

Society of Toxicology

26th Annual Meeting Program

February 23-27, 1987
Washington Hilton Hotel
Washington, D.C.

SPECIAL EVENTS

HOW TO HANDLE YOURSELF SUCCESSFULLY IN THE CURRENT JOB MARKET

sponsored by SOT Placement Committee
Monday, February 23, 1987
4:15 p.m.–6:00 p.m.
Thoroughbred Room
Open to all registrants

SOT RECEPTION

Monday, February 23, 1987
6:00 p.m.–7:30 p.m.
Crystal Ballroom
Open to all registrants and guests

SPECIAL POSTER/DEMONSTRATION SESSION— COMMUNICATING BASIC CONCEPTS IN TOXICOLOGY

sponsored by SOT Public Communications Committee
Tuesday, February 24, 1987—Thursday, February 26, 1987
8:30 a.m.–4:30 p.m.
Georgetown West
Open to all registrants

SOT ISSUES SESSION

Tuesday, February 24, 1987
Noon–1:00 p.m.
Jefferson West
Chaired by SOT President John Doull
Bring your lunch and participate in an open forum discussion of SOT affairs.
Open to all registrants

SPECIAL SOT RECEPTION AT THE CORCORAN GALLERY OF ART

Tuesday, February 24, 1987
7:00 p.m.–9:00 p.m.
Remarks by Dr. Frank Press, President, National Academy of Sciences
(Buses leave from Washington Hilton Hotel by 6:30 p.m. promptly and return by 9:15–9:30 p.m.)
\$30/person, includes transportation, open wine bar and hors d'oeuvres. Attendance limited. Tickets required. Pre-registration by February 6.

SPECIAL MECHANISMS POSTER PRESENTATION

sponsored by SOT Mechanisms Specialty Section
Wednesday, February 25, 1987
8:30 a.m.–11:30 a.m.
Thoroughbred and Hemisphere Rooms
Open to all registrants

SECOND ANNUAL BURROUGHS WELLCOME TOXICOLOGY SCHOLAR AWARD LECTURE

by Curtis D. Klaassen
Chaired by Tom S. Miya
Wednesday, February 25, 1987
Noon–1:00 p.m.
International Ballroom West
Open to all registrants

AMERICAN BOARD OF TOXICOLOGY OPEN MEETING

Wednesday, February 25, 1987
Noon–1:30 p.m.
Jefferson West

ANNUAL SOT BUSINESS MEETING

Wednesday, February 25, 1987
4:00 p.m.–5:30 p.m.
International Ballroom Center
SOT Members Only

26TH ANNUAL BANQUET AND AWARDS PRESENTATION

Wednesday, February 25, 1986
7:00 p.m.–10:00 p.m.
International Ballroom East
Open to all registrants and guests. \$30/person. Tickets required (available at Registration Desk).

FUTURE SOT MEETINGS

1987	Joint SOT-ISSX Meeting Clearwater, FL	November 8–13
1988	Lowes Anatole Hotel Dallas, TX	February 14–19
1989	Atlanta Hilton Hotel Atlanta, GA	February 26–March 3

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GENERAL INFORMATION

REGISTRATION FEES

	Member or Post-Doctoral in Training	Non- Member	Student, Full-Time, Pre-Doctoral	Spouse*
Before Feb. 6	\$80	\$120	\$15	\$10
After Feb. 6	\$95	\$135	\$30	\$10

Special SOT Reception at Corcoran Gallery of Art (includes transportation, wine bar, hors d'oeuvres). Tuesday, February 24, 7:00 p.m. Attendance is limited. \$30/person. Pre-registration by February 6.

Annual Banquet and Awards Presentation. Wednesday, February 25, 7:00 p.m. \$30/person.

*Registration required for access to the hospitality suite.

REGISTRATION DESK—CONCOURSE LEVEL FOYER

Sunday, February 22	4:00 p.m.– 8:00 p.m.
Monday, February 23	7:00 a.m.– 5:00 p.m.
Tuesday, February 24	7:00 a.m.– 4:00 p.m.
Wednesday, February 25	8:00 a.m.– 4:00 p.m.
Thursday, February 26	8:00 a.m.– 4:00 p.m.

HOTEL ACCOMMODATIONS

The Washington Hilton Hotel is the Annual Meeting headquarters hotel. The SOT rates are guaranteed when reservations are made on the hotel postcard enclosed with the preliminary program. For information regarding alternative accommodations, contact the SOT office in Washington, D.C.

AIR TRANSPORTATION

Eastern Airlines, in cooperation with the Society of Toxicology, is offering a special discount that affords at least a 50 percent discount off Eastern's normal coach roundtrip fare for attendees travelling on Eastern to the Annual Meeting. A 30 percent discount is being offered off regular first-class fares as well. Call Eastern at 800-468-7022 (Eastern Time) daily between 8:00 a.m.–9:00 p.m. for reservations. **Refer to Easy Access #EZ2P81.** A travel agent may make your reservations for you, but must refer to the file number to take advantage of the SOT discount. If Eastern has promotional fares that represent even greater savings, you will be confirmed at the lowest fare applicable to your itinerary.

AIRPORT TRANSPORTATION SERVICES

Washington Flyer (a commercial bus company) has bus service from Washington National, Dulles International and Baltimore-Washington International Airports to the Washington Hilton Hotel.

CONFERENCE HEADQUARTERS—CABINET ROOM

Sunday	1:00 p.m.– 6:00 p.m.
Monday–Thursday	7:00 a.m.– 4:00 p.m.
Friday	7:00 a.m.–11:00 a.m.

PLACEMENT SERVICE—

STATE ROOM/ADAM ROOM

Monday	10:00 a.m.– 3:30 p.m.*
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*registration only

STATE/ADAM/BANCROFT/CHEVY CHASE/DUPONT ROOMS

Tuesday–Thursday	9:00 a.m.– 4:00 p.m.
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PRESS ROOM—EDISON ROOM

Monday–Wednesday	8:00 a.m.– 5:00 p.m.
Thursday	8:00 a.m.–12:00 p.m.

SPOUSE HOSPITALITY—CONSERVATORY ROOM

Monday–Wednesday	9:00 a.m.– 4:00 p.m.
Thursday–Friday	9:00 a.m.–12:00 p.m.

A staff attendant will be available on Tuesday and Wednesday, 9:00 a.m.–12:00 p.m. to respond to questions regarding available activities and to arrange tours. Spouses must be registered for access to the hospitality suite.

See separate spouse program for SOT-sponsored tours and activities.

PLACEMENT SERVICE SEMINAR: HOW TO HANDLE YOURSELF SUCCESSFULLY IN THE CURRENT JOB MARKET— THOROUGHbred

Monday	4:15 p.m.– 6:00 p.m.
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The seminar will be given in three sections— (i) Corporate Perspective: What Industry Looks for in a Candidate; (ii) The Things They Never Taught You in School: How to Deal with Corporate Life; (iii) The Interview Process: What Works and What Does Not. A demonstration using panelists and audience members.

SPECIAL POSTER/DEMONSTRATION SESSION— GEORGETOWN WEST COMMUNICATING BASIC CONCEPTS IN TOXICOLOGY

Tuesday–Thursday	8:30 a.m.– 4:30 p.m.
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The SOT Committee on Public Communications presents a special opportunity for registrants to explore and discuss innovative educational reading materials, slide presentations, and computer-based teaching devices that have been developed by SOT members and other scientists for the purpose of communicating basic concepts in toxicology. Ideas designed to improve communications among non-scientists as well as between professional toxicologists will be described. This session is presented to encourage the participation of SOT members in the production of teaching materials that could be employed by the SOT in the development of toxicology outreach programs, and to provide an opportunity for members to gain information that might enhance individual efforts in this area.

EXHIBITS—EXHIBIT HALL

Tuesday–Thursday	8:30 a.m.– 5:00 p.m.
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SPECIAL MECHANISMS POSTER-DISCUSSION— HEMISPHERE/THOROUGHbred ROOMS

Wednesday	8:30 a.m.–11:30 a.m.
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The poster-discussion format combines features of both a poster and an oral presentation. In the first two-thirds of the session, the papers are available for discussion and examination with the authors. Thereafter, both authors and audience will be seated and an oral discussion will be open to both the authors and the audience.

THE TOXICOLOGIST—ABSTRACTS OF PAPERS PRESENTED

Distributed without charge to all members of the Society of Toxicology and pre-registered non-members in advance of the meeting. Non-member on-site registrants will be given the abstracts with their registration at the meeting. Additional copies will be available for purchase at the meeting for \$10 each. Following the meeting, copies of the Toxicologist will be available from SOT headquarters for \$20 each, plus \$3.00 postage and handling.

SLIDE PREVIEW ROOM—CONVENTION OFFICE, CONCOURSE LEVEL FOYER

Sunday	8:00 a.m.–5:00 p.m.
Monday–Thursday	8:00 a.m.–4:00 p.m.
Friday	8:00 a.m.–9:00 a.m.

PHOTOGRAPHER—Robert Forney, Jr., Medical College of Ohio, Toledo, OH

PROGRAM SUMMARY

Continuing Education Courses (Pre-Registration Only)

All courses are held on Monday, February 23, 1987

8:00 a.m.-Noon

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| 1. Dermal Absorption and Metabolism of Xenobiotics | International Ballroom Center |
| 2. Hepatotoxicity | International Ballroom West |
| 3. Naturally Occurring Toxins | International Ballroom East |

1:30 p.m.-5:30 p.m.

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|---|-------------------------------|
| 4. Clinical Chemistry of Laboratory Animals | International Ballroom Center |
| 5. <u>In Vitro</u> Toxicology Testing | International Ballroom West |
| 6. Toxicology of Special Senses | International Ballroom East |

Symposia

Day/Time	Topic	Room	Page
Tuesday 8:30 a.m.	Aquatic Organisms as Sentinels of Environmental Health	International Ballroom West	11
Tuesday 8:30 a.m.	Mechanisms of Immunotoxicology: Target Sites in the Immune System	International Ballroom Center	11
Tuesday 8:30 a.m.	Alternatives to Animals and Innovative Designs in Toxicology	International Ballroom East	11
Tuesday 1:30 p.m.	Source and Fate of Toxic Substances in Water	International Ballroom West	19
Tuesday 1:30 p.m.	Sexual Differentiation of the CNS: Relevance to Reproductive Toxicology	International Ballroom Center	19
Tuesday 1:30 p.m.	Acute Radiation-Induced Injury.	International Ballroom East	20
Wednesday 8:30 a.m.	rDNA-Derived Proteins: Toxicologic Considerations	International Ballroom West	27
Wednesday 1:30 p.m.	Toxicological Considerations in Pulmonary Carcinogenesis.	Monroe Room	34
Wednesday 1:30 p.m.	The Use of the Ferret as an Animal Model in Pre-Clinical Safety Studies and Biomedical Research	International Ballroom East	35
Thursday 8:30 a.m.	Oncogenes: Their Role in Normal and Aberrant Cell Proliferation	International Ballroom West	41
Thursday 8:30 a.m.	The Neurotoxicology of Metals: From Man to the Molecule	International Ballroom Center	41
Thursday 1:30 p.m.	Neurotoxicology of Heavy Metals: Molecular Mechanisms	International Ballroom West	49
Thursday 1:30 p.m.	Evaluation of the Rationale for Selection of the Maximum Tolerated Dose (MTD) for Chronic Animal Bioassays	International Ballroom Center	49

Day/Time	Topic	Room	Page
Friday 8:30 a.m.	Quantitative Assessment of Cancer Risk – Integration of Biological Events	International Ballroom East	55
Friday 8:30 a.m.	Biochemical Mechanisms of Species Differences in Target Organ Carcinogenicity	International Ballroom West	55

Platform Sessions

Day/Time	Topic/Abstract #	Room	Page
Tuesday 8:30 a.m.	Reproductive Toxicology/Teratology #1-14	Jefferson Room West	12
Tuesday 8:30 a.m.	Metabolism/Toxicity I #15-27	Lincoln Room West	12
Tuesday 1:30 p.m.	Immunotoxicology I #28-39	Jefferson Room West	20
Tuesday 1:30 p.m.	Inhalation I #40-53	Lincoln Room West	21
Wednesday 8:30 a.m.	Pesticides II #54-62	Jefferson Room West	28
Wednesday 8:30 a.m.	Molecular/Cellular #63-74	Lincoln Room West	28
Wednesday 1:30 p.m.	Aquatic/Environmental Toxicology II #75-81	Jefferson Room West	35
Wednesday 1:30 p.m.	Biotransformation Enzymes #82-90	Lincoln Room West	35
Thursday 8:30 a.m.	Immunotoxicology II #91-104	Jefferson Room West	42
Thursday 8:30 a.m.	Renal Toxicology #105-113	Lincoln Room West	42
Thursday 1:30 p.m.	Inhalation II #114-127	Jefferson Room West	49
Thursday 1:30 p.m.	Genetic Toxicology #128-139	Lincoln Room West	50
Thursday 1:30 p.m.	Biotransformation II #140-149	Monroe Room	50
Friday 8:30 a.m.	Metals II #150-162	Jefferson Room West	56

Poster Sessions

Posters will be displayed from 8:30 a.m. to 11:30 a.m. and from 1:30 p.m. to 4:30 p.m. in the Exhibit Hall. (Communicating Concepts will be displayed in the Georgetown Room, Mechanisms of TCDD Toxicity will be displayed in the Hemisphere Room, and Active Species of Oxygen: Biological Role in Toxicity will be displayed in the Thoroughbred Room).

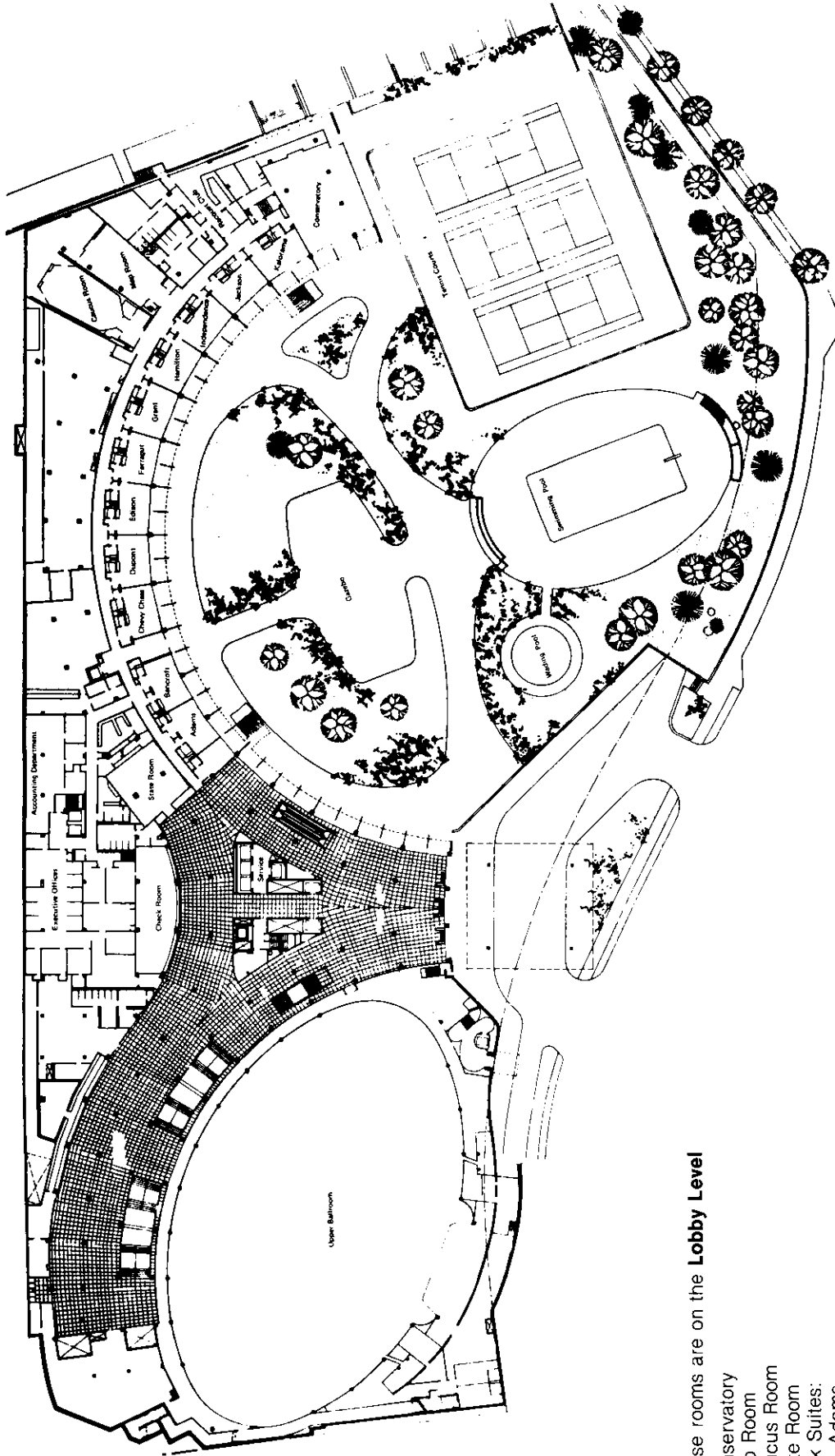
Sessions indicated by an asterisk (*) will be attended from 8:30 a.m. to 10:00 a.m. or 1:30 p.m. to 3:00 p.m. Those without an asterisk will be attended from 10:00 a.m. to 11:30 p.m. or 3:00 p.m. to 4:30 p.m.

Day/Time	Topic/Abstract #	Room	Page
Tuesday 8:30 a.m.	Communicating Concepts #163-173	Georgetown Room West (Special Attended Schedule)	13
Tuesday 8:30 a.m.	*Pesticides I #174-202	Exhibit Hall	13

Day/ Time	Topic/Abstract #	Room	Page	Day/ Time	Topic/Abstract #	Room	Page
Tuesday 8:30 a.m.	Neurotoxicology: I Neuropathology #203-219	Exhibit Hall	14	Wednesday 1:30 p.m.	Halogenated Hydro- carbons I #631B-651	Exhibit Hall	36
Tuesday 8:30 a.m.	*Hepatic-GI Toxicology #220-266	Exhibit Hall	15	Wednesday 1:30 p.m.	Molecular/Cellular *Toxicology II #652-690	Exhibit Hall	37
Tuesday 8:30 a.m.	Metals I #267-332	Exhibit Hall	17	Wednesday 1:30 p.m.	Reproductive Toxicology/ Teratology III #691-726	Exhibit Hall	39
Tuesday 1:30 p.m.	*Alternatives to Animals in Toxicology #333-345	Exhibit Hall	21	Wednesday 1:30 p.m.	*Risk Assessment #727-740	Exhibit Hall	40
Tuesday 1:30 p.m.	Cardiovascular/Renal #346-375	Exhibit Hall	22	Thursday 8:30 a.m.	*Inhalation Toxicology II #741-815	Exhibit Hall	43
Tuesday 1:30 p.m.	*Neurotoxicology II: Electrophysiology #376-393	Exhibit Hall	23	Thursday 8:30 a.m.	General Toxicology I #816-852	Exhibit Hall	45
Tuesday 1:30 p.m.	Oncogenesis #394-431	Exhibit Hall	24	Thursday 8:30 a.m.	*Biotransformation Enzymes II #853-894	Exhibit Hall	47
Tuesday 1:30 p.m.	*Metabolism/Toxicity II #432-468	Exhibit Hall	25	Thursday 1:30 p.m.	*Immunotoxicology III #895-928	Exhibit Hall	51
Tuesday 1:30 p.m.	Biotransformation I #469-485	Exhibit Hall	26	Thursday 1:30 p.m.	Disposition/ Pharmacokinetics #929-951	Exhibit Hall	52
Wednesday 8:30 a.m.	Mechanisms of TCDD Toxicity #486-504	Hemisphere Room (Special Attended Schedule)	29	Thursday 1:30 p.m.	*Food & Drug Toxicology #952-963	Exhibit Hall	53
Wednesday 8:30 a.m.	Active Species of Oxygen: Biological Toxicity #505-521	Thoroughbred Room (Special Attended Schedule)	30	Thursday 1:30 p.m.	Dermal/Ocular Toxicology #964-979	Exhibit Hall	54
Wednesday 8:30 a.m.	*Neurotoxicology III: Neurochemistry #522-544	Exhibit Hall	30	Thursday 1:30 p.m.	*Solvent Toxicology #980-991	Exhibit Hall	54
Wednesday 8:30 a.m.	Endocrine Toxicology #545-556	Exhibit Hall	31	Friday 8:30 a.m.	*Neurotoxicology V: Behavior #992-1027	Exhibit Hall	56
Wednesday 8:30 a.m.	*Reproductive Toxicology/ Teratology II #557-591	Exhibit Hall	32	Friday 8:30 a.m.	Genetic Toxicology #1028-1048	Exhibit Hall	58
Wednesday 8:30 a.m.	Aquatic/Environmental Toxicology I #592-615	Exhibit Hall	33	Friday 8:30 a.m.	*Halogenated Hydro- carbons II #1049-1092	Exhibit Hall	59
Wednesday 1:30 p.m.	*Neurotoxicology IV: Neurochemistry #616-631A	Exhibit Hall	36	Friday 8:30 a.m.	General Toxicology II #1093-1105	Exhibit Hall	60

Smoking is not permitted in scientific sessions

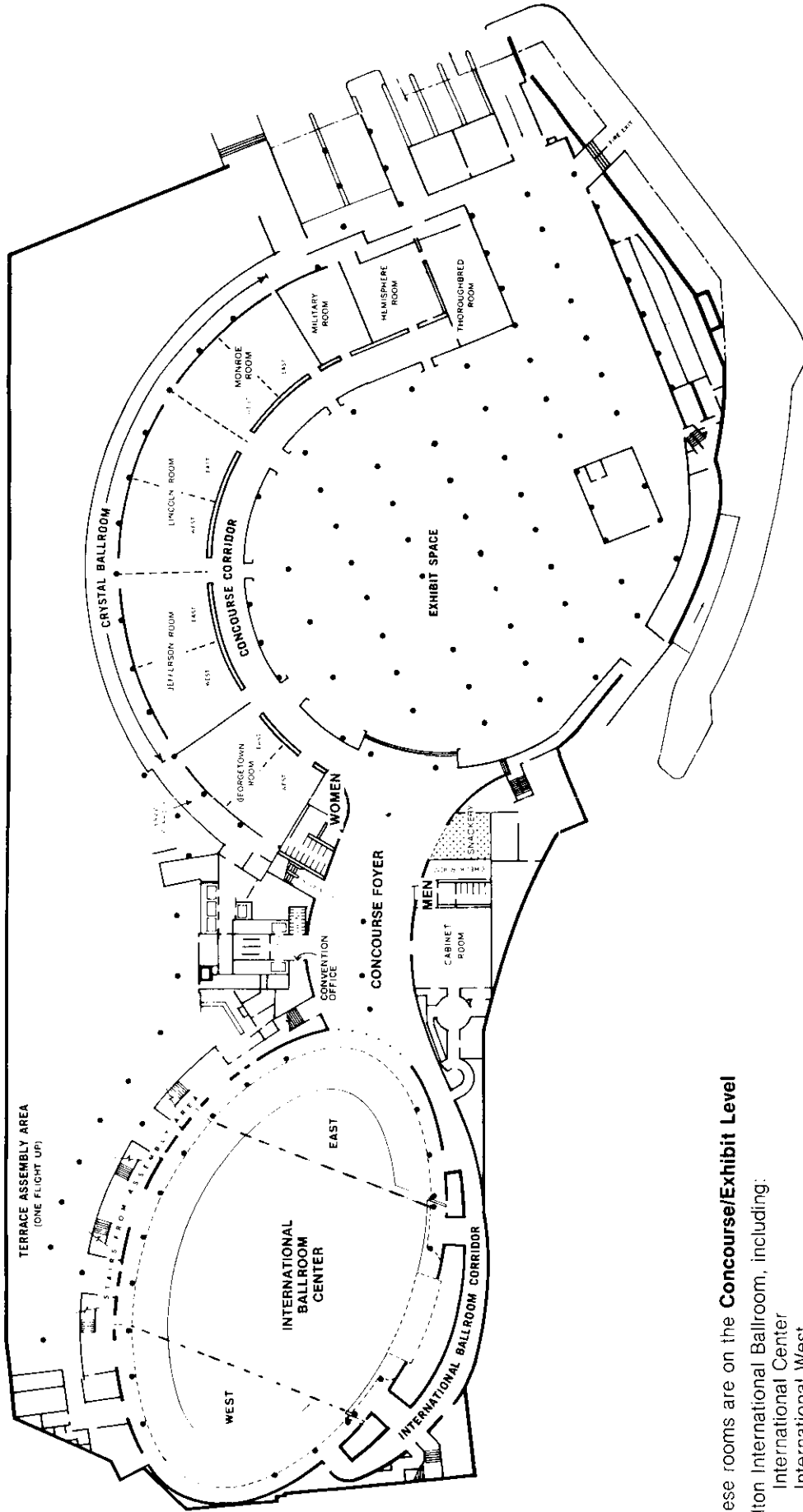
WASHINGTON HILTON HOTEL



These rooms are on the **Lobby Level**

- Conservatory
- Map Room
- Caucus Room
- State Room
- Park Suites:
- Adams
- Bancroft
- Chevy Chase
- Dupont
- Edison
- Farragut
- Grant
- Hamilton
- Independence
- Jackson
- Kalorama

WASHINGTON HILTON CONFERENCE CENTER



These rooms are on the **Concourse/Exhibit Level**

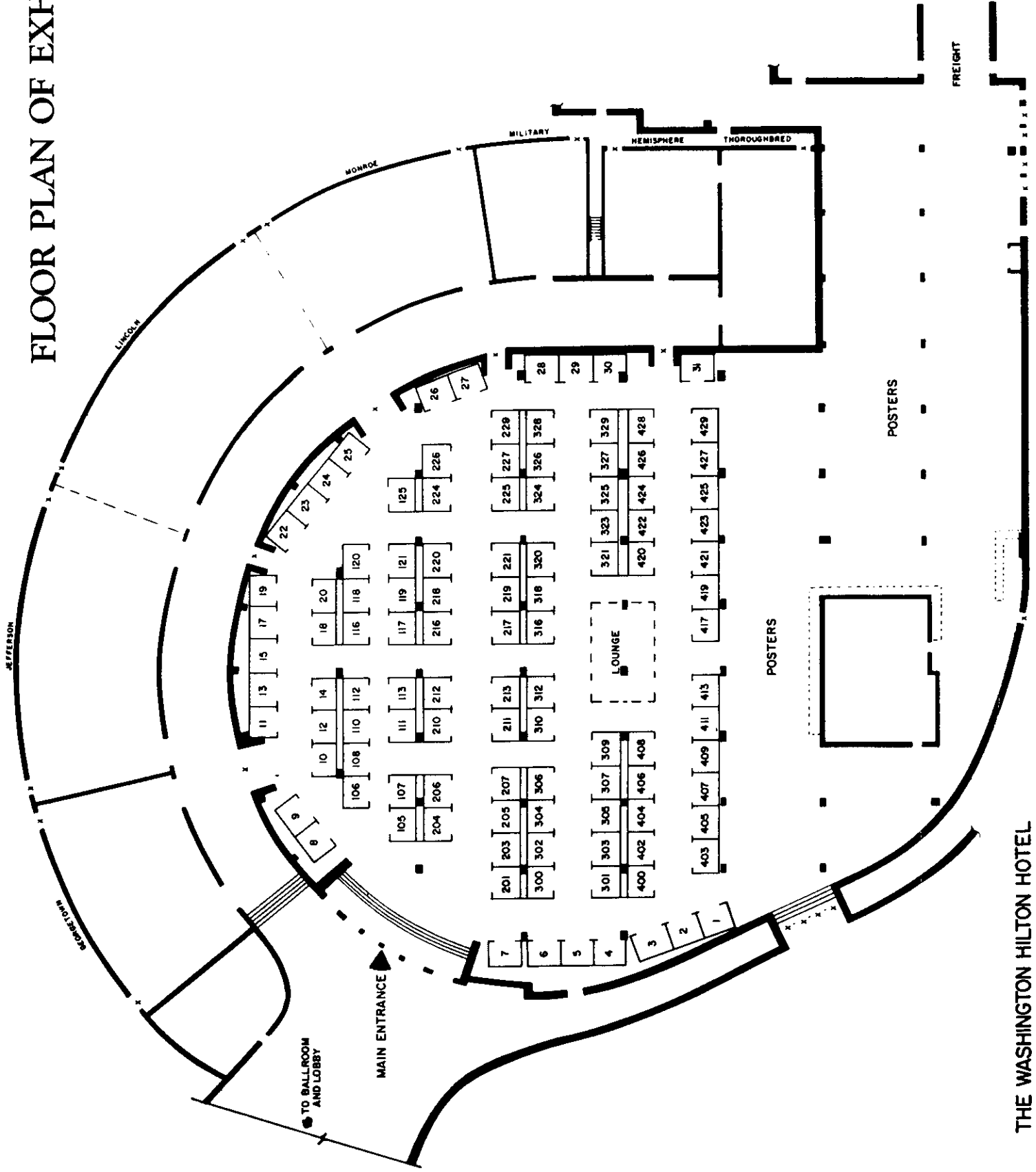
Hilton International Ballroom, including:

- International Center
- International West
- International East

Crystal Ballroom, including:

- Jefferson Room
- Lincoln Room
- Monroe Room
- Cabinet Room
- Georgetown Room
- Military Room
- Hemisphere Room
- Thoroughbred Room
- Exhibit Hall

FLOOR PLAN OF EXHIBITS



THE WASHINGTON HILTON HOTEL

1987 EXHIBITORS

Technical Exhibitors

<i>Company</i>	<i>Booth(s) #</i>		
Academia Book Exhibits	125	Matrix Technologies Corp.	423
Academic Press, Inc.	309	Microbiological Associates, Inc.	403, 405
Agway, Inc.	112	Mini-Mitter Co., Inc.	001
Allentown Caging Equipment Co., Inc.	211, 213	Nalge Company	216
Alza Corporation	400, 402	Nicolet Biomedical Instruments	210
American Biogenics Corporation	406	Pathco Inc.	422
Animal Identification and Marking Systems	303	Pathology Associates, Inc.	221
Apoloco Ltd.	004	PPM, Inc.	300
Bench Ltd.	307	The RCC Group	025
Bio-Life Associates, Ltd.	106	Ralston Purina Company, Purina Mills, Inc.	105, 107
Biomedic Data Systems Inc.	007	Raven Press	108
Buckshire	4	Roboz Surgical Instrument Company	014
Buxco Electronics, Inc.	117	SIAC—Science Applications International Corp.	421
Charles River Laboratories, Inc.	005, 006	SPSG—Scientific and Professional Support Group	031
Clonetics Corp.	329	SRI, International	220
Colorado Histo-Prep, Inc.	118	Springborn Life Sciences, Inc.	121
Columbus Instruments	204	Suburban Surgical Co., Inc.	419
Costar Corp.	324	TPS, Inc.	027
Cryo Resources, Ltd.	323	Taconic Inc.	320
Dawson Research Corporation	212	Technicon Corp.	417
Dominion Laboratories, Inc.	407	Tegeris Laboratories	316, 318
Edstrom Industries, Inc.	010	Torpac Limited	119
Elsevier Science Publishing Co.	305	Toxicity Research Laboratories	207
Encyclopaedia Britannica	321	Toxicol Laboratories	301
Experimental Pathology Laboratories, Inc. (EPL)	408	Toxikon	429
Gibraltar Biological Laboratories, Inc.	018	Tracor-Jitco	404
Harlan Sprague Dawley, Inc.	206	Unifab Corporation	302, 304
Hazleton Laboratories	306	Van Nostrand Reinhold Information Services	020
Hazleton Research Animals	201	Vanguard International, Inc.	426, 428
Health Designs, Inc.	008, 009	White Eagle Laboratories, Inc.	312
Hemisphere Publishing Corp.	203	Wildlife International, Ltd.	205
Hill Top Research, Inc.	111, 113	Zeigler Brothers, Inc.	218
Hilltop Lab Animals, Inc.	310		
Huntingdon Research Centre	217, 219		
IIT Research Institute	420		
Inhausen Research Institute, Inc.	116		
Instem Computer Systems	411		
S. Karger Publishers	120		
Lab Products Inc.	011, 013, 015, 017, 019		
Laboratory Research Enterprises, Inc.	413		
Life Science Research	28, 29		
Alan R. Liss, Inc.	409		
Macmillan Publishing Company	110		
Marshall Farms USA, Inc.	229		

Institutional Exhibitors

<i>Organization</i>	<i>Booth #</i>
American Board of Toxicology, Inc.	225
National Institute of Environmental Health Sciences	224
National Institutes of Health	22
National Library of Medicine	23
Primate Research Institute, New Mexico State University	226

CONTINUING EDUCATION COURSES

(PRE-REGISTRATION ONLY—ALL COURSES ARE ON MONDAY, FEBRUARY 23)

8:00 a.m.—Noon

1. DERMAL ABSORPTION AND METABOLISM OF XENOBIOTICS

International Ballroom Center

Chairperson: Mark Hite, Sc.D., D.A.B.T., Director, Drug Safety Evaluation, Wyeth Laboratories, Paoli, PA.

The purpose of this course is to present basic principles and accepted methods used to study the absorption, distribution, metabolism, and excretion of chemicals and drugs. State-of-the-art methodology will be presented with particular emphasis on pharmaceutical agents, antibiotics, and pesticides. One speaker will demonstrate a computer program and display his work on the physiologic modeling of pharmacokinetic data.

Drug Metabolism—Toxicology Interfaces. Samuel Sisenwine, Ph.D., Wyeth Laboratories, Radnor, PA.

Disposition of Dermally Absorbed and Inhaled Pesticides. Stephan Longacre, Ph.D., Springhouse, PA.

Pharmacokinetics of Antibiotics. Jim Riviere, D.V.M., Ph.D., School of Veterinary Medicine, North Carolina State University, Raleigh, NC.

Physiologic Modeling of Pharmacokinetic Data. Mel Anderson, Ph.D., Aerospace Medical Research Laboratory, Wright-Patterson AFB, Dayton, OH.

2. HEPATOTOXICITY

International Ballroom West

Chairperson: James Popp, D.V.M., Ph.D., Chemical Industry Institute of Toxicology, Research Triangle Park, NC.

This course will provide an in-depth review of selected topics in hepatotoxicity. While providing adequate background for the attendee not familiar with the topic, each lecture will emphasize recent advances based on experimental research.

Control of Intralobular Toxicity. Ronald G. Thurman, University of North Carolina, Chapel Hill, NC.

Mechanism of Hepatic Fibrosis. Antonio Martinez-Herandez, Thomas Jefferson University, Philadelphia, PA.

Control of Hepatocytic Hyperplasia and Hypertrophy. George Michalopoulos, Duke Medical Center, Durham, NC.

Mechanism of Hepatocytic Injury. John L. Farber, M.D., Thomas Jefferson University, Philadelphia, PA.

3. NATURALLY OCCURRING TOXINS

International Ballroom East

Chairperson: Frederick W. Oehme, D.V.M., Ph.D., Comparative Toxicology Laboratories, Kansas State University, Manhattan, KS.

The presence of poisons in nature poses a continuing, but often little recognized, source of danger to the public and their animals. This constant hazard comes from numerous sources that because of their omnipresence may be given little concern by the potentially exposed population. The hazards' being in the natural spectrum often lulls the future victims into a false sense of security. This course will review the range of poisons found in nature—venoms seen in various animal groups, bacterial and shellfish toxins that can contaminate food, mycotoxins generated by fungi, and the plants and mushrooms that have significant toxic potential.

Poisonous Reptiles, Scorpions, Spiders, and Insects. Steven C. Curry, M.D., Director of the Medical Toxicology Fellowship Program, St. Luke's Medical Center, Phoenix, AZ.

Naturally Occurring Toxins in Food. William G. Ikins, Ph.D., Assistant Professor of Food Chemistry, Department of Animal Sciences and Industry, Kansas State University, Manhattan, KS.

Mycotoxins. Gary D. Osweiler, D.V.M., Ph.D., Professor of Toxicology, College of Veterinary Medicine, Iowa State University, Ames, IA.

Poisonous Plants and Mushrooms. Kenneth F. Lampe, Ph.D., Director of the Department of Toxicology, American Medical Association, Chicago, IL.

1:30–5:30 p.m.

4. CLINICAL CHEMISTRY OF LABORATORY ANIMALS

International Ballroom Center

Chairperson: Farrel R. Robinson, D.V.M., School of Veterinary Medicine, Department of Veterinary Microbiology Pathology and Public Health, Purdue University, West Lafayette, IN.

An overview of diagnostic clinical chemistry will be presented with an emphasis on interpretation. Laboratory tests will be covered that are useful in the diagnosis of renal, hepatic, gastrointestinal, endocrine, musculoskeletal, electrolyte, acid-base, and protein disorders. Case presentations will be used for illustration. Where appropriate, important interferences and methodological variations will be mentioned.

Speakers: G. Daniel Boon, D.V.M., M.S., Diplomate, and Dennis B. DeNicola, D.V.M., M.S., Diplomate; American College of Veterinary Pathologists, Purdue University, West Lafayette, IN.

5. IN-VITRO TOXICOLOGY TESTING

International Ballroom West

Chairperson: Daniel Acosta, Ph.D., College of Pharmacy, University of Texas, Austin, TX.

Illustrations of the role of *in-vitro* systems in contemporary toxicology studies will be presented. Perspectives on the use of these tests to evaluate nephrotoxicity and cardiovascular toxicity will be discussed.

Principles, Applications and Methodology. Roland Nardone, Ph.D., CATCMB, Catholic University of America, Washington, D.C.

Nephrotoxicity Evaluation *In-Vitro*. Mary Ann Smith, Ph.D., Smith Kline and French Laboratories, Philadelphia, PA.

Perspectives on Models to Evaluate Cardiovascular Toxicity. Kenneth Ramos, Ph.D., Philadelphia College of Pharmacy and Science, Philadelphia, PA.

6. TOXICOLOGY OF SPECIAL SENSES

International Ballroom East

Chairperson: Connie S. McCaa, M.D., Ph.D., Division of Ophthalmology, University of Mississippi School of Medicine, Jackson, MS.

Because the effects of toxicants on organs of special senses have only recently gained recognition, this course is offered to provide an introduction to the area. Normal morphology and function of the eye and ear will be described, as well as changes that occur in the presence of toxicants. In addition, various methods for assessment of injury to the eye and ear will be discussed.

Overview of Anatomy, Physiology and Toxicology of the Eye. Connie S. McCaa, M.D., Ph.D., University of Mississippi School of Medicine, Jackson, MS.

Methods for Assessment of Chemically-Induced Ocular Toxicity. James Clinton, V.M.A., Animal Eye Clinic, Medford, NJ.

Inner Ear Anatomy and Physiology; Evaluation of Otoxic Agents. Joseph E. Hawkins, Jr., Ph.D., Kresge Hearing Research Institute, the University of Michigan Medical School, Ann Arbor, MI.

Electrodiagnostic Evaluation of Auditory Function. Michael Sims, Ph.D., University of Tennessee College of Veterinary Medicine, Knoxville, TN.

TUESDAY MORNING, FEBRUARY 24

8:30 a.m.-12 p.m.

International Ballroom West

SYMPOSIUM: AQUATIC ORGANISMS AS SENTINELS OF ENVIRONMENTAL HEALTH

Chairperson: W.H. Benson, Northeast Louisiana University, Monroe, LA

Introduction: W.H. Benson, Northeast Louisiana University, Monroe, LA

Biochemical Indicators and Their Application to Environmental Monitoring. G.W. Winston, Louisiana State University, Baton Rouge, LA

Pharmacokinetic Modeling of Xenobiotics in Fish: Application to Environmental Monitoring. A.H. Karara, Northeast Louisiana University, Monroe, LA

Use of Fish in Carcinogen Bioassays and Environmental Monitoring. J.C. Harshbarger, Smithsonian Institution, Washington, DC

Application of Aquatic Plants as Sentinels of Environmental Health. J.H. Rodgers, North Texas State University, Denton, TX

Directions for Future Research in Environmental Monitoring. J. Couch, U.S. Environmental Protection Agency, Gulf Breeze, FL

TUESDAY MORNING, FEBRUARY 24

8:30 a.m.-12 p.m.

International Ballroom Center

SYMPOSIUM: MECHANISMS OF IMMUNOTOXICOLOGY: TARGET SITES IN THE IMMUNE SYSTEM

Sponsored by SOT Immunotoxicology Specialty Section

Chairperson: L.D. Koller, Oregon State University, Corvallis, OR

Modulation of Cellular Interactions and Cytokine Regulation by Immunologic Compounds. P.H. Bick, Lilly Research Laboratories, Greenfield, IN

Alterations in Lymphoid Sub-populations Assessed by Flow Cytometry. P.K. Horan, Smith Kline & French Laboratories, Philadelphia, PA

Applications of Immunocytochemistry for Immunotoxicology and Toxicological Pathology. J.M. Ward, National Cancer Institute, Frederick, MD

Selective Action of Xenobiotics on Immune Targets. G.M. Henningsen, Department of the Air Force, Wright-Patterson AFB, OH

TUESDAY MORNING, FEBRUARY 24

8:30 a.m.-12 p.m.

International Ballroom East

SYMPOSIUM: ALTERNATIVES TO ANIMALS AND INNOVATIVE DESIGNS IN TOXICOLOGY

Sponsored by SOT Animals in Research Committee

Chairpersons: S.C. Gad, G.D. Searle & Co., Skokie, IL; J.M. Frazier, The Johns Hopkins University, Baltimore MD

Theoretical Perspectives on Development and Acceptance of Alternatives and Innovative Designs. R.A. Scala, Exxon Corp., E. Millstone, NJ

Safety Evaluation of Biotechnology Derived Materials: Theoretical and *In Vivo* vs. *In Vitro* Approaches. J.H. Dean, CIIT, Research Triangle Park, NC

***In Vivo* vs. *In Vitro* Models in Toxicology: A Critical Review of Advantages and Disadvantages.** J.F. Griffith, Procter & Gamble Co., Cincinnati, OH

Program for Development and Evaluation of Alternatives to the Draize Eye Test. J.M. Frazier, The Johns Hopkins University, Baltimore, MD

Design, Development and Validation of an Alternative Test System: The Mouse Ear Swelling Test. S.C. Gad, G.D. Searle & Co., Skokie, IL

Alternative Approaches to Median Lethality Testing. L. DePass, Syntex Research Institute of Toxicology Science, Palo Alto, CA

***In Vivo* and *In Vitro* Models for Assessing Cardiovascular Toxicity.** Z. Ruben, G.D. Searle & Co., Skokie, IL

TUESDAY MORNING, FEBRUARY 24

8:30 a.m.-12 p.m.

JEFFERSON ROOM WEST

PLATFORM SESSION: REPRODUCTIVE TOXICOLOGY/TERATOLOGY

Chairpersons: F. Welsh, CIIT, Research Triangle Park, NC
E. Faustman-Watts, University of Washington, Seattle, WA

- #1 8:30 **TOXICITY OF PARAQUAT IN THE CHICKEN EMBRYO.** H.T. Williams and R.T. Di Giulio. School of Forestry and Environmental Studies, Duke University, Durham, NC. Sponsor: M.B. Abou-Donia
- #2 8:45 **CONCEPTUS DEVELOPMENT IN MICE AND RATS EXPOSED TO-METHYLDOPA.** R.B. Sleet, J.D. George, C.J. Price, M.C. Marr, C.A. Kimmel*, and B.A. Schwetz*, Research Triangle Institute, *NTP/NIEHS, Research Triangle Park, NC, *NTP/REAG, US-EPA, Washington, D.C.
- #3 9:00 **TERATOGENIC DOSE-RESPONSE OF RING AND SIDE-CHAIN MODIFIED (TETRAMETHYLATED TETRALIN) ANALOGS OF RETINOIC ACID.** W.B. Howard, C.C. Willhite, and R.P. Sharma. Center for Environmental Toxicology, Utah State University, Logan, Utah 84322.
- #4 9:15 **CHANGES IN SERUM ANDROGEN BINDING PROTEIN (ABP) INDICATE GERMINAL EPITHELIAL DAMAGE.** P. Lindstrom^{1,2}, M. Harris², M. Ross², J.C. Lamb IV², R. Chapin². ¹Parasitol. & Lab. Practice, UNC, Chapel Hill, NC ²Fert. & Reprod., STB, NIEHS, Res. Tri. Pk., NC
- #5 9:30 **MONO-(2-ETHYLHEXYL)-PHTHALATE (MEHP), 2,5-HEXANE-DIONE (HD), AND A23187 PRODUCE DIFFERENT SPECTRA OF EFFECTS ON SERTOLI CELLS IN PRIMARY CULTURE.** R.E. Chapin & J.L. Phelps. Fertility and Reprod'n, NTP, NIEHS, Res. Tri. Park, NC
- #6 9:45 **DIFFERENTIAL RESPONSE OF PRIMARY RAT SERTOLI AND INTERSTITIAL CELLS TO CADMIUM.** S.R. Clough, M.J. Welsh, and M.J. Brabec. Eastern Michigan University, Department of Chemistry, and The University of Michigan, Toxicology Program and the Department of Anatomy, Ann Arbor, MI.
- #7 10:00 **POTENTIAL REVERSIBILITY OF SKELETAL EFFECTS OF CAFFEINE IN RATS.** T.F.X. Collins, J.J. Welsh, T.N. Black, K.E. Whitby, and M.W. O'Donnell, Jr. U.S. Food and Drug Administration, Washington, D.C.
- #8 10:15 **SECALONIC ACID D-INDUCED PALATAL CAMP AND CGMP CHANGES IN DEVELOPING MICE.** M.M.R. Eldeib and C.S. Reddy. Department of VeterinaryBiomedical Sciences, University of Missouri, Columbia, MO.
- #9 10:30 **REDUCTION OF THE INCIDENCE OF 2-METHOXYETHANOL(ME)-INDUCED DIGIT MALFORMATIONS BY D-GLUCOSE.** F. Welsch. C.I.I.T., Research Triangle Park, NC
- #10 10:45 **2,5-HEXANEDIONE CAUSES IRREVERSIBLE TESTICULAR GERM CELL LOSS AT NEUROTOXIC DOSES.** K. Boekelheide. Brown University, Providence, RI.
- #11 11:00 **DEVELOPMENT AND CHARACTERIZATION OF A MORPHOLOGICAL SCORING SYSTEM FOR MEDAKA EMBRYO DEVELOPMENT.** M. Shi and E.M. Faustman-Watts. Dept. of Environmental Health, University of Washington, Seattle, WA
- #12 11:15 **DEVELOPMENTAL TOXICITY OF INDUSTRIAL N-NITROSO COMPOUNDS IN VITRO.** I. Gilbert-Jones, Z. Kirby and E. Faustman-Watts. Dept. of Env. Health, Univ. of Washington, Seattle, WA
- #13 11:30 **COAL-DERIVED MIXTURES: TERATOGENICITY OF THEIR DERMALLY APPLIED CHEMICAL CLASS FRACTIONS IN THE RAT.** T.J. Mast, R.L. Rommerein, D.L. Springer, Pacific Northwest Laboratory, Richland, WA
- #14 11:45 **RESULTS OF A TWO-GENERATION REPRODUCTION STUDY IN CD RATS EXPOSED TO CYCLOHEXANONE VIA INHALATION.** C.M. Salamon, D.A. Mayhew, W.E. Rinehart (consultant). American Biogenics Corp., Decatur, IL.

TUESDAY MORNING, FEBRUARY 24

8:30 a.m.-12 p.m.

LINCOLN ROOM WEST

PLATFORM SESSION: METABOLISM/TOXICITY I

Chairpersons: G.S. Yost, Washington State University, Pullman, WA
R.G. Thurman, University of North Carolina, Chapel Hill, NC

- #15 * 8:30 **AN INTERACTION OF BENZENE METABOLITES REPRODUCES THE MYELOTXICITY OBSERVED WITH BENZENE EXPOSURE.** D.A. Eastmond, M.T. Smith and R.D. Irons. School of Public Health, University of California, Berkeley, CA and Chemical Industry Institute of Toxicology, Research Triangle Park, NC.
- #16 9:00 **CHARACTERIZATION OF THE ANTIGENIC DETERMINANT IN THE ACETAMINOPHEN-ADDUCT-IMMUNOASSAY.** D.W. Roberts, N.R. Purnford, J.A. Hinson and D.W. Potter. Natl. Ctr. Tox. Res., Jefferson, AR and Univ. Arkansas Medical Sciences, Little Rock, AR.
- #17 9:15 **THIIRANIUM IONS IN THE FORMATION AND REACTIONS OF S-(2-HALOETHYL)-L-CYSTEINES.** D.R. Dohn and J.E. Casida. Pesticide Chemistry and Toxicology Laboratory, University of California, Berkeley, CA. Sponsor: M.J. Graziano.
- #18 9:30 **MECHANISM OF INHIBITION OF PROSTAGLANDIN H SYNTHASE-MEDIATED COOXIDATION OF XENOBIOTICS BY METH-IMAZOLE.** T.W. Petry and T.E. Eling. NIH/NIEHS, Research Triangle Park, NC. Sponsor: J.R. Bend
- #19 9:45 **S-2-CHLOROACETYLG LUTATHIONE: A PUTATIVE TOXIC METABOLITE OF 1,1-DICHLOROETHYLENE.** D.C. Liebler, T.C. Reeder and D.G. Latwesen. Oregon State Univ. Corvallis, OR. Sponsor: D.J. Reed.
- #20 10:00 **MUTAGENICITY, NEPHROTOXICITY AND TESTICULAR TOXICITY OF SELECTIVELY METHYLATED ANALOGS OF DBCP.** E. Dybing*, J.G. Omichinski*, E.J. Soderlund*, J.E. Dahl* and S.D. Nelson** . National Institute of Public Health, Oslo, Norway* and Univ. of Washington, Dept. of Medicinical Chemistry, Seattle, WA.**
- #21 10:15 **EFFECT OF GLUTATHIONE ON THE IRREVERSIBLE BINDING OF DIETHYLSTILBESTROL IN HAMSTER RENAL CORTEX.** S. Adams and A. Notides, Dept. of Biophysics, Univ. of Rochester, Rochester, N.Y. Sponsor: T.A. Gasiewicz

*New Investigator Presentation

- #22 10:30 **6-BROMO-2,5-DIHYDROXY-THIOPHENOL NEPHROTOXICITY: STRUCTURE ACTIVITY REQUIREMENTS.** Serrine S. Lau and Terrence J. Monks. School of Pharmacy, Univ. of Texas at Austin, TX. and Georgetown Univ., Washington, D.C. Sponsor: Peter J. Wirth
- #23 10:45 **SYNTHESIS AND NEPHROTOXICITY OF 6-BROMO-2,5-DIHYDROXY-THIOPHENOL.** Terrence J. Monks, Robert J. Highet, Ping S. Chu and Serrine S. Lau. Georgetown Univ., Wash., D.C., NHLBI, NIH, Bethesda, MD. M.D. Anderson Hosp., Houston, TX. and Univ. of Texas at Austin, TX. Sponsor: Peter J. Wirth.
- #24 11:00 **EVIDENCE FOR FORMATION OF A REACTIVE HYDROXYLAMINE INTERMEDIATE DURING THE REDUCTION OF 5-NITRO-IMIDAZOLES.** G.T. Miwa, L.S. Argenbright, and G.L. Kedderis. Merck Sharp & Dohme Research Laboratories, Rahway, NJ. Sponsor: L.B. Kedderis
- #25 11:15 **METABOLIC ACTIVATION OF ETHYLENE GLYCOL MONOBUTYL ETHER (2-BUTOXYETHANOL; BE) VIA ALCOHOL/ALDEHYDE DEHYDROGENASES.** B.I. Ghanayem, L.T. Burka, and H.B. Matthews. NIH/NIEHS, Research triangle Park, NC.
- #26 11:30 **DEUTERATED 3-METHYLINDOLE IS LESS PNEUMOTOXIC THAN 3-METHYLINDOLE.** Jeannette C. Huijzer and Garold S. Yost. Pharmacology/Toxicology Program, Washington State University, Pullman, WA.
- #27 11:45 **EVIDENCE FOR REGIOSPECIFICITY IN THE MICROSOMAL OXIDATION OF NIFEDIPINE.** J.L. Born and W.M. Hadley, The College of Pharmacy, The University of New Mexico, Albuquerque, NM.

**TUESDAY MORNING, FEBRUARY 24
GEORGETOWN ROOM WEST**

POSTER/DEMONSTRATION SESSION: COMMUNICATING CONCEPTS

Chairperson: J.S. Woods, Batelle Seattle Research Center, Seattle, WA

Displayed: 8:30 a.m.-4:30 a.m. (On display Tues. a.m.-Thurs. p.m.)

Attended: 8:30 a.m.-11:30 a.m. only

- #163 **AUDIOVISUAL TRAINING PROGRAM IN TOXICOLOGY.** C.R. Lay, Industrial Training Systems Corporation, Herndon, VA. Sponsor: J.S. Woods
- #164 **CCRIS: CHEMICAL CARCINOGENESIS RESEARCH INFORMATION SYSTEM.** T. Cameron, M. Stump (NCI); D. Tidwell (NLM); S. Olin, T. Junghans (Tracor Jitco). Sponsor: C. Cueto
- #165 **UNDERSTANDING CHEMICAL EXPOSURE: COMPUTER-BASED INSTRUCTION FOR NON-TOXICOLOGISTS.** J.W. Appling and J. Fessenden-Raden, Program on Science, Technology, and Society, Cornell University, Ithaca, NY. Sponsor: D. Lisk.
- #166 **RISK COMPARISON AND RISK MANAGEMENT.** H.D. Thier, J.E. Davis, and E.C. Reinin. Chemical Education for Public Understanding Program (CEPUP), Lawrence Hall of Science, University of California, Berkeley, CA. Sponsor: A.L. Craigmill.
- #167 **TOOLS FOR COMMUNICATING TOXICOLOGY TO THE LAYMAN.** S.B. McCollister. The Dow Chemical Company, Health and Environmental Sciences, Midland, MI
- #168 **MOTION PICTURE AND SLIDE-TAPE PROGRAMMING TO COMMUNICATE TOXICOLOGY TO NON-SCIENTISTS.** E.A. Gross, D.L. Patterson and K.T. Morgan. Chemical Industry Institute of Toxicology, Research Triangle Park, NC. Sponsor: J.E. Gibson
- #169 **COMPUTER SIMULATION FOR COMMUNICATING THE DOSE-RESPONSE CONCEPT.** M.A. Kamrin. Center for Environmental Toxicology, Michigan State University, East Lansing, MI
- #170 **LINKING STATE LEVEL AND NATIONAL GROUPS THROUGH COMMUNICATION: THE ENVIRONMENTAL INFORMATION EXCHANGE.** A.M. Phillips Environmental Defense Fund, Washington D.C. Sponsor: James Woods
- #171 **HELPING THE PRESS INFORM THE PUBLIC: RISK REPORTING FOR JOURNALISTS.** M.R. Greenberg and Audrey R. Gotsch, University of Medicine and Dentistry of New Jersey, New Brunswick, NJ Sponsor: James S. Woods
- #172 **A BROAD-BASED APPROACH TO INFORMING THE PUBLIC: THE ENVIRONMENTAL AND OCCUPATIONAL HEALTH INFORMATION PROGRAM (EOHIP).** A. Gotsch, M.Dermak, A. Duff, R. Kashdan, D. Daneluk. UMDNJ-Robert Wood Johnson Medical School, Piscataway, New Jersey. Sponsor: M. Gallo
- #173 **AUDIO-VISUAL PROGRAMS TO PRESENT BASIC CONCEPTS OF TOXICOLOGY.** A.L. Craigmill, Cooperative Extension, Environmental Toxicology, University of California, Davis, CA.

**TUESDAY MORNING, FEBRUARY 24
EXHIBIT HALL**

POSTER SESSION: PESTICIDES I

Chairperson: M.J. Graziano, University of California, Berkeley, CA

Displayed: 8:30 a.m.-11:30 a.m.

Attended: 8:30 a.m.-10:00 a.m.

- #174 **REPEATED DOSE DERMAL TOXICITY STUDY IN RABBITS WITH CARBOFURAN TECHNICAL.** L.B. Kedderis, C. Freeman, E.J. Ballester, L.E. Geiger, and M.J. Fletcher. FMC Corporation, Princeton, NJ
- #175 **SUBCHRONIC DERMAL TOXICITY OF METSULFURON METHYL IN THE RABBIT.** G.L. Kennedy Jr., O.L. Dashiell, and H.C. Chen. E.I. du Pont de Nemours & Co., Inc., Haskell Laboratory for Toxicology and Industrial Medicine, Newark, DE.
- #176 **SUBCHRONIC DERMAL TOXICITY STUDIES OF ETHION TECHNICAL IN RABBITS.** M. Weiner, L.E. Geiger, C. Freeman, E.J. Ballester and M.J. Fletcher. FMC Corporation, Princeton, NJ
- #177 **CHLORPYRIFOS: DISTRIBUTION AND METABOLISM IN THE FISCHER 344 RAT.** R.J. Nolan, M.D. Dryzga, and P.E. Kastl. H&ES, The Dow Chemical Co., Midland, MI. Sponsor A.M. Schumann
- #178 **HEPATIC AND EXTRAHEPATIC MICROSOMAL MONOOXYGENATION OF PHORATE.** S. Kinsler and E. Hodgson, Toxicology Program, North Carolina State University, Raleigh, NC

- #179 **METABOLIC ACTIVATION OF THE PESTICIDE GUTHION BY MOUSE LIVERS PERFUSED IN SITU.** L.G. Sultatos and L.D. Minor². Depts. Pharmacol. Univ. Med. Dent. of New Jersey, Newark, NJ¹, and LSU Med. School, New Orleans, LA².
- #180 **THE ROLE OF THE LIVER IN MEDIATING THE ACUTE TOXICITY OF METHYL PARATHION.** L.G. Sultatos. Dept. Pharmacol. Univ. Med. Dent. of New Jersey, Newark, NJ
- #181 **EFFECT OF CARBOSULFAN ON REPRODUCTION IN RATS.** J.R. DeProspo¹, D.F. Kehoe², K.M. MacKensie² and M.J. Fletcher¹. FMC Corporation, Princeton, NJ, Hazleton Laboratories America, Inc., Madison, Wisconsin².
- #182 **TOXICITIES OF ENDRIN AND PARAQUAT DURING PREGNANCY.** S.D. Weitman and M.J. Vodcink. Med. Coll. Wisconsin, Milwaukee, WI.
- #184 **EFFECTS OF MIREX ON HYPOTHALAMUS, PANCREAS, ADRENALS, ADIPOSE AND LIVER.** L. Jovanovich, S. Levin, and M.A.Q. Khan. University of Illinois at Chicago, Chicago, IL.
- #185 **MUTAGENICITY STUDIES WITH THE HERBICIDE GLYPHOSATE.** T.J. Long and A.P. Li. Monsanto Company, St. Louis, MO.
- #186 **ABSORPTION OF GLYPHOSATE IN THE MALE FISCHER RAT.** C.R. Duerson and I. Glenn Sipes. Dept. of Pharmacology and Toxicology, College of Pharmacy, University of Arizona, Tucson, AZ.
- #187 **TOXICITY OF PROPANIL AND DERIVATIVES IN THE SALMONELLA TYPHIMURIUM, CHO/HGPRT, AND HEPATOCYTE ASSAYS.** D.C. McMillan, J.G. Shaddock, R.H. Heflich, D.A. Casciano, and J.A. Hinson. Natl. Center Toxicol. Res, Jefferson, AR and Univ. of Ark. for Med. Sciences, Little Rock, AR.
- #188 **CLOPYRALID: CHRONIC DIETARY TOXICITY & ONCOGENICITY IN RATS AND MICE.** T. Barna-Lloyd, J.R. Szabo & J.T. Young, Health & Environmental Sciences, Dow Chemical Company, Freeport, TX. Sponsor: R.J. Kociba.
- #189 **HISTOPATHOLOGIC ALTERATIONS FOLLOWING DIETARY ADMINISTRATION OF CAPTAN TO CD-1 MICE.** K.L. Pavkov, R.W. Thomassen, A.C. Katz, M.W. Sauerhoff and R.I. Freudenthal. Stauffer Chemical Co., Farmington, CT.
- #190 **CHLORPYRIFOS: 13-WEEK NOSE-ONLY INHALATION STUDY IN FISCHER 344 RATS.** R.A. Corley, T.D. Landry, L.L. Cathoun, D.A. Dittenber, and L.G. Lomax. The Dow Chemical Company, Mammalian and Environmental Toxicology Research Laboratory, Midland, MI.
- #191 **PERIPHERAL AND CENTRAL ENZYME INHIBITION BY THREE OP'S.** M. Farage-EiAwar and B. Magnus Francis. Dept. of Veterinary Biosciences and Inst. for Environmental Studies, University of Illinois, Urbana, IL.
- #192 **POSSIBLE BRAINSTEM INVOLVEMENT IN THE MODIFICATION OF THERMOREGULATORY PROCESSES BY CHLORDECONE IN RATS.** L.L. Cook^{1,2}, F.W. Edens³ and H.A. Tilson.⁴ ¹Toxicology Program and ³Poultry Science Dept., N.C. State Univ., Raleigh, NC; ²Neurotox. Div., USEPA and ⁴Lab. Behav. Neurol. Toxicol., NIEHS, Research Tri. PK, NC
- #193 **KINETICS OF INHIBITION AND REACTIVATION OF MAMMALIAN BRAIN ACETYLCHOLINESTERASE (AChE) BY ORGANOPHOSPHINATE (OPIN) ESTERS.** J.K. Marquis and R.D. MacCallum, Boston Univ., School of Medicine, Boston, MA.
- #194 **INFLUENCE OF DIETARY PROTEIN LEVELS ON ESTERASE ACTIVITY IN RATS.** L.E. Butler and W.C. Dauterman. Toxicology Program, N.C. State Univ., Raleigh, NC.
- #195 **EXPERIENCES WITH CHOLINESTERASE MONITORING IN A FACTORY POPULATION.** W.H. Ford, D.L. Freeman, J. Schollenberger, and J.C. Killeen, Jr. Ricerca, Inc., Painesville, OH.
- #196 **EFFECTS IN RATS OF REPEATED INHALATION EXPOSURE TO DYFONATE.** H.F. Knapp, B.O. Stuart, G.M. Zwicker and G.L. Sprague, Stauffer Chemical Company, Toxicology Department, Farmington, CT.
- #197 **RESULTS OF A ONE-YEAR DIETARY TOXICITY STUDY IN BEAGLE DOGS ADMINISTERED CYHEXATIN.** D.M. Bond, R.J. Kociba, D.G. Keyes, J.M. Wall and S.K. Weiss. The Dow Chemical Company, Midland, MI.
- #198 **DEPLETION OF RAT BRAIN BIOGENIC AMINES BY TOXAPHENE: A HIGH PERFORMANCE LIQUID CHROMATOGRAPHIC ANALYSIS.** C.H. Trotman, K.I. Ahmad-Sahib and D. Desalah. Dept. Chem., Jackson State Univ., Jackson, MS. and Dept. Neurol., Univ. Miss. Med. Ctr., Jackson, MS.
- #199 **REFINEMENT AND VALIDATION OF AN ELISA FOR THE THIOCARBAMATE HERBICIDE MOLINATE.** S.J. Gee, Q. Li, M.H. Goodrow, J.N. Seiber and B.D. Hammock. Departments of Entomology and Environmental Toxicology, University of California, Davis, CA.
- #200 **HEPATIC BIOCHEMICAL RESPONSES OF MICE TO ENDOTHAL AND CANTHARIDIC ACID.** M.J. Graziano and J.E. Casida. Pesticide Chemistry and Toxicology Laboratory, U. of California, Berkeley, CA
- #201 **IN VIVO AND IN VITRO CUTANEOUS PENETRATION OF FENVALERATE IN THE TOBACCO BUDWORM.** R.E. Grissom, Jr., T.Konno, N. Motoyama and W.C. Dauterman. Toxicology Program, N.C. State Univ., Raleigh, NC.
- #202 **STABILIZATION OF BACILLUS THURINGIENSIS STRAIN HD1-1 AND HD2-1 AGAINST UV-LIGHT.** Samia Y. El-Touny and Chester M. Himel. Toxicology Program, N.C. State University, Raleigh, NC. Sponsor: Walter Dauterman

**TUESDAY MORNING, FEBRUARY 24
EXHIBIT HALL**

POSTER SESSION: NEUROTOXICOLOGY I: NEUROPATHOLOGY

Chairperson: B.D. Goldstein, Medical College of Georgia, Augusta, GA

Displayed: 8:30 a.m.-11:30 a.m.

