

**SOCIETY OF TOXICOLOGY**  
**23rd Annual**  
**Meeting**



**March 12-15, 1984**  
**Atlanta, Georgia**

**Atlanta, Georgia**

**MIXER AND RECEPTION**

Monday evening — March 12, 1984

6:00 p.m. to 7:30 p.m.

GRAND SALON WEST

CASH BAR

Open to all attendees and guests

**ISSUES SESSION**

Wednesday afternoon, March 14, 1984

GRAND BALLROOM EAST

12 Noon - 1:30 p.m.

***Chaired by President Gabriel L. Plaa***

Bring a sandwich, etc., and participate in an open forum  
discussion of SOT affairs

**ANNUAL BUSINESS MEETING**

Wednesday afternoon, March 14, 1984

4:00 p.m.

GRAND BALLROOM EAST

***President Gabriel L. Plaa, Presiding***

SOT MEMBERS ONLY

**ANNUAL BANQUET**

Thursday evening, March 15, 1984

7:00 p.m.

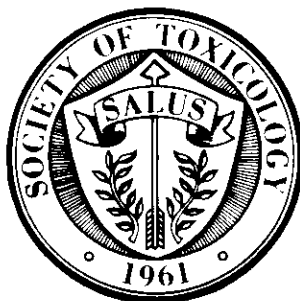
GRAND BALLROOM WEST

Open to all attendees and guests

Complimentary Wine

Courtesy, Charles River Breeding Laboratories, Inc.

**23rd ANNUAL  
MEETING  
sponsored by**



**Atlanta Hilton, Georgia  
March 12-16, 1984**

**REGISTRATION FEES**

	<b>Member or Post- doctoral In Training</b>	<b>Non- Member</b>	<b>Student, Full-time, Predoctoral</b>
<b>Pre-registration</b>	<b>\$50.00</b>	<b>\$75.00</b>	<b>\$5.00</b>
<b>At Conference</b>	<b>60.00</b>	<b>85.00</b>	<b>10.00</b>
<b>Banquet</b>	<b>25.00</b>	<b>25.00</b>	<b>25.00</b>

## **GENERAL INFORMATION**

### **REGISTRATION — ATLANTA HILTON — Pre-Function Area 2nd Floor**

Sunday, March 11	1:00 p.m. to 7:00 p.m.
Monday, March 12	7:00 a.m. to 5:00 p.m.
Tuesday, March 13	7:00 a.m. to 4:00 p.m.
Wednesday, March 14	7:00 a.m. to 4:00 p.m.
Thursday, March 15	7:30 a.m. to 4:00 p.m.

### **HOTEL ACCOMMODATIONS**

The Atlanta Hilton Hotel is Conference Headquarters. The guest room rates are guaranteed when reservations are made on the hotel form enclosed with the program packet.

The hotel accepts major credit cards.

The Atlanta Hilton will act as Housing Bureau and once capacity is reached, they will process overflow reservations in nearby hotels as needed.

### **AIRPORT TRANSPORTATION SERVICE**

Direct transportation service is available from the Atlanta Airport baggage claim area to the Atlanta Hilton Hotel.

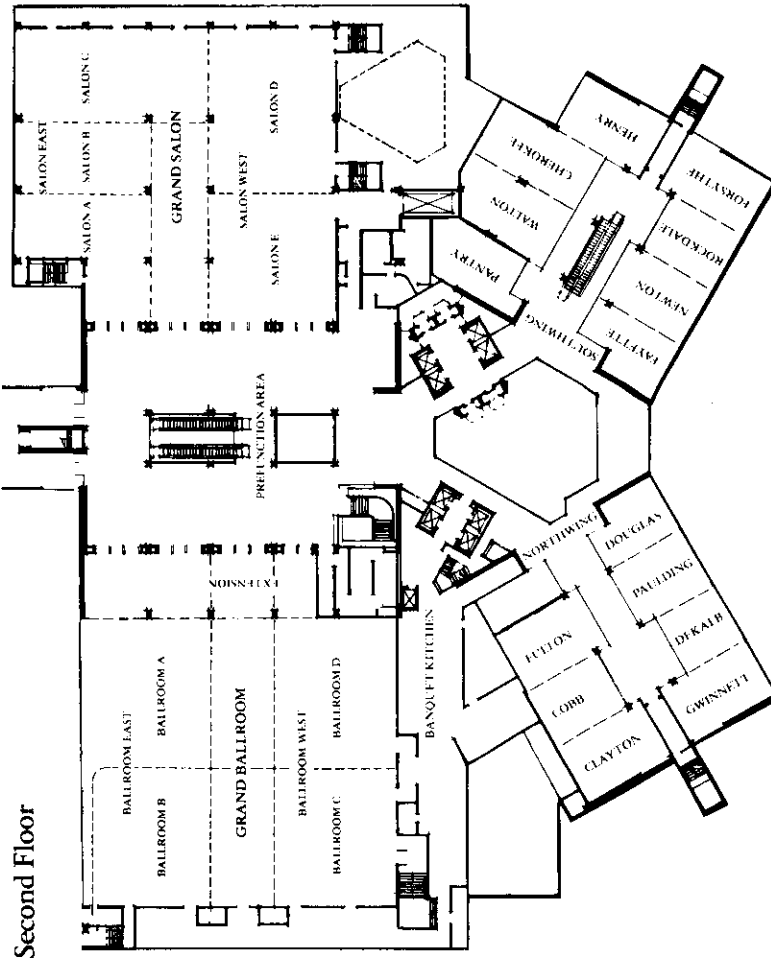
### **CONFERENCE HEADQUARTERS — JOHN ADAMS ROOM — (3rd Floor)**

Sunday, March 11	1:00 p.m. - 7:00 p.m.
Monday thru Thursday	7:00 a.m. - 5:00 p.m.
Friday	7:00 a.m. - Noon

### **PLACEMENT SERVICE — WALTON/CHEROKEE/HENRY ROOMS**

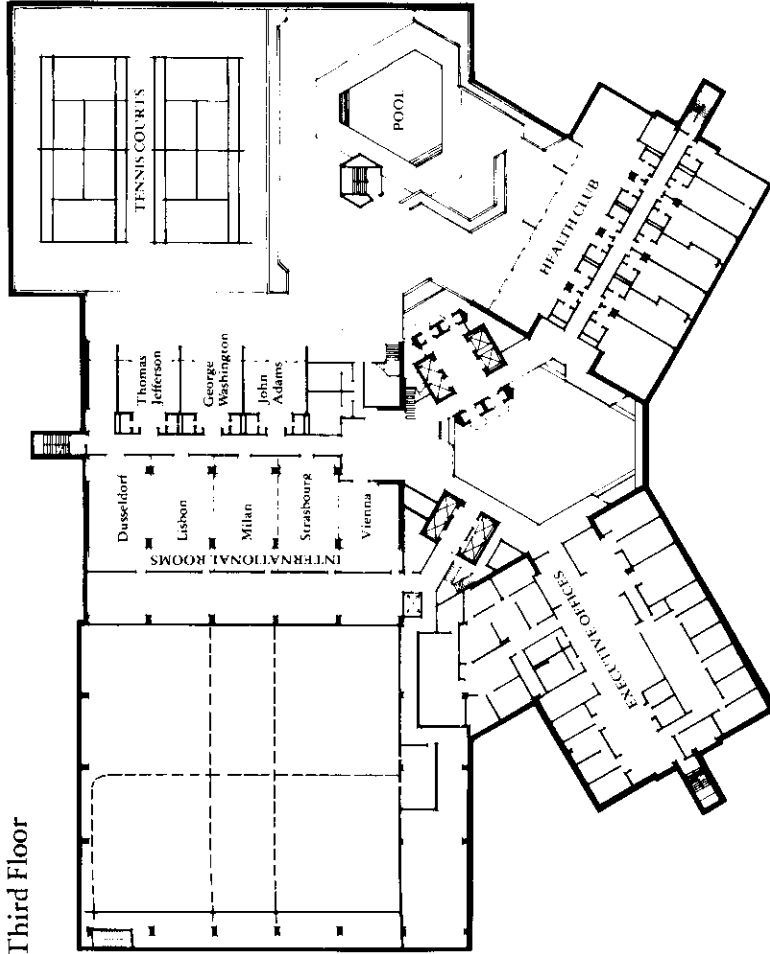
Tuesday, March 13	9:00 a.m. - 5:00 p.m.
Wednesday	9:00 a.m. - 5:00 p.m.
Thursday	9:00 a.m. - 5:00 p.m.



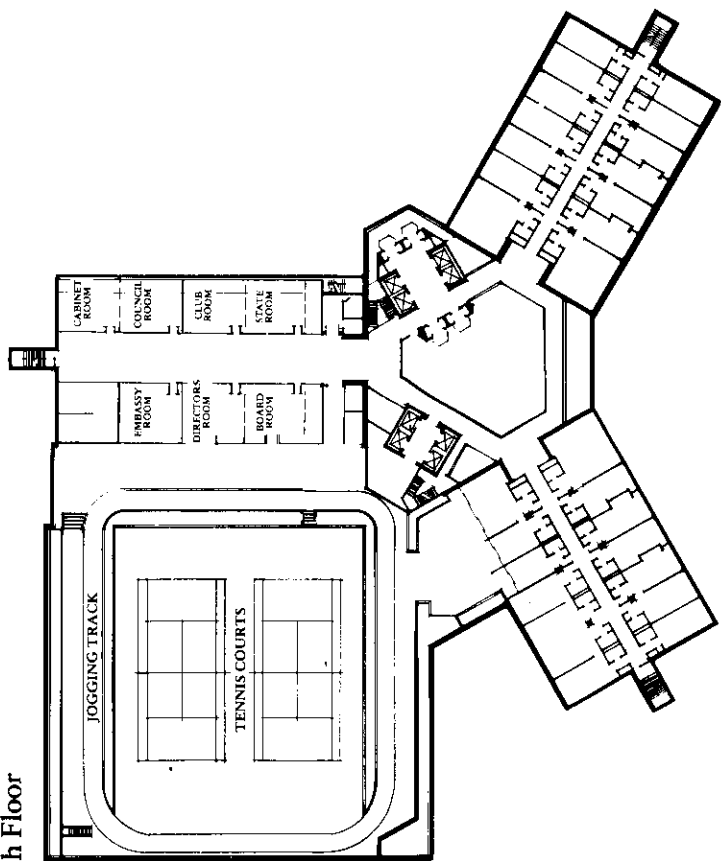


Second Floor

Third Floor

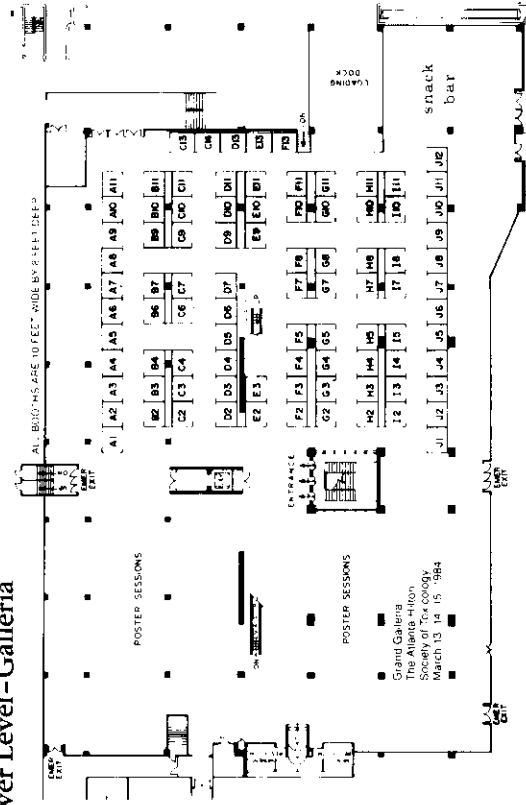


Fourth Floor





# Lower Level - Galleria



# PROGRAM SUMMARY

## Platform Sessions

<b>DAY/TIME</b>	<b>TOPIC</b>	<b>ROOM</b>	<b>SEE PAGE</b>
Tuesday			
8:30 a.m.	Inhalation I	Grand Ballroom West	15
Tuesday			
8:30 a.m.	General Toxicology Eval. I	Grand Ballroom East	16
Tuesday			
8:30 a.m.	Metabolism/Disposition I	Grand Salon East	17
Tuesday			
1:30 p.m.	Inhalation II	Grand Ballroom West	24
Tuesday			
1:30 p.m.	Renal	Grand Ballroom East	26
Wednesday			
8:30 a.m.	Methods/Tech I	Grand Salon West	34
Wednesday			
8:30 a.m.	Onconogenesis/Mutagenesis I	Grand Salon East	35
Wednesday			
8:30 a.m.	Neurotoxicology II	Grand Ballroom West	36
Wednesday			
1:30 p.m.	Hepatotox II	Grand Ballroom West	44
Thursday			
8:30 a.m.	Onconogenesis/Mutagenesis III	Grand Salon East	53
Thursday			
8:30 a.m.	Immunotoxicology I	Grand Ballroom West	54
Thursday			
8:30 a.m.	Metabolism/Disposition III	Grand Salon West	56
Thursday			
1:30 p.m.	In Vitro/Metabolism	Grand Salon East	64
Thursday			
1:30 p.m.	Reproduction/Teratology II	Grand Salon West	66
Thursday			
1:30 p.m.	General Toxicology Evaluation II	Grand Ballroom West	67
Friday			
8:30 a.m.	Metals II	Grand Ballroom West	74
Friday			
8:30 a.m.	Reproduction/Teratology III	Grand Salon West	75

## Symposia

DAY/TIME	TOPIC	ROOM	SEE PAGE
Tuesday 8:30 a.m.	Symposium on Metal Carcinogenesis	Grand Salon West	18
Tuesday 1:30 p.m.	Mechanisms of Species Differences in the Toxicity of Chemicals	Grand Salon West	27
Tuesday 1:30 p.m.	Mechanisms of Neurotoxicity	Grand Salon East	27
Wednesday 8:30 a.m.	Role of Receptors in Toxicological Response	Grand Ballroom East	37
Thursday 8:30 a.m.	Toxicity of Fluorinated Volatile Anesthetics	Grand Ballroom East	57
Thursday 1:30 p.m.	Development and Assessment of Fibrosis	Grand Ballroom East	63
Friday 8:30 a.m.	New Approaches for the Evaluation of Pulmonary Toxicology	Grand Ballroom East	77

## Poster Sessions

DAY/TIME	TOPIC	SEE PAGE
<i>(ALL IN LOWER LEVEL GALLERIA EXHIBIT AREA)</i>		
Tuesday 8:30 a.m.	Mycotoxins	19
Tuesday 8:30 a.m.	Pesticides	20
Tuesday 8:30 a.m.	Neurotoxicology I	22
Tuesday 1:30 p.m.	Onconogenesis/Mutagenesis I	29
Tuesday 1:30 p.m.	Hepatotox I	32

## Poster Sessions (cont'd)

DAY/TIME	TOPIC	SEE PAGE
Wednesday		
8:30 a.m.	Inhalation/Pulmonary/ Toxicology III	38
Wednesday		
8:30 a.m.	Cardiovascular/Renal	43
Wednesday		
1:30 p.m.	Reproductive/Teratology I	46
Wednesday		
1:30 p.m.	Metabolism/Disposition II	49
Thursday		
8:30 a.m.	Metals I	57
Thursday		
8:30 a.m.	Methods/Techniques II	61
Thursday		
1:30 p.m.	Metabolism/Disposition IV	68
Thursday		
1:30 p.m.	Immunotoxicology II	72
Friday		
8:30 a.m.	General/Drugs/Solvents III	77
Friday		
8:30 a.m.	Halogenated Hydrocarbons	83

## Student/Postdoctoral Colloquium

DAY/TIME	TOPIC	ROOM	SEE PAGE
Wednesday			
3:00 p.m.	NEW INVESTIGATORS COLLOQUIUM	INTERNATIONAL ROOMS	45

## Refresher Courses — (by Pre-registration)

DAY/TIME	TOPIC	ROOM	SEE PAGE
Monday			
8:00 a.m.	#1. Selection of Tests for Assessment of Hepatotoxicity in Animals	Grand Ballroom East	12

### Refresher Courses — (cont'd)

<b>DAY/TIME</b>	<b>TITLE</b>	<b>ROOM</b>	<b>SEE PAGE</b>
Monday 8.00 a.m.	#2. Role of Endotoxins in Toxicity	Grand Ballroom West	12
Monday 1:30 p.m.	#3. Current Concepts and Mechanisms of Carcinogenesis	Grand Ballroom East	13
Monday 1:30 p.m.	#4. Neurotoxicology Training Course	Grand Ballroom West	13

## REFRESHER COURSES

### Society of Toxicology Continuing Education Courses

*(Pre-Registration necessary — See Conference Pre-Registration form enclosed in Packet).*

*All Refresher Courses — \$30.00; Special discount \$15.00 for full-time, pre-doctoral students.*

---

#### **1. Selection of Tests for Assessment of Hepatotoxicity in Animals**

Monday Morning, March 12, 1984

8:00 A.M. - Noon

Ballroom East

**Chairman:** G.P.A. Malya, Ph.D., Stuart Pharmaceuticals, Wilmington, DE

A review of the anatomical and physiological similarities and dissimilarities of the liver among rat, dog and monkey will be undertaken. The presentation will include the factors that influence the functional capabilities of the liver. Comparative aspects of hepatic function in rat, dog and monkey will be discussed. Modern biochemical tests and their implications to assess hepatotoxicity in animals will be described with examples of known hepatotoxic drugs. Liver damage resulting from chemical or drug insult and enhancement of the hepatic microsomal enzymes will be discussed. Special emphasis will be given to species differences and xenobiotic liver enzyme induction. The workshop will end with a panel discussion where the workshop participants will be given opportunities to interact with the experts. Therefore, participants are encouraged to bring their own problem cases and/or data with them.

**Comparative Aspects of Hepatic Function in Rat, Dog and Monkey.** Dr. Charles E. Cornelius, *University of California - Davis.*

**Analytical and Biochemical Basis of Hepatotoxicity.** Dr. Joseph F. Dooley, *Biomedical Associates, Berlin, CT.*

**Enzyme Induction and Hepatotoxicity.** Dr. P.A. Govinda Malya, *Stuart Pharmaceuticals, Wilmington, DE.*

---

#### **2. Role of Endotoxins in Toxicity**

Monday Morning, March 12, 1984

8:00 A.M. - Noon

Ballroom West

**Chairman:** J.P. Nolan, M.D., Buffalo General Hospital, NY

Endotoxins are the cell walls of gram-negative enteric bacteria and are ubiquitous in nature. These lipopolysaccharides are extremely active biologically and may be an important co-factor in a variety of toxic injuries. Additionally, determination of the presence or absence of endotoxin may be critical in the interpretation of toxicological studies. This course will detail the nature and activity of these substances, describe their interaction with other toxins and their clinical significance, define their actions on the liver and lungs, and review their importance in occupational medicine. All course participants will receive appropriate reprints and references on the subject.

**Endotoxin as a Co-factor in Toxic Injury and Relevance in Toxicological Studies.** James P. Nolan, M.D., *State University of New York at Buffalo.*

**Effects of Endotoxins on the Liver and its Function.** Charles O. Abernathy, *Veterans Administration Medical Center, Washington, D.C.*

**Effects of Endotoxins on the Lung and its Function.** Robert Burrell, *Department of Microbiology, West Virginia University Medical Center, Morgantown, W. Va.*

**Role of Endotoxin in Occupational Disease.** Ragnar Rylander, *Department of Environmental Hygiene, University of Gothenburg, Gothenburg, Sweden.*

---

### **3. Current Concepts and Mechanisms of Carcinogenesis**

Monday Afternoon, March 12, 1984

1:30 P.M. - 5:30 P.M.

Ballroom East

**Chairman:** E.J. Kaminski, Ph.D., Northwestern University,  
Chicago, IL

The rapid advances in basic biological research and safety evaluation demand a thorough understanding of interactions between chemicals, tissues and cells, and their relationship to current concepts of carcinogenesis. This course will include an overview of chemical carcinogenesis and cover such topics as carcinogen metabolism, initiation, promotion, free radicals and carcinogenesis and the effects of diet and other modifiers. All participants will receive a syllabus covering the materials to be presented.

The faculty for the course will be Dr. Paul F. Hollenberg, Dr. Edward J. Kaminski, Dr. Janardan K. Reddy, Dr. Dante G. Scarpelli, and Dr. Dennis Solt from the *Pathology Department of Northwestern University.*

#### **4. Neurotoxicology Training Course**

Monday Afternoon, March 12, 1984

1:30 P.M. - 5:30 P.M.

Ballroom West

**Chairman:** Peter S. Spencer, Ph.D., Albert Einstein College of Medicine, Bronx, NY

This course will give an overview of the subject of neurotoxicology. The course will deal primarily with the actions of neurotoxic substances on cellular and sub-cellular targets. It consists of five lectures illustrated with slides. Video tapes of neurotoxic incidents and their effects also will be available for review. Emphasis will be given to presenting basic concepts in neurotoxicology. The first lecture will introduce in a survey manner topics to be considered by subsequent speakers. The faculty for the course are recognized experts for their work in this field. All participants will receive a syllabus covering the material that is presented.

**1. Introduction and Classification of Neurotoxic Disease.** Peter S. Spencer, Ph.D., MRCPATH., *Professor of Neuroscience, Albert Einstein College of Medicine, Bronx, New York.*

**2. Actions of Neurotoxins on Excitable Membranes.** Toshio Narahashi, Ph.D., *Professor and Chairman of Pharmacology, Northwestern University Medical School, Chicago, Illinois.*

**3. Effects of Toxic Agents on Neurotransmitter Systems.** Frank G. Standaert, M.D., *Professor and Chairman of Pharmacology, School of Medicine and Dentistry, Georgetown University, Washington, D.C.*

**4. Toxic Damage to Neurons and Myelinating Cells.** William F. Blakemore, M.A., B.V.Sc., Ph.D., M.R.V.S. *Lecturer in Ultrastructural Pathology Department of Clinical Veterinary Medicine, University of Cambridge, England.*

**5. Neurotoxic Disease in Humans: Behavioral Correlates.** Herbert H. Schaumburg, M.D., *Professor and Vice Chairman of Neurology, Albert Einstein College of Medicine, Bronx, New York.*

---



**TUESDAY MORNING, MARCH 13  
GRAND BALLROOM WEST**

**PLATFORM SESSION 1: Inhalation I**

**Co-Chairs:** B.K.J. Leong, The Upjohn Co., Kalamazoo, MI  
D.E. Gardner, Nortrop Corp., Res. Tri. Pk, NC

- #1 8:30 **Subchronic Studies of Methyl Bromide Toxicity in Mice.**  
R.T. Drew, S.B. Haber, and R.R. Tice. Brookhaven National Laboratory, Upton, NY
- #2 8:45 **Pulmonary Responses to Inhaled Terbium Peroxide (Tb<sub>2</sub>O<sub>3</sub>).**  
A. Jacobs, H. Beiter, J. Ferin and P.E. Morrow. University of Rochester Medical Center, Department of Radiation Biology and Biophysics, Toxicology Division, Rochester, NY
- #3 9:00 **Protection of Pulmonary Endothelial Cells from Oxygen Radical Damage and Maintenance of NAD/NADH by Sod, Nicotinamide or Picolinamide**  
R.L. Thies and A.P. Autor, Department of Pharmacology, University of Iowa, Iowa City, IA
- #4 9:15 **Differences in Nasal Cavity Toxicity between Rats and Mice Exposed to Acrylic Acid Vapor.**  
L.A. Buckley, R.A. James, and C.S. Barrow, Chemical Industry Institute of Toxicology, Res. Tri. Pk., NC
- #5 9:30 **Rabbit Alveolar Macrophage (RAM) Cytotoxicity Assay Performed on Metal Coated Graphite Fibers.**  
F.J. Koschier, M.A. Friedman, R.A. Davis and R. Gay, American Cyanamid Company, Wayne, NJ and Bioassay Systems Corp., Woburn, MA
- #6 9:45 **Performance Characteristics of an Aerosol Generator for the Resuspension of Cotton Dust for Inhalation Studies.**  
D. Weyel, Y. Alarie, P. Sasser, M. Ellakkani, M. Karol. University of Pittsburgh Graduate School of Public Health, 130 DeSoto St., Pittsburgh, PA. \*Cotton Incorporated, Raleigh, NC.
- #7 10:00 **Inhalation of Cotton Dust Produces a "Monday" Respiratory Reaction.**  
Y. Alarie, M. Ellakkani, D. Weyel and M.H. Karol, Dept. of Ind. Env. Hlth. Sci., Grad. Sch. of Pub. Hlth., Univ. of Pittsburgh, Pittsburgh, PA
- #8 10:15 **Concentration-Dependent Acute Respiratory Response to Inhaled Cotton Dust.**  
M. Ellakkani, Y. Alarie, D. Weyel and M.H. Karol. Dept. of Ind. Env. Hlth. Sci. Grad. School of Public Health, University of Pittsburgh, Pittsburgh, PA.
- #9 10:30 **Bacterial and Endotoxin Content of Cotton Dust Causing Acute Respiratory Reactions in Guinea Pigs.**  
M.H. Karol, L.A. Sinagoga, S. Burke, M. Ellakkani, G. Keleti and J.L. Sykora. Dept. of Ind. Environmental Health Sciences, Graduate School of Public Health, University of Pittsburgh, Pittsburgh, PA.
- #10 10:45 **Impact of Silica Inhalation on the Chemical Composition of Rat Lung.**  
R.S. Kutzman, M.R. Osheroff, and R.T. Drew. Brookhaven National Laboratory, Upton, NY
- #11 11:00 **Multiple Assessment of Fibrosis in the Rat after Subchronic Inhalation of CdCl<sub>2</sub> Aerosol.**  
D.L. Costa, R.S. Kutzman, B.Y. Cockrell, and R.T. Drew. Brookhaven National Laboratory, Upton, NY.
- #12 11:15 **Functional Characteristics of Alveolar Macrophages following the Deposition of Iron Oxide in the Lung.**  
B.E. Lehnert\* and P.E. Morrow. \*Los Alamos National Laboratory, Los Alamos, NM. University of Rochester, Rochester, NY.

- #35 10:00 **The Effect of Reproductive State and Vehicle on the Disposition of <sup>14</sup>C-2,4,5,2',4',5' - Hexachlorobiphenyl (6-CB) following IV Administration.**  
M.J. Vodcnik and J.J. Lech. Medical College of Wisconsin, Milwaukee, WI
- #36 10:15 **The Association of <sup>14</sup>C-2,4,5,2',4',5' - Hexachlorobiphenyl (6-CB) with Circulating Components during Liver Perfusion in the Rat.**  
L.A. Rau and M.J. Vodcnik. Med. Coll. of Wis., Milwaukee, WI
- #37 10:30 **Polychlorinated Biphenyl Congeners found in Humans who consume Great Lakes Fish.**  
H.E.B. Humphrey, M.L. Budd and H.A. Price, Michigan Department of Public Health, Lansing, MI. Sponsor: S.D. Aust
- #38 10:45 **Biotransformation of Gentian Violet to Leuco Gentian Violet by Rodents in Vivo and by Intestinal Microflora in Vitro.**  
J.J. McDonald and C.E. Cerniglia. National Center for Toxicological Research, Jefferson, AR. Sponsor: J.A. Hinson.
- #39 11:00 **Metabolism of <sup>14</sup>C-Labeled Doxylamine Succinate (Bendectin) in the Rhesus Monkey.**  
W. Slikker, Jr., C.L. Holder, G.W. Lipe, and J.R. Bailey, National Center for Toxicological Research, Jefferson, AR. Sponsor: J.G. Pounds
- #40 11:15 **Pharmacokinetics of Picloram in Human Volunteers.**  
R.J. Nolan, N.L. Freshour, P.E. Kastl and J.H. Saunders. Toxicology Research Laboratory, Dow Chemical U.S.A., Midland, MI. Sponsor: J.C. Ramsey.
- #41 11:30 **Abate Toxicity and Pharmacokinetics in Rats after Acute and Subacute Exposures.**  
P.W. Ferguson and E. Nasri. School of Pharmacy, Northeast Louisiana University, Monroe, LA
- #42 11:45 **Disposition of <sup>14</sup>C-Mirex in Classes of CD1 Mouse Hepatocytes.**  
A.K. Charles and R. Abraham. Institute of Experimental Pathology and Toxicology, Albany Medical College, Albany, NY

**TUESDAY MORNING, MARCH 13  
SALON WEST**

## **SYMPOSIUM 1: Metal Carcinogenesis**

**Sponsored by: S.O.T. Metals Specialties Section**

**Chairman:** F. William Sunderman, Jr., University of Connecticut, Farmington, CT

- | <b>Time<br/>(A.M.)</b> |   |
|------------------------|---|
| 8:30                   | <b>Introduction.</b><br>F. William Sunderman  |
| 8:35                   | <b>Metal Carcinogenesis in Man and Experimental Animals.</b><br>F. William Sunderman Jr., University of Connecticut Medical School, Farmington, CT. |
| 9:05                   | <b>Discussion.</b>  |
| 9:25                   | <b>Cellular Mechanisms of Metal-Induced Neoplastic Transformation.</b><br>Max Costa. University of Texas Medical School, Houston, TX.               |
| 10:00                  | <b>Discussion.</b>  |
| 10:20                  | <b>Metabolism and DNA-Interactions of Carcinogenic Metal Ions.</b><br>Karen E. Wetterhan. Dartmouth College, Hanover, NH.                           |
| 10:55                  | <b>Discussion.</b>  |

- 11:15 **Metal Ion Induced Effects of Nucleic Acid Structure and Genetic Information Transfer.**  
 Gunther L. Eichhorn. National Institutes of Health, Gerontology Research Center, Baltimore, MD.
- 11:45 **Discussion.**

**TUESDAY MORNING, MARCH 13**  
**REAR OF GALLERIA EXHIBIT AREA**  
**POSTER SESSION 1A: Mycotoxins**

**Co-Chairs:** G. Laewengart, Allied Corp., Morristown, NJ  
 L.O. Lim, Univ. Miami, Miami, FL

**Displayed:** 8:30 A.M. - 11:30 A.M.  
**Attended:** 8:30 A.M. - 10:00 A.M. (Even Paper Numbers)  
 10:00 A.M. - 11:30 A.M. (Odd Paper Numbers)

Paper No.	Time	
#43		<b>Investigation of the Mechanism of Toxicity of Hymenoxon in the Mouse:</b> J.C. Merrill, H.L. Kim, Haake, J.E. and <u>S. Safe</u> , Dept. of Veterinary Physiology and Pharmacology, Texas A&M University, College Station, TX.
#44		<b>The Effects of Dietary Phenylalanine Supplementation on Ochratoxicosis in Normal and Partially Nephrectomized Rats.</b> R.W. Parker, L.F. Kubena, N.D. Heidelbaugh and <u>T.D. Phillips</u> , Department of Veterinary Public Health, Texas A&M University, College Station, TX
#45		<b>Toxicity of Ochratoxin A in Fischer 344 Rats.</b> K.L. Pavkov, A.C. Peters, R.L. Persing, and <u>M.B. Powers</u> , Battelle, Columbus Laboratories, Columbus, OH and National Toxicology Program, NIEHS, Bethesda, MD
#46		<b>Toxicity of Anguidine in Mice.</b> J. deCamargo, <u>P.M. Newberne</u> , A.E. Rogers, P. Punyarit, S. Riengrojpitak, and M.W. Conner, Department of Nutrition and Food Science, Mass. Institute of Technology, Cambridge, MA.
#47		<b>Hepatotoxicity of the Blue-Green Algae (Cyanobacteria) <u>Microcystis Aeruginosa</u>.</b> W.C. Theiss, <sup>1</sup> W.W. Carmichael, <sup>1</sup> M.M. Mullins, <sup>2</sup> R.H. Bruner, <sup>3</sup> <sup>1</sup> Dept. of Biological Sciences, <sup>2</sup> Dept. of Physiology, Wright State Univ., Dayton, OH and <sup>3</sup> AFAMRL, Wright-Patterson AFB, OH. Sponsor: R.W. Gardier
#48		<b>Increased Mutagen Formation during Humic Acid Chlorination in the Presence of Bromide.</b> J.R. Meier, W.E. Coleman, J. Munch and H.P. Ringhand, Toxicology and Microbiology Division, HERL, USEPA, Cincinnati, OH. Sponsor: L. Condie
#49		<b>Subchronic Toxicology of Chlorinated Humic Acid (CHA) in the Rat.</b> <u>L.W. Condie</u> , R.D. Laurie, and J.P. Bercz, Toxicology and Microbiology Division, HERL, USEPA, Cincinnati, OH
#50		<b>Relationship of Nephrotoxic Effect of Citrinin with Stimulation of Lymphocyte Proliferation.</b> R.V. Reddy and <u>R.P. Sharma</u> , Toxicology Program, Utah State University, Logan, UT.
#51		<b>Cutaneous Penetration of Aflatoxin B<sup>1</sup>.</b> R.T. Riley and B.W. Kemppainen, USDA-ARS, Athens, GA. Sponsor: W.P. Norred.

- #52      **Anti-Saxitoxin Rabbit Serum as a Therapeutic Agent for Saxitoxin (STX) Poisoning.**  
Stephen R. Davio and Roger P. Pickering, US Army Med. Res. Inst. of Infect. Dis., Frederick, MD. Sponsor: R.M. Mhatre.
- #53      **The Acute Effects of T-2 Mycotoxin on the Cardiovascular System in the Rat.**  
G.W. Parker, Jr., DVM. US Army Medical Research Institute of Infectious Diseases, Ft. Detrick, Frederick, MD. Sponsor: R.M. Mhatre
- #54      **Effect of T-2 Mycotoxin on Glutathione Levels in the Mouse Liver.**  
R.F. Fricke, L. Keeling, and B. Beauchamp, US Army Medical Research Institute of Infectious Diseases, Ft. Detrick, Frederick, MD. Sponsor: R.M. Mhatre
- #55      **Electrocardiographic Effects of Helenalin and Related Sesquiterpene Lactones in the Canine:**  
A.C. Anderson, H.L. Kim and L.P. Jones. Texas A&M University, College Station, TX. Sponsor: B.J. Camp.
- #56      **Development of Bioassay Techniques for an African Arrow Poison.**  
C.S. Tsai and R.F. Ochillo: Laboratories of Pharmacology and Toxicology, Xavier University of Louisiana, New Orleans, LA
- #57      **The Effects of an African Arrow Poison on Different Pharmacological Preparations.**  
R.F. Ochillo and C.S. Tsai. Laboratories of Pharmacology and Toxicology, Xavier University of Louisiana, New Orleans, LA
- #58      **Assessment of Smooth Muscle Function in Sesbania Drummondii Toxicosis in Gallus Domesticus.**  
C.S. Venugopalan, W. Flory, T.A. Tucker, C.D. Hebert and G.M. Strain, Department of Veterinary Physiology, Pharmacology and Toxicology, School of Veterinary Medicine, Louisiana State University, Baton Rouge, LA. Sponsor: C.R. Short.

