], *B. D. Jimenez*[1], *L. C. Quattrichi*[2], B. Joyce[2] and *P. S. Guzelian*[2]. [1]Biochemistry, University of Puerto Rico, Medical Sciences Campus, San Juan, Puerto Rico, [2]Medical Toxicology, University of Colorado Health Sciences Center, Denver, CO and [3]Center for Environmental & Toxicological Research, University of Puerto Rico, Medical Sciences Campus, San Juan, Puerto Rico.

#164 **MECHANISTIC EXAMINATION OF GSK3 REGULATION BY PEROXISOME PROLIFERATORS AND ITS ROLE IN HEPATOCARCINOGENESIS.** *K. A. Burns* and *J. P. Vanden Heuvel*. Center for Molecular Toxicology and Carcinogenesis, The Pennsylvania State University, University Park, PA.

#165 **PEROXISOME PROLIFERATOR-ACTIVATED RECEPTORβ (PPARβ) ATTENUATES COLON CARCINOGENESIS.** H. E. Marin[1, 2], C. J. Nicol[3], F. S. Harman[2], F. J. Gonzales[3] and *J. M. Peters*[2]. [1]Department of Veterinary Science and the Center for Molecular Toxicology and Carcinogenesis, The Pennsylvania State University, University Park, PA, [2]Biochemistry, Microbiology, and Molecular Biology, The Pennsylvania State University, University Park, PA and [3]Laboratory of Metabolism, National Cancer Institute, Bethesda, MD.

#166 **THE ACTIVATION OF MOUSE AND HUMAN PPARα, PPARβ AND PPARγ BY PHTHALATE MONOESTERS.** M. T. Bility[1], *J. M. Peters*[2], *R. H. McKee*[3], *R. M. David*[4] and *J. H. Butala*[5]. [1]The Center for Molecular Toxicology, The Pennsylvania State University, State College, PA, [2]Veterinary Sciences, The Pennsylvania State University, State College, PA, [3]ExxonMobil Biomedical Sciences Inc., ExxonMobil, Annandale, NJ, [4]Health and Environment Laboratories, Eastman Kodak, Rochester, NY and [5]Toxicology, Toxicolog Consultants Inc., Gibsonia, PA.

#167 **CITED2 IS A COACTIVATOR OF PEROXISOME PROLIFERATOR-ACTIVATED RECEPTOR-α AND -γ TRANSCRIPTIONAL ACTIVITY.** E. Tien and *J. P. Vanden Heuvel*. Center for Molecular Toxicology and Carcinogenesis, Pennsylvania State University, University Park, PA.

#168 **MODULATION OF PKCα/MAPK SIGNALING PATHWAY BY PEROXISOME PROLIFERATOR-ACTIVATED RECEPTORβ (PPARβ).** *D. J. Kim*[1, 2] and *J. M. Peters*[1, 2]. [1]Department of Veterinary Science and The Center for Molecular Toxicology and Carcinogenesis, The Pennsylvania State University, University Park, PA and [2]Graduate Program in Molecular Toxicology, The Huck Institute for Life Sciences, The Pennsylvania State University, University Park, PA.

#169 **FORKHEAD BOX O1A (FOXO1A) AND PEROXISOME PROLIFERATOR ACTIVATED RECEPTOR ALPHA (PPARα) EXPRESSION LEADS TO MUTUAL REPRESSION OF THEIR TRANSCRIPTIONAL ACTIVITY.** T. Murosky and *G. Perdew*. Pennsylvania State University, State College, PA.

#170 **CONJUGATED LINOLEIC ACID BINDS TO PPAR AND CAUSES DIFFERENTIATION OF 3T3-L1 CELLS.** B. J. Belda, J. T. Thompson and *J. P. Vanden Heuvel*. Penn State University, University Park, PA.

#171 **VAN/NAF1 IS A PPAR COREGULATOR.** *A. M. Flores*, R. Wilson, L. E. Vasina and B. J. Aneskievich. Pharmaceutical Sciences, University of Connecticut, Storrs, CT.

#172 **CELL CONTEXT-DEPENDENT DIFFERENCES IN HORMONAL REGULATION OF E2F-1 IN HUMAN BREAST CANCER CELLS.** S. Ngwenya[1] and *S. Safe*[2]. [1]Biochemistry & Biophysics, Texas A&M University, College Station, TX and [2]Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

#173 **GENISTEIN REGULATES THE STEROID COACTIVATOR GRIP-1 IN THE RAT MAMMARY GLAND.** *T. G. Whitsett* and *C. A. Lamartiniere*. University of Alabama at Birmingham, Birmingham, AL.

#174 **EFFECTS OF DOPAMINE D1 FULL AGONISTS ON RECEPTOR CYCLING.** *J. P. Ryman-Rasmussen*[1] and *R. B. Mailman*[1, 2, 3]. [1]Curriculum in Toxicology, UNC Chapel Hill, Chapel Hill, NC, [2]Psychiatry, UNC Chapel Hill, Chapel Hill, NC and [3]DarPharma, Inc., Chapel Hill, NC.

#175 **EVALUATION OF HEPATIC RECEPTOR CONCENTRATION BY QUANTITATIVE OPTICAL IMAGING.** L. M. McIntosh[3], D. R. Vera[1], R. F. Mattrey[1], *S. Fournier*[2], S. Authier[2], P. Gallant[3] and F. Lesage[3]. [1]University of California, San Diego, San Diego, CA, [2]LAB Pre-Clinical Research International, Inc., Laval, QC, Canada and [3]ART Advanced Research Technologies Inc., Saint-Laurent, QC, Canada.

#176 **DURING CHOLESTASIS LOSS OF RXRα IS HEPATOPROTECTIVE AND INCREASES EXPRESSION OF GENES FOR METABOLISM AND TRANSPORT IN LIVER.** *A. L. Slitt*[1], *N. J. Cherrington*[2], *C. Chen*[1], J. M. Maher[1], Y. Wan[1] and *C. D. Klaassen*[1]. [1]University of Kansas Medical Center, Kansas City, KS and [2]University of Arizona, Tucson, AZ.

Monday Morning, March 22
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: DEVELOPMENTAL TOXICITY

Chairperson(s): *Barbara Abbott, USEPA, Research Triangle Park, NC and Linda Carlock, Amgen, Inc., Thousand Oaks, CA.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 11:00 AM–12:30 PM*

#177 **HUMAN DIETARY ALKALOIDS INHIBIT SONIC HEDGEHOG SIGNALING.** R. Lipinski and W. Bushman. Molecular and Environmental Toxicology Center, University of Wisconsin-Madison, Madison, WI. Sponsor: *R. Peterson*.

#178 **EVALUATION OF THE DEVELOPMENTAL TOXICITY OF 1-(1, 2, 3, 4, 5, 6, 7, 8-OCTAHYDRO-2, 3, 8, 8-TETRAMETHYL-2-NAPHTHALENYL)ETHANONE.** C. Letizia, J. Cocchiara, D. A. Isola and *A. Api*. Research Institute for Fragrance Materials, Inc., Woodcliff Lake, NJ.

#179 **CLONING OF RAT 5α-REDUCTASE TYPE2 GENE PROMOTER REGION AND AN EVIDENCE OF NO RELATIONSHIP BETWEEN ITS TRANSACTIVATION REGULATION AND ARYLHYDROCARBON RECEPTOR.** S. Ohsako, K. Kubota and *C. Tohyama*. Environmental Health Sciences Division, National Institute of Environmental Studies, Tsukuba, Ibaraki, Japan.

#180 **MATERNAL UNDERNUTRITION DURING PREGNANCY POTENTIATES INTRAUTERINE GROWTH EFFECTS OF ETHANOL.** *K. Shankar*[1], M. Hidestrand[1], L. D. Humphrey[3], *M. J. Ronis*[1, 3, 2] and *T. M. Badger*[3, 2, 1]. [1]Pharmacology/Toxicology, University of Arkansas for Medical Sciences, Little Rock, AR, [2]Physiology and Biophysics, University of Arkansas for Medical Sciences, Little Rock, AR and [3]Arkansas Childrens Nutrition Center, Little Rock, AR.

#181 **DEVELOPMENTAL TOXICITY OF ACETYL CEDRENE IN RATS.** A. Lapczynski, J. Cocchiara, D. Isola and *A. Api*. RIFM, Woodcliff Lake, NJ.

#182 **FOLIC ACID PROTECTS AGAINST VALPROIC ACID-INDUCED NEURAL TUBE DEFECTS IN CD-1 MICE.** *J. E. Dawson*[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.

#183 **EXPRESSION AND TERATOLOGICAL RELEVANCE OF INDUCIBLE NITRIC OXIDE SYNTHASE (INOS) AND CYCLOOXYGENASE-2 (COX-2) IN EMBRYONIC AND PLACENTAL TISSUES OF WILD-TYPE AND INOS KNOCKOUT MICE.** G. McCallum[1] and *P. G. Wells*[1, 2]. [1]Pharmacy, University of Toronto, Toronto, ON, Canada and [2]Pharmacology, University of Toronto, Toronto, ON, Canada.

#184 **A COMPARISON OF EFFECTS ON REPRODUCTION AND NEONATAL DEVELOPMENT IN CYNOMOLGUS MONKEYS GIVEN HUMAN SOLUBLE IL-4R AND MICE GIVEN MURINE SOLUBLE IL-4R.** *L. L. Carlock*[1], *L. A. Cowan*[1], *S. Oneda*[2], *A. M. Hoberman*[3] and *J. L. Bussiere*[1]. [1]Toxicology, Amgen Inc., Thousand Oaks, CA, [2]SNBL USA Ltd., , Everett, WA and [3]Argus Research Laboratories, Horsham, PA.

#185 **DEVELOPMENTAL TOXICITY OF BETA-THUJAPLICIN (TP) IN RATS.** *M. EMA*, A. HARAZONO, S. FUJII and K. KAWASHIMA. Risk Assessment, National Institute of Health Sciences, Tokyo, Japan.

#186 **INHALATION DEVELOPMENTAL TOXICITY STUDIES IN RATS WITH ANTIMONY TRIOXIDE (SB2O3).** *P. E. Newton*[1], *R. E. Schroeder*[1], L. Zwick[1] and *T. Serex*[2]. [1]MPI Research, Inc., Mattawan, MI and [2]Great Lakes Chemical Company, West Lafayette, IN.

#187 **EFFECTS ON RAT EMBRYONIC DEVELOPMENT *IN VITRO* OF DI-(2-ETHYLHEXYL) PHTHALATE (DEHP) AND ITS METABOLITES.** *J. REGNIER*[1], C. Bowden[2] and J. Lhuguenot[3]. [1]Toxicology and Environment, ATOFINA, Paris-la-defense, France, [2]Huntingdon Life Science, Eye, United Kingdom and [3]ENSBANA, Dijon, France.

#188 **TERATOGENIC RESPONSES ARE MODULATED IN MICE LACKING EXPRESSION OF EPIDERMAL GROWTH FACTOR (EGF) AND TRANSFORMING GROWTH FACTOR-ALPHA (TGF).** *B. D. Abbott*, D. S. Best and M. G. Narotsky. Repro Toxicology Division, USEPA, Research Triangle Park, NC.

#189 **COMPARATIVE STUDY OF ALCOHOL TERATOGENIC EFFECT IN C57BL/6 AND DBA/2 MOUSE EMBRYOS USING EMBRYO CULTURE.** M. Kuwagata[1], *T. Ogawa*[2, 1] and F. C. Zhou[1]. [1]Anatomy and Cell Biology, Indiana University School of Medicine, Indianapolis, IN and [2]Anatomy, Showa University School of Medicine, Tokyo, Japan.

#190 **COMPARATIVE ASSESSMENT OF TWO EMBRYO CULTURE METHODS IN EVALUATING EMBRYOTOXICITY.** H. Huuskonen and H. Komulainen. Department of Environmental Health, National Public Health Institute, Kuopio, Finland. Sponsor: *M. Viluksela*.

#191 **TWO ZEBRAFISH ALCOHOL DEHYDROGENASES SHARING COMMON ANCESTRY AND FUNCTIONAL CHARACTERISTICS WITH MAMMALIAN CLASS I AND III GENES.** *M. Reimers*[1, 3], *M. E. Hahn*[2] and *R. L. Tanguay*[3]. [1]Department of Pharmaceutical Sciences, University of Colorado Health Sciences Center, Denver, CO, [2]Biology Department, Woods Hole Oceanographic Institute, Woods Hole, MA and [3]Department of Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR.

#192 **DEVELOPMENTAL TOXICITY OF METAM SODIUM IN ZEBRAFISH.** M. A. Haendel[1, 3], F. Tilton[2, 3], *R. L. Tanguay*[2, 3] and *G. S. Bailey*[1, 2, 3]. [1]Linus Pauling Institute, Oregon State University, Corvallis, OR, [2]Environmental and Molecular Toxicology, OSU, Cor., OR and [3]EHSC and MFBSC, OSU, Cor., OR.

#193 **THE TERATOGENIC EFFECTS OF ETHANOL EXPOSURE IN ZEBRAFISH.** E. J. Loucks[1, 2], B. A. Wimpee[1, 2] and *M. J. Carvan*[1, 2]. [1]University of Wisconsin-Milwaukee, Milwaukee, WI and [2]Great Lakes WATER Institute, Milwaukee, WI.

#194 **DEVELOPMENTAL TOXICITY OF CARBARYL IN ZEBRAFISH.** *H. Cheng*, A. Lin and E. Chan. Biology and Chemsitry, City University of Hong Kong, Hong Kong, N/A, Hong Kong.

#195 **ETHANOL PERTURBS CARDIOVASCULAR DEVELOPMENT IN JAPANESE MEDAKA, *ORYZIAS LATIPES*.** *A. K. Dasmahapatra*[1] and *M. L. Haasch*[1, 2]. [1]Environmental Toxicology Research Program, Research Institute of Pharmaceutical Sciences, University of Mississippi, University, MS and [2]Department of Pharmacology, University of Mississippi, University, MS.

#196 **EXENATIDE (SYNTHETIC EXENDIN-4) DEVELOPMENTAL TOXICOLOGY IN RABBITS: COMPARISON TO PAIR-FED CONTROLS.** *R. Hiles*[1], T. Carpenter[1], *A. Hoberman*[2] and R. Byrd[3]. [1]Amylin Pharmaceuticals, Inc., San Diego, CA, [2]Argus Research, Horsham, PA and [3]Eli Lilly & Co., Greenfield, IN.

#197 **COMPARISON OF GESTATIONAL DOSE (MG/DAY) IN GAVAGE VS. CONTINUOUS EXPOSURE STUDIES IN RATS.** *S. P. Parker*[1], *C. B. Myers*[1], *R. W. Tyl*[1], *J. P. Van Miller*[2] and *R. L. Joiner*[3]. [1]Life Sciences and Toxicology, RTI International, Research Triangle Pk, NC, [2]TRS, Charlottesville, VA and [3]GE, Pittsfield, MA.

#198 **MATERNAL FUMONISIN EXPOSURE AND NEURAL TUBE DEFECTS: MECHANISMS IN AN *IN VIVO* MOUSE MODEL.** J. B. Gelineau-van Waes, L. Starr, J. Wilberding, F. Aleman and J. Maddox. Department of Genetics, Cell Biology & Anatomy, University of Nebraska Medical Center, Omaha, NE. Sponsor: *R. Riley*.

#199 **ZEBRAFISH ASSAYS FOR ASSESSING DEVELOPMENTAL TOXICITY.** C. Zhang, C. Parng, C. Willett, C. Ma and P. McGrath. Phylonix Pharmaceuticals, Inc., Cambridge, MA. Sponsor: *P. Mayeux*.

#200 **CELL CYCLE INHIBITION AND CLEFT PALATE INDUCTION BY SECALONIC ACID D.** *V. C. Dhulipala*, W. Welshons and *C. S. Reddy*. Vet. Biomedical Sciences, University of Missouri, Columbia, MO.

#201 **IMMUNE PROTECTION AGAINST MNU-INDUCED DIGITAL DEFECTS.** M. R. Prater[2, 1], *S. D. Holladay*[1] and E. D. Strahl[1]. [1]Veterinary Medicine, Virginia Tech, Blacksburg, VA and [2]Biomedical Sciences, Edward Via Virginia College of Osteopathic Medicine, Blacksburg, VA.

#202 **ORGANIC ANION TRANSPORTING POLYPEPTIDES (OATP) 9 AND 12 MNRA EXPRESSION: TISSUE DISTRIBUTION DURING PREGNANCY COMPARED WITH MALE AND NON-PREGNANT FEMALE SPRAGUE DAWLEY RATS.** *T. M. Leazer* and *C. D. Klaassen*. University of Kansas Medical Center, Kansas City, KS.

#203 **DEVELOPMENTAL EFFECTS IN RABBITS ASSOCIATED WITH ELEVATED PLASMA TYROSINE.** G. J. Moffat, M. E. Moxon, J. W. Botham and R. W. Lewis. Syngenta CTL, Alderley Park, Cheshire, United Kingdom. Sponsor: *I. Kimber*.

Monday Morning, March 22
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: HYPERSENSITIVITY/ALLERGY

Chairperson(s): *Jean Regal, University of Minnesota, Duluth, MN and Barbara Jean Meade, NIOSH, Health Effects Laboratory Division, Morgantown, WV.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 9:30 AM–11:00 AM*

#204 **THE SENSITIZING POTENTIAL OF NATIVE AND REDUCED/ALKYLATED BRAZIL NUT 2S ALBUMIN (BER E 1) IN AN ORAL BROWN NORWAY RAT FOOD ALLERGY MODEL.** S. J. Koppelman, L. M. Knippels, P. F. Nieuwenhuizen, E. I. Klein Koerkamp, H. H. de Jongh and A. H. Penninks. Experimental Immunology, TNO Nutrition and Food Research, Zeist, Netherlands. Sponsor: *V. Feron*.

#205 **INCREASED ANTIBODY RESPONSE BY BDF1 MICE CO-ADMINISTERED OVALBUMIN AND LIPOPOLYSACCRIDE (LPS).** *M. R. Woolhiser*, J. M. Rase and *T. D. Landry*. Toxicology & Environmental Research and Consulting, The Dow Chemical Company, Midland, MI.

#206 **MIXED ANTIBODY AND T-CELL RESPONSES TO PEANUT AND THE PEANUT ALLERGENS ARA H1, ARA H2, ARA H3 AND ARA H6 IN A MURINE ORAL SENSITIZATION MODEL.** F. van Wijk[1, 2], S. Koppelman[3], *R. Pieters*[1] and L. Knippels[2]. [1]Immunotoxicology, IRAS, Utrecht, Netherlands, [2]Experimental Immunology, TNO Nutrition and Food Research, Zeist, Netherlands and [3]Protein Technology, TNO Nutrition and Food Research, Zeist, Netherlands.

#207 **THE LOCAL LYMPH NODE ASSAY: CURRENT REGULATORY STATUS.** *D. A. Basketter*[1], *R. J. Dearman*[2], *C. A. Ryan*[3], *F. G. Gerberick*[3], R. J. Fielder[4] and *I. Kimber*[2]. [1]SEAC, Unilever, Sharnbrook, United Kingdom, [2]Syngenta CTL, Macclesfield, United Kingdom, [3]Procter & Gamble, Cincinnati, OH and [4]Department of Health, London, United Kingdom.

#208 **VALIDATION OF A MINIMAL TRANSCRIPT BIOMARKER SET TO DIFFERENTIATE BETWEEN SENSITIZERS AND IRRITANTS IN THE LOCAL LYMPH NODE ASSAY.** W. R. Foster[2], *G. S. Ladics*[1] and C. M. Glatt[1]. [1]Haskell Laboratory, DuPont, Newark, DE and [2]Bristol-Myers Squibb, Wilmington, DE.

#209 **EXPERIENCE IN THE ROUTINE USE OF THE LOCAL LYMPH NODE ASSAY (LLNA).** J. Le Bigot, B. Griffon, X. Manciaux, S. de Jouffrey and *R. Forster*. CIT, Evreux, France.

#210 **COMPARISON OF TWO PROTOCOLS OF A MODIFIED LYMPH NODE ASSAY.** K. Riecke and P. Kurth. Experimental Toxicology, Schering AG, Berlin, Germany. Sponsor: *R. Stahlmann*.

#211 **ROUND II OF AN INTER-LABORATORY VALIDATION OF ALTERNATIVE ENDPOINTS OF THE MURINE LLNA.** J. Huesler[9], *P. Ulrich*[1], H. Vohr[2], G. Ehling[3], M. Hecht[4], A. Heusener[10], A. Gamer[5], *H. van Loveren*[6], *L. Ullmann*[8], T. Maurer[9] and K. Riecke[11]. [1]Preclinical Safety, Novartis Pharmacology AG, Muttenz, Switzerland, [2]Bayer AG, Wuppertal, Germany, [3]Aventis Pharmacology AG, Frankfurt, Germany, [4]ITA Fraunhofer Institute, Hannover, Germany, [5]BASF AG, Ludwigshafen, Germany, [6]RIVM, Bilthoven, Netherlands, [7]University of Bern, Bern, Switzerland, [8]RCC, Itingen, Switzerland, [9]Swiss Agency for Therapeutic Products, Bern, Switzerland, [10]Merck, Darmstadt, Germany and [11]Schering AG, Berlin, Germany.

#212 **USE OF LOCAL LYMPH NODE ASSAY POTENCY DETERMINATIONS IN EXPOSURE-BASED RISK ASSESSMENT FOR SKIN SENSITIZATION.** *C. Ryan*[1], P. McNamee[2] and *F. Gerberick*[1]. [1]Procter & Gamble Company, Cincinnati, OH and [2]Procter & Gamble Company, Egham, Surry, United Kingdom.

#213 **CATEGORISATION OF HUMAN SENSITISATION POTENCY USING LOCAL LYMPH NODE ASSAY EC3 VALUES.** N. J. Gilmour[1], *D. A. Basketter*[1], G. Y. Patlewicz[1], P. S. Kern[2], *C. A. Ryan*[2], *F. G. Gerberick*[2], *R. J. Dearman*[3] and *I. Kimber*[3]. [1]SEAC, Unilever, Sharnbrook, United Kingdom, [2]Procter & Gamble, Cincinnati, OH and [3]Syngenta CTL, Macclesfield, United Kingdom.

#214 **OBSERVATIONS ON THE UTILITY OF THE LLNA FOR DERMATOLOGIC DRUG PRODUCTS.** *A. Jacobs*, *D. Allen*, P. C. Brown, B. A. Hill, N. See and J. Wilkin. USFDA, Rockville, MD.

#215 **APPLICATION OF A MODIFIED LLNA TO PETROLEUM-BASED PRODUCTS: DERMAL SENSITIZATION POTENTIAL OF CALCIUM LONG-CHAIN ALKYLBENZENE SULFONATES.** S. A. Signs[1] and *G. L. DeGeorge*[2]. [1]The Lubrizol Corporation, Wickliffe, OH and [2]MB Research Laboratories, Spinnerstown, PA.

#216 **EFFECTS OF LIPOPHILICITY AND VISCOSITY OF SOLVENTS ON DPM/LN BACKGROUND LEVEL IN MURINE LOCAL LYMPH NODE ASSAY (LLNA).** L. G. Ullmann, W. Wang-Fan, G. Arcelin, *S. Corney* and K. Blumbach. Toxicology, RCC Ltd., Itingen, Switzerland.

#217 **BISPHENOL A IS NOT SKIN SENSITIZING OR PHOTOALLERGENIC AS MEASURED BY A MODIFIED LOCAL LYMPH NODE ASSAY IN MICE.** H. Vohr, H. Ahr and G. D. Stropp. Toxicology, Bayer AG, Wuppertal, NRW, Germany. Sponsor: *R. Shiotsuka*.

#218 **EVALUATION OF THE SENSITIZATION POTENTIAL OF *PFIESTERIA* TOXIN IN BALB/C MICE.** R. M. Patterson[1], E. Noga[2] and *D. Germolec*[1]. [1]NIEHS, Research Triangle Park, NC and [2]N.C. State University, Raleigh, NC.

#219 **EVALUATION OF THE CONTACT HYPERSENSITIVITY-INDUCING POTENTIAL OF A COMMERCIAL WEAPON CLEANING AND MAINTENANCE COMPOUND.** S. Azadi[1], *D. P. Arfsten*[2] and *B. J. Meade*[1]. [1]NIOSH, Morgantown, WV and [2]Naval Health Research Center Toxicology Detachment, Wright-Patterson AFB, OH.

#220 **EFFECT OF CHLORINATED ORGANIC SOLVENTS IN DRINKING WATER ON TYPE I ALLERGIC REACTION.** M. Seo, T. Yamagiwa, T. Ikemoto, *M. Satoh* and H. Nagase. Department Of Hygienics, Gifu Pharmaceutical University, Gifu, Japan.

#221 **INVOLVEMENT OF PERTUSSIS TOXIN SENSITIVE G PROTEIN ACTIVATION IN HISTAMINE RELEASE INDUCED BY FLUOROQUINOLONE ANTIBACTERIAL AGENTS (FLUOROQUINOLONES) AND THEIR STRUCTURE-HISTAMINE RELEASE RELATIONSHIP.** M. Kazuhiko, M. Chikako and *K. Furuhama*. Drug Safety Reseach Laboratory, Daiichi Pharmaceutical Co., Ltd., , Tokyo, Japan.

#222 **DEVELOPMENT OF AN ORAL EXPOSURE ANIMAL MODEL WITH REPORTER ANTIGENS TO ASSESS IMMUNE-MEDIATED DRUG-HYPERSENSITIVITY REACTIONS.** S. Nierkens, M. Aalbers, M. Bol and *R. Pieters*. IRAS-Immunotoxicology, Utrecht University, Utrecht, Netherlands.

#223 **TEST STRATEGIES FOR IMMUNE SENSITIZATION BY PHARMACEUTICALS: A COMPARISON OF THE SUBCUTANEOUS LOCAL LYMPH NODE ASSAY AND POPLITEAL LYMPH NODE ASSAY USING REPORTER ANTIGENS.** *R. Pieters*, S. Nierkens, L. Nieuwenhuijsen and M. Thomas. IRAS-Immunotoxicology, Utrecht University, Utrecht, Netherlands.

#224 **CYTOKINE RELEASE AS AN ENDPOINT TO IMPROVE THE SENSITIVITY AND SPECIFICITY OF THE POPLITEAL LYMPH NODE ASSAY (PLNA).** *J. Descotes*[2], G. Ravel[1, 2], M. Christ[1], N. Eltschinger[1] and J. Guichard[1]. [1]MDS Pharmacology Services, L'Arbresle, France and [2]Poison Center & INSERM U503, Lyon, France.

#225 **INTER-ANIMAL VARIATION IN CYTOKINE FINGERPRINTING OF CHEMICAL ALLERGENS.** H. Caddick, *R. J. Dearman* and *I. Kimber*. Syngenta CTL, Macclesfield, United Kingdom.

#226 **SENSITIZATION WITH DINITROTHIOCYANOBENZENE (DNTB): COMPARISONS WITH DINITROCHLOROBENZENE (DNCB).** P. S. Friedmann[1], *C. Pickard*[1], M. Cumberbatch[2], *R. J. Dearman*[2] and *I. Kimber*[2]. [1]Southampton University, Southampton, United Kingdom and [2]Syngenta CTL, Macclesfield, United Kingdom.

#227 **MOLECULAR SCREENING FOR SKIN SENSITISATION HAZARD *IN VITRO* USING PROTEOMICS TECHNIQUES.** M. Divkovic[2], *D. A. Basketter*[1], C. K. Pease[1], A. Dell[2] and H. R. Morris[2]. [1]SEAC, Unilever, Sharnbrook, United Kingdom and [2]Biological Sciences, Imperial College, London, United Kingdom.

#228 **AN INTER-LABORATORY STUDY FOR THE DEVELOPMENT OF AN *IN VITRO* SKIN SENSITIZATION TEST USING HUMAN CELL LINES.** Y. Yoshida[1], T. Ashikaga[2], H. Sakaguchi[1], M. Miyazawa[1], M. Hirota[2], M. Ogo[2], H. Itagaki[2] and H. Suzuki[1]. [1]Kao Corporation, Haga, Tochigi, Japan and [2]Shiseido Corporation, Yokohama, Kanagawa, Japan. Sponsor: *J. Avalos*.

#229 **DEVELOPMENT OF AN *IN VITRO* SKIN SENSITIZATION TEST USING HUMAN CELL LINES.** T. Ashikaga[1], Y. Yoshida[2], M. Hirota[1], M. Ogo[1], H. Sakaguchi[2], M. Miyazawa[2], H. Suzuki[2] and H. Itagaki[1]. [1]Shiseido Corporation, Yokohama, Kanagawa, Japan and [2]Kao Corporation, Haga, Tochigi, Japan. Sponsor: *J. Avalos*.

#230 **MECHANISMS OF CCR7 UP-REGULATION BY NISO4 ON HUMAN DENDRITIC CELLS.** F. Boisleve and *M. Pallardy*. Faculty of Pharmacy, INSERM U461, Chatenay-Malabry, France.

#231 **STUDIES ON THE RESPIRATORY IMMUNE RESPONSE TO A PROTEASE AND IMPLICATIONS FOR THE SAFETY ASSESSMENT OF ENZYME-CONTAINING PERSONAL CARE PRODUCTS.** E. S. Finn[1], S. P. Chapoval[3], A. Xue[2], V. Chowdhary[2], L. C. Limardi[1], A. C. Pursifull[1], E. V. Marietta[2], T. A. Gaffey[2], B. Kirchner[1], *K. Sarlo*[1], C. S. David[2] and D. N. Rubingh[1]. [1]Procter & Gamble Co., Cincinnati, OH, [2]Mayo Clinic, Rochester, MN and [3]Yale University, New Haven, CT.

#232 **ASSESSMENT OF IMMUNE RESPONSES TO *PENICILLIUM CHRYSOGENUM* AND CHARACTERIZATION OF ITS ALLERGENS.** Y. Chung[1], M. E. Viana[2], L. B. Copeland[3], *M. K. Selgrade*[3] and *M. D. Ward*[3]. [1]ESE, UNC/USEPA, Chapel Hill, NC, [2]CVM, NCSU, Raleigh, NC and [3]USEPA, Research Triangle Park, NC.

#233 **THE IDENTIFICATION AND CHARACTERIZATION OF AN IGE-INDUCING PROTEIN IN METARHIZIUM ANISOPLIAE EXTRACT.** *M. Ward*[1], L. B. Copeland[1], M. J. Donohue[3] and J. A. Shoemaker[2]. [1]NHEERL, USEPA, Research Triangle Park, NC, [2]NERL, USEPA, Cincinnati, OH and [3]Oakridge Institute for Science and Education, Cincinnati, OH.

#234 **TOPICAL SENSITIZATION AND INTRANASAL CHALLENGE TO TRIMELLITIC ANHYDRIDE INDUCES AN ALLERGIC RHINITIS SIMILAR TO THAT INDUCED BY INTRANASAL SENSITIZATION AND CHALLENGE IN A/J MICE.** *A. K. Farraj*[1, 2], *J. R. Harkema*[2] and *N. E. Kaminski*[1]. [1]Pharmacology and Toxicology, Michigan State University, East Lansing, MI and [2]Pathology and Diagnostic Investigation, Michigan State University, East Lansing, MI.

#235 **PERSISTENT SPECIFIC AIRWAY RESPONSIVENESS IN RATS SENSITIZED TO AND CHALLENGED WITH TRIMELLITIC ANHYDRIDE (TMA).** *P. D. Siegel*, *X. Zhang* and D. M. Lewis. HELD/ASB, NIOSH/CDC, Morgantown, WV.

#236 **CROSS-REACTIVITY OF ACID ANHYDRIDES ASSESSED BY AIRWAY CHALLENGE IN RATS SENSITIZED WITH TRIMELLITIC ANHYDRIDE (TMA).** *X. Zhang*, J. S. Fedan, D. M. Lewis and *P. D. Siegel*. HELD, NIOSH/CDC, Morgantown, WV.

#237 **INHALATION EXPOSURE OF TRIMELLITIC ANHYDRIDE (TMA) AEROSOL IN A BROWN NORWAY RAT MODEL.** D. M. Lewis, *X. Zhang* and *P. D. Siegel*. HELD, NIOSH/CDC, Morgantown, WV.

Monday Morning, March 22
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: *IN VITRO*/ANIMAL ALTERNATIVE MODELS I

Chairperson(s): *A. Jay Gandolfi, University of Arizona, Tucson, AZ and Ian Kimber, Syngenta, United Kingdom.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 11:00 AM–12:30 PM*

#238 **INTERSPECIES VARIATION AND LINEAGE SPECIFICITY IN HEMATOPOIETIC TOXICITY TESTING.** C. Pereira, J. Damen and E. Clarke. Contract Assay, StemCell Technologies Inc., Vancouver, BC, Canada. Sponsor: *M. Ehrich*.

#239 **A HIGH THROUGHPUT CELL-BASED ASSAY FOR ASSESSMENT OF HEPATOTOXICITY USING CRYOPRESERVED HUMAN HEPATOCYTES.** *M. Chen*, M. Hann and K. Zhang. Pharmacology, Novartis Institute for Functional Genomics, San Diego, CA.

#240 **PHASE I AND II RESULTS OF A VALIDATION STUDY TO EVALUATE *IN VITRO* CYTOTOXICITY ASSAYS FOR ESTIMATING RODENT AND HUMAN ACUTE SYSTEMIC TOXICITY.** M. Paris[1, 2], J. Strickland[1, 2], *W. Stokes*[1], S. Casati[3], *R. Tice*[1, 2], H. Raabe[4], C. Cao[5], R. Clothier[6], J. Harbell[4], G. Mun[4], A. Sizemore[4], G. Moyer[4], J. Madren-Whalley[5], C. Krishna[5], M. Owen[6], N. Bourne[6], J. Haseman[7], P. Crockett[8], M. Wenk[9], M. Vallant[7] and A. Worthj[3]. [1]NICEATM, NIEHS, Research Triangle Park, NC, [2]ILS, Inc., Research Triangle Park, NC, [3]ECVAM, Ispra, Italy, [4]IIVS, Gaithersburg, MD, [5]US Army, Aberdeen Proving Ground, MD, [6]University of Nottingham, Nottingham, United Kingdom, [7]NIEHS, Research Triangle Park, NC, [8]ASI, Research Triangle Park, NC and [9]BioReliance, Rockville, MD.

#241 **DATA COLLECTION AND ANALYSIS SYSTEMS FOR AN *IN VITRO* CYTOTOXICITY VALIDATION STUDY.** J. Strickland[1, 2], M. Paris[1, 2], H. Raabe[3], J. Haseman[4], S. Casati[5], R. Clothier[6], C. Cao[7], P. Crockett[8], *R. Tice*[1, 2] and *R. Stokes*[2]. [1]ILS, Inc., Research Triangle Park, NC, [2]NICEATM, NIEHS, Research Triangle Park, NC, [3]IIVS, Gaithersburg, MD, [4]NIEHS, Research Triangle Park, NC, [5]ECVAM, Ispra, Italy, [6]University of Nottingham, Nottingham, United Kingdom, [7]US Army, Aberdeen Proving Ground, MD and [8]ACI, Research Triangle Park, NC.

#242 **MANAGING TOXIC SYNERGISM IN HYPOCHLORITE-CONTAINING CLEANERS USING THE BOVINE CORNEAL AND PERMEABILITY (BCOP) ASSAY, PART II.** J. E. Swanson[1], W. M. Rees[1], D. S. Hilgers[1], *J. C. Merrill*[2] and J. W. Harbell[2]. [1]SC Johnson & Son, Inc., Racine, WI and [2]Institute for *In Vitro* Sciences, Inc., Gaithersburg, MD.

#243 ***IN VITRO* CYTOTOXICITY TESTING WITH CULTURED IMMORTAL HUMAN COLON CELLS.** R. Konsoula and *F. A. Barile*. Department of Pharmaceutical Sciences, St. John's University College of Pharmacy, Jamaica, NY.

#244 **INDUCTION OF FIBROSIS BY BLEOMYCIN AND CARMUSTINE IN RAT LUNG SLICES.** H. P. Behrsing, K. Amin, C. Ip and *C. A. Tyson*. Toxicology Laboratory, SRI International, Menlo Park, CA.

#245 **INDUCTION OF A ZONE OF CELL DEATH IN MULTI-WELL PLATES BY REFEEDING.** H. A. Raabe, G. O. Moyer, G. C. Mun, A. M. Sizemore, J. W. Harbell and *J. C. Merrill*. Institute for *In Vitro* Sciences, Inc., Gaithersburg, MD.

#246 **ARE PRIMARY RAT HEPATOCYTE CULTURES APPROPRIATE FOR PREDICTIVE HEPATOTOXICITY TESTING OF PHARMACEUTICALS.** H. Powell, A. Quigley, J. Hopwood, J. Eakins and G. Kenna. Safety Assessment, AstraZeneca, Macclesfield, Cheshire, United Kingdom. Sponsor: *T. Orton*.

#247 **HIGH-THROUGHPUT ASSAY FOR ASSESSING LIVER TOXICITY.** P. McGrath, C. Parng, C. Ton and C. Zhang. Phylonix Pharmaceuticals, Inc., Cambridge, MA. Sponsor: *P. Mayeux*.

#248 **CHANGES IN ARGININE UPTAKE, GLUTATHIONE LEVELS, UREA AND NITRIC OXIDE SYNTHESES IN RAT LIVER SPHEROIDS AFTER EXPOSURE TO PROPRANOLOL.** M. Ma, J. Xu and W. Purcell. Faculty of Applied Sciences, University of the West of England, Bristol, United Kingdom. Sponsor: *C. Atterwill*.

#249 **A TWO-STEP PROTOCOL TO DETERMINE LIVER SPHEROID CELL SPREADING INHIBITION CONCENTRATION (SCSIC) OF TOXICANTS.** J. Xu and W. M. Purcell. Faculty of Applied Sciences, University of the West of England, Bristol, United Kingdom. Sponsor: *C. Atterwill*.

#250 **EVALUATION OF LIVER SPECIFIC FUNCTIONS AS HEPATOCYTOTOXIC ENDPOINTS USING A LIVER SPHEROID MODEL.** W. M. Purcell and J. Xu. Faculty of Applied Sciences, University of the West of England, Bristol, United Kingdom. Sponsor: *C. Atterwill*.

#251 ***IN VITRO* ANALYSIS OF MULTIPARAMETRIC CYTOTOXICITY AT THE INDIVIDUAL CELL LEVEL.** V. Abraham, B. Samson, O. Lapets and J. Haskins. Cellomics, Inc., Pittsburgh, PA. Sponsor: *E. McGuire*.

#252 **ALLERGEN-INDUCED CHANGES IN CYTOKINE EXPRESSION BY CULTURED DENDRITIC CELLS: RELATIONSHIP WITH CYTOTOXICITY.** C. J. Betts[1], M. Cumberbatch[1], *B. Hulette*[2], *G. Gerberick*[2], *C. A. Ryan*[2], *R. J. Dearman*[1] and *I. Kimber*[1]. [1]Syngenta CTL, Macclesfield, Cheshire, United Kingdom and [2]Procter & Gamble, Cincinnati, OH.

#253 **HEAT SHOCK PROTEIN RESPONSES IN TETRAFLUOROETHYLCYSTEINE-INDUCED CYTOTOXICITY.** *H. Ho*[1], Y. Jia[1], Z. Hu[3], 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]Amgen Inc., Seattle, WA and [4]Fred Hutchinson Cancer Research Center, Seattle, WA.

#254 **APPLICATION OF QSARs TO EVALUATE THE CYTOTOXICITY OF p-BENZOQUINONES TO RAT PRIMARY HEPATOCYTES AND PC12 CELLS.** A. G. Siraki, T. S. Chan and P. J. O'Brien. Pharmaceutical Sciences, University of Toronto, Toronto, ON, Canada. Sponsor: *J. Uetrecht*.

#255 **RELATIONSHIP BETWEEN CD86 EXPRESSION, CYTOTOXICITY AND EXPOSURE OF DENDRITIC CELLS TO CHEMICAL ALLERGEN.** B. Hulette[1], *C. Ryan*[1], L. Gildea[1], *I. Kimber*[2], *R. Dearman*[2] and *F. Gerberick*[1]. [1]Procter & Gamble, Cincinnati, OH and [2]Syngenta Central Toxicology Laboratory, Macclesfield, Cheshire, United Kingdom.

#256 **COMPARATIVE TOXICITY OF DIFFERENT EMISSION PARTICLES IN MURINE PULMONARY EPITHELIAL CELLS AND MACROPHAGES.** T. Stevens[1], *P. Singh*[2], M. Daniels[2] and *M. Gilmour*[2]. [1]Toxicology, UNC, Chapel Hill, NC and [2]NHEERL, USEPA, Research Triangle Park, NC.

#257 **PRESENCE OF TIGHT AND ADHERENS JUNCTION PROTEINS IN AN IMMORTALIZED Z310 CHOROID PLEXUS CELL LINE.** *W. Zheng*[1], L. Shi[1], J. Li[1], J. Szmydynger-Chodobska[2] and A. Chodobski[2]. [1]School of Health Sciences, Purdue University, West Lafayette, IN and [2]Clinical Neurosciences, Brown University, Providence, RI.

#258 **DETERMINATION OF ENERGY AND REDOX STATES IN CELL CULTURE FOLLOWING CADMIUM EXPOSURE.** L. Yu[1], *R. C. Gupta*[2] and *M. S. Yang*[1]. [1]Biology, Hong Kong Baptist University, Hong Kong, China and [2]Toxicology Department, Murray Sate University, Breathitt Veterinary Center, Hopkinsville, KY.

#259 **BASAL GENE EXPRESSION PROFILES AND EFFECTS OF HEPATOCARCINOGENS ON GENE EXPRESSION IN PRIMARY HUMAN HEPATOCYTES AND HEPG2 CELLS.** *A. J. Harris*[1], S. L. Dial[1] and *D. A. Casciano*[2]. [1]Center for Hepatotoxicity, NCTR, Jefferson, AR and [2]Office of the Director, NCTR, Jefferson, AR.

Monday Morning, March 22
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: METAL GENOTOXICITY AND INDUCTION OF GENE EXPRESSION

Chairperson(s): *Frederik De Wolff, Leiden Univeristy Medical Center, Netherlands and Maryka Bhattacharyya, Argonne National Laboratory, Argonne, IL.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 9:30 AM–11:00 AM*

#260 **GENE EXPRESSION MICROARRAY-BASED HYPOTHESIS FOR CADMIUM-INDUCED BONE LOSS.** *M. H. Bhattacharyya*[1], A. Regunathan[1], D. A. Glesne[1] and A. K. Wilson[2]. [1]Argonne National Laboratory, Argonne, IL and [2]Benedictine University, Lisle, IL.

#261 **BISMUTH-INDUCED RESISTANCE AGAINST CISPLATIN NEPHROTOXICITY AND GENE EXPRESSION PROFILE IN CULTURED TUBULAR EPITHELIUM.** *F. A. de Wolff*[1], B. T. Leussink[1], J. J. Baelde[2], T. M. Broekhuizen-van den Berg[2], E. de Heer[2], *A. Slikkerveer*[3], G. B. van der Voet[1] and J. A. Bruijn[2]. [1]Toxicology Laboratory, Leiden University Med. Ctr, Leiden, Netherlands, [2]Department of Pathology, Leiden University Med. Ctr, Leiden, Netherlands and [3]Research Laboratories, Yamanouchi Europe BV, Leiderdorp, Netherlands.

#262 **TOXICOGENOMIC ANALYSIS OF ABERRANT GENE EXPRESSION IN NEWBORN MOUSE LIVER INDUCED BY TRANSPLACENTAL EXPOSURE TO CARCINOGENIC DOSES OF INORGANIC ARSENIC.** *Y. Xie*[1], *J. Liu*[1], *B. A. Diwan*[2], J. M. Ward[3], D. L. Logsdon[3] and *M. P. Waalkes*[1]. [1]Inorganic Carcinogenesis Section, LCC, NCI at NIEHS, Research Triangle Park, NC, [2]SAIC, NCI at Frederick, Frederick, MD and [3]Office of Laboratory Animal Science, NCI at Frederick, Frederick, MD.

#263 **FURTHER STUDIES ON GENE EXPRESSION CHANGES ASSOCIATED WITH TRANSPLACENTAL ARSENIC CARCINOGENESIS.** *J. Liu*[1], *Y. Xie*[1], *B. A. Diwan*[2], J. M. Ward[3], D. L. Logsdon[2] and *M. P. Waalkes*[1]. [1]Inorganic Carcinogenesis, LCC, NCI at NIEHS, Raleigh, NC, [2]SAIC, NCI-Frederick, Frederick, MD and [3]Office of Laboratory Animal Sciences, NCI -Frederick, Frederick, MD.

#264 **MODULATION OF AHR-REGULATED GENE EXPRESSION BY ARSENITE, CADMIUM, AND CHROMIUM.** R. H. Elbekai and A. O. El-Kadi. University of Alberta, Edmonton, AB, Canada. Sponsor: *J. Koropatnick*.

#265 **DIFFERENTIAL EFFECTS OF HEAVY METALS ON ARYL HYDROCARON RECEPTOR-REGULATED GENES.** H. M. Korashy and *A. O. El-Kadi*. Faculty of Pharmacy & Pharmaceutical Sciences, University of Alberta, Edmonton, AB, Canada.

#266 **ARSENITE INITIATES AH RECEPTOR-INDEPENDENT REPRESSION OF CYP1A1 INDUCTION BY TCDD.** J. A. Bonzo[1], A. Galijatovic[1], S. Chen[1] and *R. H. Tukey*[1, 2]. [1]Pharmacology, University of California San Diego, La Jolla, CA and [2]Chemistry & Biochemistry, University of California San Diego, La Jolla, CA.

#267 **ARSENIC-TRANSFORMED HUMAN PROSTATE EPITHELIAL CELLS SHOW CHANGES IN ANDROGEN METABOLISM AND ESTROGEN RECEPTOR EXPRESSION.** *L. Benbrahim-Tallaa*[1], M. M. Webber[2] and *M. P. Waalkes*[1]. [1]Inorganic Carcinogenesis Section, NCI at NIEHS, Research Triangle Park, NC and [2]Michigan State University, East Lansing, MI.

#268 **EXPOSURE TO SOLUBLE NICKEL ALTERS IRON-MEDIATED GENE TRANSCRIPTION AND ENZYME ACTIVITY IN A549 CELLS.** *T. L. Davidson*, H. Chen, T. Kluz and *M. Costa*. Department of Env. Med., New York University, Tuxedo, NY.

#269 **EUKARYOTIC TRANSLATION INITIATION FACTOR 4E (EIF4E) IS A CELLULAR TARGET FOR CADMIUM TOXICITY.** S. Othumpangat and *P. Joseph*. Health Effects Laboratory Division, NIOSH, Morgantown, WV.

#270 **LEAD IS MITOGENIC TO WTHBF-6 CELLS, BUT LEAD CHROMATE (LC) INDUCES CELL CYCLE ARREST.** *J. Moreland*[1], S. Teufack[1, 3], S. Sandwick[1], J. Dufour[1], *S. S. Wise*[1], A. Holmes[1], M. Ketterer[2], W. Hartsock[2], E. Fomenchenko[1, 3], S. Katsifis[3] and *J. P. Wise*[1]. [1]Wise Laboratory of Environmental and Genetic Toxicology, Center for Integrated and Applied Environmental Toxicology, University of Southern Maine, Portland, ME, [2]Department of Chemistry, Northern Arizona University, Flagstaff, AZ and [3]Department of Biology, University of Bridgeport, Bridgeport, CT.

#271 **MERCURY MODULATES CELL CYCLE PROGRESSION IN HUMAN LIVER CARCINOMA CELLS THOUGH INDUCTION OF C-FOS, CYCLIN-A, AND CYCLIN-D EXPRESSION, AND REPRESSION OF GADD153.** *P. B. Tchounwou* and D. J. Sutton. Center for Environmental Health, Jackson State University, Jackson, MS.

#272 **URANIUM IS CYTOTOXIC AND GENOTOXIC TO HUMAN LUNG CELLS.** W. Diaz, *S. Wise* and *J. P. Wise*. Wise Laboratory of Environmental and Genetic Toxicology, Center for Integrated and Applied Environmental Toxicology, University of Southern Maine, Portland, ME.

#273 **INTERFERON-α INDUCTION OF METALLOTHIONEIN IN RAT LIVER IS NOT LINKED TO INTERLEUKIN-1, -6 OR TUMOR NECROSIS FACTOR-α.** E. Brambila[1], A. Leon[1], J. Guevara[1], O. Castellanos[1], *M. P. Waalkes*[2] and *W. E. Achanzar*[2]. [1]University of Puebla, Puebla, Mexico and [2]Inorganic Carcinogenesis Section, NCI at NIEHS, Research Triangle Park, NC.

#274 **PROLYL HYDROXYLASES AS TARGETS FOR CARCINOGENIC NICKEL.** *K. Salnikow*[1], *A. Zhitkovich*[2], S. P. Donald[1], J. Phang[1] and *K. Kasprzak*[1]. [1]National Cancer Institute, Frederick, MD and [2]Brown University, Providence, RI.

#275 **LEAD INHIBITS OSTEOBLAST DIFFERENTIATION BY BLOCKING SMAD SIGNALING.** K. O. Hochberg, T. J. Sheu, E. M. Schwarz, M. J. zuscik, R. J. O'Keefe, R. N. Rosier and *J. E. Puzas*. Orthopedics, University of Rochester, Rochester, NY.

#276 ***IN VIVO* ACTIVATION OF METALLOTHIONEIN ISOFORM 3 EXPRESSION IN HUMAN CANCER CELLS.** *D. A. Sens*[1], V. Gurel[2], *S. H. Garrett*[2], *S. Somji*[2] and M. Sens[2]. [1]Surgery, University of North Dakota, Grand Forks, ND and [2]Pathology, University of North Dakota, Grand Forks, ND.

#277 **EXPRESSION OF METALLOTHIONEIN 3 PROTEIN IS RESTRICTED IN THE NORMAL BREAST EPITHELIAL CELL LINE, MCF-10A.** M. Sens[1], V. Gurel[1], *S. H. Garrett*[1], *S. Somji*[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.

#278 **EFFECT OF CADMIUM ON THE EXPRESSION OF METALLOTHIONEIN 1 AND 2 PROTEIN IN THE NORMAL BREAST TISSUE AND THE CELL LINE MCF-10A.** V. Gurel[1], *D. A. Sens*[2], *S. Somji*[1], *S. H. Garrett*[1] and M. Sens[1]. [1]Pathology, University of North Dakota, Grand Forks, ND and [2]Surgery, University of North Dakota, Grand Forks, ND.

#279 **METALLOTHIONEIN AND GLUTAMYL-CYSTEINE LIGASE GENE EXPRESSION IN METAL-EXPOSED DEER MICE.** H. LaVire[1], S. Srinouanprachanh[1], M. Hooper[2], S. McMurry[2], G. Cobb[2] and *T. Kavanagh*[1]. [1]University of Washington, Seattle, WA and [2]Texas Tech University, Lubbock, TX.

#280 **ACUTE CADMIUM EXPOSURE ENHANCES AP-1 DNA BINDING AND INDUCES CYTOKINES EXPRESSION AND HEAT SHOCK PROTEIN 70 IN HEPG2 CELLS.** V. Souza[1], C. Escobar[1], L. Gomez-Quiroz[1], L. Bucio[1], E. Hernandez[1], E. Chavez Cossio[2] and *C. Gutierrez-Ruiz*[1]. [1]Cs de la Salud, UAM-I, Mexico, DF, Mexico and [2]Bioquimica, Instituto Nacional Cardiologia Ignacio Chavez, Mexico, DF, Mexico.

#281 **PARTICULATE HEXAVALENT CHROMIUM-INDUCED CLASTOGENESIS IS MEDIATED BY EXTRACELLULAR DISSOLUTION THAT DOES NOT REQUIRE PARTICLE-CELL CONTACT.** H. Xie[1], A. Holmes[1], *S. Wise*[1], N. Gordon[2] and *J. P. Wise*[1]. [1]Wise Laboratory of Environmental and Genetic Toxicology, Center for Integrated and Applied Environmental Toxicology, University of Southern Maine, Portland, ME and [2]Department of Chemistry, University of Southern Maine, Portland, ME.

#282 **CHARACTERIZATION OF DNA DAMAGE INDUCED BY DEPLETED URANIUM.** M. Yazzie[1], C. Salanga[1], A. M. Hays[2], R. Ahmad[2], E. R. Civitello[1], *R. C. Lantz*[2] and *D. M. Stearns*[1]. [1]Chemistry and Biochemistry, Northern Arizona University, Flagstaff, AZ and [2]Cell Biology and Anatomy, University of Arizona, Tucson, AZ.

#283 **HPRT MUTATIONS INDUCED BY URANYL ACETATE IN CHINESE HAMSTER OVARY AA8 AND EM9 CELLS: EFFECT OF DNA REPAIR INHIBITION.** *D. M. Stearns*[1], V. H. Coryell[1], A. Bradley[1], A. M. Hays[2], N. Denipah[2] and *R. C. Lantz*[2]. [1]Chemistry and Biochemistry, Northern Arizona University, Flagstaff, AZ and [2]Cell Biology and Anatomy, University of Arizona, Tucson, AZ.

#284 **MOLECULAR ANALYSIS OF HPRT MUTATIONS INDUCED BY CHROMIUM PICOLINATE IN CHO AA8 CELLS.** V. H. Coryell and *D. M. Stearns*. Chemistry and Biochemistry, Northern Arizona University, Flagstaff, AZ.

#285 **CARCINOGENIC HEAVY METALS, AS^{3+} AND CR^{6+}, INCREASE THE AFFINITY OF NUCLEAR LIPOCORTIN I HETEROTETRAMER FOR DAMAGED DNAS.** A. Hirata, Y. Hou, *G. B. Corcoran* and *F. Hirata*. Pharmaceutical Sciences, Wayne State University, Detroit, MI.

#286 **CHROMOSOMAL INSTABILITY AS CONSEQUENCES OF MICROTUBULE INJURY BY CADMIUM.** *I. Chou*[1], Y. Zhao[1] and W. Li[2]. [1]Microbiology, Boston University School of Medicine, Boston, MA and [2]Biochemistry, Boston university School of Medicine, Boston, MA.

#287 **ARSENITE MEDIATES GENE EXPRESSION IN HUMAN BLADDER EPITHELIUM.** X. Zheng[1], T. G. Bredfeldt[1], G. S. Watts[2], S. E. Vaught[2], A. G. May[2] and *A. Gandolfi*[1]. [1]Pharmacology/Toxicology, University of Arizona, Tucson, AZ and [2]Arizona Cancer Center, University of Arizona, Tucson, AZ.

#288 **CADMIUM AND HYDRAZINE TOXICITY IN BRL 3A CELLS AND PRIMARY RAT HEPATOCYTES BASED ON BIOCHEMICAL AND GENE EXPRESSION ANALYSIS.** *S. Hussain*[1], *K. Geiss*[2], *J. Schlager*[2], V. Chan[1] and *J. Frazier*[2]. [1]Air Force Research Laboratory, Mantech Environment, Dayton, OH and [2]AFB, Dayton, OH.

#289 **CHROMIUM INHIBITS TRANSCRIPTION FROM PAH-INDUCIBLE PROMOTERS BY BLOCKING THE RELEASE OF HDAC AND PREVENTING THE BINDING OF P300 TO CHROMATIN.** *Y. Wei*[1, 3], M. Huang[1], M. Sartor[1], K. Tepperman[2] and *A. Puga*[1]. [1]Center for Environmental Genetics and Department of Environmental Health, University of Cincinnati, Cincinnati, OH, [2]Department of Biological Sciences, University of Cincinnati, Cincinnati, OH and [3]MPH Program, Fort Valley State University, Fort Valley, GA.

#290 **C-TERMINAL DELETION MUTANT OF MRE-BINDING TRANSCRIPTION FACTOR-1 INHIBITS MRE-DRIVEN GENE EXPRESSION.** T. Kimura[1], N. Itoh[2], T. Sone[1], K. Tanaka[2] and M. Isobe[1]. [1]Department of Toxicoligy, Faculty of Pharmaceutical Sciences, Setsunan University, Hirakata, Japan and [2]Department of Toxicoligy, Graduate School of Pharmaceutical Sciences, Osaka University, Suita, Japan. Sponsor: *M. Cherian*.

#291 **THE TWO ISOFORMS OF RAT METALLOTHIONEIN ARE COORDINATELY REGULATED *IN VIVO*.** *D. M. Todd*[1, 2], *N. DelRaso*[2], *J. Gearhart*[3, 2], V. Chan[3, 2], *D. Mahle*[3, 2] and *J. M. Frazier*[2]. [1]Wright State University, Dayton, OH, [2]AFRL/HEST, Wright-Patterson AFB, OH and [3]ManTech Environmental Technology, Inc., Dayton, OH.

#292 **TOXICOGENOMICS OF DRINKING WATER ARSENIC *IN VIVO*: EFFECTS OF REPLICATES ON MICROARRAY ANALYSIS.** J. C. Davey[1], *A. S. Andrew*[1], *A. Barchowsky*[2], *N. V. Soucy*[1], D. D. Mayka[1], *R. Lantz*[3], A. Hays[3] and *J. W. Hamilton*[1]. [1]Pharmacology & Toxicology, Dartmouth Medical School, Hanover, NH, [2]Environmental & Occupational Health, University of Pittsburgh, Pittsburgh, PA and [3]Cell Biology & Anatomy, University of Arizona, Tucson, AZ.

#293 **DOSE-DEPENDENT ALTERATION OF OXIDATIVE STRESS AND DNA REPAIR GENE EXPRESSION BY DIMETHYLARSINIC ACID [DMA(V)] IN TRANSITIONAL EPITHELIUM OF URINARY BLADDER FROM FEMALE F344 RATS.** B. Sen[1, 2], *A. Wang*[3], S. D. Hester[1], J. L. Robertson[3] and *D. C. Wolf*[1]. [1]Environmental Carcinogenesis Divison, USEPA, Research Triangle Park, NC, [2]NRC, Research Triangle Park, NC and [3]VA-MD College of Veterinary Medicine, Blacksburg, VA.

Monday Morning, March 22
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: NEUROTOXICITY, GENERAL I

Chairperson(s): *Virginia Moser, USEPA, Research Triangle Park, NC and Deborah Cory-Slechta, EOHSI, University of Medicine, Piscataway, NJ.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 11:00 AM–12:30 PM*

#294 **AGE-RELATED SUSCEPTIBILITY: A GENOMICS APPROACH.** J. E. Royland. Neurotoxicology Division, USEPA, Durham, NC. Sponsor: *S. Padilla*.

#295 **THE ROLE OF HEME-OXYGENASE (HO-1) AND THIOREDOXIN IN RAT HIPPOCAMPAL ASTROCYTES PRETREATED WITH EBSELEN.** *D. Hardej* and *L. D. Trombetta*. Pharmaceutical Sciences, St. John's University, New York.

#296 **ACUTE AND REPEATED INHALATION OF TOLUENE BY RATS PERFORMING A SIGNAL DETECTION TASK LEADS TO BEHAVIORAL TOLERANCE ON SOME PERFORMANCE MEASURES.** W. M. Oshiro and *P. J. Bushnell*. Neurotoxicology Division, USEPA, Research Triangle Park, NC.

#297 **CARBONYL SULFIDE INHALATION PRODUCES BRAIN LESIONS IN F344 RATS. DL MORGAN, PB LITTLE, VC MOSER, DW HERR, AND RC SILLS. NIEHS, Research Triangle Park, NC; PATHOLOGY ASSOCIATES, INC., Research Triangle Park, NC; ORD/NHEERL, USEPA, Research Triangle Park, NC.** *D. Morgan*[1], P. B. Little[2], *V. C. Moser*[3], *D. W. Herr*[3] and R. C. Sills[1]. [1]NIEHS, Research Triangle Park, NC, [2]Pathology Associates, Inc., Research Triangle Park, NC and [3]ORD/NHEERL, USEPA, Research Triangle Park, NC.

#298 **INDUCTION OF C-FOS GENE EXPRESSION IN DIFFERENT RAT BRAIN LOCATIONS, AS AN EARLY RESPONSE OF NEURONAL ACTIVATION, AFTER TREATMENT WITH NMDA ANTAGONISTS.** B. P. de Wergifosse[1], B. Vanrossomme[1], W. Dewe[1], T. Murray[2], M. J. O'Neill[2] and K. Kramer[1]. [1]Toxicology / Drug Disposition, Eli Lilly and Company, Mont-Saint-Guibert, Belgium and [2]Neurosciences Division, Lilly Research Centre, Windelsham, United Kingdom. Sponsor: *C. Thomas*.

#299 **DEVELOPMENT OF A RELIABLE MOUSE MODEL OF VINCRISTINE-INDUCE NEUROPATHY.** F. A. Wininger, S. A. Steinberg and *C. Massicotte*. Small Animal Clinical Sciences, University of Pennsylvania, Philadelphia, PA.

#300 **ACRYLAMIDE-INDUCED REDUCTIONS OF AXONAL SODIUM AND POTASSIUM CHANNELS IN PROXIMAL AND DISTAL CNS AXONS: COMPARISON WITH PNS AXONS.** *D. W. Sickles*, J. Porter, T. Angela and D. Kumiski. Cellular Biology and Anatomy, Medical College of Georgia, Augusta, GA.

#301 **DEXTROMETHORPHAN DOES NOT CAUSE NEURONAL VACUOLATION OR DEGENERATION IN THE POSTERIOR CINGULATE/RETROSPLENIAL CORTEX OF RATS.** *D. L. Shuey*[1], T. P. O'Neill[2], R. Carliss[1] and *R. J. Gerson*[1]. [1]Endo Pharmaceuticals Inc., Chadds Ford, PA and [2]WIL Research Laboratories, Ashland, OH.

#302 **THROMBIN PRECONDITIONING PROTECTS AGAINST 6-HYDROXYDOPAMINE, WHILE LARGE DOSES RESULT IN BEHAVIORAL DEFICITS.** *J. Cannon*, G. Xi, Y. Hua, T. Schallert and R. Keep. Neurosurgery, University of Michigan, Ann Arbor, MI.

#303 **LONG-TERM SURVIVAL, MIGRATION AND PHENOTYPIC EXPRESSION OF MARROW STROMAL CELLS TRANSPLANTED INTO THE ADULT RAT BRAIN.** T. M. Coyne[1, 2], D. Woodbury[2] and I. Black[2]. [1]Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ and [2]Department Neuorsi. & Cell Bio, UMDNJ Robert Wood Johnson Med. Sch., Piscataway, NJ. Sponsor: *K. Reuhl*.

#304 **NEUROBEHAVIORAL EVALUATION AND KINETICS OF PEAK AND CONSTANT INHALATORY EXPOSURE TO TOLUENE IN HUMAN VOLUNTEERS.** J. H. Lammers, W. Meuling, L. van der Horst-Groeneveld, R. Pels Rijcken, D. de Groot and *V. Feron*. TNO Nutrition and Food Research, Zeist, Netherlands.

#305 **NEUROPROTECTION AGAINST ENDOGENOUS OXIDATIVE STRESS IN AGING PROSTAGLANDIN H SYNTHASE-1 (PHS-1) KNOCKOUT MICE.** *P. G. Wells*[1, 2], A. Ramkissoon[1] and *W. Jeng*[1]. [1]Pharmacy, University of Toronto, Toronto, ON, Canada and [2]Pharmacology, University of Toronto, Toronto, ON, Canada.

#306 **EVIDENCE FOR POSSIBLE STRAIN DIFFERENCES IN RESPONSE TO CLONIDINE IN THE ACCELERATING ROTAROD TEST OF MOTOR CO-ORDINATION IN SPRAGUE-DAWLEY AND HAN WISTAR RATS.** I. Strang[1], S. Palethorpe[1], K. Pitts[2], W. S. Redfern[1], J. Valentin[1] and *T. G. Hammond*[1]. [1]Safety Pharmacology SAUK, AstraZeneca, Alderley Park, Cheshire, United Kingdom and [2]Drug Discovery DMPK, AstraZeneca, Alderley Park, Cheshire, United Kingdom.

#307 **REAL-TIME RT-PCR MONITORED SELECTIVE ALTERATIONS OF GENE EXPRESSION IN MICE INDUCED BY MPTP.** Z. A. Xu, K. McCastlasin, D. Cawthon, *W. Slikker* and *S. F. Ali*. Neurochemistry Lab., Division of Neurotoxicology, NCTR, Jefferson, AR.

#308 **PROTEIN/DNA ARRAYS INDICATE SELECTIVE ALTERATIONS OF TRANSCRIPTION FACTORS IN MPP^+-INDUCED NEUROTOXICITY IN PC12 CELLS.** *S. F. Ali*, Z. A. Xu, K. McCastlain and *W. Slikker*. Neurochemistry Lab., Division of Neurotoxicology, NCTR, Jefferson, AR.

#309 **THE INJURED NEURON / PHAGOCYTIC MICROGLIA RATIO "R" REVEALS THE PROGRESSION AND SEQUENCE OF NEURODEGENERATION.** R. L. Jakab and *J. F. Bowyer*. Neurotoxicology, NCTR/FDA, Jefferson, AR.

#310 **DERMAL EXPOSURE TO JP8 JET FUEL: DISRUPTION OF AUDITORY FUNCTION, AND INDUCTION OF DERMATITIS IN RATS.** *L. D. Fechter*[1] and *R. Gallucci*[2]. [1]Research (151), Loma Linda VA Medical Center, Loma Linda, CA and [2]Pharmaceutical Sciences, University Oklahoma Hlth Sciences Ctr, Oklahoma City, OK.

#311 **TETRALIN AND METABOLITES: PROTEIN REACTIVITY, CHROMOGENICITY AND NEUROTOXICITY.** V. S. Palmer[2], D. Tshala-Katumbay[1], S. B. Hashemi[1], *M. I. Sabri*[1, 2] and *P. Spencer*[1, 2]. [1]Center for Research on Occupational and Environmental Toxicology, Oregon Health & Science University, Portland, OR and [2]Department of Neurology, School of Medicine, Oregon Health & Science University, Portland, OR.

#312 **COMPARATIVE ANALYSIS OF NEUROPSYCHOLOGICAL TOXICITY OF BIOLOGICAL, CHEMICAL, AND PHARMACEUTICAL AGENTS.** *M. Peterson* and *R. C. Pleus*. Intertox, Inc., Seattle, WA.

#313 **DECREASED NEUROLOGICAL SIDE EFFECTS WITH ARIPIPRAZOLE: A RESULT OF FUNCTIONALLY SELECTIVE ACTIVATION OF DOPAMINE D_2 RECEPTORS.** *J. D. Urban*[1], E. A. Gay[2] and *R. B. Mailman*[2, 1]. [1]Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC and [2]Department of Psychiatry, University of North Carolina, Chapel Hill, NC.

#314 **IS THERE A LINK BETWEEN FREE RADICAL FORMATION AND CELL DEATH.** *F. Fonnum*[1], T. Reistad[1], A. Dreiem[1] and E. Mariussen[2]. [1]Protection, Forsvarets Forskningsinstitutt, Kjeller, Norway and [2]Norwegian Institute of Air Research, Kjeller, Norway.

#315 **COMPARISON OF RAT HIPPOCAMPAL GENE EXPRESSION UTILIZING LASER CAPTURE MICRODISSECTION (LCM), RNA AMPLIFICATION AND OLIGONUCLEOTIDE MICROARRAYS.** A. C. Kant[1], *S. A. Ferguson*[1], P. M. Douglass[2] and *T. A. Patterson*[1]. [1]Neurotoxicology, NCTR/FDA, Jefferson, AR and [2]Agilent Technologies, Germantown, MD.

Monday Morning, March 22
9:30 AM to 11:30 AM
Exhibit Hall

POSTER SESSION FOR VISITING STUDENTS

Chairperson(s): *Rosita Proteau, Oregon State University, Corvalles, OR.*

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

Sponsored by:
Education Committee
Education Subcommittee for Minority Initiatives

Displayed: *9:30 AM–11:30 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 22
9:30 AM to 10:30 AM
Room 301

INFORMATIONAL SESSION: REAL TIME PCR APPLICATIONS FOR TOXICOLOGY

This seminar will illustrate new developments in real time PCR including: low cost instruments, low density real time arrays, and pre-designed TaqMan primer/probe sets for human, mouse, and rat genes. A range of applications will be presented, highlighting the flexibility of this technology including; RNAi validation, microarray hit validation, SNP Genotyping, and gene dosage.

Monday Morning, March 22
10:45 AM to 11:45 AM
Room 301

INFORMATION SESSION: IDENTIFICATION OF APOPTOSIS MARKERS IN PLATEABLE CRYOPRESERVED HUMAN HEPATOCYTES

Isolated hepatocytes have been used *in vitro* to study the drug metabolism and toxicity of different drug candidates. However, the unpredictable availability of fresh tissue can make this a challenging model to work with. A solution to this has been the development of methods for the cryopreservation of hepatocytes. Cryopreserved hepatocytes have been successfully used in many of the same studies where fresh hepatocytes were previously used. Recently cryopreserved hepatocytes have been identified which will form a monolayer when plated on collagen-coated tissue culture plates. These plateable cryopreserved human hepatocytes (PCHH) monolayers can be maintained for 5–7 days in culture, and have been used for induction and long-term (4-day) toxicity studies. PCHH have now been studied for their potential use in evaluating chemically-induced apoptosis. PCHH monolayers were incubated with compounds known to induce apoptotic pathways. Apoptosis was determined by measuring Caspase 3/7 and DNA fragmentation levels in the PCHH model. The results of these studies indicate that PCHH is a useful system for evaluating the ability of unknown compounds to initiate apoptosis in human hepatocytes.

Monday Afternoon

Monday Afternoon, March 22
12:00 NOON to 1:00 PM
Room 301

INFORMATIONAL SESSION: POTENTIAL GENOMIC MARKERS FOR CANINE LIVER INJURY

Gene Logic presents the first of two case study analyses. This study details the use of toxicogenomics in understanding species-specific liver injury by comparing gene expression data obtained from rats and canines treated with a proprietary compound. An overview of the analysis and the potential utility of such an approach will be discussed. A light lunch will be available.

Monday Afternoon, March 22
12:15 PM to 1:15 PM
Room 307

MEDICAL RESEARCH COUNCIL (MRC) LECTURE: GATEWAY TO APOPTOSIS

Lecturer: *Stanley Korsmeyer, Dana Farber Cancer Institute/Harvard Medical School, Boston, MA.*

The Bcl-2 protein family is involved in the control of death and survival as well as the subtle regulation of organelle physiology. Dr. Stanley Korsmeyer's research has been central to understand the pathophysiological functions of the member of the Bcl-2 protein family. The initial findings that Bcl-2 and its pro-apototic counterparts could regulate several steps of the death program has opened a new research field and fostered the more recent discovery of the role of these proteins in the regulation of inter-organelle calcium fluxes and cellular metabolism. The significance of Dr. Korsmeyer's research is high and its implications span from fundamental advances in understanding cell physiology to treatment of human disease.

Monday Afternoon, March 22
12:15 PM to 1:15 PM
Room 318

ROUNDTABLE SESSION: STUDENT SYMPOSIUM ON EFFECTIVE PRESENTATIONS

Chairperson(s): *Robert Mitkus, University of Maryland Baltimore, Baltimore, MD and Amy (Hui-Shan) Wang, VA MD Regional College of Veterinary Medicine, Blacksburg, VA.*

Endorsed by:
Education Committee
National Capital Area Chapter*
Placement Committee
Student Advisory Committee
Women in Toxicology Specialty Section

The ability to present information to an audience in a clear, concise manner is a critical academic and career skill. An effective presentation conveys important knowledge, generally as a summarization of a larger body of data or ideas, often within a specified format or time frame, and provides a forum for a productive exchange of ideas. Typical formats include posters and oral presentations. These can be used in academic settings (e.g., an oral classroom presentation, a proposal defense, or a thesis/dissertation defense), at professional/ scientific conferences (e.g., a poster presentation or a platform talk), or even in job interviews. This roundtable will address some of the skills needed to deliver an effective presentation. Students will find the topics to be particularly useful and informative. The speakers will cover general concepts of communication, provide practical hints for organizing and conveying information in posters and oral presentations, and discuss the skills needed to effectively answer questions and comments from the audience.

#316	12:15	**STUDENT ROUNDTABLE ON EFFECTIVE PRESENTATIONS.** *A. Wang*. Biomedical Sciences and Pathobiology, Virginia Tech, Blacksburg, VA.
#317	12:17	**PRESENTING AN EFFECTIVE POSTER.** *S. C. Fitzpatrick*. Office of the Commissioner, USFDA, Rockville, MD.
#318	12:34	**PLATFORM PRESENTATIONS.** G. L. Kimmel. Office of Research and Development, USEPA, Washington, DC. Sponsor: *A. Wang*.
#319	12:51	**THINKING ON YOUR FEET.** *B. A. Schwetz*. Office for Human Research Protections, Department of Health & Human Services, Rockville, MD.

Monday Afternoon, March 22
1:15 PM to 2:15 PM
Room 301

INFORMATIONAL SESSION: APPLICATION OF GENE EXPRESSION SIGNATURES IN TOXICOLOGY AND DRUG DEVELOPMENT

Althea Technologies will discuss the acceleration of drup development by providing a comprehensive portfolio of gene-based services.

Monday Afternoon, March 22
1:30 PM to 4:30 PM
Room 321

SYMPOSIUM SESSION: GENE EXPRESSION INFLUENCES ON METAL IMMUNOMODULATION

Chairperson(s): *David Lawrence, Wadsworth Center, Albany, NY and Michael Lynes, University of Connecticut, Storrs, CT.*

Endorsed by:
Immunotoxicology Specialty Section*
Mechanisms Specialty Section
Metals Specialty Section

Metals can stimulate or modify immune responses by multiple modulatory mechanisms. The five topics in this symposium cover a wide range of different molecular means by which metals may directly or indirectly alter immunity, but all topics address differences that exist or can be better evaluated as a consequence of genetic differences or manipulations. The first presentation demonstrates how changes in the expression of metallothionein, whose exposure is modulated by certain metals, can alter immune responses at various cellular levels. The second talk discusses how genetic differences in one of the major histocompatibility complex antigens can affect T cell stimulation by beryllium. The third talk demonstrates how altered gene expression of select immune products such as cytokines can influence how lead modulates immunity. The fourth presentation will delve into the intracellular signaling networks to discuss genetic expressions associated with mercury-induced apoptosis of lymphocytes. The final talk will focus on the involvement of select genes in mercury exacerbation of autoimmune disease with emphasis on the various stages or check-points at which the development of autoimmune reactivities can be modified. In all, the presentations indicate that the metals can affect immune reactivities based on the genetics of the exposed cells as well as the influences of other environmental agents on altered gene expression.

#320	1:30	**GENE EXPRESSION INFLUENCES ON METAL IMMUNOMODULATION.** *D. A. Lawrence*[1]. [1]Wadsworth Center, Albany, NY and [2]Wadsworth Center, Albany, NY.

#321 1:35 **INFLUENCE OF METALLOTHIONEIN GENE EXPRESSION ON STRESS-MEDIATED IMMUNOMODULATION.** *M. A. Lynes*[1], X. Yin[1], E. Canpolat[1], *K. C. Crowthers*[2], J. Youn[3] and N. Hadjout[1]. [1]Molecular and Cell Biology, University of Connecticut, Storrs, CT, [2]Pathology, University of Massachusetts Medical Center, Worcester, MA and [3]Anatomy and Cell Biology, Hanyang University, Seoul, South Korea.

#322 2:00 **MHC GENETICS AND SENSITIVITY TO BERYLLIUM.** A. P. Fontenot. University of Colorado Health Sciences Center, Denver, CO. Sponsor: *D. Lawrence*.

#323 2:25 **CYTOKINE GENE EXPRESSION MODIFIED BY LEAD.** *D. A. Lawrence*, *Y. Heo*, J. Kasten-Jolly and T. Mondal. Wadsworth Center, Albany, NY.

#324 2:50 **MODULATION OF PROTEIN INTERACTIONS BY MERCURY: MOLECULAR ANALYSIS OF SIGNALLING PATHWAYS TO UNCOVER MECHANISMS OF Hg IMMUNOTOXICITY.** *A. J. Rosenspire*. Biological Sciences, Wayne State University, Detroit, MI.

#325 3:15 **GENETIC CHECK POINTS IN HEAVY METAL INDUCED SYSTEMIC AUTOIMMUNITY.** *K. M. Pollard*. Molecular & Experimental Medicine, Scripps Research Institute, La Jolla, CA.

Monday Afternoon, March 22
1:30 PM to 4:30 PM
Room 309

SYMPOSIUM SESSION: SYSTEMS BIOLOGY: A NEW VENUE FOR EXPLORING MECHANISMS OF DEVELOPMENTAL TOXICITY

Chairperson(s): *Thomas Knudsen, Jefferson Medical College, Thomas Jefferson University, Philadelphia, PA and William Slikker, National Center for Toxicological Research, Jefferson, AR.*

Endorsed by:
Reproductive and Developmental Toxicology Specialty Section*

Genomics and proteomics enable investigators to move from studies focused on single molecules, pathways and cells toward integrative function of the intact tissue and organism; however, new advances in bioinformatics and computational biology are needed to integrate these data and explain how processes work from a whole system perspective. This symposium will explore basic and applied concepts in systems biology as an emerging tool for computational methodologies, functional genomics, and molecular embryology to predict when, and understand how, molecular perturbations induced by drugs and chemicals might culminate in developmental toxicity. Basic concepts include the formal representation of cell signaling and gene regulatory networks in complex systems, how the flow of information within and between cells suggests a parody with similar phenomena in engineered systems, what efforts are needed to incorporate this kind of information into quantitative dose response models, and how to weave theoretical and empirical data into robust computational models that project to higher order functions in developmental processes and pathologies.

#326 1:30 **OVERVIEW.** *T. B. Knudsen*[1] and *W. Slikker*[2]. [1]Pathology, Anatomy and Cell Biology, Thomas Jefferson University, Philadelphia, PA and [2]Neurotoxicology, NCTR/FDA, Jefferson, AR.

#327 1:40 **SYSTEMS BIOLOGY TOP DOWN.** E. Werner. Cellnomica, Inc., Munich, Germany. Sponsor: *T. Knudsen*.

#328 2:15 **A GENE REGULATORY NETWORK FOR DEVELOPMENT.** G. Amore and E. H. Davidson. Biology, Caltech, Pasedena, CA. Sponsor: *W. Slikker*.

#329 2:50 **CHALLENGES AND OPPORTUNITIES IN UTILIZING SYSTEMS BIOLOGY APPROACHES FOR INFORMING DEVELOPMENTAL TOXICOLOGY.** *E. M. Faustman*. Center for Child Environmental Health Risks, University of Washington, Seattle, WA.

#330 3:25 **COMPUTATIONAL MODELING OF CELL SIGNALING PATHWAYS: A STEP ON THE ROAD TO IMPROVED CHARACTERIZATION OF DOSE- AND TIME-RESPONSE FOR THE ADVERSE EFFECTS OF TOXICANTS.** *R. Conolly*, Q. Zhang and *M. Andersen*. Center for Computational Biology & Extrapolation Modeling, CIIT, Research Triangle Park, NC.

Monday Afternoon, March 22
1:30 PM to 4:30 PM
Room 314

WORKSHOP SESSION: CURRENT STATUS AND FUTURE CONSIDERATIONS FOR THE DEVELOPMENT OF SKIN TOXICOLOGY ALTERNATIVE METHODS

Chairperson(s): *Ian Kimber, Syngenta, Macclesfield Cheshire, United Kingdom and G. Frank Gerberick, Procter & Gamble Company, Cincinnati, OH.*

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

The need for alternative approaches and *in vitro* test methods has never been greater than it is today. The continued development of such approaches and use of validated alternatives test methods is an integral part of toxicology in the 21st century. Collaboration of researchers and external scientific validation organizations such as ICVAAM and ECVAM that were established to provide a mechanism for alternatives test methods validation test methods spearheaded the way forward. Such efforts have led to significant progress in the replacement of animals, reduction in the number used and refinement of *in vivo* studies. In addition to scientific considerations, significant regulatory challenges lie ahead with the implementation of the 7th Amendment to the European Union Cosmetics Directive, The European Union Chemicals Policy and the United States program on High Production Volume Chemicals. This workshop will focus on the development of alternative approaches and *in vitro* methods for the evaluation of cutaneous toxicology. It will include detailed discussion on the use of *in vitro*/in silico and other alternatives methods/approaches used today for the evaluation of skin irritation skin sensitization and skin penetration. The workshop will be introduced by an overview on the use of alternatives in toxicology today and challenges for the future and will close with placing into context the scientific and regulatory challenges relative to societal expectations.

#331 1:30 **CURRENT STATUS AND FUTURE CONSIDERATIONS FOR THE DEVELOPMENT OF SKIN TOXICOLOGY ALTERNATIVE METHODS.** *G. Gerberick*[1] and *I. Kimber*[2]. [1]Procter & Gamble Co., Cincinnati, OH and [2]Syngenta, Macclesfield, United Kingdom.

#332 1:40 **OVERVIEW OF ALTERNATIVES IN TOXICOLOGY: RECENT PROGRESS AND FUTURE OPPORTUNITIES.** *W. S. Stokes*. DHHS/NIH, NIEHS, Research Triangle Park, NC.

#333 2:10 **APPLICATION OF ALTERNATIVES IN THE EVALUATION OF SKIN IRRITATION.** *D. A. Basketter*. SEAC, Unilever, Sharnbrook, United Kingdom.

#334 2:40 **CHALLENGES IN DEVELOPMENT OF ALTERNATIVE METHODS TO EVALUATE SKIN SENSITIZATION.** *G. Gerberick*. Procter & Gamble Co., Cincinnati, OH.

#335 3:10 **SKIN PENETRATION: CURRENT AND FUTURE DIRECTIONS IN THE USE OF ALTERNATIVE METHODS.** *R. Bronaugh*. Office of Cosmetics and Colors, USFDA, Laurel, MD.

#336 3:40 **SOCIETAL EXPECTATIONS ON THE USE OF ALTERNATIVES FOR THE PROTECTION OF ANIMALS AND HUMANS.** *A. M. Goldberg*. CAAT, Johns Hopkins University, Baltimore, MD.

Monday Afternoon, March 22
1:30 PM to 4:30 PM
Room 318

WORKSHOP SESSION: DIESEL EMISSIONS: NEW HORIZONS IN THE CHEMISTRY, HEALTH EFFECTS AND REGULATIONS

Chairperson(s): *Joe Mauderly, Lovelace Respiratory Research Institute, Albuquerque, NM and Ian Gilmour, USEPA, Research Triangle Park, ND.*

Endorsed by:
Inhalation Specialty Section*
Regulatory and Safety Evaluation Specialty Section

Diesel exhaust is a complex aerosol comprised of carbonaceous particles and a mix of hydrocarbons, aldehydes and gases. The physical and chemical composition of the emission can vary dramatically depending upon the age and type of engine, fuel composition, load characteristics, presence and efficiency of control devices and climatic conditions. In 2002 the USEPA completed a health assessment of diesel exhaust, which concluded, that "long-term (i.e., chronic) inhalation exposure is likely to pose a lung cancer hazard to humans, as well as damage the lung in other ways depending on exposure." The assessment also indicated, that "evidence from numerous studies have shown that exposure to diesel exhaust increases lung cancer risk, and there is recent evidence to show that diesel may also promote the incidence and severity of allergic asthma." As these health data have emerged, regulations have also evolved to limit exposure through the promotion of new "cleaner" engines, and the development of control technologies which limit diesel emissions in terms of particle mass, CO and NO(x) output. While these changes in diesel exhaust have led to a general decrease of PM mass output per engine, the number of units has increased in the US and Europe. In addition, newer engines have significantly different emission profiles compared to older engines and there is virtually no comparative health data between diesel exhaust from light and heavy-duty engines of different ages. This symposium will contrast the historical understanding of diesel exposures with current knowledge of diesel exhaust chemistry and health effects; describe new and planned regulations; and identify future research needs. This abstract does not reflect EPA policy.

#337 1:30 **DIESEL EMISSIONS: NEW HORIZONS IN THE CHEMISTRY, HEALTH EFFECTS AND REGULATIONS.** *I. Gilmour*[1] and *J. L. Mauderly*[2]. [1]NHEERL, USEPA, Research Triangle Park, NC and [2]Lovelace Respiratory Research Institute, Albuquerque, NM.

#338 1:35 **HEALTH EFFECTS OF DIESEL EMISSIONS: EVOLVING QUESTIONS FOR AN EVOLVING ISSUE.** *J. L. Mauderly*, J. D. McDonald and *J. Seagrave*. National Environmental Respiratory Center, Lovelace Respiratory Research Institute, Albuquerque, NM.

#339 2:05 **EPIDEMIOLOGY OF DIESEL: EXPOSURE ASSESSMENT AND HEALTH OUTCOMES.** E. Garshick[1, 2], F. Laden[2, 3] and T. J. Smith[3]. [1]VA Boston Healthcare System, West Roxbury, MA, [2]Channing Laboratory, Brigham and Women's Hospital and Harvard Medical School, Boston, MA and [3]Department of Environmental Health, Harvard School of Public Health, Boston, MA. Sponsor: *I. Gilmour*.

#340 2:35 **CONTROLLED DIESEL EXPOSURES: INTERPHASING HUMAN AND ANIMAL STUDIES AND THEIR USE IN THE RISK ASSESSMENT PROCESS.** *M. C. Madden*. NHEERL\Human Studies Division, USEPA, Chapel Hill, NC.

#341 3:05 **FUTURE RESEARCH NEEDS FOR DIESEL EMISSIONS.** *T. W. Hesterberg*[1], *W. B. Bunn*[1], W. J. Slodowske[1] and *C. A. Lapin*[2]. [1]International Truck and Engine Corporation, Warrenville, IL and [2]Lapin and Associates, Glendale, CA.

Monday Afternoon, March 22
1:30 PM to 4:30 PM
Room 307

WORKSHOP SESSION: NUTRACEUTICALS AS DOUBLE-EDGED SWORDS: WEIGHING BENEFITS AND RISKS OF DIETARY CHEMICALS TO HUMAN HEALTH

Chairperson(s): *Roger Coulombe, Utah State University, Logan, UT and James Pestka, Michigan State University, East Lansing, MI.*

Endorsed by:
Carcinogenesis Specialty Section
Food Safety Specialty Section*
Mechanisms Specialty Section

Ehrlich introduced the concept of therapeutic index (TI) almost a century ago which is identified as the ratio of dose of a chemical required to produce a toxic effect and the dose needed for desired therapeutic effect. Bioactive dietary chemicals that are used as nutraceuticals are extraordinarily diverse with respect to chemical structures and biological activities. When used as foods or in supplements, these chemicals have the potential for prevention or retardation of chronic diseases. Paradoxically, some of these chemicals can also induce subtle toxic effects that exacerbate disease. Given the current regulatory environment created by the Dietary Health and Education Act of 1994 (DSHEA), providers of nutraceuticals are not subject to the degree of safety evaluation required for drugs and food additives. Thus, clear definitions of potential negative effects of nutraceuticals are not readily accessible. This is further complicated by factors such as disease, predisposing factors, age and genetic background of humans. This workshop focuses on the challenge of this double-edged sword by examining , from a mechanism-based perspective, examples of dietary chemicals that are being used or considered for disease prophylaxis relative to potential safety concerns and disease exacerbation.

#342 1:30 **OVERVIEW- NUTRACEUTICALS AS A TOXICOLOGICAL DILEMMA.** *J. J. Pestka*. Michigan State University, East Lansing, MI.

#343 1:50 **PLEIOTROPIC EFFECTS OF CANCER PROTECTIVE DIETARY INDOLES.** *L. Bjeldanes*. Department of Nutrition, University of California at Berkeley, Berkeley, CA.

#344 2:30 **BREAST CANCER THERAPIES AND DIETARY ESTROGEN (GENSITEIN) CONSUMPTION.** B. Helferich. Food Science and Human Nutrition, University of Illinois, Urbana, IL. Sponsor: *J. Pestka*.

#345 3:10 **ATTENUATION VERSUS POTENTIATION OF THE IMMUNE RESPONSE BY DIETARY OMEGA-3 POLYUNSATURATED FATTY ACIDS.** K. L. Fritsche. Animal Sciences, University of Missouri, Columbia, MO. Sponsor: *J. Pestka*.

#346 3:50 **PROMOTION VERSUS SUPPRESSION OF CHEMICAL CARCINOGENESIS BY CHLOROPHYLLS.** *G. S. Bailey* and R. Dashwood. Linus Pauling Institute, Oregon State University, Corvallis, OR.

Monday Afternoon, March 22
1:30 PM to 4:30 PM
Room 315

PLATFORM SESSION: CYTOCHROME P450: EXPRESSION AND FUNCTION

Chairperson(s): *Brian Day, UCHSC, Denver, CO and William Baldwin, University of Texas at El Paso, El Paso, TX.*

#347 1:30 **EFFECTS OF NATURAL AND SYNTHETIC FLAVONOIDS ON AROMATASE (CYP19) IN H295R HUMAN ADRENOCORTICAL CARCINOMA CELLS.** *T. Sanderson*[1], *M. S. Denison*[2], M. Springsteel[3], J. Hordijk[1], M. H. Nantz[3] and *M. van den Berg*[1]. [1]Institute for Risk Assessment Sciences, University of Utrecht, Utrecht, Netherlands, [2]Department of Environmental Toxicology, University of California, Davis, CA and [3]Department of Chemistry, University of California, Davis, CA.

#348 1:50 **EXPRESSION, CHARACTERIZATION AND MUTATION OF RAT CYTOCHROME P450C24A1 (CYP24A1).** A. J. Annalora[1, 2], K. Bobrovnikova-Marjon[2], A. Pastuszyn[2], M. Chiu[3], *C. Marcus*[1] and J. L. Omdahl[2]. [1]College of Pharmacy, University of New Mexico, Albuquerque, NM, [2]Department of Biochemistry and Molecular Biology, University of New Mexico, Albuquerque, NM and [3]Department of Structural Biology, Abbott Laboratories, Abbott Park, IL.

#349 2:10 **DEVELOPMENTAL EXPRESSION IN THE RAT PLACENTA OF ENZYMES INVOLVED IN FATTY ACID METABOLISM.** T. J. Cook, Y. Xu and G. T. Knipp. Department of Pharmaceutics, Rutgers, The State University of New Jersey, Piscataway, NJ. Sponsor: *K. Reuhl*.

#350 2:30 **CYP1A2 PROTECTS AGAINST REACTIVE OXYGEN PRODUCTION IN MOUSE LIVER MICROSOMES.** *H. G. Shertzer*, C. D. Clay, *M. Genter*, S. N. Schneider, *D. W. Nebert* and *T. P. Dalton*. Department of Environmental Health and Center for Environmental Genetics, University of Cincinnati Medical Center, Cincinnati, OH.

#351 2:50 **QUANTIFICATION AND LOCALIZATION OF ROS PRODUCTION BY POLYCHLORINATED BIPHENYLS AND BY 2, 3, 7, 8-TETRACHLORODIBENZO-P-DIOXIN.** *J. Goldstone* and *J. J. Stegeman*. Biology, Woods Hole Oceanographic Institution, Woods Hole, MA.

#352 3:10 **COAL DUST INCREASES BAX EXPRESSION, INCREASES APOPTOSIS, AND SUPPRESSES CYP1A1 INDUCTION IN A RAT MODEL OF MIXED EXPOSURE TO POLYCYCLIC AROMATIC HYDROCARBONS AND RESPIRABLE PARTICLES.** M. Ghanem[1, 2], L. Battelli[1, 2], R. R. Mercer[1, 2], M. L. Kashon[1], J. F. Scabilloni[1, 2], *V. Castranova*[1, 2], J. Nath[2], V. Vallyathan[1, 2] and A. F. Hubbs[1, 2]. [1]NIOSH, CDC, Morgantown, WV and [2]West Virginia University, Morgantown, WV.

#353 3:30 **COMPARISON OF ACUTE AND CHRONIC EXPOSURE TO NONYLPHENOL REVEALS THAT CHRONIC EXPOSURE ATTENUATES P450 INDUCTION AND RXRα LEVELS.** *W. Baldwin*, R. Acevedo, L. M. Chapman and H. Villanueva. Biological Sciences, University of Texas at El Paso, El Paso, TX.

#354 3:50 **A NOVEL CLASS OF CYTOCHROME P_{450} REDUCTASE REDOX CYCLERS: CATIONIC MANGANOPORPHYRINS.** C. T. Kariya[1] and *B. J. Day*[1, 2]. [1]Pharmaceutical Sciences, UCHSC, denver, CO and [2]Medicine, National Jewish Medical Research Center, Denver, CO.

#355 4:10 **SF-1 FUNCTIONS SYNERGISTICALLY WITH CREB TO MEDIATE CAMP STIMULATION OF CYP1B1 VIA A FAR UPSTREAM ENHANCER (FUER).** *W. Zheng* and *C. R. Jefcoate*. Pharmacology, University of Wisconsin-Madison, Madison, WI.

Monday Afternoon, March 22
1:30 PM to 4:30 PM
Room 316

PLATFORM SESSION: MECHANISMS OF OVARIAN AND UTERINE TOXICITY

Chairperson(s): *Wendy Jefferson, NIEHS, Research Triangle Park, NC.*

#356 1:30 **METHOXYCHLOR-INDUCED ATRESIA WORKS THROUGH THE BCL-2 PATHWAY.** *C. Borgeest*[1], *K. P. Miller*[1], C. Greenfeld[2] and *J. A. Flaws*[1]. [1]Program in Toxicology, University of Maryland, Baltimore, MD and [2]Department of Physiology, University of Maryland, Baltimore, MD.

#357 1:50 ***IN VITRO*** **FOLLICLE ASSAY ALLOWS GONADAL RISK ASSESSMENT FOR BENZODIAZEPINE.** R. Cortvrindt[1, 2], K. Van Wemmel[2], University. Eichenlaub-ritter[3] and J. Smitz[2]. [1]EggCentris nv, Zellik, Belgium, [2]Follicle Biology Laboratory, Free University of Brussels, Brussels, Belgium and [3]Microbiology and Genetechnology, University of Bielefeld, Bielefeld, Germany. Sponsor: *M. Martens*.

#358 2:10 **METABOLIC MECHANISMS OF METHOXYCHLOR TOXICITY IN MOUSE ANTRAL OVARIAN FOLLICLES.** *K. P. Miller*, *C. Borgeest* and *J. A. Flaws*. Program in Toxicology, University of Maryland, Baltimore, MD.

#359 2:30 **ESSENTIAL ROLE OF NRF2 IN PROTECTION AGAINST OVARIAN FOLLICLE LOSS INDUCED BY 4-VINYCYCLOHEXENE AND 4-VINYLCYCLOHEXENE DIEPOXIDE IN MICE.** X. Hu[1], Y. Kan[2] and *Q. Ma*[1]. [1]HELD/CDC, TMBB/NIOSH, Morgantown, WV and [2]Laboratory Medicine, Howard Hughes Medical Institute, University of California, San Francisco, CA.

#360 2:50 **NEONATAL EXPOSURE TO GENISTEIN ALTERS OVARIAN DIFFERENTIATION RESULTING IN THE FORMATION OF MULTI-OOCYTE FOLLICLES.** *W. Jefferson*[1, 2], M. Pepling[3], E. Padilla-Banks[1] and R. Newbold[1]. [1]Labortatory of Molecular Toxicology, NIEHS, Research Triangle Park, NC, [2]Department of Environmental and Molecular Toxicology, North Carolina State Univeristy, Raleigh, NC and [3]Syracuse University, Syracuse, NY.

#361 3:10 **QUANTIFICATION OF TOXICANTS IN COMMERCIAL BRAND CIGARETTES AND CHARACTERIZATION OF THEIR EFFECTS ON OVIDUCTAL FUNCTIONING.** *K. Riveles*[1], R. Roza[1], D. Kwan[1], V. Tran[1], *J. Arey*[2] and P. Talbot[1]. [1]Department Cell Biology & Neuroscience, UC Riverside, Riverside, CA and [2]Environmental Sciences, UC Riverside, Riverside, CA.

#362 3:30 **GESTATION-AGE RELATED INCREASES AND ACTIVATION OF PHOSPHOLIPASE A_2 ENZYMES MEDIATE PCB 50 INDUCED STIMULATION OF RAT UTERINE FUNCTION.** K. A. Brant and *R. Loch Caruso*. Environmental Health Sciences, University of Michigan, Ann Arbor, MI.

#363 3:50 **STIMULATORY EFFECTS OF A MICROBIALLY DECHLORINATED POLYCHLORINATED BIPHENYL (PCB) MIXTURE ON RAT UTERINE CONTRACTION *IN VITRO*.** *R. Loch-Caruso*[1], T. Tsuneta[1], M. Hanna[1], C. Grindatti[1], J. F. Quensen[2, 3] and S. A. Boyd[2, 3]. [1]Environmental Health Sciences, University of Michigan, Ann Arbor, MI, [2]Crop and Soil Sciences, Michigan State University, East Lansing, MI and [3]Institute for Environmental Toxicology, Michigan State University, East Lansing, MI.

#364 4:10 **DEVELOPMENTAL EFFECTS OF *IN UTERO* EXPOSURE TO BISPHENOL A ON THE UTERUS OF RAT OFFSPRING.** G. Schoenfelder[1], K. Friedrich[1], X. Wu[2, 1], M. Paul[1] and I. Chahoud[1]. [1]Department of Toxicology, Campus Benjamin Franklin, Berlin, Germany and [2]Department of Medicine, Thomas Jefferson University, Division of Endocrinology, Diabetes and Metabolic Diseases, Philadelphia, PA. Sponsor: *R. Stahlmann*.

Monday Afternoon, March 22
1:30 PM to 4:30 PM
Room 317

PLATFORM SESSION: SAFETY BIOMARKERS: APPLICATION OF "OMICS"

Chairperson(s): *John Davis, Schering-Plough, Lafayette, NJ and Frank Sistare, USFDA, Laurel, MD.*

#365 1:30 **METABONOMIC PROFILING OF URINE IN ANTIBIOTIC-INDUCED NEPHROTOXICITY IN FEMALE CYNOMOLGUS MONKEYS.** *J. W. Davis*[1], A. Buevich[2], F. M. Goodsaid[1], R. J. Smith[1], L. A. Obert[3], T. Chan[2] and *I. Y. Rosenblum*[1]. [1]Molecular Toxicology, Schering-Plough, Lafayette, NJ, [2]Structural Chemistry, Schering-Plough, Kenilworth, NJ and [3]Pathology, Schering-Plough, Lafayette, NJ.

#366 1:50 **NMR-BASED METABONOMICS STUDY OF ETHANOL-FED RATS.** R. D. Beger[1], L. K. Schoenbachler[1], *Y. P. Dragan*[2], *M. J. Ronis*[3] and *T. M. Badger*[3]. [1]Chemistry, National Center for Toxicological Research, Jefferson, AR, [2]Center for Hepatotoxcity, NCTR, Jefferson, AR and [3]Arkansas Children's Hospital and University of Arkansas for Medical Sciences, Little Rock, AR.

#367 2:10 **URINARY METABOLITE PROFILING OF RENAL INJURY USING NMR OR GC-MS.** *C. E. Thomas*[1], J. Colet[2], J. Eckstein[1], R. Julian[1], J. Sefton[1], J. Koers[1], M. Bollard[3] and B. Ackermann[1]. [1]Toxicology & Drug Disp., Eli Lilly & Co., Indianapolis, IN, [2]Toxicology, Eli Lilly & Co., Mont-Saint-Guibert, Belgium and [3]Biol. Chem., Imperial College, London, United Kingdom.

#368 2:30 **EVALUATION OF URINE METABONOMIC CHANGES IN ZDF RAT DURING THE DEVELOPMENT OF DIABETES AND TREATMENT WITH VANADYL ACETYLACETONATE.** J. A. Colet, A. Cauvin, K. Kramer and I. Smyej. Toxicology, Eli Lilly and company, Mont-Saint-Guibert, Brabant, Belgium. Sponsor: *C. Thomas*.

#369 2:50 **FOOTPRINT OF INFLAMMAGEN EXPOSURE IN THE RAT LIVER NUCLEAR PROTEOME AFTER LIPOPOLYSACHARIDE TREATMENT.** M. E. Bruno[1], J. E. Madenspacher[1], J. R. Dubin[2], J. F. Foley[1], K. B. Tomer[2] and *B. A. Merrick*[1]. [1]Ntl Ctr Toxicogenomics, NIEHS, Research Triange Pk, NC and [2]LSB, NIEHS, Research Triange Pk, NC.

#370 3:10 **BIOMARKERS OF INFLAMMATION FROM RETENTATE CHROMATOGRAPHY MASS SPECTROMETRY ANALYSIS OF RAT SERUM AFTER ACUTE LIPOPOLYSACCHARIDE TREATMENT.** J. H. Madenspacher[1], L. Li[1], J. A. Taylor[1], M. E. Bruno[1], *B. A. Wetmore*[1], A. Xu[2] and *B. A. Merrick*[1]. [1]National Ctr Toxicogenomics, NIEHS, Research Triange Pk, NC and [2]Ciphergen Biosystems Inc., Fremont, CA.

#371 3:30 **NOVEL *IN VITRO* SKIN IRRITATION MARKERS IDENTIFIED USING MICROARRAY TECHNOLOGY.** S. Fletcher, C. Duggan and *D. Basketter*. SEAC - Safety and Environmental Assurance Center, Unilever, Sharnbrook, Bedfordshire, United Kingdom.

#372 3:50 **THE ETAG MULTIPLEX ASSAY SYSTEM, A NOVEL ASSAY PLATFORM FOR ANALYZING GENOMIC AND PROTEOMIC ENDPOINTS DURING COMPOUND SAFETY AND TOXICITY ASSESSMENTS.** *K. Steinmetz*[2], T. Tian[1], L. Chen[1], Y. Badal[1], D. Ackley[3], K. Wehmeyer[3], J. Troutman[3], C. Virgo[1], S. Moore[1], V. Xiao[1], X. Jin[1] and S. Singh[1]. [1]Aclara, Mt View, CA, [2]SRI Int., Menlo Park, CA and [3]P&G, Mason, OH.

#373 4:10 **PROTEOMIC CHARACTERIZATION OF THE EFFECTS OF CLOFIBRATE ON PROTEIN EXPRESSION IN RAT LIVER.** J. Leonard[1], C. Saulnier[1], M. Courcol[1], A. Charbonnier[1], E. Boitier[1], *R. A. Roberts*[1], M. Duchesne[2], F. Parker[2] and J. Gautier[1]. [1]Drug Safety Evaluation, Aventis Pharmacology, Vitry-sur-Seine, France and [2]Functional Genomics, Aventis Pharmacology, Vitry-sur-Seine, France.

Monday Afternoon, March 22
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: METAL EXPOSURE AND METABOLISM

Chairperson(s): *Gregory Kedderis, Independent Consultant, Chapel Hill, NC and Michael Hughes, USEPA, Research Triangle Park, NC.*

Displayed: *1:30 PM–4:30 PM*

Attended*: 1:30 PM–3:00 PM*

#374 **LEAD BINDING TO HUMAN SEMINAL PROTEINS AND ZINC EQUILIBRIUM.** C. Sarmiento-Mariscal, I. Hernandez-Ochoa and *B. Quintanilla-Vega*. Toxicology Section, CINVESTAV-IPN, Mexico City, D.F., Mexico.

#375 **METALS IN INNER CITY AND SUBURBAN COMMUNITIES OF DETROIT AND NEW ORLEANS.** *H. W. Mielke*, C. Gonzales, A. Shah and E. Powell. College of Pharmacy, Xavier University, New Orleans, LA.

#376 **MERCURY CONTAMINATION IN THE RED MEAT OF WHALES AND DOLPHINS MARKETED FOR HUMAN CONSUMPTION IN JAPAN.** *T. Endo*[1], K. Haraguchi[2], H. Yohei[1] and M. Sakata[1]. [1]Clinical Toxicology and Metabolism, Health Sciences University of Hokkaido, Ishikari-Tobetsu, Hokkaido, Japan and [2]Health Science and Chemistry, Daiichi College of Pharmaceutical Sciences, Fukuoka, Japan.

#377 **RENAL DYSFUNCTION IN CADMIUM EXPOSED HUMANS—RELATIONSHIP TO CHANGES IN BONE DENSITY AND METALLOTHIONEIN GENE EXPRESSION.** *G. F. Nordberg*[1] and M. Nordberg[2]. [1]Environmental Medicine, Umea University, Umea, Sweden, [2]Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden, [3]Department of Occupational Health, School of Public Health, Fudan University, Shanghai, China, [4]Unit of Industrial Toxicology, Catholic University of Louvain, Brussels, Belgium and [5]Department of Bone Metabolism, Institute of Radiation Medicine, Fudan University, Shanghai, China.

#378 **ANALYSIS OF THE FACTORS THAT INFLUENCE THE CHRONIC HEALTH EFFECTS IN RESIDENTS EXPOSED TO ARSENIC VIA THE DRINKING WATER IN INNER MONGOLIA, CHINA.** *T. Yoshida*[1], T. Ito[1], Y. Nakagi[1], H. Yamauchi[2], H. Aikawa[3], J. Pi[4] and G. Sun[4]. [1]Health Science, Asahikawa Medical College, Asahikawa, Hokkaido, Japan, [2]St. Marianna Medical College, Kawasaki, Japan, [3]Tokai University Sch. of Med., Isehara, Japan and [4]China Medical College, Shengyang, China.

#379 **EFFECT OF SEAFOOD CONSUMPTION ON URINARY ARSENIC SPECIATION.** *J. D. Park*[1], B. S. Choi[1], E. S. Park[2], K. S. Park[3], S. T. Kim[3] and Y. P. Hong[1]. [1]Preventive Medicine, Chung-Ang University, Seoul, South Korea, [2]Pathology, Chung-Ang University, Seoul, South Korea and [3]Advanced Analysis Center, Korea Institute of Science and Technology, Seoul, South Korea.

#380 **FLUORIDE EXPOSURE ALTERS THE METABOLISM AND EXCRETION OF ARSENITE IN MICE.** M. Espinosa, E. A. Garcia-Montalvo, O. L. Valenzuela and *L. M. Del Razo*. Toxicology Section, Cinvestav-IPN, Mexico D.F, Mexico.

#381 **EFFECT OF DOSE ON THE EXCRETION AND METABOLISM OF MONOMETHYLARSONIC ACID IN THE MOUSE.** *M. F. Hughes*[1], V. Devesa[2], B. C. Edwards[1], C. T. Mitchell[1], *E. M. Kenyon*[1] and *D. J. Thomas*[1]. [1]ORD/NHEERL, USEPA, Research Triangle Park, NC and [2]CEMALB, UNC-CH, Chapel Hill, NC.

#382 **COMPREHENSIVE ANALYSIS OF BIOLOGICALLY RELEVANT ARSENICALS BY PH-SELECTIVE HYDRIDE GENERATION-ATOMIC ABSORPTION SPECTROMETRY.** V. Devesa[1], *L. Del Razo*[4], S. Waters[2], Z. Drobna[3], *M. Hughes*[5], *M. Styblo*[1, 3] and *D. Thomas*[5]. [1]CEMALB, University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC, [3]Department of Pediatrics, University of North Carolina, Chapel Hill, NC, [4]CINEVSTAV, IPN, Mexico City, Mexico and [5]NHEERL, USEPA, Research Triangle Park, NC.

#383 **INTERINDIVIDUAL VARIATION IN THE METABOLISM OF ARSENIC IN HUMAN HEPATOCYTES.** *M. Styblo*[1], F. F. Walton[1], Z. Drobna[1], S. B. Waters[3], E. L. LeCluyse[6] and *D. J. Thomas*[5]. [1]Department of Pediatrics, UNC, Chapel Hill, NC, [2]Department of Pediatrics, UNC, Chapel Hill, NC, [3]Curriculum in Toxicology, UNC, Chapel Hill, NC, [4]Department Pediatrics, UNC, Chapel Hill, NC, [5]NHEERL, ORD, USEPA, Research Triangle Park, NC and [6]Division of Drug Delivery and Dispos., UNC, Chapel Hill, NC.

#384 **ARSENIC TRANSPORT BY THE HUMAN MULTIDRUG RESISTANCE PROTEIN 1 (MRP1/ABCC1): EVIDENCE THAT A TRI-GLUTATHIONE CONJUGATE IS REQUIRED.** E. M. Leslie[1], S. P. Cole[2] and *M. P. Waalkes*[1]. [1]Inorganic Carcinogenesis Section, LCC, NCI at NIEHS, Research Triangle Park, NC and [2]Cancer Research Laboratories, Queen's University, Kingston, ON, Canada.

#385 **KINETICS OF ARSENIC METHYLATION BY FRESHLY ISOLATED MOUSE HEPATOCYTES.** *G. L. Kedderis*[1], K. A. Milne[2], A. R. Elmore[2], E. A. Crecelius[3], *J. W. Yager*[4] and *T. L. Goldsworthy*[2]. [1]Independent Consultant, Chapel Hill, NC, [2]Integrated Laboratory Systems Inc., Research Triangle Park, NC, [3]Battelle, Sequim, WA and [4]EPRI, Palo Alto, CA.

#386 **RECOMBINANT RAT CYT19, AN ARSENIC METHYLTRANSFERASE, EFFICIENTLY GENERATES TRIMETHYLARSINE OXIDE IN THE ABSENCE OF GLUTATHIONE.** S. B. Waters[1], V. Devesa[2], Z. Drobna[3], *M. Styblo*[2, 3] and *D. Thomas*[4]. [1]Curriculum in Toxicology, UNC-Chapel Hill, Chapel Hill, NC, [2]CEMALB, UNC-Chapel Hill, Chapel Hill, NC, [3]Department of Pediatrics, UNC-Chapel Hill, Chapel Hill, NC and [4]NHEERL, USEPA, Research Triangle PArk, NC.

#387 **CHARACTERIZATION OF UROTSA/RCYT19, A CLONAL HUMAN URINARY BLADDER CELL LINE EXPRESSING RAT AS^{III}-METHYLTRANSFERASE.** Z. Drobna[1], S. B. Waters[2], F. S. Walton[1], V. Devesa[3], *D. J. Thomas*[4] and *M. Styblo*[1, 3]. [1]Pediatrics, UNC, Chapel Hill, NC, [2]Curriculum in Toxicology, UNC, Chapel Hill, NC, [3]CEMALB, UNC, Chapel Hill, NC and [4]NHEERL, USEPA, Research Triangle Park, NC.

#388 **EFFECTS OF ARSENITE AND MONOMETHYL ARSONOUS ACID ON UROTSA CELLS: LOW-LEVEL EXPOSURE CAUSES ACCUMULATION OF UBIQUITINATED PROTEINS WHICH IS ENHANCED BY REDUCTION IN CELLULAR GLUTATHIONE LEVELS.** T. G. Bredfeldt[1], M. J. Kopplin[1], E. A. Mash[2] and *A. Gandolfi*[1]. [1]Pharmacology and Toxicology, University of Arizona, Tucson, AZ and [2]Chemistry, University of Arizona, Tucson, AZ.

#389 **INHIBITION OF LUMINAL CYSTINE TRANSPORT BY THE MERCURIC CONJUGATE CYS-S-HG-S-CYS IN ISOLATED-PERFUSED S2 SEGMENTS OF THE RABBIT RENAL PROXIMAL TUBULE.** D. W. Barfuss[1] and *R. K. Zalups*[2]. [1]Biology, Georgia State University, Atlanta, GA and [2]Mercer University School of Medicine, Macon, GA.

#390 **COPROPORPHYRINOGEN OXIDASE (CPOX) POLYMORPHISM ALTERS THE EFFECT OF MERCURY (Hg) ON PORPHYRIN EXCRETION IN HUMANS.** *J. S. Woods*[1, 2], *D. Echeverria*[2, 1], N. J. Heyer[2], A. C. Bittner[2] and F. M. Farin[1]. [1]Environmental Health, University of Washington, Seattle, WA and [2]Battelle Centers for Public Health Research and Evaluation, Seattle, WA.

#391 **UPTAKE OF BIOLOGICALLY RELEVANT FORM(S) OF INORGANIC MERCURY BY HUMAN ORGANIC ANION TRANSPORTER 1 (hOAT1).** *S. Ahmad* and *R. K. Zalups*. School of Medicine, Basic Science, Mercer University, Macon, GA.

#392 **ALUMINUM TRANSPORT AND UPTAKE IN CACO-2 CELLS.** Y. Zhou[1] 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.

#393 **MANGANESE CONCENTRATIONS IN THE AIR OF THE MONTREAL (CANADA) SUBWAY IN RELATION TO SURFACE AUTOMOBILE TRAFFIC DENSITY.** N. Boudia[1], R. Halley[2], G. Kennedy[3], L. Gareau[1] and *J. Zayed*[1]. [1]Environmental and occupational Health, University of Montreal, Montreal, QC, Canada, [2]Transport Montreal Society, Montreal, QC, Canada and [3]Department of Engineering Physics, Ecole Polytechnique de Montreal, Montreal, QC, Canada.

Monday Afternoon, March 22
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: NEUROTOXICITY OF MANGANESE

Chairperson(s): *Anumantha Kanthasmany, Iowa State University, IA and Deepa Rao, CIIT Centers for Health Research, Research Triangle Park, NC.*

Displayed: *1:30 PM–4:30 PM*

Attended: *3:00 PM–4:30 PM*

#394 **POTENTIAL NEUROLOGICAL EFFECTS OF MANGANESE EXPOSURE DURING WELDING: A "STATE-OF-THE-SCIENCE" REVIEW.** *A. Santamaria*[1], A. Li[2], F. Mowat[3], C. Cushing[4] and *B. Finley*[5]. [1]Exponent, Houston, TX, [2]Exponent, Oakland, CA, [3]Exponent, San Francisco, CA, [4]Exponent, Boulder, CO and [5]Exponent, Santa Rosa, CA.

#395 **PHARMACOKINETIC ANALYSES OF THE EFFICIENCY OF UPTAKE OF INHALED MANGANESE FROM THE OLFACTORY MUCOSA INTO THE CENTRAL NERVOUS SYSTEM IN RATS.** *D. B. Rao*, *D. C. Dorman* and *M. E. Andersen*. CIIT Centers for Health REsearch, Research Triangle Park, NC.

#396 **DOPAMINE TRANSPORTER LEVELS ARE TRANSIENTLY INCREASED IN THE NON-HUMAN PRIMATE STRIATUM FOLLOWING ACUTE MANGANESE EXPOSURE: PRELIMINARY FINDINGS USING *IN VIVO* BRAIN IMAGING.** *M. K. Chen*[1], J. S. Lee[2], *J. L. McGlothan*[1], R. J. Adams[3], M. Alexander[2], D. F. Wong[2] and *T. R. Guilarte*[1]. [1]Environmental Health Sciences, Johns Hopkins University, Baltimore, MD, [2]Radiology, Johns Hopkins University, Baltimore, MD and [3]Comparitive medicine, Johns Hopkins University, Baltimore, MD.

#397 **BRAIN REGIONAL DIFFERENCE IN IRON TRANSPORT AND THE EFFECT OF MANGANESE EXPOSURE.** R. Deane[1] and *W. Zheng*[2]. [1]Center for Aging Research, University of Rochester, Rochester, NY and [2]School of Health Sciences, Purdue University, West Lafayette, IN.

#398 **COMPARATIVE NEUROTOXIC EFFECTS OF MN(II) VERSUS MN(III) IN A RODENT MODEL.** S. H. Reaney[1, 2], G. Bench[3] and *D. R. Smith*[2]. [1]Chemistry and Biochemistry Department, UCSC, Santa Cruz, CA, [2]Department of Environment Toxicology., UCSC, Santa Cruz, CA and [3]LLNL, Livermore, CA.

#399 **MORPHOLOGICAL EVIDENCE OF DIFFERENTIAL CYTOTOXICITY OF MN(II) AND MN(III) IN HUMAN DOPAMINERGIC SH-SY5Y CELLS *IN VITRO*.** C. Zhang[1], J. Li[2, 3], C. Zhou[1] and *W. Zheng*[3]. [1]Xinjiang University of Med. Sciences, Urumqi, China, [2]Capital University of Med. Sciences, Beijing, China and [3]School of Health Sciences, Purdue University, West Lafayette, IN.

#400 **MOTOR AND NEUROCHEMICAL EFFECTS OF SUB-CHRONIC LOW MANGANESE EXPOSURES IN A RODENT MODEL.** *R. Gwiazda*, C. Kern and *D. Smith*. Environmental Toxicology, University of California, Santa Cruz, Santa Cruz, CA.

#401 **LOCOMOTOR ACTIVITY IN UBIQUITIN MUTANT MICE AFTER NOSE-ONLY INHALATION OF MANGANESE.** J. Karlsson[1], R. H. Gwiazda[4], O. Myers[1], W. Barrington[1], G. A. Douglas[5], E. Barr[2], S. R. Donald[4], G. Bench[3] and *J. Lewis*[1]. [1]Community Environmental Health Program, University of New Mexico, Albuquerque, NM, [2]Lovelace Respiratory Research Institute, Albuquerque, NM, [3]Lawrence Livermore National Laboratory, Livermore, CA, [4]Environmental Toxicology, University of California, Santa Cruz, CA and [5]Centre for Cancer Therapeutics, Ottawa Regional Cancer Centre, Ottawa, ON, Canada.

#402 **MANGANESE EXPOSURE ARRESTS CELL PROLIFERATION AND ALTERS SIGNAL TRANSDUCTION ON MAPK'S CASCADES IN PC12 CELLS.** *J. Chen*[1], W. Xu[1], W. Luo[1] and *W. Zheng*[2]. [1]Occupational & Environmental Health Sciences, Fourth Military Medical University, Xian, Shanxi, China and [2]School of Health Sciences, Purdue University, West Lafayette, IN.

#403 **PROTEOLYTIC ACTIVATION OF PROAPOPTOTIC KINASE PKCδ CONTRIBUTES TO MANGANESE-INDUCED APOPTOTIC CELL DEATH IN DOPAMINERGIC NEURONAL CELLS.** C. Latchoumycandane, *M. Kitazawa*, *V. Anantharam* and *A. Kanthasamy*. Department of Biomedical Sciences, Iowa State University, Ames, IA.

#404 **ASTROGLIAL-MEDIATED NEURONAL APOPTOSIS FOLLOWING EXPOSURE TO MANGANESE AND CYTOKINES REQUIRES NF-KAPPA B-DEPENDENT PRODUCTION OF NO.** X. Liu, R. Mouneimne and *R. Tjalkens*. Toxicology Program, Department of Integrative Biosciences, Texas A&M University, College Station, TX.

#405 **MANGANESE NEUROTOXICITY CORRELATES WITH INCREASES IN OXIDATIVE DAMAGE TO DNA IN THE NIGROSTRIATAL PATHWAY BUT NOT WITH CHANGES IN ANTIOXIDANTS.** D. Cox, C. Bolin and F. Cardozo-Pelaez. Biomedical and Pharmaceutical Sciences, University of Montana, Missoula, MT. Sponsor: *A. Holian*.

#406 **OXIDATIVE STRESS AND GLOBAL RAT GENE EXPRESSION PROFILES IN PC12 CELLS AFTER MANGANESE TREATMENT.** *R. R. Reams*[1] and *E. Taka*[1]. [1]College of Pharmacy, Florida A & M University, Tallahassee, FL and [2]College of Pharmacy, Florida A & M University, Tallahassee, FL.

#407 **ACTIVATION OF NITRIX OXIDE SYNTHASE DURING MODULATION WITH MANGANESE TOXICITY INVOLVES EARLY SIGNALING TRANSCRIPTION FACTOR, NF-KB: IMPLICATION FOR CELL DEATH.** *P. G. Gunasekar*[1], K. Prabhakaran[2] and D. Ghosh[1]. [1]Biological Sciences, Texas Southern University, Houston, TX and [2]Medicinal Chemistry and Mole. Pharmacology, Purdue University, West Lafayette, IN.

#408 **MANGANESE POTENTIATES LIPOPOLYSACCHARIDE-INDUCED EXPRESSION OF NOS2 IN C6 GLIOMA CELLS THROUGH MITOCHONDRIAL-DEPENDENT ACTIVATION OF NUCLEAR FACTOR KAPPA B.** R. Mounemne, J. Faske, X. Liu and *R. Tjalkens*. Toxicology Program, Department of Integrative Biosciences, Texas A&M University, College Station, TX.

#409 **COMPARISON OF DIFFERENTIATED AND NON-DIFFERENTIATED PC CELLS RESPONSE TO MNCL2, MPP+, AND ROTENONE.** L. Russell IV. University of Maryland, Baltimore, MD. Sponsor: *K. Squibb*.

#410 **MANGANESE AND LEAD DISPLAY DIFFERENT PATTERNS OF NEUROTOXICITY IN HUMAN SY5Y NEUROBLASTOMA CELLS.** *Y. Qian*, Y. Zheng and *E. Tiffany-Castiglioni*. Texas A&M University, College Station, TX.

Monday Afternoon, March 22
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: NEUROTOXICITY, GENERAL II

Chairperson(s): *Damani Parran, Virginia Tech, Blacksburg, VA and Bill Atchison, Michigan State University, East Lansing, MI.*

Displayed: *1:30 PM–4:30 PM*

Attended*: 1:30 PM–3:00 PM*

#411 **HISTOPATHOLOGY, IMMUNOHISTOCHEMISTRY AND ELECTRON MICROSCOPY OF SPONTANEOUS UVEAL MELANOMA IN TWO HAN WISTAR RATS.** C. Barton and A. Moran. Covance Laboratories Ltd., Harrogate, United Kingdom. Sponsor: *D. Everett*.

#412 **BACKGROUND CHANGES FOLLOWING DAILY INTRAVITREAL INJECTION FOR THREE CONSECUTIVE DAYS IN BEAGLE DOGS AND DUTCH-BELTED RABBITS.** *M. Vezina*, A. Patel and C. Copeman. CTBR, Senneville, QC, Canada.

#413 **A 14-DAY SYSTEMIC AND OCULAR TOXICITY STUDY IN THE DOG OF INTRAVENOUSLY ADMINISTERED HEAT SENSITIVE LIPOSOMES CONTAINING CARBOXYFLUORESCEIN.** *R. E. Rush*[1], S. A. D'Anna[2] and R. C. Zeimer[2]. [1]Charles River Laboratories- Ohio Division, Spencerville, OH and [2]The Wilmer Ophthalmological Institute, Johns Hopkins University, Baltimore, MD.

#414 **PHOTOBIOMODULATION ATTENUATES METHANOL-INDUCED RETINAL TOXICITY.** *J. T. Eells*[1, 3], M. M. Henry[2], P. Summerfelt[2], M. T. Wong-Riley[2], E. V. Buchmann[3], M. Kane[3] and H. T. Whelan[3]. [1]Health Sciences, University of Wisconsin-Milwaukee, Milwaukee, WI, [2]Cell Biology, Neurobiology and Anatomy, Medical College of Wisconsin, Milwaukee, WI and [3]Neurology, Medical College of Wisconsin, Milwaukee, WI.