Attended: 10:00 a.m.-11:30 a.m.

- #203 **EFFECTS OF METHYLEMERCURY ON NEURONAL CYTOSKELETON IN VITRO.** M. Cadrin, *K.R. Reuhl, D.L. Brown, Dept. of Biology, Univ. Ottawa, and Div. Biol. Sci., *Nat. Res. Council, Ottawa, CA. Sponsor: J.G. Pounds
- #204 **METHYL MERCURY CYTOTOXICITY: THE PROTECTIVE EFFECTS OF GLUTATHIONE ON MICROTUBULAR ARCHITECTURE.** L. Kromidas, I. Jamal and L.D. Trombetta. St. John's University, Jamaica, NY.
- #205 **SUBCHRONIC TOXICITY OF ALKYL LEAD. PART 2. MICROSCOPIC AND ULTRASTRUCTURAL NEUROPATHOLOGICAL EFFECTS.** P.B. Little², C.A. Franklin¹, A. Gilman¹, V.E. Valli^{1,2}, A. Yagminas¹ and D.C. Villeneuve¹. Health Protection Branch¹, Ottawa, Canada, and Ontario Veterinary College², Guelph, Ontario.
- #206 **NEUROPATHOLOGY OF TRIMETHYL LEAD (TMPB) IN THE RAT.** M.M. Halleck, B.G. Gold, R.L. DeGrandchamp, M. DeJesus, K.R. Reuhl and H.E. Lowndes. Neurotoxicology Laboratories, Rutgers College of Pharmacy, Piscataway, NJ.

- #207 **EFFECT OF LEAD ON THE DEVELOPING OTOCYST IN CULTURE.** M.J. Sullivan, T.R. Van De Water. Albert Einstein College of Medicine, Bronx, NY. Sponsor: R.B. Conolly
- #208 **EFFECT OF ClO_2 ON THE MORPHOLOGY OF THE DEVELOPING RAT CEREBRAL CORTEX.** *G.P. Toth, M.K. Smith and *R.E. Long. U.S. EPA, HERL Cinti., OH and *Pathol. Assoc. Inc., Cinti., OH.
- #209 **ACUTE ETHANOL EXPOSURE AND BRAIN MALFORMATIONS IN THE DEVELOPING RAT.** L.A. Kotkoskie, J.E. Harris and S. Norton, Department of Pharmacology, Toxicology & Therapeutics, Univ. of Kansas Medical Center, Kansas City, KS
- #210 **VINCA ALKALOIDS INHIBIT THE NEURON PERIKARYAL RESPONSE TO AXOTOMY.** A.I. Soiefer, A. Moretto, M.I. Sabri, and P.S. Spencer. Institute of Neurotoxicology, Albert Einstein College of Medicine, Bronx. N.Y.
- #211 **DECREASED DE NOVO ACHE SYNTHESIS FOLLOWING AXOTOMY.** R.L. DeGrandchamp, S.F. Matheson and H.E. Lowndes. Neurotoxicology Laboratories, Rutgers College of Pharmacy, Piscataway, NJ.
- #212 **ELEMENTAL DISTRIBUTION IN RAT DORSAL ROOT GANGLION CELLS AND IN INJURED AXONS.** R.M. LoPachin, J. Lowery, J. Eichberg and A.J. Saubermann. University of Houston, College of Pharmacy, Houston, TX.
- #213 **AXONAL DEGENERATION FOLLOWING RETROGRADE TRANSPORT OF DOXORUBICIN (DOX).** B.G. Gold, M.M. Halleck, L. MacEachern, H.E. Lowndes Neurotoxicology Laboratories, Rutgers College of Pharmacy, Piscataway, NJ.
- #214 **CENTRAL DISTAL AXONOPATHY INDUCED BY DI-n-BUTYLDICHLOROVINYLPHOSPHATE (DBDCVP).** A. Moretto, M. Lotti* and P.S. Spencer. Albert Einstein College of Medicine, Bronx, NY, and *Istituti di Medicina del Lavoro, Università di Padova, Italy.
- #215 **A COMPARISON OF TRIPHENYL PHOSPHITE (TPP) AND TRI-ORTHO-CRESYL PHOSPHATE (TOCP) NEUROPATHIES IN THE RAT.** B. Veronesi and C. Dvergsten. USEPA, HERL/NTD, RTP, NC.
- #216 **CHLORPYRIFOS: SUBCHRONIC (13-WK) EVALUATION IN LAYING CHICKEN HENS FOR ORGANOPHOSPHATE-INDUCED DELAYED-NEUROTOXICITY (OPIDN).** T. Barna-Lloyd, J.R. Szabo, and J.T. Young. Health & Environmental Sciences, Dow Chemical Company, Freeport, TX. Sponsor: R.J. Kociba
- #217 **THE EFFECTS OF A SYNTHETIC PYRETHROID (BIFENTHRIN) ON THE SCIATIC NERVE OF RATS IN A TWO YEAR FEEDING STUDY-A COMPARISON OF THREE DIFFERENT NERVE STRAINS.** J.D. McCarty, W.R. Rapp, R.F. McConnell, L.E. Geiger, and M.J. Fletcher. Sponsor: L.B. Kedderis, FMC Corporation, Princeton NJ
- #218 **REPRODUCTIVE AND NEUROTOXICITY IN RATS ASSOCIATED WITH CHRONIC EXPOSURE TO DICHLOROACETIC ACID.** Mather, G.G., Exon, J.H., Koller, L.D., and Parnell M.J.
- #219 **EFFECT OF DELTA-9-TETRAHYDROCANNABINOL ON RAT NEUROBLASTOMA CELLS.** E.M. Mishkin, P.J. Mc Nerney and G.A. Cabral*. Department of Microbiology and Immunology, Virginia Commonwealth University, Richmond, VA. Sponsor: A.E. Munson

TUESDAY MORNING, FEBRUARY 24 EXHIBIT HALL

POSTER SESSION: HEPATIC-GI TOXICOLOGY

Chairperson: R.F. Potrepka, Stauffer Chemical Co., Farmington, CT

Displayed: 8:30 a.m.-11:30 a.m.

Attended: 8:30 a.m.-10:00 a.m.

- #220 **EFFECT OF PHENOBARBITAL PRETREATMENT ON THE GUINEA PIG MODEL OF HALOTHANE-ASSOCIATED HEPATIC NECROSIS.** R.C. Lind, A.J. Gandolfi, and B.R. Brown, Department of Anesthesiology, University of Arizona, Tucson, AZ
- #221 **SEX AND STRAIN SPECIFICITY IN HEPATOTOXICITY OF PYRAZOLE IN MICE.** Lucy M. Anderson, Laboratory of Comparative Carcinogenesis, National Cancer Institute, Frederick, MD
- #222 **POTENTIATION OF ALLYL-ALCOHOL-INDUCED HEPATOTOXICITY BY CYANAMIDE.** R. Walker, P. Chang, R. Martin and F.A. de la Iglesia. Path. Exp. Tox. Dept., Warner-Lambert/Parke-Davis Pharm. Res., Mississauga, ON and Ann Arbor, MI.
- #223 **EFFECT OF DIQUAT ON THE DISTRIBUTION OF IRON IN RAT LIVER.** D.W. Reif, I.L.P. Beales, C.E. Thomas and S.D. Aust. Dept. of Biochemistry, Michigan State University, East Lansing, MI.
- #224 **STIMULATION OF H_2O_2 GENERATION BY FATTY ACIDS: EFFECT OF CHAIN LENGTH.** Jeffrey A. Handler and Ronald G. Thurman. Dept. Pharmacology, University of North Carolina at Chapel Hill, NC
- #225 **SUBCHRONIC AND CHRONIC ORAL STUDIES OF DIISONONYL PHTHALATE (DINP) IN F-344 RATS: EFFECTS ON HEPATIC PEROXISOME INDUCTION.** M.G. Bird, A.W. Lington, and B. Cockrell. *Exxon Biomedical Sciences, Inc., East Millstone, New Jersey. *Experimental Pathology Labs, VA Sponsor: R.A. Scala
- #226 **TRIDIPHANE (2-(3,5-DICHLORO)-2(2,2,2-TRICHLORO-ETHYL)OXIRANE), A HERBICIDE PEROXISOME PROLIFERATOR.** D.E. Moody and B.D. Hammock, Univ. of California, Davis, CA.
- #227 **A COMPARISON OF PROTECTION AGAINST ANIT INDUCED HEPATOTOXICITY OFFERED BY AN E1 AND AN E2 PROS-TAGLANDIN.** C.P. Chengelis, D.C. Dodd, T.M. Dennis, Product Safety Assessment, G.D. Searle Research and Development, Skokie, IL
- #228 **TOXICITY OF MICROCYSTIN FROM MICROCYSTIS AERUGINOSA IN RATS: MORPHOLOGIC AND SERUM CHEMISTRY ALTERATIONS.** S.B. Hooser, V.R. Beasley, W. Carmichael*, W.M. Haschek, College of Veterinary Medicine, University of Illinois, Urbana, IL, and *Wright State University, Dayton, OH.
- #229 **INHIBITION OF TAUROCHOLATE (TC) EFFLUX FROM RAT HEPATIC CANALICULAR MEMBRANE VESICLES (CMV) BY GLUTATHIONE DISULFIDE (GSSG).** J.C. Griffiths, T.P.M. Akerboom, and H. Sies, Institut für Physiologische Chemie I, Universität Dusseldorf, Dusseldorf, FRG. Sponsor: J.P. Kehrer.
- #230 **HEPATOBIILIARY FUNCTION IN RATS FOLLOWING SUB-CHRONIC EXPOSURE TO AMIODARONE.** R.A. Young and H.M. Mehendale. Dept. Pharmacol. and Toxicol., Univ. MS Medical Center, Jackson, MS.
- #231 **CYCLOHEXIMIDE IN METHYL ISOBUTYL KETONE POTENTIATION OF TAUROLITHOCHOLIC ACID-INDUCED CHOLESTASIS.** L. Dahlstrom-King and G.L. Plaa. Dept. de pharmacologie, Université de Montreal, Montreal, Quebec, Canada.
- #232 **TOXICITY OF MIXTURES OF CCl_4 , MONOCHLORO BENZENE, AND LEAD ACETATE.** E. Hayes, S. Dutton, L. Evans, W. Strawderman, R. Cody, and C. Witmer. Joint Graduate Program in Toxicology, Rutgers University and R.W. Johnson Medical School, Piscataway, N.J.

- #233 **LETHALITY AND HEPATOTOXICITY OF COMPLEX WASTE MIXTURES.** J.E. Simmons and E. Berman, Experimental Biology Division, U.S.E.P.A., Research Triangle Park, NC. Sponsor: William F. Durham
- #234 **IN VIVO AND IN VITRO HEPATOTOXICITY OF A NOVEL ANTINEOPLASTIC AGENT, SK&F 101772, IN MALE BEAGLE DOGS.** G.F. Rush, D.W. Alberts, P. Meunier, K. Leffler and P.F. Smith. Dept. of Investigative Toxicology and Dept. of Experimental Pathology, Smith Kline and French, Philadelphia, PA.
- #235 **A NEW METHOD FOR OBTAINING METABOLICALLY ACTIVE TISSUE SLICES FOR SPECIES COMPARISONS.** W.P. Ridley, J. Warren, J.E. Mueller, and R.B. Rush. Monsanto Company, Environmental Health Laboratory, St. Louis, MO. Sponsor: W.E. Ribelin
- #236 **CRYOPRESERVATION OF PRECISION CUT HUMAN LIVER SLICES.** S.M. Wishnies, R. Fisher, G.M. Becker, I.G. Sipes, C.L. Krumdieck, C.W. Putnam, and K. Brendel, Departments of Pharmacology and Toxicology, University of Arizona, Tucson, AZ.
- #237 **ORGAN SLICE TECHNOLOGY: A TOOL TO EVALUATE REGIOSELECTIVE TOXICOLOGY.** K. Brendel, G.M. Becker, R.L. Fisher, P.F. Smith, A.J. Gandolfi, and C.L. Krumdieck. Department of Pharmacology, University of Arizona, Tucson, AZ.
- #238 **TOXICITY OF VOLATILE ANESTHETICS IN RAT LIVER SLICES.** C.R. Adamson, A.J. Gandolfi, K. Brendel. Departments of Anesthesiology and Pharmacology, University of Arizona, Tucson, AZ
- #239 **COVALENT BINDING OF ¹⁴C-BROMOBENZENE METABOLITES TO LIVER SLICES IN VITRO.** G.M. Becker, R.L. Fisher, I.G. Sipes and K. Brendel. Departments of Pharmacology and Toxicology, University of Arizona, TUCSON, AZ.
- #240 **THE EFFECT OF DIFFERENT CULTURE MEDIA ON THE TOXICITY OF MONOCHLOROBENZENE, AND THE DICHLOROBENZENES.** R.L. Fisher, S.M. Wishnies, I.G. Sipes, A.J. Gandolfi, C.L. Krumdieck and K. Brendel, Departments of Pharmacology and Toxicology, Arizona Health Sciences Center, Tucson, AZ.
- #241 **VALPROIC ACID TOXICITY IN PRECISION-CUT LIVER SLICES.** G.M. Becker, R.L. Fisher, C.L. Krumdieck, H. Nau and K. Brendel. Departments of Pharmacology and Toxicology, University of Arizona, Tucson, AZ.
- #242 **EFFECTS OF FREEZING AND THAWING RATES, CRYOPROTECTANT AND INCUBATION MEDIUM ON THE CRYOPRESERVATION OF PORCINE LIVER SLICES.** S.M. Wishnies, R.L. Fisher, I.G. Sipes, C.L. Krumdieck, and K. Brendel. Departments of Pharmacology and Toxicology, University of Arizona, Tucson, AZ
- #243 **PROTEIN AND DNA SYNTHESIS IN PRIMARY CULTURES OF POSTNATAL RAT HEPATOCYTES.** K.C. Norbury, S.M. Sandifer, K. Foster, and P.L. Carthage, Research Laboratories, Ortho Pharmaceutical Corporation, Raritan, N.J.
- #244 **PROTECTION OF RAT LIVER CELL CULTURES FROM DRUG-INDUCED INJURY BY FLAVONOIDS.** J.C. Davila, D. Acosta* and A. Lenherr**. Division of Pharmacology and Toxicology*, College of Pharmacy; Department of Botany,** The University of Texas at Austin, Austin, TX.
- #245 **MIREX DECREASES THE UPTAKE OF ³H-ESTRADIOL-17-D-GLUCURONIDE (E->217G) AND ³H-TAUROCHOLATE (TC) INTO ISOLATED FEMALE RAT HEPATOCYTES(IRH).** Steve Teo and Mary Vore, Dept. Pharmacol, and Grad. Ctr. for Toxicol. Univ. KY, Lexington, KY.
- #246 **IN VITRO CYTOTOXICITY TEST FOR CULTURED HEPATOCYTES USING THE NEUTRAL RED DYE ASSAY (NRDA).** D.L. McKean, C.L. Smallwood and B.A. Merrick. U.S. EPA, TMD/HERL, Cincinnati, OH.
- #247 **BOVINE HEPATOCYTE CULTURES - A TOOL FOR THE MEASURE OF XENOBIOTIC CYTOTOXICITY AND METABOLISM IN LARGE ANIMALS.** J.A. Wisniewski and L.R. Shull. Dept. Environ. Tox., Univ. of Calif., Davis, CA
- #248 **DISSOCIATION OF SK&F 101772-INDUCED CYTOTOXICITY FROM ADENINE NUCLEOTIDE DEPLETION AND PHOSPHORYLASE A ACTIVATION IN ISOLATED RAT HEPATOCYTES.** P.F. Smith, D.W. Alberts, and G.F. Rush, Dept. of Investigative Toxicology, Smith Kline and French Laboratories, Philadelphia, PA.
- #249 **THE MECHANISM OF SK&F 101772-INDUCED CYTOTOXICITY TO ISOLATED RAT HEPATOCYTES.** D.W. Alberts, P.F. Smith and G.F. Rush. Dept. of Investigative Toxicology, Smith Kline and French, Philadelphia, PA.
- #250 **ANTIPROTEASE ACTIVITY ASSOCIATED WITH PROTECTION FROM HEPATOCELLULAR TOXICITY BY GALACTOSAMINE.** J.R. MacDonald and C. White. Dept. of Pathology UCSF, School of Medicine, San Francisco, CA.
- #251 **INHIBITION OF CARNITINE PALMITOYL TRANSFERASE I IN RAT LIVER MITOCHONDRIA BY A TETRAZOLE-SUBSTITUTED ALKOXYACETOPHENONE.** P.S. Foxworthy and P.I. Eacho, Lilly Research Labs., Toxicology Division, Greenfield, IN.
- #252 **INHIBITION OF FATTY ACID OXIDATION IN ISOLATED RAT HEPATOCYTES BY A TETRAZOLE-SUBSTITUTED ALKOXYACETOPHENONE.** P.I. Eacho and P.S. Foxworthy. Lilly Research Labs., Toxicology Division, Greenfield, IN.
- #253 **COMPARATIVE STUDIES OF PEROXISOMAL ENZYME INDUCTION IN HEPATOCYTES FROM RAT, CYNOMOLGUS MONKEY AND HUMAN BY HYPOLIPIDEMIC DRUGS.** K.L. Allen, C.E. Green, and C.A. Tyson. SRI International, Menlo Park, CA.
- #254 **STRUCTURE-ACTIVITY CORRELATION OF CYTOTOXICITY OF DINITROTOLUENE ISOMERS AND C-ATOMIC CHARGE.** S.E. LeValley, C.E. Green, C.A. Tyson, R.J. Spanggord, SRI International, Menlo Park, CA.
- #255 **TRANSCRIPTIONAL STIMULATION OF PEROXISOMAL ENOYL CoA HYDRATASE: 3-HYDROXYACYL CoA DEHYDROGENASE (ECH) mRNA BY WY-14,643 IN RAT HEPATOCYTES (RH).** B. Chatterjee¹, C.V.R. Murthy², M.J. Olson³ and A.K. Roy², Depts. of Chemistry¹ and Biological Sciences², Oakland University, Rochester, MI and Biomedical Science Dept.³, General Motors Research Labs., Warren, MI. Sponsor: E.W. Lee
- #256 **ZONATION INDICATED BY DIFFERENCES IN ENZYME RELEASE IN DIGITONIN-PERFUSED RAT LIVER.** J.R. Weiser, J. Kuhlenkamp and N. Kaplowitz. Liver Research Laboratory, Veterans Administration Wadsworth Hospital and University of California, Los Angeles, School of Medicine, Los Angeles, California. Sponsor: C.-P. Siegers
- #257 **TOTAL AND ACTIVE FORMS OF GLYCOGEN PHOSPHORYLASE IN VARIOUS PREPARATIONS OF RAT LIVER.** M. Whittaker, M. Badr, R.G. Thurman, & F.C. Kauffman. Dept. Pharmacol. Exp. Ther., Univ. MD, Sch. Med., Balto., MD and Dept. Pharmacol., Univ. North Carolina, Sch. Med., Chapel Hill, NC.
- #258 **CHARACTERIZATION OF GLUTATHIONE DEPENDENT INHIBITION OF NADPH INDUCED PEROXIDATION OF ISOLATED RAT LIVER NUCLEI.** M.A. Tirmenstein and D.J. Reed. Oregon State University, Corvallis, OR
- #259 **HEPATOTOXIC EFFECTS OF ACROLEIN IN MALE SPRAGUE-DAWLEY RATS.** J. Horvath, G. Witz, C. Witmer. JGPT-UMDNJ-Robert Wood Johnson Medical School/Rutgers University, Piscataway, NJ.
- #260 **TWO-WEEK GAVAGE STUDY OF ETHYL ACRYLATE IN RATS: EFFECTS OF THE FORESTOMACH.** J.D. Frantz, G.A. Hazelton, C.B. Frederick and G.P. O'Hara. Rohm & Haas Company, Spring House, PA. Sponsor: H.E. Scribner
- #261 **THE EFFECTS OF ETHYL ACRYLATE (IN DRINKING WATER) ON RAT FORESTOMACH.** G.A. Hazelton, G.P. O'Hara and J.D. Frantz. Rohm & Haas Company, Spring House, PA. Sponsor: H.E. Scribner
- #262 **THE EFFECTS OF ETHYL ACRYLATE (BY GAVAGE) ON RAT FORESTOMACH.** G.P. O'Hara, G.A. Hazelton and J.D. Frantz. Rohm & Haas Company, Spring House, PA. Sponsor: H.E. Scribner

- #263 **STIMULATED AND NON-STIMULATED ORNITHINE DECARBOXYLASE ACTIVITY (ODC) IN GASTRIC MUCOSA OF MINATURE SWINE.** R. Raybourne, J.W. Bier, D.W. Gaines, and L. Friedman CFSAN, FDA, Washington, DC and Laurel, MD.
- #264 **POTENTIATION OF RETINYL ACETATE (RA) HEPATOTOXICITY BY BUTYLATED HYDROXYTOLUENE (BHT).** D.L. McCormick, T.A. Hultin, and C.J. Detrisac. IIT Research Institute, Chicago, IL
- #265 **ENDOSCOPIC ASSESSMENT OF GASTRIC MUCOSAL DAMAGE BY ASPIRIN IN DOGS. PROTECTION BY Ro 22-1327.** A. Davidovich, R. Bertko, B. Finckenor, T. Gaginella. Department of Toxicology and Pathology and Department of Pharmacology. Hoffman-La Roche Inc., Nutley, NJ. Sponsor: R.M. McClain
- #266 **DEPLETION OF NON-PROTEIN SULFHYDRYL (NPSH) CONTENT IN RAT FORESTOMACH AFTER MULTIPLE DOSES OF ETHYL ACRYLATE (EA).** C.B. Frederick and H.L. Tomlinson. Rohm and Haas Co., Spring House, PA.

TUESDAY MORNING, FEBRUARY 24

EXHIBIT HALL

POSTER SESSION: METALS I

Chairperson: R.D. Mavis, Karch & Associates, Washington, DC

Displayed: 8:30 a.m.-11:30 a.m.

Attended: 10:00 a.m.-11:30 a.m.

- #267 **FLOW CYTOMETRIC INVESTIGATION OF THE EFFECT OF METALS ON NUCLEI.** R.M. Zucker¹, K. Elstein¹, R.E. Easterling², E.J. Massaro². Northrop Services, Inc.¹, and Environmental Protection Agency², Research Triangle Park, NC.
- #268 **PARADOXICAL EFFECT OF LIPOIC ACID (LA) ON BILIARY EXCRETION OF METALS.** Z. Gregus^{1,2}, A.F. Stein², F. Varga¹ and C.D. Klaassen². Dept. of Pharmacol., Univ. Med. School, Pecs, Hungary¹ and Dept. Pharmacol. Toxicol., Univ. of Kansas Med. Ctr., Kansas City, KS²
- #269 **A METHOD TO INVESTIGATE METAL BINDING PROPERTIES OF SINUSOIDAL AND CANNALICULAR HEPATIC PLASMA MEMBRANES.** H.M. Eastman and J.M. Frazier. The Johns Hopkins School of Hygiene and Public Health, Baltimore, MD.
- #270 **EFFECTS OF AGE AND SEX ON HEPATIC AND RENAL METAL AND METALLOTHIONEIN LEVELS IN CONTROL AND CADMIUM EXPOSED RATS.** M.E. Blazka, Z.A. Shaikh and C.V. Nolan, University of Rhode Island, Kingston, RI.
- #271 **METAL COMPOSITION OF METALLOTHIONEIN (MT) INFLUENCES INHIBITION OF -AMINOLEVULINIC ACID DEHYDRATASE (ALAD) BY LEAD (Pb).** Peter L. Goering and Bruce A. Fowler, NIEHS, Research Triangle Park, NC.
- #272 **EFFECT OF SULFHYDRYL-DEFICIENT DIETS ON HEPATIC METALLOTHIONEIN (MT) LEVELS IN RATS.** L.E. Sendelbach, C.A. White, Z. Gregus, S.R. Howell and C.D. Klaassen, Univ. of Kansas Medical Center, Kansas City, KS
- #273 **KIDNEY SYNTHESIZES LESS METALLOTHIONEIN(MT) THAN LIVER IN RESPONSE TO CdCl₂>2 and Cd-METALLOTHIONEIN (Cd-MT).** L.E. Sendelbach and C.D. Klaassen, Univ. of Kansas Medical Center, Kansas City, KS
- #274 **CADMIUM INDUCTION OF METALLOTHIONEIN(MT) ISOFORMS IN CADMIUM RESISTANT AND SENSITIVE STRAINS OF MICE.** W.C. Kershaw and C.D. Klaassen, Univ. of Kansas Medical Ctr., Kansas City, KS
- #275 **COMPARISON OF THE TOXICITY OF CdCl₂>2 and Cd-METALLOTHIONEIN (CD-MT) IN ISOLATED RAT HEPATOCYTES.** L.E. Sendelbach, W.M. Bracken and C.D. Klaassen, Univ. of Kansas Medical Center, Kansas City, KS
- #276 **INDUCTION OF METALLOTHIONEIN(MT)ISOFORMS BY ZINC, CADMIUM AND DEXAMETHASONE(DEX) IN MICE.** W.C. Kershaw, L.D. Lehman-McKeeman and C.D. Klaassen, Univ. of Kansas Medical Center, Kansas City, KS
- #277 **ONTOGENY AND INDUCTION OF HEPATIC ISO-METALLOTHIONEINS (MTs) IN IMMATURE RATS.** L.D. Lehman-McKeeman, G.K. Andrews and C.D. Klaassen, Univ. of Kansas Medical Center, Kansas City, KS
- #278 **ISOLATION AND CHARACTERIZATION OF A NOVEL METAL-BINDING PROTEIN FROM PATAS MONKEY TESTES.** M.P. Waalkes, A. Perantoni and A.E. Palmer. Laboratory of Comparative Carcinogenesis, National Cancer Institute-FCRF, Frederick, MD
- #279 **PURIFICATION OF THE LOW MOLECULAR WEIGHT NON-METALLOTHIONEIN LEAD-BINDING PROTEIN (PbBP) FROM RAT KIDNEY.** G.E. Duval and B.A. Fowler, NIEHS, Research Triangle Park, NC.
- #280 **CADMIUM TRANSPORT ACROSS BRUSH BORDER MEMBRANE VESICLES FROM RAT SMALL INTESTINE.** C. Bevan and E.C. Foulkes, Dept. of Environmental Health, U. of Cincinnati, Col. of Med., Cincinnati, OH
- #281 **INFLUENCE OF METAL AND STRESS PRETREATMENT ON THE SUBCELLULAR DISTRIBUTION OF CADMIUM.** K.N. Baer and W.H. Benson. Division of Pharmacology and Toxicology, School of Pharmacy, Northeast Louisiana University, Monroe, LA.
- #282 **INHIBITION OF MICROTUBULE REASSEMBLY BY CADMIUM, ARSENITE, AND METHYLMERCURY IN CULTURED FIBROBLASTS.** B.A. Perrino and I.N. Chou. Dept. of Microbiology, Boston Univ. School of Medicine, Boston, MA. Sponsor: A.E. Rogers
- #283 **ANTAGONISM OF CADMIUM CARCINOGENESIS IN THE WISTAR RAT BY ZINC TREATMENT: DOSE AND ROUTE DEPENDENCE.** M.P. Waalkes and S. Rehm. Laboratory of Comparative Carcinogenesis, National Cancer Institute-FCRF, Frederick, MD.
- #284 **DIFFERENTIATION-INDUCING AGENTS PROTECT 3T3 CELLS FROM CADMIUM TOXICITY.** C. Shopsis & B. Eng. LARC, Rockefeller University, NY, NY Sponsor: D.M. Stark
- #285 **CADMIUM CARDIOTOXICITY: INFLUENCE OF DIETARY COPPER AND SELENIUM ON ANTIOXIDANT ENZYMES AND TRACE METAL LEVELS.** J.J. Sprowls, L. Trombetta and I.S. Jamall, St. John's University, NY
- #286 **EFFECT OF CADMIUM ON ANTIOXIDANT ENZYMES AND TRACE ELEMENTS IN RAT KIDNEY I. INFLUENCE OF HIGH DIETARY COPPER.** M. Naik and I.S. Jamall, St. John's University, Jamaica, NY
- #287 **EFFECT OF CADMIUM ON ANTIOXIDANT ENZYMES AND TRACE ELEMENTS IN RAT KIDNEY II. INFLUENCE OF HIGH DIETARY SELENIUM.** M. Naik, I.S. Jamall and L. Trombetta, St. John's University, Jamaica, NY
- #288 **EFFECTS OF CADMIUM ON LUNG CYTOSOLIC ANTIOXIDANT ENZYMES IN RATS FED VARIOUS LEVELS OF SELENIUM.** P.K. Bennett and I.S. Jamall, Toxicology Program, St. John's University, Jamaica, NY.
- #289 **PROTECTION OF CADMIUM TOXICITY AND ENZYME INHIBITION BY DITHIOHREITOL.** D. Desaiah, K.I. Ahmmad-Sahib, R.R. Jinna. Dept. Neurol., Univ. Miss. Med. Ctr., Jackson, MS.
- #290 **MECHANISM OF INTERACTION OF CADMIUM AND METHYL MERCURY WITH OUABAIN-RECEPTOR SITE.** K.I. Ahmmad-Sahib and D. Desaiah. Dept. Neurol., Univ. Miss. Med. Ctr., Jackson, MS

- #291 **UPTAKE OF INORGANIC MERCURY (HG) BY HUMAN ERYTHROCYTES (RBC) IN VITRO.** J.L. Cox and E.J. Kasarskis. Grad. Ctr. for Toxicology and Dept. of Neurology, Univ. of Kentucky, Lexington, KY
- #292 **MULTIPLE SITES OF METAL ACTION ON PROXIMAL AMINO ACID REABSORPTION BY RABBIT KIDNEY.** E.C. Foulkes, Depts. Env. Health & Physiol.-Biophys., U. Cincinnati, Col. Med., Cincinnati, OH
- #293 **TIME COURSE OF MERCURY DISTRIBUTION AFTER MERCURIC CHLORIDE EXPOSURE IN CULTURED RENAL PROXIMAL TUBULE CELLS.** M.D. Aleo, M.L. Taub, and P.J. Kostyniak. SUNY at Buffalo, Toxicology Research Center, Buffalo, NY.
- #294 **CELLULAR ENZYME LEAKAGE AS AN INDICATOR OF MERCURIC CHLORIDE INDUCED CYTOTOXICITY IN CULTURED PROXIMAL TUBULE CELLS.** M.D. Aleo, and P.J. Kostyniak. SUNY at Buffalo, Toxicology Research Center, Buffalo, NY.
- #295 **ARSINE: ACUTE AND SUBCHRONIC INHALATION TOXICITY STUDIES, EXPERIMENTAL DESIGN AND QUALITY CONTROL.** B. Adkins, Jr., R.W. O'Connor, A.K. Miller, C.A. Frank, R.E. Morrissey, B.A. Schwetz, J.E. Thigpen, and B.A. Fowler. Northrop Services, Inc. and NIEHS, RTP, NC.
- #296 **ARSINE: ALTERATIONS IN THE HEMATOPOIETIC SYSTEM OF RATS AND MICE.** P. Blair, M. Thompson, C.R. Moorman*, M.P. Moorman, P.L. Goering, and B.A. Fowler, NIEHS and Northrop Environmental Sciences*, Research Triangle Park, NC
- #297 **ARSINE: TOXICITY DATA FROM ACUTE AND SUBCHRONIC INHALATION EXPOSURES.** M.P. Moorman, C.R. Moorman, J.F. Hardisty, S.L. Eustis, R.E. Morrissey, H.R. Sanders, B.A. Fowler, NIEHS, Northrop Services, Inc., Experimental Pathology Laboratories, Research Triangle Park, NC
- #298 **ARSINE AND GALLIUM ARSENIDE (GA): DEVELOPMENTAL TOXICITY STUDIES.** R.E. Morrissey, M.W. Harris, E. Haskins, J. Allen, M. Ross, B.A. Fowler, B. Adkins, M.R. Moorman, and C.R. Moorman. NIEHS and Northrop Services, Inc., Res. Tri. Pk., NC
- #299 **ALTERATION OF HEPATIC MITOCHONDRIAL STRUCTURE/FUNCTION BY ACUTE ARSENITE EXPOSURE: ULTRA-STRUCTURAL AND IN VIVO NMR STUDIES.** B. Chen, P.L. Goering, C.T. Burt, R.E. London, G.E. Toney, and B.A. Fowler, NIEHS, Research Triangle Park, NC.
- #300 **TISSUE DISTRIBUTION OF ARSENIC IN THE RABBIT FOLLOWING SUBCUTANEOUS ADMINISTRATION OF LEWISITE WITH OR WITHOUT BRITISH ANTI-LEWISITE THERAPY.** T.H. Snider, R.L. Joiner, P.I. Feder, R.C. Kiser, W.B. Keys, G.L. Fisher, Battelle Columbus Division, Columbus, OH.
- #301 **DIRECT DETERMINATION OF BLOOD LEAD LEVEL IN PLUMBERS USING PLASMA ATOMIC EMISSION SPECTROMETRIC TECHNIQUES.** Salah A. Soliman, Nabila S. Ahmed, Ahmed S. El-Bakary and Abd El-Khalek, H. El-Sebae. Lab. of Environmental Chemistry & Toxicology, Div. of Pesticide Chemistry, Faculty of Agriculture, Alexandria University, Alexandria, Egypt.
- #302 **DISTRIBUTION OF FE, CU, ZN, AND HG IN THE MOUSE CEREBELLUM.** W.M. Kwiatek, G.J. Long, K.R. Reuhl, A.L. Hanson, K.W. Jones, and J.G. Pounds. Brookhaven National Laboratory, Upton, NY.
- #303 **THE EFFECTS OF LEAD AND DIET ON TRACE ELEMENT CONTENT OF RAT SERUM.** G.J. Long. University of Arkansas for Med. Sciences, Little Rock, AR; W.M. Kwiatek, A.L. Hanson, K.E. Jones, J.G. Pounds. Brookhaven National Laboratory, Upton, NY.
- #304 **INTRACELLULAR LEAD-CALCIUM RELATIONSHIPS.** J.G. Pounds and J.F. Rosen. Brookhaven National Lab, Upton NY and Montefiore Hospital and Med Center, Bronx NY
- #305 **LEAD INHIBITION OF MG²⁺-ATP-DEPENDENT CALCIUM TRANSPORT IN ISOLATED RAT LIVER MEMBRANES.** F.A.X. Schanne, Depts. of Pediatrics and Pathology, Albert Einstein College of Medicine, Montefiore Med. Ctr., Bronx, NY. Sponsor: J.F. Rosen
- #306 **ERYTHROCYTE MEMBRANE FLUIDITY AS RELATED TO BLOOD LEAD.** C.R. Angle, L.R. Cook, S.J. Stohs, and R.C. Maxell. University of Nebraska Medical Center, Omaha, NE
- #307 **AGING ALTERS THE TISSUE DISTRIBUTION OF LEAD.** D.A. Cory-Slechta. Division of Toxicology, University of Rochester Medical School, Rochester, NY.
- #308 **NON-INVASIVE DETECTION OF TIBIAL BONE LEAD IN INTACT LEGS BY L X-RAY FLUORESCENCE.** L. Wielopolski, D.N. Slatkin, J.A. Kalef-Ezra, J.F. Rosen. Medical Dept., Brookhaven National Laboratory, Upton, NY; Dept. Med. Physics, Univ. Ioannina, Ioannina, Greece; Dept. of Pediatrics, Montefiore Medical Center, Bronx, NY.
- #309 **PHARMACOKINETIC PREDICTIONS OF UNBOUND LEAD IN THE PLASMA OF HIGH RISK POPULATIONS WITH TIME-DEPENDENT EXPOSURE PATTERNS.** B.M. Sadler, A.H. Marcus, K.G. Brown, and R.P. Bellis. Research Triangle Institute, Research Triangle Park, NC, *Washington State University, Pullman, WA, and *Carcinogen Assessment Group, U.S. EPA, Washington, D.C.
- #310 **INTRAVENOUS ADMINISTRATION MODE FOR LEAD INCLUSION DEVELOPMENT IN MOUSE TISSUES.** E.M.B. Sorensen and M.H. Bhattacharyya. College of Pharmacy, Department of Pharmacology/Toxicology, University of Texas, Austin, TX and Division of Biological and Medical Research, Argonne National Laboratory, Argonne, IL.
- #311 **LEAD-INDUCED ALTERATIONS OF RENAL GENE EXPRESSION WITHIN SUBCELLULAR COMPARTMENTS.** P. Mistry, C. Mastro, and B.A. Fowler, NIEHS, Research Triangle Park, NC.
- #312 **MOBILIZATION OF LEAD OVER THE COURSE OF DMSA CHELATION THERAPY.** D.A. Cory-Slechta. Division of Toxicology, University of Rochester Medical School, Rochester NY.
- #313 **IN UTERO MOBILIZATION OF LEAD FROM PRETREATED RAT DAMS.** T.M. Forrester and E.J. Kasarskis. Grad. Center for Toxicology and Dept. of Neurology, University of Kentucky, Lexington, Ky. Sponsor: Larry Robertson
- #314 **DOES LEAD NITRATE TREATMENT IN MOUSE LIVER INDUCE BIOCHEMICAL PATTERNS SIMILAR TO RAT LIVER?.** M.W. Roomi, Z.A. Khan, and R.G. Cameron. Dept. Pathol., Univ. of Toronto, Toronto, Canada. Sponsor: P.G. Wells.
- #315 **COMPARISON OF HEPATOCELLULAR NECROSIS AND BIOCHEMICAL CHANGES IN RESPONSE TO COBALT-HEME OR LEAD NITRATE IN DIFFERENT RAT STRAINS.** M.W. Roomi, and R.G. Cameron. Dept. Pathol., Univ. Toronto, Toronto, Canada. Sponsor: P.G. Wells.
- #316 **EFFECTS OF EDTA CHELATION ON LEAD AND ZINC CONCENTRATIONS IN HUMANS: COMPARTMENTAL MODELS.** A. Marcus, Washington State University, Pullman, WA*
- #317 **EXAMINATION OF THE POTENTIAL BIOCHEMICAL MECHANISMS OF ORGANOMETAL TOXICITY.** D.L. Norvicki and M.R. Krigman. University of North Carolina, Chapel Hill, NC.
- #318 **SUBCHRONIC TOXICITY OF ALKYL LEAD. PART 1. BIOCHEMICAL, HEMATOLOGICAL AND HISTOPATHOLOGICAL EFFECTS.** A. Yagminas¹, C.A. Franklin¹, A. Gilman¹, V.E. Valli², P.B. Little² and D.C. Villeneuve¹. Health Protection Branch¹, Ottawa, Canada, and Ontario Veterinary College², Guelph, Ontario.
- #319 **KINETICS OF INHALED MnCl₂ AEROSOLS: INFLUENCE OF CONCENTRATION.** H. Wieczorek, G. Oberdorster, C. Cox. Dept. of Biophysics, Div. of Toxicology, University of Rochester, Rochester, NY

- #320 **EFFECT OF COMPLEXING AGENTS ON DISTRIBUTION AND EXCRETION OF MANGANESE AFTER INHALATION TO $^{54}\text{MnCl}_2$.** H. Wieczorek, G. Oberdorster, C. Cox. Dept. of Biophysics, Div. of Toxicology, University of Rochester, Rochester, NY
- #321 **TISSUE DISTRIBUTION OF MANGANESE IN CHRONICALLY EXPOSED F344 RATS AND B6C3F1 MICE.** M. Heitmanick, D. Walters, J. Messman, and A.C. Peters. Battelle Columbus, OH and *National Toxicology Program, RTP, NC.
- #322 **ZINC AND NICKEL REDUCE CADMIUM-INDUCED MORPHOLOGICAL CHANGES IN 3T3 FIBROBLASTS.** E.M.B. Sorensen and E. Borenfreund. College of Pharmacy, Department of Pharmacology/Toxicology, University of Texas, Austin, TX and Laboratory Animal Research Center, The Rockefeller University, New York, NY.
- #323 **THE EFFECT OF NICKEL ON SPECIFIC PROTEIN BINDING TO MOUSE SATELLITE DNA.** D.M. Latta, T.A. Kimmel, R.J. Imbra and M. Costa. Institute of Environmental Medicine, New York University Medical Center, New York, NY
- #324 **PROTECTIVE EFFECT OF MAGNESIUM AGAINST NICKEL-INDUCED DNA DAMAGE AND CELL TRANSFORMATION.** K. Conway, L. Xu, and M. Costa. Inst. of Environ. Medicine, NYU Medical Ctr., New York, NY
- #325 **CARCINOGENICITY OF NICKEL DITHIOCARBAMATE.** M.A. Basinger, M.M. Jones. Department of Chemistry, Vanderbilt University, Nashville, TN, M.A. Holscher. Department of Pathology, Vanderbilt University, Nashville, TN, R.E. Mrak, E.M. Walker, Jr., J.L. McClellan Memorial Veterans Hospital, Little Rock, AR
- #326 **NICKEL TOXICITY IN HUMAN AND RAT ALVEOLAR EPITHELIAL CELLS.** A. Burke, C.R. Shoaf, and D.B. Menzel. Depts. of Pharm. and Med., Comp. Cancer Ctr., Duke Univ. Med. Ctr., Durham, NC
- #327 **HISTOCHEMICAL LOCALIZATION OF THALLIUM INDUCED LIPID PEROXIDATION IN THE BRAIN AND CORRELATION WITH BEHAVIOR.** L.T. Hamilton and D.R. Brown. Toxicology Prog., Northeastern Univ. Boston, MA
- #328 **ANALYSIS OF ALTERATIONS IN DNA-PROTEIN INTERACTION FOLLOWING CHROMATE TREATMENT OF CHO CELLS.** C.A. Miller III and M. Costa. Institute of Environmental Medicine, New York University Medical Center, New York, NY
- #329 **TOXICITY AND ALUMINUM CONCENTRATION IN BONE FOLLOWING DIETARY ADMINISTRATION OF TWO SODIUM ALUMINUM PHOSPHATE FORMULATIONS IN RATS.** J.S. Hicks, D.S. Hackett and G.L. Sprague. Stauffer Chemical Company, Toxicology Department, Farmington, CT.
- #330 **VANADIUM INHIBITION OF YEAST GLUCOSE-6-PHOSPHATE DEHYDROGENASE.** M.D. Cohen, A.C. Sen, and C.I. Wei. Dept. of Food Science and Human Nutrition, Univ. of Florida, Gainesville, FL. Sponsor: L.O. Lim
- #331 **ABNORMAL COPPER STORAGE IN THE TELEOST FISH (*Morone Americana*).** T.E. Bunton, J. Frazier, S. Baksi, Division of Comparative Medicine and Pathology, Division of Experimental Pathology and Toxicology, Johns Hopkins University, Baltimore, MD
- #332 **HEALTH EFFECTS OF CORROSION PRODUCTS IN DRINKING WATER.** E.V. Ohanian, Office of Drinking Water (WH-550D), U.S. Environmental Protection Agency, Washington, D.C.

TUESDAY NOON, FEBRUARY 24

12 noon-1:00 p.m.

Jefferson West

SOT ISSUES SESSION

Chaired by SOT President John Doull

Bring your lunch and participate in an open forum discussion of SOT affairs.

TUESDAY AFTERNOON, FEBRUARY 24

1:30 p.m.-5:00 p.m.

International Ballroom West

SYMPOSIUM: SOURCE AND FATE OF TOXIC SUBSTANCES IN WATER

Chairperson: L.J. Fischer, Michigan State University, E. Lansing, MI

Introduction. L.J. Fischer, Michigan State University, E. Lansing, MI

Source and Fate of Agricultural Chemical in Water. J.N. Seiber, University of California, Davis, CA

Sediment Analysis for the Estimation of the Environmental Loading of Toxic Substances. R.A. Hites, Indiana University, Bloomington, IN

Microbial Degradation of Organic Pollutants in Sediments. J. Tiedje, Michigan State University, East Lansing, MI

Photoenhanced Toxicity of Environmental Contaminants in the Hydrosphere. J.P. Giesy, Michigan State University, East Lansing, MI

TUESDAY AFTERNOON, FEBRUARY 24

1:30 p.m.-5:00 p.m.

International Ballroom Center

SYMPOSIUM: SEXUAL DIFFERENTIATION OF THE CNS: RELEVANCE TO REPRODUCTIVE TOXICOLOGY

Sponsored by SOT Reproductive and Developmental Toxicology Specialty Section

Chairperson: J.M. Manson, Smith Kline & French Laboratories, Philadelphia, PA

Sexual Differentiation of the Brain: Neuroanatomical Aspects. R.A. Gorski, University of California, Los Angeles, CA

Sexual Differentiation of the Brain: Molecular Aspects. A. Negro-Vilar, National Institute of Environmental Health Sciences, Research Triangle Park, NC

Gonadal and Functional Consequences of Toxic Insult During Sexual Differentiation. L.E. Gray, Jr., U.S. Environmental Protection Agency, Research Triangle Park, NC

Species Differences in Timing and Hormonal Control: The Primate Model. R. Goy, University of Wisconsin, Madison, WI

TUESDAY AFTERNOON, FEBRUARY 24

1:30 p.m.-5:00 p.m.

International Ballroom East

SYMPOSIUM: ACUTE RADIATION-INDUCED INJURY

Sponsored by Armed Forces Radiobiology Research Institute

Chairpersons: L.G. Cockerham, Air Force Office of Scientific Research, Bolling AFB, DC; B.J. Kelman, Battelle Pacific Northwest Labs, Richland, WA

Introduction. L.G. Cockerham, Air Force Office of Scientific Research, Bolling AFB, DC

The Release of Biological Mediators in Response to Acute Radiation Injury. M.A. Donlon, Armed Forces Radiobiology Research Institute, Bethesda, MD

The Use of Glucan and Other Immunopharmacological Agents in the Prevention and Treatment of Acute Radiation Injuries. M.L. Patchen, Armed Forces Radiobiology Research Institute, Bethesda, MD

Effect of Ionizing Radiation on the Gastrointestinal Tract. A. Dubois, Uniformed Services University of the Health Sciences, Bethesda, MD.

Postradiation Cardiovascular Dysfunction. R.N. Hawkins, NMCNCR, Bethesda, MD; C.D. Forcino, Armed Forces Radiobiology Research Institute, Bethesda, MD

Radiation-Induced Impairment of Neuronal Excitability. T.C. Pellmar and J. Tolliver, Armed Forces Radiobiology Research Institute, Bethesda, MD

Early Behavioral Toxicity Produced by Acute Ionizing Radiation. V. Bogo, Armed Forces Radiobiology Research Institute, Bethesda, MD

TUESDAY AFTERNOON, FEBRUARY 24

1:30 p.m.-5 p.m.

JEFFERSON ROOM WEST

PLATFORM SESSION: IMMUNOTOXICOLOGY I

Chairpersons: M.J. Murray, Procter & Gamble Co., Cincinnati, OH
N.I. Kerkvliet, Oregon State University, OR

- #28 * 1:30 **THE IMMUNOTOXICITY OF CATIONIC AMPHIPHILIC DRUGS.** L.J. Sauers, D. Wierda and M.J. Reasor. West Virginia Univ. Medical Center, Morgantown, WV.
- #29 2:00 **CHARACTERIZATION OF ISOCYANATE-CONTAINING ANTIGENS WHICH DETECT ANTIBODIES TO DIPHENYLMETHANE 4,4'-DIISOCYANATE (MDI).** R. Jin and M.H. Karol. Jilin Province, People's Republic of China and Dept. Ind. Env. Hlth. Sci., University of Pittsburgh, Pittsburgh, PA.
- #30 2:15 **THE SENSITISATION OF GUINEA PIGS BY INHALATION EXPOSURE TO TOLUENE DIISOCYANATE (TDI) AND TRIMELLITIC ANHYDRIDE (TMA).** P A Botham and P M Hext. ICI Central Tox. Lab., Macclesfield, U.K. Sponsor: E A Lock
- #31 2:30 **GUINEA PIGS IMMUNIZED BY INJECTION WITH HDI OR DES-N ACTIVATOR EXHIBIT PULMONARY SENSITIVITY RESPONSES.** J.C. Stadler and N.D. Krivanek. E.I. duPont de Nemours and Co., Haskell Laboratory for Toxicology and Industrial Medicine, Newark, DE.
- #32 2:45 **IMMUNOLOGICAL RESPONSE FOLLOWING EXPERIMENTAL SENSITIZATION TO SUBTILISIN THROUGH INHALATION EXPOSURE.** J.A. Hillebrand, P.S. Thorne, and M.H. Karol. Dept. Industrial Environmental Health Sciences, Univ. of Pittsburgh, Pittsburgh, PA
- #33 3:00 **THE CONTROL OF CONTACT SENSITISATION BY CUTANEOUS ANTIGEN-PRESENTING CELLS (APC).** P.A. Botham. ICI Central Tox. Lab., Macclesfield, U.K. Sponsor: E.A. Lock
- #34 3:15 **T-2 TOXIN IMMUNOMODULATION IS MEDIATED BY A STRESS-LIKE RESPONSE.** M.J. Taylor, S. Jayasekara, R.P. Sharma. Center for Environmental Toxicology, Logan, UT.
- #35 3:30 **IN VITRO EFFECTS OF T-2 TOXIN ON MITOGEN RESPONSIVENESS AND ANTIBODY PRODUCING ABILITY OF HUMAN LYMPHOCYTES.** R.S. Tomar, B.R. Blakley*, and W.E. DeCoteau*. College of Veterinary Medicine, Oregon State University, Corvallis, OR; *Veterinary Physiological Sciences and *Department of Medicine, University of Saskatchewan, Saskatoon, Canada. Sponsor: N.I. Kerkvliet.
- #36 3:45 **EFFECTS OF T-2 TOXIN ON THE MURINE ANTIBODY RESPONSE IN VIVO AND MITOGEN RESPONSIVENESS IN VITRO.** R.S. Tomar, B.R. Blakley*, and W.E. DeCoteau*. College of Veterinary Medicine, Oregon State University, Corvallis, OR; *Veterinary Physiological Sciences and *Department of Medicine, University of Saskatchewan, Saskatoon, Canada. Sponsor: N.I. Kerkvliet.
- #37 4:00 **IMMUNOTOXICITY BY DIMETHYLNITROSAMINE - DISTRIBUTIONAL STUDIES WITH ¹⁴C-LABELED DMN.** K.W. Johnson, A.E. Munson, D.H. Kim, and M.P. Holsapple. KAIST, Seoul, Korea and Medical College of Virginia/VCU, Richmond, VA.
- #38 4:15 **MECHANISMS FOR DIMETHYLNITROSAMINE (DMN) INDUCED CHANGES IN MACROPHAGE MYELOPOIESIS: ALTERATION IN THE RESPONSE TO THE REGULATOR SIGNALS CONTROLLING DIFFERENTIATION.** M.J. Myers and L.B. Schook. University of Illinois, Urbana, IL. Sponsor: P.H. Bick
- #39 4:30 **MACROPHAGE-LIKE STROMAL CELLS EXPOSED TO HYDROQUINONE INHIBIT MYELOPOIESIS IN FIBROBLASTOID STROMAL CELL CULTURES.** D.J. Buch, K. Gaido, & D. Wierda, West Virginia Univ. Med. Center, Dept. of Pharm. & Tox., Morgantown, WV.

*New Investigator Presentation

TUESDAY AFTERNOON, FEBRUARY 24

1:30 p.m.-5 p.m.

LINCOLN ROOM WEST

PLATFORM SESSION: INHALATION I

Chairpersons: K.L. Wong, CIIT, Research Triangle Park, NC
R.T. Drew, American Petroleum Institute, Washington, DC

- #40 1:30 **EFFECT OF ACUTE OZONE (O₃) EXPOSURE ON HUMAN AND RAT LAVAGE FLUID BIOCHEMISTRY.** G.E. Hatch, H. Koren, R. Slade, K. Crissman, J. Norwood. Inhalation Toxicology Division, HERL. U.S. E.P.A., Res. Tri. Pk., NC. Sponsor: E.C. Grose
- #41 1:45 **SOME CHARACTERISTICS OF AN OZONE (O₃) EXPOSURE-EFFECT MODEL IN RATS.** L. van Bree, P.J.A. Rombout, M. Marra and S.H. Heisterkamp. National Institute of Public Health and Environmental Hygiene, The Netherlands. Sponsor: J.G. Vos
- #42 2:00 **DIFFERENCES IN PULMONARY RESPONSE INDUCED BY DIURNAL OR NOCTURNAL OZONE (O₃) EXPOSURE OF RATS.** L. van Bree, M. Marra and P.J.A. Rombout, National Institute of Public Health and Environmental Hygiene, Bilthoven, The Netherlands. Sponsor: J.G. Vos
- #43 2:15 **ORNITHINE DECARBOXYLASE ACTIVITY: A SENSITIVE MARKER OF LUNG RESPONSE TO O₃ AND NO₂.** Nabil M. Elsayed and Mohammad G. Mustafa. Divisions of Pulmonary disease, and Environmental and Occupational Health, University of California, Los Angeles, CA.
- #44 2:30 **PULMONARY FUNCTION IN THE OUTBRED MALE BLOTCHY MOUSE AFTER 8 WEEKS OF 5.0 PPM NO₂.** M.A. Stevens,¹ D.L. Costa,² R. Farb,³ G. Mechanic³. ¹Northrop Services, Inc, RTP, NC; ²US Environmental Protection Agency, RTP, NC and ³Dept. of Medicine, University of North Carolina, School of Medicine, Chapel Hill, NC. Sponsor: J.S. Tepper
- #45 2:45 **EARLY LUNG CHANGES FOLLOWING ACUTE EXPOSURES TO RELATIVELY HIGH CONCENTRATIONS OF NITROGEN DIOXIDE.** B.E. Lehnert, J.S. Wilson, D.M. Stavert. Los Alamos National Laboratory, Los Alamos, NM.
- #46 3:00 **EXERCISE POTENTIATES NITROGEN DIOXIDE (NO₂) TOXICITY.** D.M. Stavert, B.E. Lehnert, and J.S. Wilson. Los Alamos National Laboratory, Los Alamos, NM.
- #47 3:15 **LETHAL BLOOD CONCENTRATIONS OF CYANIDE AND CARBON MONOXIDE IN MICE FOLLOWING INHALATION OF THESE GASES OR THERMAL DECOMPOSITION PRODUCTS OF POLYMERS CONTAINING THESE TOXICANTS.** F.M. Esposito and Y. Alarie, Dept. Ind. Env. Hlth. Sci., University of Pittsburgh, Pittsburgh, PA.
- #48 3:30 **EFFECTS OF INHALED PHOSGENE ON PULMONARY BIOCHEMISTRY AND HISTOPATHOLOGY.** E.C. Grose¹, R.H. Jaskot², J.H. Richards² and A.G. Stead¹. ¹U.S.E.P.A., RTP, NC; ²Northrop Services, Inc. RTP, NC.
- #49 3:45 **DOSE-RESPONSE INHALATION TOXICITY STUDIES ON 2-METHYLFURAN (2-MF).** S. Laham and W. Parker, Environmental Health Directorate, Health and Welfare Canada, Ottawa, Ontario, and B.BROXUP, Bio-Research Laboratories LTD. Senneville, Quebec.
- #50 4:00 **CARCINOGENICITY AND GENOTOXICITY OF 1,3-BUTADIENE (BD).** R. Melnick, J. Roycroft, M. Shelby, B. Chou*, R. Miller*, R. Tice**. NTP, NIEHS, Res. Tri. Park, NC; *Battelle Northwest, Richland, WA; **Brookhaven National Laboratories, Upton, NY. Sponsor: R.S.H. Yang
- #51 4:15 **CELLULAR AND BIOCHEMICAL CHANGES IN LUNG LAVAGE FLUIDS FOLLOWING THORACIC X-IRRADIATION.** B.E. Lehnert¹, L.A. Dethloff¹, A.J. vander Kogel¹, L.R. Gurley¹, and J.N. Finkelstein². ¹Los Alamos National Laboratory, Los Alamos, NM; ²University of Rochester, Rochester, NY.
- #52 4:30 **INHIBITION OF Fc-MEDIATED PHAGOCYTOSIS IN PULMONARY ALVEOLAR MACROPHAGES (PAM) FROM MICE EXPOSED TO MAINSTREAM CIGARETTE SMOKE.** C. Gairola, Tobacco and Health Research Institute and the Graduate Center for Toxicology, University of Kentucky, Lexington, KY
- #53 4:45 **INTERSPECIES COMPARISONS OF EARLY ALVEOLAR CLEARANCE AND INFLAMMATORY RESPONSES TO INHALED CARBONYL IRON PARTICLES.** D.B. Warheit, M.S. Stefaniak, and M.A. Hartsy, Du Pont-Haskell Lab, Newark, DE.

TUESDAY AFTERNOON, FEBRUARY 24

EXHIBIT HALL

POSTER SESSION: ALTERNATIVES TO ANIMALS IN TOXICOLOGY

Chairperson: S.C. Gad, G.D. Searle & Co., Skokie, IL

Displayed: 1:30 p.m.-4:30 p.m.

Attended: 1:30 p.m.-3:00 p.m.