**TUESDAY MORNING, MARCH 13  
REAR OF GALLERIA EXHIBIT AREA**

**POSTER SESSION 1B: Pesticides**

**Co-Chairs:** G. Reddy, US Army, Fort Detrick, Frederick, MD  
M.W. Sauerhoff, Stauffer Chemical, Farmington, CT

**Displayed:** 8:30 a.m. - 11:30 a.m.  
**Attended:** 8:30 a.m. - 10:00 a.m. (Even Paper Numbers)  
10:00 a.m. - 11:30 a.m. (Odd Paper Numbers)

- #59      **Tolerance to DFP-Induced Antinociception: Lack of Cross-Tolerance to Morphine.**  
L.G. Costa and S.D. Murphy, Dept. of Environmental Health, Univ. of Washington, Seattle, WA
- #60      **A Persistent Acute Anemia and Sickled-Cell-Like Formation in Chickens and Rats following Subchronic Administration of n-Butyl Mercaptan (nBM).**  
A.S. Abd-Elfattah and M.B. Abou-Donia. Dept. Pharmacology Duke University Medical Center, Durham, NC 27710.
- #61      **Anticholinesterase Effect of Bis (Trichloromethyl) Sulfone (N-1386® Biocide) in Rats.**  
G.L. Sprague, L.L. Sandvik, and T.R. Castles, Stauffer Chemical Company, Toxicology Department, Richmond, CA

- #62 **Mechanisms of Delayed Death produced by O,S,S-Trimethyl Phosphorodithioate (OSS) in Rats.**  
N. Konno, T.R. Fukuto, and T. Imamura. Division of Toxicology and Physiology, University of California, Riverside, CA
- #63 **Exposure of Rats to Respirable Aerosols of Paraquat: Lung Pathology and Disposition of Paraquat.**  
L.L. Smith, Imperial Chemical Industries PLC, Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK, and C.J. Hardy, Huntingdon Research Centre, Huntingdon, Cambridgeshire, UK. Sponsor: I.F.H. Purchase.
- #64 **Acute and Subchronic Inhalation Toxicity of Chlorsulfuron in Rats.**  
D.P. Kelly, N.C. Chromey and R.L. Ferenz. E.I. du Pont de Nemours and Co., Inc., Haskell Laboratory for Toxicology and Industrial Medicine, P.O. Box 50, Elkton Road, Newark, DE. Sponsor: G.L. Kennedy, Jr.
- #65 **A 30-Day Toxicity Study of an Inhaled Matacil® Formulation in the Albino Rat.**  
C. Breckenridge and D.J. Ecobichon. Bio-Research Laboratories, Senneville, Que., Canada and Dept. Pharmacology and Therapeutics, McGill Univ., Montreal, Canada.
- #66 **Characterization of Fenvalerate Mediated Skin Sensory Stimulation.**  
L.A. Malley, S.Z. Cagen, C.M. Parker, T.H. Gardiner, G.A. Van Gelder, Toxicology Research, Shell Development Company, Houston, TX
- #67 **Chlordimeform Induced Depression of the Isolated, Perfused Rabbit Heart.**  
J.A. Rieger, and V.C. Ravikumar. Pharmacodynamics and Toxicology Laboratories, University of Oklahoma College of Pharmacy, Oklahoma City, OK
- #68 **Combined 30-Day Feeding Study and One-Generation Reproduction Study in Rats with Ethyl 5-Cyano-3,4-Diphenyl-6-OXO-1 [6H]-Pyridazineacetate (DS-29399).**  
M. Mizens, W.R. Brown\*, J. Laveglia, J.C. Killeen, Jr. and J.A. Ignatoski, Department of Safety Assessment, SDS Biotech Corp., Painesville, OH. \*Research Pathology Services, Inc., New Britain, PA
- #69 **A 30-Day Toxicity Study in Dogs with Ethyl 5-Cyano-6-OXO-3, 4-Diphenyl-1 [6H]-Pyridazineacetate (DS-29399).**  
W.H. Ford\*, C.S. Auletta, Bio/dynamics, Inc., East Millstone, NJ, W.R. Brown, Research Pathology Services, Inc., New Britain, PA, J. Laveglia\*, J.C. Killeen, Jr.\* and J.A. Ignatoski\*, \*Department of Safety Assessment, SDS Biotech Corp., Painesville, OH
- #70 **Dual Actions of Chlordimeform (CDM) on Visual Evoked Potentials.**  
W.K. Boyes\* and R.S. Dyer. Neurotoxicology Division, USEPA, Research Triangle Park, NC. Sponsor: L.W. Reiter.
- #71 **A Systematic Analysis of Causes for Skin Irritation by Pregelied Defatted Corn Grit.**  
R.L. Morgan, D.O.N. Taylor, G.M. Zwicker and T.R. Castles. Stauffer Chemical Company Toxicology Department, Richmond, CA.
- #72 **The Comparative Inhibitory Activity of Acephate Technical on Brain, RBC and Plasma Cholinesterases *In Vitro* from the Human, Monkey and Rat.**  
Z.A. Wong,\* J.A. MacGregor,\* H. Morimoto, E.L. Bennett, \*Chevron Environmental Health Center, Inc., Richmond, CA, Laboratory of Chemical Biodynamics, University of California, Berkeley, CA
- #73 **Behavioral Effects Induced by Dieldrin in Rats Preexposed to Situational Stress.**  
J. Carlson, Institute of Experimental Pathology and Toxicology, Albany Medical College, Albany, NY. Sponsor: R. Abraham.
- #74 **Conditioned Taste Aversion (CTA) Induced by Organophosphate (OP) Compounds in Rats.**  
P.L. Roney, L.G. Costa\*, and S.D. Murphy\*, Dept. Environ. Sci. Univ. of Texas Sch. of Pub. Health, Houston, TX., \*Dept. Environ. Health, Univ. of Washington, Seattle, WA

- #75 **DFP Inhibits Reticuloendothelial Cell Phagocytosis of Bacteria in a Manner Distinguishable from Cholinergic Activity.**  
George A.W. Waterhouse, Stephen P. Dunn, David R. Steup, and Robert B. Forney, Department of Pharmacology and Toxicology and Department of Surgery, Indiana University School of Medicine, Indianapolis, IN
- #76 **Chlordimeform (CDMF) Effects on Motor Activity in Rats: Influence of Home-Cage Housing Conditions.**  
Q.D. Walker, R.C. MacPhail, and H.A. Tilson, Neurotoxicology Division, US EPA and Laboratory of Behavioral and Neurological Toxicology, NIEHS, Research Triangle Park, NC
- #77 **Inhibition of Rapid Axonal Transport in the Rat Visual System by Chlordimeform.**  
S. Padilla, Northrop Services, Research Triangle Park, NC 27709, W.K. Boyes\*, Neurotoxicology Division, US EPA, Research Triangle Park, NC. Sponsor: L.W. Reiter.
- #78 **Toxicity of Thiram to Mink and European Ferrets.**  
T. Hornshaw, R. Ringer, and R. Aulerich, Dept. Animal Science, Michigan State University, East Lansing, MI. Sponsor: D. Polin.
- #79 **Evaluation of Laying Hens and Roosters as Animal Models for the Assessment of Organophosphorous Compounds (OPCs) Toxicity.**  
A.S. Abd-Elfattah and T.M. Saad, Dept. Pharmacol., Duke Univ. Med. Ctr., Durham, NC. Sponsor: E.J. Rauckman
- #80 **Acute Toxicity (Oral and Inhaled) of Methyl-DBCP**  
C. Bier, C. Collins, C. Breckenridge, G. Lulham, B. Procter, Bio-Research Laboratories Ltd., Quebec. M. Ratpan, Polysar Ltd., Ontario
- #81 **The Chronic Effects of Dietary Administration of Carbofuran on Beagle Dogs.**  
G.M. Rand, J.R. DeProspero and M.J. Fletcher, FMC Corporation, Princeton, NJ
- #82 **Paraquat (PQ) - Induced Conditioned Taste Aversions (CTA): The Dose-Response Relationship.**  
M.S. Dey, R.I. Krieger, B.E. Renzi, and R.C. Ritter. Veterinary Medicine, University of Idaho, Moscow, ID
- #83 **A Behavioral Guinea Pig Test for Assessing Pyrethroid Induced Cutaneous Sensory Effects.**  
C.M. McKillop, J.A.C. Brock & G.J.A. Oliver, ICI PLC Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK. Spnsor: I.F.H. Purchase.
- #84 **A Sensory Nerve Preparation for Assessing Pyrethroid Induced Repetitive Activity.**  
C.M. McKillop, W.M. Reilly, J.A.C. Brock & G.J.A. Oliver, ICI PLC Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK. Sponsor: I.F.H. Purchase.
- #85 **The Acute Toxicity of an Inhalable Fluorophosphonate (Difluoro) and Chlorophosphonate (Dichloro) in Three Species of Rodents.**  
A.R. Dahl, T.C. Marshall, and C.H. Hobbs, Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM

**TUESDAY MORNING, MARCH 13  
REAR OF GALLERIA EXHIBIT AREA**

**POSTER SESSION 1C: Neurotoxicology I**

**Co-Chairs:** H. Chung, Walter Reed Army Med'l Ctr., Wash., DC  
V.J. Petrella, Gillette Labs, Rockville, MD

**Displayed:** 8:30 a.m. - 11:30 a.m.  
**Attended:** 8:30 a.m. - 10:00 a.m. (Even Paper Numbers)  
10:00 a.m. - 11:30 a.m. (Odd Paper Numbers)

- #86 **Studies on the Mechanism of Neuromuscular Effects of N'-(2,4-XYLYL)-N-Methyl Formamidine Hydrochloride (U-40481A) in Rats.**  
V.C. Ravikumar and J.A. Rieger, Dept. of Pharmacodyn. & Toxi., Univ. of Oklahoma Coll. of Pharm., Oklahoma City, OK
- #87 **Acute Effects of Acrylamide (ACR) on Cat Spinal Cord Reflexes.**  
B.D. Goldstein, D.R. Fincher, and B.D. Kiser, Dept. of Pharmacol., Med. Col. of GA, Augusta, GA. Sponsor: W.F. Geber.
- #88 **Sulfolane Impairs Visual Function.**  
R.S. Dyer and W.K. Boyes,\* Neurotoxicology Division, U.S. EPA. Research Triangle Park, NC. Sponsor: L.W. Reiter.
- #89 **Lack of Sensitivity of Selected Ectothermic Vertebrates to Organophosphate Induced Delayed Neurotoxicity.**  
M.H. Fulton and J.E. Chambers, Mississippi State University, Dept. of Biological Sciences, Mississippi State, MS
- #90 **Clinically Beneficial Effects of Dietary Corticosterone on TOTP-Induced Delayed Neuropathy in Chickens: Biochemical and Histopathological Correlates.**  
M. Ehrich, W.B. Gross and B.S. Jortner, Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA
- #91 **Pesticide and Drug Effects on Multiple Schedule-Controlled Behavior in Rats.**  
Michael I. Gage, US Environmental Protection Agency, RTP, NC. Sponsor: L.W. Reiter
- #92 **Effect of Triethyltin on Autonomic and Behavioral Thermoregulation of Mice.**  
Gordon, C.J., Long, M.D., and Dyer, R.S. Sponsor: R. Chadwick
- #93 **Effect of Nephrotoxicants on the Inner Ear.**  
M.J. Sullivan\*, K.E. Rarey\*, R.B. Conolly\*, +Toxicology Program, School of Public Health; \*Kresge Hearing Research Institute, University of Michigan, Ann Arbor, MI. Sponsor: M.J. Brabec
- #94 **Enhanced Neurotoxicity of 2,5-Hexanedione by Methyl Ethyl Ketone.**  
W.H. Ralston, R.W. Gardier, Dept. of Pharm. & Toxicol., Wright State Univ., Dayton, OH, D.E. Uddin, NMRI/TD, WPAFB, OH, R.L. Holderbrand, NBL, Oakland, CA, & M.E. Andersen, AFAMRL, WPAFB, OH
- #95 **Sensitivity of a Field-Testing Battery for Evaluating Neruobehavioral Toxicity: Effects of Ethanol and Carbon Monoxide.**  
D.A. Eckerman, S.L. Elliott, E.R. Long, G.S. Robinson, C.M. Gullion, and D.A. Otto, University of North Carolina at Chapel Hill and Neurotoxicology Division, Health Effects Research Lab, Environmental Protection Agency. Sponsor: L. Reiter
- #96 **Comparative Effects of Three Organochlorines on Hyperreactivity and Tremor in Rats.**  
H.A. Tilson, N.J. Peterson and C.F. Mactutus, National Institute of Environmental Health Sciences, Research Triangle Park, NC
- #97 **The Effect of Chlorine Dioxide on Exploratory Behavior and Thyroid Function in Neonatal Rats.**  
J. Orme, D.H. Taylor, R.D. Laurie, and R.J. Bull, Toxicology and Microbiology Division, HERL, USEPA, Cincinnati, OH
- #98 **The Modification of Exploratory and Locomotor Activity in Rats Exposed to Chlorine Dioxide and Perchlorate.**  
K.E. LaGory, †J. Orme, D.H. Taylor, †R.D. Laurie, †R.J. Bull and R.J. Pfohl, Department of Zoology, Miami University, Oxford, OH and †Toxicology and Microbiology Division, HERL, USEPA, Cincinnati, OH
- #99 **Recovery of Neurotoxic Esterase Activity in Chick and Hen brain and Peripheral Nerve Following Inhibition.**  
C.D. Carrington and M.B. Abou-Donia, Department of Pharmacology, Duke University Medical Center, Durham, NC.

- #100      **Comparative Sensitivity of Brain Neurotoxic Esterase and Acetylcholinesterase to Organophosphorus Inhibitors in Adult Hen, Japanese Quail and Bobwhite Quail.**  
C.N. Pope and S.D. Murphy\*. Univ. of Texas Graduate School of Biomedical Sciences, Houston, Texas and Dept. of Environmental Health, Univ. of Washington, Seattle, WA\*
- #101      **Neurohistological and Clinical Recovery in Hens after Administration of Tri-ortho-Tolyl Phosphate.**  
G.L. Sprague, A.A. Bickford and T.R. Castles. Stauffer Chemical Company, Richmond, CA and University of Missouri-Columbia, Columbia, MO.
- #102      **The Effect of Hepatic Mixed-Function Oxidase Enzyme Inducers on the Development of Tri-Ortho-Cresyl Phosphate-Induced Delayed Neurotoxicity.**  
L.F. Calabrese and S.J. Bursian, College of Veterinary Medicine and Dept. of Animal Science, Michigan State University, E. Lansing, MI. Sponsor: D. Polin
- #103      **Formation of Substituted Dimethyl Pyrrole Adducts of 2,5-Hexanedione with Polyamines In Vitro and In Vivo.**  
T.B. Moore and R.J. Richardson, Toxicology Program, School of Public Health, The University of Michigan, Ann Arbor, MI
- #104      **Toxicological Characterization of Monomeric and Oligomeric Contaminants in a Cationic Polyelectrolyte Coagulant Aid.**  
M.W. Tabor<sup>1</sup>, H.G. Shertzer<sup>1</sup>, B.L. Myers<sup>1</sup>, H. Zimmer<sup>2</sup> and J.P. Bercz<sup>3</sup>, <sup>1</sup>Kettering Lab, Univ. Cincinnati, Cincinnati, OH, <sup>2</sup>Dept. Chemistry, Univ. Cincinnati, Cincinnati, OH and <sup>3</sup>Toxicology and Microbiology Div., HERL, USEPA, Cincinnati, OH
- #105      **Nephrotoxicity of Substituted Thiobenzamides.**  
G. Traiger<sup>1</sup>, L. Gammal<sup>1</sup>, D. Cox<sup>1</sup> and W. Haschek<sup>2\*</sup>, Dept. of Pharmacol. & Toxicol., Univ. of Kansas, Lawrence, KS<sup>1</sup>; Dept. of Vet. Pathobiology, Univ. of Illinois, Urbana, IL<sup>2\*</sup>

**TUESDAY AFTERNOON, MARCH 13  
GRAND BALLROOM WEST**

**PLATFORM SESSION 4: Inhalation II**

**Co-Chairs:** G.L. Kennedy, E.I. DuPont deNemours & Co., Newark, DE  
P.E. Morrow, University Rochester, Rochester, NY

- #106    1:30    **Deposition of Nickel Aerosol in the Nasopharyngeal, Tracheal, and Pulmonary Zones in Rats.**  
J.E. Valentini, D.L. Deal, Brookman, D. and D.B. Menzel. Depts. of Pharmacology and Medicine, Comprehensive Cancer Center, Duke Med. Center, Durham, NC
- #107    1:45    **Inhalation Toxicity of HC1 Gas to Sprague-Dawley and F-344 Rats.**  
J.A. Swenberg<sup>a</sup>, H. d'A. Heck<sup>a</sup>, B.R. Dudek<sup>b</sup> and W.H. Halliwell<sup>b</sup>. CIIT<sup>a</sup>, Research Triangle Park, NC and Toxigenics<sup>b</sup>, Decatur, IL
- #108    2:00    **Pulmonary Effects of HC1 Inhalation in Guinea Pigs.**  
H. Burleigh-Flayer, K.L. Wong and Y. Alarie, Dept. of Ind. Env. Hlth. Sci., Grad. School of Public Health, University of Pittsburgh, Pittsburgh, PA.
- #109    2:15    **Lung Clearance of Inhaled Submicron Particles after Exposures to 2 PPM of Nitrogen Dioxide.**  
T.L. Chan, W.E. Hering, J.B. D'Arcy and P.S. Lee, GM Research Labs, Warren, MI. Sponsor: E.W. Lee
- #110    2:30    **Lung Antioxidants following NO<sub>2</sub> Exposure in Vitamin C Deficient Guinea Pigs.**  
G.E. Hatch, R. Slade, M.K. Selgrade, J.A. Graham, and A.G. Stead, Inhal. Tox. Div., HERL, USEPA, Res. Tri. Park, NC



- #111 2:45 **Chlorine: Chronic Inhalation Toxicity Study in Rhesus Monkeys.**  
D.R. Klonne<sup>a</sup>, C.E. Ulrich<sup>a</sup>, M.G. Riley<sup>a</sup>, C.S. Barrow<sup>b</sup>, T.E. Hamm, Jr.<sup>b</sup>, and  
K.T. Morgan<sup>b</sup>, International Research and Development Corporation<sup>a</sup>,  
Mattawan, MI and Chemical Industry Institute of Toxicology<sup>b</sup>, Res. Tri. Park,  
NC
- #112 3:00 **Respiratory Response and Nasal Deposition in Nosepiece Exposures of  
Sprague-Dawley Rats following Subchronic Inhalation of Formaldehyde.**  
C.E. Dallas, J.C. Theiss, and E.J. Fairchild, Environmental Sciences,  
University of Texas School of Public Health, Houston, TX
- #113 3:15 **Pulmonary Toxicity of the Anticancer Drug, BisChloroethylnitrosourea  
(BCNU) in Rats.**  
H.M. Reznik-Schuller, A.C. Smith, J.P. Thenot, and M.R. Boyd, NCI, Bethesda,  
MD
- #114 3:30 **Differential Labeling of Rat Nasal Mucosal DNA Fractions by [<sup>14</sup>C]- and [<sup>3</sup>H]-  
Formaldehyde (CH<sub>2</sub>O).**  
H. Heck and M. Casanova-Schmitz, Chem. Ind. Inst. Toxicology, Research  
Triangle Park, NC.
- #115 3:45 **Effects of Glutathione (GSH) Depletion on Formaldehyde-Induced DNA-  
Protein Cross-Links in the Rat Respiratory Mucosa.**  
M. Casanova-Schmitz and H. Heck, Chem. Ind. Inst. Toxicol., Res. Triangle  
Pk., NC
- #116 4:00 **Mechanisms of Formaldehyde Toxicity in Isolated Rat Hepatocytes.**  
R.H. Ku and R.E. Billings, Univ. of Texas Medical School, Dept. of Pharmacol.,  
Div. of Toxicol., Houston, TX
- #117 4:15 **Respiratory Response and Deposition in the Lower Respiratory Tract of  
Sprague-Dawley Rats following Subchronic Inhalation of Formaldehyde.**  
C.E. Dallas, J.C. Theiss, and E.J. Fairchild, Environmental Sciences,  
University of Texas School of Public Health, Houston, TX
- #118 4:30 **The Importance of Delivered Dose in Quantitative Risk Estimation:  
Formaldehyde.**  
T.B. Starr and J.E. Gibson, Chem. Ind. Inst. Toxicol., Research Triangle Park,  
NC
- #119 4:45 **Behavioral Evaluation of the Irritant Properties of Formaldehyde.**  
R.W. Wood and J.B. Coleman, Div. Toxicol., Dept. Rad. Biol. & Biophys., Univ.  
Rochester School Medicine, Rochester, NY

---

Tuesday Afternoon, March 13, 1984

**"METALS"**

12 Noon - 1:30 P.M.

GRAND BALLROOM EAST

***President-Elect F. William Sunderman, Jr., Presiding***

---

**TUESDAY AFTERNOON, MARCH 13  
GRAND BALLROOM EAST**

**PLATFORM SESSION 5: Renal**

**Co-Chairs:** T.O. King, Pfizer, Inc., Groton, CT  
H. Rosenkrantz, EG&G Mason Res. Inst., Worcester, MA

- #120 1:30 **A Study of the Effect of Disulfiram on Acute Ethylene Glycol Poisoning in Rats.**  
J.E. Calkins, Long Island Jewish Hillside Medical Center, New Hyde Park, NY,  
and J. Balkon, Department of Pharmaceutical Sciences, St. John's University,  
NY. Sponsor: W.D. Grey
- #121 1:45 **Cytotoxicity of Citrinin Evaluated in Cultured Bovine Kidney Cells.**  
M. Yoneyama, R.P. Sharma and S.J. Kleinschuster. Toxicology Program, Utah  
State University, Logan, UT
- #122 2:00 **Ochratoxin A-Induced Nephrotoxicity: Comparative Studies in the Partially  
Nephrectomized Rat.**  
A.F. Stein, W.O. Berndt, and T.D. Phillips, Department of Veterinary Public  
Health, Texas A&M University, College Station, TX
- #123 2:15 **Effect of Cephaloridine on Cellular ATP Content & Mitochondrial Succinate  
Dehydrogenase Activity in Primary Cultures of Rat Kidney Cortical Epithelial  
Cells.**  
M.A. Smith and D. Acosta. The University of Texas, Division of  
Pharmacology/Toxicology, Austin, TX
- #124 2:30 **Phenobarbital Potentiation of In Vitro Chloroform Toxicity and Metabolism in  
Rabbit Renal Cortex.**  
J.H. Smith, M.B. Bailie, J.F. Newton, R.K. Lynn, and J.B. Hook. Department of  
Pharmacology & Toxicology, Michigan State University, East Lansing, MI and  
Preclinical Research & Development, Smith Kline & French Laboratories,  
Philadelphia, PA
- #125 2:45 **Comparative Evaluations of Dibromochloropropane and Chlorolactate  
Nephrotoxicities in Rats.**  
D.K. Agarwal and W.M. Kluwe. Natl. Inst. Environ. Health Sci., Research  
Triangle Park, NC.
- #126 3:00 **AT-125 (Acivicin) Does Not Prevent Hexachlorobutadiene (HCBD)  
Nephrotoxicity.**  
M.E. Davis, West Virginia Univ. Med. Ctr., Morgantown, WV
- #127 3:15 **Effects of Glutathione on the Regulation of Renal Uroporphyrinogen  
Decarboxylase.**  
J.S. Woods, D.L. Eaton and C.B. Lukens. Department of Environmental  
Health, Univ. of Washington, Seattle, WA
- #128 3:30 **The Role of Metabolism in Strain Differences in Acetaminophen (APAP)  
Nephrotoxicity.**  
J.F. Newton, D.A. Pasino and J.B. Hook. Department of Pharmacology and  
Toxicology, Michigan State University, East Lansing, MI
- #129 3:45 **3-Pentylfuran Nephrotoxicity Requires Metabolic Activation.**  
Lynda M. Gammal, George J. Traiger, and Robert A. Wiley. Departments of  
Medicinal Chemistry and Pharmacology and Toxicology, The University of  
Kansas, Lawrence, KS
- #130 4:00 **Nephrotoxicity of Trimethyltin Chloride (TMTc) in Rats.**  
D.G. Robertson, R.H. Gray, S.N. Kim, and F.A. de la Iglesia. Environmental &  
Ind. Health, Univ. of Michigan: Pathology & Exper. Toxicology, Warner-  
Lambert/Parke-Davis Pharm. Res., Ann Arbor, MI
- #131 4:15 **Effects of Mercury and Chromium on the Renal Function of the Rat.**  
J. McC. Baggett and W.O. Berndt. Department of Pharmacology, College of  
Medicine, Univ. of Nebraska Med. Ctr., Omaha, NE

**TUESDAY AFTERNOON, MARCH 13**  
**SALON WEST**  
**SYMPOSIUM 2: Mechanisms of Species Differences**  
**in Toxicity of Chemicals**

**Sponsored by: S.O.T. Mechanism Section**

**Chairman:** J.J. Lech, Medical College of Wisconsin, Milwaukee, WI.

<b>Time (P.M.)</b>	
1:30 - 1:35	<b>Introduction.</b> J.J. Lech.
1:35 - 2:05	<b>"Species Differences in the Toxicity of Tetrachlorodibenzofuran (TCDF): Role of Disposition".</b> L.S. Birnbaum and H.B. Matthews. NIEHS Research Triangle Park, NC.
2:05 - 2:35	<b>"Oxidative Mechanisms and Toxic Action in Insects: The Comparative Approach".</b> E. Hodgson and C. Wilkinson. North Carolina State University and Cornell University.
2:35 - 3:05	<b>"Mechanisms Involved in the Differential Toxicity of Pyrethroids between Fish and Mammals".</b> A.H. Glickman and J.J. Lech. Chevron Environmental Health Center, Richmond, CA., and Medical College of Wisconsin.
3:05 - 3:35	<b>"Comparative Toxicology and Pharmacokinetics of Chlordecone in Man, Gerbil and Rat".</b> T.S. Guzelian. Medical College of Virginia.
3:35 - 4:05	<b>"Species Difference in Hepatic Peroxisome Proliferation Due to Trichloroethylene: Role of Rate of Trichloroacetic Acid Formation".</b> C.R. Elcombe. Imperial Chemical Industries, Central Toxicology Lab.
4:05 - 4:35	<b>"Mechanisms of Selective Toxicity by Organophosphate Insecticides in Vertebrates".</b> S.D. Murphy. University of Texas Medical School at Houston.

**TUESDAY AFTERNOON, MARCH 13**  
**SALON EAST**

**SYMPOSIUM 3: Mechanisms of Neurotoxicity**

**Sponsored by: S.O.T. Neurotoxicology Specialty Section**

**Chairman:** M.B. Abou-Donia, Duke University Medical Center, Durham, NC.

<b>Time (P.M.)</b>	
1:30	<b>Introduction.</b> M.B. Abou-Donia.
1:40	<b>Neuropathology of Trimethyltin in Rats.</b> L.W. Chang. University of Arkansas, Little Rock, AR.

- 2:10 **Discussion.**
- 2:20 **Implications of Human, Laboratory, and Field Investigations in Mechanisms of Neurotoxicity.**  
B.L. Johnson. NIOSH, Cincinnati, OH.
- 2:50 **Discussion.**
- 3:00 **Electrophysiological Evaluation of Toxic Axonal Neuropathy.**  
H.H. Schaumburg. Albert Einstein College of Medicine, Bronx, NY.
- 3:30 **Discussion.**
- 3:40 **Coffee Break.**
- 3:50 **Pharmacokinetics and Metabolism as Factors in Species Sensitivity in Neurotoxic Agents.**  
M.B. Abou-Donia. Duke University Medical Center, Durham, NC.
- 4:20 **Discussion.**
- 4:30 **Biochemical Evaluation of Neurotoxic Damage.**  
S. Bondy. NIEHS, Research Triangle Park, NC.
- 5:00 **Discussion.**

Reception + Cash Bar Immediately Following Symposium

---

## **BUSINESS MEETING**

Tuesday Afternoon, March 13, 1984

5:00 p.m.

NORTH WING EAST

*E. Marshall Johnson, Presiding*

---

**TUESDAY EVENING, MARCH 13  
NORTH WING EAST**

**SYMPOSIUM: Risk Assessment for  
Developmental Toxicity  
(Organized by the Developmental and  
Reproductive Toxicology Section of SOT)**

**Program Committee:** J.L. Schardein (Chrm.), F. Andrew, G. Nolen, B.A. Schwetz

**Time  
(P.M.)**

- 6:30 **Proposed Experimental Components of Developmental Toxicity Risk Assessment.**  
S. Fabro, Columbia Hospital for Women, Washington, DC.
- 7:00 **The Process of Reproductive Risk Assessment.**  
H. Teitlebaum, U.S. EPA, Washington, DC.

- 7:30 **FDA Perspectives on Use of Teratology Data for Human Risk Assessment.**  
V. Frankos, U.S. FDA, Washington, DC.
- 8:00 **Recognition, Evaluation and Control of Chemical Embryotoxins in the Workplace.**  
J.M. Smith, Rohm & Haas Co., Spring House, PA.
- 8:30 **New Mechanistic Approaches to Risk Assessment.**  
J. Chandler, U.S. FDA, Rockville, MD.  
Discussion.

**TUESDAY AFTERNOON, MARCH 13  
REAR OF GALLERIA EXHIBIT AREA**

**POSTER SESSION 2A: Oncogenesis/Mutagenesis I**

**Co-Chairs:** J.M. Charles, Union Carbide Corp., Res. Tri, Pk, NC  
J.P. Kehrer, Univ. of Texas, Austin, TX

**Displayed:** 1:30 - 4:30 p.m.  
**Attended:** 1:30 p.m. - 3:00 p.m. (Even Paper Numbers)  
3:00 p.m. - 4:30 p.m. (Odd Paper Numbers)

- #132 **Subchronic Ethanol Administration Enhances the Hepatocellular Genotoxicity of Several Pyrolysate Mutagens.**  
D.J. Louny and J.L. Byard, Dept. of Env. Tox., Univ. of Calif., Davis, CA
- #133 **The Mutagenicity of Gas-Phase Arc Welding Fumes.**  
N.W. Biggart, R.R. Rinehart, Department of Biology, San Diego State University, Sponsor: V.G. Laties
- #134 **Comparison of In Vivo and In Vitro Tests for Carcinogenicity of Complex Mixtures.**  
M.L. Cunningham, F.R. Kirchner and C.A. Reilly, Jr. Argonne National Laboratory, Argonne, IL. Sponsor: H.P. Witschi
- #135 **Contribution of Primary Aromatic Amines to the Mutagenicity of Gasifier Tars and Coal Oils.**  
W.E. Bechtold, J.S. Dutcher, A.L. Brooks and R.F. Henderson, Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM
- #136 **Evaluation of Buthidazole for Mutagenicity with Salmonella.**  
M.S. Root, \*S.R. Haworth, and †D. C. Jessup, Velsicol Chemical Corporation, Chicago, IL, \*Microbiological Associates, Bethesda, MD, and †International Research and Development Corporation, Mattawan, MI
- #137 **Mutagenic Activation of 2-Aminofluorene by Exposure to Artificial Visible Light.**  
G.L. White and R.H. Heflich, National Center for Toxicological Research, Jefferson, AR. Sponsor: J.G. Pounds
- #138 **Lack of Genotoxicity of Acrylamide Using the Hepatocyte Primary Culture (HPC)/DNA Repair Test.**  
M.J. Miller, M.S. Miller and C.A. McQueen, American Health Foundation, Valhalla, NY, and †Inst. of Neurotoxicology, Albert Einstein Coll. of Med., Bronx, NY
- #139 **The Mutagenic Activity of Toxaphene and Toxaphene Fractions in the Ames Test.**  
J.F. Rogauskas and G.A. Pollock, WOI Regional Program in Veterinary Medicine, University of Idaho, Moscow, ID; SDS Biotech Inc., Painesville, OH
- #140 **In Vitro Genotoxicity of Commercial and Purified Ethyleneamines.**  
R.S. Slesinski, P.J. Guzzie and W.C. Hengler, Bushy Run Research Center, Mellon Institute/Union Carbide Corporation, Export, PA. Sponsor: E.R. Homan

- #141 **Lack of Mutagenicity of Hydroquinone (HQ), Tetramethylthiuram Monosulfide (TMTM), and Tetramethylthiuram Disulfide (TMTD) in *Drosophila*.**  
S.J. Murphy and R.J. Serva. The Goodyear Tire & Rubber Co., Health, Safety & Gov't Compliance, Akron, OH
- #142 **Measurement of Unscheduled DNA Synthesis (UDS) in Mouse Hepatocytes following *In Vivo* Exposure.**  
J. Mirsalis, K. Tyson, K. Steinmetz, E. Loh, J. Bakke, S. Smith. SRI International, Menlo Park, CA. Sponsor: D.C.L. Jones
- #143 **Trichloroethylene: Tumor Promoting Effects.**  
D.J. Randall and J.G. Sipes. Dept. of Pharmacology & Toxicology, College of Pharmacy, Univ. of Arizona, Tucson, AZ
- #144 **Two-Year Feeding Studies with 2-Acetylaminofluorene (2-AAF): Comparative Histopathology in Sprague-Dawley Rats and CD-1 Mice.**  
M.O. Tisdell and R.H. Weltman. Hazleton Laboratories America, Inc., Madison, WI., R.J. Van Ryzin, Sandoz, Inc., Hanover, NJ
- #145 **A Dermal Carcinogenesis Study in Male Mice with Kathon CG.**  
O'Hara, G.P., Matlack, J.R., Moss, J.N., DiDonato, L.J., Smith, J.M., and Hayes, A.W. Rohm and Haas Company, Spring House, PA
- #146 **Studies on the Mouse Lung Tumor Assay as a Screen for Carcinogens.**  
L.H. Smith and H.P. Witschi. Biology Division, ORNL, Oak Ridge, TN and R.N. Maronpot, Natl. Toxicology Program, Research Triangle Park, NC
- #147 **Chronic Inhalation Study of Morpholine in Sprague-Dawley Rats.**  
C.C. Conaway\*, D.J. DeSousa\*, W.B. Coate and R.W. Voelker. Texaco Inc., Beacon, NY 12508\* and Hazleton Laboratories America, Inc., Vienna, VA 22180. Sponsor: R.D. Harbison
- #148 **Effects of 17 $\alpha$ -Ethinylestradiol (17 $\alpha$ -EE $^2$ ) on Hepatic Estrogen Action in Rats Treated Previously with Diethylnitrosamine (DEN).**  
D.B. Campen, A.E.M. Vickers and G.W. Lucier. NIEHS/NIH, Research Triangle Park, NC
- #149 **Two-Year Drinking Water Study of Methylene Chloride in B6C3F1 Mice.**  
D.G. Serota, M.A. Mense, B.M. Ulland. Hazleton Laboratories America, Vienna, VA
- #150 **Assessment of Damage at Restriction Endonuclease (RE) Cleavage Sites in Hepatic DNA following Exposure to the Hepatocarcinogen 2-Acetylaminofluorene (AAF).**  
R.L. Vorce and J.I. Goodman. Department of Pharmacology and Toxicology, Center for Environmental Toxicology, Michigan State University, East Lansing, MI
- #151 **Enhancement of Enzyme-Altered Foci in Livers of Rats after Short-Term Administration of Polybrominated Biphenyls.**  
M.S. Rezabek, S.D. Steight, R.K. Jensen. Dept. of Pathology, Michigan State University, East Lansing, MI
- #152 **Carcinogenicity Evaluation of Omadine<sup>®</sup> MDS in an 18-Month Skin Painting Study in Mice.**  
D.E. Johnson<sup>1</sup>, W.R. Richter<sup>1</sup>, K.P. Nair<sup>1</sup>, C. Mitoma<sup>2</sup>, E.I. Goldenthal<sup>1</sup>, F.X. Wazeter<sup>1</sup> and J.H. Wedig<sup>2</sup>. International Research and Development Corp.<sup>1</sup>, Mattawan, MI; SRI International<sup>2</sup>, Menlo Park, CA; Olin Corp.<sup>3</sup>, New Haven, CT
- #153 **Effects of Mixed-Function Oxidase Modifiers on Den-Induced Altered Foci in Livers of Rats Fed a Choline Deficient Diet.**  
L. Mylecraine, H. Black, M.A. Gallo. Schering Corp., Lafayette, NJ; \*UMDNJ, Rutgers Med. Sch., Piscataway, NJ
- #154 **Preclinical Range-Finding and Lethality Studies of Azacitidine (NSC-102816) in CD2F<sup>1</sup> Mice.**  
S.M. Glaza, F.E. Remp, B.G. Boysen. Hazleton Laboratories America, Inc., Madison, WI, and S. Frick, Battelle Toxicology Program Office, Vienna, VA