#415 **GENE REGULATION BY THE α-SECRETASE CLEAVED AMYLOID PRECURSOR PROTEIN.** *J. A. Johnson*[1, 2, 3] and T. D. Stein[1]. [1]Neuroscience Training Program, University of Wisconsin, Madison, WI, [2]Environmental Toxicology Center, University of Wisconsin, Madison, WI, [3]School of Pharmacy, University of Wisconsin, Madison, WI and [4]Waisman, University of Wisconsin, Madison, WI.

#416 **BREVETOXIN-INDUCED COINCIDENT ACTIVATION OF SRC KINASE AND VOLTAGE-GATED SODIUM CHANNELS ENHANCES NMDA RECEPTOR SIGNALING IN NEOCORTICAL NEURONS.** *T. F. Murray*[1], *D. G. Baden*[2] and S. M. Dravid[1]. [1]Physiology and Pharmacology, University of Georgia, Athens, GA and [2]Center for Marine Science Research, University of North Carolina at Wilmington, Wilmington, NC.

#417 **CYCLOOXYGENASE-2-CATALYZED OXIDATION OF 6-HYDROXYDOPAMINE IN PC12 PHEOCHROMOCYTOMA CELLS. IMPLICATION FOR PARKINSON'S DESIASE.** A. A. Kapralov[1], *Y. Y. Tyurina*[1], G. G. Borisenko[1], N. F. Schor[4, 6], S. H. Graham[3] and *V. E. Kagan*[1, 2, 5]. [1]EOH, University of Pittsburgh, Pittsburgh, PA, [2]Pharmacology, University of Pittsburgh, Pittsburgh, PA, [3]Neurology, University of Pittsburgh, Pittsburgh, PA, [4]Pediatrics, University of Pittsburgh, Pittsburgh, PA, [5]Cancer Institute, University of Pittsburgh, Pittsburgh, PA and [6]PCN, CHP, University of Pittsburgh, Pittsburgh, PA.

#418 **STRESS AND COMBINED EXPOSURE TO LOW DOSES OF PYRIDOSTIGMINE BROMIDE, DEET, AND PERMETHRIN PRODUCE NEUROCHEMICAL AND NEUROPATHOLOGICAL ALTERATIONS IN CEREBRAL CORTEX, HIPPOCAMPUS, AND CEREBELLUM.** E. M. El-Masry, A. Abdel-Rahman, S. M. Abou-Donia, A. K. Shetty and *M. B. Abou-Donia*. Pharmacology and Cancer Biology, Duke University Medical Center, Durham, NC.

#419 **NEURONAL DEGENERATION AND NEUROBEHAVIORAL DEFICITS FOLLOWING DERMAL EXPOSURE WITH MALATHION, DEET, AND PERMETHRIN, ALONE AND IN COMBINATION IN RATS.** A. Abdel-Rahman, A. M. Dechkovskaia, L. B. Goldstein, S. L. Bullman, W. A. Khan, E. M. El-Masry and *M. B. Abou-donia*. Pharmacology and Cancer Biology, Duke University Medical Center, Durham, NC.

#420 **LOCOMOTOR PERFORMANCE DEFICITS AND DIFFERENTIAL EFFECTS ON BRAIN REGIONAL ACETYLCHOLINESTERASE ACTIVITY FOLLOWING CO-EXPOSURE TO VARIOUS DOSES OF PYRIDOSTIGMINE BROMIDE WITH DEET, AND PERMETHRIN IN RATS.** A. M. Dechkovskaia, L. B. Goldstein, A. Abdel-Rahman, S. L. Bullman, W. A. Khan and *M. B. Abou-Donia*. Pharmacology and Cancer Biology, Duke University Medical Center, Durham, NC.

#421 **DISTINCT GENE REGULATION EVENTS ACCOMPANY ENHANCED VULNERABILITY IN HIPPOCAMPUS AFTER REPEATED EXPOSURES TO LOW-LEVEL SOMAN.** *E. Caba*, S. F. Caskurlu, D. M. Boschetto and *B. A. Bahr*. Pharmacology Sciences./Center of Drug Discovery, Univerisity of Connecticut, Storrs, CT.

#422 **SIGNALING PATHWAYS ASSOCIATED WITH GLIOSIS CAN BE STUDIED USING A BRAIN SLICE PREPARATION.** C. L. Damiani and *J. P. O'Callaghan*. NIOSH, Morgantown, WV.

#423 **HEXANEDIONE (HD)-INDUCED CHANGES IN THE POLYMERIC AND MONOMERIC STATE OF RAT SPINAL CORD CYTOSKELETAL PROTEINS.** M. L. Reid and *R. M. LoPachin*. Anesthesiology, Albert Einstein College of Medicine, Bronx, NY.

#424 **SUPRAPHYSIOLOGICAL LEVELS OF THE STRESS HORMONE CORTICOSTERONE ATTENUATE BLOOD-BRAIN BARRIER DISRUPTION AND MICROGLIAL ACTIVATION IN HIPPOCAMPUS OF C57BL/6J MICE TREATED WITH KAINIC ACID.** S. A. Benkovic, *J. P. O'Callaghan* and *D. B. Miller*. TMBB, CDC-NIOSH, Morgantown, WV.

#425 **USE OF MAGNETIC RESONANCE IMAGING (MRI) TO EXAMINE MORPHINE-INDUCED INTRATHECAL GRANULOMAS.** *T. L. Yaksh*[1], *J. W. Allen*[1], R. F. Mattrey[2], J. Corbeil[2], K. Horais[1] and N. Tozier[1]. [1]Anesthesiology, University CA-San Diego, La Jolla, CA and [2]Radiology, University CA-San Diego, La Jolla, CA.

#426 **MOLECULAR ACTIONS OF ACRYLAMIDE (ACR) AT THE NERVE TERMINAL.** *R. M. LoPachin*[1] and *D. S. Barber*[2]. [1]Anesthesiology, Albert Einstein College of Medicine, Bronx, NY and [2]CEHT, University of Florida, Gainsville, FL.

#427 **DEGRANULATION OF DURAL MAST CELLS BY *IN VIVO* AND *EX VIVO* OPIATE EXPOSURE.** *J. W. Allen*, W. Zielinska, D. Cizkova and *T. L. Yaksh*. Anesthesiology, University CA-San Diego, La Jolla, CA.

#428 **DYSREGULATION OF DOPAMINE HOMEOSTASIS AND OXIDATIVE STRESS IN PCB-EXPOSED NEURONAL CELLS.** *D. W. Lee* and *L. A. Opanashuk*. Department of Environmental Medicine, University of Rochester SMD, Rochester, NY.

#429 **OVEREXPRESSION OF BCL-XL ALTERS THE SUSCEPTIBILITY OF PRIMARY RAT ASTROCYTES TO 1, 3-DINITROBENZENE.** A. D. Phelka, M. M. Sadoff, B. P. Martin and *M. A. Philbert*. Environmental Health Sciences, University of Michigan, Ann Arbor, MI.

#430 **1, 3-DINITROBENZENE INHIBITS THE PYRUVATE DEHYDROGENASE COMPLEX.** J. A. Miller and *M. A. Philbert*. Environmental Health Sciences, University of Michigan, Ann Arbor, MI.

#431 **N, N-DIETHYLDITHIOCARBAMATE PRODUCES COPPER ACCUMULATION, LIPID PEROXIDATION AND DEMYELINATION IN PERIPHERAL NERVE.** *W. Valentine*[1], *E. G. Tonkin*[1], H. L. Valentine[1], *D. M. Milatovic*[2], K. Amarnath[1] and V. Amarnath[1]. [1]Pathology and Center in Molecular Toxicology, Vanderbilt University Medical Center, Nashville, TN and [2]Pathology, University of Washington, Seattle, WA.

#432 **ANATOMICAL AND PHYSIOLOGICAL ASPECTS AND ROUTINE AND SPECIFIC EXAMINATIONS OF MINIPIG EYE AS EXPERIMENTAL MODEL IN NON-CLINICAL SAFETY STUDIES. O. LOGET, F. HOFFMANN-LA ROCHE LTD, BASLE, SWITZERLAND.** O. M. Loget. PRBN-S, F.Hoffmann-La Roche, Basel, Switzerland. Sponsor: *M. Stephan-Gueldner*.

Monday Afternoon, March 22
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: KIDNEY

Chairperson(s): *Alice Villalobos, University of Rochester, Rochester, NY and Monica Valentovic, Marshall University, Huntington, WV.*

Displayed: *1:30 PM–4:30 PM*

Attended*: 3:00 PM–4:30 PM*

#433 **COMPARISON OF INTERACTIVE CYTOTOXIC EFFECTS OF SELECTED MYCOTOXINS ON RENAL CELLS.** A. H. Heussner, E. O'Brien, J. Haehnlein, M. A. Biester and *D. R. Dietrich*. Environmental Toxicology, University of Konstanz, Konstanz, Germany.

#434 **DETECTION OF ORGANIC ANION TRANSPORTERS (OAT) IN HUMAN KIDNEY HOMOGENATE AND PRIMARY HUMAN KIDNEY CELLS (HKC).** R. Blum, E. O'Brien, A. H. Heussner and *D. R. Dietrich*. Environmental Toxicology, University of Konstanz, Konstanz, Germany.

#435 **USE OF AN *IN VITRO* HUMAN RENAL CORTICAL CELL MODEL FOR TOXICITY AND TRANSPORT STUDIES.** N. S. Jensen, R. Challmes, L. A. Hyde and *P. M. Silber*. *In Vitro* Technologies, Baltimore, MD.

#436 **TRANSPORT OF MERCURIC CONJUGATES OF HOMOCYSTEINE BY THE AMINO ACID TRANSPORTER, SYSTEM $B^{0,+}$.** C. C. Bridges and *R. K. Zalups*. Basic Medical Sciences, Mercer University School of Medicine, Macon, GA.

#437 **CADMIUM DECREASES MNRA OF MOUSE KIDNEY SODIUM-GLUCOSE COTRANSPORTER 1 (SGLT1) *IN VITRO*.** N. Tabatabai[1], S. S. Blumenthal[2], K. Dolan[2] and D. H. Petering[1]. [1]Chemistry, University of Wisconsin-Milwuakee, Milwaukee, WI and [2]Nephrology, VA Medical Center, Milwaukee, WI. Sponsor: *J. Eells*.

#438 **CADMIUM DECREASES GLUCOSE UPTAKE IN PORCINE KIDNEY CELLS POSSIBLY BY ALTERING SODIUM-DEPENDENT GLUCOSE TRANSPORTER EXPRESSION.** J. R. Pennell and *A. R. Villalobos*. University of Rochester, Rochester, NY.

#439 **A HUMAN RENAL EPITHELIAL CULTURE MODEL FOR *IN VITRO* NEPHROTOXICITY STUDIES.** M. J. Powers and S. Damian. Cambrex BioScience, Walkersville, MD. Sponsor: *S. Tannenbaum*.

#440 **ESTROGEN THROUGH ESTROGEN-RECEPTOR INDEPENDENT PATHWAY INDUCES PROLIFERATION OF HUMAN KIDNEY EPITHELIAL CELLS.** *K. P. Singh* and *D. Roy*. Environmental Health Sciences, University of Alabama at Birmingham, Birmingham, AL.

#441 **MODULATION OF RENAL GLOMERULAR MESANGIAL AND PODOCYTE CELL NUMBERS CORRELATES WITH FIBRONECTIN ACCUMULATION IN BENZO(A)PYRENE-TREATED SPRAGUE-DAWLEY RATS.** *A. Nanez*[1, 2] and *K. S. Ramos*[1, 2]. [1]Center for Genetics and Molecular Medicne, University of Louisville, Louisville, KY and [2]Biochemistry and Molecular Biology, University of Louisville, Louisville, KY.

#442 **PYRUVATE ATTENUATION OF P-AMINOPHENOL (PAP) TOXICITY IN RENAL SLICES FROM FISCHER 344 (F344) RATS.** *M. Valentovic* and R. Harmon. Pharmacology, Marshall University School of Medicine, Huntington, WV.

#443 **PENTAMIDINE-INDUCED INJURY IN LLC-PK1 CELLS IS NOT MEDIATED BY NMDA RECEPTOR ANTAGONISM.** A. L. Piskac and *M. A. Smith*. Environmental Sciences / Toxicology, University of Texas School of Public Health, Houston, TX.

#444 **ASSESSMENT OF THE MODULATION OF RENAL ANTIOXIDANT DEFENSE MECHANISMS AND CYCLOOXYGENASES BY COMMON RODENT DIETS IN MALE SPRAGUE-DAWLEY RATS.** S. Cooper, B. Blaydes, *F. Xin* and *B. Delclos*. NCTR, Jefferson, AR.

#445 **DIFFERENTIAL EXPRESSION OF E-CADHERIN AND N-CADHERIN IN PROXIMAL AND DISTAL SEGMENTS OF THE RAT NEPHRON.** *W. C. Prozialeck*[1], P. C. Lamar[1] and D. M. Appelt[2]. [1]Pharmacology, Midwestern University, Downers Grove, IL and [2]Biomedical Sciences, Philadelphia College of Osteopathic Medine, Philadelphia, PA.

#446 **FORMIC ACID EXCRETION IN RATS EXPOSED TO BROMODICHLORO-METHANE: POSSIBLE LINK TO RENAL TUBULE CELL PROLIFERATION IN LONG-TERM STUDIES.** *E. A. Lock*, L. Cottrell, M. Jacobsen, T. Soames and R. Williams. Central Toxicology Laboratory, Syngenta, Macclesfield, United Kingdom.

#447 **RENAL GLUTATHIONE PEROXIDASE AND GLUTATHIONE REDUCTASE ACTIVITY ARE ALTERED BY 3, 4-DICHLOROANILINE (3, 4-DCA) AND 2-AMINO-4, 5-DICHLOROPHENOL (2A45CP).** *G. O. Rankin*, *M. A. Valentovic*, N. Noureddine and B. Dunlap. Pharmacology, Marshall University, Huntington, WV.

#448 **A NOVEL MITOCHONDRIAL MATRIX CALPAIN IN MITOCHONDRIAL INJURY.** *D. D. Arrington*, *T. R. Van Vleet* and *R. G. Schnellmann*. Pharmaceutical Sciences, Medical University of South Carolina, Charleston, SC.

#449 **EFFECT OF CALCIUM OXALATE ON KIDNEY MITOCHONDRIAL FUNCTION.** *K. McMartin*[1], C. Guo[1] and *K. Wallace*[2]. [1]Department of Pharmacology, LSU Health Sciences Center-Shreveport, Shreveport, LA and [2]Biochemisty and Molecular Biology, University of Minnesota-Duluth, Duluth, MN.

#450 **MODULATION OF MITOCHONDRIAL GLUTATHIONE (GSH) TRANSPORT IN NRK-52E CELLS ALTERS SUSCEPTIBILITY TO CHEMICALLY INDUCED APOPTOSIS.** *L. H. Lash*[1], D. A. Putt[1], F. Xu[1], J. Wang[1], C. S. Wood[1], J. Hartman[1] and L. H. Matherly[2, 1]. [1]Pharmacology, Wayne State University, Detroit, MI and [2]Karmanos Cancer Institute, Wayne State University, Detroit, MI.

#451 **CELLULAR TOXICITY OF CALCIUM OXALATE: IS IT RELATED TO DISRUPTION OF MEMBRANE INTEGRITY.** C. Guo, *T. Dugas* and *K. McMartin*. Department of Pharmacology, LSU Health Sciences Center-Shreveport, Shreveport, LA.

#452 **EVIDENCE FOR THE DIRECT INACTIVATION OF ENDOPLASMIC RETICULUM BOUND CA^{2+}-INDEPENDENT PHOSPHOLIPASE A_2 IN RENAL CELLS DURING OXIDATIVE STRESS.** *B. S. Cummings*[1, 3], G. R. Kinsey[1], A. K. Gelasco[2], J. Mchowat[4] and *R. G. Schnellmann*[3]. [1]Pharmacology and Biomed. Sciences., University of Georgia, Athens, GA, [2]Nephrology, Med. University of South Carolina, Charleston, SC, [3]Pharmacology Sciences., Med. University of South Carolina, Charleston, SC and [4]Pathology, St. Louis University, St. Louis, MO.

#453 **DIABETES PROTECTS FROM LETHAL NEPHROTOXICITY OF S-1, 2-DICHLOROVINYL-L-CYSTEINE (DCVC).** *A. V. Dnyanmote*[1], *S. P. Sawant*[1], *E. A. Lock*[2], *J. R. Latendresse*[3] and *H. M. Mehendale*[1]. [1]Toxicology, ULM, Monroe, LA, [2]MUSC, Charleston, SC and [3]Pathology Assoc. Intl., NCTR, Jefferson, AR.

#454 **NF-κB MEDIATED TRANSACTIVATIONAL MECHANISMS OF G1-TO-S CELL CYCLE PROGRESSION IN AUTOPROTECTION AGAINST S-1, 2-DICHLOROVINYL-L-CYSTEINE INDUCED ACUTE RENAL FAILURE.** *M. C. Korrapati*[1], *E. A. Lock*[2] and *H. M. Mehendale*[1]. [1]School of Pharmacy, ULM, Monroe, LA and [2]Medical University of South Carolina, Charleston, SC.

#455 **EFFECT OF MT-3 EXPRESSION ON APOPTOSIS IN THE HUMAN PROXIMAL TUBULE CELL LINE, HK-2.** *S. H. Garrett*[1], *S. Somji*[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.

#456 **STATINS INHIBIT ALBUMIN UPTAKE IN OPOSSUM KIDNEY PROXIMAL TUBULE CELLS VIA REDUCED PRENYLATION OF SIGNALLING PROTEINS.** J. Sidaway[1], R. G. Davidson[2], F. McTaggart[2], *T. C. Orton*[1], R. C. Scott[1], G. J. Smith[2] and N. J. Brunskill[3]. [1]Safety Assessment, AstraZeneca, Macclefield, Cheshire, United Kingdom, [2]Cardiovascular and Gastrointestinal Discovery, AstraZeneca, Macclesfield, Cheshire, United Kingdom and [3]Department of Nephrology, Leicester General Hospital, Leicester, Leicestershire, United Kingdom.

Monday Afternoon, March 22
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: CHEMICAL-INDUCED IMMUNOMODULATION

Chairperson(s): *John Barnett, West Virginia University, Morgantown, WV and B. Paige Lawrence, Washington State University, Pullman, WA.*

Displayed: *1:30 PM–4:30 PM*

Attended*: 1:30 PM–3:00 PM*

#457 **ESTROGEN RECEPTOR α BUT NOT β IS A MAJOR MEDIATOR FOR ESTRADIOL INDUCED THYMIC ATROPHY.** *Z. Lai*[1], N. C. Fiore[1], S. C. Hewitt[2], K. S. Korach[2] and *A. E. Silverstone*[1]. [1]Department of Microbiology and Immunology, SUNY Upstate Medical University, Syracuse, NY and [2]Lab. Reprod Develop Toxicology, NIEHS/NIH, Research Triangle Park, NC.

#458 **EVALUATION OF THE POTENTIAL IMMUNOTOXICITY OF 3-MONOCHLORO-1, 2-PROPANEDIOL IN BALB/C MICE.** J. Lee[1], J. Byun[1], S. Park[1], H. Kim[1], J. Park[1], J. Eom[1], M. Ryu[1], *Y. Heo*[2] and H. Oh[1]. [1]Division of Immunotoxicology, National Institute of Toxicological Research, KFDA, Seoul, South Korea and [2]Daegu Catholic University, Daegu, South Korea.

#459 **ACETONE: 4-WEEK DRINKING WATER IMMUNOTOXICITY STUDY IN CD-1 MICE.** P. K. Anderson, *M. R. Woolhiser* and *J. M. Waechter*. Toxicology & Environmental Research and Consulting, The Dow Chemical Company, Midland, MI.

#460 **EXPOSURE TO SODIUM DICHROMATE FROM DRINKING WATER DOES NOT ALTER IMMUNE FUNCTION IN B6C3F1 MICE OR SPRAGUE DAWLEY RATS.** R. D. Brown[1], *K. L. White*[1], *D. R. Germolec*[2], *C. S. Smith*[2], L. X. Zhang[1] and *T. L. Guo*[1]. [1]Pharmacology and Toxicology, Virginia Commonwealth University, Richmond, VA and [2]NIEHS, Research Triangle Park, NC.

#461 **COMPARISON BETWEEN INTRAPERITONEAL AND ASPIRATION ROUTES OF EXPOSURE TO EVALUATE THE IMMUNOTOXIC EFFECTS OF A MIXTURE OF HERBICIDES.** K. Salazar[1], M. Chroussis[2], *J. B. Barnett*[1] and *R. Schafer*[1]. [1]Microbiology, Immunology, & Cell Biology, West Virginia University, Morgantown, WV and [2]Alderson-Broaddus College, Phillipi, WV.

#462 **INDUCTION OF IFN-G CYTOKINE EXPRESSION BY CHLORPYRIFOS, CHLORPYRIFOS-OXON, AND ENDOTOXIN *IN VITRO*.** P. Duramad and *N. Holland*. UC Berkeley, Berkeley, CA.

#463 **ROLE OF CYTOKINE NETWORKS IN DETERMINING SUSCEPTIBILITY TO DRUG-INDUCED LIVER DISEASE.** *M. Bourdi*[1], D. Eiras[1], M. Holt[1], *T. Reilly*[2], *K. Welch*[1], *H. Amouzadeh*[1] and *L. Pohl*[1]. [1]Molecular and Cellular Toxicology Section/LMI/NHLBI, NIH/DHHS, Bethesda, MD and [2]Immunotoxicology, Drug Safety Evaluation, Bristol-Myers Squibb, Syracuse, NY.

#464 **LIPOPOLYSACCHARIDE PRE-EXPOSURE SENSITIZES THE MOUSE TO DEOXYNIVALENOL -INDUCED PROINFLAMMATORY CYTOKINE EXPRESSION AND LYMPHOCYTE APOPTOSIS.** *Z. Islam*[1] and *J. J. Pestka*[1, 2]. [1]Food Science and Human Nutrition, Michigan State University, East Lansing, MI and [2]Institute of Environmental Toxicology, Michigan State University, East Lansing, MI.

#465 **INFLAMMATION AND TRAUMATIC SKELETAL MUSCLE INJURY.** M. Summan, T. Hulderman, *J. M. Matheson* and P. P. Simeonova. Toxicology and Molecular Biology, DHHS/CDC/NIOSH, Morgantown, WV.

#466 **IMMUNOGENICITY OF POLYETHYLENE GLYCOL (PEG)-BASED HYDROGEL SEALANT IN LAPAROSCOPIC PORCINE PARTIAL NEPHRECTOMY.** M. H. French, E. L. Park, W. Y. Ho, J. R. Talley, M. J. White, S. Ramakumar, N. F. Ullrich, J. A. Linehan and *J. B. Ulreich*. Surgery, University of Arizona, Tucson, AZ.

#467 **IMMUNOTOXICITY OF A COPLANAR AND NONCOPLANAR POLYCHLORINATED BIPHENYL (PCB) CONGENER IN A FISH MODEL.** J. Duffy, Y. Li and *J. Zelikoff*. Department of Environmental Medicine, New York University School of Medicine, Tuxedo, NY.

#468 **IMPACT OF MATERNAL TOXICITY ON POSTNATAL IMMUNE SYSTEM-RELATED PARAMETERS IN RATS.** *A. H. Penninks*, M. van Zijverden, F. Kuper, M. M. Tegelenbosch-Schouten, A. P. Wolterbeek and I. D. Waalkens-Berendsen. Experimental Immunology, TNO Nutrition and Food Research, Zeist, Netherlands.

#469 **DEXAMETHASONE-INDUCED IMMUNOTOXICITY FOLLOWING FETAL *VS.* ADULT EXPOSURE.** *R. R. Dietert*, *J. Lee*, J. Olsen, K. Fitch and J. A. Marsh. Microbiology and Immunology, Cornell University, Ithaca, NY.

#470 **DEVELOPMENTAL EXPOSURE TO A THYROID DISRUPTING CHEMICAL STIMULATES PHAGOCYTOSIS IN JUVENILE SPRAGUE-DAWLEY RATS.** A. A. Rooney[1], R. Matulka[2] and *R. W. Luebke*[3]. [1]CVM Department of Anatomy, Physiological Sciences and Radiology, NCSU/USEPA, Raleigh, NC, [2]Department of Toxicology, UNC, Chapel Hill, NC and [3]USEPA/NHEERL, Research Triangle Park, NC.

#471 **BOTH ADULT AND DEVELOPMENTAL EXPOSURES TO NEVIRAPINE INCREASED NK CELL ACTIVITY BUT DECREASED SPLEEN ANTIBODY-FORMING CELL (AFC) RESPONSE TO T-DEPENDENT ANTIGEN SHEEP ERYTHROCYTES (SRBC) IN FEMALE B6C3F1 MICE.** *T. L. Guo*[1], *D. R. Germolec*[2], D. L. Musgrove[1], R. P. Chi[1] and *K. L. White*[1]. [1]Virginia Commonwealth University, Richmond, VA and [2]NIEHS, Research Triangle Park, NC.

#472 **THE EFFECTS OF EARLY EXPOSURE OF ENDOSULFAN, PIPERONYL BUTOXIDE AND PERMETHRIN ON IMMUNE FUNCTION OF ADULT MICE.** G. E. Pimentel-Smith[1] and *H. P. Misra*[2]. [1]Vet. Med., Virginia Tech, Blacksburg, VA and [2]Division of Biomedical Sciences, Edward Via College of Osteopathic Medicine, Blacksburg, VA.

#473 **PRENATAL MERCURIC CHLORIDE [HGCL2] EXPOSURE IN BALB/C MICE: GENDER-SPECIFIC EFFECTS ON THE ONTOGENY OF THE IMMUNE SYSTEM.** I. A. Silva[1, 3], M. El Nabawi[2], D. Hoover[2] and *E. Silbergeld*[3]. [1]Insttitute Molecular Cell Biology, Porto, Portugal, [2]University Maryland Medical School, Baltimore, MD and [3]Environmental Health Sciences, Johns Hopknis University Bloomberg School Public Health, Baltimore, MD.

#474 **POSTNATAL EXPOSURE TO THIMEROSAL ALTERS IMMUNOLOGICAL FUNCTION IN ADULT MICE.** *M. M. Peden-Adams*[1], J. EuDaly[1], H. Lauren[1], J. Smythe[1] and *D. E. Keil*[2, 1]. [1]Medical University of South Carolina, Charleston, SC and [2]NIOSH, Morgantown, WV.

#475 **DERMAL EXPOSURE TO JP-8 JET FUEL DURING PREGNANCY ALTERS IMMUNOLOGICAL FUNCTION IN F1 MICE.** *D. E. Keil*[1, 2], L. Butterworth[1], S. Azadi[1] and *M. Peden-Adams*[2]. [1]NIOSH, Morgantown, WV and [2]Medical University of South Carolina, Charleston, SC.

#476 **PHENOTYPICALLY ALTERED MURINE BONE MARROW SUBSETS EXPRESS AND ACTIVATE THE AHR IN RESPONSE TO TCDD.** *A. Wyman* and *T. A. Gasiewicz*. Environmental Medicine, University of Rochester, Rochester, NY.

#477 **REDUCTION IN THE NUMBER OF SUPERANTIGEN-SPECIFIC T CELL DIVISIONS INDUCED BY 2, 3, 7, 8-TETRACHLORODIBENZO-P-DIOXIN RESULTS FROM INCREASED APOPTOSIS.** L. S. Faulconer[1], *I. A. Camacho*[1], *P. S. Nagarkatti*[1] and *M. Nagarkatti*[2]. [1]Department Pharmacology and Toxicology, Virginia Commonwealth University, Richmond, VA and [2]Department of Microbiology and Immunology, Virginia Commonwealth University, Richmond, VA.

#478 **EVIDENCE FOR INDUCTION OF APOPTOSIS IN T CELLS FROM MURINE FETAL THYMUS FOLLOWING PERINATAL EXPOSURE TO 2, 3, 7, 8-TETRACHLORODIBENZO-P-DIOXIN (TCDD).** *P. S. Nagarkatti*[1], *I. A. Camacho*[2] and *M. Nagarkatti*[2]. [1]Department of Pharmacology and Toxicology, Virginia Commonwealth University, Richmond, VA and [2]Department of Microbiology and Immunology, Virginia Commonwealth University, Richmond, VA.

#479 **CONSEQUENCES OF TCDD EXPOSURE ON THE MIGRATION, PROLIFERATION, AND SURVIVAL OF ANTIGEN-SPECIFIC T CELLS.** *C. Funatake*[1], L. Steppan[1], E. Spanjaard[2], A. Marshak-Rothstein[2] and *N. Kerkvliet*[1]. [1]Oregon State University, Corvallis, OR and [2]Boston University School of Medicine, Boston, MA.

#480 **EXAMINING POSSIBLE MECHANISMS UNDERLYING PULMONARY NEUTROPHILIA IN VIRUS-INFECTED MICE TREATED WITH TCDD.** *S. Teske*[2, 1], L. Harrison[1], J. Neumiller[1] and *B. Lawrence*[1, 2]. [1]Pharmaceutical Sciences, Washington State University, Pullman, WA and [2]Pharmacology/Toxicology Graduate Program, Washington State University, Pullman, WA.

#481 **EFFECTS OF SILICA ON *IN VITRO*-GENERATED MACROPHAGE SUBSETS.** C. T. Migliaccio and *A. Holian*. Department of Biomedical & Pharmaceutical Sciences, Center for Environmental Health Sciences, University of Montana, Missoula, MT.

#482 **SILICA STIMULATES PHOSPHORYLATION AND ACTIVATION OF AKT IN MURINE ALVEOLAR MACROPHAGES.** C. A. Wishcamper and *A. Holian*. Pharmaceutical and Biomedical Sciences, University of Montana, Missoula, MT.

#483 **REPEATED EXPOSURE TO DIESEL EXHAUST PARTICLES CAUSES SUPPRESSION OF CELL-MEDIATED IMMUNE RESPONSES TO *LISTERIA* INFECTION IN BROWN NORWAY RATS.** X. J. Yin[1], C. C. Dong[1], *J. Y. Ma*[2], *J. M. Antonini*[2], *J. R. Roberts*[2] and J. K. Ma[1]. [1]School of Pharmacy, West Virginia University, Morgantown, WV and [2]HELD, NIOSH, Morgantown, WV.

#484 **PARTICULATE MATTER IMMUNOMODULATORY EFFECT ON THE PROGRESSION OF AUTOIMMUNE DISEASE IN NEW ZEALAND MIXED MICE.** M. Hassani, *J. M. Brown* and *A. Holian*. Center for Environmental Health Sciences, The University of Montana, Missoula, MT.

#485 **TRICHLOROETHYLENE DOES NOT ACCELERATE AUTOIMMUNE DIABETES IN NOD MICE.** G. Ravel[1, 2], M. Christ[1], F. Condevaux[1] and *J. Descotes*[2]. [1]MDS Pharmacology Services, L'Arbresle, France and [2]Poison Center & INSERM University 503, Lyon, France.

#486 **ANALYSIS OF TARGET ANTIGENS FOR AUTOANTIBODIES ASSOCIATED WITH ASBESTOS EXPOSURE.** I. Leal, *A. Holian* and *J. Pfau*. Biomedical and Pharmaceutical Sciences, University of Montana, Missoula, MT.

Monday Afternoon, March 22
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: MECHANISMS OF HEPATOTOXICITY II

Chairperson(s): *Charles Barton, IOWA Department of Public Health, Des Moines, IA and Robert Roth, Michigan State University, East Lansing, MI.*

Displayed: *1:30 PM–4:30 PM*

Attended*: 3:00 PM–4:30 PM*

#487 **DIFFERENCES IN HEPATOTOXICOLOGICAL PROFILE OF ET-743 BETWEEN SPRAGUE-DAWLEY RATS AND CYNOMOLGUS MONKEYS.** R. De Coster[1], J. Verbeeck[1], A. Vynckier[1], A. Looszova[1], K. Anciaux[1], L. Lammens[1], N. Bode[1], *W. Coussement*[1] and P. Aviles[2]. [1]Global Preclinical Development, Johnson&Johnson Pharmaceutical Research&Development, Beerse, Belgium and [2]PharmaMar, Colmenar Viejo, Spain.

#488 **PROTECTION OF FUMONISIN B_1 HEPATOTOXICITY BY SILYMARIN AND MYRIOCIN IN FEMALE BALB/C MICE.** *Q. He*, *J. Kim* and *R. P. Sharma*. Department of Physiology & Pharmacology, The University of Georgia, Athens, GA.

#489 **COCAINE HEPATOTOXICITY AND ITS POTENTIATION BY LIPOPOLYSACCHARIDE: TREATMENT AND GENDER EFFECT.** T. Visalli[1], *R. Turkall*[2, 1] and *M. S. Abdel-Rahman*[1]. [1]Pharmacology/Physiology, UMDNJ, Newark, NJ and [2]Clinical Laboratory Sciences, UMDNJ, Newark, NJ.

#490 **TNBS-INDUCED COLITIS IN THE RAT AS A MODEL FOR INFLAMMATORY BOWEL DISEASE.** S. Groom[1], K. Beard[1], E. Jacquinet[1] and N. Hamelin[1]. [1]CTBR, Senneville, QC, Canada and [2]IPN, CTBR, Senneville, QC, Canada. Sponsor: *M. Vézina*.

#491 **HYPOXIA IN RAT LIVER AFTER MONOCROTALINE EXPOSURE.** B. L. Copple, *P. E. Ganey* and *R. A. Roth*. Department of Pharmacology and Toxicology, Institute for Environmental Toxicology, and National Food Safety and Toxicology Center, Michigan State University, East Lansing, MI.

#492 **MODES OF CELL DEATH IN RAT LIVER AFTER MONOCROTALINE EXPOSURE.** *R. A. Roth*[1], *B. L. Copple*[1], C. M. Rondelli[1], *J. F. Maddox*[1], N. S. Hoglen[2] and *P. E. Ganey*[1]. [1]Pharmacology and Toxicology, Michigan State University, East Lansing, MI and [2]IDUN Pharmaceuticals, San Diego, CA.

#493 **ALTERED GENE EXPRESSION AS A CONTRIBUTING FACTOR TO LIVER INJURY IN RATS COTREATED WITH RANITIDINE AND LIPOPOLYSACCHARIDE.** *J. P. Luyendyk*[1], *W. B. Mattes*[2], *J. F. Maddox*[1], *G. N. Cosma*[2], *P. E. Ganey*[1] and *R. A. Roth*[1]. [1]Pharmacology and Toxicology, Michigan State University, East Lansing, MI and [2]Investigative Toxicology, Pharmacia Corp., Kalamazoo, MI.

#494 **COMPARISON OF THE HEPATOCELLULAR TOXICITY OF THE ANTI-ANDROGEN FLUTAMIDE TO CYANO ANALOGS.** K. J. Coe[1], *H. K. Ho*[1], H. M. Holmes[1], Y. Jia[1], N. Fausto[2], *S. A. Bruschi*[1] and *S. D. Nelson*[1]. [1]Medicinal Chemistry, University of Washington, Seattle, WA and [2]Pathology, University of Washington, Seattle, WA.

#495 **ACETAMINOPHEN-INDUCED MITOCHONDRIAL PERMEABILITY TRANSITION IN ISOLATED MOUSE HEPATOCYTES.** A. B. Reid, R. C. Kurten, S. S. McCullough, R. W. Brock, G. Nowak and *J. A. Hinson*. University of Arkansas for Medical Sciences, Little Rock, AR.

#496 **S-ADENOSYL-L-METHIONINE (SAME) REDUCES ACETAMINOPHEN HEPATOTOXICITY.** M. Terneus and *M. Valentovic*. Pharmacology, Marshall University School of Medicine, Huntington, WV.

#497 **HEPATO-PROTECTIVE EFFECTS OF HC AGAINST ETHANOL-CARBON TETRACHLORIDE-INDUCED LIVER DAMAGE IN RATS.** *O. S. El-Tawil*[1], A. M. Mohamadin[2] and A. B. Abdel-Naim[3]. [1]Department of Toxicology and Forensic Medicine, Faculty of Veterinary Medicine, Cairo University, Cairo, Egypt, [2]Tumor Marker Oncology Research Unit, Department of Biochemistry, Faculty of Pharmacy, Al-Azhar University, Cairo, Egypt and [3]Department of Pharmacology and Toxicology, Faculty of Pharmacy, Ain Shams University, Cairo, Egypt.

#498 **ONSET OF 3-(3, 5-DICHLOROPHENYL)-2, 4-THIAZOLIDINEDIONE (DCPT)-INDUCED HEPATOTOXICITY IN RATS.** *N. N. Patel*, *C. M. Crincoli* and *P. Harvison*. Department of Pharmaceutical Sciences, University of the Sciences in Philadelphia, Philadelphia, PA.

#499 **POTENTIAL ROLE OF CYTOCHROMES P450 IN 3-(3, 5-DICHLOROPHENYL)-2, 4-THIAZOLIDINEDIONE (DCPT)-INDUCED HEPATOTOXICITY IN RATS.** *C. M. Crincoli*, *N. N. Patel* and *P. Harvison*. Department of Pharmaceutical Sciences, University of the Sciences in Philadelphia, Philadelphia, PA.

#500 **UNDERLYING AGE-RELATED LIVER PATHOLOGY INCREASES AZOXYMETHANE TOXICITY IN FEMALE F344 RATS IN AN AGING STUDY ON COLON CANCER CHEMOPREVENTION.** S. Francke-Carroll[1], K. Daly[2], T. Wang[3] and *B. Magnuson*[2]. [1]OSAS, USFDA, College Park, MD, [2]Department of Nutrition and Food Science, UMD, College Park, MD and [3]Agricultural Research Service, USDA, Beltsville, MD.

#501 **IMMUNOHISTOCHEMICAL ANALYSIS OF HEPATIC HEME OXYGENASE-1 EXPRESSION FOLLOWING ADMINISTRATION OF ETHINYL ESTRADIOL TO RATS.** *L. A. Morio*, A. Leone, J. B. Parker, P. Lord and M. K. McMillian. Mechanistic Toxicology, Johnson & Johnson Pharmaceutical Research & Development, L.L.C., Raritan, NJ.

#502 **INDUCTION OF PEROXISOME PROLIFERATION IN RAT HEPATOCYTES BY A SERIES OF HALOGENATED ACETATES.** *J. McMillan*, *J. E. Walgren* and *D. J. Jollow*. Cell and Molecular Pharmacology, Medical University of South Carolina, Charleston, SC.

#503 **ENDOTOXIN POTENTIATES AFLATOXIN B1-HEPATOCELLULAR INJURY BY A MECHANISM WHICH IS DEPENDENT UPON KUPFFER CELLS.** J. L. Wagoner[1, 4], E. X. Barton[1], D. F. Klein[2], T. T. Newton[2], *R. A. Roth*[3], L. H. Mortensen[4] and *C. Barton*[2, 4]. [1]Iowa State University, Ames, IA, [2]Iowa Department of Public Health, Des Moines, IA, [3]Michigan State University, East Lansing, MI and [4]Des Moines University, Des Moines, IA.

#503a **TRANSCRIPTOMICS OF ACETAMINOPHEN IN RAT LIVER AND IN CULTURED DOG AND RAT HEPATOCYTES.** M. Jacquard[1], M. P. Renaud[1], J. C. Hoflack[1] and *N. Claude*[2]. [1]Drug Safety, Biologie SERVIER, Gidy, France and [2]Drug Safety, IRIS, Courbevoie, France.

#504 **BLESSINGS OF OLD AGE: PROTECTION FROM CHLORDECONE-POTENTIATED CCL_4 HEPATOTOXICITY.** *B. Murali*, *M. C. Korrapati* and *H. M. Mehendale*. Toxicology, University of Louisiana at Monroe, Monroe, LA.

#505 **DEPLETION OF MITOCHONDRIAL COA BY PERFLUOROSULFONIC AND PERFLUOROCARBOXYLIC ACIDS *IN VITRO*.** *T. M. O'Brien* and *K. B. Wallace*. Biochemistry and Molecular Biology, University of Minnesota, Duluth, MN.

#506 **EVALUATION OF THE SUBCHRONIC TOXIC POTENTIAL OF CHLOROFORM VIA AQUEOUS GAVAGE.** *S. S. Anand*[1], *P. S. Palkar*[1], *M. M. Mumtaz*[2] and *H. M. Mehendale*[1]. [1]Department of Toxicology, University of Louisiana, Monroe, monroe, LA and [2]ATSDR, Atlanta, GA.

#507 **PEROXISOME PROLIFERATOR CLOFIBRATE AFFECTS N-6/N-3 POLYUNSATURATED FATTY ACID (PUFA) COMPOSITION DIFFERENTIALLY IN RAT LIVER AND HEART.** *J. T. Ahokas*[1], Q. Tian[1], *F. A. Grzemski*[1] and S. Panagiotopoulos[2]. [1]Key Centre for Applied and Nutritional Toxicology, RMIT University, Melbourne, VIC, Australia and [2]Austin & Repatriation Medical Centre, University of Melbourne, Melbourne, VIC, Australia.

#508 **THE SIGNIFICANCE OF ELEVATED SERUM AMINOTRANSFERASE LEVELS IN THE ABSENCE OF HEPATIC NECROSIS: PRECLINICAL PREDICTIVE VALUE AND RELEVANCE TO HUMAN RISK.** *D. D. Wiant*[1, 2]. [1]*In Vivo* Pharmacology, Adolor Corporation, Exton, PA and [2]Department of Health, West Chester University, West Chester, PA.

#509 **IMPORTANCE OF MITOGEN-ACTIVATED PROTEIN KINASES (MAPK) IN ACETAMINOPHEN HEPATOTOXICITY IN MICE AND MURINE HEPATOCYTES.** M. Bajt and *H. Jaeschke*. Liver Research Institute, University of Arizona, Tucson, AZ.

#510 **INTERLEUKIN-13 PROTECTS AGAINST ACETAMINOPHEN-INDUCED LIVER INJURY.** *S. B. Yee*, *M. Bourdi*, M. P. Holt and *L. R. Pohl*. Molecular and Cellular Toxicology Section, Laboratory of Molecular Immunology, NHLBI, NIH, DHHS, Bethesda, MD.

#511 **ROLE OF TOLL-LIKE RECEPTOR-4 (TLR-4) IN ACETAMINOPHEN (AA)-INDUCED HEPATOTOXICITY.** C. R. Gardner[1], *L. Chen*[1], *J. D. Laskin*[2] and *D. L. Laskin*[1]. [1]Rutgers University, Piscataway, NJ and [2]UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ.

#512 **IMPAIRED SIGNAL TRAFFICKING UNDERLIES FAILED ON-DEMAND LIVER TISSUE REPAIR UPON HEPATOTOXIC CHALLENGE IN TYPE 2 DIABETES.** *S. P. Sawant*[1], *A. V. Dnyanmote*[1], *J. R. Latendresse*[2] and *H. M. Mehendale*[1]. [1]Department of Toxicology, School of Pharmacy, The University of Louisiana at Monroe, Monroe, LA and [2]NCTR, Jefferson, AR.

#513 **PROTECTION AGAINST MECHANISTICALLY DISTINCT HEPATOTOXICANTS IS ASSOCIATED WITH ACUTE PHASE RESPONSE.** *K. A. Ewald*[1] and *E. J. Calabrese*[2]. [1]KERA Environmental, LLC, Worthington, MA and [2]Department of Environmental Health Sciences, University of Massachusetts, Amherst, MA.

#514 **MECHANISMS REGULATING TREM-1 EXPRESSION IN LIVER MACROPHAGES AND ENDOTHELIAL CELLS DURING ACUTE ENDOTOXEMIA.** *L. C. Chen*, M. A. Gordon, *J. D. Laskin* and *D. L. Laskin*. Joint Graduate Program in Toxicology, Rutgers University and UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ.

#515 **EXPRESSION OF HEPATIC AND RENAL BILE ACID TRANSPORTERS DURING CHOLESTASIS.** K. Allen[1], *A. L. Slitt*[1], *N. J. Cherrington*[2], *C. Chen*[1], *M. Dieter*[1], J. Maher[1] and *C. Klaassen*[1]. [1]University of Kansas Medical Center, Kansas City, KS and [2]University of Arizona, Tucson, AZ.

Monday Afternoon, March 22
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: EXPOSURE/EPIDEMIOLOGY

Chairperson(s): *Thomas Lewandowski, Gradient Corporation, Mercer Island, WA and Jeffrey Boone, Mississippi State University, Mississippi State, MS.*

Displayed: *1:30 PM–4:30 PM*

Attended*: 1:30 PM–3:00 PM*

#516 **VOLATILE ORGANIC COMPOUND EXPOSURE ASSESSMENT FOR GOVERNMENT INSPECTORS AT GAS STATIONS.** M. J. Fedoruk[2, 3], R. Bronstein[3] and *B. D. Kerger*[1]. [1]HSRI, Inc., Tallahassee, FL, [2]Center for Occupational and Environmental Health, University of California-Irvine, Irvine, CA and [3]Exponent, Inc., Irvine, CA.

#517 **EXPOSURE ASSESSMENT OF VOLATILE ORGANIC COMPOUNDS AND METALS FOR GOVERNMENT INSPECTORS AT AUTO BODY REPAIR FACILITIES.** *B. D. Kerger*[1], R. Bronstein[3] and M. J. Fedoruk[2, 3]. [1]HSRI, Inc., Tallahassee, FL, [2]Center for Occupational and Environmental Health, University of California-Irvine, Irvine, CA and [3]Exponent, Inc., Irvine, CA.

#518 **EXPOSURE CHARACTERIZATION FROM A SURROGATE FINE FRAGRANACE.** D. A. Isola[1], R. E. Rogers[2], R. Ansari[3] and *L. W. Smith*[1]. [1]Reaearch Institute for Fragrance Materials, Inc., Woodcliff Lake, NJ, [2]Toxcon Health Sciences Research Centre, Inc., Edmonton, AB, Canada and [3]Quest International Fragrances Company, Mount Olive, NJ.

#519 **EVALUATION OF EXPOSURE TO METALS ON REUSABLE SHOP TOWELS.** L. Beyer, *M. R. Seeley* and *B. D. Beck*. Gradient Corp., Cambridge, MA.

#520 **POTENTIAL HEALTH EFFECTS OF EXPOSURE TO METHYLENEDIANILINE AND TOLUENEDIAMINE DURING POLYURETHANE FOAM MANUFACTURING.** *T. A. Lewandowski*[1], *A. Hayes*[3] and *B. D. Beck*[2]. [1]Gradient Corporation, Seattle, WA, [2]Gradient Corporation, Cambridge, MA and [3]School of Public Health, Harvard University, Cambridge, MA.

#521 **IRIDIUM TRACER USED TO MEASURE IN-VEHICLE DIESEL PARTICULATE MATTER CONCENTRATIONS.** M. D. Easter[1], *M. L. Lakin*[1], R. Ireson[2], *C. Lapin*[3], *T. Hesterberg*[4] and *W. Bunn*[4]. [1]EnSIGHT, Walnut Creek, CA, [2]AQM Consulting, Greenbrae, CA, [3]Lapin and Associates, Glendale, CA and [4]International Truck and Engine Corporation, Chicago, IL.

#522 **FREQUENCY OF EXPOSURE TO CONTAMINANT MIXTURES AT HAZARDOUS WASTE SITES.** M. Fay. Toxicology, ATSDR, Atlanta, GA. Sponsor: *M. Mumtaz*.

#523 **FIBER GLASS AND ROCK/SLAG WOOL EXPOSURE OF PROFESSIONAL INSTALLERS.** L. D. Maxim[1], W. Eastes[5], *J. G. Hadley*[2], C. M. Carter[3], J. W. Reynolds[4] and R. Niebo[1]. [1]Everest Consulting Associates, Cranbury, NJ, [2]Owens Corning Science and Technology Center, Granville, OH, [3]Johns Manville, Littleton, CO, [4]CertainTeed, Valley Forge, PA and [5]Consultant, Granville, OH.

#524 **AN OCCUPATIONAL EXPOSURE DATABASE FOR SYNTHETIC VITREOUS FIBERS (SVFS).** G. E. Marchant[1], D. Maxim[3], J. W. Reynolds[5], C. M. Carter[4], A. E. Crane[6] and *J. G. Hadley*[2]. [1]College of Law, Arizona State University, Tempe, AZ, [2]Owens Corning Science and Technology Center, Granville, OH, [3]Everest Consulting Associates, Cranbury, NJ, [4]Johns Manville, Littleton, CO, [5]CertainTeed Corporation, Valley Forge, PA and [6]North American Insulation Manufacturers Association, Alexandria, VA.

#525 **OCCUPATIONAL EXPOSURE TO AIRBORNE CHRYSOTILE ASBESTOS DURING USE AND REMOVAL OF MASTICS, COATING, AND ADHESIVES (CIRCA 1940S-PRESENT DAY).** F. S. Mowat[1], M. Bono[2] and *D. J. Paustenbach*[3]. [1]Exponent, Menlo Park, CA, [2]Exponent, Hudson, OH and [3]ChemRisk, San Francisco, CA.

#526 **MERCURY BODY BURDEN AND INTAKE IN TWO CANADIAN COASTAL COMMUNITIES: GRAND MANAN AND ST ANDREWS/ST STEPHEN.** M. Legrand and *H. Chan*. CINE - McGill University, Ste Anne de Bellevue, QC, Canada.

#527 **FETAL EXPOSURE TO PHYTOESTROGENS IN JAPAN: FOCUSING ON EQUOL.** E. Todaka[1, 2], H. Osada[3], M. Omori[1, 3], H. Miyakawa[4], M. Uzuki[4], Y. Ikezuki[5], O. Tsutsumi[5], K. Sakurai[6], H. Fukata[7], T. Iguchi[8, 9] and *C. Mori*[1, 9]. [1]Bioenv Med., Chiba University, Chiba, Japan, [2]Center Env Health, Field Sciences, Chiba University, Chiba, Japan, [3]OB/GY, Chiba University Hospital, Chiba, Japan, [4]SRL Inc., Tokyo, Japan, [5]OB/GY, University of Tokyo, Tokyo, Japan, [6]Clin Cell Biol, Chiba University, Chiba, Japan, [7]Env Med. Science (SRL), Chiba University, Chiba, Japan, [8]Bioenv Research, Center for Integrated Bioscience, Okazaki National Research Institutes, Okazaki, Japan and [9]CREST, Kawaguchi, Japan.

#528 **DIALKYL PHOSPHATES (DAP) IN PRODUCE CONFOUND BIOMONITORING IN ORGANOPHOSPHATE RISK ASSESSMENT.** X. Zhang[2, 3, 1] and *R. I. Krieger*[3, 1, 2]. [1]Department of Entomology, University of California, Riverside, Riverside, CA, [2]Environmental Toxicology Graduate Program, University of California, Riverside, Riverside, CA and [3]Personal Chemical Exposure Program, University of California, Riverside, Riverside, CA.

#529 **PROBABILISTIC METHODS TO ASSESS WORKER EXPOSURE TO AGRICULTURAL PESTICIDES.** E. Julien and . ILSI RSI Working Group. Risk Science Institute, International Life Sciences Institute, Washington, DC. Sponsor: *P. Fenner-Crisp*.

#530 **MEASURING CHILDREN'S HOME EXPOSURE TO TETRACHLORVINPHOS FROM FLEA CONTROL COLLARS APPLIED TO THEIR PET DOG.** *J. S. Boone*, J. W. Tyler and *J. E. Chambers*. Center for Environmental Health Sciences, College of Veterinary Medicine, Mississippi State University, Mississippi State, MS.

#531 **THE ASSOCIATION BETWEEN MEDICATION USE AND TAMOXIFEN (TAM) AND TAM METABOLITE CONCENTRATIONS IN WOMEN WITH BREAST CANCER.** *L. Gallicchio*[1], K. Tkaczuk[2], L. Lewis[1] and *J. A. Flaws*[1, 2]. [1]Department of Epidemiology and Preventive Medicine, University of Maryland School of Medicine, Baltimore, MD and [2]The Greenebaum Cancer Center, University of Maryland School of Medicine, Baltimore, MD.

#532 **BRAIN DERIVED NEUROTRPHIC FACTOR (BDNF) POLYMORPHISM ASSOCIATED WITH INCREASED SYMPTOM REPORTING AMONG DENTAL PERSONNEL.** N. J. Heyer[1], *D. Echeverria*[1, 2], *J. S. Woods*[1, 2], A. C. Bittner[1, 2] and *F. M. Farin*[2]. [1]Battelle CPHRE, Seattle, WA and [2]Department of Environmental Health, University of washington, Seattle, WA.

Monday Afternoon, March 22
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: CARCINOGENESIS I

Chairperson(s): *Mark Miller, Wake Forest University, Winston-Salem, NC and Vernon Walker, Lovelace Respiratory Research Institute, Albuquerque, NM.*

Displayed: *1:30 PM–4:30 PM*

Attended*: 3:00 PM–4:30 PM*

#533 **EFFECT OF TWO COMPLEX ENVIROMENTAL MIXTURES CONTAINING POLYCYCLIC AROMATIC HYDROCARBONS (PAHs), DIESEL EXHAUST AND URBAN DUST, ON THE METABOLIC ACTIVATION OF CYTOCHROME P450 1A1 IN MOUSE EPIDERMIS.** L. A. Courter, T. Musafia and *W. M. Baird*. Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR.

#534 **FORMATION OF *CIS*- BPDE-ADDUCTS AND BASE-STACKED *trans*-BPDE-ADDUCTS IS INCREASED ON SUPERCOILED DNA.** *G. Jiang*[1], R. Jankowiak[2], N. Grubor[2], M. Banasiewicz[2], G. Small[2], *M. Skorvaga*[3], *B. Van Houten*[3] and *J. States*[1]. [1]University of Louisville, Louisville, KY, [2]Iowa State University, Ames, IA and [3]NIEHS, Research Triangle Park, NC.

#535 **DNA ADDUCT FORMATION BY DIBENZO(C, P)CHRYSENE IN HUMAN CELL CULTURE.** J. Atkin[1], H. Garcia[1], *B. Mahadevan*[1], T. Musafia[1], A. Sharma[2], S. Amin[2] and *W. Baird*[1]. [1]Oregon State University, Corvallis, OR and [2]Institute for Cancer Prevention, Valhalla, NY.

#536 **LUNG DNA ADDUCT FORMATION IN MICE EXPOSED TO DIBENZO[*A, L*]PYRENE: A DOSE-RESPONSE STUDY.** *B. Mahadevan*[1], J. Atkin[2], C. Bravo[3], A. Luch[4], L. Steppan[5], *N. Kerkvliet*[6] and *W. M. Baird*[7]. [1]Environmental&Molecular Toxicology, Oregon State University, Corvallis, OR, [2]Environmental&Molecular Toxicology, Oregon State University, Corvallis, OR, [3]Environmental&Molecular Toxicology, Oregon State University, Corvallis, OR, [4]MIT Center for Cancer Research, Massachusetts Institute of Technology, Cambridge, MA, [5]Environmental&Molecular Toxicology, Oregon State University, Corvallis, OR, [6]Environmental&Molecular Toxicology, Oregon State University, Corvallis, OR and [7]Environmental & Molecular Toxicology, Oregon State University, Corvallis, OR.

#537 **ACCELERATED DNA ADDUCT FORMATION IN LUNG, NASAL MUCOSA, AND LIVER OF RATS EXPOSED TO URBAN AIR IN KAWASAKI, JAPAN.** H. Sato[1, 2], *K. T. Suzuki*[2], H. Sone[1], Y. Yamano[3], J. Kagawa[3] and *Y. Aoki*[1]. [1]Research Center for Environmental Risk, National Institute for Environmental Studies, Tsukuba, Ibaraki, Japan, [2]Graduate School of Pharmaceutical Sciences, Chiba University, Chiba, Japan and [3]Department of Public Health, Tokyo Women's Medical University, Tokyo, Japan.

#538 **KINETICS OF REACTION OF EPOXIDE METABOLITES OF POLYCYCLIC AROMATIC HYDROCARBONS WITH HUMAN AND MOUSE HEMOGLOBIN.** *S. R. Myers*, C. Cunningham, T. Wright and H. E. Hurst. Pharmacology and Toxicology, University of Louisville, Louisville, KY.

#539 **B[A]P AND B[A]P-7, 8-DIOL INDUCED CELL CYCLE ARREST AND APOPTOSIS IN LNCAP CELLS.** O. F. Nwagbara[1], S. Reed[1] and R. Gragg[1]. [1]Environmental Sciences Institute, Florida A&M University, Tallahassee, FL, [2]Environmental Sciences Institute, Florida A&M University, Tallahassee, FL and [3]Environmental Sciences Institute, Florida A&M University, Tallahassee, FL. Sponsor: *R. Thomas*.

#540 **THE PROLIFERATIVE EFFECT OF SELENIUM DIOXIDE AGANIST BENZO(A)PYRENE TOXICITY.** M. R. Smith[1], J. Ochieng[2] and *A. M. Nyanda*[1]. [1]Pharmacology, Meharry Medical College, Nashville, TN and [2]Biochemistry, Meharry Medical College, Nashville, TN.

#541 **BENZO(A)PYRENE METABOLITES ACTIVATE EGFR PATHWAYS IN HUMAN MAMMARY EPITHELIAL CELLS: A POTENTIAL MECHANISM FOR TUMOR PROMOTION.** *A. D. Burdick*, K. Liu, L. G. Hudson, H. Shi and *S. W. Burchiel*. College of Pharmacy, University of New Mexico, Albuquerque, NM.

#542 **MALIGNANT TRANSFORMATION INDUCED BY BENZO(A)PYRENE AND DISTILLATE MARINE DIESEL FUEL IN HUMAN KERATINOCYTES.** 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.

#543 **TRANSFORMATION-ASSOCIATED CHARACTERISTICS IN CELL GROWTH AND DNA CONTENT IN HUMAN KERATINOCYTES, RHEK-1.** *J. Campain*, O. Lohitnavy 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.

#544 **TOXICITY AND METABOLISM OF P-CHLOROANILINE AND P-CHLOROPHENYL UREA: CARCINOGENIC IMPLICATIONS.** *R. A. Cardona*[1], G. J. Putterman[1], D. L. Story[1], M. M. Gay[1], V. DeMatteo[1] and *E. I. Goldenthal*[2]. [1]Crop Protection R&D, Crompton Corporation, Bethany, CT and [2]Department of Toxicology, MPI Research, Mattawan, MI.

#545 **TOXICOLOGY AND CARCINOGENESIS STUDIES OF TRIETHANOLAMINE IN F344/N RATS AND B6C3F1 MICE.** F. A. Suarez[1], G. Pearse[1], *M. R. Hejtmancik*[2] and *J. R. Bucher*[1]. [1]NIEHS, Research Triangle Park, NC and [2]Batelle, Columbus, OH.

#546 **AN ORAL CARCINOGENICITY STUDY OF SENNA-MIS IN THE ALBINO RAT.** *J. M. Mitchell*[1], S. McPherson[2], University. Mengs[3], *J. Tigner*[1], *J. Zijlstra*[4], P. Dettmar[5], R. Gregson[2] and I. Lebish[1]. [1]Purdue Pharmacology, Ardsley, NY, [2]CTBR Bio-Research Inc., Senneville, QC, Canada, [3]Madaus AG, Koln, Germany, [4]Novartis Consumer Health SA, Nyon, Switzerland and [5]Reckitt Benckiser Healthcare, Hull, United Kingdom.

#547 **STABILITY OF Tg.AC PHENOTYPIC RESPONSE ACROSS MULTIPLE BREEDINGS.** *G. Moser*[1], J. W. Spalding[2], R. E. Cannon[2], *R. W. Tennant*[2], S. Stasiewicz[2], M. A. Streicker[1] and *T. L. Goldsworthy*[1]. [1]Integrated Laboratory Systems, Research Triangle Park, NC and [2]NIEHS, Research Triangle Park, NC.

#548 **TRANSPLACENTAL CARCINOGENICITY OF AZIDOTHYMIDINE IN B6C3F1 MICE AND F344 RATS.** D. M. Walker[1], *J. F. Hardisty*[2], F. A. Ruecker[3], K. A. Funk[2], M. J. Wolfe[2] and *V. E. Walker*[1]. [1]Lovelace Respiratory Research Institute, Albuquerque, NM, [2]Experimental Pathology Laboratories, Inc., Research Triangle ParK, NC and [3]FAR Consulting, L.L.C., Manchester, MO.

#549 **PHENOTYPIC BASELINE DATA ON TRANSGENIC MOUSE MODELS FOR TOXICOLOGY.** E. Arlund and *S. Swing*. Taconic Farms Inc., Germantown, NY.

#550 **COMPARISON OF THE K6/ODC AND SKH-1 HAIRLESS MICE IN RESPONSE TO PHOTOCARCINOGENICITY OF LOMEFLOXACIN.** J. Bastien, T. O'Brien and *Y. Chen*. ODC Mouse Group, Inc., Drexel Hill, PA.

#551 **A SUMMARY OF TOXICOLOGICAL AND CHEMICAL DATA RELEVANT TO THE EVALUATION OF CAST SHEET TOBACCO.** *R. J. Potts*, *P. H. Ayres*, M. A. Higuchi, K. Shreve, D. R. Meckley, E. R. Bombick, *J. E. Swauger*, *A. T. Mosberg* and *D. H. Pence*. R J Reynolds Tobacco Company, Winston-Salem, NC.

#552 **EVALUATION OF THE DBA/2 MOUSE FOR ASSESSING THE DERMAL TUMOR-PROMOTING POTENTIALS OF CIGARETTE SMOKE CONDENSATES.** *M. S. Stavanja*, D. R. Meckely, P. R. Nelson, *G. M. Curtin*, *P. H. Ayres*, *A. T. Mosberg* and *J. E. Swauger*. Regulatory Toxicology, R. J. Reynolds Tobacco Company, Winston-Salem, NC.

#553 **MICROSCOPIC EXAMINATION OF LUNG TUMORS ENHANCES EVALUATION OF TOBACCO SMOKE-INDUCED TUMORIGENICITY IN A/J MICE.** *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.

#554 **NONYLPHENOL INDUCES MAMMARY CANCER IN MMTVNEU MICE.** H. Villanueva[1], R. Acevedo[1], P. Parnell[2], S. L. Gray[3], T. Gimenez[3] and *W. Baldwin*[1]. [1]Biological Sciences, University of Texas at El Paso, El Paso, TX, [2]Clemson Veterinary Diagnostics Center, Clemson University, Columbia, SC and [3]Animal and Veterinary Sciences, Clemson University, Clemson, SC.

#555 **TOXIC AND CARCINOGENIC EFFECTS OF INHALED PROPYLENE GLYCOL MONO-*T*-BUTYL ETHER IN F344/N RATS AND B6C3F$_1$ MICE.** *A. M. Doi*[1], J. H. Roycroft[1], R. A. Herbert[1], J. A. Dill[2], S. L. Grumbein[2], *R. A. Renne*[2] and *J. R. Bucher*[1]. [1]NTP, NIEHS, Research Triangle Park, NC and [2]Battelle Toxicology Northwest, Richland, WA.

#556 **STRAIN-DEPENDENT SUSCEPTIBILITY TO TRANSPLACENTALLY-INDUCED MURINE LUNG TUMORS.** *M. S. Miller*[1], J. E. Moore[1], M. Xu[1], G. B. Nelson[2], S. T. Dance[1], N. D. Kock[1] and J. A. Ross[2]. [1]Wake Forest University, Winston-Salem, NC and [2]USEPA, Research Triangle Park, NC.

#557 **INITIATION-PROMOTION STUDIES OF 1, 3-DICHLOROPROPENE (1, 3-D) IN MALE F344 RAT LIVER AND STRAIN A MOUSE LUNG.** S. Reel, *L. M. Kamendulis*, *P. J. Klein* and *J. E. Klaunig*. Division of Toxicology, Indiana University School of Medicine, Indianapolis, IN.

#558 **CHROMIUM(VI) IN DRINKING WATER INCREASES THE INCIDENCE OF UV-INDUCED SKIN TUMORS IN HAIRLESS MICE.** *M. Costa*, T. Kluz, *T. L. Davidson*, *T. Rossman*, A. Uddin, A. Nadas, Q. Zhang and F. Burns. Department of Env. Med., New York University, Tuxedo, NY.

#559 **RELIABILITY AND PRACTICALITY OF MEDIUM-TERM LIVER CARCINOGENESIS BIOASSAYS.** S. Tamano[1], A. Hagiwara[1], M. Kawabe[1], H. Yoshino[1], T. Ichihara[1], K. Imaida[2], T. Shirai[3] and *N. Ito*[4]. [1]Daiyu-kai Institute of Medical Science, Ichinomiya, Japan, [2]Department Onco-Pathology, Kagawa Medical University, Kagawa, Japan, [3]Department Exp. Pathol. And Tumor Biol., Nagoya City University, Nagoya, Japan and [4]Nagoya City University, Nagoya, Japan.

#560 **THE MOST APPROPRIATE STRAIN FOR RAT CARCINOGENICITY BIOASSAYS.** L. D. Britton, N. Downes, P. Mullins and *D. Mitchell*. Toxicology, Sequani Limited, Ledbury, United Kingdom.

#561 **CHARACTERIZATION OF SUBCUTANEOUS TUMOR GROWTH FOR A549, PC3 AND CACO2 HUMAN CANCER XENOGRAFTS IN THE NUDE MOUSE.** A. Adamou, S. Groom and *M. Vezina*. CTBR, Senneville, QC, Canada.

#562 **TIME TO FATAL TUMORS IN P53-/- RAD50S/S MICE.** *D. Singh*[1], A. O. Chiu[1], J. H. Petrini[2], N. H. Chiu[3] and J. Beaubier[4]. [1]NCEA ORD, USEPA, Washington DC, DC, [2]Mol Biol Prog, MSKCC, New York, [3]OST OW, USEPA, Washington, DC and [4]OPPTS, USEPA, Washington, DC.

#563 **TIME TO FATAL TUMORS IN P53 +/-, -/- H2AX +/-, -/- KNOCKOUT MICE.** A. Chiu[2], M. Difilippantonio[1], A. Nussenzweig[1], N. H. Chiu[3], *D. Singh*[2] and J. Beaubier[4]. [1]NCI, NIH, Bethesda, MD, [2]NCEA ORD, USEPA, Washington, DC, [3]OSTOW, USEPA, Washington, DC and [4]OPPTS, USEPA, Washington, DC.

#564 **CARCINOGENIC RESPONSE OF K6/ODC MICE TO MELPHALAN.** *Y. Chen*, J. Bastien and T. O'Brien. ODC Mouse Group, Inc., Drexel Hill, PA.

#565 **A NON-ANIMAL ALTERNATIVE CARCINOGENICITY TEST: THE *IN OVO* CARCINOGENICITY ASSAY (IOCA).** M. K. Reeder[1], *M. J. Iatropoulos*[2], *G. M. Williams*[2], T. L. Ripper[1], *D. R. Cerven*[1] and *G. L. DeGeorge*[1]. [1]MB Research Laboratories, Spinnerstown, PA and [2]Pathology, New York Medical College, Valhalla, NY.

Monday Afternoon, March 22
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: ENDOCRINE I

Chairperson(s): *Edward Carney, The Dow Chemical Company, Midland, MI and Tala Henry, USEPA, Washington, DC.*

Displayed: *1:30 PM–4:30 PM*

Attended*: 1:30 PM–3:00 PM*

#566 **MATERNAL ATRAZINE (ATR) ALTERS HYPOTHALAMIC DOPAMINE (HYP-DA) AND SERUM PROLACTIN (SPRL) IN MALE PUPS.** C. Langdale[1], T. Stoker[2] and R. Cooper[2]. [1]Cell Biology Department, NCSU School of Veterinary Medicine, Raleigh, NC and [2]Endocrinology Branch, RTD, NHEERL, ORD, USEPA, Research Triangle Park, NC. Sponsor: *R. Kavlock*.

#567 **ATRAZINE INHIBITION OF OVULATION IN IMMATURE RATS TREATED WITH PREGNANT MARE SERUM GONADOTROPIN (PMSG).** C. Eldridge[1], D. Wynn[1], C. Breckenridge[2] and *J. Stevens*[1]. [1]Physiology-Pharmacology, Wake Forest University School of Medicine, Winston-Salem, NC and [2]Toxicology, Syngenta Crop Protection, Greensboro, NC.

#568 **ATRAZINE ALTERS STEROIDOGENESIS IN MALE WISTAR RATS.** W. Modic[1], J. Ferrell[2], C. Wood[2], J. Laskey[2], R. Cooper[2] and S. Laws[2]. [1]Department Mol. Structural Bch., NCSU, Raleigh, NC and [2]RTD, NHEERL, ORD, USEPA, Research Triangle Park, NC. Sponsor: *R. Kavlock*.

#569 **CARBOFURAN-INDUCED ENDOCRINE DISRUPTION IN MALE RATS.** R. T. Goad[1], *R. C. Gupta*[1], J. T. Goad[1], B. H. Atieh[2] and R. B. Doss[1]. [1]Toxicology, Murry State University, Hopkinsville, KY and [2]Occup. Safety & Hlth, Murray State University, Murray, KY.

#570 ***IN VITRO*/*IN VIVO* EVALUATION OF THE (ANTI)-ANDROGENIC ACTIVITY OF THE ANTIPROGESTIN RU486.** *G. Charles*, H. L. Kan, M. R. Schisler, *B. B. Gollapudi* and *M. S. Marty*. The Dow Chemical Company, Midland, MI.

#571 **PHOXIM STIMULATE STEROIDOGENESIS IN RAT GRANULOSA CELLS *IN VITRO*.** H. Chen[1, 2] and X. Wang[1]. [1]Institution of Toxicology, Nanjing Medical University, Nanjing, Jiangsu Province, China and [2]Environmental Health Sciences, UCLA School of Public Health, Los Angeles, CA. Sponsor: *L. You*.

#572 **PROCESS OF VALIDATION OF THE LUMI-CELL™ ER RECOMBINANT BIOASSAY FOR RAPID EVALUATION OF POTENTIAL ESTROGENIC ENDOCRINE DISRUPTOR CHEMICALS.** J. D. Gordon[1], A. C. Chu[1], M. D. Chu[2], C. L. Taylor[1], *M. S. Denison*[3] and *G. C. Clark*[1]. [1]Xenobiotic Detection Systems, Inc., Durham, NC, [2]Alta Analytical Perspectives, Wilmington, NC and [3]Department of Environmental Toxicology, University of California, Davis, Davis, CA.

#573 ***IN VIVO* AND *IN VITRO* ANTI-ANDROGENIC EFFECTS OF DE-71, A COMMERCIAL POLYBROMINATED DIPHENYL ETHER (PBDE) MIXTURE.** T. E. Stoker, R. L. Cooper, C. S. Lambright and *L. E. Gray*. EB, RTD, NHEERL, USEPA, Research Triangle Park, NC.

#574 **EFFECTS OF *IN UTERO* EXPOSURE OF DIETHYLSTILBESTROL AND DIBUTYL PHTHALATE ON THE TESTIS DESCENDENT IN RAT OFFSPRINGS.** T. Kim, J. Shin, S. Lee, H. Moon, I. Kang, I. Kim and S. Han. Endocrine Toxicology Division, National Inst of Toxicol Res, Seoul, South Korea. Sponsor: *I. Yu*.

#575 **RAT SPERMATID AND OVARIAN PRIMARY FOLLICLE COUNTS FOLLOWING *IN UTERO* EXPOSURE TO LOW DOSE BISPHENOL A.** C. Talsness, J. Nowak, K. Grote, S. Kuriyama and *I. Chahoud*. Department of Toxicology, Charite University Medical School, Campus Benjamin Franklin, Institute of Clinical Pharmacology and Toxicology, Berlin, Germany.

#576 **REGION-SPECIFIC GLOBAL GENE EXPRESSION ANALYSIS IN THE MICRODISSECTED HYPOTHALAMIC MEDIAL PREOPTIC AREA OF RAT NEONATES INJECTED WITH ESTRADIOL BENZOATE OR FLUTAMIDE.** M. Shibutani, K. Lee, H. Takagi, N. Kato, S. Takigami and M. Hirose. Division Pathol., NIHS, Tokyo, Japan. Sponsor: *M. Ema*.

#577 **EFFECT OF DDT ON TESTOSTERONE AND AROMATASE ACTIVITY VIA ESTROGEN RECEPTOR IN LEYDIG CELL.** K. Lee[1, 2] and *H. Jeong*[1, 2]. [1]Pharmacy, Chosun University, Kwangju, South Korea and [2]Research Center for Proteineous Materials, Chosun University, Kwangju, South Korea.

#578 **CATECHOL ESTROGEN-INDUCED DNA DAMAGE IN MCF-7 CELLS.** M. B. van Duursen, *T. Sanderson* and *M. van den Berg*. Institute for Risk Assessment Sciences (IRAS), Utrecht University, Utrecht, Netherlands.

#579 **ACTIVATION OF HUMAN ESTROGEN RECEPTORS IN HEPG2 CELLS BY GENISTEIN AND ITS CONJUGATED METABOLITES.** *S. Borghoff*, H. D. Parkinson, S. M. Ross, *K. Gaido* and M. Sochaski. CIIT Centers for Health Research, Research Triangle Park, NC.

#580 **INTERACTION ANALYSIS OF SYNTHETIC CHEMICALS AND PHYTOESTROGENS *IN VITRO*.** *E. W. Carney*[1], *G. D. Charles*[1], C. Gennings[2], *B. B. Gollapudi*[1] and *T. R. Zacharewski*[3]. [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.

#581 **COMPARATIVE ACTIVATION OF ESTROGEN RECEPTOR α (ERα) AND ERα/SP1 IN BREAST CANCER CELLS BY XENOESTROGENS.** F. Wu[1] and *S. Safe*[2]. [1]Biochemistry & Biophysics, Texas A&M University, College Station, TX and [2]Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

#582 **LACK OF SYNERGISTIC OR ANTAGONISTIC EFFECTS OF A MIXTURE OF PHYTOESTROGENS ON CELL PROLIFERATION OF MCF-7 HUMAN BREAST CANCER CELLS (E-SCREEN).** J. van Meeuwen[1], A. Piersma[2], *M. van den Berg*[1] and *J. Sanderson*[1]. [1]IRAS, University Utrecht, utrecht, Netherlands and [2]RIVM, Bilthoven, Netherlands.

#583 **CELLULAR UPTAKE OF DAIDZIN AND GENISTIN BY MCF-7-ERE CELLS VIA GLUCOSE TRANSPORTER.** I. Kim[1], Y. Sheen[2] and H. Kwon[1]. [1]Department of Food and Nutrition, college of Human Ecology, Seoul National University, Seoul, South Korea and [2]College of Pharmacy, Ewha Womans University, Seoul, South Korea. Sponsor: *Y. Cha*.

#584 **INTERACTION ANALYSIS OF SYNTHETIC CHEMICALS AND PHYTOESTROGENS *IN VIVO*.** S. D. Seidel[1], D. R. Boverhof[2], *E. W. Carney*[1], *G. D. Charles*[1], C. Gennings[3], *B. B. Gollapudi*[1] and *T. R. Zacharewski*[2]. [1]The Dow Chemical Company, Midland, MI, [2]Biochemistry & Molecular Biology, National Food Safety & Toxicology Center, Michigan State University, East Lansing, MI and [3]Biostatistics, Virginia Commonwealth University, Richmond, VA.

#585 ***IN VIVO* INTERACTIONS OF THE ENDOCRINE DISRUPTOR ETHINYL ESTRADIOL WITH THYROID HORMONE ACTION.** A. Tindall[1, 3], I. D. Morris[2], H. Isaacs[3], B. Pownall[3], D. Pickford[4], T. Hutchinson[4], R. Schultz[5] and L. Tattersfield[5]. [1]Biological Sciences, Manchester University, Manchester, United Kingdom, [2]Hull York Medical School, York, United Kingdom, [3]Biology, York University, York, United Kingdom, [4]Environmental laboratory, AstraZeneca, Brixham, United Kingdom and [5]Ecological Sciences, Syngenta, Bracknell, United Kingdom. Sponsor: *I. kimber*.

#586 **DOSE-DEPENDENT GLOBAL GENE EXPRESSION ANALYSIS IN THE MICRODISSECTED HYPOTHALAMIC MEDIAL PREOPTIC AREA OF RAT NEONATES EXPOSED PERINATALLY TO ETHINYLESTRADIOL.** K. Lee, M. Shibutani, H. Takagi, N. Kato, S. Takigami and M. Hirose. Division Pathol, NIHS, Tokyo, Japan. Sponsor: *M. Ema*.

#587 **COMPARISON OF 17β-ESTRADIOL- AND GENISTEIN-INDUCED CELL GROWTH AND PROLIFERATION IN THE RODENT UTERUS.** G. Orphanides, H. Tinwell, F. Lim, D. Moore, I. Pate, *I. Kimber*, *J. Ashby* and J. G. Moggs. Syngenta Central Toxicology Laboratory, Alderley Park, Cheshire, United Kingdom.

#588 **ETHYNYL ESTRADIOL ELICITED TEMPORAL AND DOSE-DEPENDENT HEPATIC GENE EXPRESSION PATTERNS IN IMMATURE, OVARIECTOMIZED MICE.** D. R. Boverhof[1], *K. C. Fertuck*[1], L. D. Burgoon[1], J. E. Eckel[2], C. Gennings[2] and *T. R. Zacharewski*[1]. [1]Department of Biochemistry & Molecular Biology, Institute for Environmental Toxicology, and, Department of Pharmacology & Toxicology, National Food Safety & Toxicology Center Michigan State University, East Lansing, MI and [2]Department of Biostatistics, Virginia Commonwealth University, Richmond, VA.

#589 **ELUCIDATING THE MOLECULAR PATHWAY FOR REGULATION OF THE STEROIDOGENIC ACUTE REGULATORY PROTEIN BY BETA-SITOSTEROL.** *J. Kocerha*[1], K. J. Kroll[2] and *N. D. Denslow*[1, 2]. [1]Biochemistry and Molecular Biology, University of Florida, Gainesville, FL and [2]Biotechnology Program, University of Florida, Gainesville, FL.

Monday Afternoon, March 22
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: RECEPTOR II: AH RECEPTOR

Chairperson(s): *Alvaro Puga, University of Cincinnati, Cincinnati, OH and Michael Denison, UC Davis, Davis, CA.*

Displayed: *1:30 PM–4:30 PM*

Attended: *3:00 PM–4:30 PM*

#590 **FUNCTIONAL CHARACTERIZATION OF ARYL HYDROCARBON RECEPTOR (AHR) LOCALIZATION AND DEGRADATION IN ZEBRAFISH.** J. Wentworth, R. Buzzeo and *R. S. Pollenz*. Biology, University of South Florida, Tampa, FL.

#591 **ZEBRAFISH AHR REPRESSOR: CLONING, REGULATORY INTERACTIONS AND INDUCIBILITY BY TCDD.** B. R. Evans[1, 2], S. I. Karchner[1] and *M. E. Hahn*[1]. [1]Biology, Woods Hole Oceanographic Institution, Woods Hole, MA and [2]Biology, Boston Unviersity, Boston, MA.

#592 **ANALYSIS OF LIGAND-DEPENDANT AND INDEPENDENT DEGRADATION OF THE HUMAN ARYL HYDROCARBON RECEPTOR (HAHR) IN HUMAN CELL CULTURE LINES.** C. Buggy and *R. S. Pollenz*. Biology, University of South Florida, Tampa, FL.

#593 **TCDD-MEDIATED ACTIVATION OF THE AROMATIC HYDROCARBON RECEPTOR DISPLACES p300 FROM E2F-DEPENDENT PROMOTERS.** *J. L. Marlowe* and *A. Puga*. Department of Environmental Health, University of Cincinnati, Cincinnati, OH.

#594 **ALTERED CELL CYCLE REGULATION IN AH RECEPTOR-NULL MOUSE EMBRYO FIBROBLASTS.** *X. Chang* and *A. Puga*. Environmental Health, University of Cincinnati, Cincinnati, OH.

#595 **COMPARATIVE STUDY OF MOUSE AND HUMAN AH RECEPTORS.** *P. Ramadoss*, *J. R. Petrulis* and *G. H. Perdew*. Center for Molecular Toxicology and Carcinogenesis, Department of Veterinary Science, The Pennsylvania State University, University Park, PA.

#596 **EPIREGULIN: A POTENTIAL TARGET GENE REGULATED BY AHR.** R. D. Patel and *G. H. Perdew*. Center for Molecular Toxicology and Carcinogenesis, Pennsylvania State Univeristy, Univeristy Park, PA.

#597 **MODULATION OF ARYL HYDROCARBON RECEPTOR FUNCTION BY XAP2 AND P23.** B. D. Hollingshead[1] and *G. H. Perdew*[2]. [1]Graduate Program in Biochemistry, Microbiology, and Molecular Biology, Penn State University, University Park, PA and [2]Department of Veterinary Science and Center for Molecular Toxicology and Carcinogenesis, Penn State University, University Park, PA.

#598 **MODULATION OF ARYL HYDROCARBON RECEPTOR NUCLEAR TRANSLOCATOR ACTIVITY & PHOSPHORYLATION STATUS BY PKCε.** I. A. Murray[1], *M. S. Denison*[2] and *G. H. Perdew*[1]. [1]Vet. Science, Pennsylvania State University, University Park, PA and [2]Environmental Toxicology, Uuniversity of California, Davis, CA.

#599 **A POSSIBLE ROLE FOR THE MAP KINASES IN DIOXIN-INDUCED ARYL HYDROCARBON RECEPTOR PHOSPHORYLATION.** *Z. Tan*, *A. Puga* and *Y. Xia*. Department of Environmental Health, University of Cincinnati, Cincinnati, OH.

#600 **ACTIVATION OF THE AH RECEPTOR CAN PROMOTE BENZO(A)PYRENE-7, 8-DIHYDRODIOL INDUCED APOPTOSIS IN THE ABSENCE OF MAP KINASE ERK1/2 ACTIVITY.** S. Chen, T. Operana, J. Bonzo, N. Nguyen and *R. H. Tukey*. Pharmacology, University of California, San Diego, La Jolla, CA.

#601 **A NOVEL MECHANISM FOR REGULATION OF CHOLESTEROL BIOSYNTHESIS.** Q. Tan[1], S. Ke[1], *M. A. Gallo*[2] and *Y. Tian*[1]. [1]Vet. Physiology and Pharmacology, Texas A&M University, College Station, TX and [2]Environmental & Community Medicine, UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ.

#602 **MODULATION OF ARYL HYDROCARBON RECEPTOR-REGULATED GENES BY TUMOR NECROSIS FACTOR-α AND LIPOPOLYSACCHARIDES BY AHR-DEPENDENT MECHANISMS.** N. Gharavi and *A. O. El-Kadi*. Faculty of Pharmacy, University of Alberta, Edmonton, AB, Canada.

#603 **AFFYMETRIX MICROARRAY AND REAL-TIME PCR ANALYSIS OF BENZO(A)PYRENE INDUCE CHANGES IN GENE EXPRESSION IN RAT LIVER.** A. University. N'jai, A. Jelaso, C. Ide and *J. Means*. Chemistry/Environmental Institute, Western Michigan University, Kalamazoo, MI.

#604 **COMPARATIVE ANALYSIS OF DIOXIN REGULATORY ELEMENTS IN HUMAN, MOUSE AND RAT GENOMIC SEQUENCES.** Y. Sun[1], *D. R. Boverhof*[1], M. R. Fielden[2] and *T. R. Zacharewski*[1]. [1]Biochemistry & Molecular Biology, National Food Safety & Toxicology Center, Institute for Environmental Toxicology, Michigan State University, East Lansing, MI and [2]Iconix Pharmaceuticals, Mountain View, CA.

#605 **TRANSCRIPTIONAL PROFILES FOLLOWING LIGAND-ACTIVATED AHR SIGNALING IN THE DEVELOPING KIDNEY: A ROLE FOR WT1 AND IGF SIGNALING.** M. Falahatpisheh[1, 2], C. D. Johnson[1, 2] and *K. S. Ramos*[1, 2]. [1]Biochemistry and Molecular Biology, University of Louisville, Louisville, KY and [2]Center for Genetics and Molecular Medicine, University of Louisville, Louisville, KY.

Monday Afternoon, March 22
2:30 PM to 3:30 PM
Room 301

INFORMATIONAL SESSION: P450-GLO™: A LUMINESCENT APPROACH TO THE ANALYSIS OF CYP450 ACTIVITIES IN RECOMBINANT OR NATIVE FRACTIONS AND LIVE CELLS

P450-Glo™ Assays overcome many of the limitations of fluorescent and non-optical methods by bringing the advantages of luminescence technology to the study of CYP450s. The assays provide a rapid, sensitive and accurate means of detecting CYP450 enzyme inhibition and gene induction.

Monday Afternoon, March 22
3:45 PM to 4:45 PM
Room 301

INFORMATIONAL SESSION: ADVANCING TOXICITY ASSESSMENT THROUGH MICROARRAY GENE EXPRESSION ANALYSIS

Key experts from pharmaceutical, government and academic research laboratories will present case studies in gene expression research.

Monday Afternoon, March 22
4:30 PM to 6:00 PM
Ballroom (Level 400)

PLACEMENT-CAREER DEVELOPMENT SEMINAR: JOB SEARCH SKILL WORKSHOP

Sponsored by:
The Placement Committee

This workshop is targeted for all job seekers with special emphasis on first time searchers. This workshop is designed to encourage interaction between job seekers, recruiters, and employers in academia, government, and industry. The workshop will be divided into a question and answer session and a breakout group session. The first session will provide attendees with practical information on topics such as the current job market, what skills employers are looking for, interviewing, and negotiating skills. Audience participation is highly encouraged. In the second, participants will receive advice and counsel from career placement professionals and other knowledgeable participants. This informal session is geared to assist attendees with the job search processes. The breakout groups will provide a venue for participants to have resumes critiqued, job search process concerns addressed, interviews skills polished, and career path possibilities explored. Additionally, this session will provide an excellent opportunity to develop and expand career networks.

Monday Afternoon, March 22
4:30 PM to 6:00 PM
Room 306

SPECIALTY SESCTION PRESIDENTS AND OFFICERS MEETING

Monday Afternoon, March 22
4:30 PM to 5:30 PM
Room 304

UNDERGRADUATE TOXICOLOGY TEACHING FORUM

Chairperson(s): *Thomas Simmons, Indiana University of Pennsylvania, Indiana, PA.*

Sponsored by:
Education Committee
Allegheny-Erie Regional Chapter

All those interested in undergraduate education are invited to attend this session. The goals of the Baltimore Forum are to complete a mission statement for the undergraduate toxicology teaching group, finalize a proposal for an SOT 2005 session on undergraduate education, and develop a formal structure for continuing the group. Other future activities will be discussed as time permits.

Monday Evening

Monday Evening, March 22
6:00 PM to 7:30 PM
See Events Calendar on Pages 2–6 for Room Listings

SPECIALTY SECTION MEETINGS:
BIOLOGICAL MODELING, CARCINOGENESIS, INHALATION, METALS, NEUROTOXICOLOGY, REGULATORY AND SAFETY EVALUATION

Monday Evening, March 22
6:00 PM to 11:00 PM
See Events Calendar on Pages 2–6 for Room Listings

REGIONAL CHAPTER MEETINGS/RECEPTIONS

Many of the Regional Chapters meet during the SOT Annual Meeting. Details for these Regional Chapter receptions and meetings are listed in *Program's* Events Calendar.

Tuesday Morning

Tuesday Morning, March 23
7:00 AM to 8:30 AM
Room 306

REGIONAL CHAPTER PRESIDENTS AND OFFICERS MEETING

Tuesday Morning, March 23
7:30 AM to 8:15 AM
Room 314

SPECIAL SESSION: REGULATORY OVERSIGHT OF RESEARCH INVOLVING HUMANS

Lecturer: *B.A. Schwetz, DHHS Office for Human Research Protections, Rockville, MD.*

Federal regulatory oversight by the Department of Health and Human Services (DHHS) over research involving human subjects comes primarily through the Office for Human Research Protections (OHRP) and the US Food and Drug Administration (FDA). While the FDA is responsible for studies involved in product review submissions, OHRP is responsible for implementing regulations and policies for protecting the rights, safety and welfare of people who participate in all research that is conducted or supported by agencies of DHHS. This includes toxicological research involving humans. Institutions involved in such research must agree to abide by the human subject regulations found in the Code of Federal Regulations at 45 CFR Part 46. Trust of the public is essential for success of the clinical research enterprise. That trust depends on the ethical conduct of research of high scientific quality that meets regulatory requirements.

Tuesday Morning, March 23
8:00 AM to 5:00 PM
Room 336

***PARACELSUS* GOES TO SCHOOL TEACHER WORKSHOP**

Chairperson(s): *Joanne Zurlo, NAS Institute of Laboratory Animal Science, Washington, DC and Darlene Dixon, NIEHS, Research Triangle Park, NC.*

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. Baltimore area toxicologists will serve as Science Partners to continue the effort in local classrooms.

7:15 AM–7:45 AM	Registration
8:00 AM–8:15 AM	Opening and Welcome
	Joanne Zurlo, NAS Institute of Laboratory Animal Science, Washington, DC
	Marion Ehrich, SOT President, VA-MD Regional College of Veterinary Medicine, Blacksburg, VA
8:15 AM–8:35 AM	The Diversity that is Toxicology
	Michael Trush, Johns Hopkins Bloomburg School of Public Health, Baltimore, MD
8:35 AM–9:05 AM	Overview of Local Toxicological Issues in Maryland
	Katherine Squibb, University of Maryland, Baltimore, MD
	Ellen Silbergeld, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD
9:05 AM–9:15 AM	Issues Surrounding the Use of Animals in Toxicological Research
	Joanne Zurlo, NAS Institute of Laboratory Animal Science, Washington, DC
9:15 AM–11:45 AM	Workshops Session I
	K–5—My Health My World
	Nancy Moreno, Baylor College of Medicine, Houston, TX
	6–8—EnviroHealth Connections, Thinkport Resources
	Cynde Mutryn, Maryland Public TV, Owings Mill, MD
	9–12—Risk Assessment
	Suzanne Fitzpatrick, USFDA, Rockville, MD
11:45 AM–1:15 PM	Lunch for Teachers and Toxicology Science Partners
	Poster Viewing
1:15 PM–2:45 PM	Workshop Session II
2:45 PM–3:15 PM	*Paracelsus* in Practice—Teacher Panel
3:15 PM–3:30 PM	Program Conclusion and Evaluation
3:30 PM–4:30 PM	Visit ToxExpo

Tuesday Morning, March 23
8:30 AM to 9:30 AM
Room 301

INFORMATIONAL SESSION: ANAPHARM OFFERS MORE THAN STANDARD BIOANALYTICAL METHOD VALIDATIONS

Bioanalytical services provided by Anapharm and a complete description of our bioanalytical method validation process will be presented during this info session.

Tuesday Morning, March 23
8:30 AM to 11:30 AM
Room 307

SYMPOSIUM SESSION: MECHANISMS OF CARDIOVASCULAR TOXICITY BY 2, 3, 7, 8-TETRACHLORODIBENZO-P-DIOXIN AND RELATED HALOGENATED AROMATIC HYDROCARBONS

Chairperson(s): *Nigel Walker, NIEHS, Research Triangle Park, NC and Mary Walker, University of New Mexico, Albuquerque, NM.*

Endorsed by:
Mechanisms Specialty Section*
Reproductive and Developmental Toxicology Specialty Section

Previously, the cardiovascular system has not been considered to be a primary target of toxicity induced by 2, 3, 7, 8-tetrachlorodibenzo-*p*-dioxin (TCDD) and other structurally related polyhalogenated aromatic hydrocarbons (PHAHs), particularly in mammalian species. However, considerable research in the past 5-10 years has demonstrated that TCDD and related PHAHs exhibit significant impacts on both the developing and adult cardiovascular system and these effects are apparent across vertebrate classes, including piscine, a*vian*, and mammalian species. Furthermore, occupational exposure of humans to TCDD and related PHAHs has been linked to an increased risk of mortality from ischemic heart disease, demonstrating that humans are not impervious to the cardiovascular risk posed by TCDD/PHAH exposure. This symposium will cover the recent advances in understanding the mechanisms underlying TCDD/PHAH-induced cardiovascular toxicity. The speakers will present data on the effects of TCDD/PHAHs on both cardiac and vascular development and function, providing unique comparisons across vertebrate classes.

#606 8:30 **MECHANISMS OF CARDIOVASCULAR TOXICITY BY 2, 3, 7, 8-TETRACHLORODIBENZO-P-DIOXIN AND RELATED POLYHALOGENATED AROMATIC HYDROCARBONS.** *M. K. Walker*. College of Pharmacy, University of New Mexico, Albuquerque, NM.

#607 8:35 **TCDD CARDIOTOXICITY IN DEVELOPING ZEBRAFISH.** W. Heideman, D. K. Sieprawska and *R. E. Peterson*. Molecular and Environmental Toxicology and School of Pharmacy, University of Wisconsin, Madison, WI.

#608 9:05 **FETAL DIOXIN EXPOSURE INHIBITS CORONARY VASCULOGENESIS. A POTENTIAL RISK FACTOR FOR ISCHEMIC HEART DISEASE.** *M. K. Walker*. College of Pharmacy, University of New Mexico, Albuquerque, NM.

#609 9:35 **PROINFLAMMATORY MECHANISMS OF PCB TOXICITY IN THE VASCULAR ENDOTHELIUM.** *B. Hennig*[1], M. Toborek[1] and *L. W. Robertson*[2]. [1]University of Kentucky, Lexington, KY and [2]University of Iowa, Iowa City, IA.

#610 10:05 **EXPRESSION PROFILES OF CULTURED VASCULAR SMOOTH MUSCLE CELLS AND AORTA ARE WIDELY DIFFERENT, BUT SHOW COMMON RESPONSES TO DIOXIN EXPOSURE.** *A. Puga*, M. Sartor, M. Huang, *J. Kerzee*, *Y. Wei*, C. R. Tomlinson and M. Medvedovic. Department of Environmental Health, University of Cincinnati, Cincinnati, OH.

#611 10:35 **CARDIOVASCULAR CHANGES FOLLOWING CHRONIC RODENT EXPOSURE TO DIOXIN-LIKE COMPOUNDS.** M. P. Jokinen[4], *N. J. Walker*[2], D. M. Sells[5], A. E. Brix[2] and A. Nyska[2]. [1]ETP, NIEHS, Research Triangle Park, NC, [2]NIEHS, Research Triangle Park, NC, [3]EPL, Research Triangle Park, NC, [4]Pathology Associates - A Charles River Company, Durham, NC and [5]Battelle Columbus, Columbus, OH.

Tuesday Morning, March 23
8:30 AM to 11:30 AM
Room 321

SYMPOSIUM SESSION: NEW DEVELOPMENTS IN OXIDATIVE PHOSPHOLIPID SIGNALING IN APOPTOSIS AND PHAGOCYTIC REGULATION OF INFLAMMATORY RESPONSE

Chairperson(s): *Valerian Kagan, University of Pittsburgh, Pittsburgh, PA and Dean Jones, Emory University, Atlanta, GA.*

Endorsed by:
Mechanisms Specialty Section*

Apoptosis eliminates unwanted or irreparably damaged cells by orderly phagocytosis in the absence of inflammatory responses. Oxidative stress is one of the most common factors that induce apoptosis. In addition, apoptosis itself is often accompanied by the generation of reactive oxygen species (ROS) and oxidative stress, resulting from departure of cytochrome c (cyt c) from mitochondria and attendant disruption of electron transport with enhanced production of one-electron reduced oxygen intermediates. Until recently, it was not known whether this apoptosis-associated oxidative stress is a meaningless but unavoidable side effect or an important component of the final common pathway for apoptosis. Findings from several laboratories implicated ROS production and oxidative stress in the execution of apoptotic program *via* activation of two essential mechanisms: mitochondrial permeability transition pore and caspases. The latest discoveries indicate that oxidative modifications of two types of phospholipids are critically involved in the execution of apoptotic program. In mitochondria, oxidation of cardiolipin loosens its association with cyt c and facilitates release of the latter into the cytosol, the central event in intrinsic apoptosis. In the cytosol, cyt c plays a redox-dependent catalytic role in selective oxidation of phosphatidylserine (PS) a signaling molecule of the pathway culminating in recognition of apoptotic cells by phagocytes. PS-dependent signaling involves externalization of PS on the outer leaflet of plasma membrane, its interactions with specialized adapter molecules, and tethering to specific receptor(s) on the surface of phagocytes. Cyt c-catalyzed PS oxidation in the cytosolic leaflet of plasma membrane is essential for both its externalization and recognition by macrophages. These exciting new developments in oxidative control of apoptosis, clearance of apoptotic cells, and regulation of inflammatory response will be discussed by leading researchers of the field.

#612 8:30 **NEW DEVELOPMENTS IN OXIDATIVE PHOSPHOLIPID SIGNALING IN APOPTOSIS AND PHAGOCYTIC REGULATION OF INFLAMMATORY RESPONSE.** *V. Kagan*[2] and *D. Jones*[1]. [1]Department of Biochemistry, Emory University, Atlanta, GA and [2]Environment and Occupational Health, University of Pittsburgh, Pittsburgh, PA.

#613 8:35 **REACTIVE OXYGEN SPECIES IN ACTIVATION AND EXECUTION OF APOPTOSIS.** *D. Jones*. Department of Biochemistry, Emory University, Atlanta, GA.

#614 9:10 **LIPOCALINS AND APOPTOSIS.** *J. P. Kehrer*. Pharmacology and Toxicology, The University of Texas at Austin, Austin, TX.

#615 9:45 **PHOSPHATIDYLSERINE OXIDATION DURING INTRINSIC AND EXTRINSIC APOPTOSIS: CATALYTIC AND SIGNALING MECHANISMS.** *V. E. Kagan*. Environmental and occupational Health, University of Pittsburgh, Pittsburgh, PA.

#616 10:20 **BRIDGING PROTEINS IN LIPID DIRECTED PHAGOCYTOSIS.** A. Schroit and K. Balasubramanian. Cancer Biology, The University of Texas, M. D. Anderson Cancer Center, Houston, TX. Sponsor: *V. Kagan*.

#617 10:55 **PROGRAMMED CELL CLEARANCE: STUDIES ON THE MECHANISM AND IMPORTANCE OF PHOSPHATIDYLSERINE EXPOSURE AND PLASMA MEMBRANE BLEBBING DURING FAS-TRIGGERED APOPTOSIS.** B. Fadeel. Institute of Environmental Medicine, Division of Toxicology, Karolinska Institutet, Stockholm, Sweden. Sponsor: *V. Kagan*.

Tuesday Morning, March 23
8:30 AM to 11:30 AM
Room 309

SYMPOSIUM SESSION: TOXICOGENOMIC DATABASES AND THEIR ROLE IN THE TOXICOLOGY COMMUNITY

Chairperson(s): *William Mattes, GeneLogic, Gaithersburg, MD and Syril Pettit, International Life Sciences Institute (HESI), Washington, DC.*

Endorsed by:
Carcinogenesis Specialty Section
Molecular Biology Specialty Section*

Over the last several years, the volume of microarray data generated in studies of toxicology has been steadily increasing. Likewise, the expectations of the toxicology community with respect to the information buried in this volume of data has also been increasing, and with those expectations, an appreciation for more sophisticated approaches to data housing, sharing, and analysis. Thus, public microarray databases are now considering the need to include appropriate biological context (i.e., linked toxicology data) in conjunction with array data. However, the ultimate scientific value and utility of public toxicogenomic databases, such as those developed by HESI-EBI and NIEHS-NCT will depend upon a clear assessment of how the community (both public and private sector) hopes to utilize these resources. This workshop will include presentations about the status of, challenges in, and expectations for current public toxicogenomic database development efforts by leading developers. Discussions will cover issues around whether these databases are or will meet the needs and interests of the toxicology community.

#618 8:30 **PUBLIC TOXICOGENOMIC DATABASE RESOURCES AND THEIR ROLE IN THE TOXICOLOGY COMMUNITY.** *W. B. Mattes*[1] and *S. D. pettit*[2]. [1]Pfizer, Kalamazoo, MI and [2]Health and Environmental Sciences Institute, ILSI, Washington, DC.

#619 8:50 **DEVELOPMENT OF TOXICOGENOMIC GENE EXPRESSION DATA INFRASTRUCTURE.** S. Sansone, S. Contrino, M. Shojatalab, N. Abeygunawardena, University. Sarkans, G. Garcia Lara, H. Parkinson, P. Rocca-Serra and A. Brazma. Microarray Informatics, EMBL-EBI, Cambridge, United Kingdom. Sponsor: *S. Pettit*.

#620 9:30 **THE CHEMICAL EFFECTS IN BIOLOGICAL SYSTEMS KNOWLEDGE BASE.** M. Waters[1], P. Bushel[1], W. Eastin[1], S. Gustafson[2], P. Hurban[3], A. Merrick[1], G. Nehls[1], J. Selkirk[1], S. Stasiewicz[1], N. Stegman[1], K. Tomer[1], H. Wan[1], B. Weis[1], J. Yost[2], S. Xirasagar[2] and *R. Tennant*[1]. [1]NIEHS, Research Triangle Park, NC, [2]SAIC, Germantown, MD and [3]Paradigm Genetics, Research Triangle Park, NC.

#621 10:10 **dbZach—AN INTRALABORATY TOXICOGENOMIC SUPPORTIVE DATABASE.** *T. Zacharewski*. Biochemistry & Molecular Biology, National Food Safety & Toxicology Center, and Institute for Environmental Toxicology, Michigan State University, East Lansing, MI.

#622 10:50 **MICROARRAY DISCOVERY: INTEGRATING BIOLOGY WITH EXPRESSION.** J. Quackenbush[1]. [1]The Institute for Genomic Research, Rockville, MD and [2]ILSI Health & Environmental Sciences Institute, Washington, DC. Sponsor: *W. Mattes*.

Tuesday Morning, March 23
8:30 AM to 11:30 AM
Room 318

WORKSHOP SESSION: THE ROLE OF METHYLATION IN ARSENIC TOXICITY AND RISK: THE ENIGMA CONTINUES

Chairperson(s): *Michael Waalkes, NIEHS, Research Triangle Park, NC and Barbara Beck, Gradient Corporation, Cambridge, MA.*

Endorsed by:
Carcinogenesis Specialty Section
Metals Specialty Section*

Methylation of inorganic arsenic was originally considered to be solely a detoxification pathway. Recent studies have demonstrated that, *in vitro*, the trivalent mono- and di-methylated species of inorganic arsenic are both highly cytotoxic and genotoxic. However, the relationship of these findings to *in vivo* responses and to risk assessment remains an area of on-going investigation and debate. This workshop will address toxicological differences among different states of arsenic as a function of methylation status and valence, and will consider how the role of methylation in toxicity may vary according to endpoint, tissue type, exposure duration, and animal species. Recent investigations into the enzymology of arsenic methylation including the role of co-factors will be described. The importance of reactive oxygen species in cytotoxicity and genotoxicity of inorganic versus methylated arsenic, both *in vivo* and *in vitro*, will be addressed. The use of human biomonitoring data, specifically arsenic species in urine, to elucidate the role of methylation in toxicity and to inform the role of methylation differences in susceptibility to arsenic will be discussed. Pharmacokinetic and toxicological differences between methylated species of arsenic as generated in the body *via* metabolism versus the same species when ingested will be discussed. Finally, the significance of these recent developments will be considered in the context of risk assessment for arsenic; the implications for the shape of dose-response curve as well as inter and intra-species variability will be discussed.

#623 8:30 **THE ROLE OF METHYLATION IN ARSENIC TOXICITY & RISK: THE ENIGMA CONTINUES.** *M. Waalkes*[2], *B. D. Beck*[1], *D. Thomas*[3], *M. Kadiiska*[2] and *M. Del Razo*[4]. [1]Gradient Corporation, Cambridge, MA, [2]NIEHS, Research Triangle Park, NC, [3]USEPA, Research Triangle Park, NC and [4]Instituto Poletecnico Nacional, Mexico City, Mexico.

#624 8:45 **ENZYMOLOGY OF ARSENIC METHYLATION.** *D. J. Thomas*. USEPA, Res. Tri. Pk., NC.

#625 9:25 **ARSENIC METHYLATION AND OXIDANT INJURY BY ESR *IN VIVO* AND *IN VITRO*.** *M. B. Kadiiska*[1], S. Nesnow[2], *J. Liu*[3], *M. Waalkes*[3] and *R. Mason*[1]. [1]NIEHS/NIH, Research Triangle Park, NC, [2]USEPA, Research Triangle Park, NC and [3]NCI at NIEHS, Research Triangle Park, NC.

#626 10:05 **USE OF HUMAN BIOMONITORING TO ASSESS ARSENIC METHYLATION.** *L. M. Del Razo*[1], O. L. Valenzuela[1], *G. G. Garcia-Vargas*[2] and E. S. Calderon-Aranda[1]. [1]Toxicology, Cinvestav-IPN, Mexico City, Mexico and [2]UJED, Medical School, Gomez Palacio, Durango, Mexico.

#627 10:45 **ARSENIC METHYLATION: CONSIDERATIONS FOR RISK ASSESSMENT.** *B. D. Beck* and A. Schoen. Gradient Corporation, Cambridge, MA.

Tuesday Morning, March 23
8:30 AM to 11:30 AM
Room 314

ROUNDTABLE SESSION: CONTRIBUTION OF NEUROBEHAVIORAL ASSESSMENT OF OFFSPRING TO HAZARD IDENTIFICATION AND CHARACTERIZATION

Chairperson(s): *Dana L. Shuey, Endo Pharmaceuticals Inc., Chadds Ford, PA.*

Endorsed by:
Neurotoxicology Specialty Section
Reproductive and Developmental Toxicology Specialty Section*

Neurobehavioral assessment of offspring following maternal exposures during gestation and lactation have long been a routine part of preclinical safety assessment during pharmaceutical development (Peri/Postnatal Development Study). Similar studies have recently become more common for agricultural and industrial chemicals (USEPA Developmental Neurotoxicity Study). Recently, the Health and Environmental Sciences Institute of ILSI collected data from 174 studies to retrospectively evaluate the contribution of these assessments to hazard identification (i.e., definition of a NOEL) and characterization. A similar retrospective analysis of developmental neurotoxicity studies submitted for EPA review has also recently been updated. In June 2003, a workshop was held to review and evaluate current behavioral test methods. The outcomes of these activities will be presented to provide a basis for discussion of the overall contribution of these assessments to hazard identification and characterization, as well as study design and methodologic considerations for consistent and effective conduct and interpretation of these studies.

#628 8:30 **CONTRIBUTION OF NEUROBEHAVIORAL ASSESSMENT OF OFFSPRING TO HAZARD IDENTIFICATION AND CHARACTERIZATION.** *D. L. Shuey*[1] and L. D. Middaugh[2]. [1]Preclinical Safety Assessment, Endo Pharmaceuticals Inc., Chadds Ford, PA and [2]Department of Psychiatry and Behavioral Sciences, Medical University of South Carolina, Charleston, SC.

#629 8:35 **NEUROBEHAVIORAL ASSESSMENT: A SURVEY OF USE AND VALUE IN SAFETY ASSESSMENT STUDIES.** L. D. Middaugh. Psychiatry and Behavioral Sciences/ CDAP, Medical University of South Carolina, Charleston, SC. Sponsor: *D. Shuey*.

#630 8:50 **A RETROSPECTIVE ANALYSIS OF DEVELOPMENTAL NEUROTOXICITY STUDIES SUBMITTED TO THE USEPA.** *S. L. Makris*. OPPTS/OPP/HED (7509C), USEPA, Washington, DC.

#631 9:05 **BEHAVIORAL TEST METHODS WORKSHOP.** *W. Slikker*. Division of Neurotoxicology, NCTR/FDA, Jefferson, AR.

Tuesday Morning, March 23
8:30 AM to 11:30 AM
Room 315

PLATFORM SESSION: BWF/SOT NEW INVESTIGATOR-REPROGRAMING GENE EXPRESSION IN RESPONSE TO INSULT

Chairperson(s): *Kim Boekelheide, Brown University, Providence, RI and Debra Laskin, Rutgers University, Piscataway, NJ.*

#632 8:30 **INTERPLAY OF P53 AND P63 IN TRANSCRIPTIONAL RESPONSE AFTER CELL STRESS.** J. A. Pietenpol. Biochemistry, Vanderbilt University, Nashville, TN. Sponsor: *J. Kramarik*.

#633 9:00 **MAPPING THE REGULATORY SURFACES OF MEDIATOR WITH ARTIFICIAL TRANSCRIPTION FACTORS.** A. Mapp. University of Michigan, Ann Arbor, MI. Sponsor: *J. Kramarik*.

#634 9:30 **INHIBITION OF SMAD TRANSCRIPTION ACTIVITY AND ANTIPROLIFERATIVE FUNCTION BY CDK PHOSPHORYLATION.** F. Liu. CABM and LCR, Rutgers University, Piscataway, NJ. Sponsor: *J. Kramarik*.

#635 10:00 **REGULATION OF HUMAN DNA REPAIR GENE EXPRESSION AND ACTIVITY.** J. M. Ford, S. Adimoolam and M. Fitch. Medicine & Genetics, Stanford University School of Medicine, Stanford, CA. Sponsor: *J. Kramarik*.

#636 10:30 **USING DNA MICROARRAYS TO DEFINE TRANSCRIPTIONAL PATTERNS ASSOCIATED WITH AGING AND OXIDATIVE STRESS IN THE MOUSE HEART.** T. Prolla. University of wisconsin, Madison, WI. Sponsor: *J. Kramaric*.

#637 11:00 **REPROGRAMMING GENE EXPRESSION WITH OXIDATIVE STRESS AND STRESS HORMONES: A PARADOX OF ANTIOXIDANT RESPONSES.** *Q. M. Chen*. Department of Pharmacology, University of Arizona, Tucson, AZ.

Tuesday Morning, March 23
8:30 AM to 11:30 AM
Room 316

PLATFORM SESSION: CARCINOGENESIS MODELS AND MECHANISMS

Chairperson(s): *Lori White, Rutgers University, New Brunswick, NJ and Scott Burchiel, University of New Mexico, Albuquerque, NM.*

#638 8:30 **EFFECTS OF TRANSSPECIES CARCINOGENS IN AVIAN EMBRYOS.** *H. G. Enzmann*[1], C. Goetze[1], K. Spicher[1] and H. Korr[2]. [1]Preclinical Pharmacology and Toxicology, Federal Institute for Drugs and Medical Devices, Bonn, Germany and [2]Department of Anatomy and Cell Biology, RWTH University of Aachen, Aachen, Germany.

#639 8:50 **MODEL SYSTEMS FOR COMPARING THE ROLES OF AKR1A1 AND CPY1A1 IN THE METABOLIC ACTIVATION OF THE PROXIMATE CARCINOGEN BENZO(A)PYRENE-7, 8-DIOL.** H. Jiang, Y. Shen, A. Quinn, S. Gopishetty and T. M. Penning. Department of Pharmacology, University of Pennsylvania School of Medicine, Philadelphia, PA. Sponsor: *S. Burchiel*.

#640 9:10 **ASSESSMENT OF THE ROLE OF CYP2E1-MEDIATED METABOLISM OF URETHANE ON THE EXPRESSION OF P53, PCNA, AND KI-67 USING CYP2E1-NULL AND WILD-TYPE MICE.** University. Hoffler[1, 2], *D. Dixon*[2] and *B. I. Ghanayem*[1, 2]. [1]Meharry Medical College, Nashville, TN and [2]NIEHS/NIH, Research Triangle Park, NC.

#641 9:30 **INCREASED DNA METHYLATION IN THE HOXA5 PROMOTER REGION CORRELATES WITH DECREASED EXPRESSION OF THE GENE DURING TUMOR PROMOTION.** *R. E. Watson*[1], *G. M. Curtin*[2], G. M. Hellmann[2], *D. J. Doolittle*[2] and *J. I. Goodman*[1]. [1]Department of Pharmacology and Toxicology, Michigan State University, East Lansing, MI and [2]Regulatory Toxicology, R. J. Reynolds Tobacco Co., Winston-Salem, NC.

#642 9:50 **IDENTIFICATION OF MOLECULAR PATHWAYS THAT MAY PROMOTE CELL GROWTH AND PROLIFERATION IN RESPONSE TO NONGENOTOXIC CARCINOGENS.** V. Bombail[1], R. Currie[1], J. Oliver[1], A. Morsi[2], *I. Kimber*[1], K. Chipman[2] and G. Orphanides[1]. [1]Syngenta Central Toxicology Laboratory, Alderley Park, Cheshire, United Kingdom and [2]School of Biosciences, University of Birmingham, Birmingham, United Kingdom.

#643 10:10 **AHR REGULATION OF C-MYC IN HUMAN BREAST CANCERS.** X. Yang, T. J. Murray, D. Liu and *D. H. Sherr*. Enviormental Health, Boston University School of Public Health, Boston, MA.

#644 10:30 **2, 3, 7, 8-TETRACHOLODIBENZO-P-DIOXIN (TCDD) INDUCES MMP EXPRESSION AND INVASION IN A2058 MELANOMA CELLS.** *L. A. White*[1], K. Murphy[1], A. Akintobi[1] and C. Villano[2]. [1]Biochemistry and Microbiology, Rutgers University, New Brunswick, NJ and [2]Joint Graduate Program in Toxicology, Rutgers University, New Brunswick, NJ.

#645 10:50 **HEPATOMA MITOCHONDRIA RESIST THE MITOCHONDRIAL PERMEABILITY TRANSITION: POSSIBLE INVOLVEMENT OF HEAT SHOCK PROTEIN-25 (HSP25).** E. Bustamante, L. He and *J. J. Lemasters*. Cell and Developmental Biology, University of North Carolina School of Medicine, Chapel Hill, NC.

#646 11:10 **POSSIBLE ROLE FOR CHEMOTHERAPY IN THE UPREGULATION OF MITOCHONDRIAL BIOGENESIS IN CHRONIC LYMPHOCYTIC LEUKEMIA PATIENTS.** J. S. Carew, Y. Zhou, M. J. Keating and P. Huang. UT M.D. Anderson Cancer Center, Houston, TX. Sponsor: *D. McConkey*.

Tuesday Morning, March 23
8:30 AM to 11:30 AM
Room 317

PLATFORM SESSION: GENE EXPRESSION: LIVER

Chairperson(s): *Kyle Kolaja, Iconix Pharmaceuticals, Mountain View, CA and William Mattes, GeneLogic, Gaithersburg, MD.*

#647 8:30 **EFFECTS OF RAT GENDER AND STRAIN ON ELUCIDATING LIVER TOXICITY.** B. W. Higgs, A. L. Castle, W. Zeng, M. W. Porter and *D. L. Mendrick*. Toxicogenomics, Gene Logic Inc., Gaithersburg, MD.

#648 8:50 **LIVER EFFECTS AT THE GENE EXPRESSION LEVEL OF FOOD-FASTING, WATER DEPRIVATION, AND ANESTHETIC AGENT ADMINISTRATION IN UNTREATED RATS.** M. W. Porter, *C. G. Chang*, M. W. Orr and *D. L. Mendrick*. Toxicogenomics, Gene Logic Inc., Gaithersburg, MD.

#649 9:10 **CONCORDANCE OF TOXICOGENOMIC PREDICTIONS AND MECHANISTIC ANALYSIS FOR COMPOUNDS TESTED IN BOTH RAT LIVER AND PRIMARY RAT HEPATOCYTES.** M. S. Orr, B. W. Higgs, K. R. Johnson and *D. L. Mendrick*. Toxicogenomics, Gene Logic Inc., Gaithersburg, MD.

#650 9:30 **EVALUATION OF THE BIOLOGICAL VARIATION IN GENE EXPRESSION PROFILES IN CULTURED PRIMARY RAT HEPATOCYTES.** *C. Wang*[1], *S. M. Hussain*[2], V. Chan[2] and *J. M. Frazier*[3]. [1]Microarray Core, Cedars-Sinai Medical Center, UCLA, Los Angeles, CA, [2]ManTech Environ Technology, Inc., Dayton, OH and [3]AFRL/Wright-Patterson AFB, Dayton, OH.

#651 9:50 **CLASSIFYING CHEMICAL INDUCED LIVER PATHOLOGY USING GENE EXPRESSION PROFILING *IN VITRO* IN PRIMARY HEPATOCYTES.** S. Baumhueter, L. Brady, G. Day, S. Dunlea, B. Eynon, J. Ferng, S. Fujimoto, R. Idury, K. Jarnagin, *K. Kolaja*, M. Lee, R. Nair, C. Pearson, A. Roter and A. Tolley. Iconix Pharmaceuticals, Mountain View, CA.

#652 10:10 **CROSS-SPECIES ANALYSIS OF PHENOBARBITAL-INDUCED GENE EXPRESSION CHANGES IN DOG AND RAT.** *W. B. Mattes*, M. S. Orr and *D. L. Mendrick*. Toxicogenomics, Gene Logic Inc., Gaithersburg, MD.

#653 10:30 **USE OF EXPRESS PROFILING™ TO CHARACTERIZE GENE EXPRESSION BIOMARKER SETS FOR LIVER TOXICITY.** J. Monforte[1], G. Vansant[1], P. Pezzoli[1], F. Ferre[1], S. Baumhueter[2], G. Day[2], S. Dunlea[2], B. Eynon[2], M. Fielden[2], S. Fujimoto[2], B. Ganter[2], R. Idury[2], K. Jarnigan[2], *K. Kolaja*[2], M. Lee[2], R. Nair[2], G. Natsoulis[2], S. Nicholson[2], C. Pearson[2], A. Roter[2] and A. Tolley[2]. [1]Althea Technologies, Inc., San Diego, CA and [2]Iconix Pharmaceuticals, Inc., Mountain View, CA.

#654 10:50 **EARLY CHANGES IN HEPATIC GENE EXPRESSION FOLLOWING EXPOSURE TO THE RODENT CARCINOGEN METHYLEUGENOL.** *J. T. Auman*, R. D. Fannin, S. O. Sieber, *M. L. Cunningham* and R. S. Paules. National Center for Toxicogenomics, NIEHS, Research Triangle Park, NC.

#655 11:10 **IDENTIFICATION OF MOLECULAR TARGETS OF CURCUMIN IN RAT LIVER BY OLIGONUCLEOTIDE MICROARRAY.** V. Misra[1], R. Thimmulappa[1], K. Mai[1], *L. L. Adams-Campbell*[2] and *S. Biswal*[1]. [1]Johns Hopkins University, Baltimore, MD and [2]Howard University, Washington DC, WA.

Tuesday Morning, March 23
8:30 AM to 11:30 AM
Room 324

PLATFORM SESSION: HYPERSENSITIVITY I

Chairperson(s): *Rebecca Dearman, Syngenta CTL, United Kingdom and Marc Pallardy, INSERM University, Facutly de Pharmacie Paris XI, Paris, France.*

#656 8:30 **NORMAL HUMAN DENDRITIC CELLS: A TOOL TO STUDY ALLERGIC AND IMMUNOLOGICAL REACTIONS *IN VITRO*.** *M. Klausner*, S. Ayehunie, S. Lamore, K. Bellavance, R. Lappen, *P. Hayden* and J. Sheasgreen. R & D, MatTek Corporation, Ashland, MA.

#657 8:50 **DOSE RESPONSE ANALYSIS OF ALLERGEN-INDUCED GENE EXPRESSION CHANGES IN DENDRITIC CELLS.** L. A. Gildea[1], *C. A. Ryan*[1], B. C. Hulette[1], *R. J. Dearman*[2], *I. Kimber*[2] and *F. Gerberick*[1]. [1]Procter & Gamble, Cincinnati, OH and [2]Syngenta CTL, Macclesfield, United Kingdom.

#658 9:10 **COMPARISON OF THE RESPONSE OF DENDRITIC CELLS DERIVED FROM CORD BLOOD CD34+ AND FROM CD14+ MONOCYTES TO THE CONTACT SENSITIZER NICKEL.** F. Boisleve[1], N. Aubert[2], J. Bernard[2], *M. Pallardy*[1] and S. Roemer[1]. [1]Immuntoxicology, Inserm U461, Chatenay-Malabry, France and [2]laboratoire de therapie cellulaire, Institut Jean Godinot, Reims, France.

#659 9:30 **INTRACELLULAR CYTOKINE STAINING PATTERNS OF ALLERGEN ACTIVATED LYMPH NODE CELLS (LNC).** N. Humphreys, R. Skinner, *R. J. Dearman* and *I. Kimber*. Syngenta CTL, Macclesfield, United Kingdom.

#660 9:50 **THE SENSITIZING POTENTIAL OF PEANUT PROTEINS IN FOUR DIFFERENT MICE STRAINS.** L. M. Knippels[1], A. H. Penninks[1] and *G. A. Bannon*[2]. [1]Experimental Immunology, TNO Nutrition and Food Research, Zeist, Netherlands and [2]Product Characterisation Center, Monsanto, St. Louis, MO.

#661 10:10 **EVALUATION OF PROTEIN ALLERGENIC POTENTIAL: STUDIES IN MICE.** S. Stone, H. Caddick, *R. J. Dearman* and *I. Kimber*. Syngenta CTL, Macclesfield, United Kingdom.

#662 10:30 **PROGRESS IN THE EVALUATION OF AN IN-BRED RAT STRAIN ("ASTHMATIC RAT") FOR PREDICTING THE ALLERGIC POTENTIAL OF FOOD AND OTHER PROTEINS.** *D. M. Hinton*, M. Lorenzo, S. B. Harper and S. Francke-Carroll. CFSAN, USFDA, Laurel, MD.

#663 10:50 **INFLUENCE OF ENDOTOXIN ON IGE RESPONSES TO PROTEIN ALLERGENS.** *R. J. Dearman* and *I. Kimber*. Syngenta CTL, Macclesfield, United Kingdom.

Tuesday Morning, March 23
8:30 AM to 11:30 AM
Room 326

PLATFORM SESSION: MECHANISMS OF PHASE I AND PHASE II BIOTRANSFORMATION I

Chairperson(s): *Mary Haasch, University. MS, University, MS and Melissa Runge-Morris, Wayne State University, Detroit, MI.*

#664 8:30 **FUNCTIONAL REGULATION OF HUMAN MICROSOMAL EPOXIDE HYDROLASE BY ALTERNATIVE GENE PROMOTERS AND SPLICING VARIANTS.** S. Liang, C. Hassett and *C. Omiecinski*. Veterinary Science, The Pennsylvania State University, University Park, PA.

#665 8:50 **MOLECULAR MECHANISMS OF SUBCELLULAR LOCALIZATION OF HUMAN GLUTATHIONE REDUCTASE.** L. K. Rogers, T. Tamura, B. J. Rogers, T. N. Hansen, *S. E. Welty* and *C. V. Smith*. Columbus Children's Research Institute, Columbus, OH.

#666 9:10 **CHARACTERIZATION OF FOUR MERCAPTURIC ACID URINARY METABOLITES OF 3-BUTENE-1, 2-DIOL.** *S. L. Christopher* and *A. A. Elfarra*. Center for Molecular and Environmental Toxicology and Department of Comparative Biosciences, University of Wisconsin-Madison, Madison, WI.