- #333 **PRELIMINARY EVALUATION OF THE MOUSE EAR SWELLING TEST (MEST).** T.J. Stephens, K. Drake, K.J. Renskers, J. Teal, D. Penney, M. Kaminsky, T. Gray, and H. North-Root. Mary Kay Cosmetics, Inc., Dallas, TX, Avon Products, Inc., Suffern, NY, Lever Brothers Co., Edgewater, N.J., Beecham Products, Parsippany, NY, and The Dial Corporation, Scottsdale, AZ. Sponsor: J. McNerney
- #334 **DESIGN, DEVELOPMENT AND VALIDATION OF AN ALTERNATIVE TEST SYSTEM: THE MOUSE EAR SWELLING TEST AS A CASE STUDY.** S.C. Gad, Toxicology, G.D. Searle Research and Development, Skokie, IL
- #335 **IN VIVO AND IN VITRO MODELS FOR ASSESSING CARDIOVASCULAR TOXICITY.** Z. Ruben, G.D. Searle & Co., Skokie, IL.
- #336 **CULTURED MAMMALIAN KERATINOCYTES AS A MODEL SYSTEM FOR THE STUDY OF IRRITANTS, CARCINOGENS AND TUMOR PROMOTERS.** B.J. Phillips, D. Anderson and S.D. Gangoli, BIBRA, Carshalton, UK.
- #337 **A NOVEL PREDICTIVE ASSAY FOR EVALUATING THE SKIN IRRITATION POTENTIAL OF SURFACTANTS.** E. Patrick and H.I. Maibach, Department of Dermatology, University of California, San Francisco, CA.
- #338 **DERMAL IRRITANCY TESTS: PREDICTIVENESS OF IRRITATION POTENTIAL USING SMALLER GROUP SIZES.** N.S. Hatoum, C.L. Leach, R.D. Gibbons, D.M. Talsma, J-C. Roger, and P.J. Garvin, IIT Research Institute and Amoco Corporation, Chicago, IL.
- #339 **USE OF EXCISED HUMAN SKIN FOR IN VITRO PERCUTANEOUS ABSORPTION STUDIES.** R.L. Bronaugh, R.F. Stewart, and M. Simon. Division of Toxicology, Food and Drug Administration and Regional Skin Bank, Washington, Hospital Center, Washington, DC.
- #340 **GENERATION OF A HUMAN CUTANEOUS EPIDERMIS, IN VITRO.** L. Bernstam, and I.A. Bernstein, Toxicology Program, Dept. Environ. Ind. Health, Univ. of Michigan, Ann Arbor, MI.

- #341 **A COMPARISON OF EX-VIVO RABBIT AND RAT SKIN FOR ASSESSING SKIN IRRITATION POTENTIAL.** G.J.A. Oliver and M.A. Pemberton. ICI PLC, CTL, Macclesfield, Cheshire, UK. Sponsor: E.A. Lock
- #342 **THE DEVELOPMENT OF A DATA BASE FOR THE REVIEW OF ACUTE TOXICITY STUDIES.** M.A. Pemberton, C. Rhodes & G.J.A. Oliver. ICI PLC, Macclesfield, Cheshire. Sponsor: Dr. E.A. Lock
- #343 **SCHEME FOR THE RANKING AND PREDICTION OF RELATIVE POTENCIES OF DERMAL SENSITIZERS BASED ON DATA FROM SEVERAL TEST SYSTEMS.** S.C. Gad, Toxicology, G.D. Searle and Co., Skokie, IL
- #345 **INTRA-LABORATORY VALIDATION OF AN IN-VITRO TEST FOR ASSESSING THE SKIN CORROSIVE POTENTIAL OF CHEMICALS.** G.J.A. Oliver, M.A. Pemberton, ICI PLC, CTL, Macclesfield, Cheshire, UK. Sponsor: E.A. Lock

TUESDAY AFTERNOON, FEBRUARY 24

EXHIBIT HALL

POSTER SESSION: CARDIOVASCULAR/RENAL

Chairperson: S.I. Baskin, U.S. Army Medical Research Institute, Aberdeen Proving Ground, MD

Displayed: 1:30 p.m.-4:30 p.m.

Attended: 3:00 p.m.-4:30 p.m.

- #346 **STUDIES ON HEPATORENAL TOXICITY OF STYRENE OXIDE DUE TO REPEATED EXPOSURE.** L. Lefebvre and S. Chakrabarti Med. du trav. et hyg. du mil., Fac. de Med., Univ. de Montreal, Montreal, Quebec, Canada
- #347 **SEX-RELATED DIFFERENCES IN STYRENE-INDUCED HEPATORENAL TOXICITY IN HYPERTENSIVE RATS.** S. Chakrabarti and A. Malick, Med. trav. hyg. mil., Fac. med., Univ. Montreal, Montreal, Quebec, Canada.
- #348 **INFLUENCE OF DOSE ON THE METABOLISM AND HEPATORENAL TOXICITY OF STYRENE OXIDE IN RATS.** L. Lefebvre and S. Chakrabarti. Medecine du travail et hygiene du milieu, Universite de Montreal, Montreal, Quebec, Canada.
- #349 **EFFECT OF PARA-METHYLTHIOBENZAMIDE ON THE DISPOSITION OF 5-HYDROXYTRYPTAMINE IN THE PERFUSED RAT LUNG.** L.S. Gibbs¹, M.E. Whitley¹, F. Jianxing², and G.J. Traiger¹. ¹ Dept. of Pharm. and Tox., Univ. of Kansas, Lawrence, KS, and ²Dept. of Environ. Sci., Nankai Univ., PRC.
- #350 **PHARMACOKINETICS OF ACETAMINOPHEN IN AGING SPRAGUE-DAWLEY RATS.** J.B. Tarloff, R.S. Goldstein and J.B. Hook, Department of Investigative Toxicology, Smith Kline and French Laboratories, Philadelphia, PA.
- #351 **IMPROVED RENAL CORTICAL SLICE SYSTEM FOR ASSESSMENT OF CHEMICAL-INDUCED INJURY IN VITRO.** M.A. Smith, A.C. Silver, and W.R. Hewitt. Dept. of Investigative Toxicology, Smith Kline & French Laboratories, Philadelphia, PA.
- #352 **SELECTIVE IN VITRO NECROSIS OF PROXIMAL TUBULAR SEGMENTS IN RENAL CORTICAL SLICES.** C.E. Ruegg, A.J. Gandolfi, K. Brendel, R.B. Nagle. Dept. of Pharm/Tox Univ. of AZ, Tucson, AZ
- #353 **DEVELOPMENT OF AN IMPROVED IN VITRO SYSTEM FOR PROLONGED INCUBATION OF ISOLATED RENAL TUBULES.** C.E. Green, J.E. Dabbs, C.A. Tyson, and E.J. Rauckman. SRI International, Menlo Park, CA and *National Toxicology Program, NIEHS, RTP, NC.
- #354 **EFFECTS OF CYSTEINE CONJUGATES OF ACRYLONITRILE AND BROMOBENZENE ON ORGANIC ION UPTAKE BY RAT RENAL TUBULES.** A.G. Craan, A. Malick, and S. Chakrabarti. Dept. Med. du trav. et hyg. du milieu, Fac. de med., Univ. de MtL, Montreal, Quebec, Canada
- #355 **IN VITRO STUDIES OF HYDROCARBON-INDUCED MALE RAT NEPHROPATHY.** M.J. Lipsky, C.L. Alden*, G.P. Daston*. Dept. of Path., U. of MD School of Medicine, Baltimore, MD 21201; *The Procter & Gamble Company, Cincinnati, OH.
- #356 **NEPHROTOXICITY OF 2,2,4-TRIMETHYLPENTANE (TMP) METABOLITES IN MALE FISCHER 344 RATS.** M. Charbonneau, E.A. Lock. J. Strasser, B.G. Short and J.S. Bus. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.
- #357 **IDENTIFICATION OF THE 2,2,4-TRIMETHYLPENTANE (TMP) METABOLITE BOUND TO MALE RAT 2u-GLOBULIN.** M. Charbonneau, E.A. Lock, J. Strasser, M.J. Turner, M.G. Cox and J.A. Swenberg. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.
- #358 **THE RENAL TRANSPORT OF PENTANOIC ACIDS DERIVED FROM 2,2,4-TRIMETHYLPENTANE.** E.A. Lock, M. Charbonneau, J. Strasser and J.S. Bus. Chemical Industry Institute of Toxicology, Research Triangle Park, NC
- #359 **GENTAMICIN (G)-INDUCED INCREASES IN CYTOSOLIC CALCIUM [Ca]²⁺ IN PIG KIDNEY CELLS (LLC-PK^{>1}).** P.D. Williams, D.A. Laska, M.E. Trimble, R. Coulson, M.J. Kracke, P.D. Holohan and C.R. Ross, Bristol-Myers Company and SUNY Health Science Center and V.A. Hospital, Syracuse, NY. Sponsor: H. Madisoo.
- #360 **IN VITRO TOXICITY OF CEPHALORIDINE AND HEXACHLOROBUTADIENE IN RABBIT CORTICAL SLICES.** G.H.I. Wolfgang, A.J. Gandolfi, K. Brendel, Dept. of Pharm/Tox, Univ. of AZ, Tucson, AZ
- #361 **ACUTE TOXIC EFFECTS OF PARAQUAT ON THE RAT KIDNEY.** A. Yoshida, K. Maita, and Y. Shirasu. Inst. of Environmental Toxicology, Kodaira, Tokyo, Japan.
- #362 **A RELATIONSHIP BETWEEN COVALENT BINDING OF 2-BROMOHYDROQUINONE (BHQ)-EQUIVALENTS TO PROTEIN AND TOXICITY TO RABBIT RENAL PROXIMAL TUBULES (RPT).** R.G. Schnellmann, S.S. Lau, T.J. Monks, and L.J. Mandel. Univ. GA, Athens, GA; Univ. TX, Austin, TX; Georgetown Univ., Wash. D.C.; and Duke Univ., Durham, NC. Sponsor: J.V. Bruckner.
- #363 **ROLE OF METHEMOGLOBINEMIA IN THE NEPHROTOXIC EFFECTS OF CHEMICALS.** H.H. Lo and G.O. Rankin. Department of Pharmacology, Marshall Univ. School of Medicine, Huntington, WV.
- #364 **EFFECT OF DERMAL EXPOSURE TO COMPLEX ORGANIC MIXTURES ON BLOOD PRESSURE AND HEART RATE IN RATS.** L.B. Sasser, R.C. Zangar, K.J. Cassett, D.L. Springer, and D.D. Mahlum. Pacific Northwest Laboratory, Richland, WA.
- #365 **CARDIOVASCULAR EFFECTS OF N,N-DIETHYL-M-TOLUAMIDE (DEET).** G.J. Leach, R.D. Russell and J.T. Houpt. U.S. Army Environmental Hygiene Agency, APG, MD. Sponsor: M.H. Weeks
- #366 **SUBCHRONIC TOXICITY OF THE PHENYLPIPERAZINE ANTI-HYPERTENSIVE AGENT, CI-926.** L.J. Paradiso and L.K. Andrews, Path. & Exp. Tox., Warner-Lambert/Parke-Davis Pharm., Res., Ann Arbor, MI. Sponsor: M.J. Mc Kenna
- #367 **ISOPROTERENOL-INDUCED VENTRICULAR FIBRILLATION IN THE RAT: INFLUENCE OF STRAIN OR DIETARY FISH OILS.** G.L. Johnson, S.J. Ehrreich, S. Gudbjarnason, X. Joseph, and T. Balazs. CDB, FDA, Washington, DC.

- #368 **TECHNIQUES FOR INVESTIGATING FUNCTIONAL CHANGES IN SPONTANEOUSLY BEATING CHICK MYOCARDIAL MYOCYTE REAGGREGATE CULTURES (MMR) ON EXPOSURE TO CARDIOTOXIC AGENTS.** L.K. Earl, K. Kesingland, C.G. Brown, C.K. Atterwill, and G.B. Leslie. Smith Kline and French Research Limited, The Frythe, Welwyn, Herts, U.K.
- #369 **THE TOXIC EFFECTS OF MAMBA SNAKE VENOMS IN PRIMARY MYOCARDIAL CELL CULTURES.** P.M. Mbugua, A.A. Welder, and D. Acosta. Dept. of Pharmacology & Toxicology, College of Pharmacy, The University of Texas, Austin, Texas
- #370 **THE TOXIC EFFECTS OF MAMBA SNAKE VENOMS IN PRIMARY ENDOTHELIAL CELL CULTURES.** P.M. Mbugua, A.A. Welder, and D. Acosta. Dept. of Pharmacology & Toxicology, College of Pharmacy, The University of Texas, Austin, Texas
- #371 **ALLYLAMINE CARDIOVASCULAR TOXICITY: IN VIVO EVIDENCE OF METABOLISM TO ACRROLEIN.** P.J. Boor, R. Sanduja, R.M. Hysmith, and G.A.S. Ansari, Department of Pathology, The University of Texas Medical Branch, Galveston, Texas
- #372 **INHIBITION OF ENZYME RELEASE FROM ISOLATED PERFUSED RAT HEART UPON REOXYGENATION BY CYANIDE AND CYSTAMINE.** James P. Kehrer¹ and Helmut Sies. Institut für Physiologische Chemie I, Universität Dusseldorf, Dusseldorf, FRG.
- #373 **IN VIVO OXIDATION OF CARDIAC MYOGLOBIN BY SODIUM NITRITE OR HYDROXYLAMINE.** John W. Nichols and Lavern J. Weber, Toxicology Program, Oregon State University Hatfield Marine Science Center, Newport, OR.
- #374 **PROTECTIVE EFFECTS OF 6-MERCAPTOPYRIMIDINE (6MP) AND 6-THIOGUANINE (6TG) COMBINED OR OF IRRADIATION (IRR) ON ISOPROTERENOL (ISO)-INDUCED MYOCARDIAL NECROSIS (MN) IN RATS.** X. Joseph, M. Patchen, and T. Balazs. FDA, Washington, DC and AFRRRI, Bethesda, MD.
- #375 **ADRENERGIC AGONIST-INDUCED CYTOTOXICITY IN ISOLATED ADULT RAT CARDIAC MYOCYTES.** J.B. Reese and W.D. Matthews, Investigative Toxicology, Smith Kline & French Laboratories, Philadelphia, PA. Sponsor: W.R. Hewitt

**TUESDAY AFTERNOON, FEBRUARY 24
EXHIBIT HALL**

POSTER SESSION: NEUROTOXICOLOGY II: ELECTROPHYSIOLOGY

Chairperson: W.D. Atchison, Michigan State University, East Lansing, MI

Displayed: 1:30 p.m.-4:30 p.m.

Attended: 1:30 p.m.-3:00 p.m.

- #376 **INTERACTIONS OF INHIBITORS OF NERVE TERMINAL Ca^{2+} REGULATION WITH METHYLMERCURY (MeHg) ON SPONTANEOUS RELEASE OF ACETYLCHOLINE.** P. Levesque and W. Atchison. Dept. Pharm./Tox., Mich. State Univ., E. Lansing, MI.
- #377 **SKELETAL MUSCLE SENSITIVITY TO CHOLINERGIC AGENTS DURING ORGANOPHOSPHATE-INDUCED DELAYED NEUROPATHY (OPIDN) IN ADULT HENS.** H. El-Fawal and M. Ehrlich, Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA.
- #378 **EFFECT OF DIISOPROPYL PHOSPHOROFLUORIDATE (DFP) ON THE ELECTROPHYSIOLOGICAL PROPERTIES OF APLYSIA SILENT NEURONS.** L.S. Jones, D. Lapadula, D.V. Lewis, and M. Abou-Donia. Duke University Medical Center, Durham, NC
- #379 **MOTOR NERVE TERMINAL DEFICIT EARLY IN -IMINODIPROPIONITRILE (IDPN) NEUROPATHY.** T. Baker and H.E. Lowndes, Neurotoxicology Laboratories, Rutgers College of Pharmacy, Piscataway, NJ.
- #380 **BENZODIAZEPINES ANTAGONIZE THE FACILITATION OF THE SPINAL REFLEXES PRODUCED BY SOMAN.** Barry D. Goldstein and Donnie R. Fincher. Dept. of Pharmacology and Toxicology, Medical College of Georgia, Augusta, GA.
- #381 **A CORRELATION OF SPINAL CORD NEUROPATHY AND SOMATOSENSORY EVOKED POTENTIALS (SSEP) IN THE RODENT MODEL OF OPIDN.** B. Veronesi, W.K. Boyes, S. Padilla, USEPA/HERL/NTD, RTP, NC.
- #382 **EFFECT OF PYRIDOSTIGMINE ON TETANIC CONTRACTURE IN INNERVATED VS. DENERVATED SKELETAL MUSCLE.** R.J. ANDERSON. Warner-Lambert/Parke-Davis Pharm. Research, Ann Arbor, MI
- #383 **TIME COURSE OF ELECTROPHYSIOLOGIC DEFICITS INDUCED BY DI-nBUTYL-2,2-DICHLOROVINYL PHOSPHATATE (DBCVP) IN THE ADULT HEN.** D.G. Robertson^{1,2}, A.M. Mattson¹, L.L. Bestervelt¹, R.J. Richardson¹, and R.J. Anderson^{1,2}. ¹Toxicology Program, The University of Michigan and ²Warner-Lambert/Parke-Davis Pharmaceutical Research, Ann Arbor, MI.
- #384 **ACTIVITY-DEPENDENT ALTERATIONS IN OPTIC TRACT (OT) AXONS IN 2,5-HEXANEDIONE (2,5-HD) EXPOSED RATS.** D.A. Fox and D. Impelman. College of Optometry, University of Houston, Houston, TX.
- #385 **THE INTERACTIONS OF MONENSIN AND OUABAIN ON AN ISOLATED SENSORY NEURON.** P.N. Nation, S.H. Roth. Dept. of Pharmacology and Therapeutics, University of Calgary, Calgary, AB. Sponsor: F.G. Biddle
- #386 **REVERSIBILITY OF NALIDIXIC ACID-INDUCED ACUTE ELECTRORETINOGRAPHIC CHANGES IN CATS.** F.L. Fort,¹ M. Yamamoto,² and T. Ando.² ¹Abbott Labs, North Chicago, IL and ²Takeda Chemical Ind., Ltd., Osaka, Japan
- #387 **A RAT MODEL FOR THE STUDY OF METHANOL VISUAL NEUROTOXICITY.** E.W. Lee, C.D. Garner and W.M. Dereski. Biomedical Science Dept., GM Research Labs, Warren, MI
- #388 **NEUROBEHAVIORAL EFFECTS OF DIETARY RESTRICTION IN RATS.** R.R. Albee and J.L. Mattsson. The Dow Chemical Company, Midland, MI.
- #389 **CHLORDIMEFORM ACTION ON THE SUSTAINED AND TRANSIENT COMPONENTS OF RAT PATTERN EVOKED POTENTIALS.** W.K. Boyes and H.K. Hudnell. U.S.E.P.A., Research Triangle Park, NC.
- #390 **NEONATAL ADMINISTRATION OF MONOSODIUM GLUTAMATE SEVERELY DISRUPTS FLASH EVOKED POTENTIAL ONTOGENY.** G.C. Rigdon and R.S. Dyer. USEPA/HERL/NTD, Research Triangle Park, NC.
- #391 **KETAMINE PROFOUNDLY ALTERS RAT FLASH EVOKED POTENTIALS.** R.S. Dyer and G.C. Rigdon. Neurophysiology Branch, USEPA, Research Triangle Park, NC.
- #392 **ENHANCED SUSCEPTIBILITY TO AMYGDALOID KINDLING FOLLOWING TREATMENT WITH FORMAMIDINE PESTICIDES AMITRAZ AND CHLORDIMEFORM.** M.E. Gilbert, Northrop Services, Inc.-Environmental Sciences, RTP, NC Sponsor: P.J. Bushnell.
- #393 **NEUROPHYSIOLOGIC RESPONSE OF RHESUS MACAQUES TO ATROPINE AND PYRIDOSTIGMINE USING A VAGAL TONE MONITOR.** S. Birnbaum, B.C. Richardson, and J.A. Dellinger. University of Illinois, Urbana, IL.

TUESDAY AFTERNOON, FEBRUARY 24

EXHIBIT HALL

POSTER SESSION: ONCOGENESIS

Chairperson: J.E. Klaunig, Medical College of Ohio, Toledo, OH

Displayed: 1:30 p.m.-4:30 p.m.

Attended: 3:00 p.m.-4:30 p.m.

- #394 **FORESTOMACH CARCINOMAS IN PARTIALLY-HEPATECTOMIZED RATS INDUCED BY PHENOLIC ANTIOXIDANTS.** A. Mane, R. Lefevre and R. Abraham. Section of Toxicology/Pathology Albany Medical College, Albany, New York.
- #395 **MORPHOLOGICAL TRANSFORMATION AND PROMOTION OF TRANSFORMATION IN C3H/10T $\frac{1}{2}$ Cl 8 MOUSE EMBRYO CELLS BY SODIUM ARSENITE.** J.R. Landolph and C. Troesch. Depts. of Microbiology and Pathology and the USC Comprehensive Cancer Center, USC School of Medicine, Los Angeles, CA.
- #396 **CONTRASTING EFFECTS OF TWO PURE POLYCHLORINATED BIPHENYLS (PCBs) ON INITIATION OF HEPATOCARCINOGENESIS AND ON THE ENDOPLASMIC RETICULUM.** R.G. Cameron, M.W. Roomi, D. Armstrong and G. Feuer. Dept. Pathol., and Clin. Biochem., Univ. Toronto, Toronto, Canada
- #397 **EARLY IDENTIFICATION OF RESISTANT HEPATOCYTES IN RESPONSE TO DIETHYLNITROSAMINE (DEN) INITIATION.** R.G. Cameron, D. Armstrong, T.H. Rushmore, and G. Feuer. Dept. Pathol., and Clin. Bioch., Univ. Toronto, Toronto, Canada.
- #398 **MORPHOLOGICAL AND CYTOGENETIC EVALUATION OF MINERAL FIBER INDUCED RAT PLEURAL TUMORS AND TRANSPLANTED TUMORS.** L.D. Palekar,* J.F. Eyre,* and D.L. Coffin.** *Northrop Services, Inc. **U.S. EPA/RTP, N.C.
- #399 **EVIDENCE FOR LACK OF EFFECT OF DEHP AND PHENOBARBITAL ON GROWTH AND PROGRESSION OF NATURALLY OCCURRING RODENT LIVER TUMORS.** J.M. Ward, Laboratory of Comparative Carcinogenesis, National Cancer Institute, Frederick, MD. Sponsor: M.P. Waalkes
- #400 **CHRONIC TOXICITY AND POTENTIAL REPRODUCTIVE EFFECTS OF P-NITROANILINE (PNA) IN THE RAT.** R.S. Nair, F.R. Johansson, Monsanto Co., St. Louis, MO, C.S. Auletta, and R.E. Schroeder, Bio/dynamics Inc., East Millstone, NJ.
- #401 **EXAMINATION OF THE INDUCTION OF HEPATIC UNSCHEDULED DNA SYNTHESIS (UDS) AND S-PHASE SYNTHESIS (SPS) FOLLOWING IN VIVO OR IN VITRO EXPOSURE TO METHAPYRILENE.** K. Steinmetz, C.K. Tyson, M. Ramsey, E. Meierhenry, J. Spalding, J. Mirsalis, SRI International, Menlo Park, CA and NTP/NIEHS, Research Triangle Park, NC. Sponsor: S.A. Knadle
- #402 **EFFECTS OF CASTRATION AND TESTOSTERONE ON THE RENAL CARCINOGENICITY OF METHYLMERCURY IN MICE.** M. Hirano, H. Ueda, K. Maita, and Y. Shirasu. Inst. of Environmental Toxicology, Tokyo, JAPAN.
- #403 **6-CHLOROPICOLINIC ACID: 2-YEAR DIETARY CHRONIC TOXICITY-ONCOGENICITY STUDY IN B6C3F1 MICE.** M.A. Zimmer, D.L. Eisenbrandt, F.S. Ciesziak, M.A. Hannah and W.T. Stott. The Dow Chemical Company, Mammalian and Environmental Toxicology Research Laboratory, Midland, MI.
- #404 **INFLUENCE OF VIRAL INFECTIONS ON TUMOR INCIDENCE AND SURVIVAL OF B6C3F1 MICE.** G.N. Rao, J. Edmondson, D. Crawford, and W.W. Piegorsch. National Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, NC.
- #405 **EVALUATION OF THE CHRONIC ORAL TOXICITY AND CARCINOGENIC POTENTIAL OF DIISONONYL PHTHALATE (DINP) IN RATS.** A. Lington, M. Bird, R. Plutnick, and J. Quance. Exxon Biomedical Sciences, Inc., East Millstone, NJ Sponsor: R.A. Scala.
- #406 **CHROMOSOMAL CHANGES ASSOCIATED WITH TUMORIGENESIS BY NICKEL SULFIDE (NS) AND METHYLCHOLANTHRENE (MCA).** N.T. Christie and D.M. Tummo. Inst. of Env. Med., NYU Medical Center, New York. Sponsor: M. Costa
- #407 **TIME OF FEEDING ZINC DEFICIENT DIET IN ESOPHAGEAL CARCINOGENESIS.** T.F. Schrager, D. Bueche, S.A. Broitman and P.M. Newberne. Mallory Institute of Pathology and Boston Un. Medical School. Boston, MA.
- #408 **ONCOGENICITY STUDY OF MACRODANTIN[®] IN MICE.** M.L. Sutton, T.C. Graham, R.A. Levin and E.P. Denine. Norwich Eaton Pharmaceuticals, Inc. Norwich, NY
- #409 **TWO YEAR ONCOGENICITY STUDY OF MACRODANTIN[®] IN RATS.** M.L. Sutton, J.B. Boyce, K.W. Obrosky and L.E. Van Petten. Norwich Eaton Pharmaceuticals, Inc. Norwich, NY
- #410 **EFFECT OF ASCORBIC ACID (AA) AND ASCORBYL PALMITATE (AP) ON 12-O-TETRADECANOYLPHORBOL-13-ACETATE (TPA)-INDUCED DNA SYNTHESIS, ORNITHINE DECARBOXYLASE (ODC) INDUCTION AND TUMOR PROMOTION ON MOUSE SKIN.** R.C. Smart, M-T. Huang, Z.-T. Han, M.C. Kaplan and A.H. Conney. Roche Inst. Mol. Biol., Nutley, NJ; Toxicology Program, N.C. State Univ., Raleigh, NC.
- #411 **TOXIC AND TUMOR PROMOTING EFFECTS OF SODIUM SALTS OF PHENOBARBITAL (Na.PB) AND BARBITAL (Na.BB) ON URINARY BLADDER AND KIDNEY IN MALE F344 RATS INITIATED BY N-[4-(5-nitro-2-furyl)-2-thiazolyl]formamide(FANFT).** A. Hagiwara, B.A. Diwan, J.M. Rice and J.M. Ward, National Cancer Institute, Frederick, MD. Sponsor: M.P. Waalkes
- #412 **EFFECTS OF THE TIME OF ONSET OF PHENOBARBITAL (PB) ADMINISTRATION ON HEPATIC TUMOR EXPRESSION IN DIETHYLNITROSAMINE (DNA) INITIATED B>6C>3F>1 MICE.** C.M. Weghorst, J.E. Klaunig and M.A. Pereira. Depart. of Pathology, Medical College of Ohio, Toledo, OH and Environ. Health Res. and Testing Inc., Cincinnati, OH
- #413 **ENHANCEMENT OF HEPATOCARCINOGENESIS IN RATS BY SIMULTANEOUS ADMINISTRATION OF 2,4,5,2',4',5'-HEXACHLOROBIPHENYL (HCB) AND 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (TCDD).** S.D. Sleight, R.K. Jensen, and M.S. Rezaiek. Department of Pathology and Center for Env. Toxicol., Mich. State University, E. Lansing, MI
- #414 **HEPATIC TUMOR PROMOTION BY DIETARY FAT IN B>6C>3F>1 MALE MICE.** J.E. Klaunig, N.E. Schultz and K.A. Crist. Departments of Pathology and Surgery, Medical College of Ohio, Toledo, OH
- #415 **CARCINOGEN AND TISSUE SPECIFIC ONCOGENE ACTIVATION.** A.E. Hochwalt and S.J. Garte, New York University Medical Center, New York, NY. Sponsor: C.A. Snyder.
- #416 **STATUS OF THE KIRSTEN-RAS (Kl-ras) ONCOGENE IN THE LIVER OF THE MALE B6C3F1 MOUSE.** R.L. Vorce and J.I. Goodman. Dept. of Pharmacol./Toxicol., Ctr. for Environ. Toxicol., Michigan State University, East Lansing, MI.
- #417 **LOW INCIDENCE OF DETECTABLE ACTIVATED TRANSFORMING ONCOGENES IN RAT TUMORS PRODUCED BY A SINGLE DOSE OF DIETHYLNITROSAMINE AND CONTINUOUS EXPOSURE TO ETHYNYLESTRADIOL.** T.L. Goodrow, S.H. Reynolds, D.B. Campen, M.A. Anderson, and G.W. Lucier. University of North Carolina, Chapel Hill, and NIEHS, RTP, NC.
- #418 **MORPHOFUNCTIONAL CHANGES IN HEPATIC ENDOPLASMIC RETICULUM DURING MAMMARY CANCER IN THE RAT.** C.J. DiFonzo, F.A. de la Iglesia, R.M. Walker and G. Feuer. Path. Exp. Tox. Dept., Warner-Lambert/Parke-Davis Res., Mississauga, ON and Ann Arbor, MI; Dept. of Clinical Biochemistry and Pharmacology, University of Toronto, Toronto, ON.

- #419 **VALIDATION OF RAPID BIOASSAY SYSTEM FOR DETECTION OF CARCINOGENS.** T. Shirai, H. Tsuda, T. Ogiso, T. Aoki, and N. Ito. Department of Pathology, Nagoya City University Medical School, Nagoya, Japan. Sponsor: J.R.P. Cabral
- #420 **BENZOYL PEROXIDE, A NON-PHORBOL TUMOR PROMOTER, FAILS TO INHIBIT CELL-CELL COMMUNICATION: MECHANISM OF IMMUNOTOXICITY IN VITRO.** L.W. Updyke, R.W. Pfeifer, and G.K.W. Yim. Dept. of Pharmacology and Toxicology, Purdue University, West Lafayette, IN
- #421 **MONO-2-ETHYLHEXYLPHthalate (MEHP) INHIBITS THE ENHANCEMENT OF DNA SYNTHESIS IN PRIMARY CULTURES OF HEPATOCYTES BY EPIDERMAL GROWTH FACTOR (EGF).** A.B. DeAngelo¹, C.A. Trenkamp², M.F. Skelly² and M.M. Schamer². ¹U.S. EPA Health Effects Research Laboratory and ²EHRT, Inc., Cincinnati, OH.
- #422 **THE MODULATION OF GAMMA-GLUTAMYLTRANSFERASE (GGTase) EXPRESSION IN PRIMARY CULTURES OF RAT HEPATOCYTES BY PHTHALATE MONOESTERS.** L.W. Chang, J. McSayles and A.B. DeAngelo, U.S. EPA, HERL, Cincinnati, OH.
- #423 **LOCALIZATION OF EXOGENOUSLY ADMINISTERED ³H-ETHYNYLESTRADIOL IN THE RAT TWO-STAGE MODEL OF HEPATOCARCINOGENESIS.** D.B. Campen, K.G. Nelson, R.R. Maronpot, and G.W. Lucier. NIEHS, Research Triangle Park, NC.
- #424 **PHORBOL ESTER AND CA²⁺ STIMULATE PHOSPHORYLATION OF DISTINCT RIBOSOME-ASSOCIATED PROTEINS IN GH<3> PITUITARY CELLS.** I.J. Boyer, M.A. Brostrom, C.O. Brostrom and M.M. Sanders. Dept. of Pharmacology, UMDNJ-RWJ Medical School, Piscataway, NJ. Sponsor G. Witz
- #425 **LIVER TUMOR PROMOTING ACTIVITY OF PHENOBARBITAL IS ASSOCIATED WITH ITS ABILITY TO INDUCE PHENOBARBITAL-INDUCIBLE CYTOCHROME(S) P-450 (P-450>P>B>->B), AMINOPYRINE N-DEMETHYLASE ACTIVITY AND LIVER HYPERTROPHY.** B.A. Diwan, R.W. Nims, R.A. Lubet, and J.M. Rice, National Cancer Institute, Frederick, MD and Microbiological Associates, Inc., Bethesda, MD. Sponsor: M.P. Waalkes
- #426 **HYPEROXIA REDUCES EXPERIMENTAL LUNG METASTASIS FROM SENSITIVE CELL LINES.** N.C. Margaretten, and H.P. Witschi. Oak Ridge National Laboratory, Biology Division, Oak Ridge, TN
- #427 **EFFECTS OF HYPEROXIA ON TUMOR CELL ANTIOXIDANT DEFENSES AND CELL KINETICS IN VIVO.** N.C. Margaretten, and H.P. Witschi. Oak Ridge National Laboratory, Biology Division, Oak Ridge, TN
- #428 **INFLUENCE OF COMPLEX ORGANIC MIXTURES ON BaP-DNA ADDUCTS IN MOUSE SKIN.** D.L. Springer, R.M. Bean, B.L. Thomas, D.B. Mann, and E.K. Chess. Pacific Northwest Laboratory, Richland, WA.
- #429 **PERCUTANEOUS ABSORPTION OF BENZO[a]PYRENE (BAP) FROM COMPLEX MIXTURES APPLIED TO MOUSE SKIN.** D.A. Dankovic and D.L. Springer. Pacific Northwest Laboratory, Richland, WA.
- #430 **AN APPROACH FOR CHARACTERIZING DNA ADDUCTS AFTER EXPOSURE TO COMPLEX ORGANIC MIXTURES.** E.K. Chess, R.M. Bean, B.L. Thomas, D.B. Mann, and D.L. Springer. Pacific Northwest Laboratory, Richland, WA.
- #431 **INHIBITION OF BENZO[A]PYRENE SKIN TUMOR INITIATING ACTIVITY BY COMPLEX ORGANIC MIXTURES.** D.D. Mahlum. Pacific Northwest Laboratory, Richland, WA.

**TUESDAY AFTERNOON, FEBRUARY 24
EXHIBIT HALL**

POSTER SESSION: METABOLISM/TOXICITY II

Chairperson: A.R. Buckpitt, University of California, Davis, CA
J.A. Hinson, Natl. Center for Toxicological Research, Jefferson, AR

Displayed: 1:30 p.m.-4:30 p.m.
Attended: 1:30 p.m.-3:00 p.m.

- #432 **TOXICOLOGIC SIGNIFICANCE OF THE BENZYLIC DOUBLE BOND OF PRECOCENE II.** S.K. Duddy and M.T.S. Hsia. Environ. Tox. Ctr. and Dept. of Entomology, Univ. of Wisconsin, Madison, WI.
- #433 **GLUTATHIONE, SULFITE, AND BENZO(a)PYRENE INTERACTIONS: A MATHEMATICAL MODEL.** D.A. Keller, K.H. Leung, and D.B. Menzel. Depts of Pharmacology and Medicine, Comprehensive Cancer Ctr., Duke University Medical Ctr., Durham, NC.
- #434 **HUMAN MYELOPEROXIDASE AND HORSERADISH-PEROXIDASE CATALYZED OXIDATION OF CATECHOL.** D. Ross. Molecular and Environmental Toxicology Program, School of Pharmacy, University of Colorado, Boulder, CO. Sponsor: D.R. Petersen
- #435 **DEPLETION OF HEPATOCELLULAR GLUTATHIONE (GSH) BY EXOGENOUSLY ADDED NAPHTHALENE OXIDE (NO).** M.H. Buonarati, D. Morin, and A.R. Buckpitt. Dept. Veterinary Pharmacology and Toxicology, University of California, Davis, CA.
- #436 **TRITIUM/CARBON-14 (T/C) DUAL LABEL STUDY OF 1,2-DIBROMOBENZENE METABOLISM AND COVALENT BINDING.** N. Narasimhan and R.P. Hanzlik. Department of Medicinal Chemistry, University of Kansas, Lawrence, KS.
- #437 **PEROXIDATIVE BIOTRANSFORMATION OF CYCLIC 1,3-DIKETONES.** R.A. Barter and G.A. Reed. University of Kansas Medical Center, Kansas City, KS
- #438 **FORMATION OF FORMALDEHYDE HYDRAZONE IN HYDRAZINE-INDUCED METHYLATION OF DNA GUANINE.** C.E. Lambert and R.C. Shank. Dept. of Community and Environmental Medicine, Univ. of California, Irvine, CA.
- #439 **CHARACTERIZATION OF THE REACTIVITY OF METALLOTHIONEIN TOWARDS METHYL BROMIDE.** E.M.K. Lui, Department of Pharmacology and Toxicology, University of Western Ontario, London, Canada.
- #440 **IN VITRO STUDY ON CARBON TETRACHLORIDE AND METALLOTHEIONEIN INTERACTION.** Z. Suntres and E.M.K. Lui, Dept. of Pharmacology and Toxicology, Univ. of Western Ontario, London, Canada.
- #441 **COVALENT BINDING OF N-ACETYL- AND N-GLYCOLYLHYDROXAMIC ACIDS OF 4-NITROBIPHENYL IN PRIMARY RAT HEPATOCYTE CULTURE.** L.O. Lim, B.R. Corbett, B.W. Smith, and M.D. Corbett, Pesticide Research Lab. Dept. Food Sc. Human Nutrition, University of Florida, Gainesville, FL.
- #442 **SELECTIVE DAMAGE TO CLARA CELLS BY NAPHTHALENE IN THE ISOLATED PERFUSED MOUSE LUNG.** S. Kanekal, C.G. Plopper, D. Morin and A.R. Buckpitt. Vet. Pharmacology and Toxicology, UC Davis, Davis, CA.
- #443 **METABOLISM OF BENZO[A]PYRENE-7,8-DIHYDRODIOL BY LUNG NEUTROPHIL-DERIVED OXIDANTS.** M.A. Trush, Johns Hopkins Univ., Baltimore, MD.
- #444 **COMBINED INJURY INDUCED PERTURBATIONS IN NON-SPECIFIC HOST RESISTANCE.** D.F. Gruber and M.M. D'Alesandro. Armed Forces Radiobiology Research Institute, Bethesda, MD. V. Bogo

- #445 **DECREASED SUPEROXIDE ELABORATION IN THE PRESENCE OF NORMAL SERA.** D.F. Gruber and A.M. Farese. Armed Forces Radiobiology Research Institute, Bethesda, MD. Sponsor: V. Bogo
- #446 **DISODIUM CROMOGLYCATE (DSCG) INHIBITS THE FORMATION OF FREE RADICALS, POTENT REACTIVE INTERMEDIATES.** A.J. Carmichael, C.M. Arroyo, and L.G. Cockerham. Armed Forces Radiobiology Research Institute, Bethesda, MD.
- #447 **INFLUENCE OF IMMUNOMODULATOR ADMINISTRATION ON HEPATIC GLUTATHIONE (GSH) IN THE MOUSE.** Donald W. Barnes. Department of Pharmacology, East Carolina University, Greenville, NC. Sponsor: J.P. DaVanzo
- #448 **LIPID PEROXIDATION (LP) IN PRIMARY HEPATOCYTES AFTER INCUBATION WITH PEROXISOME PROLIFERATORS.** K.E. Tomaszewski, S.W. Heindel, W.L. Jenkins and R.L. Melnick. NTP, NIEHS, RTP, NC. Sponsor: Elmer J. Rauckman
- #449 **ENHANCEMENT OF HEPATIC LIPID PEROXIDATION BY 3,3'-DICHLOROBENZIDINE PRETREATMENT IN THE RAT.** M.M. Iba and B. Lang. Department of Pharmacology and Toxicology, Rutgers University, Piscataway, NJ.
- #450 **THE INHIBITION BY CROTONALDEHYDE (2-BUTENAL) OF THE RAT HEPATIC MICROSOMAL MIXED FUNCTION OXIDASE SYSTEM.** K.O. Cooper, G. Witz and C. Witmer. The Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ.
- #451 **SEPARATE MECHANISMS FOR PROCARBAZINE-INDUCED SPERMATOTOXICITY AND CHEMOTHERAPEUTIC ACTIVITY.** M.G. Horstman, G.G. Meadows, and G.S. Yost. College of Pharmacy, Washington State University, Pullman, WA.
- #452 **STUDIES ON THE MECHANISM OF HALOACETONITRILES ACUTE TOXICITY: INTERACTIONS OF DIBROMOACETONITRILE (DBAN) WITH GLUTATHIONE (GSH) AND GLUTATHIONE-S-TRANSFERASE (GSHT) IN RATS.** Ahmed E. Ahmed and Gamal I. Hussein, Department of Pathology, The University of Texas Medical Branch, Galveston, Texas.
- #453 **URINARY METABOLITES OF ISOPROPYLCYCLOHEXANE IN MALE F-344 RATS WITH HYDROCARBON NEPHROPATHY.** G. Henningsen, M.P. Servé, R.A. Salomon, I. Lopez*, J. Roberts*, and K.O. Yu. Armstrong Aerospace Medical Research Laboratory, WPAFB, OH, and *Wright State University, Dayton, OH
- #454 **METABOLISM OF TERTIARY-BUTYLCYCLOHEXANE IN MALE F-344 RATS WITH HYALINE DROPLET NEPHROPATHY.** G. Henningsen, M.P. Servé, R.A. Salomon, M.A. Ferry*, I. Lopez*, J. Roberts*, and K.O. Yu. Armstrong Aerospace Medical Research Laboratory, WPAFB, OH, and *Wright State University, Dayton, OH
- #455 **REVERSIBLE AND IRREVERSIBLE INHIBITION OF HEPATIC OXYGEN UPTAKE IN THE ISOLATED PERFUSED RAT LIVER BY ACETAMINOPHEN.** R.L. Esterline and S. Ji. Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ
- #456 **A METHOD FOR ESTIMATING THE HEPATIC CLEARANCE FOR THE FORMATION OF THE CHEMICALLY REACTIVE METABOLITE OF ACETAMINOPHEN *IN VIVO*.** R.Chen and J.R. Gillette. NHLBI, Bethesda, MD.
- #457 **IMMUNOCHEMICAL DETECTION OF ACETAMINOPHEN-BOUND LIVER PROTEINS.** J.B. Bartolone, K. Sparks, S.D. Cohen and E.A. Khairallah. The University of Connecticut, Storrs, CT.
- #458 **EFFECT OF MIXED FUNCTION OXIDASE (MFO) ACTIVITY AND AGE ON ACETAMINOPHEN (APAP)-INDUCED INHIBITION OF HEPATIC MITOCHONDRIAL RESPIRATION.** L.L. Meyers, W.P. Beierschmitt, E.A. Khairallah, D.S. Wyand and S.D. Cohen. Toxicology Program, Univ. of Connecticut, Storrs, CT.
- #459 **PROTEIN METABOLISM PROVIDES A SENSITIVE INDEX OF THE REVERSAL OF ACETAMINOPHEN-INDUCED HEPATOTOXICITY.** M.K. Bruno, S.D. Cohen, and E.A. Khairallah. University of Connecticut, Storrs, Ct
- #460 **DISSOCIATION OF COVALENT BINDING AND OXIDATIVE EFFECTS OF ACETAMINOPHEN (APAP) BY THE USE OF DIMETHYLATED ANALOGUES.** R. Birge, J. Bartolone, M. Bruno, S. Cohen, J. Mangold, E. Nishanian, and E.A. Khairallah. Univ. of CT Storrs, CT
- #461 **CONTINUED ELECTROPHILE PRODUCTION DURING ACETAMINOPHEN (APAP) HEPATOTOXICITY.** J.T. Brady, D.A. Montelius, W.P. Beierschmitt, D.S. Wyand, E.A. Khairallah, and S.D. Cohen. The Univ. of CT, Toxicology Prog., Storrs, CT.
- #462 **EFFECT OF HEPATIC UDP-GLUCURONIC ACID (UDP-GA) DEPLETION ON THE DISPOSITION OF ACETAMINOPHEN (AA) IN RATS.** Z. Gregus, Ch. Madhu, D. Goon, and C.D. Klaassen. Univ. of Kansas Medical Center, Kansas City, KS
- #463 **BILIARY EXCRETION OF ACETAMINOPHEN-GLUTATHIONE (AAGS) AS AN INDEX FOR TOXIC ACTIVATION OF ACETAMINOPHEN (AA): EFFECT OF CYTOCHROME P-450 INDUCERS AND INHIBITORS.** Ch. Madhu, Z. Gregus and C.D. Klaassen. Univ. of Kansas Medical Center, Kansas City, KS
- #464 **SPECIES VARIATION IN BILIARY AND URINARY EXCRETION OF ACETAMINOPHEN (AA) METABOLITES.** Z. Gregus, Ch. Madhu and C.D. Klaassen. Univ. of Kansas Medical Center, Kansas City, KS
- #465 **EFFECTS OF BCNU ON ACETAMINOPHEN BIOTRANSFORMATION AND GLUTATHIONE-S-TRANSFERASE.** Y.J. Park, R.D. Smith, A.B. Combs, and J.P. Kehrer. Division of Pharmacology/Toxicology, College of Pharmacy, University of Texas, Austin, TX
- #466 **INCREASED TOXICITY OF ACETAMINOPHEN IN THE PRESENCE OF METHOTREXATE.** J. Sinclair, J. Lindenthal, S. Howell, T. Taylor, I. Cargill, P. Sinclair. VA Medical Ctr., White River Jct., VT; Dept. of Biochemistry, Dartmouth Med. School, Hanover, NH; Lederle Labs, Pearl River, NY. Sponsor: R. Gosselin
- #467 **PHARMACOKINETICS EFFECTS OF ACUTE ADMINISTRATION OF ACETAMINOPHEN (A) IN RATS PRETREATED WITH STYRENE (S).** P. Colin¹, L. Regnaud¹, G. Sirois¹ and S. Chakrabarti², Faculte de Pharmacie¹ and Dept. Med. Trav. Hyg. Mil², Universite de Montreal, Montreal, Canada.
- #468 **INFLUENCE OF ASCORBIC ACID ESTERS ON METABOLISM OF ACETAMINOPHEN (APAP) IN MICE.** A.K. Mitra and V.C. Ravikumar. Division of Pharmacology and Toxicology, School of Pharmacy, Northeast Louisiana University, Monroe, LA. Sponsor: P.J. Medon

**TUESDAY AFTERNOON, FEBRUARY 24
EXHIBIT HALL**

POSTER SESSION: BIOTRANSFORMATION I

Chairperson: D.E. Rickert, CIIT, Research Triangle Park, NC

Displayed: 1:30 p.m.-4:30 p.m.

Attended: 3:00 p.m.-4:30 p.m.

- #469 **QUALITATIVE AND QUANTITATIVE DIFFERENCES IN THE METABOLISM OF BENZO(a)PYRENE (BP) BY THE RAT AND HAMSTER.** V.J. Wroblewski and J.R. Olson, Dept. Pharmacol. and Therap., SUNY Buffalo, NY

- #470 **THE METABOLISM AND DISPOSITION OF [¹⁴C]ETHYL-3-ETHOXYPROPIONATE IN THE RAT.** P.J. Deisinger, M.L. Lyon, R.J. Boatman, and D. Guest. Health and Environment Laboratories, Eastman Kodak Co., Rochester, NY. Sponsor: J.L. O'Donoghue.
- #471 **THE EFFECT OF DOSE AND AGE ON THE METABOLISM OF LINDANE IN THE RAT.** M.F. Copeland and R.W. Chadwick. U.S. EPA, Research Triangle Park, NC
- #472 **METABOLISM AND DISPOSITION OF N-BUTYL ACRYLATE IN MALE FISCHER RATS.** J.M. Sanders, L.T. Burka, and H.B. Matthews. NIEHS, Res. Triangle Park, NC.
- #473 **METABOLIC FATE OF [U-¹⁴C-PHENYL]1-PHENYL-3-PYRAZOLIDINONE ADMINISTERED BY GAVAGE TO MALE SPRAGUE-DAWLEY RATS.** J.A. Fox, M.L. Lyon, J.C. English. Health and Environment Laboratories, Eastman Kodak Co., Rochester, NY. Sponsor: J.L. O'Donoghue.
- #474 **METABOLISM OF 1-,3- AND 6-NITROBENZO(A)-PYRENE BY RAT INTESTINAL MICROFLORA.** K.E. Richardson, P.P. Fu and C.E. Cerniglia; National Center for Toxicological Research, Jefferson, AR
- #475 **ALTERATIONS IN GLUCURONIDATION AND TOXICITY WITH AGE USING 4-4'THIOBIS(6-t-BUTYL-m-CRESOL) (TBBC) AS A MODEL COMPOUND.** S.J. Borghoff, S. Stefanski, L.S. Birnbaum. NIEHS, Research Triangle Park, NC.
- #476 **METABOLISM AND EXCRETION OF DINITROBENZENES BY MALE FISCHER-344 RATS.** D.D. Nystrom and D.E. Rickett. CIIT, Research Triangle Park, NC.
- #477 **METABOLISM OF ALLYL ALCOHOL TO ACRYLALDEHYDE: COMPARISON BETWEEN SPRAGUE DAWLEY (SD) AND FISCHER-344 (F344) RATS.** J.R. Cannon and G.L. Lage. Philadelphia College of Pharmacy and Science, Philadelphia, PA 19104
- #478 **THE EFFECT OF PHENOBARBITAL OR BIS(2-METHOXYETHYL) ETHER PRETREATMENT ON THE METABOLISM OF BIS(2-METHOXYETHYL) ETHER IN THE ADULT MALE RAT.** K.L. Cheever, D.E. Richards, W.W. Weigel, and K.B. Begley. NIOSH, DBBS, ETB, TMS, Cincinnati, OH. Sponsor: T.R. Lewis.
- #479 **DISTRIBUTION AND EXCRETION OF 3,7-DIMETHYL-2,6-OCTADIENAL (CITRAL) IN RATS.** G. Usha, J. Diliberto and L.S. Birnbaum. NIEHS, Research Triangle Park, NC.
- #480 **METABOLISM OF THE PYRIDINE/PHENYL ETHER HERBICIDE SC-1084 IN THE CHICKEN.** R.P. Clement, J.M. Pomeroy, J.C. Ritter, R.C. Gagnon and J.M. Killinger. Stauffer Chemical Co., Environmental Health Center, Farmington, CT.
- #481 **THE DISPOSITION AND METABOLISM OF VAGINALLY ADMINISTERED (¹⁴) LABELED NONOXYNOL-9 IN FEMALE SPRAGUE DAWLEY RATS.** B. Walter, B.J. Agha, G.A. Digenis. Graduate Center for Toxicology and College of Pharmacy, University of Kentucky, Lexington, KY. Sponsor: Larry Robertson
- #482 **DISTRIBUTION OF TRANS-4-HYDROXY-2-HEXENAL AND TANDEM MASS SPECTROMETRIC DETECTION OF ITS URINARY MERCAPTURIC ACID IN THE RAT.** C.K. Winter, H.J. Segall, and A.D. Jones, Veterinary Medicine Pharmacology and Toxicology and Facility for Advanced Instrumentation, University of California, Davis, CA 95616.
- #483 **URINARY METABOLITES OF N-NITROSOTHAZOLIDINE (N-NT).** D. Cragin and T. Shibamoto, Department of Environmental Toxicology, U.C. at Davis, Davis, CA. Sponsor: L. Shull
- #484 **EFFECT OF INTERACTION BETWEEN CARBAMAZEPINE AND STYRENE ON THEIR HEPATOTOXICITY AND METABOLISM IN RATS.** L. Regnaud^a, G. Sirois^a and S. Chakrabarti^b, Fac. de Pharmacie^a and Dept. Med. Trav. Hyg. Mil., Fac. de Med.^b, Univ. de Montreal, Montreal, Canada.
- #485 **STUDIES ON THE COMPARATIVE TOXICITY AND METABOLISM OF CARBARYL.** D.M. Wafa, I.S. Silver, W.C. Dauterman. Toxicology Program, N.C. State Univ., Raleigh, NC

WEDNESDAY MORNING, FEBRUARY 25

8:30 a.m.-11:30 a.m.

International Ballroom Center

SYMPOSIUM: rDNA-DERIVED PROTEINS: TOXICOLOGIC CONSIDERATIONS

Chairperson: J.A. Thomas, Deerfield, IL

Therapeutic Aspects of rDNA Proteins: An Overview. R.T. Borchardt, University of Kansas, Lawrence, KS

Immunotoxicology, Microbial & Viral Contaminants. A.E. Munson, Medical College of Virginia, Richmond, VA

Toxicologic Test Systems: Special Considerations. J.A. Thomas, Deerfield, IL

Guidelines and Test Methods for Biotechnology. K. Ulmer, National Bureau of Standards, Gaithersburg, MD

WEDNESDAY NOON, FEBRUARY 25

12 noon-1:00 p.m.

International Ballroom West

2ND ANNUAL BURROUGHS WELLCOME TOXICOLOGY SCHOLAR AWARD LECTURE

C.D. Klaassen, University of Kansas Medical Center, Kansas City, KS

Chairman: T.S. Miya, University of North Carolina, Chapel Hill, NC

WEDNESDAY MORNING, FEBRUARY 25

8:30 a.m.-12 p.m.

JEFFERSON ROOM WEST

PLATFORM SESSION: PESTICIDES II

Chairpersons: J. Riviere, North Carolina State University, Raleigh, NC
J.S. Cranmer, University of Arkansas Medical Sciences, Little Rock, AR

- #54 8:30 **PERSPECTIVES ON TOXICITY OF INERT PESTICIDAL INGREDIENTS.** L. Fishbein¹ and R.J.P. Cabral². ¹National Center for Toxicological Research, Jefferson, AR; ²International Agency for Research on Cancer, Lyon, France.
- #55 8:45 **ASSESSMENT OF CANCER RISK IN WORKERS EXPOSED TO OXADIAZON.** G.M. Wang. State of California, Department of Food and Agriculture, Sacramento, CA
- #56 9:00 **SPECIES DIFFERENCES IN MALE REPRODUCTIVE TOXICITY OF A PYRROLIDINE HERBICIDE.** G.L. Sprague, and D.W. Frank. Stauffer Chemical Company, Toxicology Department, Farmington, CT.
- #57 9:15 **EVALUATION OF HOST RESISTANCE AND IMMUNITY IN MICE EXPOSED TO ALDICARB.** P.T. Thomas, H.V. Ratajczak, W.C. Eisenberg, M. Furedi-Machacek, K.V. Ketels, and P.W. Barbera, IIT Research Institute, Chicago, IL.
- #58 9:30 **EFFECT OF CYCLODIENE COMPOUNDS ON CALMODULIN IN RAT TISSUES.** B.D. Mehrotra, K.S. Moorthy and D. Desaiiah, Department of Chemistry, Tougaloo College, Tougaloo, MS, and Department of Neurology, University of Mississippi Medical Center, Jackson, MS.
- #59 9:45 **COMPARATIVE DIETARY TOXICITY OF 2 PYRIDYLPHENYL-ETHERS IN RATS AND MICE.** A.C. Katz, G.M. Zwicker and G.L. Sprague, Stauffer Chemical Company, Toxicology Department, Farmington, CT.
- #60 10:00 **TISSUE GLUTATHIONE AND MERCAPTURIC ACID EXCRETION FOLLOWING ACUTE INHALATION EXPOSURE TO 1,3-DI-CHLOROPROPENE.** G.D. Fisher and W.W. Kilgore. Department of Environmental Toxicology, University of California, Davis.
- #61 10:15 **CHARACTERIZATION OF MULTIPLE FORMS OF CYTOCHROME P-450 FROM AN INSECTICIDE RESISTANT STRAIN OF HOUSE FLY (MUSCA DOMESTICA).** M.J.J. Ronis, W.C. Dauterman, and E. Hodgson, Toxicology Program, N.C. State Univ., Raleigh, NC
- #62 10:30 **CONTRACTILE RESPONSES OF THE FROG SLOW SKELETAL MUSCLE TO U-40481: ROLE OF EXTRA-CELLULAR CALCIUM.** V.C. Ravikumar and J.A. Rieger^{*}. School of Pharmacy, Northeast Louisiana University, Monroe, LA and ^{*}College of Pharmacy, University of Oklahoma, Oklahoma City, OK

WEDNESDAY MORNING, FEBRUARY 25

8:30 a.m.-12 p.m.

LINCOLN ROOM WEST

PLATFORM SESSION: MOLECULAR/CELLULAR

Chairpersons: T.A. Gasiewicz, University of Rochester, Rochester, NY
P.S. Guzelian, Medical College of Virginia, Richmond, VA

- #63 8:30 **DT-DIAPHORASE AND QUINONE DETOXIFICATION.** A.S. Atallah, J.R. Landolph and P. Hochstein. Institute for Toxicology and The Cancer Center, University of Southern California, Los Angeles, CA.
- #64 8:45 **MECHANISM OF CYANIDE-INDUCED CYTOTOXICITY.** C.A. Tyson, S.J. Gee, C.E. Green. SRI International, Menlo Park, CA.
- #65 9:00 **USE OF AN IN-VITRO SYSTEM TO STUDY THE EFFECTS OF LOW LEVELS OF LEAD ON THE BLOOD-BRAIN BARRIER.** A.M. Gebhart and G.W. Goldstein, Departments of Pediatrics and Neurology, University of Michigan, Ann Arbor, MI. Sponsor: M.J. Brabec.
- #66 9:15 **DETECTION OF DNA CROSS-LINKING BY GRAVITY-FLOW ALKALINE ELUTION.** J.R. Hincks and R.A. Coulombe, Jr., Center for Environmental Toxicology, Utah State University, Logan UT.
- #67 9:30 **AFFINITY PURIFICATION OF CLOFIBRIC ACID BINDING PROTEIN(S) FROM RAT LIVER.** N.D. Lalwani, K. Alvares, M.K. Reddy and J.K. Reddy, Department of Pathology, Northwestern University Medical School, Chicago, IL
- #68 9:45 **MODULATION OF HEPATIC cAMP-DEPENDENT PROTEIN KINASE (cAMP-PK) ISOENZYME (IEZ) ACTIVITY AND [³H]- cAMP BINDING IN VITRO BY MIREX (MX).** C. Timchalk, T. Van der Hoeven and A.K. Charles. Dept. of Pharm. & Tox., Albany Med. Coll., NY
- #69 10:00 **INHIBITORY ACTION OF GOSSYPOL ON SOLUBLE F1 ATPase FROM VERTEBRATE AND INVERTEBRATE.** M.E. Abd-El-Ghany and S.M. Sherby. Department of Plant Protection, Faculty of Agriculture, University of Alexandria, Alexandria, Egypt. Sponsor: S.A. Soliman.
- #70 10:15 **CEPHALOSPORIN NEPHROTOXICITY: EFFECTS ON RENAL MICROSOMAL PROTEINS.** C. Cojocel and W. Kramer. Hoechst AG, Frankfurt/Main, Federal Republic of Germany. Sponsor: A.E. Munson
- #71 10:30 **POLYNUCLEAR AROMATIC HYDROCARBON - 4S BINDING PROTEIN INTERACTIONS: STRUCTURE ACTIVITY RELATIONSHIPS.** C. Kamps, M. Harris and S. Safe, Veterinary Physiology and Pharmacology, Texas A&M University, College Station, TX.
- #72 10:45 **MECHANISMS FOR THE RELEASE OF ALKALINE PHOSPHATASE (AP) FROM CULTURED HEPATOCYTES EXPOSED TO TAMOXIFEN, DIPHENYLHYDANTOIN, OR PREDNISOLONE 21-ACETATE.** D.E. Amacher and C.V. Higgins. Drug Safety Dept., Pfizer Inc., Groton, CT.
- #73 11:00 **EFFECTS OF FORMYCINS AND DILAZEP ON GROWTH ARREST AND RECOVERY OF L5178Y CELLS.** P.W. Wigler and Y.B. Shah. University of Tennessee Memorial Research Center, Knoxville, TN
- #74 11:15 **A NOVEL IN VIVO MODEL FOR THE INDUCTION OF CARCINOIDS AND SMALL CELL CANCER OF THE LUNG.** H.M. Schuller, and H.P. Witschi. College of Veterinary Medicine, Univ. of Tenn., Knoxville, TN, and Biology Divs., ORNL, Oak Ridge, TN

POSTER/DISCUSSION SESSION: MECHANISMS OF TCDD TOXICITY

Chairpersons: S.H. Safe, Texas A&M University, College Station, TX
L.S. Birnbaum, NIEHS, Research Triangle Park, NC

Discussant: R.E. Peterson, University of Wisconsin, Madison, WI

Displayed: 8:30 a.m.-11:30 a.m.

Attended: Odd #'s 8:30 a.m.-9:15 a.m.

Evens #'s 9:15 a.m.-10:00 a.m.

Discussion: 10:00 a.m.-11:30 a.m.