- #155 **Effect of the Tumor Promotor Phorbol-12-Myristate-13-Acetate on Intracellular Enzymes of Cultured Mouse Skin Explants.**  
M.G. Bird\*, K.A. Traul\*, B.D. Goldstein and G. Witz. \*Exxon Corp. REHD and \*\*Bio/dynamics, Inc., East Millstone, NJ & UMDNJ-Rutgers Medical School, Piscataway, NJ
- #156 **Monocrotaline-Induced Hepatic Genotoxicity in Rats: Effect of Cytochrome P-450 Modulation and the Dietary Antioxidant Butylated Hydroxyanisole.**  
T.W. Petry and I.G. Sipes. Dept. of Pharmacology and Toxicology, Univ. of Arizona, Tucson, AZ
- #157 **Evaluation of the Genotoxic Potential of Picloram Herbicide in F344 Rats.**  
T.R. Fox, R.H. Reitz and P.G. Watanabe. Toxicology Research Laboratory, Dow Chemical U.S.A., Midland, MI
- #158 **Inhibition and Enhancement of Superoxide Anion Radical Production in Stimulated Human Granulocytes by Reactive Aldehydes.**  
G. Witz, N.J. Lawrie, M.A. Amoruso, H.E. Ferran, Jr.\* and B.D. Goldstein. UMDNJ-Rutgers Med. School/Rutgers Univ. Int. Graduate Program in Toxicology, Piscataway, NJ and \*Thomas Jeff. Univ., Phila. PA
- #159 **Covalent Binding of Benzo(a) Pyrenediolepoxide to DNA of Mouse Skin: Persistence of Adduct Formation.**  
L. Shugart. Oak Ridge National Lab., Biology Division, Oak Ridge, TN. Sponsor: H.P. Witschi
- #160 **Metabolism and DNA Binding of Benzo(a)Pyrene in the Presence of Complex Mixtures.**  
R.B. Westerberg, D.L. Springer, D.D. Mahlum, M.E. Frazier, C.W. Wright and R.E. Schirmer. Pacific Northwest Laboratory, Richland, WA
- #161 **Methylmercury Effect on Transplacental Toxicity of Ethylnitrosourea in Rats.**  
J.E. Nixon, J.P. Leubke, D.W. Shelton and J.A. Schmitz. Dept. of Food Sci. & Tech., Coll. of Vet. Med. & Env. Hlth. Sci. Cntr., Oregon State University, Corvallis, OR
- #162 **An Investigation of Formalin and Paraformaldehyde as Agents of Systemic Tumorigenesis in Strain a Mice.**  
M.E. Brower, J.C. Theiss, R. Ku, C.E. Dallas, R.E. Billings. University of Texas Health Science Center at Houston, Houston, TX
- #163 **Dose- and Time-Dependent Initiation of Hepatic  $\gamma$ -Glutamyl Transferase Positive (GGT+) Foci by Oral N-Nitrosodiethanolamine (NDELA) Administration.**  
M.C. Dyroff, F. Richardson, J.A. Poop and J.A. Swenberg. Chem. Ind. Inst. Toxicology, Research Triangle Park, NC
- #164 **In Vitro Cadmium-DNA Interactions: Cooperativity of Binding and Competitive Antagonism by Zinc.**  
M.P. Waalkes and L.A. Poirier. National Cancer Institute, Frederick, MD. Sponsor: E.K. Weisburger.
- #165 **Absence of Promoting Activity of Arsenite and Arsenate for the Mouse Skin and Lung.**  
R.J. Bull, M. Robinson and R.D. Laurie. Toxicology and Microbiology Division, HERL, USEPA, Cincinnati, OH
- #166 **Ability of Mouse Skin Initiation Promotion Studies to Detect Carcinogens of Different Chemical Classes.**  
R.D. Laurie, M. Robinson and R.J. Bull. Toxicology and Microbiology Division, HERL, USEPA, Cincinnati, OH
- #167 **The Sencar Mouse: Its Use in Both the Lung Adenoma and Skin Initiation/Promotion Assays.**  
M. Robinson<sup>1</sup>, R.J. Bull<sup>1</sup>, G. Knutsen<sup>2</sup> and R.P. Shields<sup>3</sup>. Toxicology & Microbiology Division<sup>1</sup>, USEPA, Cincinnati, OH, Pathology Associates Inc.<sup>2</sup>, Ijamsville, MD, and Univ. Florida<sup>3</sup>, Gainesville, FL

**TUESDAY AFTERNOON, MARCH 13  
REAR OF GALLERIA EXHIBIT AREA**

**POSTER SESSION 2B: Hepatic/Gastrointestinal I**

**Co-Chairs:** R.G. Meeks, Southern Res. Inst., Birmingham, AL  
C.R. Clark, Union Oil Co. of California, Los Angeles, CA

**Displayed:** 1:30 p.m. - 4:30 p.m.  
**Attended:** 1:30 p.m. - 3:00 p.m. (Even Paper Numbers)  
3:00 p.m. - 4:30 p.m. (Odd Paper Numbers)

- #168 **Modulation of Chemical Hepatotoxicity by Cholestasis in Rats.**  
W.C. Kershaw, T.B. Leonard, G.L. Lage, and J.G. Dent. SKF Labs., and Phila. College of Pharmacy and Science, Phila., PA
- #169 **Early Events in CC1<sup>+</sup> Toxicity in Perfused Rat Liver.**  
R.G. Thurman<sup>a</sup>, V. Christenson<sup>a</sup> and F.C. Kauffman<sup>b</sup>. Depts. of Pharmacology, U. of N.C.<sup>a</sup>, Chapel Hill, NC; U. of Maryland<sup>b</sup>, Baltimore, MD
- #170 **Increase in Catalase-H<sup>2</sup>O<sup>2</sup> and Inhibition of Ketogenesis by Valproate in Perfused Rat Liver.**  
M.J. Olson and R.G. Thurman. Dept. of Pharmacology, U. of North Carolina, Chapel Hill, NC
- #171 **Role of Induction and Normothermia in Two Models of Volatile Anesthetic Hepatotoxicity.**  
R.C. Lind, A.J. Gandolfi and I.G. Sipes. Dept. of Anesthesiology, University of Arizona, Tucson, AZ
- #172 **Chloroquine-Induced Phospholipidosis in Rat Liver: Effects on Acid Phospholipase A Activity.**  
M.J. Reasor and K.Y. Hostetler. Dept. of Medicine, VA Medical Center and Univ. of California, San Diego, CA
- #173 **Subcellular Fractionation of Mouse Liver during Acetaminophen (APAP) Hepatotoxicity.**  
G.L. Ginsberg and S.D. Cohen. Toxicology Program, School of Pharmacy, Univ. of Conn., Storrs, CT
- #174 **The Protective Effects of  $\alpha^2$ -Adrenergic Blockers on the Hepatotoxicity of Cocaine.**  
M. Schieffer, R.D. Harbison, J.G. Pounds, and R.C. James. Division of Interdisciplinary Toxicology, Univ. of Arkansas for Medical Sciences, Little Rock, AR and the National Center for Toxicological Research, Jefferson, AR
- #175 **A New Method to Study Glutathione Conjugation in Different Regions of the Liver Lobule.**  
C. Harris and R.G. Thurman. Dept. of Pharmacology, U. of N.C., Chapel Hill, NC
- #176 **Histological and Metabolic Injuries of Rat Liver following Acetaminophen Treatment *In Vivo* and *In Vitro*.**  
S. Ji<sup>1</sup>, L. Cheng<sup>1</sup>, A. Gosh<sup>2</sup>, F. Matschinsky<sup>2</sup>, C. Maliniack<sup>3</sup> and R. Trelstad<sup>3</sup>. <sup>1</sup>College of Pharmacy, Rutgers University, <sup>2</sup>School of Medicine University of Pennsylvania and <sup>3</sup>Rutgers Medical School, Piscataway, NJ. Sponsor: R. Snyder
- #177 **Effect of 2-Hexanone (Hx) Upon CC1<sup>+</sup> Nephro and Hepatotoxicity.**  
M. Raisbeck, E. Brown, and W. Hewitt<sup>\*</sup>. Univ. of MO, Columbia, MO, and SK&F Labs, Phil., PA<sup>\*</sup>
- #178 **o-Dichlorobenzene Toxicity and Metabolism in Isolated Hepatocytes.**  
C. Babjuk and J. Brodeur. Dép. Méd. Trav. et Hyg. Mil. Fac. de Méd., Univ. de Montréal, Montréal, Canada.



- #179 **Protective Effects of Selenium on Acetaminophen-Induced Hepatotoxicity in the Rat.**  
K.S. Park, M.H. Davies, B.A. Merrick, and R.C. Schnell. Dept. Pharmacodyn-Tox., Col. of Pharmacy, Un. Neb. Med. Ctr., Omaha, NE
- #180 **Zinc Protection against Bromobenzene Induced Hepatotoxicity in the Rat.**  
D.A. McMillan and R.C. Schnell. Dept. Pharmacodyn-Toxicol, Univ. Neb. Med. Ctr., Col. Pharmacy, Omaha, NE
- #181 **The Toxicity of Ethoxycoumarin and Ethylmorphine in Primary Hepatocyte Cultures.**  
R.J. Gerson and J.L. Farber. Dept. of Pathol., Hahnemann Univ., Phila., PA  
Sponsor: G. Lumb
- #182 **The Effects of Mixed-Function Oxidase Modulation on Precocene II Induced Hepatotoxicity.**  
S.K. Duddy and M.T.S. Hsia. Env. Tox. Ctr. and Dept. of Entomology, Univ. of Wisconsin, Madison, WI
- #183 **Hepatotoxicity of 4,4-Methylene-2, 6-Diisopropyl Aniline and 4,4-Methylene Dianiline in the Rat and Hamster.**  
C.R. Short, K.M. Kerr, T. Pullin, and M. Hardy. Louisiana State University School of Veterinary Medicine, Baton Rouge, LA
- #184 **Lipid Peroxidation Induced by Di-(2-Ethylhexyl)-Phthalate in Rat Liver and Lung.**  
S.C. Sahy, and D.K. Lowther. Consumer Product Safety Commission, Health Sciences Laboratory, Washington, DC

Tuesday Afternoon, March 13, 1984  
**SPECIALTY SECTION MEETINGS**

\*\*\*\*\*

**Inhalation**

6:00 P.M.

Clayton Room

**James T. Stevens, Presiding**

\*\*\*\*\*

**Mechanisms of Toxicology**

5:00 P.M.

Fulton & Cobb Rooms

Business Meeting

**Steven Cohen, Presiding**

\*\*\*\*\*

**Neurotoxicology**

Immediately following Symposium

Tuesday 1:30 to 4:45 P.M.

Grand Salon East

CASH BAR

---

**Reproductive and Developmental  
Toxicology**  
5:00 p.m.  
North Wing East  
Program and Business Meeting  
**E. Marshall Johnson, Presiding**

---

**WEDNESDAY MORNING, MARCH 14  
GRAND SALON WEST**

**PLATFORM SESSION 6: Methods/Tech I**

**Co-Chairs:** H.A. Birnbaum, Calgon Corp., Pittsburgh, PA  
R.A. Parent, Gulf South Res. Inst., New Iberia, LA

- #185 8:30 **A Semi-Automated Technique for Dosing Small Laboratory Animals.**  
E.L. Carmines, Hoechst-Roussel Pharmaceuticals Inc., Somerville, NJ.  
Sponsor: A.E. Munson
- #186 8:45 **A Dynamic Approach for Estimating the Deposition of Soluble Aerosols in the Lung: Ammonium Nitrate as an Example.**  
J.E. Valentini, D.L. Deal, D. Brookman, and D.B. Menzel, Depts. of  
Pharmacology and Medicine, Comprehensive Cancer Ctr., Duke Med. Ctr.,  
Durham, NC
- #187 9:00 **Single Day, Quantitative Determination of the Mutagenic Potential of  
Chemicals using the *S. Typhimurium* Assay.**  
B.A. Brooks, and J.G. Babish, Department of Preventive Medicine, New York  
State College of Veterinary Medicine, Cornell University, Ithaca, NY
- #188 9:15 **Development of a Non-Invasive Method to Measure Airflow Resistive Work in  
Guinea Pigs during Air Breathing and During Challenge with 10% CO<sub>2</sub>.**  
K. L. Wong and Y. Alarie, Dept. of Ind. Env. Hlth. Sci., Univ. of Pittsburgh,  
Pittsburgh, PA
- #189 9:30 **Intragastric and Intraduodenal Delivery System in Intact Dogs**  
A. Davidovich, Department of Toxicology and Pathology, Hoffmann-La Roche  
Inc., Nutley, NJ. Sponsor: R.M. McClain
- #190 9:45 **BHT Toxicity in Murine Lung as Studied by Histological Sections  
Morphometry.**  
P. Coulombe and M.G. Côté, Dept. of Pharmacology, Faculty of Medicine,  
University of Montreal, Montreal, Quebec, Canada.
- #191 10:00 **Uptake of Ozone in Mice using Oxygen-18 as a Tracer.**  
J. Santrock, J.M. Hayes, Dept. of Chem., Indiana Univ., Bloomington, IN; and  
G.E. Hatch, R. Slade, Inhal. Tox. Div., HERSL, USEPA, Res. Tri. Park, NC.  
Sponsor: J.A. Graham
- #192 10:15 **Automated Exposure Systems for Metered-Dose Aerosol Pharmaceuticals.**  
C.E. Ulrich, D.R. Klonne, S.V. Church, International Research and  
Development Corporation, Mattawan, MI
- #193 10:30 **Microencapsulation of Chemicals for Toxicologic Studies.**  
R.L. Melnick, C.W. Jameson, T. Goehl, and G. Kuhn, National Institute of  
Environmental Health Sciences, NTP, Research Triangle Park, NC; Midwest  
Research Institute, Kansas City, MO. Sponsor: W.M. Kluwe.

- #194 10:45 **Value of Different Methods for Measuring Cumulative Effects.**  
W.J. Hayes, Jr. Center in Environmental Toxicology, Department of Biochemistry, Vanderbilt University, Nashville, TN
- #195 11:00 **Rational Approach to "Statistically Randomized Samples" for the Determination of Test Substance Homogeneity in Diet.**  
 M.F. Marcus, S.K. Thompson, and R.I. Freudenthal, Stauffer Chemical Company, Environmental Health Center, Farmington, CT.
- #196 11:15 **Fractionation and Analysis of Nitro-Musks in Blood.**  
 M.W. Tabor, H. Osamura, R. El-Rakabawy, and S.S. Que Hee, Dept. Environmental Health, Univ. of Cincinnati Med. Ctr., Cincinnati, OH. Sponsor: H.G. Shertzer.
- #197 11:30 **Analysis of Deoxynivalenol Via High Pressure Liquid Chromatography Employing Electrochemical Detection.**  
 V.L. Sylvia, T.R. Irvin, N.D. Heidelbaugh, and T.D. Phillips, Department of Veterinary Public Health, Texas A&M University, College Station, TX
- #198 11:45 **An Analytical Evaluation of Urinary Excretion of Furosemide in Swine.**  
A.C. Ray, T.D. Tanksley, D.C. LaRue, and J.C. Reagor. Tex. Vet. Med. Diag. Lab. and Dept. of An. Sci., Texas A&M University, College Station, TX

**WEDNESDAY MORNING, MARCH 14  
 GRAND SALON EAST**

**PLATFORM SESSION 7: Oncogenesis/  
 Mutagenesis II**

**Co-Chairs:** D.V. Singh, USEPA, Washington, DC  
 S. Green, FDA, Washington, DC

- #199 8:30 **Mutagenic Glutathione Conjugates of Haloalkenes.**  
 T. Green, J. Odum and E.F. Howard, Imperial Chemical Industries PLC, Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK. Sponsor: I.F.H. Purchase.
- #200 8:45 **Early Changes in Gastric Carcinogenesis.**  
P.M. Newberne, K. Adams, D. Roth, and S.R. Tannenbaum, Department of Nutrition and Food Science, Mass. Institute of Technology, Cambridge, MA.
- #201 9:00 **A Comparison of the Morphological Features Associated with Reparative and Preneoplastic Hyperplasia in the Rat Urinary Bladder.**  
 D.M. Creasy and W.H. Butler, British Industrial Biological Research Association, Woodmansterne Road, Surrey, U.K.
- #202 9:15 **The Possible Role of Physiological Changes in the Occurrence of Bladder Tumors in Saccharin Treated Rats.**  
 G.P. Schoenig, Consultant to the Calorie Control Council, Atlanta, GA. Sponsor: E.I. Goldenthal.
- #203 9:30 **Effects of the Tumor Promotor Phorbol -12- Myristate-13-Acetate on Oocyte Differentiation and Development in Habrobracon Juglandis.**  
R.G. Best, D.S. Grosch, North Carolina State University, Raleigh, NC.
- #204 9:45 **Effect of Low pH Caused by Glacial Acetic Acid and Hydrochloric Acid on Chromosome Aberrations in CHO Cells.**  
 A.K. Thilagar, P.V. Kumaroo and S. Kott, Microbiological Associates, Bethesda, MD. Sponsor: A.M. Back.
- #205 10:00 **Cell Cycle Kinetics in Somatic and Germinal Tissues of the Male Sprague-Dawley Rat.**  
A.K. Sinha, V.A. Linscombe, B.B. Gollapudi, and M.L. McClintock, Health and Environmental Sciences, Dow Chemical U.S.A., Freeport, TX.

- #206 10:15 **The Induction of Unscheduled DNA Synthesis (UDS) in Multiple Tissues following Inhalation of Dimethylnitrosamine (DMN).**  
D.J. Doolittle, E. Bermudez, P.K. Working, C.S. Barrow and B.E. Butterworth. CIIT, Research Triangle Park, NC.
- #207 10:30 **Expression of Benzo(A)Pyrene and 6-Aminochrysene Initiating Activity in Complex Mixtures from Coal.**  
D.D. Mahlum. Pacific Northwest Laboratory, Richland, WA.
- #208 10:45 **Two Year Chronic Oral Toxicity/Carcinogenicity Studies on the Munitions Compound Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX) in Rats and Mice.**  
B.S. Levine, E.M. Furedi, D.E. Gordon, J.W. Sagartz, V.S. Rac, P.M. Lish and J.J. Barkley. Life Sci. Div., IIT Res. Inst., Chicago, IL and USAMBRDL, Ft. Detrick, Frederick, MD.
- #209 11:00 **Chronic Toxicity/Carcinogenicity Study of Ethylenediamine in Fischer 344 Rats.**  
R.S.H. Yang, R.H. Garman, R.R. Maronpot, E.J. Mirro, and M.D. Woodside. Bushy Run Research Center, Mellon Institute-Union Carbide Corporation, Export, PA.
- #210 11:15 **Chronic Inhalation Toxicity and Carcinogenicity of Ethylene Oxide and Propylene Oxide in F344 Rats.**  
D.W. Lynch, T.R. Lewis, W.J. Moorman and J.R. Burg. National Institute for Occupational Safety and Health, Division of Biomedical and Behavioral Science, Experimental Toxicology Branch, Cincinnati, OH.
- #211 11:30 **Carcinogenicity of Acrylates: Long-Term Inhalation Studies on Methyl Acrylate (MA) and N-Butyl Acrylate (BA) in Rats.**  
H.J. Klimisch, Dept. of Tox., BASF Aktiengesellschaft, Ludwigshafen, FRG, and W. Reininghaus, INBIFO, Koeln, FRG. Sponsor: Meryl Karol.
- #212 11:45 **DNA Binding and Cardiac Superoxide Production Studies of Pyridoanthraquinones.**  
J.P. Nachtman, E.T. Roginski, J.W. Banning, H.N. Abramson, and H.C. Wormser, Department of Basic Pharmaceutical Science, College of Pharmacy and AHP, Wayne State University, Detroit, MI.

**WEDNESDAY MORNING, MARCH 14  
BALLROOM WEST**

**PLATFORM SESSION 8: Neurotoxicology II**

**Co-Chairs:** D.A. Fox, Univ. Houston, Houston, TX  
P.S. Spencer, Albert Einstein Coll. Medicine, Bronx, NY

- #213 8:30 **Evaluation of Quaternary Imidazole Oximes as Reactivators of Organophosphonate-Inhibited Acetylcholinesterase (AChE).**  
R.A. Howd, C.D. Bedford, R.N. Harris, III, H.W. Nolen, III, and R.A. Kenley. SRI International, 333 Ravenswood, Menlo Park, CA.
- #214 8:45 **NTE in Extranervous Tissues. Comparison Between Man and Hen.**  
A. Moretto and M. Lotti. Istituto di Medicina del Lavoro, Università di Padova, Italy.
- #215 9:00 **Dose-Response Toxicity Studies on Tributoxyethyl Phosphate (TBOP) Orally Administered to Sprague-Dawley Rats.**  
S. Laham, G. Long and K. Schrader, Environmental Health Directorate, Health and Welfare Canada, Ottawa K1A 0L2; and J. Szabo, Department of Anatomy, University of Ottawa, Ottawa.
- #216 9:15 **Quantification of Leg Motor Deficits and Leg Nerve and Muscle Changes in Chicks with Neuropathy following In Ovo TOCP Treatment.**  
L. Sheets and S. Norton, Dept. of Pharmacology, Toxicology and Therapeutics, Univ. of Kansas Medical Center, Kansas City, KS.

- #217 9:30 **The Distribution of Central and Peripheral Neuropathology in the Rodent Model of Organophosphorous-Induced Delayed Neuropathy (OIPN).**  
B. Veronesi. Northrop Services Inc., RTP, NC. Sponsor: L.W. Reiter.
- #218 9:45 **The Effect of Metabolic Interference on Rodent-Sensitivity to Tri-Ortho-Cresyl Phosphate (TOCP).**  
B. Veronesi, D. Newland and A. Inman. Northrop Services, Inc., RTP, NC. Sponsor: L.W. Reiter.
- #219 10:00 **Effect of Chlordecone on Rat Brain Synaptic Calmodulin.**  
D. Desai, C.S. Chetty and K.S. Prasada Rao. Department of Neurology, University of Mississippi Medical Center, Jackson, MS.
- #220 10:15 **Inhibition of Rat Brain Synaptosomal ATPases by Plictran.**  
K.S. Prasada Rao, C.S. Chetty, C.H. Trotman and D. Desai, Department of Neurology, Univ. of Miss. Med. Ctr., Jackson, MS.
- #221 10:30 **Effects of BOAA on High-Affinity Neurotransmitter Uptake in Rat Brain and Spinal Cord.**  
S.M. Ross and P.S. Spencer, Inst. of Neurotox., Albert Einst. College of Medicine, Bronx, NY.
- #222 10:45 **Neurotoxicologic Assessment of Rats Dermally Exposed to 2,4-D Amine.**  
J.L. Mattsson, R.R. Albee, and K.A. Johnson. Dow Chemical U.S.A., Toxicology Research Laboratory, 1803 Building, Midland, MI. Sponsor: P.G. Watanabe.
- #223 11:00 **Selective Toxicity of 2,5-Hexanedione for Large Optic Tract Fibers.**  
W.H. Merigan, D.G. Flood, T.A. Eskin, and T. Pasternak. Depts. of Ophthalmology, Anatomy, Pathology, Center Brain Res., University of Rochester Medical Center, Rochester, NY. Sponsor: R.W. Wood.
- #224 11:15 **Acrylamide Reduces Retrograde Transport Velocity.**  
Matthew S. Miller and Peter S. Spencer, Institute of Neurotoxicology, Depts. of Neuroscience and Pathology, Albert Einstein College of Medicine, Bronx, NY.
- #225 11:30 **Recovery from Induced Somatosensory Deficits after a Second Exposure to Acrylamide.**  
J.P.J. Maurissen and B. Weiss, Div. of Toxicology, Env. Health Science Center, Dept. of Radiat. Biol. and Biophys., Univ. of Rochester, Rochester, NY.
- #226 11:45 **Comparative Effects of Malathion on Plasma Cholinesterase and Behavior in Hens.**  
F.O. Risinger and P.W. Ferguson, School of Pharmacy, Northeast Louisiana University, Monroe, LA.

**WEDNESDAY MORNING, MARCH 14  
GRAND BALLROOM EAST**

## **SYMPOSIUM 4: The Role of Receptors in Toxicological Response**

***Co-Sponsored by: (The European Society of Toxicology  
and The Society of Toxicology)***

**Co-Chairs:** Robert Hess, CIBA-GEIGY, Basel, Switzerland  
Robert L. Dixon, NIEHS, Research Triangle Park, NC

**Time  
(A.M.)**

8:30 **Introduction.**  
Dr. Robert Hess, Ciba-Geigy AG, CH-4002 Basel, Switzerland.

- 8:45 **The Role of Immunoreceptors in Immunotoxicity.**  
\*Dr. D.R. Stanworth. Department of Immunology, The Medical School, Vincent Drive, Birmingham. B15 2TJ, England.
- 9:30 **The Estrogen Receptor and Its Possible Role in Diethylstilbestrol Toxicity.**  
\*Dr. Kenneth S. Korach and Dr. John A. McLachlan. Laboratory of Reproductive and Developmental Toxicology, National Institute of Environmental Health Sciences. P.O. Box 12233, Research Triangle Park, NC, 27709, U.S.A.
- 10:15 **The Role of Receptors in TCDD Toxicity.**  
\*Dr. Lennard Dencker. Department of Toxicology, Biomedicum, University of Uppsala, S75123 Uppsala, Sweden.
- 11:00 **The Oncogene and its Possible Role in Carcinogenesis.**  
\*Dr. Flossie Wong-Staal. Laboratory of Tumor Cell Biology, National Cancer Institute, Bethesda, Maryland 20205, U.S.A.
- 11:45 **Closing Remarks.**  
Dr. Robert L. Dixon. Chief, Laboratory of Reproductive and Developmental Toxicology, National Institute of Environmental Health Sciences, P.O. Box 12233, Research Triangle Park, NC 27709, U.S.A.  
\*Special IUTOX Lecturer.

**WEDNESDAY MORNING, MARCH 14  
REAR OF GALLERIA EXHIBIT AREA**

**POSTER SESSION 3A: Inhalation/Pulmonary/Tox III**

**Co-Chairs:** S. Lock, Oak Ridge Nat'l Lab, Oak Ridge, TN  
C.O. Schulz, Bethesda, MD

**Displayed:** 8:30 a.m. - 11:30 a.m.  
**Attended:** 8:30 a.m. - 10:00 a.m. (Even Paper Numbers)  
10:00 a.m. - 11:30 a.m. (Odd Paper Numbers)

- #227 **The Effect of BCNU-Treatment on Damaged Lung Tissue.**  
J.P. Kehrer, Dept. of Pharmacology, College of Pharmacy, The University of Texas at Austin, Austin, TX.
- #228 **Comparative Inhalation Hazards of Aluminum and Brass Powders using Bronchopulmonary Lavage as an Indicator of Lung Damage.**  
S. Thomson, D. Burnett, M. Lamb, J. Bergmann, C. Hixson\*, Cml Research & Development Center, Rsch Division, \*USAMRICD, APG, MD. Sponsor: A.H. McCreesh.
- #229 **Changes in Pulmonary Connective Tissue Metabolism after Inhalation Exposure to Diesel Exhaust.**  
J.A. Pickrell, R.K. Jones, R.F. Henderson and J.L. Mauderly. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM.
- #230 **Daunomycin-Mediated Toxicity in Diploid Fibroblasts.**  
R.M. Arneson and A.P. Autor. Dept. of Pathology, University of British Columbia, Vancouver, B.C., Canada.
- #231 **Autolytic Changes in Mice as a Function of Time after Death.**  
M.R. Osheroff and R.T. Drew. Brookhaven National Laboratory, Upton, NY.
- #232 **Repeated Measurements of Pulmonary Mechanics in Unsedated Rabbits using a Nonsurgical Technique.**  
J.M. Gearheart and R.B. Schlesinger. New York University Medical Center. Institute of Environmental Medicine, New York, NY. Sponsor: M.H. Karol.

- #233 **Pulmonary Functional and Morphologic Changes in Guinea Pigs exposed to Freshly Generated Ultrafine ZnO.**  
H.F. Lam, M.W. Conner, A.E. Rogers and M.O. Amdur. Dept. of Nutrition & Food Sci. Mass. Inst. Tech.
- #234 **Effects of Glutathione S-Sulfonate on the Hepatic and Pulmonary Glutathione S-Transferases and Glutathione Reductases in the Rat.**  
K.H. Leung, G.B. Post and D.B. Menzel. Depts. of Pharmacology and Medicine, Comprehensive Cancer Center, Duke Medical Center, Durham, NC.
- #235 **Detection of Glutathione-S-Sulfonate in Lung Cells.**  
D.A. Keller and D.B. Menzel. Depts. of Pharmacology and Medicine, Comprehensive Cancer Center, Duke University Medical Center, Durham, NC.
- #236 **Analysis of O<sup>3</sup> Health Effects Data.**  
E.D. Smolko, R.L. Wolpert<sup>1</sup>, D.J. McKee<sup>2</sup>, F.J. Miller<sup>3</sup>, and D.B. Menzel. Depts. of Pharmacology, Medicine & Mathematics<sup>1</sup>, Comprehensive Cancer Center, Duke Medical Center, Durham, NC & OAQPS<sup>2</sup> & HERL<sup>3</sup>, USEPA, Research Triangle Park, NC.
- #237 **Non-Ciliated Bronchiolar (CLARA) Cell as the Initial Site of 1-Nitronaphthalene induced Pulmonary Toxicity.**  
D.E. Johnson<sup>1</sup>, M.G.I. Riley<sup>1</sup>, and H.H. Cornish<sup>2</sup>. International Research and Development Corp.<sup>1</sup>, Mattawan, MI; University of Michigan<sup>2</sup>, Ann Arbor, MI.
- #238 **Species Comparison of Lung Antioxidant Levels and Susceptibility to O<sup>3</sup>-induced Pulmonary Edema.**  
R. Slade, A.G. Stead, J.A. Graham, G.E. Hatch, Inhal. Tox. Div., HERL, USEPA, Research Triangle Park, NC.
- #239 **Deposition Efficiency of Monodisperse Particles in Ozone Treated Rats.**  
R.N. Shiotsuka, M.R. Osheroff, D.L. Costa, and R.T. Drew, Medical Dept., Brookhaven National Lab., Upton, NY.
- #240 **Filterability of Erythrocytes from O<sup>3</sup>-Exposed Mice.**  
A.F. Dorsey, D.L. Morgan, and D.B. Menzel. Depts. of Pharmacology and Medicine, Comprehensive Cancer Center, Duke Medical Center, Durham, NC.
- #241 **Effect of Nitrogen Dioxide Concentration on Measures of Early Damage and Edema after Exposure.**  
D.J. Guth and R.D. Mavis. Division of Toxicology, University of Rochester, Rochester, NY.
- #242 **Biochemical Assessment of Acute Nitrogen Dioxide Toxicity in Rat Lung.**  
D.J. Guth and R.D. Mavis. Division of Toxicology, University of Rochester, Rochester, NY.
- #243 **Effects of Ozone and Silica on the Development of Pulmonary Fibrosis.**  
J.K. Yermakoff, R.N. Shiotsuka, M.R. Osheroff, and R.T. Drew, Medical Dept., Brookhaven National Laboratory, Upton, NY.
- #244 **Ozone Induced Changes in Airway Epithelial Permeability.**  
P. Doherty Miller, M.R. Warnick and M.O. Amdur. Dept. of Nutrition and Food Science, Massachusetts Institute of Technology, Cambridge, MA.
- #245 **Comparison of the Acute Effects of Histamine, Sulfuric Acid, Carbamylcholine, Serotonin and Propranolol Aerosols in Guinea Pigs.**  
Michelle M. Schaper and Yves Alarie, Dept. of Ind. Env. Health Science Graduate School of Pub. Health, University of Pittsburgh, Pittsburgh, PA.
- #246 **Cytological and Biochemical Evaluation of Pulmonary Lavage Fluid from Rats Exposed to Cigarette Smoke.**  
R.D. Curren, R.M. David, C.J. Henry, and C.J. Stone<sup>\*</sup>. Microbiological Associates, Bethesda, MD and <sup>\*</sup>Lorillard Research Center, Greensboro, NC.
- #247 **Formaldehyde Effects on Bioelectric Properties of Bullfrog Lung.**  
S.T. Ballard and J.T. Gatzky. Dept. Pharmacology, Medical School, University of North Carolina at Chapel Hill, NC. Sponsor: D.J. Holbrook, Jr.
- #248 **Pulmonary Retention of Benzo(A)Pyrene (BaP) as Influenced by Amount Instilled.**  
M.A. Medinsky and S. Kampcik. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM.