#667 9:30 **MECHANISTIC INVESTIGATION ON CYTOTOXICITY OF STYRENE.** *J. Zheng*, J. Chung and W. Yuan. Pharmaceutical Sciences, Northeastern University, Boston, MA.

#668 9:50 **METHOTREXATE (MTX) INDUCTION OF SULFOTRANSFERASES.** *G. Chen*. Physiological Sciences, Oklahoma State University, Stillwater, OK.

#669 10:10 **BIOCHEMICAL COMPARISON OF ZEBRAFISH AND HUMAN ALDH2: USE OF ZEBRAFISH AS A MODEL FOR HUMAN ACETALDEHYDE METABOLISM AND TOXICITY.** N. Lassen[1], T. Estey[1, 2], *V. Vasiliou*[1, 2], *R. Tanguay*[3] and A. Pappa[1]. [1]Pharmaceutical Sciences, UCHSC, Denver, CO, [2]Pharmaceutical Biotechnology, UCHSC, Denver, CO and [3]Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR.

#670 10:30 **REGIO-SPECIFIC (ω TO ω-6) LAURIC ACID HYDROXYLATION IN HUMAN RECOMBINANT AND PEROXISOME PROLIFERATOR-TREATED JUVENILE CATFISH MICROSOMES.** *M. L. Haasch*[1, 2], A. W. Ford[1] and J. C. Allgood[1]. [1]RIPS, ECHR, Environmental Toxicology Research Program, The University of Mississippi, University, MS and [2]Pharmacology, The University of Mississippi, University, MS.

#671 10:50 **METABOLISM OF TATTOO PIGMENT YELLOW 74 USING RAT LIVER MICROSOMAL PROTEIN OR XANTHINE OXIDASE.** Y. Cui[1, 3], *N. V. Gopee*[1, 3], F. E. Evans[2], L. H. Couch[1, 3], M. I. Churchwell[1], D. R. Doerge[1] and *P. C. Howard*[1, 3]. [1]Division of Biochemical Toxicology, NCTR, USFDA, Jefferson, AR, [2]Division of Chemistry, NCTR, USFDA, Jefferson, AR and [3]NTP Center for Phototoxicology, NCTR, USFDA, Jefferson, AR.

#672 11:10 **REGULATION OF GLUCOCORTICOID-INDUCIBLE RAT HYDROXYSTEROID SULFOTRANSFERASE GENE EXPRESSION BY LIVER-ENRICHED TRANSCRIPTION FACTORS.** M. Alipour, J. R. Smigelski, A. Weckle and *M. Runge-Morris*. Inst. Environment Health Sciences., Wayne State University, Detroit, MI.

Tuesday Morning, March 23
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: PHARMACEUTICAL SAFETY

Chairperson(s): *William Johnson, ITT Research Institute, Chicago, IL and Matthew Cooper, Biogen, Cambridge, MA.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 9:30 AM–11:00 AM*

#673 **ONCOGENICITY EVALUATION OF NELFINAVIR MESYLATE IN RATS.** *M. Zorbas*[1], *M. McClain*[2], B. Jessen[1], W. Evering[1], *G. Stevens*[1], R. Gasser[3] and *L. Burns Naas*[1]. [1]Pfizer Global Research & Development, San Diego, CA, [2]McClain Associates, Randolph, NJ and [3]Hoffmann-LaRoche, Basel, Switzerland.

#674 **SAFETY EVALUATION OF STEALTH® LIPOSOMAL CKD–602.** *B. E. Stewart*[1], C. M. Engbers[1], N. B. Modi[1] and A. P. Mould[2]. [1]ALZA Corporation, Mt View, CA and [2]Covance Laboratories, Madison, WI.

#675 **2-[4-AMINO-3-METHYLPHENYL] 5-FLUORO BENZOTHIAZOLE, 5F-203, A DRUG USED IN BREAST CANCER TREATMENT UP-REGULATES NAG-1 EXPRESSION: A POSSIBLE MECHANISM OF ACTION.** J. M. Martinez[1], T. Sali[2], R. Okazaki[2], M. Hollingshead[3], C. Hose[4], *N. Walker*[1], A. Monks[4], S. Baek[2] and T. Eling[2]. [1]LCBRA, NIEHS, Research Triangle Park, NC, [2]LMC, NIEHS, Research Triangle Park, NC, [3]Developmental Therapeutics Program, NCI, Frederick, MD and [4]SAIC Frederick Inc., NCI, Frederick, MD.

#676 **PIFITHRIN-α IS A POTENT ARYL HYDROCARBON RECEPTOR AGONIST.** M. S. Hoagland, E. M. Hoagland, G. M. Ziegler and *H. I. Swanson*. Molecular and Biomedical Pharmacology, University of Kentucky, Lexington, KY.

#677 **PULMONARY FUNCTION EFFECTS OF A THREE-HOUR TOXICITY STUDY OF AMINOFLAVONE PRODRUG (NSC-710464) IN DOGS.** I. M. Grossi[1], M. Lynch[1], J. Merrill[1], *J. Tomaszewski*[2] and J. O. Peggins[2]. [1]Toxicology, Battelle, Columbus, OH and [2]NCI, NIH, Bethesda, MD.

#678 **EFFECT OF HUMAN APOB-100 ANTISENSE OLIGONUCLEOTIDE (ISIS 301012) ON THE EXPRESSION OF APOB-100 MNRA IN MONKEY.** *T. Kim*[1], *T. Zanardi*[2], M. Graham[1], R. Crooke[1], *A. Levin*[1] and *S. Henry*[1]. [1]Toxicology/PKM, ISIS Pharmaceuticals, Carlsbad, CA and [2]Charles River Laboratories (SBi Division), Sparks, NV.

#679 **CJC-1295, A LONG-ACTING GROWTH HORMONE RELEASE FACTOR ANALOGUE, IS WELL TOLERATED IN RATS UP TO 14 DAYS.** V. Iordanova[1], B. Lawrence[1], *S. Morseth*[2] and J. Castaigne[1]. [1]ConjuChem, Montreal, QC, Canada and [2]Milestone Biomedical Associates, Frederick, MD.

#680 **CJC-1131, A LONG-ACTING GLP-1 ANALOGUE, EXHIBITS SAFETY AND TOLERABILITY IN RATS AND DOGS UP TO 91 DAYS.** S. Wen[1], B. Lawrence[1], *S. Wilson*[2] and J. Castaigne[1]. [1]ConjuChem, Montreal, QC, Canada and [2]Milestone Biomedical Associates, Frederick, MD.

#681 **FOUR-WEEK COMBINATION TOXICITY STUDY OF ANTI-VLA4 ANTIBODY ADMINISTERED IV AND IFN β-1A ADMINISTERED IM IN THE RHESUS MONKEY.** *M. Cooper*[1], V. Palmer[2], *G. Beattie*[4], *J. Green*[2], *P. Martin*[2] and *N. G. Wehner*[3]. [1]Biomarker Development, Biogen, Cambridge, MA, [2]Preclinical and Clinical Development Sciences, Biogen, Cambridge, MA, [3]Safety Evaluation, Elan, South San Francisco, CA and [4]Sierra Biomedical, Sparks, NV.

#682 **RISING-DOSE TOLERABILITY STUDY OF A LYMPHOTOXIN BETA RECEPTOR AGONIST IN CHIMPANZEES.** *M. Cooper*[1], V. Palmer[2], T. J. Rowell[3] and *J. Green*[2]. [1]Biomarker Development, Biogen, Cambridge, MA, [2]Preclinical and Clinical Development Sciences, Biogen, Cambridge, MA and [3]New Iberia Research Center, New Iberia, LA.

#683 **INTRAVENOUS PERI-POSTNATAL REPRODUCTION STUDY OF RHAT IN RATS.** *M. S. Christian*[1], E. M. Lewis[2], *A. M. Hoberman*[2] and R. A. Scotland[3]. [1]Argus International, Inc., Horsham, PA, [2]Charles River Discovery and Development Services, Argus Division, Horsham, PA and [3]GTC Biotherapeutics, Inc., Framingham, MA.

#684 **SINGLE AND 28-DAY REPEATED INTRAMUSCULAR DOSE TOXICITY STUDIES OF BOTULINUM TOXIN TYPE A IN RATS.** *W. S. Koh*[1], M. K. Chung[1], Y. B. Kim[1], C. S. Ha[1], G. H. Yang[2], H. H. Chung[2] and *T. C. Jeong*[3]. [1]Korea Institute of Toxicology, Daejeon, South Korea, [2]Medy-Toxicology, Asan, South Korea and [3]College of Pharmacy, Yeungnam University, Kyungsan, South Korea.

#685 **A HUMANIZED ANTI-TISSUE FACTOR MONOCLONAL ANTIBODY DOES NOT INCREASE THE RISK OF SURGICAL BLEEDING IN A CYNOMOLGUS MONKEY MODEL.** P. J. Bugelski[1], E. C. Martin[2], V. Mendenhall[2], A. R. Soderman[1], S. H. Tam[1], K. M. Picha[1], V. S. Khandekar[1] and *G. Treacy*[1]. [1]Centocor, Inc., Malvern, PA and [2]Charles River Labs, Worcester, MA.

#686 **A 4-WEEK SUBCUTANEOUS INJECTION TOXICITY STUDY OF PTH-FC WITH A 4-WEEK RECOVERY PERIOD IN THE ALBINO RAT.** *J. E. Atkinson*[1], *C. Alcalde*[1], *M. E. Cosenza*[1], S. Y. Smith[2], N. Doyle[2], C. R. Dunstan[3], C. Zimmermann[1] and P. Kostenuik[4]. [1]Toxicology, Amgen Inc., Thousand Oaks, CA, [2]CTBR, Senneville, QC, Canada, [3]ANZAC Research Institute, Concord, NSW, Australia and [4]Metabolic Disorders, Amgen Inc., Thousand Oaks, CA.

#687 **DOSE RANGE-FINDING STUDY OF HALOFUGINONE (NSC-713205) IN RODENTS.** D. Kobs[1], P. J. Tosca[1], L. Bollinger[1], I. M. Grossi[1], *J. Tomaszewski*[2] and J. O. Peggins[2]. [1]Toxicology, Battelle, Columbus, OH and [2]NCI, NIH, Bethesda, MD.

#688 **28-DAY ORAL (GAVAGE)TOXICITY STUDY OF *Se*-METHYLSELENOCYSTEINE IN DOGS.** *W. Johnson*[1], J. Lopez[1], R. Morrissey[2], C. Ip[3], I. Kapetanovic[4] and *D. McCormick*[1]. [1]IIT Research Institute, Chicago, IL, [2]Pathology Associates, Chicago, IL, [3]Roswell Park Memorial Institute, Buffalo, NY and [4]National Cancer Institute, Bethesda, MD.

#689 **ACUTE AND SUB ACUTE ORAL TOXICITY OF VEGPANZYME IN MICE AND RATS.** S. N. Shah[1], A. University. Burhan[1], S. L. Bodhankar[1], S. P. Risbud[2] and S. Kurundkar[3]. [1]Pharmacology, Bharati Vidyapeeth Deemed University, Pune, Maharashtra, India, [2]Advanced Biochemicals Ltd., , Thane, Maharashtra, India and [3]Raj Biotech (India) Pvt. Ltd., , Satara, Maharashtra, India. Sponsor: *H. Mehendale*.

#690 **A NON-HUMAN PRIMATE MODEL OF COLLAGEN-INDUCED ARTHRITIS: ITS ONSET AND THE EFFECTS OF METHOTREXATE.** H. Kasai, H. Sameshima, H. Tsusaki, N. Horai, S. Kojima, H. Tokado and *R. Nagata*. DSR Laboratories, SNBL, Kagoshima, Japan.

#691 **REAL-TIME PCR ASSAY FOR THE QUANTITATION OF SEROTYPE 5 ADENOVIRUS VECTOR DNA IN GENOMIC DNA EXTRACTED FROM TISSUES AND FLUIDS.** M. Wu[1], M. Subramanyam[2] and D. Enke[1]. [1]Biomarker Development, Biogen, Cambridge, MA and [2]Biogen, Cambridge, MA. Sponsor: *J. Green*.

Tuesday Morning, March 23
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: RESPIRATORY TRACT I

Chairperson(s): *Paul Reinhart, Naval Health Research Center, Wright-Patterson AFB, OH and Matthew Reed, Lovelace Respiratory Research Institute, Albuquerque, NM.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 11:00 AM–12:30 PM*

#692 **APOPTOSIS INDUCED BY INTERACTIONS BETWEEN MOLDY HOUSE MICROBES.** P. Penttinen[1, 2], J. Pelkonen[2, 3], K. Huttunen[1] and M. Hirvonen[1]. [1]Department of Environmental Health, National Public Health institute, Kuopio, Finland, [2]University of Kuopio, Kuopio, Finland and [3]Kuopio University Hospital, Kuopio, Finland. Sponsor: *M. Viluksela*.

#693 **DIFFERENCES IN THE ONSET OF APOPTOSIS IN OLFACTORY SENSORY CELLS OF MICE, RATS AND MONKEYS GIVEN AN INTRAVENOUS INJECTION OF MAXIMUM TOLERATED DOSE (MTD) OF VINCRISTINE, A VINCA-ALKALOID ANTITUMOR DRUG.** K. Kai, H. Satoh, T. Suzuki, M. Yoshida, Y. Shikanai, T. Kajimura, M. Kato and *K. Furuhama*. Drug Safety Research Laboratory, Daiichi Pharmaceutical Co., Ltd., , Tokyo, Japan.

#694 **EFFECTS OF STAINLESS STEEL MANUAL METAL ARC WELDING FUMES ON DNA DAMAGE AND APOPTOSIS INDUCTION *IN VITRO* AND *IN VIVO*.** *M. D. Taylor*, *J. R. Roberts*, C. E. Solano-Lopez, S. S. Leonard, X. Shi and *J. M. Antonini*. HELD/PPRB, NIOSH, Morgantown, WV.

#695 **INHALED OZONE INDUCES DNA-DNA CROSS-LINKING IN EXPOSED RAT LUNG.** D. H. Bowser[1], M. Sisco[1], K. Baker[1], *K. Salnikow*[2], *R. B. Schlesinger*[3], *M. D. Cohen*[1] and *J. T. Zelikoff*[1]. [1]Environmental Medicine, New York University School of Medicine, Tuxedo, NY, [2]NCI, Frederick, MD and [3]Biology, Pace University, Pleasantville, NY.

#696 **ROLE OF INDUCIBLE NITRIC OXIDE-DERIVED NITRIC OXIDE *IN SILICA*-INDUCED PULMONARY INFLAMMATION AND INJURY.** *P. C. Zeidler*[1, 2], A. F. Hubbs[1, 2] and *V. Castranova*[1, 2]. [1]PPRB, NIOSH, Morgantown, WV and [2]West Virginia University, Morgantown, WV.

#697 **ROLE OF NITRIC OXIDE IN MEDIATING ALVEOLAR MACROPHAGE RESPONSES TO DIESEL EXHAUST PARTICLES.** *J. Y. Ma*[1], H. 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.

#698 ***IN-VITRO* INFLAMMATORY AND CYTOTOXIC RESPONSES TO AMBIENT AIR PARTICULATE SAMPLES COLLECTED DURING LONG-RANGE TRANSPORT (LRT) OF FOREST FIRE SMOKE TO HELSINKI, FINLAND.** P. Jalava[1, 3], R. O. Salonen[1], A. I. Halinen[1], M. Sillanpaa[2], S. Saarikoski[2], R. Hillamo[2] and M. Hirvonen[1]. [1]Department of Environmental Health, National Public Health Institute (KTL), Kuopio, Finland, [2]Air Quality Research, Finnish Meteorological Institute, Helsinki, Finland and [3]University of Kuopio, Kuopio, Finland. Sponsor: *M. Viluksela*.

#699 **NRF2 PLAYS A CRITICAL ROLE IN CONFERRING PROTECTION AGAINST INFLAMMATION IN A MOUSE MODEL OF ASTHMA.** *T. Rangasamy*[1], J. Guo[2], S. Srisuma[1], S. N. Georas[2], *T. W. Kensler*[1], W. A. Mitzner[1] and *S. Biswal*[1]. [1]Environmental Health Sciences, Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD and [2]Department of Medicine, Johns Hopkins University, Baltimore, MD.

#700 **LACK OF NRF2 AUGMENTS LIPOPOLYSACCHARIDE INDUCED INFLAMMATION IN MICE LUNGS.** S. Srisuma, R. Thimmulappa, *T. Rangasamy*, K. Mai, *T. W. Kensler* and *S. Biswal*. Johns Hopkins University, Baltimore, MD.

#701 **ROLE OF TOLL LIKE RECEPTOR-4 IN OZONE-INDUCED PRODUCTION OF INFLAMMATORY MEDIATORS AND TOXICITY.** *A. J. Connor*, *J. D. Laskin* and *D. L. Laskin*. Joint Graduate Program In Toxicology, Rutgers University and UMDNJ/Robert Wood Johnson Medical School, Piscataway, NJ.

#702 **GENOMIC ANALYSIS OF PHOSGENE-INDUCED LUNG INJURY.** *A. M. Sciuto*[2], J. F. Dillman[1], C. S. Phillips[1], L. M. Dorsch[1], A. I. Hege[1] and T. S. Moran[2]. [1]Applied Pharmacology, USAMRICD, Aberdeen Proving Ground, MD and [2]Neurotoxicology, USAMRICD, Aberdeen Proving Ground, MD.

#703 **TRANSCRIPTIONAL REGULATION IN RESPONSE TO CARBON NANOTUBES IN HUMAN BRONCHIAL EPITHELIAL CELLS AS DETECTED BY MICROARRAY ANALYSIS.** N. Keshava[1], *A. R. Murray*[2], O. Gorelik[4], S. Arepalli[4], V. Z. Gandelsman[5], *V. Castranova*[2, 3] and *A. A. Shvedova*[2, 3]. [1]TMBB, NIOSH, CDC, Morgantown, WV, [2]PPRB, NIOSH, CDC, Morgantown, WV, [3]Physiology & Pharmacology, WVU, Morgantown, WV, [4]Materials & Processes Branch, Lockheed Martin Corporation, Engineering Directorate, Houston, TX and [5]Nanotube Team, GBTech, Inc., NASA-JSC, Houston, TX.

#704 ***IN VIVO* EXPOSURE TO DRINKING WATER ARSENIC MODIFIES EXPRESSION OF GENES IN THE MOUSE LUNG.** *A. S. Andrew*[1], *A. Barchowsky*[2], J. C. Davey[1], *N. V. Soucy*[1], D. D. Mayka[1], *C. R. Lantz*[3], A. Hayes[3] and *J. W. Hamilton*[1]. [1]Pharmacology & Toxicology, Dartmouth Medical School, Hanover, NH, [2]Environmental & Occupational Health, University of Pittsburgh, Pittsburgh, PA and [3]Cell Biology & Anatomy, University of Arizona, Tucson, AZ.

#705 **ESTROUS CYCLE ALTERS PULMONARY METABOLISM OF NAPHTHALENE (NA).** *L. S. Van Winkle*[1], *G. L. Baker*[1], R. L. Stelck[1], C. D. Brown[1], *C. G. Plopper*[1] and *A. R. Buckpitt*[2]. [1]VM:APC, UC Davis, Davis, CA and [2]VM:Molecular Biosciences, UC Davis, Davis, CA.

#706 **SITE-SPECIFIC INDUCTION OF PULMONARY CYTOCHROME P450 ISOZYME 3A1 BY 1-NITRONAPHTHALENE IN NEONATAL RATS.** K. C. Day, G. L. Baker, *C. G. Plopper* and *M. V. Fanucchi*. Center for Comparative Respiratory Biology and Medicine, University of California, Davis, Davis, CA.

#707 **THE EFFECT ON PUP VIABILITY AND GROWTH DURING NOSE-ONLY INHALATION EXPOSURE OF WISTAR-HAN RATS FOR PRE AND POST NATAL STUDIES.** M. Stoute[1], S. Maquire[2], K. Robinson[1], A. Viau[1] and *C. Banks*[1]. [1]CTBR, Senneville, QC, Canada and [2]GlaxoSmithKline, Ware, United Kingdom.

Tuesday Morning, March 23
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: RESPIRATORY TRACT II—FUELS

Chairperson(s): *James O'Callaghan, CDC NIOSH, Morgantown, VA and Jeffrey Fisher, University of Georgia, Athens, GA.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 9:30 AM–11:00 AM*

#708 **INHALATION TOXICITY OF GASOLINE & FUEL OXYGENATES: NEUROTOXICITY.** *J. P. O'Callaghan*[1], C. M. Felton[1], B. K. Mutnansky[1] and *W. C. Daughtrey*[2]. [1]Molecular Neurotoxicology, Centers for Disease Control and Prevention-NIOSH, Morgantown, WV and [2]211b Research Group, American Petroleum Institute, Washington, DC.

#709 **INHALATION TOXICITY OF GASOLINE & FUEL OXYGENATES—REPRODUCTIVE TOXICITY ASSESSMENT.** *T. M. Gray*[1], K. P. Hazelden[3], *D. R. Steup*[1], *J. P. O'Callaghan*[2], G. M. Hoffman[3] and *L. G. Roberts*[1]. [1]API, 211b Research Group, Washington, DC, [2]Molecular Neurotoxicology, CDC-NIOSH, Morgantown, WV and [3]Reproductive Toxicology, Huntingdon Life Sciences, Inc., East Millstone, NJ.

#710 **ANALYTICAL CHARACTERIZATION OF AEROSOLIZED JET PROPELLANT 8 (JP-8) IN AN EXPOSURE CHAMBER ATMOSPHERE.** K. Frank[1], J. Campbell[1], *M. Witten*[2], M. Bartlett[3] and *J. Fisher*[1]. [1]Interdisciplinary Toxicology Program, University of Georgia, Athens, GA, [2]Pediatrics, University of Arizona, Tuscon, AZ and [3]Pharmaceutical and Biomedical Sciences, University of Georgia, Athens, GA.

#711 **INHALATION TOXICITY OF GASOLINE & FUEL OXYGENATES: TEST SAMPLE PREPARATION.** *W. C. Daughtrey*, M. Henley, *D. M. Burnett*, P. Podhasky and *R. D. White*. API 211(b) Research Group, Washington, DC.

#712 **A SIMPLE METHOD FOR COMPARING THE TOXICOLOGIC POTENTIAL OF EMISSIONS FROM VEHICLES USING DIFFERENT FUELS.** *C. A. Lapin*[1], *W. B. Bunn*[2] and *T. W. Hesterberg*[2]. [1]Lapin & Associates, Glendale, CA and [2]International Truck and Engine Corporation, Chicago, IL.

#713 **INHALATION TOXICITY OF GASOLINE & FUEL OXYGENATES—CHRONIC TOXICITY.** *J. Benson*[1], *C. R. Clark*[2], E. B. Barr[1], A. P. Gigliotti[1], T. H. March[1], C. A. Elliott[1], A. P. Gomez[1], *B. M. Tibbetts*[1] and R. White[2]. [1]Lovelace Respiratory Research Institute, Albuquerque, NM and [2]API 211(b) Research Group, Washington, DC.

#714 **INHALATION TOXICITY OF GASOLINE & FUEL OXYGENATES: 13-WEEK SUBCHRONIC/NEUROTOXICITY STUDY.** *G. Hoffman*[1], *C. A. Schreiner*[2], *C. Parker*[2] and *T. Gray*[2]. [1]Huntingdon Life Sciences Inc., East Millstone, NJ and [2]API 211(b) Research Group, Washington, DC.

#715 **INHALATION TOXICITY OF GASOLINE & FUEL OXYGENATES: MICRONUCLEUS AND SISTER CHROMATID EXCHANGE TESTS.** *C. Schreiner*[1], *G. Hoffman*[2], C. Mason[2] and R. Gudi[3]. [1]API 211(b) Research Group, Washington, DC, [2]Huntingdon Life Sciences Inc., East Millstone, NJ and [3]BioReliance, Rockville, MD.

#716 **INHALATION TOXICITY OF GASOLINE & FUEL OXYGENATE: IMMUNOTOXICITY.** *K. L. White*[1], V. L. Peachee[1], S. R. Armstrong[2] and *L. E. Twerdok*[2]. [1]ImmunoTox, Inc., Richmond, VA and [2]API 211(b) Research Group, Washington, DC.

#717 **BIOCHEMICAL CHANGES IN RESPIRATORY TISSUES OF RATS EXPOSED TO ETHYL TERT-BUTYL ETHER.** K. M. Broadwell and *R. Schatz*. Northeastern University, Boston, MA.

Tuesday Morning, March 23
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: RISK ASSESSMENT I

Chairperson(s): *Rosalind Schoof, Integral Consulting, Inc., Bellevue, WA and George Alexeeff, CAL/EPA, Oakland, CA.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 11:00 AM–12:30 PM*

#718 **CATEGORIZING SIGNS AND SYMPTOMS FOR EMERGENCY RESPONSE PLANNING LEVELS.** *G. V. Alexeeff* and W. D. Wang. OEHHA, Cal/EPA, Oakland, CA.

#719 **ACUTE EXPOSURE GUIDELINE LEVELS (AEGLS) FOR THREE ALIPHATIC AMINES: ALLYLAMINE (AA), CYCLOHEXYLAMINE (CYC), AND ETHYLENEDIAMINE (EDA).** *S. Milanez*[1], *L. Koller*[2], M. McClanahan[3], D. Krewski[4] and K. Bakshi[5]. [1]Oak Ridge National Laboratory, Oak Ridge, TN, [2]Loren Koller & Associates, Corvallis, OR, [3]Centers for Disease Control and Prevention, Doraville, GA, [4]University of Ottawa, Ottawa, ON, Canada and [5]National Research Council, Washington, DC.

#720 **ACUTE EXPOSURE GUIDELINE LEVELS (AEGLS) FOR URANIUM HEXAFLUORIDE.** C. Bast[1], *G. Rusch*[2], D. Krewski[3] and *K. Bakshi*[4]. [1]Oak Ridge National Laboratory, Oak Ridge, TN, [2]Honeywell, Morristown, NJ, [3]University of Ottawa, Ottawa, ON, Canada and [4]National Research Council, Washington, DC.

#721 **ACUTE EXPOSURE GUIDELINE LEVELS (AEGLS) FOR HYDROGEN CHLORIDE.** *R. Young*[1], C. Bast[1], J. Hinz[2], D. Krewski[3] and *K. Bakshi*[4]. [1]Oak Ridge National Laboratory, Oak Ridge, TN, [2]USAF, Brooks AFB, TX, [3]University Ottawa, Ottawa, ON, Canada and [4]National Research Council, Washington DC, DC.

#722 **ACUTE EXPOSURE GUIDELINE LEVELS (AEGLS) FOR HYDROGEN FLUORIDE.** S. Talmage[1], L. Gephart[2], D. Krewski[3] and *K. Bakshi*[4]. [1]Oak Ridge National Laboratory, Oak Ridge, TN, [2]Exxonmobil Biomedical Sciences, Inc., Annandale, NJ, [3]University of Ottawa, Ottawa, ON, Canada and [4]National Research Council, Washington, DC.

#723 **ACUTE EXPOSURE GUIDELINE LEVELS (AEGLS) FOR TOLUENE DIISOCYANATE.** *C. S. Wood*[1], *S. J. Barbee*[2], D. Krewski[3] and *K. Bakshi*[4]. [1]Oak Ridge Nat. Lab., Oak Ridge, TN, [2]Arch Chemicals Inc., Norwalk, CT, [3]University of Ottawa, Ottawa, ON, Canada and [4]National Research Council, Washington, DC.

#724 **ACUTE EXPOSURE GUIDELINE LEVELS (AEGLS) FOR ETHYLENIMINE (EI) AND PROPYLENIMINE (PI).** J. H. Moyer[1], *K. A. Davidson*[1], M. A. McClanahan[2], D. Krewski[2] and *K. S. Bakshi*[4]. [1]Oak Ridge National Laboratory, Oak Ridge, TN, [2]CDC (retired), Atlanta, GA, [3]University of Ottawa, Ottawa, ON, Canada and [4]National Res. Council, Washington, DC.

#725 **INTERIM ACUTE EXPOSURE GUIDELINE LEVELS (AEGLS) FOR ETHYLENE OXIDE.** *K. A. Davidson*[1] and K. Blackman[2]. [1]Life Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN and [2]FEMA, Washington, DC.

#726 **INTERIM INDOOR HEALTH GUIDANCE LEVEL FOR FORMALDEHYDE.** *R. Lam*, R. J. Blaisdell and *M. A. Marty*. CalEPA/OEHHA, State of California, Oakland, CA.

#727 **UPDATING USEPA'S AMBIENT WATER QUALITY CRITERIA FOR ARSENIC (AS): TOXICITY AND BIOACCUMULATION.** *T. R. Henry*[1], T. Linton[2], W. Clement[2], D. McIntyre[2] and *C. Abernathy*[1]. [1]Office of Water, USEPA, Washington, DC and [2]Great Lakes Environmental Center, Columbus, OH.

#728 **ARSENIC SPECIATION AND BIOACCUMULATION STUDIES SUPPORT HIGHER AMBIENT WATER QUALITY CRITERION (AWQC).** *R. A. Schoof*[1], L. Williams[1] and J. W. Yager[2]. [1]Integral Consulting, Inc., Bellevue, WA and [2]Electric Power Research Institute, Palo Alto, CA.

#729 **ESTIMATING A RELATIVE SOURCE CONTRIBUTION FOR DRINKING WATER IN ARSENIC (AS) RISK ASSESSMENTS.** I. S. Dooley[1], *C. O. Abernathy*[1], M. Devitt[2] and A. Kotros[2]. [1]Environmental Protection Agency, Washington, DC and [2]The Cadmus Group, Watertown, MA.

#730 **RISK ASSESSMENT FOR CHEMICALS IN DRINKING WATER: ESTIMATION OF RELATIVE SOURCE CONTRIBUTION.** *R. A. Howd*, J. P. Brown and *A. M. Fan*. Office of Environmental Health Hazard Assessment, Cal/EPA, Oakland, CA.

#731 **INTERACTION PROFILE FOR CHEMICALS IN RURAL WELL WATER.** J. Colman[1] and H. Pohl[2]. [1]Syracuse Research Corp., Syracuse, NY and [2]ATSDR, Atlanta, GA. Sponsor: *P. McGinnis*.

#732 **REGULATORY DETERMINATION FOR HEXACHLOROBUTADIENE IN DRINKING WATER.** *D. Wong* and *J. Du*. USEPA, Washington, DC.

#733 **DERIVATION OF A DRINKING WATER ACTION LEVEL FOR 2-MERCAPTOBENZOTHIAZOLE.** *A. Gebhart*[1], *M. H. Whittaker*[2] and F. Hammer[1]. [1]Water Program, Underwriters Laboratories, Northbrook, IL and [2]ToxServices, Washington, DC.

#734 **HUMAN HEALTH RISK ASSESSMENT OF FURFURAL TO DETERMINE DRINKING WATER ACTION LEVELS.** A. Ewing[1], A. Phelka[2], G. Ball[3] and C. McLellan[4]. [1]NSF International, Ann Arbor, MI, [2]NSF International, Ann Arbor, MI, [3]NSF International, Ann Arbor, MI and [4]NSF International, Ann Arbor, MI. Sponsor: *M. Dourson*.

#735 **HUMAN HEALTH RISK ASSESSMENT FOR *p*-CHLORO-*m*-CRESOL TO DETERMINE DRINKING WATER ACTION LEVELS.** J. Durham, V. S. Bhat, G. L. Ball and C. J. Mclellan. Toxicology Services, NSF International, Ann Arbor, MI. Sponsor: *M. Dourson*.

#736 **RISK ASSESSMENT FOR DRINKING WATER CONTAMINANTS: ASBESTOS, BARIUM, BERYLLIUM, CHLOROBENZENE, 1, 1-DICHLOROETHANE, DIETHYLHEXYLADIPATE, ETHYLENE DIBROMIDE, HEXACHLOROBENZENE, SILVEX, 1, 1, 2, 2-TETRACHLOROETHANE AND TOXAPHENE.** *A. M. Fan*, *R. A. Howd*, *G. Alexeeff*, M. Sullivan, T. Parker, *J. Avalos*, P. Painter, D. Ting, N. Butler, C. Vidair and *L. Jowa*. Office of Environmental Health Hazard Assessment, California Environmental Protection Agency, Oakland/Sacramento, CA.

#737 **HEALTH RISKS TO FETUSES, INFANTS AND CHILDREN (PROPOSED STAGE 2 DISINFECTANT/ DISINFECTION BYPRODUCTS): A REVIEW.** *Q. Zhao*[1], N. Chiu[2], *J. Du*[2], A. Bathija[2], J. Donohue[2] and *D. Wong*[2]. [1]TERA, Cincinnati, OH and [2]USEPA, Washington, DC.

#738 **DERIVATION OF A LITRE-EQUIVALENT MODIFYING FACTOR TO ACCOUNT FOR MULTIROUTE EXPOSURES IN SETTING DRINKING WATER GOALS FOR TRIHALOMETHANES (THMS).** *K. Krishnan*[1] and R. Carrier[2]. [1]Occupational and Environmental Health, Universite de Montreal, Montreal, QC, Canada and [2]Water Quality and Health Bureau, Health Canada, Ottawa, ON, Canada.

#739 **HUMAN HEALTH RISK ASSESSMENT FOR ENVIRONMENTAL RESIDUES OF ATOMOXETINE.** *J. P. Bercu*, J. M. Fiori and R. D. Meyerhoff. Toxicology and Drug Disposition, Eli Lilly and Company, Greenfield, IN.

#740 **EVALUATION OF NONCANCER HEALTH RISK ASSOCIATED WITH EXPOSURE TO CHEMICAL MIXTURES IN FISH.** S. J. Baird[1] and T. S. Bridges[2]. [1]Menzie-Cura & Assoc., Inc., Winchester, MA and [2]US Army Engineer Research and Development Center, Vicksburg, MS. Sponsor: *L. Hicks*.

#741 **FACTORS AFFECTING EXPOSURE AND RISK TO DOMOIC AID VIA SHELLFISH CONSUMPTION FOR HIGH RISK POPULATIONS.** *N. L. Judd*[1, 2], W. C. Griffith[1, 2] and *E. M. Faustman*[1, 2]. [1]Environmental Health, University Washington, Seattle, WA and [2]Institute for Risk Analysis and Risk Communication, Seattle, WA.

#742 **BIOACCESSIBILITY TESTING OF PAH CONTAMINATED SOIL AND ITS APPLICATION IN HUMAN HEALTH RISK ASSESSMENT.** *M. J. Chappel*[1], B. Birmingham[1], B. Gizyn[1], B. Leece[3], University. Klee[3], J. Bestari[2] and K. Solomon[2]. [1]Standards Development Branch, Ontario Ministry of the Environment, Toronto, ON, Canada, [2]CNTC, University of Guelph, Guelph, ON, Canada and [3]Risk Assessment, Dillon, Cambridge, ON, Canada.

#743 **MODELING RISKS FROM INTERMITTENT EXPOSURES TO LEAD: EFFECT OF EXPOSURE MODEL AVERAGING TIME.** M. H. Follansbee[1], R. M. Lorenzana[2], R. Troast[3], J. M. Klotzbach[4] and *G. L. Diamond*[1]. [1]Environmental Science Center, Syracuse Research Corp., Syracuse, NY, [2]R10, USEPA, Seattle, WA, [3]OSRTI, USEPA, Washington, DC and [4]Syracuse Environmental Research Associates, Syracuse, NY.

#744 **LEAD AND COPPER AT MILITARY SMALL ARMS RANGES; EVALUATION, RISK ASSESSMENT, AND BIOAVAILABILITY ISSUES.** D. Bannon[1] and B. R. DeShields[2]. [1]Center for Health Promotion and Preventive Medicine, US Army, APG, Aberdeen, MD and [2]Blasland, Bouck, and Lee, Inc., Engineers and Scientists, San Rafael, CA. Sponsor: *G. Reddy*.

#745 **EFFECTS OF LEAD BIOAVAILABILITY ON OUTCOME OF ADULT AND CHILD BIOKINETIC MODELS.** *I. S. Chaudhuri* and M. Garcia. Risk Assessment, ENSR International, Westford, MA.

#746 **PEDIATRIC BIOAVAILABILITY OF LEAD IN SOIL AND DUST: ESTIMATES FROM SOIL, HOUSE DUST, AND BLOOD AT THE BUNKER HILL SUPERFUND SITE.** *M. L. Stifelman*[1], S. Spalinger[2] and I. H. von Lindern[2]. [1]Region X, Office of Environmental Assessment, USEPA, Seattle, WA and [2]TerraGraphics, Inc., Moscow, ID.

#747 **ASSESSMENT OF METALS EXPOSURE ASSOCIATED WITH SUBSISTENCE USE OF CARIBOU COLLECTED NEAR A MINING TRANSPORT ROAD IN NORTHWEST ALASKA.** *M. R. Garry*[1, 2], *L. J. Yost*[2], S. S. Shock[2] and W. J. Shields[2]. [1]University of Washington, Seattle, WA and [2]Exponent, Bellevue, WA.

#748 **RELATIVE BIOAVAILABILITY OF ARSENIC FROM SOIL AFFECTED BY CCA-TREATED WOOD AND DISLODGEABLE ARSENIC FROM CCA-TREATED WOOD COLLECTED FROM RESIDENTIAL STRUCTURES.** *S. W. Casteel*, *T. J. Evans*, M. A. Miller and S. E. Turnquists. Veterinary Medical Diagnostic Laboratory, University of Missouri, Columbia, MO.

#749 **DEVELOPMENT OF A RISK ASSESSMENT TO EVALUATE HUMAN HEALTH RISKS FROM EXPOSURE TO TEBUCONAZOLE USED AS A WOOD PRESERVATIVE.** *B. K. Shipp*[1], E. M. Dube[1], *B. D. Beck*[1], *M. R. Seeley*[1], K. A. Radloff[1], S. Schettler[1] and C. Petito Boyce[2]. [1]Gradient Corporation, Cambridge, MA and [2]Gradient Corporation, Seattle, WA.

#750 **PROBABILISTIC CANCER RISK ASSESSMENT OF WORKERS EXPOSED TO CREOSOTE DURING PRESSURE TREATMENT OF WOOD.** T. Long[1], C. R. Kirman[1], *J. Butala*[3] and *R. Tardiff*[2]. [1]The Sapphire Group, Beachwood, OH, [2]The Sapphire Group, Bethesda, MD and [3]Toxicology Consultants, Gibsonia, PA.

#751 **GEOSPATIAL ANALYSIS OF THE EFFECTIVENESS OF THE RESIDENTIAL DUST CLEANUP PROGRAM IN LOWER MANHATTAN FOLLOWING THE ATTACK ON THE WORLD TRADE CENTER.** *M. Maddaloni*[1], C. Nace[1], W. Thayer[2], E. Gabriel[2], M. Ramsey[2], B. Allen[2], P. Goodrum[2] and *G. Diamond*[2]. [1]Region 2, USEPA, New York and [2]Environmental Science Center, Syracuse Research Corporation, Syracuse, NY.

#752 **REENTRY CRITERIA FOR DIOXIN AND DIOXIN-LIKE COMPOUNDS FOR BUILDING SURFACES.** *J. Greene*[1], G. Brorby[1] and *D. Paustenbach*[2]. [1]Exponent, Oakland, CA and [2]ChemRisk, San Francisco, CA.

Tuesday Morning, March 23
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: TOXICITY OF METALS

Chairperson(s): *Robert Rice, University of California, Davis, Davis, CA and Teresa Fortoul, Universidad Nacional autonoma de Mexico, Mexico.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 9:30 AM–11:00 AM*

#753 **MALIGNANT TRANSFORMATION OF HUMAN UROTHELIAL CELLS BY ARSENITE AND CADMIUM.** *S. Somji*[1], V. Gurel[1], S. Park[1], M. Sens[1], *S. H. Garrett*[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.

#754 **ARSENIC TOXICITY IN HUMAN KERATINOCYTES.** M. A. Ngo, T. J. Patterson and *R. H. Rice*. Environmental Toxicology, University of California, Davis, CA.

#755 **CYTOTOXICITY OF METALS ON CULTURED MORTAL AND IMMORTAL HUMAN MAMMARY CELLS.** C. M. Schmidt, M. B. Anderson and *F. A. Barile*. Pharmaceutical Sciences, St. John's University College of Pharmacy, Jamaica, NY.

#756 **SODIUM CHROMATE AND CADMIUM CHLORIDE TOXICITY IN STELLER SEA LION CELLS.** *C. Goertz*[1], *S. Wise*[1], L. Dunn[3], F. Gulland[4], A. Morin[1], N. Jayasundara[1], M. Bozza[2], S. Atkinson[2] and *J. P. Wise*[1]. [1]Wise Laboratory of Environmental and Genetic Toxicology, Center for Integrated and Applied Environmental Toxicology, University of Southern Maine, Portland, ME, [2]Alaska Sea Life Center, Seward, AK, [3]Mystic Aquarium, Mystic, CT and [4]The Marine Mammal Center, Sausalito, CA.

#757 **METAL TOXICITY OF SODIUM CHROMATE IN STELLER SEA LION BRONCHUS AND DERMIS COMPARED TO HUMANS.** A. Morin[1], *C. Goertz*[1], *S. Wise*[1], L. Dunn[3], F. Gulland[4], N. Jayasundara[1], M. Bozza[2], S. Atkinson[2] and *J. P. Wise*[1]. [1]Wise Laboratory of Environmental and Genetic Toxicology, Center for Integrated and Applied Environmental Toxicology, University of Southern Maine, Portland, ME, [2]Alaska Sea Life Center, Seward, AK, [3]Mystic Aquarium, Mystic, CT and [4]The Marine Mammal Center, Sausalito, CA.

#758 **CYTOTOXICITY OF ORGANO-TIN COMPOUNDS IN DIFFERENT CULTURED CELL LINES.** *C. Siegers*[2], A. Hoth[2], S. Syed Ali[2] and J. B. Schulze[1]. [1]Office of the Dean, Frankfurt/Main, Germany and [2]Inst. Exp. Clin. Pharmacology Toxicol., Frankfurt/Main, Germany.

#759 **COMPARATIVE CHROMIUM TOXICITY IN CULTURED BOWHEAD WHALE AND HUMAN LUNG CELLS.** *S. S. Wise*[1], A. Holmes[1], M. Thompson[1], B. Smith[1], T. O'Hara[2] and *J. P. Wise*[1]. [1]Wise Laboratory of Environmental and Genetic Toxicology, University of Southern Maine, Portland, ME and [2]North Slope Borough Department of Wildlife Management, Barrow, AK.

#760 **LEAD CHROMATE-INDUCED CYTOTOXICITY IN HUMAN BRONCHIAL CELLS IS MEDIATED BY EXTRACELLULAR CHROMIUM.** A. Holmes[1], N. Gordon[2] and *J. P. Wise*[1]. [1]Wise Laboratory of Environmental and Genetic Toxicology, Center for Integrated and Applied Environmental Toxicology, University of Southern Maine, Portland, ME and [2]Department of Chemistry, University of Southern Maine, Portland, ME.

#761 **BRONCHIOLAR EPITHELIUM CHANGES AFTER PB, CD OR ITS MIXTURE INHALATION.** *T. I. FORTOUL*[1], *L. Saldivar*[3], G. Espejel[3], L. Colin-Barenque[2], A. Zepeda[1], F. Pasos[1] and *M. Avila-Costa*[2]. [1]Biologia Celular Y Tisular, Universidad Nacional Autonoma De Mexico, Mexico City, Mexico, [2]Fes Iztacala, Universidad Nacional Autonoma De Mexico, Tlalnepantla, Mexico and [3]Facultad De Quimica, Universidad Nacional Autonoma De Mexico, Mexico, Mexico.

#762 **THROMBOCYTOSIS INDUCED IN MICE AFTER ACUTE AND SUBACUTE V205 INHALATION.** A. Gonzalez-Villalva[1], I. Lopez[1], I. Sanchez[1], L. Colin-Barenque[3], S. Acevedo-Nava[1], P. Bizarro[1], G. Nino-Cabrera[1], E. Tovar-Sanchez[4], P. Mussali-Galante[1], *M. Avila-Costa*[3] and *T. I. Fortoul*[1]. [1]Biologica Celulary Tisular, Uiniversidad Nacional Autonoma de Mexico, Mexico City, Mexico, [2]Facultad de Medicina, Universidad Nacional Autonoma de Mexico, Mexico City, Mexico, [3]Fes Iztacala, Universidad Nacional Autonoma de Mexico, Tlalnepantla, Mexico and [4]Instituto de Ecologia, Universidad Nacional Autonoma de Mexico, Morelia Mich, Mexico.

#763 **UPREGULATION OF CELLULAR THIOLS BUT DOWNREGULATION OF LYSYL OXIDASE IN LONG TERM CADMIUM (CD) EXPOSED LUNG FIBROBLASTS.** Y. Zhao[1], *I. Chou*[1], P. Toselli[2], P. Stone[2], H. Kagan[2] and W. Li[2]. [1]Microbiology, Boston University School of Medicine, Boston, MA and [2]Biochemistry, Boston University School of Medicine, Boston, MA.

#764 **MORPHOLOGICAL CHANGES IN TESTES. AFTER MANGANESE INHALATION. STUDY IN MICE.** P. Bizarro[1], I. Sanchez[1], I. Lopez[1], F. Pasos[1], V. Delgado[1], A. Gonzalez-Villalva[1], L. Colin-Barenque[2], S. Acevedo[1], G. Nino-Cabbera[1], P. Mussali-Galante[1], *M. Avila-Costa*[2] and *T. I. Fortoul*[1]. [1]Biologica Celulary Tisular, Universidad Nacional Autonoma de Mexico, Mexico City, Mexico and [2]Neuroviencias, Fes Iztacala Unam, Tlalnepantla, Mexico.

#765 **ADVERSE EFFECT OF COPPER TOXICITY ON SOME BLOOD PICTURE AND CELLULAR CONSTITUENTS OF A TELEOST.** A. Panigrahi, A. K. Dasmahapatra and A. K. Medda. Department of Physiology, Basirhat College, West Bengal, India. Sponsor: *M. Ehrich*.

#766 **A JUVENILE SWINE MODEL FOR COPPER OVERLOAD.** *T. J. Evans*[1], *S. W. Casteel*[1] and K. V. Katti[2]. [1]Veterinary Medical Diagnostic Laboratory, University of Missouri, Columbia, MO and [2]Radiopharmaceutical Sciences Institute, University of Missouri, Columbia, MO.

Tuesday Morning, March 23
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: SAFETY EVALUATION I

Chairperson(s): *Daniel Ness, Eli Lilly & Company, Greenfield, IN and Eugenia Theophilus, R. J. Reynolds Tobacco Company, Winston Salem, NC.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 11:00 AM–12:30 PM*

#767 **TOXICOLOGICAL EVALUATION OF EXPANDED SHREDDED TOBACCO STEMS.** *E. H. Theophilus*, D. R. Meckley, M. A. Higuchi, B. R. Bombick, M. F. Borgerding, *P. H. Ayres*, *D. H. Pence* and *J. E. Swauger*. R&D, R. J. Reynolds Tobacco Company, Winston-Salem, NC.

#768 **TOXICOLOGICAL EVALUATION OF PROPANE EXPANDED TOBACCO.** *J. E. Swauger*, *E. H. Theophilus*, B. R. Bombick, D. R. Meckley, M. A. Higuchi, M. F. Borgerding, M. J. Morton and *P. H. Ayres*. R&D, R. J. Reynolds Tobacco Company, Winston-Salem, NC.

#769 **TESTING INGREDIENTS ADDED TO CIGARETTES.** *D. M. Byrd*, M. C. Falk, R. S. Feldman, K. D. Lewis, P. Nixon and N. P. Royaee. Life Sciences Research Office, Bethesda, MD.

#770 **EFFECT OF 4-DAY FOOD RESTRICTION AND CORN OIL STIMULATION ON SERUM ALKALINE PHOSPHATASE ACTIVITY IN THE FISCHER 344 RAT.** *D. K. Ness*, J. M. Sullivan and W. P. Hoffman. Eli Lilly and Company, Greenfield, IN.

#771 **TOXICITY EVALUATION OF A FLUORINATED NORBORNENE COMPOUND.** *M. DeLorme*[1], *G. S. Ladics*[1], M. Donner[1], V. O. Wagner[2], C. Finlay[1] and *S. E. Loveless*[1]. [1]DuPont Haskell Laboratory, Newark, DE and [2]BioReliance, Rockville, MD.

#772 **SAFETY OF TINOSORB® S, A NEW ORGANIC SUNSCREEN FOR BROAD SPECTRUM UV PROTECTION.** J. R. Plautz[2] and *W. F. Salminen*[1]. [1]Product Safety and Regulatory, Ciba Specialty Chemicals Corporation, High Point, NC and [2]PSR, Ciba Specialty Chemicals, Basel, Switzerland.

#773 **PHYSIOLOGICAL PARAMETERS AND BACKGROUND HISTOPATHOLOGY FINDINGS FROM CHRONIC (2 YEAR) CARCINOGENICITY STUDIES IN THE HAN WISTAR RAT.** C. Barton and C. Springall. Covance Laboratories Ltd., Harrogate, United Kingdom. Sponsor: *D. Everett*.

#774 **TOXICOLOGICAL EVALUATION OF LEACHABLES AND EXTRACTABLES IN INHALATION DRUG PRODUCTS: RISK ASSESSMENT OF DI(2-ETHYLHEXYL)PHTHALATE (DEHP).** *L. A. Haighton*[1], K. L. Bibeau[1], *N. N. Kim*[2] and *J. M. Daniels*[1]. [1]CANTOX HEALTH SCIENCES INTERNATIONAL, Mississauga, ON, ON, Canada and [2]Sepracor Inc., Marlborough, MA.

#775 **DIETARY INCLUSION OF NOVASIL: SUBCHRONIC TOXICITY EVALUATION IN SPRAGUE-DAWLEY RATS.** E. Afriyie-Gyawu[1], J. Mackie[2], B. Dash[1], M. Wiles[1], *H. J. Huebner*[1], K. E. Lee[3] and *T. D. Phillips*[1]. [1]Faculty of Toxicology (VAPH), Texas A&M University (TAMU), College Station, TX, [2]Veterinary Pathobiology, TAMU, College Station, TX and [3]Statistics, TAMU, College Station, TX.

#776 **QUANTITATIVE CELL CYCLE INFORMATION COMPARED TO CYTOCHALASIN B BLOCKAGE IN CELL LINE MICRONUCLEUS ASSAYS.** E. Luther and M. Lee. Strategic Research Development, CompuCyte Corp., Cambridge, MA. Sponsor: *S. Zhao*.

#777 **SAFETY OF GLYCOLIC ACID IN CLEANING PRODUCTS.** *A. W. Hayes*[1] and *J. C. Stadler*[2]. [1]Department of Environmental Health, Harvard School of Public Health, Boston, MA and [2]DuPont Haskell Laboratory, Newark, DE.

#778 **REPEATED DOSE ORAL TOXICITY OF 8-2 TELOMER B ALCOHOL RANGE-FINDING STUDY IN RATS.** *G. L. Kennedy*[1], *G. S. Ladics*[1], *J. O'Connor*[1], S. Gannon[1], R. Jung[2], H. Iwai[3] and S. Shinya[4]. [1]DuPont Haskell Laboratory, Newark, DE, [2]Clariant, GmbH, Sulzbach, Germany, [3]Daikin Industries, Ltd., , Osaka, Japan and [4]Asahi Glass Co., Ltd., , Tokyo, Japan.

#779 **A SUBCHRONIC TOXICITY STUDY IN RATS AND GENOTOXICITY TESTS WITH SURELEASE® AQUEOUS ETHYLCELLULOSE DISPERSION.** C. C. DeMerlis[1], D. R. Schoneker[1], *C. Kelly*[2] and *J. Borzelleca*[3]. [1]Colorcon, West Point, PA, [2]Huntingdon Life Sciences, East Millston, NJ and [3]Medical College of Virgina, Richmond, VA.

#780 **P450-GLO™LUMINESCENT ASSAYS DETECT CYP450 ACTIVITIES IN RECOMBINANT FRACTIONS, LIVER MICROSOMES AND CULTURED HEPATOCYTES.** J. J. Cali, S. Ho, D. Ma and *R. Bulleit*. Research and Development, Promega Corporation, Madison, WI.

#781 **EVALUATION OF THE SUBCHRONIC, REPRODUCTIVE, AND DEVELOPMENTAL TOXICITY OF A FLUORINATED ACRYLIC COPOLYMER.** N. E. Everds, *J. C. Stadler*, *S. A. MacKenzie*, *L. A. Malley*, S. M. Munley and G. P. Sykes. DuPont Haskell Laboratory, Newark, DE.

Tuesday Morning, March 23
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: NATURAL PRODUCTS

Chairperson(s): *David Shepherd, CEHS, Missoula, MT and Supratim Choudhuri, USFDA, College Park, MD.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 9:30 AM–11:00 AM*

#782 **DOSE RANGE-FINDING STUDY OF HALOFUGINONE (NSC-713205) IN BEAGLE DOGS.** K. Veley[1], B. Sparrow[1], J. W. Merrill[1], I. M. Grossi[1], *J. Tomaszewski*[2] and J. O. Peggins[2]. [1]Toxicology, Battelle, Columbus, OH and [2]NCI, NIH, Bethesda, MD.

#783 **NOGATOXIN ISOLATED FROM NON-AXENIC CULTURES OF PFIESTERIA.** *D. Baden*[1], E. Noga[3], K. Rein[2], *J. Benson*[5], W. Abraham[4], R. Belas[6] and C. Tomas[1]. [1]UNCW, Wilmington, NC, [2]FIU, Miami, FL, [3]NCSU, Raleigh, NC, [4]Mt Sinai Medical Center, Miami, FL, [5]Lovelace Respiratory Research Institute, Albuquerque, NM and [6]UMd, Baltimore, MD.

#784 **UP-REGULATION OF CYCLOOXYGENASE-2 EXPRESSION BY GELATIN IN MURINE MACROPHAGES.** J. Kim[1, 2] and *H. Jeong*[1, 2]. [1]Pharmacy, Chosun University, Kwangju, South Korea and [2]Research Center for Proteineous Materials, Chosun University, Kwangju, South Korea.

#785 **INDUCTION OF INDUCIBLE NITRIC OXIDE SYNTHASE AND TUMOR NECROSIS FACTOR-A EXPRESSION BY GELATIN VIA NUCLEAR FACTOR-KB TRANSACTIVATION IN MACROPHAGES.** D. Oh[1, 2], J. Kim[1, 2] and *H. Jeong*[1, 2]. [1]Pharmacy, Chosun University, Kwangju, South Korea and [2]Research Center for Proteineous Materials, Chosun University, Kwangju, South Korea.

#786 **GROWTH INHIBITION AND INDUCTION OF APOPTOSIS BY DIHYDRO-N-CAFFEOYLTYRAMINE ON HUMAN LEUKEMIA CELLS.** E. Woo[2, 3], C. Choi[1] and *H. Jeong*[2, 3]. [1]Food Science, Jinju International University, Jinju, South Korea, [2]Pharmacy, Chosun University, Kwangju, South Korea and [3]Research Center for Proteineous Materials, Chosun University, Kwangju, South Korea.

#787 **PLATYCODON GRANDIFLORUM SUPPRESSED PDGF-DRIVEN PROLIFERATION AND COLLAGEN SYNTHESIS IN HEPATIC STELLATE CELLS.** K. Jung[1, 2], K. Lee[1, 2], Y. Chung[3], C. Choi[3], S. Roh[4], Y. Cho[4] and *H. Jeong*[1, 2]. [1]Pharmacy, Chosun University, Kwangju, South Korea, [2]Research Center for Proteineous Materials, Chosun University, Kwangju, South Korea, [3]Food Science, Chinju International University, Jinju, South Korea and [4]R&D, Jangsaeng Doraji Co., Ltd., , Jinju, South Korea.

#788 **MATRIX METALLOPROTEINASE GENE EXPRESSION IN RAT MICROGLIA EXPOSED TO THE MARINE TOXIN DOMOIC ACID.** A. M. Mayer[1], M. J. Fay[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*.

#789 **14-DAY AND 90-DAY MELATONIN TOXICITY STUDIES IN FISCHER 344(F344) AND LONG-EVANS(LE) RATS.** *D. Gerken*[1], M. Ryan[1], *M. Hejtmancik*[1], A. Wiechmann[3], *G. Boorman*[2], M. Vallant[2], J. Roberts[4] and *R. Chhabra*[2]. [1]Battelle Science and Technology, Inc., Columbus, OH, [2]NIEHS, Research Triangle Park, NC, [3]University of Oklahoma Health Sciences Center, Oklahoma City, OK and [4]Fordham University, New York.

#790 **CYTOTOXIC AND APOPTOSIS-INDUCING PROPERTIES OF *GUAIACUM SANCTUM L.* (ZYGOPHYLLACCEAE) ON BREAST CANCER CELL LINES.** *K. J. Chavez*[1], I. Delgado[3], M. T. Laux[2], J. A. Flanders[2] and E. Rodriguez[3]. [1]Institute for Comparative and Environmental Toxicology, Cornell University, Ithaca, NY, [2]Department of Clinical Sciences and Molecular Medicine, Cornell University, Ithaca, NY and [3]Department of Plant Biology, Cornell University, Ithaca, NY.

#791 **THE USE OF ELISA IN DIFFERENTIAL DIAGNOSIS OF THE GENUS TRIMERESURUS SNAKE BITES IN TAIWAN.** D. Hung[1] and M. Liau[2]. [1]Toxicology Center, Taichung Veterans General Hospital, Taichung City, Taiwan and [2]Department of Biotechnology, Fooyin University, Kaohsiung Hsien, Taiwan. Sponsor: *S. Lin-Shiau*.

#792 **TOXICITY EVALUATION OF KAVA KAVA EXTRACT IN FISHER 344 RATS AND B6C3F$_1$ MICE FOLLOWING REPEAT DOSING BY ORAL GAVAGE.** B. Sparrow[1], *M. Hejtmancik*[1], M. Ryan[1], A. Skowronek[1], P. Chan[2] and D. Orzech[2]. [1]Battelle, Columbus, OH and [2]NIEHS, Research Triangle Park, NC.

#793 **USE OF THE AFRICAN GREEN MONKEY (CHLOROCEBUS AETHIOPS) MODEL TO DETERMINE PATHOPHYSIOLOGICAL RESPONSES TO INHALED RICIN TOXIN AND EFFICACY OF RICIN VACCINES.** *R. W. Wannemacher*, R. Dinterman, J. Hewetson, M. Pitt, R. Tammariello, R. Rietcheck, C. Klages and C. Millard. USAMRIID, Frederick, MD.

#794 **DOWN-REGULATION OF CYCLOOXYGENASE-2 EXPRESSION BY CAFFEOYL-4-DIHYDROCAFFEOYL QUINIC ACID IN MACROPHAGES.** Y. Chung[1], C. Choi[1] and *H. Jeong*[2, 3]. [1]Food Science, Jinju International University, Jinju, South Korea, [2]Pharmacy, Chosun University, Kwangju, South Korea and [3]Research Center for Proteineous Materials, Chosun University, Kwangju, South Korea.

#795 **SUPPRESSION OF LIPOPOLYSACCHARIDE-ACTIVATED CYCLOOXYGENASE-2 EXPRESSION BY DIHYDRO-N-CAFFEOYLTYRAMINE IN MURINE MACROPHAGE RAW 264.7 CELLS.** H. Kim[1, 3], J. Kim[1, 3], C. Choi[2], K. Jung[1, 3], E. Woo[1, 3], S. Han[1, 3] and *H. Jeong*[1, 3]. [1]Pharmacy, Chosun University, Kwangju, South Korea, [2]Food Science, Jinju International University, Jinju, South Korea and [3]Research Center for Proteineous Materials, Chosun University, Kwangju, South Korea.

#796 **AN AQUEOUS EXTRACT ISOLATED FROM PLATYCODON GRANDIFLORUM SUPPRESSED IN B16F10 MELANOMA CELL METASTASIS.** K. Lee[1, 2] and *H. Jeong*[1, 2]. [1]Pharmacy, Chosun University, Kwangju, South Korea and [2]Research Center for Proteineous Materials, Chosun University, Kwangju, South Korea.

#797 **PLATYCODON GRANDIFLORUM SUPPRESSED INVASION AND ANGIOGENESIS.** D. Shin[1, 2], K. Lee[1, 2] and *H. Jeong*[1, 2]. [1]Pharmacy, Chosun University, Kwangju, South Korea and [2]Research Center for Proteineous Materials, Chosun University, Kwangju, South Korea.

#798 **PROTECTIVE EFFECT OF PLATYCODON GRANDIFLORUM ON THE ACETALDEHYDE-INDUCED ACTIVATION OF HEPATIC STELLATE CELLS.** *H. Jeong*[1, 2] and K. Lee[1, 2]. [1]Pharmacy, Chosun University, Kwangju, South Korea and [2]Research Center for Proteineous Materials, Chosun University, Kwangju, South Korea.

#799 **STUDY OF THE MUTAGENIC ACTIVITY OF *LUPINUS termis* ALCOHOLIC EXTRACT IN *SALMONELLA typhimurium* STRAINS.** M. R. Santiago[1], M. D. Antoun[2] and *D. Herreno-Saenz*[1]. [1]Pharmacology and Toxicology, School of Medicine, University of Puerto Rico, San Juan, Puerto Rico and [2]School of Pharmacy, University of Puerto Rico, San Juan, Puerto Rico.

#800 **MALDI-TOF/MS IN THE CHARACTERIZATION OF NUTRACEUTICALS.** J. R. Guthrie[1], H. A. Weber[1], D. E. Gray[1], R. K. Harris[1], A. P. Clark[1], J. W. Algaier[1] and *C. S. Smith*[2]. [1]Midwest Research Institute, Kansas City, MO and [2]NIEHS, Research Triangle Park, NC.

#801 **CHEMICAL CHARACTERIZATION OF *GINKGO BILOBA* EXTRACT.** J. E. McClintock[1], H. A. Weber[1], M. D. Armstrong[1], B. M. O'Brien[1], D. Logan[1], R. A. Swaney[1], J. R. Guthrie[1], R. K. Harris[1], A. P. Clark[1], J. W. Algaier[1] and *C. S. Smith*[2]. [1]Midwest Research Institute, Kansas City, MO and [2]NIEHS, Research Triangle Park, NC.

#802 **NEUROPROTECTION BY *GINKGO BILOBA* EXTRACT EGB761.** *J. T. Kern*, *A. D. Kraft* and *J. A. Johnson*. Department of Pharmaceutical Sciences, University of Wisconsin-Madison, Madison, WI.

#803 **THE BRAIN HOMEOSTASIS IS AFFECTED BY INTRACEREBRAL BUT NOT SUBCUTANEOUS INFUSION WITH FUMONISIN B_1 IN BALB/C MICE.** *M. F. Osuchowski* and *R. P. Sharma*. Physiology and Pharmacology, The University of Georgia, Athens, GA.

#804 **CHEMICAL CHARACTERIZATION OF POWDERED KAVA KAVA EXTRACT.** H. A. Weber[1], A. E. Hodges[1], S. M. Barnes[1], L. A. Moody[1], R. A. Swaney[1], J. R. Guthrie[1], R. K. Harris[1], A. P. Clark[1], J. W. Algaier[1] and *C. S. Smith*[2]. [1]Midwest Research Institute, Kansas City, MO and [2]NIEHS, Research Triangle Park, NC.

#805 **POLYSACCHARIDE ISOLATED FROM PORIA COCOS SCLEROTIUM INDUCES INOS EXPRESSION THROUGH THE ACTIVATION OF NF-KB/REL IN MURINE MACROPHAGES.** Y. J. Jeon. Pharmacology, Chosun University, Kwangju, South Korea. Sponsor: *H. Kim*.

#806 **SYNERGISTIC EFFECTS OF OCHRATOXIN A AND FUMONISIN B1 IN C6 GLIOMA CELLS: CYTOTOXICITY AND DNA SYNTHESIS INHIBITION.** *E. E. CREPPY*[1], M. CARRATU[2], P. CHIARAPPA[2], I. BAUDRIMONT[1], P. BORRACCI[2], T. A. MOBIO[1] and S. M. MOUKHA[1]. [1]Toxicology, University Bordeaux 2, Bordeaux, France and [2]Pharmacology and Human Physiology, University of Bari, Medical School, Bari, Italy.

#807 **TOXIC BREVETOXIN COMPLEXES ARE IN AQUEOUS SOLUTIONS.** *A. J. bourdelais* and *D. G. Baden*. Center for Marine Science, University of North Carolina at Wilmington, Wilmington, NC.

#808 **THE EFFECTS OF (-)-HYDROXYCITRIC ACID EXTRACT AND FLUOXETINE ON RAT BRAIN CORTEX NEUROTRANSMITTERS AFTER 30, 60 AND 90 DAYS TREATMENT.** M. Shara[1], *S. J. Stohs*[1], *D. Bagchi*[1], *M. Bagchi*[3] and S. Ohia[2]. [1]Pharmacy Science, Creighton University, Omaha, NE, [2]Pharmacology, University of Houston, Houston, TX and [3]InterHealth USA, Benicia, CA.

#809 **EFFECTS OF KAVA KAVA EXTRACT ON HEPATIC PHASE I AND PHASE II DRUG METABOLIZING ENZYMES.** A. B. Cadwallader and *M. R. Franklin*. Pharmacology and Toxicology, University of Utah, Salt Lake City, UT.

#810 **KAVA EXTRACT MODULATES EXPRESSION OF DRUG-METABOLIZING ENZYMES AND TRANSPORTERS IN MICE AND HEPA-1 CELLS.** *M. Z. Dieter*, J. M. Maher, *A. L. Slitt* and *C. D. Klaassen*. University of Kansas Medical Center, Kansas City, KS.

#811 **IMMUNOMODULATORY EFFECTS OF NUTRACEUTICALS ON MOUSE PHAGOCYTIC CELLS.** S. Navarro[2, 1], A. Rhule[1], J. M. Wilham[2, 1], B. Seaver[1], J. R. Smith[1] and *D. M. Shepherd*[2, 1]. [1]Department of Biomedical & Pharmaceutical Sciences, University of Montana, Missoula, MT and [2]Center for Environmental Health Sciences, University of Montana, Missoula, MT.

#812 **HISTOPATHOLOGICAL CHANGES OCCURRING IN THE ORGANS OF RATS FOLLOWING SUBCHRONIC TOXICITY OF ZEARALENONE.** R. M. kadry, M. Abdel-Wahab and N. A. El-Danaf. Animal Reproduction Research Institute, ARC, Giza, Egypt. Sponsor: *A. Kadry*.

Tuesday Morning, March 23
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: CARDIOVASCULAR TOXICOLOGY

Chairperson(s): *Wanda Haschek Hock, University of Illinois Urbana, Urbana, IL and Y. James Kang, University of Louisville, Louisville, KY.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 11:00 AM–12:30 PM*

#813 **PROTECTION BY METALLOTHIONEIN INDUCTION FROM CYTOTOXICITY INDUCED BY HIGH LEVELS OF GLUCOSE AND TRIGLYCERIDE.** J. Wang, Y. Jiang, *Y. Kang* and *L. Cai*. Medicine, University of Louisville, Louisville, KY.

#814 **DIABETES-INDUCED CARDIAC MT SYNTHESIS: INDEPENDENT OF METAL ALTERATIONS OR OXIDATIVE DAMAGE, BUT LIKELY RELEVANT TO INFLAMMATORY FACTORS.** *L. Cai*[1], Y. Song[1], L. Zhang[1], Y. Jiang[1], J. T. Saari[2] and *Y. Kang*[1]. [1]Medicine, University of Louisville, Louisville, KY and [2]Grand Forks Human Nutrition Research Center, Grand Forks, ND.

#815 **PREVENTION OF DIABETIC CARDIOMYOPATHY BY ZINC SUPPLEMENTATION CORRELATES WITH METALLOTHIONEIN INDUCTION.** Y. Song, J. Wilkerson, *Y. Kang* and *L. Cai*. Medicine, University of Louisville, Louisville, KY.

#816 **ALCOHOL-INDUCED MYOCARDIAL FIBROSIS IN A METALLOTHIONEIN-NULL MOUSE MODEL.** L. Wang, *Z. Zhou* and *Y. Kang*. Medicine, University of Louisville School of Medicine, Louisville, KY.

#817 **DOSE AND TIME RESPONSE OF ALCOHOL-INDUCED HYPERTENSION AND CARDIOVASCULAR INJURIES IN RATS.** *K. Husain*. Pharmacology and Toxicology, Ponce School of Medicine, Ponce, Puerto Rico.

#818 **CHEMICAL INDUCTION OF ENDOGENOUS ANTIOXIDANTS AFFORDS PROTECTION AGAINST OXIDATIVE AND ELECTROPHILIC INJURY IN CARDIOVASCULAR CELLS.** *Z. Cao*, M. Tsang and *Y. Li*. Pharmaceutical Sciences, St.John's University, Jamaica, NY.

#819 **CHEMICAL INDUCTION OF ENDOGENOUS ANTIOXIDANTS IN MOUSE CARDIAC TISSUE: IMPLICATIONS FOR CARDIOPROTECTION.** *Y. Li* and *Z. Cao*. Pharmaceutical Sciences, St. John, Jamaica, NY.

#820 **INCREASED FORMATION OF MITOCHONDRIAL REACTIVE OXYGEN SPECIES CAUSES MITOCHONDRIA PERMEABILITY TRANSITION- DEPENDENT KILLING OF CULTURED ADULT RAT MYOCYTES AFTER ISCHEMIA/REPERFUSION.** J. Kim, Y. Jin and *J. J. Lemasters*. UNC-Chapel Hill, Chapel Hill, NC.

#821 **OPENING OF MITOCHONDRIAL PERMEABILITY TRANSITION PORES PRIOR TO REPERFUSION DURING PROLONGED ISCHEMIA TO CARDIAC MYOCYTES.** *J. R. Blattner* and *J. J. Lemasters*. Curriculum in Toxicology and Department of Cell and Developmental Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC.

#822 **INDUCTION OF P21$^{WAF1/CIP1/SDI1}$ BY DOXORUBICIN IN CARDIOMYOCYTES: FUNCTIONAL IMPLICATIONS OF P21$^{WAF1/CIP1/SDI1}$ IN POSTMITOTIC CELLS.** J. Terrand[1], S. K. Williams[2] and *Q. M. Chen*[1]. [1]Pharmacology, University of Arizona, Tucson, AZ and [2]Biomedical Engineering, University of Arizona, Tucson, AZ.

#823 **BOTH SPHINGANINE AND SPHINGOSINE ARE CYTOTOXIC TO H9C2[2-1] CARDIOMYOCYTES AND HEPG2 HEPATOCYTES.** S. V. Hsiao[1], *P. D. Constable*[2], *M. Tumbleson*[3] and *W. M. Haschek*[1]. [1]Veterinary Pathobiology, University of Illinois at Urbana-Champaign, Urbana, IL, [2]Veterinary Clinical Medicine, University of Illinois at Urbana-Champaign, Urbana, IL and [3]Veterinary Biosciences, University of Illinois at Urbana-Champaign, Urbana, IL.

#824 **MITOCHONDRIAL AND CARDIOVASCULAR PATHOLOGY IN MICE EXPOSED TRANSPLACENTALLY TO ZIDOVUDINE (AZT) ALONE OR WITH LAMUVIDINE (3TC).** *V. E. Walker*[1], D. M. Walker[1], *M. J. Campen*[1], R. L. Divi[2], O. A. Olivero[2] and M. C. Poirier[2]. [1]Lovelace Respiratory Research Institute, Albuquerque, NM and [2]NCI, NIH, Bethesda, MD.

#825 **ALLYLAMINE-INDUCED VASOSPASM *IN VITRO*: ROLE OF ACROLEIN, HYDROGEN PEROXIDE, SEMICARBAZIDE-SENSITIVE AMINE OXIDASE ACTIVITY, AND EXTRACELLULAR Ca^{++}.** *D. J. Conklin*[1], H. R. Cowley[2], N. Xiong[2], G. H. Johnson[3], R. J. Wiechmann[3], L. M. Sayre[4], M. B. Trent[5] and *P. J. Boor*[5]. [1]Department of Medicine, Division of Cardiology, University of Louisville, Louisville, KY, [2]Department of Biology, University of Wisconsin-Eau Claire, Eau Claire, WI, [3]Department of Cardiothoracic Surgery, Luther Hospital/Midelfort Clinic, Eau Claire, WI, [4]Department of Chemistry, Case Western Reserve University, Cleveland, OH and [5]Department of Pathology, University of Texas Medical Branch, Galveston, TX.

#826 ***IN VITRO* CHARACTERIZATION OF THE MECHANISMS INVOLVED IN CARDIOVASCULAR TOXICITY OF ULTRAFINE PARTICULATE.** M. Marinovich[1], *E. Corsini*[1], *C. L. Galli*[1], R. Pieters[3], S. Bellosta[2], K. Remedios[2] and A. Corsini[2]. [1]Department Pharmacological Sciences, University of Milan, Milan, Italy, [2]Laboratory of Cellular Pharmacology of Atherosclerosis, University of Milan, Milano, Italy and [3]IRAS, University of Utrecht, Utrecht, Netherlands.

#827 **ARTERIAL CARCINOGEN METABOLISM COULD INITIATE THE ACCELERATED ATHEROSCLEROSIS SEEN IN SMOKERS.** *J. L. Holtzman*[1], L. M. Dunning[1], W. Carter[3] and R. J. Edwards[4]. [1]Pharmacology, University of Minnesota, Minneapolis, MN, [2]Pharmacology, University of Minnesota, Minnapolis, MN, [3]Edina Plastic Surgeions, Edina, MN and [4]Imperial College, London, United Kingdom.

#828 **CARDIOVASCULAR EFFECTS OF CHRONIC FUMONISIN B1 INGESTION IN SINCLAIR MINIPIGS.** G. W. Smith[1], P. Constable[2], R. L. Fredrickson[1], M. E. Tumbleson[3], R. M. Eppley[4] and *W. M. Haschek*[1]. [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]Center for Food Safety and Applied Nutrition, USFDA, Laurel, MD.

#829 **CHRONIC ARSENIC EXPOSURE ENHANCES FGF-2-STIMULATED ANGIOGENESIS *IN VIVO* AND TISSUE EXPRESSION OF ANGIOGENIC GENES.** *A. Barchowsky*[1, 2], L. R. Klei[1], D. D. Mayka[2], J. C. Davey[2], *J. W. Hamilton*[2] and *N. V. Soucy*[2]. [1]Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA and [2]Pharmacology and Toxicology, Dartmouth Medical School, Hanover, NH.

#830 **EXPRESSION OF PROCOAGULANT ACTIVITY BY LYSOPHOSPHATIDIC ACID IN HUMAN ERYTHROCYTES.** S. Chung, M. Lee, O. Bae and *J. Chung*. College of Pharmacy, Seoul National University, Seoul, South Korea.

#831 **ELEVATED MEAN ARTERIAL BLOOD PRESSURE IN ARYL HYDROCARBON RECEPTOR (AHR) NULL MICE IS ASSOCIATED WITH ENDOTHELIN-1.** *A. Lund*[1], J. L. Born[1] and *M. K. Walker*[1, 2]. [1]College of Pharmacy, University of New Mexico, Albuquerque, NM and [2]Cell Biology and Physiology, University of New Mexico, Albuquerque, NM.

#832 **EFFECTS OF CHLORODIBROMOMETHANE ON THE DEVELOPING HEART OF MEDAKA.** S. Palit[1], W. R. Hartley[1], L. K. Teuschler[2], C. Gennings[3], O. Conerly[4] and *A. Thiyagarajah*[1]. [1]Environmental Health Sciences, Tulane University Health Sciences Center, New Orleans, LA, [2]NCEA, USEPA/ORD, Cincinnati, OH, [3]MCV, VCU, Richmond, VA and [4]Office of Water, USEPA, Washington, DC.

#833 **SAFETY EVALUATION OF E5564, A TOLL-LIKE RECEPTOR 4 (TLR4) ANTAGONIST, ON CARDIOPULMONARY BYPASS (CPB) SURGERY IN DOGS BY INTRAVENOUS INFUSION.** *A. Suganuma*[1], H. Mendenhall[2], J. P. Sites[3], K. Kaneko[1], M. Nedelman[2] and W. D. Kerns[4]. [1]Drug Safety and Disposition, Eisai Co., Ltd., , Tsukuba, Japan, [2]Discovery and Development Services, Charles River Laboratories, Worcester, MA, [3]Cardiovascular and Extracorporeal Technologies, Plymouth, MN and [4]Pharmacology Consulting Inc., Harvard, MA.

#834 **A UNIQUE CARDIOVASCULAR TOXICITY IN RATS FOLLOWING ADMINISTRATION OF PYRAZOLE KINASE INHIBITORS IN FISCHER 344 RATS.** *A. J. Stauber*, J. L. Zimmerman, B. W. Main, S. T. Adams and G. Bricker. Lilly Research Laboratories, Eli Lilly and Company, Greenfield, IN.

Tuesday Morning, March 23
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: BIOMARKERS/BIOMONITORING

Chairperson(s): *Robert Tardif, Universite de Montreal, Montreal, QC, Canada and Timothy Fennell, RTI International, Research Triangle Park, NC.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 9:30 AM–11:00 AM*

#835 **ALPHA GLUTATHIONE S-TRANSFERASE AS A NOVEL BIOMARKER FOR MONITORING CHRONIC METHOTREXATE HEPATOTOXICITY.** M. C. Shaw[1], P. R. Maxwell[2] and D. Burden[3]. [1]Biotrin International, Dublin, Ireland, [2]Biochemistry, Stobhill Hospital, Glasgow, United Kingdom and [3]Dermatology, Western Infirmary, Glasgow, United Kingdom. Sponsor: *R. Chandra Gupta*.

#836 **BIOSENSOR DETECTION OF BLOOD NTE INHIBITION.** V. V. Malygin[1], G. F. Makhaeva[1], N. N. Strakhova[1], L. V. Sigolaeva[2], L. G. Sokolovskaya[2], A. V. Eremenko[2], I. N. Kurochkin[2] and *R. J. Richardson*[3]. [1]Institute of Physiologically Active Compounds, RAS, Chernogolovka, Russian Federation, [2]Faculty of Chemistry, M.V. Lomonosov Moscow State University, Moscow, Russian Federation and [3]Toxicology Program, University of Michigan, Ann Arbor, MI.

#837 **COMPARATIVE GENE EXPRESSION PROFILING OF EPOTHILONE B AND PACLITAXEL TO SEARCH FOR BIOMARKERS OF EFFICACY AND TOXICITY.** M. Saulnier, F. Staedtler, P. McSheehy, A. Mahl, J. Schaffner, D. Roman, P. Ulrich, M. Wartmann, S. Chibout, H. Firat and L. Mueller. Novartis Pharmacology AG, Basel, Switzerland. Sponsor: *V. Nogues*.

#838 **ENVIRONMENTAL TOBACCO SMOKE INDUCED REACTIVE OXYGEN SPECIES GENERATION IN MICE BRAIN REGIONS.** K. C. Wise[1], *T. Rangasamy*[2], *S. Biswal*[2] and *R. Govindarajan*[1]. [1]Department of Biology, Texas Southern University, Houston, TX and [2]Department of Environmental Health Sciences, Johns Hopkins University, Baltimore, MD.

#839 **IDENTIFICATION OF BIOMARKERS FOR OXYCHLORDANE-EXPOSURE IN RODENT LIVER USING MICROARRAYS.** *I. Curran*, A. Hierlihy, K. Smith, J. Green and G. Bondy. Toxicology Research Division, Health Canada, Ottawa, ON, Canada.

#840 **MEETING GUIDELINES FOR CHOLINESTERASE MONITORING BY CLINICAL LABORATORIES IN CALIFORNIA.** *B. W. Wilson*[1], J. D. Henderson[1], D. E. Arrieta[1] and M. A. O'Malley[2, 3]. [1]Environmental Toxicology, University of California, Davis, CA, [2]Employee Health, University of California, Davis, CA and [3]Department of Pesticide Regulation, California Environmental Protection Agency, Sacramento, CA.

#841 **BIOLOGICAL MONITORING OF BISPHENOL A IN CHILDREN.** S. Park[1], C. Shin[2], S. Kim[3] and *M. Yang*[1]. [1]Preventive Medicine, Seoul National University College of Medicine, Seoul, South Korea, [2]Pediatric Endocrinology, Seoul National University Hospital, Seoul, South Korea and [3]Preventive Medicine, Eulji University School of Medicine, Taejon, South Korea.

#842 **METABOLOMIC ANALYSIS OF THE MECHANISMS OF ACETAMINOPHEN LIVER TOXICITY IN RATS.** A. J. Higgins, T. J. Colatsky, B. R. Bullard and *S. S. Sumner*. Paradigm Genetics, Inc., Research Triangle Park, NC.

#843 **METABOLOMICS: URINE AND SERUM BIOMARKERS FOR ACETAMINOPHEN HEPATOTOXICITY IN RATS.** T. J. Colatsky, A. J. Higgins, B. R. Bullard and *S. C. Sumner*. Paradigm Genetics, Inc., Research Triangle Park, NC.

#844 **GENE EXPRESSION PROFILING IN A RAT CARDIAC ISCHEMIA MODEL.** P. H. Koza-Taylor[1], B. Lu[1], M. Wenfang[3], S. Eustis[2], X. Li[2] and *M. Lawton*[1]. [1]Molecular and Investigative Toxicology, Pfizer, Groton, CT, [2]Pathology, Pfizer, Groton, CT and [3]Comparative Medicine, Pfizer, Groton, CT.

#845 **METABOLISM AND HEMOGLOBIN ADDUCTS OF [1, 2, 3-$^{13}C_3$] ACRYLAMIDE IN HUMANS.** *T. Fennell*[1], R. Snyder[1], J. P. Burgess[1] and *M. A. Friedman*[2]. [1]RTI International, Research Triangle Park, NC and [2]UMDNJ, Newark, NJ.

#846 **ANALYSIS OF HEMOGLOBIN N-VALINE ADDUCTS FROM (1-CHLOROETHENYL)OXIRANE, A METABOLITE OF CHLOROPRENE.** *H. Hurst* and M. Y. Ali. Pharmacology and Toxicology, University of Louisville, Louisville, KY.

#847 **A SIMULTANEOUS DETERMINATION OF THE THREE EPOXYMETABOLITE-HEMOGLOBIN ADDUCTS OF 1, 3-BUADIENE.** K. Peltonen[1] and T. Anttinen-Klemetti[2]. [1]EELA, Helsinki, Finland and [2]FIOH, Helsinki, Finland. Sponsor: *S. Kai*.

#848 **DRUG SIGNATURES THAT PREDICT A VARIETY OF PATHOLOGIES.** C. Pearson, A. Roter, A. Tolley, B. Eynon, B. Ganter, G. Natsoulis, G. Day, K. Jarnagin, *K. Kolaja*, *M. Fielden*, M. Lee, R. Nair, S. Dunlea, J. Yang, L. Gong, S. Nicholson, S. Tugendreich, S. Fujimoto and S. Baumhueter. Iconix Pharmaceuticals, Inc., Mountain View, CA.

#849 **THE CONTRIBUTION OF AGE AND GENOTYPE TO SENSITIVITY TO ENVIRONMENTAL GENOTOXINS.** *F. M. Williams*, E. L. Davis, A. E. Daly and D. Morgan. Toxicology Unit, The Medical School, University of Newcastle, Newcastle upon Tyne, United Kingdom.

#850 **NEURO-SPECIFIC PROTEINS IN REPRODUCTIVE ORGANS AS POSSIBLE BIOMARKERS FOR ASSESSING ADVERSE EFFECTS OF 1-BROMOPROPANE.** H. Wang[1], H. Ito[2], K. Kato[2], W. Li[1], Y. Takeuchi[1], T. Nakajima[1] and *G. Ichihara*[1]. [1]Occupational and Environmental Health, Nagoya University Graduate School of Medicine, Nagoya, Aichi, Japan and [2]Biochemistry, Institute for Developmental Research, Aichi Prefectural Colony, Kasugai, Aichi, Japan.

#851 **EFFECT OF L-CARNITINE PRETREATMENT AGAINST 3-NITROPROPIONIC ACID (3-NPA) INDUCED NEUROTOXICITY.** Z. K. Binienda[1], J. L. Summage[1], S. Dufour[2], B. Przybyla-Zawislak[1], A. Virmani[3], *W. Slikker*[1] and L. C. Schmued[1]. [1]Neurotoxicology, NCTR, Jefferson, AR, [2]Milieux et Peuplements Aquatiques, Museum National d, Paris, France and [3]Scientific Affairs, sigma-tau Health Science s.p.a., Rome, Italy.

#852 **ANALYSIS OF MOLECULAR INTERACTIONS FOR PROTEIN-LIGAND COMPLEXES: INVERSE DOCKING AND TARGET IDENTIFICATION.** *J. Wang* and *R. Richardson*. Environmental Health Sciences, University of Michigan, Ann Arbor, MI.

#853 **EFFECT OF PHYSICAL EXERTION ON THE BIOLOGICAL EXPOSURE INDICES OF TOLUENE FOLLOWING EXPOSURE BY INHALATION IN HUMAN VOLUNTEERS.** *V. Nadeau*[1], G. Truchon[2], M. Brochu[3] and *R. Tardif*[1]. [1]Occupational and Environmental Health, University of Montreal, Montreal, QC, Canada, [2]Occupational Health, IRSST, Montreal, QC, Canada and [3]Kinesiology, University of Montreal, Montreal, QC, Canada.

#854 **THE USE OF METABONOMICS TO DIFFERENTIATE THE TOXICITY OF TWO MAPK KINASE INHIBITORS IN MICE.** *A. P. Brown*[1], L. Robosky[3], *C. V. Okerberg*[1], R. Merriman[2], C. Howard[2], H. Tecle[4] and M. Reily[3]. [1]Safety Sciences, Pfizer Global Research and Development, Ann Arbor, MI, [2]Cancer Pharmacology, Pfizer Global Research and Development, Ann Arbor, MI, [3]Discovery Technologies, Pfizer Global Research and Development, Ann Arbor, MI and [4]Chemistry, Pfizer Global Research and Development, Ann Arbor, MI.

#855 **ASSESSMENT OF GLOBIN S-PROPYLCYSTEINE ADDUCTS AND URINARY N-ACETYL S-PROPYLCYSTEINE AS INTERNAL EXPOSURE MARKERS OF 1-BROMOPROPANE.** *G. Ichihara*[1], K. Amarnath[2], V. Amarnath[2], H. I. Valentine[2], W. Li[1], H. Wang[1] and *W. M. Valentine*[2]. [1]Occupational and Environmental Health, Nagoya University Graduate School of Medicine, Nagoya, Aichi, Japan and [2]Pathology, Vanderbilt University Medical Center, Nashville, TN.

#856 **DETERMINATION OF BIOLOGICAL REFERENCE VALUES FOR CHLORPYRIFOS METABOLITES IN HUMAN URINE USING A TOXICOKINETIC APPROACH.** *M. Bouchard*[1], *G. Carrier*[1], R. C. Brunet[2], N. H. Gosselin[1] and Y. Bonvalot[1]. [1]Environmental & Occupational Health, University of Montreal, Montreal, QC, Canada and [2]Mathematics & Statistics, University of Montreal, Montreal, QC, Canada.

#857 **DNA ADDUCT FORMATION AND TOXICITY OF TRANS-2-HEXENAL IN MALE F344 RATS.** *M. D. Stout*[1], *E. Bodes*[1], Y. Li[2], P. B. Upton[2], R. Schoonhoven[2], J. Nakamura[2], *Y. Jeong*[2], R. Sangaiah[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.

#858 **ORAL TREATMENT WITH 13-CIS-RETINOIC ACID (13-CIS-RA) OR ALL-TRANS-RETINOIC ACID (ALL-TRANS-RA) ALTERS SERUM LEVELS OF ALBUMIN (ALB), TRIGLYCERIDES (TRIG), TOTAL PROTEIN AND GLUCOSE OF RATS.** F. J. Cisneros[1], B. J. Gough[1], R. E. Patton[2] and *S. A. Ferguson*[1]. [1]Division of Neurotox, NCTR/FDA, Jefferson, AR and [2]Charles River Laboratories, Jefferson, AR.

#859 **EVALUATION OF THREE SERUM BIOMARKERS OF HEPATOTOXICITY: MALATE DEHYDROGENASE, PARAOXONASE, AND PURINE NUCLEOSIDE PHOSPHORYLASE.** S. J. Schomaker, *D. E. Amacher*, I. M. Pruimboom-Brees and M. L. Mirsky. Safety Sciences Groton, Pfizer Global Research and Development, Groton, CT.

#860 **HEMOGLOBIN ADDUCTS OF 3, 4-EPOXY-1, 2-BUTANEDIOL IN RODENTS EXPOSED TO 3-BUTENE-1, 2-DIOL.** *M. W. Powley*[1], P. B. Upton[1], *V. E. Walker*[2] and *J. A. Swenberg*[1]. [1]Environmental Sciences and Engineering, University of North Carolina, Chapel Hill, NC and [2]Lovelace Respiratory Research Institute, Albuquerque, NM.

#861 **ACB-PCR MEASUREMENT OF *p53* MUTATION: A POTENTIAL BIOMARKER OF SKIN CANCER DEVELOPMENT.** T. L. Verkler[1], L. H. Couch[2], B. J. Miller[2], *P C. Howard*[2] and B. L. Parsons[1]. [1]Division of Genetic and Reproductive Toxicology, NCTR, USFDA, Jefferson, AR and [2]Division of Biochemical Toxicology, NCTR, USFDA, Jefferson, AR.

#862 **CYCLIC *N*-TERMINAL HEMOGLOBIN ADDUCT IN HUMANS, RATS AND MICE EXPOSED TO BUTADIENE.** *N. I. Georgieva*, G. Boysen, Y. Li and *J. A. Swenberg*. Environmental Sciences and Engineering, UNC, Chapel Hill, NC.

#863 **DETERMINING A REFERENCE VALUE FOR BLOOD CHOLINESTERASE USING US DEFENSE DEPARTMENT PERSONNEL.** S. A. McCurdy[1], J. D. Henderson[2], D. E. Arrieta[2], L. J. Lefkowitz[3], R. E. Reitstetter[4] and *B. W. Wilson*[2]. [1]Epidemiology and Preventative Medicine, University of California, Davis, CA, [2]Environmental Toxicology, University of California, Davis, CA, [3]US Army Center for Health Promotion and Preventive Medicine, Aberdeen Proving Ground, MD and [4]Clinical Investigation, Brooke Army Medical Center, San Antonio, TX.

#864 **IDENTIFICATION OF INTER-INDIVIDUAL VARIATION IN AFLATOXIN METABOLIZING ENZYMES USING HUMAN URINARY DNA.** B. Dash, E. Afriyie-Gyawu, W. Porter, *H. J. Huebner* and *T. D. Phillips*. Faculty of Toxicology (VAPH), Texas A&M University, College Station, TX.

#865 **NEW APPROACH FOR MONITORING EXPOSURE TO ENVIRONMENTAL TOXIC AGENTS.** T. Berman-Shlomovich and *University. Wormser*. Institute of Life Sciences, Jerusalem, Israel.

#866 **EVALUATION OF TWO COMMERCIALLY AVAILABLE CARDIAC TROPONIN IMMUNOASSAYS FOR THE DETECTION OF DRUG-INDUCED CARDIOTOXICITY IN RATS.** C. Bozynski[1], A. Lambert[2], J. Lugo[2], J. D. VanNess[2], C. LaBare[2], J. R. Sibley[2] and D. B. Walker[2]. [1]Faculty of Veterinary Medicine, University of Montreal, Saint Hyacinthe, QC, Canada and [2]Drug Safety, Wyeth Research, Chazy, NY. Sponsor: *F. Kirchner*.

#867 **COMPARISON OF UNCHANGED n-HEXANE IN ALVEOLAR AIR AND 2, 5-HEXANEDIONE IN URINE FOR THE BIOLOGICAL MONITORING OF n-HEXANE EXPOSURE IN HUMAN VOLUNTEERS.** G. Hamelin[1], G. Truchon[2] and *R. Tardif*[1]. [1]Occupational and Environmental Health, University of Montreal, Montreal, QC, Canada and [2]IRSST, Montreal, QC, Canada.

#868 **URINARY 3-BROMOPROPIONIC ACID: AN EFFECTIVE GAS CHROMATOGRAPHIC TEST METHOD FOR QUANTIFICATION.** C. B'Hymer[1] and *K. L. Cheever*[2]. [1]BHAB, NIOSH, Cincinnati, OH and [2]BHAB, NIOSH, Cincinnati, OH.

#869 **CREATININE ADJUSTED URINARY EXCRETION OF 3, 5, 6-TRICHLOROPYRIDINOL (TCP) BY CHILDREN AGED 4 TO 12 AND THEIR PARENTS.** *R. I. Krieger*[3, 1, 2], M. R. Oliver[3, 1], *R. L. Williams*[2, 3, 1] and X. Zhang[2, 3, 1]. [1]Department of Entomology, University of California, Riverside, Riverside, CA, [2]Environmental Toxicology Graduate Program, University of California, Riverside, Riverside, CA and [3]Personal Chemical Exposure Program, University of California, Riverside, Riverside, CA.

#870 **DETERMINATION OF ETHYL GLUCURONIDE IN BIOLOGICAL MATRICES USING REVERSED-PHASE HIGH PERFORMANCE LIQUID CHROMATOGRAPHY COUPLED WITH ELECTROCHEMICAL DETECTION.** R. Kaushik[1, 2, 3], W. R. LaCourse[2], B. Levine[3, 1] and *K. Squibb*[1]. [1]Toxicology, University of Maryland, Baltimore, Columbia, MD, [2]Chemistry, University of Maryland, Baltimore County, Baltimore, MD and [3]Office of the Chief Medical Examiner, Baltimore, MD.

Tuesday Morning, March 23
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: IMMUNOTOXICITY: *IN VITRO*/MECHANISMS

Chairperson(s): *Susan Mckarns, NIAID/NIH, Bethesda, MD and Michael Lynes, University of Connecticut, Storrs, CT.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 11:00 AM–12:30 PM*

#871 **2'-MOE ANTISENSE OLIGONUCLEOTIDES STIMULATE A PROINFLAMMATORY RESPONSE BY A TLR9-INDEPENDENT MECHANISM.** J. J. Senn, S. Burel, R. Kadri, T. Pham and *S. Henry*. Toxicology, ISIS Pharmaceuticals, Carlsbad, CA.

#872 **DISTINCTIVE EFFECTS OF TOLL-LIKE RECEPTOR LIGANDS AND ETHANOL *IN VIVO*, *IN VITRO*, AND IN A MACROPHAGE CELL LINE: IMPLICATIONS FOR SIGNALING MECHANISMS.** Q. Zheng, R. Fan, C. Schwab and *S. B. Pruett*. Cell. Biol. & Anatomy, LSU Health Sciences. Center, Shreveport, LA.

#873 **PRE-ACTIVATION OF TOLL-LIKE RECEPTORS SENSITIZE MACROPHAGES TO INDUCTION OF PROINFLAMMATORY CYTOKINE GENE EXPRESSION BY DEOXYNIVALENOL AND OTHER MICROBIAL TOXINS.** *J. J. Pestka*[1, 2] and *H. Zhou*[1]. [1]Food Science and Human Nutrition, Michigan State University, East Lansing, MI and [2]Microbiology and Molecular Genetics, Michigan State University, East Lansing, MI.

#874 **GALLIUM ARSENIDE EXPOSURE UPREGULATES INFLAMMATORY CYTOKINE EXPRESSION.** *K. McCoy*, S. Becker, T. Harrison and C. Hartmann. Microbiology & Immunology, MCV Campus/Virginia Commonwealth University, Richmond, VA.

#875 **ETHANOL IS A GENERALIZED MODULATOR OF CYTOKINE PRODUCTION INDUCED THROUGH TOLL-LIKE RECEPTORS AND INHIBITS EARLY AS WELL AS LATE SIGNALING EVENTS.** C. Schwab, R. Fan, Q. Zheng, Q. Dai and *S. B. Pruett*. Cell. Biol. & Anatomy, LSU Health Sciences. Center, Shreveport, LA.

#876 **METALLOTHIONEIN CAN FUNCTION AS A CHEMOTACTIC FACTOR.** X. Yin, D. A. Knecht and *M. A. Lynes*. Molecular and Cell Biology, University of Connecticut, Storrs, CT.

#877 **ENHANCED PROINFLAMMATORY CYTOKINE PRODUCTION BY ACTIVATED MICROGLIAL AND MACROPHAGE CELL LINES EXPOSED TO MANGANESE *IN VITRO*.** P. L. Crittenden and *N. M. Filipov*. CEHS, Basic Sciences, Mississippi State University, Mississippi State, MS.

#878 **THE EFFECTS OF INDIRUBIN ON GENE EXPRESSION PROFILES IN U937 HUMAN MONOCYTE/MACROPHAGES.** *A. E. Becker* and *C. D. Rice*. Biological Sciences, Clemson University, Clemson, SC.

#879 **EFFECTS OF SELECT PARTICULATE MATTER (PM)-ASSOCIATED METALS ON MACROPHAGE (Mϕ) IRON HOMEOSTASIS.** S. P. Doherty[1], C. Prophete[1], *J. Zelikoff*[1], P. Maciejczyk[1], *K. Salnikow*[2], T. Gould[3], T. Larson[3], P. Jaques[4], *J. Koenig*[3], C. Sioutas[5], M. Lippmann[1] and *M. Cohen*[1]. [1]Env Med., NYU, Tuxedo, NY, [2]NCI, Bethesda, MD, [3]University of Washington, Seattle, WA, [4]UCLA, Los Angeles, CA and [5]USC, Los Angeles, CA.

#880 **EFFECTS OF PROPANIL (DCPA) ON THE NF-κB ACTIVATION PATHWAY IN MURINE MACROPHAGES.** I. Ustyugova[1], *K. M. Brundage*[1, 2], *R. Schafer*[1], C. L. Walton[1] and *J. B. Barnett*[1, 2]. [1]Microbiology, Immunology and Cell Biology, West Virginia University, Morgantown, WV and [2]Mary Babb Randolph Cancer Center, West Virginia University, Morgantown, WV.

#881 **SMAD3 MEDIATES SUPPRESSION OF T CELL RECEPTOR-INDUCED BUT NOT IL-2-INDUCED T CELL PROLIFERATION BY TGF-β1.** *S. C. MCKARNS*[1], *N. E. Kaminski*[2] and R. H. Schwartz[1]. [1]Laboratory of Cellular and Molecular Immunology, NIAID/NIH, Bethesda, MD and [2]Deptartment of Pharmacology and Toxicology, Michigan State University, East Lansing, MI.

#882 **INHIBITION OF INTERLEUKIN-2 (IL-2) SECRETION BY ANANDAMIDE IS MEDIATED BY A CYCLOOXYGENASE (COX) METABOLITE.** C. E. Rockwell and *N. E. Kaminski*. Pharmacology & Toxicology, Michigan State University, East Lansing, MI.

#883 **ROLE OF EXTRACELLULAR SIGNAL-REGULATED PROTEIN KINASE 1/2 (ERK1/2) IN THE INHIBITION OF T-CELL FUNCTION BY ALKENYLBENZENES.** S. Yea[1, 2], H. Jeong[1], C. Kim[1], Y. Park[1], S. Lee[2], J. Shin[2] and C. Yun[3]. [1]Department of Biochemistry, Inje University, Pusan, South Korea, [2]Pharmacogenomics Research Center, Inje University, Pusan, South Korea and [3]Department of Genetic Engineering, Pai-Chai University, Taejon, South Korea. Sponsor: *H. Kim*.

#884 **SODIUM ARSENITE INHIBITS ERK1/2 PHOSPHORYLATION IN MICE LYMPHOCYTES STIMULATED WITH PHYTOHEMAGGLUTININ.** P. Conde-Moo[1], L. C. Acosta-Saavedra[1], *M. E. Cebrian*[1] and E. S. Calderon-Aranda[1, 2]. [1]Seccion Externa de Toxicologia, Cinvestav, Mexico, DF, Mexico and [2]Department of Environmental Health Sciences, Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD.

#885 **PRETREATMENT WITH CIGARETTE SMOKE EXTRACT DECREASES CELL DEATH IN PMA-TREATED NEUTROPHILS.** H. C. O'Neill[2] and *K. A. Stringer*[1, 2]. [1]Department of Pharmaceutical Practice, UCHSC, Denver, CO and [2]Department of Pharmaceutical Sciences, UCHSC, Denver, CO.

#886 **GW7845, A PPARγ AGONIST, INDUCES MAP KINASE-DEPENDENT APOPTOSIS IN PRO/PRE-B CELLS.** D. Liu[1], J. Emberley[2], *D. H. Sherr*[1] and *J. J. Schlezinger*[1]. [1]Environmental Health, Boston University School of Public Health, Boston, MA and [2]Microbiology, Boston University, Boston, MA.

#887 **AN ENVIRONMENTAL PPARγ AGONIST, MONO-(2-ETHYLHEXYL) PHTHALATE, INDUCES PRO/PRE-B CELL TOXICITY: INTERACTIONS WITH 9-*CIS*-RETINOIC ACID AND 15-DEOXY-$\Delta^{12, 14}$-PROSTAGLANDIN J_2.** *J. J. Schlezinger*[1], G. Howard[1], *C. H. Hurst*[2], T. Webster[1], D. J. Waxman[2] and *D. H. Sherr*[1]. [1]Environmental Health, Boston University School of Public Health, Boston, MA and [2]Biology, Boston University, Boston, MA.

#888 **INDUCTION OF COMPETING PRO-APOPTOTIC AND PRO-SURVIVAL SIGNALING PATHWAYS IN THE MACROPHAGE BY THE TRICHOTHECENE DEOXYNIVALENOL.** 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.

#889 **AhR LIGANDS INHIBIT PROLIFERATION OF ACTIVATED HUMAN B CELLS.** L. L. Allan[1], *H. Ryu*[2], J. K. Emberley[1], *J. J. Schlezinger*[2] and *D. H. Sherr*[2]. [1]Microbiology, Boston University School of Medicine, Boston, MA and [2]Environmental Health, Boston University School of Medicine, Boston, MA.

#890 **HEMATOTOXIC EFFECTS OF HEPTACHLOR ON B LYMPHOPOIESIS.** *S. V. Dodson*, D. A. Piktel, *J. B. Barnett* and *K. S. Landreth*. Microbiology, Immunology, and Cell Biology, West Virginia University, Morgantown, WV.

#891 **2, 3, 7, 8-TETRACHLORODIBENZO-*P*-DIOXIN ALTERS THE REGULATION OF PAIRED BOX GENE 5 (*PAX5*) IN B CELLS.** D. Shnaider[1, 3], B. S. Yoo[5, 1], D. R. Boverhof[2, 3], R. B. Crawford[1], *T. R. Zacharewski*[2, 3, 4] and *N. E. Kaminski*[1, 3, 4]. [1]Pharmacology & Toxicology, Michigan State University, East Lansing, MI, [2]Biochemistry and Molecular Biology, Michigan State University, East Lansing, MI, [3]Institute of Environmental Toxicology, Michigan State University, East Lansing, MI, [4]National Food Safety & Toxicology Center, Michigan State University, East Lansing, MI and [5]Biology, Kyonggi University, Paldal-gu, Suwon-Si, South Korea.

#892 **TCDD-INDUCED MODULATION OF THE 3′α ENHANCER.** *C. Sulentic*[1], W. Zhang[2], Y. Na[3] and *N. Kaminski*[2]. [1]Pharmacology & Toxicology, Wright State University, Dayton, OH, [2]Pharmacology & Toxicology, Michigan State University, East Lansing, MI and [3]Korea Advanced Institute of Science and Technology, Daejon, South Korea.

Tuesday Morning, March 23
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: DEVELOPMENTAL AND AGE-DEPENDENT NEUROTOXICITY OF METALS

Chairperson(s): *Wei Zheng, Purdue University, West Lafayette, IN and Edward Levin, Duke University Medical Center, Durham, NC.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 9:30 AM–11:00 AM*

#893 **DEVELOPMENTAL LEAD EXPOSURE IMPACTS ON SPATIAL LEARNING AND MEMORY: CHOLINERGIC AND GLUTAMATERGIC INVOLVEMENT.** *E. D. Levin*[1, 2], K. Sato[2], *J. H. Freedman*[2], J. Skene[3] and G. Harry[4]. [1]Psychiatry, Duke University Med. Ctr, Durham, NC, [2]Nicholas School of Earth and Environmental Sciences, Duke University, Durham, NC, [3]Neurobiology, Duke University Med. Ctr, Durham, NC and [4]NIEHS, Research Triangle Park, NC.

#894 **NEUROGENESIS IN THE RAT DENTATE GYRUS IS DECREASED BY CHRONIC DEVELOPMENTAL LEAD EXPOSURE.** T. Verina[1], C. A. Rohde[2] and *T. R. Guilarte*[1]. [1]Environmental Health Sciences, Johns Hopkins University, Baltimore, MD and [2]Biostatistics, Johns Hopkins University, Baltimore, MD.

#895 **CAMKII ACTIVITY, PROTEIN AND GENE EXPRESSION IN THE HIPPOCAMPUS OF LEAD-EXPOSED RATS.** *C. D. Toscano*, J. R. Moss and *T. R. Guilarte*. Environmental Health Sciences, Johns Hopkins University, Baltimore, MD.

#896 **THE INFLUENCE OF LEAD ON THE EXPRESSION OF OCT-2 AND THE REGULATION OF ITS TARGET GENES.** S. A. Bakheet and *N. H. Zawia*. Biomedical Sciences, University of Rhode Island, Kingston, RI.

#897 **DEVELOPMENTAL EXPOSURE TO LEAD AND RESPOSIVNESS OF THE APP GENE IN THE SENESCENT BRAIN.** N. Benitez, *N. H. Zawia* and *M. Basha*. Biomedical Sciences, University of Rhode Island, Kingston, RI.

#898 **INTERACTIVE EFFECTS OF CHRONIC POSTWEANING PB EXPOSURE AND ENVIRONMENTAL STRESS.** *D. A. Cory-Slechta*[1], *M. B. Virgolini*[1] and *D. Weston*[2]. [1]Env Comm. Med., EOHSI, Piscataway, NJ and [2]University of Rochester, Rochester, NY.

#899 **LONG-LASTING BEHAVIORAL AND NEUROCHEMICAL CONSEQUENCES OF MATERNAL LEAD (PB) EXPOSURE AND STRESS IN FEMALE OFFSPRING.** *M. B. Virgolini* and *D. A. Cory-Slechta*. EOHSI, UMDNJ and Rutgers University, Piscataway, NJ.

#900 **EFFECTS OF EARLY LEAD EXPOSURE ON DOPAMINERGIC AND GLUTAMATERGIC NEURONAL MARKERS IN THE AGING RAT BRAIN.** *J. L. McGlothan*, T. Verina, *C. D. Toscano* and *T. R. Guilarte*. Environmental Health Sciences, Johns Hopkins University, Baltimore, MD.

#901 **PRENATAL EXPOSURE TO METHYLMERCURY ALTERS NEUROBEHAVIOR AND BRAIN MONOAMINE OXIDASE ACTIVITY IN SPRAGUE-DAWLEY RAT OFFSPRING.** C. J. Stamler[1], P. Beyrouty[3], K. M. Loua[1] and *L. Chan*[2]. [1]Dietetics and Human Nutrition, McGill University, Montreal, QC, Canada, [2]Centre for Indigenous Peoples' Nutrition and Environment, McGill University, Montreal, QC, Canada and [3]Natural Resource Sciences, McGill University, Montreal, QC, Canada.

#902 **EFFECTS OF EARLY POSTNATAL METHYLMERCURY ADMINISTRATION ON EPH RECEPTOR EXPRESSION AND SPATIAL LEARNING IN THE MOUSE.** A. Halladay[1, 2], *D. T. Wilson*[1], R. Zhou[3], G. C. Wagner[4, 1] and *K. R. Reuhl*[1, 2]. [1]Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ, [2]Department of Pharmacology and Toxicology, Rutgers University, Piscataway, NJ, [3]Department of Chemical Biology, Rutgers University, Piscataway, NJ and [4]Department of Psychology, Rutgers University, Piscataway, NJ.

#903 **ENVIRONMENTAL MERCURY EXPOSURE AND COGNITIVE FUNCTION IN OLDER ADULTS.** M. E. Weil[1], *J. Bressler*[1], T. Glass[1], P. Parsons[2], J. Hidalgo[3] and *B. Schwartz*[1]. [1]Johns Hopkins University, Baltimore, MD, [2]New York State Department of Health, Albany, NY and [3]Autonomous University of Barcelona, Bellaterra, Spain.

#904 **ASSESSMENT OF POSTNATAL EXPOSURE TO THIMEROSAL AND METHYL MERCURY USING A MORRIS WATER MAZE PROCEDURE IN B6C3F1 MICE.** J. Smythe, J. EuDaly, W. C. Griffin, *D. E. Keil* and *M. Peden-Adams*. Medical University of South Carolina, Charleston, SC.

#905 **AGE-DEPENDENT SENSITIVITY OF STRIATAL MITOCHONDRIA TO MANGANESE-INDUCED CYTOTOXICITY.** J. Li[1, 2], R. Geng[1], J. Chu[1] and *W. Zheng*[2]. [1]School of Public Health & Family Medicine, Capital University of Medical Sciences, Beijing, China and [2]School of Health Sciences, Purdue University, West Lafayette, IN.

#906 **IRON DEFICIENCY (ID) INCREASES MANGANESE (MN) ACCUMULATION IN THE DEVELOPING RAT BRAIN.** *S. J. Garcia*[1], *T. Syversen*[2], E. Steinnes[3], K. Gellein[3] and *M. Aschner*[1]. [1]Physiology and Pharmacology, Wake Forest University School of Medicine, Winston-Salem, NC, [2]Neuroscience, Norwegian University of Science and Technology, Trondheim, Norway and [3]Chemistry, Norwegian University of Science and Technology, Trondheim, Norway.

#907 **THE EFFECTS OF TRIBUTYLTIN (TBT) ON NEUROTRANSMITTERS AND NMDA RECEPTORS IN THE BRAINS OF ICR MOUSE OFFSPRING.** *M. Tsunoda*[1], *N. Konno*[2] and *Y. Sugita-Konishi*[3]. [1]Public Health, Fukushima Medical University, Fukushima, Japan, [2]Koriyama Women's University and College, Koriyama, Japan and [3]Division of Microbiology, National Institute of Health Sciences, Tokyo, Japan.

#908 **BEHAVIORAL CONSEQUENCES OF PERINATAL MONOMETHYLTIN EXPOSURE IN RATS.** K. D. Ehman[2], K. L. McDaniel[1], P. M. Phillips[1] and *V. C. Moser*[1]. [1]NTD/NHEERL, USEPA, Research Triangle Park, NC and [2]Curriculum in Toxicology, UNC/USEPA, Research Triangle Park, NC.

Tuesday Morning, March 23
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: MALE REPRODUCTIVE TOXICITY TESTING

Chairperson(s): *Moussa Diawara, Colorado State University-Pueblo, Pueblo, CO and William Kelce, Pfizer Inc., Kalamazoo, MI.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 11:00 AM–12:30 PM*

#909 **COMBINED EFFECTS OF FLUTAMIDE AND β-ESTRADIOL 3-BENZOATE ON ADULT MOUSE TESTES.** *R. Anahara*[1], Y. Toyama[2] and *C. Mori*[1, 3]. [1]Bioenviron Med., Grad Sch Med., Chiba University, Chiba, Japan, [2]Anat Devel Biol, Grad Sch Med., Chiba University, Chiba, Japan and [3]CREST, JST, Kawaguchi, Japan.

#910 **VALIDATION OF A METHOD OF INTRAPROSTATIC ADMINISTRATION OF TEST MATERIAL TO THE MOUSE.** S. Grainger and G. Hale. Covance Laboratories Ltd., Harrogate, United Kingdom. Sponsor: *D. Everett*.

#911 **EFFECTS OF GESTATIONAL AND LACTATIONAL EXPOSURE TO 17 ALPHA-ETHYNYLESTRADIOL ON SPERM QUALITY AND EGG FERTILIZING ABILITY OF MALE OFFSPRING IN MICE.** *J. HAN*[1, 3], *P. M. Saama*[1], *T. R. Zacharewski*[2, 3, 4] and *K. Chou*[1, 3, 4]. [1]Animal Science, 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 and Toxicology Center, Michigan State University, East Lansing, MI.

#912 **DISRUPTION OF MALE REPRODUCTIVE DEVELOPMENT IN THE RAT BY A SINGLE DOSE OF THE ANTIANDROGEN, FLUTAMIDE, ADMINISTERED ON DIFFERENT GESTATIONAL DAYS.** *P. M. Foster* and M. W. Harris. DHHS, NIH, NIEHS, Research Triangle Park, NC.

#913 **EFFECTS OF SULFASALAZINE ON SPERM ACROSOME REACTION AND GENE EXPRESSION IN THE REPRODUCTIVE ORGANS.** T. Fukushima[1, 2], M. Kato[1], T. Adachi[3], Y. Hamada[1], M. Horimoto[1], M. Komiyama[2], C. Mori[2] and I. Horii[1]. [1]PGRD Nagoya Lab., Pfizr.Inc., Taketoyo, Aichi, Japan, [2]Department of Bioenvironmental Mdedicine, Graduate School of Medicine, Chiba university, Inohana, Chiba, Japan and [3]Center for Research and Development of Bioresources, Reserch Institute for Advanced Sciences and Technology, Osaka Prefecture University, Sakai, Osaka, Japan. Sponsor: *M. Kurata*.

#914 **METHYL TERTIARY-BUTYL ETHER INDUCES ALTERATIONS IN MOUSE TESTIS WEIGHT, TESTOSTERONE PRODUCTION AND MORPHOLOGY.** L. Almeida and *E. Hall*. Biology, Rhode Island College, Providence, RI.

#915 ***IN VIVO*** **EXPOSURE OF YOUNG ADULT RATS TO METHOXYCHLOR (M) REDUCES SERUM TESTOSTERONE (T) LEVELS, BASAL LEYDIG CELL (LC) T FORMATION, LC CYTOCHROME P450 CHOLESTEROL SIDE-CHAIN CLEAVAGE (P450SCC) ACTIVITY AND SERUM DEHYDROEPIANDROSTERONE (DHEA) LEVELS.** E. P. Murono and R. C. Derk. Pathology and Physiology Research Branch, CDC/NIOSH, Morgantown, WV. Sponsor: *V. Castranova*.

#916 **DI(*N*-BUTYL) PHTHALATE RAPIDLY REPRESSES STEROIDOGENESIS IN THE FETAL TESTIS AND INTERFERES WITH ADRENAL STEROIDOGENESIS THROUGH AN ALTERNATIVE MECHANISM.** C. Thompson, S. M. Ross, S. Heinze and *K. W. Gaido*. CIIT Centers for Health Research, Reserach Triangle Park, NC.

#917 **THE EFFECTS OF NEONATAL EXPOSURE TO DIETHYLSTILBESTROL AND 17β-ESTRADIOL IN MOUSE EPIDIDYMIS.** *K. Yamazaki*[1], Y. Ono[1], T. Adachi[2], H. Fukata[3], K. Kojima[4], K. Chiba[4], *C. Mori*[1, 5] and M. Komiyama[1, 6]. [1]Department of Bioenvironmental Medicine, Graduate School of Medicine, Chiba University, Chiba, Japan, [2]Center for Research and Development of Bioresources, Research Institute for Advanced Science and Technology, Osaka Prefecture University, Sakai, Osaka, Japan, [3]Department of Bioenvironmental Medicine (SRL), Graduate School of Medicine, Chiba University, Chiba, Japan, [4]Laboratory of Biochemical Pharmacology and Toxicology, Graduate School of Pharmaceutical Sciences, Chiba University, Chiba, Japan, [5]Core Research for Evolutional Science of Technology (CREST), Japan Science and Technology Corporation (JST), Kawaguchi, Saitama, Japan and [6]Center for Environment, Health and Field Sciences, Chiba University, Kashiwa, Chiba, Japan.

#918 **IMPACT OF METHODS OF EUTHANASIA ON SPERM MOTILITY OF OLDER ADULT SPRAGUE-DAWLEY RATS.** S. L. Lohrke[1], S. A. Stutler[1], E. W. Johnson[1], J. E. Miller[1], K. Carnes[2], *R. A. Hess*[2], D. L. Schaeffer[2] and *D. P. Arfsten*[1]. [1]Naval Health Research Center Toxicology Detachment, Wright-Patterson AFB, OH and [2]College of Veterinary Medicine, University of Illinois at Urbana-Champaign, Urbana, IL.

#919 ***IN VITRO*** **EXPOSURE TO 8-MOP DAMAGES MALE REPRODUCTIVE CELLS.** *M. M. Diawara* and J. Carsella. Biology, Colorado State University - Pueblo, Pueblo, CO.

#920 **FUNCTIONAL EXPRESSION OF PPAR GAMMA IN SERTOLI CELLS.** *Y. Ye* and *J. H. Richburg*. College of Pharmacy, The University of Texas at Austin, Austin, TX.

#921 **CRITICAL WINDOWS OF VULNERABILITY FOR EFFECTS OF 2, 3, 7, 8-TETRACHLORODIBENZO-*p*-DIOXIN (TCDD) ON PRENATAL PROSTATE DEVELOPMENT IN MICE.** S. M. Hicks, *T. Lin* and *R. E. Peterson*. School of Pharmacy, University of Wisconsin, Madison, WI.

#922 **PROTEOME ANALYSIS OF THE EFFECTS OF *IN UTERO* 2, 3, 7, 8- TETRACHLORODIBENZO-*P*-DIOXIN EXPOSURE ON MALE C57BL/6 MOUSE UROGENITAL SINUS.** R. Karjanlahti[1, 2], University. Simanainen[1, 2], M. Tuomainen[2], S. Ryhanen[2], T. Lin[3], *J. Tuomisto*[1, 2], S. Karenlampi[2], *R. E. Peterson*[3] and *M. Viluksela*[1]. [1]National Public Health Institute, Kuopio, 70701, Finland, [2]University of Kuopio, Kuopio, 70211, Finland and [3]University of Wisconsin, Madison, WI.

#923 **EXAMINING THE POSSIBILITY THAT CHRONIC AZATHIOPRINE TREATMENT POTENTIATES GERMLINE TRANSMISSION OF *HPRT* MUTATIONS IN C57BL/6 MICE.** *S. Bendre*[1, 2], J. G. Shaddock[2], V. N. Dobrovolsky[2] and R. H. Heflich[2, 1]. [1]Pharmacology and Toxicology, University of Arkansas for Medical Sciences, Little Rock, AR and [2]NCTR, Jefferson, AR.

#924 **TRANSPLACENTAL EXPOSURE TO 17-α-ETHYNYL ESTRADIOL INDUCES A SPECIFIC GENE EXPRESSION PROFILE IN THE DEVELOPING MALE RAT REPRODUCTIVE SYSTEM.** J. M. Naciff, K. A. Hess, S. M. Torontali, J. P. Tiesman, G. J. Overmann, G. J. Carr and *G. P. Daston*. Central Product Safety, Procter & Gamble Company, Cincinnati, OH.

#925 **MORPHOLOGY OF THE FETAL RAT TESTIS PRESERVED IN DIFFERENT FIXATIVES.** P. C. Howroyd[2, 1], R. Hoyle-Thacker[1], O. Lyght[1], D. Williams[1] and E. Kleymenova[1]. [1]CIIT Centers for Health Research, Research Triangle Park, NC and [2]Experimental Pathology Laboratories, Inc., Research Triangle Park, NC. Sponsor: *E. Gross*.

#926 **DEVELOPMENTAL EXPOSURE TO DI-N-BUTYL PHTHALATE AFFECTS CORD ORGANIZATION AND SERTOLI CELL-GONOCYTE INTERACTIONS IN THE FETAL RAT TESTIS.** E. Kleymenova, E. Dei Rossi, K. Liu, C. Swanson, L. Pluta and *K. Gaido*. CIIT Centers for Health Research, Research Triangle Park, NC.

Tuesday Morning, March 23
9:45 AM to 10:45 AM
Room 301

INFORMATIONAL SESSION: UNIQUE PERSPECTIVES IN HISTOPATHOLOGY

Colorado Histo-Prep will discuss GLP complaint histology and histopathology services for pharmaceutical and medical device industries viz., trimming blocking, and slide preparation, including serial sectioning.

Tuesday Morning, March 23
11:00 AM to 12:00 NOON
Room 301

INFORMATIONAL SESSION: COMPARISON OF LIVER GENE DYSREGULATION: TOXICANT TREATED RATS AND DISEASED HUMAN TISSUES

Gene Logic presents the second in a series of case analyses. This study will correlate gene dysregulation between models of animal toxicity and normal and diseased human tissues The cross species approach allows insights into mechanisms of toxicity and the pathogenesis of human disease. For example, the genes dysregulated by an agent capable of inducing inflammation in rats can be compared to that in human cirrhotic livers and similarities and differences in the gene expression profiles can be examined. A light lunch will be available.

Tuesday Afternoon

Tuesday Afternoon, March 23
12:00 NOON to 1:15 PM
Ballroom (Level 400)

***IN VITRO* TOXICOLOGY LECTURE: *IN VITRO* METHODS FOR DERMATOTOXICOLOGY STUDIES**

Lecturer: *Robert L. Bronaugh, Ph.D., USFDA, Laurel, MD.*

Hosted by:
The Colgate-Palmolive Company

The lecture will address *in vitro* methods for skin corrosivity, skin sensitization, skin phototoxicity and skin absorption that are widely used in the safety assessment of topical products. These alternative methods can reduce and sometimes replace the need for animals. Methods for skin corrosivity and skin sensitization have been validated by both the ICCVAM (Interagency Coordinating Committee on the Validation of Alternative Methods) and the ECVAM (European Centre for the Validation of Alternative Methods). ECVAM is poised to begin a validation study to assess the adequacy of three methods for dermal irritation measurements. Further efforts are being made to clarify controversial areas in skin absorption methodology with regard to the skin reservoir, skin metabolism and other issues.

Students register for this event on the Annual Meeting Registration form; a $5 deposit per ticket is required and will be exchanged for the ticket at the luncheon. Seating is limited.

Tuesday Afternoon, March 23
12:00 NOON to 1:00 PM
Room 307

SOT/EUROTOX DEBATE

Motion: Nutraceuticals Should be Regulated as Drugs

Sponsored by:
SOT (Society of Toxicology)
EUROTOX (European Societies of Toxicology)

Debaters:

SOT: *Penelope A. Fenner-Crisp, Risk Sciences Institute, Washington, DC.*

EUROTOX: *Andy G. Renwick, University of Southampton, Southampton, United Kingdom.*

Nutraceuticals (also referred to as dietary supplements or phytochemicals of functional foods) are potentially bioactive natural compounds which may have health promoting, disease preventing or medical properties.