- #486 **THYMIC ATROPHY MAY NOT BE A PRIMARY EFFECT OF 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD).** J.R. Gorski, G. Muzi, L.W.D. Weber and K. Rozman. Dept. of Pharmacol., Toxicol. & Therap., Univ. Kansas Med. Ctr., Kansas City, KS, USA and Inst. fur Toxikol., Gesellschaft fur Strahlen- und Umweltforschung mbH Munchen, Neuherberg, FRG
- #487 **HORMONAL STATUS IN 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD)-TREATED RATS.** J.R. Gorski, G. Muzi, L.W.D. Weber and K. Rozman. Dept. Pharmacol., Toxicol. & Therap., Univ. Kansas Med. Ctr., Kansas City, KS, USA and Inst. fur Toxikol., Gesellschaft fur Strahlen- und Umweltforschung mbHMunchen, Neuherberg, FRG
- #488 **EFFECT OF THYROIDECTOMY ON 2,3,7,8,-TETRACHLORODIBENZO-P-DIOXIN (TCDD) INDUCED LIPID PEROXIDATION.** S.J. Hermansky, S.J. Stohs and H.A. Mohammadpour, Dept. of Pharmaceutical Sciences, University of Nebraska Medical Center, Omaha, NE.
- #489 **HISTOLOGIC EVALUATION OF THE EFFECTS OF DIETARY TRIIODOTHYRONINE (T3) AND SURGICAL THYROIDECTOMY ON 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD) INDUCED LESIONS IN MALE SPRAGUE-DAWLEY RATS.** R.A. Leedle, L.C. Gilbert, R.H. Powers, W.L. Roth and S.D. Aust. Departments of Pathology and Biochemistry, Michigan State University, E. Lansing, MI
- #490 **THE EFFECT OF DIETARY TRIIODOTHYRONINE (T3) ON TCDD-INDUCED HEPATIC VITAMIN A DEPLETION.** R.H. Powers, L.C. Gilbert, M.A. Jurek, W.L. Roth and S.D. Aust. Dept. of Biochem., Michigan State University, E. Lansing, MI
- #491 **THYROID HORMONES AND THYROXINE GLUCURONIDATION IN HAMSTERS TREATED WITH 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD).** E.C. Henry and T.A. Gasiewicz. Division of Toxicology, University of Rochester, Rochester, NY.
- #492 **THE EFFECT OF DIETARY TRIIODOTHYRONINE (T3) ON 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD)-INDUCED TOXICITY IN RATS.** L.C. Gilbert, M.A. Jurek, R.H. Powers, W.L. Roth and S.D. Aust. Dept. of Biochemistry, Michigan State University, E. Lansing, MI
- #493 **TOXICITY OF 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD) IN COLD-ADAPTED RATS FED DIFFERENT DIETS.** G. Muzi, H. Greim and K. Rozman. Dept. of Pharmacol., Toxicol. & Therap., Univ. Kansas Med. Ctr., Kansas City, KS, USA and Inst. fur Toxikol., Gesellschaft fur Strahlen- und Umweltforschung mbH Munchen, Neuherberg, FRG.
- #494 **CHANGES OF BROWN ADIPOSE TISSUE THERMOGENESIS INDUCED BY 2,3,7,8,-TETRACHLORODIBENZO-p-DIOXIN (TCDD).** T.W. Haart, L.W.D. Weber and K. Rozman. Dept. Pharmacol., Toxicol. & Therap., Univ. Kansas Med. Ctr., Kansas City, KS, USA and Gesellschaft Fur Strahlen- und Umweltforschung mbH Munchen, Neuherberg, FRG.
- #495 **DIETARY IRON, AND TCDD-INDUCED ALTERATIONS IN HEPATIC LIPID PEROXIDATION AND GLUTATHIONE CONTENT IN RATS.** M.A. Shara, W.A. Al-Turk, H.A. Mohamadpour and S.J. Stohs, Dept. of Pharmaceutical Sciences, University of Nebraska Medical Center, Omaha, NE.
- #496 **TCDD PRODUCES HYDRONEPHROSIS IN FETAL MICE BY INDUCING HYPERPLASIA OF THE URETERIC EPITHELIUM.** B.D. Abbott, L.S. Birnbaum, and R.M. Pratt. NIEHS, Research Triangle Park, NC.
- #497 **TCDD EFFECTS THE BASAL LAMINA AND EXTRACELLULAR MATRIX OF THE FETAL MOUSE KIDNEY.** B.D. Abbott, L.S. Birnbaum, and R.M. Pratt. NIEHS, Research Triangle Park, NC.
- #498 **TERATOGENICITY OF 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN: ANTIAGONISM BY AROCLOR 1254.** J.M. Haake, F. Mayura, T. Phillips and S. Safe, Departments of Veterinary Physiology and Pharmacology and Veterinary Public Health, Texas A&M University, College Station, TX.
- #499 **IMMUNOTOXICITY OF 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN: ANTAGONISM BY AROCLOR 1254.** D. Davis, I. Tizard and S. Safe, Departments of Veterinary Physiology and Pharmacology and Veterinary Microbiology and Immunology, Texas A & M University, College Station, TX.
- #500 **STUDIES OF THE MECHANISM OF 2,3,7,8-TCDD INDUCED ENDOTOXIN HYPERSENSITIVITY.** G.J. Rosenthal, J. Thigpen, E. Lebetkin, M. Thompson, R. Wilson, A.N. Tucker, M.I. Luster. Systemic Toxicology Branch, NTP, NIEHS, Research Triangle Park, NC.
- #501 **2,3,4,7,8-PENTACHLORODIBENZOFURAN AND 1,2,3,4,7,8-HEXACHLORODIBENZOFURAN DECREASE GLUCOCORTICOID RECEPTOR BINDING IN MOUSE LIVER AND PLACENTAL CYTOSOL.** R.P. Ryan, K.G. Nelson, G.W. Lucier, L.S. Birnbaum, and G.I. Sunahara. University of North Carolina, Chapel Hill, and NIEHS, RTP, NC
- #502 **INTERACTION OF ESTRADIOL AND TCDD IN THREE STRAINS OF MICE.** T.H. Umbreit, E.J. Hesse, G.J. Macdonald, and M.A. Gallo. UMDNJ/Robt. W. Johnson Sch. Med., Piscataway, NJ.
- #503 **ALTERED STEROID CONCENTRATIONS IN THE TESTES OF 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN-TREATED RATS.** C.A. Mebus and W.N. Piper. Dept. of Pharmacology, Univ. of Nebr. Med. Ctr. Omaha, NE.
- #504 **INHIBITION OF TESTOSTERONE PRODUCTION IN TESTES FROM 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD)-TREATED RATS.** Robert W. Moore, James M. Kleeman and Richard E. Peterson. Sch. of Pharmacy and Env. Toxicol. Ctr., Univ. of Wisc., Madison, WI.

WEDNESDAY MORNING, FEBRUARY 25
THOROUGHbred ROOM

POSTER/DISCUSSION SESSION: ACTIVE SPECIES OF OXYGEN: BIOLOGICAL ROLE IN TOXICITY

Chairpersons: G. Witz, UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ
R. Roth, Michigan State University, East Lansing, MI

Discussant: M.A. Trush, Johns Hopkins University, Baltimore, MD

Displayed: 8:30 a.m.-11:30 a.m.

Attended: Odd #'s 8:30 a.m.-9:15 a.m.

Even #'s 9:15 a.m.-10:00 a.m.

Discussion: 10:00 a.m.-11:30 a.m.

- #505 **INVOLVEMENT OF ACTIVE OXYGEN METABOLITES AND THROMBOXANE IN PHORBOL MYRISTATE ACETATE-INDUCED EDEMA IN ISOLATED RAT LUNGS.** Laurie J. Carpenter and Robert A. Roth, Dept. of Pharmacol./Toxicol., Michigan State Univ., East Lansing, MI.
- #506 **BILE ACIDS POTENTIATE SUPEROXIDE (O₂) RELEASE FROM STIMULATED, RAT PERITONEAL NEUTROPHILS IN VITRO.** L.J. Dahm, J.A. Hewett and R.A. Roth, Dept. of Pharmacol./Toxicol., Ctr. for Environ. Toxicol., Michigan State Univ., E. Lansing, MI.
- #507 **OZONE INHALATION DECREASES CYTOCHROME b₅>2>4>5 IN RAT ALVEOLAR MACROPHAGES.** J.E. Ryer, G. Witz, B.D. Goldstein and M.A. Amoroso, JGPT-UMDNJ-RWJ Medical School/Rutgers University, Piscataway, NJ.
- #508 **OZONE INHALATION AFFECTS RAT ALVEOLAR MACROPHAGE SUPEROXIDE ANION RADICAL PRODUCTION, PHAGOCYTOSIS MEMBRANE LIPID FLUIDITY, AND MEMBRANE SULFHYDRYL GROUP STATUS.** J.E. Ryer, M.A. Amoroso, B.D. Goldstein, G. Witz, JGPT-UMDNJ-RWJ Medical School/Rutgers University, Piscataway, NJ.
- #509 **DEMONSTRATION OF INCREASED OXIDANT GENERATION BY DBA/2 MOUSE BONE MARROW NEUTROPHILS.** L.E. Twerdok, S.E. Perschke and M.A. Trush, Johns Hopkins Univ., Baltimore, MD.
- #510 **EVIDENCE FOR REACTIVE OXYGEN SPECIES INDUCING MUTATIONS IN MAMMALIAN CELLS.** A.W. Hsie, Department of Preventive Medicine and Community Health, The University of Texas Medical Branch, Galveston, TX 77550
- #511 **OXY RADICAL PRODUCTION AND ARACHIDONIC ACID RELEASE BY MURINE PERITONEAL MACROPHAGES STIMULATED BY TUMOR PROMOTERS.** G. Witz and B. Czerniecki, JGPT-UMDNJ-Robert Wood Johnson Medical School/Rutgers University, Piscataway, NJ.
- #512 **EFFECT OF ALPHA, BETA-UNSATURATED ALDEHYDES ON MEMBRANE LIPID FLUIDITY AND PHAGOCYTOSIS OF RAT ALVEOLAR MACROPHAGES.** N.J. Lawrie and G. Witz, UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ.
- #513 **OZONE STIMULATES RABBIT ALVEOLAR MACROPHAGES TO RELEASE NEUTROPHIL AND MONOCYTE CHEMOTACTIC ACTIVITY.** K.E. Driscoll and R.B. Schlesinger, New York University Med. Cntr, NY, NY
- #514 **LEUKOTRIENES IN PULMONARY OXYGEN TOXICITY.** L.M. Patton and M.D. Faiman, Dept. of Pharmacol. and Toxicol., Univ. of Kansas, Lawrence, KS
- #515 **T-LYMPHOCYTE INFILTRATION OF MOUSE LUNG FOLLOWING EXPOSURE TO OZONE.** M.R. Bleavins, D. Dziedzic, and H.J. White. Biomedical Science Dept., GM Research Labs, Warren, MI. Sponsor: E.W. Lee
- #516 **ALTERATIONS IN MEDIASTINAL LYMPHOCYTE NUMBERS AND SUBPOPULATIONS FOLLOWING OZONE EXPOSURE.** M.R. Bleavins, D. Dziedzic, and H.J. White. Biomedical Science Dept., GM Research Labs, Warren, MI. Sponsor: E.W. Lee
- #517 **OXYGEN FREE RADICAL MEDIATED ISCHEMIA-REPERFUSION DAMAGE TO GERBIL BRAIN.** A. Duchon, M. Chevion, J.M. Carney, R.A. Floyd, Oklahoma Medical Research Foundation and Department of Pharmacology University of Oklahoma Health Science Center, Oklahoma City, OK.
- #518 **HYDROPEROXIDE-INDUCED TOXICITY IN RENAL PROXIMAL TUBULE SEGMENTS.** N.G. Shipp, A.M. Kore, G.F. Grauer, J.T. Hjelle, and J.J. Hjelle, School of Veterinary Medicine, and the Environ. Toxicol. Ctr., Univ. of Wisconsin, Madison, WI, and Univ. of Illinois Coll. Med., Peoria, IL.
- #519 **ANTIOXIDANTS AND CYCLIC AMP AGONISTS PREVENT THE INHIBITION OF MOUSE HEPATOCYTE INTERCELLULAR COMMUNICATION BY LIVER TUMOR PROMOTERS.** R.J. Ruch and J.E. Klaunig, Department of Pathology, Medical College of Ohio, Toledo, OH
- #520 **VITAMIN A POTENTIATION OF CARBON TETRACHLORIDE HEPATOXICITY.** A.E. ElSisi, D.L. Earnest and I.G. Sipes, Department of Pharmacology and Toxicology, College of Pharmacy, University of Arizona, Tucson, AZ
- #521 **DIFFERENTIAL MECHANISMS OF Ca²⁺-DEPENDENT CELL INJURY.** C.E. Thomas, K. Olafsdottir, and D.J. Reed, Dept. of Biochemistry & Biophysics, Oregon State Uni., Corvallis, OR

WEDNESDAY MORNING, FEBRUARY 25
EXHIBIT HALL

POSTER SESSION: NEUROTOXICOLOGY III: NEUROCHEMISTRY

Chairperson: D.G. Graham, Duke University Medical Center, Durham, NC

Displayed: 8:30 a.m.-11:30 a.m.

Attended: 8:30 a.m.-10:00 a.m.

- #522 **COMPARATIVE NEUROTOXICITY AND PYRROLE-FORMING POTENTIAL OF 2,5-HEXANEDIONE AND PERDEUTERIO-2,5-HEXANEDIONE IN THE RAT.** A.P. DeCaprio and S.J. Jackowski, Wadsworth Center for Laboratories and Research, New York State Department of Health, Albany, NY. Sponsor: L.S. Kaminsky.
- #523 **SIMULTANEOUS EXPOSURE TO N-HEXANE AND METHYL ISO-BUTYL KETONE (MIBK) PRODUCED CROSSLINKING AND DECREASED PHOSPHORYLATION OF NEUROFILAMENT PROTEINS IN HENS.** M.B. Abou-Donia, C. Habig, E. Suwita, and D.M. Lapadula, Duke University Medical Center, Durham, NC

- #524 **TOXIC ACTION OF ACR, 2,5HD AND DMHD UPON THE MICROTUBULE: MITOSIS AND TUBULIN CROSSLINKING.** D.W. Sickles, J.A. Tischfield, D.A. Welter, A.R. Testino, J.K. Pearson, and T.G. Oblak. Medical College of Georgia, Augusta, GA Sponsor: B.D. Goldstein
- #525 **EFFECTS OF ACR, 2,5-HD, DMHD AND IDPN UPON MICROTUBULE CYTOSKELETAL NETWORKS.** D.W. Sickles, J.A. Tischfield and T.G. Oblak. Medical College of Georgia, Augusta, GA Sponsor: B.D. Goldstein
- #526 **EFFECTS OF ACR, HD, AND DMHD ON NEURAL AND NON-NEURAL NADH-TR ACTIVITY IN THE RAT.** J.K. Pearson and D.W. Sickles. Medical College of GA., Augusta, GA. Sponsor: B.D. Goldstein
- #527 **NEURON-SPECIFIC INHIBITION OF LIPOAMIDE DEHYDROGENASE (LpDH) AND CYTOCHROME c REDUTASE (CCR) BY ACRYLAMIDE.** D.W. Sickles. Medical College of Georgia, Augusta, GA Sponsor: B.D. Goldstein
- #528 **ATP, CP, AND AXOPLASMIC TRANSPORT IN SCIATIC NERVES OF ACR. 2,5,-HD AND DMHD EXPOSED RATS.** D.W. Sickles and J.K. Pearson. Medical College of Georgia, Augusta, GA Sponsor: B.D. Goldstein
- #529 **ATP PRODUCTION BY BRAIN MITOCHONDRIA EXPOSED TO NEUROFILAMENTOUS AXONOPATHY PRODUCING NEUROTOXINS .** D.W. Sickles, S.R. Fowler and A.R. Testino. Medical College of Georgia, Augusta, GA Sponsor: B.D. Goldstein
- #530 **CRESYLBENZODIOXAPHOSPHORIN OXIDE (CBDP) PRETREATMENT OF THE RAT ALTERS SOMAN TOXICITY AND CHOLINESTERASE (ChE) INHIBITION IN BLOOD AND BRAIN REGIONS.** V.R. Jimmerson, T.-M. Shih, D.M. Maxwell, Y. Hodge and K. Brecht. USAMRICD, Aberdeen Proving Ground, MD
- #531 **A DEVELOPMENTAL MODEL OF ORGANOPHOSPHATE INDUCED PERSISTANT BRAIN ACETYLCHOLINESTERASE (ACHE) INHIBITION.** C. Dvergsten, S. Padilla and B. Veronesi, USEPA/HERL/NTD, RTP, NC.
- #532 **CHANGES IN HIGH-ENERGY PHOSPHATE COMPOUNDS IN RAT SKELETAL MUSCLES INTOXICATED WITH DFP AND SOMAN.** W-D. Deitbarn and R.C. Gupta. Department of Pharmacology, School of Medicine, Vanderbilt University, Nashville, TN
- #533 **ETHYL METHYLPHOSPHINATE (YL) NEUROTOXICITY IN HENS.** E.J. Olajos and H. Wall. Toxicol. Div., CRDEC, U.S. Army, APG, MD 21010 and Comp. Path. Br., MRICD, U.S. Army, APG, MD
- #534 **EFFECTS OF CRESYLBENZODIOXAPHOSPHORIN OXIDE (CBDP) ON TISSUE CARBOXYLESTERASE (CaE) AND CHOLINESTERASE (ChE) ACTIVITIES IN THE RAT.** V.R. Jimmerson, D.M. Maxwell, Y. Hodge, K. Brecht and T.-M. Shih, USAMRICD, Aberdeen Proving Ground, MD
- #535 **ALTERED CALMODULIN KINASE II ACTIVITY IN BRAIN CYTOSOL OF CHICKENS TREATED WITH TRI-O-CRESYL PHOSPHATE (TOCP).** E. Suwita, D.M. Lapadula, and M.B. Abou-Donia. Duke University, Durham, N.C.
- #536 **CORRELATION BETWEEN PROLONGED INHIBITION OF NEUROTOXIC ESTERASE BY TPP AND TOCP AND THE RATE OF ABSORPTION AS MONITORED BY ³¹P-NUCLEAR MAGNETIC RESONANCE (NMR).** Clark D. Carrington, C. Tyler Burt, and Mohamed B. Abou-Donia. Duke University and NIEHS, Durham and RTP, N.C.
- #537 **SOLUBILIZATION AND CHROMATOGRAPHY OF NEUROPATHY TARGET ENZYME.** C.N. Pope* and S. Padillia, Neurotoxicology Div., U.S. EPA, RTP, NC. Sponsor: L. Reiter.
- #538 **SCREENING PESTICIDE PLANT WORKERS FOR ORGANO-PHOSPORUS INDUCED DELAYED NEURO-PATHY (OPIDN).** D.J. Svendsgaard, S.A. Soliman, A. Soffar and D.A. Otto. U.S. Environmental Protection Agency, Alexandria University, and Tanta University, Egypt.
- #539 **ATROPINE AND DFP-INDUCED DELAYED NEUROPATHY IN THE CHICKEN.** T.P. Kellner, J.D. Henderson, R.J. Higgins and B.W. Wilson. University of California, Davis, CA.
- #540 **EFFECT OF DIETARY TRIAMCINOLONE ON DEVELOPMENT OF ORGANOPHOSPHORUS-INDUCED DELAYED NEUROPATHY (OPIDN) IN CHICKENS.** M. Ehrich, B.S. Jortner and W.B. Gross, Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA
- #541 **IN VITRO SENSITIVITIES OF AVIAN NEURAL ESTERASES TO ORGANOPHOSPHORUS COMPOUNDS: A COMPARATIVE STUDY.** L. Correll and M. Ehrich, Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA
- #542 **DIMETHYL METHYLPHOSPHONATE (DMMP) NEUROTOXICITY IN HENS.** E.J. Olajos and H. Wall. Toxicology Div., CRDEC, U.S. Army, APG, MD and Comp. Path. BR., MRICD, U.S. Army, APG, MD.
- #543 **O-ETHYL-O'-(2-DIISOPROPYLAMINOETHYL) METHYLPHOSPHONITE (QL) NEUROTOXICITY IN PIGEONS.** E.J. Olajos and H. Wall. Toxicol. Div., CRDEC, U.S. Army, APG, MD and Comp. Path. Br., MRICD, U.S. Army, APG, MD
- #544 **THE EFFECT OF ROUTE OF ADMINISTRATION OF ORGANOPHOSPHATE DELAYED NEUROTOXINS IN YOUNG CHICKENS.** B.A. Olson and S.J. Bursian, Dept. Animal Science and Center for Environmental Toxicology, Michigan State University, East Lansing, MI. Sponsor: D. Polin

**WEDNESDAY MORNING, FEBRUARY 25
EXHIBIT HALL**

POSTER SESSION: ENDOCRINE TOXICOLOGY

Chairperson: M.J. Vodcnik, Medical College of Wisconsin, Milwaukee, WI

Displayed: 8:30 a.m.-11:30 a.m.

Attended: 10:00 a.m.-11:30 a.m.

- #545 **TESTICULAR TUBULE DEGENERATION AND ASPERMATOGENESIS INDUCED BY SaH 59-801 IN THE DOG: DECREASE IN SERUM FSH, LH AND TESTOSTERONE.** S. Roberts, C. Smith, H. Hartman, F. Robison, G. Niswender and R. Stoll. Dept. of Preclinical Safety Assessment, Sandoz Res. Instit., E. Hanover, NJ and Dept. of Physiol. and Biophys., Colorado State Univ., Ft. Collins, CO.
- #546 **PREVENTION OR DEXAMETHASONE-SUPPRESSED RAT TESTICULAR HEME, CYTOCHROME P-450, 17-HYDROXYLASE AND 17,20-LYASE BY HUMAN CHORIONIC GONADOTROPIN (HCG).** R.V. Reddy, C.A. Mebus and W.N. Piper. Dept. of Pharmacology, Univ. of Nebr. Med. Ctr. Omaha, NE.
- #547 **REPEATED DOSE EXPOSURE OF SALICYLAZOSULFAPYRIDINE TO RATS AND MICE.** F. Kari, R. Kutzman, M. Thompson, NIEHS/NTP Research Triangle Park, NC; and H. Esber, E.G. & G. Mason Research Institute, Worcester, MA.

- #548 **PATHOLOGY OF THE REPEATED DOSE TOXICITY OF SALICYLAZOSULFAPYRIDINE IN FISCHER-344 RATS.** C.A. Montgomery, F. Kari, F. Voelker, National Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, NC; K. Murthy, E.G. & G. Mason Research Institute, Worcester, MA. Sponsor: J.H. Mennear
- #549 **MODULATION OF ACETAMINOPHEN (AA) HEPATOTOXICITY IN RATS BY ENDOCRINE STATUS.** S.D. Ray, P.Y. Lee and S. Ji. College of Pharmacy, Rutgers University, Piscataway, NJ
- #550 **INHIBITION OF HEPATIC AND RENAL THYROXINE DEIODINASE BY IODINATED ISOMERS OF AMINO ACIDS.** J.P. Bercz, R. Bawa, and L.W. Condie, Health Effects Research Laboratory, U.S. EPA, Cincinnati, Ohio.
- #551 **THE EFFECT OF CHLORINE DIOXIDE ON IODINE UPTAKE AND ORGANIFICATION BY THYROID CELLS IN CULTURE.** R.M. Harrington¹, H.G. Shertzer², and J.P. Bercz¹. ¹Toxicology and Microbiology Division, HERL, U.S. EPA, Cincinnati, OH, ²Department of Environmental Health, University of Cincinnati, Cincinnati, Ohio
- #552 **THE EFFECTS OF IMMOBILIZATION ON THE SERUM MEASUREMENTS OF ALDOSTERONE, CORTICOSTERONE, ELECTROLYTES AND OSMOLALITY IN THE MALE RAT.**S.M. Clement, J.M. Killinger, R.P. Clement (Stauffer Chem. Co., Farmington, CT), D.W. Frank (Schering-Plough Corp., Lafayette, NJ), A.D. Notation (Quinnipiac Coll., Hamden, CT)
- #553 **CHRONOPHARMACOLOGY OF PHENYLBUTAZONE: INFLUENCE OF MELATONIN.** M.S.I. Dhani , N.A. Kerenyi, D.C. Holley, and G. Feuer. Palmer College of Chiropractic-West, Sunnyside, CA, U.S.A.; Banting Institute, University of Toronto, Ontario, Canada; Sunnybrook Medical Centre, Toronto, Ontario, Canada; and Department of Biological Sciences, San Jose State University, San Jose, CA, U.S.A.
- #554 **EFFECTS OF HEXACHLOROBENZENE ON CALCIUM HOMEOSTASIS AND BONE IN FISCHER 344 RATS.** J.E. Andrews,¹ K.D. Courtney,¹ and W.E. Donaldson². ¹U.S.E.P.A., Research Triangle Park, NC; ²Toxicology Program, N.C. State University, Raleigh, NC.
- #555 **ACTH-INDUCED ADRENAL ADENOMAS IN RATS TREATED WITH TRILOSTANE.** B.A. Mayes, R.J. Fabian, J.D. Frantz*, L. Rapp and H.P. Drobeck. Sterling-Winthrop Research Institute, Rensselaer, NY and *Rohm and Haas Co., Spring House, PA.
- #556 **INFLUENCE OF PROLACTIN ON THE PORPHYRIN OF THE HARDERIAN GLAND OF MICE.** T. Kajimura and A. Yamada. Drug Safety Research Center, Daiichi Seiyaku Co., Ltd., Tokyo, Japan. Sponsor: S. Takayama.

**WEDNESDAY MORNING, FEBRUARY 25
EXHIBIT HALL**

POSTER SESSION: REPRODUCTIVE TOXICOLOGY/TERATOLOGY II

Chairperson: J.C. Lamb, U.S. Environmental Protection Agency, Washington, DC

Displayed: 8:30 a.m.-11:30 a.m.

Attended: 8:30 a.m.-10:00 a.m.

- #557 **MODELING LACTATIONAL TRANSFER OF TRICHLOROETHYLENE (TCE) AND ITS METABOLITE, TRICHLOROACETIC ACID (TCA) IN THE RAT.** J.W. Fisher, M.E. Andersen, H.J. Clewell III, and D. Taylor*. Armstrong Aerospace Medical Research Laboratory, Wright-Patterson AFB, OH, *Miami University, Department of Zoology, Oxford, OH.
- #558 **CARBENDAZIM EFFECTS ON THE HYPOTHALAMIC-PITUITARY REPRODUCTIVE AXIS.** J.M. Goldman, R.L. Cooper, G. Rehnberg, J. Hein, W.K. McElroy, and L.E. Gray, Jr. Reproductive Tox Br/HERL/USEPA, RTP, NC. Sponsor: P.V. Shah
- #559 **DIRECT EFFECT OF HEAVY METAL IONS ON PITUITARY HORMONE SECRETION.** R.L. Cooper, J.M. Goldman, G.L. Rehnberg, W.K. McElroy and J.F. Hein. Repro Tox Br/HERL/USEPA, RTP, NC. Sponsor: P.V. Shah
- #560 **ENDOCRINE STATUS OF MALE RATS FOLLOWING EXPOSURE TO m-DINITROBENZENE (DNB).** G.L. Rehnberg, R. Linder, J.M. Goldman, J.F. Hein, W.K. McElroy, and R.L. Cooper. Reproductive Toxicology Branch, HERL/USEPA, RTP, NC. Sponsor: P.V. Shah
- #561 **DEVELOPMENTAL TOXICITY OF RHODAMINE 123 IN DROSOPHILA MELANOGASTER.** W.W. Zhang and R.D. Hood. Department of Biology, University of Alabama, Tuscaloosa, AL. Sponsor: R.S. Filler.
- #562 **APPLICATION OF POSTIMPLANTATION RODENT EMBRYO CULTURE SYSTEMS TO IDENTIFY PRENATAL TOXIC COMPONENTS OF HAZARDOUS WASTE SITES.** T. Rick Irvin, R. Roop and A. Akgerman, Lab. of Toxicology, Vet. Anatomy Dept (TR1) and Chem Eng Dept (RR,AA), Texas A&M, Coll Sta, TX Sponsor: A. Ray
- #563 **INTRACELLULAR GLUTATHIONE (GSH) STATUS AND THE ABILITY OF CHEMICALS TO ELICIT OPEN NEURAL TUBES (ONT) IN RAT EMBRYOS IN VITRO.** C. Harris, K.L. Stark, and M.R. Juchau. Dept. of Pharmacol., Sch. of Med., Univ. of Washington, Seattle, WA.
- #564 **CHICK EMBRYO RETINA CELL CULTURE AS AN IN VITRO TERATOGEN SCREEN.** G.P. Daston and J.E. Yonker. Procter & Gamble, Cincinnati, Ohio.
- #565 **IDENTIFICATION OF TOXIC COMPONENTS OF IVA ANGUSTIFOLIA VIA POSTIMPLANTATION RODENT EMBRYO CULTURE.** T. Rick Irvin, Michael Murphy, P.C. Mertes, J. Reagor, G.R. Bratton and A. Ray, Laboratory of Toxicology, Vet Anatomy Dept, Texas A&M and Texas Vet Diag Lab, Coll Sta, TX.
- #566 **EFFECT OF SEVERAL POTENT TESTICULAR TOXINS ON CO-CULTURES OF TESTICULAR CELLS.** C.D. Brown, M.J. Brabec. Reproductive Toxicology, Dept. of Chem., Eastern Mich. Univ., Ypsilanti, MI
- #567 **EFFECT OF ME AND MA ON RAT SERTOLI-GERM CELLS CO-CULTURE DNA SYNTHESIS IN VITRO.** S. Pavitranon and M.J. Brabec. Program in Toxicology, The U. of Michigan and the Reproductive Toxicology group, Dept. of Chem., Eastern Michigan U., Ypsilanti, MI.
- #568 **EFFECT OF MONO-(2-ETHYLHEXYL)PHTHALATE (MEHP) ON THE HORMONAL RESPONSIVENESS OF RAT SERTOLI CELLS IN VITRO.** P.M.D. Foster and S.C. Lloyd, Imperial Chemical Industries PLC, Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK. Sponsor: E.A. Lock
- #569 **LACTATE AND PYRUVATE PRODUCTION AS SPECIFIC INDICES OF ALTERED SERTOLI CELL FUNCTION IN VITRO AFTER THE ADDITION OF TESTICULAR TOXICANTS.** J. Williams**, D.C.H. McBrien* and P.M.D. Foster*, Imperial Chemical Industries PLC, Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK* and Brunel University, Uxbridge, Middlesex UK*. Sponsor: E.A. Lock
- #570 **COMPARISON OF IN VITRO AND IN VIVO MEASURES OF CADMIUM-INDUCED TESTICULAR DAMAGE IN THE RAT.** P.V. Phelps and J.W. Laskey. Reproductive Tox Br HERL/USEPA, RTP, NC. Sponsor: P.V. Shah

- #571 **DITHIOCARBAMATE INHIBITION OF CADMIUM-INDUCED CHANGES IN SPERMATOZOAN CHOLINE ACETYLTRANSFERASE.** S.G. Jones, M.M. Jones, Dept. of Chemistry and Center in Molecular Toxicology, Vanderbilt University, Nashville, TN, C. Dwivedi and S.S. Kumar, Dept. of Medical Genetics, Meharry Medical College, Nashville, TN and E.M. Walker, Jr., Dept. of Laboratory Services, J.L. McClellan Veterans Administration Medical Center, Little Rock, AR
- #572 **STRUCTURAL STABILITY OF SPERM NUCLEI ASSESSED ACROSS SPECIES BY FLOW CYTOMETRY & SPERM MICRO-INJECTION.** S.D. Perreault, R.R. Barbee, K.H. Elstein and R.M. Zucker. Repro Tox Br/HERL/USEPA & Northrop Ser Inc, RTP, NC. Sponsor: P.V. Shah
- #573 **EFFECTS OF HEPATIC INDUCERS ON TESTICULAR XENOBIOTIC METABOLISM IN RODENTS.** K.W. DiBiasio, M.H. Silva, B.D. Hammock, and L.R. Shull. Depts of Toxicology and Entomology, University of California, Davis, CA.
- #574 **NITROREDUCTION OF 1,3-DINITROBENZENE BY RAT TESTICULAR CELL CULTURES AND ITS RELATIONSHIP TO TARGET ORGAN TOXICITY.** P.M.D. Foster, S.C. Lloyd and M.S. Prout, Imperial Chemical Industries PLC, Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK. Sponsor: E.A. Lock
- #575 **EMBRYOTOXIC EFFECTS OF THE ARYL GLYCOL ETHER PHENOXY ETHANOL ARE AFFECTED BY INTRAUTERINE SIBLING CONTIGUITY IN LONG EVANS RATS.** R.F. MANKES and V. Renak. Department of Pharmacology and Toxicology, Albany Medical College, Albany, NY.
- #576 **TRANSFER OF DI(2-ETHYLHEXYL) PHTHALATE (DEHP) AND MONO(2-ETHYLHEXYL) PHTHALATE (MEHP) THROUGH RAT MILK AND EFFECTS OF DEHP ON MILK COMPOSITION AND MAMMARY GLAND IN LACTATING RATS.** L.A. Dostal, R.P. Weaver, W.L. Jenkins and B.A. Schwetz, National Toxicology Program, N.I.E.H.S., Research Triangle Park, NC.
- #577 **REPRODUCTIVE TOXICITY OF 3 PHTHALATE ESTERS IN CD-1 MICE.** D.K. Gulati*, Robin C. Mounce*, K.B. Poonacha*, and J.C. Lamb, IV*. *Environmental Health Research and Testing, Inc., Lexington, KY; and *National Toxicology Program, NIEHS, Research Triangle Park, NC.
- #578 **DEVELOPMENTAL TOXICITY OF 4-NITRO-N-METHYL-PHTHALIMIDE IN RATS.** S.L. Morseth and L. W. Smith. Hazleton Laboratories America, Vienna, VA and General Electric Company, Pittsfield, MA.
- #579 **SUBCHRONIC TOXICITY OF BUTYL BENZYL PHTHALATE AND MODIFIED MATING TRIALS IN MALE F-344 RATS.** E.J. Rauckman, M.R. Elwell, *R.H. Cardy, *M. Moore and *R. Filler. National Institutes of Environmental Health Sciences, Research Triangle Park, NC and *Hazleton Laboratories, Rockville, MD.
- #580 **POSTNATAL DEVELOPMENT AND REPRODUCTIVE PERFORMANCE OF FISCHER 344 RATS FOLLOWING MATERNAL EXPOSURE TO DIETHYLHEXYL PHTHALATE (DEHP).** C.J. Price, R.W. Tyl, M.C. Marr, B.M. Sadler, *C.A. Kimmel, and *R.E. Morrissey. Research Triangle Inst., Research Triangle Pk., NC; *NTP/Reproductive Effects Assessment Group, US-EPA, Washington, D.C. and *NTP, Research Triangle Pk., NC.
- #581 **FERTILITY EFFECTS OF ETHYLENE GLYCOL MONOMETHYL ETHER (EGME) IN THE MALE MOUSE.** A.R. Nikurs, D.P. Waller, and L.J.D. Zaneveld, University of Illinois at Chicago, and Rush-Presbyterian-St. Luke's Medical Centre, Chicago, IL.
- #582 **A FERTILITY AND GENERAL REPRODUCTIVE PERFORMANCE STUDY IN RATS WITH A TERATOLOGY PHASE ON DIETHYLENE GLYCOL.** D.E. Rodwell, R.A. Davis¹, E.J. Tasker and M.A. Friedman¹. WIL Research Laboratories, Inc., Ashland, OH. ¹American Cyanamid Company, Wayne, NJ.
- #583 **MALE REPRODUCTIVE TOXICITY OF 2-METHOXYETHANOL APPLIED DERMALLY TO OCCLUDED AND NON-OCCLUDED SITES.** M.H. Feuston, K.R. Bodnar, S.L. Kerstetter, and E.J. Singer. Mobil Oil Corporation, Princeton, NJ
- #584 **THE STRUCTURE ACTIVITY RELATIONSHIPS OF AZO DYES DERIVED FROM BENZIDINE (B), DIMETHYLBENZIDINE (DMB) OR DIMETHOXYBENZIDINE (DMOB) AND THEIR TERATOGENIC EFFECTS ON THE TESTES OF THE MOUSE.** J.S. Ostby, L.E. Gray, Jr., J.M. Ferrell, and K.L. Gray. Reproductive Toxicology Branch/HERL/USEPA, and NSI, RTP, NC. Sponsor: P.V. Shah
- #585 **REPRODUCTIVE TOXICITY OF CONCENTRATED TEA INFUSION IN MALE MICE.** W.W. Zhang and X.S. Huang. Toxicology Unit, Zhejiang Medical University, Hangzhou, Zhejiang, People's Republic of China. Sponsor: R.S. Filler.
- #586 **REPRODUCTIVE EFFECTS OF INHALED METHYL BROMIDE IN THE MALE F-344 RAT.** M.E. Hurtt and P.K. Working. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.
- #587 **EFFECTS OF REPEATED FENTANYL OR MORPHINE ADMINISTRATION ON RAT SPERMATOGENESIS AND TESTICULAR MORPHOLOGY.** S.J. Waters, T.C. Spaulding and D.E. Johnson*. Anaquest-BOC Health Care, Murray Hill, N.J. and International Research and Development Corporation*, Mattawan, MI.
- #588 **ROLE OF TESTICULAR TOXICITY IN THE INDUCTION OF PRE-IMPLANTATION LOSS IN F-344 RATS BY METHYL CHLORIDE.** G.J. Chellman, M.E. Hurtt, J.S. Bus, and P.K. Working. CIIT, Res. Triangle Park, NC.
- #589 **1,3-DINITROBENZENE (DNB): EFFECTS OF REPEATED ORAL DOSING ON THE RAT TESTIS.** D.M. Blackburn, J.E. Doe, M.C.E. Hodge. ICI, PLC, CTL, Macclesfield, Cheshire, UK. Sponsor: E.A. Lock
- #590 **1,3-DINITROBENZENE (DNB): EFFECTS ON FERTILITY IN THE RAT.** D.M. Blackburn, J.E. Doe, G.M. Milburn, G.A. de S. Wickramaratne. ICI PLC/CTL, Macclesfield, Cheshire, UK. Sponsor: E.A. Lock
- #591 **REPRODUCTIVE TOXICITY OF 1,3-DINITROBENZENE (m-DNB) IN YOUNG ADULT AND ADULT MALE RATS.** L.F. Strader¹, R.E. Linder², S.D. Perreault², and R.R. Barbee². Northrop Services Inc¹ and Reproductive Tox Br², HERL/USEPA, RTP, NC. Sponsor: P.V. Shah.

**WEDNESDAY MORNING, FEBRUARY 25
EXHIBIT HALL**

POSTER SESSION: AQUATIC/ENVIRONMENTAL TOXICOLOGY I

Chairperson: H. Zenick, U.S. Environmental Protection Agency, Washington, DC

Displayed: 8:30 a.m.-11:30 a.m.

Attended: 10:00 a.m.-11:30 a.m.

- #592 **INHIBITION OF SUPEROXIDE ANION RADICAL PRODUCTION IN STIMULATED PHAGOCYTTIC CELLS BY N-[2-(2-OXO-1-IMIDAZOLIDINYL)ETHYL]-N-PHENYLUREA.** M.A. Amoroso, G. Witz and E. Brennan. Dept. of Environmental and Community Medicine, UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ and Dept. of Plant Pathology, Rutgers University, New Brunswick, NJ.

- #593 **ABSENCE OF PATHOGENICITY FOR GENETICALLY ENGINEERED MICROBIAL PESTICIDES (GEMPS).** B.G. Hammond, L.S. Watrud, F.R. Johannsen, Monsanto Co., St. Louis, MO, J. Kinkler and D. Suchmann, Hazleton Labs, Vienna, VA.
- #594 **STUDIES ON THE MECHANISM OF HALOACETONITRILES ACUTE TOXICITY: ESTABLISHMENT OF TOXIC DOSES AND TARGET ORGANS OF TOXICITY IN RATS.** G.I. Hussein and A.E. Ahmed, Department of Pathology, The University of Texas Medical Branch, Galveston, TX.
- #595 **THE EFFECT OF PARAQUAT ON MICROSOMAL OXYGEN REDUCTION AND ANTIOXIDANT ENZYMES IN THE HEPATOPANCREAS OF TWO MID-ATLANTIC BIVALVE MOLLUSCS.** R.J. Wenning, R.T. DiGiulio. Ecotoxicology Laboratory, Duke University, Durham, NC. Sponsor: M.B. Abou-Donia
- #596 **MIXED FUNCTION OXIDASE ACTIVITY IN BROWN BULLHEAD FROM A CONTAMINATED NEUSE RIVER ESTUARY.** E. Gallagher and R.T. DiGiulio, Ecotoxicology Laboratory, Duke University, Durham, NC. Sponsor: M.B. Abou-Donia.
- #597 **HISTOPATHOLOGY AND EVALUATION OF THE REPRODUCTIVE STATUS OF SELENIUM-EXPOSED FRESHWATER FISH.** E.M.B. Sorensen and Peter Thomas. Department of Pharmacology/Toxicology, University of Texas, Austin, TX and Marine Science Institute, University of Texas, Port Aransas, TX.
- #598 **SELENIUM ACCUMULATION AND MORPHOLOGICAL CHANGES IN LIVERS OF ENVIRONMENTALLY-EXPOSED TELEOSTS.** E.M.B. Sorensen. College of Pharmacy, Department of Pharmacology/Toxicology, University of Texas, Austin, TX.
- #599 **COMPARATIVE CYTOTOXICITY OF AQUATIC POLLUTANTS TO BLUEGILL (BF-2) AND FATHEAD MINNOW (FHM) CELL LINES.** H. Babich. Rockefeller University, LARC, New York, NY. Sponsor: D.M. Stark
- #600 **DEVELOPMENT OF A FISH HEPATOCYTE MODEL FOR THE INVESTIGATION OF INTRACELLULAR METAL REGULATION.** S.M. Baksi, T.M. Vozar and J.M. Frazier. The Johns Hopkins University, Baltimore, MD.
- #601 **EFFECT OF PRETREATMENT OF RAINBOW TROUT, SALMO GAIRDNERI, WITH INDUCERS AND INHIBITORS OF P-450-DEPENDENT MONOOXYGENASES ON THE INVITRO BIOTRANSFORMATION OF ROTENONE.** D.A. Erickson, M.S. Goodrich, and J.J. Lech. Med. Coll. Wisc., Milwaukee, WI.
- #602 **THE EFFECT OF VARIOUS HEPATIC MONOOXYGENASE INDUCERS ON LEVELS OF mRNA IN RAINBOW TROUT (SALMO GAIRDNERI).** M.L. Haasch, K.M. Kleinow and J.J. Lech. Dept. Pharmacol. and Toxicol., Med. Coll. Wisc., Milwaukee, WI.
- #603 **HEPATOTOXICITY OF ACETAMINOPHEN IN THE BROWN BULLHEAD CATFISH (ICTALURUS NEBULOSUS).** J.A. Hampton and J.E. Klaunig. Department of Pathology, Medical College of Ohio, Toledo, OH
- #604 **COMPARATIVE STUDIES ON THE EFFECTS OF MERCURY ON BRAIN ATPases OF FISH AND RAT.** J.E. Uzodinma, S.R. Reddy, R.R. Jinna, and D. Desai. Dept. Biol., Jackson State Univ., Jackson, MS and Dept. Neurol., Univ. Miss. Med. Ctr., Jackson, MS.
- #605 **METABOLISM AND DNA-BINDING IN VIVO OF AFLATOXIN B>1 IN MEDAKA (ORYZIAS LATIPES).** C. Toledo¹, J. Hendricks², P. Loveland², and G. Bailey². ¹University of Campinas, Campinas, Brazil and ² Oregon State University, Corvallis, OR. Sponsor: D.R. Buhler.
- #606 **THE POSSIBLE ROLE OF THE LIVER RUDIMENT IN THE TOXICITY OF DIOXINS AND DIBENZOFURANS IN THE JAPANESE MEDAKA EMBRYO.** J. Wisk, K.R. Cooper, Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ.
- #607 **THE ROLE OF METABOLISM IN THE TOXICITY OF CCl>4 ON THE JAPANESE MEDAKA EMBRYO (ORYZIAS LATIPES).** J.D. Schell and K.R. Cooper, JGPT, Rutgers University, Piscataway, NJ
- #608 **PURIFICATION AND IMMUNOLOGICAL CHARACTERIZATION OF TWO HEPATIC CYTOCHROME P-450 ISOZYMES FROM UNTREATED RAINBOW TROUT.** C.L. Miranda, J.-L. Wang, D.E. Williams, M.C. Henderson and D.R. Buhler. Dept. of Agric. Chem. and MFB Center, Oregon State Univ., Corvallis, OR.
- #609 **REACTIVATION AND AGING OF RODENT AND FISH BRAIN ACETYLCHOLINESTERASE.** K.B. Wallace and U. Herzberg. Dept. of Pharmacol., Chem. Toxicol. Res. Ctr., Univ. of Minnesota, Duluth, MN. Sponsor: R.A. Roth.
- #610 **SULFADIMETHOXINE DISPOSITION IN THE LOBSTER, HOMARUS AMERICANUS.** M.O. James and M.G. Barron. Whitney Marine Research Laboratory of the University of Florida, St. Augustine, FL.
- #611 **SOIL ADSORPTION ALTERS BIOAVAILABILITY OF TOLUENE IN ORALLY EXPOSED MALE RATS.** R.M. Turkall, S. Gerges, G. Skowronski, S. VonHagen, M.S. Abdel-Rahman, Pharmacology Dept., NJ Medical School, Newark, NJ.
- #612 **STRUCTURE/TOXICITY RELATIONSHIP OF THE DEHYDROAMINO ACID FROM A CYCLIC PEPTIDE HEPATOTOXIN PRODUCED BY BLUE-GREEN ALGAE.** A.M. Dahlem¹, K.-I. Harada², C.A. Harvis², K.L. Rinehart, Jr², M.H.G. Munro³, J.W. Blunt³, P.E. Mulligan³, and V.R. Beasley¹. University of Illinois, Departments of Veterinary Biosciences¹ and Chemistry², Urbana, IL; University of Canterbury, Department of Chemistry,³ Christchurch, New Zealand. Sponsor: W.W. Hasc
- #613 **ALTERATIONS IN PLANT DEVELOPMENT BY BENZO(A)PYRENE.** V.J. Forrest, J.L. Caruso, T.E. Cody, V.C. Pence and D. Warshawsky. University of Cincinnati, Cincinnati, OH. Sponsor: E.J. O'Flaherty
- #614 **RADON DECAY PRODUCTS: POLONIUM-210 DECORPORATION BY DMPA.** H.V. Aposhian, Mary M. Aposhian and R.C. Dart. University of Arizona, Tucson, AZ.
- #615 **DECONTAMINATION STRATEGIES FOR HEPTACHLOR CONTAMINATED LIVESTOCK.** M.F. Raisbeck, G.E. Rottinghaus, F.T. Satalowich. University of Missouri College of Veterinary Medicine, Columbia, MO. and Missouri Dept. Health, Jefferson City, MO.

WEDNESDAY AFTERNOON, FEBRUARY 25

1:30 p.m.-5:00 p.m.

International Ballroom West

SYMPOSIUM: TOXICOLOGICAL CONSIDERATIONS IN PULMONARY CARCINOGENESIS

Sponsored by SOT Inhalation Specialty Section

Chairperson: H.A. MacFarland, Victoria, Canada

Lung Tumors in Rats Exposed to Particles. R.O. McClellan, Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM

Lung Tumors in Mice: Their Significance in Toxicology. H. Witschi, Oak Ridge National Laboratory, Oak Ridge, TN

Molecular Mechanisms of Pulmonary Carcinogenesis. M.V. Anderson, National Institute of Environmental Health Sciences, Research Triangle Park, NC

Cellular Mechanisms of Pulmonary Carcinogenesis. D.G. Thomassen, Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM

WEDNESDAY AFTERNOON, FEBRUARY 25

1:30 p.m.-5:00 p.m.

International Ballroom East

SYMPOSIUM: THE USE OF THE FERRET AS AN ANIMAL MODEL IN PRE-CLINICAL SAFETY STUDIES AND BIOMEDICAL RESEARCH

Chairpersons: Y. Greener, Travenol Laboratories, Inc., Round Lake, IL; R.M. Hoar, Argus International, Horsham, PA

Introduction. Y. Greener, Travenol Laboratories, Inc., Round Lake, IL

Ferretology: Application in Pre-Clinical Safety Studies. D.E. McLain, Travenol Laboratories, Inc., Round Lake, IL

The Ferret as an Experimental Animal in Teratology. R.M. Hoar, Argus International, Horsham, PA

Intercurrent Disease in Ferret: Impact on Toxicological Research. J.G. Fox, Massachusetts Institute of Technology, Cambridge, MA

Species Selection for Pre-Clinical Safety Evaluation of Pharmaceuticals. W.M. Galbraith, Linz Institute, Washington, DC

WEDNESDAY AFTERNOON, FEBRUARY 25

1:30 p.m.-5 p.m.

JEFFERSON ROOM WEST

PLATFORM SESSION: AQUATIC/ENVIRONMENTAL TOXICOLOGY II

Chairpersons: J.J. Lech, Medical College of Wisconsin, Milwaukee, WI
W.H. Benson, Northeast Louisiana University, Monroe, LA

- #75 1:30 **NITROAROMATIC CATALYSIS OF SUPEROXIDE GENERATION IN THREE SPECIES OF FRESHWATER FISH.** P.C. Washburn, R.T. DiGiulio, Ecotoxicology Laboratory, Duke University, Durham, NC. Sponsor: M.B. Abou-Donia
- #76 1:45 **IN VIVO AND IN VITRO EFFECTS OF THE COTTON DEFOLIANT DEF ON CATFISH ACETYLCHOLINESTERASE.** C. Habig, Ecotoxicology Laboratory, Duke University, Durham, NC. Sponsor: M.B. Abou-Donia
- #77 2:00 **EFFECT OF SODIUM PENTACHLOROPHENATE ON FEEDING ENERGETICS IN THE CATFISH HETEROPNEUSTES FOSSILIS (BLOCH).** G. Belliyappa and S.R. Reddy. Department of Zoology, Bangalore University, Bangalore and Dept. Neurol., Univ. Miss. Med. Ctr., Jackson, MS. Sponsor: D. Desaiiah
- #78 2:15 **IMPACT OF A PAPER MILL WASTE DISCHARGE ON AN AQUATIC ECOSYSTEM.** W.H. Benson, R.A. Stackhouse, C.F. Watson, and K.N. Baer. Division of Pharmacology and Toxicology, School of Pharmacy, Northeast Louisiana University, Monroe, LA.
- #79 2:30 **SUBCHRONIC TOXICITY STUDY OF 1,4-DITHIANE IN THE CD RAT.** G.J. Schieferstein, G.Reddy, W.G. Sheldon, and S.A. Cantrell. National Center for Toxicological Research, Jefferson, AR, US Army Medical Bioengineering R&D Laboratory, Fort Detrick, Frederick, MD
- #80 2:45 **PHARMACOKINETICS OF SULFADIMETHOXINE IN FREE SWIMMING RAINBOW TROUT.** K.M. Kleinow, W.L. Beifuss, and J.J. Lech. Medical College of Wisconsin, Milwaukee, WI.
- #81 3:00 **TRICHLOROACETATE EFFECTS ON LACTATE AND GLUCOSE METABOLISM.** M.E. Davis, West Virginia Univ. Med. Ctr, Morgantown, WV.

WEDNESDAY AFTERNOON, FEBRUARY 25

1:30 p.m.-5 p.m.

LINCOLN ROOM WEST

PLATFORM SESSION: BIOTRANSFORMATION ENZYMES I

Chairpersons: J.R. Halpert, University of Arizona, Tucson, AZ
M. Vore, University of Kentucky, Lexington, KY

- #82 1:30 **REGULATION OF RAT LIVER MICROSOMAL CYTOCHROME P-450_p AND UDP-GLUCURONOSYL-TRANSFERASE.** A.J. Sonderfan, M.P. Arlotto and A. Parkinson. Kansas University Medical Center, Kansas City, Kansas.
- #83 1:45 **PURIFICATION OF RAT LIVER MICROSOMAL CYTOCHROME P-450_b WITHOUT THE USE OF NON-IONIC DETERGENT.** D.R. Dutton, M.P. Arlotto and A. Parkinson. Kansas Univ. Medical Center, Kansas City, Kansas.
- #84 2:00 **CHARACTERIZATION OF THE DOG HEPATIC CYTOCHROME P-450 ISOZYME RESPONSIBLE FOR THE METABOLISM OF 2,2',4,4',5,5'-HEXACHLOROBIPHENYL.** D.B. Duignan, I.G. Sipes, T.B. Leonard, and J.R. Halpert, Dept. of Pharmacology and Toxicology, University of Arizona, Tucson, AZ, and Smith, Kline & French Labs., Philadelphia, PA
- #85 2:15 **MECHANISM-BASED INACTIVATION OF CYTOCHROME P-450 ISOZYMES BY ANALOGS OF CHLORAMPHENICOL.** N. Miller, C. Balfour, and J. Halpert, Department of Pharmacology and Toxicology, College of Pharmacy, University of Arizona, Tucson, AZ
- #86 2:30 **INDUCTION OF MICROSOMAL CHOLESTEROL EPOXIDE HYDROLASE BY CLOFIBRATE.** B.L. Finley and B.D. Hammock. Dept. of Entomology, University of California, Davis, CA.

- #87 2:45 **INVESTIGATIONS INTO THE ROLE OF CYTOCHROME P-450 INDUCTION AND GLUTATHIONE DEPLETION IN THE DIFFERENTIAL HEPATOTOXICITY OF THE ISOMERS OF DICHLOROBENZENE.** E.R. Stine and I.G. Sipes, Dept. of Pharmacology and Toxicology, University of Arizona, Tucson, AZ
- #88 3:00 **TEMPERATURE ACCLIMATION (TA) OF RAINBOW TROUT MARKEDLY ALTERED ARYL HYDROCARBON HYDROXYLASE (AHH) KINETICS BUT SLIGHTLY ALTERED CYTOCHROMES p-450.** L.R. Curtis, H.M. Carpenter, L.K. Siddens, D.E. Williams and D.R. Buhler. Oak Creek Lab of Biology and the Marine and Freshwater Biomedical CTR., Oregon State Univ., Corvallis, OR.
- #89 3:15 **THE KINETICS AND MECHANISMS OF ISOCYANIDE BINDING TO PURIFIED RAT LIVER CYTOCHROME P-450.** W.D. McGuinn and E. Hodgson. Toxicology Program, N.C. State Univ., Raleigh, NC
- #90 3:30 **IN VIVO AND IN VITRO INTERACTION OF METHACRYLONITRILE WITH GLUTATHIONE.** W.W. Day, M.Y.H. Farooqui, R. Cavazos and E. Rodriguez Jr. Dept. of Biology, Pan American University, Edinburg, TX. Sponsor: G.A.S. Ansari.

**WEDNESDAY AFTERNOON, FEBRUARY 25
EXHIBIT HALL**

POSTER SESSION: NEUROTOXICOLOGY IV: NEUROCHEMISTRY

Chairperson: J. O'Donoghue, Eastman Kodak Co., Rochester, NY

Displayed: 1:30 p.m.-4:30 p.m.

Attended: 1:30 p.m.-3:00 p.m.

- #616 **EFFECTS OF ACRYLAMIDE AND 2,5-HEXANEDIONE ON MITOCHONDRIAL RESPIRATION.** C. Medrano and R.M. LoPachin. University of Houston, College of Pharmacy, Houston, TX.
- #617 **LEAD-INDUCED ALTERATIONS IN ENERGY METABOLISM IN ISOLATED RAT RETINA.** D.A. Fox and S.D. Rubinstein. College of Optometry, University of Houston, Houston, TX.
- #618 **ENHANCED NEUROTOXICITY OF 1-METHYL-4-PHENYL-1,2,3,6-TETRAHYDROPYRIDINE (MPTP) IN C57B1 MICE BY PRE-TREATMENT WITH DIETHYLDITHIOCARBAMIC ACID (DDC).** D.B. Miller, J.P. O'Callaghan, and J.F. Reinhard.¹ U.S. Environmental Protection Agency, RTP, NC and ¹The Wellcome Research Laboratories, RTP, NC
- #619 **ACUTE ADMINISTRATION OF TRIBUTYL TIN OXIDE (TBTO) TO THE DEVELOPING RAT ALTERS MORPHOLOGICAL AND BIOCHEMICAL INDICATORS OF NEUROTOXICITY.** J.P. O'Callaghan and D.B. Miller. Neurotoxicology and Experimental Biology Divisions, U.S. EPA, Health Effects Res. Lab., Res. Triangle Park, NC
- #620 **PRECONVULSANT AND ANTICONVULSANT MEMBRANE FLUIDITY EFFECTS.** C. LeBel, M. Gill and R. Schatz. Toxicology Program, Northeastern University, Boston, MA.
- #621 **THE EFFECTS OF L-METHIONINE-d,1-SULFOXIMINE ON CEREBRAL SULFUR CONTAINING COMPOUNDS.** T. Aucoin, and R. Schatz. Toxicology Program, Northeastern University, Boston, MA
- #622 **EFFECT OF CHLORDECON ON MATURING RAT BRAIN ATPases.** R.R. Jinna, J.E. Uzodinma and D. Desai. Dept. Biol., Jackson State Univ., Jackson, MS. and Dept. Neurol., Univ. Miss. Med. Ctr., Jackson, MS.
- #623 **DIMINISHED DOPAMINERGIC PRESYNAPTIC RECEPTOR FUNCTION IN RAT CNS AFTER CHRONIC LEAD.** S.M. Lasley and J.D. Lane. Dept. Basic Sci., U. of Ill. Coll. of Med., Peoria, IL & Dept. Pharmacol. Texas Coll. Osteopath. Med., Ft. Worth, TX. Sponsor: J.G. Pounds.
- #624 **METHYLMERCURY (MeHg) INDUCED DOPAMINE RELEASE FROM SUPERFUSED RAT STRIATAL SYNAPTOSOMES.** D.J. Minnema, Dept. Envir. Hlth., U. Cinti., Cincinnati, OH. Sponsor: E.J. O'Flaherty
- #625 **PYRETHROIDS AND THE STRIATAL DOPAMINERGIC SYSTEM IN VIVO.** J.D. Doherty¹, N. Morii², K. Nishimura², N. Kurihara², and T. Fujita² ¹HED (TS-769) EPA, Washington, D.C. and ² Kyoto University, Kyoto JAPAN.
- #626 **BIOGENIC AMINE ALTERATIONS IN DIFFERENT BRAIN REGIONS OF MICE EXPOSED TO BENZO(a)PYRENE.** S. Jayasekara, D.B. Drown and R.P. Sharma. Center for Environmental Toxicology, Utah State University, Logan, UT.
- #627 **EFFECTS OF DIETARY COPPER ON CADMIUM, SELENIUM, COPPER, ZINC, CALCIUM AND IRON IN THE EYE OF CADMIUM-TREATED RATS.** I.S. Jamall and H. Roque, St. John's University, Jamaica, NY
- #628 **EFFECTS OF DIETARY SELENIUM ON SELENIUM, CADMIUM, COPPER, ZINC, CALCIUM AND IRON IN THE EYE OF CADMIUM-TREATED RATS.** I.S. Jamall, Toxicology Program, St. John's University, Jamaica, NY.
- #629 **IMAGING MANGANESE IN THE PRIMATE BRAIN WITH MAGNETIC RESONANCE.** M.C. Newland, J.H. Kordower, T.L. Ceckler and B. Weiss. University of Rochester School of Medicine and Dentistry, Rochester, NY
- #630 **BISMUTH ACCUMULATION IN MAMMAL BRAIN TISSUE.** J.F. Powers, S.A. Heitmeyer and D. Caudill. The Procter & Gamble Co., Miami Valley Research Laboratories, Cincinnati, OH. Sponsor: G.P. Daston.
- #631A **CYSTEINE AND GLUTATHIONE ENHANCE METHYLMERCURY UPTAKE BY THE BRAIN.** M. Aschner, and T.W. Clarkson. Division of Toxicology, School of Medicine and Dentistry, University of Rochester, Rochester, NY

**WEDNESDAY AFTERNOON, FEBRUARY 25
EXHIBIT HALL**

POSTER SESSION: HALOGENATED HYDROCARBONS I

Chairperson: M.W. Sauerhoff, Stauffer Chemical Co., Farmington, CT

Displayed: 1:30 p.m.-4:30 p.m.

Attended: 3:00 p.m.-4:30 p.m.