- #249 **Changes in Alveolar Permeability of Rats following Ozone Exposure.**  
D.K. Bhalla and T.T. Crocker. Dept. of Comm. and Env. Medicine, University of California, Irvine, CA. Sponsor: R.F. Phalen.
- #250 **The Role of Oxygen and NADPH availability in the Potentiation of Paraquat Toxicity by Ascorbate.**  
M.R. Montgomery, VA Hospital and University of South Florida, Tampa, FL.
- #251 **Diffuse Interstitial Pulmonary Fibrosis in the Rat: An Approach using Bleomycin in Combination with Oxygen.**  
J.R. Lehmann, D.L. Costa, D.N. Slatkin, and M.R. Osheroff. Sponsor: R.T. Drew.
- #252 **a-Difluoromethylornithine (DFMO) Inhibits Monocrotaline (MCT) Induced Pulmonary Hypertension (PH) and Right Ventricular Hypertrophy (RVH) in Rats.**  
J.E. Atkinson, J.W. Olson, R.J. Altieri and M.N. Gillespie, College of Pharmacy and Graduate Center for Toxicology, University of Kentucky, Lexington, KY. Sponsor: S.D. Harrison, Jr.
- #253 **In Vitro Inhibition of Lung GSSG Reductase by BCNU.**  
A.C. Smith and M. Boyd, NIH, Bethesda, MD.
- #254 **Apparent Production of Hydrogen Peroxide by Rat Lung Alveolar Type II Cells.**  
R.F. Minchin, A.A. del Campo and M.R. Boyd, NCI, Bethesda, MD.
- #255 **Effect of Chlorphentermine on Incorporation of 14C-Choline in the Rat Lung Phospholipids.**  
K. Gonmori, T. Morita and H.M. Mehendale. Dept. Pharmacology & Toxicology, University Mississippi Medical Center, Jackson, MS.
- #256 **Aniline Induced Methemoglobinemia and Hemolysis as a Function of Exposure Concentration and Duration.**  
B.A. Burgess, T.P. Pastoor and G.L. Kennedy, Jr. E.I. du Pont de Nemours and Co., Inc., Haskell Laboratory for Toxicology and Industrial Medicine, Elkton Road, P.O. Box 50, Newark, DE.
- #257 **Autoradiographic Localization of (14-C) Acetaldehyde in Nasal Tissues of F-344 Rats.**  
R.M. David<sup>1</sup> and E.A. Gross<sup>2</sup>, <sup>1</sup>Microbiological Associates, Bethesda, MD and <sup>2</sup>CIIT, Research Triangle Park, NC. Sponsor: J.A. Swenberg<sup>2</sup>.
- #258 **Inhalation Toxicity of N-Methylformamide in the Rat.**  
R.L. Ferenz, B.A. Burgess, E.F. Stula and G.L. Kennedy, Jr. E.I. du Pont de Nemours and Industrial Medicine, P.O. Box 50, Elkton Road, Newark, DE.
- #259 **Subchronic Inhalation Toxicity of Dimethylacetamide in Rats.**  
D.P. Kelly, W.D. Kerns, B.A. Burgess and G.L. Kennedy, Jr. E.I. du Pont de Nemours and Co., Inc., Haskell Laboratory for Toxicology and Industrial Medicine, P.O. Box 50, Elkton Road, Newark, DE.
- #260 **Kathon® Biocide: 13-Week Aerosol Inhalation Toxicity Study in Rats.**  
R.C. Baldwin, J.V. Hagan, C.H. Barthel\*, and J.N. Moss Toxicology Department, Rohm and Haas Company, Spring House, PA and \*Toxpath Services, Inc., Harleysville, PA. Sponsor: A.W. Hayes.
- #261 **Inhalation Toxicity of 3-Chloropentafluoropropene in the Rat.**  
R.L. Ferenz, B.A. Burgess, and E.F. Stula. E.I. du Pont de Nemours and Co., Inc., Haskell Laboratory for Toxicology and Industrial Medicine, P.O. Box 50, Elkton Road, Newark, DE.
- #262 **A Two-Week Subchronic Inhalation Toxicity Study on Teracol® 1000 in Rats.**  
B.A. Burgess and L. A. Kinney, E.I. du Pont de Nemours and Company, Inc., Haskell Laboratory for Toxicology and Industrial Medicine, P.O. Box 50, Elkton Road, Newark, DE. Sponsor: G.L. Kennedy, Jr.
- #263 **Acute and Subchronic Inhalation Toxicity of p-Nitrobenzyl Chloride in Rats.**  
L.A. Kinney, B.A. Burgess, H.C. Chen and G.L. Kennedy, Jr., E.I. du Pont de Nemours and Co., Inc., Haskell Laboratory for Toxicology and Industrial Medicine, P.O. Box 50, Elkton Road, Newark, DE.



- #264      **Effects of Multiple Exposure to Aerosolized Diesel Fuel.**  
S. Lock. Biology Division, Oak Ridge National Laboratory, Oak Ridge, TN.
- #265      **Acute and Subchronic Inhalation of Methyl-DBCP.**  
R.D. Phillips<sup>1</sup>, W.A. Stubblefield<sup>1</sup>, D.E. Dodd<sup>2</sup>, and H.C. Grice<sup>3</sup>, <sup>1</sup>Exxon Corp., E. Millstone, NJ, <sup>2</sup>Bushy Run Research Center, Export, PA, and <sup>3</sup>Polysar, Ltd., Sarnia, Ontario.
- #266      **Predictive Pharmacokinetic Models for Inhaled JP-10, Benzene, and Toluene from In Vitro Data.**  
J.P. Murphy, M.E. Andersen, M.L. Gargas, and H.J. Clewell, Air Force Aerospace Medical Research Laboratory, Wright-Patterson AFB, OH.
- #267      **Evaluation of Subchronic Toxicity of O-Nitrochlorobenzene.**  
R.S. Nair, F.B. Johannsen, G.J. Levinskas, Monsanto Co., St. Louis, MO, J.B. Terrill, Bio/dynamics, Inc., East Millstone, NJ.
- #268      **Effects of 4-Week Exposure to a Middle Boiling Range Coal Liquid.**  
D.L. Springer, D.D. Mahlum, H.A. Ragan, and W.C. Weimer. Pacific Northwest Laboratory, Richland, WA.
- #269      **Measurement of N-Acetyl-P-Aminophenol as an Indicator of Body Load after Subchronic Exposure of Rats to Aniline.**  
T.P. Pastoor and B.A. Burgess. E.I. du Pont de Nemours and Co., Inc., Haskell Laboratory for Toxicology and Industrial Medicine, P.O. Box 50, Elkton Road, Newark, DE. Sponsor: G.L. Kennedy, Jr.
- #270      **Acute and Subchronic Inhalation Toxicity of Anhydrous Trimethylamine in Rats.**  
L.A. Kinney, B.A. Burgess and H.C. Chen. E.I. du Pont de Nemours and Company, Inc., Haskell Laboratory for Toxicology and Industrial Medicine, P.O. Box 50, Elkton Road, Newark, DE. Sponsor: G.L. Kennedy, Jr.
- #271      **Methodology for Toxicological Evaluation of Cigarette Smoke after Nose-Only Inhalation in Mice and Rats.**  
C.J. Henry, W.C. Hall, R.M. David, C.J. Stone\*. Microbiological Associates, Bethesda, MD and \*Lorillard Research Center, Greensboro, NC.
- #272      **Combined Effects of Carbon Monoxide and Heat Stress on Fixed Ratio Schedule Performance in Rats.**  
M.M. Preache and P.S. McGuire. IIT Research Institute, Chicago, IL. Sponsor: B.S. Levine.
- #273      **Transport of Inhaled Cigarette Smoke in Pregnant and Lactating Guinea Pigs and Rats. Effect on Fetuses and Nursing Young.**  
M.H. Bilimoria and D.J. Ecobichon, Departments of Pathology and Pharmacology and Therapeutics, McGill University, Montreal, Quebec, Canada.
- #274      **In Vitro Metabolic Activity of Hepatic Enzymes from Rats Exposed to Cigarette Smoke.**  
M.J. Graziano and H.W. Dorough, Dept. of Entomology and Graduate Center for Toxicology, University of Kentucky, Lexington, KY.
- #275      **Relative Toxicity of Carbon Monoxide and Hydrogen Cyanide in Combined Atmospheres.**  
B. Ballantyne, Applied Toxicology Department, Union Carbide Corporation, Charleston, WV.
- #276      **Comparison of a Standard and Novel Workshift on the Formation of Carboxyhemoglobin and Elimination of Dichloromethane in Rats and Mice Exposed by Inhalation.**  
Y.C. Kim and G.P. Carlson, Dept. of Pharmacology & Toxicology, School of Pharmacy & Pharmaceutical Science, Purdue University, W. Lafayette, IN.
- #277      **A Steady-State Generation and Inhalation Exposure System for Plastics Pyrolysis Products.**  
A. Carson and A. Vinegar, University of Cincinnati College of Medicine, Kettering Laboratory, Cincinnati, OH. Sponsor: P.B. Hammond.

- #278 **Pathological Indices of pTFE Fume Intoxication: Dependence on the Method of Thermal Decomposition.**  
K.P. Lee and S.J. Williams, E.I. du Pont de Nemours and Co., Inc., Haskell Laboratory for Toxicology and Industrial Medicine, P.O. Box 50, Elkton Road, Newark, DE.
- #279 **Comparative Inhalation Toxicity of the Combustion Products of Two Nylons and Douglas Fir.**  
H.L. Kaplan, W.G. Switzer, Dept. of Fire Tech., Southwest Research Institute, S.A., TX and S.C. Gad, Allied Corp., Morristown, NJ.
- #280 **Formaldehyde (FA) Concentrations in the Blood of Humans and F-344 Rats Exposed to FA under Controlled Conditions.**  
H.d'A. Heck\*, M. Casanova-Schmitz\*, P.B. Dodd\*, E.N. Schachter†, T. Witek†, and T. Tosun†, Chem. Ind. Institute Toxicology,\* Research Triangle Park, NC, and Yale University School of Medicine and John B. Pierce Foundation†, New Haven, CT.
- #281 **Dependence of pTFE Combustion Product Toxicity on Heating Parameters.**  
S.J. Williams and B.B. Baker, E.I. du Pont de Nemours and Co., Inc., Haskell Laboratory for Toxicology and Industrial Medicine, P.O. Box 50, Elkton Road, Newark, DE. Sponsor: G.L. Kennedy, Jr.
- #282 **Ethyl Acrylate Chronic Vapor Inhalation Study.**  
R.R. Miller, J.T. Young, R.J. Kociba, D.G. Keyes, L.L. Calhoun and J.M. Smith\*, Toxicology Research Laboratory, Health and Environmental Sciences U.S.A., Dow Chemical U.S.A., Midland, MI. \*Rohm and Haas Company, Springhouse, PA.
- #283 **Physicochemical Characterization of Cryogenically Ground, Size Separated Fibrogenic Particles.**  
P.S. Thorne, E.N. Lightfoot, R.M. Albrecht, University of Wisconsin, Madison, WI. Sponsor: R.E. Peterson.
- #284 **Interaction of Short Term Toluene Inhalation and Acute Oral Ethanol.**  
S.R. Howell, J.E. Christian, and G.E. Isom, School of Health Science & Department of Pharmacology & Toxicology, School of Pharmacy & Pharmacal Science, Purdue University, W. Lafayette, IN.
- #285 **Comparative Subchronic Vapor Toxicity of Three Chlorinated Propanes.**  
F.R. Johannsen, G.J. Levinskas, Dept. of Medicine & Environmental Health, Monsanto Co., St. Louis, MO; G.M. Rusch, J.B. Terrill, Bio/dynamics, Inc., E. Millstone, NJ.
- #286 **Effect of Equilibration Zones on Stability, Uniformity, and Homogeneity Profiles of Vapors and Aerosols in the ADG Nose-Only Inhalation Exposure System.**  
J.D. Green, W.F. Helke, J.B. Scott, E.T. Yau, V.M. Traina and R.M. Diener, Research Dept., Pharmaceuticals Div., CIBA-GEIGY Corp., Summit, NJ.
- #287 **Inhalation of a Complex Mixture of Red Phosphorus/Butyl Rubber Combustion Products.**  
C. Aranyi, J.N. Bradof and S.C. Vana, IIT Research Institute, Chicago, IL. Sponsor: J.D. Fenters.

---

Wednesday Afternoon, March 14, 1984

12:00 Noon - 1:30 P.M.

**ISSUES SESSION**

GRAND BALLROOM EAST

**Chaired by President Gabriel L. Plaa**

**Bring a sandwich, etc., and participate in an open  
forum discussion of SOT affairs.**

---

**WEDNESDAY MORNING, MARCH 14  
REAR OF GALLERIA EXHIBIT AREA**

**POSTER SESSION 3B: Cardiovascular/Renal**

**Co-Chairs:** T. Miller, McNeil Pharmaceuticals, Spring House, PA  
E.A. Brown, USDA, McLean, VA

**Displayed:** 8:30 a.m. - 11:30  
**Attended:** 8:30 a.m. - 10:00 a.m. (Even Paper Numbers)  
10:00 a.m. - 11:30 a.m. (Odd Paper Numbers)

- #288 **Intravenous Toxicity Studies of a Quinazolinone Derivative (ORF 16402) in Rats and Dogs.**  
K.C. Norbury, A.N. Johnson and G.J. Davis, Ortho Pharmaceutical Corporation, Raritan, NJ. Sponsor: D. Abrutyn.
- #289 **Susceptibility of Various Strains of Mice to Cephaloridine Nephrotoxicity.**  
Dale A. Pasino, Katsuyuki Miura and Jerry B. Hook. Department of Investigative Toxicology, Smith Kline & French Laboratories, Philadelphia, PA.
- #290 **Correlation of the Covalent Binding of 1-(2-Chloroethyl)-3-(Trans-4-Methylcyclohexyl)-1-Nitrosourea (MeCCNU) with the Renal Slice Uptake of p-Aminohippuric Acid (PAH) in Pretreated F344 Rats.**  
R.A. Kramer, M.G. McMenamin and M.R. Boyd, NIH, Bethesda, MD.
- #291 **The Metabolism of Hexachloro-1:3-Butadiene and the Role of Sulphur Containing Metabolites in its Nephrotoxicity.**  
T. Green, J.A. Nash and J. Odum, Imperial Chemical Industries PLC, Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK. Sponsor: I.F.H. Purchase.
- #292 **The Conjugation and Bioactivation of Tetrafluoroethylene.**  
T. Green and J. Odum, Imperial Chemical Industries PLC, Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK. Sponsor: I.F.H. Purchase.
- #293 **Alterations in Renal Morphology Induced by Treatment with 2-Hexanone (HX) plus CHCl<sub>3</sub>.**  
E. Brown, S. Kanchanapangka, D. Kinden, and W. Hewitt. University of Montana, Columbia, MO. and SK&F Labs, Philadelphia, PA.
- #294 **The Effects of Uranyl Fluoride on Renal Function in Guinea Pigs.**  
H.K. Gardner, G.L. Diamond, F.A. Smith. Departments of Radiation Biology and Biophysics, and Pharmacology, University of Rochester, Rochester, NY.
- #295 **Characteristics of Mercury Accumulation by Rat Renal Cortical Slices.**  
A. Blacker and R.J. Richardson, Toxicology program, School of Public Health, The University of Michigan, Ann Arbor, MI.
- #296 **Studies on the Renal Etiology of Mercury-Induced Uroporphyrinuria.**  
J.S. Woods, D.L. Eaton and C.B. Lukens, Department of Environmental Health, University of Washington, Seattle, WA.
- #297 **Characterization of a Murine Strain Difference in Renal Excretion of Methylmercury.**  
K.M. Mulder and P.J. Kostyniak, Department of Pharmacology and Therapeutics, SUNY at Buffalo, School of Medicine, Buffalo, NY. Sponsor: T.W. Clarkson.
- #298 **Effects of Therapeutic Agents on Chromium-Induced Acute Nephrotoxicity.**  
W.J. Powers, S.C. Gad, M.J. Derelanko and K.M. Siino, Allied Corp., Dept. of Toxicology, Morristown, NJ.
- #299 **Effect of Peroxidative Insult on Rat Renal Proximal Tubular Function.**  
W.R. Hewitt, Investigative Toxicology Department, L-64, Smith Kline & French Laboratories, 709 Swedeland Road, Swedeland, PA.

---

## ANNUAL BUSINESS MEETING

Wednesday afternoon, March 14, 1984

4:00 p.m.

GRAND BALLROOM EAST

**President Gabriel L. Plaa, Presiding**

SOT MEMBERS ONLY

---

**WEDNESDAY AFTERNOON, MARCH 14**

**REAR OF GALLERIA EXHIBIT AREA**

### **POSTER SESSION 4A: Reproduction/Teratology I**

**Co-Chairs:** R. Abraham, Albany Medical College, Albany, NY  
Shayne C. Gad, Allied Corporation, Morristown, NJ

**Displayed:** 1:30 P.M. — 4:30 P.M.  
**Attended:** 1:30 P.M. — 3:00 P.M. (Even Paper Numbers)  
3:00 P.M. — 4:30 P.M. (Odd Paper Numbers)

- #317 **Effect of Cadmium and Buthionine Sulfoximine (BSO) on Glutathione Levels in the Male Reproductive Tract.**  
C.M. Teaf and R.D. Harbison, Univ. of Arkansas for Medical Sciences, Little Rock, AR and J.B. Bishop, National Center for Toxicological Research, Jefferson, AR.
- #318 **Peroxidase Activity in the Mouse Uterine-Feto-Placental Unit.**  
J.L. Nelson and A.P. Kulkarni, Toxicology Program, Dept. of Environmental and Industrial Health, The University of Michigan, Ann Arbor, MI.
- #319 **Evaluation of Male Rat Fertility Following Inhalation Exposure to Ordram®.**  
J.L. Minor, H.F. Knapp, B.O. Stuart, J.M. Killinger, G.M. Zwicker and R.J. Freudenthal, Stauffer Chemical Co., Environmental Health Center, Farmington, CT.
- #320 **Detecting Chemicals Hazardous to Development with Artemia Nauplii.**  
R.B. Sleet and K. Brendel, Dept. of Pharmacology, Arizona Health Sciences Center, Tucson, AZ. Sponsor: I.G. Sipes.
- #321 **Effects of Repeated Exposure to 2-Ethoxyethanol (EE) on the Male Reproductive System in Rats.**  
D. Oudiz, H. Zenick, Dept. of Environmental Health, R. Niewenhuis, Dept. of Anatomy, Univ. of Cincinnati, Cincinnati, OH.
- #322 **Assessment of Testicular and Epididymal Functioning in Fischer-344 (F344) Rats.**  
W. Blazak, T. Ernst, L. Diel, and B. Stewart, SRI International, Menlo Park, CA. Sponsor: D. Jones.
- #323 **The Effect of Ornidazole on Fertility and Sperm Motility in Rats.**  
R. Michael McClain and John C. Downing, Department of Toxicology and Pathology, Hoffmann-La Roche Inc., Nutley, NJ.
- #324 **Reproductive Effects of Exposure to Sodium Chlorite in Long-Evans Rats.**  
B.D. Carlton, A.H. Basaran, D.L. Habash, M.K. Smith, Battelle Memorial Institute, Columbus, OH, and USEPA, HERL, Cincinnati, OH. Sponsor: G.L. Fisher.

- #325 **A Dominant Lethal Study of Inhaled Methyl Chloride in Male F-344 Rats.**  
P.K. Working, J.S. Bus, R.M. Norton and T.E. Hamm, Jr. Chemical Industry Institute Toxicology, Research Triangle Park, NC.
- #326 **Effects of Inhaled Methyl Chloride on Sperm on F-344 Rats.**  
P.K. Working, J.S. Bus, L.L. Earle and T.E. Hamm, Jr. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.
- #327 **Effects of Cadmium and/or Diet on Reproductive Parameters in Female Mice Bred Through Six Consecutive Cycles.**  
B.D. Whelton, M.H. Bhattacharyya, D.P. Peterson, and E.S. Moretti. Argonne National Laboratory, Argonne, IL. Sponsor: B.A. Fowler.
- #328 **Effects of Dibutyl Phthalate (DBP) on the Reproductive System of Two Strains of Young Male Rats.**  
J.A. Ward, H. Zenick, W.W. Wilfinger, R.J. Niewenhuis. University of Cincinnati College of Medicine, Cincinnati, OH.
- #329 **Reproductive and Neurochemical Effects of Selected PCB Isomers in the Mink (*Mustela Vison*).**  
R.J. Aulerich, S.J. Bursian, R.K. Ringer, B.A. Olson, J.S. Brewster, and A.C. Napolitano. Dept. Animal Science, Michigan State University, East Lansing, MI. Sponsor: D. Polin.
- #330 **Reproductive Toxicity in Rats Administered Monosodium Cyanurate.**  
A.G. Wheeler. ICI Americas Inc., Wilmington, DE, T. Cascieri, FMC Corp., Princeton, NJ, S.J. Barbee, Olin Corp., New Haven, CT, B.G. Hammond, Monsanto, Co., St. Louis, MO, T. Inoue, Nissan Chemical Industries, New York, NY, N. Ishida, Shikoku Chemical Corp., Los Angeles, CA, J.L. Schardein, International Research and Development Corp., Mattawan, MI.
- #331 **Fetal Lateral Cerebral Ventricular Enlargement Induced by Exposure to Selected Teratogenic Agents.**  
B.K. Beyer and W.F. Geber, Dept. of Pharmacology, Medical College of Georgia, Augusta, GA.
- #332 **Teratological Evaluation of a Novel Antiabortifacient, 5,6-BIS-(Dibenzoyloxy)-1-OXO-2-Propyl-2-Indanpropionic Acid (DIPA).**  
Franziska R. Del Vecchio and Ralf G. Rahwan, Pharmacology Division, L.M. Parks Hall, Ohio State University, Columbus, OH.
- #333 **Learning Performance of Offspring of Resus Monkeys Exposed to Low Levels of 2,3,7,8-Tetra-Chlorodibenzo-p-Dioxin (TCDD).**  
S.L. Schantz, and R.E. Bowman, University of Wisconsin Primate Laboratory, Madison, WI. Sponsor: R.E. Peterson.
- #334 **A Teratological Study of Cyclopiazonic Acid in Rats.**  
R.E. Morrissey, R.J. Cole, J. Dorner. USDA-ARS, Russell Research Center, Athens, GA and National Peanut Laboratory, Dawson, GA. Sponsor: W.P. Norred.
- #335 **Vitamin A Acetate: A Behavioral Teratology Study in Rats. I.**  
S.A. Kutz, N.J. Troise, R.E. Cimprich, S.M. Fischer, P.J. Rugen and P.J. DeBaecke, Stuart Pharmaceuticals, Division of ICI Americas Inc., Wilmington, DE. Sponsor: L.E. Gongwer.
- #336 **The Effect of Body Weight Gain Depression on Reproduction Studies Using F-344 Rats.**  
T.E. Hamm, Jr., P.K. Working, and T.H. Raynor. Chemical Industries, Institute of Toxicology, Research Triangle Park, NC. Sponsor: J.E. Gibson.
- #337 **Teratogenic Evaluation of Sodium Omadine® Administered Topically to Rats.**  
D.E. Rodwell<sup>1</sup>, D.E. Johnson<sup>1</sup> and J.H. Wedig<sup>2</sup>. International Research and Development Corporation<sup>1</sup>, Mattawan, MI and Olin Corporations<sup>2</sup>, New Haven, CT.
- #338 **Plasma Levels of 2-Methylsulfonyl-Pyridine in Pregnant Rats and Rabbits Given Omadine® MDS Dermally.**  
D.E. Johnson<sup>1</sup>, J.L. Schardein<sup>1</sup>, C. Mitoma<sup>2</sup>, E.I. Goldenthal<sup>1</sup>, F.X. Wazeter<sup>1</sup> and J.H. Wedig<sup>2</sup>. International Research and Development Corp.<sup>1</sup>, Mattawan, MI; SRI International<sup>2</sup>, Menlo Park, CA; Olin Corporation<sup>3</sup>, New Haven, CT.

- #339      **Teratogenicity Studies With a Candidate Anti-Malarial Drug.**  
J.A. Trutter, F.E. Reno, and R.S. Durloo. Hazleton Laboratories America, Inc., Vienna, VA, and D.W. Korte, Jr., Walter Reed Army Institute of Research, Washington, DC.
- #340      **Neonatal Chlordecone and/or DMSO Alter Reactivity to Conditional and Unconditional Stimuli: Non-Associative Factors in Avoidance Performance Deficits.**  
C.F. Mactutus and H.A. Tilson. Lab. Beh. Neur. Tox., NIEHS, Research Triangle Park, NC.
- #341      **Developmental Toxicity of Carbon Disulfide in Rabbits and Rats.**  
C.J. Price, R.W. Tyl, M.C. Marr, J.D. George, and C.A. Kimmel. Research Triangle Institute, Research Triangle Park, NC and Division of Teratogenesis Research, NCT/NTP/DHHS, Jefferson, AR.
- #342      **The Utility of Early Perceptual-Cognitive Assessments for Behavioral Teratology.**  
K.S. Grant, V.M. Gunderson, T.M. Burbacher, N.K. Mottet. Department of Pathology, University of Washington, Seattle, WA. Sponsor: M.R. Juchau.
- #343      **The Effects of Perinatally Administered B<sub>2</sub> Agents on the Myocardium of Offspring in Rats.**  
J. Butany, F.R. Alleva, V.J. Ferrans, G.L. Johnson, S.J. Ehrreich, and T. Balazs. NIH, Bethesda, MD and FDA, Washington, DC.
- #344      **Drug Effects on Locomotor Activity of Rats Exposed Perinatally to Polybrominated Biphenyls.**  
J.W. Henck, C.L. Carlson, D.H. Rezabek and R.H. Rech. Dept. of Pharmacology/Toxicology, Michigan State University, East Lansing, MI. Sponsor: W.D. Atchison.
- #345      **Gestation Period Sensitivity of Ethylene Glycol Monoethyl Ether in Rats.**  
P.T. Goad, J.M. Cranmer. Intox Laboratories, and Univ. AR Medical Sciences, Little Rock, AR.
- #346      **Teratogenic Potential of Dietary Cassava in the Golden Hamster.**  
R.A. Frakes, C.C. Willhite\* and R.P. Sharma. Toxicology Program, Utah State University. Logan, UT and \*USDA, Western Regional Research Center, Berkeley, CA.
- #347      **Developmental Toxicity of 2,4,5,2',5'-Hexa-Bromobiphenyl (HBB) in B6C3F1 Mice.**  
F. Welsch and D.B. Stedman. CIIT, Research Triangle Park, NC.
- #348      **Effect of Maternal Cadmium Exposure on Trace Metal Metabolism in the Perinatal Guinea Pig.**  
E.M.K. Lui, Dept. of Pharmacology and Toxicology, Univ. of Western Ontario, London, Ont. Canada.
- #349      **The Effect of Low Level Lead Exposure on Latent Learning.**  
G.D. Miller, T.F. Massaro, and E.J. Massaro. Center for Air Environment Studies, The Pennsylvania State University, University Park, PA.
- #350      **Psychopharmacological Investigations of a Lead-Induced Delayed Spatial Alternation Deficit in Monkeys.**  
E.D. Levin and R.E. Bowman, Psychology Primate Lab, University of Wisconsin, Madison, WI. Sponsor: R.E. Peterson.
- #351      **Functional Hyperreactivity in Adult Rats Following Neonatal Triethyl Lead Exposure.**  
R.M. Booze, C.F. Mactutus, Z. Annau, and H.A. Tilson. Lab. Beh. Neur. Tox., NIEHS, Research Triangle Park, NC and The Johns Hopkins Univ., Baltimore, MD.
- #352      **Lipopolysaccharide W (LPSW) Alters Organ Growth and Copper Concentrations in Neonatal Mice.**  
D.J. Thomas, R.A. Winchurch, and J.J. Chisolm, Jr. Dept. Environmental Health Sciences, School Hygiene Pub. Health, Dept. Surgery and Pediatrics, School Medicine, Johns Hopkins Univ. Baltimore MD. Sponsor: J.M. Frazier.

- #353 **Neonatal Exposure to Cadmium (Cd) Causes Hydrocephalus and Alterations in Adult Operant Behavior in the Rat.**  
W.W. Ng, M.C. Newland, R.K. Miller, R.B. Baggs, B. Weiss, Depts. of Obstetrics/Gynecology, Pharmacology, and Radiology Biological & Biophysical, Division of Toxicology and Laboratory Animal Medicine, Univ. of Rochester, Rochester, NY.
- #354 **Developmental Toxicity of Sodium Nitrite in Long-Evans Rats.**  
A.C. Roth, J.P. Bercz, L.L. Jones, and M.K. Smith, HERL, U.S. Environmental Protection Agency, Cincinnati, OH. Sponsor: M.A. Pereira.
- #355 **Teratogenicity of Adriamycin *In Vitro*.**  
A.G. Fantel, J.G. Greenaway, M.R. Juchau, Depts. of Pediatrics and Pharmacology, University of Washington, Seattle, WA.
- #356 **An Examination of 2-Acetylaminofluorene (AAF) Induced Dysmorphogenesis in Rat Embryos Transplacentally Exposed to 3-Methylcholanthrene (MC).**  
C. Giachelli, E. Faustman-Watts and M. Juchau, Depts. of Pharmacology, and Environmental Health, Univ. of Washington, Seattle, WA.

**WEDNESDAY AFTERNOON, MARCH 14  
REAR OF GALLERIA EXHIBIT AREA**

**POSTER SESSION 4B: Metabolism/Disposition II**

**Co-Chairs:** J. Hixson, Mobay Chemical Corp., Stilwell, KS  
A.L. Aronson, North Carolina State University, Raleigh, NC

**Displayed:** 1:30 P.M. - 4:30 P.M.  
**Attended:** 1:30 P.M. - 3:00 P.M. (Even Paper Numbers)  
3:00 P.M. - 4:30 P.M. (Odd Paper Numbers)

- #357 **The Effect of Age, Chronic Lindane Treatment, Genotypic and Phenotypic Differences on the Metabolism of Lindane by Inbred Mice.**  
R.W. Chadwick, M.F. Copeland, N. Cooke, D.A. Whitehouse, L.M. Mole and G.L. Wolff, U.S. E.P.A., Research Triangle Park, NC.
- #358 **Disposition and Metabolism of [Ring-<sup>14</sup>C] Roneet® in Cynomolgus Monkeys.**  
T.Y. Chin, R.P. Clement, L.E. Somma, J.P. Lehman, C.A. Skowronek and R.J. Freudenthal, Stauffer Chemical Co., Environmental Health Center, Farmington, CT.
- #359 **Distribution and Metabolism of [<sup>14</sup>C]-Tri-o-Cresyl Phosphate (TOCP) in the Male Rat Following Oral Administration.**  
A.A. Nomeir, H.A. Makkawy, J.H. Bower and M.B. Abou-Donia, Duke Univ. Medical Center, Durham, NC.
- #360 **Disposition of Tri-o-Cresyl Phosphate (TOCP) and its Metabolites in Various Tissues of the Male Cat Following Dermal Application of [<sup>14</sup>C] TOCP.**  
A.A. Nomeir and M.B. Abou-Donia, Dept. Pharmacology Duke Univ. Medical Center, Durham, NC.
- #361 ***In Vitro* Detoxification of Methylparathion (MeP) by Human Placental and Fetal Liver Glutathione S-Transferases (GSHT<sup>f</sup>).**  
L.L. Radulovic, J.J. LaFerla, W.C. Dauterman, and A.P. Kulkarni, Toxicology Program, Dept. of Environmental and Industrial Health, The University of Michigan, Ann Arbor, MI.
- #362 **A Physiological Based Model for Paraquat (PQ) Pharmacokinetics in the Rat.**  
M.S. Dey, W.L. Hayton\*, and R.I. Krieger, Veterinary Medicine, University of Idaho, Moscow ID and \*College of Pharmacy, Washington State University, Pullman, WA.

- #363 **The Pharmacokinetics and Metabolism of <sup>14</sup>C-Tridiphan (TRID) in Sprague-Dawley Rats and B6C3F1 Mice.**  
J.M. Waechter, Jr., J.C. Ramsey, R.L. Swann, E.A. Hermann, and N.L. Freshour. Toxicology Research Laboratory, Health & Environmental Sciences, USA, The Dow Chemical Company, Midland, MI.
- #364 **Significance of Plasma Gutoxon (GO) Levels After I.V. Administration of Guthion (GS) in the Rat.**  
R.S. Takazawa, S-N. Lin, and S.D. Murphy, Dept. Biochemical Molecular Biology, Univ. of TX. Medical School, Houston, TX.
- #365 **Disposition and Anticholinesterase Activity of Carbosulfan [2,3-Dihydro-2,2-Dimethyl-7-Benzofuranyl (DI-N-Butylaminosulfonyl) (Menthyl) Carbamate] in the Rat After Intravenous and Oral Exposures.**  
B.E. Renzi and R.I. Krieger, Veterinary Medicine, University of Idaho, Moscow, ID.
- #366 **Pathway of Carbamate Ester Hydrolysis in Rats.**  
W.R. Mundy and H.W. Dorough, Entomology-Toxicology University of Kentucky, Lexington, KY.
- #367 **The Role of Liver in Mediating the Acute Toxicity of Chlorpyrifos and Parathion.**  
L.G. Sultatos<sup>1</sup>, and S.D. Murphy<sup>2</sup>. The Louisiana State University, Department of Pharmacology New Orleans, LA<sup>1</sup> and Department Environmental Health, University of Washington, Seattle, WA<sup>2</sup>.
- #368 **Metabolism and Disposition of Sodium Cyanurate in the Dog.**  
S.J. Barbee, Olin Corp., New Haven, CT; T. Cascieri, FMC Corp., Princeton, NJ; B.G. Hammond, Monsanto Co., St. Louis, MO; T. Inoue, Nissan Chemical Co., New York, NY; Ishida, Shikoku Chemicals, Los Angeles, CA; A.G. Wheeler, ICI Americas, Inc., Wilmington, DE; M. Chadwick, D. Hayes, J. Macauley, M. McComish, A.D. Little, Inc., Cambridge, MA.
- #369 **Dose-Dependent Pharmacokinetics of the Herbicide Buthidazole in Rats and Mice.**  
Y.H. Atallah, and C.C. Yu, Research Department, Velsicol Chemical Corporation, Chicago, IL.
- #370 **The Relative Toxicity of a Metabolized Versus Non-Metabolized PBB Congeners.**  
C.D. Millis, and S.D. Aust, Department of Biochemistry & Center for Environmental Toxicology, Michigan State University, East Lansing, MI.
- #371 **PCBs and PBBs: Biologic and Toxic Effects on C57BL/6J and DBA/2J Mice.**  
L.W. Robertson, A. Parkinson, S. Bandiera, I. Lambert, J. Merrill and S. Safe, Dept. of Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M University, College Station, TX.
- #372 **Reductive Metabolism and Hepatotoxicity of Halothane in Aroclor 1254 Pretreated Rats.**  
S.J. Waters, A.J. Gandolfi and I.G. Sipes, Dept. of Anesthesiology, University of Arizona, Tucson, AZ.
- #373 **The Disposition of Firemaster FF-1 (PBB) in Maternal, Fetal and Neonatal Tissues After Dosed Feed Exposure of Rat and Mouse Dams.**  
A.E. Chin, P.J. Kurtz, B.D. Carlton, A.C. Peters, and R.S. Chhabra, Battelle Memorial Institute, Columbus, OH and National Toxicology Program, NIEHS, Research Triangle Park, NC.
- #374 **Metabolism of PBB Congeners by Reconstituted Monooxygenase Systems.**  
R. Vorrman, R.A. Mills, and S.D. Aust, Department of Biochemistry and Center for Environmental Toxicology, Michigan State University, East Lansing, MI.
- #375 **Polychlorinated Dibenzofurans: Synthesis and Quantitative Structure-Activity Relationships.**  
S. Bandiera, T. Sawyer, M. Romkes, G. Mason, L. Safe and S. Safe, Dept. of Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M University, College Station, TX.