Tuesday Afternoon, March 23
12:15 PM to 1:15 PM
Room 301

INFORMATIONAL SESSION: AFFYMETRIX GENECHIP EXPRESSION ANALYSIS APPLIED TO TOXICOLOGY

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

Tuesday Afternoon, March 23
1:30 PM to 2:30 PM
Room 301

INFORMATIONAL SESSION: WHAT'S NEW IN ELECTRONIC LAB ANIMAL IDENTIFICATION?

Electronic identification has grown in the past 12 months with the addition of new technology. From wireless transmission to programmable chips to accurate temperature there are many exciting products to learn about. Come see how the new technology and new products can make your facilities more productive, more accurate and more compliant!

Tuesday Afternoon, March 23
1:30 PM to 4:00 PM
Room 325

FORUM ON GRANTSMANSHIP AND SOURCES FOR RESEARCH SUPPORT

Chairperson(s): *Elaine Knight, Johnson & Johnson Pharmaceutical Research & Development, LLC, Raritan, NJ, Darlene Dixon, NIEHS, Research Triangle Park, NC, and Rosita Proteau, Oregon State University, Corvallis, OR.*

Sponsored by:
The Education Committee*

1:30 PM	Introduction, Elaine Knight, Johnson & Johnson Pharmaceutical Research & Development, LLC, Raritan, NJ
1:35 PM	New Program Opportunities at NIEHS and How to Take Advantage of Them, Anne Sassaman, NIEHS, Research Triangle Park, NC Dr. Sassaman will provide an overview of programs at NIEHS of special interest to SOT members, and discuss how NIH institutes have responded to new science with new initiatives. Learn about some of the new mechanisms in place and how they may be applicable to your project and interests.
2:25 PM	Toxicology Research and the Reorganization of Study Sections at CSR, Michael Martin, NIH Center for Scientific Review, Bethesda, MD The Center for Scientific Review (CSR) at the National Institutes of Health (NIH) is in the final phase of its reorganization activities in accord with recommendations of its Panel on Scientific Boundaries for Review (PSBR). New study sections will begin meeting in 2004. A majority of the applications currently being reviewed by the ALTX 1 and 4 Study Sections are likely to be assigned to the XNDA (Xenobiotics and Nutrient Distribution and Action) and LIRR (Lung Injury and Repair) Study Sections. This presentation will provide a report on progress and additional information for applicants.
3:10 PM	Grant Opportunities amongst Private Funding Agencies, T.J. Koerner, American Cancer Society, Atlanta, GA Non-governmental organizations comprise a significant source of research funding. This includes foundations, voluntary health organizations and other private funders. This session will share some of these opportunities and some of the nuances of approaching a mission-driven organization.

Tuesday Afternoon, March 23
1:30 PM to 4:30 PM
Room 321

SYMPOSIUM SESSION: MODULATION OF HOST DEFENSES BY AMBIENT AND SOURCE PARTICULATE AIR POLLUTANTS

Chairperson(s): *Ian Gilmour, USEPA, Research Triangle Park, ND and Matthew Reed, Lovelace Respiratory Research Institute, Albuquerque, NM.*

Endorsed by:
Immunotoxicology Specialty Section*
Inhalation Specialty Section

Epidemiological evidence links air pollutants with increases in morbidity and mortality in susceptible populations. Among the health effects of long term and episodic air pollution, parameters associated with respiratory infections in susceptible populations, especially small children and the elderly, may be of primary importance. The mechanistic work detailing the modulation of infection by air pollutants is a developing and exciting field of research that brings together cutting edge biology and mechanistic toxicology. For example, the role of toll-like receptors (tlr) in response to infection and airborne particulates has been recognized. This symposium will address the epidemiological evidence suggesting that ambient air pollutants may modulate the occurrence and/or severity of respiratory infection. Subsequently, the current state of experimental models of host defense mechanisms and pathogenesis will be presented in relation to both bacterial and viral respiratory infection as modulated by individual pollutants and pollutant mixtures. Speakers will detail susceptibility to, and lung clearance of gram positive and negative bacteria, and viruses such as RSV. Focus will be placed on infection models modulated by ambient particulates, source emissions (coal fly ash and diesel exhaust), and metals. Target Audience: This Symposia encompasses the fields of microbial pathogenesis, immunology, air pollution, mixtures and mechanistic toxicology.

#927	1:30	**MODULATION OF HOST DEFENSES BY AIR POLLUTANTS.** *M. D. Reed*[1] and *I. Gilmour*[2]. [1]Toxicology, Lovelace Respiratory Research Institute, Albuquerque, NM and [2]Experimental Toxicology Division, National Health and Environmental Effects Research Laboratory, USEPA, Research Triangle Park, NC.

#928 1:35 **MECHANISMS OF HOST DEFENSE.** *I. Gilmour* and *M. K. Selgrade*. Experimental Toxicology Division, National Health and Environmental Effects Research Laboratory, USEPA, Research Triangle Park, NC.

#929 1:50 **EPIDEMIOLOGY OF AMBIENT AIR POLLUTION AND PULMONARY INFECTION.** A. Pope. Department of Economics, Brigham Young University, Provo, UT. Sponsor: *M. Reed*.

#930 2:20 **INCREASED LUNG PATHOGENESIS TO RESPIRATORY VIRAL INFECTION BY DIESEL ENGINE COMBUSTION COMPONENTS.** *K. S. Harrod*[1], J. A. Berger[1], J. D. McDonald[2] and *M. D. Reed*[2]. [1]Asthma and Pulmonary Immunology Program, Lovelace Respiratory Research Institute, Albuquerque, NM and [2]Toxicology, Lovelace Respiratory Research Institute, Albuquerque, NM.

#931 2:50 **EFFECT OF WORKPLACE PARTICULATES ON THE SUSCEPTIBILITY TO BACTERIAL INFECTION AND THE SUPPRESSION OF LUNG DEFENSE RESPONSES IN RATS.** *J. M. Antonini*. Health Effects Laboratory Division, National Institutes of Occupational Safety and Health, Morgantown, WV.

#932 3:20 **EXACERBATION OF PULMONARY PNEUMONIA BY INHALED AMBIENT PARTICULATE MATTER AND ASSOCIATED METALS.** *J. T. Zelikoff*, Y. Li, K. Schermerhorn, M. D. Cohen and R. B. Schlesinger. Nelson Institute of Environmental, NYU School of Medicine, Tuxedo, NY.

#933 3:50 **ROLE OF TOLL-LIKE RECEPTORS (TLRS) IN RESPONSES TO AIR POLLUTANTS AND INFECTIONS.** *S. R. Kleeberger*. Environmental Genetics Group, Laboratory of Pulmonary Pathobiology, National Institute of Environmental Health Sciences, Research Triangle Park, NC.

Tuesday Afternoon, March 23
1:30 PM to 4:30 PM
Room 307

SYMPOSIUM SESSION: THE PRESENT AND FUTURE OF TOXICOGENOMICS IN PRECLINICAL DRUG DEVELOPMENT

Chairperson(s): *Frank Sistare, USFDA, Laurel, MD and Kyle Kolaja, Iconix Pharmaceuticals, Mountain View, CA.*

Endorsed by:
Carcinogenesis Specialty Section
Molecular Biology Specialty Section
Regulatory and Safety Evaluation Specialty Section*
Toxicologic & Exploratory Pathology Specialty Section

Toxicogenomics, the genome scale analyses of chemically induced changes in complex populations of mRNA to understand toxicity, has the potential to dramatically improve predictive, mechanistic and descriptive insights into drug development candidates prior to human exposures. Currently, toxicogenomics and microarray research are used selectively in drug development, primarily to facilitate the generation of proto-type compound databases and/or mechanistic and assay development research on compounds dropped from development consideration. However, as regulatory guidance begins to crystallize regarding toxicogenomics, the opportunity to use transcription profiling to improve and broaden understanding of efficacy and safety of development candidate(s) early in the testing paradigm could become more and more common. This session will discuss the current implementation of toxicogenomics in pharmaceutical companies and delve into the not-so-distant future for this technology. The first speaker will outline some critical steps needed to allow the true value of genome wide expression analysis to be realized. In order to improve human health using transcription profiling, a number of technical, biological, and regulatory/procedural issues will need to be resolved. The remaining speakers will discuss focused hypothesis-driven research projects highlighting the strategic advantage(s) inherent to toxicogenomics.

#934 1:30 **THE PRESENT AND FUTURE OF TOXICOGENOMICS IN PRECLINICAL DRUG DEVELOPMENT.** *J. K. Leighton*[2] and *K. L. Kolaja*[1]. [1]Toxicology, Iconix Pharmaceuticals, Mountain View, CA and [2]Food and Drug Administration, Laurel, MD.

#935 1:35 **TECHNICAL, PROCEDURAL, AND BIOLOGICAL ISSUES IN THE INCORPORATION OF TOXICOGENOMICS INTO THE REGULATORY PROCESS.** J. K. Leighton. USFDA/CDER, Rockville, MD. Sponsor: *F. Sistare*.

#936 2:04 **GENE EXPRESSION PROFILING IN PHARMACEUTICAL TOXICOLOGY RESEARCH.** R. G. Ulrich. Molecular Profiling, Rosetta Inpharmatics-Merck Research Laboratories, Kirkland, WA. Sponsor: *K. Kolaja*.

#937 2:33 **IDENTIFICATION AND EVALUATION OF GENOMIC BIOMARKERS OF TOXICITY.** F. M. Goodsaid. Genetic and Molecular Toxicology, Schering-Plough Research Institute, Lafayette, NJ. Sponsor: *W. Choy*.

#938 3:02 **IMPLEMENTATION OF STRATEGY TOWARD IMPACTING PRECLINICAL DEVELOPMENT WITH GENOMICS APPROACHES.** *C. Afshari*. Amgen Inc., Thousand Oaks, CA.

#939 3:31 **APPLICATION OF TOXICOGENOMICS TO PHARMACEUTICAL DRUG DISCOVERY AND DEVELOPMENT.** *Z. Jayyosi*. eSafety-Drug Safety Evaluation, Aventis Inc., Bridgewater, NJ.

#940 4:00 **USE OF A LARGE CHEMOGENOMIC DATABASE TO FACILITATE DRUG DEVELOPMENT.** *K. L. Kolaja*. Toxicology, Iconix Pharmaceuticals, Mountain View, CA.

Tuesday Afternoon, March 23
1:30 PM to 4:30 PM
Room 318

SYMPOSIUM SESSION: TISSUE AND SPECIES DIFFERENCES IN REGULATION OF CYTOCHROME P450S

Chairperson(s): *Mary Beth Genter, University of Cincinnati, Cincinnati, OH and Xinxin Ding, New York State Department of Health, Albany, NY.*

Endorsed by:
Molecular Biology Specialty Section*

Tissue differences in the expression and regulation of various xenobiotic-metabolizing cytochrome P450 genes are critical determinants of organ-selective chemical toxicity, and species differences in P450 expression and regulation will impact risk assessment. Although tremendous progress has been made in recent years on the identification and characterization of biotransformation enzymes involved in metabolic activation, we still know very little about the expression and regulation of these enzymes in various extrahepatic target tissues, in either humans or laboratory animals. The goal of this symposium is to provide a timely forum for the dissemination of recent progress in studying P450 regulation in several important extrahepatic organs, including the brain, the lung, the skin, and the nasal mucosa. The individual research topics to be discussed will be diverse, involving different tissues, different P450 genes, different modes of regulation, and different approaches. However, a common theme of tissue- and species differences will be emphasized, and the approaches used will likely benefit studies on gene regulation in other tissues.

#941 1:30 **INTRODUCTION TO THE SYMPOSIUM ON "TISSUE AND SPECIES DIFFERENCES IN REGULATION OF CYTOCHROME P450S".** *X. Ding*[1, 2]. [1]Wadsworth Center, New York State Department of Health, Albany, NY and [2]School of Public Health, SUNY at Albany, Albany, NY.

#942 1:35 **TISSUE DIFFERENCES IN THE REGULATION OF THE CYP2A GENES.** *X. Ding*[1, 2]. [1]Wadsworth Center, New York State Department of Health, Albany, NY and [2]School of Public Health, SUNY at Albany, Albany, NY.

#943 2:10 **OLFACTORY MUCOSAL METABOLIC ENZYMES: MODULATION OF TOXIC ENDPOINTS BASED ON DISTRIBUTION, INDUCTION, AND AGE-AND SPECIES VARIABLES.** *M. Genter*. Department of Environmental Health and Center for Environmental Genetics, University of Cincinnati, Cincinnati, OH.

#944 2:45 **GENE REGULATION BY THE AHR IN HUMAN KERATINOCYTES.** *H. I. Swanson*, *S. S. Ray*, E. M. Hoagland, E. Thompson, D. Pupula and Z. M. Georgia. Molecular and Biomedical Pharmacology, University of Kentucky, Lexington, KY.

#945 3:20 **NICOTINE INCREASES CYP2B IN THE BRAIN BUT NOT IN THE LIVER: CONTRASTING THE REGULATION IN RODENTS, NON-HUMAN PRIMATES AND PEOPLE.** R. F. Tyndale, A. Lee and S. Miksys. Department of Pharmacology, Center for Addiction and Mental Health, University of Toronto, Toronto, ON, Canada. Sponsor: *X. Ding*.

#946 3:55 **MECHANISMS THAT CONTROL THE SELECTIVE EXPRESSION OF CYP2F1, CYP4B1, AND CYP3A5 IN HUMAN LUNG.** *G. S. Yost*[1] and *R. N. Hines*[2]. [1]Pharmacology and Toxicology, University of Utah, Salt Lake City, UT and [2]Department of Pediatrics, Medical College of Wisconsin, Milwaukee, WI.

Tuesday Afternoon, March 23
1:30 PM to 4:30 PM
Room 314

WORKSHOP SESSION: SYSTEMIC DRUG ALLERGY: FREQUENCY, CHALLENGES, MECHANISMS AND NEED FOR PREDICTIVE MODELS

Chairperson(s): *Raymond Pieters, Institute for Risk Assessment Sciences/Utrecht University, TD Utrecht, Netherlands and Jack Dean, Sanofi Research Services, Malvern, PA.*

Endorsed by:
Immunotoxicology Specialty Section*

A number of drugs induce hypersensitivity responses that may result in systemic allergy and/or autoimmune-like phenomena in susceptible individuals. These reactions can be very serious and even life-threatening. The susceptibility for immune-mediated adverse drug reactions (ADRs) is dependent on a complex interplay of inherent idiosyncratic factors combined with poorly defined environmental factors. Due to the complexity of the mechanisms underlying these ADRs and the lack of predictive models, the potential for these reactions can be missed in routine toxicology testing and often remains undetected until the drug is already on the market. Therefore, a better understanding of the mechanisms of ADRs as well as the development and validation of predictive tests represent important issues for the pharmaceutical industry and for governmental agencies. Rat (in particular Brown Norway strain) as well as certain mouse models are in use to study mechanisms of ADRs by specific drugs, but these models are not applicable as general screening models. For screening for hazard identification two assays have been evaluated, the popliteal lymph node assay (PLNA) and a recently investigated modification of the Local Lymph Node Assay. These assays detect direct immunostimulatory effects of chemicals following subcutaneous administration, and PLNA data collected over the past 15-20 years correlated well with documented ADRs in man. As many drugs are administered by the oral route, an additional assay using the oral route of exposure is desirable. Recent efforts combining relevant routes of exposures with simple read-out systems such as the local lymph node assays have shown promise.

#947 1:30 **SYSTEMIC DRUG ALLERGY:FREQUENCY, CHALLENGES, MECHANISMS AND NEED FOR PREDICTIVE MODELS.** *J. Dean*[2] and *R. Pieters*[1]. [1]Immunotoxicology, IRAS/Utrecht University, Utrecht, Netherlands and [2]Sanofi-Synthelabo, Inc., Malvern, Philadelphia, PA.

#948 1:45 **MECHANISMS OF ADVERSE EFFECTS OF LOW MOLECULAR WEIGHT CHEMICALS.** *J. Uetrecht*. Faculty of Pharmacy and Medicine, University of Toronto, Toronto, ON, Canada.

#949 2:15 **POPLITEAL LYMPH NODE ASSAY AND RECENT MECHANISTIC STUDIES.** R. Pieters. Immunotoxicology, IRAS/Utrecht University, Utrecht, Netherlands. Sponsor: *J. Dean*.

#950 2:45 **MODIFICATION OF THE LOCAL LYMPH NODE ASSAY TO EVALUATE THE POTENTIAL FOR ADVERSE IMMUNOLOGICALLY-MEDIATED DRUG REACTIONS.** *B. J. Meade*[1] and *J. L. Weaver*[2]. [1]NIOSH, Morgantown, WV and [2]CDER, USFDA, Laurel, MD.

#951 3:15 **THE USE OF THE PLNA IN RELATION TO ORAL ROUTE OF EXPOSURE TO LMWCS.** *B. W. Gutting*. Chemical Biological Systems Technology Division, Naval Surface Warfare Center, Dahlgren Division, Dahlgren, VA.

Tuesday Afternoon, March 23
1:30 PM to 4:30 PM
Room 309

ROUNDTABLE SESSION: SCIENCE IN THE LEGISLATIVE PROCESS: A CONGRESSIONAL AND SCIENTIFIC VIEW

Chairperson(s): *William Brock, ENVIRON Corporation, Arlington, VA and Kenneth Olden, NIEHS, Research Triangle Park, NC.*

Endorsed by:
Regulatory Affairs and Legislative Assistance (RALA) Committee
Regulatory and Safety Evaluation Specialty Section

A primary goal for the Society of Toxicology is to promote the use of sound toxicological science in regulatory and legislative practices and policies. To achieve this goal, the SOT focuses significant activity to support science-related functions in regulatory agencies and legislative bodies with the objective of achieving better working relationships with policy makers. In this session, representatives from Congress and experienced SOT members will explore those practices that have worked best in developing and promoting good science policy. Topics to be included in this session will be a Congressional view on the "rights" and the "wrongs" of working with Congressional committees or individual representatives. It is anticipated that a speaker from both the Senate and House of Representatives will provide special insights for the SOT membership on developing relationships with Congressional members and their staff. Also, SOT members with significant experience with presentations before Congress or have worked closely with Congressional members will present on the practices that work best for the scientific community. A general discussion between speakers will address the importance of strategy and effective communication between policy makers and scientists during those times when scientific topics are being addressed by Congress. A key outcome from this roundtable discus-

sion will be to provide SOT members with greater perspective of how the process of legislation works and how scientists can be a part of that process.

#952 1:30 **SCIENCE IN THE LEGISLATIVE PROCESS: A CONGRESSIONAL AND SCIENTIFIC VIEW.** *W. J. Brock*[1] and *K. Olden*[2]. [1]ENVIRON Health Sciences Institute, Arlington, VA and [2]National Institute of Environmental Health Sciences, Research Triangle Park, NC.

Tuesday Afternoon, March 23
1:30 PM to 4:30 PM
Room 315

PLATFORM SESSION: AH RECEPTOR

Chairperson(s): *Richard Pollenz, University of South Florida, Tampa, FL and Yanan Tian, Texas A&M, College Station, TX.*

#953 1:30 **THE ROLE OF ESTROGEN IN THE MAINTENANCE OF AH RECEPTOR EXPRESSION IN MCF-7 BREAST CANCER CELLS.** *D. C. Spink*, B. H. Katz and B. C. Spink. New York State Department of Health, Wadsworth Center, Albany, NY.

#954 1:50 **A PROPOSED ROLE FOR THE ARYLHYDROCARBON RECEPTOR (AHR) IN NON-PHOTIC FEEDBACK TO THE MASTER CIRCADIAN CLOCK.** *L. T. Frame*[1], W. Li[1], J. D. Miller[2] and *R. L. Dickerson*[1]. [1]Pharmacology and Neuroscience, Texas Tech Health Sciences Center, Lubbock, TX and [2]Department of Cell and Neurobiology, Keck School of Medicine of USC, Los Angeles, CA.

#955 2:10 **LIGHT-INDUCED SIGNALING VIA THE ARYL HYDROCARBON RECEPTOR (AHR).** *A. Rannug*[1], M. Oberg[1], L. Bergander[2], *H. Hakansson*[1] and University. Rannug[2]. [1]Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden and [2]Cellular and Genetic Toxicology, Stockholm University, Stockholm, Sweden.

#956 2:30 **AH RECEPTOR-REGULATED CHROMATIN REMODELING AND TRANSCRIPTIONAL ELONGATION:** ***Sequential recruitment of transcription factors and differential phosphorylation of c-terminal domain of rna polymerase ii at cyp1a1 promoter.*** *Y. Tian* and S. Ke. Vet. Physiology and Pharmacology, Texas A&M University, College Station, TX.

#957 2:50 **COREGULATOR DYNAMICS OF AHR-MEDIATED TRANSCRIPTIONAL ACTIVATION: RECRUITMENT OF ERα TO TCDD RESPONSIVE PROMOTERS.** J. Matthews[1], B. Wihlen[1] and J. Gustafsson[2, 1]. [1]Biosciences, Karolinska Institutet, Huddinge, Sweden and [2]Medical Nutrition, Karolinska Institutet, Huddinge, Sweden. Sponsor: *T. Zacharewski*.

#958 3:10 **AGONIST AND CHEMOPREVENTATIVE LIGANDS INDUCE DIFFERENTIAL TRANSCRIPTIONAL COFACTOR RECRUITMENT BY ARYL HYDROCARBON RECEPTOR.** *E. Hestermann*[1, 2, 3] and M. Brown[2, 3]. [1]Biology Department, Furman University, Greenville, SC, [2]Medical Oncology, Dana Farber Cancer Institute, Boston, MA and [3]Harvard Medical School, Boston, MA.

#959 3:30 **PROTEIN KINASE C (PKC)-ELICITED PHOSPHORYLATION OF THE ARYL HYDROCARBON RECEPTOR (AHR) IS INHIBITED BY MUTATION OF AHR TYROSINE 9.** *G. D. Minsavage*[1], G. S. Bedi[2] and *T. A. Gasiewicz*[1]. [1]Toxicology Training Program, Department of Environmental Medicine, University of Rochester, Rochester, NY and [2]Biochemistry and Biophysics Center for Oral Biology, University of Rochester, Rochester, NY.

#960 3:50 **IMPACT OF NUCLEOCYTOPLASMIC SHUTTLING AND ACCESSORY PROTEINS ON THE DEGRADATION OF THE ARYL HYDROCARBON RECEPTOR (AHR).** J. Popat, R. Buzzeo and *R. S. Pollenz*. Biology, University of South Florida, Tampa, FL.

#961 4:10 **MOLECULAR MECHANISMS OF DIOXIN INSENSITIVITY IN *XENOPUS LAEVIS* EMBRYOS AND TADPOLES.** J. A. Lavine, B. H. Philips, T. C. Susman, A. J. Rowatt, A. J. Whitington, T. Klimova and W. H. Powell. Biology, Kenyon College, Gambier, OH. Sponsor: *M. Hahn*.

Tuesday Afternoon, March 23
1:30 PM to 4:30 PM
Room 317

PLATFORM SESSION: ANALYSIS OF GENETIC POLYMORPHISMS

Chairperson(s): *Terrance Kavanaugh, University Washington, WA and James Yager, Johns Hopkins, Baltimore, MD.*

#962 1:30 **FUNCTIONALITY OF HUMAN XRCC1 399 AND 194 VARIANT PROTEINS IN CELLS DETERMINED BY AN ULTRA-SENSITIVE AND REAL-TIME SSB ASSAY.** J. Nakamura[1], T. Takanami[2], *J. A. Swenberg*[1] and Y. Kubota[2]. [1]Department of Environmental Sciences and Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC and [2]Department of Biochemistry, Medical School of Medicine, Iwate Medical University, Morioka, Iwate, Japan.

#963 1:50 **STUDIES ON PROTEIN STABILITY AND METABOLIC ACTIVITY OFHUMAN CYTOCHROME P450 2A6 (CYP2A6) GENETIC VARIANTS.** K. George, X. He and *J. Hong*. Joint Graduate Program Toxicology, Rutgers University/UMDNJ and School of Public Health, Piscataway, NJ.

#964 2:10 **SINGLE AND COMBINED GENOTYPES ON LUNG CANCER SUSCEPTIBILITY IN CHILEAN PEOPLE.** L. Gil, V. Martinez and M. Adonis. Cellular and Molecular Biology, Faculty of Medicine University of Chile, Santiago, Chile. Sponsor: *R. Yang*.

#965 2:30 **N-ACETYLTRANSFERASE 2, EXPOSURE TO SMALL AMOUNTS OF AROMATIC AMINES, AND BLADDER CANCER.** *K. Golka*[1], K. Farker[2], W. Weistenhoefer[1], T. Reckwitz[3], V. Prior[4], T. Seidel[5], R. Thier[1], M. Blaszkewicz[1] and H. M. Bolt[1]. [1]Institute for Occupational Physiology, University of Dortmund, Dortmund, Germany, [2]Institute of Clinical Pharmacology, Friedrich-Schiller-University Jena, Jena, Germany, [3]Department of Urology, Klinikum Leverkusen, Leverkusen, Germany, [4]Department of Urology, Klinikum Dortmund, Dortmund, Germany and [5]Department of Urology, Paul-Gerhard-Stiftung, Lutherstadt Wittenberg, Germany.

#966 2:50 **CORRELATION BETWEEN CATECHOL-*O*-METHYLTRANSFERASE GENOTYPE AND PHENOTYPE.** A. E. Sullivan[1], *J. E. Goodman*[2], *P. M. Silber*[3] and *J. D. Yager*[1]. [1]Environmental Health Sciences, Johns Hopkins University, Baltimore, MD, [2]Laboratory of Human Carcinogenesis, NCI, NIH, Bethesda, MD and [3]*In Vitro* Technologies, Inc., Baltimore, MD.

#967 3:10 **GLUTATHIONE-S-TRANSFERASE POLYMORPHISMS AND ASSOCIATIONS WITH T1DM.** *L. M. Bekris*[1], C. Shephard[1], *F. Farin*[1], J. Graham[2], B. Mcneney[2], *T. J. Kavanagh*[1] and A. Lernmark[1]. [1]Environmental Health, University of Washington, Seattle, WA and [2]Statistics and Actuarial S, Simon Fraser University, Burnaby, BC, Canada.

#968 3:30 **POLYMORPHISMS IN HUMAN SOLUBLE EPOXIDE HYDROALSE.** P. K. Srivastava and *D. F. Grant*. Pharmacy, University of Connecticut, Storrs, CT.

#969 3:50 **POLYMORPHISMS IN ALCOHOL DEHYDROGENASE INFLUENCE TOPICAL CAPSAICINOID ACTIVITY IN HUMAN SKIN.** L. K. Pershing and Y. Chen. Dermatology, University of Utah, Salt Lake City, UT. Sponsor: *G. Yost*.

#970 4:10 **ACUTE TOXICITY OF ACETALDEHYDE ON ALDEHYDE DEHYDROGENASE 2 GENE TARGETING MICE: SINGLE DOSE IP STUDY.** T. Isse[1], T. Oyama[1], N. Kunugita[2], K. Matsuno[3], K. Kitagawa[4], A. Yoshida[5], I. Uchiyama[6], M. Ogawa[1], T. Kinaga[1], R. Suzuki[1], T. Yamaguchi[1] and *T. Kawamoto*[1]. [1]Environmental Health, University of Occupational and Environmental Health, Kitakyushu, Fukuoka, Japan, [2]Health Science, University of Occupational and Environmental Health, Kitakyushu, Japan, [3]Bio-information Research Center, University of Occupational and Environmental Health, Kitakyushu, Japan, [4]First Department of Biochemistry, Hamamatsu Medical University, Hamamatsu, Japan, [5]Beckman Research Institute of the City of Hope, Duarte, CA and [6]Environmental hygiene, School of technology, Kyoto University, Kyoto, Japan.

Tuesday Afternoon, March 23
1:30 PM to 4:30 PM
Room 316

PLATFORM SESSION: MECHANISMS OF OXIDATIVE INJURY

Chairperson(s): *Dennis Petersen, University of Colorado Health Sciences Center, Denver, CO and Ramesh Gupta, Murry State University, Hopkinsville, KY.*

#971 1:30 **ARRESTED LUNG DEVELOPMENT ASSOCIATED WITH CHANGES IN TEMPORAL EXPRESSIONS OF FIBROBLAST GROWTH FACTOR (FGF) RECEPTORS-3 AND -4 IN NEWBORN MICE EXPOSED TO SUBLETHAL HYPEROXIA.** *S. E. Welty*, M. S. Park, B. L. Schanbacher, L. K. Rogers, A. C. Cook, T. N. Hansen, J. A. Bauer and *C. V. Smith*. Pediatrics, Columbus Children, Columbus, OH.

#972 1:48 **THIOREDOXIN AND THE TOXICITY OF ACROLEIN.** Y. Choi, X. Yang and *J. P. Kehrer*. Division of Pharmacology and Toxicology, College of Pharmacy, The University of Texas at Austin, Austin, TX.

#973 2:06 **EFFECT OF OVEREXPRESSION OF HGSTA4-4 ON OXIDATIVE INJURY AND PROLIFERATION OF HEPG2 CELLS EXPOSED TO 4-HYDROXYNONENAL.** *E. P. Gallagher* and *C. M. Huisden*. Physiological Sciences, University of Florida, Gainesville, FL.

#974 2:24 **REDUCED EXPRESSION OF 8-OXOGUANINE-DNA GLYSOSYLASE IN THE EKER RAT.** *S. S. Lau*, *S. L. Habib*, M. S. Chacko and *T. J. Monks*. Department of Pharmacology and Toxicology, College of Pharmacy, University of Arizona Health Sciences Center, Tucson, AZ.

#975 2:42 **CARBONYL REDUCTASE CATALYZES REDUCTION OF 4-OXONONENAL.** *D. R. Petersen*[1], *J. A. Doorn*[1], E. Maser[2] and D. J. Claffey[1]. [1]Pharmaceutical Sciences, University of Colorado Health Sciences Center, Denver, CO and [2]Experimental Toxicology, University of Kiel, Kiel, Germany.

#976 3:00 **DNA DAMAGE-INDUCED HISTONE H3 PHOSPHORYLATION DOES NOT INVOLVE SITES NORMALLY ASSOCIATED WITH MITOTIC CHROMOSOMAL CONDENSATION.** *K. Cox*[1], *A. H. Palmer*[1], *S. S. Lau*[3], K. N. Dalby[2] and *T. J. Monks*[3]. [1]Pharmacology and Toxicology, University of Texas at Austin, Austin, TX, [2]Medicinal Chemistry, University of Texas at Austin, Austin, TX and [3]Pharmacology and Toxicology, University of Arizona Health Sciences Center, Tucson, AZ.

#977 3:18 **GENETIC MUTATION ANALYSIS OF THE GLUTATHIONE REDUCTASE HYPOMORPHIC MICE (GR1A1NEU) INDICATES A GENETIC KNOCKOUT ANIMAL.** *C. V. Smith*, T. Tamura, L. K. Rogers, B. J. Rogers, T. N. Hansen and *S. E. Welty*. Pediatrics, Columbus Children's Research Institute, Columbus, OH.

#978 3:36 **THE ROLE OF NRF2 AND ARE IN THE INITIATION AND PROGRESSION OF AMYOTROPHIC LATERAL SCLEROSIS.** *J. C. Kern*, *A. D. Kraft* and *J. A. Johnson*. Pharmaceutical Sciences, University of Wisconsin-Madison, Madison, WI.

#979 3:54 **CIGARETTE SMOKE INDUCIBLE HUMAN *FRA-1* EXPRESSION IN AIRWAY EPITHELIAL CELLS IS REGULATED BY EGFR-MEDIATED AND ERK/JNK/P38- DEPENDENT MAP KINASE PATHWAYS.** S. P. Reddy and Q. Zhang. Environmental Health Sciences, Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD. Sponsor: *K. Steven*.

#980 4:12 **4-HYDROXYNONENAL-MEDIATED INHIBITION OF ENZYME-CATALYZED OXIDATION OF THE REACTIVE ELECTROPHILE 3, 4 DIHYDROXYPHENYLACETALDEHYDE.** *J. A. Doorn* and *D. R. Petersen*. Pharmaceutical Sciences, University of Colorado Health Sciences Center, Denver, CO.

Tuesday Afternoon, March 23
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: SAFETY EVALUATION II

Chairperson(s): *James MacGregor, USFDA NCTR, Rockville, MD and George Thomas, Calvert Laboratories, PA.*

Displayed: *1:30 PM–4:30 PM*

Attended*: 1:30 PM–3:00 PM*

#981 **RAPID ANALYSIS OF HEPATOCYTE TOXICITY USING BD OXYGEN BIOSENSORS.** L. E. Dike[1], H. Xia[1] and M. Timmins[2]. [1]R&D, BD Biosciences, Woburn, MA and [2]R&D, BD Biosciences, Bedford, MA. Sponsor: *D. Stresser*.

#982 **IDENTIFICATION OF THE POTENTIAL OF I_{Kr} (HERG) BLOCKERS TO INDUCE QT PROLONGATION AND TORSADE DE POINTES: EFFECTS OF TERFENADINE, DL-SOTALOL AND VERAPAMIL IN ANESTHETIZED GUINEA PIGS.** *G. P. Thomas*, J. G. Morahan and *C. B. Spainhour*. Pharmacology and Electrophysiology, Calvert Laboratories Inc., Olyphant, PA.

#983 **EVALUATION OF RAT SERUM PROTEIN ELECTROPHORESIS USING THE SEBIA HYDRASYS SYSTEM.** *L. Le Sauteur*, L. Huard, K. Larocque and Y. Deschamps. Immunology, CTBR, Senneville, QC, Canada.

#984 **CIRCADIAN RHYTHM OF RATS: SHOULD CNS EFFECTS OF SMALL MOLECULES BE EVALUATED DURING THE DARK CYCLE.** K. Cardoza[1], M. Gallacher[1], C. Doherty[2], *C. Alden*[2], D. Tumas[2] and V. J. Kadambi[2]. [1]Comparative Medicine, Millennium Pharmaceuticals, Inc., Cambridge, MA and [2]Drug Safety and Disposition, Millennium Pharmaceuticals, Inc., Cambridge, MA.

#985 **EVALUATION OF STATISTICAL METHODS TO ANALYZE MOUSE LYMPHOMA ASSAY MUTATION DATA.** *M. Moore*[1], J. Clements[2], R. Delongchamp[1], *A. Thakur*[3] and *B. Myhr*[3]. [1]NCTR, Jefferson, AR, [2]Covance, Harrogate, United Kingdom and [3]Covance, Vienna, VA.

#986 **APPLICATIONS OF AUTOMATED DIGITAL MICROSCOPY IMAGING IN INVESTIGATING MECHANISMS OF TOXICITY.** X. Ying, J. Dwyer, R. A. Schuhl, *T. M. Monticello*, *Z. Jayyosi* and *P. S. Rao*. Drug Safety Evaluation, Aventis, Bridgewater, NJ.

#987 **SAFETY EVALUATION OF SMALL MOLECULES USING RADIOTELEMETRY IN RATS.** M. Gallacher[1], K. Cardoza[1], C. Doherty[2], *C. Alden*[2], D. Tumas[2] and V. J. Kadambi[2]. [1]Comparative Medicine, Millennium Pharmaceuticals, Inc., Cambridge, MA and [2]Drug Safety and Disposition, Millennium Pharmaceuticals, Inc., Cambridge, MA.

#988 **MECHANISM FOR SHORTENING PT AND APTT IN DOGS AND RATS: EFFECT OF FIBRINOGEN ON PT AND APTT.** *M. Kurata*, Y. Sasayama, N. Yamasaki, I. Kitazawa, Y. Hamada and I. Horii. Worldwide Safety Sciences, Pfizer Global Research & Development, Nagoya Laboratories, Pfizer Inc., Taketoyo, Aichi, Japan.

#989 **A FLOW CYTOMETRIC ASSAY THAT PERMITS INTEGRATION OF CHROMOSOMAL DAMAGE ASSESSMENT WITH ROUTINE TOXICITY TESTING.** *J. T. MacGregor*[1], M. E. Bishop[2], *S. Dertinger*[3], J. McNamee[7], *M. M. Moore*[2], A. Aidoo[2], S. Harper[4], R. Frobish[5] and M. Hayashi[6]. [1]USFDA NCTR, Rockville, MD, [2]USFDA NCTR, Jefferson, AR, [3]Litron Laboratories, Rochester, NY, [4]USFDA CFSAN, Laurel, MD, [5]USFDA CVM, Laurel, MD, [6]NIHS, Tokyo, Japan and [7]Health Canada, Ottawa.

#990 **EFFECTS OF SUBCHRONIC DERMAL APPLICATION OF BREAK-FREE CLP® IN CD-1 MICE.** *D. P. Arfsten*[1], A. R. Thitoff[1], E. W. Johnson[1], A. Jung[1], W. W. Brinkley[2], D. Schaeffer[3] and *K. R. Still*[1]. [1]Naval Health Research Center Toxicology Detachment, Wright-Patterson AFB, OH, [2]Operational Toxicology, Air Force Research Laboratory, Wright-Patterson AFB, OH and [3]Department of Veterinary Biosciences, University of Illinois at Urbana Champaign, Urbana, IL.

#991 **SUBCHRONIC TOXICITY 90-DAY ORAL GAVAGE STUDY OF 8-2 TELOMER B ALCOHOL IN RATS.** *G. S. Ladics*[1], *G. L. Kennedy*[1], *J. O'Connor*[1], N. Everds[1], S. R. Frame[1], S. Gannon[1], R. Jung[2], H. Iwai[3] and S. Shin-ya[4]. [1]DuPont Haskell Laboratory, Newark, DE, [2]Clariant, GmbH, Sulzbach, Germany, [3]Daikin Industries, Ltd., , Osaka, Japan and [4]Asahi Glass Co., Ltd., , Tokyo, Japan.

#992 **SAFETY OF TINOSORB® M ACTIVE, A NEW SUNSCREEN INGREDIENT FOR BROAD SPECTRUM UV PROTECTION.** *W. F. Salminen*[1] and J. R. Plautz[2]. [1]Product Safety and Regulatory, Ciba Specialty Chemicals Corporation, High Point, NC and [2]PSR, Ciba Specialty Chemicals, Basel, Switzerland.

#993 **VAPOR INHALATION TOXICITY STUDY OF HEXAMETHYLCYCLOTRISILOXANE IN THE RAT.** *P. A. Jean*, J. M. Tobin and *K. P. Plotzke*. Dow Corning Corporation, Auburn, MI.

#994 **CHRONIC TOXICITY ASSESSMENT OF GENISTEIN IN SPRAGUE DAWLEY RATS.** *B. Delclos*[1], C. Weis[1], *D. Doerge*[1], G. Olson[2], R. Trotter[2], N. Sadovova[2] and R. Newbold[3]. [1]NCTR, Jefferson, AR, [2]Pathology Associates, Jefferson, AR and [3]NIEHS, Research Triangle Park, NC.

#995 **HEPAVIR B, A CYP3A4-ACTIVATED PRODRUG OF PMEA, SHOWED BETTER SAFETY THAN HEPSERA IN PRE-CLINICAL STUDIES.** *D. Vitarella*, *S. Dadgostari* and *C. Lin*. Drug Dev., ICN Pharmaceuticals, Inc., Costa Mesa, CA.

#996 **INTRAPERITONEAL ADHESION FORMATION FOLLOWING IMPLANTATION OF HERNIA REPAIR GRAFT MATERIALS:COMPARISONS OF PERMACOL™ WITH SURGIPRO® AND SURGISIS GOLD™ IN THE RAT.** S. L. Saynor[1], G. Hale[1], S. Bloor[2] and C. Curtis[2]. [1]Covance Laboratories Ltd., Harrogate, United Kingdom and [2]Tissue Science Laboratories Plc, Leeds, United Kingdom. Sponsor: *D. Everett*.

#997 **INTRODUCTION OF THE *IN VIVO* MINI-TOX STUDY AS AN EFFECTIVE TOOL TO IMPROVE CONFIDENCE IN SAFETY IN THE EARLY STAGE OF DRUG DEVELOPMENT.** Y. Sato, M. Nagata, T. Mako, H. Yamada and *I. Horii*. Worldwide Safety Sciences, PGRD Nagoya Laboratories, Pfizer Inc., Aichi, Japan.

#998 **IS 20% INHIBITION OF HERG CURRENT SUFFICIENT FOR PREDICTING FOR *IN VIVO* QT INTERVAL PROLONGATION.** C. Doherty, C. Claiborne, T. Glyptis, M. Holmqvist, M. Stewart, P. Eddy, V. Sasseville, *C. Alden* and V. Kadambi. Millennium Pharmaceuticals, Inc., Cambridge, MA.

#999 **THE COMMON MARMOSET (CALLITHRIX JACCHUS) AS A MODEL IN TOXICOLOGY: REFERENCE CONTROL DATA AND COMPARISON WITH MACAQUES.** S. Korte, University. Zuehlke, J. Kaspareit, S. Friedrichs-Gromoll, W. Mueller, F. Vogel and G. Weinbauer. Covance Laboratories GmbH, Muenster, Germany. Sponsor: *P. Thomas*.

#1000 **DERMAL DOSING OF NEONATAL RATS: EFFECT OF MOTHER-INFANT SEPARATION AND OCCLUSIVE DOSING.** J. F. Barnett[1], *D. B. Learn*[1], *A. M. Hoberman*[1], *T. G. Osimitz*[2] and University. Vedula[3]. [1]Charles River Discovery and Development Services, Argus Division, Horsham, PA, [2]Science Strategies, LLC., Charlottesville, VA and [3]S.C. Johnson & Sons, Inc., Racine, WI.

#1001 **TAMPON RISK ASSESSMENT: A COMPREHENSIVE APPROACH.** *A. E. Hochwalt*. Procter & Gamble, Cincinnati, OH.

#1002 **COMPARATIVE REPEATED-DOSE TOXICITY OF LIPOSOME-ENCAPSULATED VINCRISTINE SULFATE AND FREE VINCRISTINE SULFATE IN RATS.** P. M. Tam[1], R. Oshanek[1], N. Yasuda[1], R. Namdari[1], A. Janse[1], O. Smals[1], L. Armer[2], *J. Daniels*[3] and C. Flowers[1]. [1]Preclincal Development, INEX Pharmaceuticals Corporation, Burnaby, BC, Canada, [2]CTBR Bio-Research Inc., Senneville, QC, Canada and [3]Cantox Health Sciences International, Mississauga, ON, Canada.

#1003 **CONSTRUCTION OF A HUMAN ADVERSE EFFECTS DATABASE FOR MODELING QUANTITATIVE STRUCTURE-ACTIVITY RELATIONSHIPS (QSARS).** N. L. Kruhlak[1], J. L. Weaver[2], R. Benz[1], *J. F. Contrera*[1] and E. J. Matthews[1]. [1]USFDA, Rockville, MD and [2]USFDA, Laurel, MD.

#1004 **THE FERRET AS A MODEL OF EMETIC SENSITIVITY.** S. Mason, H. Penton and P. Mansell. CTBR, Senneville, QC, Canada. Sponsor: *M. Vezina*.

Tuesday Afternoon, March 23
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: FOOD SAFETY AND NUTRACEUTICALS

Chairperson(s): *Manashi Bagchi, InterHealth Research Center, CA and Stanley Omaye, University of Nevada, Reno, NV.*

Displayed: *1:30 PM–4:30 PM*

Attended*: 3:00 PM–4:30 PM*

#1005 **EFFECTS OF 3, 3', 4, 4'-TETRACHLOROBIPHENYL (PCB 77) ON THE DISTRIBUTION AND METABOLISM OF SELENIUM IN RATS.** *D. N. Stemm*[2], *L. W. Robertson*[3], J. C. Tharappel[1] and *H. P. Glauert*[1]. [1]Grad. Center for Nutritional Sciences, University of Kentucky, Lexington, KY, [2]Graduate Center for Toxicology, University of Kentucky, Lexington, KY and [3]Department of Occupational and Environmental Health, University of Iowa, Iowa City, IA.

#1006 **DEVELOPMENT OF SOFTWARE THAT INTERFACES WITH THE FOOD ANIMAL RESIDUE AVOIDANCE DATABANK TO ESTIMATE EXTENDED WITHDRAWAL INTERVALS FOR VETERINARY DRUGS.** R. Gehring, J. Wang, X. Lou, *R. E. Baynes* and *J. E. Riviere*. Center for Chemical Toxicology Research and Pharmacokinetics, North Carolina State University, Raleigh, NC.

#1007 **EVALUATION OF THE SUBCHRONIC TOXICITY OF A TRANSGENIC MAIZE.** I. Lamb[2], *S. A. MacKenzie*[1], *L. A. Malley*[1], N. E. Everds[1] and J. F. Hansen[2]. [1]DuPont Haskell Laboratory, Newark, DE and [2]Pioneer Hi-Bred International, Inc., Johnston, IA.

#1008 **HEALTH HAZARD ASSESSMENT FOR PEANUT ALLERGY.** S. A. Assimon and *P. M. Bolger*. CFSAN, USFDA, College Park, MD.

#1009 **METABOLISM AND PHARMACOKINETICS OF NEOTAME IN HUMAN VOLUNTEERS.** P. Aikens[1], D. Kirkpatrick[1], *D. Mayhew*[2], W. Stargel[2], G. Wright[2] and J. Allen[2]. [1]Huntingdon Life Sciences, Huntingdon, Cambs, United Kingdom and [2]The NutraSweet Company, Evanston, IL.

#1010 **EFFECTS OF DIETARY EXPOSURE TO POLYPHENOLIC COMPOUNDS IN DIFFERENT BERRIES ON COLON CANCER IN RATS.** *J. H. Exon* and T. Taruscio. Food Science and Toxicology, University of Idaho, Moscow, ID.

#1011 **VITAMIN E ANALOGUE LEVELS IN TISSUES OF OLD AND YOUNG RATS FED D-α-TOCOPHERYL SUCCINATE.** T. G. Taruscio[1], *J. H. Exon*[1], G. D. Clifton[2] and *M. W. Fariss*[2]. [1]Food Science and Toxicology, University of Idaho, Moscow, ID and [2]Pharmaceutical Science and Pharmacotherapy, Washington State University, Pullman, WA.

#1012 **METABOLISM AND PHARMACOKINETICS OF NEOTAME IN RATS AND DOGS.** *D. Mayhew*[2], P. Aikens[1], D. Kirkpatrick[1], W. Stargel[2], G. Wright[2] and J. Allen[2]. [1]Huntingdon Life Sciences, Huntingdon, Cambs., United Kingdom and [2]The NutraSweet Company, Evanston, IL.

#1013 **DOCOSAHEXAENOIC ACID DOSE-DEPENDENTLY SUPPRESSES DEOXYNIVALENOL INDUCED IGA NEPHROPATHY, INTERLEUKIN-6 AND CYCLOOXYGENASE-2 GENE EXPRESSION.** *Q. Jia*[1, 2] and *J. J. Pestka*[1, 2]. [1]Department of food science and human nutrition, Michigan State University, East Lansing, MI and [2]Institute for enviromental toxicolocgy, Michigan State University, East Lansing, MI.

#1014 **EXPOSURE FOR ONE YEAR TO A METABOLIC NUTRITION SYSTEM CONTAINING EPHEDRA AND CAFFEINE DOES NOT ALTER SERUM CHEMISTRY PROFILE OR TARGET ORGAN HISTOPATHOLOGY OF B6C3F1 MICE.** *S. D. Ray*[1, 2], *S. Stohs*[2] and R. Hackman[3]. [1]Pharmacology & Toxicology, Long Island University, Brooklyn, NY, [2]Coll. of Pharmacy and Health Professions, Creighton University, Omaha, NE and [3]Department of Nutrition, University of California, Davis, CA.

#1015 **SPHINGOSINE KINASE CONFERS RESISTANCE TO FUMONISIN B_1 APOPTOSIS IN HUMAN RENAL CELLS.** N. sharma and *R. P. Sharma*. Physiology and Pharmacology, University of Georgia, Athens, GA.

#1016 **DOWNREGULATION OF mdr1b mRNA EXPRESSION IN THE KIDNEY OF NEXT GENERATION EXPOSED TO TRIBUTYLTIN CHLORIDE.** K. Kobayashi[1], T. Watanabe[2] and *Y. Sugita-Konishi*[1]. [1]Division of Microbiology, National Institute of Health Sciences, Tokyo, Japan and [2]Division of Food, National Institute of Health Sciences, Tokyo, Japan.

#1017 **NAVIGATING THE REGULATORY WATERS AT FDA- TOXICOLOGY SAFETY REVIEWS OF FOOD AND COLOR ADDITIVES.** *D. B. Carlson*, *T. L. Taras* and *T. Thurmond*. FDA, College Park, MD.

#1018 **NATIONAL RESIDUE PROGRAM (NRP) AS A FOOD SAFETY TOOL.** R. Kishore, P. Zervos, *A. Brown*, C. Deyrup, R. Sutton and *J. Vodela*. Residue Branch, USDA/FSIS, Washington DC, DC.

#1019 **TOXICOLOGICAL EVALUATION AND ANTIOXIDANT POTENTIAL OF A NOVEL BOTANICAL EXTRACT FOR USE IN AMELIORATING ALLERGIC RHINITIS.** *M. Bagchi*[1], A. Amit[3], V. S. Saxena[3], N. Pratibha[3] and *D. Bagchi*[2, 1]. [1]R & D, InterHealth Research Center, Benicia, CA, [2]Pharmacy Sciences, Creighton University Medical Center, Omaha, NE and [3]R & D, Natural Remedies Research Center, Bangalore, India.

#1020 **SAFETY STUDIES OF A NOVEL, NATURAL EXTRACT OF (-)-HYDROXYCITRIC ACID, A SUPPLEMENT FOR WEIGHT MANAGEMENT.** *D. Bagchi*[1, 2], M. Shara[1], S. E. Ohia[1], T. Yasmin[1], *M. Bagchi*[2], A. Chatterjee[1] and *S. J. Stohs*[1]. [1]Pharmacy Sciences, Creighton University Medical Center, Omaha, NE and [2]R&D, InterHealth Research Center, Benicia, CA.

#1021 **THE USE OF STRUCTURE ACTIVITY RELATIONSHIP (SAR) ANALYSIS IN THE SAFETY ASSESSMENT OF FOOD CONTACT NOTIFICATIONS.** A. J. McDougal, *M. Twaroski*, R. Chanderbhan, N. Braier, K. Arvidson, J. Mayer, M. Cheeseman and A. Bailey. Division of Food Contact Notifications, OFAS, USFDA, College Park, MD.

#1022 **TOXICOLOGICAL EVALUATION OF JOALA, A HOME-BREWED BEVERAGE, PREPARED FROM CORN CONTAMINATED WITH *FUSARIUM VERTICILLIOIDES* CULTURE MATERIAL.** *K. A. Voss*[1], L. H. Couch[2], *P. C. Howard*[2], N. P. Keller[3], M. Mabathoana[4] and C. W. Bacon[1]. [1]Toxicology & Mycotoxin Research Unit, USDA Agricultural Research Service, Athens, GA, [2]NCTR, USFDA, Jefferson, AR, [3]Plant Pathology, University of Wisconsin, Madison, WI and [4]Consultant, Maseru, Lesotho.

#1023 **FUMONISINS IN MAIZE IN GUATEMALA AND A PRELIMINARY ESTIMATE OF DAILY INTAKES.** *R. T. Riley*[1], E. Palencia[2], O. R. Torres[2], A. E. Glenn[1] and M. Fuentes[3]. [1]Toxicology and Mycotoxins Research Unit, USDA-ARS, Athens, GA, [2]Institute of Nutrition of Central America and Panama, Guatemala City, Guatemala and [3]Institute of Agricultural Science and Technology, Guatemala City, Guatemala.

#1024 **SAFETY EVALUATION OF A NATURAL TOMATO OLEORESIN EXTRACT DERIVED FROM TOMATOES.** R. A. Matulka, *A. M. Hood* and *J. C. Griffiths*. Burdock Group, Vero Beach, FL.

#1025 **POLYUNSATURATED FATTY ACIDS INHIBIT TOXIN-INDUCED ACTIVATION OF MITOGEN ACTIVATED PROTEIN KINASES.** Y. Shi[1] and *J. J. Pestka*[1, 2]. [1]Food Science and Human Nutrition, Michigan State University, East Lansing, MI and [2]Institute for Environmental Toxicology, Michigan State University, East Lansing, MI.

#1026 **A 24-MONTH DIETARY CARCINOGENICITY STUDY OF DAG (DIACYLGLYCEROL) IN MICE.** J. B. Kirkpatrick[1], *C. P. Chengelis*[1], R. H. Bruner[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.

#1027 **COMBINATION TOXICITY OF ACRYLAMIDE AND HEAVY METALS – ADDITIVE EFFECTS OR MORE.** J. B. Schulze[1] and *C. Siegers*[2]. [1]Office of the Dean, Frankfurt/Main, Germany and [2]Inst. Exp. CLin. Pharmacology Toxicol., Luebeck, Germany.

#1028 **A 24-MONTH CARCINOGENICITY STUDY OF DAG (DIACYLGLYCEROL) IN RATS WITH DIETARY OPTIMIZATION.** C. P. Chengelis[1], *J. B. Kirkpatrick*[1], R. H. Bruner[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.

#1029 ***IN VITRO* SCREENING FOR BIOLOGICAL ACTIVITY ASSOCIATED WITH FUMONISINS IN NIXTAMALIZED FOODS.** *L. D. Williams*[1, 2], *K. A. Voss*[2], *W. P. Norred*[2], *D. S. Saunders*[3] and *R. T. Riley*[2, 1]. [1]Environmental Health Sciences, University of Georgia, Athens, GA, [2]Toxicology and Mycotoxin Research Unit, USDA, Athens, GA and [3]Department of Food Safety, Frito-Lay, Inc., Plano, TX.

#1030 **COMBINATIVE TOXIC EFFECTS OF AFLATOXIN-B_1 AND MICROCYSTIN-LR IN HUMAN CELL LINES AND VERTEBRATES.** *M. Billam*, *L. Tang*, *C. McKean*, *H. Luo*, M. Tang and *J. Wang*. EnvTox/TIEHH, TTU, Lubbock, TX.

#1031 **RECALL AND TRACE BACK: FEDERAL, STATE AND FOOD INDUSTRY COOPERATIVE EFFORTS TO ENSURE FOOD SAFETY.** A. Tawadrous[1], *A. M. Kadry*[2], E. Jensen[2], W. Schlosser[2], J. Kause[2] and C. Maczka[2]. [1]Recall Management Divsion, Food Safety and Inspection Service Department Of Agriculture, Washington, DC and [2]Risk Assessment Divison, Food Safety and Inspection Service Department Of Agriculture, Washington, DC.

#1032 **EFFECTS OF SIX DIETARY PHYTOCHEMICALS ON AFLATOXIN B_1-MEDIATED GENOTOXICITY AND GENE EXPRESSION IN HUMAN HEPATOCYTES AND HEPG2 CELLS.** *K. Gross-Steinmeyer*[1], K. M. Bradley[1], P. L. Stapleton[1], F. Liu[1], J. H. Tracy[1], *T. K. Bammler*[1], R. P. Beyer[1], S. C. Strom[2] and *D. L. Eaton*[1]. [1]Department Environment & Occup. Health Sciences, University Washington, Seattle, WA and [2]Department Pathology, University Pittsburgh, Pittsburgh, PA.

#1033 **EFFECTS OF INCREASING PERCENTAGE OF DIETARY MAIZE ON RATS.** *S. A. MacKenzie*[1], N. E. Everds[1], *L. A. Malley*[1], *G. S. Ladics*[1], J. F. Hansen[1], I. Lamb[2] and G. Dana[2]. [1]DuPont Haskell Laboratory, Newark, DE and [2]Pioneer Hi-Bred International, Inc., Johnston, IA.

#1034 **IMPACT OF 30-DAY ORAL DOSING WITH N-ACETYL-L-CYSTEINE ON SPRAGUE-DAWLEY RAT PHYSIOLOGY.** E. W. Johnson[1], A. R. Thitoff[1], A. E. Jung[1], J. S. Eggers[2], S. L. Lohrke[1], A. J. Bobb[1] and *D. P. Arfsten*[1]. [1]Naval Health Research Center Toxicology Detachment, Wright-Patterson AFB, OH and [2]Air Force Research Laboratory, Brooks AFB, TX.

#1035 **COMBINATIVE TOXICITY OF MULTIPLE MYCOTOXIN MIXTURES IN ANIMALS AND HUMAN CELLS.** *C. Mckean*, *L. Tang*, *M. Billam*, *H. Luo*, M. Tang, C. Theodorakis, R. Kendall and *J. Wang*. EnvTox/TIEHH, TTU, Lubbock, TX.

#1036 **APPLE JUICE EXTRACT AND CERTAIN POLYPHENOLS IN APPLE JUICE ACT AS INDUCERS OF CYP1A1 AND MRP2.** C. Pohl[1], V. Emmerlich[1], H. Schmitz[1], F. Will[2], H. Dietrich[2] and *D. Schrenk*[1]. [1]Food Chemistry and Environmental Toxicology, University of Kaiserslautern, Kaiserslautern, Germany and [2]Forschungsanstalt Geisenheim, Geisenheim, Germany.

#1037 **ONCOGENICITY EVALUATIONS OF SOY ISOFLAVONES AND BOWMAN-BIRK INHIBITOR IN $p53^{(+/-)}$ MICE.** *D. McCormick*[1], *W. Johnson*[1], R. Selby[1], L. Dooley[1], R. Morrissey[2], L. Arp[2] and *J. Crowell*[3]. [1]IIT Research Institute, Chicago, IL, [2]Pathology Associates, Chicago, IL and [3]National Cancer Institute, Bethesda, MD.

Tuesday Afternoon, March 23
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: ENVIRONMENTAL/ECOTOXICOLOGY

Chairperson(s): *Eva Oberdoerster, Southern Methodist University, Dallas, TX and Wilson Rumbeiha, Michigan State University, East Lansing, MI.*

Displayed: *1:30 PM–4:30 PM*

Attended*: 1:30 PM–3:00 PM*

#1038 **A SIMPLE CYTOTOXICITY AND GENOTOXICITY ASSAY FOR ENVIRONMENTAL MONTORING USING NOVEL PORTABLE INSTRUMENTATION.** A. W. Knight[2, 3], P. O. Keenan[1, 3], N. J. Goddard[2], P. R. Fielden[2] and R. M. Walmsley[1, 3]. [1]BMS, UMIST, Manchester, United Kingdom, [2]DIAS, UMIST, Manchester, United Kingdom and [3]Gentronix Ltd., Manchester, United Kingdom. Sponsor: *L. Walsh*.

#1039 **THE EFFECT OF URBAN PARTICULATE MATTER ON HUMAN LUNG CELLS.** A. Jalbert[3], N. Gordon[2], S. Langley-Turnbugh[3] and *J. P. Wise*[1]. [1]Wise Laboratory of Environmental and Genetic Toxicology, Center for Integrated and Applied Environmental Toxicology, University of Southern Maine, Portland, ME, [2]Department of Chemistry, University of Southern Maine, Portland, ME and [3]Department of Environmental Science and Policy, University of Southern Maine, Portland, ME.

#1040 **EFFECTS OF MOTORCYCLE EXHAUST INHALATION EXPOSURE ON CYTOCHROME P450 2B1, ANTIOXIDANT ENZYMES AND LIPID PEROXIDATION IN RAT LIVER AND LUNG.** *T. Ueng*, C. Hung and H. Wang. Institute of Toxicology, National Taiwan University, Taipei, Taiwan.

#1041 **INTERACTION OF SIMULATED HUMAN BODY FLUIDS WITH MERCURY MINE WASTES.** J. E. Gray[1], P. L. Higueras[2], P. L. Hageman[1], G. S. Plumlee[1] and *T. L. Ziegler*[1]. [1]US Geological Survey, Denver, CO and [2]Universidad de Castilla-La Mancha, Almaden, Spain.

#1042 **THE TOXICOLOGICAL GEOCHEMISTRY OF DUSTS, SOILS, AND OTHER EARTH MATERIALS: INSIGHTS FROM *IN VITRO* LEACH TESTS.** G. S. Plumlee, P. J. Lamothe, G. P. Meeker, S. J. Sutley and *T. L. Ziegler*. US Geological Survey, Denver, CO.

#1043 **THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES OF AMPHIBOLE FROM LIBBY, MT.** *T. L. Ziegler*[1], J. D. Hyde[2], G. P. Meeker[1], S. J. Sutley[1], P. J. Lamothe[1], I. K. Brownfield[1], T. M. Hoefen[1], G. S. Plumlee[1] and *M. L. Witten*[2]. [1]US Geological Survey, Denver, CO and [2]The University of Arizona, Tucson, AZ.

#1044 **FLUORIDE MODIFIES ADHESION OF STREPTOCOCCUS PYOGENES.** J. Cao[1], J. luengpailin[2] and D. Ron J.[2]. [1]Stomatology, The Great Wall Hospital, Beijing, China and [2]Microbiology, University of Louisville, Louisville, KY. Sponsor: *G. Jiang*.

#1045 **DEVELOPMENT OF SCREENING VALUES FOR SOIL AND SEDIMENT BASED ON PROTECTION OF FLORIDA WILDLIFE.** H. Ochoa-Acuna and *S. M. Roberts*. Ctr. Env. Human Toxicology., University of Florida, Gainesville, FL.

#1046 **DETECTION OF ORGANOCHLORINE CONTAMINANTS IN THE SHED SKIN OF SNAKES.** *S. D. Holladay* and D. E. Jones. Veterinary Medicine, Virginia Tech, Blacksburg, VA.

#1047 **PATHOLOGY OF OCHRATOXISIS IN BROILERS.** A. -. Muthuswamy[1] and G. -. -[2]. [1]Toxicology, University of Kentucky, Lexington, KY and [2]Department of Pathology, Veterinary College and Research Institute, Namakkal, Tamil Nadu, India. Sponsor: *M. Vore*.

#1048 **MERCURY AFFECTS NEUROCHEMICAL RECEPTOR BINDING CHARACTERISTICS IN THE CEREBRAL CORTEX AND CEREBELLUM OF WILD RIVER OTTERS.** N. Basu[1], K. Klenavic[2], A. M. Scheuhammer[3] and *H. M. Chan*[4, 5]. [1]Natural Resource Science, McGill University, Montreal, QC, Canada, [2]Environmental and Resource Studies, Trent University, Peterborough, ON, Canada, [3]Canadian Wildlife Service, Ottawa, ON, Canada, [4]Center for Indigenous Peoples' Nutrition and Environment, McGill University, Montreal, QC, Canada and [5]Dietetics and Human Nutrition, McGill University, Montreal, QC, Canada.

#1049 **THYROID AXIS INHIBITION IN *XENOPUS LAEVIS*: GENE EXPRESSION CHANGES IN THE BRAIN.** S. J. Degitz[1], J. J. Korte[1], G. W. Holcombe[1], P. A. Kosian[1], J. E. Tietge[1], C. M. Bailey[2], N. Veldhoen[2], F. Zhang[2] and C. C. Helbing[2]. [1]MED, USEPA, Duluth, MN and [2]Univesity of Victoria, Victoria, BC, Canada. Sponsor: *J. Nichols*.

#1050 **AQUATIC MICROBIAL POPULATION AND COMMUNITY RESPONSES TO SELECT SSRIS.** B. W. Brooks[1], D. Fadelu[1, 2], E. A. Glidewell[1] and R. Massengale[2]. [1]Environmental Studies, Baylor University, Waco, TX and [2]Biology, Baylor University, Waco, TX. Sponsor: *M. Kanz*.

#1051 **INHIBITION OF GERMINAL VESICLE BREAKDOWN (GVBD) IN XENOPUS OOCYTES *IN VITRO* BY A SERIES OF SUBSTITUTED GLYCOL ETHERS.** *D. J. Fort*[1], J. H. Thomas[1], J. H. Thomas[1], *P. D. Guiney*[2] and *J. A. Weeks*[2]. [1]Fort Environmental Laboratories, Stillwater, OK and [2]Product Safety, Toxicology & Environmental Assessment, SC Johnson & Son, Inc., Racine, WI.

#1052 **TOXICOKINETICS OF PCBs IN TADPOLES OF THE GREEN FROG (*RANA CLAMITANS*): DOES METAMORPHOSIS AFFECT ELIMINATION RATES.** J. L. Leney, D. G. Haffner and K. G. Drouillard. Great Lakes Institute for Environmental Research (GLIER), University of Windsor, Windsor, ON, Canada. Sponsor: *R. Letcher*.

#1053 **EFFECT OF TEMPERATURE ON TOXICITY OF HEAVY METALS IN AQUATIC INVERTEBRATES.** *M. A. Khan*. Biological Sciences, University of IL at Chicago, Chicago, IL.

#1054 **A DETERMINATION OF ARSENIC CONCENTRATIONS IN FISH FROM THE NORTH FORK OF AMERICAN FORK CANYON, UTAH.** *W. Ball*, T. Jewkes, J. Contreras and E. Revenaugh. Environmental Epidemiology Program, Utah Department of Health, Salt Lake City, UT.

#1055 **NONSPECIFIC IMMUNE RESPONSES IN TWO POPULATIONS OF ATLANTIC TOMCOD (MICROGADUS TOMCOD) EXPERIMENTALLY EXPOSED TO PCB 126: CONTAMINATED HUDSON RIVER VS. REFERENCE MIRAMICHI RIVER.** E. A. Berg, *J. T. Zelikoff*, I. I. Wirgin, N. K. Roy, *J. E. Duffy* and E. A. Carlson. Environmental Medicine, New York University, Tuxedo, NY.

#1056 **SEX STEROID HORMONES IN A WATERSHED DOMINATED BY CONCENTRATED ANIMAL FEEDING OPERATIONS.** *E. Oberdoerster*, P. Gravel, B. North, A. Dongell and J. H. Easton. Southern Methodist University, Dallas, TX.

#1057 **LOW SPECIFIC ANTIBODY RESPONSES AND ELEVATED BIOINDICATORS OF INNATE IMMUNITY IN CREOSOTE-ADAPTED MUMMICHOGS, *FUNDULUS HETEROCLITUS*.** *L. A. Frederick* and *C. D. Rice*. Biological Sciences, Clemson University, Clemson, SC.

#1058 **ESTROGENIC COMPOUNDS IN FISH BILE IDENTIFIED WITH BIOASSAY-DIRECTED FRACTIONATION.** C. J. Houtman, A. M. van Oostveen, M. H. Lamoree, *A. Brouwer* and J. Legler. Institute for Environmental Studies, Vrije Universiteit, Amsterdam, Netherlands.

#1059 **EFFECTS OF ACUTE, SUB-LETHAL SODIUM ARSENATE EXPOSURE ON MIGRATORY BIRD MODELS: MITOCHONDRIAL FUNCTION, OXIDATIVE STRESS AND TIME OF FLIGHT.** J. M. Brasel[2, 1], R. Cooper[2, 1] and *C. A. Pritsos*[1, 2]. [1]Nutrition, University of Nevada, Reno, NV and [2]Environmental Sciences and Engineering, University of Nevada, Reno, NV.

#1060 **ASSESSING ENDOCRINE-ACTIVE COMPOUNDS IN A JAPANESE QUAIL REPRODUCTION STUDY DESIGN.** L. Brewer[1], J. Stafford[1], E. Mihaich[2] and *R. A. Becker*[3]. [1]Springborn Smithers Lab., Inc., Snow Camp, NC, [2]Rhodia, Raleigh, NC and [3]American Chemistry Council, Arlington, VA.

#1061 **THE AFRICAN FISH EAGLE: DEVELOPING A BIOSENTINEL MODEL TO STUDY ENVIRONMENTAL POLLUTION IN UGANDA.** *W. K. Rumbeiha*[1], S. Hollamby[1], J. Sikarskie[4], C. Dranzoa[2], J. Kaneene[1] and W. Bowerman[3]. [1]Pathobiology and Diagnostic Investigagtion, Michigan State University, East Lansing, MI, [2]Wildlife and Animal Resource Management, Makerere University, Kampala, Uganda, [3]Environmental Toxicology, Clemson University, Pendelton, SC and [4]Small Animal Clinical Sciences, Michigan State University, East Lansing, MI.

Tuesday Afternoon, March 23
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: FEMALE AND MULTIGENERATION REPRODUCTIVE TOXICITY

Chairperson(s): *Waheed Siddiqui, Dow Corning Corporation, Midland, MI and Judith Marquis, Genzyme Corporation, Waltham, MA.*

Displayed: *1:30 PM–4:30 PM*

Attended*: 3:00 PM–4:30 PM*

#1062 **DETECTION OF A CRITICAL PERIOD NECESSARY FOR ATRAZINE-INDUCED MAMMARY GLAND DELAYS IN RATS.** J. L. Rayner[1] and *S. E. Fenton*[2]. [1]Department of Environmental Sciences & Engineering, University of North Carolina, Chapel Hill, NC and [2]Reproductive Toxicology Division, NHEERL, ORD, USEPA, Research Triangle Park, NC.

#1063 **DIFFERENTIATION OF MAMMARY TISSUE IS SEVERELY IMPAIRED IN PREGNANT MICE TREATED WITH TCDD.** *B. A. Vorderstrasse*[1], *S. E. Fenton*[2], A. A. Bohn[3], J. A. Cundiff[1] and *B. Lawrence*[1, 3]. [1]Pharmaceutical Sciences, Center for Reproductive Biology, Washington State University, Pullman, WA, [2]RTD, NHEERL, USEPA, Research Triangle Park, NC and [3]Veterinary Clinical Sciences, Washington State University, Pullman, WA.

#1064 **ONE-GENERATION REPRODUCTIVE TOXICITY STUDY OF FENITROTHION IN RATS.** N. Okahashi[1], K. Miyata[1], M. Sano[2], S. Tamano[2], H. Higuchi[1], Y. Kamita[1] and T. Seki[1]. [1]Environmental Health Science Laboratory, Sumitomo Chemical Company, Ltd., , Osaka, Japan and [2]Daiyu-Kai Institute of Medical Science, Ichinomiya, Japan. Sponsor: *T. Yamada*.

#1065 **EFFECTS OF 20 WEEK EXPOSURES IN FEMALE SPRAGUE-DAWLEY (S-D) RATS TO THE DRINKING WATER DISINFECTION BY-PRODUCT DIBROMOACETIC ACID.** A. S. Murr and J. M. Goldman. RTD, NHEERL, ORD, USEPA, Research Triangle Park, NC. Sponsor: *A. Cummings*.

#1066 **A FIVE GENERATION REPRODUCTIVE TOXICITY ASSESSMENT OF *P*-NONYLPHENOL (NP) IN CD SPRAGUE-DAWLEY RATS.** *J. R. Latendresse*[2], C. C. Weis[1], P. W. Mellick[2], R. R. Newbold[3] and *B. Delclos*[1]. [1]NCTR, Jefferson, AR, [2]Pathology Associates, Jefferson, AR and [3]NIEHS, Research Triangle Park, NC.

#1067 **THE ARYL HYDROCARBON RECEPTOR (AHR) MAY ALTER ESTROGEN PATHWAYS IN THE MOUSE OVARY.** K. R. Barnett[1], *W. Fritz*[2], *T. Lin*[2], *R. E. Peterson*[2] and *J. Flaws*[1]. [1]Epidemiology and Preventive Medicine, University of Maryland, Baltimore, Baltimore, MD and [2]University of Wisconsin, Madison, WI.

#1068 **LACK OF INVOLVEMENT OF THE ARYL HYDROCARBON RECEPTOR IN 4-VINYLCYCLOHEXENE DIEPOXIDE-INDUCED OVARIAN FOLLICLE LOSS IN C57BL/6 MICE.** S. M. Bourguet[1], H. L. Brooks[1], M. R. McReynolds[1], *I. G. Sipes*[2, 3] and *P. B. Hoyer*[1, 3]. [1]Physiology, University of Arizona, Tucson, AZ, [2]Pharmacology, University of Arizona, Tucson, AZ and [3]Southwest Environmental Health Sciences Center, Tucson, AZ.

#1069 **DEVELOPMENTAL EXPOSURE TO A COMPLEX MIXTURE OF ENVIRONMENTAL TOXICANTS INTERACTS WITH POSTNATAL GENISTEIN TO INDUCE CHANGES IN REPRODUCTIVE DEVELOPMENT OF FEMALE SPRAGUE DAWLEY RATS.** *W. G. Foster*[1], M. G. Wade[2], C. L. Hughes[3] and E. V. YoungLai[1]. [1]OBS/GYN, McMaster University, Hamilton, ON, Canada, [2]Health Canada, Ottawa, ON, Canada and [3]Duke University, Durham, NC.

#1070 **THE INHIBITORY EFFECT OF CIGARETTE SMOKE AND ITS REACTIVE OXYGEN SPECIES ON HAMSTER OOCYTE CUMULUS COMPLEX PICKUP.** C. Gieseke[1, 2], R. Pederson[2] and P. Talbot[2, 1]. [1]Environmental Toxicology Graduate Program, University of California, Riverside, Riverside, CA and [2]Cell Biology and Neuroscience, University of California, Riverside, Riverside, CA. Sponsor: *J. Arey*.

#1071 **RESPONSE OF CULTURED MOUSE OVARIAN SURFACE EPITHELIUM (OSE) CELLS TO METHOXYCHLOR (MXC) AND BIS-HYDROXYMETHOXYCHLOR (HPTE).** D. A. Symonds, *K. P. Miller*, *C. Borgeest* and *J. A. Flaws*. Program in Toxicology, University of Maryland, Baltimore, MD.

#1072 **METHOXYCHLOR ALTERS THE EXPRESSION OF ANTIOXIDANT ENZYMES IN ANTRAL FOLLICLES OF THE MOUSE OVARY.** R. K. Gupta, *K. P. Miller* and *J. A. Flaws*. Program in Toxicology, University of Maryland, Baltimore, MD.

#1073 **ROLE OF GAP JUNCTIONS 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.

#1074 **REPRODUCTIVE TOXICOLOGY STUDIES ON GT 56-252, A NOVEL ORALLY AVAILABLE IRON CHELATOR.** *J. K. Marquis*[1], R. Dagher[1], W. Gaoua[2], O. Foulon[2] and *R. Forster*[2]. [1]Genzyme Corporation, Boston, MA and [2]CIT, Evreux, France.

#1075 **MULTI-GENERATION REPRODUCTIVE TOXICITY STUDY OF IMPLANTED DEPLETED URANIUM IN RATS: RESULTS FROM THE 1ST GENERATION.** A. R. Thitoff, A. E. Jung, E. W. Johnson, S. L. Lohrke, S. A. Stutler, *K. R. Still* and *D. P. Arfsten*. Naval Health Research Center Toxicology Detachment, Wright-Patterson AFB, OH.

#1076 **IMPACT OF MATERNAL TOXICITY ON PRE- AND POSTNATAL DEVELOPMENT OF RATS.** I. D. Waalkens-Berendsen, M. M. Tegelenbosch-Schouten, A. Dijkstra and A. P. Wolterbeek. Target Organ Toxicology, TNO Nutrition and Food Research, Zeist, Netherlands. Sponsor: *V. Feron*.

#1077 **DEVELOPING CHEMILUMINESCENT ASSAYS FOR MEASURING ENDOCRINE DISRUPTION IN MAMMALS.** C. Morris[1], E. Wood[2], K. Roberts[1, 3] and S. Woodhead[1]. [1]Molecular Light Technology Research, Cardiff, CF14 5DL, United Kingdom, [2]SafePharm Laboratories Ltd., PO Box 45, Derby, DE1 2BT, United Kingdom and [3]Cardiff University, School of Biosciences, PO Box 911, Cardiff, CF10 3US, United Kingdom. Sponsor: *A. Smith*.

#1078 **28-DAY ORAL AND REPRODUCTIVE/DEVELOPMENTAL SCREENING TOXICITY STUDIES OF 1, 2-ETHANEDIAMINE, N-{3-(TRIMETHOXYSILYL)PROPYL}- IN RATS.** *W. H. SIDDIQUI*[1], L. S. Meeker[1], *T. R. Barfknecht*[2], S. D. Crofoot[1] and *K. P. Plotzke*[1]. [1]Dow Corning Corporation, Midland, MI and [2]Celanese International Corporation, Dallas, TX.

Tuesday Afternoon, March 23
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: CARCINOGENESIS II

Chairperson(s): *Shyam Biswal, Johns Hopkins, Baltimore, MD and Lisa Kamendulis, Indiana University School of Medicine, Indianapolis, IN.*

Displayed: *1:30 PM–4:30 PM*

Attended*: 1:30 PM–3:00 PM*

#1079 **Q-SWITCH LASER AND TATTOO PIGMENTS, A CHEMICAL ANALYSIS OF LASER INDUCED DECOMPOSITION COMPOUNDS.** W. Baumler[1], R. Vasold[2], B. Koenig[2] and M. Landthaler[1]. [1]Department of Dermatology, Regensburg, Germany and [2]Institute of organic chemistry, Regensburg, Germany. Sponsor: *P. Howard*.

#1080 **OCHRATOXIN A: LACK OF FORMATION OF COVALENT DNA ADDUCTS.** *W. Dekant*[1], H. Zepnik[1], P. Wanek[1], E. Eder[1], K. Dingley[3], H. Ihmels[2], W. Voelkel[1] and A. Mally[1]. [1]Department of Toxicology, University of Wuerzburg, Wuerzburg, Germany, [2]Department of Organic Chemistry, University of Wuerzburg, Wuerzburg, Germany and [3]Lawrence Livermore National Laboratory, Livermore, CA.

#1081 **MITOCHONDRIAL AUTOPHAGY IS ASSOCIATED WITH A HIGH RATE OF MTDNA TURNOVER IN REMODELING RAT HEPATOCYTES.** Y. Kai, S. Rodriguez-Enriquez and *J. J. Lemasters*. Cell & Developmental Biology, UNC-CH, Chapel Hill, NC.

#1082 **DIETARY FAT RICH IN ω-6 POLYUNSATURATED FATTY ACIDS MODULATES OXIDATIVE DNA DAMAGE AND REPAIR IN MOUSE LIVER.** C. Powell[1, 2], P. Ross[2], O. Kosyk[2], B. Bradford[2] and *I. Rusyn*[1, 2]. [1]Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC and [2]Department of Environmental Sciences and Engineering, University of North Carolina, Chapel Hill, NC.

#1083 **MECHANISMS FOR THE INDUCTION OF DNA DAMAGE (COMET) FOLLOWING 2-BUTOXYETHANOL EXPOSURE.** S. M. Corthals, *L. M. Kamendulis* and *J. E. Klaunig*. Department of Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN.

#1084 **ATM-DEPENDENT, DNA DAMAGE-INDUCED G1 CHECKPOINT FUNCTION REGULATES GENE EXPRESSION IN HUMAN FIBROBLASTS.** *T. Zhou*[1, 3], D. A. Simpson[1, 3], Y. Zhou[1, 3] and W. K. Kaufmann[1, 2, 3]. [1]Pathology & Lab. Medicine, University of North Carolina, Chapel Hill, NC, [2]Center for Environmental Health and Susceptibility, University of North Carolina, Chapel Hill, NC and [3]Lineberger Comprehensive Cancer Center, University of North Carolina, Chapel Hill, NC.

#1085 **PHENOBARBITAL AND PREGENOLONE 16α-CARBONITRILE INDUCE HEPATIC EXPRESSION OF MDM2 INDEPENDENT OF P53.** D. M. Nelson, V. Bhaskaran, W. R. Foster, *B. Gemzik* and *L. D. Lehman-McKeeman*. Discovery Toxicology, Bristol-Myers Squibb, Princeton, NJ.

#1086 **MOLECULAR EPIDEMIOLOGY OF ESOPHAGEAL CANCER USING THE IARC TP53 HUMAN TUMOR DATABASE.** R. K. Elespuru[1] and S. M. Jenning[2]. [1]Genetic Technology Lab., USFDA Federal Laboratories at White Oak, Silver Spring, MD and [2]School of Engineering, Columbia University, New York. Sponsor: *J. MacGregor*.

#1087 **EFFECT OF TRICHLOROACETIC ACID IN MALE B6C3F1 MOUSE HEPATOCYTES.** *D. J. Smith*, *L. M. Kamendulis* and *J. E. Klaunig*. Department of Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN.

#1088 **QUANTITATION OF CARCINOGENESIS-INITIATING EFFECTS OF 2-ACETYLAMINO-FLUORENE AND THEIR NO-OBSERVED-EFFECT LEVELS IN RAT LIVER.** *M. J. Iatropoulos*, *A. M. Jeffrey*, J. D. Duan and *G. M. Williams*. Pathology, New York Medical College, Valhalla, NY.

#1089 **DICHLOROACETIC AND TRICHLOROACETIC ACID INDUCED ALTERATION IN THE METHYLATION OF TUMOR SUPPRESSOR GENES AND IN THE ACETYLATION OF HISTONE H3 IN MOUSE LIVER AND TUMORS.** *L. Li*, *L. Tao*, *P. M. Kramer* and *M. A. Pereira*. Department of Pathology, Medical College of Ohio, Toledo, OH.

#1090 **PHENOBARBITAL (PB) INDUCES INITIAL HYPOMETHYLATION OF THE PROMOTER REGION OF HA-RAS, BUT NOT LINE-1 ELEMENTS, IN THE LIVER OF B6C3F1 MICE.** *A. Carnell* and *J. I. Goodman*. Pharmacology and Toxicology, Michigan State University, East Lansing, MI.

#1091 **SPECIES DIFFERENCES IN THE INHIBITION OF GAP JUNCTIONAL INTERCELLULAR COMMUNICATION (GJIC) BY DIETHANOLAMINE.** *L. M. Kamendulis*, *D. J. Smith* and *J. E. Klaunig*. Division of Toxicology, Indiana University School of Medicine, Indianapolis, IN.

#1092 **PURIFICATION OF THE BIOACTIVE INGREDIENT IN PSYLLIUM THAT UP-REGULATES GAP JUNCTIONAL COMMUNICATION IN RAS-TRANSFECTED RAT LIVER EPITHELIAL CELLS.** *Y. Nakamura*[1], N. Yoshikawa[1], K. Sato[1], K. Ohtsuki[1], C. Chang[2], *B. L. Upham*[2] and *J. E. Trosko*[2]. [1]Food Science, Kyoto Pref. University, Kyoto, Japan and [2]NFSTC, Michigan State University, Lansing, MI.

#1093 **PPARβ AMELIORATES CHEMICALLY-INDUCED LIVER TOXICITY.** W. Shan[1], M. T. Bility[1], *C. J. Nicol*[2], M. J. Kennett[1], J. M. Ward[2], F. J. Gonzales[2] and *J. M. Peters*[1]. [1]Veterinary Science, Center for Molecular Toxicology and Carcinogenesis, Pennsylvania State University, University Park, PA and [2]Lab. of Metabolism, National Cancer Institute, Bethesda, MD.

#1094 **BIOCHEMICAL, HISTOLOGICAL AND MOLECULAR CHARACTERIZATION OF THE INFLUENCE OF INITIATION ON CLOFIBRIC ACID-INDUCED HEPATOCARCINOGENESIS IN THE RAT.** C. Michel[1], C. Desdouets[2], V. Guilpin[1], M. Slaoui[1], *R. A. Roberts*[1] and E. Boitier[1]. [1]Drug Safety Evaluation, Aventis Pharmacology, Vitry sur Seine, France and [2]INSERM U370, Paris, France.

#1095 **LACK OF BOTH HEPATIC PORPHYRIA AND TUMORS IN CYP1A2(-/-) MICE EXPOSED TO PCBs AND IRON.** *A. G. Smith*[1], B. Clothier[1], R. Davies[1], R. E. Edwards[1], *T. P. Dalton*[2], *D. W. Nebert*[2] and P. Greaves[1]. [1]MRC Toxicology Unit, University of Leicester, Leicester, United Kingdom and [2]Environmental Health, University of Cincinnati, Cincinnati, OH.

#1096 **ISOLATION AND ENRICHMENT OF PRENEOPLASTIC HEPATOCYTES DURING MALIGNANT CELL TRANSFORMATION.** A. Ashley, M. Lohitnavy, Y. Lu, L. Chubb, *R. Billings*, 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.

#1096a **EFFECTS OF DIMETHYLARSINIC ACID (DMA(V)) ON THE TRANSITIONAL EPITHELIUM OF THE URINARY BLADDER FROM FEMALE F344 RATS**. *A. Wang*[1], *K. Kitchin*[2], *B. Sen*[2], G. Knapp[2], *D.C. Wolf*[2], J. Robertson[1]. [1]Virginia Tech, Blacksburg, VA and [2]USEPA, Research Triangle Park, NC.

Tuesday Afternoon, March 23
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: NEUROTOXICITY, PESTICIDES I

Chairperson(s): *Frode Fonnumm, Forsvarets Forskningsinstitutt, Norway and David Herr, USEPA, Research Triangle Park, NC.*

Displayed: *1:30 PM–4:30 PM*

Attended*: 3:00 PM–4:30 PM*

#1097 **MIPAFOX-INHIBITED ACHE YIELDS A DOUBLY AGED ACTIVE SITE.** *T. J. Kropp* and *R. J. Richardson*. Environmental Health Sciences, University of Michigan, Ann Arbor, MI.

#1098 **EFFECTS OF CHRONIC DERMAL EXPOSURE TO METHYL PARATHION ON GLUTAMATE RECEPTOR SUBTYPES IN THE RAT BRAIN.** *T. Ma*, *T. Sun*, R. C. Baker, R. E. Kramer and *I. K. Ho*. Pharmacology & Toxicology, University of Mississippi Medical Center, Jackson, MS.

#1099 **MOTOR FUNCTIONS BUT NOT ACQUISITION AND RETENTION OF ACTIVE AVOIDANCE RESPONSE ARE IMPAIRED IN METHYL PARATHION-TOLERANT RATS.** T. Sun[1], I. A. Paul[2] and *I. Ho*[1]. [1]Pharmacology and Toxicology, University of Mississippi Medical Center, Jackson, MS and [2]Psychiatry and Human Behavior, University of Mississippi Medical Center, Jackson, MS.

#1100 **EFFECTS OF ESTROGEN ON THE NEUROTOXICITY OF DELTAMETHRIN IN THE RAT CORTICAL BRAIN SYNAPTOSOMES.** N. Shi, L. Chen, J. Dong, T. Li and D. Chen. Department of Health Toxicology, Tongji Medical College Huazhong University of Science and Technology, Wuhan, Hubei, China. Sponsor: *Z. Lai*.

#1101 **MODULATION OF DOPAMINE METABOLISM BY SEVERAL METABOLITES OF THE HERBICIDE ATRAZINE IN RAT STRIATAL SLICES.** *N. M. Filipov*[1], *M. Tsunoda*[1, 2] and S. C. Sistrunk[1]. [1]CEHS, Basic Sciences, Mississippi State University, Mississippi State, MS and [2]Public Health, Fukushima Medical University, Fukushima, Japan.

#1102 **NEUROTROPHIN EXPRESSION IN THE SPINAL CORD OF CHICKENS DURING ACTIVE NERVE FIBER DEGENERATION FOLLOWING EXPOSURE TO ORGANOPHOSPHATE COMPOUNDS.** *M. J. Pomeroy*, *D. Parran*, *M. Ehrich* and *B. Jortner*. Virginia Tech, Blacksburg, VA.

#1103 **CHLORPYRIFOS ALTERS FUNCTIONAL INTEGRITY AND STRUCTURE OF AN *IN VITRO* BBB MODEL.** *D. Parran*, G. Magnin, W. Li, *B. S. Jortner* and *M. Ehrich*. Virginia-Maryland Regional College of Veterinary Medicine, Virginia Tech, Blacksburg, VA.

#1104 **CONCURRENT CHRONIC STRESS AND CHLORPYRIFOS ATERED SWIMMING BEHAVIOR MORE THAN CHRONIC STRESS ALONE.** *T. Pung*, K. Knight, G. Magnin, K. Fuhrman, J. Hinckley and *M. Ehrich*. Virginia-Maryland Regional College of Veterinary Medicine, Virginia Tech, Blacksburg, VA.

#1105 **DOSE RESPONSE OF NEUROPATHY TARGET ESTERASE INHIBITORS ON ATP PRODUCTION AT COMPLEX I AND II IN HUMAN NEUROBLASTOMA CELLS IN SITU.** K. M. Knight[1], *C. Massicotte*[2] and *M. Ehrich*[1]. [1]Virginia-Maryland Regional College of Veterinary Medicine, Virginia Tech, Blacksburg, VA and [2]Matthew J. Ryan Veterinary Hospital, University of Pennsylvania, Philadelphia, VA.

#1106 **ORAL BIOAVAILABILITY AND NERVOUS TISSUE DISTRIBUTION OF CYHALOTHRIN IN RATS.** M. R. Martinez-Larranaga, M. Martinez, M. A. Martinez, M. J. Diaz, M. T. Frejo and *A. Anadon*. Toxicology & Pharmacology, Faculty of Veterinary Medicine, Complutense University, Madrid, Spain.

#1107 **DECREASE OF 5-HT LEVELS AFTER FIPRONIL TREATMENT.** *A. Anadon*, R. Pita, Y. Garcia-Uzcategui, M. J. Diaz and M. R. Martinez-Larranaga. Department of Toxicology and Pharmacology, Faculty of Veterinary Medicine, Complutense University, Madrid, Spain.

#1108 **INHIBITION OF CHOLINESTERASE AND CARBOXYLESTERASE FOLLOWING *IN VIVO* EXPOSURE OF RATS TO MIXTURES OF PARATHION AND CHLORPYRIFOS.** *E. Meek*, *R. Carr*, H. Chambers, *J. Kamykowski* and *J. Chambers*. Mississippi State University, Mississippi State, MS.

#1109 **PHARMACOKINETIC DIFFERENCES MAY EXPLAIN THE AGE-RELATED SENSITIVITY OF DELTAMETHRIN, A PYRETHROID INSECTICIDE, IN RATS.** *W. Haines*[1, 2], *R. S. Marshall*[2], *D. L. Hunter*[2] and *S. Padilla*[2, 1]. [1]Toxicology, UNC- CH, Chapel Hill, NC and [2]NHEERL, USEPA, Research Triangle Park, NC.

#1110 **TWO-GENERATION DIETARY REPRODUCTIVE TOXICITY STUDY WITH CHLORPYRIFOS-METHYL IN CD RATS: INHIBITION OF ACETYLCHOLINESTERASE.** *B. Marable*[1], K. E. Stebbins[1], A. B. Liberacki[1], *S. Marty*[1], *R. Billington*[2] and *E. W. Carney*[1]. [1]The Dow Chemical Company, Midland, MI and [2]Dow Agrosciences, Oxon, United Kingdom.

#1111 **PROPERTIES AND FIPRONIL MODULATION OF INSECT GLUTAMATE-GATED CHLORIDE CHANNELS.** X. Zhao[1], J. Z. Yeh[1], V. L. Salgado[2] and *T. Narahashi*[1]. [1]Molecular Pharmacology and Biological Chemistry, Northwestern University Medical School, Chicago, IL and [2]Global Biology Insecticides, Bayer CropScience, Monheim, Germany.

#1112 **TIME AND CONCENTRATION DEPENDENT ACCUMULATION OF [^{3}H]-DELTAMETHRIN IN *XENOPUS* OOCYTES.** J. A. Harrill[1], C. A. Meacham[2], *T. J. Shafer*[2] and *K. M. Crofton*[2]. [1]Curriculum in Toxicology, University of N. Carolina, Chapel Hill, NC and [2]Neurotoxicology Division, NHEERL, ORD, USEPA, Research Triangle Park, NC.

#1113 **CHRONIC DIETARY EXPOSURE WITH INTERMITTENT SPIKE DOSES OF CHLORPYRIFOS FAILS TO ALTER SOMATOSENSORY EVOKED POTENTIALS, COMPOUND NERVE ACTION POTENTIALS, OR NERVE CONDUCTION VELOCITY IN RATS.** J. E. Graff, R. S. Marshall, D. L. Hunter and *D. W. Herr*. Neurotoxicology, USEPA, Research Triangle Park, NC.

Tuesday Afternoon, March 23
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: NEUROTOXICOLOGY OF LEAD, MERCURY AND OTHER METALS

Chairperson(s): *Stephen Lasley, University of Illinois College of Med., Peoria, IL and Yukun Yuan, Michigan State University, East Lansing, MI.*

Displayed: *1:30 PM–4:30 PM*

Attended: *1:30 PM–3:00 PM*

#1114 **BLOOD LEAD IS A PREDICTOR OF HOMOCYSTEINE LEVELS IN A POPULATION-BASED STUDY OF OLDER ADULTS.** J. H. Schafer[1], T. A. Glass[2] and *B. S. Schwartz*[1, 2]. [1]Environmental Health Sciences, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD and [2]Epidemiology, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD.

#1115 **IMMUNOGLOBULINS TO AUTOANTIGENS OF NERVOUS AND REPRODUCTIVE SYSTEMS IN MALES OCCUPATIONALLY EXPOSED TO LEAD.** H. A. El-Fawal[1], A. De Feo[1] and M. Shamy[2]. [1]Neurotoxicology Laboratory, Mercy College, Dobbs Ferry, NY and [2]Institute of Public Health, University of Alexandria, Alexandria, Egypt. Sponsor: *M. Ehrich*.

#1116 **LOW LEVEL LEAD EXPOSURE ALTERS THE MESOCORTICOLIMBIC EXCITATORY/INHIBITORY AMINO ACID NEUROTRANSMITTER BALANCE.** *Y. Gedeon* and *A. L. Jadhav*. Texas Southern University, Houston, TX.

#1117 **INORGANIC LEAD (PB) EXPOSURE ACTIVATES STRIATAL CFOS EXPRESSION AT LOWER BLOOD LEVELS AND INHIBITS AMPHETAMINE-INDUCED STRIATAL CFOS EXPRESSION AT HIGHER BLOOD LEVELS IN THE RAT.** M. W. Lewis and D. K. Pitts. Pharmaceutical Sciences, Wayne State University, Detroit, MI. Sponsor: *G. Corcoran*.

#1118 **INHIBITORY EFFECT OF LEAD ON PKC ISOFORMS AND NF-KAPPA B *IN VIVO* AND *IN VITRO*.** S. xu, *B. Rajanna* and C. Shan. Biological Sciences, Alcorn State University, Alcorn state, MS.

#1119 **DIFFERENT MECHANISMS MEDIATE UPTAKE OF LEAD IN A RAT GLIAL CELL LINE.** *J. P. Bressler*[2, 3], *D. Bannon*[1, 2], L. Olivi[3], J. Cheong[4, 2, 3] and K. Kim[2, 5, 3]. [1]Center for Health Promotion and Preventive Medicine, US Army, APG, Aberdeen, MD, [2]Environmental Health Sciences, Johns Hopkins University, Baltimore, MD, [3]Neurotoxicology, Kennedy Krieger Institute, Baltimore, MD, [4]School of Pharmacy, Sahmyook University, Seoul, South Korea and [5]Department of Preventive Medicine, Soonchunhyan University, Seoul, South Korea.

#1120 **BRAIN-DERIVED NEUROTROPHIC FACTOR (BDNF)POLYMORPHISM ASSOCIATIONS WITH BEHAVIORAL MEASURES OF MEMORY IN MERCURY (Hg)-EXPOSED HUMANS.** *D. Echeverria*[2, 1], *J. S. Woods*[1, 2], N. J. Heyer[2], A. C. Bittner[2] and F. M. Farin[1]. [1]Environmental Health, University of Washington, Seattle, WA and [2]Battelle Centers for Public Health Research and Evaluation, Seattle, WA.

#1121 **EVIDENCE FOR DIRECT MODULATION OF GLUTAMATE (AMPA) RECEPTOR CHANNEL PROPERTIES BY METHYLMERCURY.** T. Vaithianathan, V. Suppiramaniam and *P. Dey*. Pharmacal Sciences, Auburn University, Auburn, AL.

#1122 **EFFECTS OF METHYLMERCURY ON GABA$_A$ RECEPTOR-MEDIATED CURRENTS (I_{GABA}) IN RAT CORTICAL CELLS IN CULTURE.** C. Herden[2], *Y. Yuan*[1, 2] and *B. Atchison*[1, 2]. [1]Department Pharmacology/Toxicology, Mich State University, East Lansing, MI and [2]Neuroscience Program, Mich. State University, East Lansing, MI.

#1123 **ALTERATIONS BY METHYLMERCURY (MEHG) OF PRESYNATIC TERMINAL CA^{2+} CONCENTRATION APPEAR TO BE RESPONSIBLE FOR MEHG-INDUCED INITIAL STIMULATION OF SPONTANEOUS INHIBITORY POSTSYNAPTIC CURRENTS.** *Y. Yuan* and *W. D. Atchison*. Pharmacology/Toxicology, Michigan State University, East Lansing, MI.

#1124 **CALBINDIN D-28K TRANSFECTED HUMAN EMBRYONIC KIDNEY (HEK 293) CELL LINE IS RESTANT TO METHYLMERCURY-INDUCED ALTERATIONS OF CALCIUM HOMEOSTASIS.** *J. R. Edwards* and *W. D. Atchison*. Michigan State University, East Lansing, MI.

#1125 **LACK OF EXPRESSION OF CALBINDIN-D 28K CORRELATES WITH INCREASED SENSITIVITY TO METHYLMERCURY CYTOTOXICITY IN GUINEA PIG MYENTERIC PLEXUS NEURONS.** A. Rodriguez, *J. R. Edwards* and *B. Atchison*. Department Pharmacology/Toxicology, Mich State University, East Lansing, MI.

#1126 **TRANSFECTION OF PC12 CELLS WITH CALBINDIN-D 28K INCREASES RESISTANCE TO METHYLMERCURY-INDUCED DISRUPTION OF INTRACELLULAR CALCIUM HOMEOSTASIS.** J. R. Gomulka[2, 1], *J. R. Edwards*[1] and *B. Atchison*[1]. [1]Department Pharmacology/Toxicology, Mich State University, East Lansing, MI and [2]College of Veterinary Medicine, Mich. State University, East Lansing, MI.

#1127 **NEUROBEHAVIORAL AND MITOCHONDRIAL MEMBRANE POTENTIAL CHANGES IN CEREBELLAR GRANULE CELLS OF MICE EXPOSED TO METHYLMERCURY.** S. Bellum, K. A. Thuett and L. C. Abbott. CVM, VAPH, Texas A&M University, College Station, TX. Sponsor: *E. Tiffany-Castiglioni*.

#1128 **EFFECTS OF METHYLMERCURY ON EPH AND EPHRIN PROTEINS IN EMBRYONAL CARCINOMA CELL DERIVED NEURONS.** *D. T. Wilson*[1], *M. A. Polunas*[1], R. Zhou[1, 2], H. E. Lowndes[1, 3] and *K. R. Reuhl*[1, 3]. [1]JGPT, Rutgers University, Piscataway, NJ, [2]Chem. Biol., Rutgers University, Piscataway, NJ and [3]Pharmacology and Toxicol., Rutgers University, Piscataway, NJ.

#1129 **PROTECTIVE EFFECT OF GLUTATHIONE PEROXIDASE OVEREXPRESSION IN METHYLMERCURY NEUROTOXICITY.** *M. Polunas*[1, 2], O. Prokopenko[3], O. Mirochnitchenko[3, 1], *M. Philbert*[4] and *K. Reuhl*[1, 2]. [1]JGPT, Rutgers/UMDNJ, Piscataway, NJ, [2]Department Pharmacology/Toxicology, Rutgers University, Piscataway, NJ, [3]Department Biochem., UMDNJ, Piscataway, NJ and [4]Department Environment Health Sciences, University Mich., Ann Arbor, MI.

#1130 **INCREASE IN INTRACELLULAR REACTIVE OXYGEN SPECIES FORMATION INDUCED BY METHYLMERCURY IN CULTURED ASTROCYTES: A CONFOCAL MICROSCOPIC STUDY.** G. Shanker, L. A. Mutkus, Q. Wu and *M. Aschner*. Physiology and Pharmacology, Wake Forest University School of Medicine, Winston-Salem, NC.

#1131 **GENE EXPRESSION ANALYSIS OF THE MICE CEREBELLAR CELLS *IN VITRO* EXPOSED TO METHYL MERCURIC CHLORIDE.** E. S. Calderon-Aranda[1, 3], A. E. Jedlicka[2], A. S. Scott[2] and *E. K. Silbergeld*[1]. [1]EHS, Johns Hopkins University, Baltimore, MD, [2]MMI, Johns Hopkins University, Baltimore, MD and [3]Seccion de Toxicologia, Cinvestav, Mexico, DF, Mexico.

#1132 **MICE OLFACTORY BULB NEURONAL DEATH AFTER V2O5 INHALATION.** L. COLIN-BARENQUE[2], *M. AVILA-COSTA*[2], V. DELGADO[1], I. SANCHEZ[1], I. LOPEZ[1], F. PASOS[1] and *T. I. FORTOUL*[1]. [1]BIOLOGIA CELULAR Y TISULAR, UNIVERSIDAD NACIONAL AUTONOMA DE MEXICO, MEXICO CITY, Mexico and [2]NEUROCIENCIAS, FES IZTACALA, MEXICO, Mexico.

#1133 **DIFFERENTIAL RESPONSES TO CADMIUM IN AN *IN VIVO* AND *IN VITRO* MODEL OF NEUROTOXICITY.** C. Bolin, D. Cox and F. Cardozo-Pelaez. Biomedical and Pharmaceutical Sciences, University of Montana, Missoula, MT. Sponsor: *A. Holian*.

#1134 **ARSENIC LEVELS AND GLUTATHIONE REDUCTASE ACTIVITY IN CD1 MICE BRAIN.** *M. E. Gonsebatt*[1], J. H. Limon[1], V. Rodriguez[2], M. M. Giordano[2] and *L. M. Del Razo*[3]. [1]Medical Genomics and Environmental Toxicology, Instituto de Investigaciones Biomedicas, Mexico, DF, Mexico, [2]Instituto de Neurobiologia, Queretaro, Mexico and [3]Toxicology Section, CINVESTAV, IPN, Mexico, DF, Mexico.

#1135 **THE TRIMETHYLTIN MODEL OF HIPPOCAMPAL INJURY: GENE ARRAY ANALYSIS REVEALS EARLY AND DIVERSE CHANGES IN GENE EXPRESSION ASSOCIATED WITH NEURONAL INJURY AND GLIAL ACTIVATION.** *A. R. Little* and *J. P. O'Callaghan*. TMBB, CDC-NIOSH, Morgantown, WV.

#1136 **HIPPOCAMPAL DENDRITIC SPINES LOSS AND MEMORY DETERIORATION IN MICE EXPOSED TO VANADIUM (V2O5) INHALATION.** G. Nino-Cabrera[2], *M. Avila-Costa*[1], L. Colin-Barenque[1], P. Bizarro-Nevares[2], S. Acevedo-Nava[2], I. Sanchez-Cervantes[2], I. Lopez[2], A. Gonzalez-Villalva[2], F. Pasos[2] and *T. I. Fortoul*[2]. [1]Neuroscience, UNAM campus Iztacala, Tlalnepantla, Edo. Mex., Mexico and [2]Facultad de Medicina, UNAM, MEXICO, D.F., Mexico.

#1137 **ERYTHROPOIETIN PREVENTS TRIMETHYLTIN-INDUCED NEURONAL DEATH AND GLIAL ACTIVATION.** *B. Vi*via*ni*, S. Bartesaghi, *E. Corsini*, L. Lucchi, *C. L. Galli* and M. Marinovich. Department of Pharmacological Sciences, University of Milan, Milan, Italy.

#1138 **DOPAMINERGIC CELL DEATH AND VANDIUM INHALATION.** *M. Avila-Costa*[1], L. Colin-Barenque[1], E. Montiel-Flores[1], P. Aley[1], I. Sanchez[2], L. Irma[2], A. Gutierrez[2], J. Ordones[2], S. Acevedo-Nava[2], A. Gonzalez-Villalva[2], G. Nino-Cabrera[2], P. Bizarro[2], J. Espinosa-Villanueva[2], F. Pasos[2], P. Mussali-Galante[2], V. Delgado[2] and *T. I. Fortoul*[2]. [1]Neuroscience, UNAM campus Iztacala, Tlalnepantla, Edo. Mex., Mexico and [2]Facultad de Medicina, UNAM, Mexico, DF, Mexico.

#1139 **INHALATION OF URANIUM OXIDE: PHYSIOLOGICAL EFFECTS ON RATS.** *J. Lewis*[1], J. Karlsson[1], G. Bench[3], O. Myers[1], W. Barrington[1], E. Barr[2] and *F. Hahn*[2]. [1]Community Environmental Health Program, University of New Mexico, Albuquerque, NM, [2]Lovelace Respiratory Research Institute, Albuquerque, NM and [3]Lawrence Livermore National Laboratory, Livermore, CA.

#1140 **ACUTE EXPOSURE TO URANIUM (University) DECREASES POTASSIUM-STIMULATED HIPPOCAMPAL GLUTAMATE RELEASE.** *S. M. Lasley* and K. R. Vietti. Biomedical & Therapeutic Sciences, University of Illinois College of Medicine, Peoria, IL.

#1141 **MITOCHONDRIAL MEMBRANE POTENTIAL IN CEREBELLAR GRANULE CELLS OF CALCIUM CHANNEL MUTANT LEANER MICE UNDER VARIOUS CONDITIONS.** K. A. Thuett, S. Bellum and L. C. Abbott. CVM, VAPH, Texas A&M University, College Station, TX. Sponsor: *E. Tiffany-Castiglioni*.

Tuesday Afternoon, March 23
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: METAL ACTIVATION OF OXIDATIVE STRESS AND SIGNAL TRANSDUCTION PATHWAYS

Chairperson(s): *Howard Beall, University of Montana, Missoula, MT and Kevin Trouba, Laboratory of Immunotoxicology, Research Triangle Park, NC.*

Displayed: *1:30 PM–4:30 PM*

Attended: *3:00 PM–4:30 PM*

#1142 **LEAD EXPOSURE IS A RISK FACTOR FOR OSTEOPOROSIS.** *J. E. Puzas*, K. O. Hochberg, R. J. O'Keefe, E. M. Schwarz, M. J. Zuscik, J. Campbell and R. N. Rosier. Department of Orthopaedics, University of Rochester School of Medicine, Rochester, NY.

#1143 **SODIUM ARSENITE (ASIII) MODULATORY EFFECT ON THE HEART AND BLOOD LEVELS OF GLUTATHIONE IN APOE(-/-)XLDLR(-/-) MICE.** F. E. Pereira, M. Hassani and *H. D. Beall*. Center for Environmental Health Sciences, The university of Montana, Missoula, Missoula, MT.

#1144 **ARSENIC-INDUCED TRANSFORMATION CAUSES GENERALIZED RESISTANCE TO APOPTOSIS IN CULTURED HUMAN KERATINOCYTES.** *J. Pi*[1], Y. He[2], C. Bortner[3], J. Huang[2], *J. Liu*[1], *W. Qu*[1], J. M. Reece[3], *M. Styblo*[4], C. F. Chignell[2] and *M. P. Waalkes*[1]. [1]ICS, LCC, NCI at NIEHS, Research Triangle Park, NC, [2]LPC, NIEHS, Research Triangle Park, NC, [3]LST, NIEHS, Research Triangle Park, NC and [4]Department of Pediatr, UNC, Chapel Hill, NC.

#1145 **SUBCYTOTOXIC INORGANIC ARSENITE TARGETS MITOCHONDRIA IN HK-2 HUMAN PROXIMAL TUBULAR CELLS: IMPLICATIONS ON MECHANISM OF CELL DEATH.** *M. Peraza*, *D. E. Carter* and *A. Gandolfi*. Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

#1146 **ARSENIC TRIOXIDE INHIBITS NUCLEAR RECEPTOR SIGNALING BY PHOSPHORYLATION OF RXR.** *K. K. Mann*[1], A. L. Colosimo[1], H. Lee[2], J. M. Kurie[2] and W. H. Miller[1]. [1]Molecular Oncology, Lady Davis Institute for Medical Research, McGill University, Montreal, QC, Canada and [2]Thoracic/Head and Neck Medical Oncology, University of Texas/MD Anderson Cancer Center, Houston, TX.

#1147 **EFFECT OF LOW DOSE AS(III) IN THE DRINKING WATER OF MICE ON TUMOR GROWTH AND ANGIOGENESIS.** M. A. Ihnat, L. Hess, S. Curilla and C. Clark. OUHSC, Oklahoma City, OK. Sponsor: *R. Kaltreider*.

#1148 **PANCREATIC OXIDATIVE DAMAGE AND ENDOCRINE FUNCTION IN RATS SUBCHRONICALLY EXPOSED TO ARSENITE.** J. A. Izquierdo-Vega[1], C. A. Soto[2], L. C. Sanchez-Pena[1], L. O. Valenzuela[1], E. A. Garcia-Montalvo[1] and *L. M. Del Razo*[1]. [1]Toxicology Section, Cinvestav-IPN, Mexico D.F, Mexico and [2]Biologic Systems Department, UAM-Xochimilco, Mexico D.F., Mexico.

#1149 **HEAT SHOCK PROTEIN 70 AS AN INDICATOR OF EARLY LUNG INJURY CAUSED BY EXPOSURE TO ARSENIC.** S. Han[1, 2], *J. Nath*[2] and *V. Vallyathan*[1]. [1]Pathology and Physiology Research Branch, Health Effects Laboratory Division, NIOSH, Morgantown, WV and [2]Genetics and Developmental Biology, West Virginia University, Morgantown, WV.

#1150 **ROLE OF CALCIUM AND MITOGEN-ACTIVATED PROTEIN KINASES ON CADMIUM-MEDIATED GROWTH ARREST AND CASPASE-3 ACTIVATION IN MURINE MACROPHAGES.** *J. Kim* and *R. P Sharma*. physiology and pharmacology, University of Georgia, Athens, GA.

#1151 **ARSENIC ALTERS THE SCAFFOLDING PROPERTIES OF THE MEKK4 KINASE.** University. M. Halfter, *Z. E. Derbyshire* and *R. R. Vaillancourt*. Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

#1152 **TUMOR PROMOTER ARSENITE STIMULATES HISTONE H3 PHOSPHOACETYLATION AT C-*fos* AND C-*jun* IN HUMAN DIPLOID FIBROBLASTS.** Y. Liu[1, 2], J. Li[2], M. Gorospe[2] and J. Barnes[2]. [1]Children's Hospital, Children's Research Institute, Columbus, OH and [2]Laboratory of Cellular and Molecular Biology, NIA-IRP, NIH, Baltimore, MD. Sponsor: *C. Smith*.

#1153 **SODIUM ARSENITE INHIBITS FOCAL ADHESION COMPLEX FORMATION AND DYNAMICS IN LIVE CELLS.** S. L. Yancy[2], E. A. Shelden[1] and *M. J. Welsh*[1]. [1]Cell and Developmental Biology, University of Michigan Medical School, Ann Arbor, MI and [2]Environmental Health Sciences (Toxicology), University of Michigan School of Public Health, Ann ARbor, MI.

#1154 **CADMIUM-INDUCED APOPTOSIS, ACTIVATION OF MAPK SIGNALING PATHWAYS AND ACCUMULATION OF UBIQUITINATED-PROTEIN-CONJUGATES IN PRIMARY RAT NEONATAL SERTOLI-GONOCYTE CO-CULTURES.** *X. Yu*, J. S. Sidhu, S. Hong and *E. M. Faustman*. Env. & Occ. Health Sciences., IRARC, University of Washinton, Seattle, WA.

#1155 **DEFINING P53-DEPENDENT AND INDEPENDENT MECHANISMS OF CADMIUM-INDUCED CYTOTOXICITY, STRESS SIGNALING, APOPTOSIS AND UBIQUITIN PROTEASOME PATHWAY PROCESSING.** J. S. Sidhu, S. Hong, *X. Yu*, E. Kim, A. Erickson, J. F. Robinson, S. Kim, M. Vredevoogd and *E. M. Faustman*. Env. & Occ. Health Sciences., IRARC, University of Washington, Seattle, WA.

#1156 **THE MECHANISM OF NF-κB SUPPRESSION IN CADMIUM-INDUCED APOPTOSIS IN RAT KIDNEY EPITHELIAL CELLS.** J. Xie and *Z. A. Shaikh*. Department of Biomedical Sciences, University of Rhode Island, Kingston, RI.

#1157 **OXIDATIVE STRESS AND CYTOKINES CO-STIMULATES METALLOTHIONEIN EXPRESSION IN CADMIUM TREATED HEPG2 CELLS.** C. Escobar, V. Souza, L. Bucio, E. Hernandez, L. Gomez-Quiroz and *C. Gutierrez-Ruiz*. Ciencias de la Salud, Universidad Autonoma Metropolitana, Mexico, DF, Mexico.

#1158 **OXIDATIVE STRESS INDUCED BY LEAD, CADMIUM AND ARSENIC MIXTURES: 30-, 90-, AND 180-DAY DRINKING WATER STUDIES IN RATS.** *M. H. Whittaker*, M. Lipsky, *G. Wang*, X. Chen and *B. A. Fowler*. Toxicology Program, The University of Maryland, Baltimore, Baltimore, MD.

#1159 **INTERACTIONS OF LEAD, CADMIUM AND ARSENIC IN RAT KIDNEYS.** G. Wang, *X. Chen*, *M. M. Lipsky*, *W. H. Margaret* and *B. A. Fowler*. Toxicology Program, University of Maryland, Baltimore, MD.

#1160 **ACUTE RENAL FAILURE INDUCED BY CHROMATE TREATMENT AND CLAUDIN-2 EXPRESSION IN MURINE KIDNEY.** L. Arreola-Mendoza[1], J. L. Reyes[2], D. Martin[2], M. C. Namorado[2], J. C. Luna[2] and *L. M. Del Razo*[1]. [1]Toxicology Section, Cinvestav-IPN, Mexico D.F, Mexico and [2]Physiology, Biophysics & Neurosciences, Cinvestav-IPN, Mexico D.F., Mexico.

#1161 **SELECTIVE SIGNALING PATHWAYS FOR CHROMIUM(VI) INDUCED PATTERNS OF TRANSCRIPTION FACTOR BINDING IN EXPOSED AIRWAY EPITHELIAL CELLS.** *K. A. O'Hara*[1, 2], L. R. Klei[1, 2], R. J. Vaghjiani[2] and *A. Barchowsky*[1, 2]. [1]Department of Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA and [2]Department of Pharmacology and Toxicology, Dartmouth Medical School, Hanover, NH.

#1162 **MODULATORY EFFECT OF THE GREEN TEA FLAVONOID EPIGALLOCATECHIN 3-GALLATE ON ARSENITE- AND HYDROGEN PEROXIDE-STIMULATED MITOGEN-ACTIVATED PROTEIN KINASE PHOSPHORYLATION AND HEME OXYGENASE-1 EXPRESSION IN HUMAN DERMAL FIBROBLASTS.** *K. J. Trouba*, J. D. Britton, A. C. Smith, Y. D. Rebolloso and *D. R. Germolec*. NIEHS, Research Triangle Park, NC.

#1163 **DIFFERENTIAL REGULATION OF AKT SIGNALING PATHWAY IN P53 WILD AND MUTATED CELLS AND RESISTANCE TO COPPER TOXICITY.** E. Ostrakhovitch and *G. Cherian*. Pathology, UWO, London, ON, Canada.

#1164 **EFFECTS OF TRIBUTYLTIN ON APOPTOSIS IN LEYDIG CELLS: CYTOCHROME C RELEASING AND CASPASE-3 ACTIVATION BY DISTURBANCE OF CA2+.** J. Choi[1, 2], K. Lee[1, 2] and *H. Jeong*[1, 2]. [1]Pharmacy, Chosun University, Kwangju, South Korea and [2]Research Center for Proteineous Materials, Chosun University, Kwangju, South Korea.

Tuesday Afternoon, March 23
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: SIGNAL TRANSDUCTION II

Chairperson(s): *John Reichard, University of Colorado Health Sciences Center, Denver, CO and Kenneth Ramos, University of Louisville, Louisville, KY.*

Displayed: *1:30 PM–4:30 PM*

Attended: *1:30 PM–3:00 PM*

#1165 **AMPLIFICATION OF THE CELLULAR RESPONSE TO PARTICULATES THROUGH TUMOR NECROSIS FACTOR AUTOCRINE SIGNALING.** B. chin, G. Holtom, C. chen and *B. D. thrall*. Molecular Biosciences Division, Pacific Northwest National Laboraoty/Battelle, Richland, WA.

#1166 **SILENCING OF THROMBOSPONDIN-1 EXPRESSION BY ESTROGEN IS REQUIRED FOR ESTROGEN-INDUCED ENDOTHELIAL CELL PROLIFERATION AND MIGRATION AND IS MEDIATED THROUGH NONGENOMIC ER-MAPK-JNK SIGNALING PATHWAY.** K. Sengupta, B. Snigdha, N. Saxena and *S. K. Banerjee*. Hematology and Oncology, University of Kansas Medical Center & VA Medical Center, Kansas City, KS.

#1167 **SP600125, AN ANTHRAPYRALOZOLONE INHIBITOR OF JNK, INHIBITS B LYMPHOMA GROWTH.** M. Gururajan[1, 3], R. Chui[3], A. K. Karuppannan[2, 3] and S. Bondada[1, 2, 3]. [1]Graduate Center for Toxicology, University of Kentucky, lexington, KY, [2]Microbiology & Immunology, University of Kentucky, Lexington, KY and [3]Center on Aging, University of Kentucky, Lexington, KY. Sponsor: *M. Vore*.

#1168 **STRUCTURAL STABILIZATION OF CELLS DETECTED BY FTIR IS POSSIBLY DUE TO TYROSINE PHOSPHORYLATION BY RHO KINASE IN SPLENOCYTES: EFFECT OF WATER EXTRACT OF THUNBERGIA LAURIFOLIA LINN.** *P. Sinhaseni*[1], V. Taechakitiroj[1], T. Suramana[2], T. Posayanonda[3], N. Nuntharatanapong[1], R. Sindhuphak[1], S. Chivapat[4], P. Chavalittumrong[4] and N. Dusitsin[1]. [1]Institute of Health Research, Chulalongkorn University, Bangkok, Thailand, [2]Pharmacology and Toxicology Unit, Faculty of Sciences, Rangsit University, Pathumthani, Thailand, [3]Food Control Division, Food and Drug Administration, Nonthaburi, Thailand, [4]Department of Medical Science, Medicinal Plant Research Institute, Nonthaburi, Thailand and [5]Department of Pharmacology, Faculty of Pharmaceutical, Chulalongkorn University, Bangkok, Thailand.

#1169 **DOES THALIDOMIDE ALTER HAVE THE ABLITIY TO ALTER PROTEIN KINASE C SIGNALING TRANSDUCTION PATHWAY.** *T. N. Ezell*. Biology, Morgan State University, Baltimore, MD.

#1170 **PCB ACTIVATION OF EXTRACELLULAR SIGNAL-REGULATED KINASES (ERKS) IS MEDIATED THROUGH EPIDERMAL GROWTH FACTOR RECEPTOR AND INTRACELLULAR CALCIUM.** *B. V. Madhukar*, G. Chen and B. F. Wood. Pediatrics/Human Development, Michigan State University, East Lansing, MI.

#1171 **CALCIUM REGULATION OF BRAIN MITOCHONDRIAL CALCIUM / CAMP RESPONSE ELEMENT BINDING PROTEIN (CREB).** *R. A. Schuh*, T. Kristian, C. Chinopoulos and G. Fiskum. Anesthesiology, University of Maryland Baltimore, Baltimore, MD.

#1172 **COX-2 INDUCTION BY BOVINE TYPE I COLLAGEN IN MACROPHAGES VIA C/EBP AND CREB ACTIVATION.** M. Cho, Y. Cho, G. Lee and *S. Kim*. College of Pharmacy, Seoul National University, Seoul, South Korea.

#1173 **GSTA2 GENE REPRESSION BY GR-ASSOCIATED SMRT BINDING TO ACTIVATING C/EBPβ AND NRF2.** S. Ki, I. Cho, D. Choi, M. Cho and *S. Kim*. College of Pharmacy, Seoul National University, Seoul, South Korea.

#1174 **REGULATION OF NRF-2 BY GLUTATHIONE AND THIOREDOXIN.** *J. M. Hansen*[1], *W. H. Watson*[2] and *D. P. Jones*[1]. [1]Biochemistry, Emory University, Atlanta, GA and [2]Environmental Health Sciences, Johns Hopkins University, Baltimore, MD.

#1175 ***HMGA1A* BEHAVES AS A STRESS-REGULATED TRANSCRIPTION FACTOR IN VASCULAR SMOOTH MUSCLE CELLS.** L. R. Chapman[1, 2], C. D. Johnson[1, 2], M. H. Falahatpisheh[1, 2] and *K. S. Ramos*[1, 2]. [1]Biochemistry and Molecular Biology, University of Louisville, Louisville, KY and [2]Center for Genetics and Molecular Medicine, University of Louisville, Louisville, KY.

#1176 **GROWTH FACTOR-INDUCED REACTIVE OXYGEN SPECIES OXIDIZE GLUTATHIONE AND THIOREDOXIN-1 IN A DIFFERENTIAL MANNER.** P. J. Halvey[1, 3], *W. H. Watson*[2], Y. Go[1], *J. M. Hansen*[1] and *D. P. Jones*[1]. [1]Biochemistry, Emory University, Atlanta, GA, [2]Environmental Health Sciences, Johns Hopkins University, Baltimore, MD and [3]Biochemistry, NUI Galway, Galway, Connacht, Ireland.

#1177 **A ROLE FOR P38 MAPK IN ROS-INDUCED ONCOTIC CELL DEATH IN RENAL CELLS.** *J. Dong*, *S. Ramachandiran*, *S. S. Lau* and *T. J. Monks*. Department of Pharmacology & Toxicology, University of Arizona Health Sciences Center, Tucson, AZ.

#1178 **EFFECTS OF BENZOQUINONE (BQ) ON CELL PROLIFERATION VIA ERK/MAPK SIGNALING PATHWAY ACTIVATION AND ROS PRODUCTION.** R. Ruiz-Ramos[1], *M. E. Cebrian*[1] and E. Garrido[2]. [1]Toxicology Section, CINVESTAV IPN, Mexico City, D.F., Mexico and [2]Genetics and Molecular Biology, CINVESTAV-IPN, Mexico City, D.F., Mexico.

#1179 **INDUCTION OF ANTIOXIDANT AND DETOXIFICATION RESPONSE WITH H_2O_2 IN CARDIAC CELLS.** S. E. Purdom[1], *J. A. Johnson*[2] and *Q. M. Chen*[1, 3]. [1]Graduate Program in Genetics, University of Arizona, Tucson, AZ, [2]School of Pharmacy, University of Wisconsin, Madison, WI and [3]Department of Pharmacology, University of Arizona, Tucson, AZ.

#1180 **DIFFERENTIAL REGULATION OF THE NRF2- AND AP-1-RESPONSE ELEMENTS BY 4-HYDROXY-2-NONENAL, t-BUTYLHYDROQUINONE AND PHORBOL 12-MYRISTATE 13-ACETATE IN CULTURED HEPATIC STELLATE CELLS.** *J. F. Reichard* and *D. R. Petersen*. Toxicology, University of Colorado Health Sciences Center, Denver, CO.