- #631B **CLEARANCE OF 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD) FROM BODY FAT OF RHESUS MONKEYS FOLLOWING CHRONIC EXPOSURE.** R.E. Bowman, S.L. Schantz, N.C.A. Weerasinghe, J. Meehan, J. Pan, M.L. Gross, K.M. Boehm, J.P. Van Miller, and P.G. Welling. Harlow Primate Laboratory, University of Wisconsin, Madison WI and Chemistry Department, University of Nebraska, Lincoln NE. Sponsor: R.E. Peterson

- #632 **EFFECT OF TCDD ON THE HEPATIC AND TESTICULAR DISTRIBUTION OF IRON, ZINC AND COPPER IN RATS.** Z.Z. Wahba, Z.A.F. Al-Bayati and S.J. Stohs. Dept. of Pharmaceutical Sciences, University of Nebraska Medical Center, Omaha, NE.
- #633 **STERIOD UDP-GLUCURONYL TRANSFERASE (UDPGT) ACTIVITY AND ANTIESTROGENIC EFFECTS IN TCDD TREATED GUINEA PIGS AND HAMSTERS.** T.H. Umbreit, D. Engels, E.J. Hesse, and M.A. Gallo. UMDNJ/Robt. W. Johnson Medical School, Piscataway, NJ.
- #634 **DIOXIN SUPPRESSION OF ESTROGEN REGULATED PLASMINOGEN ACTIVATOR ACTIVITY OF MCF-7 BREAST CANCER CELLS.** J.F. Gierthy, H.W. Dickerman, J.I. Seeger, D.W. Lincoln, H. Martinez, and S.A. Kumar. Wadsworth Center for Laboratories and Research, NY State Dept. of Health, Albany, NY. Sponsor: L.S. Kaminsky
- #635 **RESOLUTION OF 2,3,7,8-TCDD IN AN ENVIRONMENTAL SAMPLE USING GENETICALLY SENSITIVE MICE.** J.B. Silkworth, L. Antrim, D. Houston, C. Tumasonis, and L.S. Kaminsky. Wadsworth Center for Laboratories and Research. New York State Department of Health, Albany, NY.
- #636 **ADDITIVE TERATOGENIC EFFECTS OF POLYCHLORINATED DIBENZOFURANS (PCDFS).** L.S. Birnbaum, M.W. Harris, and R. Morrissey. Systemic Toxicology Branch, NIEHS, Research Triangle Park, NC.
- #637 **2,3,4,7,8-PENTACHLORODIBENZOFURAN (PCDF): TOXICOKINETICS AND METABOLISM IN THE RAT.** D.W. Brewster and L.S. Birnbaum. NIEHS, Research Triangle Park, NC.
- #638 **TOXICITY AND DISPOSITION OF 2,3,4,7,8-PENTACHLORODIBENZOFURAN (PCDF) IN THE RHESUS MONKEY.** D.W. Brewster and L.S. Birnbaum. NIEHS, Research Triangle Park, NC.
- #639 **AROCFLOR 1254 AS A 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN ANTAGONIST IN C57BL/6J AND DBA/2J MICE - EFFECTS ON ENZYME INDUCTION AND THYMIC ATROPHY.** R. Bannister and S. Safe. Veterinary Physiology and Pharmacology, Texas A&M University, College Station, TX.
- #640 **4-METHYL-1,3,8-TRICHLORODIBENZOFURAN (MCDF) AS A 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD) ANTAGONIST IN RATS - AHH INDUCTION.** B. Astroff and S. Safe, Veterinary Physiology and Pharmacology, Texas A&M University, College Station, TX.
- #641 **INDUCTION OF THE HEPATIC MONOOXYGENASE SYSTEM BY 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (TCDD) AT DOSES ASSOCIATED WITH ACUTE TOXICITY.** E.S. Shen, S. I. Gutman and J.R. Olson, Depts. of Pharmacol. and Pathol., SUNY, Buffalo, NY.
- #642 **TOXICITY OF POLYCHLORINATED DIBENZO-p-DIOXINS AND RELATED COMPOUNDS IN GUINEA PIGS - STRUCTURE-ACTIVITY RELATIONSHIPS.** M. Holcomb, C. Yao and S. Safe, Veterinary Physiology and Pharmacology, Texas A & M University, College Station, TX.
- #643 **ARYL HYDROCARBON HYDROXYLASE (AHH), ETHOXYRESORUFIN O-DEETHYLASE (EROD), AND CYTOCHROME P-450 (cP-450) IN THE GUINEA PIG AND HAMSTER IN RESPONSE TO TCDD TREATMENT.** T.H. Umbreit, E.J. Hesse, and M.A. Gallo. UMDNJ/Robt. W. Johnson Medical School, Piscataway, NJ.
- #644 **BIOLOGIC AND TOXIC EFFECTS OF POLYBROMINATED DIBENZO-p-DIOXINS AND RELATED COMPOUNDS.** G. Mason, T. Zacharewski, M.A. Denomme, L. Safe and S. Safe, Veterinary Physiology and Pharmacology, Texas A&M University, College Station, TX; Chemistry and Biochemistry, University of Guelph, Guelph, Ontario, Canada.
- #645 **EVALUATION OF SUBCHRONIC EXPOSURE TO OCTACHLORODIBENZODIOXIN (OCDD).** L.A. Couture and L.S. Birnbaum. NIEHS, Research Triangle Park, NC.
- #646 **ROLE OF THE Ah RECEPTOR IN THE DOWN REGULATION OF UTERINE AND HEPATIC ESTROGEN RECEPTOR LEVELS IN RATS.** M. Romkes, J. Piskorska-Pliszczynska and S. Safe, Veterinary Physiology and Pharmacology, Texas A&M University, College Station, TX.
- #647 **LONG-TERM KINETICS OF THE Ah RECEPTOR IN HAMSTERS ADMINISTERED ³H-2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD).** T.A. Gasiewicz and G. Rucci, Division of Toxicology, University of Rochester, Rochester, NY.
- #648 **THE ROLE OF THE Ah RECEPTOR IN HEXACHLOROBENZENE (HCB) PORPHYRIA: STUDIES IN CONGENIC C57BL/6 MICE.** M.E. Hahn, T.A. Gasiewicz, P. Linko*, and J.A. Goldstein*. Division of Toxicology, University of Rochester, Rochester NY; and NIEHS, Research Triangle Park, NC.
- #649 **PHYSICO-CHEMICAL PROPERTIES OF THE HUMAN AND RODENT Ah RECEPTOR.** J.C. Cook and W.F. Greenlee. Chemical Industry Institute of Toxicology. Research Triangle Park, NC
- #650 **2-SUBSTITUTED-3,7,8-TRICHLORODIBENZO-p-DIOXINS AS LIGANDS FOR THE Ah RECEPTOR AND IN VIVO EFFECTS.** M. Romkes, S. Safe, G. Mason, J. Piskorska-Pliszczynska and T. Fujita, Veterinary Physiology and Pharmacology, Texas A&M University, College Station, TX; Department of Agricultural Chemistry, Kyoto University, Kyoto, Japan.
- #651 **[³H]-2,3,7,8-TETRACHLORODIBENZOFURAN (TCDF) - SYNTHESIS AND CHARACTERIZATION AS A RADIOLIGAND FOR THE Ah RECEPTOR.** K. Farrell, L. Safe and S. Safe, Veterinary Physiology and Pharmacology, Texas A&M University, College Station, TX.

WEDNESDAY AFTERNOON, FEBRUARY 25

EXHIBIT HALL

POSTER SESSION: MOLECULAR/CELLULAR TOXICOLOGY II

Chairperson: W.R. Hewitt, Smith Kline & French Labs, Philadelphia, PA

Displayed: 1:30 p.m.-4:30 p.m.

Attended: 1:30 p.m.-3:00 p.m.

- #652 **QUANTITATION OF GAP JUNCTIONS IN NORMAL LIVERS AND CHEMICALLY-INDUCED HEPATIC NODULES OF RATS.** M.G. Evans, Dept. of Pathology, Michigan State University, E. Lansing, MI. Sponsor: S.D. Sleight
- #653 **APPLICATION OF THE 'FRAP' ASSAY TO MEASURE INHIBITION OF INTERCELLULAR COMMUNICATION BY 2,2',4,4',5,5'-HEXABROMOBIPHENYL IN WB CELLS.** M.G. Evans, J.E. Trosko. Depts. of Pathology and Pediatrics/Human Development, Michigan State University, E. Lansing, MI.
- #654 **DOSE-DEPENDENT INHIBITION OF METABOLIC COOPERATION IN RAT EPITHELIAL (WB-F344) CELLS BY HEPATIC TUMOR PROMOTER 2,2',4,4',5,5'-HEXABROMOBIPHENYL.** M.G. Evans and J.E. Trosko. Depts. of Pathology and Pediatrics/Human Development, Michigan State University, E. Lansing, MI.

- #655 **EVALUATION OF VOLATILE AND NONVOLATILE CARCINOGENS ON THE V79 METABOLIC COOPERATION ASSAY.** E. Elmore, M. Lewis-Borden, D. Murphy and G. Wyatt. Northrop Services Inc., Research Triangle Park, NC
- #656 **INDUCTION OF HEPATIC PEROXISOME PROLIFERATION IN MALE B>6C>3F>1 MICE FOLLOWING HIGH FAT DIETARY EXPOSURE.** P.J. Schafer, J.E. Klaunig and J.A. Hampton. Department of Pathology, Medical College of Ohio, Toledo, OH
- #657 **PEROXISOME PROLIFERATION INDUCED BY THE URICOSURIC DRUG BENZBROMARONE.** E.G. Butler, T. Ichida, H. Maruyama, P. Vic and G.M. Williams. American Health Foundation, Valhalla, NY.
- #658 **COMPARATIVE EFFECTS OF THE PEROXISOMAL PROLIFERATING AGENTS, DI(2-ETHYLHEXYL)PHTHALATE (DEHP) AND WY-14,643 (WY) IN RAT LIVER.** D.S.Marsman, R.C. Cattley, and J.A. Popp, Chemical Industry Institute of Toxicology, Research Triangle Park, NC Sponsor: J.E. Gibson
- #659 **EFFECT OF DIETARY CLOFIBRATE ON HYDROLYTIC ENZYMES.** M-B.A. Ashour, B.L. Finley, D.E. Moody, and B.D. Hammock. Departments of Entomology and Environmental Toxicology, University of California, Davis, CA.
- #660 **THE EFFECT OF PHENOBARBITAL PRETREATMENT AND OXYGEN CONCENTRATION ON MENADIONE TOXICITY IN ISOLATED RAT HEPATOCYTES.** W.S. Utley and H.M. Mehendale. Dept. of Pharmacol and Toxicol, Univ. Miss. Medical Center, Jackson, MS.
- #661 **LIPID PEROXIDATION AND CELLULAR DAMAGE CAUSED BY THE PYRROLIZIDINE ALKALOID SENECTIONINE, THE ALKENAL TRANS-4-OH-2-HEXENAL, AND RELATED ALKENALS.** D.S. Griffin and H.J. Segall. VM/Pharmacology and Toxicology, University of California, Davis, CA
- #662 **ALTERATION OF PROSTAGLANDIN FORMATION BY THE DIRECT ADDITION OF DOXORUBICIN.** M.A. Valentovic and C. Elliott. Dept. of Pharmacology, Marshall U. School of Med., Huntington, WV Sponsor: G.O. Rankin
- #663 **PARAQUAT-INDUCED CYTOSKELETAL INJURY IN CULTURED LUNG EPITHELIAL CELLS.** Wande Li¹, Yinzhi Zhao¹, and I.N. Chou². Dept. of Pathol., North China Coal Medical College, Tangshan, PRC and ²Dept. of Microbiol., Boston University School of Medicine, Boston, MA. Sponsor: A.E. Rogers
- #664 **ASSESSMENT OF MALONDIALDEHYDE (MDA) FORMATION INDUCED BY IRON-BLEOMYCIN COMPLEXES IN ISOLATED SPERMATOGENIC CELLS.** M.P. Angioli, K.Ramos, I.Y. Rosenblum. Philadelphia College of Pharmacy and Science, Philadelphia, PA.
- #665 **CYANIDE AND PEROXIDATION OF BRAIN LIPIDS.** J.D. Johnson, W.G. Conroy, and G.E. Isom. Dept. Pharmacol. Toxicol., Sch. of Pharmacy & Pharmacol Sci., Purdue Univ., West Lafayette, IN.
- #666 **EFFECT OF SILICA (SI) ON SUPEROXIDE ANION (O>2-) PRODUCTION IN GUINEA PIG ALVEOLAR MACROPHAGES (AM).** P.L. Roney Jr., and A. Holian. University Texas School of Public Health, Houston, Texas. Sponsor: E.J. Fairchild, II.
- #667 **ABSENCE OF ROLES FOR OXIDATIVE STRESS AND LIPID PEROXIDATION IN MPTP-INDUCED CYTOTOXICITY.** M.S. Sandy, D. Di Monte, G. Ekstrom and M.T. Smith. School of Public Health, University of California, Berkeley, CA.
- #668 **MISONIDAZOLE-INDUCED DNA DAMAGE IN HYPOXIC AND NORMALLY AERATED TUMOR CELLS.** L.C. Totman and K.A. Kennedy. George Washington University Medical Center, Washington, D.C. Sponsor: P. Mazel
- #669 **INDUCTION OF OXYGEN TOLERANCE IN MICE.** N.C. Margaretten, and H.P. Witschi. Oak Ridge National Laboratory, Biology Division, Oak Ridge, TN
- #670 **METABOLISM OF METHOTREXATE IN HEPATIC CELLS.** C. Kruger-McDermott, M. Rhee and J. Galivan. N.Y.S. Health Labs, Albany, NY. Sponsor: L.S. Kaminsky
- #671 **HISTONE PHOSPHORYLATION DURING DIFFERENTIATION OF HUMAN PROMYELOCYTIC LEUKEMIA HL-60 CELLS INDUCED BY A PHORBOL DIESTER.** D.G. DeBordand C.S. Baxter. Univ. of Cincinnati Coll. of Med. Cincinnati, OH.
- #672 **PURIFICATION AND CHARACTERIZATION OF CYTOSOLIC EPOXIDE HYDROLASE FROM HUMAN PLACENTA.** R.N. Wixtrom, M.H. Silva and B.D. Hammock. Depts. of Entomology & Environmental Toxicology, University of California, Davis, CA.
- #673 **HUMAN LYMPHOCYTES AS A MODEL FOR SULFUR MUSTARD TOXICITY.** H.L. Meier, C.T. Lusco, C.L. Gross, L.M. Graham, R.C. Krebs, and J.B. Johnson. USAMRICD, APG, MD. Sponsor: W. Sultan
- #674 **MODULATION OF GTP-RESPONSIVE ADENYLATE CYCLASE (AC) IN ISOLATED MALE GERM CELLS (MGC) BY PROMOTIONAL AGENTS.** L. Beebe and D.A. Barsotti, Philadelphia College of Pharmacy and Science, Dept. of Pharmacology and Toxicology, Phila, PA.
- #675 **PHENOTYPIC MODULATION OF AORTIC SMOOTH MUSCLE CELLS IN CULTURE.** L.R Cox, S.K. Murphy*, and K. Ramos. Dept. of Pharmacology and Toxicology and *Dept. of Biological Sciences, Philadelphia College of Pharmacy and Science, Philadelphia, PA.
- #676 **ORGAN DIFFERENCES IN STIMULATION OF MICROSOMAL NADPH OXIDATION BY BIPYRIDYL HERBICIDES.** L. Zychlinski, P. Raska-Ernery, and M.R. Montgomery. Univ. of South Florida, Coll. of Public Health and VA Hospital Research Service, Tampa, FL
- #677 **EFFECT OF TRIMETHYLTIN (TMT) ON RAT HEPATIC GLUTATHIONE TRANSFERASE ACTIVITY IN VIVO AND IN VITRO.** J. C. Lipscomb, J.E.A. Leakey, J. Bazare, Jr., P. Webb, W.Slikker, Jr., U of Ark for Med Science, Little Rock, AR and National Center for Toxicological Research, Jefferson, AR.
- #678 **INDUCTION OF CHOLESTEROL SYNTHESIS IN PRIMARY CULTURES OF RAT HEPATOCYTES BY NONGENOTOXIC ENVIRONMENTAL CONTAMINANTS.** T.V. Reddy, L.W. Chang, and A.B. DeAngelo, U.S. EPA Health Effect Research Laboratory, Cincinnati, OH.
- #679 **VITAMIN E SUCCINATE PROTECTS HEPATOCYTES FROM CHEMICAL TOXICITY.** M.W. FARISS. Environmental Toxicology, Department of Pathology, Medical College of Virginia/Virginia Commonwealth University, Richmond, VA
- #680 **INFLUENCE OF DIETHYL MALEATE ON GLUTATHIONE METABOLISM IN RATS PRETREATED WITH HIPPURIC ACID.** C. McGowan. Food Science and Human Nutrition Department, University of Florida, Gainesville, FL.
- #681 **IN VITRO INACTIVATION OF PLASMA >1-PROTEINASE INHIBITOR BY EPOXIDES AND 1,2-DIHALOETHANES.** G.A.S. Ansari, Jose C. Gan and Brian K. Barton, Division of Biochemistry, The University of Texas Medical Branch, Galveston, TX.
- #682 **SUBCELLULAR LOCALIZATION OF RADIOLABEL IN RAT KIDNEY TISSUE FOLLOWING ADMINISTRATION OF COMPOUND 14C053.** B.J. Kidon, M.C. Savides, R.L. Mead, J.P. Marciszyn, and K.A. Krutyholowa. Ricerca, Inc., Painesville, OH.
- #683 **PHOTOACTIVATED PSORALENS ARE POTENT INHIBITORS OF EPIDERMAL GROWTH FACTOR (EGF) BINDING.** E. Lee, D.L. Laskin, M.A. Gallo, and J.D. Laskin. UMDNJ-R.W. Johnson Med. Sch. and Rutgers Univ., Piscat., NJ.
- #684 **TRYPAN BLUE EXCLUSION: A POOR INDICATOR OF CELLULAR INJURY.** A.T. Canada, R.F. Werkman¹, A. Nye, and G.M. Rosen. Toxicology Program, Duke Univ., Durham, NC and, ¹Department of Medicine, Univ. Tennessee, Memphis, TN.

- #685 **ANALYSIS OF DNA-BOUND ³H]- AND [¹⁴C]FORMALDEHYDE (HCHO) IN THE NASAL MUCOSA OF F-344 RATS BY HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY (HPLC).** M. Casanova, D.F. Deyo, M.G. Cox, and H. d'A. Heck. Chemical Industry Institute of Toxicology, Research Triangle Park, NC
- #686 **CHARACTERIZATION OF CROSS-LINKS BETWEEN DNA AND LYSINE PRODUCED BY FORMALDEHYDE.** T.R. Fennell, F.H. Deal, and J.A. Swenberg. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.
- #687 **CRYOPRESERVATION OF RODENT AND PRIMATE HEPATOCYTES.** K. L. Allen, C.E. Green and C.A. Tyson. SRI International, Menlo Park, CA.
- #688 **CHOLESTEROL AND PHOSPHOLIPID PEROXIDATION IN MEMBRANE BILAYERS.** E. Kim and A. Sevanian, Institute for Toxicology, University of Southern California, Los Angeles, CA.
- #689 **COMPARATIVE BINDING AND SEQUENCE INTERACTION SPECIFICITIES OF AFLATOXIN B1, AFLATOXICOL, AFLATOXIN M1, AND AFLATOXICOL M1 WITH PURIFIED DNA.** K. Marien¹, R. Moyer², P. Loveland¹, K. Van Holde², and G. Bailey¹. ¹Dept. of Food Science & Technology, ²Dept. of Biochemistry & Biophysics, Oregon State University, Corvallis, OR. Sponsor: I. Tinsley.
- #690 **NITROGEN DIOXIDE (NO₂) DECREASES SURFACE MEMBRANE FLUIDITY AND INSULIN RECEPTOR BINDING OF ENDOTHELIAL CELLS (EC).** J.M. Patel, D.A. Edwards, E.R. Block, and M.K. Raizada. University of Florida, and VAMC, Gainesville, FL.

**WEDNESDAY AFTERNOON, FEBRUARY 25
EXHIBIT HALL**

POSTER SESSION: REPRODUCTIVE TOXICOLOGY/TERATOLOGY III

Chairperson: D.J. Thompson, Merrell Dow Company, Indianapolis, IN

Displayed: 1:30 p.m.-4:30 p.m.

Attended: 3:00 p.m.-4:30 p.m.

- #691 **DEVELOPMENTAL TOXICITY EVALUATION OF INHALED N,N-DIMETHYLETHANOLAMINE(DMEA) IN FISCHER 344 RATS.** R.W. Tyl, E.R. Homan, D.R. Klonne, I.M. Pritts, E.H. Fowler, L.C. Fisher, K.A. France, T.A. Rebick, J.L. Beskitt, and B. Ballantyne. Bushy Run Research Center, Export, PA and ^aUnion Carbide Corporation, Danbury, CT.
- #692 **INHALATION FERTILITY AND REPRODUCTION STUDIES WITH O,O'-DIMETHYL PHOSPHORODITHIOATE.** W.F. Heydens, J.M. Kronenberg, D.C. Thake and S.M. Shoemaker. Monsanto Company, St. Louis, MO.
- #693 **CARBON DISULFIDE (CS₂): ASSESSMENT OF REPRODUCTIVE EFFECTS.** H. Choudhury, L. Papa, C.T. DeRosa and J.F. Stara. U.S. EPA, Cincinnati, OH. Sponsor: D.V. Singh.
- #694 **REPRODUCTIVE EFFECTS IN LONG-EVANS RATS EXPOSED PERINATALLY TO CHLORINE DIOXIDE.** B.D. Carlton, A.H. Basaran, L.E. Mezza, M.K. Smith Battelle Columbus Division, Columbus, OH and USEPA, HERL, Cincinnati, OH
- #695 **DEVELOPMENTAL TOXICITY EVALUATION OF SOMAN IN CD RATS.** H.K. Bates and J.B. LaBorde. Pathology Associates, Inc. and the Division of Reproductive and Developmental Toxicology, NCTR, Jefferson, AR. Sponsor: D. Sheehan
- #696 **TERATOLOGICAL EVALUATIONS OF AMETRYN TECHNICAL, A TRIAZINE HERBICIDE, IN RATS AND RABBITS.** R. Infurna, E. Yau and V. Traina, CIBA-GEIGY Pharmaceuticals Division, Research Department, Safety Evaluation Facility, Summit, N.J. and L. Wetzel and J. Stevens, CIBA-GEIGY Agricultural Division, Safety Evaluations Department, Greensboro, N.C.
- #697 **MATERNAL AND DEVELOPMENTAL TOXICITY OF DERMALLY APPLIED CLARIFIED SLURRY OIL IN RATS.** M.H. Feuston, S.L. Kerstetter, E.J. Singer, M.A. Mehlman. Mobil Oil Corporation, Princeton, NJ.
- #698 **EFFECTS OF AFLATOXINS B1 AND G1 ON POSTIMPLANTATION RAT EMBRYOS.** E.A. Maull, B.A. Clement, N.D. Heidelbaugh and T.D. Phillips. Veterinary Public Health, Texas A&M University, College Station, TX.
- #699 **TERATOGENIC EFFECTS OF ORGANOPHOSPHORUS INSECTICIDES IN *Xenopus laevis*.** J.E. Snawder and J.E. Chambers. Dept. of Biological Sciences, Mississippi State University, Mississippi State, MS
- #700 **DEVELOPMENTAL TOXICITY OF 1,1,1-TRICHLOROETHANE (TCEN) IN CD RATS.** J.D. George, C.J. Price, M.C. Marr, B.A. Schwetz* and R.E. Morrissey*, Research Triangle Institute and *NTP/NIEHS, Research Triangle Park, NC.
- #701 **THE EFFECT OF PHENYLETHYL ALCOHOL APPLIED DERMALLY TO PREGNANT RATS.** R.A. Ford, A.M. Api, Research Institute for Fragrance Materials, Inc., Englewood Cliffs, NJ and T.M. Palmer, Huntingdon Research Centre Ltd., Cambridgeshire, England. Sponsor: O.E. Easterday.
- #702 **AN EVALUATION OF THE TERATOGENIC POTENTIAL OF ORALLY ADMINISTERED PHENYLETHYL ALCOHOL (PEA).** G.A. Burdock, R.A. Ford, A.M. Bottomley, and D.M. John. Flavor and Extract Manufacturers Association, Washington, D.C., Research Institute for Fragrance Materials, Englewood Cliffs, N.J. and Huntingdon Research Centre Ltd., Cambridgeshire, England.
- #703 **THREE-GENERATION REPRODUCTION STUDY WITH DIOCTYL SODIUM SULFOSUCCINATE (DSS) IN RATS.** K. Mackensie*, S. Henwood^a, G. Foster^b, F. Alcino^c, R. Davis^a, P. DeBaecke^a, G. Sisson¹, and G. McKinney¹; ^aHazelton Laboratories America, Inc., Madison WI, ^bAmerican Cyanamid Co., Pearl River NY, ^cPlough, Memphis TN, ^dAmerican Cyanamid Co., Wayne NJ, ^eStuart Pharmaceuticals, Wilmington DE, ^fBristol-Myers Co., Evansville, IN.
- #704 **ABSENCE OF TERATOGENIC RESPONSE IN RATS AND RABBITS GIVEN A DETERGENT BUILDER.** R.S. Nair, F.R. Johannsen, Monsanto Co., St. Louis, MO, and R.E. Schroeder, Bio/dynamics, Inc., East Millstone, NJ.
- #705 **A TERATOLOGY STUDY OF A MIXTURE OF DECYLDODECYL BENZENES.** E.C. Robinson, R.D. Short, F.R. Johannsen, Monsanto Co., St. Louis, MO, and R.E. Schroeder, Bio/dynamics Inc., East Millstone, NJ.
- #706 **TERATOLOGY STUDIES OF VANCOMYCIN (V) ADMINISTERED INTRAVENOUSLY (IV) TO RATS AND RABBITS.** R.A. Byrd, M.K. Buening, and C.L. Gries. Toxicology Division, Lilly Research Laboratories, Greenfield, IN.
- #707 **DEVELOPMENTAL TOXICITY STUDY OF VIRGINIAMYCIN IN Crl:CD-1(ICR)BR MICE.** E.A. Lochry, A.M. Hoberman, M.S. Christian, Argus Research Labs Inc., Horsham, PA and V.J. Theodorides, Smith-Kline Animal Health Products, West Chester, PA.
- #708 **A TERATOLOGY STUDY IN RATS WITH VIRGINIAMYCIN** R.E. Schroeder, I.W. Daly, Bio/dynamics Inc. and V.J. Theodorides, Smith-Kline Animal Health Products, West Chester, PA
- #709 **A TWO-GENERATION REPRODUCTION STUDY IN RATS WITH VIRGINIAMYCIN.** I.W. Daly, Bio/dynamics Inc., East Millstone, N.J. and V.J. Theodorides, Smith-Kline Animal Health Products, West Chester, PA.

- #710 **STUDY OF THE TERATOGENIC POTENTIAL OF GUAR GUM.** J.J. Welsh, T.F.X. Collins, T.N. Black, M.W. O'Donnell, Jr., and S.L. Graham. U.S. Food and Drug Administration, Washington, D.C.
- #711 **TOXICITY STUDY OF AN IODINE CONTAINING FEMALE STERILIZATION FORMULATION (ICF).** D.P. Waller, T. Parmley, A. Martin, M.R. Szarley, C.D. Fakroddin and A. Goldsmith, University of Illinois at Chicago and Northwestern University Medical School, Chicago, IL and Johns Hopkins University, Baltimore, MD.
- #712 **EFFECT OF AN EXTRACT OF SENECIO VULGARIS AND SENECONINE ON RAT FETUSES.** N.A. Nuzzo, A. Hall, A. Martin, R.J. Molyneux and D.P. Waller, PCRPS, University of Illinois at Chicago, Chicago, IL and USDA, Albany, CA
- #713 **ACRYLAMIDE (ACR) INDUCED PREIMPLANTATION LOSS IN RATS.** V.H. Sublet¹, M.K. Smith², and H. Zenick³. Dept. Environ. Health, Univ. Cincinnati College of Medicine, Cinti., OH¹; U.S. EPA, Cinti., OH² and Washington, D.C.³.
- #714 **TERATOLOGIC EVALUATION OF NITROFURAZONE (NF) IN CD-1 MICE.** C.J. Price, J.D. George, M.C. Marr, and *C.A. Kimmel, Research Triangle Institute, Research Triangle Park, NC and *NTP/Reproductive Effects Assessment Group, US-EPA, Washington, D.C.
- #715 **TERATOLOGIC EVALUATION OF BETA(3,4-EPOXYCYCLOHEXYL)ETHYLTRIMETHOXYSILANE(ECEMS) IN RATS AND RABBITS.** R.W. Tyl, B. Ballantyne, K.A. France, L.C. Fisher, T.A. Savine, and D.L. Fait. Bushy Run Research Center, Export, PA and *Union Carbide Corporation, Danbury, CT.
- #716 **TERATOGENIC POTENTIAL OF DEZAGUANINE (CI-908), AN ANTICANCER AGENT, IN RATS AND RABBITS.** M.D. Seefeld, J.A. Anderson, K.A. Keller* and J.L. Schardein*. Warner-Lambert/Parke-Davis Pharm. Res., Ann Arbor, MI and *Int'l., Res. and Devel. Corp, Mattawan, MI.
- #717 **A DOSE RESPONSE ANALYSIS OF CARBENDAZIM-INDUCED ALTERATIONS OF REPRODUCTIVE DEVELOPMENT IN RATS.** L.E. Gray, Jr., K. Gray, J. Ferrell, J. Ostby, R. Linder, L. Strader, and R. Cooper. Repro Tox Br/HERL/USEPA, RTP, NC. Sponsor: P.V. Shah
- #718 **CONSIDERATION OF MATERNAL TOXICITY IN THE ASSESSMENT OF DEVELOPMENTAL TOXICITY.** D.D. Cozens, A.M. Bottomley, E.W. Hughes, and A.K. Palmer. Huntingdon Research Centre, Huntingdon, England.
- #719 **MATERNAL TOXICITY AND FETAL MALFORMATIONS OF RODENT- RABBIT SPECIES.** R.E. Masters, D.M. John, J.A. Edwards, R. Billington, A.J. Bowman, and A.K. Palmer. Huntingdon Research Centre, Huntingdon, England.
- #720 **HEALTH EFFECTS ASSESSMENT OF MONOCHLOROETHANE, MALEIC ANHYDRIDE, METHYL METHACRYLATE, AND PHTHALIC ANHYDRIDE.** R.H. Ross, D.M. Opresko, R.A. Faust, F.M. Martin, S.S. Talmage, and P.Y. Lu. Biology Division, Oak Ridge National Laboratory*, Oak Ridge, TN. W. Ewald, Environmental Criteria and Assessment Office, U.S. Environmental Protection Agency, Research Triangle Park, NC.
- #721 **REPRODUCTIVE ASSESSMENT OF MALE WASTE WATER WORKERS.** G.K. Lemasters, K. Hansen, H. Zenick*, C. Meyer, V. Hertzberg, S. Clark, Department of Environmental Health, University of Cincinnati, Cincinnati, OH, U.S. Environmental Protection Agency, Washington, D.C.*.
- #722 **SAFETY FACTORS APPLIED TO VARIOUS FDA PREGNANCY CLASS DRUGS.** V.H. Frankos, and S.H. Rieth. Environ Corporation, Washington, DC. Sponsor: R.G. Tardiff.
- #723 **TERATOLOGY OF 13-CIS RETINOIC ACID IN TWO RAT STRAINS.** J.W. Henck, Y.S. Motte, S.L. Mudgett and R.G. Skalko. Toxicity Research Laboratories, Ltd., Muskegon, MI and East Tennessee State University, Johnson City, TN.
- #724 **EMBRYOTOXICITY AND GLUTATHIONE (GSH) DEPLETION ELICITED BY INHIBITION OF -GLUTAMYL TRANSFERASE (GGT) BY ACIVICIN AND ANTI-GGT ANTIBODIES.** K.L. Stark, C. Harris, and M.R. Juchau, Dept. of Pharmacol., Sch. of Med., Univ. of Washington, Seattle WA.
- #725 **EFFECTS OF MATERNAL IRON RESTRICTION ON NITRITE INDUCED NEONATAL ANEMIA.** A.C. Roth, J.U. Doerger, P.H. Perez, J.P. Berz and M.K. Smith U.S. EPA, HERL, Cincinnati, OH.
- #726 **EXCRETION OF ¹⁴C-NIFLURIDIDE INTO MILK OF LACTATING RATS: A COMPARISON OF TWO METHODS OF MILK SAMPLING.** R.C. Pohland and T.K. Byrd. Lilly Research Labs., Toxicol. Div., Greenfield, IN. Sponsor: J.L. Emmerson

**WEDNESDAY AFTERNOON, FEBRUARY 25
EXHIBIT HALL**

POSTER SESSION: RISK ASSESSMENT

Chairperson: T.B. Starr, CIIT, Research Triangle Park, NC

Displayed: 1:30 p.m.-4:30 p.m.

Attended: 1:30 p.m.-3:00 p.m.

- #727 **AN EXACT NOEL-PROCEDURE FOR INCIDENCE DATA FROM ANIMAL EXPERIMENTS.** K.G. Brown, L.M. Lavange. Research Triangle Institute, Research Triangle Park, N.C. Sponsor: A.H. Marcus
- #728 **CHEMICAL HEALTH EFFECTS ASSESSMENT METHODOLOGY FOR AIRBORNE CONTAMINANTS.** H.S. Brown, Clark University, Worcester, MA, C.R. West, and D.R. Bishop, Mass. Dept. of Envir. Qual. Engr., Boston, MA. Sponsor: D. Brown.
- #729 **RISK ASSESSMENT FOR LEAD CONTAMINATED SOIL.** B.D. Beck and P.Y. Tsai, Region I Environmental Protection Agency, Boston, MA.
- #730 **COMPARATIVE APPROACHES TO NONCARCINOGENIC RISK ASSESSMENT FOR CADMIUM IN AMBIENT AIR.** M.J. Miller, K.G. Bogdan and A.J. Grey. New York State Department of Health, Bureau of Toxic Substance Assessment, Albany, NY.
- #731 **HEALTH EFFECTS REVIEWS: METHYL BROMIDE, CHLORINATED STYRENES, BROMINATED DIPHENYL ETHERS.** M.W. Daugherty, D.M. Opresko, B.C. Pal. Oak Ridge National Laboratory*, Oak Ridge, TN. T.R. O'Bryan, M.A. Wiedow, J.S. Leitzke. U.S. Environmental Protection Agency (USEPA), Washington, D.C. Sponsor: P.Y. Lu
- #732 **A SIMPLIFIED METHOD FOR PRELIMINARY HUMAN HEALTH HAZARD ASSESSMENT BASED ON INTEGRATED TOXICITY AND EXPOSURE ESTIMATES.** S.C. Lewis, E.C. Thayer, D.H. Wasserstrom, Exxon Biomedical Sciences, Inc., East Millstone, NJ. Sponsor: G.F. Egan
- #733 **ASSESSING THE PREDICTIVE VALUE OF ANIMAL TOXICITY TESTS FOR MAN.** C.E. Lumley and S.R. Walker, Centre for Medicines Research, Carshalton, Surrey, UK. Sponsor: S.D. Gangolli

- #734 **U-SHAPED DOSE-RESPONSE FUNCTIONS.** J.M. Davis and D.J. Svendsgaard, U.S. Environmental Protection Agency, Research Triangle Park, NC. Sponsor: B.A. Fowler
- #735 **EXCURSIONS ABOVE THE ACCEPTABLE DAILY INTAKE.** M.L. Dourson, J.C. Swartout and J.F. Stara. U.S. Environmental Protection Agency, Cincinnati, OH. Sponsor: E. O'Flaherty
- #736 **THEORETICAL FOUNDATIONS OF TOXICOLOGY.** S. Ji Dept. of Pharmacol. & Toxicology, Rutgers University, Piscataway, NJ.
- #737 **MECHANISM OF INDUCTION OF CYTOCHROMES P-450 BY XENOBIOTICS.** S. Ji Dept. Pharmacol. Toxicol., College of Pharmacy, Rutgers University, Piscataway, NJ.
- #738 **WATER QUALITY CRITERIA FOR MUNITION COMPOUNDS.** K.A. Davidson, E.L. Etnier, M.G. Ryon, J.G. Smith, C.F. Sigmon, P.S. Hovatter, and R.H. Ross. Oak Ridge National Laboratory*, Oak Ridge, TN. Sponsor: P.Y. Lu
- #739 **HUMAN HEALTH EVALUATION OF MERCURY CONTAMINATED SPORTFISH.** A.M. Fan, J.W. Stratton, and S.A. Book. Office Environ. Health Hazard Assessment, Calif. Dept. Health Services, Berkeley, CA.
- #740 **A RISK ASSESSMENT METHODOLOGY FOR OCEAN DISPOSAL OF MUNICIPAL SLUDGE.** A.D. Michael, *R.J.F. Bruins, G. Petrazzuolo, B. Davis, *V.Molak, B. Bush. Technical Resources, Inc., Rockville, MD. *U.S. Environmental Protection Agency, ECAO, Cincinnati, OH. Sponsor: R.S. Yamamoto

WEDNESDAY AFTERNOON, FEBRUARY 25

4 p.m.-5:30 p.m.

International Ballroom Center

ANNUAL SOT BUSINESS MEETING

President: John Doull, Presiding

SOT Members Only

THURSDAY MORNING, FEBRUARY 26

8:30 a.m.-12 p.m.

International Ballroom West

SYMPOSIUM: ONCOGENES: THEIR ROLE IN NORMAL AND ABERRANT CELL PROLIFERATION

Chairpersons: A.E. Aust, Michigan State University, E. Lansing, MI; J.I. Goodman, Michigan State University, E. Lansing, MI

Introduction: A.E. Aust, Michigan State University, E. Lansing, MI

Cellular Oncogene Activation by Retroviruses. H-J. Kung, Case Western Research University, Cleveland, OH

Activation of Oncogenes by Chemical Carcinogens. M. Barbacid, National Cancer Institute, Bethesda, MD

Oncogene Products Which Localize to the Nucleus. M. Rosenberg, Smith Kline & French Laboratories, Philadelphia, PA

Parameters Associated with Oncogene Expression. J.I. Goodman, Michigan State University, E. Lansing, MI

Oncogenes and Animal Testing. T.R. Fox, Michigan State University, E. Lansing, MI

THURSDAY MORNING, FEBRUARY 26

8:30 a.m.-12 p.m.

International Ballroom Center

SYMPOSIUM: THE NEUROTOXICOLOGY OF METALS: FROM MAN TO THE MOLECULE

Sponsored by SOT Neurotoxicology and Metals Specialty Sections

Chairperson: H.A. Tilson, National Institute of Environmental Health Sciences, Research Triangle Park, NC

Introduction. H.A. Tilson, NIEHS, Research Triangle Park, NC

Human Problems: A Review. A.J. Windebank, Mayo Clinic, Rochester, MN

Neurobehavioral Toxicology in Developing and Adult Animals. H.L. Evans, New York University Medical School, New York, NY

Neuropathological Changes in Developing and Adult Animals. K.R. Reuhl, NRC-Canda, Ottawa, Canada

Electrophysiological Alterations in Man and Animals. D.A. Fox, University of Houston, Houston, TX

Discussants. P.B. Hammond, University of Cincinnati, Cincinnati, OH; B. Weiss, University of Rochester, Rochester, NY

THURSDAY MORNING, FEBRUARY 26

8:30 a.m.-12 p.m.

JEFFERSON ROOM WEST

PLATFORM SESSION: IMMUNOTOXICOLOGY II

Chairpersons: R.D. Short, Jr., Monsanto Company, St. Louis, MO
R. Stoll, Sandoz Research Institute, East Hanover, NJ

- #91 8:30 **LOVE CANAL LEACHATE IMMUNOSUPPRESSION.** J.B. Silkworth, G. Sack, and L.S. Kaminsky. Wadsworth Center for Laboratories and Research, New York State Department of Health, Albany, NY.
- #92 8:45 **INHIBITION OF CYTOTOXIC T CELL ACTIVITY WITHOUT INDUCTION OF SUPPRESSOR CELLS IN 3,4,5,3',4',5'-HEXACHLOROBIPHENYL (HCB) TREATED MICE.** N.I. Kerkvliet and L. Baecher-Steppan. College of Veterinary Medicine and Environmental Health Sciences Center, Oregon State University, Corvallis, OR
- #93 9:00 **THE EFFECTS OF SUBCHRONIC PULMONARY EXPOSURE TO BENZO(A)PYRENE ON IGA IMMUNITY IN MICE.** C.T. Schnitzlein and R.A. Rhoades. Department of Physiology and Biophysics, Indiana University School of Medicine, Indianapolis, IN.
- #94 9:15 **EFFECT OF PHOSGENE ON LUNG NATURAL KILLER CELL ACTIVITY.** G.R. Bureson, L.B. Fuller, and L.L. Keyes. Northrop Services, Inc., Environmental Sciences, RTP, NC. Sponsor: J.A. Graham
- #95 9:30 **ACQUIRED IMMUNOLOGIC TOLERANCE TO TRIMELLITIC ANHYDRIDE DURING A 13-WEEK INHALATION EXPOSURE.** C.L. Leach, N.S. Hatoum, C.R. Zeiss, D.M. Talsma, and P.J. Garvin, IIT Research Institute, Veterans Admin., and AMOCO Corp., Chicago, IL.
- #96 9:45 **THE ROLE OF COMPLEMENT IN MEDIATING CLEARANCE OF INHALED PARTICLES.** D.B. Warheit, Du Pont-Haskell Laboratory, Newark, DE.
- #97 10:00 **POLYMORPHONUCLEAR LEUKOCYTE-MEDIATED LIPID PEROXIDATION AND LUNG INJURY.** J.R. Hatherill, G.O. Till*, and P.A. Ward*. Research Dept., Pharma Div., CIBA-GEIGY Corp., Summit, N.J., and *Dept. of Path., Univ. of Mich. Med. Sch., Ann Arbor, MI. Sponsor: J.D. Green
- #98 10:15 **EFFECT OF 0>3 EXPOSURE ON SUSCEPTIBILITY TO INFLUENZA IN MICE.** M.J.K. Selgrade¹, J.W. Illing¹, M.A. Stevens², and D.M. Starnes¹. U.S. Environmental Protection Agency¹, Research Triangle Park, NC 27711; and Northrop Services, Inc.², Research Triangle Park, NC. Sponsor: E.C. Grose
- #99 10:30 **INHIBITION OF THE BLASTOGENIC RESPONSE TO HERPES SIMPLEX VIRUS 2(HSV2) BY DELTA-9-TETRAHYDRO-CANNABINOL.** P.J. McNerney, E.M. Mishkin, and G.A. Gabral*. Department of Microbiology and Immunology, Virginia Commonwealth University, Richmond, VA. Sponsor: A.E. Munson.
- #100 10:45 **OBSERVATIONS ON THE TOXICITY OF RECOMBINANT HUMAN INTERLEUKIN-2 IN RODENTS.** T.J. Hayes, T.D. Anderson, and M.K. Gately. Department of Toxicology and Pathology and Department of Immunopharmacology, Hoffmann-La Roche Inc., Nutley, N.J. Sponsor: R.M. McClain
- #101 11:00 **IMMUNOGENICITY OF CHO CELL-DERIVED rDNA HUMAN GM-CSF IN RHESUS MONKEYS.** S.W. Burchiel, A.S. Ferszt, C.L. Smith*, R.L. Robinson*, and R.E. Stoll*. The University of New Mexico, College of Pharmacy, Albuquerque, NM; and *The Sandoz Research Institute, Preclinical Safety Assessment, East Hanover, NJ
- #102 11:15 **IMMUNE-MEDIATED HEMOLYTIC ANEMIA AND CYTOPENIAS ASSOCIATED WITH -LACTAM ANTIBIOTIC ADMINISTRATION.** R. Eydeloth and D. Kornbrust, Merck Sharp & Dohme Res. Labs., West Point, PA; and G. Garratty, American Red Cross, Los Angeles, CA Sponsor: R Robertson
- #103 11:30 **INHIBITION OF INDUCTION OF IL-2 RECEPTOR EXPRESSION BY DMBA DETECTED USING FLOW CYTOMETRY.** S.W. Burchiel, R.F. Fincher, and W.M. Hadley. The University of New Mexico College of Pharmacy Immunopharmacology Lab, Albuquerque, NM
- #104 11:45 **A NEW MODEL TO STUDY THE INFLAMMATORY POTENTIAL OF SURGICAL IMPLANTS.** F.M. Robertson, R. Greco, A. Beavis and D.L. Laskin. UMDNJ-R.W. Johnson Med. School and Rutgers Univ., Piscataway, NJ

THURSDAY MORNING, FEBRUARY 26

8:30 a.m.-12 p.m.

LINCOLN ROOM WEST

PLATFORM SESSION: RENAL TOXICOLOGY

Chairpersons: G.F. Rush, Smith Kline & French Laboratories, Philadelphia, PA
M.E. Davis, West Virginia University Medical Center, Morgantown, WV

- #105 8:30 **RAPID POST-EXPOSURE DECAY OF GASOLINE-INDUCED HYALIN DROPLETS AND >2>u-GLOBULIN ACCUMULATED IN THE MALE RAT KIDNEY.** B.D. Garg*, M.J. Olson*, W.F. Demyan** and A.K. Roy**, *Biomedical Science Dept., GM Research Labs, Warren, MI and ** Biological Sciences Dept., Oakland University, Rochester, MI. Sponsor: E.W. Lee
- #106 8:45 **THE REVERSIBLE BINDING OF 2,2,4-TRIMETHYLPENTANE (TMP) TO RENAL 2uGLOBULIN (2u) IN MALE FISCHER 344 RATS.** E.A. Lock, M. Charbonneau, J. Strasser, and J.S. Bus. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.
- #107 9:00 **EFFECT OF TRICYANOHEXANE ON RENAL LYSOSOMAL FUNCTION.** D.E. Johnson¹, J.W. Barnett, Jr.², L.C. Farnum¹, and F.R. Johannsen². ¹International Research & Development Corp., Mattawan, MI, and ²Monsanto Company, St. Louis, MO
- #108 9:15 **PROTEIN ACCUMULATION AS THE INITIAL EVENT IN TRICYANOHEXANE INDUCED NEPHROPATHY IN MALE RATS.** J.W. Barnett, Jr.¹, D.E. Johnson², A.D. Boothe², and F.R. Johannsen¹. ¹Monsanto Co., St. Louis, MO, and ²International Research & Development Corp., Mattawan, MI.
- #109 9:30 **LACK OF COVALENT BINDING OF 2,2,4-TRIMETHYLPENTANE (TMP) TO 2u-GLOBULIN (2u).** D.J. Loury, T. Smith-Oliver, and B.E. Butterworth. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.
- #110 9:45 **COMPARATIVE SUSCEPTIBILITY OF KIDNEY AND LIVER CELLS TO CEPHALORIDINE TOXICITY IN VITRO.** R.S. Goldstein, P.F. Smith, J.B. Tarloff, G.F. Rush and J.B. Hook. Dept. of Invest. Toxicology, Smith Kline & French Laboratories, Phila., PA.
- #111 10:00 **MERCURIC AND CHROMATE ION EFFECTS ON RENAL VESICLE MEMBRANE TRANSPORT.** R. Jensen and W.O. Berndt, Dept. Pharmacology, Univ. NE Med. Ctr., Omaha, Nebraska.

- #112 10:15 **EFFECTS OF DICHLOROMALEATE (DCM) ON KIDNEY AND LIVER.** W.O. Berndt, W.R. Christenson, and M.E. Davis, Dept. Pharmacol., Univ. NE Med. Ctr., Omaha, NE and Dept. Pharmacol. & Toxicol., West Virginia Univ., Morgantown, WV.
- #113 10:30 **EVIDENCE FOR ROLE OF PHOSPHOLIPASE C IN GENTAMICIN-INDUCED RENAL PHOSPHOLIPIDOSIS IN RAT.** S. Kacew, Dept. of Pharmacology, Univ. of Ottawa, Ottawa, Ontario.

THURSDAY MORNING, FEBRUARY 26

EXHIBIT HALL

POSTER SESSION: INHALATION TOXICOLOGY II

Chairperson: J. Graham, U.S. Environmental Protection Agency, Research Triangle Park, NC

Displayed: 8:30 a.m.-11:30 a.m.

Attended: 8:30 a.m.-10:00 a.m.

- #741 **RESPIRATORY SYSTEM UPTAKE OF OZONE IN GUINEA PIGS AND THREE STRAINS OF RATS.** M.J. Wiester¹, T.B. Williams², J.S. Tepper² and M.G. Menache². ¹U.S.E.P.A., RTP, NC; ²Northrop Services, Inc., RTP, NC.
- #742 **CRITICAL TIME FOR POST-EXPOSURE EFFECT OF LUNG GLUTATHIONE ON OZONE-INDUCED FIBROSIS IN MICE.** D.T. Kirkpatrick, J.D. Sun, J.A. Pickrell, J.R. Harkema, and R.F. Henderson. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM
- #743 **CHANGES IN COLLAGEN METABOLISM AND PROTEINOLYSIS AFTER REPEATED INHALATION EXPOSURE TO OZONE.** J.A. Pickrell, F.F. Hahn, A.H. Rebar^a, R.A. Horada, and R.F. Henderson. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM; ^aVMI Department, Purdue University, Lafayette, IN.
- #744 **EFFECTS OF CHRONIC EXPOSURE TO OZONE ON COLLAGEN METABOLISM IN RAT LUNG.** E.S. Wright¹, J.P. Kehrer², D.M. White¹, K.L. Smiler¹, Biomedical Science Dept., GM Research Labs, Warren, MI¹, Div. of Pharmacology and Toxicology, College of Pharmacy, The University of Texas at Austin, Austin, TX².
- #745 **PRELIMINARY RESULTS OF A CHRONIC INHALATION STUDY TO O₃ AND NO₂ ON PULMONARY ENZYMES AND METABOLISM IN RATS.** ¹R.H. Jaskot, ²E.C. Grose, ¹J.H. Richards, ²A.G. Stead, and ¹L.C. Walsh III. ¹Northrop Services Inc., RTP, NC., ²U.S.E.P.A., RTP, NC.
- #746 **EFFECT OF NO₂ EXPOSURE ON THE UPTAKE OF VITAMIN E BY LUNG.** H.K. Gardner and R.D. Mavis. Division of Toxicology, University of Rochester, Rochester, NY
- #747 **SENSITIVITY OF ISOLATED LUNG CELLS FROM NITROGEN DIOXIDE (NO₂)-EXPOSED RATS TO IN-VITRO NO₂ EXPOSURE.** L. Van Bree^a, I.M.C.M. Rietjens^b, J.A.M.A. Dormans^a, P.J.A. Rombout^a and G.M. Alink^b. ^aNational Institute of Public Health and Environmental Hygiene, Bilthoven, and ^bAgricultural University, Wageningen, The Netherlands. Sponsor: J.G. Vos
- #748 **REACTION RATE OF NO₂ PEROXIDATION OF POLYUNSATURATED FATTY ACIDS (PUFA) IN LIPOSOMES.** C.R. Shoaf, J.R. Sandy, D.B. Menzel. Dept. of Pharm. and Med., Comp. Cancer Ctr., Duke Univ. Med. Ctr., Durham, NC.
- #749 **EFFECT OF -TOCOPHEROL AND ASCORBATE ON NO₂-INITIATED PEROXIDATION OF LIPOSOMAL MEMBRANES.** C.R. Shoaf, J. Sandy, D.B. Menzel. Dept. of Pharm. and Med., Comp. Cancer Ctr., Duke Univ. Med. Ctr., Durham, NC.
- #750 **SYNERGISTIC INTERACTION BETWEEN NITROGEN DIOXIDE AND RESPIRABLE AEROSOLS.** D.L. Warren and J.A. Last. CPRC, Univ. of California, Davis, CA.
- #751 **ADSORPTION AND ELIMINATION KINETICS IN RATS EXPOSED TO SUB-LETHAL CONCENTRATIONS OF CARBON MONOXIDE.** A.T. Mosberg, C.R.E. Coggins and P.H. Ayres. R.J. Reynolds Tobacco Company, Winston-Salem, NC.
- #752 **PULMONARY FUNCTION EFFECTS IN RATS EXPOSED TO SUB-LETHAL CONCENTRATIONS OF CARBON MONOXIDE.** A.T. Mosberg, P.H. Ayres and C.R.E. Coggins. R.J. Reynolds Tobacco Company, Winston-Salem, NC.
- #753 **CARDIOMEGALY IN RATS AFTER 14-DAY EXPOSURE TO SUBLETHAL CONCENTRATIONS OF CARBON MONOXIDE.** P.H. Ayres, C.R.E. Coggins. A.T. Mosberg R.J. Reynolds Tobacco Company, Winston-Salem, NC
- #754 **HISTOPATHOLOGICAL CHANGES IN RATS EXPOSED TO CARBON MONOXIDE.** C.R.E. Coggins, G.T. Burger, P.H. Ayers, A.T. Mosberg, R.J. Reynolds Tobacco Company, Bowman Gray Technical Center, Winston-Salem, NC.
- #755 **EFFECTS OF INHALED ETHYL CHLORIDE ON FETAL DEVELOPMENT IN CF-1 MICE.** T.R. Hanley, Jr., B.H. Scortichini, K.A. Johnson, and J.J. Momany-Pruender. Mammalian and Environmental Toxicology Research Laboratory, H&ES, The Dow Chemical Company, Midland, MI.
- #756 **ETHYL CHLORIDE (EIC1): 11-DAY CONTINUOUS EXPOSURE INHALATION TOXICITY STUDY IN B6C3F1 MICE.** T.D. Landry, K.A. Johnson, J.E. Phillips and S.K. Weiss. The Dow Chemical Company, Mammalian and Environmental Toxicology Research Laboratory, Midland, MI.
- #757 **TOXICOLOGIC EFFECTS OF 13-WEEK INHALATION EXPOSURE TO TETRAFLUOROETHYLENE IN RATS AND MICE.** J.H. Roycroft^{*}, R.H. Miller^{**}, H.A. Ragan^{**}, B.J. Chou^{**}. ^{*}National Toxicology Program, NIEHS, RTP, NC; ^{**}Battelle Pacific Northwest Laboratories, Richland, WA. Sponsor: R.S. Chhabra
- #758 **SUBCHRONIC INHALATION STUDY OF PROPYLENE GLYCOL IN RATS.** R.L. Suber, A.I. Nikiforov^{*}, X. Fouillet^{*}, R. Deskin and C. Coggins. R.J. Reynolds Tobacco Co., Winston-Salem, NC and ^{*}Battelle Research Centers, Geneva, Switzerland.
- #759 **SUBCHRONIC INHALATION OF TRIETHYLAMINE VAPOR IN F-344 RATS.** D.W. Lynch, W.J. Moorman, T.R. Lewis, P. Stober, R.D. Hamlin^{*}, and R.L. Schueler^{**}. National Institute for Occupational Safety and Health, Cincinnati, OH; ^{*}Dept. of Veterinary Physiology and Pharmacology, Ohio State Univ., Columbus, OH; and ^{**}Research Pathology Associates, Inc., Sykesville, MD.
- #760 **SUBCHRONIC INHALATION TOXICITY OF PARTIALLY HYDROGENATED TERPHENYLS IN RATS.** C.H. Farr, R.S. Nair, F.R. Johansson, Monsanto Company, St. Louis, MO, and J.B. Terrill, Bio/dynamics Inc., East Millstone, NJ.
- #761 **SPECIES DIFFERENCES IN PEROXISOME PROLIFERATION AND METABOLISM AFTER INHALATIONAL EXPOSURE TO PERCHLOROETHYLENE.** J. Odum, T. Green, J.R. Foster and P.M. Hext, Imperial Chemical Industries PLC, Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK. Sponsor: E.A. Lock
- #762 **EFFECTS IN RATS OF REPEATED INHALATION EXPOSURE TO PERCHLOROMETHYL MERCAPTAN.** H.F. Knapp, S.M. MacAskill, G.M. Zwicker and G.L. Sprague. Stauffer Chemical Company, Toxicology Department, Farmington, CT.

- #763 **SUBCHRONIC INHALATION STUDIES OF TERTIARY BUTYLAMINE (TBA).** B.R. Dudek, M.V. Roloff, W.E. Ribelin, M.W. Stevens, Monsanto Company, St. Louis, MO. and S.V. Becker, E.P.L. Midwest, Decatur, IL.
- #764 **AN EIGHT-WEEK INHALATION TOXICITY STUDY OF SEVOFLURANE IN CYNOMOLGUS MONKEYS.** W. J. Tierney, Bio/dynamics Inc., and N. Satoh, Maruishi Pharmaceutical, Osaka, Japan
- #765 **SUBCHRONIC INHALATION TOXICITY STUDIES WITH O,O'-DIMETHYL PHOSPHORODITHIOATE.** W.F. Heydens, M.V. Roloff, J.M. Kronenberg, D.C. Thake, and F.A. Ruecker. Monsanto Company, St. Louis, MO.
- #766 **A 2-WEEK SUBCHRONIC INHALATION STUDY ON 3,4-DICHLOROANILINE IN RATS.** L.A. Kinney, T.W. Slone, Jr., and G.L. Kennedy, Jr. E.I. du Pont de Nemours and Company, Newark, DE.
- #767 **LONG-TERM EFFECTS OF HYDROGEN CHLORIDE ON PULMONARY FUNCTION AND MORPHOLOGY IN NONHUMAN PRIMATES.** A. Anzueto,² W.G. Switzer,¹ H.L. Kaplan,¹ & R.K. Hinderer.³ 1) Southwest Research Institute, San Antonio, TX; 2) UT Health Science Center, SA, TX; 3) B.F. Goodrich, Akron, OH
- #768 **A COMPARISON OF ACUTE INHALATION TOXICITY OF A SERIES OF CHLOROSILANES WITH HYDROGEN CHLORIDE.** G.B. Kolesar, W.H. Siddiqui and E.J. Hobbs Dow Corning Corporation, Midland, MI.
- #769 **CLINICAL ASPECTS AND CASUISTIK OF ACUTE INTOXICATION BY AMMONIA INHALATION IN HUMANS.** J.R. Weiser, Department of Internal Medicine, Medical University of Lubeck, FRG. Sponsor: C.-P. Siegers
- #770 **MORPHOMETRIC ANALYSIS OF THE PRIMATE NASAL CAVITY.** E.A. Gross, T.B. Starr, H.W. Randall and K.T. Morgan. Chemical Industry Institute of Toxicology. R.T.P., NC.
- #771 **TEMPORAL CHARACTERISTICS OF LATE BRONCHIAL AND EARLY ALVEOLAR CLEARANCE IN RABBITS.** B.D. Naumann and R.B. Schlesinger. New York University Medical Center, Institute of Environmental Medicine, New York, NY.
- #772 **A MORPHOMETRIC ANALYSIS OF RABBIT AIRWAYS AFTER REPEATED EXPOSURES TO SULFURIC ACID AEROSOL.** J.M. Gearhart and R.B. Schlesinger. New York University Medical Center, New York, NY.
- #773 **EFFECTS OF INTERMITTENT EXPOSURE TO SULFURIC ACID AEROSOL ON MUCOCILIARY CLEARANCE IN RABBITS.** J.M. Gearhart and R.B. Schlesinger. New York University Medical Center, New York, NY.
- #774 **A 2-WEEK SUBCHRONIC INHALATION STUDY ON PERACETIC ACID IN RATS.** L.A. Kinney, T.W. Slone, Jr., B.A. Burgess and G.L. Kennedy, Jr., E.I. du Pont de Nemours and Company, Newark, DE.
- #775 **RESPONSE OF GUINEA PIGS UPON EXPOSURE TO SULFUR OXIDES ON THE SURFACE OF FRESHLY GENERATED ULTRAFINE ZNO AEROSOLS.** L.C. Chen, H.F. Lam, J. Guty, G. Mohiuddin and M.O. Amdur. Dept. Appl. Biol. Sci. MIT, Cambridge, MA.
- #776 **THE PULMONARY RESPONSE OF GUINEA PIGS EXPOSED TO A COMBINATION OF ZNO-SO₂ AEROSOLS FOLLOWING THE 'WORKWEEK' EXPOSURE REGIME.** H.F. Lam, J. Guty, D. Ainsworth, and M.O. Amdur. Appl. Biol. Sci., MIT, Cambridge, MA.
- #777 **NASAL EPITHELIAL CELL CADMIUM TOXICITY DATA FOR EXTRAPOLATION FROM IN VITRO TO IN VIVO.** D.L. Morgan, V.E. Steele, J.E. Humphreys, Pulmonary Carcinogenesis Laboratory, Northrop Services, Inc., and G.E. Hatch, Toxicology Branch, HERL, USEPA, Res. Tri. Pk. NC. Sponsor: D.E. Gardner
- #778 **DEGENERATION AND REGENERATION OF THE OLFACTORY EPITHELIUM FOLLOWING INHALATION EXPOSURE TO METHYL BROMIDE.** M.E. Hurtt, P.K. Working, and K.T. Morgan, CIIT, Research Triangle Park, NC.
- #779 **RESPONSE OF GUINEA PIGS TO THE INHALATION OF PLATELET ACTIVATING FACTOR (PAF).** L.M. Rosato, D.A. Weyel and Y. Alarie, Dept. Ind. Env. Hlth. Sci., University of Pittsburgh, Pittsburgh, PA.
- #780 **RESPIRATORY ALLERGY; SUBCHRONIC GUINEA PIG INTRATRACHEAL TEST SYSTEM.** E.R. Fletcher, H.L. Ritz, and P.J. Danneman. The Procter & Gamble Co., Miami Valley Labs, Cincinnati, OH. Sponsor: Michael J. Murray
- #781 **IRRITATION RESPONSE TO BISPHENOL-A (BPA) AEROSOL IN MICE AND RATS.** W.H. Steinhagen, W.W. Harrington, and K.L. Wong. CIIT, Research Triangle Park, NC
- #782 **ONE-MONTH INHALATION STUDY WITH CUMENE.** C.L. Bechtel, R.D. Short, W.E. Ribelin, and M.V. Roloff. Monsanto Company, St. Louis, MO.
- #783 **RESPIRATORY EFFECTS OF REPEATED EXPOSURE TO PARAQUAT AEROSOLS.** H. Burleigh-Flayer and Y. Alarie, Dept. Ind. Env. Hlth. Sci., University of Pittsburgh, Pittsburgh, PA.
- #784 **ACUTE INHALATION STUDIES WITH HEATED 10,10'-OXYBISCHLOROPHENOXARSINE.** W.E. Dalbey, T. Roy, E.J. Singer, T. Osimitz, and C. Hardy. Mobil Oil Corporation and Huntingdon Research Centre, Princeton, NJ
- #785 **COMPARISON OF THE TWO-WEEK WHOLE BODY AND NOSE-ONLY INHALATION TOXICITY OF MANCOZEB IN RATS.** J.V. Hagan, J.R. Fisher, W.R. Brown, and R.C. Baldwin. Toxicology Department, Rohm and Haas Company, Spring House, PA. Sponsor: P.K. Chan
- #786 **INHALATION TOXICITY AND FERTILITY STUDIES IN RATS WITH ACETONE CYANOHYDRIN AND ADIPONITRILE.** W.F. Heydens, L.D. Kier, M.V. Roloff, D.C. Thake, T.L. Blank, W.E. Ribelin, and R.D. Short Monsanto Company, St. Louis, MO.
- #787 **ACUTE T-2 MYCOTOXICOSIS IN SWINE: COMPARISON OF INHALATION AND INTRAVASCULAR ROUTES OF EXPOSURE ON PULMONARY ULTRASTRUCTURE.** W.M. Haschek¹, V.F. Pang¹, J.A. Adams¹, E.J. Basgall², W.B. Buck², R.J. Lambert², and V.R. Beasley², Departments of Pathobiology¹ and Biosciences², University of Illinois, Urbana, IL.
- #788 **PRODUCTION OF HYPERTHERMIA AND RESPIRATORY RESPONSE TO INHALATION OF ENDOTOXIN IN GUINEA PIGS.** P.S. Thorne, C.P. Yeske, and M.H. Karol. Dept. Industrial Environmental Health Sciences, Univ. of Pittsburgh, Pittsburgh, PA
- #789 **INHALATION TOXICITY OF NICKEL SUBSULFIDE TO F344/N RATS AND B6C3F1 MICE EXPOSED FOR 13 WEEKS.** C.H. Hobbs¹, J.M. Benson¹, Y.S. Cheng¹, A.F. Eidson¹, F.F. Hahn¹, J.A. Pickrell¹, and J.K. Dunnick², Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM¹, and NIEHS/NTP, Research Triangle Park, NC²
- #790 **COMPARATIVE TOXICITY OF NICKEL OXIDE, NICKEL SULFATE, AND NICKEL SUBSULFIDE IN THE F344/N RAT AND B6C3F>1 MOUSE.** J.K. Dunnick¹, C.H. Hobbs, J.M. Benson, F.F. Hahn, R.L. Hanson, A.F. Eidson and Y.S. Cheng. *NIEHS/NTP, Research Triangle Park, NC and Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM
- #791 **BIOCHEMICAL AND HISTOLOGICAL PULMONARY EFFECTS OF GALLIUM ARSENIDE COMPARED TO SILICA AFTER A SINGLE INTRATRACHEAL DOSE.** B.J. Snider, J. Zhang and D.E. Carter, Dept. of Pharmacology and Toxicology, Univ. of Arizona, Tucson, AZ.
- #792 **KINETICS OF THE PULMONARY CLEARANCE OF COBALT IN RATS.** R.J. Francovitch, M.I. Tayyeb, and D.B. Menzel. Depts. of Pharm. and Med., Comp. Cancer Ctr., Duke Univ. Med. Ctr., Durham, NC.