- #376 **Application of Bioassays for the Analysis of Toxic Halogenated Aromatics.**  
M.A. Denomme, S. Bandiera, T. Sawyer, G. Mason, B. Keys and S. Safe, Dept. of Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M University, College Station, TX, Dept. of Chemistry, University of Guelph, Guelph, Ontario, Canada.
- #377 **Evidence for an Additional Pathway of Polychlorinated Biphenyl (PCB) Metabolism in Dog Liver Microsomes.**  
R.G. Schnellmann and I.G. Sipes, Dept. of Pharmacology & Toxicology, College of Pharmacy, University of Arizona, Tucson, AZ.
- #378 **Binding of PCB Congeners and Metabolites to Rat Liver Cytosol Proteins.**  
A.E.M. Vickers, I.G. Sipes and K. Brendel, Dept. Pharmacology, Univ. of Arizona, Tucson, AZ. Sponsor: G.W. Lucier.
- #379 **Comparative Decontamination of Hexachlorobenzene (HCB) Exposed Rats and Rabbits by Hexadecane.**  
E. Scheuffler and K. Rozman, Dept. Pharmacology, Toxicology and Therapy, Univ. of Kansas Medical Center, Kansas City, KS, U.S.A. and Abt. für Toxikologie der GSF mbH München, Neuherberg, F.R.G.
- #380 **Trans-Stilbeneoxide Reduces Heptachlor Body Burden in Rats.**  
E. Scheuffler and K. Rozman, Dept. Pharmacology, Toxicology, and Therapy, University of Kansas Medical Center, Kansas City, KS, U.S.A.; and Abt. für Toxikologie der GSF mbH München, Neuherberg, F.R.G.
- #381 **Enhanced Elimination of Hexachlorobenzene and Pentachlorophenol from Chickens by Feeding Mineral Oil, Cholestipol, or Less Diet.**  
D. Polin, E. Lehning, B. Olson, and S. Bursian, Michigan State University, E. Lansing, MI.
- #382 **Dose- and Time-Dependency of Mono- and Di-(20Eethylhexyl) Phthalate (MEHP and DEHP) Metabolism in Rats.**  
J.C. Lhuguenot\*, E.A. Lock and C.R. Elcombe, Imperial Chemical Industries PLC, Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK, and \*E.N.S.B.A.N.A., Campus Universitaire, 2100 Dijon, France. Sponsor: I.F.H. Purchase.
- #383 **Dose- and Time-Dependency of Mono-(2-Ethylhexyl) Phthalate (MEHP) Metabolism in Primary Rat Hepatocyte Cultures.**  
J.C. Lhuguenot\*, A.M. Mitchell and C.R. Elcombe, Imperial Chemical Industries PLC, Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK, and \*E.N.S.B.A.N.A., Campus Universitaire, 2100 Dijon, France. Sponsor: I.F.H. Purchase.
- #384 **Regulation of Benzo(a) Pyrene (BP) Metabolism in Lung by Cyclic Amp.**  
V.H. Schaeffer and R.J. Rubin, Dept. Environmental Health Sciences, Johns Hopkins Univ., Baltimore, MD.
- #385 **Metabolic and Mutagenic Activation of Acetylaminofluorene (AAF) and Aminofluorene (AF) by Two 3-Methylcholanthrene (MC) Inducible Forms of Cytochrome P-450 in Rat Liver.**  
J.A. Goldstein, I.G.C. Robertson, and D.W. Sundheimer, NIEHS, Research Triangle Park, NC.
- #386 **Strain, Sex and Age Dependent Variation in the Metabolism of 2-Acetylaminofluorene (2-AAF) in Cultured Rat Hepatocytes.**  
C.A. McQueen, M.J. Miller, and G.M. Williams, American Health Foundation, Valhalla, NY.
- #387 **2,6-Dichloro-P-Phenylenediamine: Comparative Disposition in Male and Female Rats and Mice.**  
Y.M. Ioannou and H.B. Matthews, NIEHS, Research Triangle Park, NC.
- #388 **Potentiation of Hematin-Mediated Increases in Pulmonary Monooxygenase Activity by Cytosolic Protein.**  
P.A. Dean, M.J. Namkung and M.R. Juchau, Department of Pharmacology, School of Medicine, University of Washington, Seattle, WA.
- #389 **Disposition of Benzo(f)Quinoline in Rats.**  
L.S. Birnbaum, L. Johnson, NIEHS, Research Triangle Park, NC.

- #390 **Metabolism and Mutagenicity of 1-Nitropyrene in Nasal, Lung, and Liver Tissue of Rats.**  
J.A. Bond. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM. Sponsor: R.F. Henderson.
- #391 **Pharmacokinetics of <sup>14</sup>C-Sorbitan Monolaurate in Uremic Rats.**  
E. Lengle, T. Tolhurst, R. Kroes, R. Burke and L. Martis. Travenol Laboratories, Morton Grove, IL.
- #392 **Effects of Purified Versus Standard Rodent Diet on Hepatic Biotransformation Enzyme Activities.**  
D.H. Monroe, C.J. Holeski, G.M. Bellamy and D.L. Eaton. University of Washington, Seattle, WA. Sponsor: J.S. Woods.
- #393 **Whole Animal Studies of the Distribution and Metabolism of Nitro Musks in Rats.**  
H. Osamura, R. El-Rakabawy, S.S. QueHee and M.W. Tabor, Dept. of Environmental Health, Univ. Cincinnati Medical Center, Cincinnati, OH. Sponsor: H.G. Shertzer.
- #394 **Inhibition of UDPGA Glucuronyl Transferase (UDPGT) by Benzodiazepines (BZDP): Species and Isozyme Differences.**  
A.A. Levin, E. Adler and D. Gulywasz. Department of Toxicology and Pathology, Hoffmann-La Roche Inc., Nutley, NJ. Sponsor: R.M. McClain.
- #395 **Changes in Glucuronidation and Deglucuronidation in Hepatic and Extrahepatic Tissues of Aging Rats.**  
S.J. Borghoff, L.S. Birnbaum. NIEHS, Research Triangle Park, NC.
- #396 **Butylated Hydroxyanisole Increases Glucuronosyltransferase Activity and UDP-Glucuronic Acid Concentration in Mouse Small Intestine.**  
J.J. Hjelle, G.A. Hazelton and C.D. Klaassen, Dept. of Pharmacology, Toxicology & Therapy, Univ. of Kansas Medical Center, Kansas City, KS.
- #397 **A Rapid and Sensitive Method for Measurement of Adenosine 3'-Phosphate 5'-Phosphosulfate (PAPS).**  
G.A. Hazelton, J.J. Hjelle and C.D. Klaassen, Dept. of Pharmacology, Toxicology & Therapy, Univ. of Kansas Medical Center, Kansas City, KS.
- #398 **Glutathione-Cytosol and Microsomal Mediated Binding of 1,2-Dichloroethane to Polynucleotides.**  
M.A. Pereira, E.L.C. Lin and J.K. Mattox, HERL, U.S. Environmental Protection Agency, Cincinnati, OH.
- #399 **Significance of Microsomal Vitamin E Content on the Heat-Labile Glutathione Inhibition of Lipid Peroxidation.**  
J. Solti and R.D. Mavis, Division of Toxicology, Univ. of Rochester, Rochester, NY.
- #400 **Effects of 4-Hydroxy-2-Nonenal in Mice and Rats.**  
A. O'Connor, J.J. Kocsis and H.E. Ferran, Jr. Thomas Jefferson University, Philadelphia, PA.
- #401 **Loss of Microsomal Cytochrome P-450 Due to the Flavin-Containing Monooxygenase-Mediated Metabolism of Methimazole.**  
G.L. Kedderis and D.E. Rickert, Chemical Industries Institute Toxicology, Research Triangle Park, NC.
- #402 **Catalytic Characteristics of the Microsome Bound Fad-Containing Monooxygenase: A Species and Organ Comparison.**  
R.E. Tynes and E. Hodgson, Interdepartmental Toxicology Program, N.C. State University, Raleigh, NC.
- #403 **Metabolism of Phosphorus-Containing Compounds by Pig Liver Microsomal Fad-Containing Monooxygenase.**  
B.P. Smyser and E. Hodgson, Interdepartmental Toxicology Program, N.C. State University, Raleigh, NC.
- #404 **DT—Diaphorase and Horseradish Peroxidase Influence the Covalent Binding of Reactive Metabolites of Benzene.**  
R.C. Smart and V.G. Zannoni. Toxicology Program, Dept. of Environmental & Industrial Health, The Univ. of Michigan, Ann Arbor, MI. Sponsor: A.P. Kulkarni.

- #405      **Identification of Reactive Metabolites of Toxic Methylfurans.**  
V. Ravindranath, L.T. Burka and M.R. Boyd, NCI, Bethesda, MD.
- #406      **In Vitro Metabolism of Verapamil: Effects of Phenobarbital, SKF-525A, and Propranolol.**  
S.R. Hamann, T.G. Tan, K.E. Kaltenborn, M. Vore, and R.G. McAllister. VA Medical Center, Graduate Center for Toxicology and Departments of Pharmacology and Medicine, Univ. of Kentucky, Lexington, KY. Sponsor: S.D. Harrison.
- #407      **In Vitro Hydrolysis of Selected Plasticizers by Rat Gut Homogenates.**  
J.A. Fox, P.M. Enriquez, and G.D. DiVincenzo. Health, Safety and Human Factors Laboratory, Eastman Kodak Co., Rochester, NY.
- #408      **Regional Differences in the Activation of Spironolactone (SL) by Guinea Pig Adrenal Cortical Microsomes.**  
J.H. Sherry, P.B. Johnson, M.R. Pope, and H.D. Colby. West Virginia Univ. Medical Center, Morgantown, WV.
- #409      **Drug-Induced Membrane Changes in the Rough Endoplasmic Reticulum of Rat Liver.**  
R.A. Martin, C.J. DiFonzo, J.M. Sturgess, G. Feuer and F.A. de la Iglesia. Pathological Experimental Toxicology, Warner-Lambert/Parke-Davis Pharmaceuticals Research, Ann Arbor, MI and Mississauga, Ont. and Clinical Biochemistry, University of Toronto, Toronto, Ont.
- #410      **The Effect of Cyanide on Isolated Aorta Strips from the Dog, Rabbit, and Ferret.**  
C.P. Robinson, S.I. Baskin, and D.R. Franz. Pharmacodynamics and Toxicology, University of Oklahoma, Oklahoma City, OK, and USA Medical Research Institute of Chemical Defense, APG MD.
- #411      **Comparison of Lactate Dehydrogenase Release and Malonaldehyde Production for Assessment of Cytotoxicity in Primary Cultures of Rat Hepatocytes.**  
C.B. Salocks, J.J. Ma, and F. Joachim. Materials Toxicology Department, H60/282, IBM Corporation, San Jose, CA. Sponsor: G.M. Decad.
- #412      **Human Placental Ca<sup>2+</sup> ATPase: Effect of Organochlorine Pesticides and Polyamines.**  
K.A. Treinen, A.P. Kulkarni. Toxicology Program, Dept. of Environmental & Industrial Health, University of Michigan, Ann Arbor, MI.

**THURSDAY MORNING, MARCH 15  
GRAND BALLROOM C**

**PLATFORM SESSION 10: Oncogenesis/  
Mutagenesis III**

**Co-Chairs:** G.R. Thompson, Int'l. Flavors & Fragrances, Union Beach, NJ  
E.J. Massaro, Penn State University, University Park, PA

- #413    8:30    **Cell Kinetics in Mouse Lung Initiated With Urethan and Promoted by Butylated Hydroxytoluene.**  
H.P. Witschi and C.C. Morse. Biology Division and Univ. of Tennessee-Oak Ridge Graduate School of Biomedical Sciences, Oak Ridge National Laboratory, Oak Ridge, TN.
- #414    8:45    **Modification of Lung Tumor Development in Mice by Butylated Hydroxyanisole.**  
H.P. Witschi and D.G. Doherty. Biology Division, Oak Ridge National Laboratory, Oak Ridge, TN.

- #415 9:00 **Lack of Genotoxicity of Butylated Hydroxyanisole (BHA) and Butylated Hydroxytoluene (BHT).**  
G.M. Williams, T. Shimada, C. McQueen, C. Tong, and S. Ved Brat. Naylor Dana Institute for Disease Prevention, American Health Foundation, Dana Road, Valhalla, NY.
- #416 9:15 **Effects of  $\alpha$  and  $\beta$  Hexachlorocyclohexane During Tumor Development in Mouse Liver.**  
F. Iverson, L. Tryphonas and E. Lok. Toxicology Research Division, Food Directorate, Health Protection Branch, Ottawa, Ontario, Canada.
- #417 9:30 **Interaction of the Hepatocarcinogen Aflatoxin B<sub>1</sub> with the Ribosomal RNA Gene of Rat Liver Mitochondrial DNA.**  
T. Rick Irvin, Dept. of Vet. Public Health, Texas A&M University, College Station, TX. Sponsor: T.D. Phillips.
- #418 9:45 **Development of  $\nu$ -Glutamyltranspeptidase Positive (GGT+) FOCI in Hepatocytes of Rats Administered Aflatoxin B<sub>1</sub> Over a Ten-Fold Dose Range.**  
G.E. Dunaif and T.C. Campbell, Field of Environmental Toxicology, Cornell University, Ithaca, NY.
- #419 10:00 **Ploidy Alterations in Partially Hepatectomized Rats Given Mirex or DMN.**  
C. Kruger-McDermott and R. Abraham. Institute of Experimental Pathology and Toxicology, Albany Medical College, Albany, NY.
- #420 10:15 **Hepatocarcinogenesis in Fischer Rats Following Limited Exposures to N-2-Fluorenylacetamide (FAA).**  
J.R.P. Cabral and G.E. Neal. International Agency for Research on Cancer, Lyon, France and Medical Research Council, Toxicology Unit, Carshalton, U.K.
- #421 10:30 **Effect of Benzene on DNA Synthesis in Mice Hemopoietic Cells Following Exposure by Inhalation.**  
E.W. Lee, Biomedical Science Dept., GM Research Labs, Warren, MI.
- #422 10:45 **The Genotoxicity of Dichloromethane, Benzene and Other Organic Solvents.**  
A.M. Back, A.K. Thilagar, J.J. Clarke, and P.E. Kirby, Microbiological Associates, Bethesda, MD.
- #423 11:00 **Inhibition of Replication in Rat Liver Mitochondria by Benzene Metabolites.**  
C. Schwartz, R. Snyder, and G. Kalf, Dept. of Pharmacology and Toxicology, Rutgers Univ., Piscataway, NJ and Depts. of Biochemistry and Pathology, Thomas Jefferson, Univ., Phila., PA.
- #424 11:15 **N-Nitrosodimethylamine-Induced Forestomach Tumors in Zinc Deficient Rats.**  
P.M. Newberne, L. Fong, and W.L. Ng. Massachusetts Institute of Technology, Cambridge, MA.
- #425 11:30 **Enhanced Esophageal Carcinogenesis by Riboflavin Deficiency.**  
P.M. Newberne. Massachusetts Institute of Technology, Cambridge, MA.
- #426 11:45 **Asbestos and Fiberglass Transform Rat Tracheal Epithelial Cells in Culture.**  
T.W. Hesterberg, B. Evrenidis, J.C. Barrett, and P. Nettesheim. NIEHS, Research Triangle Park, NC. Sponsor: R.L. Dixon.

**THURSDAY MORNING, MARCH 15  
GRAND BALLROOM WEST**

**PLATFORM SESSION 11: Immunotoxicology I**

**Co-Chairs:** D. Amacher, Pfitzer, Inc. Groton, CT  
L.D. Koller, University of Idaho, Moscow, ID

- #427 8:30 **Absence of Immunotoxic Effects of Inhaled Isobutyl Nitrite in Balb/c Mice.**  
D.M. Lewis, W.A. Koller, D.W. Lynch, and T.J. Spira. National Institute for Occupational Safety and Health, Division of Respiratory Disease, Morgantown, WV, Division of Biomedical and Behavioral Science, Cincinnati, OH, and Centers for Disease Control, Atlanta, GA. Sponsor: T.R. Lewis.

- #428 8:45 **Concentration-Response Governs Respiratory Hypersensitivity to Bacterial Subtilisin.**  
M.H. Karol, E.J. Riley and C.M. Magreni, Dept. of Industrial Environmental Health Science, Graduate School of Public Health, University of Pittsburgh, Pittsburgh, PA.
- #429 9:00 **Clinical and Experimental Evaluation of the Allergenicity of a Psyllium Laxative.**  
W.F. Gauss, J.P. Alarie and M.H. Karol, Dept. of Industrial Environmental Health Science, Graduate School of Public Health, University of Pittsburgh, Pittsburgh, PA.
- #430 9:15 **Manganese Chloride Enhances Natural Cell-Mediated Immune Effector Cell Function.**  
R.J. Smialowicz, R.R. Rogers, R.W. Luebke, M.M. Riddle, D.G. Rowe and R.J. Garner, U.S. EPA, Research Triangle Park, NC. Sponsor: N. Chernoff.
- #431 9:30 **Immunosuppression by Alkylating Agents: A Proposed Biochemical Mechanism.**  
C.O. Joe and D.L. Busbee, Department of Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M University, College Station, TX. Sponsor: T.D. Phillips.
- #432 9:45 **Spermicide-Induced Alterations in the Immune and Hematological Systems in Mice.**  
L.D. Caren,<sup>1</sup> J.A. Leveque,<sup>1</sup> and A.D. Mandel,<sup>2</sup> <sup>1</sup>Dept. of Biology, Univ. of Santa Clara, Santa Clara, CA and <sup>2</sup>NASA Ames Research Center, Moffett Field, CA. Sponsor: J. Wesley Clayton.
- #433 10:00 **Dose-Response for Contact Sensitivity Provides a Method for Evaluating the Sensitizing Potency of Chemicals.**  
J.C. Stadler and M.H. Karol, Dept. of Industrial Environmental Health Science, Graduate School Public Health, Univ. of Pittsburgh, Pittsburgh, PA.
- #434 10:15 **Assessment of Delayed Contact Hypersensitivity in Mice.**  
K.W. Johnson, M.P. Holsapple, K.L. White, Jr., and A.E. Munson, Depts. of Microbiology and Immunology and Pharmacology and Toxicology, Medical College of VA, Richmond, VA.
- #435 10:30 **Evaluation of the Murine Model for Predictive Allergic Contact Dermatitis.**  
M.A. Thomson<sup>1</sup>, B.O. Brooks<sup>2</sup>, T.J. Stephens<sup>1</sup>, R.B. Drotman<sup>3</sup> and J.G. Babish<sup>1</sup>. <sup>1</sup>Dept. of Veterinary Preventive Medicine Cornell University, Ithaca, NY. <sup>2</sup>Dept. of Health Effects Research, IBM Corp., Boulder, CO. <sup>3</sup>Product Safety Dept., Mary Kay Cosmetics, Dallas, TX.
- #436 10:45 **Effect of Repeated Low Level T-2 Toxin Exposure on the Murine Immune System.**  
M.J. Taylor, R.V. Reddy, R.P. Sharma, Toxicology Program, Utah State University, Logan, UT.
- #437 11:00 **Altered Immunocompetence and Host Resistance to Murine Malaria in Tumor Susceptible Obese Yellow (AVY-) Mice.**  
D.W. Roberts, R.L. Suber, W.L. Campbell, R.W. Benson and G.L. Wolff, National Center for Toxicological Research, Jefferson, AR.
- #438 11:15 **Delta-9-Tetrahydrocannabinol Decreases Host Resistance to Herpes Simplex Virus Type 2 Vaginal Infection.**  
Mishkin, E.; Marciano-Cabral, F.; and Cabral, G.A. Sponsored by: S.G. Bradley.
- #439 11:30 **Membrane-Mediated Effects of Estrogen Metabolites on Lymphocyte and Macrophage Activation and Effector Cell Function.**  
R.W. Pfeifer and R.M. Patterson, STB, NIEHS, P.O. Box 12233, Research Triangle Park, NC. Sponsor: J.A. Goldstein.
- #440 11:45 **Correlations Between Polychlorinated Biphenyl (PCB) Isomer Immunotoxicity, Microsomal Enzyme Induction, and the Aromatic Hydrocarbon (Ah) Receptor.**  
J.B. Silkworth, L. Antrim, and L.S. Kaminsky, Center for Laboratories and Research, New York State Department of Health, Albany, NY.

**Displayed:** 8:30 A.M. - 11:30 A.M.  
**Attended:** 8:30 A.M. - 10:00 A.M. (Even Paper Numbers)  
10:00 A.M. - 11:30 A.M. (Odd Paper Numbers)

- #455 **Altered Neuromuscular Transmission Following Acute Thallium Administration.**  
W.D. Atchison and M. Roesner. Dept. of Pharmacology and Toxicology, Center for Environmental Toxicology, Michigan State University, East Lansing, MI.
- #456 **Visual Cortical and Hippocampal Loss of Gabaergic Receptors in Lead Exposed Rats: Electrophysiological and Pharmacological Correlates.**  
D.A. Fox and L.G. Costa. College of Optometry, University Houston, Houston, TX and Dept. Environmental Health, Seattle, WA.
- #457 **Effects of Triethyl and Trimethyl Tin and Lead on Regional Content of Amino Acids in the Rat Brain.**  
T.J. Walsh, W.E. Wilson, P.N. Hudson, T. Kanamatsu, J.S. Hong and H.A. Tilson. National Institute of Environmental Health Sciences, Research Triangle Park, NC.
- #458 **The Mobilization of Intracellular Cadmium Deposits under the Influence of Dithiocarbamates.**  
Mark M. Jones, Shirley G. Jones and Leslie A. Shinobu. Dept. of Chemistry and Center in Environmental Toxicology, Vanderbilt University, Nashville, TN.
- #459 **Effects of Cadmium, Diet and Reproductive History on Bone Parameters in Mice.**  
M.H. Bhattacharyya, B.D. Whelton, L.L. Williams, J.M. Toomey, D.P. Peterson and E.S. Moretti. Argonne National Laboratory, Argonne, IL. Sponsor: B.A. Fowler.
- #460 **Enhanced Accumulation of Manganese in Rat Lung: A Possible Explanation for the Increased Toxicity in MMT in the Rat.**  
P.A. McGinley, J.B. Morris, G. Gianutsos. Section of Pharmacology and Toxicology, School of Pharmacy, University of Connecticut, Storrs, CT.
- #461 **Trimethyl Tin and Triethyl Tin in Rats Responding Under a DRL 10-14 Sec Schedule of Reinforcement.**  
G.R. Wenger, D.E. McMillan and L.W. Chang. Dept. of Pharmacology and Interdisciplinary Toxicology and Dept. of Pathology, University Arkansas For Medical Science, Little Rock, AR.
- #462 **Rat Testicular Cd-Binding Proteins: Apparent Source of the Low-Molecular Weight (MW) Protein.**  
M.P. Waalkes, S.B. Chernoff and C.D. Klaassen. Dept. of Pharmacology, Toxicology & Therapeutics, University of Kansas Medical Center, Kansas City, KS.
- #463 **Trimethyltin Exposure Retards Serial Pattern Anticipation Learning in Rats.**  
S.B. Fountain and Z. Annau. Dept of Environmental Health Sciences, The John Hopkins University, Baltimore, MD.
- #464 **The Impact of Dietary Selenium (SE) and Vitamin E (Vit. E) on <sup>14</sup>C-Arachidonic Acid Metabolism in Aortas and Platelets of Smoked Rats.**  
M.A. Valentovic, C. Gairola, W.C. Lubawy. College of Pharmacology, Tob. and Health Research Institute, University of Kentucky, Lexington, KY. Sponsor: S.D. Harrison, Jr.
- #465 **Blood PB, ALAD, and ZPP in Calves Receiving Low Doses of Lead.**  
J. Zumudzki, G.R. Bratton. Dept. of Veterinary Anatomy, Texas A&M University, College Station, TX. Sponsor: T.D. Phillips.
- #466 **Omaha Childhood Blood Lead and Environmental Lead: A Linear Total Exposure Model.**  
C.R. Angle, A. Marcus, I.H. Cheng, and M.S. McIntire. University of Nebraska Medical Center, Omaha, NE.

- #467 **Estimation of Renal Mercury Burden in Rats by Chelation with Dimercapto Propane Sulfonate.**  
M.G. Cherian<sup>1</sup>, E. Miles and T.W. Clarkson. Dept. Pathology, University Western Ontario, London, Canada<sup>2</sup>; Dept. Radiology Biology Biophysics, University Rochester, School of Medicine, Rochester, NY.
- #468 **Cadmium and Lead Concentrations in the Human Amniotic Fluids of Smokers and Non-Smokers.**  
C.P. Siegers, J. Jungblut, F. Klink, and F. Oberheuser. Departments of Toxicology, Gynecology and Obstetrics, Medical School of Lubeck (FRG).
- #469 **In Vitro Enhancement of Cellular Glutathione Levels following Cadmium, Mercury and Vanadium Treatment.**  
W.M. Bracken and R.P. Sharma. Dept. Pharmacology, Toxicology & Therapeutics, University of Kansas Medical Center, Kansas City, KS and Toxicology Program, Utah State University, Logan, UT.
- #470 **Chelate Antidotes for Gold (Sodium BIS(thiosulfate) Gold (I) Intoxication in Mice.**  
Mark A. Basinger, Mark M. Jones, William M. Mitchell, Robert L. Forti and Stephen J. Gibbs. Departments of Chemistry and Pathology and Center in Environmental Toxicology, Vanderbilt University, Nashville, TN.
- #471 **The Effects of Trimethyltin Chloride (TMTc) on Acetylcholinesterase (AChE) in the Hippocampus of Rat Brain.**  
D.G. Robertson, R.H. Gray, R.J. Richardson, and F.A. de la Iglesia. Dept. Environmental Industrial Health, University of Michigan; Dept. Pathology Experimental Toxicology, Warner-Lambert/Parke-Davis Pharmaceutical Research, Ann Arbor, MI.
- #472 **Subacute Comparative Toxicity Study of Lead Sulfate and Lead Dioxide.**  
W.J. Powers, S.C. Gad, S.B. Mulder and K.M. Siino. Allied Corp., Dept. of Toxicology, Morristown, NJ.
- #473 **Effect of Lead Treatment During Pregnancy and Lactation on Vitamin D Metabolism.**  
M.E. Shackelford and M.H. Bhattacharyya. Argonne National Laboratory, Argonne, IL. Sponsor: B.A. Fowler
- #474 **Urinary Calcium and Zinc Excretion in Lead Exposed Rats during Calcium, Disodium EDTA Treatment.**  
W. Victory, C.R. Miller, and R.A. Goyer. National Institute of Environmental Health Sciences, Research Triangle Park, NC.
- #475 **Utilization of Urinary Enzyme Assays to Monitor Renal Toxicity in F344 Rats after Prolonged Mercuric Chloride Treatment.**  
M.P. Dieter, M.B. Powers<sup>1</sup>, J.H. Riley<sup>2</sup>, J.H. Thorstenson<sup>2</sup>, and L.C. Uraih<sup>2</sup>, NIEHS, P.O. Box 12233, Research Triangle Park, NC; <sup>1</sup>NIH, Westwood Towers, 9000 Rockville Pike, Bethesda, MD; <sup>2</sup>IRDC, Mattawan, MI.
- #476 **Effects of Trimethyltin on the Auditory System of Rats as Reflected in the Brainstem Auditory Evoked Response (BAER).**  
R. Janssen and R.S. Dyer. US EPA, Neurotoxicology Division, Research Triangle Park, NC. Sponsor: L.W. Reiter.
- #477 **Effects of Chronic Lead Exposure on Behavioral Reaction to a Complex, Novel Environment in Adult Rhesus Monkeys.**  
N.K. Laughlin and R.E. Bowman, Psychology Primate Laboratory, University of Wisconsin, Madison, WI. Sponsor: R.E. Peterson.
- #478 **Comparison of Metal Neurotoxicity: Biochemical Changes in Brain Regions and Analysis of Patterns of Behavior.**  
D.R. Brown, M. Cleaves, R. Schatz, and B. Callahan. Northeastern University, Boston, MA.
- #479 **Four Essential Trace Metals and Three Specific Organ Weights in Rats with Restricted Dietary Food Intake.**  
B.C. Lee, K.L. Stemmer, and H.G. Petering. Kettering Lab (#56), University Cincinnati Medical Center, Cincinnati, OH.

- #480 **Effect of Pulmonary Instillation of Gallium Arsenide on the Biochemical and Histological Composition of the Rat Lung.**  
D.R. Webb, S. Wilson and D.E. Carter. Dept. of Pharmacology & Toxicology, University of Arizona, Tucson, AZ.
- #481 **The Role of Iron on the Intestinal Uptake of Cd in the Newborn Rat.**  
L. Leon and D.R. Johnson, Dept. Environmental Health, University Cincinnati Medical Center, Cincinnati, OH. Sponsor: P.B. Hammond.
- #482 **An Investigation of the Mechanism of Lead Toxicity in Smooth Muscle.**  
I.J. Boyer and V. DiStefano. Division of Toxicology, Depts. of RB&B and Pharmacology, University of Rochester School of Medicine, Rochester, NY. Sponsor: George G. Berg.
- #483 **Effect of Chronic Ingestion of Lead on In Vitro Contractile Response of Rat Forestomach, Ileum and Colon.**  
C.T. Walsh and E.B. Ryden. Dept. of Pharmacology, Boston University Medical Center, Boston, MA. Sponsor: J.A. Hayes.
- #484 **Ototoxic Effects of Triethyltin: Electrophysiological and Histological Correlates.**  
B.N. Evans, A. Yonovitz and D.A. Fox. University Texas Graduate School Biomedical Science and College of Optometry, University of Houston, Houston, TX.
- #485 **Fetal Uptake of Mercury in Pregnant Rats Exposed to Elemental Mercury Vapor.**  
G.S. Rao, Y.S. Tong, and V. Radchenko, Research Institute, American Dental Association Health Foundation, Chicago, IL.
- #486 **Studies on Human Fetal Hepatic and Placental Zinc-Metallothionein (MT).**  
S.R. Clough, R.S. Mitra, J.J. LaFerla, and A.P. Kulkarni, Toxicology Program, Dept. of Environmental and Industrial Health, The University of Michigan, Ann Arbor, MI.
- #487 **Effect of Lead Intoxication on Ca Metabolism in Cultured Bovine Brain Capillary Endothelial (BBE) Cells.**  
A.C. Nye and J.G. Pounds, National Center for Toxicological Research, Jefferson, AR and Division of Interdisciplinary Toxicology, University of Arkansas for Medical Sciences, Little Rock, AR, and P.D. Bowman and G.W. Goldstein, University of Michigan, Ann Arbor, MI.
- #488 **Effect of the Calmodulin Inhibitor, Trifluoperazine (TFP), on the Cellular Metabolism of Calcium-45 and Lead-210 in Cultured Rat Hepatocytes.**  
J.G. Pounds and A.C. Nye. National Center for Toxicological Research, Jefferson, AR and Division of Interdisciplinary Toxicology, University of Arkansas for Medical Science, Little Rock, AR.
- #489 **Platelet Uptake of Cadmium.**  
J.L. Cox and S.D. Harrison, Jr. Graduate Center for Toxicology, University of Kentucky, Lexington, KY.
- #490 **Effects of Methylmercury and Sodium Selenite on Tissue Levels of Calcium, Copper, Iron and Zinc in Guinea Pigs.**  
E. Komsta-Szumaska, K.R. Reuhl and D.R. Miller. Sponsor: C.T. Miller.
- #491 **Intestinal Absorption of Pb and Its Influence on Zn Absorption.**  
L.B. Sasser, R.J. Chertok, D.K. Burbank, and F.H. Cross. Pacific Northwest Laboratory, Richland, WA.
- #492 **Methylmercury Neurotoxicity in the Rat. I. Tissue Content of Organic and Inorganic Mercury.**  
R.J. Hargreaves, I.R. Rowland, S.R. Moorhouse, D. Pelling, S.D. Gangolli, British Industrial Biological Research Association, Carshalton, Surrey, U.K.
- #493 **Methylmercury Neurotoxicity in the Rat. II. Localization of Mercury in the CNS.**  
R.J. Hargreaves, J.R. Foster, S.R. Moorhouse, D. Pelling, S.D. Gangolli, British Industrial Biological Research Association, Carshalton, Surrey, U.K.



- #494      **Methylmercury Neurotoxicity in the Rat. III. Cerebral Blood Flow and Blood-Brain Barrier Function.**  
R.J. Hargreaves, S.R. Moorhouse, D. Pelling, S.D. Gangolli, British Industrial Biological Research Association, Carshalton, Surrey, U.K.
- #495      **Experimental Lead Toxicity in the Ring-Necked Duck.**  
M. Mautino, C.W. Jeske and J.U. Bell, Dept. of Preventive Medicine, University of Florida, Gainesville, FL.
- #496      **Lead Induced Modification of Behavior is Dependent on the Age at which Rats are Exposed.**  
D.H. Taylor, K.E. LaGory, C. Barnes, D.J. Zaccaro, R.J. Pfohl and R.J. Bull, Dept. of Zoology, Miami University, Oxford, OH and Toxicology and Microbiology Division, HERL, USEPA, Cincinnati, OH.
- #497      **Effect of Animal Caging on Response of Rats to Uranium Toxicity.**  
E.G. Damon, A.F. Eidson and T.C. Marshall, Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM.
- #498      **Protection Against Cadmium Toxicity in Isolated Rat Hepatocytes by Zinc Pre-Induction of Metallothionein.**  
W.S. Din, and J.M. Frazier, Dept. of Environmental Health Science, Johns Hopkins University, Baltimore, MD.
- #499      **Behavioral Changes in the Absence of Zinc Protoporphyrin Elevation during Chronic Postweaning Lead Exposure of the Rat.**  
D.A. Cory-Slechta and B. Weiss, Division of Toxicology, Dept. of Radiology, Biology & Biophysics, University of Rochester School of Medicine and Dentistry, Rochester, NY.
- #500      **Alterations in Fixed Ratio Performance and Zinc Protoporphyrin Levels Produced by Chronic Lead Exposure.**  
D.A. Cory-Slechta, Division of Toxicology, Dept. of Rad. Biology & Biophysics, University of Rochester School of Medicine and Dentistry, Rochester, NY.
- #501      **Behavioral and Biological Toxicity of Chronic Postweaning Lead Exposure in the Mouse.**  
D.A. Cory-Slechta and B. Weiss, Division of Toxicology, Dept. of Radiology, Biology & Biophysics, University of Rochester School of Medicine and Dentistry, Rochester, NY.