#1181 **INDUCTION OF CYCLOOXYGENASE-2 BY H_2O_2 AND CORTICOSTERONE IN CARDIOMYOCYTES.** H. Sun and *Q. M. Chen*. Pharmacology, University of Arizona, Tucson, AZ.

#1182 **INDUCTION OF METALLOTHIONEIN I BY PHENOLIC ANTIOXIDANTS REQUIRES METAL-ACTIVATED TRANSCRIPTION FACTOR 1 (MTF-1) AND ZINC.** Y. Bi[1], *R. D. Palmiter*[2], K. M. Wood[1] and *Q. Ma*[1]. [1]HELD/CDC, TMBB/NIOSH, Morgantown, WV and [2]Biochemistry, Howard Hughes Medical Institute, University of Washington School of Medicine, Seattle, WA.

#1183 **PI3-KINASE REGULATES CA^{2+}-DEPENDENT NRF2 TRANSLOCATION FROM THE CYTOPLASM TO THE PLASMA MEMBRANE PRIOR TO ITS NUCLEAR TRANSLOCATION.** K. Kang[1, 2] and *S. Kim*[2]. [1]College of Pharmacy, Chosun University, Gwang-Ju, South Korea and [2]College of Pharmacy, Seoul National University, Seoul, South Korea.

#1184 **NICOTINE USES T CELL ANTIGEN RECEPTOR-INDEPENDENT AND -DEPENDENT SIGNALING PATHWAYS TO AFFECT INFLAMMATORY AND ADAPTIVE IMMUNE RESPONSES.** N. C. MISHRA, *S. Razani-Boroujerdi*, S. Singh, R. Langley, *R. Kalra*, J. C. Pena-Philippides and *M. L. Sopori*. Immunology Program, Lovelace Respiratory Research Institute, Albuquerque, NM.

#1185 **THE EFFECTS OF THALIDOMIDE ON C-MYB SIGNALING.** N. A. Thadani[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.

Tuesday Afternoon, March 23
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: TCDD & OTHER POPS/*IN VIVO*

Chairperson(s): *Howard Shertzer, University of Cincinnati, Cincinnati, OH and Moiz Mumtaz, ATSDR, Atlanta, GA.*

Displayed: *1:30 PM–4:30 PM*

Attended: *3:00 PM–4:30 PM*

#1186 **ESTABLISHMENT OF THE PUBLIC SAMPLE BANK TO MONITOR A LONG-TERM TREND OF HUMAN EXPOSURE TO PERSISTENT ORGANIC POLLUTANTS (POPS).** K. Inoue, A. Koizumi, T. Yoshinaga, K. Harada and N. Saito. Health Environmental Sciences, Kyoto University Graduate School of Medicine, Kyoto, Japan. Sponsor: *R. Reitz*.

#1187 **CHRONIC TOXICITY INCLUDING CARCINOGENICITY OF HPCDD OBEYS THE C X T = K PARADIGM.** *K. K. Rozman*[1, 3], M. Lebofsky[1] and D. M. Pinson[2]. [1]Pharmacology, Kansas University Medical Center, Kansas City, KS, [2]Pathology, Kansas University Medical Center, Kansas City, KS and [3]Toxicology, GSF, Neuherberg, Germany.

#1188 **COMPARISON OF OVERALL METABOLISM OF 1, 2, 3, 7, 8-PENTACHLORODIBENZO-P-DIOXIN (PECDD) IN CYP1A2 (-/-) KNOCKOUT (KO) AND C57BL/6N PARENTAL STRAINS OF MICE.** J. J. Diliberto[1] and H. Hakk[2]. [1]PKB, ETD, NHEERL ORD, USEPA, Research Triangle Park, NC and [2]ARS, BRL, USDA, Fargo, ND. Sponsor: *L. Birnbaum*.

#1189 **DEVELOPMENT OF A PBPK MODEL FOR HEXACHLOROBENZENE IN THE CONTEXT OF ITO'S MEDIUM-TERM LIVER FOCI BIOASSAY.** Y. LU, *M. Reddy*, M. Lohitnavy, O. Lohitnavy, A. Ashley and *R. S. Yang*. Quantitative and Computational Toxicology Group, Center for Environmental Toxicology and Technology, Colorado State University, Fort Collins, CO.

#1190 **TOXICITY AND RELATIVE POTENCY OF 1, 2, 3, 4, 6, 7-HEXACHLORONAPHTHALENE (PCN66) AND 1, 2, 3, 5, 6, 7-HEXACHLORONAPHTHALENE (PCN67)IN FEMALE SPRAGUE-DAWLEY RATS.** *L. M. Fomby*[1], *M. Hejtmancik*[1], D. Vasconcelos[1], *A. Fuciarelli*[2], M. Vallant[3], *R. Chhabra*[3], H. Toyoshiba[3], *N. Walker*[3] and *M. Hooth*[3]. [1]Battelle Columbus, Columbus, OH, [2]Battelle Northwest, Richland, WA and [3]NIEHS, Research Triangle Park, NC.

#1191 **ROLE OF THE AROMATIC HYDROCARBON RECEPTOR (AHR) IN CAUSING NEONATAL LETHALITY IN MICE EXPOSED TO COPLANAR HEXABROMOBIPHENYL (CHBB).** *C. P Curran*, K. Miller, *T. Dalton*, M. Miller, *H. G. Shertzer* and *D. W. Nebert*. Environmental Health, University of Cincinnati, Cincinnati, OH.

#1192 **NEONATAL EXPOSURE TO PCB 180 AFFECTS THE PREPUBERTAL REPRODUCTIVE ORGAN DEVELOPMENT IN FEMALE RATS BY ANTIESTROGENIC ACIVITY.** G. Rhee[1], S. Kim[1], R. Lee[1], S. Kwack[1], K. Lim[1], H. Yhun[1], G. Lee[2], E. Jeung[2] and K. Park[1]. [1]Specialized Toxicology, National Institute of Toxicological Research, KFDA, Seoul, South Korea and [2]Veterinary Medicine, Chungbuk National University, Chung-Ju, South Korea. Sponsor: *J. Hong*.

#1193 **AROCLOR 1254 CHEMICAL MODEL FOR REYE'S SYNDROME.** *K. Ebner*[1, 2, 3]. [1]09ZC, Abbott Labs, Abbott Park, IL, [2]Department of Pharmacol, Ohio St University, Columbus, OH and [3]Department Pharmacol/Toxicol, Mich St. University, East Lansing, MI.

#1194 **EFFECTS OF PCB 126 ON LIVER ENZYMES AND THE THYROID AXIS.** T. L. Almekinder[2], J. L. Campbell[2], S. Muralidhara[2], *J. V. Bruckner*[2], D. C. Ferguson[3], *M. Mumtaz*[4], *H. El-Masri*[4] and *J. Fisher*[2]. [1]Environmental Health Science, University of Georgia, Athens, GA, [2]Interdisciplinary Toxicology Program, University of Georgia, Athens, GA, [3]Physiology and Pharmacology, University of Georgia, Athens, GA and [4]Division of Toxicology, ATSDR, Atlanta, GA.

#1195 **BIOMEDICAL APPLICATION OF ACCELERATOR MASS SPECTROMETRY (AMS): PLACENTAL AND LACTATIONAL TRANSFER OF PCB 126 IN SPRAGUE-DAWLEY RATS.** B. Buchholz[2], *S. Lee*[1], M. B. Reddy[1], *K. H. Liao*[1], M. Lohitnavy[1], *J. Vogel*[2] and *R. Yang*[1]. [1]Environmental and Radiological Health Sciences, Colorado State University, Fort Collins, CO and [2]Center for Accelerator Mass Spectrometry, Lawrence Livermore National Laboratory, Livermore, CA.

#1196 **DIETARY AROCLOR 1254-INDUCED CHANGES IN GLOBAL GENE EXPRESSION IN FISHER RATS.** T. M. Basford and *J. C. Means*. Environmental Institute & Department of Chemistry, Western Michigan University, Kalamazoo, MI.

#1197 **MULTI-FACTOR ANALYSIS OF TEQ-EQUIVALENT AROCLOR AND TCDD TREATED RATS REVEALS DIFFERENTIAL GENE EXPRESSION PROFILES.** K. Illouz[1], A. Possolo[1], M. Zhao[1], S. B. Hamilton[2], *G. M. Hoffman*[3], Y. Huang[4], S. Goodwin[4], *T. R. Sutter*[4] and *J. B. Silkworth*[1]. [1]Global Research Center, GE, Schenectady, NY, [2]Corporate Environmental Programs, GE, Fairfield, CT, [3]Huntingdon Life Sciences, East Millstone, NJ and [4]Feinstone Center for Genomic Research, University Memphis, Memphis, TN.

#1198 **DIFFERENTIAL ACTIVATION OF GENES BY TCDD AND RELATED COMPOUNDS: ANALYSIS BY MICROARRAYS.** S. Khan[1], P. Beremand[2], T. Thomas[2] and *S. Safe*[1]. [1]Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX and [2]Biology, Texas A&M University, College Station, TX.

#1199 **SEX-DEPENDENT LIVER GENE EXPRESSION PROFILES OF TCDD-TREATED SPRAGUE-DAWLEY RATS.** Y. Huang[1], S. Goodwin[1], K. Illouz[2], *J. B. Silkworth*[2], *G. M. Hoffman*[3] and *T. R. Sutter*[1]. [1]Feinstone Center for Genomic Research, University of Memphis, Memphis, TN, [2]Global Research Center, General Electric, Schenectady, NY and [3]Huntingdon Life Sciences, East Millstone, NJ.

#1200 **TCDD-INDUCED OXIDATIVE STRESS IN DIFFERENT BRAIN REGIONS OF RATS: MODULATION BY VITAMIN E SUCCINATE AND ELLAGIC ACID.** *E. A. Hassoun*, J. Vodhanel, A. Abushaban and M. Al-Ghafri. Pharmacology, University of Toledo, Toledo, OH.

#1201 **TCDD ALTERS THE p53 RESPONSE TO DNA DAMAGE.** *M. Viluksela*[1], University. Stenius[2], R. Pohjanvirta[3, 4, 1] and J. Hogberg[2]. [1]Department of Environmental Health, National Public Health Institute, Kuopio, Finland, [2]Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden, [3]National Food and Veterinary Research Institute, Kuopio, Finland and [4]Department of Food and Environmental Hygiene, Faculty of Veterinary Medicine, University of Helsinki, Helsinki, Finland.

#1202 **MITOCHONDRIAL PROTEIN EXPRESSION IN MOUSE LIVER FOLLOWING TCDD EXPOSURE.** X. Shi, D. Shen, S. N. Schneider, *M. Genter*, *D. W. Nebert*, *T. P. Dalton* and *H. G. Shertzer*. Department of Environmental Health and Center for Environmental Genetics, University of Cincinnati Medical Center, Cincinnati, OH.

#1203 **HYDRONEPHROSIS AND RENAL CYP1A1 INDUCTION IN THE RAT KIDNEY BY LACTATIONAL EXPOSURE TO DIOXIN.** N. Nishimura[1, 2], *J. Yonemoto*[1, 2], Y. Takeuchi[1], C. Yokoi[1, 2], H. Nishimura[3] and *C. Tohyama*[1, 2]. [1]NIES, Tsukuba, Japan, [2]CREST, Kawaguchi, Japan and [3]Aichi Mizuho University, Toyota, Japan.

#1204 **EFFECTS OF *IN UTERO* AND LACTATIONAL 2, 3, 7, 8-TETRACHLORODIBENZO-*P*-DIOXIN (TCDD) EXPOSURE ON THE PROSTATE AND ITS RESPONSE TO CASTRATION IN SENESCENT C57BL/6 MICE.** *W. A. Fritz*, *T. Lin* and *R. E. Peterson*. School of Pharmacy, University of Wisconsin, Madison, WI.

#1205 **DECREASED CARDIOMYOCYTE PROLIFERATION AND DOWN-REGULATION OF CELL-CYCLE-SPECIFIC GENES FOLLOWING *IN UTERO* 2, 3, 7, 8-TETRACHLORODIBENZO-P-DIOXIN EXPOSURE.** *E. A. Thackaberry* and *M. K. Walker*. College of Pharmacy, University of New Mexico, Albuquerque, NM.

#1206 **LOSS OF ARNT2 IS INSUFFICIENT TO PROTECT AGAINST TCDD DEVELOPMENTAL TOXICITY IN ZEBRAFISH.** *A. L. Prasch*, W. Heideman and *R. E. Peterson*. Molecular and Environmental Toxicology Center and School of Pharmacy, University of Wisconsin, Madison, WI.

#1207 **TCDD INHIBITS REGRESSION OF THE COMMON CARDINAL VEIN IN DEVELOPING ZEBRAFISH.** S. M. Bello, W. Heideman and *R. E. Peterson*. Pharmacy, University of Wisconsin - Madison, Madison, WI.

#1208 **WATER PERMEABILITY AND TCDD-INDUCED EDEMA IN EARLY LIFE STAGES OF ZEBRAFISH.** A. J. HILL, S. M. BELLO, *A. L. PRASCH*, *R. E. PETERSON* and W. HEIDEMAN. School of Pharmacy, University of Wisconsin, Madison, WI.

#1209 **MORPHOLINO KNOCKDOWN OF CYP1A DOES NOT PROTECT AGAINST 2, 3, 7, 8-TETRACHLORODIBENZO-*P*-DIOXIN INDUCED EMBRYOTOXICITY IN ZEBRAFISH.** S. Carney, W. Heideman and *R. E. Peterson*. University of Wisconsin, Madison, WI.

#1210 **CHRONIC EXPOSURE TO LOW DOSES OF TCDD ALTERS REPRODUCTIVE SUCCESS IN ZEBRAFISH.** *T. King Heiden*, B. Wimpee, *R. Hutz* and *M. J. Carvan*. UW-Milwaukee Great Lakes WATER Inst and NIEHS Marine and Freshwater Biomedical Sciences Center, Milwaukee, WI.

#1211 **EFFECTS OF 2, 3, 7, 8-TETRACHLORODIBENZO-P-DIOXIN (TCDD) ON MATRIX METALLOPROTEINASE (MMP) EXPRESSION IN A FISH MODEL OF WOUND REPAIR.** *K. Hogan*[1], B. Wall[2], *K. Cooper*[1, 2] and *L. White*[1, 2]. [1]Joint Graduate Program in Toxicology, Rutgers/UMDNJ, Piscataway, NJ and [2]Department of Biochemistry, Rutgers, New Brunswick, NJ.

#1212 **TCDD DECREASES RESPONSIVENESS OF THE CHICK EMBRYO HEART TO ISOPROTERENOL BUT NOT TO AGENTS EFFECTING DOWNSTREAM EVENTS OF THE BETA-ADRENERGIC RECEPTOR.** *R. J. Sommer*[1] and *M. K. Walker*[2]. [1]Biology Department, Bates College, Lewiston, ME and [2]College of Pharmacy, University of New Mexico, Albuquerque, NM.

#1213 **2, 3, 7, 8-TETRACHLORODIBENZO-P-DIOXIN (TCDD) EXPOSURE AFTER ANGIOBLAST DIFFERENTIATION INHIBITS CORONARY VASCULOGENESIS.** *I. D. Ivnitski-Steele*, M. M. Friggens, M. K. Chavez and *M. K. Walker*. College of Pharmacy, University of New Mexico, Albuquerque, NM.

Tuesday Afternoon, March 23
2:45 PM to 3:45 PM
Room 301

INFORMATIONAL SESSION: GETTING TO THE HEART OF THE MATTER

Are you looking for a way to define cardiovascular safety for your lead compounds — accurately, quickly and affordably? Our ownexperiences in the pharmaceutical industry left us frustrated with the lack of facilities and expertise to perform this type of toxicological testing. We decided to find a way to provide the services needed to meet these demands.

Tuesday Afternoon, March 23
4:30 PM to 6:00 PM
Room 316

ANNUAL BUSINESS MEETING

Chairperson(s): *Marion F. Ehrich, 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 discussion of the Council 2004 Strategic Planning Session, financial summary, a review of the 2003–2004 activities, and plans for the future.

Tuesday Afternoon, March 23
5:30 PM to 6:30 PM
Room 304

REGIONAL CHAPTER CONTACTS FOR K–12 EDUCATION MEETING

Chairperson(s): *Marion Miller, University of California, Davis, Davis, CA.*

Sponsored by:
Education Committee
Education Subcommittee for K–12 Education

SOT Regional Chapter Contacts for K–12 Education and others interested in outreach to schools and teachers are invited to attend an informal meeting to discuss K–12 education activities at the regional level. Light refreshments will be available.

Roundtable: Updates of activities and plans in the regional chapters

Educating K–12 Students on the Use of Animals in Research. Joanne Zurlo, National Academies Institute of Laboratory Animal Science, Washington, DC.

Tuesday Evening

Tuesday Evening, March 23
6:00 PM to 7:30 PM
See Events Calendar on Pages 2–6 for Room Listings

SPECIALTY SECTION MEETINGS:
COMPARATIVE AND VETERINARY, DERMAL, FOOD SAFETY, HISPANIC ORGANIZATION FOR TOXICOLOGISTS, *IN VITRO*, MOLECULAR BIOLOGY, REPRODUCTIVE AND DEVELOPMENTAL, WOMEN IN TOXICOLOGY

Tuesday Evening, March 23
6:00 PM to 11:00 PM
See Events Calendar on Pages 2–6 for Room Listings

REGIONAL CHAPTER MEETINGS/RECEPTIONS

Many of the Regional Chapters meet during the SOT Annual Meeting. Details for these Regional Chapter receptions and meetings are listed in *Program's* Events Calendar.

Wednesday Morning

Wednesday Morning, March 24
7:15 AM to 8:15 AM
Room 318

TOWN MEETING: SOT ENDOWMENT—YOUR FUTURE

Presiding: *Linda S. Birnbaum, Ph.D., SOT Vice President*

Dr. Birnbaum invites you to the SOT Town Meeting, open to all members, which will be a forum to discuss the SOT endowment plans. The SOT endowment will provide stable financial resources that will be used to foster and further SOT goals and contribute to the health and betterment of society.

Whether you are interested in how the endowment can contribute to the accomplishment of SOT goals or whether you are in search of a tool to help you achieve your long-term financial goals, please plan on attending the Town Meeting. Bring your comments and suggestions; we will do our best to give each member an opportunity to be heard on this topic as well as any issues on your mind, as time permits.

Wednesday Morning, March 24
8:30 AM to 11:30 AM
Room 318

SYMPOSIUM SESSION: ARSENIC DISRUPTION OF CELL CYCLE: MECHANISMS AND EFFECTS ON APOPTOSIS, DIFFERENTIATION AND CARCINOGENESIS

Chairperson(s): *Michael McCabe, University of Rochester, Rochester, NY and J. Christopher States, University of Louisville, Louisville, KY.*

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

Epidemiological studies indicate that arsenic is a human carcinogen, but the mechanism of arsenic carcinogenesis is unknown and a subject of great debate. Paradoxically, arsenic is an effective anti-leukemia agent. There is great interest in understanding and exploiting the potential chemotherapeutic effects of arsenic compounds to treat other malignancies. Recent discoveries detailing arsenic's effects on cell cycle regulation may provide insight into the mechanisms underlying its carcinogenic and chemotherapeutic activities. Collectively, recent studies suggest that arsenic may influence cell cycle regulators at either the transcriptional or post-translational levels, and effects on specific protein-protein interactions also have been postulated. Arsenic recently has been shown to interfere with protein ubiquitination — an important finding given the role of ubiquitination of cell cycle regulatory proteins (e.g., cyclins) in normal cell cycle control. Disruption of normal cell cycle checkpoints is thought to be a key feature of the carcinogenic process. Similarly, disrupting cell cycle control is a contemporary strategy for chemotherapy. Determining which cell cycle regulators are targeted by arsenic and how such targeting is linked to cellular processes (i.e., differentiation, apoptosis) will provide an understanding of the carcinogenic mechanism and molecular targets that may be useful for chemotherapeutic benefit. This symposium will present an overview of the role of protein ubiquitination in cell cycle regulation, as well as the latest research investigating arsenic effects on protein ubiquitination and on regulation of genes and signaling pathways controlling cell cycle, differentiation and apoptosis. The presentations will discuss mechanisms that may explain the paradoxical effects of arsenic as both a cancer causing and a chemotherapeutic agent.

#1214 8:30 **ARSENIC DISRUPTION OF CELL CYCLE: MECHANISMS AND EFFECTS ON APOPTOSIS, DIFFERENTIATION AND CARCINOGENESIS.** *J. States*[1] and *M. J. McCabe*[2]. [1]Pharmacology & Toxicology, University of Louisville, Louisville, KY and [2]Environmental Medicine, University of Rochester, Rochester, NY.

#1215 8:35 **UBIQUITINATION IN THE CONTROL OF CELL CYCLE, GROWTH AND ONCOGENESIS.** A. Banerjee. Inst. of Env. Health Sciences, Wayne State University, Detroit, MI. Sponsor: *J. States*.

#1216 9:00 **EFFECTS OF *IN VITRO* EXPOSURE TO ARSENIC ON THE UBIQUITIN PATHWAY IN HUMAN RENAL AND BLADDER CELLS.** *A. J. Gandolfi*, *D. S. Kirkpatrick*, T. G. Bredfeldt and *X. H. Zheng*. Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

#1217 9:25 **ARSENIC-INDUCED DISRUPTION OF MITOTIC PROGRESSION: IMPLICATIONS FOR CARCINOGENESIS AND POTENTIAL FOR CHEMOTHERAPY.** *J. States*[1], S. C. McNeely[1] and *M. J. McCabe*[2]. [1]Pharmacology & Toxicology, University of Louisville, Louisville, KY and [2]Environmental Medicine, University of Rochester, Rochester, NY.

#1218 9:50 **CELL CYCLE DYSREGULATION BY ARSENITE: IMPLICATIONS FOR ITS CHEMOTHERAPEUTIC ACTIONS.** *M. J. McCabe* and *G. McCollum*. Environmental Medicine, University of Rochester, Rochester, NY.

#1219 10:15 **MOLECULAR EVENTS DURING TRANSPLACENTAL INORGANIC ARSENIC CARCINOGENESIS IN MICE: ABERRANT ACTIVATION OF GENES LINKED TO CELL CYCLE DYSREGULATION.** *M. P. Waalkes*[1], *J. Liu*[1], H. Chen[1], *W. E. Achanzar*[1] and *B. A. Diwan*[2]. [1]LCC, NCI at NIEHS, Research Triangle Park, NC and [2]SAIC, NCI-Frederick, Frederick, MD.

Wednesday Morning, March 24
8:30 AM to 11:30 AM
Room 314

SYMPOSIUM SESSION: OCCUPATIONAL SKIN EXPOSURE: CURRENT TRENDS AND FUTURE DIRECTIONS FROM THE FIELD TO GENOMICS

Chairperson(s): *Michael Luster, NIOSH, Morgantown, WV and Anna Shvedova, NIOSH, Morgantown, WV.*

Endorsed by:
Dermal Toxicology Specialty Section
Occupational Health Specialty Section*

The purpose of this symposium is to address important and emerging areas of occupational skin toxicology with respect to current trends and future directions from the field to genomics. For many years, skin has been considered primarily as a route of exposures for toxic chemicals and not as a target organ. As a result, research in skin toxicology per se is extremely underemphasized and under-represented in the discipline of toxicology. Advances in cellular and molecular skin biology have provided insightful opportunities to explore dermal toxicology at different levels. There is no doubt occupational and environmental exposures play a substantial role in skin maladies. A comprehensive discussion of recent developments and trends in occupational skin toxicology will provide novel approaches to elucidate exposure outcomes. This group of selected topics will bring together leading experts representing diverse perspectives in this important field. Ample time will be allotted for full discussion of major skin programs and current findings in Europe and the US. This symposium will address innovative issues in the area of skin toxicology ranging from disease incidences and causes to dermal toxicogenomics.

#1220 8:30 **OCCUPATIONAL SKIN EXPOSURE: CURRENT TRENDS AND FUTURE DIRECTIONS FROM THE FIELD TO GENOMICS.** *A. A. Shvedova*[1] and *M. Luster*[2]. [1]HELD/PPRB, NIOSH, Morgantown, WV and [2]HELD/TMBB, NIOSH, Morgantown, WV.

#1221 8:50 **A RASH OVERVIEW OF OCCUPATIONAL SKIN DISEASES.** B. D. Lushniak. DSHEFS, NIOSH, Cincinnati, OH. Sponsor: *A. Shvedova*.

#1222 9:20 **MOLECULAR MECHANISMS OF ANTIOXIDANT DEFENSE IN THE SKIN.** *A. A. Shvedova*. HELD/PPRB, NIOSH, Morgantown, WV.

#1223 9:50 **BASIC AND CLINICAL ASPECTS OF SKIN DISEASES.** K. D. Cooper. Case Western University, Cleveland, OH. Sponsor: *A. Shvedova*.

#1224 10:20 **DISSECTING MECHANISMS OF SKIN TOXICITY IN THE AGE OF PROTEOMICS AND GENOMICS.** *J. D. Laskin*. UMDNJ, Piscataway, NJ.

#1225 10:50 **EXTRA CUTANEOUS ORGAN ENDPOINTS AND DEFINING KNOWLEDGE HIATUS (CLINICAL, CONCEPTUAL AND LABORATORY) WHOSE SOLUTIONS SHOULD LEAD TO INCREASED WORKER SAFETY.** *H. I. Maibach*. Department of Dermatology, UCSF, San Francisco, CA.

Wednesday Morning, March 24
8:30 AM to 11:30 AM
Room 307

SYMPOSIUM SESSION: XENOBIOTIC-ACTIVATED RECEPTORS: BIOLOGICAL FUNCTIONS AND DISEASE PREVENTION

Chairperson(s): *Jack Vanden Heuvel, Penn State University, University Park, PA and Qiang Ma, CDC/NIOSH, Morgantown, WV.*

Endorsed by:
Carcinogenesis Specialty Section
Molecular Biology Specialty Section*

Xenobiotic-activated receptors comprise several classes of structurally distinct receptor/transcription factors, which sense changes in the chemical environment of cells, mediate transcriptional responses to the chemical stimuli, and thereby control the homeostasis of cells. Overactivation or dysfunction of the receptors is often associated with altered responses to chemicals, including toxicity and disease states. The rapid advances in understanding of signal transduction and molecular mechanism of action of these receptors provide new insights into the biological functions of the receptors and their relation to disease pathogenesis. Moreover, increasing evidence reveals that many xenobiotic-activated receptors represent important targets for developing effective therapeutic and preventive strategies in disease control and prevention. The objective of this symposium is to bring together leading experts to present new advances in the concept and understanding of the biological functions of a number of receptors in relation to disease development and prevention. Topics include ligand-receptor interactions and implications for therapy/chemoprotection; receptor-mediated antioxidant/oxidative responses and relation to autoimmune regulation/embryonic development; and control of metal homeostasis.

#1226 8:30 **XENOBIOTIC-ACTIVATED RECEPTORS: BIOLOGICAL FUNCTIONS AND DISEASE PREVENTION.** *R. D. Palmiter*. University of Washington, Seattle, WA.

#1227 8:35 **A NEW CLASS OF PEROXISOME PROLIFERATOR-ACTIVATED RECEPTOR γ AGONISTS: 1, 1-BIS(3'-INDOLYL)-1-(P-SUBSTITUTEDPHENYL)METHANES.** *S. Safe*. Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

#1228 9:05 **THE AH RECEPTOR:DIVERSITY IN LIGAND BINDING AND BIOLOGICAL/TOXICOLOGICAL RESPONSES.** *M. Denison*[1], A. Padini[3], L. Bonati[3] and *S. Safe*[2]. [1]Environmental Toxicology, University of California, Davis, CA, [2]Vet. Physiol. & Pharmacology, Texas A&M University, College Station, TX and [3]di Scienze dell, University of Milano-Bicocca, Milano, Italy.

#1229 9:35 **NRF2, AN ANTIOXIDANT ACTIVATED CNC BZIP TRANSCRIPTION FACTOR: MECHANISM OF ACTION AND ROLE IN AUTOIMMUNE FUNCTION.** *Q. Ma*. Toxicology and Molecular Biology Branch, CDC/NIOSH, Morgantown, WV.

#1230 10:05 **THE NRF1 TRANSCRIPTION FACTOR IN OXIDATIVE STRESS RESPONSE AND DEVELOPMENT.** J. Chan. Pathology, University of California at Irvine, Irvine, CA. Sponsor: *Q. Ma*.

#1231 10:35 **DEFENSE AGAINST ZINC AND CADMIUM TOXICITY.** R. D. Palmiter[1, 2]. [1]Biochemistry, University Washington, Seattle, WA and [2]Howard Hughes Medical Institute, University of Washington, Seattle, WA. Sponsor: *Q. Ma*.

Wednesday Morning, March 24
8:30 AM to 11:30 AM
Room 309

WORKSHOP SESSION: AGRICULTURAL CHEMICAL SAFETY ASSESSMENT: A MULTI-SECTOR, INTERNATIONAL PROPOSAL

Chairperson(s): *Timothy Pastoor, Syngenta Crop Protection Inc., Greensboro, NC and Neil Carmichael, Aventis CropScience, Sophia Antipolis, France.*

Endorsed by:
Occupational Health Specialty Section
Regulatory and Safety Evaluation Specialty Section*
Toxicologic & Exploratory Pathology Specialty Section

This workshop will present and debate a series of proposals which result from a fundamental re-examination of the process of evaluating the safety of agricultural chemicals. This project has had the support and active participation of internationally recognised expert scientists from industry, international government agencies and academia. The intention was to propose a scheme which would provide a robust evaluation of these chemicals while reducing wasteful use of animals and other resources. Since October 2002 three multisector task forces have been working on proposals for a tiered approach to the evaluation of toxicology dossiers, guided by existing precedents for the evaluation of other types of chemicals and taking into accounts the specificity of agricultural chemicals. Thus, the approach is oriented towards the risk assessments which are dictated by the use of these products and the emphasis on hazard is decreased. The three groups were charged to look at potentially vulnerable life stages, the design of the systemic toxicity evaluation package and the role of ADME in study design and choice. The integration of ADME into the toxicology package is seen as key to a more modern and appropriate approach to study design and interpretation. Availability of good data from such studies is intended to permit a well informed choice of studies and a justification for avoiding unnecessary use of animals and other resources. As for any tiered evaluation, the triggers for higher tiers are critical and require thought and debate. The scheme allows the efforts to be concentrated on the studies which will be needed to perform critical risk assessments and suggests study designs that are most appropriate.

#1232 8:30 **OVERVIEW OF THE ILSI "AGRICULTURAL CHEMICAL SAFETY ASSESSMENT" PROJECT.** *N. G. Carmichael*. Toxicology, Bayer CropScience, Sophia-Antipolis, France.

#1233 8:50 **DEVELOPMENT OF ADME DATA IN AGRICULTURAL CHEMICAL SAFETY ASSESSMENTS.** *T. Pastoor*[1] and *H. Barton*[2]. [1]Syngenta Crop Protection, Greensboro, NC and [2]EPA Office of Research and Development-NHEERL, Research Triangle Park, NC.

#1234 9:30 **INCORPORATING LIFE STAGE TESTING INTO AGRICULTURAL CHEMICAL SAFETY ASSESSMENT.** *J. C. Lamb*. BBL Sciences, Reston, VA.

#1235 10:10 **INCORPORATING SYSTEMIC TOXICITY TESTING IN AGROCHEMICAL SAFETY ASSESSMENT.** *A. Moretto*. Environmental Medicine and Public Health, Universita di Padova, Padova, Italy.

#1236 10:50 **AN EPA PERSPECTIVE: A NEW TESTING PARADIGM FOR PESTICIDES.** *V. Dellarco*. Office of Pesticide Programs, USEPA, Washington DC, DC.

Wednesday Morning, March 24
8:30 AM to 11:30 AM
Room 316

WORKSHOP SESSION: HISTOMORPHOLOGY AND BEYOND: CORRELATING NON-CLINICAL IMMUNE MODULATION WITH CLINICAL DATA

Chairperson(s): *Lynnda Reid, FDA/CDER, Rockville, MD and JoAnn Schuh, Applied Veterinary Pathobiology, PLLC, Bainbridge Island, WA.*

Endorsed by:
Immunotoxicology Specialty Section
Toxicologic & Exploratory Pathology Specialty Section*

Histopathology is an important component for assessing immunomodulation as part of immunotoxicology profiling in non-clinical studies. Histomorphological evaluation of lymphoid organs and tissues in animals captures the accumulation of both background and treatment-specific immunomodulation and careful evaluation can provide evidence of altered immune function. However, immunomodulatory changes in tissues need to be interpreted in the context of variation due to genetic modifiers, stress and degree of environmental antigenic exposure. In the last few years, experiences with expanded immunotoxicology testing have resulted in availability of data sets that allow correlation of histomorphology to functional data and clinical studies. Additionally, compartments of the mucosal immune system are also beginning to be more thoroughly analyzed. Many challenges remain in our efforts to fully understand non-clinical immunohistology relative to functional data. The increasing need for immunotoxicology assessment as part of regulatory submissions reinforces our need to continually improve our abilities to correctly interpret and apply immunotoxicology information. Periodic reassessment of completed and ongoing immunohistology and immune function studies is important to monitoring the robustness of testing guidelines, directing testing modifications and to establish predictive value of animal studies for clinical studies. The purpose of this workshop is to present and examine several available data sets that have evaluated histomorphology and immunomodulation in animals and resulting correlations to clinical data. Representative data sets from immunomodulation subsequent to chemical and pharmaceutical exposure conducted by laboratories in The Netherlands and by the NTP, USFDA and ILSI will be highlighted. Discussions on these current and ongoing experiences with correlative data sets will be relevant to individuals involved in gathering and evaluating data in all aspects of the rapidly progressing field of immunotoxicology.

#1237 8:30 **HISTOMORPHOLOGY AND BEYOND: CORRELATING NON-CLINICAL IMMUNE MODULATION WITH CLINICAL DATA.** *J. Schuh*[1] and *L. Reid*[2]. [1]Applied Veterinary Pathobiology, PLLC, Bainbridge Island, WA and [2]Division of Reproductive and Urologic Drug Products, USFDA, Rockville, MD.

#1238 8:40 **IMMUNOTOXICOLOGY AND THE MUCOSAL IMMUNE SYSTEM.** C. F. Kuper. TNO Nutrition and Food Research, Zeist, Netherlands. Sponsor: *J. Schuh*.

#1239 9:10 **PROTOCOLS AND VALIDATION STUDIES OF HISTOPATHOLOGY AND IMMUNE FUNCTION IN NON-CLINICAL STUDIES.** *J. G. Vos*. Laboratory of Pathology and Immunology, National Institute for Public Health and the Environment, Bilthoven, Netherlands.

#1240 9:40 **REGULATORY IMPLICATIONS OF NON-CLINICAL IMMUNOTOXICOLOGICAL FINDINGS DURING THE DRUG DEVELOPMENT PROCESS IN THE UNITED STATES.** D. Mellon. Division of Anesthetics, Critical Care and Addiction Drug Products, Center for Drug Evaluation and Research, US Food and Drug Administration, Rockville, MD. Sponsor: *L. Reid*.

#1241 10:10 **CONCORDANCE OF ANIMAL TOXICITY AND SAFETY PHARMACOLOGY DATA WITH HUMAN TOXICITIES FOR THERAPEUTIC AGENTS: FOCUS ON THE IMMUNE SYSTEM.** *M. P. Holsapple*[1], K. Thomas[1], *J. Sanders*[2] and E. Kadyszewski[3]. [1]Health and Environmental Sciences Institute, International Life Sciences Institute, Washington, DC, [2]Aventis Pharmaceuticals, Bridgewater, NJ and [3]Pfizer Central Research, Groton, CT.

Wednesday Morning, March 24
8:30 AM to 11:30 AM
Room 321

WORKSHOP SESSION: ZEBRAFISH—A MODEL ORGANISM FOR ASSESSING DEVELOPMENTAL TOXICITY IN DRUG DISCOVERY/ENVIRONMENTAL RISK ASSESSMENT

Chairperson(s): *John Rogers, USEPA, Research Triangle Park, NC and Ravi Dugyala, Schering Plough Research Institute, Lafayette, NJ.*

Endorsed by:
***In Vitro* Specialty Section**
Neurotoxicology Specialty Section
Regulatory and Safety Evaluation Specialty Section
Reproductive and Developmental Toxicology Specialty Section*

Several organisms such as the worm (C. elegans), fly (D. melanogaster), frog (X. laevis) and zebrafish (D. rerio) have been discussed as alternative models for assessing developmental toxicity of environmental agents in higher mammals. Zebra fish seems to be an appropriate model for several reasons. It is a vertebrate, its genetics and development is well understood and transgenics/knockdowns can be easily made. The zebrafish life cycle is short therefore; its specific developmental phenotypes can be screened effectively. Zebrafish are easily bred throughout the year in the laboratory and individual females can give rise to hundreds of progeny on a year-round basis. Several zebrafish mutants are representative of known forms of human genetic disorders. In addition, its genomic sequence will be available from the Sanger Sequencing Center and this has already allowed easy isolation and identification of gene regions. Commercial sources of DNA libraries for microarray analysis are now available. Moreover, they can be easily exposed to environmental agents; can be used to screen environmental agents that have developmental risk in a semi or high-throughput manner. Mechanistic data involving specific genes/pathways can also be effectively generated to help better estimate the human developmental risk. Therefore, zebrafish can be an effective alternative model in the drug discovery process or environmental risk assessment.

#1242 8:30 **ZEBRAFISH—A MODEL ORGANISM FOR ASSESSING DEVELOPMENTAL TOXICITY IN DRUG DISCOVERY/ENVIRONMENTAL RISK ASSESSMENT.** *R. R. Dugyala*[1] and *J. M. Rogers*[2]. [1]Reproductive Toxicology, Schering-Plough Research Institute, Lafayette, NJ and [2]Reproductive Toxicology Division, National Health and Environmental Effects Research Laboratory, Research Triangle Park, NC.

#1243 8:35 **TRANSGENESIS, MICROARRAY ANALYSIS AND ANTI-SENSE KNOCKDOWNS OF ZEBRAFISH GENES-TOOLS FOR USING ZEBRAFISH AS A TOXICOLOGICAL MODEL.** E. Linney[1], L. Upchurch[1], S. Donerly[1], Q. Xhao[1], C. Lassiter[1] and *E. Levin*[2]. [1]Department of Molecular Genetics and Microbiology, Duke University Medical Center, Durham, NC and [2]Department of Psychiatry, Duke University Medical Center, Durham, NC.

#1244 9:10 **ZEBRAFISH AND DIOXIN DEVELOPMENTAL TOXICITY: POISED TO IDENTIFY CRITICAL GENES FOR SPECIFIC ENDPOINTS.** *R. E. Peterson*[1], *A. L. Prasch*[1], *E. A. Andreasen*[2], *R. L. Tanguay*[2] and W. Heideman[1]. [1]School of Pharmacy, Molecular and Environmental Toxicology, University of Wisconsin, Madison, WI and [2]Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR.

#1245 9:45 **NICOTINE-INDUCED DEVELOPMENTAL TOXICITY IN ZEBRAFISH.** *R. L. Tanguay*[1], K. R. Svoboda[2] and S. Vijayaraghavan[3]. [1]Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR, [2]Department of Biological Sciences, Louisiana State University, Baton Rouge, LA and [3]Department of Physiology and Biophysics, University of Colorado Health Sciences Center, Denver, CO.

#1246 10:20 **ZEBRAFISH AS A MODEL FOR SMALL MOLECULE SCREENING/DISCOVERY.** R. T. Peterson, D. Milan, C. MacRae, T. Peterson and M. Fishman. Cardiovascular Research Center, Massachusetts General Hospital, Charlestown, MA. Sponsor: *R. Dugyala*.

#1247 10:55 **EVALUATING THE TOXICITY OF ENVIRONMENTAL SAMPLES USING ZEBRAFISH DEVELOPMENTAL ENDPOINTS AND ALTERATION OF GENE EXPRESSION.** *M. J. Carvan*, B. A. Wimpee, T. King-Heiden, E. J. Loucks and K. A. VanDerel. Great Lakes WATER Institute and Marine & Freshwater Biomedical Sciences Center, University of Wisconsin-Milwaukee, Milwaukee, WI.

Wednesday Morning, March 24
8:30 AM to 11:30 AM
Room 315

PLATFORM SESSION: BIOMARKERS OF EXPOSURE AND EFFECTS

Chairperson(s): *David Doolittle, RJR Tobacco Company, Winston Salem, NC and Christopher Bral, Schering Plough Research Institute, Lafayette, NJ.*

#1248 8:30 **INDIVIDUAL VARIATIONS IN CIGARETTE MAINSTREAM SMOKE BIOMARKERS OF EXPOSURE.** *C. J. Smith*, M. J. Morton, *B. G. Brown*, *D. W. Bombick*, D. L. Heavner, M. W. Ogden, J. H. Robinson and *D. J. Doolittle*. Research and Development, RJ Reynolds, Winston-Salem, NC.

#1249 8:50 **LARGE WITHIN CHILD VARIABILITY FOR OP PESTICIDE URINARY BIOMARKERS LIMITS OUR ABILITY TO IDENTIFY HIGH EXPOSURE FARM WORKER CHILDREN.** W. C. Griffith[2, 1], C. L. Curl[1], *E. M. Faustman*[2, 1], C. A. Li[1] and R. A. Fenske[1]. [1]DEOHS, University of Washington, Seattle, WA and [2]Institute for Risk Analysis and Risk Communication, University of Washington, Seattle, WA.

#1250 9:10 **A REVERSED PHASE HPLC METHOD FOR THE DETERMINATION OF EPOXIDES OF 1, 3-BUTADIENE AND OTHER PETROCHEMICAL ALKENES.** B. Kandlakunta, J. L. Allison and R. M. Uppu. Environmental Toxicology, Southern University and A&M College, Baton Rouge, LA. Sponsor: *J. Ward*.

#1251 9:30 **DEVELOPMENT OF AN LCMS METHOD FOR THE QUANTITATIVE MEASUREMENT OF AFLATOXIN B_1 SERUM ALBUMIN ADDUCTS.** P. F. Scholl[1], L. McCoy[2], R. Schleicher[2] and *J. D. Groopman*[1]. [1]Environmental Health Sciences, Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD and [2]National Center for Environmental Health, Inorganic Toxicology and Nutrition Branch, Centers for Disease Control and Prevention, Atlanta, GA.

#1252 9:50 **CYCLIN AND HOX GENE EXPRESSION ASSOCIATED WITH DRUG-INDUCED BILIARY HYPERPLASIA AND CELL PROLIFERATION IN CYNOMOLGUS MONKEYS.** *C. M. Bral*, F. M. Goodsaid, R. J. Smith, F. Poulet and *I. Y. Rosenblum*. Genetic and Molecular Toxicology, Schering-Plough Research Institute, Lafayette, NJ.

#1253 10:10 **DMBT1 IS A BIOMARKER OF BILE DUCT HYPERPLASIA IN F344 RATS.** D. E. Watson[1], I. Kadura[1], B. Li[1], G. Searfoss[1], K. Rodocker[2], J. Sullivan[2] and B. Berridge[2]. [1]Global Exploratory Toxicology Team, Eli Lilly and Company, Greenfield, IN and [2]Experimental Pathology, Eli Lilly and Company, Greenfield, IN. Sponsor: *C. Thomas*.

#1254 10:30 **BIOMARKERS OF HEPATOTOXINS IDENTIFIED USING MURINE EMBRYONIC STEM CELL DIFFERENTIATION SYSTEMS.** Y. S. Kim[1], Y. Luo[1], O. A. Callan[1], *A. Vickers*[2] and *H. R. Snodgrass*[1]. [1]VistaGen Therapeutics, Burlingame, CA and [2]Novartis Pharmaceuticals, East Hanover, NJ.

#1255 10:50 **DIFFERENTIATION BETWEEN RENAL INJURY AND COMPENSATORY RESPONSES BY THE USE OF SPECIFIC BIOMARKERS.** A. Coyle[1], P. R. Maxwell[2] and D. Gordon[3]. [1]Biotrin, Dublin, Ireland, [2]Biochemistry, Stobhill Hospital, Glasgow, United Kingdom and [3]Medicine, Stobhill Hospital, Glasgow, United Kingdom. Sponsor: *R. Chandra Gupta*.

#1256 11:10 **EVALUATION OF A HIGH-THROUGHPUT ARRAYPLATE TEST PLATFORM FOR GENOMIC BIOMARKERS OF TOXICITY.** I. Botros[1], F. M. Goodsaid[2], B. Seligmann[1], *J. W. Davis*[2], M. Crawford[1], R. J. Smith[2], R. Martel[1] and *I. Y. Rosenblum*[2]. [1]High-Throughput Genomics, Tucson, AZ and [2]Genetic and Molecular Toxicology, Schering-Plough Research Institute, Lafayette, NJ.

Wednesday Morning, March 24
8:30 AM to 11:30 AM
Room 317

PLATFORM SESSION: HYPERSENSITIVITY II

Chairperson(s): *Jack Uetrecht, University of Toronto, Department of Pharmacy, ON, Canada and MJ Selgrade, USEPA, Research Triangle Park, NC.*

#1257 8:30 **EVIDENCE OF AN IMMUNE-MEDIATED MECHANISM FOR NEVIRAPINE-INDUCED SKIN RASH IN THE BROWN NORWAY RAT.** J. M. Shenton and *J. P Uetrecht*. Pharmaceutical Sciences, University of Toronto, Toronto, ON, Canada.

#1258 8:50 **CONTRIBUTION OF MAJOR HISTOCOMPATIBILITY COMPLEX DIFFERENCE ON OCCURRENCE OF SYSTEMIC ANAPHYLAXIS IN MICE.** *Y. Heo*[1], H. Kim[2] and S. Hur[3]. [1]Occupational Health, Catholic University of Daegu, Kyongsan si, Kyongbuk, South Korea, [2]Preventive Medicine, The Catholic University of Korea, College of Medicine, Seoul, South Korea and [3]Biological Products, Korea Food & Drug Administration, Seoul, South Korea.

#1259 9:10 **INVESTIGATING IMMUNOGENICITY OF 2-PHENYLPROPENAL, A REACTIVE METABOLITE OF FELBAMATE.** *M. Popovic*[1], S. Nierkens[2], W. Santos[3], R. Pieters[2] and *J. Uetrecht*[1]. [1]Pharmaceutical Sciences, University of Toronto, Toronto, ON, Canada, [2]IRAS-IT, Utrecht, Netherlands and [3]Harvard University, Cambridge, MA.

#1260 9:30 **CHARACTERIZATION OF HARDWOOD AND SOFTWOOD DUST INDUCED EXPRESSION OF CYTOKINES AND CHEMOKINES IN MOUSE MACROPHAGE RAW 264.7 CELLS.** J. Maatta[1], M. Majuri[1], A. Lauerma[2], K. Husgafvel-Pursiainen[1], H. Alenius[1] and *K. Savolainen*[1]. [1]Department of Industrial Hygiene and Toxicology, Finnish Institute of Occupational Health, Helsinki, Finland and [2]Department of Occupational Medicine, Finnish Institute of Occupational Health, Helsinki, Finland.

#1261 9:50 **CAN THE POPLITEAL LYMPH NODE (PLN) ASSAY BE USED TO PREDICT SPECIFIC IgE ADJUVANT ACTIVITY OF AMBIENT AIR PARTICLES? RESULTS FROM THE EUROPEAN RAIAP PROJECT.** M. Lovik, T. Lovdal, E. Groeng and *E. Dybing*. Environmental Medicine, NIPH, Oslo, Norway.

#1262 10:10 **SENSITIVITY AND SPECIFICITY OF A SEROLOGICAL TEST THAT DETECTS HUMAN IGE ANTIBODY TO THE BACILLUS ENZYME Y217L BPN'.** *K. Sarlo*[1], B. Schnell[1], R. J. Harbeck[2], D. Leto[2], *E. Finn*[1] and B. Kirchner[1]. [1]Miami Valley Laboratories, Procter & Gamble Company, Cincinnati, OH and [2]National Jewish Medical and Research Center, Denver, CO.

#1263 10:30 **DIFFERENTIAL GENE EXPRESSION IN OCCUPATIONAL ASTHMA.** *J. F. Regal*[1], A. L. Greene[1], R. R. Regal[2], M. S. Rutherford[3], G. H. Flickinger[3], J. A. Hendrickson[3] and M. E. Mohrman[1]. [1]Pharmacology, University of Minnesota, Duluth, MN, [2]Mathematics and Statistics, University of Minnesota, Duluth, MN and [3]Veterinary Pathobiology, University of Minnesota, St. Paul, MN.

#1264 10:50 **PULMONARY HYPERRESPONSIVENESS FOLLOWING DERMAL EXPOSURE TO CERTAIN DIISOCYANATES.** *M. K. Selgrade*, E. H. Boykin, N. H. Coates, D. L. Doerfler and *S. H. Gavett*. ORD/NHEERL, University.S.EPA, Research Triangle Park, NC.

Wednesday Morning, March 24
8:30 AM to 11:30 AM
Room 326

PLATFORM SESSION: OMICS TECHNOLOGIES: APPLICATION IN TOXICOLOGY

Chairperson(s): *Craig Thomas, Eli Lilly & Co., Greenfield, IN and Clay Frederick, Merck & Co Inc., West Point, PA.*

#1265 8:30 **SUITABILITY OF AFFYMETRIX HUMAN GENECHIPS FOR ANALYSIS OF RNA SAMPLES FROM NON-HUMAN PRIMATES.** M. Derbel, S. Szak, M. Rosenberg, *M. Cooper*, D. Enke, M. Subramanyam and *J. Green*. Preclinical and Clinical Development Sciences Division, Biogen, Cambridge, MA.

#1266 8:50 **DEVELOPMENT OF A PUBLIC TOXICOGENOMICS SOFTWARE FOR MICROARRAY DATA MANAGEMENT AND ANALYSIS.** W. Tong, S. Harris, X. Cao, H. Fang, L. Shi, H. Sun, *J. Fuscoe*, H. Hong, Q. Xie, R. Perkins and *D. Casciano*. NCTR, Jefferson, AR.

#1267 9:10 **DRUG SIGNATURES PREDICT CHRONIC RENAL TUBULE INJURY FOLLOWING SUB-ACUTE DRUG ADMINISTRATION.** *M. R. Fielden*, S. Baumhueter, G. Day, S. Dunlea, B. Eynon, S. Fujimoto, B. Ganter, R. Idury, K. Jarnagin, *K. Kolaja*, M. Lee, R. Nair, G. Natsoulis, S. Nicholson, C. Pearson, A. Roter, S. Thode, A. Tolley, S. Tugendreich, S. Tugendreich and S. Tugendreich. Iconix Pharmaceuticals, Mountain View, CA.

#1268 9:30 **DECISION FOREST FOR PREDICTING PROSTATE CANCER BASED ON SELDI-TOF MS DATA—SHOW ME THE CONFIDENCE.** W. Tong[1], Q. Xie[2], H. Hong[2], H. Fang[2], L. Shi[1], R. Perkins[2] and R. Kodell[1]. [1]Nat. Ctr for Toxicology Research, Jefferson, AR and [2]Bioinformatics and Computational Science Group, Northup Grumman Information Technology, Jefferson, AR. Sponsor: *D. Casciano*.

#1269 9:50 **INTEGRATION OF GENOMICS AND METABONOMICS DATA WITH ESTABLISHED TOXICOLOGICAL ENDPOINTS. A SYSTEMS BIOLOGY APPROACH.** K. Kramer[1], S. Patwardhan[3], K. A. Patel[3], S. T. estrem[2], J. M. Colet[1], *R. A. Jolly*[2], G. S. Ganji[3], N. J. Lewin-Koh[3], H. Gao[2], I. L. Smyej[1], S. Huang[2], H. R. Qian[2], P. Chen[2] and V. K. Kanjilal[3]. [1]Lilly Development Centre, Mont Saint Guibert, Belgium, [2]Eli Lilly, Indeanapolis, IN and [3]Eli Lilly, Singapore, Singapore.

#1270 10:10 **TARGETED PROTEOMICS PROFILING:USE OF LECTIN AFFINITY CHROMATOGRAPHY TO ISOLATE CANCER-RELATED FUCOSYLATED PROTEINS FROM SERUM.** *C. R. Wilson*[1], C. L. Feasley[2], F. E. Regnier[2] and *S. B. Hooser*[1]. [1]Animal Disease Diagnostic Laboratory, Purdue University, West Lafayette, IN and [2]Chemistry, Purdue University, West Lafayette, IN.

#1271 10:30 **GENE EXPRESSION CHANGES IN PRIMATES ARE DIFFERENT FROM THOSE IN RODENTS FOLLOWING EXPOSURE TO THE HEPATOTOXIN ACETAMINOPHEN.** M. S. Lawrence, D. Redmond, R. Roth, J. Elsworth, S. Tam, R. Jensen and S. Gullans. RxGen, Hamden, CT. Sponsor: *Y. Dragon*.

#1272 10:50 **GENOMIC CHARACTERIZATION OF IDIOPATHIC AND DRUG-INDUCED DILATED AND HYPERTROPHIC CARDIOMYOPATHY IN THE RAT HEART.** *D. Donna*[1], *M. R. Fielden*[2], *K. Kolaja*[2], *J. Moehlencamp*[3], M. Peden[3] and *B. Car*[1]. [1]Bristol-Myers Squibb, Princeton, NJ, [2]Iconix Pharmaceuticals, Mountain View, CA and [3]Bristol-Myers Squibb, Evansville, IN.

#1273 11:10 **FTICR-MS ACCURATE MASS AND TIME TAG ANALYSIS OF HUMAN PROTEOME ORGANIZATION REFERENCE SERA AND PLASMA.** J. N. Adkins, K. J. Auberry, N. Tolic, M. E. Monroe, R. Karin, R. D. Smith and *J. G. Pounds*. Biological Sciences Division, Pacific Northwest National Laboratory, Richland, WA.

Wednesday Morning, March 24
8:30 AM to 10:50 AM
Room 324

PLATFORM SESSION: RESPIRATORY TRACT V—TOBACCO SMOKE AND COPD

Chairperson(s): *Willie McKinney, Phillip Morris, Richmond, VA and Rogene Henderson, Lovelace Respiratory Research Institute, Albuquerque, NM.*

#1274 8:30 **TRANSCRIPTIONAL PERTURBATION OF LYSYL OXIDASE BY CIGARETTE SMOKE CONDENSATE IN CULTURED LUNG FIBROBLASTS.** W. Li[1], K. Chen[1], Y. Zhao[2], L. Chen[1], P. Toselli[1], *I. Chou*[2] and P. Stone[1]. [1]Biochemistry, Boston University School of Medicine, Boston, MA and [2]Microbiology, Boston University School of Medicine, Boston, MA.

#1275 8:50 **INHIBITION OF LYSYL OXIDASE AT PROTEIN AND CATALYTIC LEVELS AND CELLULAR THIOL HOMEOSTASIS IN RAT LUNG FIBROBLASTS TREATED WITH CIGARETTE SMOKE CONDENSATE.** L. Chen[1], Y. Zhao[2], K. Chen[1], P. Toselli[1], *I. Chou*[2], P. Stone[1] and W. Li[1]. [1]Biochemistry, Boston University School of Medicine, Boston, MA and [2]Microbiology, Boston University School of Medicine, Boston, MA.

#1276 9:10 **NANOPARTICLES ARISING FROM COMBUSTION OF 1, 3-BUTADIENE TRANSPORT PAHS AND OXIDANTS TO RESPIRATORY EPITHELIAL CELLS.** *A. penn*, W. Henk, G. Murphy, W. Catallo and S. Barker. comp biomed sci, lsu vet med, baton rouge, LA.

#1277 9:30 **CHANGES IN INFLAMMATORY MEDIATORS AND LUNG PERMEABILITY MARKERS IN RATS AFTER ACUTE EXPOSURE TO CIGARETTE MAINSTREAM SMOKE.** P. Vanscheeuwijck[2], E. Van Miert[2] and P. Kuhl[1]. [1]PHILIP MORRIS Research Laboratories GmbH, Cologne, Germany and [2]PHILIP MORRIS Research Laboratories bvba, Leuven, Belgium. Sponsor: *H. Haussmann*.

#1278 9:50 ***IN VIVO* DETECTION OF LUNG TUMORS IN MICE BY HIGH-RESOLUTION X-RAY MICROTOMOGRAPHY.** K. Meurrens[1], H. Weiler[2], N. M. De Clerck[3] and A. A. Postnov[3]. [1]PHILIP MORRIS Research Laboratories bvba, Leuven, [2]PHILIP MORRIS Research Laboratories GmbH, Cologne, Germany and [3]University of Antwerp, Antwerp, Belgium. Sponsor: *H. Haussmann*.

#1279 10:10 **NRF2 DEFICIENT MICE DEVELOPS PULMONARY EMPHYSEMA IN RESPONSE TO CIGARETTE SMOKE.** *S. Biswal*[1], *T. Rangasamy*[1], R. K. Thimmulappa[1], K. H. Mai[1], S. Srisuma[1], *T. W. Kensler*[1] and R. M. Tuder[2]. [1]Environmental health Sciences, Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD and [2]Deapartment of Pathology, Johns Hopkins Medical Institution, Baltimore, MD.

#1280 10:30 **ACUTE RESPONSES IN MICE EXPOSED TO POLYMER AND TOBACCO COMBUSTION PRODUCTS USING A DIN FURNACE.** *R. Lemus*[1], *K. M. Lee*[2] and M. S. Werley[1]. [1]Philip Morris USA, Richmond, VA and [2]Battelle Toxicology NW, Richland, WA.

Wednesday Morning, March 24
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: *IN VITRO*/ANIMAL ALTERNATIVE MODELS II

Chairperson(s): *Alan Goldberg, Johns Hopkins University, Baltimore, MD and Charles Tyson, SRI International, Menlo Park, CA.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 9:30 AM–11:00 AM*

#1281 **INVESTIGATION OF A METHOD OF PREPARING A SINGLE CELL SUSPENSION IN THE LOCAL LYMPH NODE ASSAY USING CHEMICAL DISSOLUTION.** D. Dreher and *D. Everett*. Covance Laboratories Ltd., Harrogate, United Kingdom.

#1282 **RETROSPECTIVE ASSESSMENT OF THE RABBIT ENUCLEATED EYE TEST (REET) AS A SCREEN TO REFINE WORKER SAFETY STUDIES.** *F. J. Guerriero*[1], *C. W. Seaman*[2], *M. J. Olson*[3], R. Guest[4] and A. Whittingham[4]. [1]GlaxoSmithKline, King of Prussia, PA, [2]GlaxoSmithKline, Ware, Herts, United Kingdom, [3]GlaxoSmithKline, Research Triangle Park, NC and [4]SafePharm Laboratories, Shardlow, Derbyshire, United Kingdom.

#1283 **PRECISION-CUT RAT LIVER SLICE TECHNOLOGY: EFFECTS OF CARBON DIOXIDE VS. "RAT MIX" ANESTHESIA.** W. Y. Ho, M. H. French, J. Singh, A. V. Valles and *J. B. Ulreich*. Surgery, University of Arizona, Tucson, AZ.

#1284 **IGE MEASUREMENTS: COMPARISON OF RBL AND PASSIVE CUTANEOUS ANAPHYLAXIS (PCA) ASSAYS.** R. Skinner, N. Deakin, D. Shaw, *R. J. Dearman* and *I. Kimber*. Syngenta CTL, Macclesfield, United Kingdom.

#1285 **THE IMPORTANCE OF MULTIPLE ENDPOINT ANALYSIS (MEA) USING RECONSTITUTED HUMAN TISSUE MODELS FOR IRRITATION AND COMPATIBILITY TESTING.** B. De Wever, M. Cappadoro and M. Rosdy. SkinEthic Laboratories, Nice, France. Sponsor: *A. Goldberg*.

#1286 **AN *IN VITRO* MODEL OF DRUG-INDUCED ARRHYTHMOGENESIS USING MYOCARDIAL REFRACTORINESS: COMPARISON TO hERG ELECTROPHYSIOLOGY AND RUBIDIUM EFFLUX.** R. G. Caccese, H. G. Barthlow, G. D. Yasay, J. S. Smith, C. W. Scott and R. A. Bialecki. Neuroscience, AstraZeneca Pharmaceuticals, Wilmington, DE. Sponsor: *M. Dyroff*.

#1287 **SPECIES AND TISSUE DIFFERENCES IN ENDOPLASMIC RETICULUM CA^{2+}-INDEPENDENT PHOSPHOLIPASE A_2 EXPRESSION.** G. R. Kinsey[1], *B. S. Cummings*[3, 1], J. Mchowat[2] and *R. G. Schnellmann*[1]. [1]Pharmacology Sciences., Med. University of South Carolina, Charleston, SC, [2]Pharmacology and Biomed. Sciences., University of Georgia, Athens, GA and [3]Pathology, St. Louis University, St. Louis, MO.

#1288 **A PROTYPE *IN VITRO* NEUROTOXICITY DATABASE.** A. D. Weissman. NovaScreen Biosciences Corp, Hanover, MD. Sponsor: *J. Sina*.

#1289 **LYSIS OF ADHERENT HUMAN EPIDERMAL KERATINOCYTES IN SITU BY A MISONIX TISSUE CULTURE PLATE SONICATOR.** C. L. Gross, O. E. Clark, E. W. Nealley, M. T. Nipwoda and W. J. Smith. USAMRICD, APG-EA, MD. Sponsor: *A. Sciuto*.

#1290 **DIFFERENTIATION OF THE ABSORPTION KINETICS OF JET FUEL HYDROCARBONS WITH AN ETHANOL/WATER SYSTEM AND A MEMBRANE-COATED FIBER TECHNIQUE.** X. Xia and *J. E. Riviere*. Center for Chemical Toxicology Research and Pharmacokinetics, North Carolina State University, Raleigh, NC.

#1291 **THE PERFORMANCE OF *IN VITRO* TEST BATTERIES AS PRE-SCREENS TO *IN VIVO* SKIN AND EYE IRRITATION TESTS.** D. I. Lees and R. W. Lewis. CTL, Syngenta, Cheshire, United Kingdom. Sponsor: *I. Kimber*.

#1292 **UPTAKE KINETICS OF JET FUEL AROMATIC HYDROCARBONS FROM AQUEOUS SOLUTIONS STUDIED BY A MEMBRANE-COATED FIBER TECHNIQUE.** *J. E. Riviere* and X. Xia. Center for Chemical Toxicology Research and Pharmacokinetics, North Carolina State University, Raleigh, NC.

#1293 **DEVELOPMENTAL TOXICITY OF TRIETHYLENE GLYCOL, TRIETHYLENE GLYCOL MONOMETHYL ETHER AND TRIETHYLENE GLYCOL DIMETHYL ETHER IN INTACT *DROSOPHILA MELANOGASTER*.** *D. Lynch*. Biomonitoring and Health Assessment Branch, NIOSH, Cincinnati, OH.

#1294 **THE IMPACT OF ETHANOL ON THE *IN VITRO* SKIN PENETRATION RATES OF CAFFEINE IN ENGINEERED SKIN CONSTRUCTS.** G. Pugh[1], G. O. Moyer[2], H. A. Raabe[2], J. W. Harbell[2] and *D. M. Bagley*[1]. [1]Colgate-Palmolive Co., Piscataway, NJ and [2]Institute for *In Vitro* Sciences, Inc., Gaithersburg, MD.

#1295 **PRECISION-CUT TISSUE CHIPS AS A TOXICOLOGICAL TOOL.** *J. M. Catania*, A. Fernandez and *A. Gandolfi*. Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

#1296 **EVALUATION OF THE BCOP ASSAY AS A PREDICTOR OF OCULAR IRRITATION OF PETROCHEMICAL PRODUCTS.** P. T. Bailey[1], *J. J. Freeman*[1], *R. D. Phillips*[1] and *J. C. Merrill*[2]. [1]Toxicology and Environmental Sciences Division, ExxonMobil Biomedical Sciences, Inc., Annandale, NJ and [2]Institute for *In Vitro* Sciences, Inc., Gaithersburg, MD.

#1298 **ESTIMATE OF FALSE NEGATIVE RATES FOR THE *IN VIVO* RABBIT DERMAL IRRITATION ASSAY.** N. Choksi[1], J. Haseman[2], *R. Tice*[1] and *W. Stokes*[3]. [1]ILS, Inc., Research Triangle Park, NC, [2]NIEHS, Research Triangle Park, NC and [3]NICEATM, NIEHS, Research Triangle Park, NC.

#1299 **ESTIMATE OF FALSE NEGATIVE RATES FOR THE *IN VIVO* RABBIT DERMAL CORROSION ASSAY.** *R. Tice*[1, 2], N. Choksi[1, 2], J. Haseman[3], R. Hill[4], M. Lewis[4], D. Lowther[4] and *W. Stokes*[2]. [1]ILS, Inc., Research Triangle Park, NC, [2]NICEATM, NIEHS, Research Triangle Park, NC, [3]NIEHS, Research Triangle Park, NC, [4]EPA, Washington, DC and [5]FDA, College Park, MD.

#1300 **CHARACTERIZATION OF BPA GLUCURONIDATION BY RAT AND HUMAN HEPATOCYTES.** *R. K. Kuester*, D. Castro, *A. M. Solyom* and *S. Glenn*. Pharmacology, The University of Arizona, Tucson, AZ.

#1301 **FURTHER DEVELOPMENT OF A FLOW CYTOMETRY-BASED LOCAL LYMPH NODE ASSAY WITH EAR SWELLING AND IMMUNOPHENOTYPIC ENDPOINTS.** S. Young, *D. R. Cerven*, T. L. Ripper and *G. L. DeGeorge*. MB Research Laboratories, Spinnerstown, PA.

#1302 **DEVELOPMENT OF AN *IN VITRO* MODEL FOR ASSESSING PULMONARY INFLAMMATION.** J. M. Kennedy and *J. M. Carter*. Central Product Safety, Procter & Gamble, Cincinnati, OH.

#1303 **PERFORMANCE OF THE PH 6.7 SYRIAN HAMSTER EMBRYO (SHE) CELL TRANSFORMATION ASSAY IN PREDICTING THE CARCINOGENIC POTENTIAL OF CHEMICALS.** *H. Zhang* and *B. C. Myhr*. Genetic and Molecular Toxicology, Covance Laboratories Inc., Vienna, MD.

#1304 **DEVELOPMENT OF A CELLOMICS-BASED *IN VITRO* SCREEN FOR PHOSPHOLIPIDOSIS.** J. K. Morelli, M. Buehrle, *F. Pognan* and *P. Ciaccio*. Safety Assessment, AstraZeneca Pharmaceuticals, Wilmington, DE.

#1305 **COMPARATIVE MICROARRAY ANALYSIS OF BASAL GENE EXPRESSION IN MOUSE HEPA-1C1C7 WILD-TYPE AND MUTANT CELL LINES.** C. J. Fong, *L. D. Burgoon*, M. D. Ramer and *T. R. Zacharewski*. Department of Biochemistry & Molecular Biology, Department of Pharmacology & Toxicology, Institute of Environmental Toxicology, National Food Safety and Toxicology Center, Michigan State University, East Lansing, MI.

#1306 **PHASE TWO: EVALUATING THE EYE IRRITANCY OF SOLVENTS IN A SIMPLE FRAGRANCE MIXTURE WITH THE BOVINE CORNEAL OPACITY AND PERMEABLITY (BCOP) ASSAY.** N. Cuellar[1], P. H. Lloyd[2], J. E. Swanson[1], *J. C. Merrill*[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, Inc., Gaithersburg, MD and [4]Charles River Laboratories Inc., Spencerville, OH.

#1307 **COMPARISON OF *IN VITRO* EYE IRRITATION POTENTIAL BY BCOP ASSAY TO ERYTHEMA SCORES IN HUMAN EYE STING TEST OF SURFACTANT-BASED FORMULATIONS.** *K. C. Cater*[1], E. Patrick[2], J. W. Harbell[3], *J. C. Merrill*[3] and S. L. Schilcher[1]. [1]The Dial Corporation, Scottsdale, AZ, [2]Consultant, Westfield, NJ and [3]Institute for *In Vitro* Sciences, Gaithersburg, MD.

#1308 **THE USE OF A HUMAN RECONSTITUTED EPIDERMAL MODEL FOR THE OCCUPATIONAL HAZARD ASSESSMENT OF PHARMACEUTICAL PROCESS MATERIALS.** *C. W. Seaman*[1], B. De Wever[2], M. Cappadoro[2], A. Whittingham[3], R. Guest[3] and C. Prusiewicz[1]. [1]c/o GlaxoSmithKline, Ware, Herts, United Kingdom, [2]SkinEthic Laboratories, Nice, France and [3]SafePharm Laboratories, Derby, United Kingdom.

#1309 **THE USE OF A HUMAN RECONSTITUTED CORNEAL EPITHELIUM MODEL FOR THE OCCUPATIONAL HAZARD ASSESSMENT OF PHARMACEUTICAL PROCESS MATERIALS.** R. Guest[3], *C. W. Seaman*[1], B. De Wever[2], M. Cappadoro[2], A. Whittingham[3] and C. Prusiewicz[1]. [1]c/o GlaxoSmithKline, Ware, Herts, United Kingdom, [2]SkinEthic Laboratories, Nice, France and [3]SafePharm Laboratories, Derby, United Kingdom.

#1310 ***IN VITRO* FIBER DISSOLUTION RATE AS A PREDICTOR OF FIBER CLEARANCE FROM THE LUNG.** R. M. Potter and *J. G. Hadley*. Product Stewardship, Owens Corning Science and Technology Center, Granville, OH.

#1311 **COCAETHYLENE-INDUCED CHANGES IN ENDOTHELIAL PERMEABILITY AND CATION FLUX.** *D. H. Tacker* and A. O. Okorodudu. Department of Pathology, The University of Texas Medical Branch at Galveston, Galveston, TX.

#1312 **A NON-ANIMAL PHOTOTOXICITY TEST USING EPIDERMAL TISSUE MODELS AND CYTOKINE ENDPOINTS.** *D. R. Cerven*, A. C. Gilotti, M. K. Reeder, C. A. Kirk, T. L. Ripper and *G. L. DeGeorge*. MB Research Laboratories, Spinnerstown, PA.

#1313 **ALTERNATIVE PHOTOSENSITIZATION ASSAY IN THE MOUSE (PHOTO-LLNA).** *G. L. DeGeorge*, T. L. Ripper, S. Young and *D. R. Cerven*. MB Research Laboratories, Spinnerstown, PA.

#1314 **MULTI-CENTER PREVALIDATION USING *IN VITRO* RECONSTITUTED HUMAN CORNEAL EPITHELIAL MODEL TO ASSESS THE EYE IRRITATING POTENTIAL OF CHEMICALS.** B. De Wever[1], M. Cappadoro[1], F. Straube[2], N. Alepee[4], F. Van Goethem[3], P. Vanparys[3] and E. Adriaens[5]. [1]SkinEthic Laboratories, Nice, France, [2]Novartis Pharmacology, Basel, Switzerland, [3]Johnson & Johnson Pharmaceutical R&D, Beerse, Belgium, [4]Pfizer Global R&D, Amboise, France and [5]University of Ghent, Ghent, Belgium. Sponsor: *A. Goldberg*.

Wednesday Morning, March 24
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: BIOLOGICAL MODELING

Chairperson(s): *Michael Zager, USEPA, Research Triangle Park, NC and David Mattie, AFRL, Wright-Patterson AFB, OH.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 11:00 AM–12:30 PM*

#1315 **COMPUTATIONAL MODEL FOR RADIATION-INDUCED CELL DEATH AT LOW DOSES IN THE DEVELOPING NEOCORTEX.** N. M. DeFrank, W. C. Griffith, *J. M. Gohlke* and *E. M. Faustman*. Environmental and Occupational Health Sciences, University of Washington, Seattle, WA.

#1316 **CONTRIBUTION OF EXPERIMENTAL AND INTER AND INTRASPECIES VARIABILITY IN A COMPUTATIONAL MODEL FOR ETHANOL-INDUCED PERTURBATIONS OF NEOCORTICAL DEVELOPMENT.** *J. M. Gohlke*, W. C. Griffith and *E. M. Faustman*. Environmental and Occupational Health Sciences, University of Washington, Seattle, WA.

#1317 **PREDICTIVE MODELING OF *IN VITRO* BRAIN CHOLINESTERASE INHIBITION FOLLOWING SIMULTANEOUS OR SEQUENTIAL EXPOSURES TO BINARY MIXTURES OF ORGANOPHOSPHATES.** *J. E. Chambers*[1], *R. L. Carr*[1], H. W. Chambers[2], *J. A. Kamykowski*[1], *E. C. Meek*[1], S. F. Oppenheimer[3] and *J. R. Richardson*[1]. [1]Coll Veterinary Med., Mississippi State University, Mississippi State, MS, [2]Department Entomology, Mississippi State University, Mississippi State, MS and [3]Department Mathematics, Mississippi State University, Mississippi State, MS.

#1318 **STOCHASTIC MATHEMATICAL MODELING OF TUMOR GROWTH AND DIFFERENTIATION IN HUMAN CARCINOGENESIS.** S. Y. Whitaker[1], A. Kopp-Schneider[2] and *C. J. Portier*[1]. [1]LCBRA, NIEHS, Research Triangle Park, NC and [2]Biostatistics, DKFZ, Heidelberg, Germany.

#1319 **PHARMACOKINETIC (PK)/PHARMACODYNAMIC (PD) RELATIONSHIP OF PCB126 UNDER THE CONDITIONS OF MODIFIED ITO MEDIUM-TERM LIVER BIOASSAY.** M. Lohitnavy, L. Chubb, O. S. Lohitnavy, C. C. Yang, J. Homburg, J. A. Campain and *R. S. Yang*. Quantitative and Computational Toxicology Group, Center for Environmental Toxicology and Technology, Environmental and Radiological Health Sciences, Colorado State University, Fort Collins, CO.

#1320 **REACTION NETWORK MODELING OF BENZO(A)PYRENE METABOLIC PATHWAYS: FURTHER DEVELOPMENT.** *K. H. Liao*[1, 2], A. N. Mayeno[1, 3], K. F. Reardon[1, 2] and *R. S. Yang*[1, 3]. [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 Environmental and Radiological Health Sciences, Colorado State University, Fort Collins, CO.

#1321 **QUANTIFYING GENE EXPRESSION NETWORKS USING BAYESIAN METHODS: KNOWN NETWORK STRUCTURE.** H. Toyoshiba, T. Yamanaka, F. M. Parham, J. M. Martinez, H. Sone, *N. J. Walker* and *C. J. Portier*. LCBRA, National Institute of Environmental Health Sciences, Research Triangle Park, NC.

#1322 **PATHWAYS TO UNDERSTANDING THE METABOLISM OF CHLORINATED ENVIRONMENTAL CONTAMINANTS THROUGH BIOCHEMICAL REACTION NETWORK MODELING.** A. N. Mayeno, *B. Reisfeld* 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.

#1323 **APPLICATION OF A STATISTICAL DYNAMIC MODEL INVESTIGATING THE SHORT-TERM CELLULAR KINETICS INDUCED BY RIDDELLIINE, A HEPATIC ENDOTHELIAL CARCINOGEN.** M. V. Smith[1], A. Nyska[2] and *C. Portier*[2]. [1]Constella Health Sciences, Constella Group, Durham, NC, NC and [2]NIEHS, Research Triangle Park, NC.

#1324 **A FEEDBACK MODEL FOR TESTICULAR-PITUITARY AXIS HORMONE KINETICS AND THEIR EFFECTS ON THE REGULATION OF THE PROSTATE IN ADULT MALE RATS.** *H. A. Barton*[2], *M. G. Zager*[1] and L. K. Potter[1]. [1]Toxicology, University of North Carolina, Chapel Hill, NC and [2]NHEERL, USEPA, Research Triangle Park, NC.

#1325 **PRELIMINARY ANALYSIS OF ALGORITHMS PREDICTING BLOOD:AIR AND TISSUE:BLOOD PARTITION COEFFICIENTS FROM SOLVENT PARTITION COEFFICIENTS.** T. R. Sterner[1], P. J. Robinson[2], *D. R. Mattie*[3] and G. A. Burton[4]. [1]OpTech, Dayton, OH, [2]ManTech Environmental Technology, Dayton, OH, [3]Air Force Research Laboratory, Wright-Patterson AFB, OH and [4]Wright State University, Dayton, OH.

#1326 **STEADY STATE TOXICOKINETICS OF METHYLMERCURY IN HUMANS.** G. Balagopal and *H. Chan*. Nutrition and Dietetics, McGill University, Ste-Anne-de-Bellevue, QC, Canada.

Wednesday Morning, March 24
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: DEVELOPMENTAL NEUROTOXICITY I

Chairperson(s): *Christiane Massicotte, VA MD Regional College of Veterinary Medicine, Blacksburg, VA and Larry Sheets, Bayer CropScience, Stilwell, KS.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 9:30 AM–11:00 AM*

#1327 **DEVELOPMENTAL EXPOSURE TO LEAD PROMOTES NEURODEGENERATION IN THE SENESCENT RAT BRAIN.** B. Brock, *N. H. Zawia* and *M. Basha*. Biomedical Sciences, University of Rhode Island, Kingston, RI.

#1328 **DEVELOPMENTAL OVEREXPRESSION OF ALPHA(2)-ADRENERGIC RECEPTORS: ROLE IN CELL PROLIFERATION AND CROSS-REGULATION BY BETA-ADRENERGIC RECEPTOR NEUROTOXICANTS.** M. L. Kreider, *F. J. Seidler* and *T. A. Slotkin*. Pharmacology & Cancer Biology, Duke University Med. Ctr, Durham, NC.

#1329 **EFFECT OF ETHANOL ON CARBACHOL-STIMULATED PHOSPHOLIPASE D SIGNALING IN ASTROGLIAL CELLS.** *M. Guizzetti*[1], B. D. Thompson[1], Y. Kim[1], K. VanDeMark[1] and *L. G. Costa*[1, 2]. [1]Environmental and Occupational Health Sciences, University of washington, Seattle, WA and [2]Department of Pharmacology and Human Physiology, University of Bari, Bari, Italy.

#1330 **THE EFFECTS OF EARLY POSTNATAL CHLORPYRIFOS EXPOSURE ON PERFORMANCE IN THE 12-ARM RADIAL MAZE.** F. O. Johnson and *R. L. Carr*. College Of Veterinary Medicine, Center For Environmental Health Sciences, Mississippi State University, Starkville, MS.

#1331 **DEVELOPMENTAL EXPOSURE TO CHLORPYRIFOS ELICITS SEX-SELECTIVE ALTERATIONS OF SEROTONERGIC SYNAPTIC FUNCTION IN ADULTHOOD.** J. E. Aldridge, *F. J. Seidler* and *T. A. Slotkin*. Pharmacology & Cancer Biology, Duke University Med. Ctr, Durham, NC.

#1332 **NICOTINE IS A DEVELOPMENTAL NEUROTOXICANT AND NEUROPROTECTANT: STAGE-SELECTIVE INHIBITION OF DNA SYNTHESIS COINCIDENT WITH SHIELDING FROM EFFECTS OF CHLORPYRIFOS.** D. Qiao, *F. J. Seidler*, J. D. Violin and *T. A. Slotkin*. Pharmacology & Cancer Biology, Duke University Med. Ctr, Durham, NC.

#1333 **PRENATAL NICOTINE EXPOSURE ALTERS THE RESPONSE TO NICOTINE ADMINISTRATION IN ADOLESCENCE.** Y. Abreu-Villaca, *F. J. Seidler* and *T. A. Slotkin*. Pharmacology & Cancer Biology, Duke University Med. Ctr, Durham, NC.

#1334 **TERBUTALINE IS A DEVELOPMENTAL NEUROTOXICANT: EFFECTS ON NEUROPROTEINS AND MORPHOLOGY IN CEREBELLUM, HIPPOCAMPUS, AND SOMATOSENSORY CORTEX.** *M. C. Rhodes*[1], *F. J. Seidler*[1], A. Abdel-Rahman[1], *A. Nyska*[2], *H. L. Rincavage*[1] and *T. A. Slotkin*[1]. [1]Pharmacology & Cancer Biology, Duke University Med. Ctr, Durham, NC and [2]NIEHS, Research Triangle Park, NC.

#1335 **ELEVATED EXPRESSION OF GLIAL FIBRILLARY ACIDIC PROTEIN IN THE CEREBELLUM OF THE OFFSPRING AT LATE PUBERTY FOLLOWING MATERNAL EXPOSURE TO NICOTINE DURING GESTATION.** W. A. Khan, A. Abdel-Rahman, A. M. Dechkovskaia, J. M. Sutton, X. Guan and *M. B. Abou-Donia*. Pharmacology and Cancer Biology, Duke University Medical Center, Durham, NC.

#1336 **MATERNAL EXPOSURE TO NICOTINE VIA INFUSION DURING GESTATION PRODUCES NEUROBEHAVIORAL DEFICITS AND ELEVATED EXPRESSION OF GLIAL FIBRILLARY ACIDIC PROTEIN IN THE CEREBELLUM IN THE OFFSPRING AT PUBERTY.** *M. B. Abou-Donia*, A. Abdel-Rahman, A. M. Dechkovskaia, J. M. Sutton and W. A. Khan. Pharmacology and Cancer Biology, Duke University Medical Center, Durham, NC.

#1337 **GENE EXPRESSION CHANGES ASSOCIATED WITH A DEVELOPMENTAL PESTICIDE EXPOSURE MODEL OF PARKINSON'S DISEASE.** *M. Thiruchelvam*[1], A. I. Brooks[2], E. K. Richfield[1] and *D. A. Cory-Slechta*[1]. [1]Environmental and Community Medicine, University of Medicine and Dentistry of New Jersey, Piscataway, NJ and [2]Environmental Medicine, University of Rochester, Rochester, NY.

#1338 **ONTOGENY OF PROTEINS FOR USE AS BIOMARKERS OF DEVELOPMENTAL NEUROTOXICITY.** B. L. Robinette and *W. R. Mundy*. Neurotoxicology Division, NHEERL, ORD, USEPA, Research Triangle Park, NC.

#1339 **NEUROPATHOLOGICAL EXAMINATION OF FETAL RAT BRAIN EXPOSED TO THE GENOTOXIC COMPOUND, 5-BROMO-2-DEOXYURIDINE (BRDU).** *T. Ogawa*[1], K. Muneoka[2], M. Kuwagata[1] and S. Shioda[1]. [1]Anatomy, Showa University School of Medicine, Tokyo, Japan and [2]Hatano Research Institute, FDSC, Kanagawa, Japan.

#1340 **EPA SCREEN FOR DEVELOPMENTAL NEUROTOXICITY: RESULTS WITH SIX ORGANOPHOSPHORUS (OP) INSECTICIDES.** *L. P. Sheets*. Toxicology, Bayer CropScience, Stilwell, KS.

#1341 **AUDITORY STARTLE REFLEX HABITUATION IN DEVELOPMENTAL NEUROTOXICITY TESTING: A CROSS-LABORATORY COMPARISON OF CONTROL DATA.** *W. Sette*[2], *K. Crofton*[3], *S. Makris*[1], *J. Doherty*[1] and *K. Raffaele*[1]. [1]OPP, USEPA, Washington, DC, [2]OSA, USEPA, Washington, DC and [3]NHEERL, ORD, USEPA, Research Triangle Park, NC.

#1342 **LEARNING AND MEMORY TESTS IN DEVELOPMENTAL NEUROTOXICITY TESTING: A CROSS-LABORATORY COMPARISON OF CONTROL DATA.** *K. Raffaele*[1], *M. Gilbert*[2], *K. Crofton*[2], *S. Makris*[1] and *W. Sette*[3]. [1]OPP, USEPA, Washington, DC, [2]NHEERL, ORD, USEPA, Research Triangle Park, NC and [3]OSA, USEPA, Washington, DC.

#1343 **DEVELOPMENTAL NEUROTOXICITY OF PYRETHROID INSECTICIDES: CRITICAL REVIEW.** *T. J. Shafer*[1], D. A. Meyer[2] and *K. M. Crofton*[1]. [1]Neurotoxicology Division, NHEERL, ORD, USEPA, Research Triangle Park, NC and [2]Curriculum in Toxicology, University of N. Carolina, Chapel Hill, NC.

Wednesday Morning, March 24
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: NEUROTOXICITY, PESTICIDES II

Chairperson(s): *Bernard Jortner, Virginia Tech, Blacksburg, VA and Mary Gilbert, USEPA, NC.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 11:00 AM–12:30 PM*

#1344 **NEUROPATHOLOGICAL STUDY OF LONG-TERM CONCURRENT EXPOSURE TO TWO ORGANOPHOSPHATES (OPS) IN RATS.** *B. S. Jortner*, S. Hancock, J. Hinckley, L. Tobias, L. Flory and *M. Ehrich*. Laboratory for Neurotoxicity Studies, Virginia Tech, Blacksburg, VA.

#1345 **THE EFFECT OF REPEATED ORAL INGESTION OF CHLORPYRIFOS ON CHOLINESTERASE AND CARBOXYLESTERASE ACTIVITY IN ADULT RATS.** *A. M. Betancourt* and *R. Carr*. Mississippi State University, MS State, MS.

#1346 **EFFECTS OF REPEATED EARLY POSTNATAL EXPOSURE TO EITHER CHLORPYRIFOS OR METHYL PARATHION ON SPATIAL LEARNING AND MEMORY AND MOTOR ACTIVITY.** *R. L. Carr*, *A. M. Betancourt*, *J. E. Chambers*, F. O. Johnson and *J. A. Kamykowski*. Center for Environmental Health Sciences, College of Veterinary Medicine, Mississippi State University, Mississippi State, MS.

#1347 **DNA MICROARRAY ANALYSIS OF RAT BRAIN TO ASSESS CHANGES IN GENE EXPRESSION AND NEUROTOXICITY OF FOUR CONAZOLES.** *L. D. White*[1], D. B. Tully[2], W. Bao[2], J. E. Schmid[2], H. Ren[2], A. K. Goetz[4], G. Sun[3], S. Nesnow[3], *D. J. Dix*[2] and *S. Barone*[1]. [1]Neurotoxicology, USEPA, Research Triangle Park, NC, [2]Reproductive Toxicology, USEPA, Research Triangle Park, NC, [3]Environmental Carcinogenesis, USEPA, Research Triangle Park, NC and [4]Department Envir. & Molecular Toxicology., NCSU, Raleigh, NC.

#1348 **BEHAVIORAL AND NEUROCHEMICAL ALTERATIONS ASSOCIATED WITH ACUTE AND CHRONIC ATRAZINE EXPOSURE.** V. M. Rodriguez, *M. Thiruchelvam* and *D. A. Cory-Slechta*. Environmental and Community Medicine, EOHSI, University of Medicine and Dentistry of New Jersey and Rutgers State University, Piscataway, NJ.

#1349 **INFLUENCE OF 14-DAY EXPOSURE TO ATRAZINE ON STRIATAL NEUROCHEMISTRY IN JUVENILE MALE C57BL/6 MICE.** A. Coban, A. B. Norwood, S. C. Sistrunk and *N. M. Filipov*. CEHS, Basic Sciences, Mississippi State University, Mississippi State, MS.

#1350 **SPECIES, STRAIN, AND SEX INFLUENCE ON THE DOPAMINERGIC TOXICITY OF THE HERBICIDE ATRAZINE *EX VIVO*.** J. A. Whitehead, S. C. Sistrunk and *N. M. Filipov*. CEHS, Basic Sciences, Mississippi State University, Mississippi State, MS.

#1351 **PARAOXONASE ABUNDANCE AND Q192R GENOTYPE ARE IMPORTANT DETERMINANTS OF ORGANOPHOSPHATE TOXICITY DURING DEVELOPMENT.** T. B. Cole[1, 2], C. Pettan-Brewer[2], R. Richter[2], D. M. Shih[3], A. Tward[3], A. J. Lusis[3], *L. G. Costa*[2] and C. E. Furlong[1]. [1]Genome Sciences and Medicine, Division of Medical Genetics, University of Washington, Seattle, WA, [2]Environmental Health, University of Washington, Seattle, WA and [3]Microbiology and Molecular Genetics, UCLA, Los Angeles, CA.

#1352 **EVALUATION OF EPIDEMIOLOGICAL AND ANIMAL DATA ASSOCIATING PESTICIDES WITH PARKINSON'S DISEASE.** *A. A. Li*[1], P. Mink[2], *L. McIntosh*[1], J. Teta[2] and *B. Finley*[1]. [1]Toxicology/Human Health Risk Assessment, Exponent, San Francisco, CA and [2]Health/Epidemiology, Exponent, Washington D.C., DC.

#1353 **NEUROTOXICOLOGICAL AND STATISTICAL ANALYSES OF A MIXTURE OF FIVE ORGANOPHOSPHORUS PESTICIDES USING A RAY DESIGN.** *V. C. Moser*[1], A. Hamm[2], M. Casey[2], W. H. Carter[2], *J. E. Simmons*[1] and C. Gennings[2]. [1]NHEERL, USEPA, Research Triangle Park, NC and [2]Biostatistics, VCU, Richmond, VA.

#1354 **CHOLINESTERASE INHIBITION AND HYPOTHERMIA FOLLOWING EXPOSURE TO BINARY MIXTURES OF ANTICHOLINESTERASE AGENTS: LACK OF EVIDENCE FOR CAUSE-AND-EFFECT.** C. J. Gordon[1], *D. Herr*[1], C. Gennings[2] and *C. M. Mack*[1]. [1]Neurotoxicology, USEPA, Res. Tri. Park, NC and [2]Virginia Commonwealth University, Richmond, NC.

#1355 **ESTERASE PROFILES FOR A DIALKYLPHOSPHATE SERIES: QSAR APPROACH.** G. Makhaeva[1], V. Malygin[1], A. Aksinenko[1], V. Sokolov[1] and *R. J. Richardson*[2]. [1]Institute of Physiologically Active Compounds, RAS, Chernogolovka, Russian Federation and [2]Toxicology Program, University of Michigan, Ann Arbor, MI.

#1356 **CHARACTERIZATION OF LARGEMOUTH BASS ACETYLCHOLINESTERASE AND ITS INHIBITION BY ANTIESTERASE PESTICIDES.** *D. S. Barber* and T. Knowles. Center for Environmental and Human Toxicology, University of Florida, Gainesville, FL.

#1357 **DELTAMETHRIN INCREASES DOPAMINE TRANSPORTER EXPRESSION AND ENHANCES COCAINE-INDUCED LOCOMOTION.** T. S. Guillot, *J. R. Richardson* and *G. W. Miller*. Center for Neurodegenerative Disease, Rollins School of Public Health, Emory University, Atlanta, GA.

#1358 **DIETARY SUGAR-INDUCED MODULATION OF PARATHION TOXICITY IN JUVENILE AND ADULT RATS.** *J. Liu*, *S. Karanth* and *C. Pope*. Physiol Sciences, Oklahoma State University, Stillwater, OK.

#1359 **EFFECTS OF *IN VIVO* EXPOSURE TO ENDOSULFAN AND PERMETHRIN ON THE STRIATAL DOPAMINERGIC PATHWAYS.** C. Aguilar[1] and *H. P. Misra*[1, 2]. [1]College of Osteopathic Medicine, Blacksburg, VA and [2]Biomedical Sciences and Pathobiology, Virginia Tech, Blacksburg, VA.

#1360 **THE EFFECTS OF ZINEB AND ENDOSULFAN ON MPTP-INDUCED STRIATUM DOPAMINE DEPLETION IN MICE.** Z. Jia[1] and *H. P. Misra*[2]. [1]Virginia-Maryland Regional College of Veterinary Medicine, Virginia Tech, Blacksburg, VA and [2]Edward Via Virginia College of Osteopathic Medicine, Blacksburg, VA.

Wednesday Morning, March 24
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: ENDOCRINE II

Chairperson(s): *Gay Goodman, Intertox, Inc., Seattle, WA and Vicki Wilson, USEPA, Research Triangle Park, NC.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 9:30 AM–11:00 AM*

#1361 **PREGNANCY ALTERS THE MECHANISM OF ALCOHOL-INDUCED BONE LOSS.** *M. J. Ronis*[1, 5], M. Hidestrand[1], *K. Shankar*[1], C. K. Lumpkin[2], *T. M. Badger*[3, 5], J. Aronson[4], R. Skinner[4], W. Hogue[4], C. Jo[2], P. Simpson[2], M. Zipperman[5], R. Haley[5] and L. Humphrey[5]. [1]Pharmacology and Toxicology, University of Arkansas for Medical Sciences, Little Rock, AR, [2]Pediatrics, University of Arkansas for Medical Sciences, Little Rock, AR, [3]Physiology, University of Arkansas for Medical Sciences, Little Rock, AR, [4]Orthopedics, University of Arkansas for Medical Sciences, Little Rock, AR and [5]Arkansas Children's Nutrition Center, Arkansas Childrens Hospital, Little Rock, AR.

#1362 **DIRECT BONE FORMATION IN NUDE (NU/NU) MICE.** L. Liu[3], J. Aronson[1, 2, 3], E. C. Wahl[3], R. A. Skinner[2], B. G. Fowlkes[3], *T. M. Badger*[1] and C. K. Lumpkin[1, 3]. [1]Department of Pediatrics, University of Arkansas for Medical Sciences, Little Rock, AR, [2]Department of Orthopaedics, University of Arkansas for Medical Sciences, Little Rock, AR and [3]Laboratory for Limb Regeneration Research, Arkansas Children's Hospital Research Institute, Little Rock, AR.

#1363 **ADMINISTRATION OF RMTNF-α INHIBITS ENDOSTEAL BONE FORMATION IN A MOUSE DISTRACTION OSTEOGENESIS MODEL.** J. Aronson[1, 2], L. Liu[2], E. C. Wahl[2], P. S. Daniel[2, 1], R. A. Skinner[1], *T. M. Badger*[1, 2] and C. K. Lumpkin[1, 2]. [1]University of Arkansas for Medical Sciences, Little Rock, AR and [2]Arkansas Children's Hospital Research Institute, Little Rock, AR.

#1364 **EFFECT OF OVARIECTOMY ALONE AND IN COMBINATION WITH CALCIUM/VITAMIN D-DEFICIENT DIET ON THE BONE MINERAL DENSITY IN CYNOMOLGUS MONKEYS.** M. Niehoff[1], S. Mohr[2] and G. Weinbauer[1]. [1]Covance Laboratories GmbH, Muenster, Germany and [2]F.Hoffmann-La Roche Ltd., Basel, Switzerland. Sponsor: *P. Thomas*.

#1365 **INHIBITION OF DIRECT BONE FORMATION ASSOCIATED WITH CHRONIC ETHANOL EXPOSURE IN A MOUSE MODEL OF DISTRACTION OSTEOGENESIS.** E. C. Wahl[2], L. Liu[2], D. S. Perrien[2, 1], J. Aronson[1, 2], W. R. Hogue[1], R. A. Skinner[1], M. Hidestrand[2], *M. J. Ronis*[1, 2], *T. M. Badger*[1, 2] and C. K. Lumpkin[1, 2]. [1]University of Arkansas for Medical Sciences, Little Rock, AR and [2]Arkansas Children's Hospital Research Institute, Little Rock, AR.

#1366 **EFFECT OF PERCHLORATE ON DISPLACEMENT OF THYROXINE FROM SERUM BINDING PROTEINS AND BINDING OF PERCHLORATE TO SERUM PROTEINS.** J. L. Campbell[1], *L. Narayanan*[3], D. C. Ferguson[2], *M. Mumtaz*[4], *H. El-Masri*[4] and *J. Fisher*[1]. [1]Interdisciplinary Toxicology Program, University of Georgia, Athens, GA, [2]Physiology and Pharmacology, University of Georgia, Athens, GA, [3]Geo-Centers, Inc., Wright-Patterson AFB, Dayton, OH and [4]Division of Toxicology, ATSDR, Atlanta, GA.

#1367 **ENHANCED RAT HERSHBERGER ASSAY APPEARS RELIABLE FOR DETECTION OF NOT ONLY (ANTI-) ANDROGENIC CHEMICALS BUT ALSO THYROID HORMONE MODULATORS.** *T. Yamada*, T. Kunimatsu, K. Miyata, S. Yabushita, T. Sukata, S. Kawamura, T. Seki, Y. Okuno and N. Mikami. Environmental Health Science Laboratory, Sumitomo Chemical Company, Ltd., , Osaka, Japan.

#1368 **HIGH-THROUGHPUT REPORTER GENE TRANSCRIPTION ASSAY FOR THE DETERMINATION OF THYROID HORMONE DISRUPTING EFFECTS OF FOOD ADDITIVES OR CONTAMINANTS.** J. Cho, *S. Jeong* and J. Park. Toxicology Division, National Vet. Res. Quarant. Service, Anyang City, South Korea.

#1369 **CHANGES IN SERUM TSH LEVEL AND T4/T3 RATIO IN DEVELOPMENTAL TOXICITY STUDIES OF PERCHLORATE IN RATS FED HIGH-IODINE DIETS REFLECT ADAPTIVE INCREASES IN IODIDE UPTAKE NOT RELEVANT TO HUMANS.** *G. Goodman*. Intertox, Inc., Seattle, WA.

#1370 **MARGINAL IODINE DEFICIENCY EXACERBATES PERCHLORATE THYROID TOXICITY.** P. C. Das[1], J. M. Hedge[2], *D. C. Wolf*[2] and *K. M. Crofton*[2]. [1]Curriculum In Toxicology, UNC, Chapel Hill, NC and [2]NHEERL, ORD, USEPA, Research Triangle Park, NC.

#1371 **AN ADDITIVE EFFECT OF A MIXTURE OF AMMONIUM PERCHLORATE AND SODIUM CHLORATE ON THE PITUTARY-THYROID AXIS IN MALE F344 RATS.** *M. A. Khan*[1, 2], *S. E. Fenton*[3], A. E. Swank[1], G. W. Knapp[1], S. D. Hester[1] and *D. C. Wolf*[1]. [1]Environmental Carcinogenesis Division, USEPA, Research Triangle Park, NC, [2]NRC, Research Triangle Park, NC and [3]Reproductive Toxicology Division, USEPA, Research Triangle Park, NC.

#1372 **CUMULATIVE EFFECTS OF ENDOCRINE DISRUPTERS (EDCS): SYNERGY OR ADDITIVITY.** *L. E. Gray*[1], J. Ostby[1], J. Furr[1], C. Lambright[1], A. Hotchkiss[2] and *V. S. Wilson*[1]. [1]ORD, NHEERL, RTD, EB, USEPA, Research Triangle Park, NC and [2]Psychology, Ohio State University, Columbus, OH.

#1373 **MALFORMATIONS IN GUBERNACULAR LIGAMENT DEVELOPMENT INDUCED BY DEHP, DBP, AND BBP ARE ASSOCIATED WITH DECREASES IN INSL3 GENE EXPRESSION IN THE FETAL RAT TESTIS.** *V. S. Wilson*, C. Lambright, J. Furr, C. Wood, G. Held and *L. E. Gray*. Reproductive Toxicology Division, USEPA, ORD, NHEERL, Research Triangle Park, NC.

#1374 **DI-BUTYL PHTHALATE ACTIVATES THE NUCLEAR RECEPTORS CAR AND PXR AND ENHANCES THE EXPRESSION OF CYP 2B1 AND 3A1 IN MATERNAL AND FETAL LIVER IN THE RAT.** *L. You*[1], M. Wyde[1], S. Kirwan[1], A. Laughter[1], E. Bartolucci-Page[1], *K. Gaido*[1] and *B. Yan*[2]. [1]CIIT Centers for Health Research, Research Triangle Park, NC and [2]Department of Biological Sciences, University of Rhode Island, Kingston, RI.

#1375 **EFFECTS OF GESTATIONAL PROCHLORAZ ADMINISTRATION ON MALE REPRODUCTIVE DEVELOPMENT IN RATS. *IN VIVO* ASSESSMENTS OF A FUNGICIDE WITH MULTIPLE *IN VITRO* EFFECTS.** *N. Noriega*, J. Ostby, *C. Lambright*, *V. S. Wilson* and *E. Gray*. USEPA, Research Triangle Park, NC.

#1376 **STEROID AND THYROID HORMONAL RECEPTOR GENE TRANSCRIPTION ASSAY AND ONE-GENERATION REPRODUCTION STUDY OF CHLORPYRIPHOS-METHYL.** *S. Jeong*, B. Kim, S. Kim, J. Cho and J. Park. Toxicology Division, National Vet. Res. Quarant. Service, Anyang City, South Korea.

#1377 **EFFECTS OF PRENATAL EXPOSURE TO PCB METABOLITES 4-OH-CB 107 AND 4-OH-CB 187 ON ENDOCRNE STATUS AND REPRODUCTIVE CYCLE OF THE FEMALE RAT.** C. Buitenhuis[1], P. Cenijn[1], A. Bergman[2], A. Gutleb[1], J. Legler[1] and *A. Brouwer*[1]. [1]Institute for Environmental Studies (IVM), Vrije Universiteit, Amsterdam, Netherlands and [2]Department of Environmental Chemistry, Stockholm University, Stockholm, Sweden.

#1378 **THE CHARACTERIZATION AND HORMONAL REGULATION OF KIDNEY ANDROGEN-REGULATED PROTEIN (KAP)-LUCIFERASE TRANSGENIC MICE.** *S. Malstrom*[1], A. F. Purchio[2] and D. B. West[1]. [1]LPTA, Xenogen Corporation, Alameda, CA and [2]Xenogen Corporation, Alameda, CA.

Wednesday Morning, March 24
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: RESPIRATORY TRACT III—PARTICULATE MATTER

Chairperson(s): *Urmila Kodavanti, USEPA, Research Triangle Park, NC and Janet Benson, Lovelace Respiratory Research Institute, Albuquerque, NM.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 11:00 AM–12:30 PM*

#1379 **AIRWAY HYPERRESPONSIVENESS AND PULMONARY INFLAMMATION IN PULMONARY HYPERTENSIVE RATS EXPOSED TO CONCENTRATED AMBIENT PARTICLES.** T. Cheng[1], Y. Lei[1], M. Chen[1], C. Chan[1] and P. Wang[2]. [1]Institute of Occupational Medicine and Industrial Hygiene, National Taiwan University College of Public Health, Taipei, Taiwan and [2]Institute of Environmental Engineering, National Central University, Chung Li, Taiwan. Sponsor: *T. Ueng*.

#1380 **RESPONSES TO SUBCHRONIC INHALATION OF DIESEL EXHAUST (DE) AND HARDWOOD SMOKE (HWS) MEASURED IN RAT BRONCHOALVEOLAR LAVAGE FLUID.** *J. Seagrave*[1], S. K. Seilkop[2] and *J. L. Mauderly*[1]. [1]Lovelace Respiratory Research Institute, Albuquerque, NM and [2]SKS Consulting, Siler City, NC.

#1381 **TOXICOLOGICAL ASSESSMENT OF DIESEL-WATER EMULSION [PURINOX™ (SUMMER FUEL BLEND)] EXHAUST EMISSIONS.** R. Kraska[1], E. Barr[2], *I. Daly*[3], R. Gudi[4], J. D. McDonald[2], M. Mercieca[5], *D. Naas*[8], *J. O'Callagan*[6], N. Ronsko[1], S. Seilkop[7], V. Wagner[4] and *M. D. Reed*[2]. [1]Lubrizol Corporation, Wickliffe, OH, [2]Lovelace Respiratory Research Institute, Albuquerque, NM, [3]Regulatory and Technical Associates, Lebanon, NJ, [4]BioReliance, Rockville, MD, [5]Pathology Associates, Frederick, MD, [6]CDC/ NIOSH, Morgantown, WV, [7]SKS Consulting, Silver City, NC and [8]AccuTox Consulting, Midland, MI.

#1382 **USING TOXICOLOGY TO PREDICT THE HEALTH EFFECTS OF DIESEL PARTICLE MATTER (DPM) IN THE University.S.** *L. C. Green*, M. Ames and E. Crouch. Cambridge Environmental, Cambridge, MA.

#1383 **INHALATION OF DIESEL EXHAUST AFFECTS CALCITONIN GENE-RELATED PEPTIDE (CGRP) DENSITY IN F344 RATS.** S. S. Wong[1], I. M. Keith[2], N. N. Sun[1], C. Kweon[3], *J. J. Schauer*[4], D. E. Foster[3], *R. Lantz*[1] and *M. L. Witten*[1]. [1]Center for Toxicology, The University of Arizone, Tucson, AZ, [2]School of Veterinary Medicine, The University of Wisconsin, Nadison, WI, [3]Engine Research Center, The University of Wisconsin, Madison, WI and [4]Wisconsin College of Engineering & State Laboratory of Hygiene, The University of Wisconsin, Madison, WI.

#1384 **SURFACE AREA AS DETERMINANT OF ULTRAFINE PARTICLE-INDUCED OXIDATIVE STRESS.** Y. Lei and T. Cheng. Institute of Occupational Medicine and Industrial Hygiene, National Taiwan University, Taipei, Taiwan. Sponsor: *T. Ueng*.

#1385 **TOXICOLOGICAL ASSESSMENT OF DIESEL-METHANOL-WATER EMULSION [PURINOX™ (ALL WEATHER) GENERATION 2 FUEL] EXHAUST EMISSIONS.** *M. D. Reed*[1], *I. Daly*[3], R. Gudi[4], J. D. McDonald[1], M. Mercieca[5], J. O'Callagan[6], N. Ronsko[2], S. Seilkop[7], V. Wagner[4] and R. Kraska[2]. [1]Toxicology, Lovelace Respiratory Research Institute, Albuquerque, NM, [2]Lubrizol Corporation, Wickliffe, OH, [3]Regulatory and Technical Associates, Allendale, NJ, [4]BioReliance, Rockville, MD, [5]Pathology Associates, Frederick, MD, [6]CDC/ NIOSH, Morgantown, WV and [7]SKS Consulting, Silver City, NC.

#1386 **INDUCTION OF IL-6 IN LUNG CELLS BY PM2.5 PARTICLES FROM DESERT SOILS AND COAL FLY ASH.** *J. M. Veranth*, M. M. Veranth and *G. S. Yost*. Pharmacology and Toxicology, University of Utah, Salt Lake City, UT.

#1387 **EFFECTS OF PARTICULATE MATTER ON GLUTAMATE CYSTEINE LIGASE IN RAW CELLS.** S. M. Leaman[1], P. Vliet[1], *D. L. Luchtel*[1], M. E. Rosenfeld[2] and *T. J. Kavanagh*[1]. [1]Department of Occupational and Environmental Health Sciences, University of Washington, Seattle, WA and [2]Department of Pathobiology and Nutritional Sciences Program, University of Washington, Seattle, WA.

#1388 **EFFECTS OF COMBUSTION-DERIVED PARTICULATE MATTERS CONTAINING ARSENIC IN NF-κB LUCIFERASE TRANSGENIC MICE.** J. Park[1], B. Park[2], G. Yang[2], M. Young[3], N. Colburn[3] and *M. Cho*[1]. [1]Laboratory of Toxicology, College of Veterinary Medicine, Seoul National University, Seoul, South Korea, [2]Laboratory of Combustion and Air Pollution Control, College of Environmental Engineering, Chunbuk National University, Chunju, South Korea and [3]Basic Research Laboratory, National Cancer Institute, Frederick, MD.

#1389 **CYTOTOXICITY AND CELL SIGNALING IN MH-S CELLS: RELATIVE POTENCY OF DIESEL AND COAL COMBUSTION PARTICLES.** *P. Singh*[1], Y. Kostetski[2], M. Daniels[1], T. Stevens[3] and *I. Gilmour*[1]. [1]ORD/NHEERL, USEPA, Research Triangle Park, NC, [2]NUS, Singapore, Singapore and [3]UNC, Chapel Hill, NC.

#1390 **INFLAMMATORY AND GENOTOXIC RESPONSES AND PULMONARY FUNCTION CHANGES DURING 60 DAYS OF WELDING FUME EXPOSURE PERIOD.** J. Sung[1], *I. Yu*[1], S. Maeng[1], S. KIm[1], B. Choi[1], K. Song[2], J. Han[1], Y. Chung[1] and J. Hyun[1]. [1]Center for Occupational Toxicology, Occupatinal Safety & Health Research Institute, KOSHA, Daejeon, South Korea and [2]College of Veterinary Medicine, Seoul National University, Seoul, South Korea.

#1391 **INDUCTION OF TGFβ PRODUCTION IN HAMSTER LUNGS FOLLOWING PERTURBATION WITH PULMONARY FIBROTIC AGENTS AMIODARONE AND PARAQUAT.** *H. M. Conway*, University. Doshi and J. M. Cerreta. Pharmaceutical Sciences, St. John's University, New York.

#1392 **SEASONAL METAL CONTENT MEASURED IN BALTIMORE $PM_{2.5}$ SEAS SAMPLES CORRELATES WITH CYTOKINE AND CHEMOKINE RELEASE IN AN *IN VITRO* ASSAY SYSTEM.** *R. J. Mitkus*[1], J. L. Powell[1], J. P. Pancras[2], J. M. Ondov[2] and *K. S. Squibb*[1]. [1]Epidemiology and Preventive Medicine, University of Maryland School of Medicine, Baltimore, MD and [2]Chemistry and Biochemistry, University of Maryland, College Park, MD.

#1393 **METHOD OF DUST EXTRACT PREPARATION AFFECTS CYTOKINE PRODUCTION BY RESPIRATORY EPITHELIAL CELLS AFTER DUST EXPOSURE.** R. D. Massengale and J. J. Balsam. Biology, Baylor University, Waco, TX. Sponsor: *M. Kanz*.

#1394 **ROLE OF TNFα AND CAVEOLIN-1 IN OZONE-INDUCED INFLAMMATORY MEDIATOR RELEASE AND TOXICITY.** L. Fakhrzadeh, *J. D. Laskin* and *D. L. Laskin*. Environmental and Occupational Health Sciences Institute, Rutgers University/UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ.

#1395 **DIFFERENTIAL EXPRESSION OF TREFOIL FACTORS 1 AND 3 FOLLOWING AIRWAY EPITHELIAL CELL INJURY.** G. L. Baker, *L. S. Van Winkle*, *M. V. Fanucchi*, D. C. Kim and *C. G. Plopper*. Veterinary Medicine: Anatomy Physiology and Cell Biology, UC Davis, Davis, CA.

#1396 **PRE-TREATMENT WITH DIESEL EXHAUST EXTRACT ALTERS INFLUENZA VIRUS REPLICATION IN LUNG EPITHELIAL CELLS.** *I. Jaspers*[1, 2], J. Ciencewicki[3], M. Beck[2], W. Zhang[1] and M. Brighton[1]. [1]Center for Env. Med., Asthma, & Lung Biology, University of North Carolina, Chapel Hill, NC, [2]Pediatrics, University of North Carolina, Chapel Hill, NC and [3]Curriculum of Toxicology, University of North Carolina, Chapel Hill, NC.

#1397 **SOLUBLE METALS ASSOCIATED WITH ROFA SUPPRESS LUNG IMMUNE DEFENSE AND ALTER CYTOKINE PROFILES AFTER INFECTION IN RATS.** *J. R. Roberts*[1, 2], *M. D. Taylor*[1], *V. Castranova*[1, 2] and *J. M. Antonini*[1, 2]. [1]NIOSH, Morgantown, WV and [2]WVU, Morgantown, WV.

#1398 **SHORT-TERM EXPOSURE TO INHALED DIESEL EXHAUST PARTICLES ENHANCES ASTHMA-LIKE SYMPTOMS AND INCREASES CYP1A1 mRNA LEVELS.** *M. J. Whitekus*[1], N. Brechun[2], S. K. Nelson[2], *O. Hankinson*[1] and D. Diaz-Sanchez[3]. [1]Department of Pathology and Laboratory Medicine and Jonsson Comprehensive Cancer Center, UCLA, Los Angeles, CA, [2]Webb-Waring Antioxidant Research Institute, Denver, CO and [3]Division of Clinical Immunology and Allergy at UCLA School of Medicine, UCLA, Los Angeles, CA.

#1399 **DISPARATE ALLERGIC AIRWAY RESPONSES TO DIESEL EXHAUST INHALATION DURING ALLERGEN SENSITIZATION VERSUS ALLERGEN CHALLENGE.** *J. Wagner*[1], *E. Barrett*[2], J. McDonald[2] and *J. Harkema*[1]. [1]Pathobiology and Diagnostic Investigation, Michigan State University, East Lansing, MI and [2]Lovelace Respiratory Research Institute, Albuquerque, NM.

#1400 **CHANGES IN THE COMPOSITION OF DIESEL EXHAUST RESULTS IN CHANGES IN THE MAGNITUDE OF SEVERAL ACUTE INHALATION RESPONSES.** J. McDonald, K. S. Harrod, *J. Seagrave*, S. Seilkop and *J. Mauderly*. Toxicology, Lovelace Respiratory Research Institute, Albuquerque, NM.

#1401 ***IN VITRO* AND *IN VIVO* EFFECTS OF WORLD TRADE CENTER DUSTS: STUDIES IN HUMAN AND MOUSE CELL LINES AND IN INFLUENZA-COMPROMISED YOUNG AND OLD RATS.** *A. Elder*[1], *J. Finkelstein*[2], R. Gelein[1], N. Corson[1], P. Mercer[1], C. Reed[2], D. Oakes[3], S. Eberly[3], D. Topham[4] and *G. Oberdorster*[1]. [1]Environ Med., University of Rochester, Rochester, NY, [2]Peds, University of Rochester, Rochester, NY, [3]Biostat, University of Rochester, Rochester, NY and [4]Immunol, University of Rochester, Rochester, NY.

#1402 **OXIDATIVE STRESS OF POLAR AND NONPOLAR AIR PARTICULATE MATTER COMPONENTS.** A. Kubatova[1], L. C. Dronen[1], S. B. Hawthorne[1] and *M. J. Picklo*[2]. [1]EERC, University of North Dakota, Grand Forks, ND and [2]School of Medicine and Health Sciences, University of North Dakota, Grand Forks, ND.

#1403 **THE ALLERGY ADJUVANT EFFECT OF PARTICLES: CHARACTERISATION OF THE PRIMARY CELLULAR RESPONSE IN THE LOCAL LYMPH NODE.** University. C. Nygaard, A. Aase and M. Lovik. Environmental Immunology, Norwegian Institute of Public Health, Oslo, Norway. Sponsor: *E. Dybing*.

#1404 **IMMUNOLOGIC SENSITIZATION OF GUINEA PIGS VIA INHALATION.** W. Lee, *C. Banks* and A. Viau. CTBR, Senneville, QC, Canada.

#1405 **DIFFERENTIAL GENE EXPRESSION PROFILES IN RAT TRACHEAL EPITHELIAL (RTE) CELLS IN RESPONSE TO COMBUSTION-SOURCE PARTICULATE MATTER (PM) AND VANADIUM (V) A PRIMARY METAL CONSTITUENT.** *S. Nadadur*, J. A. Dye and *D. L. Costa*. Pulmonary Toxicology Branch, USEPA, Research Triangle Park, NC.

#1406 **ANALYSIS OF GENE EXPRESSION IN RAT ALVEOLAR EPITHELIAL CELLS IN RESPONSE TO ORGANIC EXTRACT OF DIESEL EXHAUST PARTICLES.** E. KOIKE[1], *S. Hirano*[2] and T. Kobayashi[2, 1]. [1]PM2.5 and DEP Research Project, National Institute for Environmental Studies, Tsukuba, Ibaraki, Japan and [2]Environmental Health Sciences Division, National Institute for Environmental Studies, Tsukuba, Ibaraki, Japan.

#1407 **HEAVY METALS AND ELEMENTAL AND ORGANIC CARBON IN ATMOSPHERIC FINE PARTICLES (PM2.5) FROM PUERTO RICO.** *B. D. Jimenez*[1, 2], D. Acevedo[2] and C. Rodriguez-Sierra[3, 2]. [1]Biochemistry, University of Puerto Rico, San Juan, PR, Puerto Rico, [2]Center for Environmental and Toxicological Research, University of Puerto Rico, San Juan, PR, Puerto Rico and [3]Public Health, University of Puerto Rico, San Juan.

Wednesday Morning, March 24
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: TCDD & OTHER POPS/*IN VITRO*

Chairperson(s): *Richard Seegal, New York State Department of Health, Albany, NY and Martin Vandenberg, University of Utrecht, Institute for Risk Assessment Science, Netherlands.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 9:30 AM–11:00 AM*

#1408 **QSAR STUDY FOR THE ACTIVATION OF THE ARYL HYDROCARBON RECEPTOR BY POLYCHLORINATED NAPHTHALENES.** *J. Olivero-Verbel*[1] and *K. Kannan*[2]. [1]University of Cartagena. Environmental and Computational Chemistry Group, Cartagena, Colombia and [2]Wadsworth Center and Department of Environmental Toxicology and Health, State University of New York, Albany, NY.

#1409 **APPLICATION OF CALUX BIOASSAY FOR DETERMINING DIOXIN EXPOSURE LEVEL IN HUMAN BLOOD AND ENVIRONMENTS.** K. Joung and Y. Y. Sheen. Pharmacy, Ewha Womans University, Seoul, seoul, South Korea. Sponsor: *Y. Cha*.

#1410 **RECOVERY DETERMINATIONS FOR DIOXIN ANALYSIS WITH THE CALUX® BIOASSAY.** G. C. Clark[1], A. C. Chu[1], J. D. Gordon[1], D. J. Brown[1], M. Nakamura[2], M. D. Chu[3], H. Murata[2] and *M. S. Denison*[4]. [1]Xenobiotic Detection Systems, Inc., Durham, NC, [2]Hiyoshi Corporation, Omihachiman, Shiga, Japan, [3]Alta Analytical Perspectives, Wilmington, NC and [4]Department of Environmental Toxicology, University of California, Davis, Davis, CA.

#1411 **ACTIVATION OF ARYL HYDROCARBON RECEPTOR BY TCDD INDUCES GENE SILENCING BY PROMOTER METHYLATION: A NOVEL MECHANISM FOR TCDD MEDIATED TUMOR PROMOTION.** *S. S. Ray* and *H. I. Swanson*. Molecular and Biomedical Pharmacology, University of Kentucky, Lexington, KY.

#1412 **SUPPRESSOR OF CYTOKINE SIGNALING-2: A NOVEL TCDD INDUCIBLE GENE IN CH12.LX MURINE B-CELLS.** E. Tam, D. R. Boverhof, R. B. Crawford, *N. E. Kaminski* and *T. R. Zacharewski*. Department of Biochemistry and Molecular Biology, Department of Pharmacology and Toxicology, and Institute for Environmental Toxicology, National Food Safety and Toxicology Center, Michigan State University, East Lansing, MI.

#1413 **EFFECTS OF 2, 3, 7, 8-TETRACHLORODIBENZO-P-DIOXIN EXPOSURE ON HYPOXIA DRIVEN GENES IN HUMAN MICROVASCULAR ENDOTHELIAL CELLS.** *K. N. De Abrew*[1], K. K. Graven[1, 2] and *B. Allen-Hoffman*[1, 3]. [1]Molecular and Environmental Toxicology Center, University of Wisconsin, Madison, WI, [2]Medicine, University of Wisconsin, Madison, WI and [3]Pathology and Labarotary Medicine, University of Wisconsin, Madison, WI.

#1414 **GENE EXPRESSION RESPONSES TO 2, 3, 7, 8-TETRACHLORODIBENZO-P-DIOXIN (TCDD) IN MULTIPOTENTIAL C3H10T1/2 FIBROBLASTS EXHIBIT CLUSTER ACCORDING TO THE FUNCTIONAL STATE OF THE CELLS.** *P. Hanlon*[2] and *C. Jefcoate*[1, 2]. [1]Pharmacology, University of Wisconsin, Madison, WI and [2]Molecular & Environmental Toxicology Center, University of Wisconsin, Madison, WI.

#1415 **INHIBITION OF INTERFERON-γ INDUCED APOPTOSIS BY TCDD IN HUMAN PERIPHERAL LUNG EPITHELIAL CELLS.** *M. Richards*[1, 2], J. M. Martinez[2], D. M. Mays[2] and *N. J. Walker*[2]. [1]Toxicology, University of North Carolina, Chapel Hill, NC and [2]Laboratory of Computational Biology and Risk Analysis, NIEHS, NIH, Research Triangle Park, NC.

#1416 **TCDD ATTENUATES VITAMIN A INDUCED GROWTH AND DIFFERENTIATION IN HUMAN LUNG EPITHELIAL CELLS.** D. M. Mays[1], J. M. Martinez[1], *M. P. Richards*[2, 1] and *N. J. Walker*[1]. [1]Laboratory of Computational Biology and Risk Analysis, NIEHS, Research Triangle Park, NC and [2]Toxicology, University of North Carolina, Chapel Hill, NC.

#1417 **HISTONE MODIFICATION IN ARYL HYDROCARBON RECEPTOR MEDIATED GENE TRANSCRIPTION.** A. Fretland[1, 2] and *O. Hankinson*[1, 2]. [1]Department of Pathology and Laboratory Medicine, University of California, Los Angeles, Los Angeles, CA and [2]Jonsson Comprehensive Cancer Center, Los Angeles, CA.

#1418 **EVIDENCE OF AN INDUCTION THRESHOLD IN LIVER CELL LINES TREATED WITH 3, 3′, 4, 4′, 5-PENTACHLOROBIPHENYL.** C. Broccardo[1], *R. E. Billings*[1], L. S. Chubb[1], *M. E. Andersen*[2] and *W. H. Hanneman*[1]. [1]Department of Environmental & Radiological Health Sciences, Colorado State University, Fort Collins, CO and [2]CIIT, Research Triangle Park, NC.

#1419 **INHIBITION OF AROMATASE ACTIVITY BY METHYL SULFONYL PCB METABOLITES IN H295R CELLS AND IN PRIMARY CULTURE OF HUMAN MAMMARY FIBROBLASTS.** M. Heneweer[1], *M. van den Berg*[1], P. C. de Jong[2], *A. Bergman*[3] 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.

#1420 **2, 2', 4, 4'-TETRACHLOROBIPHENYL STIMULATES RELEASE OF ARACHIDONIC ACID FROM NEUTROPHILLIC HL-60 CELLS.** *S. 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, East Lansing, MI, [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.

#1421 **A NON-COPLANAR POLYCHLORINATED BIPHENYL INDUCES OXIDATIVE STRESS AND CELL DEATH IN A MID-BRAIN DOPAMINERGIC CELL LINE.** *R. F. Seegal*[1], *A. G. Kanthasamy*[2] and S. Kaul[2]. [1]Wadsworth Center, New York State Department of Health, Albany, NY and [2]Department Biomedical Sciences, Iowa State University, Ames, IA.

Wednesday Morning, March 24
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: PHARMACEUTICAL SAFETY EVALUATION

Chairperson(s): *Sushmita Chanda, Roche Palo Alto, Palo Alto, CA and Vikram Arora, AVI BioPharma, Inc., Corvallis, OR.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 11:00 AM–12:30 PM*

#1422 **PHARMACOKINETICS AND IMPROVED ORAL BIOAVAILABILITY OF TWO NANOSTRUCTURED DRUG CRYSTALS: COMPARISON OF PARTICLE ENGINEERING TECHNOLOGIES.** *S. A. Saghir*, G. B. Kupperblatt, D. A. Markham, T. L. Rogers, C. J. Tucker, J. E. Hitt and E. J. Elder. The Dow Chemical Company, Midland, MI.