- #793 **SERUM COPPER AND PULMONARY HYPERTENSION IN MONOCROTALINE PYRROLE-TREATED RATS.** P.E. Ganey and R.A. Roth. Dept. of Pharmacology/Toxicology, Ctr. for Environ. Toxicol., Michigan State Univ., East Lansing, MI
- #794 **LUNG RETENTION AND METABOLIC ACTIVATION OF ¹⁴C-BENZO(A)PYRENE ADSORBED ON CARBON BLACK PARTICLES.** J.D. Sun, J.A. Bond, S.M. Maio, M.E. Carlini, and R.K. Wolff. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM.
- #795 **RETENTION AND BINDING OF INHALED ¹⁴C-BENZO(A)PYRENE ADSORBED ON CARBON BLACK PARTICLES.** R.K. Wolff, J.D. Sun, E.B. Barr, and S.J. Rothenberg. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM.
- #796 **PULMONARY AND PATHOLOGICAL RESPONSES OF RATS TO ACUTE INHALATION OF SYNTHETIC GRAPHITE.** S.A. Thomson, D.C. Burnett, R.S. Anderson*, R.J. Hilaski. Chemical Research, Development and Engineering Center, APG, MD and *Chesapeake Biol. Lab., Univ. MD, Solomons, MD.
- #797 **SURFACTANT BIOSYNTHESIS IN THE LUNGS OF SILICA-TREATED RATS.** B.E. Miller*, R.E. Chapin, and G.E.R. Hook. NIEHS/NIH, Research Triangle Park, NC and Curriculum in Toxicology, University of North Carolina at Chapel Hill, Chapel Hill, NC.
- #798 **A MURINE MODEL TO ASSESS THE INFLAMMATORY AND FIBROTIC POTENTIAL OF SYNTHETIC INDUSTRIAL FIBERS.** L.R. Pustilnik and A.K. Hubbard. Dept. of Pharmacology/Toxicology, University of AZ, Tucson, AZ. Sponsor: A.J. Gandolfi
- #799 **CHRONOLOGY OF A PULMONARY INFLAMMATORY RESPONSE INDUCED BY EXPOSURE TO GLASS FIBERS IN A MURINE MODEL OF PNEUMOCONIOSIS.** M.S. Stefaniak and A.K. Hubbard. Dept. Pharm-Tox, University of AZ, Tucson, AZ. Sponsor: A.J. Gandolfi
- #800 **THE EFFECT OF ARAMID AND METAPHOSPHATE FIBERS ON MACROPHAGE VIABILITY AND FUNCTION.** C.S. Wheeler and C.D. Garner. Biomedical Science Dept., GM Research Labs, Warren, MI. Sponsor: E.W. Lee
- #801 **DEPOSITION & CLEARANCE OF INHALED KEVLAR® ARAMID FIBERS IN RATS.** D.P. Kelly, K.P. Lee and G.L. Kennedy, Jr. E.I. du Pont de Nemours and Co., Haskell Laboratory for Toxicology and Industrial Medicine, Newark, DE.
- #802 **POST-CATHETERIZATION SUPPORT STRATEGIES FOR STUDIES INVOLVING INSTRUMENTED RATS TO ASSESS WORK PERFORMANCE DEGRADATION FOLLOWING THE INHALATION OF TOXIC SUBSTANCES.** D.M. Stavert, J.S. Wilson, and B.E. Lehnert. Los Alamos National Laboratory, Los Alamos, NM.
- #803 **TOXICOLOGICAL EFFECTS OF PURE AND MIXED FIRE GASES FOR VARIOUS EXPOSURE TIMES.** B.C. Levin, J.L. Gurman¹, M. Paabo, L. Baier, and T. Holt. National Bureau of Standards, Gaithersburg, MD; ¹American Iron & Steel Inst., Washington, DC.
- #804 **COMPARISON OF TOXIC SMOKE FROM LARGE-SCALE ROOM BURNS AND SMALL-SCALE LABORATORY EXPERIMENTS.** E. Braun, B.C. Levin, M. Paabo, J.L. Gurman¹, T. Holt, and J.S. Steel. National Bureau of Standards, Gaithersburg, MD; ¹Amer. Iron & Steel Institute.
- #805 **PRODUCTION OF NEUROTOXIC BICYCLOPHOSPHATE ESTERS FOLLOWING THERMAL DECOMPOSITION OF SYNTHETIC LUBRICANTS.** J.F. Wyman, M. Porvaznik, P. Serve*, D.W. Hobson, D. Geiger**, and D.E. Uddin. Naval Medical Research Institute/ Toxicology Detachment and ** Armstrong Aerospace Medical Research Laboratory, WPAFB, OH and *Dept of Chemistry, Wright State University Dayton, OH. Sponsor: Ed Kinkead
- #806 **EXPOSURE-RELATED ALTERATIONS IN RAT RESPIRATORY TRACT HISTOPATHOLOGY AND LAVAGE CYTOLOGY/BIO-CHEMISTRY FOLLOWING CIGARETTE SMOKE EXPOSURE.** R.M. David, C.V. Dove, M. Sonawane, L.G. Campbell, D.R. Dansie and W.C. Hall. Microbiological Associates Inc., Bethesda, MD, and Pathology Associates, Inc., Ijamsville, MD. Sponsor: L.T. Mulligan
- #807 **ACUTE RESPIRATORY EFFECTS OF INHALED POLYVINYLCHLORIDE (PVC) SMOKE IN NONHUMAN PRIMATES.** H.L. Kaplan¹, A. Anzueto², W.G. Switzer¹ and R.K. Hinderer³. 1) Southwest Research Institute, SA, TX; 2) UT Health Science Center, SA, TX; 3) B.F. Goodrich, Akron, OH.
- #808 **THE MECHANISM OF THIOL UTILIZATION BY SMOKE CHALLENGED RAT AND RABBIT LUNGS.** U.M. Joshi, K.S. Prasada Rao and H.M. Mehendale. Dept. Pharmacol and Toxicol., Univ. MS Med Ctr., Jackson, MS.
- #809 **SUBCHRONIC INHALATION TOXICITY OF 2-ETHYLHEXYL-NITRATE.** R. Valentine, L.A. Kinney, R.L. Ferenz, B.A. Burgess, R.M. Everett, N.C. Chromey and E.F. Stula. E.I. du Pont de Nemours and Company, Newark, DE
- #810 **30-DAY INHALATION EXPOSURES OF SPRAGUE-DAWLEY RATS TO AEROSOLIZED LUBRICANT BASE OILS.** T.G. Osimitz, W.E. Dalbey, C. Kommineni, and E.J. Singer. Mobil Oil Corporation, Princeton, NJ.
- #811 **DIMETHYLSULFOXIDE (DMSO) DOES NOT PROTECT AGAINST PULMONARY FIBROSIS.** W.M. Haschek, K.E. Baer, and J.E. Rutherford. Department of Veterinary Pathobiology, University of Illinois, Urbana, IL.
- #812 **RANGE-FINDING AND SUBCHRONIC INHALATION TOXICITY STUDIES WITH POLYPHENYLENE OXIDE (PPO) DUST IN RATS.** M.E. Placke, B. Prentice, D.K. Craig, G.L. Fisher and L.W. Smith. Battelle Columbus Division, Columbus, OH. and General Electric Co., Pittsfield, MA.
- #813 **A NOVEL INHALATION CHAMBER FOR EXPOSURE OF RATS TO OXIDANT GASES.** J.S. Wilson, D.M. Stavert, R.F. Archuleta, and B.E. Lehnert. Los Alamos National Laboratory, Los Alamos, NM
- #814 **INEXPENSIVE CONVERSION OF UPRIGHT AND INVERTED MICROSCOPES FOR POLARIZED LIGHT MICROSCOPY.** P.S. Thorne and W.G. Jones, Dept. of Industrial Environmental Health Sciences, University of Pittsburgh, Pittsburgh, PA. Sponsor: M.H. Karol
- #815 **APPLICATION OF ELECTRON PROBE X-RAY ANALYSIS AS A DIAGNOSTIC ADJUNCT FOR NATURALLY-OCCURRING AND EXPERIMENTAL VETERINARY PNEUMOCONIOSES.** M.G. Evans, S.L. Flegler*, and R.F. Slocombe, Dept. of Pathology and Ctr. for Electron Optics (*), Michigan State University, E. Lansing, MI. Sponsor: S.D. Sleight

**THURSDAY MORNING, FEBRUARY 26
EXHIBIT HALL**

POSTER SESSION: GENERAL TOXICOLOGY I

Chairperson: J.D. deBethizy, RJR Nabisco, Inc. Winston-Salem, NC

Displayed: 8:30 a.m.-11:30 a.m.
Attended: 10:00 a.m.-11:30 a.m.

- #816 **INTEGRATED PRECONDITIONING PROCEDURES FOR IMPROVING THE QUALITY OF FERRETS SELECTED FOR BIOLOGICAL RESEARCH.** D. McLain, S. McGrain, Y. Greener, and E. Youkilis. Travenol Laboratories, Inc., Round Lake, IL.

- #817 **THE EFFECTS OF SOLVENTS ON THE IN VITRO TOXICITY OF A BONE REPLACEMENT MATERIAL.** C.E. Hastings, Jr., J.R. Heath, III, J.W. Vincent and J.O. Hollinger. U.S. Army Institute of Dental Research, Washington, D.C. Sponsor: T.H. Keenan.
- #818 **EFFECTS OF PYRIDOSTIGMINE BROMIDE ON THE MORPHOLOGY OF NEUROMUSCULAR JUNCTIONS IN DIAPHRAGM MUSCLE OF SPRAGUE DAWLEY RATS.** J.G. Page¹, D.L. Habash¹, J.S. Nelson² and W.E. Ridder³. ¹Battelle Columbus Division, Columbus, OH; ²Washington University, St. Louis, MO, and ³Walter Reed Army Institute of Research, Washington, DC.
- #819 **EFFECT OF PYRIDOSTIGMINE BROMIDE ON RED BLOOD CELL ACETYLCHOLINESTERASE IN BEAGLE DOGS.** J.G. Page, G.C. Haggerty, D.L. Habash, and W.E. Ridder¹. Battelle Columbus Division, Columbus, OH; and ¹Walter Reed Army Institute of Research, Washington, DC.
- #820 **METABOLIC FATE OF 1-PALMITOYL-L-LYSOPHOSPHATIDYLCHOLINE IN TYPE II CELLS AND MACROPHAGES AFTER EXPOSURE TO CARBON BLACK, DIESEL EXHAUST, NITROGEN DIOXIDE AND OZONE.** K.C. Chen, and J.T. Johnson. Biomedical Science Dept., GM Research Labs, Warren, MI. Sponsor: E.W. Lee
- #821 **COMPARATIVE ACUTE TOXICITY OF CHLOROCITRATE AND FLUOROCITRATE IN DOGS.** T. Bosakowski and A.A. Levin, Dept. of Toxicology and Pathology, Roche Research Center, Hoffmann-La Roche Inc., Nutley, NJ. Sponsor: R.M. McClain
- #822 **PERFLUORODECANOIC ACID (PFDA) AND LIPID METABOLISM IN THE RAT.** M.J. Van Raefelghem, J.P. Vanden Heuvel, C.W. Noren, L.A. Menahan, and R.E. Peterson. School of Pharmacy, University of Wisconsin, Madison, WI.
- #823 **INTERRELATIONSHIPS BETWEEN ENERGY AND FAT METABOLISM AND HYPOPHAGIA IN RATS TREATED WITH PERFLUORODECANOIC ACID (PFDA).** M.J. Van Raefelghem, C.W. Noren, L.A. Menahan, and R.E. Peterson. School of Pharmacy, University of Wisconsin, Madison, WI.
- #824 **SERUM ASAL (ARGININOSUCCINATE LYASE): A SENSITIVE INDICATOR OF HEPATOTOXICITY IN RATS.** J.C. Kapeghian, A.F. Plocinski, D.J. O'Connor, B.J. Weeks, J.D. Green, and V.M. Traina. Division of Tox/Path and Statistics, Research Dept., CIBA-GEIGY, Pharma. Div., Summit, NJ.
- #825 **DIETARY STATUS: AN IMPORTANT FACTOR IN MODULATING THE HYPOLIPIDEMIC RESPONSE OF PHTHALATE ESTERS IN RODENTS.** A.W. Lington, M.G. Bird and R.W. Kapp. Exxon Biomedical Sciences, Inc., East Millstone, NJ. Sponsor: R.A. Scala.
- #826 **EFFECT OF VOMITOXIN (DEOXYNIVALENOL) ON INFANT CYNOMOLGUS MONKEYS.** F. Iverson, J. Truelove, E. Lok and E.A. Nera. Toxicology Research Division, Food Directorate, Health Protection Branch, Ottawa, Canada.
- #827 **SUBCHRONIC ORAL TOXICITY STUDY OF 1-ETHYNYL-1-CYCLOHEXENE IN RATS.** W.H. Siddiqui and E.J. Hobbs. Dow Corning Corporation, Midland, MI.
- #828 **SUBCHRONIC ORAL TOXICITY EVALUATION OF AN ANTI-CHOLINERGIC BRONCHODILATOR.** B.J. Houston, R.A. Martin and G.S. Smith, Path. Exp. Tox. Dept., Warner-Lambert/Parke-Davis Res., Mississauga, ON and Ann Arbor, MI.
- #829 **SUBACUTE INTRAVENOUS TOXICITY OF C1-937, AN ANTHRAPYRAZOLE ANTICANCER DRUG CANDIDATE, IN BEAGLE DOGS.** D.G. Pegg and J.R. Watkins, Warner-Lambert/Parke-Davis Pharm. Res., Ann Arbor, MI.
- #830 **TOXICOLOGICAL STUDIES OF A NEW CLASS OF MACROCYCLIC TRICHOTHECENES.** R.W. Wannemacher, R.E. Dinterman, W.L. Thompson, and B.B. Jarvis. United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Frederick, MD and University of Maryland, College Park, MD Sponsor: R.F. Fricke.
- #831 **TOXIC EFFECTS OF N-PHENYL-2-NAPHTHYLAMINE (PBNA) IN F344/N RATS AND B6C3F₁ MICE GIVEN THE COMPOUND IN THE FEED FOR UP TO 13 WEEKS.** K.M. Abdo and C.A. Montgomery, NTP, NIEHS, RTP, NC; A.C. Peters, Battelle Columbus Laboratories, Columbus, OH. Sponsor: R.S. Yang
- #832 **TOXICITY STUDIES OF ANORDRIN.** D.P. Waller, M. Szarley, J.C. Pena, C.D. Fakroddin, A. Martin and R.T. Chatterton Jr., TRU, University of Illinois at Chicago and Northwestern University Medical School, Chicago, IL
- #833 **ASSESSMENT OF THE SUBCHRONIC INTRAVENOUS TOXICITY AND DISPOSITION OF (¹⁴C-) ACROLEIN IN THE RAT AND THE ACUTE AND SUBCHRONIC TOXICITY IN FERRETS.** D. McLain, M. McCartney, S. Giovanetto, L. Martis, Y. Greener, and E. Youkilis. Travenol Labs., Inc., Round Lake, IL
- #834 **SUBCHRONIC ORAL TOXICITY STUDY OF TRIDECYL ALCOHOL ETHOXYLATE IN RATS.** A.E. Chin, R.T. Plutnick, J.P. Matlock, T.M. Federici, and G.W. Burton. Exxon Corporation, East Millstone, NJ. Sponsor: R.A. Scala.
- #835 **THIRTEEN WEEK SUBCHRONIC TOXICITY STUDY OF CROTONALDEHYDE (CA) IN F344 RATS AND B6C3F₁ MICE.** G.W. Wolfe, M. Rodwin, J.E. French*, and G.A. Parker. Hazleton Laboratories America, Inc., Vienna, VA and *NTP, NIEHS, RTP, NC.
- #836 **THIRTEEN WEEK SUBCHRONIC TOXICITY STUDY OF BUTYRALDEHYDE (BA) IN F344 RATS AND B6C3F₁ MICE.** G.W. Wolfe, M. Rodwin, J.E. French*, G.A. Parker. Hazleton Laboratories America, Inc., Vienna, VA. *NTP, NIEHS, RESEARCH TRIANGLE PARK, NC.
- #837 **TOXICOLOGICAL STUDIES OF CHEMICAL MIXTURES OF ENVIRONMENTAL CONCERN AT THE NATIONAL TOXICOLOGY PROGRAM: STATUS REPORT.** R.S.H. Yang, E.J. Rauckman and T.J. Goehl. NIEHS/NTP, RTP, NC, R. Brown, Midwest Res. Inst., Kansas City, MO.
- #838 **OVERVIEW OF INGESTION STUDIES OF AIRBORNE ASBESTOS FROM CONTAMINATED DRINKING WATER THROUGH SHOWERING, BATHING OR USE OF HUMIDIFIER.** Y.M. Patel, J.A. Cotruvo and E.V. Ohanian. Criteria and Standards Division, ODW, USEPA, Washington, DC.
- #839 **ACUTE ORAL TOXICITY OF CHEMICALS IN THE RAT AND THE RABBIT.** G.L. Kennedy, Jr. and G.J. Graepel, Haskell Laboratory for Toxicology and Industrial Medicine, Newark, DE.
- #840 **SHORT-TERM TOXICITY OF 9 INDUSTRIAL CHEMICALS.** E. Komsta-Szumaska¹, V.E. Secours¹, I. Chu¹, V.E. Valli², V.M. Douglas³ and D.C. Villeneuve¹. Health Protection Branch¹, Ottawa, Canada, Biopath Analysts², Guelph, Ontario, and Environment Canada³, Hull, Quebec.
- #841 **AN APPROACH FOR THE STATISTICAL ANALYSIS OF SCREENING DATA IN TOXICOLOGY.** S.C. Gad, Toxicology, G.D. Searle Research and Development, Skokie, IL
- #842 **REQUIRED SAMPLE SIZES FOR INCREASING THE STATISTICAL POWER OF HEMATOLOGIC-BIOCHEMICAL EVALUATIONS IN A HETEROGENEOUS POPULATION OF FERRETS.** D. McLain, L. Lin, Y. Greener, and E. Youkilis. Travenol Labs., Inc., Round Lake, IL.
- #843 **THE USE OF BACKGROUND DATA IN THE INTERPRETATION OF TOXICOLOGY STUDIES.** D.O. Chanter, J.L. Dyke and R.L. Aitken. Huntingdon Research Centre, Huntingdon, England. Sponsor: P.A. Johns
- #844 **ANOTHER APPROACH TO TOXIC HAZARD RATINGS.** P.Y. Lu, S.H. Hubner, J.T. Ensminger, Oak Ridge National Laboratory*, Oak Ridge, TN. and R.A. Yeary, Chemlawn, Columbus, OH.

- #845 **HUMAN EXPOSURE ASSESSMENTS FOR LAUNDRY PRODUCTS.** P.J. Hakkinen and J. Yam. The Procter & Gamble Company, Packaged Soap and Detergent Product Development Division, Cincinnati, OH. Sponsor: J.F. Griffith
- #846 **RISING DOSE TOLERANCE (RDT) STUDY: A NOVEL SCENARIO FOR OBTAINING PRECLINICAL TOXICOLOGY/DRUG METABOLISM DATA.** J.R. Hazelette, T.N. Thompson, B. Mertz, L. Vuolo-Schuessler, J.D. Green, S.L. Tripp, P. Robertson, and V.M. Traina. Research Dept., Pharma. Div., CIBA-GEIGY CORP., Summit, NJ and Ardsley, NY
- #847 **DETERMINATION OF PYRROLIZIDINE ALKALOID METABOLITES FROM MOUSE LIVER MICROSOMES USING TANDEM MASS SPECTROMETRY.** C.K. Winter, A.D. Jones, and H.J. Segall. Veterinary Medicine Pharmacology and Toxicology and Facility for Advanced Instrumentation, University of California, Davis, CA.
- #848 **A RAPID AND SPECIFIC CLEAN-UP PROCEDURE FOR THE GAS CHROMATOGRAPHIC (GC) ANALYSIS OF NICOTINE AND COTININE IN SMALL VOLUMES OF PLASMA.** E.L. White, L.E. Bates, and J.D. deBethizy. R.J. Reynolds Tobacco Company, Bowman Gray Technical Center, Winston-Salem, NC
- #849 **DETERMINATION OF CANTHARIDIN USING CAPILLARY GC/MS IN SPECIMENS FROM HORSES POISONED BY INGESTION OF BLISTER BEETLES (EPICAUTA SPP.).** A.C. Ray, M.J. Murphy, J.C. Reagor, Texas Veterinary Medical Diagnostic Laboratory (TVMDL), Texas A&M University, College Station, TX
- #850 **HPLC ANALYSIS OF ³²P-POSTLABELED DNA-2-AMINOFLOURENE ADDUCTS.** G.N. Levy and W.W. Weber. Dept. of Pharmacology, University of Michigan, Ann Arbor, MI
- #851 **CELL GROWTH STUDIED BY FOURIER TRANSFORM INFRARED SPECTROSCOPY.** M.J.W. Chang, T.B. Huston, J.T. Keller and D.J. Long. Battelle Columbus Division, Columbus, OH. Sponsor: J.G. Page
- #852 **FLUORESCENCE QUANTITATION OF THE SCRAPE-LOADING/DYE TRANSFER ASSAY TO MEASURE INHIBITED CELL-CELL COMMUNICATION IN WB CELLS BY PBB AND DIELDRIN.** M.G. Evans*, M.H. El-Fouly, J.E. Trosko. Depts. of Pathology (*) and Pediatrics/Human Develop., Michigan State University, E. Lansing, MI.

**THURSDAY MORNING, FEBRUARY 26
EXHIBIT HALL**

POSTER SESSION: BIOTRANSFORMATION ENZYMES II

Chairperson: M.S. Bogdanffy, Haskell/E.I. du Pont de Nemours & Co., Newark, DE

Displayed: 8:30 a.m.-11:30 a.m.

Attended: 8:30 a.m.-10:00 a.m.

- #853 **INVOLVEMENT OF IMMUNE REACTION IN DEPRESSING HEPATIC MIXED FUNCTION OXIDASE ACTIVITIES AFTER TREATMENT WITH OOS-TMP.** A. Koizumi, >*K.E. Rodgers, L. Hasewaga, >*D. Ellefson and T. Imamura. Univ. California, Riverside, CA >*Univ. Southern California, L.A., CA.
- #854 **NEONATAL DEXAMETHASONE (DEX) TREATMENT ALTERS THE DEVELOPMENT OF SEXUALLY DIMORPHIC HEPATIC p-450'S IN THE RAT.** H.C. Cunny, J. Leakey, J. Bazare, P. Webb and W. Slikker, Jr. U of AR for Medical Sciences, Little Rock, AR and National Center for Toxicological Research, Jefferson, AR
- #855 **EFFECT OF VARIOUS PRETREATMENTS ON THE METABOLISM OF ACRYLONITRILE (ACN) IN RATS.** L. Rouisse and S. Chakrabarti. Med. Trav. & Hyg. Mil., Fac. Med., Univ. de Montreal, Montreal, Quebec, Canada
- #856 **INFLUENCES OF DIETARY RESTRICTION AND AGE ON LIVER ENZYME ACTIVITIES AND LIPID PEROXIDATION IN MICE.** A. Koizumi, R. Weindruch* and R.L. Walford*. Univ. of California, Riverside, CA *Univ. of California, Los Angeles, CA Sponsor: I. Imamura
- #857 **MECHANISM-BASED INHIBITION OF CYTOCHROME P450 BY HETEROCYCLIC ANALOGS OF PHENCYCLIDINE (PCP).** J.F. Brady, J. Dokko, C.H. Nguyen, E.W. DiStefano and A.K. Cho, Dept. of Pharmacology, UCLA, Los Angeles, CA.
- #858 **CYTOTOXICITY OF 4-AZASTEROIDS TOWARD RAT HEPATOCYTES: ROLE OF CYTOCHROME P-450 IN DETOXICATION.** G.L. Kedderis, L.S. Argenbright, and G.T. Miwa. Merck Sharp & Dohme Research Laboratories, Rahway, NJ Sponsor: L.B. Kedderis
- #859 **ROLE OF GLUTATHIONE S-TRANSFERASES AND PHENOLIC ANTIOXIDANTS IN THE DETOXIFICATION OF BENZO(a)PYRENE IN LUNG.** S.V. Singh, T. Leal, G. Creadon and Y.C. Awasthi Univ. TX. Med. Br., Galveston, TX.
- #860 **A NEW METHOD FOR THE MEASUREMENT OF HEPATIC APS KINASE ACTIVITY.** T.J. Maziasz and J.J. Hielle. Dept. of Comparative Biosciences and the Environmental Toxicology Center, Univ. of Wisconsin, Madison, WI.
- #861 **CARBON MONOXIDE-INDUCED INHIBITION OF AMINOPYRINE METABOLISM IN THE ISOLATED PERFUSED RABBIT LUNG.** B.A. Trela, K.M. Johnson, P.R. Mayer and G.P. Carlson. Dept. of Pharmacology & Toxicology, Sch. of Pharmacy, Purdue University, West Lafayette, IN
- #862 **SELECTIVE INACTIVATION OF FOUR RAT LIVER MICROSOMAL ANDROSTENEDIONE HYDROXYLASES BY CHLORAMPHENICOL ANALOGS.** J.C. Stevens and J.R. Halpert, Department of Pharmacology and Toxicology, College of Pharmacy, University of Arizona, Tucson, AZ.
- #863 **A SIMPLE AND SENSITIVE METHOD TO MEASURE MICROSOMAL ACETANILIDE HYDROXYLASE ACTIVITY.** M. Lewandowski, Y.C. Chui and E. Hodgson. Toxicology Program, North Carolina State University, Raleigh, NC
- #864 **THE EFFECTS OF METHYLENEDIOPHENYL (MDP) COMPOUNDS ON HEPATIC MICROSOMAL PROTEINS OF C57BL/6 AND DBA/2 MICE.** Y.C. Chui, M. Lewandowski, and E. Hodgson. Toxicology Program, North Carolina State University, Raleigh, NC
- #865 **COMPARISON OF OXIDATIVE DESULFURATION AND DEARYLATION OF FENITROTHION BY CYTOCHROME P-450 ISOZYMES.** P.E. Levi, *R.M. Hollingworth, and E. Hodgson. Toxicology Program, N.C. State Univ., Raleigh, NC. *Dept. Entomology, Purdue Univ., West Lafayette, IN
- #866 **HEPATOTOXIC RESPONSE TO ACUTE COCAINE ADMINISTRATION IN MALE AND FEMALE MICE.** C.S. Boyer, D.R. Petersen and D. Ross, School of Pharmacy, Molecular and Environmental Toxicology Program, Hepatobiliary Research Center, University of Colorado, Health Sciences Center, Denver, CO.
- #867 **MECHANISMS OF TOXICITY OF COCAINE IN HEPATOCYTES ISOLATED FROM MOUSE AND RAT.** D. Ross, A.J. Sadler, D.A. Donnelly, C.S. Boyer and D.R. Petersen. Molecular and Environmental Toxicology Program, School of Pharmacy, University of Colorado, Boulder, CO.

- #868 **DEFLOURINATION BY HEPATIC GLUTATHIONE S-TRANSFERASES?** S.A. Rice and S.-L. Wang. Dept. of Anesthesia. Stanford University and V.A.M.C. Palo Alto, CA
- #869 **DOSE DIFFERENTIATED INDUCTION OF DRUG METABOLIZING ENZYMES BY CLOTRIMAZOLE.** J.K. Ritter and M.R. Franklin, Dept. Pharmacology and Toxicology, Univ. of Utah, Salt Lake City, UT.
- #870 **PARTIAL PURIFICATION OF A BENZENE HYDROXYLASE FROM RAT LIVER MITOPLASTS.** J.W. Karaszkiwicz, R. Snyder*, and G.F. Kalf. Thomas Jefferson Univ., Philadelphia, PA and *Rutgers Univ., Piscataway, NJ.
- #871 **IN VITRO INACTIVATION BY CHLORAMPHENICOL OF THE MAJOR PHENOBARBITAL-INDUCIBLE ISOZYME OF DOG LIVER CYTOCHROME P-450.** P.J. Ciaccio, D.B. Duignan, and J.R. Halpert, Dept. of Pharmacology and Toxicology, University of Arizona, Tucson, AZ
- #872 **DEVELOPMENT OF AN HPLC ASSAY FOR FOUR HYDROXYLATION ENZYMES TOWARDS AFLATOXIN B>1 AND GSH-S-TRANSFERASE (GST) TOWARDS AFLATOXIN B-8,9-EPOXIDE.** D.L. Eaton, D.H. Monroe and G.M. Bellamy, Dept. Environmental Health, University of Washington, Seattle, WA.
- #873 **TREATMENT OF AFLATOXIN B>1 WITH CHLORINE GAS.** A.C. Sen, S.Y. Fernando, E.M. Ahmed and C.I. Wei. Department of Food Science and Human Nutrition, University of Florida, Gainesville, FL. Sponsor: L.O. Lim
- #874 **OLTIPRAZ PROTECTS AGAINST THE HEPATOTOXICITY OF AFLATOXIN B>1 (AFB>1) IN THE RAT.** Y-L. Liu, B.D. Roebuck, J.D. Yager, J.D. Groopman, and T.W. Kensler. Dartmouth Medical School, Hanover, NH, Boston University School of Public Health, Boston, MA, Johns Hopkins University, Baltimore, MD.
- #875 **AFLATOXIN B1 HYDROXYLATION BY THE PCN-INDUCIBLE FORM OF RAT LIVER MICROSOMAL CYTOCHROME P-450.** M.R. Halvorson, S.H. Safe, A. Parkinson* and T.D. Phillips. Depts. of Veterinary Public Health and Physiology & Pharmacology, Texas A&M University, College Station, TX and *Kansas University Medical Center, Kansas City, KS.
- #876 **ROLE OF GLUTATHIONE (GSH) IN OLTIPRAZ (OTP)-INDUCED PROTECTION IN ACETAMINOPHEN (AAP) OR ALLYL ALCOHOL (AOH) HEPATOTOXICITY (HT) IN THE MALE HAMSTER.** M.H. Davis, G.J. Schamber and R.C. Schnell, Depts. Pharmaceutical and Veterinary Science, North Dakota State University, Fargo, ND.
- #877 **OTP-INDUCED PROTECTION IN ACETAMINOPHEN- OR ALLYL ALCOHOL-INDUCED HEPATOTOXICITY IN MALE HAMSTERS.** M.H. Davies, G.J. Schamber and R.C. Schnell, Depts. Pharmaceutical and Veterinary Science, North Dakota State University, Fargo, ND.
- #878 **EFFECT OF HEPATIC GLUTATHIONE (GSH) DEPLETION ON ACTIVATION OF INORGANIC SULFATE AND SULFATE ESTER FORMATION IN RATS.** Z. Gregus, C.A. White, S.R. Howell, and C.D. Klaassen. Univ. of Kansas Medical Center, Kansas City, KS
- #879 **INFLUENCE OF GSH DEPLETION ON THE UPTAKE OF ACRYLONITRILE (AN) VAPORS AND RESULTING THIOCYANATE (SCN) URINARY EXCRETION.** D. Pilon and D.E. Ricker. CIIT, RTP, NC
- #880 **A SENSITIVE NONINVASIVE ASSAY TO DETERMINE ALTERED XENOBIOTIC METABOLISM BY GI MICROFLORA.** R.W. Chadwick, M.F. Copeland, D.A. Whitehouse, and D.M. Hill. U.S. EPA, Research Triangle Park, NC.
- #881 **ACETYLATION/DEACETYLATION (AC/DC) OF ARYL AMINES IN HUMAN AND RAT LIVER.** C.E. Green, V.P. Hanko, G.R. Gordon, J.H. Peters, and C.A. Tyson. SRI International, Menlo Park, CA.
- #882 **TRICHLOROETHYLENE METABOLISM IN HUMAN AND RAT HEPATOCYTES AND S-9.** S.A. Knadle, V.P. Hanko. G.R. Gordon, C.E. Green, J.H. Peters, and C.A. Tyson. SRI International, Menlo Park, CA.
- #883 **BENZO(a)PYRENE METABOLISM IN HUMAN AND RAT HEPATOCYTES AND A COMPARISON OF METABOLISM IN SUSPENSION AND MONOLAYER CULTURE.** S.A. Knadle, C.E. Green, S.E. LeValley, J.E. Dabbs, C.A. Tyson. SRI International, Menlo Park, CA.
- #884 **PRESENCE OF HEXOBARBITAL IN PRIMARY CULTURES OF RAT HEPATOCYTES MAINTAINS CYTOCHROME P-450 LEVELS AND DRUG METABOLIZING ENZYME ACTIVITIES.** H.M. Kim and K.H. Yang, Department of Biological Science & Engineering, Korea Advanced Institute of Science & Technology, Chongyangni, Seoul, Korea
- #885 **THE METABOLISM OF 7-ETHOXYCOUMARIN (7EC) AND 7-HYDROXYCOUMARIN (7HC) IN PRECISION-CUT RAT AND HUMAN LIVER SLICES IN DYNAMIC ORGAN CULTURE.** J. Barr, A.J. Weir, A. Istock, A. Villareal, K. Brendel and I.G. Sipes, Dept. of Pharmacology and Toxicology, University of Arizona, Tucson, AZ.
- #886 **N-DEMETHYLATION OF N-NITROSODIMETHYLAMINE (NDMA) CATALYZED BY PIG LIVER MICROSOMES.** L.A. Myers, *J.L. Raucy, **R.F. Bevill and P.N. Magee, Fels Research Inst. and Dept. of Pathology, Temple Univ. Sch. of Med., Philadelphia, PA. *Dept. of Pharmacology, Temple Univ. Sch. of Med., Phila., PA; **College of Veterinary Med., University of Illinois, Urbana, IL.
- #887 **MICROSOMAL DECHLORINATION OF CHLOROPROPANES.** R.F. Volp. Department of Chemistry, Murray State University, Murray, KY. Sponsor: A.J. Gandolfi
- #888 **METABOLISM OF TRANS-4-HYDROXY-2-NONENAL (T-4HN) BY PURIFIED RAT LIVER MICROSOMAL AND MITOCHONDRIAL ALDEHYDE DEHYDROGENASES (ALDH).** M.W. Lame', L. Grasse and H.J. Segall. Veterinary Medicine Pharmacology and Toxicology, University of California, Davis, CA
- #889 **OXIDATION OF ALDEHYDE LIPID PEROXIDATION PRODUCTS BY PURIFIED RAT HEPATIC MICROSOMAL ALDEHYDE DEHYDROGENASE.** D.Y. Mitchell and D.R. Petersen, School of Pharmacy, Molecular and Environmental Toxicology Program, Hepatobiliary Research Center, University of Colorado, Health Sciences Center, Denver, CO.
- #890 **ROLE OF QUINONE REDUCTASE (QR) IN IN VIVO ETHANOL (EtOH) METABOLISM.** J.H. Chung and R.J. Rubin, Johns Hopkins University, Balto., MD
- #891 **METABOLISM AND CLEARANCE OF MPTP AND 2'CH>3-MPTP IN MOUSE BRAIN.** M.V. Kindt, D.M. Placenti, and R.E. Heikkila. Dept. of Neurology, UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ. Sponsor: G. Witz
- #892 **SEQUESTRATION AND DISPOSITION OF PUTRESCINE, SPERMIDINE AND SPERMINE BY RAT LUNGS.** S.B. Rao and H.M. Mehendale, Dept. Pharmacol. and Toxicol., Univ. Miss. Med. Ctr., Jackson, MS.
- #893 **PHOSPHOROTHIONATE INSECTICIDE ACTIVATION BY RAT BRAIN MONOOXYGENASES.** C.S. Forsyth and J.E. Chambers. Dept. of Biological Sciences, Mississippi State University, Mississippi State, MS.
- #894 **A COMPARISON BETWEEN LIVER AND BRAIN PIG MICROSOMES.** M. Farage-ElAwar, B.M. Francis and E.H. Jeffery. Dept. of Veterinary Biosciences and Inst. for Environmental Studies, University of Illinois, Urbana, IL.

THURSDAY AFTERNOON, FEBRUARY 26

1:30 p.m.-5:00 p.m.

International Ballroom West

SYMPOSIUM: NEUROTOXICOLOGY OF HEAVY METALS: MOLECULAR MECHANISMS

Sponsored by SOT Neurotoxicology and Metals Specialty Sections

Chairperson: E. Foulkes, University of Cincinnati, Cincinnati, OH

Introduction. E. Foulkes, University of Cincinnati, Cincinnati, OH

Effects of Metals on Neurotransmitter Release. G.P. Cooper, University of Cincinnati, Cincinnati, OH

Effects of Lead on Calcium Channels. G. Audesirk, University of Colorado, Denver, CO

Involvement of Calmodulin in Metal Neurotoxicology. D. Desai, University of Mississippi Medical Center, Jackson, MS

Cell-Specific Proteins as Indicators of Metal Neurotoxicology. J.P. O'Callaghan, U.S. Environmental Protection Agency, Research Triangle Park, NC

Discussant A. Michaelson, University of Cincinnati, Cincinnati, OH; M. Jones, Vanderbilt University, Nashville, TN

THURSDAY AFTERNOON, FEBRUARY 26

1:30 p.m.-5:00 p.m.

International Ballroom Center

SYMPOSIUM: EVALUATION OF THE RATIONALE FOR SELECTION OF THE MAXIMUM TOLERATED DOSE (MTD) FOR CHRONIC ANIMAL BIOASSAYS

Chairperson: R.J. Kociba, Dow Chemical Company, Midland, MI

Introduction. R.J. Kociba, Dow Chemical Company, Midland, MI

Historic Perspective on Issue of the Maximum Tolerated Dose (MTD). L. Golberg, Duke University Medical Center, Durham, NC

Current Status of the Issue of Maximum Tolerated Dose (MTD) Within the U.S. National Toxicology Program. E.E. McConnell, J.J. Collins, National Institute of Environmental Health Sciences, Research Triangle Park, NC

Policy Document of U.S. Environmental Protection Agency, Office of Pesticides Program, on Selection of Maximum Tolerated Dose (MTD) in Oncogenicity Studies. T.M. Farber, U.S. Environmental Protection Agency, Washington, DC

Exaggerated Pharmacodynamic Effects in Carcinogenicity Studies. G.H. Hottendorf, Bristol-Myers Company, Syracuse, NY

Use of Chemical Disposition and Toxicological Data for Selection of Dose Levels for Chronic Animal Bioassays. D.E. Rickert, Chemical Industry Institute of Toxicology, Research Triangle Park, NC; V.L. Horton, University of North Carolina, Chapel Hill, NC

European Perspective on the Issue of the Maximum Tolerated Dose (MTD). R. Kroes, National Institute of Public Health and Environmental Hygiene, Bilthoven, Netherlands

THURSDAY AFTERNOON, FEBRUARY 26

1:30 p.m.-5 p.m.

JEFFERSON ROOM WEST

PLATFORM SESSION: INHALATION II

Chairpersons: J.T. Stevens, Ciba-Geigy Corp., Greensboro, NC

M.A. Medinsky, Lovelace Inhalation Tox. Research Institute, Albuquerque, NM

- #114 1:30 **RETENTION AND CLEARANCE OF INHALED SUBMICRON CARBON BLACK PARTICLES.** K.A. Strom, J.T. Johnson and T.L. Chan, Biomedical Science Dept., GM Res. Labs, Warren, MI. Sponsor: E.W. Lee
- #115 1:45 **DEVELOPMENT OF A COMPREHENSIVE BIOASSAY FOR ASSESSING LUNG TOXICITY TO INHALED DUSTS.** D.B. Warheit, Du Pont-Haskell Lab., Newark, DE
- #116 2:00 **RETROSTERNAL, CAUDAL MEDIASTINAL TISSUE AS A TRANSLOCATION SITE FOR PARTICLES CLEARING FROM THE PLEURAL SPACE COMPARTMENT (PSC).** B.E. Lehnert, Los Alamos National Laboratory, Los Alamos, NM
- #117 2:15 **DISPOSITION AND METABOLISM OF INHALED 1-CHLORO-2-PROPANOL IN RATS.** J.A. Bond, P.J. Sabourin, A.R. Dahl, L.S. Birnbaum*, and R.F. Henderson. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM; *NIEHS/NTP, Res. Triangle Park, NC.
- #118 2:30 **TOXICOKINETIC STUDIES OF BEAGLE DOGS EXPOSED BY INHALATION TO BERYLLIUM OXIDE.** G.L. Finch, J.A. Mewhinney, M.D. Hoover, A.F. Eidson, A.G. Harmsen, and D.E. Bice. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM Sponsor: R.F. Henderson
- #119 2:45 **FACTORS MODIFYING LUNG RETENTION OF INHALED ORGANIC COMPOUNDS.** R.F. Henderson, W.E. Bechtold, M.A. Medinsky, and T.T. Lee, Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM 87185
- #120 3:00 **DEPOSITION AND METABOLISM OF PROPANOL AND ACETONE VAPORS IN THE NASAL CAVITY.** J.B. Morris and D.G. Cavanagh, School of Pharmacy Univ. of Connecticut, Storrs, CT.
- #121 3:15 **THE ISOLATED AIRWAY-PERFUDED NASAL CAVITY.** D.G. Cavanagh and J.B. Morris, School of Pharmacy, Univ. of Conn., Storrs, CT.

- #122 3:30 **INFLAMMATION AND DEGENERATION OF NASAL EPITHELIUM IN RATS AND MICE CAUSED BY CHRONIC INHALATION EXPOSURE TO METHYL METHACRYLATE.** P.C. Chan, G.A. Boorman, J.K. Haseman. National Institute of Environmental Health Sciences, Research Triangle Park, NC 27709. Sponsor: R.S.H. Yang
- #123 3:45 **A MODEL FOR PHYSIOLOGIC AND BEHAVIORAL EVALUATION OF ANIMAL PERFORMANCE DURING TOXIC INHALATION EXPOSURES.** D.E. Malek and Y. Alarie, Dept. Ind. Env. Hlth. Sci., University of Pittsburgh, Pittsburgh, PA.
- #124 4:00 **COMPARISON OF FLOW-VOLUME LOOPS IN GUINEA PIGS EXPOSED TO TWO ISOCYANATES.** J.S. Ferguson and Y. Alarie, Dept. Ind. Env. Hlth. Sci., University of Pittsburgh, Pittsburgh, PA.
- #125 4:15 **UPTAKE OF VINYLIDENE FLUORIDE (VDF) IN RATS SIMULATED BY A PHYSIOLOGICAL MODEL.** M.A. Medinsky, W.E. Bechtold, L.S. Birnbaum, D.M. Chico, R.L. Gertach, and R.F. Henderson. Lovelace Inhal. Toxicol. Res. Inst., Albuquerque, NM, NIEHS/NTP*, Res. Tri. Park, NC and Phila. Coll. Pharm.Sci*. Philadelphia, PA.
- #126 4:30 **ESTIMATING THE HAZARD OF SUDDEN INHALATION EXPOSURE BY EXTRAPOLATION OF TLVS AND ACUTE LC₅₀S.** G.V. Alexeff, California Public Health Foundation, Berkeley, CA
- #127 4:45 **A LOW FLOW AEROSOL GENERATOR FOR THE DELIVERY OF RESPIRABLE AEROSOLS.** D.A. Weyel, and L. Rosato. University of Pittsburgh, Graduate School of Public Health, Pittsburgh, PA 15261.

THURSDAY AFTERNOON, FEBRUARY 26

1:30 p.m.-5 p.m.

LINCOLN ROOM WEST

PLATFORM SESSION: GENETIC TOXICOLOGY

Chairpersons: D.J. Doolittle, RJR Nabisco Inc., Winston Salem, NC
R.W. Naismith, Pharmakon Research Inc., Waverly, PA

- #128* 1:30 **CONSTRUCTION OF A SITE-SPECIFICALLY MODIFIED VIRAL GENOME CONTAINING THE MAJOR DNA ADDUCT OF THE ANTITUMOR DRUG, CIS-DIAMMINEDICHLORO-PLATINUM(II) (CIS-DDP).** L.J.Naser, A.L. Pinto, S.J. Lippard and J.M. Essigmann. Massachusetts Institute of Technology, Cambridge, MA.
- #129 2:00 **INHIBITION OF 2-AMINOFLUORENE MUTAGENESIS BY INDUCERS OF CYTOCHROME P450d.** D.M. Miller, A.E. Aust, R. Voorman, and S.D. Aust. Dept. Biochemistry and Center for Environmental Toxicology, Michigan State Univ., E. Lansing, MI
- #130 2:15 **SULFITE-DEPENDENT MUTAGENICITY OF 7,8-DIHYDROXY-7,8-DIHYDROBENZO(A)PYRENE.** G.A. Reed and A.D. Bye. University of Kansas Medical Center, Kansas City, KS.
- #131 2:30 **ENHANCED IN VITRO MUTAGENICITY OF DIMETHYLNITRO-SAMINE FOLLOWING ETHANOL PRETREATMENT IN RATS.** E. Monosson and J.G. Babish. Department of Pharmacology, New State College of Veterinary Medicine, Cornell University, Ithaca, NY
- #132 2:45 **GENOTOXICITY OF PYRROLIZIDINE AND LARKSPUR ALKALOIDS DETECTED BY ALKALINE ELUTION.** J.R. Hincks, R.A. Coulombe, Jr., F.R. Stermitz and R. Molyneux. Center for Environmental Toxicology, Utah State University, Logan, UT, Dept. of Chemistry, Colorado State University, Fort Collins, CO and Western Region Research Laboratory, USDA, Berkeley, CA.
- #133 3:00 **EFFECT OF AGE ON THE METABOLIC ACTIVATION AND DNA BINDING OF AFLATOXIN B₁ IN FISCHER RATS.** F.F. Chiao, N.Y., Kado, L.S. Hsieh, B.H. Ruebner, D.P.H. Hsieh. Dept. Environmental Toxicology, University of Calif., Davis, CA.
- #134 3:15 **INDUCTION OF HYDROGEN PEROXIDE-MEDIATED CHROMOSOME DAMAGE IN VITRO BY PHENOLIC ANTIOXIDANTS.** B.J. Phillips, D. Anderson and S.D. Gangolli, BIBRA, Carshalton, UK.
- #135 3:30 **BLEOMYCIN-INDUCED DAMAGE OF MITOCHONDRIA DNA FROM MOUSE AND L1210 TUMOR MITOCHONDRIA.** L.O. Lim and A.H. Neims. Pesticide Research Lab. Dept. Food Sci. Human Nutrition; Dept. Pharmacology and Therapeutics, University of Florida, Gainesville, FL.
- #136 3:45 **DIFFERENTIAL ACTIVATION OF BENZIDINE CONGENERS BY RAT HEPATIC ENZYMES TO MUTAGENIC PRODUCTS IN THE SALMONELLA TEST.** Michael M. Iba, Department of Pharmacology and Toxicology, Rutgers University, Piscataway, NJ.
- #137 4:00 **HEPATIC DNA DAMAGE IS NOT POSITIVELY CORRELATED WITH GLUTATHIONE (GSH) CONCENTRATION IN RATS EXPOSED TO 1,2-DICHLOROETHANE (DCE).** J.Cramer¹, Kris Blanchard and R.B. Conolly¹. Toxicology Program, School of Public Health, The University of Michigan, Ann Arbor, MI. ¹ Northrop Services, Inc. - Environmental Sciences, Dayton, OH.
- #138 4:15 **DNA DAMAGE AND LACK OF REPAIR SYNTHESIS IN RAT HEPATOCYTES FOLLOWING IN VIVO EXPOSURE TO CHLORDECONE AND CARBON TETRACHLORIDE.** F.I. Ikegwuonu and H.M. Mehendale, Dept. Pharmacol. and Toxicol., Univ. MS Med. Ctr., Jackson, MS.
- #139 4:30 **BREAKS IN HEPATIC DNA PRODUCED BY TRICHLOROACETIC ACID (TCA), CHLORAL (CH) AND TRICHLOROETHYLENE (TCE).** R.J. Bull and M.A. Nelson. Pharmacology/Toxicology Program, College of Pharmacy, Washington State University, Pullman, WA

THURSDAY AFTERNOON, FEBRUARY 26

1:30 p.m.-5 p.m.

MONROE ROOM

PLATFORM SESSION: BIOTRANSFORMATION II

Chairpersons: A. Parkinson, University of Kansas Medical Center, Kansas City, MO
L.S. Kaminsky, New York Health Department, Albany, NY

- #140 1:30 **OVINE URINARY METABOLITES OF ETHOXYQUIN.** H.L. Kim, Veterinary Physiology and Pharmacology, Texas A&M University, College Station, TX. Sponsor: S. Safe
- #141 1:45 **CYTOCHROME P-450 (P-450) CATALYZED METABOLISM OF 2,2,2-TRIFLUOROETHANOL AND ITS RELATIONSHIP TO TOXICITY.** J.M. Fraser and L.S. Kaminsky. Wadsworth Center for Laboratories and Research, New York State Department of Health, Albany, NY.

*New Investigator Presentation

- #142 2:00 **MODIFICATION OF XENOBIOTIC METABOLISM BY DIETARY INDOLES: A NOVEL MECHANISM.** C.A. Bradfield and L.F. Bjeldanes. Univ. of California, Berkeley.
- #143 2:15 **INTESTINAL METABOLISM OF HARMOL (HA): DOSE-DEPENDENT GLUCURONIDATION AND SULFATION.** D. Goon and C.D. Klaassen. Univ. of Kansas Medical Center, Kansas City, KS
- #144 2:30 **EFFECT OF 17—ETHYNYLESTRADIOL ON THE INDUCTION OF P450 BY 3-METHYLCHOLANTHRENE IN CULTURED HEPATOCYTES.** S.A. Sundstrom, J.F. Sinclair, P.R. Sinclair, & E.L. Smith. Dept. of Pharmacology & Toxicology and Biochemistry, Dartmouth Medical School, Hanover, NH, and Veterans Administration Medical Center, White River Jct., VT Sponsor: H. Borison
- #145 2:45 **INHIBITION OF RAT LIVER MICROSOMAL CYTOCHROME P450p *IN VIVO*.** M.P. Arlotto, A.J. Sonderfan and A. Parkinson. Kansas University Medical Center, Kansas City, Kansas.
- #146 3:00 **COMPARATIVE EFFECTS OF BUTYLATED HYDROXYANISOLE (BHA) ON *IN VIVO* AND *IN VITRO* METABOLISM OF AFLATOXIN B₁(AFB₁) IN RAT AND MOUSE LIVER.** D.H. Monroe and D.L. Eaton, Department of Environmental Health, University of Washington, Seattle, WA.
- #147 3:15 **EFFECTS OF ANESTHETICS ON THE BILIARY EXCRETION OF SULFHYDRYLS (SHs) AND Cd.** C.A. White and C.D. Klaassen, Univ. of Kansas Medical Center, Kansas City, KS
- #148 3:30 **EFFECT OF VOLATILE ANESTHETICS ON THE BILIARY CLEARANCE OF CHOLEPHILIC CHEMICALS.** J.B. Watkins. Medical Sciences Program, Indiana University School of Medicine, Bloomington, IN.
- #149 3:45 **COMPARATIVE TOXICOLOGY STUDIES OF THE MONOMER AND POLYMER OF 1,2-DIHYDRO-2,2,4-TRIMETHYL-QUINOLINE IN F344 RATS AND B6C3F₁ MICE (SKIN PAINT).** J.E. French, W. Eastin, and *A.G. Manus, NTP/NIEHS, RTP, NC and *Southern Research Institute, Birmingham, AL. Sponsor: R.S.H. Yang

THURSDAY AFTERNOON, FEBRUARY 26 EXHIBIT HALL

POSTER SESSION: IMMUNOTOXICOLOGY III

Chairperson: K.C. Norbury, Ortho Pharmaceutical Corp., Raritan, NJ

Displayed: 1:30 p.m.-4:30 p.m.

Attended: 1:30 p.m.-3:00 p.m.

- #895 **THE EFFECT OF ACUTE PHOSGENE EXPOSURE ON THE INFLUENZA PULMONARY CYTOTOXIC T LYMPHOCYTE RESPONSE.** J.P. Ehrlich¹ and G.R. Burleson². ¹NYU Med. Center, Institute of Environmental Medicine, ²Northrop Services, Inc., Environmental Sciences, RTP, NC. Sponsor: J.A. Graham
- #896 **EFFECTS OF CYCLOSPORIN A (CYA) ON SUSCEPTIBILITY TO MURINE CYTOMEGALOVIRUS (MCMV) AND RELATED IMMUNE FUNCTION TESTS.** M.J. Daniels,¹L.D. Laauer,² J.H. Dean,² and M.J.K. Selgrade.¹ U.S. Environmental Protection Agency, Research Triangle Park, N.C. and Chemical Industry Institute of Toxicology, Research Triangle Park, NC.
- #897 **EFFECTS OF BENZO(A)PYRENE ON HOST RESISTANCE TO PLASMODIUM YOELII AND P. BERGHEI IN B6C3F₁ MICE.** M.M. Fouant and S.G. Bradley. Dept. of Microbiology and Immunology. Medical College of VA/Virginia Commonwealth University, Richmond, VA.
- #898 **MODULATION OF HOST RESISTANCE FOLLOWING INTRATRACHEAL INSTILLATION OF GALLIUM ARSENIDE(GaAs).** H.H. Lysy, J.A. McCay, N.K. Snyder and K.L. White, Jr. Medical Coll. of VA/VCU, Richmond, VA.
- #899 **IMMUNOTOXICOLOGICAL EVALUATION OF THE ANTIOXIDANT 4,4'-THIOBIS(6-t-BUTYL-m-CRESOL) (TBBC).** K.L. White, Jr., D.L. Musgrove, J.A. McCay, M.P. Holsapple. Medical College of Virginia/VCU, Richmond, VA.
- #900 **EFFECT OF OZONE ON PULMONARY NATURAL KILLER CELL ACTIVITY.** L.B. Fuller and G.R. Burleson. Northrop Services, Inc., Environmental Sciences, ²HERL, RTP, NC. Sponsor: J.A. Graham
- #901 **SPECIES COMPARISON OF IMMUNE FUNCTION ASSAYS COMMONLY INCLUDED IN IMMUNOTOXICITY ASSESSMENT.** M.J. Murray, P.A. Melanson. The Procter & Gamble Co., Miami Valley Labs, Cincinnati, OH
- #902 **DEPRESSION OF NATURAL KILLER CELL ACTIVITY BY OCHRATOXIN A.** D.R. Germolec, G.R. Burleson, C.W. Jameson, M.F. Ackermann, K.R. Lamm, H.T. Hayes, and M.I. Luster. NTP, NIEHS, Research Triangle Park, NC
- #903 **THE *IN VITRO* EFFECTS OF TRICHOHECENES ON THE IMMUNE SYSTEM.** H.A.C. Atkinson and K. Miller, BIBRA, Carshalton, UK. Sponsor: G.C. Hard
- #904 **TARTRAZINE SPECIFIC REAGINIC ANTIBODY PRODUCTION: A DOSE RESPONSE STUDY.** S. Nicklin, A.P. Hutchinson and K. Miller, BIBRA, Carshalton, UK. Sponsor: G.C. Hard
- #905 **EARLY THYMIC EFFECTS OF DIOCTYLtin DICHLORIDE (DOTC) AT A CELLULAR LEVEL.** S. Volsen and K. Miller, BIBRA, Carshalton, UK. Sponsor: G.C. Hard
- #906 **AN ENZYME LINKED IMMUNOSORBENT ASSAY (ELISA) TO DETECT HUMAN IgE ANTIBODY TO SUBTILISIN A: CORRELATION WITH THE RADIOALLERGO-SORBENT TEST (RAST) AND SKIN TEST IN OCCUPATIONALLY EXPOSED INDIVIDUALS.** K. Sarlo, E. Clark, and D.I. Bernstein*. The Procter & Gamble Co., Miami Valley Labs and *University of Cincinnati, Cincinnati, OH Sponsor: M.J. Murray
- #907 **ACETAMINOPHEN-INDUCED IMMUNOSUPPRESSION OF THE MURINE IgM ANTI SHEEP ERYTHROCYTE (SRBC) RESPONSE *IN VITRO*.** A.A. Abdelrahman, S.D. Cohen and R.A. DiCapua. Section of Pharmacology and Toxicology, School of Pharmacy, University of Connecticut, Storrs, CT
- #908 **IMMUNE DYSFUNCTION WITH SEVERE OR MARGINAL COPPER DEFICIENCY.** S.A. Mulhern & L.D. Koller. FDA, Wash. D.C. and Oregon State Univ., Corvallis, OR.
- #909 **SYSTEMIC IMMUNE MODULATION PRODUCED BY INTRATRACHEAL INSTILLATION OF GALLIUM ARSENIDE (GaAs).** J.A. McCay, M.P. Holsapple, S.G. Bradley and A.E. Munson. Medical College of Virginia/VCU, Richmond, VA.
- #910 **SUPPRESSION OF HUMORAL IMMUNITY BY CARBON TETRACHLORIDE.** N.E. Kaminski, S.D. Jordan and M.P. Holsapple. Department of Pharmacology and Toxicology, Medical College of VA/VCU, Richmond, VA.
- #911 **CYCLOPHOSPHAMIDE (CY)-INDUCED IMMUNOENHANCEMENT IS MEDIATED BY ITS METABOLITE, ACROLEIN.** T.T. Kawabata and K.L. White, Jr. Medical College of Virginia, VCU, Richmond, Va.