**THURSDAY MORNING, MARCH 15  
REAR OF GALLERIA EXHIBIT AREA**

**POSTER SESSION 5B: Methods/Tech II**

**Co-Chairs:** T.F. Smith, IBM, White Plains, NY  
E.V. Buehler, Procter & Gamble Co., Cincinnati, OH

**Displayed:** 8:30 A.M. - 11:30 A.M.  
**Attended:** 8:30 A.M. - 10:00 A.M. (Even Paper Numbers)  
10:00 A.M. - 11:30 A.M. (Odd Paper Numbers)

- #502      **Computer Control of Inhalation Exposure Systems.**  
J.A. Dozier, J.E. Montrone and D.B. Menzel, Depts. of Pharmacology and Medicine, Comprehensive Cancer Center, Duke University Medical Center, Durham, NC.
- #503      **Combined Unit for Housing and Nose-Only Exposures in Conduct of Inhalation Carcinogenesis Studies.**  
R.K. Wolff, J.A. Lopez, I. Wolf, W.F. Beierman, M.D. Hoover and R.O. McClellan, Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM.

- #504 **A Computer-Assisted System for Inhalation Toxicology.**  
R.W. O'Connor and B. Adkins, Jr. Northrop Services, Inc., Research Triangle Park, NC. Sponsor: D.E. Gardner.
- #505 **An Automated Method for Determining Bronchoreactivity in Small Awake Mammals.**  
J.L. Tepper, M.J. Wiester\*, C.J. Setzer, W.A. Schutt, Jr., M.F. Weber, and J.A. Graham \* Northrop Services, Inc., RTP, NC; \*USEPA, RTP, NC.
- #506 **Use of a Combined Hepatocyte-Erythrocyte System for Studying Cyanide and Antidote Action.**  
S.J. Gee, C.E. Green and C.A. Tyson, SRI International, Menlo Park, CA.
- #507 **Chemical Induction of Cataracts: Toxicity Test Duration.**  
K.J. Falahee, C.S. Rose, and D. Sawhney, Tracor Jitco, Inc., Rockville, MD and Environmental Protection Agency, Washington, DC.
- #508 **Hemogram and Coagulation Data: A Real Time Data Collection and Reporting System.**  
R. Ruhren, V. Soni, T. Scarnecchia, R.A. Schroer, M. Brodeck, Medical Research Division/Information Services Division, American Cyanamid Co., Pearl River, NY. Sponsor: B. Sparano.
- #509 **Toxicological Use of Three Microassays for Iodine and Iodide.**  
H.G. Shertzer and M.W. Tabor, Kettering Lab, University of Cincinnati Medical Center, Cincinnati, OH.
- #510 **Quantitative Digestion of Dimethylarsenic Acid to Inorganic Arsenic and Analysis using Direct Hydride AAS.**  
D.R. Webb and D.E. Carter, Dept. of Pharmacology & Toxicology, University of Arizona, Tucson, AZ.
- #511 **A Micro-Column Method for Aflatoxin Detection.**  
E.C. Shepherd and T.D. Phillips, Dept. of Veterinary Public Health, College of Veterinary Medicine, Texas A&M University, College Station, TX.
- #512 **Quantitation of Tritium Exchange in In Vitro and In Vivo Experiments using Tritium Labeled Aflatoxin B<sup>1</sup>.**  
H.E. Olsen, Y. Shao and D.P.H. Hsieh, Dept. of Environmental Toxicology, University of California, Davis, CA.
- #513 **Analytical Procedures for Determination of Polychlorinated Dibenzo-p-Dioxins and Related Compounds in Human and Animal Tissues.**  
M.L. Taylor, T.O. Tiernan, J.H. Garrett, G.F. VanNess, N.J. Fendinger, D.J. Wagel, C.E. Everson, S.R. Bultman, G.L. Ferguson, J.G. Solch, Wright State University, Dayton, OH.
- #514 **Trypan Blue Uptake as a New Method for Studying Hepatotoxicity in Perfused Liver.**  
S.A. Belinsky a, J.A. Popp b, F.C. Kauffman c, and R.G. Thurman a, Depts. of Pharmacology, University of NC a, Chapel Hill, NC; University of Maryland c, Baltimore, MD. and CIIT b, RTP, NC.
- #515 **Assessment of Isolated Hepatocytes in Suspension for Toxicological Prescreening.**  
C. Babiuk and J. Brodeur, Dep. med. trav. et hyg. mil., University de Montreal, Montreal, Canada.
- #516 **Measurement of In Vivo Lipid Peroxidation using the Thiobarbituric Acid Assay for Lipid Hydroperoxides.**  
D.T. Kirkpatrick and R.D. Mavis, Division of Toxicology, University of Rochester Medical Center, Rochester, NY.
- #517 **Use of a Modified 109-Cadmium Hemoglobin Assay for Quantitation of Metallothionein in Biological Tissues.**  
G.J. Chellman and G.L. Diamond, Division of Toxicology, University of Rochester, Rochester, NY. Sponsor: F.A. Smith.
- #518 **Electrical Potential Response of Alveolar Type II Cells as a Sensitive Indicator of Direct Membrane Damage.**  
R.L. Gallo, J.N. Finkelstein, R.H. Notter, P. Rubin, D.L. Shapiro, University of Rochester School of Medicine, Rochester, NY. Sponsor: R.D. Mavis.

- #519 **The Sensitivity of Various Cultured Primary, Cloned, and Transformed Cells to Disobutamide-Induced Cytoplasmic Vacuoles.**  
Z. Ruben, S.N. Anderson, and G.C. Fuller. Searle Research and Development, 4901 Searle Parkway, Skokie, IL.
- #520 **A Flow-Through Diffusion Cell for Percutaneous Absorption Studies.**  
R.L. Bronaugh and R.F. Stewart, Food and Drug Administration, Washington, DC. Sponsor: H. Blumenthal.
- #521 **Estimation and Analysis of the Dose-Response Surfaces Associated with Drug Combinations.**  
J.D. Wilson, W.H. Carter and R.A. Carchman, Depts. of Radiology, Biostatistics, and Pharmacology and Toxicology, Medical College of VA, Richmond, VA. Sponsor: A. Munson.
- #522 **Quantitative Risk Estimates: Empirical Distributions and Confidence Bounds.**  
R.D. Buck and T.B. Starr, Chemical Industrial Institute of Toxicology, Research Triangle Park, NC. Sponsor: J.E. Gibson.
- #523 **A Cigarette Smoke Exposure Model for Assessing Effects on Cardiovascular Tissue Calcium Receptors in Rats.**  
S.D. Harrison, Jr. and J.L. Cox, Graduate Center for Toxicology, University of Kentucky, Lexington, KY.

---

Thursday, March 15, 1984  
**AMERICAN BOARD OF TOXICOLOGY**  
12:00 Noon - 1:30 P.M.  
GRAND SALON WEST  
**Charles E. Reinhardt, Presiding**  
All attendees welcome!

---

**THURSDAY AFTERNOON, MARCH 15**  
**GRAND BALLROOM EAST**

**SYMPOSIUM 6: Development and Assessment of  
Fibrosis**

**Chairman:** George C. Fuller, G.D. Searle & Co., Skokie, IL.

**Time  
(P.M.)**

1:30 **Introduction.**

1:40 **"How Do Fibroblasts Synthesize Collagen Fibers and How Can the Process be Modulated?"**  
Darwin J. Prockop, M.D., Ph.D. Chairman and Professor of Biochemistry, Rutgers Medical School.

2:10 **Discussion.**

- 2:25 **"Changes in the Collagen Pathway Associated with Fibrosis"**.  
Jerold A. Last, Ph.D. Associate Professor of Internal Medicine & Biochemistry,  
University of California, Davis.
- 2:55 **Discussion.**
- 3:10 **"Cellular Sources of Fibrotic Collagen"**.  
Robert F. Diegelmann, Ph.D. Associate Professor of Surgery and  
Biochemistry, Medical College of Virginia.
- 3:40 **Discussion.**
- 3:55 **"Mediators of Increased Collagen Synthesis in Fibrosing Organs"**.  
Jerome M. Seyer, Ph.D. Professor of Biochemistry, University of Tennessee,  
Memphis.
- 4:25 **Discussion.**
- 4:40 **"The Many Faces of an Increase in Lung Collagen"**.  
Hanspeter Witschi, M.D. Section Head, Toxicology Oak Ridge National  
Laboratory.
- Discussion follows.**

**ANNUAL BANQUET**  
Thursday Evening, March 15, 1984  
7:00 P.M.  
**GRAND BALLROOM WEST**  
Open to all attendees and guests  
Complimentary Wine  
Courtesy, Charles River Breeding Laboratories, Inc.

**THURSDAY AFTERNOON, MARCH 15**  
**GRAND SALON EAST**

**PLATFORM SESSION 13: In Vitro/Metabolism**

**Co-Chairs:** L. Kaminsky, Health Department, New York State, Albany, NY  
D. Desai, University of Mississippi Medical Center, Jackson, MS.

- #524 1:30 **Effects of Butylated Hydroxyanisole (BHA) on Hepatic Glucuronosyl-transferase Activities and UDP-Glucuronic Acid Metabolism in Mice.**  
G.A. Hazelton, J.J. Hjelle and C.D. Klaassen. Dept. of Pharmacology,  
Toxicology and Therapeutics, University of Kansas Medical Center, Kansas  
City, KS.

- #525 1:45 **The Effects of Glucuronide Conjugation on Benzo(a) Pyrene-Induced Cytotoxicity and Mutagenicity in the CHO/HGPRT Assay.**  
L. Recio, A.W. Hsieh. Graduate Center for Toxicology, University of Kentucky, Lexington, KY and Biology Division, Oak Ridge National Laboratory, Oak Ridge, TN.
- #526 2:00 **Reversal of Halogenated Biphenyl Inhibition of Uroporphyrinogen Decarboxylase in Chick Embryo Hepatocyte Cultures.**  
P.R. Sinclair, H.L. Bonkovsky, W.J. Bement, J.F. Sinclair, A.J. Urquart and G.H. Elder. VA Medical Center, White River Jct., VT, Dartmouth Medical School, Hanover, NH & Welsh National Medical School, Cardiff, Wales, UK. Sponsor: G. Reddy.
- #527 2:15 **Effects of Auranofin on Hepatic Drug Metabolizing Enzymes.**  
T.B. Leonard, M.E. Graichen, and J.G. Dent, SK&F Labs, Philadelphia, PA.
- #528 2:30 **The Effect of Dietary Exposure to a Mirex and Chlordecone Combination on CC1<sub>4</sub> Induced Hepatotoxicity.**  
Andrea N. Bell and Harihara M. Mehendale, Department Pharmacology & Toxicology, University MS Medical Center, Jackson, MS.
- #529 2:45 **Perturbation of Hepatocellular Calcium Homeostasis by Chlordecone and CC1<sub>4</sub> Interaction.**  
Arvind K. Agarwal and Harihara M. Mehendale, Department Pharmacology & Toxicology, The University MS Medical Center, Jackson, MS.
- #530 3:00 **The Role of Extracellular Calcium in CCL<sub>4</sub> Injury of Cultured Rat Hepatocytes.**  
K.S. Santone and D. Acosta. College of Pharmacy, The University of Texas, Austin, TX.
- #531 3:15 **Covalent Binding of [<sup>14</sup>C]N-Nitrosornicotine (NNN) Mediated by Rat Liver Microsomes.**  
M.F. Hughes, W.J. Brock and M. Vore, Graduate Center Toxicology, Department Pharmacology, University Kentucky, Lexington, KY.
- #532 3:30 **Effects of 5-Fluorouracil Analogs on DNA and RNA Synthesis in Cultured L1210 Cells after MFO Activation.**  
A.M. Shipp, M.H. Holshouser and P.W. Ferguson, School of Pharmacy, Northeast Louisiana University, Monroe, LA.
- #533 3:45 **Intermediacy of 1-Naphthol in the Covalent Binding and Pulmonary Toxicity of Naphthalene.**  
A.R. Buckpitt, L.S. Bahnson and R.B. Franklin, Community and Environmental Medicine, University of California, Irvine, CA, and Lilly Research Labs, Indianapolis, IN.
- #534 4:00 **Aqueous Chlorine and Saccharides React to Form Compound(s) which Inhibit Procine Vascular Endothelial Cell Growth in Culture.**  
L. Papa and P.T. McCauley. Toxicology and Microbiology Division, HERL, USEPA, Cincinnati, OH. Sponsor: L. Condie.
- #535 4:15 **Comparison of Several Indicators of Cytotoxicity in Rat Hepatocytes in Primary Culture.**  
C.A. McQueen, B.M. Merrill, and G.M. Williams, American Health Foundation, Valhalla, NY.
- #536 4:30 **Species Differences in the Susceptibility of Isolated Hepatocytes to Peroxidative Injury.**  
G.F. Rush. Pathology & Toxicology, Smith, Kline & French Laboratories, Philadelphia, PA. Sponsor: W.R. Hewitt.

---

**AMERICAN BOARD OF TOXICOLOGY  
BOARD MEETING**

Thursday Afternoon, March 15, 1984

1:00 p.m. — 4:00 p.m.

VIENNA ROOM

*Charles Reinhardt Presiding*

---

**THURSDAY AFTERNOON, MARCH 15  
GRAND SALON WEST**

**PLATFORM SESSION 14: Reproductive/Teratology II**

**Co-Chairs:** D.J. Thompson, Dow Chemical Co., Indianapolis, IN  
L. Fechter, Johns Hopkins University, Baltimore, MD

- #537 1:30 **Inhibition of In Vitro Fertilization of Mouse Gametes by Paraoxon.**  
K. Chou and R.M. Cook, Department of Animal Science, Michigan State University, East Lansing, MI. Sponsor: D. Polin.
- #538 1:45 **A Quantitative Morphological Study of the Stage Specificity of Spermatocyte Damage in Ethylene Glycol Monomethyl Ether (EGM) Induced Testicular Toxicity.**  
D.M. Creasy and W.H. Butler, British Industrial Biological Research Association, Woodmansterne Road, Carshalton, Surrey, U.K.
- #539 2:00 **Inhibition of Steroidogenesis in the Testes of Rats Treated with Hexafluoroacetone (HFA).**  
P.J. Gillies and K.P. Lee, E.I. du Pont de Nemours & Co., Inc., Haskell Laboratory for Toxicology and Industrial Medicine, P.O. Box 50, Elkton Road, Newark, DE.
- #540 2:15 **Depression of Rat Serum Follicle Stimulating Hormone (FSH) and Luteinizing Hormone (LH) after Exposure to 1,2-Dibromo-3-Chloropropane (DBCP).**  
E.M. Sadler and W.N. Piper, Department of Pharmacology, University of Nebraska Medical Center, Omaha, NE. Sponsor: W.O. Berndt.
- #541 2:30 **Adverse Effects of Butyl Benzyl Phthalate on Bone Marrow and the Male Reproductive System.**  
W.M. Kluwe, B.R. Maronpot, J.C. Lamb, IV and D.K. Agarwal, National Institute Environmental Health Science, Research Triangle Park, NC.
- #542 2:45 **Validation of a New Reproductive Toxicology Protocol using Diethylstilbestrol (DES) as a Model Compound.**  
J.R. Reel\*, A.D. Lawton\*, R. Woikowski-Tyl\* and J.C. Lamb, IV+, Research Triangle Institute\* and National Toxicology Program+, NIEHS, Research Triangle Park, NC.
- #543 3:00 **Reproductive Toxicity of Ethylene Glycol (EG) Studied by a New Continuous Breeding Protocol.**  
J.C. Lamb IV\*, D.K. Gulati, V.S. Russell, L. Hommel and P.S. Sabharwal, National Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, NC and Environmental Health Research and Testing, Inc., Lexington, KY.
- #544 3:15 **The Testicular Toxicity of Ethylene Glycol Monomethyl Ether (EGME) as Characterized by Mating Success, Sperm Parameters, and Histopathology.**  
R.E. Chapin, S.L. Dutton, M.D. Ross, and J.C. Lamb, IV, National Toxicology Program, NIEHS, Post Office Box 12233, Research Triangle Park, NC.
- #545 3:30 **Duplication of Shetland Sheepdog Reproduction Problems.**  
T.A. Marks\*, D. Schellenberg\*, C.M. Metzler\*, J. Oostveen, and M.J. Morey, Allegan Study Group and \*The Upjohn Company, Kalamazoo, MI.
- #546 3:45 **Testicular Lesions and Testosterone Fluctuations in Rats after Intraperitoneal Injection of 2,2,2-Trifluoroethanol.**  
T.C. Marshall, F.F. Hahn and B. Parker, Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM.
- #547 4:00 **A Two-Generation Reproduction and Teratology Study of Sucrose Polyester.**  
G.A. Nolen, T.A. Dierckman, and F.E. Wood, Jr. The Procter & Gamble Company, Cincinnati, OH.
- #548 4:15 **Recovery of Reproductive Function after Theobromine-Induced Testicular Atrophy.**  
S.M. Tarka, Jr., R. Morrissey, B. Burkholder and C. Shively, Hershey Foods Corp.-Technical Center, Hershey, PA.

- \* #562 4:30 **Subchronic Toxicity Studies with Alkylaryl Phosphates.**  
B.G. Hammond, M.W. Stevens, F.R. Johannsen, G.J. Levinskas. Monsanto Co., St. Louis, MO; D.E. Johnson. IRDC, Mattawan, MI.

**THURSDAY AFTERNOON, MARCH 15  
GRAND BALLROOM WEST**

**PLATFORM SESSION 15: General Toxicology II**

**Co-Chairs:** F.E. Reno, Hazleton Raltech, Inc., Madison, WI  
W.R. Pool, G.D. Searle & Co., Skokie, IL

- #549 1:30 **Inhibition of Chloroform Formation by Chlorine Dioxide in Water.**  
D.H. Suh and M.S. Abdel-Rahman. Toxicology Laboratory, Pharmacology Department, UMDNJ-NJ Medical School, Newark, NJ.
- #550 1:45 **Thyroid, Cardiac, and Hypothermic Effects of Perfluoro-N-Decanoic Acid in Rats.**  
G.D. Pilcher, D.M. Gutshall, and A.E. Langley. Department of Pharmacology and Toxicology, Wright State University, Dayton, OH. Sponsor: R.L. Koerker.
- #551 2:00 **Assessment of Chemical-Induced Polycythemia in Wistar Rats.**  
G.M. Henningsen and L.D. Koller. Veterinary Medical, University of Idaho, Moscow, ID.
- #552 2:15 **Phototoxicity of Psoralens Plus UVA Light (PUVA) in Mammalian Cells in Culture.**  
E.G. Lee, E.J. Yurkow, M.A. Gallo and J.D. Laskin, UMDNJ-Rutgers Medical School/Rutgers University Joint Program in Toxicology, Piscataway, NJ.
- #553 2:30 **Induction of Urinary Bladder Hypertrophy in Sprague-Dawley Rats Orally Administered Tri-n-Butyl Phosphate.**  
S. Laham, G. Long, Environmental Health Directorate, Health Protection Branch, Health and Welfare Canada, Ottawa; and B.R. Broxup, Bio-Research Laboratories Ltd., Senneville, Quebec.
- #554 2:45 **Contaminated Groundwater in California: An Emerging Health Concern.**  
P.E. Berteau and D.P. Spath. California Department of Health Services, Berkeley, CA.
- #555 3:00 **Acute and Subacute Toxicity of Selexol<sup>®</sup> Solvent.**  
W.J. Powers, S.C. Gad, R.W. Darr and B.J. Dunn. Allied Corp., Department of Toxicology, Morristown, NJ.
- #556 3:15 **Characterization of Carbon Disulfide Binding to Blood and Other Biological Substances.**  
C.W. Lam and V. DiStefano. Division of Toxicology, University of Rochester, Rochester, NY. Sponsor: T.W. Clarkson.
- #557 3:30 **Role of Red Blood Cells in the Transport of Carbon Disulfide in Blood.**  
C.W. Lam and V. DiStefano. Division of Toxicology, University of Rochester, Rochester, NY. Sponsor: T.W. Clarkson.
- #558 3:45 **Three-Month Subchronic Toxicity Study with MV-678 in Rats.**  
M.W. Sauerhoff, R.E. Ouellette, G.M. Zwicker, and R.J. Freudenthal. Stauffer Chemical Company, Environmental Health Center, Farmington, CT.
- #559 4:00 **Effects of Reduced and Oxidized Glutathione on Thiourea Binding.**  
H.W. Leung. Division of Occupational & Environmental Health, Graduate School of Public Health, San Diego State University, San Diego, CA. Sponsor: J.E. Holson.

\*Out of sequence by number only.

- #560 4:15 **Sequence of Acute Toxic Injury Induced in Rat Kidney by Dimethylnitrosamine (DMN).**  
G.C. Hard and R. Mackay. Fels Research Institute, Temple University School of Medicine, Philadelphia, PA.
- #561 4:30 **Toxicity of Monochloroacetic Acid.**  
M. Berardi and R. Snyder. Joint Graduate Program in Toxicology, Rutgers University and UMDNJ/Rutgers Medical School, Piscataway, NJ.
- \* #759 4:45 **Consideration on the Mechanism for 6-Methyl-Coumarin Photoallergenicity.**  
T. Seki, S. Kato, Y. Katsumura, T. Kobayashi and S. Fukushima. Dept. of Dermatology and Toxicology, Shiseido Laboratories, Yokohama, Japan.  
Sponsor: T. Miya.

**THURSDAY AFTERNOON, MARCH 15  
REAR OF GALLERIA EXHIBIT AREA**

**POSTER SESSION 6A: Metabolism/Disposition IV**

**Co-Chairs:** J. Kao, Oak Ridge National Labs, Oak Ridge, TN  
M.R. Montgomery, VA Hospital, Tampa, FL

**Displayed:** 1:30 P.M. - 4:30 P.M.  
**Attended:** 1:30 P.M. - 3:00 P.M. (Even Paper Numbers)  
3:00 P.M. - 4:30 P.M. (Odd Paper Numbers)

- #563 **Species Differences in the Metabolism of Amphetamine by Isolated Hepatocytes.**  
C.E. Green, S.E. LeValley and C.A. Tyson. SRI International, Menlo Park, CA. Supported by NIH GM 28158.
- #564 **In Vitro Metabolism of 2,4-Dichlorophenol (2,4-DCP) in a Rat Liver Microsomal System.**  
G.E. Siegel and D.R. Buhler. Department of Agricultural Chemistry and Environmental Health Science Center, Oregon State University, Corvallis, OR.
- #565 **The Role of Fluoroacetate Specific Dehalogenase (FSD) and Glutathione Transferase (GST) in the Metabolism of Fluoroacetamide (FAM) and 2,4-Dinitrofluorobenzene (DNFB).**  
P.J. Kostyniak and A.I. Soiefer. Department of Pharmacology and Therapeutics, S.U.N.Y. at Buffalo, NY. Sponsor: T.W. Clarkson.
- #566 **Stereoselectivity in the Microsomal Cytochrome P-450-Dependent Oxidation of Styrene to Styrene 7,8-Oxide (SO) in Rats and Rabbits.**  
G.L. Foureman, C. Harris, O. Hernandez, A. Bhatia and J.R. Bend. NIEHS/NIH, Research Triangle Park, NC.
- #567 **Absorption, Distribution and Excretion of Span 20 in Rats.**  
S. Giovanetto, L. Martis, E. Lengle and E. Woods. Travenol Laboratories, Morton Grove, IL.
- #568 **2-Nitropropane (2NP) Metabolism in Uninduced Mouse Liver Microsomes.**  
E.K. Marker, A.P. Kulkarni. Toxicology Program, Department of Environmental and Industrial Health, The University of Michigan, Ann Arbor, MI.

\*Out of sequence by number only.



- #569 **Metabolism, DNA Binding and Cytotoxicity of Aflatoxin B<sup>1</sup> in Tracheal Explants from Syrian Hamster.**  
R.A. Coulombe, D.W. Wilson and D.P.H. Hsieh. California Primate Research Center, University of California, Davis, CA.
- #570 **Identification of the Proximate Peroxisome Proliferator(s) Derived from Di-(2-Ethyl-Hexyl)Phthalate (DEHP).**  
A.M. Mitchell, J.C. Lhuguenot<sup>1</sup>, J.W. Bridges<sup>1</sup> and C.R. Elcombe, Imperial Chemical Industries PLC, Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK, <sup>1</sup>E.N.S.B.A.N.A., Campus Universitaire, 2100 Dijon, France, and <sup>2</sup>Robens Institute, University of Surrey, Guildford, Surrey, UK.
- #571 **Influence of Diet on Intestinal Microfloral Metabolism and Toxicity of Nitrobenzene.**  
R. Goldstein, J. Chism, and T. Hamm, Jr. CIIT, Research Triangle Park, NC. Sponsor: D.E. Rickert.
- #572 **Pharmacokinetics of Ethanol in the Ferret.**  
D.E. McLain, D.A. Roe and J.G. Babish. Division of Nutritional Sciences, Cornell University and Department of Preventive Medicine, NYS College of Veterinary Medicine, Cornell University, Ithaca, NY.
- #573 **Effects of Centrilobular and Periportal Hepatotoxins on Cytosolic and Mitochondrial Alcohol and Aldehyde Metabolizing Enzymes.**  
R.G. Little, J.J. Hjelle, C.D. Klaassen and D.R. Petersen. Department of Pharmacology, University of Colorado, Boulder, CO and Department of Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS.
- #574 **Differential Effects of Hepatotoxins on Microsomal Aldehyde Dehydrogenase.**  
D.R. Petersen, R.G. Little, C.D. Klaassen and J.J. Hjelle. Department of Pharmacology, University of Colorado, Boulder, CO and Department of Pharmacology, Toxicology and Therapeutics, University Kansas Medical Center, Kansas City, KS.
- #575 **1,3 Butanediol Treatment of Ethylene Glycol Toxicity in Dogs.**  
M.J. Murphy, A.C. Ray, and J.C. Reagor. Texas Veterinary Medical Diagnostic Laboratory, P.O. Drawer 3040, College Station, TX.
- #576 **Ascorbic Acid and the Oxidation of Methanol and Ethanol.**  
R.L. Susick and V.G. Zannoni. Toxicology Program, Department of Environmental & Industrial Health, The University of Michigan, Ann Arbor, MI. Sponsor: M.J. Brabec.
- #577 **Ascorbic Acid, Thiamine, or Cysteine Effect on Ethanol or Acetaldehyde Induced Increases in Antipyrine Half-Life.**  
S. LaFollette and M. Moldowan, College of Pharmacy, Oregon State University, Corvallis, OR. Sponsor: R.E. Larson.
- #578 **Skin Absorption of Pesticides by Deconvolution.**  
H.L. Fisher,<sup>1</sup> B. Most,<sup>2</sup> L.L. Hall,<sup>1</sup> Environmental Protection Agency,<sup>1</sup> Northrop Services, Inc.,<sup>2</sup> Research Triangle Park, NC.
- #579 **Dermal Absorption and Disposition of 1,3-Diphenylguanidine in Rats.**  
P.V. Shah,<sup>1</sup> Y.M. Ioannou,<sup>2</sup> H.L. Fisher<sup>3</sup> and L.L. Hall,<sup>1</sup> NSI,<sup>1</sup> NIEHS,<sup>2</sup> USEPA,<sup>3</sup> Research Triangle Park, NC.
- #580 **A Study on the Structure-Activity Relationship of Morpholine and its Derivatives used in the Rubber Industry. II. Reactivity of Morpholine and its Derivatives with Select Amino Acids.**  
X. Wang and M.W. Tabor. Department of Environmental Health, University of Cincinnati Medical Center, Cincinnati, OH 45267. Sponsor: H.G. Shertzer.
- #581 **Percutaneous Absorption and Disposition (PAD) of [<sup>14</sup>C] Kathon Biocide in Male Sprague-Dawley Rats.**  
J.D. deBethizy, S.L. Longacre, R.B. Steigerwalt, F.W. Deckert, H.E. Scribner, J.N. Moss, and A.W. Hayes. Toxicology Department, Rohm and Haas Company, Spring House, PA.

- #582 **Skin Penetration of Chemicals *In Vitro*: Metabolic Viability and Species Differences.**  
J. Kao and J. Whitaker, Biology Div., ORNL, Oak Ridge, TN.
- #583 **Subchronic Dermal Toxicity of Para-Tertiary Butyl Benzoic Acid in Rats.**  
S.Z. Cagen, T.H. Gardiner, D.R. Patterson, and C.C. Lu, Toxicology Research, Shell Development Company, P.O. Box 822, Houston, TX.
- #584 ***In Vitro* Metabolism of 1, 1-Dichloroethylene (VDC) to Monochloroacetate by Rat Hepatic Mitochondria and Microsomes.**  
R. Chen and R.B. Conolly, Toxicology Program, Environmental and Industrial Health, School of Public Health, The University of Michigan, Ann Arbor, MI. Sponsor: M.J. Brabec.
- #585 **The Pharmacokinetics of <sup>14</sup>C-1,3,-Dichloropropene in Rats and Mice following Oral Administration.**  
F.K. Dietz, E.A. Hermann and J.C. Ramsey, Toxicology Research Laboratory, Dow Chemical U.S.A., Midland, MI.
- #586 **Non-Protein Sulfhydryl Content and Macromolecular Binding in Rats and Mice following Oral Administration of 1,3-Dichloropropene.**  
F.K. Dietz, D.A. Dittenber, H.D. Kirk and J.C. Ramsey, Toxicology Research Laboratory, Dow Chemical U.S.A., Midland, MI.
- #587 **Metabolism of Inhaled Dihalomethane *In Vivo* in Male Rats.**  
M.L. Gargas and M.E. Andersen, Air Force Aerospace Medical Research Laboratory, Wright-Patterson AFB, OH.
- #588 **1,4-Bis [(3,5-Dichloropyridyloxy)]Benzene: Effects of Structural Analogs as Inducers of Hepatic Drug-Metabolizing Enzymes:**  
I. Lambert, M. Kelly, J. Merrill and S. Safe, Department of Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M University, College Station, TX.
- #589 **Effect of Disulfiram and Diethylthiocarbamate on ATPase and Nucleotidase Activities of Rat Liver Cell Membranes.**  
D.J. Brown and A. Hunter, East Carolina University School of Medicine, Greenville, NC. Sponsor: John P. DaVanzo.
- #590 **Corticosterone Inhibition of Benzo(a)Pyrene Metabolism in Comparison with Metyrapone and  $\alpha$ -Naphthoflavone.**  
M. Bogdanffy, A.E. Roberts, D.R. Brown, and R.A. Schatz, Toxicology Program, Northeastern University Boston.
- #591 **Polychlorinated Terphenyls as Inducers of Hepatic Drug-Metabolizing Enzymes.**  
B. Leece, M.A. Denomme, J. Gyorkos, K. Homonoko, B. Chittim and S. Safe, Department of Chemistry, University of Guelph, Guelph Ontario, Canada, N1G2W1, Department of Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M University, College Station, TX.
- #592 **2,2-Dimethyl-5-t-Butyl-1,3-Benzodioxole: An Unusual Inducer of Microsomal Enzymes.**  
J.C. Cook and E. Hodgson, Interdepartmental Toxicology Program, N.C. State University, Raleigh, NC.
- #593 **Ligand Interactions of Isocyanides and Methylene-Dioxyphenyl Compounds with Isolated Isozymes of Cytochrome P-450.**  
G.A. Beumel, P.E. Levi and E. Hodgson, Interdepartmental Toxicology Program, N.C. State University, Raleigh, NC.
- #594 **Evidence for the Differential Distribution of Cytochrome P-450 Isozymes in Rabbit Lung Cells.**  
R.F. Minchin, M.E. McManus, S.S. Thorgeirsson, D. Schwartz and M.R. Boyd, NCI, Bethesda, MD.
- #595 **MV-678: A Reversible Inducer of Rat Hepatic Microsomal Drug Metabolism.**  
R.P. Clement, T.Y. Chin, G.M. Zwicker, and B.J. Freudenthal, Stauffer Chemical Co., Environmental Health Center, Farmington, CT.

- #596 **The Effect of 2,6 Dichloro-4-Nitroaniline on Hepatic Microsomal Enzymes.**  
L.A. Basting, C.M. Witmer, M.M. Iba and M.A. Gallo, UMDNJ-Rutgers Medical School/Rutgers University Joint Graduate Program in Toxicology, Piscataway, NJ.
- #597 **Diethyl Ether Anesthesia Decreases the Excretion of Bilirubin.**  
R.L. Dills and C.D. Klaassen, Department of Pharmacology, Toxicology & Therapeutics, University of Kansas Medical Center, Kansas City, KS.
- #598 **Biotransformation by Liver, Kidney and Intestine of Cattle.**  
John B. Watkins, Medical Sciences Program, Indiana University School of Medicine, Bloomington, IN. Sponsor: T.R. Bosin.
- #599 **Induction of Hepatic Cytochrome P-450 and Inhibition of Brain, Liver and Plasma Esterases by An Acute Dose of  $\beta$ , $\beta$ , $\beta$ -Tri-n-Butyl Phosphorotrithioate (DEF) in the Adult Hen.**  
D.M. Lapadula, C.D. Carrington, and M.B. Abou-Donia, Department Pharmacology Duke University Medical Center, Durham, NC.
- #600 **The Effect of 3-Methylindole on Bovine Hepatic and Pulmonary Cytochrome P-450.**  
S.A. Lacy, W.L. Castleman and J.G. Babish, Department of Preventive Medicine, NYS College of Veterinary Medicine, Cornell University, Ithaca, NY.
- #601 **Effects of Cadmium and Zinc *In Vitro* on Microsomal Monooxygenase Activities in the Inner and Outer Zones of the Guinea Pig Adrenal Cortex.**  
H.D. Colby, M.R. Pope, P.B. Johnson, and J.H. Sherry, West Virginia University, Morgantown, WV.
- #602 **Interaction of Alcohols with Carbon Disulfide Metabolism.**  
R.J. Rubin, B. Taffe, and P. Egner, Johns Hopkins University, Baltimore, MD.
- #603 **Aryl Hydrocarbon Hydroxylase Activity of Hepatic S9 Fractions from Wild Caught Woodchucks (*Marmota monax*).**  
B.E. Johnson<sup>1</sup>, J.G. Babish<sup>1</sup>, J.N. Boyd<sup>2</sup>, B.C. Tennant<sup>2</sup>, <sup>1</sup>Department of Preventive Medicine & <sup>2</sup>Department of Clinical Sciences, New York State College of Veterinary Medicine, Cornell University, Ithaca, NY.
- #604 **Effects of Phenobarbital (PB) Treatment on Hepatobiliary Disposition of Aflatoxin B<sup>1</sup> (AFB).**  
C.J. Holeski, G.M. Bellamy and D.L. Eaton, University of Washington, Seattle, WA. Sponsor: J.S. Woods.
- #605 **The Effect of Butylated Hydroxytoluene on the *In Vivo* Disposition of Aflatoxin B<sup>1</sup> in the Rat.**  
M.Y. Fukayama and D.P.H. Hsieh, Department of Environmental Toxicology, University of California, Davis, CA.
- #606 **Long-Term Depletion of Reduced Glutathione in Mice using L-Buthionine-S,R-Sulfoximine.**  
J.D. Sun, S.S. Ragsdale, J.M. Benson and R.F. Henderson, Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM.
- #607 **Interaction of Formaldehyde with Glutathione.**  
P.H. Ayres, T.C. Marshall, J.A. Bond, J.D. Sun and C.H. Hobbs, Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM.
- #608 **Effect of Cobalt on Biliary Excretion of Bilirubin and Glutathione.**  
K.J. Steizer and C.D. Klaassen, Department of Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS.
- #609 **Depression of Hepatic Glutathione S-Transferase Activity Produced by Dietary Saturated Fat.**  
W.P. Norred and A. Marzuki, Russell Research Center, ARS, USDA, Athens, GA and School of Pharmacy, University of Georgia, Athens, GA.
- #610 **Effect of Dietary Composition on Hepatic and Renal Glutathione (GSH) Levels and Related Enzyme Activities.**  
M.H. Davies, B.A. Merrick, and R.C. Schnell, University Nebraska Medical Center College Pharmacy, Department Pharmacodyn-Toxicology, Omaha, NE.