#1423 **γ-SECRETASE (γ-SEC) INHIBITORS THAT MODULATE NOTCH PROCESSING CAUSE INTESTINAL GOBLET CELL METAPLASIA (GM) AND SPLENIC MARGINAL ZONE LYMPHOID DEPLETION. PART I, PATHOLOGY.** *P. Ciaccio*[1], J. McKay[2], C. Louden[1], C. Dagenais[1], R. Gadient[1], Q. Jiang[1], L. Foster-Brown[1], F. Pognan[1], T. Piser[1], J. Stahl[1] and B. Greenberg[1]. [1]AstraZeneca Pharmacology R&D, Wilmington, DE and [2]AstraZeneca Pharmacology R&D, Alderley Park, United Kingdom.

#1424 **OTOTOXICITY STUDY WITH CIPRODEX STERILE OTIC SUSPENSION® IN THE GUINEA PIG.** *L. E. Lemke*[1], *D. H. McGee*[1], D. M. Prieskorn[2], R. A. Altschuler[2], *R. B. Hackett*[1] and J. M. Miller[2]. [1]Toxicology, Alcon Research, Ltd., , Fort Worth, TX and [2]Kresge Hearing Research Institute, University of Michigan, Ann Arbor, MI.

#1425 **THG213.29: SAFETY OF A NOVEL PEPTIDE FOR TREATMENT OF ACUTE RENAL FAILURE.** *G. Washer*[1], E. Ferdinandi[1], K. High[1], K. Peri[1], J. Praslicka[2], J. Laliberte[2], C. Pare[3], C. Thompson[3] and S. Cote[4]. [1]Theratechnologies Inc., Montreal, QC, Canada, [2]ITR, Montreal, QC, Canada, [3]CTBR, Montreal, QC, Canada and [4]Anapharm, Quebec City, QC, Canada.

#1426 **SAFETY EVALUATION OF TELBERMIN IN RABBITS USING A FULL THICKNESS EXCISIONAL DERMAL WOUND MODEL.** *T. R. Gelzleichter*[1], A. L. Fuller[3], N. Pelletier[2], S. M. Eppler[2], D. Fei[2] and S. Brignoli[2]. [1]Safety Assessment, Genentech, South San Francisco, CA, [2]Develepment Sciences, Genentech, South San Francisco, CA and [3]Covance, Madison, WI.

#1427 **TOXICOLOGICAL PROFILE OF AVI-4020, AN ANTISENSE MORPHOLINO OLIGOMER FOR TREATMENT OF WEST NILE VIRAL INFECTIONS.** *V. Arora*, M. L. Cate, M. T. Reddy, D. H. Mason and *P. L. Iversen*. AVI BioPharma, Inc., Corvallis, OR.

#1428 **GENOTOXICITY STUDIES WITH PURE *TRANS*-CAPSAICIN.** *S. Chanda*[1], *G. Erexson*[2], C. Riach[3], D. Innes[3], F. Stevenson[3], H. Murli[2] and K. Bley[1]. [1]Toxicology, NeurogesX, Inc., San Carlos, CA, [2]Covance Laboratories, Vienna, VA and [3]Inveresk Research, Tranent, Scotland, United Kingdom.

#1429 **GLYCOGEN SYNTHASE KINASE (GSK3) INHIBITORS STIMULATE CELLULAR PROLIFERATION VIA WNT SIGNALING PATHWAY *IN VITRO* AND *IN VIVO*.** *C. E. Ruegg*[1], B. R. Berridge[2], D. E. Watson[1], *D. K. Monteith*[1], B. Li[1], J. L. Blackbourne[1], S. W. Queener[3], C. M. Love[3], J. W. Ryder[3], R. A. Owens[3], T. E. Eessalu[3], E. A. Misener[5], T. A. Engler[4] and J. T. Brozinick[5]. [1]Lead Optimization Toxicology, Lilly Research Labs, Greenfield, IN, [2]Lead Optimization/Investigative Pathology, Lilly Research Labs, Greenfield, IN, [3]Lead Optimization Biology, Lilly Research Labs, Indianapolis, IN, [4]Discovery Chemistry, Lilly Research Labs, Indianapolis, IN and [5]Discovery Biology, Lilly Research Labs, Indianapolis, IN.

#1430 **DRUG-INDUCED CARDIOMYOPATHY IN RATS: MORPHOGENISIS AND IDENTIFICATION OF POTENTIAL BIOMARKERS.** *J. D. Moehlenkamp*, W. A. Kelly, *R. L. Kowalski*, W. M. Peden, W. J. Saunders and *G. D. Pilcher*. Drug Safety Evaluation, Bristol-Myers Squibb Company, Mt. Vernon, IN.

#1431 **γ-SECRETASE INHIBITORS THAT MODULATE NOTCH PROCESSING CAUSE INTESTINAL GOBLET CELL METAPLASIA. PART II: GENE EXPRESSION.** J. Milano[1], S. Matis[2], *F. Pognan*[1] and *P. Ciaccio*[1]. [1]Safety Assessment, AstraZeneca Pharmaceuticals, Wilmington, DE and [2]EST Infx, AstraZeneca Pharmaceuticals, Wilmington, DE.

#1432 **SOCIALIZATION AND ENVIRONMENTAL ENRICHMENT IN LONG-TERM TOXICITY STUDIES IN MICE.** L. Bonnet[1], J. Golfier[1], B. Heritier[1] and *J. Descotes*[2]. [1]MDS Pharmacology Service, L'Arbresle, France and [2]Poison Center, Lyon, France.

#1433 **BILIARY EXCRETION OF ^{14}C-DIAZEPAM IN MALE RATS AFTER PRETREATMENT WITH TACROLIMUS.** L. Faure[1], P. Vignand[1], A. Raynard[1], F. Pasello-Legrand[1] and *J. Descotes*[2]. [1]MDS Pharmacology Services, L'Arbresle, France and [2]Poison Center, Lyon, France.

#1434 **THE ACUTE SAFETY PHARMACOLOGY PROFILE OF CM-2, 239: A NEW THERAPEUTIC AGENT FOR THE TREATMENT OF MILD COGNITIVE IMPAIRMENT AND ATTENTION DEFICITS.** *D. R. Helton*[1], D. B. Fick[1], S. Nadjsombati[2], E. Pfadenhauer[1], M. Piacente[2], J. P. Sharp[1] and P. Mazur[2]. [1]Cenomed, Inc., Lake Forest, CA and [2]Biological Test Center, Irvine, CA.

#1435 **BIOAVAILABILITY OF INSULIN FOLLOWING PULMONARY ADMINISTRATION TO THE BEAGLE DOG VIA A SURGICALLY PREPARED TRACHEOSTOME.** G. Cow and P. McDonald. Inhalation Toxicology, Inveresk Research, Edinburgh, United Kingdom. Sponsor: *R. Greenough*.

#1436 **NINETY DAY TOXICOLOGICAL EVALUATION OF THE ORAL TOXICITY OF GBR 12909 IN DOGS.** R. Krishnaraj[1], R. L. Morrissey[2] and *B. S. Levine*[1]. [1]Toxicology Research Laboratory, University of Illinois at Chicago, Chicago, IL and [2]Pathology Associates, Chicago, IL.

#1437 **CONTINUOUS SUBCUTANEOUS INFUSION IN RODENTS.** M. Stilianesis, S. Groom and C. Copeman. CTBR, Senneville, QC, Canada. Sponsor: *M. Vezina*.

#1438 **SAFETY EVALUATION OF XMP.629, A NOVEL PEPTIDE FOR ACNE TREATMENT.** R. Hawks[1], J. Secrest[2], *S. Frantz*[2], E. Serbinova[3], T. Merriman[4], D. Learn[5] and K. Meyer[1]. [1]XOMA US, Berkeley, CA, [2]MPI Research, Mattawan, MI, [3]Dow Pharmaceuticals, Petaluma, CA, [4]Charles River Springborn, Spencerville, OH and [5]Charles River Argus, Horsham, PA.

#1439 **MONITORING THE PRIMARY AND SECONDARY ANTIBODY RESPONSE TO KLH IN A DEVELOPMENTAL IMMUNOTOXICITY (DIT) STUDY.** G. Desilets, N. Rouleau, P. Louise and L. LeSauteur. CTBR, Senneville, QC, Canada. Sponsor: *L. LeSauteur*.

#1440 **PHARMACOKINETIC AND TOXICITY STUDIES OF GENTAMICIN IN AFRICAN GREEN MONKEYS.** *D. J. Auyeung*[1], S. Cyrek[1], J. Schindler-Horvat[2], L. Iyer[2], R. Swezey[2], Y. Li[2], J. Arezzo[3], *K. Draper*[1] and *J. Mirsalis*[2]. [1]CRL DDS Sierra Division, Sparks, NV, [2]SRI International, Menlo Park, CA and [3]Albert Einstein College of Medicine, Bronx, NY.

#1441 **SUBCHRONIC TOXICITY OF ZICONOTIDE ADMINISTERED BY CONTINUOUS INTRATHECAL INFUSION IN RAT AND DOG.** *G. M. Shopp*[1], M. J. Skov[1] and *T. L. Yaksh*[2]. [1]Safety Evaluation, Elan Pharmaceuticals, Inc., South San Francisco, CA and [2]Anesthesiology, University of California, San Diego, La Jolla, CA.

#1442 **FORMULATION OF POORLY WATER SOLUBLE DRUGS FOR PRE-CLINICAL TESTING.** B. Rabinow, J. Wong, M. Doty, M. Chaubal, J. Kipp, P. Papadopoulos and *J. Kerzee*. Baxter Healthcare, Round Lake, IL.

Wednesday Morning, March 24
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: MECHANISMS OF PHASE I AND PHASE II BIORANSFORMATION II

Chairperson(s): *Burhan Ghanayem, Meharry Medical College, TN and Bhupendra Khaphalia, UTMB, Gavelston, TX.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 9:30 AM–11:00 AM*

#1443 **PHIP PRODUCES DNA ADDUCTS FOLLOWING IN SITU PHASE I AND II METABOLISM IN MCF10A CELLS.** *R. D. Thomas*[1], M. R. Green[1], *T. A. Kocarek*[2] and *M. Runge-Morris*[2]. [1]Basic Pharmaceutical Sciences, Florida A&M UNiversity, Tallahassee, FL and [2]Institute of Environmental Health Sciences, Wayne State University, Detroit, MI.

#1444 **COMPARATIVE METABOLISM AND DISPOSITION OF 1-^{14}C- AND 2, 3-^{14}C-ACRYLAMIDE IN CYTOCHROME P450 2E1-NULL (KO) AND WILD-TYPE (WT) MICE.** *L. El-Hadri* and *B. I. Ghanayem*. NIEHS/NIH, Research Triangle Park, NC.

#1445 **METHACRYLONITRILE: EFFECT OF CAFFEINE AND ALCOHOL ON TOXICITY IN MALE SPRAGUE-DAWLEY RATS.** *M. Farooqui* and R. Ruiz. Biology, University of Texas Pan American, Edinburg, TX.

#1446 **HYDROLYSIS OF ISOEUGENYL-ACETATE AND EUGENYL-ACETATE BY RAT AND HUMAN HEPATIC MICROSOMES.** D. J. Castro, C. J. Sweet, *R. K. Kuester* and *G. Sipes*. Pharmacology and Center for Toxicology, University of Arizona, Tucson, AZ.

#1447 **EFFECTS OF ROXARSONE AND ITS METABOLITES ON CACO-2 CELL PROLIFERATION.** G. S. Bayse[1], *W. G. Kirlin*[2] and P. D. Kirkland[1]. [1]Chemistry, Spelman College, Atlanta, GA and [2]Pharmacology & Toxicology, Morehouse School of Medicine, Atlanta, GA.

#1448 **EPOXIDATION OF COUMARIN IS THE MAJOR DETERMINANT OF COUMARIN-INDUCED CLARA CELL TOXICITY IN THE MOUSE.** J. D. Vassallo and *G. P. Daston*. Central Product Safety, Procter & Gamble, Cincinnati, OH.

#1449 ***IN VITRO* METABOLISM OF ERGOTAMINE BY MOUSE LIVER MICROSOMES FROM ENDOPHYTE SUSCEPTIBLE AND RESISTANT BREEDING LINES.** *J. M. Duringer*[1], R. M. Lewis[2], L. A. Kuehn[2], T. J. Fleischmann[1] and *M. Craig*[1]. [1]Biomedical Sciences, Oregon State University, Corvallis, OR and [2]Animal and Poultry Sciences, Virginia Polytechnic Institute and State University, Blacksburg, VA.

#1450 **METABOLISM OF VINCLOZOLIN AND ITS METABOLITES IN RAT.** *A. Sierra-Santoyo*[1], R. A. Harrison[2], *H. A. Barton*[2] and *M. F. Hughes*[2]. [1]TOXICOLOGY, CINVESTAV-IPN, Mexico City, D.F., Mexico and [2]ETD, NHEERL, ORD, USEPA, Research Triangle Park, NC.

#1451 ***IN VITRO* METABOLISM OF CARBOFURAN BY HUMAN, MOUSE, AND RAT LIVER MICROSOMES, AND HUMAN CYTOCHROME P450 ISOFORMS.** *K. A. Usmani*, *E. Hodgson* and *R. L. Rose*. Environmental & Molecular Toxicology, North Carolina State University, Raleigh, NC.

#1452 **COMPARISON OF DETOXIFICATION AND BIOACTIVATION PATHWAYS FOR BROMODICHLOROMETHANE IN THE RAT.** *M. K. Ross*[1], C. R. Eklund[2] and R. A. Pegram[2]. [1]Curriculum in Toxicology, UNC-CH, Chapel Hill, NC and [2]ETD, USEPA, Research Triangle Park, NC.

#1453 **EFFECT OF DIMETHYL SULFOXIDE ON METABOLISM AND TOXICITY OF MODEL HEPATOTOXICANTS IN MICE.** M. Yoon[1, 2] and *Y. Kim*[2]. [1]Research Associateship Program, National Research Council, Chapel Hill, NC and [2]College of Pharmacy, Seoul National University, Seoul, South Korea.

#1454 **METABOLISM OF ORALLY ADMINISTERED N, N-DIMETHYL-P-TOLUIDINE (DMPT) IN F344 RATS AND B6C3F1 MICE.** K. Ghanbari, *K. J. Dix*, D. Kracko and J. McDonald. Toxicology, Lovelace Respiratory Research Institute, Albuquerque, NM.

#1455 **SUBSTRATE SPECIFICITY OF THE INDIVIDUAL RAT UGT1A FAMILY OF ENZYMES.** *L. J. Webb*, F. K. Kessler and *J. K. Ritter*. Pharmacology and Toxicology, Virginia Commonwealth University, Medical College of Virginia Campus, Richmond, VA.

#1456 **INVESTIGATION OF UDP-GLUCURONOSYLTRANSFERASES INVOLVED IN GLUCURONIDATION OF MYCOPHENOLIC ACID IN RATS.** K. Miles[1], S. Stern[2], F. Kessler[1], *P. Smith*[2] and *J. Ritter*[1]. [1]Pharmacology and Toxicol., VCU, Richmond, VA and [2]Drug Deliv. and Dispos., UNC, Chapel Hill, NC.

#1457 **THYROID HORMONE METABOLISM IN SPRAGUE DAWLEY AND UGT2B2-DEFICIENT FISCHER 344 RATS.** *T. A. Couch*[2, 1] and *C. D. Klaassen*[2]. [1]Pharmacology, Emory University, Atlanta, GA and [2]Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS.

#1458 ***IN VITRO* CONJUGATION OF ETHANOLAMINE WITH FATTY ACIDS.** S. H. Khan, *B. S. Khaphalia* and *G. Ansari*. Pathology, UTMB, Galveston, TX.

#1459 **CHARACTERIZATION OF THE PHASE 2 METABOLITES OF RUTAECARPINE AS GLUCURONIDE/SULFATE CONJUGATES BY LIQUID CHROMATOGRAPHY-ELECTROSPRAY IONIZATION TANDEM MASS SPECTROMETRY.** S. Lee[1], D. Lee[1], J. Lee[2], D. Kim[2], E. Lee[1], Y. Jahng[1] and *T. Jeong*[1]. [1]Pharmacy, Yeungnam University, Kyungsan, Kyungbuk, South Korea and [2]Bioanalysis and Biotransformation Research Center, KIST, Seoul, South Korea.

#1460 **SUBCELLULAR LOCALIZATION OF SOLUBLE EPOXIDE HYDROLASE IN HUMAN TISSUES USING CONFOCAL MICROSCOPY.** A. Enayetallah[1], *D. F. Grant*[1] and M. Barber[2]. [1]Pharmaceutical sciences, University of Connecticut, Storrs, CT and [2]Biotechnology / Bioservices Center, University of Connecticut, at Storrs, CT.

#1461 **THE *IN VITRO* INHIBITION OF DIETHYLSTILBESTROL-DNA ADDUCTS BY DIALLYL SULFIDE: A POSSIBLE MECHANISM OF BREAST CANCER PREVENTION.** M. R. Green, C. L. Wilson, M. McCaskill and *R. D. Thomas*. Basic Pharmaceutical Sciences, Florida A&M UNiversity, Tallahassee, FL.

#1462 **COMPARATIVE BIOSYNTHESIS OF FATTY ACID ETHYL ESTERS IN AR42J CELLS AND HEPG2 CELLS.** *B. S. Kaphalia*[1], H. Wu[1], D. L. Clemens[2], *T. R. Jerrells*[2], *M. Khan*[1] and *G. Ansari*[1]. [1]Pathology, University of Texas Medical Branch, Galveston, TX and [2]Pathology and Microbiology, University of Nebraska Medical Center, Omaha, NE.

Wednesday Morning, March 24
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: GENE EXPRESSION I

Chairperson(s): *Nathan Cherrington, University of Arizona, Tucson, AZ and Susan Burst, University of Kansas, Kansas City, KS.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 11:00 AM–12:30 PM*

#1463 **THE UP-REGULATION OF STRESS RESPONSIVE GENES IN THE RAT KIDNEY GLOMERULUS FOLLOWING SINGLE INTRAVENOUS DOSE OF PUROMYCIN AMINONUCLEOSIDE (PAN).** T. Shimizu, N. Masutomi, T. Sakairi, Y. Inoue, N. Shimada, T. Hamano, *J. Sugimoto* and M. Mutai. Mitsubishi Pharmacology Corporation, Kisarazu, Chiba, Japan.

#1464 **ONTOGENY OF P-GLYCOPROTEIN (PGP) IN THE BRAIN AND GONADS 0F NEONATAL MALE AND FEMALE SPRAGUE-DAWLEY RATS.** S. J. Yavanhxay[1], *J. T. Stevens*[1], J. Eldridge[1], *M. S. Chistian*[2] and *A. M. Hoberman*[2]. [1]Physiology and Pharmacology, Wake Forest University School of Medicine, Winston-Salem, NC and [2]Charles River Laboratories, Horsham, PA.

#1465 **MECHANISM OF FEMALE-PREDOMINANT OAT2 EXPRESSION.** *S. C. Buist* and *C. D. Klaassen*. University of Kansas Medical Center, Kansas City, KS.

#1466 **ALTERATIONS IN GENE EXPRESSION OF HEPATIC DRUG TRANSPORTERS BY THE LOSS OF THE TRANSCRIPTIONAL FACTOR HNF1α.** T. Callaghan[1], *A. L. Slitt*[1], J. M. Maher[1], C. Cheung[2], F. J. Gonzalez[2] and *C. D. Klaassen*[1]. [1]University of Kansas Medical Center, Kansas City, KS and [2]National Cancer Institute, NIH, Bethesda, MD.

#1467 **DISTRIBUTION OF THE MULTIDRUG RESISTANCE-ASSOCIATED PROTEINS (MRPS) IN TESTES, OVARY, AND PLACENTA OF MICE.** J. M. Maher, *A. L. Slitt*, *T. M. Leazer* and *C. D. Klaassen*. Pharmacology, KU Medical Center, Kansas City, KS.

#1468 **REGULATION OF MOUSE ORGANIC ANION TRANSPORTING POLYPEPTIDES (OATPS) IN MOUSE LIVER BY CLASSES OF PROTOTYPICAL MICROSOMAL ENZYME INDUCERS THAT ACTIVATE VARIOUS TRANSCRIPTIONAL PATHWAYS.** X. Cheng and *C. Klaassen*. University of Kansas Medical Center, Kansas City, KS.

#1469 **REGULATION OF HEPATIC TRANSPORTERS DURING CHOLESTASIS IS INDEPENDENT OF TNFα, IL-1, AND IL-6 ACTIVITY.** A. J. Lickteig[1], *A. L. Slitt*[2], *N. Li*[2], *C. D. Klaassen*[2] and *N. J. Cherrington*[1]. [1]University of Arizona, Tucson, AZ and [2]University of Kansas Medical Center, Kansas City, KS.

#1470 **XENOBIOTIC TRANSPORTER EXPRESSION IN THE BLOOD-TESTIS BARRIER.** *N. J. Cherrington*[1], R. J. Markelewicz[2] and *K. Boekelheide*[2]. [1]University of Arizona, Tucson, AZ and [2]Brown University, Providence, RI.

#1471 **DEVELOPMENT OF GENE CHIPS FOR EARLY DETECTION OF WELDER'S PNEUMOCONIOSIS.** *I. Yu*[1], K. Park[2], K. Rim[1], J. Sung[1], B. Choi[1], Y. Chung[1] and J. Han[1]. [1]Center for Occupational Toxicology, Occupatinal Safety & Health Research Institute, KOSHA, Daejeon, South Korea and [2]Pharmacogenechips, Chuncheon, South Korea.

#1472 **RENAL TOXICOLOGICAL GENE RESPONSE TO ANTI-HEPATITIS B PRODRUGS HEPAVIR B AND HEPSERA IN RATS.** C. Fang, R. Yan, C. Lim, *D. Vitarella*, P. Srivastava and *C. Lin*. R & D Department, ICN Pharmaceuticals Inc., Costa Mesa, CA.

#1473 **RAT LIVER TRANSCRIPTOMICS AFTER (COMBINATORIAL) 28-DAY EXPOSURE TO BENZENE AND TRICHLOROETHYLENE.** *W. H. Heijne*, M. J. Bart, D. Jonker, R. H. Stierum, B. van Ommen and J. Groten. Biomolecular Sciences, TNO Nutrition and Food Research, ZEIST, Utrecht, Netherlands.

#1474 **BIOMARKER SETS THAT CHARACTERIZE BILE DUCT HYPERPLASIA.** K. Jarnagin, C. Pearson, A. Roter, A. Tolley, B. Eynon, B. Ganter, G. Natsoulis, G. Day, *K. Kolaja*, *M. Fielden*, M. Lee, R. Nair, S. Dunlea, J. Yang, L. Gong, S. Nicholson, S. Tugendreich, S. Fujimoto and S. Baumhueter. Iconix Pharmaceuticals, Inc., Mountain View, CA.

#1475 **TRANSCRIPTIONAL PROFILE OF CIGARETTE SMOKE INDUCED EMPHYSEMA LUNGS.** K. H. Mai[1], *T. Rangasamy*[1], R. M. Tuder[2] and *S. Biswal*[1]. [1]Environmental Health Sciences, Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD and [2]Deapartment of Pathology, Johns Hopkins School of medicine, Baltimore, MD.

#1476 **EFFECTS OF MULTIPLE CARDIAC APEX NECROSIS AGENTS ON GENOME WIDE EXPRESSION.** A. L. Castle, B. W. Higgs, *C. G. Chang* and *D. L. Mendrick*. Toxicogenomics, Gene Logic Inc., Gaithersburg, MD.

#1477 **MONITORING INDICATIONS OF LEAD EFFICACY AND TOXICITY WITH A MULTIPLEX GENE EXPRESSION ASSAY DURING EARLY DRUG DEVELOPMENT.** G. Vansant, P. Pezzoli, J. Monforte and *F. Ferre*. eXpress Profiling, Althea Technologies, Inc., San Diego, CA.

#1478 **MITOCHONDRIAL TOXICITY OF 3'-AZIDO-3'-DEOXYTHYMIDINE (AZT) IN THE ABSENCE OF MITOCHONDRIAL DNA (MTDNA) DEPLETION.** K. C. Lund and *K. B. Wallace*. Biochemistry and Molecular Biology, University of Minnesota School of Medicine, Duluth, MN.

#1479 **PHTHALATES INFLUENCE THE EXPRESSION OF FATTY ACID HOMEOSTASIS REGULATING PROTEINS IN HRP-1 CELLS.** Y. Xu, P. Shah, T. J. Cook and G. T. Knipp. Department of Pharmaceutics, Rutgers, The State University of New Jersey, Piscataway, NJ. Sponsor: *K. Reuhl*.

Wednesday Morning, March 24
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: OXIDATIVE STRESS I

Chairperson(s): *Kulbir Bakshi, National Academy of Sciences, Washington, DC and Carlos Dalmeira, University of Coimbra, Coimbra, Portugal.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 9:30 AM–11:00 AM*

#1480 **6-HYDROXYDOPAMINE-INDUCES OXIDATIVE STRESS AND TOXICITY IN HUMAN NEUROBLASTOMA CELLS.** *C. hu*, *M. A. Tirmenstein*, *P. K. Narayanan*, *H. C. Thomas* and *L. W. Schwartz*. GlaxoSmithKline, King of Prussia, PA.

#1481 **A MODEL OF TOXICANT-INDUCED OXYGEN FREE RADICAL PRODUCTION FROM ISOLATED BOVINE RESPIRATORY CHAIN COMPLEX I.** J. E. Johnson[1, 2], K. Choksi[2] and W. R. Widger[2]. [1]Optometry, University of Houston, Houston, TX and [2]Department Biology and Biochemistry, University of Houston, Houston, TX. Sponsor: *D. Fox*.

#1482 **LACK OF INHIBITION BY MELATONIN OF THE TOXIC AND PROLIFERATIVE EFFECTS OF DIETARY DIMETHYLARSINIC ACID ON RAT UROTHELIUM.** M. Wei, *S. M. Cohen*, M. Cano and *L. L. Arnold*. Path/Micro, University of Nebraska Med. Ctr, Omaha, NE.

#1483 **CARBON NANOTUBE EXPOSURE CAUSED FORMATION OF FREE RADICALS, INDUCTION OF OXIDATIVE STRESS AND CYTOTOXICITY IN HUMAN KERATINOCYTES AND BRONCHIAL EPITHELIAL CELLS.** E. Kisin[1], *A. R. Murray*[2], D. Schwegler-Berry[1], V. Z. Gandelsman[3], M. R. Ganther[2], *V. Castranova*[1, 2, 4] and *A. A. Shvedova*[1, 2]. [1]PPRB, NIOSH, CDC, Morgantown, WV, [2]Physiology and Pharmacology, WVU, Morgantown, WV, [3]Advanced Technology Group, NASA-JSC/SAIC, Houston, TX and [4]GSPH, University of Pittsburgh, Pittsburgh, PA.

#1484 **GREEN CHEMISTRY CATALYST CAUSES DEPLETION OF GSH, OXIDATIVE STRESS AND CYTOTOXICITY IN KERATINOCYTES IN THE PRESENCE OF H_2O_2.** J. Kisin[1], Y. Y. Tyurina[2], E. Kisin[3], C. P. Horwitz[1], T. J. Collins[1], *V. E. Kagan*[2], *V. Castranova*[3, 4] and *A. A. Shvedova*[3, 4]. [1]Carnegie Melon University, Pittsburgh, PA, [2]GSPH, University of Pittsburgh, Pittsburgh, PA, [3]PPRB, NIOSH, Morgantown, WV and [4]WVU, Morgantown, WV.

#1485 **INDUCTION OF ENDOGENOUS GLUTATHIONE BY α-LIPOIC ACID IN HUMAN NEUROBLASTOMA SH-SY5Y CELLS: PROTECTION AGAINST 4-HYDROXYNONENAL- AND PEROXYNITRITE-MEDIATED NEUROTOXICITY.** S. S. Hallur, Z. Cao and *Y. Li*. Pharmaceutical Sciences, ST. John's University, Jamaica, NY.

#1486 **MECHANISM OF GLUTATHIONE S-TRANSFERASE A4-4 IN PROTECTION AGAINST OXIDATIVE STRESS INDUCED APOPTOSIS IN ENDOTHELIUM.** Y. Yang[1], Y. Yang[2], M. B. Trent[1], S. D. Lick[3], *P. Zimniak*[4], *Y. C. Awasthi*[2] and *P. Boor*[1]. [1]Pathology, University of Tex. Med. Branch, Galveston, TX, [2]2Human Biological Chemistry and Genetics, University of Texas Medical Branch, Galveston, TX, [3]3Department of Surgery, University of Texas Medical Branch, Galveston, TX and [4]4Department of Pharmacology and Toxicology, University of Arkansas for Medical Sciences, and Central Arkansas Veterans Healthcare System, Little Rock, AR.

#1487 **MGSTA4-4 NULL (-/-) MICE ALTERS THE COURSE OF CCL4 INDUCED HEPATOTOXICITY.** S. Dwivedi[1], R. Sharma[2], A. Sharma[2], *Y. C. Awasthi*[2] and *P. Boor*[1]. [1]Pathology, University of Tex. Med. Branch, Galveston, TX and [2]Human Biology and Genetics, University of Texas Medical Branch, Galveston, TX.

#1488 **MITOCHONDRIAL METABOLISM: THE ROOT OF HYPEROIXC CELL DAMAGE.** *J. Li*[1], X. Gao[2], M. Qian[2] and J. W. Eaton[2]. [1]Department of Pharmacology and Toxicology, University of Louisville, Louisville, KY and [2]Department of Medicine, University of Louisville, Louisville, KY.

#1489 **OXYGEN TOXICITY AND MITOCHONDRIAL FUNCTION.** E. C. Campian[1], *J. Li*[1], X. Gao[2], M. Qian[2], H. Joenje[3] and J. W. Eaton[2]. [1]Department of Pharmacology and Toxicology, University of Louisville, Louisville, KY, [2]Department of Medicine, University of Louisville, Louisville, KY and [3]Department of Clinical Genetics and Human Genetics, VU University Medical Center, Amsterdam, Netherlands.

#1490 **PROTEIN MODIFICATION BY 4-HYDROXYNONENAL MODULATES 26S PROTEASOMAL DEGRADATION.** *D. L. Carbone* and *D. R. Petersen*. Pharmaceutical Sciences, University of Colorado Health Sciences Center, Denver, CO.

#1491 **THE PROTECTIVE EFFECTS OF CHEMICALLY-INDUCED ENDOGENOUS GLUTATHIONE ON DOPAMINE AND 6-HYDROXYDOPAMINE-MEDIATED TOXICITY IN RAT PHECHROMOCYTOMA PC12 CELLS.** X. PENG and *Y. LI*. Pharmaceutical Sciences, St. John's University, Jamaica, NY.

#1492 **DIFFERENTIAL EFFECTS OF CHRONIC ESTRADIOL TREATMENT ON INDUCTION OF PHASE II ANTIOXIDANT ENZYMES IN BRAIN AND LIVER OF ACI RATS.** *T. M. Stakhiv*, R. I. Sanchez and *F. C. Kauffman*. Joint Graduate Program in Toxicology, Rutgers University/UMDNJ, Piscataway, NJ.

#1493 **ANILINE-INDUCED ACTIVATION OF REDOX-SENSITIVE TRANSCRIPTION FACTOR NF-KB IN THE RAT SPLEEN.** S. Kannan, J. Wang, H. Li and *M. Khan*. Pathology, University of Texas medical branch, Galveston, TX.

#1494 **PHARMACOLOGIC SUPPRESSION OF OXIDATIVE DAMAGE AND DENDRITIC DEGENERATION FOLLOWING KAINIC ACID-INDUCED EXCITOTOXICITY IN MOUSE CEREBRUM.** *D. Milatovic*[1], S. Milatovic[1], *R. C. Gupta*[2] and T. J. Montine[1]. [1]Pathology, University of Washington, Seattle, WA and [2]Toxicology, Murray State University, Hopkinsville, KY.

#1495 **OVEREXPRESSION OF CYTOKINES IN SPLENIC FIBROGENIC RESPONSE TO ANILINE.** J. Wang, H. Li, S. Kannan, *B. S. Kaphalia* and *M. Khan*. Pathology, University of Texas Medical Branch, Galveston, TX.

#1496 **THE GENES INVOLVED IN THE ONSET OF PARAQUAT INJURY AND THE INDIVIDUAL DIFFERENCE OF THE TOXIC EFFECT.** M. Tomita[1], T. Okuyama[1] and T. Nohno[2]. [1]Medical Toxicology, Kawasaki Medical School, Kurashiki, Japan and [2]Molecular Biology, Kawasaki Medical School, Kurashiki, Japan. Sponsor: *L. Birnbaum*.

#1497 **HO-1 PROMOTER/ENHANCER LUCIFERASE ASSAY: A PROMISING *IN VITRO* TOOL FOR MEASURING CELLULAR OXIDATIVE STRESS.** C. Knoerr, S. Gebel and T. Mueller. PHILIP MORRIS Research Laboratories GmbH, Cologne, Germany. Sponsor: *H. Haussmann*.

#1498 **INDUCIBLE GLUTAMATE-CYSTEINE LIGASE TRANSGENIC MICE EXHIBIT PROTECTION AGAINST ACETAMINOPHEN INDUCED LIVER INJURY.** D. Botta, *S. Shi*, *C. C. White*, S. Chatterton-Kirchmeier, P. A. Vliet and *T. J. Kavanagh*. Environmental and Occupational Health Sciences, University of Washington, Seattle, WA.

#1499 **QUANTITATION OF 4-HYDROXY-TRANS-2-NONENAL AND ITS METABOLITES BY LIQUID CHROMATOGRAPHY-MASS SPECTROMETRY.** M. J. Meyer[1], M. Miyagi[2] and *M. J. Picklo*[1]. [1]Pharmacology and Physiology, University of North Dakota, Grand Forks, ND and [2]Biochemistry and Molecular Biology, University of North Dakota, Grand Forks, ND.

#1500 **MEMANTINE PROTECTS SKELETAL MUSCLES AGAINST OXIDATIVE STRESS.** *R. C. Gupta*[1], *D. Milatovic*[2], T. J. Montine[2] and W. D. Dettbarn[3]. [1]Toxicology, Murry State University, Hopkinsville, KY, [2]Pathology, University Washington, Seattle, WA and [3]Pharmacology, Vanderbilt University, Nashville, TN.

#1501 **ANTIOXIDANT EFFECTS ON ETHANOL-INDUCED OXIDATIVE STRESS AND HEPATOXICITY IN RATS FED VIA TOTAL ENTERAL NUTRITION.** *T. M. Badger*[1, 3], S. Korourian[2], M. Ferguson[3], B. Sampey[4], E. Albano[5], *D. Petersen*[4] and *M. J. Ronis*[6, 3]. [1]Physiology, University of Arkansas for Medical Sciences, Little Rock, AR, [2]Pathology, University of Arkansas for Medical Sciences, Little Rock, AR, [3]Arkansas Children's Nutrition Center, Arkansas Children's Hospital, Little Rock, AR, [4]Pharmacy, University of Colorado Health Sciences Center, Denver, CO, [5]Medical Sciences, University "A Avogadro" of East Piedmont, Novara, Italy and [6]Pharmacology & Toxicology, University of Arkansas for Medical Sciences, Little Rock, AR.

Wednesday Morning, March 24
9:30 AM to 12:30 PM
Exhibit Hall

POSTER SESSION: MOLECULAR HEPATOTOXICITY

Chairperson(s): *Carl Alden, Millennium Pharmaceuticals, Cambridge, MA and Greg Falls, GlaxoSmithKline, Research Triangle Park, NC.*

Displayed*: 9:30 AM–12:30 PM*

Attended*: 11:00 AM–12:30 PM*

#1502 **IMPAIRED TISSUE REPAIR IN THIOACETAMIDE TREATED DIABETIC RATS: NF-KB AS A RINGMASTER.** *S. S. Devi* and *H. M. Mehendale*. Toxicology, The University of Louisiana at Monroe, Monroe, LA.

#1503 **ROLE OF CALPAIN IN ENDOTOXIN-MEDIATED HEPATIC INJURY.** *University. M. Apte*, *R. McRee*, J. Nguyen and *S. K. Ramaiah*. Department of Pathobiology, Texas A&M University, College Station, TX.

#1504 **OSTEOPONTIN-MEDIATED INDUCTION OF MATRIX METALLOPROTEINASE-9 ACTIVITY VIA NF-κB IN ALCOHOLIC STEATOSIS.** *S. K. Ramaiah*, *R. McRee*, J. Nguyen, S. J. Smith, M. Garza, E. Wellberg and *University. M. Apte*. Department of Pathobiology, Texas A&M University, College Station, TX.

#1505 **OVERACTIVATION OF POLY(ADP-RIBOSE) POLYMERASE-1 ACCOMPANIES CARBON TETRACHLORIDE-INDUCED CENTRILOBULAR NECROSIS.** M. Banasik[1, 2], T. Stedeford[1, 2], C. Muro-Cacho[3] and *R. D. Harbison*[1]. [1]Department of Environmental and Occupational Health, University of South Florida, Tampa, FL, [2]Laboratory of Toxicology and Risk Assessment, Polish Academy of Sciences, Gliwice, Poland and [3]Department of Interdisciplinary Oncology, H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL.

#1506 **STRESS-RESPONSIVE MAP KINASES REGULATE RUBRATOXIN B-INDUCED CYTOKINE SECRETION IN HEPG2 CELLS.** H. Nagashima, K. Nakamura and T. Goto. National Food Research Institute, Tsukuba, Ibaraki, Japan. Sponsor: *M. Fukayama*.

#1507 **INHIBITION OF PHAGOCYTOSIS IN PRIMARY RAT KUPFFER CELLS BY METHYL PALMITATE.** P. Cai, *B. S. Kaphalia* and *G. Ansari*. Pathology, UTMB, Galveston, TX.

#1508 **DIETARY ZINC SUPPLEMENTATION ATTENUATES CHRONIC ALCOHOL-INDUCED LIVER INJURY IN MICE THROUGH INHIBITION OF OXIDATIVE STRESS.** *Z. Zhou*[1], L. Wang[1], J. T. Saari[2], C. J. McClain[1] and *Y. Kang*[1]. [1]University of Louisville, Louisville, KY and [2]Human Nutrition Research Center, USDA, Grant Forks, ND.

#1509 **CHENODEOXYCHOLIC ACID-MEDIATES INDUCTION OF THE MITOCHONDRIAL PERMEABILITY TRANSITION THROUGH ALTERED MEMBRANE FLUIDITY.** A. P. Rolo, P. J. Oliveira, A. J. Moreno and *C. M. Palmeira*. Center for Neurosciences and Cell Biology of Coimbra, Department of Zoology, University of Coimbra, Coimbra, Portugal.

#1510 ***IN VITRO* DEVELOPMENT OF BIOMARKERS FOR ACETAMINOPHEN TOXICITY IN PRIMARY MOUSE HEPATOCYTES.** *J. N. Mayes*[1, 2], R. Edmondson[3], R. Jones[3] and *Y. P. Dragan*[2, 1]. [1]Pharmacology and Toxicology, University of Arkansas for Medical Sciences, Little Rock, AR, [2]Hepatic Toxicology, NCTR, Jefferson, AR and [3]Chemistry, NCTR, Jefferson, AR.

#1511 **PREDICTION FOR HEPATOTOXINS IN A PRIMARY HEPATOCYTE TEST SYSTEM WITH TRANSCRIPTIONAL PROFILING OF TOXICITY RELATED GENES.** *P. Eddy*, J. Lin, E. Fedyk, S. Badola, V. Sasseville and *C. L. Alden*. Drug Safety and Disposition, Millennium Pharmacology., Cambridge, MA.

#1512 **VISUALIZATION AND QUANTITATION OF PEROXISOMES USING QUANTUM DOTS™: DETECTION IN THE LIVER FOLLOWING TREATMENT OF RATS AND MONKEYS WITH FIBRATES.** *G. Falls*[1], H. M. Colton[1], H. Ni[1], *P. Kwanyuen*[1], D. R. Creech[1], N. F. Cariello[1] and G. Hamilton[2]. [1]Safety Assessment, GlaxoSmithKline, Research Triangle Park, NC and [2]Hepatotech Inc., Pittsboro, NC.

#1513 **GENOMIC ANALYSIS OF SUSCEPTIBILITY FACTORS ASSOCIATED WITH HALOTHANE-INDUCED LIVER INJURY IN GUINEA PIGS.** M. Holt[1], *M. Bourdi*[1], A. Elkahloun[2], D. Erias[1] and *L. Pohl*[1]. [1]Melecular and Cellular Toxicology Section/LMI, NHLBI/NIH/DHHS, Bethesda, MD and [2]Cancer Genetics Branch, NHGRI/NIH/DHHS, Bethesda, MD.

#1514 **EFFECTS OF FLAVONOID TREATMENT ON THE PERMEABILITY OF CYCLOSPORIN A ACROSS CACO-2 CELL MONOLAYERS.** *J. E. Mata*[1], *R. Rodriguez-Proteau*[1, 2], *C. L. Miranda*[2], *D. R. Buhler*[2] and J. Brown[1]. [1]Pharmaceutical Sciences, Oregon State University, Corvallis, OR and [2]Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR.

#1515 **ABSENCE OF LIVER CANALICULAR MRP2 TRANSPORTER SHIFTS METHYLENE DIANILINE INJURY FROM BILIARY EPITHELIAL CELLS TO HEPATOCYTES.** *M. F. Kanz*[1], F. Nayeem[1], *V. Santa Cruz*[1], *T. R. Dugas*[2] and *M. Treinen-Moslen*[1]. [1]Pathology, University of Texas Medical Branch, Galveston, TX and [2]Pharmacology, LSU Health Sciences Center, Shreveport, LA.

#1516 **MULTIPLE DRUG RESISTANCE GENE REGULATION IN MICE.** *J. M. Brady*, X. G. Cheng, J. M. Maher and *C. D. Klaassen*. University of Kansas Medical Center, Kansas City, KS.

#1517 **TISSUE DISTRIBUTION AND HORMONAL REGULATION OF THE BREAST CANCER RESISTANCE PROTEIN (BCRP/ABCG2) IN RATS AND MICE.** Y. Tanaka, *A. L. Slitt*, J. M. Maher, *T. M. Leazer* and *C. D. Klaassen*. University of Kansas Medical Center, Kansas City, KS.

#1518 **LIPOPOLYSACCHARIDE-MEDIATED DOWN-REGULATION OF ORGANIC ANION TRANSPORTING POLYPEPTIDE 4 (OATP4; SLC21A10) IS INDEPENDENT OF TUMOR NECROSIS FACTOR-α, INTERLEUKIN-1β, INTERLEUKIN-6, OR INDUCIBLE NITRIC OXIDE SYNTHASE.** N. Li and *C. D. Klaassen*. University of Kansas Medical Center, Kansas City, KS.

#1519 **ROLE OF NAD(P)H:QUINONE OXIDOREDUCTASE 1 IN CLOFIBRATE MEDIATED HEPATOPROTECTION FROM ACETAMINOPHEN TOXICITY.** *J. Moffit*[1], M. Kardas[1], L. M. Aleksunes[1], *A. M. Slitt*[2], *C. D. Klaassen*[2] and *J. E. Manautou*[1]. [1]Department of Pharmaceutical Sciences, University of Connecticut, Storrs, CT and [2]Department of Pharmacology, Toxicology, and Therapeutics, University of Kansas Medical Center, Kansas City, KS.

#1520 **DIFFERENTIAL GENE EXPRESSION OF MEMBRANE TRANSPORT AND DETOXIFICATION PROTEINS DURING HEPATIC INJURY.** L. Aleksunes[1], *A. Slitt*[2], *M. Thibodeau*[1], *C. Klaassen*[2] and *J. Manautou*[1]. [1]Pharmaceutical Sciences, University of Connecticut, Storrs, CT and [2]Pharmacology, Toxicology, and Therapeutics, University of Kansas Medical Center, Kansas City, KS.

#1521 **TRANSPORT CHARACTERISTICS OF 3, 3′-DIINDOLYLMETHANE USING HUMAN DERIVED INTESTINAL CELLS, CACO-2 AND P27.7 CELLS.** A. J. Rodriguez[1], *R. Rodriguez-Proteau*[1, 2], *S. C. Tilton*[2], J. Chen[1], K. P. Hall[1], *J. E. Mata*[1] and *D. E. Williams*[2, 3, 4]. [1]Pharmaceutical Sciences, Oregon State University, Corvallis, OR, [2]Department of Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR, [3]Linus Pauling Institute, Oregon State University, Corvallis, OR and [4]Marine and Freshwater Biomedical Science Center, Oregon State University, Corvallis, OR.

#1522 **EFFECT OF TROGLITAZONE (TGZ) ON BASOLATERAL AND CANALICULAR TRANSPORT OF MODEL ORGANIC ANIONS.** *D. C. Kemp*[1] and K. L. Brouwer[2, 1]. [1]Curriculum in Toxicology, Univeristy of North Carolina, Chapel Hill, NC and [2]Drug Disposition and Delivery, School of Pharmacy, University of North Carolina, Chapel Hill, NC.

#1523 **AUTOPROTECTION: SUBCHRONIC LOW DOSE ADMINISTRATION OF CHLOROFORM RENDERS RESISTANCE TO A LETHAL DOSE OF CHLOROFORM.** *H. M. Mehendale*[1], *S. S. Anand*[1], *P. S. Palkar*[1] and *M. M. Mumtaz*[2]. [1]Department of Toxicology, University of Louisiana, Monroe, monroe, LA and [2]ATSDR, Atlanta, GA.

#1524 **ANALYSIS OF GENOMIC AND PROTEOMIC DATA FROM TRANSGENIC RAT LIVER NEOPLASMS.** *Y. Dragan*[1], F. Hong[2], W. Tong[2], J. Ward[3], S. Yim[4], R. Perez[5], L. Zhang[5] and M. Freitas[5]. [1]Hepatic Toxicology, NCTR, Jefferson, AR, [2]Bioinformatics, NCTR, Jefferson, AR, [3]Pathology, NCI, Frederick, MD, [4]Metabolism, NCI, Bethesda, MD and [5]Chemistry, Ohio State University, Columbus, OH.

#1525 **QUANTITATIVE RNA INVADER ANALYSIS AS A FAST METHOD TO SCREEN FOR INDUCTION POTENTIAL OF DRUGS USING PRIMARY CULTURES OF HUMAN AND RAT HEPATOCYTES.** V. Kostrubsky, S. Kulkarni, J. Hanson and *S. Duddy*. Safety Sciences, Pfizer, Ann Arbor, MI.

Wednesday Afternoon

Wednesday Afternoon, March 24
12:00 NOON to 1:00 PM
Room 318

SPECIAL WORKSHOPS: A CONVERSATION WITH THE DIRECTORS

The Meet the Directors session is a one-hour special session that will be formatted like a panel discussion with the leaders of several major federal agencies. The intention is to promote interaction between agency directors and the Annual Meeting attendees. Each agency head will briefly provide the five to ten year vision for their agency with an opportunity for discussion.

- Dr. Henry Falk, Assistant Administrator, Agency for Toxic Substances and Disease Registry (ATSDR) Director, National Center for Environmental Health (NCEH), Centers for Disease Control and Prevention (CDC), Atlanta, GA.
- Dr. Paul Gilman, Assistant Administrator for Research and Development, U.S. Environmental Protection Agency (USEPA), Washington, DC.
- Dr. Kenneth Olden, Director, National Institute of Environmental Health Sciences (NIEHS), Research Triangle Park, NC.
- Dr. Stephen F. Sundlof, Director, Center for Veterinary Medicine, U.S. Food and Drug Administration (USFDA), Rockville, MD.

Wednesday Afternoon, March 24
12:00 NOON to 1:00 PM
Room 307

ISSUES SESSION: DOES FUNDING SOURCE INFLUENCE RESEARCH INTEGRITY?

Chairperson(s): *Bruce Kelman, GlobalTox, Redmond, WA and Steven Gilbert, Institute of Neurotox & Neurological Disorders, Seattle, WA.*

Co-Sponsored by: *DHHS/ORI*

#1526 12:00 **DOES FUNDING SOURCE INFLUENCE RESEARCH INTEGRITY.** *S. G. Gilbert*[1], *B. J. Kelman*[2], L. A. Bero[3], R. L. Brent[4] and *J. I. Goodman*[5]. [1]INND, Seattle, WA, [2]GlobalTox, Seattle, WA, [3]Clinical Pharmacy, University of California, San Francisco, CA, [4]Pediatrics, Radiology and Pathology, duPont Hospital for Children and Thomas Jefferson University, Wilmington, DE and [5]Pharmacology and Toxicology, Michigan State University, East Lansing, MI.

Wednesday Afternoon, March 24
1:30 PM to 4:30 PM
Room 314

SYMPOSIUM SESSION: COMPARISON OF THRESHOLD DOSE-RESPONSE METHODS FOR COMPLETE DATA SETS: COPPER AS A CASE STUDY

Chairperson(s): *Scott Baker, International Copper Association Ltd., New York, NY and Laura Plunkett, Integrative Biostrategies, Houston, TX.*

Endorsed by:
Metals Specialty Section
Occupational Health Specialty Section
Risk Assessment Specialty Section*

Copper is an essential element with a high redox potential, and therefore can be highly toxic. The complete range of physiologic response (toxicity of deficiency, essentiality, and toxicity of excess) was considered in a dose-response assessment of copper. The data set on the biological effects of copper is difficult to interpret because the cascade of effects occurs over a very narrow dose range, making it hard to define the critical effect and dose. Dose-response data from the entire database on health effects of copper (observations on acute human poisoning, chronic toxicity, nutritional essentiality/homeostasis, animal nutrition and toxicity, and molecular/genetic mechanisms of copper control and action) were subjected to biological and mathematical modeling to better understand the human response. This was particularly important to better define the regions of marginal deficiency and excess, where adverse effects are subtle and where individuals with mild inborn errors of metabolism are positioned on the University- shaped dose-response curve. The purposes of this approach to dose-response analysis are to better define quantitative ranges for marginal deficiency and excess, bound the limits of essentiality and uncertainty, account for broad interindividual variability, and use the power of the entire database to define the human response to copper exposure. The comparative analysis of NOAEL/LOAEL, Benchmark Dose, and Categorical Regression approaches to understanding how copper behaves in the body and the thresholds for effects will applicable to other essential trace elements, in developing more precise RDAs and regulatory/guidance limits for metals in food, diet, and water.

#1527 1:30 **COMPARISON OF THRESHOLD DOSE-RESPONSE METHODS FOR ENTIRE DATA SETS: COPPER AS A CASE STUDY.** *S. Baker*. International Copper Association, New York.

#1528 1:45 **THE ESSENTIALITY AND TOXICITY OF COPPER: IMPLICATIONS FOR DOSE-RESPONSE ASSESSMENT.** C. Keen. Department of Nutrition, University of California, Davis, CA. Sponsor: *L. Plunkett*.

#1529 2:10 **QUALITATIVE INTERPRETATION OF COMPLEX AND DISPARATE DATA SETS FOR DOSE-RESPONSE ASSESSMENT OF ESSENTIAL TRACE ELEMENTS: COPPER AS A CASE STUDY.** *L. M. Plunkett*. Integrative Biostrategies, LLC, Houston, TX.

#1530 2:35 **A CRITICAL COMPARISON OF DOSE-RESPONSE ASSESSMENT APPROACHES FOR COPPER, AN ESSENTIAL TRACE ELEMENT.** *T. B. Starr*. TBS Associates, Raleigh, NC.

#1531 3:00 **DOSE-RESPONSE MODELS FOR COPPER: IMPLICATIONS FOR RISK ASSESSMENT.** D. Krewski. McLaughlin Centre for Population Health Risk Assessment, University of Ottawa, Ottawa, ON, Canada. Sponsor: *L. Plunkett*.

#1532 3:25 **SUMMARY: SELECTING AND ASSESSING BIOLOGICAL DATA IN TOXICITY, DOSE-RESPONSE, AND RISK ASSESSMENTS FOR ESSENTIAL TRACE ELEMENTS: USE IN SETTING SAFE LIMITS.** *M. L. Dourson*. Toxicology Excellence for Risk Assessment, Cincinnati, OH.

Wednesday Afternoon, March 24
1:30 PM to 4:30 PM
Room 321

SYMPOSIUM SESSION: ENVIRONMENTAL POLLUTION AND THE IMMUNE SYSTEM: MECHANISMS OF IMMUNOTOXICITY ACROSS PHYLA

Chairperson(s): *Dori Germolec, NIEHS, Research Triangle Park, NC and Robert Luebke, USEPA, Research Triangle Park, NC.*

Endorsed by:
Immunotoxicology Specialty Section*

Our current understanding of immunotoxicology comes largely from studies done in rodents or using *in vitro* systems, as surrogates for potential human effects. However, innate and adaptive immune responses are remarkably similar across a broad range of species: innate immunity, which appeared billions of years ago, is evident at lower levels of biological complexity and adaptive immune responses made an evolutionary appearance 400 million years ago in cartilaginous fish. Recent evidence indicates that plant responses to environmental factors depend on a family of pattern-recognition receptors that are homologous to Toll-like receptors that in animals are critical to both innate and adaptive responses. This phylogenetic conservation of effector mechanisms suggests that a given xenobiotic may cause immunotoxicity in a range of species extending beyond vertebrates. Immunotoxicology studies in plants and wildlife support this concept, with reported adverse effects following exposure to oxidant gases, various hydrocarbons, metals or endocrine disruptors. It is important for mammalian immunotoxicologists to develop an understanding of immune system organization and homeostasis across a broad phylogenetic scale, as well as an appreciation for the effects that similar xenobiotics have on immune system health across species. Field studies of populations in polluted environments, which are unable to escape exposure, provide insight into the risk xenobiotics pose to biologically diverse members of the ecosystem, from plants to mammals. This symposium will address shared and unique features of immune system organization and responses by selected species at diverse levels of biological complexity and immune system sophistication, and the mechanisms whereby selected xenobiotics alter immune function.

#1533 1:30 **ENVIRONMENTAL POLLUTION AND THE IMMUNE SYSTEM: MECHANISMS OF IMMUNOTOXICITY ACROSS PHYLA.** *B. Luebke*[1] and *D. Germolec*[2]. [1]Immunotoxicology Branch, USEPA, ORD, NHEERL, ETD, Research Triangle Park, NC and [2]Environmental Immunology, NIEHS, Research Triangle Park, NC.

#1534 1:35 **DISEASE RESISTANCE AND INNATE IMMUNITY IN PLANTS.** K. R. Davis and R. V. Mulpuri. Paradigm Genetics, Inc., Research Triangle Park, NC. Sponsor: *R. Luebke*.

#1535 2:10 **CHEMICAL TOXICITY AND HOST DEFENSE IN INVERTEBRATES: AN EARTHWORM MODEL FOR IMMUNOTOXICOLOGY.** A. Goven and L. Fitzpatrick. Department of Biological Sciences, University of North Texas, Denton, TX. Sponsor: *B. Luebke*.

#1536 2:45 **ENVIRONMENTAL CHEMICALS AND AMPHIBIAN IMMUNITY: WHAT ARE THE RISKS TO AMPHIBIAN HEALTH.** L. A. Rollins-Smith. Microbiology and Immunology, Vanderbilt University Medical Center, Nashville, TN. Sponsor: *L. Rollins-Smith*.

#1537 3:20 **FISH AS EXPERIMENTAL MODELS IN IMMUNOTOXICOLOGY: EVOLUTIONARY CONSERVED MECHANISMS OF ACTION.** *C. D. Rice*. Biological Sciences, Clemson University, Clemson, SC.

Wednesday Afternoon, March 24
1:30 PM to 4:30 PM
Room 318

SYMPOSIUM SESSION: USE OF MOLECULAR APPROACHES TO EXAMINE MECHANISMS OF NEUROTOXICITY

Chairperson(s): *Gary Miller, Emory University, Atlanta, GA and William Atchison, Michigan State University, East Lansing, MI.*

Endorsed by:
Mechanisms Specialty Section
Metals Specialty Section
Molecular Biology Specialty Section
Neurotoxicology Specialty Section*

Numerous diseases and toxic agents target the brain monoamine systems. Disruption of the normal handling of these neurotransmitters can have devastating consequences on the function of these neuronal systems. The uptake, storage, and release of dopamine, serotonin, and norepinephrine are mediated by the vesicular monoamine transporter (VMAT2). Given the critical nature of VMAT2 in monoamine function, we have created a mouse model of enhanced neurotoxicity by decreasing the expression of VMAT2. Homozygote knockout mice die within a few days after birth, while heterozygote VMAT2 knockout mice (VMAT2 +/-) survive into adulthood and appear healthy. We have subjected the VMAT2+/- mice to various neurotoxicants and assessed vulnerability to toxicity. The classical parkinsonian-inducing toxin, MPTP, was more toxic to the mice with reduced VMAT2 and this was attributed to the decreased ability to sequester to toxic metabolite of MPTP. Methamphetamine was also found to be more toxic in VMAT2+/- mice, which was attributed to an inability to handle elevated intracellular dopamine. There has been some question as to whether the administration of L-DOPA (a dopamine precursor) to patients with Parkinsons disease may exacerbate dopamine neuron cell death. Since the VMAT2+/- mice have an impaired ability to handle dopamine, we hypothesized that they would be vulnerable to L-DOPA-induced toxicity. We subjected the VMAT2+/- mice to L-DOPA three times a day for 28 days and found no enhanced toxicity. Indeed, the VMAT2+/- and wild type did not exhibit any toxicity to a dose of L-DOPA 10x higher than that used in humans. In addition to the generation of animal model of neurotoxicity, our lab has been working on more sensitive assays for detecting damage to the nigrostriatal dopamine system, including the development of novel behavioral tests to assess dopaminergic toxicity in mice and the use of laser capture microdissection and quantitative PCR to analyze gene expression in dopamine neurons. This work has been supported by NIEHS and NINDS.

#1538 1:30 **ANALYSIS OF NEUROTOXICITY IN VESICULAR MONOAMINE TRANSPORTER KNOCKOUT MICE.** *G. W. Miller*. Emory University, Atlanta, GA.

#1539 2:05 **USE OF MOLECULAR APPROACHES TO EXAMINE MECHANISMS OF NEUROTOXICITY.** *W. D. Atchison*. Mich State University, East Lansing, MI.

#1540 2:10 **THE USE OF BCL-XL OVEREXPRESSING TRANSGENIC MICE HELPS DECIPHER THE MITOCHONDRIALLY-MEDIATED MECHANISM OF LEAD-INDUCED ROD PHOTORECEPTOR APOPTOSIS.** *D. A. Fox*. College of Optometry, University of Houston, Houston, TX.

#1541 2:45 **MOLECULAR APPROACHES TO DEFINE NECROTIC-LIKE NEURONAL DEATH AND STRATEGIES OF PHYSIOLOGICAL DEATH SUPPRESSION IN *C. ELEGANS*.** *M. Driscoll*. Molecular Biology and Biochemistry, Rutgers University, Piscataway, NJ.

#1542 3:20 **MOLECULAR BASIS OF DIFFERENTIAL SENSITIVITIES OF INSECT SODIUM CHANNELS TO PYRETHROID INSECTICIDES.** K. Dong[1, 2]. [1]Entomology, Michigan State University, East Lansing, MI and [2]Neuroscience Program, Michigan State University, East Lansing, MI. Sponsor: *B. Atchison*.

#1543 3:55 **EFFECTS OF NEUROTOXIC METALS ON HUMAN RECOMBINANT CALCIUM CHANNELS- ROLE OF THE α_1 SUBUNIT.** *W. D. Atchison*. Department Pharmacology/Toxicology, Mich State University, East Lansing, MI.

Wednesday Afternoon, March 24
1:30 PM to 4:30 PM
Room 309

WORKSHOP SESSION: BIOMARKERS: DEVELOPMENT, EVALUATION AND USE

Chairperson(s): *Thomas Monticello, Aventis, Bridgewater, NJ and Ruth Roberts, Aventis Pharmacology, France.*

Endorsed by:
Carcinogenesis Specialty Section*
Occupational Health Specialty Section
Risk Assessment Specialty Section
Toxicologic & Exploratory Pathology Specialty Section

Interest in biomarkers continues to grow at a rapid pace. In part, this interest is attributed to the potential utilization of biomarkers in the many aspects of toxicology. Biomarkers of toxicity are characteristics that can be measured and evaluated as indicators of adverse or pathological responses to a drug or xenobiotic. This workshop will feature four stimulating, state-of-the-art presentations on the different aspects of biomarker development, evaluation and use in the field of toxicology. Topics to be covered will include the utility of biomarkers for nonclinical toxicity during drug development, including current applications, validation procedures and regulatory interest, and an evaluation of the newer genomic and proteomic technologies that can contribute to the discovery of potential novel biomarkers of toxicity. In addition, biomarkers for rodent nongenotoxic carcinogenesis will be described and evaluated in the context of screening assays. Finally, the development and utilization of biomarkers for environmental exposure to toxicants and human risk assessment will be addressed in the session. This workshop will suit those who wish to update and extend their knowledge in this rapidly moving field. It is of general interest to all toxicologists, particularly those concerned with drug development, carcinogenesis and risk assessment.

#1544 1:30 **BIOMARKERS: DEVELOPMENT, EVALUATION AND USE.** *R. Roberts*[1] and *T. Monticello*[2]. [1]Drug Safety Evaluation, Aventis, Vitry sur Seine, France and [2]Drug Safety Evaluation, Aventis, Bridgewater, NJ.

#1545 1:40 **BIOMARKERS OF NONCLINICAL TOXICITY.** *T. M. Monticello*. Drug Safety Evaluation, Aventis, Bridgewater, NJ.

#1546 2:10 **BIOMARKERS FOR NONGENOTOXIC CARCINOGENS.** J. K. chipman. Biosciences, University of Birmingham, Birmingham, United Kingdom. Sponsor: *R. Roberts*.

#1547 2:40 **BIOMARKERS OF ENVIRONMENTAL EXPOSURE TO GENOTOXICANTS.** D. E. Shuker. Chemistry, The Open University, Milton Keynes, United Kingdom. Sponsor: *R. Roberts*.

#1548 3:10 **BIOMARKERS FROM NEW TECHNOLOGIES.** *R. Roberts*[1], J. Leonard[1], M. Duchesne[2], P. Fabiene[2], M. Courcol[1], C. Saulnier[1] and J. Gautier[1]. [1]Drug Safety Evaluation, Aventis, Vitry sur Seine, France and [2]Functional Genomics, Aventis, Vitry sur Seine, France.

Wednesday Afternoon, March 24
1:30 PM to 4:30 PM
Room 307

WORKSHOP SESSION: HORMONE REPLACEMENT THERAPY: A CHALLENGE OF RISKS AND BENEFITS

Chairperson(s): *Anthony Scialli, Georgetown University Medical Center, Washington, DC and Virginia Moser, USEPA, Research Triangle Park, NC.*

Endorsed by:
Regulatory and Safety Evaluation Specialty Section
Reproductive and Developmental Toxicology Specialty Section
Risk Assessment Specialty Section
Women in Toxicology Specialty Section*

A large epidemiological study of the risks and benefits of estrogen plus progestin hormone therapy was stopped early due to the unanticipated but significantly higher incidence of invasive breast cancer, coronary heart disease, and stroke in postmenopausal women receiving this therapy (JAMA 2002, 288:321-333). The medical community was faced with difficult questions, since estrogen has been so commonly prescribed for relieving menopausal symptoms and preventing bone loss. Questions remain, including whether the results are valid for other pharmaceutical formulations and whether clinicians could have predicted the toxicity of estrogen and progestin based on experimental studies and previous clinical trials. This workshop will present the basic and epidemiological studies of hormone therapy for women and men, as well as the challenge of managing the apparent and real risks and benefits of hormone therapy.

#1549 1:30 **HORMONE REPLACEMENT THERAPY: A CHALLENGE OF RISKS AND BENEFITS.** *V. C. Moser*[1] and *A. R. Scialli*[2]. [1]Neurotoxicology Division, USEPA, Research Triangle Park, NC and [2]Department of Obstetrics and Gynecology, Georgetown University Medical Center, Washington, DC.

#1550 1:35 **HORMONE THERAPY IN MENOPAUSE: THE CLINICAL CONTEXT.** *A. R. Scialli*. Ob-Gyn, Georgetown University Hospital, Washington, DC.

#1551 2:15 **ALTERNATIVES TO HORMONE THERAPY.** A. Fugh-Berman. Health Care Sciences, George Washington University School of Medicine, Washington DC, DC. Sponsor: *V. Moser*.

#1552 2:55 **RESULTS AND PREDICTABILITY OF ANIMAL STUDIES FOR HUMAN RISK.** A. jordan. fda, rockville, MD. Sponsor: *G. moser*.

#1553 3:35 **TESTOSTERONE AND AGING: CLINICAL RESEARCH DIRECTIONS; INSTITUTE OF MEDICINE REPORT ON TESTOSTERONE THERAPY IN OLDER MEN.** E. Vaughan[17], D. Blazer[3], E. Barrett-Connor[2], B. A. Brody[4], R. M. Califf[3], J. P. Costantino[5], D. D. Federman[6], L. P. Fried[7], D. G. Grady[8], W. R. Hazzard[9], S. B. Heymsfield[10], S. W. Lagakos[11], M. S. Litwin[12], C. T. Liverman[1], P. A. Lombardo[13], P. S. Nelson[14], E. S. Orwoll[15] and L. R. Schover[16]. [1]Committee on Assessing the Need for Clinical Trials of Testosterone Therapy, Institute of Medicine, Washington, DC, [2]University of California, San Diego, San Diego, CA, [3]Duke University, Durham, NC, [4]Baylor College of Medicine, Houston, TX, [5]University of Pittsburgh, Pittsburgh, PA, [6]Harvard Medical School, Boston, MA, [7]Johns Hopkins University, Baltimore, MD, [8]University of California, San Francisco, San Francisco, CA, [9]University of Washington, Seattle, WA, [10]Columbia University College of Physicians and Surgeons, New York, [11]Harvard School of Public Health, Boston, MA, [12]University of California, Los Angeles, Los Angeles, CA, [13]University of Virginia, Charlottesville, VA, [14]Fred Hutchinson Cancer Research Center, Seattle, WA, [15]Oregon Health Sciences University, Portland, OR, [16]M.D. Anderson Cancer Center, Houston, TX and [17]Cornell University, New York. Sponsor: *V. Moser*.

Wednesday Afternoon, March 24
1:30 PM to 4:30 PM
Room 316

WORKSHOP SESSION: STRATEGIES TO IDENTIFY BIOACTIVE SUBSTANCES IN COMPLEX AIR POLLUTANT MIXTURES

Chairperson(s): *Jack Harkema, Michigan State University, East Lansing, MI and Michael Madden, USEPA, Chapel Hill, NC.*

Endorsed by:
Inhalation Specialty Section*

Both indoor and outdoor air contains a very complex mixture of gas and particulate matter (PM) pollutants. The assessment of the role of each pollutant in the complex atmosphere in the induction of an associated health effect or a response can be difficult due to many factors, including the vast number of pollutants that may potentially induce or modify the health effect. The aim of this session is to present different strategies that have been used by researchers in attempts to identify airborne toxic components in complex mixtures. The range of strategies to be presented spans a wide spectrum of possible approaches (from study of whole populations to predictive toxicology modeling). Findings will be presented on: appropriately designed field epidemiological studies and controlled exposure studies with humans subjects aimed at determining the components of airborne ambient PM that induce increased morbidity and mortality (e.g., premature deaths, hospitalizations, asthma symptomatology); determination of airway irritants in indoor air using rodent exposures; comparative potencies of components of diesel exhaust using controlled *in vitro* cell exposures; and prediction of toxicity using quantitative structure-activities relationships. In each case, individual components of a polluted atmosphere were isolated or considered, and then assessed for potential bioactivity using a variety of methods. In some cases where individual components appeared to be relatively biologically inactive, different individual components were added together to assess potency. This session is timely in that the topics provide insights that may be utilized by researchers to aid in risk assessment and management of complex atmospheres such as combustion emissions, outdoor PM, and indoor air quality, all currently subject to regulation at local to federal levels. [This abstract may not represent official EPA policy.]

#1554 1:30 **STRATEGIES TO IDENTIFY BIOACTIVE SUBSTANCES IN COMPLEX AIR POLLUTANT MIXTURES.** *M. C. Madden*[1] and *J. R. Harkema*[2]. [1]NHEERL\Human Studies Division, USEPA, Chapel Hill, NC and [2]Department National Food Safety and Toxicology, Michigan St. University, East Lansing, MI.

#1555 1:45 **THE EPIDEMIOLOGICAL APPROACH TO INVESTIGATING AIR POLLUTION MIXTURES.** J. M. Samet. Department of Epidemiology, Johns Hopkins University, Baltimore, MD. Sponsor: *M. Madden*.

#1556 2:15 **LUNG RESPONSES IN HEALTHY HUMAN SUBJECTS INHALING COARSE FRACTION PARTICULATE MATTER (PMCF).** N. E. Alexis[1], W. Bennett[3], T. Huang[2] and S. Becker[2]. [1]Pediatrics, UNC-Chapel Hill, Chapel Hill, NC, [2]Human Studies Division, USEPA, Chapel Hill, NC and [3]Pulmonary Medicine, UNC Chapel, Chapel Hill, NC. Sponsor: *M. Madden*.

#1557 2:45 **AIRWAY AND PULMONARY EFFECTS OF TERPENE/OZONE REACTION PRODUCTS IN MICE.** A. C. Rohr. Electric Power Research Institute, Palo Alto, CA. Sponsor: *M. Madden*.

#1558 3:15 **AIR-LIQUID INTERFACE CULTURE: TOWARDS MORE PHYSIOLOGICAL *IN VITRO* TOXICOLOGY OF AEROSOLS.** *J. Seagrave*, J. D. McDonald and *J. L. Mauderly*. Lovelace Respiratory Research Institute, Albuquerque, NM.

#1559 3:45 **THE RELATIVE TOXICITY OF SUBSTITUTED PHENOLS REPORTED IN CIGARETTE MAINSTREAM SMOKE.** *C. J. Smith*[1], T. A. Perfetti[4], M. J. Morton[4], A. Rodgman[4], R. Garg[2], C. D. Selassie[3] and C. Hansch[3]. [1]Wake Forest University, Winston-Salem, NC, [2]Clarkson University, Potsdam, NY, [3]Pomona College, Claremont, CA and [4]RJRT, Winston-Salem, NC.

Wednesday Afternoon, March 24
1:30 PM to 4:30 PM
Room 315

PLATFORM SESSION: FISH MODELS

Chairperson(s): *Richard DiGiulio, Duke University, Chaoel Hill, NC and Louis Trombetta, St. John, Jamaica, NY.*

#1560 1:30 **NEUROMODULATION OF TELEOST CATECHOLAMINES BY PROPRANOLOL AND FLUOXETINE.** W. Smith[1], L. Blank[1], C. M. Foran[2], D. B. Huggett[3] and B. W. Brooks[4]. [1]Chemistry and Biochemistry, University of Oklahoma, Norman, OK, [2]Biology, West Virginia University, Morgantown, WV, [3]Pharmacology, University of Mississippi, University, MS and [4]Environmental Studies, Baylor University, Waco, TX. Sponsor: *M. Kanz*.

#1561 1:50 **BEHAVIORAL AND NEUROLOGICAL BIOMARKERS OF STRESS EXPOSURE IN A FISH MODEL.** J. Salierno[1], A. Murphy[2], J. Shields[3] and A. Kane[1]. [1]Vet. Med., University MD, College Park, MD, [2]Biology, Georgia State University, Atlanta, GA and [3]VIMS, College of William & Mary, Gloucester Pt, VA. Sponsor: *K. Squibb*.

#1562 2:10 **IMMUNOTOXIC EFFECTS OF *IN VIVO* CHLORPYRIFOS EXPOSURE ON MURRAY COD (*MACCULLOCHELLA PEELI*).** P. F. Wright[1], A. J. Harford[1] and K. O'Halloran[2]. [1]Key Centre for Toxicology, RMIT-University, Melbourne, VIC, Australia and [2]CENTOX, Landcare Research, Lincoln, Canterbury, New Zealand. Sponsor: *M. Karol*.

#1563 2:30 **USING STRUCTURAL EFFECTS ON THE ORGANIZATION OF THE CYTOSKELETON OF RAINBOW TROUT HEPATOCYTES TO SORT PATHWAYS OF REACTIVE TOXICITY.** K. Flynn, P. K. Schmieder and R. D. Johnson. USEPA, Duluth, MN. Sponsor: *J. Nichols*.

#1564 2:50 **MECHANISMS OF PAH- AND PCB-MEDIATED IMPACTS ON EMBRYONIC DEVELOPMENT IN THE KILLIFISH, *FUNDULUS HETEROCLITUS*.** D. Wassenberg and *R. T. Di Giulio*. Integrated Toxicology Program, Duke University, Durham, NC.

#1565 3:10 **DEVELOPMENT OF A QUANTITATIVE VITELLOGENIN ELISA FOR DETECTION OF ENDOCRINE DISRUPTOR EFFECTS IN ZEBRAFISH (*DANIO RERIO*).** F. F. Mikkelsen[1], J. K. Eidem[1], B. M. Nilsen[1] and A. Goksoyr[1, 2]. [1]Biosense Laboratories AS, Bergen, Norway and [2]Department of Molecular Biology, University of Bergen, Bergen, Norway. Sponsor: *E. Dybing*.

#1566 3:30 **ACUTE TOXICITY AND BIOACCUMULATION OF TRIBUTYLTIN IN TISSUES OF UROLOPHUS JAMAICENSIS (YELLOW STINGRAY).** J. Dwivedi[1] and *L. D. Trombetta*[2]. [1]Biological Sciences, St. John's University, New York and [2]Pharmaceutical Sciences, St. John's University, New York.

#1567 3:50 **CORRELATION BETWEEN OBSERVED ACUTE AQUATIC TOXICITY OF A SERIES OF OLEFINIC MATERIALS USING SOLID PHASE MICROEXTRACTION—BIOAVAILABLE PETROLEUM HYDROCARBON.** *D. J. Caldwell*, E. J. Febbo, D. J. Letinski, C. L. Dzamba, R. F. Blattenberger, D. A. Winkelmann and T. F. Parkerton. Toxicology and Environmental Sciences Division, ExxonMobil Biomedical Sciences, Inc., Annandale, NJ.

#1568 4:10 **NOTOCHORD DISTORTION BY THIURAM AND OTHER DITHIOCARBAMATE IN ZEBRAFISH EMBRYO.** *H. Teraoka*[1], S. Urakawa[1], S. Nanba[1], W. Dong[1], T. Imagawa[2], H. Handley[3], *J. J. Stegeman*[3] and T. Hiraga[1]. [1]School of Veterinary Medicine, Rakuno Gakuen University, Ebetsu, Hokkaido, Japan, [2]Faculty of Agriculture, University of Tottori, Tottori, Japan and [3]Woods Hole Oceanographic Institution, Woods Hole, MA.

Wednesday Afternoon, March 24
1:30 PM to 4:30 PM
Room 317

PLATFORM SESSION: GENE EXPRESSION: OXIDANT STRESS

Chairperson(s): *Craig Giroux, Wayne State University, MI and Qiang Ma, CDC/NIOSH, Morgantown, WV.*

#1569 1:30 **REPROGRAMMING OF THE GENETIC NETWORK FOR CELLULAR DEFENSE AGAINST OXIDATIVE STRESS.** *C. N. Giroux*, J. Fan and A. Weiss. Center for Molecular Medicine and Genetics, Wayne State University, Detroit, MI.

#1570 1:50 **DISSECTING ANTIOXIDANT RESPONSE ELEMENT (ARE)-DRIVEN GENE EXPRESSION INDUCED BY TERT-BUTYLHYDROQUINONE: A COMPARATIVE STUDIES USING LONG AND SHORT OLIGONUCLEOTIDE MICROARRAYS.** *J. A. Johnson*, *J. Li* and M. L. Spletter. School of Pharmacy, University of Wisconsin at Madison, Madison, WI.

#1571 2:10 **AGE-RELATED IMPAIRMENT OF THE TRANSCRIPTIONAL RESPONSES TO OXIDATIVE STRESS IN THE MOUSE HEART AND SKELETAL MUSCLE.** T. Prolla. University of wisconsin, Madison, WI. Sponsor: *J. Kramarik*.

#1572 2:30 **ENHANCED EXPRESSION OF MAMMALIAN PROTEASOME THROUGH THE KEAP1-NRF2 SIGNALING PATHWAY.** M. Kwak[1], N. Wakabayashi[1, 2], J. L. Greenlaw[1], M. Yamamoto[2] and *T. W. Kensler*[1]. [1]Environmental Health Sciences, Johns Hopkins University, Baltimore, MD and [2]University of Tsukuba, Tsukuba, Japan.

#1573 2:50 **THE TAK1-TAO1 COMPLEX MEDIATES STRESS-ACTIVATED SIGNALING.** *W. HuangFu* and J. Ninomiya-Tsuji. Environmental and Molecular Toxicology, North Carolina State University, Raleigh, NC.

#1574 3:10 **USE OF AFFINITY CHROMATOGRAPHY TO IDENTIFY NOVEL PROTEINS THAT MEDIATE STRESS-INDUCED GENE ACTIVATION.** N. Macdonald, D. A. Clynes, J. G. Moggs, *I. Kimber* and G. Orphanides. Syngenta Central Toxicology Laboratory, Alderley Park, United Kingdom.

#1575 3:30 **INHIBITION OF NUCLEAR FACTOR KAPPA B BY PHENOLIC ANTIOXIDANTS: INTERPLAY BETWEEN ANTIOXIDANT SIGNALING AND INFLAMMATORY CYTOKINE EXPRESSION.** *Q. Ma* and K. Kinneer. HELD/TMBB, CDC/NIOSH, Morgantown, WV.

#1576 3:50 **RESTRAINT STRESS ACTIVATES STAT3 VIA ADRENOCEPTOR STIMULATION AND IL-6 PRODUCTION IN MOUSE LIVER.** 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, Centers for Disease Control-NIOSH, Morgantown, WV and [2]Molecular Neurotoxicology Laboratory, Toxicology and Molecular Biology Branch, Centers for Disease Control-NIOSH, Morgantown, WV.

Wednesday Afternoon, March 24
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: SKIN

Chairperson(s): *John Schlager, AFRL/HEST, Wright-Patterson AFB, OH and Nancy Monteiro-Riviere, North Carolina State University, Raleigh, NC.*

Displayed: *1:30 PM–4:30 PM*

Attended: *1:30 PM–3:00 PM*

#1577 **EVALUATION OF THE DERMAL BIOAVAILABILITY OF AQUEOUS XYLENE IN F344 RATS AND HUMAN VOLUNTEERS.** *K. D. Thrall* and A. D. Woodstock. Battelle, Pacific Northwest Laboratories, Richland, WA.

#1578 **A NEW QSAR MODEL FOR HUMAN SKIN ABSORPTION.** *W. Luo*[1], H. Nguyen[1], Q. Telesford[2] and *W. Fung*[1]. [1]Toxicology, L'Oreal USA, Clark, NJ and [2]Bioengineering, Rutgers University, New Brunswick, NJ.

#1579 **DERMAL TOXICITY OF SUPER VASMOL 33 WITH AYURPRASH, SUPER VASMOL 33, COMBINED EXTRACT AND TWO SOLUTION DYE SAMPLES.** S. L. Bodhankar, S. Sankaran, K. R. Khandelwal, S. N. Shah and N. A. Mhetre. Pharmacology, Bharati Vidyapeeth Deemed University, Pune, Maharashtra, India. Sponsor: *H. Mehendale*.

#1580 **THE PIG AS AN EXPERIMENTAL MODEL IN WOUND HEALING RESEARCH.** P. Glerup, M. Skydsgaard, J. T. Jensen and S. Klastrup. General toxicology and pharmacology, Scantox A/S, Lille Skendsved, Denmark. Sponsor: *R. Harling*.

#1581 **SIMULATED SOLAR UV LIGHT (SSL) INDUCES INFLAMMATION AND OXIDATIVE STRESS IN THE SKIN OF SKH-1 HAIRLESS MICE.** *A. R. Murray*[1], E. Kisin[2], *V. Castranova*[1, 2], B. J. Miller[3], P. C. Howard[3] and *A. A. Shvedova*[1, 2]. [1]Physiology and Pharmacology, West Virginia University, Morgantown, WV, [2]PPRB, NIOSH, Morgantown, WV and [3]NCTR, USFDA, Jefferson, AR.

#1582 **MOLECULAR CHANGES IN RAT SKIN RELATED TO IRRITATION BY JP-8 JET FUEL.** *J. N. McDougal*, C. M. Garrett and C. M. Amato. Pharmacology/Toxicology, Wright State University, Dayton, OH.

#1583 **ASSESSMENT OF SKIN BARRIER CREAMS TO LOWER PENETRATION OF JP-8 JET FUEL.** *J. J. Schlager*[1], D. L. Pollard[2] and A. J. Guilfoil[1]. [1]AFRL/HEST, Wright-Patterson AFB, OH and [2]Mantech Enviromental Technology, Inc., Wright-Patterson AFB, OH.

#1584 **A NEW TECHNIQUE TO ASSESS DERMAL ABSORPTION OF CHEMICAL VAPORS *IN VITRO* BY THERMAL GRAVIMETRIC ANALYSIS.** T. S. Isaksson and *G. Johanson*. Work Environment Toxicology, Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden.

#1585 **INFLUENCE OF CUTTING FLUID CONTAMINANTS ON THE DERMAL DISPOSITION OF THE BIOCIDE, TRIAZINE.** *R. E. Baynes*, J. D. Brooks, B. Beth, R. Wilkes and *J. E. Riviere*. Center for Chemical Toxicology Research and Pharmacokinetics, North Carolina State University, Raleigh, NC.

#1586 **A COMPARATIVE INVESTIGATION OF THE EFFECTS OF WATER, ETHANOL AND WATER/ETHANOL MIXTURES ON CHEMICAL PARTITIONING INTO PORCINE STRATUM CORNEUM AND PERMEABILITY IN PORCINE SKIN.** D. van der Merwe and *J. E. Riviere*. Center for Chemical Toxicology Research and Pharmacokinetics, North Carolina State University, Raleigh, NC.

#1587 **INVESTIGATION OF THE SENSITIZATION POTENTIAL OF VARIOUS ESSENTIAL OILS IN THE LOCAL LYMPH NODE ASSAY (LLNA).** J. Lalko and *A. Api*. Research Institute for Fragrance Materials, Inc., Woodcliff Lake, NJ.

#1588 **TOPICAL HYDROCARBON ABSORPTION IN PORCINE SKIN PREVIOUSLY EXPOSED TO JP-8 JET FUEL.** F. Muhammad, *N. A. Monteiro-Riviere* and *J. E. Riviere*. Center for Chemical Toxicology Research and Pharmacokinetics, North Carolina State University, Raleigh, NC.

#1589 **A MURINE MODEL FOR CUTANEOUS PHOTOAGING: OBSERVATIONAL, HISTOPATHOLOGIC AND MOLECULAR ENDPOINTS.** *D. B. Learn*[1], C. P. Sambuco[1], *P. D. Forbes*[1], M. J. Mayo[2], C. S. Johnson[2] and *A. M. Hoberman*[1]. [1]Charles River Discovery and Development Services, Argus Division, Horsham, PA and [2]Pathology Associates, West Chester, OH.

#1590 **DIFFERENTIAL REGULATION OF COX-2 EXPRESSION BY ULTRAVIOLET LIGHT IN KERATINOCYTES AND MACROPHAGES.** A. T. Black[1], A. M. Vetrano[1], R. Sur[1], *D. E. Heck*[1] and *J. D. Laskin*[2]. [1]Rutgers University, Piscataway, NJ and [2]Environmental and Community Medicine, UMDNJ-Robert W Johnson Medical School, Piscataway, NJ.

#1591 **EPIDERMAL CYTOKINE SECRETION INDUCED BY CHEMICAL CONTACT AND RESPIRATORY ALLERGENS.** M. Cumberbatch, *R. J. Dearman* and *I. Kimber*. Syngenta CTL, Macclesfield, United Kingdom.

#1592 ***IN VIVO* AND *IN VITRO* DERMATOTOXICITY OF CUTTING FLUID MIXTURES.** *N. A. Monteiro-Riviere*, A. Inman, B. Barlow and *R. E. Baynes*. Center for Chemical Toxicology Research and Pharmacokinetics, North Carolina State University, Raleigh, NC.

#1593 **INVESTIGATION OF THE SENSITIZATION POTENTIAL OF FRAGRANCE INGREDIENT 3 AND 4-(4-HYDROXY-4-METHYLPENTYL)-3-CYCLOHEXENE-1-CARBOXALDEHYDE (HMPCC).** *A. Api*, J. Cocchiara and C. Letizia. Research Institute for Fragrance Materials, Inc., Woodcliff Lake, NJ.

#1594 **ASSESSMENT OF SKIN ABSORPTION AND METABOLISM OF ARACHIDONIC ACID & GLYCERYL ARACHIDONATE USING *IN VITRO* DIFFUSION CELL TECHNIQUES.** A. R. Eppler[1, 2], *M. E. Kraeling*[1], R. R. Wickett[2] and *R. L. Bronaugh*[1]. [1]Office of Cosmetics and Colors/ Cosmetic Toxicology Branch, US Food & Drug Administration, Laurel, MD and [2]College of Pharmacy, University of Cincinnati, Cincinnati, OH.

#1595 **MIXTURE EFFECTS OF JET FUEL ALIPHATIC AND AROMATIC HYDROCARBONS ON HUMAN EPIDERMAL KERATINOCYTES.** *C. Chou*[1], J. Yang[2], C. Lee[1] and *N. A. Monteiro-Riviere*[3]. [1]Veterinary Medicine, National Chung-Hsing University, Taichung, Taiwan, [2]Chung-Shan Medical University, Taichung, Taiwan and [3]Center for Cutaneous Toxicology and Research Pharmacokinetics, NC State University, Raleigh, NC.

#1596 **DIPHOTERINE:SKIN SENSITIZATION STUDY IN THE GUINEA PIG.** L. MATHIEU[1], F. BURGHER[1] and *A. H. HALL*[2]. [1]Researches and Communication, PREVOR, TALENCE, France and [2]TCMTS, Inc., Elk Mountain, WY.

#1597 **ROLE OF SP-1 IN SDS-INDUCED ADIPOSE DIFFERENTIATION RELATED PROTEIN SYNTHESIS IN HUMAN KERATINOCYTES.** *C. L. Galli*, O. Zancanella, L. Lucchi, *B. Vi*via*ni*, M. Marinovich and *E. Corsini*. Department Pharmacological Sciences, University of Milan, Milan, Italy.

#1598 **INFLUENCE OF SKIN THICKNESS ON PERCUTANEOUS PENETRATION OF CAFFEINE, BUTOXYETHANOL AND TESTOSTERONE *IN VITRO*.** S. C. Wilkinson[1], L. Greaves[2] and *F. M. Williams*[1]. [1]Clinical and Lab. Sciences, University of Newcastle, Newcastle upon Tyne, Tyne and Wear, United Kingdom and [2]Neurology, University of Newcastle, Newcastle upon Tyne, Tyne and Wear, United Kingdom.

#1599 **AN *IN VITRO* MODEL FOR CUTANEOUS PHOTOAGING USING A LUCIFERASE REPORTER GENE TO MEASURE HUMAN ELASTIN PROMOTER ACTIVITY.** D. B. Brown, M. D. Schwartz, S. M. Ksenzenko, E. F. Bernstein, *P. D. Forbes*, C. P. Sambuco and *A. M. Hoberman*. Charles River Discovery and Development Services, Argus Division, Horsham, PA.

#1600 **RETINOIC ACID INDUCED EXPRESSION OF THE HELIX-LOOP-HELIX INHIBITORY PROTEIN ID-1 IN NORMAL HUMAN KERATINOCYTES.** C. Villano[2], *L. A. White*[1] and E. Myers[1]. [1]Biochemistry and Microbiology, Rutgers University, New Brunswick, NJ and [2]Joint Graduate Program in Toxicology, Rutgers University, New Brunswick, NJ.

#1601 ***IN VITRO* PERCUTANEOUS ABSORPTION OF SALICYLIC ACID IN HAIRLESS MOUSE AND HUMAN SKIN.** *M. E. Kraeling* and *R. L. Bronaugh*. Office of Cosmetics and Colors, USFDA, Laurel, MD.

#1602 **RESPONSE OF SKH-1 MOUSE SKIN FOLLOWING THE ACUTE INJURY OF TATTOOING.** *N. V. Gopee*[1, 2], Y. Cui[1, 2], G. Olson[3], A. Warbritton[3], B. J. Miller[1, 2], L. H. Couch[1, 2], *W. G. Wamer*[4] and *P. C. Howard*[1, 2]. [1]Division Biochemical Toxicology, NCTR, USFDA, Jefferson, AR, [2]NTP Center for Phototoxicology, NCTR, USFDA, Jefferson, AR, [3]Charles River Companies, Jefferson, AR and [4]CFSAN, USFDA, College Park, MD.

#1603 **MECHANISM OF PARAQUAT-INDUCED TOXICITY IN MOUSE KERATINOCYTES.** A. Vetrano[1], *D. E. Heck*[1], A. T. Black[1], M. Thiruchelvam[2], E. Richfield[3], *D. A. Cory-Slechta*[2] and *J. D. Laskin*[2]. [1]Pharmacology and Toxicology, Rutgers University, Piscataway, NJ, [2]Environmental and Community Medicine, UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ and [3]Pathology and Lab. Medicine, UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ.

#1604 **MECHANISMS OF UVB LIGHT-INDUCED OXIDANT FORMATION IN THE SKIN.** *D. E. Heck*. Pharmacology and Toxicology, Rutgers University, Piscataway, NJ.

#1605 **SUNSCREENS WITH PHYSICAL UV BLOCKERS CAN INCREASE TRANSDERMAL ABSORPTION OF THE HERBICIDE 2, 4 D.** R. M. Brand, J. M. Pike and A. R. Charron. Internal Medicine, Evanston Northwestern Healthcare and Feinberg School of Medicine, Evanston, IL. Sponsor: *P. Iversen*.

#1606 **DERMAL ABSORPTION AND CHEMISTRY OF ARSENIC IN RESIDUES FROM WOOD PRESERVED WITH CHROMATED COPPER ARSENATE (CCA).** Y. W. Lowney[1], R. Wester[2], P. Nico[3] and M. Ruby[1]. [1]Health Risk Group, Exponent, Boulder, CO, [2]Department of Dermatology, University of California, San Francisco, CA and [3]Chemistry Department, California State University, Stanislaus, Turlock, CA. Sponsor: *J. Tsuji*.

#1607 ***IN VITRO* ASSESSMENT OF STYRENE ABSORPTION THROUGH HUMAN SKIN.** S. Madden, C. Roper and *R. Greenough*. *In Vitro* Sciences, Inveresk Research, Edinburgh, United Kingdom.

#1608 **STUDIES ON PERCUTANEOUS ABSORPTION, BIOPHYSICAL AND BIOCHEMICAL CHANGES IN THE SKIN BY NONANE AND DODECANE IN HAIRLESS RATS.** *J. B. RAMAPURAM*[1], A. Chatterjee[1], B. Locke[2], S. Gibbs[2] and *M. Singh*[1]. [1]COLLEGE OF PHARMACY, FLORIDA A&M UNIVERSITY, TALLAHASSEE, FL and [2]Department of Chemical Engineering, FAMU-FSU College of Engineering, Tallahassee, FL.

#1609 **PHOTODECOMPOSITION OF PIGMENT YELLOW 74, A PRIMARY COLOR CHEMICAL IN TATTOO INKS.** L. H. Couch[1, 3], Y. Cui[1, 3], A. Spann[1], *N. V. Gopee*[1, 3], F. E. Evans[2], M. I. Churchwell[1], L. Williams[1], D. R. Doerge[1] and *P. C. Howard*[1, 3]. [1]Division of Biochemical Toxicology, NCTR, USFDA, Jefferson, AR, [2]Division of Chemistry, NCTR, USFDA, Jefferson, AR and [3]NTP Center for Phototoxicology, NCTR, USFDA, Jefferson, AR.

#1610 **PHOTOCHEMICAL DECOMPOSITION OF THE DICHLOROBENZIDINE-BASED TATTOO PIGMENT ORANGE 13 IN SIMULATED SOLAR LIGHT.** *P. C. Howard*[1, 3], *N. V. Gopee*[1, 3], Y. Cui[1, 3], F. E. Evans[2], L. H. Couch[1, 3], M. I. Churchwell[1] and D. R. Doerge[1]. [1]Division of Biochemical Toxicology, NCTR, USFDA, Jefferson, AR, [2]Division of Chemistry, NCTR, USFDA, Jefferson, AR and [3]NTP Center for Phototoxicology, NCTR, USFDA, Jefferson, AR.

#1611 **CUTANEOUS UVR AND CIS-UROCANIC ACID EXPOSURE ENHANCES BURULI ULCER DISEASE IN THE CRL:IAF(HA)-HRBR HAIRLESS GUINEA PIG.** *R. Cope*[1], N. Stang[1], B. Valentine[1], P. L. Small[2] and L. Bermudez[1]. [1]College of Veterinary Medicine, Oregon State University, Corvallis, OR and [2]Department of Microbiology, University of Tennessee, Knoxville, TN.

Wednesday Afternoon, March 24
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: APOPTOSIS I

Chairperson(s): *Michael Waalkes, NIEHS, Research Triangle Park, NC.*

Displayed: *1:30 PM–4:30 PM*

Attended*: 3:00 PM–4:30 PM*

#1612 **HELICOBACTER PYLORI AND ETHANOL INDUCED TOXICITY AND APOPTOSIS IN GASTRIC EPITHELIAL CELLS.** *A. N. Nunley*[1], R. L. Copeland[1] and D. T. Smoot[2]. [1]Pharmacology, Howard University College of Medicine, Washington, DC and [2]Medicine, Howard University Hospital, Washington, DC.

#1613 **INVOLVEMENT OF APOPTOSIS IN THE HMG-COA REDUCTASE INHIBITOR-INDUCED MYONECROSIS IN HUMAN SKELETAL MUSCLE CELLS.** *A. Wolf*[1], L. Ndountse-Tchapda[1], S. Ursula[1] and W. E. Trommer[2]. [1]Biomarker Development, Novartis Pharmacology AG, Basel, Switzerland and [2]Department of Chemistry, University of Kaiserslautern, Kaiserslautern, Germany.

#1614 **PULMONARY TOXICANTS AMIODARONE AND PARAQUAT CAUSE INJURY BY APOPTOSIS IN RAT PLEURAL MESOTHELIAL CELLS.** S. Seth and J. Cerreta. Pharmaceutical Sciences, St. John's University, New York. Sponsor: *L. Trombetta*.

#1615 **SUPPRESSION OF TGF-β_1 INDUCED APOPTOSIS *IN VITRO* BY THE ALDOSE REDUCTASE INHIBITOR, ZOPOLRESTAT.** L. Fasulo and *D. Amacher*. Safety Sciences - Groton, Pfizer Global Research and Development, Groton, CT.

#1616 **THE ROLE OF DIMINISHED JNK SIGNAL TRANSDUCTION IN THE ACQUISITION OF APOPTOTIC RESISTANCE IN CADMIUM-TRANSFORMED HUMAN PROSTATE EPITHELIAL CELLS.** W. Qu[1], D. Broderick[1], *W. E. Achanzar*[1], M. M. Webber[2] and *M. P. Waalkes*[1]. [1]Inorganic Carcinogenesis Section, NCI at NIEHS, Research Triangle Park, NC and [2]Departments of Zoology and Medicine, Michigan State University, East Lansing, MI.

#1617 **CYTOPROTECTIVE EFFECTS OF GLYCYRRHIZAE RADIX EXTRACT AND ITS ACTIVE COMPONENT LIQUIRITIGENIN AGAINST CADMIUM-INDUCED TOXICITY.** K. Sangchan[1, 2], B. Sung Hui[1], Y. Chae Ha[1], K. Chul Young[2], K. Jin Woong[2] and *K. Sang Geon*[2]. [1]College of Oriental Medicine, Daegu Hanny University, Daegu, South Korea and [2]College of Pharmacy, Seoul National University, Seoul, South Korea.

#1618 **INTERACTION OF ARSENITE WITH B-CELL RECEPTOR- AND CD40- MEDIATED SIGNALING AND EFFECT ON APOPTOSIS IN B-LYMPHOMA CELLS.** *D. Muscarella*. Cornell University, Ithaca, NY.

#1619 **MECHANISMS OF OCHRATOXIN A-INDUCED APOPTOSIS IN HUMAN LYMPHOCYTES.** H. Assaf[1, 2], H. Azouri[2] and *M. Pallardy*[1]. [1]INSERM U461, Chatenay-Malabry, France and [2]Toxicology laboratory, Faculty of Pharmacy, Beirut, Lebanon.

#1620 **THE ROLE OF APOPTOSIS IN THE OTA/OTB INDUCED NEPHROPATHY.** K. Kobras, E. O'Brien, A. H. Heussner and *D. R. Dietrich*. Environmental Toxicology, University of Konstanz, Konstanz, Germany.

#1621 **DIELDRIN EXPOSURE IMPAIRS THE UBIQUITIN-PROTEOSOME FUNCTION AND PROMOTES α-SYNUCLEIN AGGREGATION IN MESENCEPHALIC DOPAMINERGIC NEURONAL CELLS: RELEVANCE OF ENVIRONMENTAL FACTORS IN THE ETIOPATHOGENESIS OF PARKINSON'S DISEASE.** F. Sun, V. Anantharam and *A. Kanthasamy*. Biomedical Science, Iowa State University, Ames, IA.

#1622 **EFFECTS OF ENDOSULFAN AND PERMETHRIN EXPOSURE ON APOPTOTIC AND NECROTIC CELL DEATH OF MURINE SPLENOCYTES, *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]Biomedical Science, Edward Via Virginia College of Osteopathic Medicine, Blacksburg, VA.

#1623 **GENE EXPRESSION ANALYSIS DURING DIELDRIN EXPOSURE IN RAT MESENCEPHALIC DOPAMINERGIC NEURONAL CELLS: POTENTIAL MECHANISMS INVOLVED IN ENVIRONMENTAL CHEMICAL-INDUCED DOPAMINERGIC DEGENERATION.** Y. yang, K. D. Petry, *A. Vellareddy*, A. Kanthasamy and *A. Kanthasamy*. Biomedical Sciences, Iowa State University, Ames, IA.

#1624 **DETERMINATION OF APOPTOSIS IN PLATEABLE CRYOPRESERVED HUMAN HEPATOCYTES.** T. A. Moeller, *P. M. Silber* and N. S. Jensen. *In Vitro* Technologies, Baltimore, MD.

#1625 **CELL-CELL CONTACT IS REQUIRED FOR PAH-INDUCED, STROMAL CELL-DEPENDENT, BONE MARROW B CELL APOPTOSIS.** *D. H. Sherr*, *H. Ryu*, J. K. Emberley, *J. J. Schlezinger* and L. L. Allan. Environmental Health, Boston University School of Public Health, Boston, MA.

#1626 **DMBA-INDUCED PRO/PRE-B CELL APOPTOSIS: CASPASE 8-MEDIATED, TNF RECEPTOR-INDEPENDENT SIGNALING PATHWAYS.** J. K. emberley[1], *H. Ryu*[2], L. L. Allan[1], *J. J. Schlezinger*[2] and *D. H. Sherr*[2, 1]. [1]Microbiology, Boston University Sch. of Medicine, Boston, MA and [2]Environmental Health, Boston University Sch. of Medicine, Boston, MA.

#1627 **THE ROLE OF P53 IN DEATH RECEPTOR EXPRESSION AND ACTIVITY IN MOUSE TESTIS AFTER MONO-2-(ETHYLHEXYL) PHTHALATE (MEHP) EXPOSURE.** *Y. Chandrasekaran* and *J. H. Richburg*. College of Pharmacy, The University of Texas at Austin, Austin, TX.

#1628 **THE PROTEASOME INHIBITOR, BORTEZOMIB, STIMULATES APOPTOSIS BY INDUCING ENDOPLASMIC RETICULAR STRESS AND PROTEOTOXICITY.** S. Nawrocki, J. S. Carew and *D. J. McConkey*. Cancer Biology, UT M.D. Anderson Cancer Center, Houston, TX.

#1629 **THE ASSOCIATION OF APOPTOSIS WITH THE INDUCTION OF NEUTROPHIL GELATINASE ASSOCIATED LIPOCALIN (NGAL).** *J. P. Kehrer*, *Z. Tong* and X. Wu. Division of Pharmacology and Toxicology, College of Pharmacy, The University of Texas at Austin, Austin, TX.

#1630 **AKT PLAYS A ROLE IN THE APOPTOSIS INDUCED BY THE 5-LIPOXYGENASE ACTIVATING PROTEIN (FLAP) INHIBITOR, MK886.** *Z. Tong*, X. Wu and *J. P. Kehrer*. Division of Pharmacology and Toxicology, College of Pharmacy, The University of Texas at Austin, Austin, TX.

#1631 **α-SYNUCLEIN PREVENTS MITOCHONDRIAL AND NUCLEAR LOCALIZATION OF PRO-APOPTOTIC KINASE PKCδ DURING 1-METHYL-4-PHENYLPYRIDINIUM (MPP^+)-INDUCED CELLULAR APOPTOSIS IN DOPAMINERGIC NEURONAL CELLS. NOVEL ROLE OF α-SYNUCLEIN IN DOPAMINERGIC DEGENERATION.** S. Kaul, *V. Anantharam* and *A. Kanthasamy*. Iowa State University, Ames, IA.

#1632 **ROLE OF PROTEIN KINASE Cδ IN SILICA-INDUCED APOPTOSIS AND AUTOIMMUNITY.** *J. M. Brown* and *A. Holian*. CEHS, University of Montana, Missoula, MT.

#1633 **MECHANISMS OF NORDIHYDROGUAIARETIC ACID (NDGA)-MEDIATED APOPTOSIS IN FL5.12 CELLS.** *V. S. Deshpande* and *J. P. Kehrer*. Division of Pharmacology and Toxicology, College of Pharmacy, The University of Texas at Austin, Austin, TX.

#1634 **ENVIRONMENTAL STRESS-MEDIATED SENSITIZATION OF B-LYMPHOID CELLS TO PESTICIDE-INDUCED APOPTOSIS AND INDUCTION OF MAP KINASE PATHWAYS.** *S. E. Bloom* and *D. E. Muscarella*. Microbiology and Immunology, Cornell University, Ithaca, NY.

#1635 **THIOREDOXIN AND TGHQ-INDUCED APOPTOSIS IN HL-60 CELLS.** *M. Yang*, *S. S. Lau* and *T. J. Monks*. Pharmacology and Toxicology, University of Arizona Health Sciences Center, Tucson, AZ.

#1636 **THE FATE OF INSTILLED APOPTOTIC MACROPHAGES IN THE LUNGS.** R. R. Mercer, J. Scabilloni, *J. Antonini*, *V. Castranova* and L. Wang. HELD, NIOSH, Morgantown, WV.

#1637 **APOPTOTIC CELL INSTILLATION RESULTS IN ELEVATED TGF-β AND APOPTOSIS-INDUCED-APOPTOSIS IN RAT LUNG.** L. Wang[1], J. Scabilloni[1], *J. Antonini*[1], Y. Rojanasakul[2], *V. Castranova*[1] and R. R. Mercer[1]. [1]PPRB, NIOSH, Morgantown, WV and [2]School of Pharmacy, West Virginia University, Morgantown, WV.

Wednesday Afternoon, March 24
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: CARCINOGENESIS III

Chairperson(s): *Deodutta Roy, University of Alabama at Birmingham, Birmingham, AL and Shyam Biswal, Johns Hopkins, Baltimore, MD.*

Displayed: *1:30 PM–4:30 PM*

Attended*: 1:30 PM–3:00 PM*

#1638 **PERTURBATION OF TESTICULAR CELL PROLIFERATION USING SODIUM ARSENITE.** N. L. Harmon and *J. W. DuMond*. Biology, Texas Southern University, Houston, TX.

#1639 **ARSENIC ACTIVATES NADPH OXIDASE THROUGH CDC42 AND THEIR INVOLVEMENT IN ACTIN FILAMENT REMODELING AND CELL MOTILITY IN ENDOTHELIAL CELLS.** Y. Qian[1], D. C. Flynn[2], *V. Castranova*[1] and X. Shi[1]. [1]The pathology and Physiology Research Branch, National Institute for Occupaptional Safety and Health, Morgantown, WV and [2]Microbology, Immunology and cell biology, West virginia University, Morgantown, WV.

#1640 **TRANSGENERATIONAL EFFECTS OF CHROMIUM(III) ON OFFSPRING WEIGHT, SERUM TIIODOTHYRONINE, AND HEPATIC GENE EXPRESSION.** R. Y. Cheng and *L. M. Anderson*. Laboratory of Comparative Carcinogenesis, National Cancer Institute, Frederick, MD.

#1641 **INDUCTION OF THE HYPOXIA MARKERS, CARBONIC ANHYDRASE IX AND Cap43, BY NICKEL OR CELL DENSITY IS RELATED TO ASCORBATE DEPLETION.** A. A. Karaczyn[1], *K. S. Kasprzak*[1], S. Ivanov[2] and *K. Salnikow*[1]. [1]Laboratory of Comparative Carcinogenesis, National Cancer Institute at Frederick, Frederick, MD and [2]SAIC, NCI-Frederick, Frederick, MD.

#1642 **THE BENZENE METABOLITES HYDROQUINONE AND BENZOQUINONE INCREASE C-MYB ACTIVITY IN HD3 CELLS: AN INSIGHT INTO BENZENE MEDIATED LEUKEMOGENESIS.** *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.

#1643 **ACTIVATION OF DOWNSTREAM RAS EFFECTORS IN LUNG LESIONS FOLLOWING DOXYCYCLINE (DOX) REGULATED EXPRESSION OF MUTANT HUMAN KI-*ras* IN A BITRANSGENIC MOUSE MODEL.** *H. S. Floyd*[1], C. L. Farnsworth[2], N. D. Kock[1], J. L. Little[1], S. T. Dance[1] and *M. S. Miller*[1]. [1]Cancer Biology, Wake Forest University, Winston-Salem, NC and [2]Cell Signaling Technology, Beverly, MA.

#1644 **OVEREXPRESSION OF PKC EPSILON IN THE MOUSE EPIDERMIS LEADS TO POLYMORPHONUCLEAR NEUTROPHIL INFILTRATION AND EPIDERMAL DESTRUCTION AFTER A SINGLE TOPICAL DMBA-TPA TREATMENT.** *Y. li*, D. Wheeler, H. Anathaswamy, A. Verma and T. D. Oberley. Molecular and Environmental Toxicology, University of Wisconsin, Madison, WI.

#1645 **ACTIVATION OF AP-1 AND PRO/ANTIOXIDANT STATUS IN SKIN OF AP-1 TRANSGENIC MICE DURING CANCER PROMOTION WITH CUMENE HYDROPEROXIDE.** M. Xu[1], E. Kisin[2], *A. R. Murray*[1], C. Kommineni[2], *V. Vallyathan*[2], *V. Castranova*[1, 2] and *A. A. Shvedova*[1, 2]. [1]Physiology and Pharmacology, WVU, Morgantown, WV and [2]PPRB, NIOSH, Morgantown, WV.

#1646 **REDUCTION OF COX-2 EXPRESSION IN THYROID FOLLICULAR EPITHELIAL CELLS DURING DHPN-INDUCED CARCINOGENESIS IN RATS.** T. Imai, M. Hasumura, J. Onose, M. Ueda, T. Takizawa, Y. Cho and M. Hirose. National Institute of Health Sciences, Tokyo, Japan. Sponsor: *M. Ema*.

#1647 **INHIBITION OF ESTROGEN RECEPTOR NEGATIVE MDA-MB-453 AND BT-474 BREAST CANCER CELL GROWTH BY ARYL HYDROCARBON RECEPTOR AGONISTS.** L. Kotha and *S. Safe*. Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

#1648 **ESTROGEN THROUGH CALCIUM MEDIATED SIGNALING INDUCES CELL GROWTH IN BREAST CANCER CELLS.** M. K. Singh and *D. Roy*. Environmental Health Sciences, University of Alabama at Birmingham, Birmingham, AL.

#1649 **ESTROGEN-INDUCED UPREGULATION OF CRE CONTAINING GENES IN BREAST CANCER CELLS.** *Q. H. Felty* and *D. Roy*. Environmental Health Sciences, University of Alabama at Birmingham, Birmingham, AL.

#1650 **LONG TERM EXPOSURE OF HUMAN MAMMARY EPITHELIAL CELLS TO HEXACHLOROBENZENE (HCB) INDUCES A PROCARCINOGENIC PHENOTYPE.** R. M. Audet, S. Girard, G. Lassonde and *M. Charbonneau*. INRS-Institut Armand-Frappier, Universite du Quebec, Montreal, QC, Canada.

#1651 **MAPPING AND GENOMIC ANALYSIS OF RESISTANCE TO AZOXYMETHANE-INDUCED COLORECTAL CANCER.** *D. J. Barrick*[1], J. Uronis[2] and D. Threadgill[2, 1]. [1]Curriculum in Toxicology, UNC-Chapel Hill, Chapel Hill, NC and [2]Genetics, UNC-Chapel Hill, Chapel Hill, NC.

#1652 **MAPPING RAT MAMMARY CANCER SUSCEPTIBILITY LOCI THAT CONTROL N-METHYL-N-NITROSOUREA-INDUCED MAMMARY CARCINOGENESIS IN FISCHER 344 RAT.** *H. Zarbl*[1, 2], L. Jing[1], A. M. Mikheev[1], H. Xie[1], Y. Gao[1], X. Ren[1], J. Lew[1] and X. Zhang[1]. [1]Human Biology and Public Health Sciences, Fred Hutchinson Cancer Research Center, Seattle, WA and [2]Center for Ecogenetics and Environmental Health, NIEHS/ University of Washington, Seattle, WA.

#1653 **GENISTEIN AND ESTROGEN REGULATION OF ANDROGEN RECEPTOR AND EXTRACELLULAR REGULATING KINASES IN RAT PROSTATE.** *C. E. Harper*. Pharmacology and Toxicology, University of Alabama at Birmingham, Birmingham, AL.

#1654 **INHALATION DELIVERY OF AEROSOL CONTAINING PEI-GLUCOSE-PTEN COMPLEX INDUCED CHANGE OF PROTEIN TRANSLATION IN KRAS KNOCKOUT LUNG CANCER MODEL MICE.** H. Kim[1], I. Park[2], C. Cho[2], G. Beck[3], N. Colburn[3] and *M. Cho*[1]. [1]Laboratory of Toxicology, College of Veterinary Medicine, Seoul National University, Seoul, South Korea, [2]Laboratory of Biomedical Polymer and Tissue Engineering, College of Agricultural Biotechnology, Seoul National University, Seoul, South Korea and [3]Basic Research Laboratory, National Cancer Institute, Frederick, MD.

#1655 **PREVENTION BY METHIONINE OF DICHLOROACETIC ACID-INDUCED LIVER CANCER AND DNA HYPOMETHYLATION IN MICE.** *M. A. Pereira*, W. Wang, P. M. Kamer and *L. H. Tao*. Pathology, Medical College of Ohio, Toledo, OH.

#1656 **LACK OF MODIFICATION OF MEIQX RAT LIVER CARCINOGENESIS BY CAFFEINE INDUCTION OF CYP1A2.** H. Kandori[1, 2], M. Kuribayashi[1, 3], M. Asamoto[1], S. Suzuki[1] and *T. Shirai*[1]. [1]Department of Experimental Pathology and Tumor Biology, Nagoya City University Graduate School of Medical Sciences, Nagoya, Japan, [2]Takeda Chemical Industries Ltd., Drug Safety Research Laboratories Hikari Branch, Hikari, Japan and [3]Ono Pharmaceutical Co. Ltd., Safety Research, Fukui, Japan.

#1657 **CURCUMIN PROTECTS AGAINST 2-AMINO-1-METHYL-6-PHENYLIMIDAZO[4, 5-B]PYRIDINE (PHIP) CARCINOGENECITY THROUGH MODULATION OF ITS METABOLISM.** R. Thimmulappa[1], *M. Knize*[2], K. Mai[1], *J. S. Felton*[2] and *S. Biswal*[1]. [1]Johns Hopkins University, Baltimore, MD and [2]Biology and Biotechnology Research Program, Lawrence Livermore National Laboratory, Livermore, CA.

#1658 **CURCUMIN ENHANCES EGCG-MEDIATED CYTOTOXICITY *IN VITRO* AND MODULATES LIVER ENZYMES *IN VIVO*.** S. Valentine, M. J. Le Nedelec and *R. J. Rosengren*. Pharmacology & Toxicology, Univeristy of Otago, Dunedin, New Zealand.

#1659 **COMPARATIVE EFFECTS OF NNK AND RESVERATROL ON INOS EXPRESSION AND INITIATION OF TUMORIGENESIS IN THE LIVER OF FEMALE A/J MICE.** R. H. Nsaif, O. M. Philip and *C. S. Mehta*. College of Pharmacy and Health Sciences, Texas Southern Univesity, Houston, TX.

#1660 **EPIGENETIC MECHANISMS OF ORGANIC TUMOR PROMOTERS AND THE ANTICARCINOGENIC ROLE OF RESVERATROL.** *B. L. Upham*, J. P. Scott, J. M. Carbone, L. Lee, A. M. Rummel and *J. E. Trosko*. Pediatrics & Human Development, National Food Safety and Toxicology Center, Michigan State University, East Lansing, MI.

Wednesday Afternoon, March 24
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: CYTOCHROME P450 REGULATION BY XENOBIOTICS

Chairperson(s): *Rhonda Rosengren, University of Otago, New Zealand and Bhagavatula Moorthy, Baylor College of Medicine, Houston, TX.*

Displayed: *1:30 PM–4:30 PM*

Attended*: 3:00 PM–4:30 PM*

#1661 **MOLECULAR CLONING OF CYTOCHROME P450 2 AND 3A FROM LARGEMOUTH BASS.** A. McNally, T. Knowles and *D. S. Barber*. Center for Environmental and Human Toxicology, University of Florida, Gainesville, FL.

#1662 **ROLE OF USF AND NF-1 PROTEINS IN THE BASAL EXPRESSION OF HUMAN CYP1A2.** *M. J. Narvaez*[2], *G. V. Pickwell*[1] and *L. C. Quattrochi*[1]. [1]Medicine, University of Colorado Health Sciences. Ctr., Denver, CO and [2]Pharmaceutical Sciences, University of Colorado Health Sciences. Ctr., Denver, CO.

#1663 **NONYLPHENOL ATTENUATES P450 INDUCTION BY TCPOBOP IN FVB/NJ MICE.** J. P. Hernandez and *W. Baldwin*. Biological Sciences, University of Texas at El Paso, El Paso, TX.

#1664 **DEVELOPMENT OF CHEMILUMINESCENT ASSAYS FOR MEASURING CYTOCHROME P450 ISOFORMS.** K. Roberts[1, 2], R. Morgan[1], C. Morris[1] and S. Woodhead[1]. [1]Molecular Light Technology Research, Cardiff, CF14 5DL, United Kingdom and [2]Cardiff University, School of Biosciences, PO Box 911, Cardiff, CF10 3US, United Kingdom. Sponsor: *A. Smith*.

#1665 **DEVELOPMENTAL CYTOCHROME P450 EXPRESSION IN THE MOUSE LUNG: SUSCEPTIBILITY DIFFERENCES TO METABOLICALLY-ACTIVATED PULMONARY CYTOTOXICANTS.** A. Taff[1, 2], M. Bartosiewicz[1], D. Rocke[3], K. Ruggiero[4], K. Butler[5], *A. Buckpitt*[1] and *C. Plopper*[2]. [1]Molecular Biology, School of Veterinary Medicine, University of California, Davis, CA, [2]Anatomy, Physiology, Cell Biology, School of Veterinary Medicine, University of California, Davis, CA, [3]Applied Science, University of California, Davis, CA, [4]CSIRO Mathematical and Informational Sciences, Canberra, ACT, Australia and [5]Primary Industries Research, Victoria, Australia.

#1666 **SYNERGISTIC INDUCTION OF CYP3A4 EXPRESSION BY RIFAMPICIN AND TCDD IN PXR-ENHANCED HEPG2 CELLS.** X. Gu[1], T. Sheng[1], S. Ke[1], *P. E. Thomas*[2], W. Xie[3] and *Y. Tian*[1]. [1]Vet. Physiology and Pharmacology, Texas A&M University, College Station, TX, [2]EOHSI, Rutgers University, Piscataway, NJ and [3]Center for Pharmacogenetics, School of Pharmacy, University of Pittsburgh, Pittsburgh, PA.

#1667 **ALTERED HEPATIC CYTOCHROME P450 ENZYME EXPRESSION IN A CHOLESTATIC MOUSE MODEL.** *S. M. Bandiera*[1], E. G. Hrycay[1], D. Forrest[2], R. Wang[2] and V. Ling[2]. [1]Faculty of Pharmaceutical Sciences, University of British Columbia, Vancouver, BC, Canada and [2]British Columbia Cancer Research Center, British Columbia Cancer Agency, Vancouver, BC, Canada.

#1668 **EXPRESSION OF CYP1A1 AND 1B1 MNRA IN BLOOD LYMPHOCYTES FROM TWO POPULATIONS IN SLOVAKIA COMPARED TO TOTAL PCBs LEVELS AND TEQS IN BLOOD.** *M. van den Berg*[1], R. Fernandez Canton[1], A. Kocan[2], H. T.Besselink[3], *T. Sanderson*[1] and *B. Brouwer*[4]. [1]Institute for Risk Assessment Sciences, Utrecht, Netherlands, [2]National Reference Center for Dioxins and Related Compounds, Bratislava, Slovakia, [3]Biodetection Systems B.V., Amsterdam, Netherlands and [4]Institute for Environmental Studies, Amsterdam, Netherlands.

#1669 **HISTONE DEACETYLATION EFFECTS OF THE CYP1A1 PROMOTER ACTIVITY, PROLIFERATION AND APOPTOSIS OF CELLS IN HEPATIC, PROSTATE AND BREAST CANCER CELLS.** K. Min, K. Joung, M. Cho, J. An, D. Kim and Y. Y. Sheen. Pharmacy, Ewha Womans University, Seoul, seoul, South Korea. Sponsor: *Y. Cha*.

#1670 **EFFECTS OF QUERCETIN AND AMENTOFLAVONE ON CYP1 EXPRESSION IN RL95-2 ENDOMETRIAL CARCINOMA CELLS.** Z. R. Master and *K. L. Willett*. Pharmacology, University of Mississippi, Oxford, MS.

#1671 **NO RELATIONSHIP BETWEEN NF-κB ACTIVATION BY PPARα AGONISTS AND TCDD-MEDIATED INDUCTION OF *CYP1A1*.** 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.

#1672 **EFFECT OF EPIGALLOCATECHIN GALLATE AND EPICATECHIN GALLATE ON CYP450 ISOFORMS IN THE MALE SWISS WEBSTER MOUSE.** M. G. Goodin and *R. J. Rosengren*. Pharmacology and Toxicology Department, University of Otago, Dunedin, New Zealand.

#1673 **ENDOGENOUS REGULATION OF CYP1A1 INDUCTION IN HEPA 1c1c7 CELLS IS MEDIATED BY CALCIUM-DEPENDENT ADHESION.** L. M. Van Pay[1], M. A. Pickart[2, 3], C. R. Ivarie[3] and *B. Allen-Hoffmann*[1, 2, 3]. [1]Molecular and Environmental Toxicology, University of Wisconsin, Madison, WI, [2]Biotechnology Training Program, University of Wisconsin, Madison, WI and [3]Pathology and Laboratory Medicine, University of Wisconsin, Madison, WI.

#1674 **EFFECT OF THIABENDAZOLE ON RAT HEPATIC XENOBIOTIC METABOLISING ENZYME ACTIVITIES.** *B. G. Lake*, C. Meredith, M. P. Scott and R. J. Price. BIBRA International Ltd., , Carshalton, Surrey, United Kingdom.

#1675 **CYP2E1 GENOTYPE AND PHENOTYPE IN A POPULATION OCCUPATIONALLY EXPOSED TO VOLATILE ORGANIC CHEMICALS (VOCS).** A. Mendoza-Cantu[1], F. Castorena-Torres[1], M. Bermudez[1], R. A. Reyes[1], L. Lopez-Carrillo[2] and *A. Albores*[1]. [1]Cinvestav-IPN, Mexico City, D.F., Mexico and [2]Instituto Nacional de Salud Publica, SS, Cuernavaca, Mor., Mexico.

#1676 **CYP1A2 GENO- AND PHENOTYPE IN A POPULATION OF THE COAL REGION IN NORTHERN MEXICO.** F. Castorena[1], A. Mendoza-Cantu[1], M. Bermudez[1], L. Lopez-Carrillo[2], J. E. Salinas-Moreno[3] and *A. Albores*[1]. [1]Cinvestav-IPN, Mexico City, D.F., Mexico, [2]Instituto Nacional de Salud Publica, SS, Cuernavaca, Mor., Mexico and [3]Secretaria de Salud, Sabinas, Coah., Mexico.

#1677 **EFFECT OF SOY DIET ON EXPRESSION OF ADRENAL CYTOCHROMES P450 (CYP) 1A1, 1B1, 11A, AND STEROIDOGENIC ACUTE REGULATORY PROTEIN (STAR) IN RATS AFTER ADMINISTRATION OF 7, 12-DIMETHYLBENZANTHRACENE (DMBA).** *X. Fu*[1], B. Blaydes[1], S. Cooper[1], *J. R. Latendresse*[2], L. Muskhelishvili[2], L. J. Hennings[2] and *B. Delclos*[1]. [1]Biochemical Toxicology, NCTR, Jefferson, AR and [2]Pathology Associates International, Jefferson, AR.

#1678 **ROLE OF CYTOCHROME P4501A2 IN THE METABOLIC ACTIVATION OF 3-METHYLCHOLANTHRENE TO GENOTOXIC METABOLITES THAT PREFERENTIALLY BIND TO CYP1A1 PROMOTER *IN VITRO* AND MODULATE CYP1A1 GENE EXPRESSION.** *B. Moorthy*[1], K. Muthiah[1], S. R. Kondraganti[1], G. Zhou[2] and W. Jiang[1]. [1]Pediatrics, Baylor College of Medicine, Houston, TX and [2]School of Rural Public Health, Texas A&M University system, Houston, TX.