- #912 **EFFECT OF CYCLOSPORIN A (CsA) ON HgCL₂-INDUCED ANTINUCLEAR ANTIBODY (ANA) AND GLOMERULAR IMMUNE COMPLEXES (GIC) IN ASW MICE.** K. Simon and T. Balazs. FDA, Washington, DC.
- #913 **SUPPRESSION OF LYMPHOCYTE PROLIFERATION BY HEXAMETHYLENE DIAMINE.** R.W. Luebke, C.B. Copeland, L.D. Lawson, M.M. Riddle, R.R. Rogers, and R.J. Smialowicz. U.S. EPA, Research Triangle Park, NC
- #914 **MURINE POLYMORPHONUCLEAR NEUTROPHILS AS IMMUNOTOXICOLOGICAL TARGETS.** M.F. Ackermann, K.R. Lamm, and M.I. Luster. Systemic Toxicology Branch, NTP, NIEHS, Research Triangle Park, NC.
- #915 **IMMUNOGENICITY OF BIOSYNTHETIC HUMAN GROWTH HORMONE IN RHESUS MONKEYS.** C.M. Zwicky, K.S. Pancak, G.T. Brophy, L.M. Holhausen, R.A. True, J.R. Ross, and P.H. Bick. Eli Lilly Research Labs, Greenfield, IN.
- #916 **ROLE OF METABOLISM IN DMN-INDUCED IMMUNOSUPPRESSION.** D.H. Kim, K.H. Yang, K.W. Johnson, and M.P. Holsapple. KAIST, Seoul, Korea, and Medical College of Virginia/VCU, Richmond, VA.
- #917 **HUMORAL IMMUNOSUPPRESSION BY N-NITROSO COMPOUNDS-STRUCTURE ACTIVITY RELATIONSHIPS.** N.E. Kaminski, S.D. Jordan and M.P. Holsapple. Department of Pharmacology and Toxicology, Medical College of Virginia/VCU, Richmond, VA.
- #918 **STRUCTURE-ACTIVITY ANALYSIS OF POLYCYCLIC AROMATIC HYDROCARBON ALTERATIONS IN B-CELL ACTIVATION AND DIFFERENTIATION.** G.J. Rosenthal, M.T. Silver, and M.I. Luster. Systemic Toxicology Branch, NTP, NIEHS, Research Triangle Park, NC.
- #919 **IMMUNOSUPPRESSION AND SPLENCYTE SURFACE ADDUCT FORMATION *IN VITRO* BY BENZO(A)PYRENE.** S.P. Mudzinski. Dept. Microbiology/Immunology, Albany Medical College, Albany, NY. Sponsor: L. Kaminsky
- #920 **HYDROQUINONE-INDUCED ALTERATION OF STROMAL CELL DEPENDENT B-LYMPHOPOIESIS.** A.G. King, K.S. Landreth, and D. Wierda. Dept. of Pharm. & Tox. and Dept. of Microbiology, West Virginia University Medical Center, Morgantown, WV.
- #921 **THE EFFECT OF PARAOXON ON MURINE T AND B CELL PROLIFERATION *IN VITRO*.** Steven Wood, Steven D. Cohen and R.A. DiCapua. Section of Pharmacology and Toxicology, University of Connecticut, Storrs, CT
- #922 **EVALUATION OF THE IMMUNOLOGICAL EFFECTS OF BETA-HEXACHLOROCYCLOHEXANE (-HCH) IN THE B6C3F1 MOUSE.** J.B. Cornacoff, L.D. Lauer, R.V. House, A.N. Tucker, J.G. Vos, and J.H. Dean. Chemical Industry Institute of Toxicology, Research Triangle Park, NC and 'National Institute of Public Health and Environmental Hygiene, Bilthoven, The Netherlands.
- #923 **EVALUATION OF THE IMMUNOTOXIC POTENTIAL OF DINOCAP IN MICE.** R.J. Smialowicz, M.M. Riddle, R.R. Rogers, R.W. Luebke, and D.G. Rowe. U.S. EPA, Research Triangle Park, NC
- #924 **HALOTHANE INDUCED IMMUNE RESPONSE IN A GUINEA PIG MODEL OF HALOTHANE HEPATITIS.** M. Siadat-Pajouh, T.P. Roth, A.K. Hubbard, A.J. Gandolfi. Dept. of Microbiology/Immunology and Anesthesiology, University of Arizona, Tucson, AZ
- #925 **CHARACTERIZATION OF ANTIBODIES PRODUCED IN HUMAN HALOTHANE HEPATITIS.** J.P. Levy, A.K. Hubbard, A.J. Gandolfi. Dept. of Anesthesiology, University of AZ, Tucson, AZ.
- #926 **CHRONOLOGY OF HALOTHANE-INDUCED ANTIGEN EXPRESSION IN HALOTHANE EXPOSED RABBITS.** T.P. Roth, O. Khidir, S. Schuman, A.K. Hubbard, A.J. Gandolfi. Dept. of Anesthesiology, University of AZ, Tucson, AZ.
- #927 **EFFECTS OF TOLMETIN SODIUM DIHYDRATE ON NORMAL AND POSTSURGICAL PERITONEAL CELL FUNCTION.** K.E. Rodgers, D.D. Ellefson, W. Girgis, L. Scott and G.S. diZerega. Livingston Reproductive Biology Laboratory. USC Medical School. Los Angeles, CA.
- #928 **CYTOFLUOROMETRIC ANALYSIS OF THYMIC AND SPENIC LYMPHOID POPULATIONS FOLLOWING ACUTE ADMINISTRATION OF O,O,S-TRIMETHYL PHOSPHOROTHIOATE.** K.E. Rodgers, D.D. Ellefson and C.F. Ware. Livingston Reproductive Biology Institute. USC Medical School. Los Angeles, CA. and Division of Biomedical Sciences, University of California, Riverside, CA.

**THURSDAY AFTERNOON, FEBRUARY 26
EXHIBIT HALL**

POSTER SESSION: DISPOSITION/PHARMACOKINETICS

Chairperson: R.B. Conolly, Northrop Services, Inc., Dayton, OH

Displayed: 1:30 p.m.-4:30 p.m.

Attended: 3:00 p.m.-4:30 p.m.

- #929 **WATER-SOLUBLE BENZENE METABOLITES IN F344/N RATS AND B6C3F₁ MICE DURING AND FOLLOWING ³H-BENZENE INHALATION** P.J. Sabourin, W. Bechtold, L. Birnbaum, G. Lucier and R. Henderson; Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM; NIEHS/NTP, Research Triangle Park, NC
- #930 **A COMPARATIVE *IN VITRO* EVALUATION OF FORMALDEHYDE METABOLISM IN THE EYE AND LIVER OF THE LONG-EVANS RAT.** T.B. Moore and E.W. Lee. Biomedical Science Dept., GM Research Labs, Warren, MI.
- #931 **A COMPARATIVE *IN VITRO* EVALUATION OF METHANOL OXIDATION TO FORMALDEHYDE IN THE EYE AND LIVER OF THE LONG-EVANS RAT.** T.B. Moore and E.W. Lee. Biomedical Science Dept., GM Research Labs, Warren, MI.
- #932 **PHARMACOKINETICS OF INHALED METHANOL: A COMPARISON BETWEEN F-344 RATS AND RHESUS MONKEYS.** V.L. Horton, M.A. Higuchi, and D.E. Rickert. CIIT, Research Triangle Park, NC, and Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC.
- #933 **PHARMACOKINETICS AND BIOAVAILABILITY OF VITAMIN K IN DOGS.** D.F. Gerken, R.A. Sams, G. Kociba, S. Ashcraft, and D. Bruzzesi. Ohio State University, Columbus, OH. Sponsor: V.L. Carter, Jr.
- #934 **COMPARATIVE PHARMACOKINETICS: DIETARY VS. GAVAGE ADMINISTRATION OF FENOPROFEN TO MALE FISCHER 344 RATS.** G.K. Hanasong, J.L. Masten, G.S. Grimes, and L.C. Howard. Toxicology Div., Lilly Research Labs., Greenfield, IN.
- #935 **ABSORPTION OF BUTACHLOR IN RHESUS MONKEYS FOLLOWING TOPICAL ADMINISTRATION OF MACHETE HERBICIDE.** J.M. Kronenberg, and T.W. Fuhremann, Monsanto Company, St. Louis, MO and D.E. Johnson, International Research and Development Corp., Mattawan, MI.
- #936 **PHARMACOKINETICS OF PROPETAMPHOS IN RATS.** I.S. Silver and W.C. Dauterman. Toxicology Program, N.C. State Univ., Raleigh, NC

- #937 **PHARMACOKINETICS OF RECOMBINANT HUMAN INTERFERONGAMMA IN THE RHESUS MONKEY AFTER INTRAVENOUS, INTRAMUSCULAR AND SUBCUTANEOUS ADMINISTRATION.** B.L. Ferraiolo, G.B. Fuller, B. Burnett and E. Chan. Genentech, Inc., South San Francisco, CA. Sponsor: P. Billings
- #938 **PHARMACOKINETICS AND BIOAVAILABILITY OF GOSSYPOL IN MALE RATS.** M.A. Othman and M.B. Abou-Donia. Duke University Medical Center, Durham, N.C.
- #939 **THE DIFFERENTIAL ELIMINATION OF 2,4,5,2',4',5'-HEXACHLOROBIPHENYL (6-CB) FROM LACTATING MICE.** L.A. Gallenberg and M.J. Vodicknik. Medical College of Wisconsin, Milwaukee, WI.
- #940 **DISTRIBUTION AND ELIMINATION OF 4-ISOPROPYLBIPHENYL FROM THE RAT AND MOUSE.** S.A. Carle, M.R. Roby, and D.E. Carter. Dept. of Pharmacology and Toxicology, University of Arizona, Tucson, AZ.
- #941 **COMPARATIVE DISPOSITION OF ORALLY ADMINISTERED 4-VINYLCYCLOHEXENE (VCH) IN RATS AND MICE.** B.J. Smith, M.R. Roby, and I.G. Sipes. Dept. of Pharmacology and Toxicology, University of Arizona, Tucson, AZ.
- #942 **EFFECTS OF ETHANOL PRETREATMENT ON MORPHINE DISTRIBUTION IN RATS.** D.R. Steup and R.B. Forney. Department of Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN.
- #943 **ABSORPTION STUDY OF DIMAC WITH SILVER SULFADIAZINE AS COMPARED TO SILVADENE CREAM IN THE RABBIT.** Kin-Kai Hwang, Jan Battor, David Drees, Joe Lacz, Marion Laboratories, Kansas City, MO.
- #944 **PHYSIOLOGICALLY-BASED PHARMACOKINETIC MODEL FOR VINYLIDINE CHLORIDE.** R.W. D'Souza and *M.E. Andersen, Miami Valley Laboratories, Procter & Gamble Co., Cincinnati, OH and *AAMRL/TH, Wright Patterson AFB, OH. Sponsor: G.P. Daston.
- #945 **PHARMACOKINETIC MODELS FOR INDIRECT CARCINOGENS.** R.H. Reitz, R.B. Conolly and M.E. Andersen. The Dow Chemical Company, Midland, MI; Northrop Services Inc., Dayton, OH; AAMRL/TH, Wright Patterson AFB, OH.
- #946 **METABOLISM AND PHARMACOKINETICS OF 4-NITRO-N-METHYLPHthalimide [CARBONYL-¹⁴C] (4-NPI) IN RATS AND RABBITS** R.C. Couch and L.W. Smith. Primate Research Institute/NM State Univ., Holloman AFB, NM and General Electric Company, Pittsfield, MA.
- #947 **CITRAL: MODEL FOR TERPENE DISPOSITION IN RATS.** J.J. Diliberto, G. Usha and L.S. Birnbaum. NIEHS, Research Triangle Park, NC.
- #948 **A COMPUTER-BASED SYSTEM FOR DATA ACQUISITION AND MANAGEMENT OF RADIOLABELED XENOBIOTIC DISPOSITION STUDIES.** J.D. deBethizy, K.S. Burchette, M.B. Johnson, T.G. Ashby and T.J. Hellard. R.J. Reynolds Tobacco Company, Bowman Gray Technical Center, Winston-Salem, NC.
- #949 **ABSORPTION DISTRIBUTION AND EXCRETION OF TOPICAL DOSES OF ¹⁴C-PHENYLETHYL ALCOHOL (PEA).** R.A. Ford, A.M. Api, Research Institute for Fragrance Materials Inc., Englewood Cliffs, N.J. and D.R. Hawkins, Huntingdon Research Centre Ltd., Cambridgeshire, England. Sponsor: O.E. Easterday.
- #950 **COMPARATIVE DISPOSITION OF A SERIES OF HERBICIDES IN THE RAT.** R.P. Clement, T.Y. Chin, C.A. Skowronek, N.D. Pignone, J.M. Pomeroy, R.C. Gagnon, J.E. Bonetti, and J.M. Killinger. Stauffer Chemical Co., Environmental Health Ctr., Farmington, CT.
- #951 **COMPARATIVE PHARMACOKINETICS OF INTRATRACHEALLY-ADMINISTERED MICROCRYSTALLINE AND PARTICULATE ABSORBED AFLATOXIN B >1 IN THE RAT.** R.A. Coulombe, Jr., R.P. Sharma, and J.M. Huie. Center for Environmental Toxicology, Utah State University, Logan, UT.

THURSDAY AFTERNOON, FEBRUARY 26

EXHIBIT HALL

POSTER SESSION: FOOD & DRUG TOXICOLOGY

Chairperson: R.S. Goldstein, Smith Kline & French Labs, Philadelphia, PA

Displayed: 1:30 p.m.-4:30 p.m.

Attended: 1:30 p.m.-3:00 p.m.

- #952 **A COMPARATIVE STUDY OF THE ACUTE EFFECTS OF d-LIMONENE AND DECALIN ON MALE RAT NEPHROPATHY.** G. Ridder, E. Von Bargen, R. Parker and C. Alden. The Procter & Gamble Company, Miami Valley Laboratories, Cincinnati, OH. Sponsor: Michael J. Murray.
- #953 **DOSE AND TEMPORAL THRESHOLD FOR THE NEPHROTOXICITY OF D-LIMONENE IN MALE FISCHER-344 RATS.** D.R. Webb and C.L. Alden, The Procter & Gamble Company, Cincinnati, OH.
- #954 **MUSCLE DAMAGE IN THE RABBIT FOLLOWING SINGLE INJECTIONS OF A NOVEL ENKEPHALINE ANALOG, SC-34871.** R.C. Guy, C.L. Durack and J.L. Allen. Product Safety Assessment, G.D. Searle Research & Development, Skokie, IL.
- #955 **TOXICITY OF ORALLY ADMINISTERED CI-944 IN RODENTS.** R.H. De Wit, E.J. McGuire, M.D. Seefeld, and B.C. Dickie*. Warner-Lambert/Parke-Davis Pharm. Res, Ann Arbor, MI and *Hazleton Laboratories America, Madison, WI.
- #956 **EFFECT OF DRUG-INDUCED THROMBOCYTOPENIA ON PLATELET VOLUME AND RELATIVE DISTRIBUTION WIDTH IN THE RAT.** J.L. Allen, J.A. Stock, C.E. Ludemann, and C.F. Chesney. Pathology and Toxicology Department, Riker Labs/3M Co., St. Paul, MN.
- #957 **A 4-WEEK ORAL TOXICITY STUDY WITH ACETALDEHYDE AND FORMALDEHYDE IN RATS.** H.P. Til', R.A. Woutersen', V.J. Feron' and J.J. Clary', TNO-CIVO Institutes, Zeist, The Netherlands and Celanese Corporation', New York, NY.
- #958 **CHRONIC TOXICITY OF THE ANTICONVULSANT ZONISAMIDE IN BEAGLE DOGS.** R. Walker, A. Gough, N. Barsoum and C. DiFonzo, Sponsor: J. Theiss Path. Exp. Tox. Dept., Warner-Lambert/Parke-Davis Pharm. Res., Mississauga, ON and Ann Arbor, MI.
- #959 **DECREASED INCIDENCES OF MONONUCLEAR CELL LEUKEMIA AND PHEOCHROMOCYTOMA IN MALE F344/N RATS DOSED FOR TWO YEARS WITH PHENYLEPHRINE HCL.** J.R. Bucher. NTP/NIEHS, Res. Tri. Park, NC, and M. Cowan. Physiol. Res. Labs., Minneapolis, MN
- #960 **THREE-GENERATION TOXICITY STUDY OF RATS INGESTING GENTIAN VIOLET.** N.A. Littlefield, B.N. Blackwell, D.W. Gaylor. National Center for Toxicological Research, Jefferson, AR. Sponsor: G. Schieferstein
- #961 **MORPHOMETRIC ANALYSIS OF CULTURED HEPATOCYTES EXPOSED TO INDOMETHACIN.** E.M.B. Sorensen. College of Pharmacy, Department of Pharmacology/Toxicology, University of Texas, Austin, TX.

- #962 **An IN VITRO MODEL FOR ASSESSING MUSCLE IRRITATION DUE TO PARENTERAL ANTIBIOTICS.** P.D. Williams, B.G. Masters, L.D. Evans, D.A. Laska, and G.H. Hottendorf, Department of Experimental Toxicology, Bristol-Meyers Company, Syracuse, NY. Sponsor: H. Madissoon.
- #963 **IN VITRO NEUTRAL RED CYTOTOXICITY ASSAY WITH AN S-9 METABOLIC ACTIVATING SYSTEM.** E. Borenfreund, Laboratory Animal Research Center, The Rockefeller University, NY, NY. Sponsor: D.M. Stark

**THURSDAY AFTERNOON, FEBRUARY 26
EXHIBIT HALL**

POSTER SESSION: DERMAL/OCULAR TOXICOLOGY

Chairperson: J.Y. Kao, Smith Kline & French Labs, Philadelphia, PA

Displayed: 1:30 p.m.-4:30 p.m.

Attended: 3:00 p.m.-4:30 p.m.

- #964 **OPHTHALMOLOGICAL EVALUATION OF FERRETS (MUSTELA PUTORIUS).** D. McLain, E. Youkilis, and Y. Greener. Travenol Laboratories, Inc., Round Lake, IL.
- #965 **QUANTITATION OF EYE IRRITATION BY DRAIZE SCORE OR CORNEAL SWELLING AND CORRELATION WITH IN VITRO CYTOTOXICITY.** H.E. Kennah II, D. Albulescu, S. Hignet and C.S. Barrow. PPG Industries, Inc. Environmental Sciences Center, Pittsburgh, PA
- #966 **DISTINCTIVE PATTERNS OF EPIDERMAL KERATIN EXPRESSION ARE INDUCED BY POTENT DERMATOTOXINS.** C.J. Molloy, M.A. Gallo, and J.D. Laskin. UMDNJ-RWJ Med. Sch. and the Jt. Grad. Prog. in Toxicology, Rutgers Univ., Piscataway, NJ
- #967 **COMPARISON OF THE SENSITISING POTENTIAL OF SOME INDUSTRIAL COMPOUNDS IN THE MOUSE AND GUINEA PIG.** J. Maisey, M.C. Robbins, R. Purchase and K. Miller. BIBRA Carshalton, Surrey, UK. Sponsor: G.C. Hard
- #968 **PREVALENCE AND PREDICTION, ACUTE SKIN AND EYE IRRITATION.** M.A. Pemberton, J. Doe and G.J.A. Oliver. ICI PLC, CTL, Macclesfield, Cheshire, UK.
- #969 **THE EPILATED GUINEA PIG (EGP) TEST IN THE ASSESSMENT OF PETROLEUM PRODUCT MILDNESS.** P.T. Bailey, D.L. Ackerman, and E.J. Singer. Mobil Oil Corporation, Princeton, NJ.
- #970 **DERMAL SENSITIZATION STUDY IN HAIRLESS GUINEA PIGS WITH DNCB AND BENZOCAINE.** A. Chester, T. Terrell, L. Nave, L. DePass. Syntex Research, Palo Alto, CA.
- #971 **A NOVEL METHOD TO PREVENT A DERMAL DOSE FROM BECOMING AN ORAL DOSE IN RATS.** M.C. Savides and J.P. Marciniak. Ricerca, Inc., Painesville, OH.
- #972 **IN VIVO AND IN VITRO DERMAL PENETRATION AND PHARMACOKINETICS OF 2,4,5,2',4',5'-HEXACHLOROBIPHENYL IN YOUNG AND ADULT RATS.** H.L. Fisher, L.L. Hall. U.S. EPA, P.V. Shah and M.R. Sumler, NSI, Research Triangle Park, NC
- #973 **AGE RELATED PERCUTANEOUS PENETRATION OF DINOSEB, DETERMINED BY IN VIVO AND IN VITRO METHODS.** L.L. Hall, H.L. Fisher, M.R. Sumler* and P.V. Shah*. U.S.EPA, *NSI, Research Triangle Park, NC
- #974 **DERMAL ABSORPTION AND DISPOSITION OF 1,2-DIHYDRO-2,2,4-TRIMETHYLQUINOLINE IN FISCHER 344 RATS.** P.V. Shah¹, H.L. Fisher², M.R. Sumler¹, M. Sanders³, Y.M. Ioannou⁴, and L.L. Hall². ¹NSI, ²U.S. EPA, ³NIEHS, Research Triangle Park, NC ⁴U.S. EPA, Washington, D.C.
- #975 **PERCUTANEOUS ABSORPTION KINETICS OF ORGANOPHOSPHATES, STEROIDS, CAFFEINE, AND BENZOIC ACID IN THE ISOLATED PERFUSED PORCINE SKIN FLAP(IPPSF).** M.P. Carver, N.A. Monteiro-Riviere, R.A. Rogers, K.F. Bowman, and J.E. Riviere. North Carolina State University, Raleigh, NC
- #976 **PERCUTANEOUS FATE OF TOPICAL STEROIDS: IN VITRO STUDIES WITH MOUSE SKIN IN ORGAN CULTURE.** J. Kao, Dept. Drug Metabolism, SK&F Philadelphia, PA
- #977 **SKIN PENETRATION POTENTIAL OF ¹⁴C-POLYMERS JR400 AND LR400 FOLLOWING A SINGLE APPLICATION TO FISCHER 344 RATS.** S.W. Frantz, M.J. Tallant, C.M. Grosse and B. Ballantyne. Bushy Run Research Center/Union Carbide Corporation, Export, PA.
- #978 **SUBCHRONIC DERMAL TOXICITY STUDY OF BENZETHONIUM CHLORIDE IN F344 RATS AND B6C3F1 MICE.** W.C. Eastin, *M.E. Placke, M.R. Hejtmancik, M.J. Ryan and A.C. Peters. *National Toxicology Program, RTP, NC and Battelle Columbus, OH.
- #979 **ANTI-KERATIN MONOCLONAL ANTIBODY USED TO PROBE FOR PERTURBATION IN THE DIFFERENTIATIVE PROCESS INDUCED BY EXPOSURE OF RAT KERATINOCYTES TO BIS-(B-CHLOROETHYL) SULFIDE (BCES).** B.J. Locey, and I.A. Bernstein. Toxicology Program, Dept. Env. Ind. Health, Univ. of Michigan., Ann Arbor, MI.

**THURSDAY AFTERNOON, FEBRUARY 26
EXHIBIT HALL**

POSTER SESSION: SOLVENT TOXICOLOGY

Chairperson: J. Bond, Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM

Displayed: 1:30 p.m.-4:30 p.m.

Attended: 1:30 p.m.-4:30 p.m.

- #980 **RESULTS OF A 90-DAY ORAL GAVAGE STUDY OF OXOOCTYL ACETATE IN RATS.** W.C. Daughtrey, M. Eutermoser, S.W. Thompson*, and R.W. Biles. Exxon Biomedical Sciences, Inc., East Millstone, NJ, *Veterinary and Comparative Pathology, Sayre, PA. Sponsor: G.F. Egan
- #981 **SUBCHRONIC TOXICITY STUDIES OF t-BUTYL ALCOHOL IN RATS AND MICE.** C. Lindamood III, D.R. Farnell, J.D. Prejean, and R.R. Maronpot*. Southern Research Institute, Birmingham, AL and *National Toxicology Program, Research Triangle Prk, NC.
- #982 **COMPARATIVE TOXICITY OF CRESOL ISOMERS.** D.D. Dietz, B.S. Levine, R.B. Sonawane, R. Rubenstein and C. DeRosa, Research Triangle Institute, RTP, NC; Microbiological Associates, Bethesda, MD; and USEPA, Washington, DC.

- #983 **NEUROTOXIC POTENTIAL OF ORTHO-, META-, AND PARA-CRESOL.** J.W. Henck, D.J. Traxler, D.D. Dietz and R. Rubinstein. Toxicity Research Laboratories, Ltd., Muskegon, MI, Research Triangle Institute, Research Triangle Park, NC, and U.S. EPA, Washington, D.C.
- #984 **SUBCHRONIC TOXICITY OF ETHYLENE GLYCOL IN CD-1 RATS.** M. Robinson¹, R.D. Laurie¹, C.L. Pond², L.W. Condie¹. ¹Health Effects Research Laboratory, USEPA, Cincinnati, OH and ²Pathology Associates, Inc., Ijamsville, MD.
- #985 **ETHYLENE GLYCOL PHENYL ETHER (EGPE): TOXICOLOGICAL EFFECTS IN RABBITS AND RATS¹.** W.J. Breslin, J.E. Phillips, L.G. Lomax, L.L. Calhoun, D.A. Dittenber, M.J. Bartels and R.R. Miller. H&ES, The Dow Chemical Company, Midland, MI.
- #986 **SUBCHRONIC TOXICITY OF CROTONALDEHYDE IN RATS.** B. Sonawane, R. Rubenstein, and C. DeRosa, U.S. Environmental Protection Agency, Washington, DC, E.C. Tompkins, Toxicity Research Labs, Muskegon, Mich., and D. Dietz, Research Triangle Institute, Research Triangle Park, NC
- #987 **SUBCHRONIC TOXICITY OF METHYL ISOBUTYL KETONE IN SPRAGUE DAWLEY RATS.** B.S. Levine¹, D.D. Dietz², R.B. Sonawane³, R. Rubenstein³ and C. DeRosa³. Microbiological Associates, Inc., Bethesda, MD¹, Research Triangle Inst., RTP, NC², and USEPA, Washington, DC³.
- #988 **p-XYLENE'S ALTERATION OF THE RAT LUNG MICROSOMAL MEMBRANE.** A. Roberts, J. Tegeris, R. Schatz, and D. Brown. Toxicology Program, Northeastern Univ., Boston, MA
- #989 **EFFECTS OF p-XYLENE ON CEREBRAL MEMBRANES.** L.J. King, T. Aucoin and R.A. Schatz. Toxicology Program, Northeastern University, Boston, MA
- #990 **THE IMMUNOLOGICAL AND NEUROCHEMICAL EVALUATIONS OF TOLUENE TOXICITY IN CD-1 MICE.** G.C. Hsieh, R.D.R. Parker, R.A. Coulombe, and R.P. Sharma. Center for Environmental Toxicology, Utah State University, Logan, UT
- #991 **EFFECT OF L-2-OXOTHIAZOLIDINE-4-CARBOXYLIC ACID (OTCA) ON THE URINARY EXCRETION OF MERCAPTURIC ACIDS IN RATS EXPOSED TO ACRYLONITRILE.** J. Brodeur, L. Laliberte, D. Talbot and R. Tardif. Dep. med. trav. & hyg. mil., Faculte de medecine, Universite de Montreal, Montreal, Quebec, Canada.

FRIDAY MORNING, FEBRUARY 27

8:30 a.m.-12 p.m.

International Ballroom East

SYMPOSIUM: QUANTITATIVE ASSESSMENT OF CANCER RISK – INTEGRATION OF BIOLOGICAL EVENTS

Sponsored by SOT Carcinogenesis Specialty Section

Chairpersons: N.P. Page, Dynamac Corporation, Gaithersburg, MD; D.V. Singh, U.S. Environmental Protection Agency, Washington, DC

Introduction. D.V. Singh, U.S. Environmental Protection Agency, Washington, DC

Interpretation of Carcinogenicity Tests. R.A. Squire, The Johns Hopkins University, Baltimore, MD

Types and Amounts of Carcinogens as Potential Human Cancer Risks. J. Weisburger, G. Williams, American Health Foundation, Valhalla, NY

Tissue Dosimetry in Cancer Risk Assessment. M.E. Andersen, H. Clewell, Wright-Patterson Air Force Base, OH

Pharmacokinetics in Cancer Risk Assessment. C.W. Chen, J.N. Blancato, U.S. Environmental Protection Agency, Washington, DC

Correlation of Carcinogenic Potency in Animals and Humans. K.S. Crump, B. Allen, A. Shipp, K.S. Crump & Co., Inc., Ruston, LA

Two-Stage Model for Carcinogenesis: Implications for Risk Assessment. S.H. Moolgavkar, F. Hutchison Cancer Research Center, Seattle, WA

Uncertainties in Risk Assessment. R. Albert, University of Cincinnati, Cincinnati, OH

FRIDAY MORNING, FEBRUARY 27

8:30 a.m.-12 p.m.

International Ballroom West

SYMPOSIUM: BIOCHEMICAL MECHANISM OF SPECIES DIFFERENCES IN TARGET ORGAN CARCINOGENICITY

Chairpersons: I.F.H. Purchase, E.A. Lock, Imperial Chemical Industries PLC, Cheshire, England

Introduction. I.E.H. Purchase, ICI PLC, Cheshire, England

Species Differences in Liver and Lung Carcinogenicity: The Role of Routes and Rates of Metabolism for Methylene Chloride. T. Green, Imperial Chemical Industries PLC, Cheshire, England

Species Differences in Thyroid Carcinogenicity. M. McClain, Hoffmann-La Roche, Inc., Nutley, NJ

Species and Sex Differences in Renal Carcinogenicity: The Relevance of Specific Proteins and Increased Cell Turnover. J. Swenberg, CIIT, Research Triangle Park, NC

Possible Mechanisms of Species Differences in Cancer of the Forestomach. D.B. Clayson. Bureau of Chemical Safety, Ottawa, Canada

FRIDAY MORNING, FEBRUARY 27

8:30 a.m.-12 p.m.

JEFFERSON ROOM WEST

PLATFORM SESSION: METALS II

Chairpersons: F.W. Sunderman, Jr., University of Connecticut, Farmington, CT
A. Furst, Palo Alto, CA

- #150 * 8:30 **ALTERED GANGLIOSIDE EXPRESSION WITHIN NEONATAL MOUSE CEREBELLAR CELLS FOLLOWING IN VIVO EXPOSURE TO METHYLMERCURY.** A.J. Jacobs¹, W.M. Maniscalco², and J.N. Finkelstein^{1,2}. Toxicology Training Program¹ and Division of Neonatology², University of Rochester School of Medicine, Rochester, NY
- #151 9:00 **AGE DEPENDENT DIFFERENCE IN CHEMICAL FORM OF BILIARY METHYLMERCURY IN RATS.** T. Urano, A. Naganuma and N. Imura. Dept. of Public Health, Sch. of Pharmaceutical Sciences, Kitasato University, Minato-ku, Tokyo, Japan
- #152 9:15 **MICROSCOPIC DISTRIBUTION OF ORGANIC VS INORGANIC HG IN MEHG - EXPOSED MOUSE KIDNEY.** P.M. Rodier and B. Kates, Department of Obstetrics and Gynecology, University of Rochester, Rochester, NY. Sponsor: T.W. Clarkson.
- #153 9:30 **GENOTOXICITY OF METHYLMERCURY IN MAMMALIAN CELLS.** J.T. Zelikoff, X.W. Wang, T.G. Rossman, and M. Costa. New York University Medical Center, Inst. of Environ. Medicine, New York, NY
- #154 9:45 **KINETICS OF ELEMENTAL MERCURY OXIDATION BY A SUSPENSION OF WASHED ERYTHROCYTES.** S.P. Sichak, J.B. Hursh, and T.W. Clarkson. Division of Toxicology, University of Rochester School of Medicine, Rochester, NY
- #155 10:00 **CHRONIC EXPOSURE OF HUMANS TO CADMIUM STIMULATES PULMONARY INFLAMMATION MEASURED BY BRONCHOALVEOLAR LAVAGE.** C.S. Rose, B.J. Fisher, A.A. Fowler. Medical College of Virginia, Richmond, VA. Sponsor: R.A. Carchman
- #156 10:15 **CADMIUM AND OVARIECTOMY-INDUCED LOSS OF BONE MINERAL.** M.H. Bhattacharyya*, B.D. Whelton*, D. P. Peterson*, E. S. Moretti*, and H. A. Dare*. Argonne National Laboratory*, Argonne, IL and Eastern Washington University*, Cheney, WA. Sponsor: E.M.D. Sorensen
- #157 10:30 **APPLICATION OF SUBCELLULAR FRACTIONATION IN STUDYING THE NEPHROTOXICITY OF METALS.** M.Dobrota and K.J. Andersen, Robens Institute, University of Surrey, Guildford, UK and Dept. of Biochemistry, Medical University of South Carolina, Charleston, SC. Sponsor: B.A. Fowler.
- #158 10:45 **REGULATION OF HEPATIC METALLOTHIONEIN-I (MT-I) AND METALLOTHIONEIN-II (MT-II) LEVELS FOLLOWING ADMINISTRATION OF ZINC.** L.D. Lehman-McKeeman, G.K. Andrews, and C.D. Klaassen. Univ. of Kansas Med. Ctr., Kansas City, KS
- #159 11:00 **CELLULAR UPTAKE AND METABOLIC REDUCTION OF PENTAVALENT TO TRIVALENT ARSENIC AS DETERMINANTS OF CYTOTOXICITY AND TRANSFORMATION.** F. Bertolero, G. Pozzi, E. Sabbioni and U. Saffiotti. National Cancer Institute, Frederick, MD. Mario Negri Institute, Milan, Italy and European Community Joint Research Center, Ispra (Varese), Italy.
- #160 11:15 **NICKEL - MAGNESIUM INTERACTIONS IN CARCINOGENESIS: DOSE EFFECTS AND NATURAL KILLER CELLS INVOLVEMENT.** K.S. Kasprzak, J.M. Ward, L.A. Poirier and C.W. Reynolds. National Cancer Institute, FCRF, Frederick, MD. Sponsor: M.P. Waalkes.
- #161 11:30 **COMPARATIVE CYTOTOXICITY OF NICKEL OXIDES AND NICKEL-COPPER OXIDES TO RAT, MOUSE AND DOG PULMONARY ALVEOLAR MACROPHAGES IN VITRO.** J.M. Benson, R.F. Henderson, J.A. Pickrell, and R.P. Singh, Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM.
- #162 11:45 **TISSUE UPTAKE OF NICKEL IN RATS DURING CONTINUOUS INTRAVENOUS INFUSION OF NICKEL-2.** R.J. Francovitch, M.I. Tayyeb, and D.B. Menzel. Depts. of Pharm. and Med., Comp. Cancer Ctr., Duke Univ. Med. Ctr., Durham, NC.

FRIDAY MORNING, FEBRUARY 27

EXHIBIT HALL

POSTER SESSION: NEUROTOXICOLOGY V: BEHAVIOR

Chairperson: D.A. Cory-Slechta, University of Rochester, Rochester, NY

Displayed: 8:30 a.m.-11:30 a.m.

Attended: 8:30 a.m.-10:00 a.m.

- #992 **RELIABILITY AND SENSITIVITY OF VIBRATION SENSE AS A MEANS OF TESTING FOR PERIPHERAL NEUROPATHY IN HUMANS.** J.P.J. Maurissen, G.J. Chrzan and S.G. Gorzinski. The Dow Chemical Company, Mammalian and Environmental Toxicology Research Laboratory, Midland, MI.
- #993 **NEUROPSYCHOLOGICAL EVALUATION OF CYCLODIENE INSECTICIDE TOXICITY.** R.M. Singer and N.E. Scott. Occupational Health Consulting, West Nyack, NY
- #994 **EFFECTS OF PREVIOUS MATERNAL EXPOSURE TO 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD) ON PEER GROUP SOCIAL BEHAVIOR OF RHESUS MONKEY INFANTS.** S.L. Schantz, S.A. Ferguson, H.C. Van Valkenberg, and R.E. Bowman. Harlow Primate Laboratory, University of Wisconsin, Madison WI. Sponsor: R.E. Peterson
- #995 **SENSITIVE PERIODS FOR LEAD BEHAVIORAL TOXICITY IN THE MONKEY.** D.C. Rice and S.G. Gilbert, Toxicology Research Division, Health Protection Branch, Ottawa, Canada. Sponsor: B. Stavric
- #996 **EFFECTS OF LOW-LEVEL LEAD EXPOSURE ON A SPATIAL DISCRIMINATION TASK IN ADULT MONKEYS.** S.G. Gilbert and D.C. Rice. Toxicology Research Division, Health and Welfare Canada, Ottawa, Ontario, Canada. Sponsor: B. Stavric.
- #997 **DELAYED MATCHING TO POSITION IN RATS: EFFECTS OF DELAY, INTERTRIAL INTERVAL, REHEARSAL, AND TRIMETHYLTIN.** P.J. Bushnell and D.D. Dunn. Neurotoxicology Div., U.S. EPA, RTP, NC and Northrop Services, Inc., Environmental Sciences, RTP, NC
- #998 **EFFECTS OF VOLATILE INHALANTS ON FLUROTHYL INDUCED CONVULSIONS AND CHANGES IN OPERANT PERFORMANCE.** D.C. Rees, K.R. Iorio, L.E. Black, E.E. Sikorski, T.M. O'Hara, R.L. Balster, Dept. of Pharmacology and Toxicology, Medical College of Virginia, Richmond, VA Sponsor: J.F. Borzelleca

*New Investigator Presentation

- #999 **EFFECTS OF INTRAPERITONEAL CARBON MONOXIDE ON FIXED-RATIO PERFORMANCE IN THE MOUSE.** J.S. Knisely, D.C. Rees, J.M. Salay, H.G. Haggerty, T.J. Breen, R.L. Balster, Dept. of Pharmacology and Toxicology and Biostatistics, Medical College of Virginia, Richmond, VA Sponsor: J.F. Borzelleca
- #1000 **EFFECTS OF SUBLETHAL DOSES OF IONIZING RADIATION ON SCHEDULE-CONTROLLED PERFORMANCE IN RATS.** P.C. Mele, C.G. Franz and J.R. Harrison. Armed Forces Radiobiology Research Institute, Bethesda, MD. Sponsor: V. Bogo
- #1001 **EFFECTS OF ACUTE EXPOSURES TO CHOLINERGIC AGENTS ON OPERANT BEHAVIOR IN RATS.** J.E. Chambers and H.W. Chambers. Depts. of Biological Sciences and Entomology, Mississippi State University, Mississippi State, MS.
- #1002 **FURTHER NEUROBEHAVIORAL CHARACTERIZATION OF THE IONOPHORE A23187.** T. Sobotka, R. Brodie, Y. Quander, M. O'Donnell and G. West. Div. of Toxicology, CFSAN, FDA, Wash., D.C. Sponsor: H. Blumenthal
- #1003 **COMPARISON OF CHLORDIMEFORM AND CARBARYL USING A FUNCTIONAL OBSERVATIONAL BATTERY.** V.C. Moser, J.P. McCormick and R.C. MacPhail. Northrop Services, Inc. and U.S. Environmental Protection Agency, Research Triangle Park, NC. Sponsor: W.K. Boyes
- #1004 **PRELIMINARY STUDIES OF MOTOR ACTIVITY AND TREMOR IN INTRATHECALLY IMPLANTED RATS.** D.W. Herr* and H.A. Tilson, National Institute of Environmental Health Sciences, Research Triangle Park, NC.
- #1005 **CHRONIC NICOTINE ADMINISTRATION AND WITHDRAWAL: EFFECTS ON RADIAL ARM MAZE PERFORMANCE IN RATS.** E.D. Levin, A. Reyes, and G.D. Ellison, Dept. of Psychology, University of California, Los Angeles, CA. Sponsor: A. Cho
- #1006 **BEHAVIORAL EFFECTS OF PESTICIDES IN MALE MICE.** J.A. Mitchell and M.C. Wilson, Dept. of Pharmacology, School of Pharmacy, University of Mississippi, University, MS
- #1007 **BEHAVIORAL EFFECTS OF PYDRIN AND AMBUSH IN MALE MICE.** J. Mitchell, M. Wilson, and M.J. Kallman, Depts of Pharmacology and Psychology, University of Mississippi, University, MS.
- #1008 **TIME-DEPENDENT DEFICITS IN DELAY CONDITIONING PRODUCED BY TRIMETHYLITIN.** D.B. Peele, J.D. Farmer, and J.C. Coleman. Northrop Services, Inc.-Environmental Sciences, RTP, NC and Neurotoxicology Div., U.S. EPA, RTP, NC. Sponsor: P.J. Bushnell.
- #1009 **CONCENTRATION-DEPENDENT CONDITIONED FLAVOR AVERSIONS INDUCED BY INHALED p-XYLENE.** P.J. Bushnell and D.B. Peele. Neurotoxicology Div., U.S. EPA, RTP, NC and Northrop Services, Inc. - Environmental Sciences, RTP, NC.
- #1010 **EFFECTS OF p-XYLENE AND TOLUENE ON MOTOR ACTIVITY IN RATS: DEPENDENCE OF ROUTE OF ADMINISTRATION.** R.C. MacPhail. Neurotoxicology Division, U.S. Environmental Protection Agency, Research Triangle Park, NC Sponsor: P.J. Bushnell
- #1011 **RECOVERY OF THE NERVOUS SYSTEM FROM DEMYELINATION: A CORRELATIVE NEUROBEHAVIORAL AND MORPHOLOGICAL EVALUATION.** J.V. Saphia, and L.D. Trombetta. St. John's University, Jamaica, NY. Sponsor: I.S. Jamall
- #1012 **EFFECTS OF SUBCHRONIC EXPOSURE TO BENZONITRILE ON NEUROBEHAVIOR IN B6C3F1 MICE AND F344 RATS.** G.C. Haggerty, R. Trejo, M. Hejtmancik, A.C. Peters, and R. Irwin*. Battelle, Columbus, OH, and *National Toxicology Program, RTP, NC.
- #1013 **EFFECTS OF ACUTE GAMMA RADIATION EXPOSURE ON LOCOMOTOR ACTIVITY IN SWISS-WEBSTER MICE.** M.R. Landauer, H.D. Davis, J.A. Dominitz, and S.J. Pierce. Behavioral Sciences Dept., Armed Forces Radiobiology Research Institute, Bethesda, MD. Sponsor: L.G. Cockerham
- #1014 **HYPERACTIVITY INDUCED BY TRIADIMEFON (TDF), A TRIAZOLE FUNGICIDE.** K.M. Crofton, V.M. Boncek and L.W. Reiter, Neurotoxicology Division, U.S. EPA, RTP, NC and Northrop Services, Inc., Environmental Services, RTP, NC
- #1015 **THE EFFECTS OF AMITRAZ (AMZ) ADMINISTRATION ON LOCOMOTOR ACTIVITY AND THE ACOUSTIC STARTLE RESPONSE: DOSAGE AND TIME DEPENDENT EFFECTS IN THE RAT.** K.M. Crofton, V.M. Boncek and L.W. Reiter, Neurotoxicology Division, U.S. EPA, RTP, NC and Northrop Services, Inc, Environmental Services, RTP, NC
- #1016 **RATS TREATED WITH MONOSODIUM GLUTAMATE (MSG) AS NEONATES EXHIBIT HYPERACTIVITY AND ELEVATED AUDITORY STARTLE RESPONSE.** L. Sheets*, G.C. Rigdon*, V.M. Boncek and L.W. Reiter. Neurotoxicology Division, U.S. EPA, RTP, NC
- #1017 **AGE-DEPENDENT NEUROTOXICITY OF PYRETHROIDS: ACUTE LETHALITY VERSUS THE AUDITORY STARTLE RESPONSE (ASR).** L. Sheets, K.M. Crofton and L.W. Reiter. Neurotoxicology Division, U.S. EPA, RTP, NC
- #1018 **A SCREEN FOR THE BEHAVIORAL TOXICOLOGY OF CLONIDINE IN NEONATAL RATS.** W.J. Pizzi, S. Tarchala, and R. Jersey. Neuropsychology Lab, Northeastern Illinois University, Chicago, IL. Sponsor: J.A. Thomas.
- #1019 **CHLORINE DIOXIDE DEPRESSES T>3 UPTAKE AND DELAYS THE DEVELOPMENT OF LOCOMOTOR ACTIVITY IN YOUNG RATS.** D.H. Taylor, S.A. Mobley, ¹R.D. Laurie and R.J. Pfohl. Department of Zoology, Miami University, Oxford, OH. ¹HERL, USEPA, Cincinnati, Ohio. Sponsor: P.T. McCauley
- #1020 **NEUROBEHAVIORAL DEVELOPMENT IN RATS AFTER PRENATAL KETAMINE.** G.L. West, T.J. Sobotka, R.E. Brodie & D.Y. Quander. Div. of Toxicology, CFSAN, FDA, Wash., DC. Sponsor: T.F.X. Collins
- #1021 **EFFECT OF LEAD ON SEIZURE SPREAD AND MORTALITY.** B.D. Davis¹, H.J. Kupferberg², M. Dombroski², and T.C. Rains³. ¹Technical Resources, Inc., Rockville, MD; ²National Institutes of Health, Bethesda, MD; ³National Bureau of Standards, Gaithersburg, MD.
- #1022 **EFFECT OF PERTUSSIS VACCINE ON CONVULSIVE THRESHOLD OF CNS STIMULANTS IN MICE.** H.C.Y. Yen-Koo, T. Balazs, D. Burns and C.R. Manclark, CDB, FDA, Washington, DC
- #1023 **TEMPORAL RELATIONSHIP BETWEEN LINDANE EFFECT ON PICROTOXIN-INDUCED SEIZURES AND HEPATIC DRUG-METABOLIZING ENZYMES.** B.E. Fishman, S.D. Cohen, N. Gastonguay and G. Gianutsos, Tox. Program, Sect. of Pharm. and Tox., U. of Ct., Storrs, CT.
- #1024 **IONIZING RADIATION INDUCES HYPOTHERMIA IN GUINEA PIGS.** S.B. Kandasamy, W.A. Hunt, and G.A. Mickley. Behavioral Sciences Department, Armed Forces Radiobiology Research Institute, Bethesda, MD. Sponsor: V. Bogo
- #1025 **A METHOD FOR ESTIMATING DOSE-RESPONSE PARAMETERS FROM WITHIN-SUBJECT EXPERIMENTS IN BEHAVIORAL TOXICOLOGY.** T.J. Breen, D.C. Rees, J.S. Knisely, R.L. Balster, Depts. of Biostatistics and Pharmacology and Toxicology, Medical College of Virginia, Richmond, VA Sponsor: J.F. Borzelleca
- #1026 **A NEW STATISTICAL MODELING FOR LEARNING BEHAVIOR IN WATER-FILLED MULTIPLE T-MAZE TESTING.** K. Suzuki, N. Hasegawa, T. Kamei, K. Kikukawa and T. Imamichi. Department of Physiology, Nippon Veterinary and Zoototechnical College, Musashinoshi Tokyo, Japan. Sponsor: I.P. Lee
- #1027 **A DATABASE FOR COMPUTER ANALYSIS OF REPORTED NEUROTOXIC EFFECTS.** M.I. Gage, Neurotoxicology Div., HERL, USEPA, Research Triangle Park, NC

FRIDAY MORNING, FEBRUARY 27
EXHIBIT HALL

POSTER SESSION: GENETIC TOXICOLOGY

Chairperson: C.A. McQueen, American Health Foundation, Valhalla, NY

Displayed: 8:30 a.m.-11:30 a.m.

Attended: 10:00 a.m.-11:30 a.m.

- #1028 **HUMAN AND RAT METABOLISM AND MUTAGENESIS OF 2-ACETYLAMINOFLUORENE BY INTACT HEPATOCYTES: A SYSTEM FOR SHORT-TERM IN VITRO GENOTOXICITY TESTING USING HUMAN TISSUES.** K. Rudo^{1,2}, W.C. Dauterman², and Robert Langenbach¹. ¹Cellular and Genetic Toxicology Branch, NIEHS, RTP, NC. ²Toxicology Program, N.C. State Univ., Raleigh, NC.
- #1029 **POTENTIATION OF 2-ACETYLAMINOFLUORINE-INDUCED UNSCHEDULED DNA SYNTHESIS IN RAT HEPATOCYTES BY THE PEROXISOME PROLIFERATORS CLOFIBRATE AND DI(2-ETHYLHEXYL)PHTHALATE.** M.T.S. Hsia and C.M. Chang. University of Wisconsin, Environmental Toxicology Center and Department of Entomology, Madison, WI.
- #1030 **VALIDATION OF THE HUMAN HEPATOCYTE PRIMARY CULTURE (HPC)/DNA REPAIR TEST.** C.A. McQueen, B.M. Way and G.M. Williams. American Health Foundation, Valhalla, NY
- #1031 **DNA DOUBLE-STRAND DAMAGE AND REPAIR IN ISOLATED SPERMATOGENIC CELLS FOLLOWING GAMMA IRRADIATION.** T.P. Coogan and I.Y. Rosenblum. Dept. of Pharmacology and Toxicology, Philadelphia College of Pharmacy and Science, Phila., PA
- #1032 **ACTIVITY OF GERM CELL MUTAGENS AND NONMUTAGENS IN THE RAT SPERMATOGENIC CELL DNA REPAIR ASSAY.** K.S. Bentley and P.K. Working. CIIT, Research Triangle Park, NC
- #1033 **INDUCTION OF UNSCHEDULED DNA SYNTHESIS (UDS) IN XENOGRAFTS CONTAINING HUMAN BRONCHIAL EPITHELIAL CELLS.** S.C. Maness, T.W. Hesterberg, J.B. Mangum, C.J. Borelko, *J.D. Iglehart, and J.I. Everitt. Chemical Industry Institute of Toxicology, Research Triangle Park, NC and *Duke University Medical Center, Durham, NC. Sponsor: P.K. Working
- #1034 **EVALUATION OF IN-VIVO MUTAGENICITY OF METHYLENE CHLORIDE FOLLOWING INHALATION EXPOSURE IN MICE BY DOMINANT LETHAL TEST.** M. Basso, R. Raju and M. Greening. A & M Schwartz College of Pharmacy & Hlth. Sciences, Long Island University, Brooklyn, NY.
- #1035 **DIETARY FAT MODIFIES HEPATIC ACTIVATION OF COOKED-FOOD MUTAGENS IN THE RAT.** A.J. Alldrick, T.M. Coutts and I.R. Rowland, BIBRA, Carshalton, UK. Sponsor: S.D. Gangolli.
- #1036 **DIETARY QUERCETIN MODIFIES HEPATIC TRANSFORMATION OF COOKED-FOOD MUTAGENS TO BACTERIAL GENOTOXINS IN VIVO AND IN VITRO.** A.J. Alldrick, T.M. Coutts and I.R. Rowland, BIBRA, Carshalton, UK. Sponsor S.D. Gangolli.
- #1037 **NUTRITIONAL TOXICOLOGY: MECHANISMS OF FORMATION OF POTENT CARCINOGENS DURING COOKING.** R. Conrad Jones and J.H. Weisburger, American Health Foundation, Valhalla, NY.
- #1038 **SOME FURTHER EVIDENCE SUGGESTING AN INDUCIBLE DNA REPAIR SYSTEM IN THE EUKARYOTE, TETRAHYMENA PYRIFORMIS.** J. Wheeler and J. Calkins. Graduate Center for Toxicology and Department of Radiation Medicine, University of Kentucky, Lexington. Sponsor: L. Robertson
- #1039 **MUTAGENICITY STUDIES OF NITROGUANIDINE (NG) AND NITROSOGUANIDINE (NSG).** J.W. Harbell, L.D. Witcher, S.E. Sebastian, and D.W. Korte, Jr. Letterman Army Institute of Research, San Francisco, CA. Sponsor: R.M. Wilkenfeld.
- #1040 **PEROXIDATIVE ACTIVATION OF 3,3'-DICHLORO-BENZIDINE TO MUTAGENIC PRODUCTS IN THE SALMONELLA TYPHIMURIUM TEST.** B. Lang and M.M. Iba. Department of Pharmacology and Toxicology and Graduate Program in Toxicology, Rutgers University, Piscataway, NJ.
- #1041 **FORMALDEHYDE (HCHO)- AND BENZO(A)PYRENE (BAP)-INDUCED DNA DAMAGE AND REPAIR IN AIRWAY EPITHELIUM.** G.N. Cosma and A.C. Marchok, Biology Division, Oak Ridge National Laboratory, Oak Ridge, TN. Sponsor: H.P. Witschi
- #1042 **CHEMICAL REACTIVITY, CYTOTOXICITY AND MUTAGENICITY OF CHLOROPROPANONES (CP).** B.A. Merrick, C.L. Smallwood, J.R. Meier, D.L. McKean, W.H. Kaylor, R.D. Laurie and L.W. Condie U.S. EPA, Cincinnati, Ohio
- #1043 **REACTIONS INVOLVING HOC1 OR C10>2 WITH FATTY ACIDS UNDER AQUEOUS CONDITIONS: pH EFFECTS AND MUTAGENICITY OF REACTION PRODUCTS.** C.I. Wei, A.C. Sen, M.F. Fukayama, and W.B. Wheeler. Department of Food Science and Human Nutrition, University of Florida, Gainesville, FL. Sponsor: L.O. Lim
- #1044 **SISTER-CHROMATID EXCHANGES AND CHROMOSOME ABERRATIONS IN LYMPHOCYTES FROM MONKEYS EXPOSED TO DIESEL ENGINE EMISSIONS AND COAL DUST, ALONE AND COMBINED.** D. W. Lynch, J.R. Burg, T.R. Lewis, D.K. Gulati*, and P.S. Sabharwal*. National Institute for Occupational Safety and Health, Division of Biomedical and Behavioral Science, Experimental Toxicology Branch, Cincinnati, OH and * Environmental Health Research and Testing, Lexington, KY
- #1045 **IN VITRO AND IN VIVO GENOTOXICITY STUDIES ON 2-ETHYL-1,3-HEXANEDIOL.** R.S. Slesinski, P.J. Guzzie, B. Ballantyne. Bushy Run Research Center/Union Carbide Corporation, Export, PA
- #1046 **GENOTOXICITY OF SIX OXIME COMPOUNDS IN BACTERIA AND MAMMALIAN CELLS IN VITRO.** A.M. Rogers-Back^a, T.E. Lawlor^a, T.P. Cameron^b, and V.C. Dunkel^c. ^aMicrobiological Associates, Inc., Bethesda, MD, ^bNational Cancer Institute, Bethesda, MD, ^cFood and Drug Administration, Washington, DC
- #1047 **REDUCING THE MUTAGENICITY OF CIGARETTE SMOKE CONDENSATE WITH ADDED SELENIUM.** O.T. Chortyk, J.L. Baker, and W.J. Chamberlain, Tobacco Safety Research Unit, USDA-ARS, Athens, GA. Sponsor: W.P. Norred
- #1048 **GENOTOXIC PROFILE OF 1R4F REFERENCE CIGARETTE SMOKE CONDENSATE IN AN IN VITRO TEST BATTERY.** C.K. Lee, D.J. Doolittle^a, D.A. Lee, J.R. Hayes, R.J. Reynolds Tobacco Company, Winston-Salem, NC.

FRIDAY MORNING, FEBRUARY 27
EXHIBIT HALL

POSTER SESSION: HALOGENATED HYDROCARBONS II

Chairperson: J.V. Bruckner, University of Georgia, Athens, GA

Displayed: 8:30 a.m.-11:30 a.m.

Attended: 8:30 a.m.-10:00 a.m.