- #611 **Glutathione S-Transferase and Mixed Function Oxidase in 1,2-Dibromoethane-Induced Nonprotein Sulfhydryl Depletion of Rat Organs.**  
D.A. Wiersma and I.G. Sipes, Department of Pharmacology/Toxicology, University of Arizona, Tucson, AZ.
- #612 **Sulfobromophthalein Inhibition of Glutathione and Methylmercury Secretion into Bile.**  
N. Ballatori and T.W. Clarkson, Division of Toxicology, University of Rochester School of Medicine, Rochester, NY.
- #613 **Disposition of [<sup>14</sup>C]-Kathon Biocide in Male Sprague-Dawley Rats.**  
J.D. deBethizy, F.W. Deckert, R.B. Steigerwalt, H.E. Scribner, J.N. Moss, A.W. Hayes and J.M. Smith, Toxicology Department, Rohm and Haas Company, Spring House, PA.
- #614 **Disposition and Metabolism of [2-<sup>14</sup>C] Tris (1-Chloro-2-Propyl) Phosphate in Fyrol PCF® in the Rat.**  
R.P. Clement, T.Y. Chin, J.P. Lehman, J. Adir, M.F. Gullak, and R.I. Freudenthal, Stauffer Chemical Co., Environmental Health Center, Farmington, CT.
- #615 **Dowicil 200 Preservative: Pharmacokinetics and Metabolism in Fischer 344 Rats.**  
J.M. Waechter, Jr., P.E. Kastl, F.A. Smith and M.D. Dryzga, Toxicology Research Laboratory, Health & Environmental Sciences, USA, The Dow Chemical Company, Midland, MI.
- #616 **Fate and Disposition of [2-Hexyl <sup>14</sup>C]Tri(2-Ethyl-Hexyl) Trimellitate in the Rat.**  
P.M. Enriquez, C.J. Giordano and G.D. DiVincenzo, Health, Safety and Human Factors Laboratory, Eastman Kodak Co., Rochester, NY.
- #617 **The Metabolism and Disposition of Benzylbutyl Phthalate in Fischer-344 Rats.**  
D.A. Eigenberg, H.P. Bozigian, D.E. Carter and I.G. Sipes, Department of Pharmacology & Toxicology, College of Pharmacy, University of Arizona, Tucson, AZ.
- #618 **Tissue Distribution and Excretion of Tri-(2-Ethylhexyl) Trimellitate in Rats.**  
L. Martis, E. Fried, and E. Woods, Travenol Laboratories, Morton Grove, IL.

**THURSDAY AFTERNOON, MARCH 15  
REAR OF GALLERIA EXHIBIT AREA**

**POSTER SESSION 6B: Immunotoxicology II**

**Co-Chairs:** F. Koschier, Ciba-Geigy, Ardsley, NY  
S. Laham, Health & Welfare Canada, Ottawa, Ontario

**Displayed:** 1:30 P.M. - 4:30 P.M.  
**Attended:** 1:30 P.M. - 3:00 P.M. (Even Paper Numbers)  
3:00 P.M. - 4:30 P.M. (Odd Paper Numbers)

- #619 **In Vitro Immunotoxic Effects of Multiple Concentrations of Formaldehyde on Lymphocyte Cultures.**  
C.L. Leach, R.P. Sharma and S.G. Oberg, Toxicology Program, Utah State University, Logan, UT.
- #620 **Evaluation of Inhalation Hazard of Organic Chemical Air Contaminants.**  
Catherine Aranyi and William J. O'Shea, IIT Research Institute, Chicago, IL.  
Sponsor: James D. Fenters.
- #621 **Effect of Cyclophosphamide (CY) on Host Resistance after Primary and Secondary Infectious Challenge.**  
J. Fenters, P. Barbera and K. Ketels, IIT Research Institute, Chicago, IL.

- #622 **Cyclophosphamide Exposure and the Developing Immune System.**  
R.W. Luebke, M.M. Riddle, R.R. Rogers, D.G. Rowe and R.J. Smialowicz. U.S. EPA, Research Triangle Park, NC. Sponsor: N. Chernoff.
- #623 **The Effect of Organophosphorus and Carbamate Cholinesterase Inhibitors on In Vitro Immune Responses.**  
G.A.W. Waterhouse and R.B. Forney, Department of Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN.
- #624 **Natural Killer Cell Function in Chemically-Treated Rats.**  
P.A. Talcott, G.A. Whitbeck, and L.D. Koller. Veterinary Medicine, University of Idaho, Moscow, ID.
- #625 **Immunotoxicity of Two N-Nitroso Compounds Via Multiple Immune Assays in the Rat.**  
G.M. Henningsen, J.H. Exon, L.D. Koller, C.A. Osborne, P.A. Talcott, and D. Schultz. Veterinary Medicine, University of Idaho, Moscow, ID.
- #626 **The Rat as a Model for Immunopharmacology/Toxicology.**  
L.D. Koller, J.H. Exon, C.A. Osborne, G.M. Henningsen, and P.A. Talcott. University of Idaho, Moscow, ID.
- #627 **Chemically-Induced Changes in Antigen Distribution can Affect Antibody (AB) Production.**  
P.H. Bick, P.J. Mc Nerney and M.P. Holsapple. Department of Microbiology and Immunology, Medical College of VA/VCU, Richmond, VA. Sponsor: A.E. Munson.
- #628 **Carcinogenicity and Immunotoxicity of Chlorinated Phenolic Drinking Water Contaminants.**  
J.H. Exon and L.D. Koller. Veterinary Medicine, University of Idaho, Moscow, ID.
- #629 **Effects of Dimethylnitrosamine (DMN) on Cell-Mediated Immunity and Bone Marrow of B6C3F1 Mice.**  
L.B. Schook, J.K. Pullen, S.S. Duke, and M.P. Holsapple, Department of Microbiology and Immunology, Medical College of Virginia/VCU, Richmond, VA. Sponsored by A.E. Munson.
- #630 **Separation of Carcinogenic Initiation and Immunosuppression by Polycyclic Aromatic Hydrocarbons.**  
K.L. White, Jr., H.H. Lysy, P.J. Mc Nerney, and M.P. Holsapple, Department of Microbiology and Immunology, Medical College of Virginia/VCU, Richmond, VA. Sponsored by A.E. Munson.
- #631 **Immunosuppression by Selected Hexachlorodibenzo-P-Dioxins (HCDDs) in Adult Female B6C3F1 Mice.**  
M.P. Holsapple, J.A. Munson, P.J. Mc Nerney, and A.E. Munson. Departments of Pharmacology and Toxicology and Microbiology and Immunology, Medical College of VA, Richmond, VA.
- #632 **Immunotoxicological Effects of Subchronic Exposure to Benzopyrene in B6C3F1 Male and Female Mice.**  
A.E. Munson, J.H. Butala\*, R.A. Kuna+, N.K. Snyder, H.H. Lysy and K.L. White, Jr. Departments of Pharmacology & Toxicology, Microbiology & Immunology, Medical College of VA, Richmond, VA, Gulf Oil, Pittsburgh, PA\*, and Exxon Corp., E. Millstone, NJ+
- #633 **Suppression of Mouse Complement Activity by Dioxin Contaminants of Technical Grade Pentachlorophenol.**  
A.C. Anderson and K.L. White, Jr. Department of Microbiology and Immunology, Medical College of VA, Richmond, VA. Sponsor: A.E. Munson.
- #634 **A Study on the Structure-Activity Relationship of Morpholine and its Derivatives Used in the Rubber Industry. I. A Comparison of the Sensitizing Potency of Morpholine and its Derivatives in Guinea Pigs.**  
X.S. Wang and R.R. Suskind. University of Cincinnati, Department of Environmental Health, Cincinnati, OH. Sponsor: H.G. Shertzer.

- #635 **Effect of Repeated Parathion Exposure on the Primary IGM Response and Bone Marrow Stem Cells in C57BL/6 Mice.**  
P.M. Bartholomew, G.P. Casale, W.J. Duggan, J. Della Puca, V.S. Gallicchio\*,  
 R.A. DiCapua and S.D. Cohen, \*Dept. of Thera. Radiology, Yale University  
 School of Medicine, New Haven, CT and Toxicology Program, School of  
 Pharmacology, University of Connecticut, Storrs, CT.
- #636 **Paraoxon (PX)-Induced Suppression of the In Vitro Response of Murine Spleen Cells to Sheep Red Cells (SRC).**  
W.J. Duggan, G.P. Casale, S.D. Cohen, R.A. DiCapua. Toxicology Program,  
 School of Pharmacology, University of Connecticut, Storrs, CT.
- #637 **Chronic Immunosuppression Induced by 7,12-Dimethylbenz[A]Anthracene (DMBA).**  
 E.C. Ward, M.J. Murray, L.D. Lauer, R.V. House, and J.H. Dean. Chemical  
 Industrial Institute Toxicology, Research Triangle Park, NC. Sponsor: F.  
 Welsch.
- #638 **Polycyclic Aromatic Hydrocarbon (PAH)-Induced Suppression of Cell-Mediated Immunity (CMI).**  
 M.J. Murray, E.C. Ward, L.D. Lauer, R.V. House and J.H. Dean. Chemical  
 Industrial Institute of Toxicology, Research Triangle Park, NC. Sponsor: F.  
 Welsch.
- #639 **Sensitization Potential of Inhaled TDI in Guinea Pigs.**  
 C. Collins,<sup>1</sup> C. Bier,<sup>1</sup> M. Friedman,<sup>2</sup> C. Breckenridge,<sup>1</sup> J. Wallace,<sup>3</sup> S. Cornell<sup>1</sup>.  
<sup>1</sup>Bio-Research Laboratories, Montreal, Quebec, <sup>2</sup>American Cyanamid  
 Company, Wayne, NJ, <sup>3</sup>University of Louisville, KY.
- #640 **Cell Cycle Perturbation of DNA and RNA Content in the Bone Marrow and Alveolar Macrophages of Rodents after Subchronic Inhalation Exposure to Formaldehyde.**  
 C.E. Dallas, D.N. Mellard, J.C. Theiss, and E.J. Fairchild. Environmental  
 Sciences, University of Texas School of Public Health, Houston, TX.
- #641 **Use of Flow Cytometry (FCM) to Analyze Bone Marrow Perturbations Induced by Ethylene Oxide (EO).**  
 R. Popp, S. Lock, D. Popp, R. Mann and R. Hand, Jr., Oak Ridge National  
 Laboratory, Oak Ridge, TN.
- #642 **Hemotoxicity of Ethylene Oxide (EO).**  
 D.M. Popp, S. Lock, and R.A. Popp. Oak Ridge National Laboratory, Oak  
 Ridge, TN.
- #643 **Effects of Dimethylnitrosamine (DMN) on Host Resistance and Immunity.**  
 P. Thomas, R. Fugmann, C. Aranyi and J. Fenters. IIT Research Institute,  
 Chicago, IL.

**FRIDAY MORNING, MARCH 16  
 GRAND BALLROOM WEST**

**PLATFORM SESSION 16: Metals II**

**Co-Chairs:** B.J. Kelman, Battelle Labs, Richland, WA  
 D.E. Carter, University of Arizona, Tucson, AZ

- #644 8:30 **Methylmercury Effects on Cell Cycle Kinetics.**  
 D.G. Vogel, P.S. Rabinovitch, and N.K. Mottet. Department of Pathology,  
 University of Washington, Seattle, WA. Sponsor: Mr. Juchau.
- #645 8:45 **In Vivo Effects of Heavy Metals on Synaptosomal Uptake of 3H-Dopamine.**  
 B. Rajanna, M. Hobson and D. Desai. Division of Natural and Applied  
 Sciences, Selma University, Selma, AL and Department of Neurology,  
 University of Mississippi Medical Center, Jackson, MS.

- #646 9:00 **Acute Toxicity of Trimethyltin in the Monkey.**  
K.R. Reuhl, B.A. Mackenzie. Division Biological Science, NRC, Ottawa, Canada and S.G. Gilbert, D.C. Rice. Health and Welfare Canada, Ottawa, Canada. Sponsor: J.G. Pounds.
- #647 9:15 **Effect of Lead Intoxication on the Hormonal Regulation of Amino Acid Transport in Cultured Rat Hepatocytes.**  
R.W. Wright, G.J. Long, and J.G. Pounds. National Center for Toxicological Research, Jefferson, AR and Division of Inter-Disciplinary Toxicology, University of Arkansas for Medical Sciences, Little Rock, AR.
- #648 9:30 **The Influence of Carbon Monoxide Exposure on Brain Lead Kinetics in Developing Rats.**  
J.M. Frazier. The Johns Hopkins University, Baltimore, MD.
- #649 9:45 **Resistance to Cadmium-Induced Hepatotoxicity in Immature Rats.**  
P.L. Goering and C.D. Klaassen. Department of Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS.
- #650 10:00 **Morphometric Analysis of Cadmium-Induced Cytotoxicity in Cultured Hepatocytes.**  
E.M.B. Sorenson and D. Acosta. Department of Pharmacology, University of Texas, Austin, TX.
- #651 10:15 **Cadmium-Induced Hepatotoxicity in Repeatedly Exposed Rats.**  
R.E. Dudley and C.D. Klaassen. Department of Pharmacology, Toxicology & Therapeutics, University of Kansas Medical Center, Kansas City, KS.
- #652 10:30 **Alterations of Serum Fatty Acid Composition of Chicks during Lead Toxicity.**  
W.E. Donaldson and D.M. Latta. Toxicology Program, NCSU, Raleigh, NC.
- #653 10:45 **Effects of Dietary Methionine and Choline on Lead Toxicity in Chicks.**  
D.M. Latta and W.E. Donaldson. Toxicology Program, NCSU, Raleigh, NC.
- #654 11:00 **Neuropathological Changes Induced by Triethyl and Trimethyl Lead Compounds.**  
L.W. Chang, H.A. Tilson, and T.J. Walsh. Department of Pathology, University of Arkansas for Medical Science, Little Rock, AR and Laboratory Behavior Neurology Toxicology, NIEHS, Research Triangle Park, NC.
- #655 11:15 **Role of Metallothionein in Resistance to Cadmium-Induced Testicular Necrosis in Inbred Mice.**  
G.J. Chellman, G.L. Diamond and Z.A. Shaikh. Division of Toxicology, University of Rochester, Rochester, NY.
- #656 11:30 **Effects of Lead on Nonprotein Sulfhydryl Content of Various Tissues of Chicks.**  
C. McGowan and W.E. Donaldson. Toxicology Program, NCSU, Raleigh, NC.
- #657 11:45 **The Effect of Mercury on the Domestic Chicken as Influenced by Dehydration and Duration of Treatment.**  
R.E. Grissom, J.P. Thaxton. Interdepartmental Toxicology Program, NC State University, Raleigh, NC. Sponsor: F.E. Guthrie.

**FRIDAY MORNING, MARCH 16  
GRAND SALON WEST**

**PLATFORM SESSION 17: Reproduction/Teratology**

**Co-Chairs:** B. Wilson, Oak Ridge National Labs, Oak Ridge, TN  
J.U. Bell, University of Florida, Gainesville, FL

- #658 8:30 **Diffusional-Induced Hemolytic Anemia as a Cause of Teratogenicity in Rabbits.**  
R.L. Clark, R.T. Robertson, D.H. Minsker, S.M. Cohen, D.J. Tocco, H.L. Allen, M.L. James and D.L. Bokelman. Merck Institute for Therapeutic Research, West Point, PA.

- #659 8:45 **Effects of Phenylalanine on the Teratogenicity of Ochratoxin A in Rats.**  
K. Mayura, W.O. Berndt and T.D. Phillips. Department of Veterinary Public Health, Texas A&M University, College Station, TX.
- #660 9:00 **Teratology Studies on Ethylenediamine Dihydrochloride (EDA) in Fischer 344 Rats.**  
L.R. DePass, M.D. Woodside, and R.S.H. Yang. Bushy Run Research Center, Export, PA.
- #661 9:15 **Effects of Ethanol, Acetaminophen or Combinations of Ethanol and Acetaminophen on the Offsprings of Mice.**  
K. Hess, R.F. Mankes, and R. LeFevre. Institute of Experimental Pathology and Toxicology, Albany Medical College, Albany, NY. Sponsor: R. Abraham.
- #662 9:30 **Teratogenicity of Nitrofen (2,4-Dichloro 4'-Nitro Diphenyl Ether) and Thyroid Function in the Rat.**  
J.M. Manson, T.J. Brown, and D.M. Baldwin. University of Cincinnati, Cincinnati, OH.
- #663 9:45 **The Teratogenic Effects of Congo Red (CR) on the Reproductive System of the Male and Female House Mouse.**  
L.E. Gray, Jr., R.J. Kavlock, J. Ostby, and J. Ferrelli, USEPA, HERL, DBD, RTB, RTP, NC. Sponsor: Neil Chernoff.
- #664 10:00 **A Teratology Study in Fischer 344 Rats with 2, 4-Dichlorophenoxyacetic Acid.**  
D.E. Rodwell, R.D. Wilson, M.D. Nemece, and E.J. Tasker. WIL Research Laboratories, Inc., Ashland, OH. Sponsor: D.M. Serrone.
- #665 10:15 **A Teratology Study in Fischer 344 Rats with 2, 4-Dichlorophenol.**  
D.E. Rodwell, R.D. Wilson, M.D. Nemece, and M.D. Mercieca. WIL Research Laboratories, Inc., Ashland, OH. Sponsor: D.M. Serrone.
- #666 10:30 **Absence of Teratogenic Response in Rats given Yellow Phosphorus.**  
R.S. Nair, F.R. Johannsen, G.J. Levinskis, Monsanto Co., St. Louis, MO., J.L. Schardein, International Research & Development Corp., Mattawan, MI.
- #667 10:45 **Transplacental Kinetics of Metals from the Actinide Series.**  
B.J. Kelman and M.R. Sikov. Pacific Northwest Laboratory, Richland, WA.
- #668 11:00 **Neuropathology of TMT on Neonatal Rat Hippocampus.**  
L.W. Chang and R.S. Dyer. Department of Pathology, University of Arkansas for Medical Science, Little Rock, AR and Neurotoxicology Division, U.S.E.P.A., Research Triangle Park, NC.
- #669 11:15 **Correlation of Lesion Induction by Trimethyltin with Various Developmental Stage and Functional Maturity of the Hippocampal Formation.**  
L.W. Chang. Department of Pathology, University of Arkansas for Medical Sciences, Little Rock, AR.
- #670 11:30 **The Toxicology and Developmental Teratology of Chronic Methylmercury Exposure.**  
T.M. Burbacher and N.K. Mottet. Department of Pathology and Environmental Health, University of Washington, Seattle, WA. Sponsor: J.S. Woods.
- #671 11:45 **Chronic Low-Level Lead Exposure from Birth Procedures Deficits in Discrimination Reversal in Monkeys.**  
D.C. Rice, Health and Welfare Canada, Ottawa, Ontario. Sponsor: F. Iverson.

---

### 1985 SOT PROGRAM COMMITTEE BREAKFAST MEETING

Friday Morning, March 16, 1984

7:00 a.m. — 8:00 a.m.

MILAN ROOM - 3rd Floor

*Emil A. Pfitzer, Presiding*

1984-85 SOT COUNCIL MEETING FOLLOWS

---



**FRIDAY MORNING, MARCH 16  
GRAND BALLROOM EAST**

**SYMPOSIUM 7: New Approaches for the Evaluation  
of Pulmonary Toxicology.**

***Sponsored by: (S.O.T. Inhalation Specialty Section)***

**Chairman:** Donald E. Gardner, Director, Environmental Toxicology and Technology,  
Northrop Services, Inc., Research Triangle Park, NC.

<b>Time (A.M.)</b>	
8:30	<b>Introduction.</b> Donald E. Gardner.
8:35	<b>Structural Evaluation of the Respiratory System.</b> Walter Tyler, Anatomy V.M, University of California, Davis, CA.
9:00	<b>Discussion.</b>
9:05	<b>Functional Evaluation of the Respiratory System.</b> Daniel Acosta, Inhalation Toxicology Medical, Brookhaven National Lab, Upton, NY.
9:30	<b>Discussion.</b>
9:35	<b>Clearance of the Respiratory System.</b> Richard Schlesinger, Department Environmental Medicine, New York University Medical Center, New York, NY.
10:00	<b>Discussion.</b>
10:05	<b>Biochemical Evaluation of the Respiratory System.</b> Rogene F. Henderson, Inhalation Toxicology Research Institute, Lovelace Biomedical & Environmental Research Institute, Albuquerque, NM.
10:30	<b>Discussion.</b>
10:35	<b>Inter-relationships between Pulmonary Xenobiotic and Intermediary Metabolism.</b> Daniel B. Menzel, Lab of Environmental Pharmacology and Toxicology, Duke University Medical Center, Durham, NC.
11:00	<b>Discussion.</b>
11:05	<b>Immunotoxicology Evaluation of the Respiratory System.</b> Meryl H. Karol, University of Pittsburgh, Pittsburgh, PA.
11:30	<b>Discussion.</b>

**FRIDAY MORNING, MARCH 16  
REAR OF GALLERIA EXHIBIT AREA**

**POSTER SESSION 7A: General III - Drugs/Solvents**

**Co-Chairs:** J.M. Frazier, Johns Hopkins University, Baltimore, MD  
Charles Ward, Gulf Oil Corp., Pittsburgh, PA

**Displayed:** 8:30 a.m. - 11:30 a.m.  
**Attended:** 8:30 a.m. - 10:00 a.m. (Even Paper Numbers)  
10:00 a.m. - 11:30 a.m. (Odd Paper Numbers)

- #672 **Acute and Subacute Oral Toxicity Evaluation of an Anxiolytic Agent.**  
G.S. Smith, N.J. Barsoum, C.J. DiFonzo, A.W. Gough, S.I. Gracon, G.E. McGill, R.A. Martin, J.M. Sturgess and F.A. de la Iglesia. Pathology Experimental Toxicology, Warner-Lambert/Parke-Davis Pharmacology Research, Ann Arbor, MI and Mississauga, Ontario.
- #673 **Intravenous Toxicity Studies of Fenoldopam Mesylate in Rats.**  
E.M. Yuhás, D.G. Morgan, E. Arena, R.P. Kupp, and L.Z. Saunders. Pathology/Toxicology Department, SmithKline and French Laboratories, Philadelphia, PA.
- #674 **BCNU Enhanced Doxorubicin Toxicity.**  
T. Paraidathathu, A.B. Combs, and J.P. Kehrer. Department of Pharmacology, College of Pharmacy, University of Texas at Austin, Austin, TX.
- #675 **Interaction between Tolbutamide and Verapamil: Effect on Blood Glucose Levels in Mice.**  
M. Greening and A.M. Deery. Arnold and Marie Schwartz College of Pharmacy and Health Sciences, Brooklyn, NY. Sponsor: R. Raje.
- #676 **Subacute Toxicity of 9 Retinoic Acid Amides.**  
R.G. Meeks and B.P. Sani. Southern Research Institute, Birmingham, Alabama.
- #677 **A 13-Week Feeding Study in the Rat with Ac-Di-Sol™ Croscarmellose Sodium, Type A, National Formulary XV.**  
T. Cascieri, F.K. Kinoshita, (Hercules, Inc. Wilmington, DE), D.E. Werner, M.J. Fletcher, (FMC Corporation, Princeton, NJ), P. Batham, (Bio-Research Labs, Ltd., Senneville, Quebec, Canada).
- #678 **Acetaminophen-Induced Extrahepatic Degeneration and Necrosis in the Mouse.**  
M.E. Placke, D.S. Wyand, and S.D. Cohen. Department Pathobiology and School of Pharmacy, University of Connecticut, Storrs, CT.
- #679 **Changes in Monoamine Oxidase Activity Following Chlorphentermine Administration to Rats.**  
L. Zychlinski and M.R. Montgomery. Department of Pharmacology, University of South Florida and VA Hospital, Tampa, FL.
- #680 **Retinoic Acid Induces Calcium Release from Fetal Bones in Culture.**  
C.J. Viau and S.D. Harrison, Jr. Graduate Center for Toxicology, University of Kentucky, Lexington, KY.
- #681 **Lack of In Vivo Covalent Binding of Nafenopin, A Carcinogenic Peroxisome Proliferator, to Liver DNA of Normal and Partially Hepatectomized Rats.**  
S.K. Goel, N.D. Lalwani, and J.K. Reddy. Department of Pathology, Northwestern University Medical School, Chicago, IL.
- #682 **Mechanism of Thyroid Changes Induced by SC-37211 in the Male Rat.**  
C.P. Chengelis, S. Levin, P. Comer, and F. Kotsonis. Product Safety Assessment, G.D. Searle Research and Development, Skokie, IL.
- #683 **Interaction between Diisopropylfluorophosphate (DFP) and the Opiate System in Mice.**  
S.H. Zorn, L.G. Costa\*, S.D. Murphy\*. Division Toxicology, Department Pharmacology, University of Texas Medical School, Houston, TX and \*Department Environmental Health, University of Washington, Seattle, WA.
- #684 **Effect of Organic Acid Drugs on Methotrexate Toxicity in the Mouse Intestine.**  
M.Z. Badr and T.S. Chen. Department of Pharmacology and Toxicology, University of Louisville, Louisville, KY.
- #685 **Two-Week Dietary Screening Study of a Series of Imidazo[-1,2-a]Pyridine Analogs in Mice.**  
D.G. Perkins, J.D. Frantz, B.F. Murphy, R.J. Szot, H.E. Black, and E. Schwartz. Department of Pathology and Toxicology, Pharmaceutical Research Division, Schering Corporation, Lafayette, NJ.
- #686 **One-Month Intravenous Safety Evaluation of Tulobuterol in Rats and Dogs.**  
F.L. Fort, C.L. Yang, M.C. Pratt, S. Tekeli, I.A. Heyman, P.K. Cusick and J.W. Kesterson. Drug Safety Evaluation Division, Abbott Laboratories, North Chicago, IL.

- #687 **Methemoglobin Formation Induced by a Candidate 8-Aminoquinoline Antileishmanial Agent (WR 6026-2HC1) in Beagle Dogs.**  
J.C. Anders, H. Chung, and J.R. Baker. Department of Pharmacology, Walter Reed Army Institute of Research, Washington, DC U.S.A.
- #688 **A Toxicologic Evaluation of Spirohydantoin Mustard (SHM, NSC-172112) in Sprague-Dawley Rats, CD2F1 Mice and Beagle Dogs.**  
J.T. Liao, W.T. Collins, R.A. Hiles, R.V. Karcher, S. Frick, and M.D. Kastello. Springborn Institute for Bioresearch, Inc., Spencerville, OH, and Battelle Columbus Laboratories, Vienna, VA.
- #689 **Lethality Studies in Mice and Rats and Toxicity Studies in Rats and Dogs of Bisbenzimidazole (BIS, NSC-322921).**  
J.T. Liao, W.T. Collins, R.V. Karcher, S.D. Erk, R.A. Hiles, S. Frick, and M.D. Kastello. Springborn Institute for Bioresearch, Inc., Spencerville, OH, and Battelle Columbus Laboratories, Vienna, VA.
- #690 **Dermal Toxicity of Psoralens and UVA Light.**  
J.K. Dunnick<sup>1</sup>, P.D. Forbes<sup>2</sup>, R.E. Davies<sup>2</sup>, and W.O. Iverson<sup>3</sup>. <sup>1</sup>National Toxicology Program, NIEHS, Research Triangle Park, NC; <sup>2</sup>The Center for Photobiology, Temple University Health Sciences Center, Philadelphia, PA; and <sup>3</sup>Experimental Pathology Laboratories, Inc., Herndon, VA. Sponsor: J.H. Mennear.
- #691 **Acute Toxicity and Absorption of FC-128 into the Blood of Rats.**  
G.L. Kennedy, Jr., R.L. Ferenz, O.L. Dashiell and B.A. Burgess. E.I. du Pont de Nemours and Co., Inc., Haskell Laboratory for Toxicology and Industrial Medicine, P.O. Box 50, Elkton Road, Newark, DE.
- #692 **Comparative Subacute Toxicity of Trichlorotoluene Isomers: A 28-Day Feeding Study in the Rat.**  
D.C. Villeneuve, I. Chu, S.Y. Shen, V.E. Secours and V.E. Vaili\*. Bureau of Chemical Hazards, Environmental Health Directorate, Ottawa, Canada and \*Biopath Analysts Ltd., Guelph, Ontario, Canada.
- #693 **Effects of Perfluoro-N-Decanoic Acid (PFDA) on Liver Enzymes and Ultrastructure in the Rat.**  
M.J. Van Rafelghem and M.E. Andersen. AFAMRL/THB, Wright-Patterson AFB, OH; S. Lane, S. Luking, and E.H. Harrison. Department of Biological Chemistry, Wright State University, Dayton, OH.
- #694 **Toxic Effects of Perfluoro-N-Decanoic Acid (PFDA) in Rats.**  
M.E. George and M.E. Andersen. Air Force Aerospace Medical Research Laboratory, Wright-Patterson AFB, OH.
- #695 **The Etiology of Yusho Poisoning.**  
S. Bandiera, K. Farrell, M. Kelly, R. Bannister, G. Mason, L. Safe and S. Safe. Department of Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M University, College Station, TX.
- #696 **Effects of Oral Disopyramide Phosphate on Serum Glucose and Glucose Counterregulation in the Dog.**  
J.R. Means, J.J. Hjelle, and F.N. Kotsonis. Product Safety Assessment Department, Searle Research and Development, Skokie, IL.
- #697 **Hazardous Waste Management: An Investigation of Potential Generation of Air Pollutants.**  
M.S. Bisesi. Department of Health and Safety, Indiana State University, Terre Haute, IN. Sponsor: F.E. Oehme.
- #698 **Sodium Saccharin Associated Changes in Bladder Tissue Mineral Concentrations.**  
R.L. Anderson. The Procter & Gamble Company, Miami Valley Laboratories, Cincinnati, OH. Sponsor: E.V. Buehler.
- #699 **Effects of 6-Mercaptopurine on Developing Muscle Cells *In Vitro*.**  
G. Yander and H. Kaji. Thomas Jefferson University, Philadelphia, PA. Sponsor: J.J. Kocsis.
- #700 **Long-Term Peritoneal Tissue Response to Particulate Mold-Release Agents Used in Surgeons' Glove Manufacture.**  
D. Pelling, J.G. Evans. British Industrial Biological Research Association, Carshalton, Surrey, U.K. Sponsor: S.D. Gangolli.

- #701 **Prechronic Toxicity Evaluation of O-Benzyl-P-Chlorophenol: Comparison Between F344 Rats and B6C3F1 Mice.**  
Randy Deskin, Sondra Grumbein, Perry Kurtz, Arthur Peters, and Linda Birnbaum\* Battelle, Columbus, Ohio, and \*National Toxicology Program, RTP, NC.
- #702 **The Toxicology of Eight Ionophores: Neurobehavioral, Membrane and Acute Effects and Their Structure Activity Relationships (SAR's).**  
S.C. Gad, F.A. Gavigan, K.M. Siino, and C. Reilly. Allied Corporation, Morristown, NJ.
- #703 **Phthalate Ester Migration from Polyvinyl Chloride Consumer Products.**  
R.L. Hanson and C.H. Hobbs. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM.
- #704 **Potential Toxicity of Intravenously Administered Di-(2-Ethylhexyl) Phthalate (DEHP) and Mono-(2-Ethylhexyl) Phthalate (MEHP) in the Neonatal Rat.**  
D.B. Wienckowski, B.A. Gillies, J.A. Thomas, and E.J. Youkilis. Travenol Laboratories, Morton Grove, IL.
- #705 **Toxic Responses in F344 Rats and B6C3F1 Mice given Roxarsone in Their Diets for up to 13 Weeks.**  
K.M. Abdo, C.A. Montgomery<sup>1</sup>, R.B. Thompson<sup>2</sup>, J.D. Prejean<sup>2</sup>. <sup>1</sup>NIEHS-NTP, Research Triangle Park, NC. <sup>2</sup>Southern Research Institute, Birmingham, AL.
- #706 **Toxicity of Diacetylenic Compounds: Structure-Activity Relationships.**  
M.J. Derelanko, S.C. Gad, B.J. Dunn, F. Gavigan and R.D. Walsh. Department of Toxicology, Allied Corp., Morristown, NJ.
- #707 **Subchronic Feeding Study with FR-D in Rats.**  
L.E. Geiger, T. Cascieri, M.J. Fletcher. FMC Corporation, Princeton, NJ, C.M. Salamon and H. Salem. ToxiGenics, Inc., Decatur, IL.
- #708 **Oral Toxicity of Fryol® 6 in Rats.**  
A.C. Katz, J.C. Turnier, M.W. Sauerhoff and G.M. Zwicker. Stauffer Chemical Company, Environmental Health Center, Farmington, CT.
- #709 **Effect of Butylated Hydroxytoluene (BHT) on Biliary Excretion of Xenobiotics and Bile Flow in Rats.**  
K.H. Yang, S.Y. Choe and H.M. Kim. Korea Advanced Institute of Science & Technology, P.O. Box 150, Chongryangni, Seoul, Korea. Sponsor: I.P. Lee.
- #710 **Comparison Between Effects of Aqueous Chlorine, Monochloramine, and Chlorine Dioxide on Dietary Iodide Absorption in the Rat.**  
J.P. Bercz, R. Harrington, L. Jones, L. Condi. Toxicology and Microbiology Division, HERL, USEPA, Cincinnati, OH.
- #711 **Effect of Ingested Aqueous Chlorine Dioxide on Absorption and Distribution of Dietary Iodide in the Rat.**  
R.M. Harrington, H.G. Shertzer, and †J.P. Bercz. Kettering Laboratory, University of Cincinnati, Cincinnati, OH and †Toxicology and Microbiology Division, HERL, USEPA, Cincinnati, OH.
- \* #758 **Assessment of Lead Toxicity in Traffic Controllers of Alexandria (Egypt) Road Intersections.**  
N.S. Ahmed, K.S. El-Gendy, A. Kh. El-Refai, S.A. Marzouk, N.S. Bakry, A.H. El-Sebae and S.A. Soliman. Faculties of Agriculture and Medicine, University of Alexandria, Alexandria, Egypt.
- \* #760 **The Time Course, Dose Response, and Histology of Chemically Induced Skin Irritation in the Mouse.**  
E. Patrick, H. Maibach and A. Burkhalter. University of California, San Francisco, CA.
- \* #761 **Toxicity in Rats following Single 4-Hour or 7-Day Repeated Inhalation of Para-Tertiary Butyl Benzoic Acid Dust.**  
K.I. Darmer, Jr., D.R. Patterson, C.C. Lu and T.H. Gardiner. Toxicology Research, Shell Development Company, Box 822, Houston, TX 77001.