#1679 **ARSENITE DECREASES PHENOBARBITAL- AND RIFAMPICIN-MEDIATED INDUCTION OF CYP3A4 BY DIFFERENT MECHANISMS IN CULTURED HUMAN HEPATOCYTES.** *T. L. Noreault*[1], V. E. Kostrubsky[2], S. G. Wood[3], R. C. Nichols[3, 6], S. C. Strom[4], H. W. Trask[3], *S. A. Wrighton*[5], J. M. Jacobs[3], P. R. Sinclair[3, 1] and *J. F. Sinclair*[3, 1]. [1]Pharmacology & Toxicology, Dartmouth Medical School, Hanover, NH, [2]Department of Safety Sciences, Pfizer, Ann Arbor, MI, [3]Research, VA Medical Center, White River Junction, VT, [4]Pathology, University Pittsburgh Med. Ctr, Pittsburgh, PA, [5]Research Laboratories, Lilly, Indianapolis, IN and [6]Microbiology/Immunology, Dartmouth Medical School, Indianapolis, NH.

#1680 **EXPRESSION OF AH RECEPTOR, ARNT, CYP1A1, AND CYP1B1 IN RAT MAMMARY EPITHELIA *IN VITRO* IS EACH SUBSTANTIALLY ELEVATED BY SPECIFIC EXTRACELLULAR MATRIX INTERACTIONS THAT PRECEDE DUCTAL FORMATION.** M. L. Larsen[1], *R. S. Pollenz*[2] and *C. R. Jefcoate*[1]. [1]Pharmacology, University of Wisconsin, Madison, WI and [2]Biology, University of South Florida, Tampa, FL.

Wednesday Afternoon, March 24
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: CYTOCHROME P450-MEDIATED METABOLISM OF XENOBIOTICS

Chairperson(s): *Xanthi Couroucli, Baylor College of Medicine, Houston, TX and Steve Shedlofsky, University of Kentucky, Lexington, KY.*

Displayed: *1:30 PM–4:30 PM*

Attended: *1:30 PM–3:00 PM*

#1681 **ACTIVITIES OF CYP2E1 AND 1A2 IN PATIENTS WITH HEPATITIS C (HC) AND HC-ASSOCIATED PORPHYRIA CUTANEA TARDA (PCT/HC).** *S. I. Shedlofsky*[1, 3], R. T. Tosheva[1], R. A. Blouin[1], C. M. Charriez[1], C. K. Hallberg[2] and K. Anderson[2, 3]. [1]University of Kentucky, Lexington, KY, [2]University of Texas Med. Branch, Galveston, TX and [3]General Clinical Research Centers, Lexington, KY.

#1682 **IDENTIFICATION OF CYP2E1-DEPENDENT GENES INVOLVED IN CARBON TETRACHLORIDE INDUCED LIVER INJURY: A MODEL FOR CHEMICAL TOXICITY MEDIATED BY FREE RADICALS.** S. Avasarala and S. Lee. Biochemistry, The Chinese University of Hong Kong, Shatin, Hong Kong, Hong Kong. Sponsor: *K. Chan*.

#1683 **NEUROPROTECTIVE EFFECTS OF CYP2D6 OVEREXPRESSION IN DIFFERENTIATED PC12 CELLS.** *R. D. Harbison*[1], M. Banasik[1, 2], T. Stedeford[1, 2], N. Matoh[3], S. Tanaka[3], M. Takehashi[3] and K. Ueda[3]. [1]Department of Environmental and Occupational Health, University of South Florida, Tampa, FL, [2]Laboratory of Toxicology and Risk Assessment, Polish Academy of Sciences, Gliwice, Poland and [3]Laboratory of Molecular Clinical Chemistry, Institute for Chemical Research, Kyoto University, Uji, Japan.

#1684 **EFFECT OF THE PROTOTYPICAL INDUCER RIFAMPICIN ON CYTOCHROME P450 3A INDUCTION IN LONG-TERM CULTURES OF HUMAN HEPATOCYTES.** C. M. Chandler, *G. Zhang*, R. Clark, *C. L. Crespi* and *D. M. Stresser*. Discovery Labware, BD Biosciences, Woburn, MA.

#1685 **THE USE OF IMMORTALIZED HEPATOCYTES IN METABOLISM AND INDUCTION STUDIES.** K. C. Lyon, M. Czerwinski, P. Toren, M. Perry and *A. Parkinson*. XenoTech LLC, Lenexa, KS.

#1686 **VALIDATION OF POOLED CRYOPRESERVED HUMAN HEPATOCYTES AS A MODEL FOR METABOLISM STUDIES.** *G. Zhang*, C. M. Chandler, A. Dandeneau, *C. L. Crespi* and *D. M. Stresser*. Discovery Labware, BD Biosciences, Woburn, MA.

#1687 **THE ONTOGENY OF HEPATIC CYTOCHROME P450S IN SPRAGUE-DAWLEY RATS.** B. T. McPhail, S. Muralidhara and *J. Bruckner*. University of Georgia, Athens, GA.

#1688 **ORAL ADMINISTRATION OF BENZO(A)PYRENE IN THE INTACT MOUSE: DETOXICATION BY INDUCIBLE CYP1A1 IS MUCH MORE IMPORTANT THAN METABOLIC ACTIVATION.** *D. W. Nebert*, H. Dong, *T. P. Dalton*, M. L. Miller, S. Derkenne, C. Curran and S. Uno. Environmental Health and Center for Environmental Genetics, University of Cincinnati, Cincinnati, OH.

#1689 **ABILITY OF FLAVONOIDS IN ST. JOHN'S WORT TO DECREASE CYP1 ACTIVITIES.** A. M. Chaudhary and *K. L. Willett*. Pharmacology, The University of Mississippi, University, MS.

#1690 **THEOPHYLLINE METABOLISM AND PHARMACOKINETICS IN CYP1A2(+/+) WILD-TYPE AND CYP1A2(-/-) KNOCKOUT MICE.** S. Derkenne, *C. Curran*, *T. P. Dalton*, *H. G. Shertzer* and *D. W. Nebert*. University of Cincinnati, Cincinnati, OH.

#1691 **DECREASED CYP1A1-DEPENDENT ENZYME ACTIVITY AND PROTEIN LEVELS IN HEPG2 CELLS EXPOSED TO BENZO(A)PYRENE IN THE PRESENCE OF 1-NITROPYRENE.** S. Cherng[1, 2], S. Hsu[3], J. Yang[4] and H. Lee[1]. [1]Institute of Toxicology, Chung Shan Medical University, Taichung, Taiwan, [2]Food Science and Nutrition, Hung Kuang University, Taichung, Taiwan, [3]Department of Education & Research, Taichung Veterans General Hospital, Taichung, Taiwan and [4]Department of Life Science, National Tsing Hua University, Hsinchu, Taiwan. Sponsor: *P. Howard*.

#1692 **ROLE OF MOUSE CYP2E1 IN THE O-HYDROXYLATION OF P-NITROPHENOL: COMPARISON OF ACTIVITIES IN *CYP2E1* (-/-) AND WILDTYPE MICE.** *K. K. Wolf*[1], S. G. Wood[3], J. L. Bement[3], P. R. Sinclair[3, 2, 1], *S. A. Wrighton*[4], *E. Jeffery*[5], F. J. Gonzalez[6] and *J. F. 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 and Human Nutrition, University of Illinois, Urbana, IL and [6]Laboratory of Drug Metabolism/ Disposition, National Cancer Institute, Bethesda, MD.

#1693 **STUDY OF METABOLIC INTERACTIONS OF FIPRONIL AND SOME CYP3A4 SUBSTRATES.** *J. Tang*, *A. Usmani*, *E. Hodgson* and *R. L. Rose*. Environmental and Molecular Toxicology, North Carolina State University, Raleigh, NC.

#1694 **N-DEALKYLATION OF N-ETHYL-N-(2-HYDROXYETHYL)PERFLUOROOCTANESULFONAMIDE (N-ETFOSE) BY RAT LIVER MICROSOMES AND BY EXPRESSED RAT AND HUMAN CYTOCHROMES P450 (CYPS).** L. Xu[1], *A. S. Seacat*[2], *J. L. Butenhoff*[2] and *M. W. Anders*[1]. [1]Pharmacology and Physiology, University of Rochester, Rochester, NY and [2]3M Co., St. Paul, MN.

#1695 **COMPARATIVE HEPATIC MICROSOMAL ENZYME STUDIES IN COMMERCIALLY RAISED GAMEBIRDS.** K. A. Cortright and *A. L. Craigmill*. Environmental Toxicology, University of California-Davis, Davis, CA.

#1696 **CYTOCHROME P450 ENZYME ACTIVITIES IN EMBRYONIC TURKEY LIVER.** C. E. Perrone[1], L. Leung[2], J. Kao[2], H. Yasmeen[2], G. L. Fisher[2] and *G. M. Williams*[1]. [1]Pathology, New York Medical College, Valhalla, NY and [2]Drug Safety and Metabolism, Wyeth Research, Collegeville, PA.

#1697 **MODULATION OF HEPATIC AND PULMONARY CYTOCHROME P4501A1 EXPRESSION BY HYPEROXIA AND INHALED NITRIC OXIDE IN THE NEWBORN RAT: IMPLICATIONS FOR LUNG INJURY.** *X. I. Couroucli*, Y. Wei, W. Jiang, L. Evey and *B. Moorthy*. Pediatrics, Baylor College of Medicine, Houston, TX.

#1698 **DECREASED ACETAMINOPHEN TOXICITY IN LUNG AND KIDNEY, BUT NOT NASAL MUCOSA, OF MICE WITH LIVER-SPECIFIC KNOCKOUT OF THE NADPH-CYTOCHROME P450 REDUCTASE GENE.** *J. Gu*, *H. Cui*, M. Behr, L. Zhang, Q. Zhang, Y. Weng, W. Yang and *X. Ding*. Wadsworth Center, New York State Department of Health, Albany, NY.

#1699 **INJURY PATTERNS IN THE NASAL PASSAGE FROM INHALED NA ARE RELATED TO AIRFLOW PATTERNS AND IN SITU METABOLISM OF NA IN SPRAGUE-DAWLEY RATS.** M. G. Lee[1], S. Camacho[2], *A. R. Buckpitt*[2] and *C. G. Plopper*[1]. [1]Department of Anatomy, Physiology, and Cell Biology, School of Veterinary Medicine, University of California, Davis, Davis, CA and [2]Department of Molecular Biosciences, School of Veterinary Medicine, University of California, Davis, Davis, CA.

#1700 **TARGETED DISRUPTION OF THE OLFACTORY MUCOSA-SPECIFIC CYP2G1 GENE: IMPACT ON ACETAMINOPHEN TOXICITY IN THE LATERAL NASAL GLAND, AND TISSUE-SELECTIVE EFFECTS ON CYP2A5 EXPRESSION.** *H. Cui*, *X. Zhuo*, *J. Gu*, M. Behr, P. Swiatek, Q. Zhang, Y. Xie, D. Collins and *X. Ding*. Wadsworth Center, New York State Department of Health, Albany, NY.

#1701 **MECHANISM-BASED INACTIVATION OF HUMAN PULMONARY CYTOCHROME P450 2F1 BY PNEUMOTOXIN 3-METHYLINDOLE.** J. S. Kartha, *K. W. Skordos*, D. L. Lanza and *G. S. Yost*. Pharmacology and Toxicology, University Of Utah, Salt lake city, UT.

#1702 **INVESTIGATION OF THE IRREVERSIBILITY OF CYP450 INHIBITION CAUSED BY M-XYLENE AND METABOLITES IN RAT LUNG AND NASAL MUCOSA.** *A. Vaidyanathan* and *R. Schatz*. Pharmacology Sciences., Northeastern University, Boston, MA.

Wednesday Afternoon, March 24
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: GENE EXPRESSION II

Chairperson(s): *John Davis, Schering-Plough, Lafayette, NJ.*

Displayed: *1:30 PM–4:30 PM*

Attended: *3:00 PM–4:30 PM*

#1703 **TOXICOGENOMICS PROJECT IN JAPAN—OBJECTIVE AND PROPOSAL.** T. Urushidani[1, 2], J. Kanno[1], T. Miyagishima[2] and T. Nagao[3, 2]. [1]Cell. & Mol. Toxicol., National Institute of Health Sciences(NIHS), Tokyo, Japan, [2]Toxicogenomics Project, NIHS, Tokyo, Japan and [3]Director General, NIHS, Tokyo, Japan. Sponsor: *S. Tsuda*.

#1704 **USING TRANSCRIPT PROFILING FOR PREDICTIVE TOXICOLOGY: OPPORTUNITIES AND CHALLENGES.** R. A. Jolly, K. M. Goldstein, T. Wei, J. Colet, H. Gao, T. P. Ryan, *C. E. Thomas*, H. B. Harlow, K. Kramer, S. Patwardhan, S. T. Estrem and *J. L. Stevens*. Exploratory Toxicology, Lilly Research Labs, Indianapolis, IN.

#1705 **FORMULATION OF RNA PERFORMANCE STANDARDS FOR REGULATORY TOXICOGENOMIC STUDIES.** B. A. Rosenzweig[1], E. Mansfield[1], P. Pine[1], *F. D. Sistare*[1], J. C. Fuscoe[2] and K. Thompson[1]. [1]Division of Applied Pharmacology Research, CDER, USFDA, Laurel, MD and [2]Center for Functional Genomics, NCTR, USFDA, Jefferson, AR.

#1706 **LASER MICRODISSECTION AND ITS APPLICATION IN TOXICOGENOMICS.** W. Hu, M. Taurino, M. Wojke, T. Monticello and *Z. Jayyosi*. Drug Safety Evaluation, Aventis Inc., Bridgewater, NJ.

#1707 **EXPRESSION ANALYSIS OF NOVEL BIOMARKERS OF NEPHROTOXICITY USING LASER CAPTURE MICRODISSECTION (LCM) AND IMMUNOHISTOCHEMISTRY (IHC).** *L. A. Obert*[2], *J. W. Davis*[1], F. Goodsaid[1], K. Milford[2], P. Louro[2], M. Geraci[2], R. J. Smith[1] and *I. Y. Rosenblum*[1]. [1]Molecular Toxicology, Schering-Plough, Lafayette, NJ and [2]Pathology, Schering-Plough, Lafayette, NJ.

#1708 **QUANTIFYING GENE EXPRESSION NETWORKS: IDENTIFYING NETWORK STRUCTURE.** T. Yamanaka[1], H. Toyoshiba[1], *N. Walker*[1], F. Parham[1], *J. Martinez*[1], H. Sone[1] and *C. Portier*[1]. [1]Laboratory of Computational Biology and Risk Analysis, National Institute of Environmental Health Sciences, Research Triangle Park, NC and [2]LCBRA, NIEHS, Research Triangle Park, NC.

#1709 **ESTROGENICITY OF THE DIETARY INDOLE, 3, 3'-DIINDOLYLMETHANE, IN RAINBOW TROUT (*ONCORHYNCHUS MYKISS*).** *S. C. Tilton* and *D. E. Williams*. Environmental and Molecular Toxicology and The Marine and Freshwater Biomedical Sciences Center, Oregon State University, Corvallis, OR.

#1710 **ESTROGEN-INDUCED GENE EXPRESSION IN HUMAN UTERINE LEIOMYOMA AND NORMAL UTERINE SMOOTH MUSCLE CELL LINES.** C. Swartz[1], *C. Afshari*[2], L. Yu[1], K. Hall[1] and *D. Dixon*[1]. [1]NIEHS, Research Triangle Park, NC and [2]Amgen, Thousand Oaks, CA.

#1711 **DIFFERENTIAL GENE EXPRESSION BY ANDROGENS AND ESTRADIOL BY MICROARRAY ANALYSIS IN THE LARGEMOUTH BASS (MICROPTERUS SALMOIDES).** J. L. Blum[2], P. Larkin[4], K. J. Kroll[3] and *N. D. Denslow*[1, 3]. [1]Biochemistry and Molecular Biology, University of Florida, Gainesville, FL, [2]Graduate Program in Pharmacology, University of Florida, Gainesville, FL, [3]Biotechnology Program, University of Florida, Gainesville, FL and [4]EcoArray, LLC, Alachua, FL.

#1712 **DOSE RESPONSE ANALYSIS OF FEMORAL CHANGES IN GENE EXPRESSION ELICITED BY ETHYNYL ESTRADIOL USING CDNA MICROARRAYS.** J. Burt[1, 3], *L. D. Burgoon*[2, 3], D. R. Boverhof[1, 3], Y. Sun[1, 3] and *T. R. Zacharewski*[1, 3]. [1]Biochemistry and Molecular Biology, Michigan State University, East Lansing, MI, [2]Pharmacology & Toxicology, Michigan State University, East Lansing, MI and [3]Institute of Environmental Toxicology, Michigan State University, East Lansing, MI.

#1713 **THE USE OF GENE EXPRESSION PROFILING FOR IDENTIFYING POTENTIAL BIOMARKERS OF REPRODUCTIVE TOXICOLOGY.** L. Nelms[1], R. E. Chapin[2], B. Lu[1], S. J. Curry[2], M. B. Wilhelms[3], M. R. Elwell[3], D. Pelletier[1] and *M. P. Lawton*[1]. [1]Molecular and Investigative Toxicology, Pfizer, Groton, CT, [2]Investigative Developmental Toxicology, Pfizer, Groton, CT and [3]Pathology, Pfizer, Groton, CT.

#1714 **EXPRESSION PROFILING THE HEPATIC RESPONSE OF RATS TREATED WITH FENOFIBRATE AND FIVE OTHER FIBRATE ANALOGUES.** *P. D. Cornwell*, A. T. De Souza and R. G. Ulrich. Molecular Profiling, Rosetta Inpharmatics, Merck Research Labs, Kirkland, WA.

#1715 **GENE EXPRESSION PROFILE OF HEPATIC STEATOSIS IN PPARα-DEFICIENT MOUSE LIVER AFTER EXPOSURE TO HYDRAZINE.** *V. E. Richards*, B. Chau and *C. A. McQueen*. Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

#1716 **EFFECT OF FURAN, CHLOROFORM, DI-(2-ETHYLHEXYL)PHTHALATE (DEHP) AND OXAZEPAM ON BIOMARKERS OF CELL CYCLING AND PROLIFERATION IN MOUSE LIVER.** C. Meredith[1], M. P. Scott[1], A. Barton[2], R. J. Price[1], T. R. Hupp[3], *C. R. Elcombe*[2] and *B. G. Lake*[1]. [1]BIBRA International Ltd., , Carshalton, Surrey, United Kingdom, [2]CXR Biosciences Ltd., , Dundee, United Kingdom and [3]University of Dundee, Dundee, United Kingdom.

#1717 **DI(2-ETHYLHEXYL) PHTHALATE INDUCED GENE EXPRESSION CHANGES.** *J. S. Wong*. Cell Biology & Neuroscience, Environmental Toxicology Program, University of California, Riverside, CA.

#1718 **CHEMICAL GENOMICS ANALYSIS OF GENE EXPRESSION PROFILES TO HELP ELUCIDATE MOLECULAR MECHANISMS OF ANTI-BREAST CANCER AGENTS.** C. Yang[1, 3], P. Blower[1], K. Cross[1], G. Myatt[1], J. Richards[2], R. Brueggemeier[2] and J. Rathman[3]. [1]Leadscope, Inc., Columbus, OH, [2]College of Pharmacy, The Ohio State University, Columbus, OH and [3]Chemical Engineering, The Ohio State University, Columbus, OH. Sponsor: *D. Johnson*.

#1719 **IDENTIFICATION OF GENE EXPRESSION CHANGE AS A FUNCTION OF DOSE IN A MICROARRAY EXPERIMENT.** K. Dawson[1], J. E. Eckel[1], C. Gennings[1], D. Boverhof[2] and *T. Zacharewski*[2, 3, 4]. [1]Biostatistics, VA Commonwealth University, Richmond, VA, [2]Department of Biochemistry & Molecular Biology, Michigan State University, East Lansing, MI, [3]Nation Food Safety & Toxicology Center, Michigan State University, East Lansing, MI and [4]Institute for Environmental Toxicology, Michigan State University, East Lansing, MI.

#1720 **NORMALIZATION OF MICROARRAY DOSE-RESPONSE DATA.** J. Eckel[1], C. Gennings[1], K. Dawson[1], D. Boverhof[2] and *T. Zacharewski*[2]. [1]Department of Biostatistics, Virginia Commonwealth University, Richmond, VA and [2]Department of Biochemistry & Molecular Biology, National Food Safety & Toxicology Center and Institute for Environmental Toxicology, Michigan State University, East Lansing, MI.

Wednesday Afternoon, March 24
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: CHEMICAL & BIOLOGICAL WARFARE POSTERS

Chairperson(s): *Richard Carchman, N/A, Columbia, VA and Gary Rosenthal, RxKinetix, Drug Development, Louisville, CO.*

Displayed: *1:30 PM–4:30 PM*

Attended*: 1:30 PM–3:00 PM*

#1721 **USE OF RAY DESIGNS IN EVIDENCE-BASED DECISIONS INVOLVING MIXTURES OF LARGE NUMBERS OF CHEMICALS.** C. Gennings, H. Carter, K. Fisher and *R. Carchman*. Solveritas, LLC, Richmond, VA.

#1722 **IMPROVED DETERMINATION OF REGENERATED SARIN (GB) IN MINIPIG AND HUMAN BLOOD BY GAS CHROMATOGRAPHY-CHEMICAL IONIZATION MASS SPECTROMETRY USING ISOTOPE DILUTION AND LARGE VOLUME INJECTION.** E. M. Jakubowski[1], J. M. McGuire[2], J. L. Edwards[2], R. A. Evans[2], S. W. Hulet[1], B. J. Benton[1], J. S. Forster[1], D. C. Burnett[1], W. T. Muse[1], C. L. Crouse[2], R. J. Mioduszewski[1] and *S. A. Thomson*[1]. [1]Toxicology Team, Edgewood Chemical Biological Center, APG-Edgewood, MD and [2]Geo-Centers, APG-Edgewood, MD.

#1723 **THE INHALATION TOXICITY OF GB VAPOR IN RATS AS A FUNCTION OF EQUILIBRATION TIME FOR TEN MINUTE EXPOSURES.** J. S. Anthony[1], M. V. Haley[1], J. H. Manthei[1], R. A. Way[1], D. C. Burnett[1], B. P. Gaviola[1], D. R. Sommerville[1], R. B. Crosier[1], *R. J. Mioduszewski*[1], *S. A. Thomson*[1], C. L. Crouse[2] and K. L. Matson[2]. [1]Edgewood Chemical Biological Center, Department of the Army, Aberdeen Proving Ground, MD and [2]Geo-Centers Inc., Abingdon, MD.

#1724 **CLINICAL SAFETY OF REACTIVE SKIN DECONTAMINATION LOTION (RSDL).** *D. A. Tonucci*[1], S. Masaschi[1], L. Lockhart[1], M. Millward[1], D. Liu[2], R. Clawson[2], V. Murphy[3], P. O'Dell[4], M. C. Lanouette[5], T. Hayes[6] and *C. Sabourin*[6]. [1]Hill Top Research, Cincinnati, OH, [2]Chemical Biological Medical Systems Project Management Office, Ft Detrick, MD, [3]MarCorSysCom, Quantico, VA, [4]O'Dell Engineering, Cambridge, ON, Canada, [5]Canadian Department of National Defense, Ottawa, ON, Canada and [6]Battelle, Columbus, OH.

#1725 **DETERMINATION OF RADIOPROTECTIVE EFFICACY OF GENISTEIN WHEN ADMINISTERED BEFORE OR AFTER IONIZING RADIATION.** *M. R. Landauer* and V. Srinivasan. Radiation Pathophysiology and Toxicology, Armed Forces Radiobiology Research Institute, Bethesda, MD.

#1726 **SEIZURE/STATUS EPILEPTICUS AND ANIMAL TOXICITY INDUCED BY LITHIUM PILOCARPINE CLOSELY MIMICS HIGH-DOSE ORGANOPHOSPHATE EXPOSURE.** *M. P. Nambiar*[1], L. M. Tetz[1] and R. K. Gordon[1]. [1]Biochemical Pharmacology, Walter Reed Army Institute of Research, Silver Spring, MD, [2]Biochemical pharmacology, WRIAR, Silver Spring, MD and [3]Biochemical Pharmacology, WRIAR, Silver Spring, MD.

#1727 **REPEATED LOW-LEVEL EXPOSURE TO ORGANOPHOSPHATE VX ACTIVATES BRAIN-DERIVED NEUROTROPHIC FACTOR IN MOUSE BRAIN.** W. E. Chang[1], J. M. Pizarro[1], G. A. Saviolakis[1], E. G. Midboe[2], M. J. Bah[1], A. Alagappan[1], C. L. Robison[1], J. L. Meyerhoff[1], J. D. Shah[1] and L. A. Lumley[1]. [1]Neurosciences, Walter Reed Army Inst. Research, Silver Spring, MD and [2]Pharmacology, USAMRICD, Aberdeen Proving Ground, MD. Sponsor: *J. Yourick*.

#1728 **LOW-LEVEL EFFECTS OF VX VAPOR EXPOSURE ON PUPIL SIZE IN RATS.** B. J. Benton[1], K. L. Matson[2], C. L. Crouse[2], J. S. Forster[1], E. M. Jakubowski[1], J. S. Anthony[1], J. Scotto[1], J. H. Manthei[1], R. A. Way[1], S. W. Hulet[1], C. E. Whalley[1], D. C. Burnett[1], B. I. Gaviola[1], W. T. Muse[1], D. B. Miller[2], R. J. Mioduszewski[1] and *S. A. Thomson*[1]. [1]US Army Edgewood Chemical Biological Command, Aberdeen Proving Ground, MD and [2]Geo-Centers, Inc., Gunpowder, MD.

#1729 **A COMPARISON OF BASELINE CHOLINESTERASE LEVELS AND THE INHIBITORY RESPONSE TO PYRIDOSTIGMINE IN WHOLE BLOOD, PLASMA, AND RBCS FROM HUMANS AND SEVERAL NONHUMAN PRIMATE SPECIES.** N. A. Niemuth[1], *C. T. Olson*[1], T. L. Hayes[1], G. van der Zwaag[1], C. Matthews[1], D. E. Lenz[2] and I. Koplovitz[2]. [1]Medical Research and Evaluation Facility, Battelle Memorial Institute, Columbus, OH and [2]US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD.

#1730 **LOCALIZATION OF SUBSTANCE P GENE EXPRESSION FOR EVALUATING PROTECTIVE COUNTERMEASURES AGAINST SULFUR MUSTARD.** *S. L. Casbohm*[1], J. V. Rogers[1], M. K. Stonerock[1], J. L. Martin[2], K. M. Ricketts-Kaminsky[2], *M. C. Babin*[1], *R. P. Casillas*[1] and *C. L. Sabourin*[1]. [1]Medical Research & Evaluation Facility, Battelle, Columbus, OH and [2]US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD.

#1731 **PROTEOLYTIC CLEAVAGE AND COUNTER-IRRITATING EFFECT OF H2A HISTONE FRAGMENT AGAINST SULFUR MUSTARD-INDUCED SKIN LESIONS.** *University. Wormser* and B. Brodsky. Institute of Life Sciences, The Hebrew University, Jerusalem, Israel.

#1732 **REDUCED SULFUR MUSTARD-INDUCED SKIN TOXICITY IN CYCLOOXYGENASE-2 KNOCKOUT AND CELECOXIB-TREATED MICE.** A. Nyska[1], A. Sintov[2], R. Langenbach[3], B. Brodsky[4] and *University. Wormser*[4]. [1]Laboratory of Experimental Pathology, NIEHS, Research Triangle Park, NC, [2]Institutes for Applied Research, Ben Gurion University of the Negev, Beer-Sheva, Israel, [3]Laboratory of Molecular Carcinogenesis, NIEHS, Research Triangle Park, NC and [4]Institute of Life Sciences, The Hebrew University, Jerusalem, Israel.

#1733 **GENE EXPRESSION IN MICE EXPOSED TO LOW AND HIGH LEVELS OF SULFUR MUSTARD.** J. V. Rogers[1], Y. W. Choi[1], R. C. Kiser[1], *R. P. Casillas*[1], *M. C. Babin*[1], *J. J. Schlager*[2] and *C. L. Sabourin*[1]. [1]Medical Research & Evaluation Facility, Battelle Memorial Institute, Columbus, OH and [2]Pharmacology Division, US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD.

#1734 **EFFECTS OF THE CHEMICAL WARFARE AGENT SULFUR MUSTARD ON OXIDATIVE METABOLISM IN CULTURED HUMAN EPIDERMAL KERATINOCYTES.** M. E. Martens. Biochemical Pharmacology Branch, US Army Medical Res. Inst. Chemical Defense, Aberdeen Proving Ground, MD. Sponsor: *A. Brimfield*.

#1735 **THE USE OF FLOW CYTOMETRY TO DETERMINE THE EFFECTS OF THE VESICATING AGENTS SULFUR MUSTARD (SM) AND LEWISITE (L) ON HUMAN T CELLS (CD3+).** H. L. Meier. BiochemPharmacology, USAMRICD, Aberdeen Proving Ground, MD. Sponsor: *A. Brimfield*.

#1736 **THIODIGLYCOL METABOLISM BY ALCOHOL DEHYDROGENASE USING NMR: SYNTHETIC ROUTE TO THE METABOLIC INTERMEDIATE HYDROXYETHYLTHIOACETALDEHYDE.** *A. A. Brimfield*[1] and M. J. Novak[2]. [1]Biochemical Pharmacology, USAMRICD, Aberdeen Proving Ground, MD and [2]Chemistry, Florida Institute of Technology, Melbourne, FL.

#1737 **REAL-TIME CONCENTRATION AND RESPIRATORY MONITORING TO CONTROL PRESENTED DOSE IN AN AUTOMATED AEROSOL EXPOSURE SYSTEM.** J. M. Hartings[1, 2], B. R. Goodenow[2] and *C. J. Roy*[2]. [1]Biaera Technologies, Inc., Frederick, MD and [2]Department of Aerobiology and Product Evaluation, USAMRIID, Fort Detrick, MD.

#1738 **REAL-TIME DOSIMETRY INCORPORATES UNANTICIPATED RESPIRATORY CHANGES DURING SEB AEROSOL EXPOSURES WITH RHESUS MACAQUES.** *C. J. Roy*, B. R. Goodenow and J. M. Hartings. Aerobiology & Product Evaluation, USAMRIID, Fort Detrick, MD.

#1739 **IMMUNE RESPONSE INDUCED BY AN EXPERIMENTAL MUCOSAL ADJUVANT ADMINISTERED WITH RECOMBINANT PROTECTIVE ANTIGEN (RPA) IN A GUINEA PIG CHALLENGE MODEL.** *E. K. Leffel*, B. R. Goodenow and *C. J. Roy*. Toxinology & Aerobiology, USAMRIID, Frederick, MD.

#1740 **A NOVEL VACCINE DELIVERY SYSTEM THAT MINIMIZES ADVERSE EVENTS WHILE IMPROVING IMMUNE RESPONSE.** *J. M. Blonder*[1], C. Coeshott[1], E. Verderber[1], A. Samaniego[1], C. Tate[1], K. Stone[1], S. Smithson[2], M. Westerink[2] and *G. J. Rosenthal*[1]. [1]Drug Development, RxKinetix, Inc., Louisville, CO and [2]Department of Medicine, Medical College of Ohio, Toledo, OH.

#1741 **DIFFERENTIAL SUSCEPTIBILITY OF MACROPHAGE CELL LINES TO BACILLUS ANTHRACIS (VOLLUM 1B).** *B. W. Gutting*, K. Gaske, R. Mackie, A. Slaterbeck, L. Sobota, A. Schilling and T. Buhr. Naval Surface Warfare Center, Dahlgren, VA.

Wednesday Afternoon, March 24
1:30 PM to 3:30 PM
Exhibit Hall

POSTER SESSION: EDUCATION AND PUBLIC OUTREACH

Chairperson(s): *Helen Goeden, Minnesota Department of Health, MN and Kristine Willett, University of Mississippi, University, MS.*

Displayed*: 1:30 PM–3:30 PM*

Attended*: 3:00 PM–4:30 PM*

#1742 **METHYLMERCURY CONTAMINATION IN FISH: HUMAN EXPOSURES AND RISK COMMUNICATION.** *D. D. Petersen*. NRMRL, USEPA, Cincinnati, OH.

#1743 **LINKING COMMUNITY OUTREACH AND EDUCATION WITH RESEARCH TO IMPROVE THE HEALTH OF A POPULATION.** C. G. Sumaya[1], G. Carrillo[2, 1], *K. C. Donnelly*[2, 1] and J. A. Parrish[2, 1]. [1]Center for Community Outreach and Education, Texas A& M University Center for Environmental and Rural Health, College Station, TX and [2]School of Rural Public Health, Texas A&M University System Health Science Center, College Station, TX.

#1744 **TRANSLATING CHILDREN'S ENVIRONMENTAL HEALTH RISK RESEARCH FOR COMMUNITIES.** C. H. Drew and *E. M. Faustman*. Institute for Risk Assessment and Risk Evaluation, University of Washington, Seattle, WA.

#1745 **ENVIROHEALTH CONNECTIONS: A COLLABORATIVE EXPLORATION OF THE ENVIRONMENT & HUMAN HEALTH.** C. Mutryn[1], *M. A. Trush*[2] and G. P. Long[1]. [1]Maryland Public Television, Owings Mills, MD and [2]JHU Bloomberg School of Public Health, Baltimore, MD.

#1746 **DEVELOPMENT OF K–12 ENVIRONMENTAL HEALTH & SCIENCE (EH&S) CURRICULA.** J. A. Gorenstein, D. Cook, J. Rodriguez and R. Fuchs-Young. Center for Research on Environmental Disease, UT M. D. Anderson Cancer Ctr., Smithville, TX. Sponsor: *C. Walker*.

#1747 **BUILDING CREDIBILITY IN K–12 EDUCATION.** *H. Goeden*[1], *P. Shubat*[1], *L. Solem*[2] and *R. Skoglund*[3]. [1]Minnesota Department of Health, St. Paul, MN, [2]Minnesota Pollution Control Agency, Duluth, MN and [3]3M, St. Paul, MN.

#1748 **THE AMBIENT PROJECT: HIGH SCHOOL ENVIRONMENTAL HEALTH SCIENCES CURRICULUM.** L. Pitman[1, 2], L. E. Fleming[1], T. Pitman[1, 4], W. Stephan[1], H. Davis[1] and K. Goodman[1]. [1]NIEHS MFBS Center, Rosenstiel School of Marine and Atmospheric Sciences, University of Miami, Miami, FL, [2]Educational Specialists, Miami Dade County Public Schools, Miami, FL, [3]Epidemiology, Miami Dade County Public Health Department, Miami, FL and [4]Chemistry, Florida International University (FIU), Miami, FL. Sponsor: *L. O'Fallon*.

#1749 **AN INTERDISCIPLINARY, ENVIRONMENTAL HEALTH-BASED APPROACH TO IMPROVING SCIENCE LEARNING BY ELEMENTARY TEACHERS AND STUDENTS.** N. Moreno, B. Tharp and P. Cutler. Center for Educational Outreach, Baylor College of Medicine, Houston, TX. Sponsor: *L. O'Fallon*.

#1750 **PROBLEM-BASED LEARNING FOR ENVIRONMENTAL HEALTH.** *E. Henry*[1], *D. G. Markowitz*[1], P. Braus[2], P. Debes[1], K. Hart[2], D. Hursh[3] and C. Martina[3]. [1]Environmental Medicine, University of Rochester, Rochester, NY, [2]Community and Preventive Medicine, University of Rochester, Rochester, NY and [3]Warner Graduate School of Eudcation and Human Development, University of Rochester, Rochester, NY.

#1751 **DEVELOPMENT AND ASSESSMENT OF AN ONLINE, UNDERGRADUATE INTRODUCTION TO TOXICOLOGY COURSE.** *K. L. Willett*[1] and A. S. Bouldin[2]. [1]Pharmacology and Environmental Toxicology, University of Mississippi, University, MS and [2]Pharmacy Administration, The University of Mississippi, University, MS.

Wednesday Afternoon, March 24
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: RISK ASSESSMENT II

Chairperson(s): *Lisa Yost, Exponent, Bellevue, WA and John Lipscomb, USEPA, Cincinnati, OH.*

Displayed: *1:30 PM–4:30 PM*

Attended*: 1:30 PM–3:00 PM*

#1752 **CHARACTERIZING THE UNCERTAINTIES IN SCREENING AND ASSESSING RISKS TO CHEMICALS THAT DECREASE THYROID HORMONE CONCENTRATIONS.** *M. J. DeVito* and *K. M. Crofton*. ORD/NHEERL/ETD, USEPA, Research Triangle Park, NC.

#1753 **ESTABLISHING A SAFE DOSE FOR PERCHLORATE BASED ON HUMAN EVIDENCE OF A NO EFFECT LEVEL.** *R. C. Pleus*[1]. [1]Intertox, Seattle, WA and [2]Pharmacology, UNMC, Omaha, NE.

#1754 **EXPOSURE ASSESSMENT FOR PERCHLORATE IN DRINKING WATER.** *D. Proctor*[1], *E. Cohen*[1], *H. Leung*[1], S. Hays[1], L. Barraj[1] and *A. Madl*[2]. [1]Exponent, Irvine, CA and [2]ChemRisk, San Francisco, CA.

#1755 **DERIVATION OF A RFD FOR PERCHLORATE: IDENTIFING A CRITICAL HEALTH ENDPOINT AND THE MOST SENSITIVE SUBPOPULATION.** *A. Madl*[2], *D. Proctor*[1], *H. Leung*[1], E. Goswami[1], S. Hays[1] and *E. Cohen*[1]. [1]Exponent, Irvine, CA and [2]ChemRisk, San Francisco, CA.

#1756 **SCIENTIFIC RATIONALE FOR THE DERIVATION OF A REFERENCE DOSE (RFD) FOR PERCHLORATE.** *H. Leung*[1], *D. Proctor*[1], *A. Madl*[2], S. Hays[1] and *E. Cohen*[1]. [1]Exponent, Irvine, CA and [2]ChemRisk, San Francisco, CA.

#1757 **USE OF HUMAN AND ANIMAL PBPK MODELS IN RISK ASSESSMENT FOR PERCHLORATE.** *D. R. Mattie*[1], T. R. Sterner[2], E. A. Merrill[3], R. A. Clewell[3], *Q. Zhao*[4], J. E. Strawson[4] and *M. L. Dourson*[4]. [1]AFRL, Wright-Patterson AFB, OH, [2]OpTech, Dayton, OH, [3]Geo-Centers, Wright-Patterson AFB, OH and [4]Toxicology Excellence for Risk Assessment (TERA), Cincinnati, OH.

#1758 **CAPTURING AND MODELING HUMAN INTERINDIVIDUAL DIFFERENCES FOR HEALTH RISK ASSESSMENT: HEPATIC BIOACTIVATION OF CHLOROFORM.** *J. C. Lipscomb*[1], *J. T. Du*[2], J. C. Swartout[1], *D. A. Mahle*[3], J. E. Snawder[4] and *G. L. Kedderis*[5]. [1]ORD/NCEA, USEPA, Cincinnati, OH, [2]OW/HECD, USEPA, Washington, DC, [3]Man Tech Environmental Tech Inc., Wright-Patterson AFB, OH, [4]Taft Lab., CDC/NIOSH, Cincinnati, OH and [5]Independent Consultant, Chapel Hill, NC.

#1759 **THE CONTRIBUTION OF PHARMACOKINETIC VARIABILITY TO VARIABILITY IN HEPATIC LABELING INDEX DATA FROM B6C3F1 MICE EXPOSED TO CHLOROFORM.** *C. Tan* and *R. Conolly*. CIIT Centers for Health Research, Research Triangle Park, NC.

#1760 **A TRIAL OF TOXICOGENOMIC ANALYSIS OF HUMAN UMBILICAL CORDS FOR DEVELOPING A NEW RISK ASSESSMENT METHOD OF FETAL EXPOSURE TO MULTIPLE CHEMICALS.** *M. Komiyama*[1, 2] and *C. Mori*[1, 3]. [1]Bioenvironmental Medicine, Chiba University, Chiba, Japan, [2]Center for Environment, Health and Field Sciences, Chiba University, Kashiwa, Japan and [3]Core Research for Evolutional Sciences. and Technol. (CREST), Japan Sciences. and Technol. Corporation (JST), Kawaguchi, Japan.

#1761 **APPLICATION OF A PBPK MODEL TO AID IN UNDERSTANDING THE RELATIVE POTENCIES (REPS) OF DIOXIN-LIKE CHEMICALS.** *L. S. Birnbaum*[1], *C. Emond*[2] and *M. J. DeVito*[1]. [1]ORD/NHEERL/ETD, USEPA, Research Triangle Park, NC and [2]NRC, NAS, Washington, DC.

#1762 **DERIVATION OF A RANGE OF INTERIM INHALATION CANCER SLOPE FACTORS FOR TCE USING PHYSIOLOGICALLY BASED PHARMACOKINETIC MODELING.** *L. Yost*[1, 3], *J. F. Greene*[1, 2], *S. M. Hays*[1, 5], *M. Kelsh*[1, 4] and *P. Sheehan*[1, 2]. [1]Exponent, Menlo Park, CA, [2]Health Risk, Exponent, Oakland, CA, [3]Health Risk, Exponent, Bellevue, WA, [4]Health, Exponent, Menlo Park, CA and [5]Health Risk, Exponent, Boulder, CO.

#1763 **ISSUES IN THE VALIDATION OF PBPK MODELS FOR RISK ASSESSMENT: AN EXAMPLE WITH PERCHLOROETHYLENE.** *J. Kester*[2], *R. Gentry*[1] and *H. Clewell*[1]. [1]ENVIRON Health Sciences Institute, Ruston, LA and [2]ENVIRON Health Sciences Institute, St. Louis, MO.

#1764 **PREDICTION OF BIOLOGIC PARTITION COEFFICIENTS AND BINDING AFFINITIES USING STRUCTURE ACTIVITY RELATIONSHIPS (SAR) MODELS.** *M. Mumtaz*[1], H. A. El-Masri[1], D. Hawkins[2], D. Mills[3] and S. Basak[3]. [1]Computational Toxicology Laboratory/Division of Toxicology, ATSDR, Atlanta, GA, [2]School of Statistics, University of Minnesota, Minneapolis, MN and [3]Natural Resources Research Institute, University of Minnesota Duluth, Duluth, MN.

#1765 **ANALYSIS OF AN INTERACTION THRESHOLD IN DRUG/CHEMICAL MIXTURES ALONG A FIXED-RATIO RAY.** A. Hamm[1], C. Gennings[1, 2], H. Carter[1, 2] and *R. Carchman*[2]. [1]Biostatistics, Virginia Commonwealth University, Richmond, VA and [2]Solveritas, LLC, Richmond, VA.

#1766 **D-OPTIMAL EXPERIMENTAL DESIGNS TO TEST FOR DEPARTURE FROM ADDITIVITY IN A FIXED-RATIO RAY MIXTURE.** T. Coffey[1], L. Stork[1], C. Gennings[1], W. H. Carter[1], *J. E. Simmons*[2] and *D. W. Herr*[2]. [1]Biostatistics, Virginia Commonwealth University, Richmond, VA and [2]ORD/NHEERL, USEPA, Research Triangle Park, NC.

#1767 **ANALYSIS OF AN INTERACTION THRESHOLD IN A MIXTURE OF DRUGS AND/OR CHEMICALS.** H. Carter[1, 2], A. Hamm[1], C. Gennings[1, 2] and *R. Carchman*[2]. [1]Biostatistics, Virginia Commonwealth University, Richmond, VA and [2]Solveritas, LLC, Richmond, VA.

#1768 **TESTING FOR DEPARTURES FROM ADDITIVITY FOR A 2:1 MIXTURE OF CHLORPYRIFOS AND CARBARYL ON CHOLINESTERASE ACTIVITY IN BRAIN, PLASMA, AND RED BLOOD CELLS OF LONG EVANS RATS.** L. Stork[1], T. Coffey[1], C. Gennings[1], W. Carter[1], *J. Simmons*[2] and *D. Herr*[2]. [1]Biostatistics, Virginia Commonwealth University, Richmond, VA and [2]ORD/NHEERL, USEPA, Research Triangle Park, NC.

#1769 **RISK ASSESSMENT FOR MALE REPRODUCTIVE TOXICANTS.** I. Mangelsdorf[1], J. Buschmann[1] and B. Orthen[2]. [1]Chemical Risk Assessment, Fraunhofer Institute of Toxicology and Experimental Medicine, Hannover, Germany and [2]Federal Institute for Occupational Safety and Health, Dortmund, Germany. Sponsor: *H. Muhle*.

#1770 **APPROACHES FOR CONVERTING ADULT DOSE TO CHILDREN OF VARIOUS AGE GROUPS: RELEVANCE FOR THE RISK ASSESSMENT OF ENVIRONMENTAL CHEMICALS.** D. Gohore Bi and *K. Krishnan*. Occupational and Environmental Health, Universite de Montreal, Montreal, QC, Canada.

#1771 **BENCHMARK DOSE MODELING OF MERCURY-INDUCED ACUTE RENAL FAILURE IN SPRAGUE-DAWLEY RATS WITH RENAL INSUFFICIENCY COMPARED TO HEALTHY CONTROLS.** R. Brown, E. F. Madden, M. E. Stratmeyer and *P. L. Goering*. CDRH, USFDA, Rockville, MD.

#1772 **ESTIMATION OF THE MAGNITUDE OF THE PHARMACOKINETIC COMPONENT OF THE INTERINDIVIDUAL VARIABILITY FACTOR USING A PROBABILITY BOUNDS APPROACH.** A. Nong and *K. Krishnan*. Occupational and Environmental Health, Universite de Montreal, Montreal, QC, Canada.

#1773 **LACK OF SUBCHRONIC TOXICITY OF TRICHLOROETHYLENE ADMINISTERED VIA AQUEOUS GAVAGE TO MICE.** *P. S. Palkar*[1], *S. S. Anand*[1], *M. M. Mumtaz*[2] and *H. M. Mehendale*[1]. [1]Department of Toxicology, University of Louisiana, Monroe, Monroe, LA and [2]ATSDR, Atlanta, GA.

#1774 **OCCUPATIONAL EXPOSURE TO AIRBORNE QUATERNARY AMMONIUM CHLORIDE DISINFECTANTS: MARGIN OF EXPOSURE ANALYSIS.** J. D. Hamilton, S. S. Willems and *D. A. Daggett*. Global Product Safety, JohnsonDiversey, Inc., Sturtevant, WI.

#1775 **ASSESSMENT OF RESPIRATORY ENDPOINTS RESULTING FROM NICKEL EXPOSURE: DERIVATION OF MINIMAL RISK LEVELS.** H. Abadin[1], L. Ingerman[2], S. Wilbur[1] and M. Fay[1]. [1]Agency for Toxic Substances and Disease Registry, Atlanta, GA and [2]Environmental Science Center, Syracuse Research Corp, Syracuse, NY. Sponsor: *P. McGinnis*.

#1776 **DOSE-RESPONSE ANALYSIS OF COMBINED DATA FROM CLINICAL TRIALS: A CASE STUDY OF DATA ANALYSIS FOR SYSTEMIC CONTACT DERMATITIS IN A SENSITIZED POPULATION.** *Q. Zhao*[1], *L. Haber*[1] and *A. Bathija*[2]. [1]TERA, Cincinnati, OH and [2]USEPA, Washington, DC.

#1777 **THE ATSDR CHRONIC ORAL MINIMAL RISK LEVEL (MRL) FOR FLUORIDE.** L. Ingerman[1], C. Tylenda[2] and *D. Jones*[2]. [1]Environmental Science Center, Syracuse Research Corp, Saratoga Springs, NY and [2]ATSDR, Atlanta, GA.

#1778 **UPDATING THE FREE CYANIDE RFD.** *L. T. Haber*[1], *B. R. Stern*[2], *Q. Zhao*[1], J. Strawson[1] and N. Chiu[3]. [1]TERA, Cincinnati, OH, [2]B.R. Stern Associates, Alexandria, VA and [3]USEPA, Washington, DC.

#1779 **DEVELOPMENT OF PROVISIONAL TOXICITY VALUES FOR COBALT.** *H. Choudhury*. ORD, NCEA, USEPA, Cincinnati, OH.

#1780 **THE IMPORTANCE OF CONSIDERATION OF MODE OF ACTION DATA IN NON-CANCER RISK ASSESSMENT: THE CASE OF ETHYLENE CYANOHYDRIN.** *M. Osier* and M. Odin. Syracuse Research Corporation, Syracuse, NY.

#1781 **LACK OF EFFECTS OF 1439 MHZ ELECTROMAGNETIC NEAR FIELD EXPOSURE ON THE BLOOD-BRAIN BARRIER IN IMMATURE AND YOUNG RATS.** M. Kuribayashi[1, 4], J. Wang[2], O. Fujiwara[2], Y. Doi[3], K. Nabae[3], S. Tamano[3], T. Ogiso[1], M. Asamoto[1] and *T. Shirai*[1]. [1]Experimental Pathology and Tumor Biology, Nagoya City University Graduate School of Medical Sciences, Nagoya, Japan, [2]Electrical and Computer Engineering, Nagoya Institute of Technology, Nagoya, Japan, [3]Daiyu-kai Institute of Medical Science, Nagoya, Japan and [4]Ono Pharmaceutical Co. Ltd., Safety Research, Fukui, Japan.

#1782 **RESULTS OF SCREENING TESTS ON RE-REFINED MINERAL OILS DERIVED FROM USED OILS.** *W. Dalbey*, *R. McKee*, S. Hong, *M. Amoruso* and *J. Freeman*. ExxonMobil Biomedical Sciences, Inc., Annandale, NJ.

#1783 **AN EMPIRICAL EVALUATION OF THE CANCER POTENCY OF DIOXIN TOXIC EQUIVALENTS (TEQs) IN FOUR PCB MIXTURES.** *R. E. Keenan*[1], J. M. Hamblen[1], *J. B. Silkworth*[2], M. N. Gray[1], P. O. Gwinn[1] and S. B. Hamilton[3]. [1]AMEC Earth & Environmental, Portland, ME, [2]Global Research Center, General Electric Co., Niskayuna, NY and [3]Environmental Programs, General Electric Co., Fairfield, CT.

#1784 **ESTIMATION OF A NO OBSERVED EFFECT LEVEL FOR 2, 4-DIANIMOTOLUENE, A GENOTOXIC LIVER CARCINOGEN, IN A 16-WEEK FEEDING STUDY USING MALE F344 RATS.** N. IAMI[1], T. ICHIHARA[1], H. YOSHINO[1], H. WANIBUCHI[2], K. MORIMURA[2], A. HAGIWARA[1] and *S. FUKUSHIMA*[2]. [1]Daiyu-kai Institute of Medical Science, Ichinomiya, Japan and [2]Department of Pathology, Osaka City University Medical School, Osaka, Japan.

#1785 **BENCHMARK DOSE ANALYSIS OF PAPILLOMA INDUCTION IN THE SKIN OF TG.AC MICE FOLLOWING ORAL OR DERMAL EXPOSURE TO 2, 3, 7, 8-TETRACHLORODIBENZO-P-DIOXIN.** M. E. Wyde[1], *A. Braen*[2], *M. R. Hejtmancik*[3], J. D. Johnson[3], *A. F. Fuciarelli*[4], M. K. Vallant[1], *J. R. Bucher*[1] and *N. J. Walker*[1]. [1]NIEHS, Research Triangle Park, NC, [2]Hoffman-La Roche, Nutley, NJ, [3]Battelle, Columbus, OH and [4]Battelle, Richland, WA.

#1786 **COMPARISON OF RISK ASSESSMENT METHODS FOR POLYCYCLIC AROMATIC HYDROCARBON (PAH) MIXTURES IN AIR.** H. I. Williams[1], A. Wiman[1], *C. A. Williams*[1], C. Stineman[2] and T. Husain[3]. [1]Ecology and Environment, Inc., Tallahassee, FL, [2]Ecology and Environment, Inc., Chicago, IL and [3]Faculty of Engineering, Memorial University of Newfoundland, St. Johns, NF, Canada.

#1787 **UPDATED CANCER RISK ASSESSMENT OF ACRYLONITRILE.** C. R. Kirman[1], *M. Gargas*[2], *J. Klaunig*[3], *J. Collins*[4], *T. Starr*[5], *D. Strother*[6] and *R. Deskin*[7]. [1]The Sapphire Group, Beachwood, OH, [2]The Sapphire Group, Dayton, OH, [3]Indiana University, Indianapolis, IN, [4]Dow Chemical Company, Midland, MI, [5]TBS Associates, Raleigh, NC, [6]BP Chemical, Arlington, VA and [7]Cytec Industries, West Paterson, NJ.

#1788 **NEW DATA AND GUIDELINES SUPPORT A REVISED CANCER RISK ASSESSMENT FOR ACRYLAMIDE.** P. R. McClure[1], D. W. Wohlers[1] and *R. S. DeWoskin*[2]. [1]Environmental Science Center, Syracuse Research Corporation, Syracuse, NY and [2]National Center for Environmental Assessment, USEPA, Research Triangle Park, NC.

#1789 **AVAILABLE TOXICITY DATA ON ALTERNATIVE DRY CLEANING CHEMICALS.** J. F. Collins, A. G. Salmon, J. D. Budroe, *M. A. Marty* and *G. V. Alexeeff*. CalEPA/OEHHA, Oakland, CA.

#1790 **RFD AND CANCER ASSESSMENT FOR DICHLOROACETIC ACID (DCA).** J. M. Donohue[1], H. Galal-Gorchev[1], K. B. Altschuler[2] and W. Brattin[3]. [1]Health and Ecological Criteria Department, USEPA, Washington DC, DC, [2]ICF Consulting Inc., Fairfax, VA and [3]Syracuse Research Corp., Denver, CO. Sponsor: *E. Ohanian*.

Wednesday Afternoon, March 24
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: REGULATORY/POLICY

Chairperson(s): *Timothy McMahon, USEPA, Washington, DC and Ashraf Youssef, TAP Pharmaceuticals Products, Inc., Lake Forest, IL.*

Displayed: *1:30 PM–4:30 PM*

Attended*: 3:00 PM–4:30 PM*

#1791 **CHILDRENS HEALTH BENEFITS FROM REDUCTIONS IN CRITERIA AIR POLLUTION CONCENTRATIONS.** E. Wong[1], *J. Gohlke*[1], W. Griffith[1], S. Farrow[2] and *E. M. Faustman*[1, 2]. [1]Institute for Risk Analysis and Risk Communication, Department Environ Occup Health Sciences, University of Washington, Seattle, WA and [2]Engr Public Policy, Carnegie Mellon University, Pittsburgh, PA.

#1792 **DRINKING WATER ECONOMIC ANALYSIS (EA): THE ARSENIC CESSATION LAG MODEL.** A. E. Schulman[1], *M. Manibusan*[3], *C. O. Abernathy*[2], M. Messner[3], S. Qian[4] and D. Gaylor[4]. [1]OECA/OC, USEPA, Washington, DC, [2]OW/OST, USEPA, Washington, DC, [3]OW/OGWDW, USEPA, Washington, DC and [4]Sciences International, Alexandria, VA.

#1793 **INFLUENCE OF THE NATIONAL RESEARCH COUNCIL (NRC) REPORT (university)ARSENIC IN DRINKING WATER: 2001 UPDATE(university) ON THE DERIVATION OF THE CANCER SLOPE FACTOR FOR INORGANIC ARSENIC.** *T. McMahon*[1], *C. Abernathy*[2], *J. Chen*[1] and *I. S. Dooley*[2]. [1]OPP, USEPA, Washington, DC and [2]OW, USEPA, Washington, DC.

#1794 **EVIDENCE FROM EPIDEMIOLOGICAL AND MODE OF ACTION STUDIES SUPPORT A NONLINEAR DOSE-RESPONSE RELATIONSHIP FOR ARSENIC-INDUCED CARCINOGENESIS.** A. Schoen[1], *B. Beck*[1], *R. Sharma*[2] and E. Dube'[1]. [1]Gradient Corporation, Cambridge, MA and [2]Arch Chemicals, Inc., Norwalk, CT.

#1795 **HORMESIS DATABASE.** R. R. Blain and *E. J. Calabrese*. Environmental Health Sciences, University of Massachusetts, Amherst, MA.

#1796 **AN EXPANDING WEB RESOURCE ON COMPARATIVE RISK INFORMATION: THE INTERNATIONAL TOXICITY ESTIMATES FOR RISK (ITER) DATABASE JOINS THE NATIONAL LIBRARY OF MEDICINE'S (NLM) TOXNET SYSTEM.** A. Wullenweber[1], *P. Wexler*[2] and *M. Dourson*[1]. [1]TERA, Cincinnati, OH and [2]NLM, Bethesda, MD.

#1797 **NATO WORKSHOP ON COMPARATIVE RISK ASSESSMENT AND ENVIRONMENTAL MANAGEMENT: SUMMARY AND CURRENT TRENDS.** *I. Linkov*. ICF Consulting, Lexington, MA.

#1798 **SCREENING TOOLS FOR CONTEXT-BASED DECISION-MAKING.** I. Walls and . ILSI RSI Expert Panel. Risk Science Institute, International Life Sciences Institute, Washington, DC. Sponsor: *P. Fenner-Crisp*.

#1799 **COMPARATIVE APPROACHES TO PRIORITY SELECTION OF CHEMICALS FOR TOXICITY ASSESSMENT/REASSESSMENT: IMPLICATIONS FOR PUBLIC HEALTH PROTECTION.** *B. R. Stern*[1] and *P. McGinnis*[2]. [1]BR Stern and Associates, Annandale, VA and [2]Syracuse Research Corporation, Philadelphia, PA.

#1800 **STATUS OF HEALTH ENDPOINTS SUBMISSIONS IN THE USEPA HIGH PRODUCTION VOLUME (HPV) CHEMICAL CHALLENGE PROGRAM.** J. Tao, R. Hefter, R. Northrop, L. Scarano, M. Sonawane, A. Benson and *D. Sawhney*. USEPA, Washington DC, DC.

#1801 **USING ANIMAL AND HUMAN MODE OF ACTION INFORMATION IN ASSESSING HUMAN RISK: A FRAMEWORK FOR ANALYSIS.** *P. A. Fenner-Crisp* and . ILSI RSI Human Relevance Work Group. Risk Science Institute, International Life Sciences Institute, Washington, DC.

#1802 **CATEGORY APPROACH IN THE USEPA HIGH PRODUCTION VOLUME CHALLENGE PROGRAM.** L. Scarano, R. Hefter, R. Northrop, M. Sonawane, J. Tao, A. Benson and *D. Sawhney*. USEPA, Washington DC, DC.

#1803 **ESTIMATING SEVERITY FOR DEVELOPMENT OF THE CONTAMINANT CANDIDATE LIST (CCL).** *A. M. Mahfouz*[1], J. Donohue[1], N. Chiu[1], *J. Du*[1], O. Conerly[1], *C. O. Abernathy*[1], B. Ambika[1], S. Kueberuwa[1] and W. Mendez[2]. [1]Office of Water, USEPA, Washington, DC and [2]ICF Consulting, Fairfax, VA.

#1804 **ESTIMATING POTENCY FOR DEVELOPMENT OF THE CONTAMINANT CANDIDATE LIST (CCL).** *G. Blumenthal*[2], J. M. Donohue[1], O. Conerly[1], K. Sullivan[2], *A. Mahfouz*[1], *J. Du*[1], S. Kueberuwa[1], *C. Abernathy*[1], N. Chiu[1] and A. Bathija[1]. [1]Health and Ecological Criteria Department, USEPA, Washington, DC and [2]ICF Consulting Inc., Fairfax, VA.

#1805 **THE USEPA CONTAMINANT CANDIDATE LIST(CCL) DEVELOPMENT PROCESS.** O. D. Conerly[1], *C. Abernathy*[1], A. Bathija[1], N. Chiu[1], J. Donohue[1], *J. Du*[1], S. Kueberuwa[1], *A. Mahfouz*[1] and W. Mendez[2]. [1]Office of Water, USEPA, Washington, DC and [2]ICF Consulting, Fairfax, VA.

#1806 **A CRITICAL LOOK AT THE EU DRINKING WATER PARAMETRIC VALUE AND ITS USE AS AN INDICATOR OF HEALTH RISK.** *E. R. Nestmann*, *L. A. Haighton*, E. Cheng and R. A. Halford. CANTOX HEALTH SCIENCE INTERNATIONAL, Mississauga, ON, Canada.

#1807 **PRINCIPLES AND PRACTICES FOR DIRECT DOSING OF PRE-WEANING MAMMALS IN TOXICITY TESTING AND RESEARCH.** *T. Zoctis* and . ILSI RSI Working Group. Risk Science Institute, International Life Sciences Institute, Washington, DC.

#1808 **VALIDATION OF THE HUMAN EPIDERMIS MODEL SKINETHIC FOR SKIN CORROSION TESTING ACCORDING TO NEW OECD TEST GUIDELINE 431.** M. Liebsch[1], H. Kandarova[1], H. Spielmann[1], R. Guest[2], A. Whittingham[2], N. Warren[2], A. O. Gamer[3], T. Kaufmann[3], M. Remmele[3] and B. De Wever[4]. [1]ZEBET, Federal Institute for Risk Assessment (BfR), Berlin, Germany, [2]Safepharm Laboratories, Derby, United Kingdom, [3]Toxikologie Z470, BASF AG, Ludwigshafen, Germany and [4]Skinethic Laboratories, Nice, France. Sponsor: *A. Goldberg*.

#1809 **WELFARE-ENHANCED CAGE DESIGN FOR PRIMATE TOXICOLOGY STUDIES.** J. Hedley and S. Grainger. Covance Laboratories Ltd., Harrogate, United Kingdom. Sponsor: *D. Everett*.

#1810 **DO PRECLINICAL STUDIES IN PREADOLESCENT ANIMALS PREDICT CLINICAL TOXICITY?- LANSOPRAZOLE (A PROTON PUMP INHIBITOR) AS A CASE EXAMPLE-.** *A. Youssef*. TAP Pharmaceutical Products Inc., Lake Forest, IL.

#1811 **ICCVAM PROCESS FOR NOMINATION AND SUBMISSION OF NEW, REVISED, AND ALTERNATIVE TEST METHODS.** *L. M. Schechtman*[1], *W. S. Stokes*[2], M. L. Wind[3], B. C. Blackard[2, 4] and *R. R. Tice*[2, 4]. [1]NCTR, USFDA, Rockville, MD, [2]NICEATM, NIEHS, Research Triangle Park, NC, [3]DHS, CPSC, Bethesda, MD and [4]NICEATM, ILS. Inc., Research Triangle Park, NC.

#1812 **THE ICCVAM/NICEATM PROCESS FOR DEVELOPING TEST METHOD PERFORMANCE STANDARDS.** *W. S. Stokes*[1], *L. M. Schechtman*[2], A. Rispin[3], R. N. Hill[3], K. Hamernik[3], B. C. Blackard[1, 4] and *R. R. Tice*[1, 4]. [1]NICEATM, NIEHS, Research Triangle Park, NC, [2]NCTR, USFDA, Rockville, MD, [3]OPPTS, USEPA, Washington, DC and [4]ILS, Inc., Research Triangle Park, NC.

#1813 **RISK MANAGEMENT UNDER REACH—THE NEW EUROPEAN CHEMICALS POLICY.** *T. Petry*, A. Conrad and T. Golojuch. The Weinberggroup LLC, Brussels, Belgium.

#1814 **REGULATION OF VETERINARY ANTIMICROBIAL DRUG RESIDUES IN FOOD: FDA AND VICH APPROACHES.** *A. H. Fernandez*. CVM, USFDA, Rockville, MD.

#1815 **VICH HUMAN FOOD SAFETY GUIDELINES: PROGRESS REPORT.** L. T. Mulligan. Human Food Safety, USFDA/CVM, Rockville, MD. Sponsor: *A. Fernandez*.

Wednesday Afternoon, March 24
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: CARDIOVASCULAR METHODS & MARKERS

Chairperson(s): *Bruce Hammond, Monsanto Company, St. Louis, MO and William Kerns, Pharmacology Consulting, Harvard, MA.*

Displayed: *1:30 PM–4:30 PM*

Attended*: 1:30 PM–3:00 PM*

#1816 **EVALUATION OF ACUTE DRUG-INDUCED VASCULAR INJURY BIOMARKERS.** C. Louden[1], D. Brott[1], L. Foster-Brown[1], S. Gould[2], H. Jones[2], H. Prior[2], J. Valentin[2], G. Evans[2], S. Bjurstrom[3], K. Kenne[3], I. Schuppe-Koistinen[3] and G. Betton[2]. [1]Safety Assessment - US, AstraZeneca Pharmaceutical, Wilmington, DE, [2]Safety Assessment - UK, AstraZeneca Pharmaceuticals, Alderley Park, United Kingdom and [3]Safety Assessment - Sweden, AstraZeneca Pharmaceuticals, Sodertalje, Sweden. Sponsor: *P. Ciaccio*.

#1817 **ROLE OF CAVEOLIN-1 IN DRUG-INDUCED VASCULAR INJURY.** D. Brott[1], A. Katein[1], L. Foster-Brown[1], J. Morelli[1], G. Evans[2], H. Jones[2], S. Gould[2], G. Betton[2], S. Bjurstrom[3], H. Prior[2], J. Valentin[2] and C. Louden[1]. [1]Safety Assessment-US, AstraZeneca Pharmaceutical, Wilmington, DE, [2]SA-UK, AstraZeneca Pharmaceuticals, Alderley Park, United Kingdom and [3]SA-Sweden, AstraZeneca Pharmaceuticals, Sodertalje, Sweden. Sponsor: *M. Dyroff*.

#1818 **NOVEL TECHNIQUES FOR ISOLATION AND CHARACTERIZATION OF ENDOTHELIAL CELLS AND VASCULAR SMOOTH MUSCLE CELLS FROM CANINE CORONARY ARTERIES.** X. Yu[1], M. K. Dame[2], R. Garrido[1], D. Stump[1], W. Bobrowski[1], J. E. McDuffie[1], J. Varani[2] and M. A. Albassam[1]. [1]Worldwide Safety Sciences, Pfizer Global Research & Development, Ann Arbor, MI and [2]Pathology, University of Michigan, Ann Arbor, MI. Sponsor: *A. Brown*.

#1819 **ENDOTHELIN-1 AND VASCULAR TOXICITY OF HIV COCKTAILS.** V. Y. Hebert, B. Crenshaw, R. L. Romanoff, V. P. Ekshyyan and T. R. Dugas. Pharmacology, LSU Health Sciences Center, Shreveport, LA. Sponsor: *K. McMartin*.

#1820 **POTENTIAL MARKERS OF ACUTE CORONARY ARTERY INJURY IN DOGS FOLLOWING ADMINISTRATION OF CI-1034, AN ENDOTHELIN A RECEPTOR ANTAGONIST.** E. McDuffie, X. Yu, Y. Song and M. Albassam. Worldwide Safety Sciences, Pfizer Global Research & Development, Ann Arbor, MI. Sponsor: *A. Brown*.

#1821 **AN EXPERIMENTAL PDE IV INHIBITOR-INDUCED VASCULAR INJURY (VI) ASSOCIATED WITH INCREASED MAST CELL DEGRANULATION AND ELEVATED SERUM LEVELS OF ACUTE-PHASE PROTEINS IN SPRAGUE-DAWLEY RATS.** J. Zhang[1], R. Honchel[1], J. L. Weaver[1], A. Knapton[1], *E. H. Herman*[1], F. M. Goodsaid[2], *J. W. Davis II*[2], *I. Y. Rosenblum*[2] and *F. D. Sistare*[1]. [1]Division of Applied Pharmacology Research, Center For Drug Evaluation and Research, USFDA, Laurel, MD and [2]Toxicology, Schering-Plough Research Institute, Lafayette, NJ.

#1822 **ESTABLISHMENT OF AN *IN VITRO* METHOD FOR ASSESSMENT OF DRUG-INDUCED VASCULITIS.** Y. Zhou[1], H. Yamada[1], *I. Horii*[1] and K. Suzuki[2]. [1]Worldwide Safety Sciences, Pfizer Global Research & Development, Nagoya Laboratories, Pfizer Inc., Nagoya, Japan and [2]Department of Molecular Pathobiology, Mie University School of Medicine, Tsu, Japan.

#1823 **USE OF A NON-INVASIVE TELEMETRY SYSTEM (EMKA) FOR FUNCTIONAL CARDIOVASCULAR ENDPOINTS IN TOXICOLOGY STUDIES.** H. Prior[1], D. Hunter[1], J. Schofield[1], K. Gracie[1], J. Moors[1], K. Philp[1], P. Carter[2], J. Valentin[1] and *T. Hammond*[2]. [1]Safety Pharmacology, AstraZeneca UK Ltd., Macclesfield, Cheshire, United Kingdom and [2]Safety Assessment UK, AstraZeneca UK Ltd., Macclesfield, Cheshire, United Kingdom.

#1824 **A METHOD FOR THE LONG TERM MONITORING OF CARDIOVASCULAR AND RESPIRATORY FUNCTION IN THE WISTAR RAT.** N. McMahon[1], A. Robinson[1], E. Martel[2] and J. Valentin[1]. [1]Safety Pharmacology, Safety Assessment, AstraZeneca R&D, Macclesfield, Cheshire, United Kingdom and [2]CERB, Baugy, France. Sponsor: *T. Hammond*.

#1825 **ASSESSMENT OF QT INTERVAL PROLONGATION USING A TELEMETRY SYSTEM IN CONSCIOUS GUINEA PIGS.** T. Harada, M. Shiotani, J. Abe, M. Nagata, Y. Hamada and I. Horii. PGRD Nagoya Lab., Pfizer Inc., Taketoyo, Aichi, Japan. Sponsor: *M. Kurata*.

#1826 **COMPARISONS OF HOLTER AND TELEMETRIC ECG MONITORING FOR EVALUATION OF QT INTERVALS IN CYNOMOLGUS MONKEYS.** S. kitani, K. Sakamoto, N. Muto, M. Nomura and *W. Tierney*. Ina Research Inc., Nishiminowa, Ina, Nagano, Japan.

#1827 **COMPARISONS OF NON-INVASIVE VERSUS INVASIVE DOG TELEMETRY.** H. Prior[1], D. Hunter[1], S. Jason[1], K. Gracie[1], J. Moors[1], K. Philp[1], J. Valentin[1] and *T. Hammond*[2]. [1]Safety Pharmacology, AstraZeneca UK Ltd., Macclesfield, Cheshire, United Kingdom and [2]Safety Assessment UK, AstraZeneca UK Ltd., Macclesfield, Cheshire, United Kingdom.

#1828 **SIMULTANEOUS CARDIOVASCULAR AND PULMONARY STUDIES IN MONKEYS AND DOGS.** C. R. Hassler. Safety Pharmacology, Battelle, Columbus, OH. Sponsor: *M. Brooker*.

#1829 **ECG CHANGES DURING INHALATION OF DILUTED ENGINE EMISSIONS IN A RAT MODEL OF MYOCARDIAL INFARCTION (MI).** J. MORIN[1], S. LORIOT[1], F. ANSELME[2], A. CHAGROUI[1], J. HENRY[1] and F. DIONNET[3]. [1]E9920, INSERM, ROUEN, France, [2]Cardiology Unit, CHRU Rouen, Rouen, France and [3]CERTAM, Saint Etienne du Rouvray, France. Sponsor: *R. FORSTER*.

#1830 **THE CARDIOVASCULAR EFFECTS OF CLINICALLY RELEVANT DOSES OF D, L-SOTALOL AND VERAPAMIL, OBSERVED AFTER ACUTE ORAL ADMINISTRATION TO CONSCIOUS, TELEMETERED CYNOMOLGUS MONKEYS.** P. L. Munt, D. J. Beard, P. H. Davies, C. Winfield, J. J. Daniels, R. Brammer and F. Sannajust. Huntingdon Life Sciences, Huntingdon, Cambridgeshire, United Kingdom. Sponsor: *C. Hardy*.

#1831 **VALIDATION FOR QT PROLONGATION IN CONSCIOUS CYNOMOLGUS MONKEYS ADMINISTERED SOTALOL VIA NASOGASTRIC ROUTE.** M. miyamoto, *C. M. Kelly* and S. J. Gosselin. Huntingdon Life Sciences, East Millstone, NJ.

#1832 **TRIANGULATION, REVERSE-USE-DEPENDENCE AND INSTABILITY DISTINGUISH THE PROARRHYTHMIC POTENTIAL OF DRUGS IN A PACED ISOLATED LANGENDORFF RABBIT HEART.** J. Valentin[1], K. Gracie[1], S. Palethorpe[1], *T. Hammond*[1] and L. Hondeghem[2]. [1]Safety Pharmacology, Safety Assessment, AstraZeneca R&D, Macclesfield, Cheshire, United Kingdom and [2]Hondeghem Pharmaceutical Consulting, Oostende, Belgium.

Wednesday Afternoon, March 24
1:30 PM to 4:30 PM
Exhibit Hall

POSTER SESSION: DEVELOPMENTAL NEUROTOXICITY II

Chairperson(s): *Kevin Crofton, USEPA, Research Triangle Park, NC and Russell Carr, Mississippi State University, Mississippi State, MS.*

Displayed: *1:30 PM–4:30 PM*

Attended*: 3:00 PM–4:30 PM*

#1833 **THE INTERACTION OF SEROTONERGIC AND DOPAMINERGIC SYSTEMS IN THE DEVELOPING RAT AFTER NEONATAL COCAINE EXPOSURE.** T. B. Summavielle[1, 2], C. J. Alves[1], A. Magalhaes[1], L. de Sousa[1] and M. A. Tavares[3, 1]. [1]Neurobehavior, Institute for Molecular and Cellular Biology, Porto, Portugal, [2]Biomedical Sciences, Allied Health Sciences School of Porto, Porto, Portugal and [3]Institute of Anatomy, Medical School, University of Porto, Porto, Portugal. Sponsor: *S. Ali*.

#1834 **ROLE OF ENVIRONMENT IN FETAL BASIS FOR ADULT DISEASES: DEVELOPMENT OF AN ANIMAL MODEL FOR NEURODEGENERATION (ND).** *A. E. Ahmed*. Pathology, UTMB, Galveston, TX.

#1835 **DELTAMETHRIN-INDUCED DELAYS IN BEHAVIORAL DEVELOPMENT.** M. A. Cheh[1], L. Michna[2], A. W. Kusnecov[3] and G. C. Wagner[3]. [1]Neuroscience, Rutgers University, New Brunswick, NJ, [2]Toxicology, Rutgers University, New Brunswick, NJ and [3]Psychology, Rutgers University, New Brunswick, NJ. Sponsor: *K. Reuhl*.

#1836 **EXPLORING A FISH MODEL OF DEVELOPMENTAL ETHANOL NEUROTOXICITY.** S. Oxendine[1, 2], *S. Padilla*[1] and *D. E. Hinton*[3]. [1]Neurotox. Division, USEPA, Research Triangle Park, NC, [2]Curr. in Toxico., UNC-CH, Chapel Hill, NC and [3]Nicholas School of the Environment, Duke University, Durham, NC.

#1837 **DOPAMINE TRANSPORTER AND VESICULAR MONOAMINE TRANSPORTER LEVELS ARE INCREASED BY PERINATAL HEPTACHLOR EXPOSURE.** W. M. Caudle, *J. R. Richardson*, E. D. Dean, M. Z. Wang and *G. W. Miller*. Center for Neurodegenerative Disease, Rollins School of Public Health, Emory University, Atlanta, GA.

#1838 **EFFICACY OF *IN VITRO* CARBOXYLESTERASE DETOXICATION OF ORGANOPHOSPHATES IN ADULT AND JUVENILE RAT LIVER AND SERUM.** J. T. Pittman[1], C. A. Moore[1], E. B. Shows[1], H. H. Chambers[2], J. L. Wagner[1] and *J. E. Chambers*[1]. [1]College of Veterinary Medicine, Mississippi State University, Mississippi State, MS and [2]Department of Entomology, Mississippi State University, Mississippi State, MS.

#1839 **EFFECTS OF EARLY POSTNATAL ORAL EXPOSURE TO CHLORPYRIFOS AND METHYL PARATHION ON CHOLINE ACETYLTRANSFERASE IN REGIONS OF THE RAT BRAIN.** J. A. Dobbs, M. B. Dail, *R. L. Carr*, *E. C. Meek* and *J. E. Chambers*. Center for Environmental Health Sciences, Mississippi State University, Mississippi State, MS.

#1840 **HUMAN LIVER CARBOXYLESTERASE DURING POSTNATAL MATURATION AND ITS SENSITIVITY TO CHLORPYRIFOS OXON.** *C. Pope*[1], *S. Karanth*[1], *J. Liu*[1], *J. Shaikh*[1] and *B. Yan*[2]. [1]Physiol Sciences, Oklahoma State University, Stillwater, OK and [2]Biomed Sciences, University Rhode Island, Kingston, RI.

#1841 **EFFECTS OF PERINATAL EXPOSURE TO PCB 153 ON THE BRAIN NEUROTRANSMITTERS OF OFFSPRING RATS.** T. Honma, M. Miyagawa, M. Suda, R. Wang, K. Kobayashi and S. Sekiguchi. Department of Health Effects Research, National Institute of Industrial Health, Kawasaki, Japan. Sponsor: *M. Chiba*.

#1842 **PERINATAL EXPOSURE TO DELTAMETHRIN ALTERS DOPAMINERGIC NEUROCHEMISTRY IN THE DEVELOPING MOUSE BRAIN.** *J. R. Richardson*, W. M. Caudle, E. D. Dean, M. Z. Wang and *G. W. Miller*. Center for Neurodegenerative Disease, Rollins School of Public Health, Emory University, Atlanta, GA.

#1843 **METHAMPHETAMINE-INITIATED NEURODEVELOPMENTAL DEFICITS ARE ENHANCED IN *OXOGUANINE GLYCOSYLASE 1* (*OGG1*) KNOCKOUT MICE.** *A. W. Wong*[1], *W. Jeng*[1] 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.

#1844 **INCREASED METHAMPHETAMINE-ENHANCED DNA OXIDATION IN FETAL BRAIN OF *COCKAYNE SYNDROME B* (*CSB*) KNOCKOUT MICE.** T. J. Preston[1], *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.

#1845 **EFFECTS OF LOW DOSE PERINATAL VINCLOZOLIN EXPOSURE ON A BATTERY OF ANDROGEN-MEDIATED BEHAVIORS.** N. W. Colbert, J. B. Concannon and *V. P. Markowski*. Environmental Toxicology Center, University of Southern Maine, Portland, ME.

#1846 **AGE-DEPENDENT INCREASES IN MDMA-MEDIATED DOPAMINERGIC NEUROTOXICITY IN MICE.** *M. E. Reveron*[1], *G. V. Erives*[2], *S. S. Lau*[2] and *T. J. Monks*[2]. [1]Division of Pharmacology and Toxicol., University of Texas at Austin, Austin, TX and [2]Department of Pharmacology and Toxicol., University of Arizona Health Sciences Center, Tucson, AZ.

#1847 **THE EFFECT OF ACUTE ETHANOL EXPOSURE ON OXIDATIVE STRESS AND CASPASE-3 ACTIVE SUBUNIT EXPRESSION IN POSTNATAL DAY 4 RAT CEREBELLUM.** *K. H. Horn*[1], *L. M. Kamendulis*[2], C. R. Goodlett[3, 1] and *J. E. Klaunig*[2, 1]. [1]Program in Medical Neurobiology, Indiana University School of Medicine, Indianapolis, IN, [2]Department of Pharmacology and Toxicology; Division of Toxicology, Indiana University School of Medicine, Indianapolis, IN and [3]Psychology, Indiana University Purdue Univeristy at Indianapolis, Indianapolis, IN.

#1848 **POLYAROMATIC HYDROCARBON MIXTURE EFFECTS ON CENTRAL NERVOUS SYSTEM DEVELOPMENT, PLASTICITY, AND BEHAVIOR.** *D. B. Hood*, *D. D. Wormley*, *T. Nayyar*, J. Wu, T. Tu and *S. Johnson*. pharmacology, meharry medical college, Nashville, TN.

#1849 **PRENATAL EXPOSURE OF TCDD DECREASED HIPPOCAMPAL ARC AND NMDAR1 EXPRESSION IN F1 GENERATION RATS.** J. Wu, *T. Nayyar*, T. Tu, S. Johnson and *D. B. Hood*. pharmacology, meharry medical college, Nashville, TN.

Wednesday Afternoon, March 24
4:45 PM to 5:30 PM
Room 309

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 24
6:00 PM to 7:30 PM
See Events Calendar on Pages 2–6 for Room Listings

SPECIALTY SECTION MEETINGS: EPIDEMIOLOGY, ETHICAL, LEGAL, AND SOCIAL ISSUES, IMMUNOTOXICOLOGY, MECHANISMS, OCCUPATIONAL HEALTH, RISK ASSESSMENT, TOXICOLOGY AND EXPLORATORY PATHOLOGY.

Wednesday Evening, March 24
6:00 PM to 11:00 PM
See Events Calendar on Pages 2–6 for Room Listings

REGIONAL CHAPTER MEETINGS/RECEPTIONS

Many of the Regional Chapters meet during the SOT Annual Meeting. Details for these Regional Chapter receptions and meetings are listed in *Program's* Events Calendar.

Thursday Morning

Thursday Morning, March 25
8:30 AM to 11:30 AM
Room 302

SYMPOSIUM SESSION: ASSESSING THE BIOLOGICAL AND ENVIROMENTAL RISKS OF NANOPARTICULATES

Chairperson(s): *Jeff Everitt, GlaxoSmithKline, Research Triangle Park, NY and David Warheit, DuPont Haskell Laboratories, Newark, DE.*

Endorsed by:
Inhalation Specialty Section
Occupational Health Specialty Section*

This symposium is a basic primer on nanoparticles and health. After a brief introduction, Dr. Vicki Colvin, director of Rice University CBEN will discuss potential environmental risks related to nanomaterials. Few data exist on the environ. effects of engineered nanomaterials, yet some NGOs are calling for bans on these systems. Govt. policy issues will also be presented. Next, Dr. Sally Tinkle will discuss skin exposure to fine particulates: mechanism of entry and biological response. Previously, it was assumed that exposures to fine particles could not penetrate the stratum corneum of the skin; however, particle size may play a role in skin penetration potential. Dr. Gunter Oberdorster will discuss the pulmonary and extrapulmonary disposition of inhaled nanoparticles. Airborne particles <100 nm in diam. in urban air along with nanotechnol. particles (<10 nm) raise health concerns for humans. Toxicology. studies with different types of nano/ultrafine particles suggest a range of adverse effects. Translocation of 10 to 50 nm sized particles from the respiratory tract to other organs, including the CNS and heart, have also been demonstrated. Dr. Jeff Everitt will next discuss a recent interspecies study of lung responses to inhaled ultrafine TiO2 particles. Female rats, mice and hamsters were exposed to aerosols of ufTiO2 particles for 13 weeks and evaluated through 1 year. At higher doses the adverse lung responses in rats were significantly greater than the other 2 species. The final presentation will discuss lung bioassay studies of intratracheally instilled single wall carbon nanotubes (SWCNT). Individual SWCNT have dimensions of 1 nm (diameter) and lengths > 1 um, yet, SWCNT have a high electrostatic potential and thus agglomerate, forming bundles of 10 to 100 SWCNT, so-called nanoropes. There are very low respirable concentrations of SWCNT in the workplace (i.e., < 0.1 mg/m3). SWCNT instilled in the lungs of rats or mice have produced granulomas. Because of agglomeration, however, the relevance of these findings are questionable and should be confirmed *via* an inhalation study with SWCNT.

#1850 8:30 **ASSESSING THE BIOLOGICAL AND ENVIRONMENTAL RISKS OF NANOPARTICULATES.** *D. B. Warheit*[1] and *J. Everitt*[1]. [1]DuPont Haskell Lab., Newark, DE and [2]GlaxoSmithKline, Reseach Triangle Park, NC.

#1851 8:40 **ENVIRONMENTAL IMPACTS OF ENGINEERED NANOMATERIALS: RESEARCH FROM THE CENTER FOR BIOLOGICAL AND ENVIRONMENTAL NANOTECHNOLOGY.** V. Colvin. Rice University, Houston, TX. Sponsor: *D. Warheit*.

#1852 9:10 **SKIN EXPOSURE TO PARTICLES: PENETRATION IS DEPENDENT ON PARTICLE SIZE.** S. S. Tinkle. NIAID, NIH, Bethesda, MD. Sponsor: *D. Warheit*.

#1853 9:40 **BIOLOGICAL EFFECTS AND FATE OF INHALED NANO/ULTRAFINE PARTICLES.** *G. Oberdorster*. Environmental Medicine, University of Rochester, Rochester, NY.

#1854 10:10 **COMPARISON OF INTERSPECIES LUNG RESPONSES TO ULTRAFINE (NANO) TITANIUM DIOXIDE PARTICLES.** *J. Everitt* and E. Bermudez. CIIT, Research Triangle Park, NC.

#1855 10:40 **PULMONARY BIOASSAY STUDIES WITH CARBON NANOTUBES IN RATS.** *D. B. Warheit*. Pulmonary Toxicology, DuPont Haskell Lab., Newark, DE.

Thursday Morning, March 25
8:30 AM to 11:30 AM
Room 321

SYMPOSIUM SESSION: MOLECULAR PROFILING AND COMPUTER MODELING IN EARLY DETECTION AND TREATMENT OF CANCER

Chairperson(s): *Richard Thomas, INTERCET Ltd, McLean, VA.*

Endorsed by:
Carcinogenesis Specialty Section
Mechanisms Specialty Section
Risk Assessment Specialty Section

Cancer diagnosis is traditionally an ad hoc activity where the quality of diagnosis and treatment is often limited by experience and available tools. There exists an opportunity to provide clinicians with important new tools to increase the potential for patients to receive superior diagnosis and treatment. At the core of this opportunity are enhanced research and bioinformatics tools which allow toxicologists and other researchers to identify and exploit gene and molecular profiles associated with many stages of cancer development. For example, such profiles are currently being explored as methods for early detection of ovarian and breast cancer. In addition, gene and molecular profiles have shown promise in identifying aggressive tumor subtypes and in predicting patient outcomes. The purpose of this symposium will be to explore some of the most recent advances in gene profiling and bioinformatics tools now available to toxicologists, clinicians and other researchers.

#1856 8:30 **MOLECULAR PROFILING AND COMPUTER MODELING IN EARLY DETECTION AND TREATMENT OF CANCER.** *R. Thomas*. Canswers, McLean, VA.

#1857 8:40 **THE MOLECULAR STAGING OF COLORECTAL CANCER.** W. E. Grizzle[1], University. Manne[1], N. Jhala[1], C. Suarez-Cuervo[1], S. Meleth[2] and D. Alexander[3]. [1]Pathology, University of Alabama at Birmingham, Birmingham, AL, [2]Medicine/Biostatistics Unit, University of Alabama at Birmingham, Birmingham, AL and [3]Epidemiology, University of Alabama at Birmingham, Birmingham, AL. Sponsor: *R. Thomas*.

#1858 9:15 **PREDICTING CLINICAL PROGNOSIS IN COLORECTAL CANCER PATIENTS USING MOLECULAR PROFILE DATA AND BIOINFORMATICS TECHNOLOGIES.** *R. D. Thomas*[1, 2], W. E. Grizzle[3] and University. Manne[3]. [1]Canswers, Inc., McLean, VA, [2]INTERCET, LTD., McLean, VA and [3]Department of Pathology, University of Alabama at Birmingham, Birmingham, AL.

#1859 9:40 **THE EFFORTS TO UTILIZE SERUM PROTEIN PATTERNS AND ARTIFICIAL INTELLIGENCE BASED PATTERN RECOGNITION TOOLS FOR NCI-SPONSORED CLINICAL TRAILS OF OVARIAN AND PROSTATE CANCER DETECTION.** E. F. Petricoin. National Cancer Institute, Bethesda, MD. Sponsor: *R. Thomas*.

#1860 10:15 **THE INTEGRATION OF MOLECULAR PROFILING, TOXICOLOGY AND PATHOLOGY DATASETS FOR KNOWLEDGE DISCOVERY.** *M. Waters*[1], P. Bushel[1], *G. Boorman*[2], W. Eastin[2], S. Gustafson[4], P. Hurban[5], R. Irwin[2], *A. Merrick*[1], J. Nehls[3], *K. Olden*[3], R. Paules[1], *J. Selkirk*[1], S. Stasiewicz[1], N. Stegman[3], K. Tomer[3], B. Weis[3], J. Yost[4], S. Xirasagar[4] and *R. Tennant*[1]. [1]National Center for Toxicogenomics (NCT), Research Triangle Park, NC, [2]National Toxicology Program (NTP), Research Triangle Park, NC, [3]NIEHS, NIH, DHHS, Research Triangle Park, NC, [4]Science Applications International Corporation, Germantown, MD and [5]Paradigm Genetics, Research Triangle Park, NC.

Thursday Morning, March 25
8:30 AM to 11:30 AM
Room 314

WORKSHOP SESSION: NOVEL APPROACHES TO ENGAGING TOXICOLOGISTS IN K–12 SCIENCE EDUCATION AND OUTREACH

Chairperson(s): *Craig Marcus, University of New Mexico, Albuquerque, NM and David Eaton, University of Washington, Seattle, WA.*

Endorsed by:
Education Committee
K–12 Subcommittee*
NIEHS K–12
Toxicology Education Foundation
Women in Toxicology Specialty Section

Toxicologists are encouraged to become engaged in K–12 classroom activities with the goal of increasing student interest in and awareness of toxicology and environmental health. The SOT K–12 education subcommittee has been very supportive of providing toxicologists with tools and resources to help them prepare for K–12 classroom visits. This session will spotlight positive impacts of classroom visits by toxicologists, and will provide SOT members with novel approaches, tools and resources that can be used to facilitate toxicology education in the K–12 setting. During this workshop, there will be hands-on demonstrations of a variety of tools that toxicologists can use before and during classroom visits. Presenters will include toxicologists who have been actively engaged in K–12 outreach as well as K–12 teachers who have utilized toxicology in the classroom. The presenters will highlight successful models for taking students into the field to learn more about local issues that affect their life and health. The purpose of the session is to show how toxicologists are making a positive impact; provide them with, and direct them to, locations where they can obtain tools; and show them how specific tools can be used effectively in the classroom. In addition, SOT members will learn how to take the classroom learning experience into the field to study local environmental health issues.

#1861 8:30 **NOVEL APPROACHES TO ENGAGING TOXICOLOGISTS IN K–12 SCIENCE EDUCATION AND OUTREACH.** *D. L. Eaton*[1], *C. Marcus*[3], *D. Dixon*[2] and L. O'Fallon[2]. [1]Occupational and Environmental Health Sciences, University of Washington, Seattle, WA, [2]NIEHS, Research Triangle Park, NC and [3]College of Pharmacy, University of New Mexico, Albuquerque, NM.

#1862 8:35 **POSITIVE IMPACTS OF TOXICOLOGIST VISITS TO THE CLASSROOM: A TEACHER'S PERSPECTIVE.** D. Becker[1], A. Renkwitz[1], F. Ross[2] and B. Tharp[3]. [1]Cambridge-South Dorchester High School, Baltimore, MD, [2]Robert Poole Middle School #56, Baltimore, MD and [3]Baylor College of Medicine, Houston, TX. Sponsor: *D. Eaton*.

#1863 9:05 **TOXICOLOGISTS IN THE CLASSROOM: SUCCESSFUL MODELS FOR K–12 OUTREACH.** *D. L. Eaton*[1], *N. I. Kerkvliet*[2], *C. Marcus*[3], *S. H. Safe*[4] and *M. A. Trush*[5]. [1]Environment Occup. Health Sciences., University Washington, Seattle, WA, [2]Environment Molec.Toxicology., Oregon St. University, Corvallis, OR, [3]College of Pharmacy, University New Mexico, Albuquerque, NM, [4]Vet. Physiol. & Pharmacology, Texas A & M University, College Station, TX and [5]Environment Health Sciences., Johns Hopkins University, Baltimore, MD.

#1864 9:35 **HANDS-ON FUN: TOOLS FOR TOXICOLOGISTS ENTERING THE K–12 CLASSROOM.** L. O'Fallon. NIEHS, Research Triangle Park, NC. Sponsor: *D. Eaton*.

#1865 10:50 **CLASSROOM TO FIELD: PUTTING TOXICOLOGY IN A LOCAL CONTEXT.** *J. Lewis*[1] and B. Sattler[2]. [1]University of New Mexico Health Sciences Center, Albuquerque, NM and [2]University of Maryland School of Nursing, Baltimore, MD.

Thursday Morning, March 25
8:30 AM to 11:30 AM
Room 318

WORKSHOP SESSION: THE NATIONAL CHILDREN'S STUDY: PROGRESS DEVELOPING METHODS APPROPRIATE FOR ASSESSING CHILDREN'S EXPOSURE, BIOMARKERS, AND GENETIC SUSCEPTIBILITY

Chairperson(s): *Carole Kimmel, USEPA, Washington, DC and Barbara Abbott, USEPA, Research Triangle Park, NC.*

Endorsed by:
Neurotoxicology Specialty Section
Reproductive and Developmental Toxicology Specialty Section*

The National Children's Study is a long term prospective study of the effects of environmental influences on the development and health of children across the United States. This study is a collaborative effort authorized by the Children's Health Act of 2000. The National Institute of Child Health and Human Development (NICHD), the National Institute of Environmental Health Sciences (NIEHS), the Center for Disease Control and Prevention (CDC), and the USEPA (EPA) are involved in planning and conduct of the study. This study will include approximately 100, 000 children, following them from before birth to adulthood. Social, behavioral, cultural, chemical, physical, and genetic factors need to be considered to assess the broad and complex influences of the environment on child health and development. In this symposium, individuals involved in various aspects of study planning and/or advisory groups will present recent progress in developing improved methods for identifying biomarkers, evaluating genetic susceptibility, and modeling children's exposure. A final presentation will discuss the issues and concerns related to childhood asthma, one of the major themes of the study, and progress in that research area. The NCS and the ongoing pilot studies to develop the final form of that study, represent a rich resource for the toxicological and epidemiological community. This symposium provides an introduction to this vast resource, an update on research in this arena and an indication of future research directions in studies of children's environmental health.

#1866 8:30 **THE NATIONAL CHILDREN'S STUDY: PROGRESS DEVELOPING METHODS APPROPRIATE FOR ASSESSING CHILDREN'S EXPOSURE, BIOMARKERS AND GENETIC SUSCEPTIBILITY.** *C. A. Kimmel*[2] and *B. D. Abbott*[1]. [1]RTD, NHEERL, ORD, USEPA, Durham, NC and [2]NCEA, ORD, USEPA, Silver Spring, MD.

#1867 8:35 **AN OVERVIEW OF THE NATIONAL CHILDREN'S STUDY.** P. Mendola. Human Studies Division, USEPA, Research Triangle Park, NC. Sponsor: *B. Abbott*.

#1868 9:10 **VALIDATION OF NON-INVASIVE BIOLOGICAL SAMPLES: PILOT PROJECTS RELEVANT TO THE NATIONAL CHILDREN STUDY.** J. E. Gallagher[1], T. Lehman[2], R. Modali[2], S. Rhoney[1], J. Rockett[1], M. Clas[1], J. Inmon[1], D. Dix[1], C. Mamay[1], *S. Fenton*[1], S. McMaster[1], *S. Barone*[1] and *R. Sams*[1]. [1]NHEERL, USEPA, Research Triangle Park, NC and [2]Bioserve Biotechnologies LTD, Laurel, MD.

#1869 9:45 **DEVELOPMENT AND USE OF BIOMARKERS OF EXPOSURE FOR CDC'S NATIONAL EXPOSURE REPORT.** L. L. Needham. Organic Analytical Toxicology, Centers for Disease Control and Prevention, Atlanta, GA. Sponsor: *B. Abbot*.

#1870 10:20 **STUDY DESIGN CONSIDERATIONS FOR THE EXPOSURE COMPONENT OF THE NATIONAL CHILDREN'S STUDY.** H. Ozkaynak[1], L. Needham[2], R. Whyatt[3] and J. Quackenboss[4]. [1]NERL, USEPA, Washington, DC, [2]CDC, Atlanta, GA, [3]Columbia University, New York and [4]NERL, USEPA, Las Vegas, NV. Sponsor: *H. Ozkaynak*.

#1871 10:55 **ENVIRONMENTAL EXPOSURE AND ASTHMA: HYPOTHESES FOR THE NATIONAL CHILDREN'S STUDY.** S. J. London. Epidemiology Branch, National Institute of Environmental Health Sciences, Research Triangle Park, NC. Sponsor: *B. Abbott*.

Thursday Morning, March 25
8:30 AM to 11:30 AM
Room 316

ROUNDTABLE SESSION: DEVELOPING THE USE OF THRESHOLD CONCEPT FOR PROTEIN ALLERGENS

Chairperson(s): *Timothy Landry, Dow Chemical Company, Midland, MI and Jay Vodela, USDA, Washington, DC.*

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

Public exposure guidelines are meant to protect all segments of the population, including the very young and the very old, pregnant women, and hypersensitive individuals. Each year the Food & Drug Administration receives reports of consumers who experienced adverse reactions following exposure to an allergenic substance in foods. Food allergies are abnormal responses of the immune system, especially involving the production of allergen specific IgE antibodies, to naturally occurring proteins in certain foods that most individuals can eat safely. Although the number of food proteins with allergenic potential is not clearly established, there are a limited number of proteins involved in commonly observed food allergy. When the immune system recognizes a food protein as foreign and harmful, cellular and biochemical cascades are initiated that may lead to sensitization and ultimately allergic reactions. There is a significant incidence of food allergy to naturally occurring allergens in children (5% to 6 % in US) and adults (2% U.S.). Although protection may require exposure avoidance (e.g. to peanuts in peanut sensitive persons), it would be preferable to be able to apply the "dose makes the poison" concept to induction and / or elicitation. This roundtable will provide recent scientific information on the health effects of protein allergens and will consider how the "threshold" concept for sensitization to allergens may be applied to establishing non-zero exposure guidelines.

#1872 8:30 **DEVELOPING THE USE OF THRESHOLD CONCEPT FOR PROTEIN ALLERGENS.** *J. Vodela*[1] and *T. D. Landry*[2]. [1]Residue Branch, USDA/FSIS, Washington DC, DC and [2]Environment, Health and Safety, Dow Chemical Company, Midland, MI.

#1873 8:40 **FOOD ALLERGENS-THE FDA PERSPECTIVE.** K. Falci. US Food and Drug Administration, Center for Food Safety and Applied Nutrition, College Park, MD. Sponsor: *J. Vodela*.

#1874 9:05 **FACTORS AFFECTING THE DETERMINATION OF THRESHOLD DOSES FOR ALLERGENIC FOODS: TOXICOLOGICAL ASPECTS.** S. Hefle. Food Allergy Research and Resource Program, University of Nebraska, Lincoln, NE. Sponsor: *T. Landry*.

#1875 9:30 **FACTORS AFFECTING THE DETERMINATION OF THRESHOLD DOSES FOR ALLERGENIC FOODS-CLINICAL ASPECTS.** J. Hourihane. Infection Inflammation and Repair, University of Southampton, Southampton, United Kingdom. Sponsor: *J. Hourihane*.

#1876 9:55 **COMMUNICATING RISKS ASSOCIATED WITH FOOD ALLERGENS.** D. W. Achesson. Center for Food Safety and Applied Nutrition, Food and Drug Administraion, College Park, MD. Sponsor: *J. Vodela*.

#1877 10:20 **EVIDENCE FOR THRESHOLDS FOR TYPE 1 ALLERGY TO ENZYMES USED IN THE DETERGENT INDUSTRY.** *K. Sarlo*. Central Product Safety, Procter & Gamble Company, Cincinnati, OH.

Thursday Morning, March 25
8:30 AM to 11:30 AM
Room 317

PLATFORM SESSION: ANIMAL ALTERNATIVE MODELS

Chairperson(s): *Lois Lehman-McKeeman, Bristol Myers Squibb Company, Princeton, NJ and David Monteith, Eli Lilly Research Labs, Greenfield, IN.*

#1878 8:30 **AN *IN VITRO* SURROGATE FOR DRUG-INDUCED PHOSPHOLIPIDOSIS.** *R. E. Morgan*, A. Kriauciunas, B. Berridge, J. Sullivan and *D. K. Monteith*. Lead Optimization Toxicology, Eli Lilly Research Labs, Greenfield, IN.

#1879 8:50 **MODELLING THE ESTROUS CYCLE *IN VITRO* USING 3-D RAT VAGINAL EPITHELIUM CELL CULTURES.** R. Caldelari[1], *B. D. Car*[2], *L. D. Lehman-McKeeman*[2], E. J. Muller[1] and M. M. Suter[1]. [1]CELLnTEC advanced cell systems, Bern, Switzerland and [2]Bristol Myers Squibb, Princeton, NJ.

#1880 9:10 **PREDICTION OF OVARIAN FUNCTION DEFECTS BY MOUSE FOLLICLE CULTURE.** J. E. SMITZ[1], I. Hellinckx[2] and R. Cortvrindt[1, 2]. [1]Reprod Med., AZ-VUB, BRUSSELS, Belgium and [2]EggCentris NV, Zellik, Belgium. Sponsor: *P. McAnulty*.

#1881 9:30 **AN *IN VITRO* SURROGATE ASSAY FOR MITOCHONDRIAL TOXICITY.** B. Li, D. Watson, *R. Morgan* and *D. Monteith*. Lilly Research Laboratories, Greenfield, IN.

#1882 9:50 **INVESTIGATING APOPTOTIC MECHANISMS OF CELL DEATH USING POSITIONAL BIOSENSORS.** J. R. Haskins, A. M. Peters, M. Weiss, J. Strauss, R. DeBiasio and Y. Chen. Assay Development, Cellomics, Inc., Pittsburgh, PA. Sponsor: *E. McGuire*.

#1883 10:10 **C. ELEGANS RESPONSE TO MAMALIAN ANTIOXIDANT RESPONSE ELEMENT INDUCER TBHQ.** M. Calkins[1, 3] and *J. A. Johnson*[1, 2, 3]. [1]Molecular and Environmental Toxicology Center, University of Wisconsin, Madison, WI, [2]Waisman Center, University of Wisconsin, Madison, WI and [3]School of Pharmacy, University of Wisconsin, Madison, WI.

#1884 10:30 **WOUND HEALING RESPONSE OF THE EPIDERM FULL THICKNESS (EPIDERM-FT) *IN VITRO* HUMAN SKIN EQUIVALENT AFTER SOLAR UV IRRADIATION: COMPARISON TO EXCISED HUMAN SKIN.** *P. J. Hayden*, B. Burnham, *M. Klausner*, J. Kubilus and J. E. Sheasgreen. MatTek Corp., Ashland, MA.

#1885 10:50 **MURINE EMBRYRONIC STEM CELLS AS A MODEL TO IDENTIFY BIOMARKER PROFILES OF PPAR AGONISTS.** M. Pang[1], T. Downey[2], S. Kim[3], K. L. Rose[1], R. Snodgrass[3] and *A. E. Vickers*[1]. [1]BioMarker Development, Novartis Pharmaceuticals, East Hanover, NJ, [2]Partek, Inc., St. Charles, MO and [3]VistaGen Therapeutics, Inc., Burlingame, CA.

#1886 11:10 **EMBRYONIC STEM CELL-DERIVED HEPATOCYTE CULTURES AS A MODEL TO IDENTIFY BIOMARKER PROFILES OF PPAR AGONISTS.** *H. R. Snodgrass*[1], Y. S. Kim[1], O. A. Callan[1], G. Keller[2], A. Kubo[3] and *A. Vickers*[4]. [1]VistaGen Therapeutics, Inc., Burlingame, CA, [2]Mount Sinai School of Medicine, New Youk, NY, [3]Nara Medical University, Nara, Japan and [4]Novartis Pharmaceuticals, East Hanover, NJ.

Thursday Morning, March 25
8:30 AM to 11:30 AM
Room 324

PLATFORM SESSION: CHEMICAL & BIOLOGICAL WARFARE

Chairperson(s): *Carol Sabourin, Batelle, Medical Reserach & Evaluation Facility, Columbus, OH and Alan Brimfield, USAMRICD, Biochemical Pharmacology, Aberdeen Proving Ground, MD.*

#1887 8:30 **CHEMICALLY INDUCED CELL DEATH IN HUMAN KERATINOCYTES.** O. E. Clark, E. W. Nealley, K. L. Finke, R. E. Roberts and W. J. Smith. Biochem Pharmacology Br, US Army Med. Rsch Inst of Chem Defense, Aberdeen Proving Ground, MD. Sponsor: *A. Brimfield*.

#1888 8:50 **SULFUR MUSTARD ALTERS LAMININ 5 AND GELATINASE MNRA LEVELS AND INCREASES GELATINASE ACTIVITY IN A MOUSE EAR VESICANT MODEL.** *D. R. Gerecke*[1], P. Bhatt[1], *C. L. Sabourin*[2], T. L. Rudge[2], *R. P. Casillas*[2], R. C. Kiser[2], *S. L. Casbohm*[2], *M. K. Gordon*[1], D. J. Riley[3] and M. P. Shakarjian[3]. [1]Pharmacology & Toxicology, Rutgers University, Piscataway, NJ, [2]Medical Research and Evaluation Facility, Battelle Memorial Institute, Columbus, OH and [3]Medicine, UMDNJ/Robert Wood Johnson Medical School, Piscataway, NJ.

#1889 9:10 **GENOMIC ANALYSIS OF SULFUR MUSTARD-INDUCED LUNG INJURY.** C. S. Phillips[1], J. F. Dillman[1], L. M. Dorsch[1], M. D. Croxton[1], Z. Hess[2], T. S. Moran[2] and *A. M. Sciuto*[2]. [1]Applied Pharmacology, USAMRICD, Aberdeen Proving Ground, MD and [2]Neurotoxicology, USAMRICD, Aberdeen Proving Ground, MD.

#1890 9:30 **GENOMIC ANALYSIS OF THE MECHANISM OF ACTION OF POTENTIAL VESICANT COUNTERMEASURES.** J. F. Dillman[1], L. M. Dorsch[1], A. I. Hege[1], C. S. Phillips[1], Y. W. Choi[2], R. C. Kiser[2] and *C. L. Sabourin*[2]. [1]Applied Pharmacology, USAMRICD, Aberdeen Proving Ground, MD and [2]Medical Research and Evaluation Facility, Battelle Memorial Institute, Columbus, OH.

#1891 9:50 **TIME- AND DOSE-DEPENDENT ANALYSIS OF GENE EXPRESSION IN SULFUR MUSTARD-EXPOSED MICE.** *C. L. Sabourin*[1], J. V. Rogers[1], Y. W. Choi[1], R. C. Kiser[1], *R. P. Casillas*[1], *M. C. Babin*[1] and *J. J. Schlager*[2]. [1]Medical Research & Evaluation Facility, Battelle Memorial Institute, Columbus, OH and [2]Pharmacology Division, US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD.

#1892 10:10 **LOW-LEVEL INHALATION EXPOSURE TO SARIN AND CYCLOSARIN LEADS TO ENHANCED EXPRESSION OF NEURONAL CELL DEATH AND REGENERATION RELATED GENES.** *J. W. Sekowski*[1], J. Bucher[1], M. Orehek[1], M. Horsmon[1], D. Menking[1], C. E. Whalley[2], B. Benton[2], M. Vahey[3], M. Nau[3], D. Burnett[2], J. Jarvis[2], B. Gaviola[2], R. Mioduszewski[2], *S. Thomson*[2] and J. J. Valdes[1]. [1]Molecular Engineering Team, US Army RD&E Command, APG-EA, MD, [2]Toxicology Team, US Army RD&E Command, APG-EA, MD and [3]WRAIR, US Army MRMC, Rockville, MD.

#1893 10:30 **TOXIC EFFECTS OF A WHOLE-BODY INHALATION SARIN (GB) VAPOR EXPOSURE IN THE GOTTINGEN MINIPIG.** S. W. Hulet[1], E. M. Jakubowski[1], J. S. Forster[1], M. B. Dennis[2], B. J. Benton[1], W. T. Muse[1], P. A. Dabisch[2], R. A. Way[1], J. L. Edwards[2], J. M. McGuire[2], J. A. Scotto[1], D. C. Burnett[1], B. I. Gaviola[1], J. R. Jarvis[2], R. A. Evans[2], K. L. Matson[2], C. L. Crouse[2], J. H. Manthei[1], R. J. Mioduszewski[1] and *S. A. Thomson*[1]. [1]Toxicology, US Army Soldier and Biological Chemical Command, Aberdeen Proving Ground, MD and [2]Geo-Centers, Inc., Aberdeen Proving Ground, MD.

#1894 10:50 **DEVELOPMENT OF A MICROFLUIDIC MICROARRAY FOR THE RAPID DETECTION OF TOXICOGENOMIC SIGNATURES.** *J. West*[1], R. M. DeVay[1] and *S. Micheal*[2]. [1]Microfluidics Research Group, Sandia National Laboratories, Livermore, CA and [2]VetMed: Molecular Biosciences, University of California, Davis, CA.

Thursday Morning, March 25
8:30 AM to 11:30 AM
Room 326

PLATFORM SESSION: DNA DAMAGE AND REPAIR

Chairperson(s): *Gary Williams, NY Med. College, Valhalla, NY and Toby Rossman, NYU, Tuxedo, NY.*

#1895 8:30 **LACK OF DNA SINGLE STRAND BREAKS IN A LUNG EPITHELIAL CELL LINE AFTER EXPOSURE TO ARSENIC.** *A. R. Molinelli*[1], J. Nakamura[2], *J. A. Swenberg*[1, 2] and *M. C. Madden*[3]. [1]Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC, [2]Environmental Sciences and Engineering, University of North Carolina, Chapel Hill, NC and [3]Human Studies Division, USEPA, NHEERL, Research Triangle Park, NC.

#1896 8:50 **CYTOGENETIC EVALUATION OF ARSENIC TRIOXIDE TOXICITY IN SPRAGUE-DAWLEY RATS.** *A. K. Patlolla* and *P. B. Tchounwou*. Center for Environmental Health, Jackson State University, Jackson, MS.

#1897 9:10 **ARSENITE DEPRESSES POLY(ADP-RIBOSYL)ATION IN HUMAN SKIN KERATINOCYTES AND IN MOUSE SKIN.** *T. G. Rossman*, E. V. Komissarova, A. N. Uddin and *P. Li*. Environmental Medicine, New York University School of Medicine, Tuxedo, NY.

#1898 9:30 **P-GLYCOPROTEIN EXPRESSION LEVEL HAS A SIGNIFICANT IMPACT ON CLASTOGENICITY *IN VITRO*.** A. M. Peters, J. Strauss, M. Weiss and J. Haskins. Assay Development, Cellomics, Inc., Pittsburgh, PA. Sponsor: *E. McGuire*.

#1899 9:50 ***N*-ETHYL-*N*-NITROSOUREA (ENU) INCREASED BRAIN MUTATIONS IN PRENATAL AND INFANT MICE BUT NOT IN THE ADULTS.** *W. Slikker III*[1], *N. Mei*[2] and *T. Chen*[2]. [1]College of Letters and Science, University of California, Los Angeles, CA and [2]Division of Genetic and Reproductive Toxicology, NCTR/FDA, Jefferson, AR.

#1900 10:10 **A MODEL OF SENSITIVITY: 1, 3-BUTADIENE INDUCES HPRT MUTANTS IN MICE LACKING MICROSOMAL EPOXIDE HYDROLASE ACTIVITY.** J. Wickliffe, M. M. Ammenheuser, L. Galbert, J. Salazar and *J. Ward*. University of Texas Medical Branch, Galveston, TX.

#1901 10:30 **FORMATION OF DNA ADDUCTS IN F344 RAT NASAL TISSUE BY 2, 6-DIMETHYLANILINE AND 2, 6-DIETHYLANILINE, BUT NOT ALACHLOR.** J. D. Duan[1], *M. Genter*[2], *A. M. Jeffrey*[1] and *G. M. Williams*[1]. [1]Department of Pathology, New York Medical College, Valhalla, NY and [2]Department of Environmental Health, University of Cincinnati, Cincinnati, OH.

#1902 10:50 **THE ROLE OF O6 METHYLGUANINE DNA REPAIR METHYLTRANSFERASE AND MOUSE 3-METHYLADENINE DNA GLYCOSYLASE IN REPAIRING ANTHRACYCLINE-INDUCED DNA ADDUCTS IN SALMONELLA TYPHIMURIUM AND ESCHERICHIA COLI.** *W. J. Mackay*, J. Armagost, R. Robinson and E. Scully. Biology & Health Services, Edinboro University of PA, Edinboro, PA.

#1903 11:10 **INVESTIGATION OF THE MUTAGENIC POTENTIAL OF EMISSIONS FROM ASPHALT FORMULATIONS WITH AND WITHOUT CRUMB-RUBBER MODIFICATION.** L. D. Olsen[1], V. S. Houk[2], S. H. Warren[2], *L. D. Claxton*[2], K. W. Hanley[1], A. K. Miller[3], G. A. Burr[1], D. Almaguer[1] and G. M. Kinnes[1]. [1]NIOSH, Cincinnati, OH, [2]USEPA, Research Triangle Park, NC and [3]USEPA, Denver, CO.

Thursday Morning, March 25
8:30 AM to 11:30 AM
Room 307

POSTER SESSION: PBDES

Chairperson(s): *Daniele Staskal, USEPA, ORD/NHEERL/ETD/IO, Reserach Triangle Park, NC and Herbert Wiegand, Heinrich-Heine University, Germany.*

Displayed*: 8:30 AM–11:30 AM*

Attended*: 8:30 AM–10:00 AM*

#1904 **PBDES IN US NURSING MOTHERS MILK, FOOD, AND ELECTRONIC APPLIANCES: LEVELS AND ESTIMATED INTAKE BY VARIOUS ROUTES.** *A. J. Schecter*[1], O. Paepke[2], J. J. Ryan[3], J. Olson[4], R. Malisch[5], *L. Birnbaum*[6] and M. Pavuk[1]. [1]Environmental Sciences, University of Texas School of Public Health, Dallas, TX, [2]ERGO Research Laboratory, Hamburg, Germany, [3]Health Canada, Ottawa, ON, Canada, [4]Pharmacology & Toxicology, University at Buffalo, Buffalo, NY, [5]State Laboratory for Chemical and Veterinary Analysis, Freiburg, Germany and [6]Experimental Toxicology Division, USEPA, Research Triangle Park, NC.

#1905 **DEVELOPMENTAL NEUROTOXICITY OF POLYBROMINATED DIPHENYLETHERS (PBDE): STEROID-DEPENDENT BEHAVIOR, SEXUAL DEVELOPMENT AND CIRCULATING STEROIDS.** H. Lilienthal, A. Hack, A. Roth-Haerer, L. Altmann, G. Winneke and *H. Wiegand*. Neurobehavioral Toxicology, Med. Institute of Environmental Hygiene, Duesseldorf, Germany.

#1906 **DEVELOPMENTAL NEUROTOXICITY OF PBDES:IMPAIRMENT OF SYNAPTIC PLASTICITY IN RAT CORTEX AND HIPPOCAMPUS. WIEGAND, H., ALTMANN, L., AND LILIENTHAL, H. MED. INST. ENVIRONM. HYG. AT THE HEINRICH-HEINE-UNIVERSITY, DUESSELDORF, GERMANY.** *H. Wiegand*[1], L. Altmann[2] and H. Lilienthal[3]. [1]Med.Inst.Environm.Hyg., Heinrich-Heine-University, Duesseldorf, Germany, [2]Med.Inst.Environm.Hyg., Heinrich-Heine-University, Duesseldorf, Germany and [3]Med.Inst.Environm.Hyg., Heinrich-Heine-University, Duesseldorf, Germany.

#1907 **COMPARATIVE DEVELOPMENTAL NEUROTOXICITY OF PBDE 99 IN TWO DIFFERENT MOUSE STRAINS AND RAT.** H. Viberg, A. Fredriksson and *P. Eriksson*. Environmental Toxicology, Uppsala University, Uppsala, Sweden.

#1908 **EXPOSURE TO AN ENVIRONMENTALLY RELEVANT DOSE OF PBDE 99 DISRUPTS THYROID HORMONE HOMEOSTASIS AND CAUSES NEUROBEHAVIOR DISTURBANCES IN RAT OFFSPRING.** S. N. Kuriyama, C. Talsness, W. Wittfoht and I. Chahoud. Department of Toxicology, Institute of Clinical Pharmacology and Toxicology, Charite University Medical School Berlin, Campus Benjamin Franklin, Berlin, Germany. Sponsor: *E. Silbergeld*.

#1909 **2, 2', 4, 4'-TETRABROMODIPHENYL ETHER (PBDE-47) ALTERS THYROID FUNCTION IN RATS.** J. M. Hedge[1], *K. M. Crofton*[1], *S. C. Laws*[1], *M. J. DeVito*[1], D. G. Ross[1] and P. C. Das[2]. [1]NHEERL, ORD, USEPA, Research Triangle Park, NC and [2]Curriculum in Toxicology, UNC, Chapel Hill, NC.

#1910 **DISPOSITION OF 2, 2′, 4, 4′-TETRABROMODIPHENYL EITHER (BDE 47) IN FEMALE MICE.** *D. Staskal*[1], *J. Diliberto*[2], *M. DeVito*[2] and *L. Birnbaum*[2]. [1]Curriculum in Toxicology, UNC, Chapel Hill, NC and [2]ETD, NHEERL, ORD, USEPA, Research Triangle Park, NC.

#1911 **EFFECTS OF POLYBROMINATED DIPHENYL ETHERS (PBDES) ON BASAL AND TCDD-INDUCED CYTOCHROME P450 1A1 ACTIVITY IN MCF7, HEPG2 AND H4IIE CELLS.** L. Peters[1], *M. van den Berg*[1], A. Bergman[2] and *T. Sanderson*[1]. [1]Institute for Risk Assessment Sciences, University of Utrecht, Utrecht, Netherlands and [2]Department of Environmental Chemistry, University of Sweden, Stockholm, Sweden.

#1912 **EFFECTS OF BROMINATED FLAME RETARDANTS ON THE ACTIVITY OF THE STEROIDOGENIC ENZYME AROMATASE (CYP19) IN H295R HUMAN ADRENOCORTICAL CARCINOMA CELLS IN CULTURE.** R. Fernandez Canton[1], *T. Sanderson*[1], *R. Letcher*[3], A. Bergman[2] and *M. Berg*[1]. [1]Institute for Risk Assessment Sciences, Utrecht, Netherlands, [2]Department of Environmental Chemistry and Analytical Chemistry, Stockholm University, Stockholm, Sweden and [3]Great Lakes Institute for environmental Research, Windsor, ON, Canada.

#1913 **POLYBROMINATED DIPHENYLETHERS INHIBIT TCDD-INDUCED EROD-ACTIVITY IN CARP HEPATOCYTES.** R. V. Kuiper[1, 2, 3], *J. G. Vos*[3, 2], A. Bergman[4] and *M. van den Berg*[1]. [1]Institute for Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands, [2]Pathobiology, Utrecht University, Utrecht, Netherlands, [3]National Institute for Public Health and the Environment, Bilthoven, Netherlands and [4]Environmental Chemistry, Stockholm University, Stockholm, Sweden.

#1914 **CHILDREN'S HEALTH RISK ASSESSMENT OF THE COMMERCIAL PENTABROMODIPHENYL ETHER PRODUCT.** *T. L. Serex*[1], R. J. Wenning[2], *J. A. Biesemeier*[1], A. Von Burg[2], S. Braithwaite[2], A. M. Shipp[3] and G. Lawrence[3]. [1]Regulatory Affairs, Great Lakes Chemical Corp., West Lafayette, IN, [2]ENVIRON International Corp., Emeryville, CA and [3]ENVIRON International Corp., Ruston, LA.

#1915 **DEVELOPMENTAL EXPOSURE TO POLYBROMINATED DIPHENYL ETHERS IMPAIRS SYNAPTIC TRANSMISSION AND LTP IN HIPPOCAMPUS.** *M. E. Gilbert*[1], L. Sui[2, 1] and *K. M. Crofton*[1]. [1]Neurotoxicology, USEPA, Research Triangle Pk, NC and [2]National Research Council, Washington, DC.

Thursday Morning, March 25
8:30 AM to 11:30 AM
Room 307

POSTER SESSION: PFOS/PFOC

Chairperson(s): *Rayetta Grasty, University of North Carolina, Department of Toxicology, Chapel Hill, NC and Christopher Lau, USEPA, ORD/NHEERL/RTD, Reserach Triangle Park, NC.*

Displayed*: 8:30 AM–11:30 AM*

Attended*: 10:00 AM–11:30 AM*

#1916 **PERFLUOROOCTANE SULFONATE (PFOS) ALTERS LUNG DEVELOPMENT IN THE NEONATAL RAT.** *R. C. Grasty*[1, 2], N. Roberts[1], B. E. Grey[1], *C. Lau*[1] and *J. M. Rogers*[1, 2]. [1]Reproductive Toxicology Division, NHEERL, ORD, USEPA, Research Triangle Park, NC and [2]Curriculum in Toxicology, UNC Chapel Hill, Chapel Hill, NC.

#1917 **EFFECTS OF PERFLUOROOCTANE SULFONATE (PFOS) ON THYROID HORMONE STATUS IN ADULT AND NEONATAL RATS.** M. N. Logan[1], J. R. Thibodeaux[2], R. G. Hanson[2] and C. Lau[2]. [1]Biology, North Carolina Central University, Durham, NC and [2]USEPA NHEERL, Research Triangle Park, NC. Sponsor: *J. Rogers*.

#1918 **PERFLUOROOCTANOIC ACID: RELATIONSHIP BETWEEN REPEATED INHALATION EXPOSURES AND PLASMA PFOA CONCENTRATION IN THE RAT.** *P. M. Hinderliter*, *M. P. DeLorme* and *G. W. Jepson*. Haskell Laboratory for Health and Environmental Sciences, Newark, DE.

#1919 **CONSIDERATIONS RELEVANT TO CONSTRUCTING A HUMAN PBPK MODEL FOR PERFLUOROOCTANOIC ACID (PFOA).** *D. J. Paustenbach*[1] and *G. W. Jepson*[2]. [1]ChemRisk, San Francisco, CA and [2]Biochemical and Molecular Toxicology, Haskell Laboratory for Health and Environmental Sciences, Newark, DE.

#1920 **A LONG-TERM TREND OF SERUM LEVELS OF PERFLUOROOCTANE SULFONATE (PFOS) AND PERFLUOROOCTANOATE (PFOA) IN JAPANESE.** K. Harada, A. Koizumi, T. Yoshinaga, K. Inoue and N. Saito. Health Environmental Sciences, Kyoto University Graduate School of Medicine, Kyoto, Japan. Sponsor: *R. Reitz*.

#1921 **PERFLUOROOCTANOATE AND PERFLUOROOCTANE SULFONATE CONCENTRATIONS IN SURFACE WATERS IN JAPAN.** N. Saito[2], A. Koizumi[1], T. Yoshinaga[1], K. Harada[1] and K. Inoue[1]. [1]Health Environmental Sciences, Kyoto University Graduate School of Medicine, Kyoto, Japan and [2]Health and Environmental Sciences, Iwate Environmental Institute, Morioka, Japan. Sponsor: *R. Reitz*.