- #1049 **EVALUATION OF TOXIC INTERACTIONS INVOLVING MULTIPLE TARGET ORGANS.** M. Vezina*, J. Brodeur**, G.L. Plaa*, A.L. Gascon*, and J. Lambert***. Departement de *pharmacologie, **Medecine du travail et hygiene du milieu, ***Medecine sociale et preventive, Universite de Montreal, Quebec, Canada.
- #1050 **INFLUENCE OF THE CCl₄ DOSAGE ON THE POTENTIATION OF CCl₄ HEPATOTOXICITY BY KETONES.** D. Pilon, J. Brodeur and G.L. Plaa. Universite de Montreal, Montreal, Canada.
- #1051 **CHLORDECONE INDUCED CCl₄>4 HEPATOTOXICITY IN PARTIALLY HEPATECTOMIZED RATS.** K.S. Prasada Rao, U.M. Joshi, R.A. Young, A.N. Bell and H.M. Mehendale, Dept Pharmacol and Toxicol, Univ Miss. Med. Ctr., Jackson, MS.
- #1052 **INTERACTION BETWEEN 1,3-DICHLOROPROPANONE AND CARBON TETRACHLORIDE.** T.K. Wessendarp, K. Blackburn, and R.D. Laurie. Toxicology and Microbiology Division, Health Effects Research Laboratory, USEPA, Cincinnati, OH Sponsor: L.W. Condie
- #1053 **INTERACTION STUDIES WITH CARBON TETRACHLORIDE AND CHLOROFORM.** L.W. Condie, R.D. Laurie, J.A. Stober and B.A. Merrick, Health Effects Research Lab, U.S. EPA, Cincinnati, Ohio.
- #1054 **PROTECTION OF CHLORDECONE POTENTIATED CCl₄>4 HEPATOTOXICITY BY PARTIAL HEPATECTOMY.** A.N. Bell, R.A. Young, V.G. Lockard and H.M. Mehendale. Dept. Pharmacol and Toxicol and Dept. Path.* Univ. MS Med. Ctr. Jackson, MS
- #1055 **CCl₄>4 HEPATOTOXICITY IN ISOLATED HEPATOCYTES OBTAINED FROM CHLORDECONE(CD) PRETREATED RATS.** A.N. Bell and H.M. Mehendale. Dept. Pharmacol. and Toxicol. Univ. Ms. Med. Ctr. Jackson, MS.
- #1056 **PROTECTION OF HEPATOTOXIC AND LETHAL EFFECTS OF CCl₄>4 BY PARTIAL HEPATECTOMY.** K.S. Prasada Rao, U.M. Joshi, R.A. Young, A.N. Bell, and H.M. Mehendale, Dept. of Pharmacol. and Toxicol., Univ. Miss. Med. Ctr., Jackson, MS
- #1057 **INTERACTIVE HEPATOTOXICITY OF CCl₄>4 AND TRICHLOROETHYLENE: ANY ROLE FOR ENHANCED LIPID PEROXIDATION.** I.G. Sipes and C.D. Eskelson, Depts. of Pharmacology & Toxicology & Surgery, University of Arizona, Tucson, AZ
- #1058 **P-XYLENE INDUCES CYTOCHROME P-450 AND ENHANCES THE EFFECT OF CARBON TETRACHLORIDE ON THE LIVER.** J.W. Allis, E. Berman, B.L. Sinha-Robinson, H.C. Carter, E.C. Grose, and J.E. Simmons, Health Effects Research Laboratory, U.S.E.P.A., Research Triangle Park, NC. Sponsor: William F. Durham
- #1059 **DICHLOROACETATE INCREASES CHLOROFORM TOXICITY IN FEMALE RATS.** M.E. Davis, West Virginia Univ. Med. Ctr., Morgantown, WV.
- #1060 **EFFECT OF VEHICLE ON THE RELATIVE UPTAKE OF HALOALKANES ADMINISTERED BY GAVAGE.** R.H. Granger, J.B. Coleman, L.W. Condie*, R.G. Lamb and J.F. Borzelleca. Depts. of Pharmacology/Toxicology and Internal Medicine, Medical College of VA, Richmond, VA and *U.S.E.P.A., Cincinnati, OH.
- #1061 **EFFECT OF ORAL DOSING VEHICLES ON ACUTE HEPATOTOXICITY OF CARBON TETRACHLORIDE (CCl₄>4) IN RATS.** H.J. Kim, *S. Odend'hal, R. Ramanathan, C.E. Dallas, S. Muralidhara and J.V. Bruckner. Dept. Pharmacol. & Toxicol., Coll. Pharmacy and *Dept. Path., Coll. Vet. Med., Univ. Georgia, Athens, GA.
- #1062 **EFFECT OF DOSING VEHICLES ON THE PHARMACOKINETICS OF ORALLY ADMINISTERED CARBON TETRACHLORIDE (CCl₄>4) IN RATS.** J.V. Bruckner, H.J. Kim, C.E. Dallas, R. Ramanathan, S. Muralidhara, and *J.M. Gallo. Dept. Pharmacology & Toxicology, *Dept. Pharmaceutics, College of Pharmacy, Univ. of Georgia, Athens, GA.
- #1063 **EFFECTS OF 4-HYDROXY-2-NONENAL (4-HNA) ON SULFHYDRYL LEVELS AND GLUCOSE-6-PHOSPHATASE (G-6-Pase) ACTIVITY ON RAT LIVER.** J. Renz, J.J. Kocsis, H.E. Ferran, Jr., A. O'Connor. Dept. of Biol., La Salle University, Philadelphia, PA, and Dept. of Pharmacol., Thos. Jefferson University, Philadelphia, PA.
- #1064 **ADENOSINE 3'-PHOSPHATE 5'-PHOSPHOSULFATE (PAPS) AND UDP-GLUCURONIC ACID REGULATION DURING CARBON TETRACHLORIDE-INDUCED HEPATIC FIBROSIS IN THE RAT.** T.J. Maziasz, N.G. Shipp and J.J. Hielle. University of Wisconsin, Madison, WI.
- #1065 **ADENOSINE 3'-PHOSPHATE 5'-PHOSPHOSULFATE (PAPS) AND UDP-GLUCURONIC ACID (UDPGA) SYNTHESIS DURING LIVER NECROSIS AND REGENERATION.** T.J. Maziasz, N.G. Shipp, M. Wickman, and J.J. Hielle. University of Wisconsin, Madison, WI. .
- #1066 **THE COVALENT BINDING OF ¹⁴CCl₄>4 METABOLITES WITH PHOSPHOLIPID OF HEPATIC MICROSOMES FROM PHENOBARBITAL TREATED RATS.** B.S. Kaphalia and G.A.S. Ansari, Division of Chemical Pathology, The University of Texas Medical Branch, Galveston, TX.
- #1067 **ROLE OF CARBON TETRACHLORIDE BIOTRANSFORMATION IN THE ACTIVATION OF HEPATOCYTE PHOSPHOLIPASE C IN VIVO AND IN VITRO.** J.B. Coleman and R.G. Lamb. Dept. of Pharmacology/Toxicology, Medical College of VA, Richmond, VA. Sponsor: J.F. Borzelleca.
- #1068 **THE INFLUENCE OF CHLORINATED HYDROCARBONS ON HEPATOCYTE FUNCTION IN VIVO AND IN VITRO.** R.G. Lamb, J.B. Coleman, H. Granger, L.W. Condie* and J.F. Borzelleca. Depts. of Pharmacology/Toxicology and Internal Medicine, Medical College of VA, Richmond, VA and *U.S.E.P.A., Cincinnati, OH.
- #1069 **COMPARISON OF BIOCHEMICAL ALTERATIONS PRODUCED BY CCl₄>4 EXPOSURE IN RAT LIVER AND IN PRIMARY CULTURES OF RAT HEPATOCYTES.** R.M. Long and L. Moore, Dept. of Pharmacology, USUHS, Bethesda, MD.
- #1070 **A COMPARISON OF ARGININOSUCCINIC ACID LYASE TO OTHER INDICES OF CARBON TETRACHLORIDE (CCl₄>4)-INDUCED HEPATOTOXICITY.** D.A. McMillan and I.G. Sipes, Dept. of Pharmacology and Toxicology, University of Arizona, Tucson, AZ
- #1071 **CCl₄>4 HEPATOTOXICITY IN MICE: CORRELATIONS WITH RAPID EFFECTS ON CALCIUM UPTAKE ACTIVITIES IN LIVER SUBCELLULAR FRACTIONS.** F.A. Reitman and H.G. Shertzer. Dept. Envir. Health., Univ. Cincinnati Med. Ctr., Cincinnati, OH
- #1072 **EFFECT OF ETHIONINE AND CCl₄>4 INTERACTION ON HEPATOCELLULAR CALCIUM HOMEOSTASIS IN FEMALE RATS.** J.W. Coleman, W.D. Zinerman, and A.K. Agarwal. Toxicol. Res. & Training Ctr., John Jay College of CUNY, New York, NY Sponsor: H.M. Mehendale.
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- #1074 **RELATIVE UPTAKE AND ELIMINATION OF 1,1,1-TRICHLOROETHANE (TRI) IN INHALATION AND ORAL EXPOSURES IN RATS.** C.E. Dallas, R. Ramanathan, S. Muralidhara, *J.M. Gallo, and J.V. Bruckner. Dept. of Pharmacol. & Toxicol. and *Dept. Pharmaceutics, College of Pharmacy, Univ. Georgia, Athens, GA
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- #1076 **ROLE OF LIPID PEROXIDATION IN TRICHLOROETHYLENE-INDUCED NEPHROTOXICITY.** C. Cojocel, W. Beuter and D. Mayer. Hoechst AG, Frankfurt/Main, Federal Republic of Germany. Sponsor: A.E. Munson
- #1077 **PERCHLOROETHYLENE METABOLISM BY THE GLUTATHIONE CONJUGATION PATHWAY.** J. Odum and T. Green. Imperial Chemical Industries PLC, Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK. Sponsor: E.A. Lock
- #1078 **90-DAY TOXICITY DATA FOR 1,2,3-TRICHLOROPROPANE.** R.D. Laurie, M. Robinson, J.P. Bercz, *R. Long and L.W. Condie. Toxicology and Microbiology Division, Health Effects Research Laboratory, Cincinnati, OH, *Pathology Associates, Ijamsville, MD.
- #1079 **ACUTE, SUBACUTE AND SUBCHRONIC PATHOLOGY OF 1,2-DICHLOROPROPANE (DCP).** *W.F. MacKenzie, J.V. Bruckner, S. Muralidhara, R. Ramanathan, H.J. Kim and C.E. Dallas. *Exper. Pathol. Labs, Inc., R. T. P., NC and Dept. Pharmacol. & Toxicol., College of Pharmacy, Univ. Georgia, Athens, GA.
- #1080 **PERFLUORO-N-DECANOIC ACID (PFDA)-INDUCED INCREASE IN HEPATIC PALMITATE OXIDATION IN VITRO IN MALE F344 RATS.** G.D. Pilcher, M.E. George, and M.E. Andersen. Armstrong Aerospace Medical Research Laboratory, Wright-Patterson AFB, OH.
- #1081 **TOXICITY OF PERFLUOROALKYL ETHYL METHACRYLATE.** G.L. Kennedy, Jr. E.I. duPont de Nemours & Co. Newark, DE.
- #1082 **SUBCHRONIC TOXICOLOGY STUDIES OF HEXACHLORO-1,3-BUTADIENE (HCBD) IN B6C3F₁ MICE FOLLOWING DIETARY INCORPORATION.** R.S.H. Yang, K.M. Abdo, and M.R. Elwell, NIEHS/NTP, RTP, NC, A.C. Levy, Microbiological Associates, Inc., Bethesda, MD, L.H. Brennecke, PAI, Ijamsville, MD
- #1083 **DNA-PROTEIN CROSS-LINKING IN RAT LIVER NUCLEI BY HALOGENATED ACETALDEHYDES.** D.A. Keller, K.C. Brown, and H. d'A. Heck. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.
- #1084 **THE EFFECT OF HALOGENATED ACETONITRILES ON THE MIXED FUNCTION OXIDASES AND GLUTATHIONE LEVEL OF RAT LIVER.** E.L.C. Lin, J.K. Mattox and B.M. McFarland, U.S. EPA, HERL, Cincinnati, OH. Sponsor: A.B. DeAngelo
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- #1086 **PCBs IN GOATS. HASTENING WITHDRAWAL USING MINERAL OIL.** D. POLIN, M. UNDERWOOD, E. Lehning, S. Bursian, and P. Wiggers, Dept. of Animal Science, Michigan State University, East Lansing, MI
- #1087 **SUBACUTE TOXICITY OF 2,2',3,4,4',6-HEXACHLORODIPHENYL ETHER IN THE RAT.** D.C. Villeneuve¹, V.E. Secours¹, I. Chu¹, W. Eamon², M. Beaudette¹ and V.E. Valli², Health Protection Branch¹, Ottawa, Canada, and Biopath Analysts², Guelph, Ontario.
- #1088 **COMPARISON OF THE PHARMACOKINETICS OF TWO TOXICOLOGICALLY DIVERSE POLYCHLORINATED BI-PHENYLISOMERS IN MICE.** M.A. Clevenger, R.D. Harbison, and R.C. James. Div. of Toxicol., Univ. Ark. for Medical Sciences, Little Rock, AR.
- #1089 **CHRONIC EXPOSURE TO 3,4,5,3'4'5'-HEXACHLOROBIPHENYL (HCB) ALTERS THE DYNAMICS OF VITAMIN A METABOLISM.** P.A. Bank*, M.E. Cullum*, R.K. Jensen*, and M.H. Zile*, Depts. of Food Science/Human Nutrition* and Pathology*, Michigan State University, East Lansing, MI. Sponsor: S.D. Seight
- #1090 **EVIDENCE FOR 3,4,3',4'-TETRACHLOROBIPHENYL-MEDIATED OXIDATION OF UROPORPHYRINOGEN BY CHICK EMBRYO LIVER SUPERNATANTS.** P. Sinclair, R. Lambrecht, & J. Sinclair, VA Medical Center, White River Jct., VT and Dartmouth Medical School, Hanover, NH Sponsor: R. Smith
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- #1092 **ROLE OF GLUTATHIONE (GSH) CONTENT IN MODULATING CYTOSKELETAL PERTURBATION INDUCED BY 1-CHLORO 2,4-DINITROBENZENE(CDNB).** M.F. Leung and I.N. Chou. Dept. of Microbiology, Boston University School of Medicine, Boston, MA. Sponsor: A.E. Rogers

**FRIDAY MORNING, FEBRUARY 27
EXHIBIT HALL**

POSTER SESSION: GENERAL TOXICOLOGY II

Chairperson: I.R. Danse, ENVIROMED Health Services, San Rafael, CA

Displayed: 8:30 a.m.-11:30 a.m.

Attended: 10:00 a.m.-11:30 a.m.

- #1093 **SUBCHRONIC DERMAL TOXICITY OF THREE SYNTHETIC OILS IN RATS.** R.W. Lane, B.M. Henderek, G. Cruzan, and E.J. Singer. Mobil Oil Corp., Princeton, NJ.
- #1094 **ACOMPARATIVE STUDY ON THE EFFECT OF ANIMAL AGE ON THE PERCUTANEOUS ABSORPTION OF CAPTAFOL.** D.W. Rosenberg, C.M. Cisson, Y.S. Chen, Z.A. Wong. Chevron Environmental Health Center, Inc. and Chevron Chemical Company, Richmond, California.
- #1095 **EFFECTS OF P. GINSENG ON ACUTE ALCOHOL INTOXICATION.** F.C. Lee, J.K. Park, J.H. Ko, and J.S. Lee. Korea Ginseng & Tobacco Research Institute, Daejeon, Korea. Sponsor: K.H. Yang.
- #1096 **A RELEVANT VAGINAL IRRITATION/SUBACUTE TOXICITY MODEL IN THE RABBIT AND OVARIECTOMIZED RAT.** R.J. Staab, Tambrands, Palmer, MA. C.S. Auletta, D.L. Blaszcak, R.F. McConnell, Bio/Dynamics Inc., E. Millstone, NJ.
- #1097 **ACUTE ORAL TOXICITY OF 2-THIOTRIAZONE IN RATS.** T.M. Tate, L.P. Ruhr, and W. Flory. Louisiana State University, School of Veterinary Medicine, Baton Rouge, LA

- #1098 **GRANULOCYTIC AND MONOCYTIC INDUCERS OF HUMAN PROMYELOCYTIC LEUKEMIA CELL DIFFERENTIATION ALTER GLYCOSAMINOGLYCAN SULFATION.** D.L. Carson and C.S. Baxter. Univ. Cincinnati Coll. of Med. Cincinnati, OH.
- #1099 **ACUTE TOXICITY STUDIES ON SOME NOVEL ANTIPLATELET COMPOUNDS.** W.H. Lawrence, P.A. Tisdelle, J.E. Turner*, E.O. Dillingham, R. Gollamudi, G. Carter-Burks, and A. Lasslo. Dept. Med. Chem., Coll. Pharm., and *Dept. Biol. & Diagnostic Sci., Coll. Dent., Univ. Tenn., Memphis, TN.
- #1100 **OCCURRENCE OF THE MYCOTOXIN CYCLOPIAZONIC ACID, IN MEAT AFTER ORAL ADMINISTRATION TO CHICKENS.** William P. Norred, Joe W. Dorner and Richard J. Cole. Russell Research Center, ARS/USDA, Athens, GA and National Peanut Research Laboratory, ARS/USDA, Dawson, GA.
- #1101 **CHRONIC TOXICITY OF DIETARY FLUORIDE TO MINK.** R.J. Aulerich, A.C. Napolitano, S.J. Bursian, B.A. Olson, and J.R. Hochstein. Dept. Animal Science and Center for Environmental Toxicology, Michigan State University, East Lansing, MI. Sponsor: D. Polin
- #1102 **NUTRIENT CONCENTRATION AND ANATOXIN-A PRODUCTION.** D.K. Stevens and R.I. Krieger. Pharmacology/Toxicology Program and Washington Animal Disease Diagnostic Laboratory, Universities of Washington State, Pullman WA and Idaho, Moscow ID.
- #1103 **PROPHYLAXIS AND TREATMENT AGAINST THE TOXICITY OF ORGANOPHOSPHATE (OP) COMPOUNDS IN RAT BY MEMANTINE AND ATROPINE.** R.C. Gupta, M.J. McLean, and W-D. Dettbarn. Departments of Pharmacology and Neurology, School of Medicine, Vanderbilt University, Nashville, TN
- #1104 **THE EFFECTS OF SUBSTRATES AND COMPETITIVE INHIBITORS ON THE INHIBITION OF ELECTRIC EEL ACETYLCHOLINESTERASE (EC 3.1.1.7) BY ANATOXIN-A(S).** E.G. Hyde, G.M. Alter, W.W. Carmichael and N.A. Mahmood. Wright State University, Dayton, OH. Sponsor: R. Gardier.
- #1105 **ANATOXIN-A(S), AN IRREVERSIBLE ANTICHOLINESTERASE FROM BLUE GREEN ANABAENA FLOS-AQUAE NRC 525-17.** N.A. Mahmood and W.W. Carmichael, Wright State Univ., Dayton, OH. Sponsor: R.W. Gardier

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The Toxicology Forum

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Achievement

1967	Gabriel L. Plaa
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1969	Samuel S. Epstein
1970	Sheldon D. Murphy
1971	Yves Alarie
1972	Robert L. Dixon
1973	No Award
1974	Morris F. Cranmer
1975	Ian C. Munro
1976	Curtis D. Klaassen
1977	James E. Gibson
1978	Raymond D. Harbison
1979	Michael R. Boyd
1980	Philip G. Watanabe
1981	No Award
1982	Frederick P. Guengerich
1983	No Award
1984	Melvin E. Andersen
1985	Alan R. Buckpitt
1986	Sam Kacew

Frank R. Blood

1974	Yves Alarie
1975	Donald J. Ecobichon G.J. Johnstone O. Hutzinger
1976	Richard D. Brown
1977	J. Dedinas George D. DiVincenzo C.J. Kaplan
1978	Perry J. Gehring E.O. Madrid G.R. McGowan Philip G. Watanabe
1979	R. Fradkin E.J. Ritter W.J. Scott James G. Wilson
1980	Jerold A. Last Peter F. Moore Otto G. Raabe Brian K. Tarkington
1981	Yves Alarie Martin Brady Christine Dixon Meryl Karol
1982	Melvin E. Andersen Michael L. Gargas Lawrence J. Jenkins, Jr. Robert A. Jones
1983	Henry D. Heck
1984	Erik Dybing Sidney Nelson Erik Soderlund Christer Von Bahr
1985	Nobumasa Imura Masae Inokawa Kyoko Miura
1986	Calvin C. Willhite M.I. Dawson K.J. Williams

Hazleton Laboratories Corporation

1984	Patricia Ganey
1985	Kevin Gaido
1986	Lisa Naser

Education

1975	Harold C. Hodge
1976	Ted A. Loomis
1977	Robert B. Forney
1978	No Award
1979	Sheldon D. Murphy
1980	Herbert H. Cornish
1981	Frederick Sperling
1982	Lloyd W. Hazleton
1983	Julius M. Coon
1984	Frank Guthrie Ernest Hodgson
1985	William B. Buck
1986	Robert I. Krieger

Arnold J. Lehman

1980	Allan H. Conney
1981	Gabriel L. Plaa
1982	Gary M. Williams
1983	David P. Rall
1984	Tibor Balasz
1985	Frederick Coulston
1986	Gerrit Johannes Van Esch

Merit

1966	Henry F. Smyth, Jr.
1967	Arnold J. Lehman
1968	R.T. Williams
1969	Harold C. Hodge
1970	Don D. Irish
1971	Kenneth P. DuBois
1972	O. Garth Fitzhugh
1973	Herbert E. Stokinger
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Procter & Gamble Company

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1981	Cheng Wang
1982	Samson Chow
1983	Laurie Basting
1984	Philip Bartholomew
1985	Russell Esterline
1986	Leonard Sauers

Burroughs Wellcome Toxicology Scholar

1981-86	Alan P. Poland
1982-87	Curtis D. Klaassen
1983-85	R. Craig Schnell
1983-88	Frederick P. Guengerich
1984-89	Philip Guzelian
1985-90	I. Glenn Sipes
1986-91	Daniel Acosta

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Crawford, D.	404	Di Monte, D.	667	Eisenbrandt, D.	403
Creadon, G.	859	DiBiasio, K.W.	573	Ekstrom, G.	667
Crissman, K.	40	DiCapua, R.A.	907,921	El-Bakary, A.S.	301
Crist, K.A.	414	Dickerman, H.W.	634	El-Fawal, H.A.	377
Crofton, K.M.	1014,1015,1017	Dickie, B.C.	955	El-Fouly, M.H.	852
Cruzan, G.	1093	Dietz, D.D.	982,983,986,987	El-Khalek, A.	301
Cullum, M.E.	1089	DiFonzo, C.	418,958	El-Sebae, H.	301
Cunny, H.C.	854	Digenis, G.A.	481	El-Touny, S.	202
Curtis, L.R.	88	DiGiulio, R.T.	1,75,595,596	Elawar, M.F.	191
Czerniecki, B.	511	Diliberto, J.	479,947	Eldeib, M.M.	8
D'Alesandro, M.	444	Dillingham, E.O.	1099	Eling, T.E.	18
D'Souza, R.W.	944	Dinterman, R.E.	830	Ellefson, D.	853,927,928
Dabbs, J.E.	353,883	DiStefano, E.W.	857	Elliott, C.	662
Dahl, A.R.	117	Dittenber, D.A.	190,985	Ellison, G.D.	1005
Dahl, J.E.	20	Diwan, B.A.	411,425	Elmore, E.	655
Dahlem, A.M.	612	diZerega, G.S.	927	Elsayed, N.M.	43
Dahlstrom-King	231	Dobrota, M.	157	ElSisi, A.E.	520
Dahm, L.J.	506	Dodd, D.C.	227	Elstein, K.	267,572
Dalbey, W.E.	784,810	Doe, J.	589,590,968	Elwell, M.R.	579,1082
Dallas, C.E.	1061,1062,1074,1075,1079	Doerger, J.U.	725	Engels, D.	633
Daly, I.W.	708,709	Dohn, D.R.	17	English, J.C.	473
Daneluk, D.	172	Dokko, J.	857	Ensminger, J.T.	844
Daniels, M.J.	896	Dombroski, M.	1021	Erickson, D.A.	601
Dankovic, D.A.	429	Dominitz, J.A.	1013	Esber, H.	547
Danneman, P.J.	780	Dommineni, C.	810	Eskelson, C.D.	1057
Dansie, D.R.	806	Donaldson, W.E.	554	Esposito, F.M.	47
Dare, H.E.	156	Donnelly, D.A.	867	Essigmann, J.M.	128
Dart, R.C.	614	Doolittle, D.J.	1048	Esterline, R.L.	455
Dashiell, O.L.	175	Dormans, J.A.	747	Etnier, E.L.	738
Daston, G.P.	355,564	Dorner, J.W.	1100	Eustus, S.L.	297
Daugherty, M.W.	731	Dostal, L.A.	576	Eutermoser, M.	980
Daughtrey, W.C.	980	Dourson, M.L.	735	Evans, L.	232,962
Dauterman, W.C.	61,194,201,485,936,1028	Dove, C.V.	806	Evans, M.G.	652,653,654,815,852
David, R.M.	806	Drake, K.	333	Everett, R.M.	809
Davidovich, A.	265	Drees, D.	943	Everitt, J.I.	1033
Davidson, K.A.	738	Driscoll, K.E.	513	Exon, J.H.	218
Davies, M.H.	876,877	Drobeck, H.P.	555	Eydelloth, R.S.	102
Davila, J.C.	244	Drown, D.B.	626	Eyre, J.F.	398
Davis, B.	740,1021	Dryzga, M.D.	177	Fabian, R.J.	555
Davis, D.	499	Duchon, A.	517	Faiman, M.D.	514
Davis, H.D.	1013	Duddy, S.K.	432	Fait, D.L.	715
Davis, J.E.	166	Dudek, B.R.	763	Fakroddin, C.D.	711
Davis, J.M.	734	Duerson, C.R.	186	Fan, A.M.	739
Davis, M.E.	81,112,1059	Duff, A.	172	Farage-Elawar,	894
Davis, R.	703	Duignan, D.B.	84,871	Farb, R.	44
Davis, R.A.	582	Dunkel, V.C.	1046	Fariss, M.W.	679
Day, W.W.	90	Dunn, D.D.	997	Farmer, J.D.	1008
de la Iglesia	222,418	Dunnick, J.K.	789,790	Farnell, D.R.	981
de S. Wickramar	590	Durack, C.L.	954	Farnum, L.C.	107
De Wit, R.H.	955	Dutton, D.R.	83	Farooqui, M.Y.	90
Deal, F.H.	686	Dutton, S.	232	Farr, C.H.	760
Dean, J.H.	896,922	Duval, G.E.	279	Farrell, K.	651
DeAngelo, A.B.	421,422,678	Dvergsten, C.	215	Faust, R.A.	720
DeBaecke, P.	703	Dvergsten, S.	531	Faustman-Watts,	12
deBethizy, J.D.	848,948	Dwivedi, C.	571	Feder, P.I.	300
DeBord, D.G.	671	Dybing, E.	20	Federici, T.M.	834
DeCaprio, A.P.	522	Dyer, R.S.	390,391	Fennell, T.R.	686
DeCoteau, W.E.	35,36	Dyke, J.L.	843	Ferenz, R.L.	809
DeGrandchamp, R	206,211	Dziedzic, D.	515,516	Ferguson, J.S.	124
Deisinger, P.J.	470	Eacho, P.I.	251,252	Ferguson, S.A.	994
DeJesus, M.	206	Eamon, W.	1087	Fernando, S.Y.	873
Dellinger, J.A.	393	Earl, L.K.	368	Feron, V.J.	957
Demak, M.	172	Earnest, D.L.	520	Ferraiolo, B.L.	937
Demyan, W.F.	105	Easterling, R.E.	267	Ferran, H.E.	1063
Denine, E.P.	408	Eastin, W.	149,978	Ferrell, J.	584,717
Dennis, T.M.	227	Eastman, H.M.	269	Ferry, M.A.	454

Ferszt, A.S.	101	Gage, M.I.	1027	Grasse, L.	888
Fessenden-Raden	165	Gaginella, T.	265	Grauer, G.F.	518
Feuer, G.	396,397,418,553	Gagnon, R.C.	480,950	Gray, K.L.	584,717
Feuston, M.H.	583,697	Gaido, K.	39	Gray, L.E.	558,584,717
Filler, R.	579	Gaines, D.W.	263	Gray, T.	333
Finch, G.L.	118	Gairola, C.	52	Graziano, M.J.	200
Fincher, D.R.	380	Galivan, J.	670	Greco, R.	104
Fincher, R.F.	103	Gallagher, E.	596	Green, C.E.	64,253,254,353,687,881,882,883
Finckenor, B.	265	Gallenberg, L.A.	939	Green, J.D.	824,846
Finkelstein, J.	51,150	Gallo, J.M.	1062,1074,1075	Green, T.	761,1077
Finley, B.L.	86,659	Gallo, M.A.	502,633,643,683,966	Greenberg, M.R.	171
Fishbein, L.	54	Gan, J.C.	681	Greener, Y.	816,833,842,964
Fisher, B.J.	155	Gandolfi, A.J.	220,237,238,240,352,360,924,925,926	Greening, M.	1034
Fisher, G.D.	60	Ganey, P.E.	793	Greenlee, W.F.	649
Fisher, G.L.	300,812	Gangolli, S.D.	134,336	Gregus, Z.	268,272,462,463,464,878
Fisher, H.L.	972,973,974	Gardner, H.K.	746	Greim, H.	493
Fisher, J.R.	785	Garg, B.D.	105	Grey, A.J.	730
Fisher, J.W.	557	Garner, C.D.	387,800	Gries, C.L.	706
Fisher, L.C.	691,715	Garratty, G.	102	Griffiths, J.C.	229
Fisher, R.L.	236,237,239,241,242	Garte, S.J.	415	Grimes, G.S.	934
Fishman, B.E.	1023	Garvin, P.J.	95,338	Grissom, R.E.	201
Flegler, S.L.	815	Gascon, A.L.	1049	Groopman, J.D.	874
Fletcher, E.R.	780	Gasiewicz, T.A.	491,647,648	Grose, E.C.	48,745,1058
Fletcher, M.J.	174,176,181,217	Gastonguay, N.	1023	Gross, C.L.	673
Flory, W.	1097	Gately, M.K.	100	Gross, E.A.	168,770
Floyd, R.A.	517	Taylor, D.W.	960	Gross, M.L.	631B
Ford, R.A.	701,702,949	Gearhart, J.M.	772,773	Gross, W.B.	540
Ford, W.H.	195	Gebhart, A.M.	65	Grosse, C.M.	977
Forney, R.B.	942	Gee, S.J.	64,199	Gruber, D.F.	444,445
Forrest, V.J.	613	Geiger, D.	805	Gudbjarnason, S	367
Forrester, T.M.	313	Geiger, L.E.	174,176,217	Guest, D.	470
Forsyth, C.S.	893	George, J.D.	2,700,714	Gulati, D.K.	577,1044
Fort, F.L.	386	George, M.E.	1080	Gupta, R.C.	1103
Foster, G.	703	Gerges, S.	611	Gurley, L.R.	51
Foster, J.R.	761	Gerken, S.F.	933	Gurman, J.L.	803,804
Foster, K.	243	Gerlach, R.L.	125	Gutman, S.I.	641
Foster, P.M.	568,569,574	Germolec, D.R.	902	Gutpa, R.C.	532
Fouant, M.M.	897	Ghanayem, B.I.	25	Guty, J.	775,776
Fouillet, X.	758	Gianutsos, G.	1023	Guy, R.C.	954
Foulkes, E.C.	280,292	Gibbons, R.D.	338	Guzzie, P.J.	1045
Fowler, A.A.	155	Gibbs, L.S.	349	Haake, J.M.	498
Fowler, B.A.	271,279,295,296,297,298,299,311	Gierthy, J.F.	634	Haart, T.W.	494
Fowler, E.H.	691	Gilbert, L.C.	489,490,492	Haasch, M.L.	602
Fowler, S.R.	529	Gilbert, M.E.	392	Habash, D.L.	818,819
Fox, D.A.	384,617	Gilbert, S.G.	995,996	Habig, C.	76,523
Fox, J.A.	473	Gilbert-Jones	12	Hackett, D.S.	329
Foxworthy, P.S.	251,252	Gill, M.	620	Hadley, W.M.	27,103
France, K.A.	691,715	Gillette, J.R.	456	Hagan, J.V.	785
Francis, B.M.	191,894	Gilman, A.	318	Haggerty, G.C.	819,1012
Francovitch, M.	162	Giovanetto, S.	833	Haggerty, H.G.	999
Francovitch, R.	792	Girgis, W.	927	Hagiwara, A.	411
Frank, C.A.	295	Goehl, T.J.	837	Hahn, F.F.	743,789,790
Frank, D.W.	56,552	Goering, P.L.	271,296,299	Hahn, M.E.	648
Franklin, C.A.	205,318	Gold, B.G.	206,213	Hakkinen, P.J.	845
Franklin, M.R.	869	Goldman, J.M.	559,560	Hall, A.	712
Frankos, V.H.	722	Goldsmith, A.	711	Hall, L.L.	972,973,974
Frantz, J.D.	260,261,262,555	Goldstein, B.D.	380,507,508	Hall, W.C.	806
Frantz, S.W.	977	Goldstein, G.W.	65	Halleck, M.M.	206,213
Franz, C.G.	1000	Goldstein, J.A.	648	Halpert, J.R.	84,85,862,871
Fraser, J.M.	141	Goldstein, R.S.	110,350	Halvorson, M.R.	875
Frazier, J.M.	269,331,600	Gollamudi, R.	1099	Hamilton, L.T.	327
Frederick, C.B.	260,266	Goodman, J.I.	416	Hamlin, R.D.	759
Freeman, C.	174,176	Goodrich, M.S.	601	Hammock, B.D.	86,199,226,573,659,672
Freeman, D.L.	195	Goodrow, M.H.	199	Hammond, B.G.	593
French, J.E.	149,835,836	Goodrow, T.L.	417	Hampton, J.A.	603,656
Freudenthal, R.	189	Goon, D.	143,462	Han, Z.T.	410
Friedman, L.	263	Gordon, G.R.	881,882	Hanasono, G.K.	934
Friedman, M.A.	582	Gorski, J.R.	486,487	Handler, J.A.	224
Fu, P.P.	474	Gorzinski, S.G.	992	Hanko, V.P.	881,882
Fuhremann, T.W.	935	Gotsch, A.R.	171,172	Hanley, T.R.	755
Fujita, T.	625,650	Gough, A.	958	Hannah, M.A.	403
Fukayama, M.F.	1043	Graepel, G.J.	839	Hansen, K.	721
Fuller, G.B.	937	Graham, L.M.	673	Hanson, A.L.	302,303
Fuller, L.B.	94,900	Graham, S.L.	710	Hanson, R.L.	790
Furedi-Machacek	57	Graham, T.C.	408	Hanzlik, R.P.	436
Gabral, G.A.	99,219	Granger, R.H.	1060,1068	Haraka, K.I.	612
Gad, S.C.	334,343,841			Harbell, J.W.	1039

Harbison, R.D.	1088	Hjelle, J.J.	518,860,1064,1065	Irons, R.D.	15
Hardisty, J.F.	297	Hjelle, J.T.	518	Irvin, R.	562,565
Hardy, C.	784	Hobbs, C.H.	789,790	Irwin, R.	1012
Harkema, J.R.	742	Hobbs, E.J.	768,827	Isom, G.E.	665
Harmsen, A.G.	118	Hoberman, A.M.	707	Istock, A.	885
Harrington, R.M.	551	Hobson, D.W.	805	Ito, N.	419
Harrington, W.W.	781	Hochstein, J.R.	1101	Iverson, F.	826
Harris, C.	563,724	Hochstein, P.	63	Jackowski, S.J.	522
Harris, J.E.	209	Hochwalt, A.E.	415	Jacobs, A.J.	150
Harris, M.	4,71	Hodge, M.C.	589	Jamall, I.S.	204,285,286,287,288,627,628
Harris, M.W.	298,636	Hodge, Y.	530,534	James, M.O.	610
Harrison, J.R.	1000	Hodgson, E.	61,89,178,863,864,865	James, R.C.	1088
Hartman, H.	545	Holcomb, M.	642	Jameson, C.W.	902
Hartsy, M.A.	53	Holhausen, L.M.	915	Jane, J.D.	623
Harvis, C.A.	612	Holian, A.	666	Jarvis, B.B.	830
Haschek, W.M.	228,811	Holley, D.C.	553	Jaskot, R.H.	48,745
Haschek-Hock, W.	787	Hollinger, J.O.	817	Jayasekara, S.	34,626
Hasegawa, N.	1026	Hollingworth, R.	865	Jeffery, E.H.	894
Haseman, J.K.	122	Holohan, P.D.	359	Jenkins, W.L.	448,576
Hasewaga, L.	853	Holsapple, M.P.	37,37,899,909,910,916,917	Jensen, R.	111
Haskins, E.	298	Holscher, M.A.	325	Jensen, R.K.	413,1089
Hastings, C.E.	817	Holt, T.	803,804	Jersey, R.	1018
Hatch, G.E.	40	Homan, E.R.	691	Ji, S.	455,549,736,737
Hatherill, J.R.	97	Hood, R.D.	561	Jianxing, F.	349
Hatoum, N.S.	95,338	Hook, G.E.	797	Jimmerson, V.R.	530,534
Hawkins, D.R.	949	Hook, J.B.	110,350	Jin, R.	29
Hawkins, N.J.	949	Hooser, S.B.	228	Jinna, R.R.	289,604,622
Hayes, H.T.	902	Hoover, M.D.	118	Johannsen, F.R.	107,108,400,593,
Hayes, J.R.	1048	Horada, R.A.	743		704,705,760
Hayes, T.J.	100	Horstman, M.G.	451	John, D.M.	702,719
Hazelette, J.R.	846	Horton, V.L.	932	Johnson, D.E.	107,108,587,935
Hazelton, G.A.	260,261,262	Horvath, J.	259	Johnson, G.L.	367
Heath, J.R.	817	Hottendorf, G.H.	962	Johnson, J.B.	673
Heck, H.d'A.	685,1083	Haupt, J.T.	365	Johnson, J.D.	665
Heflich, R.H.	187	House, R.V.	922	Johnson, J.T.	114,820
Heidelbaugh, N.	698	Houston, B.J.	828	Johnson, K.A.	755,756
Heikkila, R.E.	891	Houston, D.	635	Johnson, K.M.	861
Hein, J.F.	558,559,560	Hovatter, P.S.	738	Johnson, K.W.	37,916
Heindel, S.W.	448	Howard, L.C.	934	Johnson, M.B.	948
Heisterkamp, S.	41	Howard, W.B.	3	Joiner, R.L.	300
Heitmeyer, S.A.	630	Howell, S.R.	272,466,878	Jones, A.D.	482,847
Hejtmancik, M.R.	321,978,1012	Hsia, M.T.	432,1029	Jones, K.W.	302,303
Hellard, T.J.	948	Hsieh, G.C.	990	Jones, L.S.	378
Henck, J.W.	723,983	Hsieh, A.W.	510	Jones, M.M.	325,571
Henderek, B.M.	1093	Hsieh D.P.	133	Jones, R.C.	1037
Henderson, E.F.	743	Hsieh, L.S.	133	Jones, S.G.	571
Henderson, J.D.	539	Huang, M.-T.	410	Jones, W.G.	814
Henderson, M.C.	608	Huang, X.S.	585	Jordan, S.D.	910,917
Henderson, R.	929	Hubbard, A.K.	798,799,924,925,926	Jortner, B.S.	540
Henderson, R.F.	117,119,125,161,742	Hubner, S.H.	844	Joseph, X.	367,374
Hendricks, J.	605	Hudnell, H.K.	389	Joshi, U.M.	808,1051,1056
Henningsen, G.	453,454	Hughes, E.W.	718	Jovanovich, L.	184
Henry, E.C.	491	Huie, J.M.	951	Juchau, M.R.	563,724
Henwood, S.	703	Huijzer, J.C.	26	Junghans, T.	164
Hermansky, S.J.	488	Hultin, T.A.	264	Jurek, M.A.	490,492
Herr, D.W.	1004	Humphreys, J.E.	777	Kacew, S.	113
Hertzberg, V.	721	Hunt, W.A.	1024	Kado, N.Y.	133
Herzberg, U.	609	Hursh, J.B.	154	Kajimura, T.	556
Hesse, E.J.	502,633,643	Hurt, M.E.	586,588,778	Kalef-Erza, J.A.	308
Hesterberg, T.W.	1033	Hussein, G.I.	452,594	Kalf, G.F.	870
Hewett, J.A.	506	Huston, T.B.	851	Kallman, M.J.	1007
Hewitt, W.R.	351	Hutchinson, A.P.	904	Kamei, T.	1026
Hext, P.M.	30,761	Hwang, K.K.	943	Kaminisky, M.	333
Heydens, W.F.	692,765,786	Hyde, E.G.	1104	Kaminski, N.E.	910
Hicks, J.S.	329	Hysmith, R.M.	371	Kaminsky, L.S.	91,141,635
Higgins, C.V.	72	Iba, M.M.	136,449,1040	Kamps, C.	71
Higgins, R.J.	539	Ichida, T.	657	Kamrin, M.A.	169
Highet, R.J.	23	Iglehart, J.D.	1033	Kandasamy, S.B.	1024
Hignet, S.	965	Ikegwuonu, F.I.	138	Kanekal, S.	442
Higuchi, M.A.	932	Illing, J.W.	98	Kao, J.	976
Hilaski, R.J.	796	Imamichi, T.	1026	Kapeghian, J.C.	824
Hill, D.M.	880	Imamura, T.	853	Kaphalia, B.S.	1066
Hillebrand, J.A.	32	Imbra, R.J.	323	Kaplan, H.L.	767,807
Himel, C.M.	202	Impelman, D.	384	Kaplan, M.C.	410
Hincks, J.R.	66,132	Imura, N.	151	Kaplowitz, N.	256
Hinderer, R.K.	767,807	Infurna, R.	696	Kapp, R.W.	825
Hinson, J.A.	16,187	Ioannou, Y.M.	974	Karaszkievicz	870
Hirano, M.	402	Iorio, K.R.	998	Kari, F.W.	547,548

Karol, M.H.	29,32,788	Kornbrust, D.	102	Lee, T.T.	119
Kasarskis, E.J.	291,313	Korte, D.W.	1039	Leedle, R.A.	489
Kashdan, R.	172	Kostyniak, P.J.	293,294	Lefebvre, L.	348
Kasprzak, K.S.	160	Kotkoskie, L.A.	209	Lefevre, R.	394
Kastl, P.E.	177	Kracke, M.J.	359	Leffler, K.	234
Kates, B.	152	Kramer, W.	70	Lehman-McKeeman	158,276,277
Katz, A.C.	59,189	Krebs, R.C.	673	Lehnert, B.E.	45,46,51,116,802,813
Kauffman, F.C.	257	Krieger, R.I.	1102	Lehning, E.	1086
Kawabata, T.T.	911	Krigman, M.R.	317	Leibler, D.C.	19
Kaylor, W.H.	1042	Krivanek, N.D.	31	Leitzke, J.S.	731
Kedderis, G.L.	24,858	Kromidas, L.	204	Lemasters, G.K.	721
Kedderis, L.B.	174	Kronenberg, J.M.	692,765,935	Lenherr, A.	244
Kehoe, D.F.	181	Kruger-McDermot	670	Leonard, T.B.	84
Kehrer, J.P.	372,465,744	Krumdieck, C.L.	236,237,240,241,242	Leslie, G.B.	368
Keller, D.A.	433,1083	Krutyholowa, K.	682	Leung, K.H.	433
Keller, J.T.	851	Kuhlenkamp, J.	256	Leung, M.	1092
Keller, K.A.	716	Kumar, S.A.	634	LeValley, S.E.	254,883
Kellner, T.P.	539	Kumar, S.S.	571	Levesque, P.	376
Kelly, D.P.	801	Kupferberg, H.J.	1021	Levi, P.E.	865
Kennah, H.E.	965	Kurihara, N.	625	Levin, A.A.	821
Kennedy, G.L.	175,766,774,801,839,1081	Kutzman, R.	547	Levin, B.C.	803,804
Kennedy, K.A.	668	Kwiatek, W.M.	302,303	Levin, E.D.	1005
Kensler, T.W.	874	LaBorde, J.B.	695	Levin, R.A.	408
Kerenyi, N.A.	553	Lacz, J.	943	Levin, S.	184
Kerkvliet, N.I.	92	Lage, G.L.	477	Levine, B.S.	982,987
Kershaw, W.C.	274,276	Laham, S.	49	Levy, A.C.	1082
Kerstetter, S.L.	583,697	Laliberte, L.	991	Levy, G.N.	850
Kesingland, K.	368	Lalwani, N.D.	67	Levy, J.P.	925
Ketels, K.V.	57	Lam, H.F.	775,776	Lewandowski, M.	863,864
Keyes, D.G.	197	Lamb, J.C.	4,577	Lewis, D.V.	378
Keyes, L.L.	94	Lamb, R.G.	1060,1067,1068	Lewis, S.C.	732
Keys, W.B.	300	Lambert, C.E.	438	Lewis, T.R.	759,1044
Khairallah, E.A.	457,458,459,460,461	Lambert, J.	1049	Lewis-Bordon, M.	655
Khan, M.A.	184	Lambert, R.J.	787	Li, A.P.	185
Khan, Z.A.	314	Lambrech, R.L.	1090,1091	Li, Q.	199
Khidir, O.	926	Lamm, K.R.	902,914	Li, W.	663
Kidon, B.J.	682	Landauer, M.R.	1013	Lim, L.O.	135,441
Kier, L.D.	786	Landolph, J.R.	63,395	Lin, E.L.	1084
Kikukawa, K.	1026	Landreth, K.S.	920	Lin, L.	842
Kilgore, W.W.	60	Landry, T.D.	190,756	Lincoln, D.W.	634
Killeen, J.C.	195	Lane, R.W.	1093	Lind, R.C.	220
Killinger, J.M.	480,552,950	Lang, B.	449,1040	Lindamood, C.	981
Kim, D.H.	37,916	Langenbach, R.	1028	Lindenthal, J.	466
Kim, E.H.	688	Lapadula, D.M.	378,523,535	Linder, R.	560,591,717
Kim, H.J.	1061,1062,1079	Larc, B.	284	Lindstrom, P.	4
Kim, H.L.	140	Laska, D.A.	359,962	Lington, A.W.	225,405,825
Kim, H.M.	884	Laskey, J.W.	570	Linko, P.	648
Kimmel, C.A.	2,580,714	Laskin, D.L.	104,683	Lippard, S.J.	128
Kimmel, T.A.	323	Laskin, J.D.	683,966	Lipscomb, J.C.	677
Kindt, M.V.	891	Lasley, S.M.	623	Lipsky, M.J.	355
King, A.G.	920	Lasslo, A.	1099	Little, P.B.	205,318
King, L.J.	989	Last, J.A.	750	Littlefield, N.	960
Kinkler, J.	593	Latta, D.M.	323	Liu, Y.L.	874
Kinney, L.A.	766,774,809	Latwesen, D.C.	19	Lloyd, S.C.	568,574
Kinsler, S.	178	Lau, S.S.	22,23,362	Lo, H.H.	1085
Kirby, Z.	12	Lauer, L.D.	896,922	Locey, B.J.	979
Kirkpatrick, D.	742	Laurie, R.D.	984,1019,1042,1053,1078	Lochry, E.A.	707
Kiser, R.C.	300	Lavange, L.M.	727	Lock, E.A.	106,356,357,358
Klaassen, C.D.	143,147,158,268,272,273,274,275,276,277,462,463,464,878	Lawlor, T.E.	1046	Lockard, V.G.	1054
Klaunig, J.E.	412,414,519,603,656	Lawrence, W.H.	1099	Lok, E.	826
Kleeman, J.M.	504	Lawrie, N.J.	512	Lomax, L.G.	190,985
Kleinow, K.M.	80,602	Lawson, L.D.	913	London, R.E.	299
Klonne, D.R.	691	Lay, C.R.	163	Long, D.J.	851
Knadle, S.A.	882,883	Leach, C.L.	95,338	Long, G.J.	302,303
Knapp, H.F.	196,762	Leach, G.J.	365	Long, R.	1078
Knisely, J.S.	999,1025	Leakey, J.	677,854	Long, R.E.	208
Ko, J.H.	1095	Leal, T.	859	Long, R.M.	1069
Kociba, G.	933	LeBel, C.P.	620	Long, T.J.	185
Kociba, R.J.	197	Lebetkin, E.	500	LoPachin, R.M.	212,616
Kocsis, J.J.	1063	Lech, J.J.	80,601,602	Lopez, I.	453,454
Koizumi, A.	853,856	Lee, C.K.	1048	Lotti, M.	214
Koller, L.D.	218,908	Lee, D.A.	1048	Loury, D.J.	109
Komsta-Sxumska	840	Lee, E.	683	Loveland, P.	605,689
Konno, T.	201	Lee, E.W.	387,930,931	Lowery, J.	212
Kordower, J.H.	629	Lee, F.C.	1095	Lowndes, H.E.	206,211,213,379
Kore, A.M.	518	Lee, J.S.	1095	Lu, P.Y.	720,844
Koren, H.	40	Lee, K.P.	801	Lubet, R.A.	425
		Lee, P.Y.	549	Lucier, G.W.	417,423,501,929

Ludemann, C.E.	956	Mayura, F.	498	Mobley, S.A.	1019
Luebke, R.W.	913,923	Maziasz, T.J.	860,1064,1065	Mohammadpour, H	488,495
Lui, E.M.	439,440	Mbugua, P.M.	369,370	Mohiuddin, G.	775
Lumley, C.E.	733	McBrien, D.C.	569	Molak, V.	740
Lusco, C.T.	673	McCartney, M.	833	Molloy, C.J.	966
Luster, M.I.	500,902,914,918	McCarty, J.D.	217	Molyneux, R.	132,712
Lynch, D.W.	759,1044	McCay, J.A.	898,899,909	Momany-Pfruende	755
Lyon, M.L.	470,473	McCollister, S.	167	Monks, T.J.	22,23,362
Lysy, H.H.	898	McConnell, R.F.	217,1096	Monosson, E.	131
MacAskill, S.M.	762	McCormick, D.L.	264	Monroe, D.H.	146,872
MacCallum, R.D.	193	McElroy, W.K.	558,559,560	Monteiro-Rivier	975
Macdonald, G.J.	502	McFarland, B.M.	1084	Montelius, D.A.	461
MacDonald, J.R.	250	McGowan, C.	680	Montgomery, C.A	548,831
MacEachern, L.	213	McGrain, S.	816	Montgomery, M.R	676
Mackenzie, K.M.	181,703	McGuinn, W.D.	89	Moody, D.E.	226,659
MacKenzie, W.F.	1079	McGuire, E.J.	955	Moore, L.	1069
MacPhail, R.C.	1003,1010	McKean, D.L.	246,1042	Moore, M.	579
Madhu, C.	462,463,464	McKinney, G.	703	Moore, R.W.	504
Magee, P.N.	886	McLain, D.	816,833,842,964	Moore, T.B.	930,931
Mahlum, D.D.	364,431	McLean, M.J.	1103	Moorman, C.R.	296,297,298
Mahmood, N.A.	1104,1105	McMillan, D.A.	1070	Moorman, M.P.	296,297
Maibach, H.I.	337	McMillan, D.C.	187	Moorman, M.R.	298
Maio, S.M.	794	McNerney, P.J.	99,219	Moorman, W.J.	759
Mair, R.S.	760	McQueen, C.A.	1030	Moorthy, K.S.	58
Maisey, J.	967	McSayles, J.	422	Moretti, E.S.	156
Maita, K.	361,402	Mead, R.L.	682	Moretto, A.	210,214
Malek, D.E.	123	Meadows, G.G.	451	Morgan, D.L.	777
Malick, A.	347,354	Mebus, C.A.	503,546	Morgan, K.T.	168,770,778
Manclark, C.R.	1022	Mechanic, G.	44	Mori, N.	625
Mandel, L.J.	362	Medinsky, M.A.	119,125	Morin, D.	435,442
Mane, A.	394	Medrano, C.	616	Morris, J.B.	120,121
Maness, S.C.	1033	Meehan, J.	631B	Morrissey, R.E.	295,297,298,580,636,700
Mangold, J.	460	Mehendale, H.M.	138,230,660,808,892,1051,1054,1055,1056	Morseth, S.L.	578
Mangum, J.B.	1033	Mehlman, M.A.	697	Mosberg, A.T.	751,752,753,754
Maniscalco, W.M	150	Mehrotra, B.D.	58	Moser, V.C.	1003
Mankes, R.F.	575	Meier, H.L.	673	Motoyama, N.	201
Mann, D.B.	428,430	Meier, J.R.	1042	Motte, Y.S.	723
Manus, A.G.	149	Meierhenry, E.	401	Mounce, R.C.	577
Marchok, A.C.	1041	Melanson, P.A.	901	Moyer, R.	689
Marciniszyn, J.	682,971	Mele, P.C.	1000	Mrak, R.E.	325
Marcus, A.H.	309,316	Melmick, R.L.	50,448	Mudgett, S.L.	723
Margaretten, N.	426,427,669	Menache, M.G.	741	Mudzinski, S.P.	919
Marien, K.	689	Menahan, L.A.	822,823	Mueller, J.E.	235
Maronpot, R.R.	423,981	Menzel, D.B.	162,326,433,748,749,792	Mulhern, S.A.	908
Marquis, J.K.	193	Merrick, B.A.	246,1042,1053	Mulligan, P.E.	612
Marr, M.C.	2,580,700,714	Mertes, P.C.	565	Munro, M.H.	612
Marra, M.	41,42	Mertz, B.	846	Munson, A.E.	37,909
Marsman, D.S.	658	Messman, J.	321	Muralidhara, S.	1061,1062,1074,1075,1079
Martin, A.	711,712,832	Meunier, P.	234	Murphy, D.	655
Martin, F.M.	720	Mewhinney, J.A.	118	Murphy, M.	565
Martin, R.A.	222,828	Meyer, C.	721	Murphy, M.J.	849
Martinez, H.	634	Meyers, L.L.	458	Murphy, S.K.	675
Martis, L.	833	Mezza, L.E.	694	Murray, M.J.	901
Maruyama, H.	657	Michael, A.D.	740	Murthy, C.V.	255
Mason, G.	644,650	Mickley, G.A.	1024	Murthy, K.	548
Massaro, E.J.	267	Milburn, G.M.	590	Musgrove, D.L.	899
Mast, T.J.	13	Miller, A.K.	295	Mustafa, M.G.	43
Masten, J.L.	934	Miller, B.	797	Muzi, G.	486,487,493
Masters, B.G.	962	Miller, C.A.	328	Myers, L.A.	886
Masters, R.E.	719	Miller, D.B.	618,619	Myers, M.J.	38
Mastri, C.	311	Miller, D.M.	129	Naganuma, A.	151
Mather, G.G.	218	Miller, K.	903,904,905,967	Nagle, R.B.	352
Matheson, S.F.	211	Miller, M.J.	730	Naik, M.	286,287
Matlock, J.P.	834	Miller, N.	85	Nair, R.S.	400,704
Matthews, H.B.	25,472	Müller, R.	50	Napolitano, A.C	1101
Matthews, W.D.	375	Miller, R.H.	757	Narasimham, N.	436
Mattox, J.K.	1084	Miller, R.R.	985	Naser, L.J.	128
Mattson, A.M.	383	Minnema, D.J.	624	Nation, P.N.	385
Mattsson, J.L.	388	Minor, L.D.	179	Nau, H.	241
Mauil, E.A.	698	Miranda, C.L.	608	Naumann, B.D.	771
Maurissen, J.P.	992	Mirsalis, J.	401	Nave, L.	970
Mavis, R.D.	746	Mishkin, E.M.	99,219	Neims, A.H.	135
Maxell, R.C.	306	Mistry, P.	311	Nelson, J.S.	818
Maxwell, D.M.	530,534	Mitchell, D.Y.	889	Nelson, K.G.	423,501
Mayer, D.	1076	Mitchell, J.A.	1006,1007	Nelson, M.A.	139
Mayer, P.R.	861	Mitra, A.K.	468	Nelson, S.D.	20
Mayes, B.A.	555	Miwa, G.T.	24,858	Nera, E.A.	826
Mayhew, D.A.	14			Newberne, P.M.	407

Newland, M.C.		629	Patel, J.M.	690	Ragan, H.A.	757
Nguyen, C.H.		857	Patel, Y.M.	838	Rains, T.C.	1021
Nicholas, J.W.		373	Patrick, E.	337	Raisbeck, M.F.	615
Nicklin, S.		904	Patterson, D.L.	168	Raizada, M.K.	690
Nikiforov, A.I.		758	Patton, L.M.	514	Raje, R.	1034
Nikurs, A.R.		581	Pavitranon, S.	567	Ramanathan, R.	1061,1062,1074,1075,1079
Nims, R.W.		425	Pavkov, K.L.	189	Ramos, K.	664,675
Nishanian, E.		460	Pearson, J.K.	524,526,528	Ramsey, M.	401
Nishimura, K.		625	Peele, D.B.	1008,1009	Randall, H.W.	770
Niswender, G.		545	Pegg, D.G.	829	Rankin, G.O.	363
Nolan, C.V.		270	Pemberton, M.A.	341,345,968	Rao, G.N.	404
Nolan, R.J.		177	Pena, J.C.	832	Rao, K.S.	808,1051,1056
Norbury, K.C.		243	Pence, V.C.	613	Rao, S.B.	892
Noren, C.W.		822,823	Penney, D.	333	Rapp, L.	555
North-Root, H.		333	Perantoni, A.	278	Rapp, W.R.	217
Norton, S.		209	Perberton, M.A.	342	Raska-Emerly, P.	676
Norvicki, D.L.		317	Pereira, M.A.	412	Ratajczak, H.V.	57
Norwood, J.		40	Perez, P.H.	725	Rauckman, E.J.	353,579,837
Notation, A.D.		552	Perreault, S.D.	572,591	Raucy, J.L.	886
Notides, A.		21	Perrino, B.A.	282	Ravikumar, V.C.	62,468
Nuzzo, N.A.		712	Perschke, S.E.	509	Ray, A.	565
Nye, A.		684	Peters, A.C.	321,978,1012	Ray, A.C.	849
Nystrom, D.D.		476	Peters, J.H.	881,882	Ray, S.D.	549
O'Bryan, T.R.		731	Petersen, D.R.	866,867,889	Raybourne, R.	263
O'Callaghan, J.		618,619	Peterson, D.P.	156	Reagor, J.	565
O'Connor, A.		1063	Peterson, R.E.	504,822,823	Reagor, J.C.	849
O'Connor, D.J.		824	Petrazzuolo, G.	740	Reasor, M.J.	28
O'Connor, R.W.		295	Petry, T.W.	18	Rebar, A.H.	743
O'Donnell, M.W.		7,710,1002	Pfeifer, R.W.	420	Rebick, T.A.	691
O'Hara, G.P.		260,261,262	Pfohl, R.J.	1019	Reddy, C.S.	8
O'Hara, T.M.		998	Phelps, J.L.	5	Reddy, G.	79
Oberdorster, G.		319,320	Phelps, P.V.	570	Reddy, J.K.	67
Oblak, T.G.		524,525	Phillips, A.M.	170	Reddy, M.K.	67
Obrosky, K.W.		409	Phillips, B.J.	134,336	Reddy, R.V.	546
Odend'hal, S.		1061	Phillips, J.E.	756,985	Reddy, S.R.	77,604
Odum, J.		761	Phillips, T.D.	498,698,875	Reddy, T.V.	678
Odum, L.		1077	Pickrell, J.A.	161,742,743,789	Reed, D.J.	258,521
Ogiso, T.		419	Piegorsch, W.W.	404	Reed, G.A.	130,437
Ohanian, E.C.		838	Pierce, S.J.	1013	Reeder, T.C.	19
Ohanian, E.V.		332	Pignone, N.D.	950	Rees, D.C.	998,999,1025
Olafsdottir, K.		521	Pilcher, G.D.	1080	Reese, J.B.	375
Olajos, E.J.		533,542,543	Pilon, D.	879,1050	Regnaud, L.	467,484
Olin, S.		164	Pinto, A.L.	128	Rehm, S.	283
Oliver, G.J.		341,342,345,968	Piper, W.N.	503,546	Rehnberg, G.L.	558,559,560
Olson, B.A.		544,1101	Piskorska-Plisz	646,650	Reif, D.F.	223
Olson, J.R.		469,641	Pizzi, W.J.	1018	Reinhard, J.F.	618
Olson, M.J.		105,255	Plaa, G.L.	231,1049,1050	Reinin, E.C.	166
Omichinski, J.G.		20	Placenti, D.M.	891	Reiter, L.W.	1014,1015,1016,1017
Opresko, D.M.		720,731	Placke, M.E.	812,978	Reitman, F. A.	1071
Osimitz, T.		784,810	Plocinski, A.F.	824	Reitz, R.H.	945
Ostby, J.		584,717	Plopper, C.G.	442	Renak, V.	575
Othman, M.A.		938	Plutnick, R.	405,834	Renskers, K.J.	333
Otto, D.A.		538	Pohland, R.C.	726	Renz, J.	1063
Paabo, M.		803,804	Poirier, L.A.	160	Reuhl, K.R.	203,206,302
Padilla, S.		381,531,537	Polin, D.	1086	Reyes, A.	1005
Page, J.G.		818,819	Pomeroy, J.M.	480,950	Reynolds, C.W.	160
Pal, B.C.		731	Pond, C.L.	984	Reynolds, R.J.	754
Palekar, L.D.		398	Poonacha, K.B.	577	Reynolds, S.H.	417
Palmer, A.E.		278	Pope, C.	537	Rezabek, M.S.	413
Palmer, A.K.		718,719	Popp, J.A.	658	Rhee, M.	670
Palmer, M.A.		1096	Porvaznik, M.	805	Rhoades, R.A.	93
Palmer, N.J.		701	Potter, D.W.	16	Rhodes, C.	342
Palmer, T.M.		701	Pounds, J.G.	302,303,304	Ribelin, W.E.	763,782,786
Pan, J.		631B	Powers, J.F.	630	Rice, D.C.	995,996
Pancak, K.S.		915	Powers, R.H.	489,490,492	Rice, J.M.	411,425
Pang, V.F.		787	Pozzi, G.	159	Rice, S.A.	868
Papa, L.		693	Pratt, R.M.	496,497	Richards, D.E.	478
Paradiso, L.J.		366	Prejean, J.D.	981	Richards, J.H.	48,745
Park, J.K.		1095	Prentice, B.	812	Richardson, B.C.	393
Park, Y.J.		465	Price, C.J.	2,580,700,714	Richardson, K.E.	474
Parker, G.A.		835,836	Pritts, I.M.	691	Richardson, R.J.	383
Parker, R.		952,990	Prout, M.S.	574	Rickert, D.E.	476,879,932
Parker, W.		49	Pumford, N.R.	16	Ridder, G.	952
Parkinson, A.		82,83,145,875	Purchase, R.	967	Ridder, W.E.	818,819
Parmley, T.		711	Pustilnik, L.R.	798	Riddle, M.M.	913,923
Parnell, M.J.		218	Putnam, C.W.	236	Ridley, W.P.	235
Patchen, M.		374	Quance, J.	405	Rieger, J.A.	62
			Quander, D.Y.	1002,1020	Rieth, S.H.	722

Rietjens, I.M.	747	Ruhr, L.P.	1097	Serve, M.P.	453,454
Rigdon, G.C.	390,391,1016	Rush, G.F.	110,234,248,249	Serve, P.	805
Rinehart, K.L.	612	Rush, R.B.	235	Sevanian, A.	688
Rinehart, W.E.	14	Rushmore, T.H.	397	Shaddock, J.G.	187
Ritter, J.C.	480	Russell, R.D.	365	Shah, P.V.	972,973,974
Ritter, J.K.	869	Rutherford, J.E.	811	Shah, Y.B.	73
Ritz, H.L.	780	Ryan, M.J.	978	Shaikh, Z.A.	270
Riviere, J.E.	975	Ryan, R.P.	501	Shank, R.C.	438
Robbins, M.C.	967	Ryer, J.E.	507,508	Shara, M.A.	495
Roberts, A.E.	988	Ryon, M.G.	738	Sharma, R.P.	3,34,626,951,990
Roberts, D.W.	16	Sabbioni, E.	159	Sheets, L.	1016,1017
Roberts, J.	453,454	Sabharwal, P.S.	1044	Shelby, M.	50
Roberts, S.	545	Sabourin, P.J.	117,929	Sheldon, W.G.	79
Robertson, D.G.	383	Sabri, M.I.	210	Shen, E.S.	641
Robertson, F.M.	104	Sack, G.	91	Sherby, S.M.	69
Robertson, P.	846	Sadler, A.J.	867	Shertzer, H.G.	551,1071
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Robinson, M.	984,1078	Safe, L.	644,651	Shibamoto, T.	483
Robinson, R.L.	101	Safe, S.	71,498,499,639,640,642,	Shih, T.-M.	530,534
Robison, R.	545		644,646,650,651,875	Shipp, N.G.	518,1064,1065
Roby, M.R.	940,941	Saffiotti, U.	159	Shirai, T.	419
Rodgers, K.	853,927,928	Salamon, C.M.	14	Shirasu, Y.	361,402
Rodier, P.M.	152	Salay, J.M.	999	Shoaf, C.R.	326,748,749
Rodriguez, E.	90	Salomon, R.A.	453,454	Shoemaker, S.M.	692
Rodwell, D.E.	582	Sams, R.A.	933	Shopsis, C.	284
Rodwin, M.	835,836	Sanders, H.R.	297	Short, B.G.	356
Roebuck, B.D.	874	Sanders, J.M.	472	Short, R.D.	705,782,786
Roger, J.C.	338	Sanders, M.	424,974	Shull, L.R.	247,573
Rogers, R.A.	975	Sandifer, S.M.	243	Siadat-Pajouh	924
Rogers, R.R.	913,923	Sanduja, R.	371	Sichak, S.P.	154
Rogers-Back, A.	1046	Sandy, J.	748,749	Sickles, D.W.	524,525,526,527,528,529
Roloff, M.V.	763,765,782,786	Sandy, M.S.	667	Siddens, L.K.	88
Rombout, P.J.	41,42,747	Saphia, J.V.	1011	Siddiqui, W.H.	768,827
Romkes, M.	646,650	Sarlo, K.	906	Sies, H.	229,372
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Roney, P.L.	666	Satalowich, F.T.	615	Sikorski, E.E.	998
Ronis, M.J.	61	Satoh, N.	764	Silkworth, J.B.	91,635
Roomi, M.W.	314,315,396	Saubermann, A.J.	212	Silva, M.H.	573,672
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Roque, H.	627	Sauers, L.J.	28	Silver, I.S.	485,936
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Rosen, G.M.	684	Schafer, P.J.	656	Simon, K.	912
Rosen, J.F.	304,308	Schamber, G.J.	876,877	Simon, M.	339
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