\*Out of sequence by number only.

- \* #762      **Reproductive Toxicity of Theobromine in Mice Studied by a New Continuous Breeding Protocol.**  
H. Choudhury, J.C. Lamb IV\*, D.K. Gulati, R.C. Chambers, and P.S. Sabharwal. Environmental Health Research & Testing, Inc., Lexington, KY 40503, and National Toxicological Program\*, NIEHS, Research Triangle Park, NC 27709.
- #712      **Influence of Antioxidants on Indomethacin-Induced Gastrointestinal Bleeding in Rats.**  
D.J. Murphy, E.B. Taylor, and J.J. Horvath, Department of Toxicology, Squibb Institute for Medical Research, New Brunswick, NJ. Sponsor: J.S. Kulesza.
- #713      **Acute Toxicity of o-Dichlorobenzene.**  
C. Babiuk and J. Brodeur. Dép. méd. trav. et hyg. mil., Fac. de med., University de Mtl., Mtl., Canada.
- #714      **Prenatal and Postnatal Exposure to Trichloroethylene Affect Locomotor Activity in Rats.**  
D.J. Zaccaro, D.H. Taylor, K.E. LaGory, R.J. Pfohl and †R.D. Laurie. Department of Zoology, Miami University, Oxford, OH and †Toxicology and Microbiology Division, HERL, USEPA, Cincinnati, OH. Sponsor: R.J. Bull.
- #715      **Acute Toxicity of Ethylene Glycol Monoalkyl Ethers on the Haemopoietic System of Rats.**  
D. Grant, S. Sulsh, W.H. Butler. British Industrial Biological Research Association, Woodmansterne Road, Surrey, U.K.
- #716      **Toxicity of Benzene Metabolites toward Mouse Bone Marrow Stromal Cells in a Co-Culture System.**  
K.W. Gaido and D. Wierda. Department of Pharmacology and Toxicology, West Virginia University Medical Center, Morgantown, WV.
- #717      **Acute Toxicity of Dermally Applied 2-Ethoxy-Ethanol.**  
W.C. Daughtrey, D.P. Ward, S.C. Lewis, D.R. Peterson. Exxon Corp., Bio/dynamics, Inc., East Millstone, NJ. Sponsor: R.A. Kuna.
- #718      **Ophthalmic Toxicology of Diethylene Glycol Monobutyl Ether by Topical Application.**  
B. Ballantyne. Applied Toxicology Department, Union Carbide Corporation, Charleston, WV.
- #719      **Carbon Dioxide Production in Mice in Response to Solvent Inhalation.**  
P.J. Bushnell, H.L. Evans, and E.D. Palmes. NYU Medical Center, New York, NY.
- #720      **Early Toxic Responses in the Cerebellum and Kidney of Methyl Chloride-Exposed Mice.**  
X.Z. Jiang, R. White, O. Lyght, E.A. Gross and K.T. Morgan. Chemical Industrial Institute Toxicology, Research Triangle Park, NC. Sponsor: J.A. Swenberg.
- #721      **Performance on a Rota-Rod as a Predictor of CNS Depression: Evaluation with Ethanol.**  
P.E. Kish, I. Rosenblum, and R. Abraham. Institute of Experimental Pathology and Toxicology, Albany Medical College, Albany, NY.
- #722      **A 90-Day Inhalation Study of Nitrobenzene in F-344 Rats, CD Rats and B6C3F1 Mice.**  
T.E. Hamm, Jr., M. Phelps, T.H. Raynor and R.D. Irons. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.
- #723      **Effects of Xylene Isomers on Operant Responding in Mice.**  
V.C. Moser, E.M. Coggeshall, and R.L. Balster. Department of Pharmacology, Medical College of Virginia, Richmond, VA. Sponsor: L.W. Reiter.
- #724      **Neurotoxicity of Methyl Chloride (MeCl) in Continuously Versus Intermittently Exposed Female C57BL/6 Mice.**  
T.D. Landry, J.F. Quast, T.S. Gushow and J.L. Mattsson. Toxicology Research Laboratory, Dow Chemical USA, Midland, MI. Sponsor: M.J. McKenna.

\*Out of sequence by number only.

- #725 **Effect of Cimetidine on the Acute Hepatotoxicity of Styrene in Rats.**  
S.A. Kerim <sup>a</sup>, S. Chakrabarti <sup>b</sup> and G. Sirois <sup>a</sup>. Fac. pharmacie <sup>a</sup> et Dép. méd. trav. hyg. mil. <sup>b</sup>, University Montréal, Montréal, Québec, Canada.
- #726 **Influence of Styrene and Trichloroethylene on the Acute Hepatotoxicity of Acetaminophen in Rats.**  
P. Colin <sup>a</sup>, J. Henri <sup>a</sup>, S. Chakrabarti <sup>b</sup> and G. Sirois <sup>a</sup>. Fac pharmacie <sup>a</sup> and Dép. méd. trav. et hyg. mil. <sup>b</sup>, University Montréal, Montréal, Québec, Canada.
- #727 **Dose-Dependent Metabolism and Hepatotoxicity of Trichloroethylene (TRI) in Rats.**  
L. Rouisse and S. Chakrabarti. Dept. méd. trav. et hyg. mil., Fac. méd., University Montréal, Montréal, Quebec, Canada.
- #728 **Toxic Interactions Between Lead and Toluene in Fisher 344 Rats.**  
B. Tuchweber <sup>a</sup>, S. Chakrabarti <sup>b</sup>, R. Goyal <sup>b</sup> and F. Gratton <sup>a</sup>. Dep. nutrition <sup>a</sup> and Dép. méd. trav. et hyg. mil. <sup>b</sup>, Fac. méd., University Montréal, Montréal, Québec, Canada.
- #729 **Induction by Chlorinated Aliphatics of GGT- FOCI in Liver of Male Osborne-Mendel Rats.**  
D.L. Story, J.E. Dabbs, C.A. Tyson. SRI International, Menlo Park, CA and H.A. Milman, U.S. Environmental Protection Agency, Washington, DC.
- #730 **Subchronic Toxicity of Carbon Tetrachloride (CT) Administered by Oral Gavage to CD-1 Mice.**  
J.R. Hayes, L.W. Condie\*, and J.F. Borzelleca. Department of Pharmacology and Toxicology, Medical College of VA, Richmond, VA; \*U.S.E.P.A., 26 W. St. Clair St., Cincinnati, OH.
- #731 **Acetone Potentiation of Chronic Liver Injury Induced by Repetitive Administration of CC1<sub>4</sub>.**  
M. Charbonneau, B. Tuchweber and G.L. Plaa. Université de Montréal, Montréal, Québec.
- #732 **Systemic Toxicity in the Rabbit Following Repeated Dermal Exposure to EDS Coal-Derived Liquids.**  
D.P. Ward, R.W. Kapp, Jr., and R.H. McKee\*; Bio/dynamics, Inc. and Exxon Corporation\*, E. Millstone, NJ. Sponsor: G.F. Egan.
- #733 **Increased Seizure Susceptibility Following Sulfolane Exposure.**  
L.J. Burdette and R.S. Dyer. Northrop Services, Inc. and US EPA, RTP, NC. Sponsor: L.W. Reiter.
- #734 **Subchronic Dermal Toxicity and Delayed Contact Sensitization Evaluations of Dicyclopentenyloxyethyl Methacrylate (DPOMA) in Rabbits and Guinea Pigs.**  
P.K. Chan, R.C. Baldwin, A. Fedorowski, G.P. O'Hara, J.M. Smith and A.W. Hayes. Rohm and Haas Company, Spring House, PA.
- #735 **A Comparative 90-Day Dermal Exposure Study of Diethylene Glycol Monomethyl Ether (DEGME) and Ethylene Glycol Monomethyl Ether (EGME) in the Guinea Pig.**  
D.W. Hobson, A.P. D'Addario and D.E. Uddin. Naval Medical Research Institute/Toxicology Detachment, Wright-Patterson AFB, Dayton, OH. Sponsor: R.W. Gardier.
- #736 **Effects of Branched Chain Hydrocarbon Exposure in the Rat, Guinea Pig and Mouse.**  
A.P. D'Addario, D.W. Hobson, D.E. Uddin, L.L. Pitts and J.R. Latendresse II\*; Naval Medical Research Institute and \*AFAMRL, Wright-Patterson AFB, Ohio. Sponsor: R.W. Gardier.
- #737 **X-Ray Microanalysis of Mitochondrial Calcium Levels in Frozen Liver Tissue from Rats Exposed to Carbon Tetrachloride.**  
J.R. Millette, P.T. McCauley, P.J. Clark, †A.L. Allenspach, J. Washington, Toxicology and Microbiology Division, HERL, USEPA, Cincinnati, OH and †Department of Zoology, Miami University, Oxford, OH. Sponsor: L. Condie

- #738 **Effect of H1-Histaminergic Antagonists on Carfentanil Induced Immobilization.**  
S.V. Doctor, W.C. Heyl, and R.A. Braun. Toxicology Branch, Research Division, Chemical Research and Development Center, USAAMCCOM, APG, MD.

**FRIDAY MORNING, MARCH 16  
REAR OF GALLERIA EXHIBIT AREA**

**POSTER SESSION 7B: Halogenated Hydrocarbons**

**Co-Chairs:** J.H. Nair, Consultant, Clifton Park, NY  
T.D. Trautman, General Mills, Minneapolis, MN

**Displayed:** 8:30 A.M. - 11:30 A.M.  
**Attended:** 8:30 A.M. - 10:00 A.M. (Even Paper Numbers)  
10:00 A.M. - 11:30 A.M. (Odd Paper Numbers)

- #739 **Studies on the Bioavailability in Guinea Pigs of Dioxin in Soil.**  
E.E. McConnell, M.W. Harris, D.J. Harvan, P.W. Albro and J.R. Hass. National Institute of Environmental Health Sciences (NIH), Research Triangle Park, NC. Sponsor: G.W. Lucier.
- #740 **Effect of Oral and Intrahypothalamic Administration of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) on Food Intake and Oxygen Consumption in Rats.**  
C.L. Potter, R.M. Lopachin, M.D. Seefeld, and R.E. Peterson. University of Wisconsin, Madison, WI.
- #741 **A Longitudinal Metabolic Profile following 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) Treatment in the Sprague-Dawley Rat.**  
B.J. Christian, L.A. Menahan, and R.E. Peterson, University of Wisconsin, Madison, WI.
- #742 **Effect of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) on Caloric Balance in the Rat.**  
M.D. Seefeld, B.J. Christian and R.E. Peterson. University of Wisconsin, Madison, WI.
- #743 **Effect of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) on Food Intake, Body Weight and Lethality in Guinea Pigs, Rats and Mice: A Pair-Feeding Study.**  
C.K. Kelling, B.J. Christian and R.E. Peterson. University of Wisconsin, Madison, WI.
- #744 **Enhancement of Bradykinin and Histamine-Induced Paw Edema by 2,3,7,8-Tetrachlorodibenzo-p-Dioxin.**  
H.M. Theobald, R.C. Bookstaff and R.E. Peterson. University of Wisconsin, Madison, WI.
- #745 **Effects of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin on the Pituitary-Testis Axis in Rats.**  
R.W. Moore, C.L. Potter, J.A. Robinson, R.E. Peterson. University of Wisconsin, Madison, WI.
- #746 **The Effect of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) on Adrenal Steroidogenesis, *In Vivo*.**  
M.J. DiBartolomeis, C.R. Jefcoate, B.J. Christian, R.W. Moore, and R.E. Peterson. University of Wisconsin, Madison, WI.
- #747 **Changes in Serum Triglyceride (TG) Metabolism Induced by 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) in Adult Male Fischer Rats.**  
R. Walden, C.R. Shoaf, D.E. Chapman and C.M. Schiller. Laboratory Pharmacology, NIEHS/NIH, Research Triangle Park, NC.

- #748 **Comparative Toxicity of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD).**  
D.E. Chapman and C.M. Schiller, Laboratory of Pharmacology, NIEHS/NIH, Research Triangle Park, NC.
- #749 **Altered Apoprotein (apo) Composition of Chlomicra and Very Low Density Lipoproteins (VLDL) from Mesenteric Lymph after Exposure of Adult Male Fischer Rats with 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD).**  
C.R. Shoaf, R. Walden, D.E. Chapman and C.M. Schiller. Laboratory of Pharmacology, NIEHS/NIH, Research Triangle Park, NC.
- #750 **Altered Regulation of Human Epidermal Cell Proliferation and Differentiation by 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD).**  
R. Osborne and W.F. Greenlee. Chemical Industrial Institute of Toxicology, Research Triangle Park, NC.
- #751 **2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) Inhibits the Induction by Thymic Epithelial (TE) Cells of T-Lymphocyte Mitogen Responsiveness.**  
W.F. Greenlee, K.M. Dold and R.D. Irons. Chemical Industrial Institute of Toxicology, Research Triangle Park, NC.
- #752 **Mixed Function Oxidase Induction and Toxic Effects of TCDD in Poultry.**  
D. Jones, T.W. Sawyer, K. Rosanoff and S. Safe. Department of Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M University, College Station, TX.
- #753 **Effect of Thyroxine (T4) and Triiodotyrosine (T3) on TCDD Toxicity in Thyroidectomized Rats.**  
K. Rozman, E. Scheufler, T. Pazdernik and H. Greim. Department of Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS, U.S.A. and Abt. für Toxikologie, GSF mbH München, Neuherberg, F.R.G.
- #754 **Hexadecane Enhances the Toxicity of TCDD.**  
K. Rozman. Department of Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS, U.S.A. and Abt. für Toxikologie der GSF, mbH München, Neuherberg, F.R.G.
- #755 **Role of Thyroid Function in TCDD Induced Toxicity.**  
T. Rozman, K. Rozman and H. Greim. Basotherm GmbH, Biberach, F.R.G.; Department Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS and Abt. für Toxikologie der GSF mbH München, Neuherberg, F.R.G.
- #756 **Uptake, Distribution, Metabolism and Elimination of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) in Fish.**  
J.M. Kleeman, S.M. Chen, C.L. Potter, J.R. Olson, and R.E. Peterson. SUNY, Buffalo, NY. and University of Wisconsin, Madison, WI.
- #757 **Toxicity of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) in Freshwater Fish.**  
J.M. Spitsbergen, J.M. Kleeman and R.E. Peterson. Cornell University, Ithaca, NY and University of Wisconsin, Madison, WI.



# **SOCIETY OF TOXICOLOGY OFFICERS, COUNCILORS, EXECUTIVE SECRETARY**

## **OFFICERS (1983-1984)**

Gabriel L. Plaa, President  
Frederick W. Oehme, Vice-President  
Emil A. Pfitzer, Vice-President Elect  
Marshall Steinberg, Secretary  
Richard S. Waritz, Treasurer

## **EXECUTIVE SECRETARY**

Joseph R. Wasdovich  
475 Wolf Ledges Parkway  
Akron, OH 44311-1087  
(216) 762-2289

## **COUNCILORS**

James E. Gibson (1982-1984)  
A. Wallace Hayes (1982-1984)  
Mark Hite (1983-1985)  
Jerry B. Hook (1983-1985)  
Robert L. Dixon, Past President

## **OFFICE OF THE SECRETARY**

Hazleton Labs America  
9200 Leesburg Turnpike  
Vienna, VA 22180  
(703) 893-5400

---

# **COMMITTEES, BOARDS, AND OTHER APPOINTMENTS 1983-1984**

## **ELECTED COMMITTEES**

\*Council Liaison

### **EDUCATION**

(James E. Gibson\*)  
Gary P. Carlson (1982-1984), Chairman  
Melvin E. Andersen (1983-1985)  
Robert I. Krieger (1983-1985)  
Paul E. Morrow (1982-1984)

### **MEMBERSHIP**

(Gabriel L. Plaa\*)  
Curtis D. Klaassen (1981-1984), Chairman  
Marion W. Anders (1981-1984)  
Michael A. Gallo (1982-1985)  
Orville E. Paynter (1983-1986)  
I. Glenn Sipes (1982-1985)  
Philip G. Watanabe (1983-1986)

## APPOINTED COMMITTEES

\*Council Liaison

### ANIMALS IN RESEARCH

(Marshall Steinberg\*)  
Gordon W. Newell (1983-1984),  
Chairman  
Donald R. Buhler (1983-1985)  
Robert T. Drew (1983-1984)  
Sidney Green (1983-1985)  
Joseph E. Le Beau (1983-1985)  
Robert J. Weir (1983-1984)  
James R. Beall (Advisor)  
Jerold A. Last (Advisor)  
Celso E. Mendoza (Advisor)  
Daljit S. Sawhney (Advisor)  
R. Craig Schnell (Advisor)

### AWARDS

Robert L. Dixon,  
\*Chairman  
Rose Dagirmanjian  
Frederick P. Guengerich  
George J. Traiger

### BOARD OF PUBLICATIONS

Robert I. Krieger (1982-1985), Chairman  
Roger O. McClellan (1983-1986)  
Gabriel L. Plaa  
Mary Vore (1983-1984)  
William W. Carlton, Auditor  
A. Wallace Hayes, Auditor  
Frederick W. Oehme, Auditor\*  
Philip G. Watanabe, Auditor

### BURROUGHS WELCOME ADVISORY SCHOLARSHIP

(Gabriel L. Plaa\*)  
Tom S. Miya, Chairman  
Harold J. Fallon  
Perry J. Gehring  
Ernest Hodgson

### COMMUNICATIONS TASK GROUP

(Jerry B. Hook\*)  
Bernard A. Schwetz, Chairman  
Anne P. Autor  
Donald J. Ecobichon  
Donald A. Fox  
Donald W. Lamb  
Matilda McIntire  
Richard A. Parent  
R. Craig Schnell  
James S. Woods

### DELEGATES FOR IUTOX

Robert Dixon  
James E. Gibson  
Perry J. Gehring  
Frederick W. Oehme  
Richard S. Waritz  
Marshall Steinberg, Alternate  
A. Wallace Hayes, Alternate

### FINANCE

Richard S. Waritz, Chairman\*  
Gary L. Lage (1983-1985)  
Lloyd W. Hazleton (1983-1985)  
Frederick W. Oehme  
Gabriel L. Plaa

### INFORMATION HANDLING

(Robert L. Dixon\*)  
Elton R. Homan, Chairman  
George J. Cosmides  
Robert R. Maronpot  
Norbert P. Page  
Frederick Sperling  
Arthur A. Wykes

### HISTORIAN

Harry W. Hays

**NOMINATING**

(A. Wallace Hayes\*)  
Robert B. Forney, Chairman  
Michael A. Evans  
Joyce A. Goldstein  
William R. Hewitt  
Bruce J. Kelman

**PLACEMENT OFFICE**

(Richard S. Waritz\*)  
Frederick R. Johannsen, Director  
Richard A. Parent, Co-Director  
Ho Chung  
Carl L. Hake  
Manfred A. Hollinger

**PROFESSIONAL RELATIONS****PROFESSIONAL RELATIONS  
AND STANDARDS**

(Emil A. Pfitzer\*)  
Charles F. Reinhardt (1983-1984), Chairman  
Monique C. Braude (1983-1985)  
Marion Ehrich (1983-1985)  
Loren D. Koller (1983-1984)  
William E. Rinehart (1983-1984)  
John A. Thomas (1983-1985)

**PROGRAM**

Frederick W. Oehme, Chairman\*  
Emil Pfitzer, Co-Chairman  
John L. Emmerson, (1981-1984),  
Chairman, Poster Sessions  
William O. Berndt (1982-1985)  
Donald J. Ecobichon (1981-1984)  
A. Jay Gandolfi (1983-1986)  
Bernard D. Goldstein (1982-1985)  
Frederick P. Guengerich (1982-1985)  
Meryl H. Karol (1983-1986)  
Joseph E. Manno (1981-1984)  
Emil A. Pfitzer  
David M. Serrone (1983-1986)

**REGULATORY AFFAIRS AND  
LEGISLATIVE ASSISTANCE**

(Marshall Steinberg\*)  
Frederick R. Johannsen (1983-1985),  
Chairman  
Gio B. Gori (1983-1984)  
John G. Keller (1983-1984)  
Arthur H. McCreesh (1983-1985)  
Lawrence M. Roslinski (1983-1985)  
Peter D. Unger (1983-1984)  
Herman A. Birnbaum (Advisor)  
G. Carl Holsing (Advisor)  
Edward Schwartz (Advisor)  
Robert D. Short (Advisor)  
Barbara J. Struthers (Advisor)

**TECHNICAL**

(Mark Hite\*)  
James S. Bus (1983-1984), Chairman  
Joseph F. Borzelleca (1983-1985)  
James M. Fujimoto (1983-1985)  
George J. Levinkas (1983-1985)  
Donald J. Lisk (1983-1984)  
Jaroslav J. Vostal (1983-1984)  
Wayne M. Galbraith (Advisor)  
Stephen B. Harris (Advisor)  
Frank N. Kotsonis (Advisor)  
James T. MacGregor (Advisor)  
Gary M. Williams (Advisor)

## PAST PRESIDENTS

Harold C. Hodge .....	1961-1962
C. Boyd Shaffer .....	1962-1963
Paul S. Larson .....	1963-1964
Harry W. Hays .....	1964-1965
Frederick Coulston .....	1965-1966
Verald K. Rowe .....	1966-1967
John A. Zapp, Jr. ....	1967-1968
Carrol S. Weil .....	1968-1969
Ted A. Loomis .....	1969-1970
Robert L. Roudabush .....	1970-1971
Wayland J. Hayes, Jr. ....	1971-1972
Victor A. Drill .....	1972-1973
Joseph F. Borzelleca .....	1973-1974
Sheldon D. Murphy .....	1974-1975
Seymour L. Friess .....	1975-1976
Robert A. Scala .....	1976-1977
Harold M. Peck .....	1977-1978
Leon Golberg .....	1978-1979
Tom S. Miya .....	1979-1980
Perry J. Gehring .....	1980-1981
Robert B. Forney .....	1981-1982
Robert L. Dixon .....	1982-1983

# AWARDS

L.J. Jenkins, Jr.

R.A. Jones

<b>Achievement</b>	
1967	G.L. Plaa
1968	A.H. Conney
1969	S.S. Epstein
1970	S.D. Murphy
1971	Y. Alarie
1972	R.L. Dixon
1973	No Award
1974	M.F. Cranmer
1975	I.C. Munro
1976	C.D. Klaassen
1977	J.E. Gibson
1978	R.D. Harbison
1979	M.R. Boyd
1980	P.G. Watanabe
1981	No Award
1982	F.P. Guengerich
1983	No Award

1983 ..... Henry D. Heck

## Education

1975	H.C. Hodge
1976	T.A. Loomis
1977	R.B. Forney
1978	No Award
1979	S.D. Murphy
1980	H.H. Cornish
1981	F. Sperling
1982	L.W. Hazleton
1983	Julius M. Coon

## Arnold J. Lehman

<b>Frank R. Blood</b>	
1974	Y. Alarie
1975	D.J. Ecobichon
	G.J. Johnstone
	O. Hutzinger
1976	R.D. Brown
1977	J. Dedinas
	G.D. DiVincenzo
	C.J. Kaplan
1978	P.J. Gehring
	E.O. Madrid
	G.R. McGowan
	P.G. Watanabe
1979	R. Fradkin
	E.J. Ritter
	W.J. Scott
	J.G. Wilson
1980	J.A. Last
	P.F. Moore
	O.G. Raabe
	B.K. Tarkington
1981	Y. Alarie
	M. Brady
	C. Dixon
	M. Karol
1982	M.E. Andersen
	M.L. Gargas

1980	A.H. Conney
1981	G.L. Plaa
1982	G.M. Williams
1983	David P. Rall

## Merit

1966	H.F. Smyth, Jr.
1967	A.J. Lehman
1968	R.T. Williams
1969	H.C. Hodge
1970	D.D. Irish
1971	K.P. DuBois
1972	O.G. Fitzhugh
1973	H.E. Stokinger
1974	W.B. Deichmann
1975	F. Coulston
1976	V.K. Rowe
1977	H.W. Hays
1978	J.M. Coon
1979	D.W. Fassett
1980	B.L. Oser
1981	J.H. Weisburger
1982	H.M. Peck
1983	Perry J. Gehring

## **AWARDS (cont'd)**

### **Distinguished Fellow**

The following have been given the Distinguished Fellow Award:

Joseph F. Borzelleca, Ph.D.  
Julius M. Coon, M.D., Ph.D.  
Frederick Coulston, Ph.D.  
William B. Deichmann, M.D., Ph.D.  
Victor A. Drill, M.D., Ph.D.  
David W. Fassett, M.D.  
O. Garth Fitzhugh, Ph.D.  
Seymour L. Friess, Ph.D.  
Wayland J. Hayes, Jr., M.D., Ph.D.  
Leon Golberg, M.D., D.Sc., D. Phil.  
Harry W. Hays, Ph.D.  
Harold C. Hodge, Ph.D.  
Don D. Irish, Ph.D.  
Paul S. Larson, Ph.D.  
Ted A. Loomis, M.D., Ph.D.  
Sheldon D. Murphy, Ph.D.  
Harold M. Peck, M.D.  
Robert L. Roudabush, Ph.D.  
Verald K. Rowe, Sc.D.  
Robert A. Scala, Ph.D.  
C. Boyd Shaffer, Ph.D.  
Henry F. Smyth, Jr., Ph.D.  
Herbert E. Stokinger, Ph.D.  
Carrol S. Weil  
John A. Zapp, Jr., Ph.D.

# OFFICERS — REGIONAL CHAPTERS 1983-1984

## **MICHIGAN**

Michael J. McKenna, President  
Felix A. De La Iglesia, President-Elect  
Jay I. Goodman, Vice-President  
Richard C. Piper, Secretary/Treasurer  
Richard J. Kociba, Councilor  
James E. Trosko, Councilor  
Michael J. Brabec, Councilor

## **MIDWEST**

Edward J. Kaminski, President  
Richard W. Krasula, President-Elect  
Dennis W. Arnold, Secretary  
Eugene J. Youkilis, Treasurer  
Milton Eisler, Councilor  
Barry S. Levine, Councilor  
Jean-Claude Roger, Councilor  
Michael A. Evans, Councilor

## **NORTH CAROLINA**

James E. Gibson, President  
Ernest Hodgson, President-Elect  
Arthur L. Aronson, Vice-President  
James S. Bus, Secretary/Treasurer  
James C. Lamb, Councilor  
John A. Moore, Councilor  
Mohamed B. Abou-Donia, Councilor

## **MID-ATLANTIC**

A. Wallace Hayes, President  
Mark Hite, Vice-President  
Richard L. Steelman, Vice-President-Elect  
R. Michael McClain, Secretary/Treasurer  
John G. Dent, Councilor  
Fran Mielach, Councilor  
Robert Snyder, Councilor  
Florence K. Kinoshita, Councilor

## **NATIONAL CAPITAL AREA**

Jane Robens, President  
Lester Hardy, President-Elect  
Albert E. Munson, Vice-President  
William M. Busey, Secretary/Treasurer  
Frederick Sperling, Councilor  
Betty Moran, Councilor  
Michael Farrow, Councilor

## **SOUTH CENTRAL**

Raymond D. Harbison, President  
Morris F. Cranmer, President-Elect  
Donald E. McMillan, Vice-President  
George L. Wolff, Secretary/Treasurer  
Syed F. Ali, Councilor  
Karl P. Baetcke, Councilor  
Jack A. Hinson, Councilor

# OFFICERS — SPECIALTY SECTIONS

## 1983-1984

### **METALS**

Carol R. Angle, President  
F. William Sunderman, Jr., President-Elect  
Gerald L. Fisher, Vice President  
John U. Bell, Secretary  
Donald E. Gardner, Councilors  
Curtis D. Klaassen, Councilor  
Zahir A. Shaikh, Councilor

### **REPRODUCTIVE AND DEVELOPMENTAL TOXICOLOGY**

E. Marshall Johnson, President  
James L. Schardein, President-Elect  
Robert E. Staples, Secretary/Treasurer  
Richard M. Hoar, Councilors  
Neil Chernoff, Councilor

### **INHALATION**

James T. Stevens, President  
Donald E. Gardner, President-Elect  
Roger O. McClellan, Vice-President  
Craig S. Barrow, Secretary/Treasurer  
Robert T. Drew, Councilor  
Basil K.J. Leong, Councilor  
Judith A. Graham, Councilor

### **MECHANISMS**

Steven D. Cohen, President  
Marion. W. Anders, President-Elect  
Philip G. Watanabe, Vice-President  
I. Glenn Sipes, Secretary/Treasurer  
John J. Lech, Councilor  
Robert Snyder, Councilor

### **NEUROTOXICOLOGY**

Mohamed B. Abou-Donia, President  
Peter S. Spencer, President-Elect  
Larry Reiter, Vice-President  
Gary P. Cooper, Secretary/Treasurer  
Herbert E. Lowndes, Councilor  
Donald A. Fox, Councilor  
Toshio Narahashi, Councilor



## CORPORATE ASSOCIATE MEMBERS — 1983

- Abbott Laboratories, Inc.**  
North Chicago, Illinois
- Allied Corporation**  
Morristown, New Jersey
- American Petroleum Institute**  
Washington, D.C.
- Atlantic Richfield Company**  
Los Angeles, California
- Boehringer Ingelheim Ltd.**  
Ridgefield, Connecticut
- Bristol-Myers Company**  
Evansville, Indiana
- Burroughs Wellcome Company**  
Research Triangle Park, North Carolina
- Chesebrough Pond's Inc.**  
Trumbull, Connecticut
- Ciba-Geigy Corporation**  
Greensboro, North Carolina
- Clairol Products Division (Bristol Myers Corporation)**  
Stamford, Connecticut
- Coca Cola Company**  
Atlanta, Georgia
- Colgate-Palmolive Company**  
Piscataway, New Jersey
- Dow Chemical U.S.A.**  
Midland, Michigan
- E.I. DuPont de Nemours & Company**  
Wilmington, Delaware
- Eli Lilly & Company**  
Indianapolis, Indiana
- Exxon Corporation**  
East Millstone, New Jersey
- Gulf Science & Technology Company**  
Pittsburgh, Pennsylvania
- Hazleton Laboratories America, Inc.**  
Vienna, Virginia
- Hercules, Inc.**  
Wilmington, Delaware
- Hershey Foods Corporation**  
Hershey, Pennsylvania

**Hoechst-Roussel Pharmaceuticals, Inc.**  
Somerville, New Jersey

**Hoffmann-La Roche, Inc.**  
Nutley, New Jersey

**ICI Americas, Inc.**  
Wilmington, Delaware

**International Research & Development Corporation**  
Mattawan, Michigan

**Johnson & Johnson**  
New Brunswick, New Jersey

**Merck Sharp & Dohme Research Laboratories**  
West Point, Pennsylvania

**Merrell Dow Pharmaceuticals**  
Cincinnati, Ohio

**Mobay Chemical Corporation**  
Kansas City, Missouri

**Mobil Oil Corporation**  
New York, New York

**Monsanto Company**  
St. Louis, Missouri

**Pennwalt Corporation**  
King of Prussia, Pennsylvania

**Pfizer, Incorporated**  
Groton, Connecticut

**Phillip Morris U.S.A.**  
Richmond, Virginia

**Phillips Petroleum Company**  
Bartlesville, Oklahoma

**Pillsbury Company**  
Minneapolis, Minnesota

**Procter & Gamble Company**  
Cincinnati, Ohio

**Rohm and Haas Corporation**  
Spring House, Pennsylvania

**Schering Corporation**  
Bloomfield, New Jersey

**Smith Kline & French Laboratories**  
Philadelphia, Pennsylvania

**Squibb Institute Medical Research**  
New Brunswick, New Jersey

**Standard Oil Company**  
Cleveland, Ohio

**Stauffer Chemical Company**  
Westport, Connecticut

**Union Carbide Company**  
Danbury, Connecticut

**Uniroyal, Inc.**  
Middlebury, Connecticut

**Warner-Lambert/Parke-Davis**  
Ann Arbor, Michigan

**Wyeth Laboratories, Inc.**  
Paoli, Pennsylvania

**SOT REGIONAL CHAPTERS MEETINGS**

Thursday, March 15, 1984

\*\*\*\*\*

**NATIONAL CAPITAL AREA**

*Jane F. Robens, Presiding*

5:00 P.M.

Fayette Room

CASH BAR

\*\*\*\*\*

**SOUTH CENTRAL CHAPTER**

*Morris F. Cranmer, Presiding*

5:00 P.M.

Newton Room

CASH BAR

\*\*\*\*\*

**GULF COAST CHAPTER**

*Ruth Billings, President*

5:00 P.M.

Fulton Room

CASH BAR

\*\*\*\*\*

**MID-ATLANTIC CHAPTER**

*A. Wallace Hayes/Mark Hite*

5:00 P.M.

South Wing West

CASH BAR

\*\*\*\*\*

Tuesday Afternoon, March 13, 1984  
**SPECIALTY SECTION MEETINGS**

\*\*\*\*\*  
**Inhalation**

6:00 P.M.

Clayton Room

*James T. Stevens, Presiding*

\*\*\*\*\*  
**Mechanisms of Toxicology**

5:00 P.M.

Fulton & Cobb Rooms

Business Meeting

*Steven Cohen, Presiding*

\*\*\*\*\*  
**Neurotoxicology**

Immediately following Symposium

Tuesday 1:30 to 4:45 P.M.

Grand Salon East

CASH BAR

\*\*\*\*\*  
**Reproductive and Developmental  
Toxicology**

5:00 p.m.

North Wing East

Program and Business Meeting

*E. Marshall Johnson, Presiding*

\*\*\*\*\*  
Tuesday Afternoon, March 13, 1984

**"METALS"**

12 Noon - 1:30 P.M.

GRAND BALLROOM EAST

*President Elect F. William Sunderman, Jr., Presiding*

## FUTURE MEETINGS

<b>Meeting</b>	<b>Year</b>	<b>Dates</b>	<b>Location</b>
24	1985	March 11-16	Town & Country Hotel San Diego, CA
25	1986	March 2-7 Houston, TX	Shamrock Hilton Hotel
26	1987	March 15-20	Washington Hilton Hotel Washington, DC