Thursday Morning, March 25
8:30 AM to 11:30 AM
Room 307

POSTER SESSION: POLYCYCLIC AROMATIC HYDROCARBONS

Chairperson(s): *Aramandla Ramesh, Meharry Medical College, Nashville, TN.*

Displayed*: 8:30 AM–11:30 AM*

Attended*: 8:30 AM–10:00 AM*

#1922 **PAHS EXPOSURE AND BIOMARKERS: SIMULTANEOUS ANALYSIS OF 1-HYDROXYPYRENE AND ITS CONJUGATES IN URINE.** Y. Hu[1], X. Xue[1], Z. Zhou[2], J. Fu[2], B. S. Cohen[1], A. A. Melikian[3], M. Desai[1], X. Li[1], E. Tang[1], X. Huang[1], N. K. Roy[1] and Q. Qu[1]. [1]Institute of Environmental medicine, New York University School of Medicine, Tuxedo, NY, [2]Department of Toxicology, School of Public Health, Peking University, Beijing, China and [3]American Health Foundation, Valhalla, NY. Sponsor: *L. Chen*.

#1923 **THE CARCINOGEN 7, 8-DIHYDRO-9, 10-EPOXY-7, 8, 9, 10-TETRAHDROBENZO[A]PYRENE AND BENZO(A)PYRENE REDUCED ANDROGEN RECEPTOR EXPRESSION IN HUMAN LUNG CELLS.** *P. Lin* and J. Ko. Toxicology, Chung Shan Medical University, Taichung, Taiwan.

#1924 **DEVELOPMENT OF A HIGH PERFORMANCE LIQUID CHROMATOGRAPHIC METHOD FOR THE SIMULTANEOUS DETERMINATION OF PYRENE-1, 6- AND -1, 8-DIONE IN ANIMAL AND HUMAN URINE.** A. Ruzgyte, *M. Bouchard* and *C. Viau*. Environmental & Occupational Health, University of Montreal, Montreal, QC, Canada.

#1925 **EFFECTS OF POLYAROMATIC HYDROCARBON CONTENT IN VEHICLE GASOLINE EMISSION EXHAUST ON GSH/GSSG RATIO *IN VITRO*.** R. P. Balan[1], J. L. Garcia-Tavera[1], A. Zambrano-Garcia[2], J. L. Arriaga[2], University. Gonzalez-Macias[2], I. Zapata-Penazco[2], *M. E. Cebrian*[1], E. S. Calderon-Aranda[1] and A. De Vizcaya-Ruiz[1]. [1]Toxicology, CINVESTAV-IPN, Mexico D.F., Mexico and [2]Ecotoxicology, IMP, Mexico D.F., Mexico.

#1926 ***IN VIVO* AND *IN VITRO* IMMUNOSUPPRESSIVE EFFECTS OF BENZO[K]FLUORANTHENE IN FEMALE BALB/C MICE.** T. Jeon, C. Jin, S. Lee, D. Lee, N. Kim, S. Hyun and *T. Jeong*. Pharmacy, Yeungnam University, Kyungsan, Kyungbuk, South Korea.

#1927 **DNA ADDUCT AS BIOLOGICAL EFFECT MARKER IN A CHINESE POPULATION WITH ENVIRONMENTAL EXPOSURES TO PAHS.** Q. Qu[1], Y. Hu[1], X. Xue[1], Z. Zhou[2], J. Fu[2], B. Cohen[1], D. Li[3], X. Li[1], E. Tang[1] and N. Roy[1]. [1]Environmental Medicine, NYU School of Medicine, Tuxedo, NY, [2]Toxicology, Peking University School of Public Health, Beijing, China and [3]Gastrointestinal Medical Oncolog, University of Texas, M.D Anderson Cancer Center, Houston, TX. Sponsor: *L. Chen*.

#1928 **BENZO(A)PYRENE INDUCES ATM-DEPENDENT P53 PHOSPHORYLATION AND CELL CYCLE ARREST IN HUMAN PLACENTAL AND ENDOMETRIAL CELL LINES.** J. M. Kitzman, T. A. Medrano and *K. T. Shiverick*. Pharmacology & Therapeutics, University of Florida, Gainesville, FL.

#1929 ***IN VIVO* AND *IN VITRO* COMPARISONS OF POLYCYCLIC AROMATIC HYDROCARBONS-INDUCED IMMUNOTOXICITY IN MICE.** D. Lee, T. Jeon, C. Jin, S. Lee, N. Kim, S. Hyun and *T. Jeong*. Pharmacy, Yeungnam University, Kyungsan, Kyungbuk, South Korea.

#1930 **DIETARY FAT MODULATED METABOLISM OF FLUORANTHENE (FLA) IN F-344 RATS.** S. A. WALKER and *A. RAMESH*. PHARMACOLOGY, MEHARRY MEDICAL COLLEGE, NASHVILLE, TN.

#1931 **DMBA BONE MARROW TOXICITY SELECTIVELY AFFECTS THE GRANULOCYTE POPULATION, MONOCYTE VS. NEUTROPHIL.** *N. Galvan*[1, 2], *C. J. Czuprynski*[1, 3] and *C. R. Jefcoate*[1, 2]. [1]Molecular and Environmental Toxicology, UW-Madison, Madison, WI, [2]Pharmacology, UW-Madison, Madison, WI and [3]Pathological Sciences, UW-Madison, Madison, WI.

#1932 **SPECIES-SPECIFIC INTESTINAL MICROSOMAL METABOLISM OF FLUORANTHENE.** *A. Ramesh*, S. A. Walker, L. Whitten and G. Seals. Pharmacology, Meharry Medical College, Nashville, TN.

#1933 ***IN VITRO* AND *IN VIVO* GENOTOXICITY OF ISOLATED FRACTIONS FROM PAH AND CHLOROPHENOL MIXTURES.** T. D. Phillips, A. M. Gillespie, L. Cizmas, L. He, G. Zhou, T. J. McDonald, Y. Qian and *K. C. Donnelly*. Texas A&M University, College Station, TX.

#1934 **PAH *O*-QUINONES PRODUCE SIGNIFICANT AMOUNTS OF 8-OXO-7, 8-DIHYDRO-2′-DEOXYGUANOSINE (8-OXO-DG) IN SALMON TESTIS DNA.** J. Park, L. M. Szewczuk and T. M. Penning. pharmacology, school of medicine, university of pennsylvania, philadelphia, PA. Sponsor: *S. burchiel*.

#1935 **PYRENE ALTERS GENE EXPRESSION AND FATTY ACIDS IN CD-1 MICE.** L. Y. Hernandez and *L. J. Bain*. Biological Sciences, University of Texas at El Paso, El Paso, TX.

#1936 **DEVELOPING A CARCINOGENIC BIOASSAY FOR COMPLEX MIXTURES.** *D. Warshawsky*, K. LaDow, R. Albert, M. Anderson, W. Xue, S. Spalding, G. Boivin, D. Ginsburg and P. Succop. Environmental Health, University of Cincinnati, Cincinnati, OH.

#1937 **METABOLISM OF POLYCYCLIC AROMATIC HYDROCARBON *trans*-DIHYDRODIOLS BY CYTOCHROME P450 AND ALDO-KETO REDUCTASE ENZYMES.** A. M. Quinn, H. Jiang and T. M. Penning. Pharmacology, University of Pennsylvania, Philadelphia, PA. Sponsor: *S. Burchiel*.

Thursday Morning, March 25
8:30 AM to 11:30 AM
Room 307

POSTER SESSION: APOPTOSIS II

Chairperson(s): *Anna Lisa Nieminen, Case Western Reserve University, Cleveland, OH and Valerian Kagan, University of Pittsburgh, Pittsburgh, PA.*

Displayed*: 8:30 AM–11:30 AM*

Attended*: 10:00 AM–11:30 AM*

#1938 **QUANTITATIVE ANALYSIS OF PHOSPHOLIPID PEROXIDATION: APPEARANCE OF OXIDIZED PHOSPHATYDYLSERINE ON THE SURFACE OF HL-60 CELLS DURING INTRINSIC APOTOSIS.** V. B. Ritov[2], V. A. Tyurin[1], *Y. Y. Tyurina*[1] and *V. E. Kagan*[1]. [1]Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA and [2]Medicine, University of Pittsburgh, Pittsburgh, PA.

#1939 **ENHANCMENT OF TRANSBILYER DIFFUSION OF PHOSPHATIDYLSERINE BY ITS OXIDATION PRODUCTS: MECHANISM OF PHOSPHATIDYLSERINE EXTERNALIZATION DURING APOPTOSIS.** *Y. Y. Tyurina*[1], Q. Zhao[1], V. A. Tyurin[1], M. Djukic[1] and *V. E. Kagan*[1, 2, 3]. [1]Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA, [2]Pharmacology, University of Pittsburgh, Pittsburgh, PA and [3]Cancer Institute, University of Pittsburgh, Pittsburgh, PA.

#1940 **CYTOCHROME *C* -/- CELLS FAIL TO TRIGGER PHOSPHATIDYLSERINE SIGNALING DURING APOPTOSIS.** *J. Jiang*[1], V. Kini[1], *Y. Y. Tyurina*[1], G. G. Borisenko[1], *A. J. Schroit*[2] and *V. E. Kagan*[1]. [1]Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA and [2]Cancer Biology, The University of Texas M.D. Anderson Cancer Center, Huston, TX.

#1941 **METALLOTHIONEIN MEDIATES GLUCOCORTICOID HORMONE RESPONSIVENESS IN IMMORTALIZED MOUSE FIBROBLASTS AND PRIMARY THYMOCYTES.** F. Haq[1], *R. K. Zalups*[2] and *J. Koropatnick*[3]. [1]Department of Microbiology & Immunology, University of Western Ontario & London Regional Cancer Center, Ontario, Canada, [2]Basic Sciences, Mercer University, Macon, GA and [3]Departments of Physiology & Pharmacology, Oncology, & Pathology, University of Western Ontario, & London Regional Cancer Center, Ontario, Canada.

#1942 **ACUTE ETHANOL PRE-EXPOSURE SENSITIZES LIVER AND KIDNEYS TO FUROSEMIDE-INDUCED APOPTOTIC AND NECROTIC CELL DEATHS BY SELECTIVELY INFLUENCING OXIDATIVE STRESS AND GENOMIC DNA FRAGMENTATION *IN VIVO*.** *C. Patel*, *R. R. Raje* and *S. D. Ray*. Mol. Toxicology. Program, Division of Pharmacology & Toxicol., Long Island University, Brooklyn, NY.

#1943 **HYPOXIA-MEDIATED NFκB ACTIVATION IS INHIBITED BY N-ACETYLCYSTEINE IN TUMOR CELLS.** S. Qanungo and *A. Nieminen*. Case Western Reserve University, Cleveland, OH.

#1944 **PHAGOCYTOSIS OF APOPTOTIC JURKAT CELLS BLOCKS ZYMOSAN-INDUCED INTRACELLULAR PRODUCTION OF REACTIVE OXYGEN SPECIES AND NITRIC OXIDE IN RAW 264.7 MACROPHAGES.** B. F. Serinkan, H. N. Babu, A. I. Potapovich, F. Gambelli, L. A. Ortiz and *V. E. Kagan*. Environmental and Ocupational Health, University of Pittsburg, Pittsburgh, PA.

#1945 **NITRIC OXIDE INDUCES P53-DEPENDENT APOTOSIS IN RAT NEURAL CELL LINES.** C. Brynczka[1], *B. A. Wetmore*[1], C. McNeil-Blue[1], W. A. Freed[2] and *B. A. Merrick*[1]. [1]NCT, NIEHS, NIH DHHS, Research Triangle Pk, NC and [2]Cell Neurobiol Rsch Branch, NIDA, NIH, DHHS, Baltimore, MD.

#1946 **SIMILAR APOPTOTIC ULTRASTRUCTURAL DAMAGE BUT DIFFERENT BIOCHEMICAL PATHWAYS INDUCED BY ROTENONE AND CAMPTOTHECIN IN HUMAN NEUROSPHERES.** *J. Li*, M. L. Spletter and *J. A. Johnson*. School of Pharmacy, University of Wisconsin at Madison, Madison, WI.

#1947 **ANTI-APOPTOTIC MECHANISM OF MOUSE LEYDIG CELL LINE TM3 AFTER BENZO(A)PYRENE EXPOSURE IS ASSOCIATED WITH THE UP-REGULATION OF X-CHROMOSOME LINKED INHIBITOR OF APOPTOSIS PROTEIN.** J. Chung, J. Kim, J. Kim, J. Kim, K. Yoo, Y. Yoo and J. Kim. Department Anatomy & Cell Biology, Dong-A University, Busan, South Korea. Sponsor: *K. Yang*.

#1948 **CASPASE 2 AND THE MITOCHONDRION IN PAH-INDUCED PRO/PRE-B CELL APOPTOSIS.** *H. Ryu*[1], J. K. Emberley[2], *J. J. Schlezinger*[1], L. L. Allan[2] and *D. H. Sherr*[1, 2]. [1]Envrionmental Health, Boston University Sch. of Medicine, Boston, MA and [2]Microbiology, Boston University Sch. of Medicine, Boston, MA.

#1949 **TESTICULAR SERTOLI CELLS SURVIVE DESPITE CISPLATIN-INDUCED INJURY DUE TO THE EXPRESSION OF INHIBITOR OF APOPTOSIS PROTEINS THAT DISRUPT MITOCHONDRIAL-MEDIATED APOPTOTIC SIGNALING.** *P. Sawhney* and *J. H. Richburg*. College of Pharmacy, The University of Texas at Austin, Austin, TX.

#1950 **EVIDENCE THAT 1, 1-DICHLOROETHYLENE INDUCES APOPTOTIC CELL DEATH IN MURINE LIVER.** *E. J. Martin* and *P. Forkert*. Anatomy and Cell Biology, Queen's University, Kingston, ON, Canada.

#1951 **BCL-X_L AND CYCLOSPORIN A (CsA) INHIBIT LEAD-INDUCED ROD PHOTORECEPTOR APOPTOSIS AND DECREASED MITOCHONDRIAL RESPIRATION BY BLOCKING CYTOCHROME C RELEASE.** *D. A. Fox*[1], *L. He*[2], A. T. Poblenz[3] and C. J. Medrano[1]. [1]University of Houston, Houston, TX, [2]UNC, Chapel Hill, NC and [3]UT MDACC, Houston, TX.

#1952 **CASPASE-2 DIRECTLY IMPAIRS MITOCHONDRIAL FUNCTION AND STIMULATES CYTOCHROME C RELEASE.** *J. D. Robertson*[2, 1], V. Gogvadze[1], A. Kropotov[1], H. Vakifahmetoglu[1], B. Zhivotovsky[1] and *S. Orrenius*[1]. [1]Toxicology, Karolinska Institutet, Stockholm, Sweden and [2]Pharmacology, Toxicology, and Therapeutics, University of Kansas Medical Center, Kansas City, KS.

#1953 **THE MITOCHONDRIAL PERMEABILITY TRANSITION (MPT) IS A KEY FACTOR IN ACETAMINOPHEN KILLING OF HEPATOCYTES.** K. Kon[1], J. Kim[1], E. A. Doyal[1], *H. Jaeschke*[2] and *J. J. Lemasters*[1]. [1]University of North Carolina, Chapel Hill, NC and [2]University of Arizona, Tucson, AZ.

#1954 **LIVER CELL DEATH AFTER ACETAMINOPHEN (AP) OVERDOSE: APOPTOSIS OR ONCOTIC NECROSIS.** S. Phadke, C. Patel, *R. Raje* and *S. D. Ray*. Mol. Toxicology. Program/Pharmacology & Toxicol., Long Island University, Brooklyn, NY.

Thursday Morning, March 25
8:30 AM to 11:30 AM
Room 307

POSTER SESSION: GENE EXPRESSION III

Chairperson(s): *Samuel Cohen, University of Nebraska Medical Center, Omaha, NE and Matthew Cooper, Biogen, Cambridge, MA.*

Displayed*: 8:30 AM–11:30 AM*

Attended*: 8:30 AM–10:00 AM*

#1955 **ALTERED GENE PROFILES IN RAT TESTES AFTER INHALATION EXPOSURE TO 1-BROMOPROPANE AND 2-BROMOPROPANE.** W. Li[1], E. Kitagawa[2], H. Iwahashi[2], H. Wang[1], S. Ichihara[1] and *G. Ichihara*[1]. [1]Occupational and Environmental Health, Nagoya University Graduate School of Medicine, Nagoya, Aichi, Japan and [2]Human Stress Signal Research Center, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaragi, Japan.

#1956 **GENE EXPRESSION IN MOUSE BRAIN FOLLOWING SUBCUTANEOUS INJECTIONS OF SARIN.** C. M. Garrett, S. J. Paton, D. R. Cool, R. D. Grubbs, W. R. Price and M. Morris. Pharmacology/Toxicology, Wright State, Dayton, OH. Sponsor: *J. McDougal*.

#1957 **GLOBAL GENE EXPRESSION CHANGES UNDERLYING TOXICOLOGICAL INTERACTIONS OF *STACHYBOTRYS CHARTARUM* TOXINS AND MURINE ALVEOLAR MACROPHAGES.** H. Wang and J. S. Yadav. Environmental Health, University of Cincinnati Medical Center, Cincinnati, OH. Sponsor: *D. Warshawsky*.

#1958 **GENETIC TOXICITY AND GENE EXPRESSION PROFILES IN TK6 CELLS EXPOSED TO IONIZING RADIATION.** G. Akerman[1], O. E. Domon[1], B. Rosenzweig[3], M. E. Bishop[1], L. J. McGarrity[1], C. A. Tsai[1], P. S. Pine[3], *J. T. MacGregor*[2], *F. D. Sistare*[3], J. J. Chen[1] and S. M. Morris[1]. [1]NCTR, Jefferson, AR, [2]NCTR, Washington, DC and [3]USFDA, Laurel, MD.

#1959 **TRANSCPRIPTIONAL RESPONSES OF MOUSE EMBRYO CULTURES EXPOSED TO BROMOCHLOROACETIC ACID.** *E. D. Karoly*[1, 2], J. E. Schmid[2] and S. Hunter[2]. [1]Curriculum in Toxicology, UNC Chapel Hill, Chapel Hill, NC and [2]Reproductive Toxicology Division, USEPA, NHEERL, ORD, Research Triangle Park, NC.

#1960 ***IN VITRO* GENE EXPRESSION PROFILING OF HEPATOTOXINS USING DNA MICROARRAYS.** C. M. Glatt[1], K. A. Ewane[2], D. L. Nabb[1] and *R. A. Kemper*[1]. [1]Haskell Laboratory, DuPont, Newark, DE and [2]Biological Sciences, University of Delaware, Newark, DE.

#1961 **MICROARRAY ANALYSIS OF LUNG GENE EXPRESSION IN MOUSE PUPS AFTER FETAL DRINKING WATER EXPOSURE TO URANYL-NITRATE.** J. M. Orozco[1], S. L. Marion[3], C. Begay[3], *P. Hoyer*[3], C. Dyer[4] and *R. C. Lantz*[2, 1]. [1]Pharmacology and Toxicology, University of Arizona, Tucson, AZ, [2]Cell Biology and Anatomy, University of Arizona, Tucson, AZ, [3]Physiology, University of Arizona, Tucson, AZ and [4]Biological Sciences, Northern Arizona University, Flagstaff, AZ.

#1962 **EFFECT OF VALPROIC ACID ON THE EXPRESSION OF GENES IN THE LIVERS OF PREGNANT MICE.** J. Fuscoe[1, 2], C. D. Melvin[1, 2], C. L. Moland[1, 2], W. S. Branham[1, 2], L. Shi[3] and *D. K. Hansen*[2]. [1]Center for Functional Genomics, NCTR, Jefferson, AR, [2]Division of Genetic and Reproductive Toxicology, NCTR, Jefferson, AR and [3]Division of Biometry and Risk Assessment, NCTR, Jefferson, AR.

#1963 **TOXICOGENOMIC STUDIES ON THE MECHANISMS OF SARIN-INDUCED NEURODEGENERATION IN RATS.** *T. V. Damodaran*, S. T. Greenfield, A. G. Patel and *M. B. Abou-Donia*. Pharmacology and Cancer Biology, Duke University Medical Center, Durham, NC.

#1964 **INVESTIGATION OF A COMPOUND-INDUCED VASCULAR INFLAMMATORY SYNDROME IN DOGS USING GENE EXPRESSION ANALYSES.** *Q. Huang*, O. DiSorbo, Y. Yu, S. Jayadev and *K. Blanchard*. Toxicology and Safety Assessment, Boehringer Ingelheim, Ridgefield, CT.

#1965 **THE EFFECT OF ANTI-HEPATITIS B PRODRUG HEPAVIR B ON HEPATIC TOXICOLOGICAL GENE EXPRESSION IN RATS.** R. Yan, C. Fang, C. Lim, *D. Vitarella*, P. Srivastava, Y. Liu, L. Yeh and *C. Lin*. R&D Department, ICN Pharmaceuticals Inc., Costa Mesa, CA.

#1966 **IDENTIFICATION OF GENE EXPRESSION IN THE UROTHELIUM OF RATS FED DIMETHYLARSINIC ACID USING MICROARRAY ANALYSIS.** *S. M. Cohen*, M. Wei, *L. L. Arnold* and J. D. Eudy. Path/Micro, University of Nebraska Med. Ctr, Omaha, NE.

#1967 **XENOBIOTIC-INDUCED CHANGES IN RAT HEART GENE EXPRESSION.** *B. P. Hirakawa*[1], *B. Jessen*[1], *A. de Peyster*[2] and *G. Stevens*[1]. [1]Drug Safety Evaluation, Pfizer Global Research and Development, San Diego, CA and [2]Graduate School of Public Health, San Diego State University, San Diego, CA.

#1968 **HEPATIC GENE EXPRESSION PROFILES INDUCED BY PREGENOLONE 16α-CARBONITRILE.** V. Bhaskaran, D. M. Nelson, W. R. Foster, *B. Gemzik*, *B. D. Car* and *L. D. Lehman-Mckeeman*. Discovery Toxicology, Bristol-Myers Squibb, Princeton, NJ.

#1969 **THE SKELETAL MUSCLE INJURY INDUCED BY COMPOUND A WITH INHIBITORY EFFECTS ON HMG-COA REDUCTASE IS REVERSIBLE.** K. Tanaka[1], N. Kiyosawa[1], S. Sharyo[1], *M. Teranishi*[1], *S. Manabe*[1] and H. Ozaki[2]. [1]Medicinal Safety Res. Labs., Sankyo Co., Ltd., , Fukuroi-shi, Shizuoka, Japan and [2]Department of Vet. Pharmacology, University of Tokyo, Bunkyo-ku, Tokyo, Japan.

#1970 **GENE EXPRESSION STUDY OF ADRIAMYCIN INDUCED TOXICITY IN HEART OF MALE SPRAGUE-DAWLEY RATS.** M. Derbel, *M. Cooper*, D. Hutto, D. Enke, M. Subramanyam and *J. Green*. Preclinical and Clinical Development Sciences Division, Biogen, Cambridge, MA.

#1971 **PERSISTENT ALTERATIONS IN GENE EXPRESSION FOLLOWING CHRONIC DOXORUBICIN ADMINISTRATION IN RATS.** *J. M. Berthiaume*, J. A. Bjork and *K. B. Wallace*. Biochem. & Mol. Biology, Toxicology Graduate Program, School of Medicine, University of Minnesota, Duluth, MN.

#1972 **GENE EXPRESSION PROFILING IN TESTIS AND LIVER OF MICE TO IDENTIFY MODES OF ACTION OF CONAZOLE TOXICITIES.** A. K. Goetz[2], W. Bao[1], J. E. Schmid[1], C. Wood[1], H. Ren[1], D. S. Best[1], R. N. Murrell[2], *J. C. Rockett*[1], M. G. Narotsky[1], *D. C. Wolf*[1], D. B. Tully[1] and *D. J. Dix*[1]. [1]Reproductive Toxicology, USEPA, Research Triangle Park, NC and [2]Department of Environmental and Molecular Toxicology, North Carolina State University, Raleigh, NC.

#1973 **GENE EXPRESSION CHANGES ASSOCIATED WITH ALTERED GROWTH AND DIFFERENTIATION IN BENZO(A)PYRENE OR ARSENIC EXPOSED NORMAL HUMAN EPIDERMAL KERATINOCYTES.** D. S. Perez, *R. S. Yang* and J. A. Campain. Quantitative & Computational Toxicology Group, Center for Environmental Toxicology & Technology, Department of Environmental & Radiological Health Sciences, Colorado State University, Fort Collins, CO.

#1974 **CHARACTERISTIC EXPRESSION PROFILES INDUCED BY GENOTOXIC AND NON-GENOTOXIC CARCINOGENS IN RAT LIVER ANALYZED ON AFFYMETRIX GENECHIPS.** *H. J. Ahr*[1], H. Ellinger-Ziegelbauer[1], *B. P. Stuart*[2] and *B. S. Wahle*[2]. [1]Molecular and Genetic Toxicology, Bayer Health Care AG, Wuppertal, Germany and [2]Toxicology, Bayer Crop Science, Stilwell, KS.

#1975 **GENE EXPRESSION PROFILING OF MAMMARY TISSUE FOLLOWING NMU TREATED SENSITIVE FISHER 344 AND RESISTANT COPENHAGEN RAT STRAINS IN DIFFERENT TIME POINTS.** X. Ren[2, 1], R. C. Sullivan[1], A. S. Kim[1] and *H. Zarbl*[1, 2]. [1]Human Biology, Fred Hutchinson Cancer Research Center, Seattle, WA and [2]Department of Environmental and Occupational Health, University of Washington, Seattle, WA.

#1976 **SERUM CYTOKINE ANALYSIS AND TRANSCRIPTIONAL PROFILING OF PBMCS IN CHIMPANZEES TREATED WITH A LYMPHOTOXIN BETA RECEPTOR AGONIST.** *M. Cooper*[1], E. Stanford[2], M. Wu[1], M. Derbel[1], J. Goyal[2], *J. Green*[2], M. Subramanyam[2] and D. Enke[1]. [1]Biomarker Development and Validation, Biogen, Cambridge, MA and [2]Preclinical and Clinical Development Sciences, Biogen, Cambridge, MA.

#1977 **BLOOD GENE EXPRESSION PROFILING: A BIOMARKER PILOT STUDY COMPARISON OF SMOKERS AND NONSMOKERS.** G. M. Hellmann[1], W. T. Morgan[2] and C. N. Overman[2]. [1]Physiology and Pharmacology, Wake Forest University, Winston-Salem, NC and [2]R. J. Reynolds, Winston-Salem, NC. Sponsor: *D. Pence*.

Thursday Morning, March 25
8:30 AM to 11:30 AM
Room 307

POSTER SESSION: OMICS

Chairperson(s): *Srikanth Nadadur, USEPA, Research Triangle Park, NC and Karen Steinmetz, SRI International, Menlo Park, CA.*

Displayed*: 8:30 AM–11:30 AM*

Attended*: 10:00 AM–11:30 AM*

#1978 **ROLE OF INTESTINAL PERMEABILITY IN NSAID- AND LPS-INDUCED ACUTE PHASE RESPONSE IN RATS.** S. Tugendreich, S. Baumhueter, G. Day, S. Dunlea, B. Eynon, *M. Fielden*, S. Fujimoto, B. Ganter, R. Idury, K. Jarnagin, *K. Kolaja*, M. Lee, R. Nair, G. Natsoulis, S. Nicholson, C. Pearson, A. Roter, S. Thode and A. Tolley. Iconix Pharmaceuticals, Mountain View, CA.

#1979 **TOWARDS QUANTITATIVE PREDICTIONS OF HEPATOTOXICITY USING GENE EXPRESSION PROFILES.** *Y. Yang*, R. X. Ciurlionis and J. F. Waring. Department of Cellular and Molecular Toxicology, Abbott Laboratories, Abbott Park, IL.

#1980 **BIOMARKER DEVELOPMENT INFORMATION MANAGEMENT SYSTEM (BMD-IMS): ELECTRONIC FORMS IN A 21 CFR PART 11 COMPLIANT LIMS SYSTEM.** D. Enke[1], *M. Cooper*[1], M. Derbel[1], M. Wu[1], Q. Duong[1], M. Subramanyam[1], S. Subramaniam[2], M. Means[2], M. Christow[2], M. Wang[2], Z. Xu[2], A. Siva[2], K. Natarajan[2], J. Calabro[2] and M. Rosenberg[2]. [1]Biomarker Development, Biogen, Cambridge, MA and [2]Research Informatics, Biogen, Cambridge, MA.

#1981 **HEPATIC GENE EXPRESSION SIGNATURES IDENTIFY MULTIPLE PATHWAYS RELATED TO AH RECEPTOR ACTIVATION FOLLOWING SHORT- AND LONG-TERM COMPOUND ADMINISTRATION IN RAT.** S. Nicholson, S. Baumhueter, G. Day, S. Dunlea, B. Eynon, *M. Fielden*, S. Fujimoto, B. Ganter, R. Idury, K. Jarnagin, *K. Kolaja*, M. Lee, R. Nair, G. Natsoulis, C. Pearson, A. Roter, S. Thode, A. Tolley and S. Tugendreich. Iconix Pharmaceuticals, Mountain View, CA.

#1982 **A GENOMIC MODEL OF BENZO(A)PYRENE INDUCED ATHEROGENESIS.** C. D. Johnson[1, 2], T. L. Thomas[3] and *K. S. Ramos*[1, 2]. [1]Center for Genetics and Molecular Medicine, University of Louisville, Louisville, KY, [2]Biochemistry and Molecular Biology, University of Louisville, Louisville, KY and [3]Biology, Texas A&M University, College Station, TX.

#1983 **COMPOUND CLASSIFICATION USING TRANSCRIPT PROFILING.** S. ruepp[1], G. Steiner[2], *F. Boess*[1], R. Gasser[1], S. Evers[3], M. De Vera[1], S. Albertini[1] and L. Suter[1]. [1]PRBN-S, Roche, Basel, Switzerland, [2]PRBI-B, Roche, Basel, Switzerland and [3]PRG, Roche, Basel, Switzerland.

#1984 **THE COMPARATIVE TOXICOGENOMICS DATABASE (CTD).** C. J. Mattingly[1], G. T. Colby[1], M. Rosenstein[1], J. N. Forrest[2, 1] and J. L. Boyer[2, 1]. [1]Bioinformatics, MDI Biological Laboratory, Salisbury Cove, ME and [2]Medicine, Yale Univeristy, New Haven, CT. Sponsor: *W. Toscano*.

#1985 **DISCOVERING SYSTEM-LEVEL FEATURES OF THE EARLY MOUSE EMBRYO USING MITOCHONDRIAL BENZODIAZEPINE RECEPTOR LIGANDS, MICROARRAY AND COMPUTATIONAL METHODS.** *K. R. Nemeth*, A. V. Singh, R. C. Craig, K. B. Knudsen, N. H. Owens, B. Nibbio, M. Green and *T. B. Knudsen*. Pathology, Anatomy and Cell Biology, Thomas Jefferson University, Philadelphia, PA.

#1986 **PROTEOMIC IDENTIFICATION OF INSULIN-LIKE GROWTH FACTOR BINDING PROTEIN-6 INDUCED BY SUBLETHAL H_2O_2 STRESS FROM HUMAN DIPLOID FIBROBLASTS.** L. Xie and *Q. M. Chen*. Pharmacology, University of Arizona, Tucson, AZ.

#1987 **NEW OPPORTUNITIES TO EXPLOIT THE HAZARDOUS SUBSTANCES DATA BANK USING TEXT MINING.** A. Porter[2], M. Szczur[1], H. F. Chang[1], J. Goshorn[1] and D. Schoeneck[3]. [1]National Library of Medicine, National Institutes of Health, Bethesda, MD, [2]Technology Policy and Assessment Center, Georgia Institute of Technology, Atlanta, GA and [3]Search Technology Inc., Norcross, GA. Sponsor: *V. Hudson*.

#1988 **USING A CDNA MICROARRAY FOR GENE EXPRESSION PROFILING OF WHOLE BLOOD IN LIPOPOLYSACCHARIDE-TREATED RATS.** R. D. Fannin, *J. T. Auman*, M. E. Bruno, S. O. Sieber, S. M. Ward, C. J. Tucker, *B. A. Merrick* and R. S. Paules. National Ctr Toxicogenomics, NIEHS, Research Triange Pk, NC.

#1989 **APPLICATION OF CDNA MICROARRAYS FOR SCREENING CARCINOGENICITY OF CHEMICALS IN THE 28-DAY REPEAT-DOSE TOXICITY STUDY.** M. Otsuka[1], H. Matsumoto[1], Y. Yakabe[1], M. Takeyoshi[1], *K. Saito*[2], K. Sumida[2], M. Sekijima[3], K. Nakayama[3], Y. Kawano[3], M. Tsuchiya[3], Y. Shinohara[4] and *T. Shirai*[5]. [1]Chemical Evaluation and Research Institute, Japan, Tokyo, Japan, [2]Sumitomo Chemical Co., Ltd., , Osaka, Japan, [3]Mitsubishi Chemical Safety Institute Ltd., , Ibaraki, Japan, [4]Hokkaido University, Sapporo, Japan and [5]Graduate School of Medical Sciences, Nagoya City University, Nagoya, Japan.

#1990 **QUANTITATIVE PROTEOMIC ANALYSIS OF HEPATIC RESPONSES TO 28-DAY REPEATED DOSE.** H. Yamanaka[1], M. Otsuka[1], Y. Yakabe[1], M. Takeyoshi[1], *K. Saito*[2], K. Sumida[2], M. Sekijima[3], K. Nakayama[3], Y. Kawano[3], M. Tsuchiya[2], Y. Shinohara[4] and *T. Shirai*[5]. [1]Chemical Assessment Center, Chemical Evaluation and Research Institute, Japan, Saitama, Japan, [2]Sumitomo Chemical Co., Ltd., , Osaka, Japan, [3]Mitsubishi Chemical Safety Institute Ltd., , Ibaraki, Japan, [4]Hokkaido University, Sapporo, Japan and [5]Graduate School of Medical Sciences, Nagoya City University, Nagoya, Japan.

#1991 **BIOMARKERS OF ASPHALT FUME EXPOSURE.** C. Keshava[1], N. Keshava[1], B. Law[2], D. Lewis[2] and *A. Weston*[1]. [1]TMBB, National Institute for Ocupational Safety and Health, Morgantown, WV and [2]Analytical Services Branch, NIOSH, Morgantown, WV.

#1992 **USING CORRELATION ANALYSIS AND HIERARCHICAL CLUSTERING TO DISCRIMINATE GENES ASSOCIATED WITH HEPATIC VASCULITIS FROM SUBSEQUENT HEPATIC INFLAMMATION.** B. lu[1], L. Nelms[1], *G. Floyd*[2] and *M. Lawton*[1]. [1]Molecular and investigative toxicology, Pfizer, Groton, CT and [2]Pathology, pfizer, Groton, CT.

#1993 **DBZACH: A COMPREHENSIVE TOXICOGENOMIC INFORMATION MANAGEMENT AND KNOWLEDGE DISCOVERY SYSTEM.** E. Dere, *L. D. Burgoon*, P. C. Boutros, S. Doran, S. S. Pai, R. Aiyar, J. Vakharia, R. Rotman, A. Adams, B. Lau and *T. R. Zacharewski*. Pharmacology & Toxicology, Biochemistry & Molecular Biology, National Food Safety & Toxicology Center, Institute for Environmental Toxicology, Michigan State University, East Lansing, MI.

#1994 **COMPARISON OF THE MODIFIED LOOP AND INDEPENDENT REFERENCE DESIGNS FOR MICROARRAY STUDIES.** *L. D. Burgoon*[1], *D. R. Boverhof*[1], J. E. Eckel[2], C. Gennings[2] and *T. R. Zacharewski*[1]. [1]Pharmacology & Toxicology, Biochemistry & Molecular Biology, National Food Safety & Toxicology Center, Institute for Environmental Toxicology, Michigan State University, East Lansing, MI and [2]Biostatistics, Virginia Commonwealth University, Richmond, VA.

#1995 **ASSESSING TOXICOGENOMIC DATA: ANALYSIS OF MICROARRAY QUALITY CONTROL MEASURES.** M. Ramer, *L. D. Burgoon*, *D. R. Boverhof*, B. Jeremy, *C. Fong* and *T. Zacharewski*. Pharmacology & Toxicology, Biochemistry & Molecular Biology, National Food Safety & Toxicology Center, Institute for Environmental Toxicology, Michigan State University, East Lansing, MI.

#1996 **PREDICTION OF TOXICITY FROM *LISTERIA MONOCYTOGENES* INFECTION IN MICE USING GENOMIC DATA.** *H. H. Ng*[1], *C. E. Frantz*[1], *L. Rausch*[1], J. Shimon[1], E. Riccio[1], S. Phillips[1], S. Smith[1], *C. Litterst*[2] and *J. C. Mirsalis*[1]. [1]BioSciences, SRI International, Menlo Park, CA and [2]National Institute of Allergy and Infectious Diseases, NIH, Bethesda, MD.

Thursday Morning, March 25
8:30 AM to 11:30 AM
Room 307

POSTER SESSION: OXIDATIVE STRESS II

Chairperson(s): *Raghubir Sharma, University of Georgia, Athens, GA and D Bagchi, InterHealth Nutraceuticals Inc., Benicia, CA.*

Displayed*: 8:30 AM–11:30 AM*

Attended*: 8:30 AM–10:00 AM*

#1997 **TISSUE SPECIFIC OXIDATIVE STRESS AND GLUTATHIONE METABOLISM IN STREPTOZOTOCIN-INDUCED DIABETIC RATS.** *H. Raza*, A. John and L. A. Kumar. Biochemistry, Faculty of Medicine and Health Sciences, UAE University, Al Ain, United Arab Emirates.

#1998 **ASSESSMENT OF S-NITROSOTHIOLS IN BIOLOGICAL FLUIDS: CONTENT OF S-NITROSOTHIOLS IN PLASMA.** V. A. Tyurin[1], Q. Zhao[1], *J. Jiang*[1], G. G. Borisenko[1], R. E. Gandley[1, 4], *Y. Y. Tyurina*[1], H. Bair[2], A. A. Kapralov[1], *A. A. Shvedova*[6], A. M. Komarov[7], C. A. Hubel[4], R. N. Taylor[5], D. A. Stoyanovsky[3] and *V. E. Kagan*[1]. [1]EOH, University of Pittsburgh, Pittsburgh, PA, [2]CCM, University of Pittsburgh, Pittsburgh, PA, [3]Surgery, University of Pittsburgh, Pittsburgh, PA, [4]OBGJN, University of Pittsburgh, Pittsburgh, PA, [5]OBGJN&RS, UCSF, San Francisco, CA, [6]PPRB, NIOSH, Morgantown, WV and [7]Physiology, George Washington University, Washington, DC.

#1999 **4-HYDROXYNONENAL AND MALONDIALDEHYDE SUPRESS CONSTITUTIVE ACTIVITY OF NFKB IN PRIMARY RAT HEPATOCYTE CULTURES BY MODULATING MAPKS UP-STREAM OF IKK.** B. P. Sampey, M. S. Taylor and *D. R. Petersen*. Pharmaceutical Sciences, University of Colorado HSC, Denver, CO.

#2000 **INAPPROPRIATE CELL CYCLE CHECK POINT CONTROL DURING ROS- INDUCED ONCOTIC CELL DEATH.** *S. Ramachandiran*, *S. S. Lau* and *T. J. Monks*. Pharmacology/Toxicology, University of Arizona Health Sciences Center, Tucson, AZ.

#2001 **USING CRYOPRESERVED NEURONAL CELLS FOR ASSESSMENT OF CHEMICALLY INDUCED OXIDATIVE CELL STRESS IN PRIMARY CELL CULTURE.** A. Krantis[1, 2], W. Staines[1, 2], S. VandenHoek[2, 1] and T. Durst[1, 2]. [1]Cellular& Molecular Medicine, University Ottawa, Ottawa, ON, Canada and [2]CRBB, University Ottawa, Ottawa, ON, Canada. Sponsor: *M. Aschner*.

#2002 **OXIDATIVE INACTIVATION OF THE THIOREDOXIN SYSTEM.** *W. H. Watson*[1] and *D. P. Jones*[2]. [1]Environmental Health Sciences, Johns Hopkins School of Public Health, Baltimore, MD and [2]Medicine, Emory University School of Medicine, Atlanta, GA.

#2003 **THE ROLE OF CYSTEINE REGULATION IN ADIPOGENESIS.** M. Cimafranca[2], *P. R. Hanlon*[2] and *C. R. Jefcoate*[1, 2]. [1]Pharmacology, University of Wisconsin, Madison, WI and [2]Molecular & Environmental Toxicology Center, University of Wisconsin, Madison, WI.

#2004 **FREE RADICAL DETERMINANTS OF AMPHETAMINE NEURODEGENERATION: PROSTAGLANDIN H SYNTHASE (PHS)-CATALYZED FREE RADICAL FORMATION AND REACTIVE OXYGEN SPECIES (ROS)-MEDIATED OXIDATIVE DNA DAMAGE IN NEURONAL DEGENERATION AND FUNCTIONAL DEFICITS.** *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.

#2005 **INCREASED MITOCHONDRIAL THIOREDOXIN INHIBITS OXIDANT-INDUCED APOPTOSIS BY A GSH-INDEPENDENT MECHANISM IN SH-SY5Y NEUROBLASTOMA CELLS.** J. Cai, Y. Chen and *D. P. Jones*. Department of Medicine, Emory University, Atlanta, GA.

#2006 **FETAL HEMATOPOIETIC STEM CELLS ARE SENSITIVE TARGETS OF 4-HYDROXYNONENAL.** C. G. Moneypenny, *C. M. Huisden* and *E. P. Gallagher*. Department of Physiological Sciences, University of Florida, Gainesville, FL.

#2007 **MOUSE GLUTAMATE-CYSTEINE LIGASE CATALYTIC AND MODIFIER SUBUNITS COMPLEX *IN VITRO*, TO FORM HOLOENZYME EXHIBITING OPTIMIZED CATALYTIC EFFICIENCY.** *Y. Chen*, S. N. Schneider, *H. G. Shertzer*, *D. W. Nebert* and *T. P. Dalton*. Environmental Health and Center for Environmental Genetics, University of Cincinnati, Cincinnati, OH.

#2008 **GENERATION OF REACTIVE OXYGEN BY HALOGENATED AROMATIC HYDROCARBONS IN MOUSE LIVER MICROSOMES.** *T. P. Dalton*, *M. Genter*, C. D. Clay, M. C. Chames, S. N. Schneider, G. G. Oakley, *D. W. Nebert* and *H. G. Shertzer*. Department of Environmental Health and Center for Environmental Genetics, University of Cincinnati Medical Center, Cincinnati, OH.

#2009 **GLUTATHIONE DEFICIENCY IN PANCREATIC BETA CELLS PREDISPOSES MALE MICE TO THE DEVELOPMENT OF DIABETES.** S. N. Schneider, *Y. Chen*, Y. Yang, *H. G. Shertzer*, *D. W. Nebert* and *T. P. Dalton*. Environmental Health and Center for Environmental Genetics, University of Cincinnati, Cincinnati, OH.

#2010 **BRAIN UPTAKE, METABOLITE DISTRIBUTION AND METABOLIC SHIFT FOLLOWING [^{14}C]-1, 3-DINITROBENZENE ADMINISTRAION IN THE SPRAGUE-DAWLEY RAT.** *J. Tobias*, *R. T. Miller* and P. Venkatakrishnan. Toxicology, University of Kentucky, Lexington, KY.

#2011 **PROTECTIVE ROLE OF URIC ACID AGAINST NITRIC OXIDE-MEDIATED OXIDATIVE INJURY.** R. M. Uppu and B. Kandlakunta. Environmental Toxicology, Southern University and A&M College, Baton Rouge, LA. Sponsor: *J. Ward*.

#2012 **SYNTHESIS OF PEROXYNITRITE USING ISOAMYL NITRITE AND HYDROGEN PEROXIDE IN A HOMOGENOUS SOLVENT SYSTEM.** R. R. Kancharla, B. Kandlakunta and R. M. Uppu. Environmental Toxicology, Southern University and A&M College, Baton Rouge, LA. Sponsor: *J. Ward*.

#2013 **PROTECTIVE EFFECTS OF ENHANCED GLUTATHIONE SYNTHESIS ON TNFA-INDUCED HEPATOTOXICITY IN GLUTAMATE-CYSTEINE LIGASE TRANSGENIC MICE.** *S. Shi*, D. Botta, *C. C. White*, P. A. Vliet, S. Chatterton-Kirchmeier and *T. J. Kavanagh*. Environmental & Occupational Health Sciences, University of Washington, Seattle, WA.

#2014 **HYPEROXIA-INDUCED MAP KINASE ACTIVATION IN LUNG CELLS.** M. Wu[1, 2], L. Volk[2, 1] and W. J. Martin[2, 1]. [1]Biochemistry & Mol Biol, University of North Dakota, Grand Forks, ND and [2]College of Medicine, University of Cincinnati, Cincinnati, OH. Sponsor: *D. Sens*.

#2015 **DEP-INDUCED *FRA-1* EXPRESSION CORRELATES WITH A DISTINCT ACTIVATION OF AP1-DEPENDENT GENE TRANSCRIPTION IN ALVEOLAR EPITHELIAL CELLS.** Q. Zhang[1], *S. R. Kleeberger*[2] and S. P. Reddy[1]. [1]Environmental Health Sciences, Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD and [2]Laboratory of Pulmonary Pathobiology, NIEHS, Research Triangle Park, NC.

#2016 **HUMAN MITOCHONDRIAL THIOREDOXIN (MTTRX) IS MORE SENSITIVE TO PEROXIDE-DEPENDENT OXIDATIVE STRESS THAN CYTOPLASMIC THIOREDOXIN (TRX1).** Y. Chen, J. Cai and *D. P. Jones*. Department of Medicine, Emory University, Atlanta, GA.

#2017 **INJURY DYNAMICS FOLLOWING SUBLETHAL BLAST OVERPRESSURE EXPOSURES.** *N. M. Elsayed*[1, 2], *N. V. Gorbunov*[3], S. J. McFaul[3] and J. L. Atkins[3]. [1]Hurley Consulting Associates, Chatham, NJ, [2]SUNY Downstate Medical Center, Brooklyn, NY and [3]Walter Reed Army Institute of Research, Silver Spring, MD.

#2018 **GENERATION AND CHARACTERIZATION OF A GLUTAMATE-CYSTEINE LIGASE MODIFIER SUBUNIT NULL MOUSE.** L. McConnachie[1], F. N. Hudson[2], C. B. Ware[3], C. Fernandez[1], P. A. Vliet[1], C. C. White[1] and *T. J. Kavanagh*[1]. [1]Environmental and Occupational Health Sciences, University of Washington., Seattle, WA, [2]Pathology, University of Washington, Seattle, WA and [3]Comparative Medicine, University of Washington, Seattle, WA.

#2019 **THE ROLE OF ANTIOXIDANTS IN URAEMIC PATIENTS.** *Z. A. Fadhel*. Division of Neurotoxicology, HFT-132, National Center for Toxicological Research/FDA, Jefferson, AR.

Thursday Morning, March 25
8:30 AM to 11:30 AM
Room 307

POSTER SESSION: PHYSIOLOGICALLY BASED PHARMACOKINETIC MODELS

Chairperson(s): *Paul Schlosser, CIIT Centers for Health Research, Research Triangle Park, NC and Lisa Sweeney, The Sapphire Group, Dayton, OH.*

Displayed*: 8:30 AM–11:30 AM*

Attended*: 10:00 AM–11:30 AM*

#2020 **DETERMINATION OF PARTITION COEFFICIENTS FOR SELECTED N-ALKANES.** A. Q. Smith, J. L. Campbell and *J. Fisher*. Environmental Health Science, University of Georgia, Athens, GA.

#2021 **COMPARATIVE METABOLISM OF HYDROQUINONE IN RAT AND HUMAN HEPATOCYTES.** *T. S. Poet*[1], H. Wu[1], *J. C. English*[2] and *R. A. Corley*[1]. [1]Cntr for Biological Monitoring and Modeling, PNNL, Richland, WA and [2]Eastman Kodak Company, Rochester, NY.

#2022 **A COMPREHENSIVE APPROACH FOR PHYSIOLOGICALLY BASED PHARMACOKINETIC (PBPK) MODELS USING THE EXPOSURE RELATED DOSE ESTIMATING MODEL (ERDEM) SYSTEM.** A. Ruiz[1], A. M. Tsang[1], J. Licitra[1], F. Power[2], *J. Blancato*[2] and *C. Dary*[2]. [1]Las Vegas Technical Center, Anteon Corporation, Las Vegas, NV and [2]Human Exposure & Atmospheric Sciences Division, USEPA, Las Vegas, NV.

#2023 **APPLICATION OF THE EXPOSURE DOSE ESTIMATING MODEL (ERDEM) TO ASSESSMENT OF DERMAL EXPOSURE IN THE RAT TO MALATHION.** *M. V. Evans*[1], F. W. Power[2], *C. C. Dary*[2], R. Tornero-Velez[2] and *J. N. Blancato*[2]. [1]PKB, USEPA, Research Triangle Park, NC and [2]National Exposure Research Lab., USEPA, LV, NY.

#2024 **KINETIC MODELING OF ORAL UPTAKE AND ELIMINATION OF ^{54}MN FOLLOWING ORAL AND COMBINED ORAL/INHALATION EXPOSURE.** *H. J. Clewell*[1], *J. G. Teeguarden*[2] and *M. E. Andersen*[3]. [1]ENVIRON Health Sciences Institute, Ruston, LA, [2]ENVIRON Health Sciences Institute, Collegeville, PA and [3]CIIT Centers For Health Research, Research Triangle Park, NC.

#2025 **DOSE METRIC SENSITIVITY TO CHANGES IN PBPK MODEL INPUT FUNCTIONS USED TO SIMULATE DAILY ORAL OR INHALATION EXPOSURE.** *R. S. DeWoskin*[1] and *H. A. Barton*[2]. [1]ORD/NCEA/HPAG, USEPA, Research Triangle Park, NC and [2]ORD/NHEERL/ETD, USEPA, Research Triangle Park, NC.

#2026 **PHYSIOLOGICAL PARAMETERS OF RATS FOR PHARMACOKINETIC MODELS OF PRENATAL EXPOSURE.** T. Leavens, B. Elswick and *D. Dorman*. Center for Developmental Dosimetry, CIIT Centers for Health Research, Research Triangle Park, NC.

#2027 **PHARMACOKINETIC MODEL FOR TESTOSTERONE AND ITS METABOLITES, DIHYDROTESTOSTERONE AND ESTRADIOL, IN THE PERINATAL RAT.** R. Clewell and *M. E. Andersen*. CIIT Centers for Health Research, Research Triangle Park, NC.

#2028 **PHYSIOLOGICALLY BASED PHARMACOKINETIC (PBPK) MODELING OF DI-N-BUTYL PHTHALATE (DBP) IN PREGNANT RATS.** J. Kremer, R. A. Clewell and *S. J. Borghoff*. CIIT Centers for Health Research, Research Triangle Park, NC.

#2029 **PBPK MODELING OF PHARMACOKINETIC INTERACTIONS FOR THE LACTATIONAL TRANSFER OF METHYLMERCURY AND PCB CONGENERS: IMPLICATIONS OF TRANSPORT PROTEINS.** *S. Lee*, M. B. Reddy, M. Lohitnavy and *R. Yang*. Environmental and Radiological Health Sciences, Colorado State University, Fort Collins, CO.

#2030 **SIMULATING THE DOSE-DEPENDENT LAG IN BILIARY EXCRETION OF GENISTEIN USING A HEPATIC DISPERSION MODEL.** *M. G. Zager*[1, 2], H. T. Tran[2] and *P. M. Schlosser*[1]. [1]CIIT Centers for Health Research, Research Triangle Park, NC and [2]Center for Research in Scientific Computation, NCSU, Raleigh, NC.

#2031 **MATHEMATICAL MODELING OF FAST AND SLOW GENISTEIN PHARMACOKINETICS (PK) IN RATS.** *P. M. Schlosser*[1], *S. J. Borghoff*[1], N. G. Coldham[2], H. T. Tran[3] and *M. G. Zager*[1, 3]. [1]CIIT Centers for Health Research, Research Triangle Park, NC, [2]Department of Bacterial Diseases, eterinary Laboratories Agency, Surrey, United Kingdom and [3]Center for Research in Scientific Computation, NCSU, Raleigh, NC.

#2032 **A PRAGMATIC METHOD FOR SIMULATING THE PHARMACOKINETICS OF INTERACTING CHEMICALS IN MIXTURES: A CASE STUDY WITH TOLUENE IN MIXTURES.** K. Price and *K. Krishnan*. Occupational and Environmental Health, Universite de Montreal, Montreal, QC, Canada.

#2033 **A GENERAL PHYSIOLOGICAL AND TOXICOKINETIC (GPAT) MODEL FOR SIMULATION OF COMPLEX TOLUENE EXPOSURE SCENARIOS IN HUMANS.** *E. M. Kenyon*[1], T. Colemen[2], C. Eklund[1] and V. Benignus[3]. [1]ORD/NHEERL, USEPA, Research Triangle Park, NC, [2]Biological Simulators, Inc., Jackson, MS and [3]HSD, USEPA, Chapel Hill, NC.

#2034 **IMPACT OF PEAK EXPOSURE AND BIOLOGICAL VARIABILITY ON THE KINETICS OF TOLUENE IN MAN—A PBTK ANALYSIS.** J. Bessems, J. Lammers, G. Schaafsma, T. Bouwman, L. Ravensberg and A. Freidig. Toxicological Risk Assessment, TNO Chemistry, Zeist, Netherlands. Sponsor: *V. Feron*.

#2035 **PRELIMINARY DEVELOPMENT OF PHYSIOLOGICALLY-BASED PHARMACOKINETIC/ PHARMACODYNAMIC(PBPK/PD) MODEL FOR LOW LEVEL EXPOSURE TO CHEMICAL WARFARE AGENT (CWA) IN MINIPIG.** *K. O. Yu*[1], R. J. Mioduszewski[2], E. M. Jakubowski[2], S. Hulet[2], *S. M. Thompson*[2] and *J. M. Gearhart*[1]. [1]Air Force Research Laboratory, US Air Force, Wright-Patterson AFB, OH and [2]Edgewood Chemical and Biological Center, US Army, Aberdeen Proving Ground, MD.

#2036 **A QUANTITATIVE DESCRIPTION OF SUICIDE INHIBITION OF DICHLOROACETIC ACID IN RATS AND MICE.** D. A. Keys[1], *I. R. Schultz*[2], *R. D. Stenner*[3], *D. A. Mahle*[4] and *J. W. Fisher*[1]. [1]Environmental Health Science, University of Georgia, Athens, GA, [2]Pacific Northwest Division, Battelle, Sequim, WA, [3]Pacific Northwest Division, Battelle, Richland, WA and [4]Mantech Environmental Technology Inc., Dayton, OH.

#2037 **PBTK-TD MODEL FOR ACUTE POISONING BY HYDROGEN CYANIDE.** *G. Johanson*. Work Environment Toxicology, IMM, Karolinska Institutet, Stockholm, Sweden.

#2038 **DEVELOPMENT OF A PHYSIOLOGICALLY BASED PHARMACOKINETIC MODEL FOR DECANE, A CONSTITUENT OF JET PROPELLENT-8.** R. Perleberg[1], *D. A. Keys*[1], J. L. Campbell[1], W. Everett[1], A. Q. Smith[1], T. Almekinder[1], K. Frank[1], M. G. Bartlett[2] and *J. Fisher*[1]. [1]Environmental Health Science, University of Georgia, Athens, GA and [2]Pharmaceutical and Biomedical Sciences, University of Georgia, Athens, GA.

#2039 **DEVELOPMENT OF A PBPK-CHEMICAL LUMPING MODEL FOR GASOLINE VOLATILES.** J. E. Dennison[1], *M. E. Andersen*[2], *H. J. Clewell*[3], *M. M. Mumtaz*[4] and *R. S. Yang*[1]. [1]ERHS, Colorado State, Fort Collins, CO, [2]CIIT Centers for Health Research, Research Triangle Park, NC, [3]Environ Corp, Ruston, LA and [4]ATSDR, Atlanta, GA.

#2040 **PHYSIOLOGICAL MODELING OF DECAMETHYLCYCLOPENTASILOXANE (D5) INHALATION KINETICS IN RATS AND HUMANS.** M. Reddy[1], J. M. Tobin[2], D. A. McNett[2], M. L. Jovanovic[2], M. J. Utell[3], P. E. Morrow[3], *K. P. Plotzke*[2] and *M. E. Andersen*[4]. [1]Quantitative Toxicology Group, Center for Environmental Toxicology and Technology, Colorado State University, Fort Collins, CO, [2]Toxicology, Health and Environmental Sciences, Dow Corning Corporation, Midland, MI, [3]Departments of Medicine and Environmental Medicine, University of Rochester Medical Center, Rochester, NY and [4]Division of Biomathematics and Physical Sciences, CIIT Centers for Health Research, Research Triangle Park, NC.

#2041 **INCORPORATION OF THE GENETIC CONTROL OF ALCOHOL DEHYDROGENASE INTO A PHYSIOLOGICALLY BASED PHARMACOKINETIC MODEL FOR ETHANOL IN HUMANS.** *G. M. Pastino*[2], *L. G. Sultatos*[1], *C. A. Rosenfeld*[1] and *E. J. Flynn*[1]. [1]Pharmacology and Physiology, UMD- New Jersey Medical School, Newark, NJ and [2]Schering-Plough Research Institute, Lafayette, NJ.

#2042 **TOWARDS A GENERIC PBPK MODEL OF PYRETHROID PESTICIDES: MODELING DELTAMETHRIN AND PERMETHRIN IN THE RAT.** *R. Tornero-Velez*[1], H. Nichols[4], *M. V. Evans*[2], *M. J. DeVito*[2], *C. C. Dary*[1], M. Dellarco[3] and J. N. Blancato[4]. [1]National Exposure Research Laboratory, USEPA, Las Vegas, NV, [2]National Health and Environmental Effects Research Laboratory, USEPA, Research Triangle Park, NC, [3]National Center for Environmental Assessment, USEPA, Washington DC, DC and [4]National Exposure Research Laboratory, USEPA, Research Triangle Park, NC.

#2043 **PHYSIOLOGICALLY-BASED PHARMACOKINETIC MODELING OF CHLOROETHANE DISPOSITION AND GLUTATHIONE DEPLETION.** *L. M. Sweeney*[1], *J. W. Holder*[2] and *M. L. Gargas*[1]. [1]The Sapphire Group, Dayton, OH and [2]USEPA, Washington, DC.

#2044 **PARTITIONING OF BISPHENOL A (BPA) IN RAT TISSUE FOR PHYSIOLOGICALLY-BASED PHARMACOKINETIC (PBPK) MODELING.** I. A. Ross[1], *H. M. Luu*[2], P. P. Sapienza[1], W. Johnson[1], J. C. Hutter[2] and C. S. Kim[1, 2]. [1]Toxicology, US Food and Drug Administration, Laurel, MD and [2]Radiological Health, USFDA, Rockville, MD.

#2045 **HALOACETIC ACID PHARMACOKINETICS IN RHESUS MONKEYS AND HUMANS: CLASSICAL AND PBPK MODELING APPROACHES.** *I. Schultz*[1], R. E. Shangraw[2], *R. D. Stenner*[3], *D. A. Keys*[4] and *J. W. Fisher*[4]. [1]Battelle PND, Sequim, WA, [2]OHSU, Portland, OR, [3]Battelle PND, Richland, WA and [4]University of Georgia, Athens, GA.

#2046 **A PHYSIOLOGICALLY-BASED PHARMACOKINETIC (PBPK) MODEL FOR INTRAVENOUS AND INHALATION-ROUTE PHARMACOKINETICS OF BUTYL ACETATE (BA) AND METABOLITES N-BUTANOL (BOH) AND N-BUTYRIC ACID (BOOH).** *J. G. Teeguarden*[1], P. J. Deisinger[2], *T. S. Poet*[3], C. English[2], *R. A. Corley*[3], *H. A. Barton*[4], H. J. Clewell[1] and *W. D. Faber*[5]. [1]ENVIRON Health Sciences Institute, Collegeville, PA, [2]Eastman Kodak Co., Rochester, NY, [3]PNNL, Richland, WA, [4]NHEERL, USEPA, Research Triangle Park, NC and [5]WFTC, LLC, Victor, NY.

#2047 **DEVELOPMENT OF A PRIMATE PHYSIOLOGICALLY-BASED PHARMACOKINETIC MODEL FOR DI-2ETHYLHEXYL PHTHALATE AND ITS METABOLITE MONO-2ETHYLHEXYL PHTHALATE.** E. D. McLanahan[1], *R. Conolly*[2] and D. Keys[1]. [1]Environmental Health Science, University of Georgia, Athens, GA and [2]Center for Computational Biology & Extrapolation Modeling, CIIT Centers for Health Research, Research Triangle Park, NC.

#2048 **USING *IN VIVO* GAS UPTAKE STUDIES TO ESTIMATE METABOLIC RATE CONSTANTS FOR CCL CHEMICALS: 1, 1-DICHLOROPROPENE AND 2, 2-DICHLOROPROPANE.** C. T. Mitchell, *M. V. Evans* and *E. M. Kenyon*. ORD/NHEERL, USEPA, Research Triangle Park, NC.

Thursday Morning, March 25
8:30 AM to 11:30 AM
Room 307

POSTER SESSION: GENETIC POLYMORPHISMS

Chairperson(s): *Mark Hahn, WHOI, MA and Jodi Flaws, University of Maryland, Baltimore, MD.*

Displayed*: 8:30 AM–11:30 AM*

Attended*: 8:30 AM–10:00 AM*

#2049 **HUMAN MITOCHONDRIAL DNA AMPLIFICATION AND SEQUENCING STANDARD REFERENCE MATERIALS 2392 AND 2392-I.** *B. C. Levin*[1], D. K. Hancock[1], H. Cheng[1], K. Holland Deckman[2] and K. L. Richie[1]. [1]Biotechnology Division, National Institute of Standards and Technology, Gaithersburg, MD and [2]Chemistry Department, Gettysburg College, Gettysburg, PA.

#2050 **POLYMORPHISMS IN CYTOCHROME P4503A5 (CYP3A5) MAY BE ASSOCIATED WITH TUMOR SIZE IN BREAST CANCER PATIENTS.** A. N. Deigert, L. Lewis, K. Tkaczuk and *J. Flaws*. Epidemiology and Preventive Medicine, University of Maryland, Baltimore, MD.

#2051 **GSTP1 A1578G (ILE105VAL) POLYMORPHISM IN BENZIDINE-EXPOSED WORKERS: AN ASSOCIATION WITH CYTOLOGICAL GRADING OF EXFOLIATED UROTHELIAL CELLS.** Q. Ma[1], G. Lin[1], Y. Qin[2], D. Lu[3], *K. Golka*[4], F. Geller[5], C. Jigang[2] and J. Shen[1]. [1]Institute of Plant Physiology and Ecology, Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences, Shanghai, China, [2]Disease Prevention and Control, Municipal Center, Shanghai, China, [3]State Key Laboratory of Genetics Engineering, Fudan University, Shanghai, China, [4]Institute for Occupational Physiology, University of Dortmund, Dortmund, Germany and [5]Institute of Medical Biometry and Epidemiology, Philipps-University Marburg, Marburg, Germany.

#2052 **GENETIC VARRIATION IN TGF-BETA1 BUT NOT ANTIOXIDANT GENES IS ASSOCIATED WITH PROGRESSIVE MASSIVE FIBROSIS IN COAL WORKERS.** *B. Yucesoy*, *V. J. Johnson*, M. L. Kashon, K. Fluharty, P. Willard, *V. Vallyathan* and *M. I. Luster*. Health Effects Laboratory Division, NIOSH/CDC, Morgantown, WV.

#2053 **GENETIC INFLUENCES ON HUMAN ENDOTHELIAL CELL FUNCTION AND SURVIVAL: INFLUENCE OF THE NOS3 EXON7 (GLU298ASP) AND ACE (I/D) POLYMORPHISMS ON GLUCOSE AND FREE 3-NITROTYROSINE INDUCED CELL TOXICITY *IN VITRO*.** M. S. Joshi[2, 1] and J. A. Bauer[1, 2]. [1]Center for Cardiothoracic Medicine, Columbus Children's Research Institute, Columbus, OH and [2]Division of Pharmacology, The Ohio State University, Columbus, OH. Sponsor: *C. Smith*.

#2054 **PARAOXONASE STATUS IN A MEXICAN POPULATION AND ITS RELATIONSHIP TO THE SUSCEPTIBILITY TO DNA DAMAGE ON CULTURED HUMAN LYMPHOCYTES TREATED WITH METHYL-PARATHION AND PARAOXON.** E. Rojas-Garcia, L. Vega L, M. J. Solis-Heredia and *B. Quintanilla-Vega*. Toxicology Section, CINVESTAV-IPN, Mexico City, D.F., Mexico.

#2055 **THE ARYL HYDROCARBON RECEPTOR 1 (AHR1) LOCUS IS HIGHLY POLYMORPHIC IN ATLANTIC KILLIFISH (FUNDULUS HETEROCLITUS): RELATIONSHIP TO DIOXIN RESISTANCE.** *M. E. Hahn*[1], B. R. Evans[1, 2], S. I. Karchner[1] and D. G. Franks[1]. [1]Biology, Woods Hole Oceanographic Institution, Woods Hole, MA and [2]Biology, Boston University, Boston, MA.

#2056 **EFFECT OF ALDH2 GENE POLYMORPHISMS ON THE METABOLISM AND TOXICITY OF 2-ETHOXYETHANOL IN THE EXPOSED WORKERS.** R. WANG[1], M. Suda[1], X. Gao[2], B. Wang[2] and T. Honma[1]. [1]Department of Health Effects Research, National Institute of Industrial Health, Kawasaki, Kanagawa, Japan and [2]Beijing Institute of Industrial Hygiene and Occupational Diseases, Beijing, China. Sponsor: *M. Chiba*.

Thursday Morning, March 25
8:30 AM to 11:30 AM
Room 307

POSTER SESSION: PESTICIDES, GENERAL

Chairperson(s): *David Barber, University of Florida, Gainesville, FL and WF Sette, USEPA, Washington, DC.*

Displayed*: 8:30 AM–11:30 AM*

Attended*: 10:00 AM–11:30 AM*

#2057 **COMPARATIVE ASSESSMENT OF THE INHIBITION OF HUMAN RECOMBINANT CYP19 (AROMATASE) BY AZOLES USED AS FUNGICIDES IN AGRICULTURE, AS ANTIMYCOTIC DRUGS, AND FOR TUMOR THERAPY.** *W. K. Lutz*[1], K. Scholz[1], E. R. Troesken[1], R. W. Lutz[2], W. Voelkel[1] and J. A. Zarn[3]. [1]Toxicology, University of Wuerzburg, Wuerzburg, Germany, [2]Statistics, Swiss Federal Institute of Technology, Zuerich, Switzerland and [3]Food Science, Swiss Federal Office of Public Health, Zuerich, Switzerland.

#2058 **HUMAN EXPOSURE TO IMIDACLOPRID FROM DOGS TREATED WITH ADVANTAGE®.** M. Craig[2], *R. C. Gupta*[1], T. D. Canerdy[2] and D. A. Britton[1]. [1]Toxicology, Murray State University, Hopkinsville, KY and [2]Agriculture, Murry State University, Murray, KY.

#2059 **HUMAN EXPOSURE TO SELAMECTIN FROM DOGS TREATED WITH REVOLUTION®.** T. M. Acosta, *R. C. Gupta*, M. B. Masthay, T. D. Canerdy, R. J. Provost, B. H. Atieh and R. J. Keller. Toxicology, Murry State University, Hopkinsville, KY.

#2060 **MODULATION OF HEPATIC CYTOCHROME P450S IN RATS AND MICE BY TRIAZOLE CONAZOLES.** G. Sun[1], A. K. Goetz[2], D. Tully[1], G. R. Lambert[1], *D. J. Dix*[1] and S. Nesnow[1]. [1]NHEERL, Research Triangle Park, NC and [2]North Carolina State University, Raleigh, NC.

#2061 **DEVELOPMENTAL EFFECTS OF CHLORPYRIFOS EXTEND BEYOND NEUROTOXICITY: CRITICAL PERIODS FOR IMMEDIATE AND DELAYED-ONSET EFFECTS ON CARDIAC AND HEPATIC CELL SIGNALING.** A. Meyer[1, 2], *F. J. Seidler*[1] and *T. A. Slotkin*[1]. [1]Pharmacology & Cancer Biology, Duke University Med. Ctr, Durham, NC and [2]Escola Nacional de Saude Publica, Rio de Janeiro, Brazil.

#2062 **INHIBITION OF DIAZINON METABOLISM BY CHLORPYRIFOS IN RAT LIVER MICROSOMES.** H. Wu, *C. Timchalk* and *T. Poet*. Cntr for Biological Monitoring and Modeling, Battelle, Pacific NW Division, Richland, WA.

#2063 **COMPARISON OF CHLORPYRIFOS-OXON AND PARAOXON ACETYLCHOLINESTERASE INHIBITION DYNAMICS: POTENTIAL ROLE OF A PERIPHERAL BINDING SITE.** *A. Kousba*[1], *L. G. Sultatos*[2], *T. Poet*[1] and *C. Timchalk*[1]. [1]Center for Biological Monitoring and Modeling, Pacific NW Nat'l Lab., Richland, WA and [2]UMDNJ, Newark, NJ.

#2064 **PHARMACOKINETIC & PHARMACODYNAMIC INTERACTIONS OF A BINARY MIXTURE OF CHLORPYRIFOS AND DIAZINON IN THE RAT.** *C. Timchalk*, *T. S. Poet*, M. N. Hinman, A. L. Busby and *A. Kousba*. Center for Biological Monitoring and Modeling, Pacific NW Division, Richland, WA.

#2065 **CONTINUOUS SYSTEMS MODELING OF THE INTERACTIONS OF PARAOXON WITH HUMAN RECOMBINANT ACETYLCHOLINESTERASE.** *C. A. Rosenfeld* and *L. G. Sultatos*. Pharmacology and Physiology, UMD- New Jersey Medical School, Newark, NJ.

#2066 **PERMETHRIN AND NICOSULFURON MIXTURES ALTER TOXICITY AND GLUTATHIONE S- TRANSFERASE ACTIVITY IN CORN EARWORMS (HELICOVERPA ZEA).** O. Jacobs, P. S. Burns, R. Massa and S. L. Chao. Natural Sciences, Fayetteville State University, Fayetteville, NC. Sponsor: *J. Casida*.

#2067 **ROLE OF CYP3A METABOLISM IN HEPG2 CYTOTOXICITY OF ALACHLOR.** S. R. Miranda and *S. A. Meyer*. Toxicology, University of Louisiana at Monroe, Monroe, LA.

#2068 **DIAZINON ALTERS SPERM CHROMATIN STRUCTURE BY NUCLEAR PROTAMINE PHOSPHORYLATION.** B. Pina-Guzman[1], B. E. Reyes-Marquez[2], M. J. Solis-Heredia[1] and *B. Quintanilla-Vega*[1]. [1]Toxicology Section, CINVESTAV-IPN, Mexico City, D.F., Mexico and [2]Department of Cell Biology, CINVESTAV-IPN, Mexico City, D.F., Mexico.

#2069 **THE EFFECT OF THIOFLAVIN-T AND PARAOXON ON THE GROWTH PROMOTING FUNCTION OF ACETYLCHOLINESTERASE IN NG108-15 CELLS.** H. M. Campanha and *E. J. flynn*. UMD-New Jersey Medical School, Newark, NJ.

#2070 ***IN VIVO* AND *IN VITRO* EFFECTS OF THE ORGANOPHOSPHATE INSECTICIDE TETRACHLORVINPHOS ON CHOLINESTERASE AND CARBOXYLESTERASE ACTIVITIES IN HORSES.** *S. Karanth*[1], L. Mason[1], T. Holbrook[2], C. MacAllister[2] and *C. Pope*[1]. [1]Physiol Sciences, Oklahoma State University, Stillwater, OK and [2]Vet. Clin Sciences, Oklahoma State University, Stillwater, OK.

#2071 ***IN VITRO* METABOLISM OF PYRETHROIDS IN RAT LIVER MICROSOMES.** S. J. Godin[1], R. A. Harrison[2], *M. F. Hughes*[2] and *M. J. DeVito*[2]. [1]Toxicology, University of North Carolina, Research Triangle Park, NC and [2]NHEERL, USEPA, Research Triangle Park, NC.

#2072 **TOXICITY OF SODIUM METAM IN THE RAINBOW TROUT.** T. Bunch[1], M. A. Haendel[2, 3] and *G. S. Bailey*[1, 2, 3]. [1]Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR, [2]Linus Pauling Institute, Oregon State University, Corvallis, OR and [3]MFBSC, Oregon State University, Corvallis, OR.

Thursday Morning, March 25
8:30 AM to 11:30 AM
Room 307

POSTER SESSION: IMMUNOTOXICITY: METHODS AND VALIDATION

Chairperson(s): *Helen Haggerty, Bristol Meyers Squibb, Drug Safety Evaluation, Syracuse, NY and Stephen Pruett, Louisiana State University, Shreveport, LA.*

Displayed*: 8:30 AM–11:30 AM*

Attended*: 8:30 AM–10:00 AM*

#2073 **EVALUATION OF WHITE BLOOD CELL COUNT IN RAT SPLEEN AND THYMUS EXTRACTS USING THE ADVIA 120 HEMATOLOGY ANALYZER.** *L. LeSauteur*, J. McCartney, L. Huard and Y. Deschamps. Immunology, CTBR, Senneville, QC, Canada.

#2074 **ESTABLISHING AN IMMUNOPHENOTYPING SPECIES SPECIFIC BIOLOGICAL CONTROL.** J. Van Ness, J. Sibley, J. Elliott and D. Walker. Clinical Pathology, Wyeth, Chazy, NY. Sponsor: *M. Seme Nelson*.

#2075 **THE MEASUREMENT OF RABBIT ANTI IDIO-TYPE ANTIBODY USING BIOSENSOR ASSAY.** K. Harada, N. Ohtake, S. Hayashi and J. Kawahara. Toxicology, Pharmaceutical laboratory in Kirin Brewery Co.Ltd., Maebashi-shi, Japan. Sponsor: *F. Sagami*.

#2076 **CELL CHIP TECHNOLOGY—AN ALTERNATIVE METHOD FOR IMMUNOTOXICITY SCREENING.** T. Ringerike[1], E. Ulleras[2], G. Nilsson[2], R. J. Vandebriel[3], J. Dastych[4] and M. Lovik[1]. [1]Department of Environmental Immunology, Norwegian Institute of Public Health, Oslo, Norway, [2]Department of Genetics and Pathology, Uppsala University, Uppsala, Sweden, [3]Laboratory for Pathology and Immunobiology, National Institute of Public Health and the Environment, Bilthoven, Netherlands and [4]Laboratory of Molecular Immunology, International Institute of Molecular and Cell Biology, Warsaw, Poland. Sponsor: *E. Dybing*.

#2077 **IN SEARCH OF A BIOMARKER FOR STRESS-INDUCED IMMUNOMODULATION.** *P. Hebert*, C. Schwab and *S. B. Pruett*. Cellular Biology & Anatomy, LSUHSC-Shreveport, Shreveport, LA.

#2078 **ROLE OF STRESS-INDUCED IMMUNOTOXICITY IN 28-DAY EXPOSURE STUDIES: CHEMICAL-SPECIFIC HABITUATION AND LACK OF HABITUATION.** *S. B. Pruett*, Q. Zheng, R. Fan, C. Schwab and *P. Hebert*. Cell. Biol. & Anatomy, LSU Health Sciences. Center, Shreveport, LA.

#2079 **EVALUATION OF ANTI-CD3 INDUCED T-CELL PROLIFERATION ASSAY FOR ASSESSING THE IMMUNOTOXICITY OF VERAPAMIL, NIFEDIPINE, CYCLOSPORIN A, AND FK506.** S. Mittelstadt, B. Hulette, G. Fadayel, M. Hare and *F. Gerberick*. Procter & Gamble, Cincinnati, OH.

#2080 **PERIPHERAL LEUKOCYTE PHENOTYPING AND SYSTEMIC ANTIBODY RESPONSE AS FIELD TESTS TO EVALUATE IMMUNOTOXICITY IN BEEF CATTLE.** *D. Bechtel*[1], C. Waldner[1], W. C. Davis[2] and M. Wickstrom[1]. [1]University of Saskatchewan, Saskatoon, SK, Canada and [2]Washington State University, Pullman, WA.

#2081 **COMPARISON OF THE EFFECTS OF CYCLOPHOSPHAMIDE AND DEXAMETHASONE ON PFC ASSAY, ANTI-KLH AND ANTI-TETANUS TOXOID ELISA RESPONSES IN RATS.** F. Condevaux[1], J. Guichard[1], N. Eltschinger[1], C. Cretinon[1] and *J. Descotes*[2]. [1]MDS Pharmacology Services, L'Arbresle, France and [2]Poison Center, Lyon, France.

#2082 **VALIDATION OF A METHOD FOR THE DETECTION OF ANTI-KEYHOLE LIMPET HEMOCYANIN (KLH) IGM ANTIBODIES IN FISCHER-344 RAT SERUM BY ENZYME-LINKED IMMUNOSORBENT ASSAY (ELISA).** N. Rouleau, M. Boutet, P. Gauthier, V. Girard and L. LeSauteur. CTBR, Senneville, QC, Canada. Sponsor: *L. LeSauteur*.

#2083 **PRIMARY ANTIBODY PRODUCTION TO A T CELL-DEPENDENT ANTIGEN: REPLACEMENT OF THE SRBC PLAQUE-FORMING CELL ASSAY BY A KLH-BASED PROTOCOL.** M. van Zijverden, E. I. Klein Koerkamp, P. T. van den Berg and A. H. Penninks. Experimental Immunology, TNO Nutrition and Food Research, Zeist, Netherlands. Sponsor: *V. Feron*.

#2084 **T-CELL DEPENDENT ANTIBODY RESPONSES TO KEYHOLE LIMPET HEMOCYANIN (KLH) IN PRECLINICAL IMMUNOTOXICITY TESTING.** T. Bigwarfe, M. Abbott, D. DeVona, D. Gonchoroff, *H. Haggerty*, E. McAvoy, L. Phelps, K. Price and *T. Reilly*. Immunotoxicology, Bristol-Myers Squibb, Syracuse, NY.

#2085 **VALIDATING THE T-DEPENDENT ANTIBODY RESPONSE IN DOGS WITH A KNOWN IMMUNOSUPPRESSIVE AGENT (NEORAL).** D. L. Finco-Kent, J. Dugas, A. Hudson, R. Barnes and *T. Kawabata*. WWSS, Pfizer, Groton, CT.

#2086 **VALIDATION OF CYNOMOLGUS MONKEY IMMUNOPHENOTYPING BY FLOW CYTOMETRY.** D. Baker, D. Finco-Kent, W. Reagan and *T. Kawabata*. WWSS, Pfizer, Groton, CT.

#2087 **PRE- AND POSTNATAL THYMUS DEVELOPMENT IN THE CYNOMOLGUS MONKEY: RELEVANCE TO IMMUNOTOXICOLOGY.** E. Buse, G. Habermann, S. Friderichs-Gromoll, J. Kaspareit, F. Vogel and *P. Thomas*. Pathology, Covance Laboratories GmbH, Muenster, Germany.

#2088 **FLOW CYTOMETRY-BASED EVALUATION OF LYMPHOCYTE SUBSETS AND NATURAL KILLER CELL ACTIVITY IN DEVELOPING AND ADULT CYNOMOLGUS MONKEYS.** W. Frings and G. Weinbauer. Covance Laboratories GmbH, Muenster, Germany. Sponsor: *P. Thomas*.

#2089 **EVALUATION OF T-DEPENDENT ANTIBODY RESPONSE IN CYNOMOLGUS MONKEYS.** J. D. Alvey and J. R. Piccotti. Safety Sciences, Pfizer Global Research & Development, Ann Arbor, MI. Sponsor: *M. Bleavins*.

#2090 **INHIBITION OF IL-6 BUT NOT TNFα INHIBITS THE ANTIBODY RESPONSE TO KLH IN CYNOMOLGUS MACAQUES.** *P. L. Martin*[1], *J. Cornacoff*[1], P. Bugelski[1], S. Hersey[3], E. C. Martin[2], *J. E. Sutherland*[2] and *G. Treacy*[1]. [1]Toxicology, Centocor, Malvern, PA, [2]Charles River Laboratories, Worchester, MA and [3]Charles River Laboratories, Sparks, NV.

#2091 **DEVELOPMENT AND IMMUNOMODULATION OF DELAYED-TYPE HYPERSENSITIVITY (DTH) IN CYNOMOLGUS MONKEYS.** *K. D. Price*, L. Mezza, R. Diters, S. Wells, D. DeVona, Z. Tzogas and *H. Haggerty*. Bristol-Myers Squibb, Syracuse, NY.

Thursday Morning, March 25
8:30 AM to 11:30 AM
Room 307

POSTER SESSION: JUVENILE AND PERINATAL TOXICITY STUDIES

Chairperson(s): *Rosario Perez, Ina Research Philippines Inc., Laguna, Philippines and Roy Forster, CIT, Evreux, France.*

Displayed*: 8:30 AM–11:30 AM*

Attended*: 10:00 AM–11:30 AM*

#2092 **IMMUNOLOGICAL, HEMATOLOGICAL AND CLINICAL PATHOLOGY PARAMETERS DURING POSTNATAL DEVELOPMENT IN THE CYNOMOLGUS MONKEY: PRELIMINARY FINDINGS.** G. Weinbauer, G. Habermann, I. Osterburg, J. Kaspareit, S. Friderichs-Gromoll, S. Srivastav, W. Mueller and F. Vogel. Covance Laboratories GmbH, Muenster, Germany. Sponsor: *P. Thomas*.

#2093 **EFFECT OF CHRONIC EXPOSURE TO ISOFLAVONE ON POSTNATAL DEVELOPMENT OF MICE.** *K. Takashima*[1, 2], H. Fukata[2], H. Kato[3], *T. Iguchi*[4, 5], *M. Komiyama*[6] and *C. Mori*[1, 5]. [1]Department of Bioenvironmental Medicine, Graduate School of Medicine, Chiba University, Chiba, Japan, [2]Department of Environmental Medical Science (SRL), Graduate School of Medicine, Chiba University, Chiba, Japan, [3]Nihon Bioresearch Inc., Hashima, Japan, [4]Center for Integrative bioscience, Okazaki National Research Institutes, Okazaki, Japan, [5]CREST, JST, Kawaguchi, Japan and [6]Center for Environment, Health and Field Sciences, Health and Field Sciences, Chiba University, Chiba, Japan.

#2094 **PRACTICAL ASPECTS OF JUVENILE SAFETY STUDIES IN MINIPIGS.** A. Makin and A. Christensen. Toxicology and Pharmacology, Scantox A/S, Lille Skensved, Denmark. Sponsor: *R. Harling*.

#2095 **PRENATAL DOSE LEVEL OF 3, 3', 4, 4', 5-PENTACHLORBIPHENYL (PCB 126) TO INDUCE HYPOSPADIAS IN FEMALE RATS.** M. Shirota[1, 2], Y. Sakurada[2], K. Hayasaka[2], K. Inoue[2] and K. Shirota[2]. [1]Hatano Research Institute, Food and Drug Safety Center, Hadano, Kanagawa, Japan and [2]Research Institute of Biosciences, Azabu University, Sagamihara, Kanagawa, Japan. Sponsor: *H. Ono*.

#2096 **ECOLOGICAL INDICATORS, ENVIRONMENTAL CONTAMINANTS, AND AUTISM: PRELIMINARY FINDINGS FROM MINNESOTA.** M. G. Opler[1], L. Moy[2], K. Eng[2] and M. Bresnahan[3]. [1]Psychiatry, Columbia University, New York, [2]Bronx High School of Science, Bronx, NY and [3]Epidemiology, Columbia University, New York. Sponsor: *W. Zheng*.

#2097 **A TERATOLOGY STUDY OF ZICONOTIDE UTILIZING DOUBLE-STAINING AND POST NATAL EXAMINATIONS TO ELUCIDATE DELAYED OSSIFICATION.** M. J. Skov[1], *G. M. Shopp*[1], L. Pouliot[2], K. J. Robinson[2] and J. C. Beck[3]. [1]Safety Evaluation, Elan Pharmaceuticals, Inc., South San Francisco, CA, [2]CTBR Bio-Research Inc., Senneville, QC, Canada and [3]Roche, Palo Alto, CA.

#2098 **NEONATAL EXPOSURE TO GENISTEIN, A SOY PHYTOESTROGEN, ALTERS MAMMARY GLAND DIFFERENTIATION.** E. Padilla-Banks, *W. Jefferson* and R. Newbold. NIEHS, Research Triangle Park, NC.

#2099 **FEASIBILITY STUDY TO ASSESS SKELETAL DEVELOPMENT IN NON-CLINICAL PEDIATRIC STUDIES.** K. Robinson, A. Varela, N. Doyle, J. Jolette, C. Luc, M. Sabourin, C. Chevrier and S. Smith. CTBR, Senneville, QC, Canada. Sponsor: *M. Vezina*.

#2100 **SAFETY ASSESSMENT OF CARGLUMIC ACID IN JUVENILE RATS.** *R. Forster*[1], G. Chevalier[1], M. Attia[1], L. Martin[2] and M. Fortun[2]. [1]CIT, Evreux, France and [2]Orphan Europe, Paris, France.

#2101 **COMPARATIVE TOXICITY STUDY OF PHENYTOIN IN JUVENILE AND ADULT CYNOMOLGUS MONKEYS.** *R. M. Perez*[1], F. P. de Villa[1], L. S. Antonio[1], T. Hayashi[1], N. Muto[2], E. Suzuki[2] and M. Nomura[2]. [1]INA RESEARCH PHILIPPINES, INC., Laguna, Philippines and [2]Ina Research Inc., Nagano, Japan.

#2102 **GLOBAL ANALYSIS OF ABERRANT DNA METHYLATION INDUCED BY NEONATAL EXPOSURE TO DIETHYLSTILBESTROL USING RESTRICTION LANDMARK GENOMIC SCANNING (RLGS).** K. Sato[1], H. Fukata[2], Y. Kogo[3], J. Ohgane[3], K. Shiota[3] and *C. Mori*[1, 4]. [1]Department of Bioenvironmental Medicine, Graduate School of Medicine, Chiba University, Chiba, Japan, [2]Department of Environmental Medical Science (SRL), Graduate School of Medicine, Chiba University, Chiba, Japan, [3]Laboratory of Cellular Biochemistry, Veterinary Medical Science/Animal Resource Science, The University of Tokyo, Tokyo, Japan and [4]Core Research for Evolutional Science of Technology (CREST), Japan Science and Technology Corporation (JST), Kawaguchi, Japan.

Thursday Morning, March 25
8:30 AM to 11:30 AM
Room 307

POSTER SESSION: INHALATION TOXICOLOGY—METHODOLOGY AND KINETICS

Chairperson(s): *Anna Shvedova, NIOSH, Morgantown, WV and John Morris, University of Connecticut, Storrs, CT.*

Displayed*: 8:30 AM–11:30 AM*

Attended*: 8:30 AM–10:00 AM*

#2103 **DETERMINING THE RESPIRATORY BIOAVAILABILITY OF WATER-SOLUBLE VAPORS USING PBPK MODELING AND A COMBINED GAS UPTAKE INHALATION, PLETHYSMOGRAPHY, AND BLOOD SAMPLING SYSTEM.** A. Woodstock[1], *T. S. Poet*[1], J. J. Soelberg[1], H. Wu[1], *J. G. Teeguarden*[2], W. Faber[3], B. Francis[4] and *R. A. Corley*[1]. [1]Pacific Northwest National Laboratory, Richland, WA, [2]Environ, Collegeville, PA, [3]WFTC, LLC, Victor, NY and [4]American Chemistry Council, Arlington, VA.

#2104 **ROLE OF TUMOR NECROSIS FACTOR ALPHA AND INTERLEUKIN-1 BETA IN THE DEVELOPMENT OF PULMONARY TOXICITY FROM EXPOSURE TO ADVANCED COMPOSITE MATERIAL COMBUSTION ATMOSPHERES.** *P. G. Reinhart*[1], D. L. Courson[2], J. E. Reboulet[3] and *E. C. Kimmel*[3]. [1]Naval Health Research Center (Toxicology Detachment), Wright-Patterson AFB, OH, [2]Man Tech Environmental Technology Inc., Wright-Patterson AFB, OH and [3]Geo-Centers Inc., Wright-Patterson AFB, OH.

#2105 **TIME COURSE OF PULMONARY EFFECTS FROM EXPOSURE TO ADVANCED COMPOSITE MATERIAL COMBUSTION ATMOSPHERES.** D. L. Courson[1], *P. G. Reinhart*[2], J. E. Reboulet[3] and *E. C. Kimmel*[3]. [1]Man Tech Environmental Technology Inc., Wright-Patterson AFB, OH, [2]Naval Health Research Center (Toxicology Detachment), Wright-Patterson AFB, OH and [3]Geo-Centers Inc., Wright-Patterson AFB, OH.

#2106 **FUNCTIONAL ROLE OF TRANSFERRIN IN THE UPTAKE OF METALS TO THE BRAIN VIA THE OLFACTORY PATHWAY.** *D. C. Dorman*, *B. A. Wong*, M. Sar, B. E. McManus, A. M. McElveen, D. G. Wallace, *E. E. Gross* and *D. B. Rao*. CIIT Centers for Health REsearch, Research Triangle Park, NC.

#2107 **CORRELATION OF NASAL SURFACE-AREA-TO-VOLUME RATIO WITH PREDICTED INHALED GAS UPTAKE EFFICIENCY IN HUMANS.** 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.

#2108 **EVALUATION OF THREE COMMERCIALLY AVAILABLE AEROSOL GENERATORS FOR ANIMAL BASED RESEARCH STUDIES.** M. Eifrid, *M. J. Brooker* and R. Moutvic. Toxicology, Battelle, Columbus, OH.

#2109 **AIRFLOW DISTRIBUTION AND PARTICLE DEPOSITION IN DIFFERENT LOBES OF THE LUNG.** B. Asgharian and O. T. Price. Biomathematics and Physical Sciences, CIIT Centers for Health Research, Durham, NC. Sponsor: *B. Wong*.

#2110 **COMPARISON OF EXPERIMENTAL MEASUREMENTS WITH MODEL CALCULATIONS OF PARTICLE DEPOSITION EFFICIENCIES IN MONKEY AND RAT NASAL AIRWAYS.** *B. A. Wong*[1], J. T. Kelly[2], B. Asgharian[1] and *J. S. Kimbell*[1]. [1]CIIT CHR, Research Triangle Park, NC and [2]UC Davis, Davis, CA.

#2111 **NASAL TOXICITY OF CARBON TETRACHLORIDE IN RATS: DOSE RESPONSE AND TIME COURSE STUDIES.** C. Reed[1], S. Simpson[1] and J. Foster[2]. [1]School of Biomolecular Sciences, Liverpool John Moores University, Liverpool, United Kingdom and [2]Pathology Department, AstraZeneca, Macclesfield, United Kingdom. Sponsor: *E. Lock*.

#2112 **APPLICATION OF MAGNETIC RESONANCE IMAGING IN THE DEVELOPMENT AND VALIDATION OF 3D COMPUTATIONAL MODELS OF THE RESPIRATORY SYSTEM.** *R. A. Corley*[1], K. R. Minard[1], B. Saam[2], *C. Timchalk*[1], H. E. Trease[1], L. L. Trease[1], *C. G. Plopper*[3], J. Fowler[4], E. M. Postlethwait[5] and *J. R. Harkema*[6]. [1]PNNL, Richland, WA, [2]University of Utah, Salt Lake City, UT, [3]University of California, Davis, CA, [4]CGC, Los Alamos, NM, [5]UAB, Birmingham, AL and [6]MSU, Lansing, MI.

#2113 **INHALED SOLID ULTRAFINE PARTICLES (UFP) ARE EFFICIENTLY TRANSLOCATED VIA NEURONAL NASO-OLFACTORY PATHWAYS.** T. Feikert[1], P. Mercer[1], N. Corson[1], R. Gelein[1], *L. Opanashuk*[1], *A. Elder*[1], *V. Silva*[1], *J. Carter*[2], A. Maynard[3], *J. Finkelstein*[4] and *G. Oberdorster*[1]. [1]Environmental Medicine, University of Rochester, Rochester, NY, [2]Procter & Gamble Co., Cincinnati, OH, [3]NIOSH, Cincinnati, OH and [4]Pediatrics, University of Rochester, Rochester, NY.

#2114 **CARBON BLACK-INDUCED NASAL LESIONS IN LABORATORY RODENTS: A SPECIES COMPARISON.** P. Santhanam[1], *J. Wagner*[1], L. Bramble[1], *A. Elder*[2], *G. Oberdorster*[2] and *J. Harkema*[1]. [1]Pathobiology & Diagnostic Investigation, Michigan State University, East Lansing, MI and [2]Environmental Medicine, University of Rochester, Rochester, NY.

#2115 **THE BIOPERSISTENCE OF CANADIAN CHRYSOTILE ASBESTOS FOLLOWING INHALATION.** *R. Rogers*[2], *D. Bernstein*[1] and P. Smith[3]. [1]Consultant in Toxicology, Geneva, Switzerland, [2]Rogers Imaging Corporation, Needham, MA and [3]Research & Consulting Company Ltd., Fullinsdorf, Switzerland.

#2116 **COMPARISON OF CALIDRIA CHRYSOTILE ASBESTOS TO PURE TREMOLITE: INHALATION BIOPERSISTENCE AND HISTOPATHOLOGY FOLLOWING SHORT TERM EXPOSURE.** *D. Bernstein*[1], J. Chevalier[2] and P. Smith[3]. [1]Consultant, Geneva, Switzerland, [2]EPS, Muttenz, Switzerland and [3]RCC Ltd., Fullinsdorf, Switzerland.

#2117 **TOXICOLOGICAL AND MINERALOGICAL ANALYSIS OF RICHTERITE-WINCHITE ASBESTOS.** B. S. Van Gosen[1], H. A. Lowers[1], J. D. Hyde[2], G. P. Meeker[1], A. M. Bern[1], S. J. Sutley[1], *M. L. Witten*[2] and *T. L. Ziegler*[1]. [1]US Geological Survey, Denver, CO and [2]The University of Arizona, Tucson, AZ.

#2118 **TOXICITY TESTING OF FIBROUS PARTICLES: THE APPROPRIATE USE OF SHORT-TERM ASSAYS.** S. Olin and . ILSI RSI Working Group. Risk Science Institute, International Life Sciences Institute, Washington, DC. Sponsor: *P. Fenner-Crisp*.

#2119 **KINETICS OF ABSORPTION OF INHALED BENZO(A)PYRENE IN THE ISOLATED PERFUSED RAT LUNG.** P. Ewing, *A. Ryrfeldt* and *P. Gerde*. Environmental medicine, Karolinska Institute, Stockholm, Sweden.

#2120 **TRACHEOBRONCHIAL AND NASAL CLEARANCE OF 1.0 MICRON PARTICLES IN THE RAT: COMPARISON WITH A TYPICAL PATH TRACHEOBRONCHIAL CLEARANCE MODEL.** *E. C. Kimmel*[1, 2], S. L. Prues[1, 2], J. E. Reboulet[1, 2] and D. L. Courson[1, 3]. [1]Inhalation/Pulmonary Effects Laboratory, Naval Health Research Center (Toxicology), Wright-Patterson AFB, OH, [2]Geo-Centers, Inc., Wright-Patterson AFB, OH and [3]ManTech Environmental, Wright-Patterson AFB, OH.

#2121 **COMPARATIVE ANALYSIS OF PULMONARY IRRITATION BY FUNCTIONAL MEASUREMENTS (PENH) AND PROTEIN IN BRONCHOALVEOLAR LAVAGE FLUID IN BROWN NORWAY RATS AND WISTAR RATS EXPOSED TO POLYISOCYANATE AEROSOL.** *J. Pauluhn*. Toxicology, Bayer HealthCare, Wuppertal, Germany.

#2122 **EXHALED BREATH PROTEIN SAMPLING IN UNANESTHETIZED PIGS.** *O. R. Moss*[1], N. Boggs[2] and J. Jackman[2]. [1]Biomathematics and Physical Sciences, CIIT Centers for Health Research, Research Triangle Park, NC and [2]Research & Technology Dev. Center, APL/JHU, Laurel, MD.

#2123 **EFFECTS OF 1, 3-BUTADIENE, ISOPRENE, AND THEIR PHOTOCHEMICAL DEGRADATION PRODUCTS ON HUMAN LUNG CELLS.** M. Doyle[1], K. Sexton[1], *I. Jaspers*[2, 1], K. Bridge[1] and H. Jeffries[1]. [1]ESE, University of North Carolina, Chapel Hill, NC and [2]CEMALB, University of North Carolina, Chapel Hill, NC.

#2124 **ACUTE, FOUR-WEEK, AND MICRONUCLEUS INHALATION STUDIES IN RATS WITH HEXAFLUOROISOBUTENE EPOXIDE.** *D. P. Kelly*[1], M. Donner[1], *L. A. Malley*[1], J. F. Hansen[1], V. O. Wagner, III[2] and N. E. Everds[1]. [1]Haskell Laboratory, DuPont Company, Newark, DE and [2]BioReliance, Rockville, MD.

#2125 **SINGLE-PASS BUBBLE AEROSOL GENERATOR FOR INHALATION STUDIES.** *R. Jaeger*[1], G. Mainelis[3], K. DeVoe[2] and M. Yao[3]. [1]CH Technologies, Westwood, NJ, [2]BGI, Walham, MA and [3]Department Env Sciences, Rutgers University, New Brunswick, NJ.

#2126 **COLLECTION, VALIDATION AND GENERATION OF BITUMEN FUMES FOR CHRONIC INHALATION STUDIES IN RATS.** G. Pohlmann, A. Preiss and W. Koch. Aerosoltechnologie, Fraunhofer Institute of Toxicology and Experimental Medicine, Hannover, Germany. Sponsor: *H. Muhle*.

#2127 **INHALATION TOXICITY OF THE FLAVORING AGENT, DIACETYL (2, 3-BUTANEDIONE), IN THE UPPER RESPIRATORY TRACT OF RATS.** A. F. Hubbs, L. A. Battelli, R. R. Mercer, M. Kashon, S. Friend, D. Schwegler-Berry and W. T. Goldsmith. HELD, NIOSH, Morgantown, WV. Sponsor: *D. Porter*.

#2128 **THE EVALUATION OF TWO ANESTHETICS FOR USE IN A BRONCHODILATOR SCREEN MODEL.** A. Sivillo, R. Moutvic, *M. J. Brooker* and I. M. Grossi. Toxicology, Battelle, Columbus, OH.

#2129 **VALIDATION OF AN ISO-KINETIC DILUTOR FOR USE WITH AN ANDERSON CASCADE IMPACTOR.** J. Frye, R. Moutvic, *M. J. Brooker* and I. M. Grossi. Toxicology, Battelle, Columbus, OH.

#2130 **ACUTE RESPIRATORY RESPONSES OF THE MOUSE TO CHLORINE.** W. S. Wilkie[1], D. J. Shusterman[2] and *J. B. Morris*[1]. [1]Toxicology Program, University of Connecticut, Storrs, CT and [2]Occupational and Environmental Medicine, University of California at San Francisco, San Francisco, CA.

#2131 **COMPARISON OF DOSE AND TOXICITY AFTER ADMINSTRATION OF A FLUOROALKYLETHYL PHOSPHATE SURFACTANT BY DERMAL AND INHALATION ROUTES IN RATS.** C. Finlay, D. P. Kelly, N. E. Everds, J. F. Hansen and *J. C. Stadler*. DuPont Haskell Laboratory, Newark, DE.

#2132 **DEVELOPMENT OF A METHOD FOR THE SIMULTANEOUS ANALYSIS OF VINYL ACETATE AND ACETALDEHYDE CONCENTRATIONS IN THE NASOPHARYNGEAL CAVITY AND EXHALED BREATH OF HUMAN VOLUNTEERS.** R. E. Schwartz[1], J. J. Soelberg[2], *R. A. Corley*[2], K. K. Weitz[2], L. Bloemen[3], *M. S. Bogdanffy*[4] and *K. D. Thrall*[2]. [1]Otolaryngology, Richland, WA, [2]Battelle, Pacific Northwest Laboratories, Richland, WA, [3]Dow Benelux, Terneuzen, Netherlands and [4]DuPont, Newark, DE.

#2133 **THE USE OF FLUORESCENTLY LABELED NANOPARTICLES TO DETERMINE THE EFFECT OF PARTICLE SIZE ON TRANSLOCATION FROM THE LUNG.** *J. M. Carter*[1], J. M. Kennedy[1], *G. Oberdorster*[3] and *E. D. Clark*[2]. [1]Central Product Safety, Procter & Gamble, Cincinnati, OH, [2]The Health and Environmental Safety Alliance, Cincinnati, OH and [3]University of Rochester, Rochester, NY.

#2134 **THE EFFECT OF DOSAGE ERRORS AND STEP SELECTION METHOD ON THE PERFORMANCE OF THE UP-AND DOWN METHOD.** D. R. Sommerville. US Army Edgewood CB Center, Aberdeen Proving Ground, MD. Sponsor: *S. Thomson*.

#2135 **CHEMESTHESIS IN 15-MINUTE EXPOSURES TO OCCUPATIONALLY-PERTINENT CONCENTRATIONS OF GLUTARALDEHYDE VAPOR.** W. S. Cain, R. Schmidt and A. A. Jalowayski. Otolaryngology, UCSD, La Jolla, CA. Sponsor: *J. Cometto-Muñiz*.

#2136 **ASSESSMENT OF HUMAN SENSORY AND RESPIRATORY RESPONSES TO CONSUMER PRODUCTS.** University. Vedula[5], L. Fell[2], S. Selim[4], R. Rogers[3], P. Dalton[6] and *T. G. Osimitz*[1]. [1]Science Strategies, Charlottesville, VA, [2]ToxLink, LLC, Racine, WI, [3]Toxcon, Edmonton, AB, Canada, [4]selim and Associates Toxicology, Camelia, CA, [5]S.C. Johnson, Racine, WI and [6]Monell Institute for the Chemical Senses, Philidelphia, PA.

#2137 **COMBINED ARTERIAL BLOOD GAS ANALYSIS AND PLETHYSMOGRAPHY TO EVALUATE PULMONARY FUNCTION IN THE RAT.** K. D. Lake-Bruse, K. J. Smith and *G. J. Schaefer*. Safety Pharmacology, WIL Research Laboratories, Inc., Ashland, OH.

#2138 **MECHANISMS OF ORGANOPHOSPHATE INSECTICIDE-INDUCED AIRWAY HYPERREACTIVITY.** *P. Lein*[1] and A. D. Fryer[2]. [1]CROET, Oregon Health & Science University, Portland, OR and [2]Physiology and Pharmacology, Oregon Health & Science University, Portland, OR.

#2139 **CONTROLLED VENTILATION INHALATION EXPOSURE AND LUNG SCINTIGRAPHY APPLIED TO A PHARMACOKINETIC AND TISSUE DISTRIBUTION STUDY.** R. Moutvic[1], D. B. Cearlock[2], R. L. Beihn[3], A. Zutshi[4] and *M. J. Brooker*[1]. [1]Toxicology, Battelle, Columbus, OH, [2]Zivena, Columbus, OH, [3]Scintiprox, Inc., Indianapolis, IN and [4]Pfizer, Inc., Kalamazoo, MI.

Author Index

The numerals following author's names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the first presenter.

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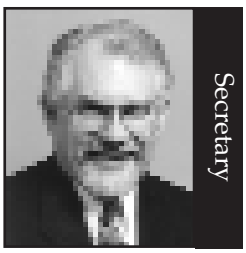
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Karen Riveles, Student Representative

Society of Toxicology Awards

In recognition of distinguished toxicologists and students, SOT presents several prestigious awards each year. In addition to receiving the award stipend and plaque, recipients are honored at a special Awards Ceremony at the SOT Annual Meeting and their names are listed in SOT publications. The deadline for the 2005 award nominations is October 9, 2004.

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 On-Line Award Nomination Form. The supporting documentation must indicate the candidate's achievements in toxicology and is critical in the review of each application. See the award description for the additional requirements for some of the awards, including the Sponsored Awards. The Best Paper Awards is 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


Indicates an SOT Award

Achievement Award

The Achievement Award is presented to a member of the Society of Toxicology who has less than 15 years experience since obtaining his/her highest earned degree (in the year of the Annual Meeting of the Society of Toxicology) and who has made significant contributions to toxicology. This award consists of a plaque and a cash stipend.

Award Recipients

1967 .....Gabriel L. Plaa
1968 .....Allan H. Conney
1969 .....Samuel S. Epstein
1970 .....Sheldon D. Murphy
1971 .....Yves Alarie
1972 .....Robert L. Dixon
1973 .....(No Award)
1974 .....Morris F. Cranmer
1975 .....Ian C. Munro
1976 .....Curtis D. Klaassen
1977 .....James E. Gibson
1978 .....Raymond D. Harbison
1979 .....Michael R. Boyd
1980 .....Philip G. Watanabe
1981 .....(No Award)
1982 .....Frederick P. Guengerich
1983 .....(No Award)
1984 .....Melvin E. Andersen
1985 ..... Alan R. Buckpitt
1986 .....Sam Kacew
1987 .....James S. Bus
1988 .....Jeanne M. Manson
1989 .....James P. Kehrer
1990 .....Michael P. Waalkes
1991 .....Debra Lynn Laskin
1992 .....Michael P. Holsapple
1993 .....David L. Eaton
1994 .....James L. Stevens
1995 .....Lucio G. Costa
1996 .....Kenneth 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
2004 .....David Dorman

Society of Toxicology Awards (Continued)

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.

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
2004 .....Melvin E. Andersen

AstraZeneca SOT/IUTOX Fellowship

The AstraZeneca company sponsors a travel fellowship award annually through SOT and IUTOX. Four (4) fellowship awards will be available to senior scientists from a country where toxicology is underrepresented to assist with travel to attend the 2004 Society of Toxicology meeting in Baltimore, Maryland, USA, March 21–25, 2004.

Award Recipients

2002 .....Christophor Dishovsky (Bulgaria)
.....Zoltan Gregus (Hungary)
..... Maritza Rojas Martini (Venezuela)
.....Choon-Nam Ong (Singapore)
.....W. Wasowicz (Poland)
.....Ping-kun Zhou (China)
2003 .....Jian-Hui Liang (China)
.....Marjan G. Vracko (Slovenia)
.....Eman A. Seif (Egypt)
2004.....Christina Bolaton (Phillipines)
.....P.K. Gupta (India)
.....Salmaan Inayat-Hussain (Malaysia)
.....Xianping Ying (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 three-four week lecture tour of Europe. The awards are intended to familiarize recipients with research and regulatory issues in Europe as well as bring a North American perspective to these issues. Candidates for these awards should be established, mid-career North American scientists who are members of the Society and who demonstrate the ability to develop collaborative relationships with European colleagues. The awards are given each year in the amount of $6,000 each.

Award Recipients

1990 .....Robert I. Krieger, Joseph R. Landolph
1991 .....Sam Kacew
1992 .....Charles V. Smith, Jerold A. Last
1993 .....Terrence James Monks, Harihara H. Mehendale
1995 .....David L. Eaton, Hanspeter R. Witschi
1996 .....Rick G. Schnellmann, James P. Kehrer
1997 .....Lucio G. Costa, Durisala Desaiah
1998 .....Syed F. Ali, Curtis J. Omiecinski
1999 .....Alvaro Pugo
2000 .....Kenneth Ramos, Garold Yost
2001 .....Ronald Hines, Richard Seegal
2003.....William D. Atchison
2004.....Charlene A. McQueen

Society of Toxicology Awards (Continued)

Board of Publications Award

The Board of Publications Award for the Best Paper in ***Toxicological Sciences*** is presented to the author(s) of the best paper published in this official SOT publication during a 12-month period, terminating with the June issue of the calendar year preceding the Annual Meeting at which the award is presented. The author(s) need not be a member of the Society of Toxicology. Submissions should include a one-page summary of the paper's contribution to the science of toxicology and a copy of the article for which the nomination is being made. Any member of the Society may submit one title for consideration. In addition, the titles of no more than six papers to be considered are submitted by the editor of ***Toxicological Sciences***. All papers submitted will be evaluated by the Board of Publications. This award consists of a plaque and a cash stipend. (This award was formerly known as the Frank R. Blood Award.)

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
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
2004 .....U.P. Kodavanti, C.F. Moyer, ...A.D. Ledbetter, M.C. Schladweiler, D.L. Costa, ...R. Hauser, D.C. Christiani, A. Nyska

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 $33,500) 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, 2004.

Award Recipients

1988 .....Ernest Bloom
1989 .....Gin Hsieh
1990 .....Dennis E. Chapman
1991 .....Anne Walsh
1992 .....Qin Chen
1993 .....Erika Cretton
1994 .....William Chan
1995 .....Bob Van de Water
1997 .....Alan Parrish
1999 .....Russell Thomas
2001 .....Kevin Kerzee, Christopher Reilly
2002.....Kevin Kerzee
2003 .....Kimberly Miller

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
2003 ....Sachin Devi, Midhun Korrapati, and Pallavi Limaye
2004 .....Jaya Chilakapati

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
Visiting Professor: .....Robert Chapin
2000 .....Yale University, School of Medicine
Visiting Professor: .....Narendre Singh
2001 .....Medical College of Wisconsin
Visiting Professor: .....Garold Yost
2003 .....Washington State University
Visiting Professor: .....Marc W. Fariss
2004 .....University of Louisiana at Monroe
Visiting Professor: .....Snorri S. Thorgeirsson

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
2004 .....Americans for Medical Progress and
.....North Carolina Association for Biomedical Research

Distinguished Lifetime Toxicology Scholar Award

The Distinguished Toxicology Scholar 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 award is scientific accomplishments and not necessarily service to the Society. This award consists of a plaque and a cash stipend. (This award was formerly known as the Scientific Achievement Award.)

Award Recipients

2003 .....Henry C. Pitot
2004 .....Gerald N. Wogan

Award Recipients (Scientific Achievement Award)

2001.....James E. Troska

Education Award

The Education Award is presented to an individual who is distinguished by the teaching and training of toxicologists and who has made significant contributions to education in the broad field of toxicology. This award consists of a plaque and a cash stipend.

Award Recipients

1975 .....Harold C. Hodge
1976 .....Ted A. Loomis
1977 .....Robert B. Forney
1979 .....Sheldon D. Murphy
1980 .....Herbert H. Cornish
1981 .....Frederick Sperling
1982 .....Lloyd W. Hazleton
1983 .....Julius M. Coon
1984 .....Frank Guthrie, Ernest Hodgson
1985 .....William B. Buck
1986 .....Robert I. Krieger
1987 .....Gabriel L. Plaa
1988 .....John Autian
1989 ..... Tom S. Miya
1990 .....Charles H. Hine
1991 .....Hanspeter R. Witschi
1992 .....Dean E. Carter
1993 .....Curtis D. Klaassen
1994 .....Robert A. Neal
1995 .....William Carlton
1996 .....Robert Snyder
1997 .....Albert E. Munson
1998 .....David J. Holbrook
1999 .....Jules Brodeur
2000 .....Gary Carlson
2001 .....Harihara Mehendale
2002 .....Joseph Borzelleca
2003 .....Frederick W. Oehme
2004.....A. Jay Gandolfi

Society of Toxicology Awards (Continued)

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 .....G. Frank Gerberick, Ian Kimber

Graduate Student Fellowship Awards

The Graduate Student Fellowship Awards are provided by generous sponsors 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
2003 .....Winnie Jeng

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
2003 .....Sachin Devi

(Recipients of Graduate Fellowship Awards no longer offered may be found on the SOT Web site at www. toxicology.org.)

Society of Toxicology Awards (Continued)

Graduate Student Travel Awards

Graduate Student Travel Awards defray expenses for students presenting platform talks or posters at the SOT 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

*** Deceased**

.....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*

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. Loomis
1987 .....Bo Holmstedt
1988 .....Seymour L. Friess
1989 .....Wayland J. Hayes, Jr.
1990 .....Sheldon D. Murphy
1991 ..... Toshio Narahashi
1992 .....W. Norman Aldridge
1993 .....John Doull
1994 .....Ernest Hodgson
1995 .....Robert A. Scala
1996 .....Gabriel L. Plaa
1997 .....Mary O. Amdur
1998 .....John A. Thomas
1999 .....Thomas Clarkson
2000 .....Philippe Shubik
2001 .....Donald Reed
2002 .....Bernard Schwetz
2003 .....M.W. Anders
2004.....Robert Goyer

Society of Toxicology Awards (Continued)

Minority Undergraduate Student and Advisor Awards

The Minority Undergraduate Student and Advisor Awards provide support for awardees to participate in the Undergraduate Education Program at the SOT Annual Meeting. This program is an introduction to the discipline of toxicology for undergraduate science majors and includes an orientation, a special poster session with scientists, and activities with a SOT mentor. The travel awards are for those from races and ethnic groups underrepresented in the sciences (African American, American Indian or Hispanic American) and for their advisors. Advisors are eligible regardless of racial or ethnic background. Meeting registration and support for travel, lodging, and meals are provided for students and advisors who are not local to the meeting site. Students and advisors from local institutions receive meeting and program registration and meals. 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
2004 .....Kenneth Olden

Regional Chapter Awards

Most SOT Regional Chapters provide awards to recognize outstanding students or scientists. 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 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, 2006.)

Award Recipients

1989 .....Kevin L. Stark
1992 .....Daland Richard Juberg
1995 .....Xuelin Li
1998 .....Jeeyeon Bee
2001 .....Mark Fielden
2004.....Julie M. Gohlke

Society of Toxicology/ American Chemistry Council Early Career Award

The American Chemistry Council offers an Early Career Award through the Society of Toxicology. The award is up to $100,000 and 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 a particular specialty area of potential toxicity of chemicals. Awards have been offered in Inhalation and Neurotoxicology. Full details are available on the SOT Web site.

Award Recipients

2002 .....Ronald Tjalkens (Neurotoxicololgy)
2003 .....Ilona Jaspers (Inhalation)
2004 .....Nikolay Filipov (Neurotoxicololgy)

Society of Toxicology Awards (Continued)

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.

SOT Award Nominations On-Line

SOT AWARD NOMINATION EASIER THAN EVER

SOT Award nomination has gone on-line! Have you ever considered nominating a distinguished toxicologist for an award, but hesitated because of the work involved? In 2004, SOT automated the award nomination process. Tied to the SOT on-line Directory, the forms self-populate and automatically send an email to the designated seconder. Please take a look at the site, **www.toxicology.org**, and consider making a nomination for 2005.

The deadline for 2005 award nominations is October 9, 2004.

SOT presents several prestigious awards each year to toxicologists, public communicators, and students. Award recipients receive a plaque and a generous stipend, are listed in the annual *Membership Directory*, are posted on the SOT Web site, and are honored at a special Awards Ceremony at the SOT Annual Meeting. Information regarding the individual awards and mandatory applications are available at the SOT Web site at **www.toxicology.org**.

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
Jane A. S. Allen
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
Jane A. S. Allen
Linda Birnbaum
David L. Eaton
Sidney Green
James E. Klaunig
Robert Krieger
Michael McClain
Kendall B. Wallace

Genetic Toxicology
Jane A. S. Allen
Sidney Green
James E. Klaunig
Charlene A. McQueen (environmental)
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
Jane A. S. Allen
Daniel Acosta, Jr.
William Berndt
Linda Birnbaum
Gary P. Carlson
George B. Corcoran
Ann de Peyster
Jay Gandolfi
James E. Klaunig
Lois D. Lehman-McKeeman
Jose E. Manautou
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/ RegulatoryAffairs/ Safety Evaluation
Jane A. S. Allen
Daniel Acosta, Jr. (drugs/addictive agents)
Gregory Allgood
Richard Bull
Jack Dean (drugs)
Michael Dourson
Robin Goldstein (drugs)
Robert A. Kuna
James Lamb (pesticides and industrial chemicals)
Michael McClain (drugs)
Kathleen Rodgers (drugs)
Robert Rubin

Reproductive/ Developmental
Robert Chapin
George Daston
Ann de Peyster
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
Robert A. Kuna
James Lamb
Roger McClellan
Robert Rubin
Jacqueline H. Smith

Toxicology Specialists

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 A. Kuna
Robert Rubin

Free Radicals/Oxidative Stress/Antioxidants
Gregory Allgood
James Kehrer
James E. Klaunig
Kendall B. Wallace

Industrial Chemical Toxicology
James S. Bus
Robert A. Kuna
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

Geographical Distribution:

Allegheny-Erie
Mary Davis (WV)

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)
Robert A. Kuna (NJ)
Michael McClain (NJ)
James Popp (PA)
Jacqueline H. Smith (NJ)

Midwest
James E. Klaunig (IN)
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)
Marion F. Ehrich (VA)
Sidney Green (DC)
Carole A. Kimmel (DC)
James Lamb (VA)
Robert Rubin (MD)
Ellen Silbergeld (MD)

North Carolina
Jane A. S. Allen
Linda Birnbaum
James Bond
Gary Boorman
Robert Chapin
Rory Conolly
William Greenlee
H.B. Matthews
Mary Jane Selgrade
Hugh Tilson

Northeast
Barbara Beck (MA)
Steven D. Cohen (CT)
John Morris (CT)

Northern California
John Christopher
Stephen DiZio

Ohio Valley
Daniel Acosta, Jr. (OH)
Gregory Allgood (OH)
George Daston (OH)
Michael Dourson (OH)
Ernest Foulkes (OH)
Lois D. Lehman-McKeeman (OH)

Pacific Northwest
Richard Bull (WA)
David L. Eaton (WA)
Nancy Kerkvliet (OR)

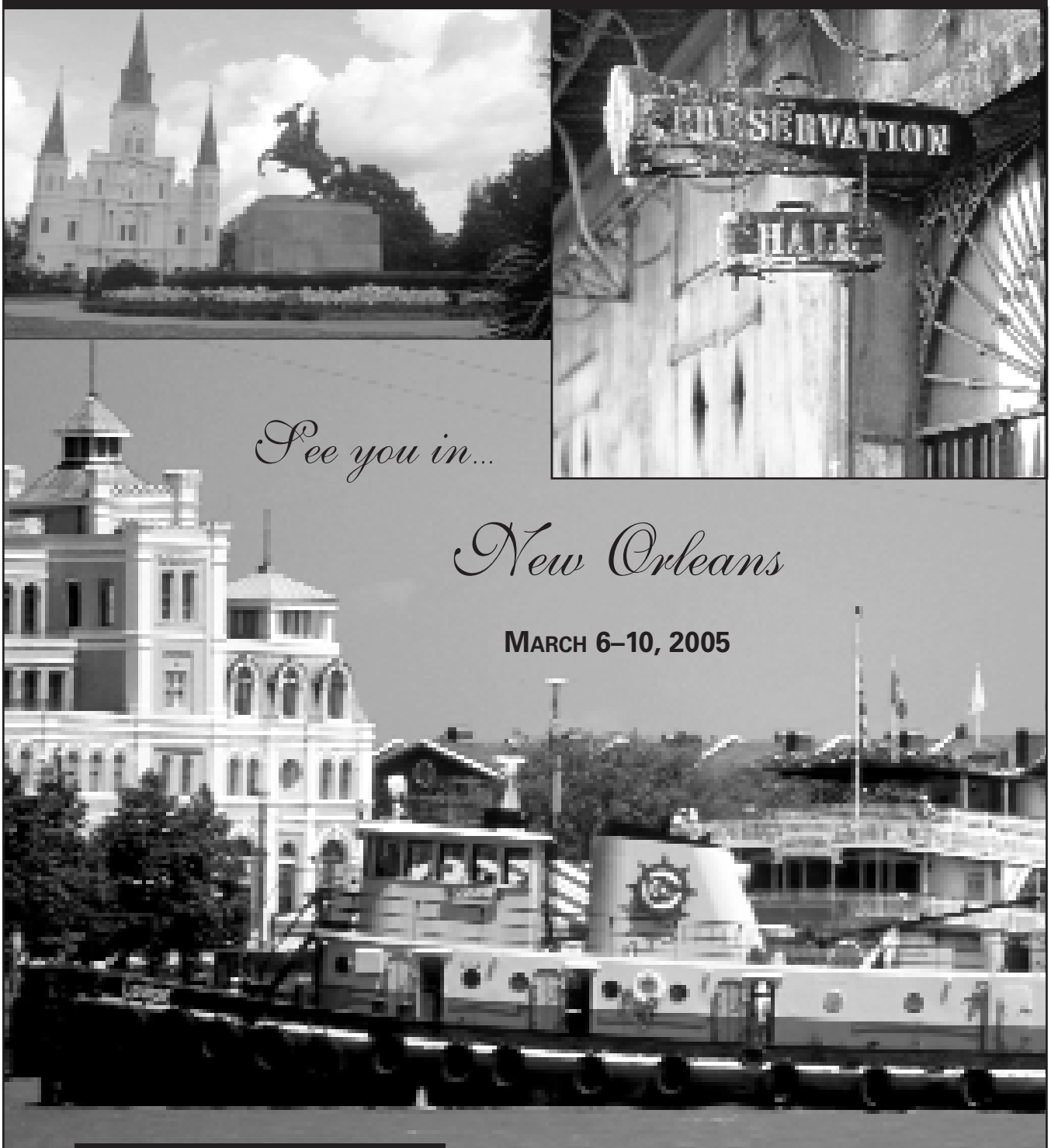
South Central
Hari Mehendale (LA)

Southeastern
Rick Schnellmann (SC)

Southern California
Robert Krieger
Robert Phalen
Kathleen Rodgers

Society of Toxicology

44th Annual Meeting



See you in...

New Orleans

March 6–10, 2005

www.toxicology.org

20 Excellent Reasons To Be a Member of SOT

1. Participation in the Community
2. Discounted registration fees to the Annual Meeting
3. *The Toxicologist* on CD
4. The *SOT Membership Directory*
5. The *Program* for the Annual Meeting
6. SOT Members Only Web site information
7. SOT On-Line Job Placement Service
8. Electronic subscription to *Toxicological Sciences* (print version available for a nominal fee)
9. SOT *Communiqué*
10. Voting privileges at Annual and Special Meetings
11. Voting privileges for Officers of the Society
12. Ability to sponsor non-member abstracts at the Annual Meeting
13. Eligibility for election as an Officer
14. Eligibility for election or appointment to a committee
15. Eligibility to serve as a Regional Chapter Officer
16. Eligibility to serve as a Specialty Section Officer
17. Eligibility for Awards
18. Legislative and Regulatory Updates
19. Recognition by peers and the wider professional community
20. Promotion of the Science of Toxicology

MEMBERSHIP

SOT

www.toxicology.org

For complete information about membership in the Society of Toxicology, visit our Membership Booth in 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.

We'll see you at the 2005 SOT Annual Meeting in New Orleans!