Society of Toxicology

27th Annual Meeting
Program

February 15-19, 1988
Loews Anatole Hotel
Dallas, Texas

SPECIAL EVENTS

CAREER PLANNING IN TOXICOLOGY
sponsored by SOT Placement Service Committee
Monday, February 15, 1988
4:15 p.m.–6:00 p.m.
Metropolitan Ballroom
Open to all registrants

SOT WELCOMING RECEPTION
Monday, February 15, 1988
6:00 p.m.–7:30 pm.
Chantilly Ballroom and Foyer
Open to all registrants and guests

SOT PLENARY SESSION
Chaired by James E. Gibson
Tuesday, Feburary 16, 1988
8:30 a.m.–11:30 a.m.
Khmer Pavillion
Open to all registrants

SOT ISSUES SESSION
Tuesday, February 16, 1988
Noon–1:00 p.m.
Monet Ballroom
Chaired by SOT President Jerry B. Hook
Bring your lunch and participate in an open forum discussion of SOT affairs
Open to all registrants

SPECIAL POSTER/DEMONSTRATION SESSION—COMMUNICATING BASIC CONCEPTS IN TOXICOLOGY TO NON-SCIENTISTS
sponsored by SOT Public Communications Committee
Tuesday, February 16, 1988—1:30 p.m.–4:30 p.m. (attended)
Wednesday, February 17, 1988—8:30 a.m.–4:30 p.m. (displayed)
Sapphire and Topaz Rooms
Open to all registrants

SPECIAL NIGHT AT THE RANCH
Tuesday, February 16, 1988
7:00 p.m.–11:00 p.m.
(Buses leave from Loews Anatole Hotel by 6:30 p.m. promptly and return by 11:00 p.m.)
$30/person, includes transportation, open wine and beer bar, all-you-can-eat barbeque dinner, and entertainment.
Tickets required. Pre-registration by January 22.

3RD ANNUAL BURROUGHS WELLCOME TOXICOLOGY SCHOLAR AWARD LECTURE
by Frederick P. Guengerich
Chaired by Tom S. Miya
Wednesday, February 17, 1988
Noon–1:00 p.m.
Terrace Ballroom
Open to all registrants

27TH ANNUAL BANQUET AND AWARDS PRESENTATION
Thursday, February 18, 1988
7:00–10:00 p.m.
Khmer Pavillion
Open to all registrants and guests. $32/person. Tickets required (available at Registration Desk through noon, February 16)

FUTURE MEETINGS

Meeting	Year	Date	Location
28	1989	Febrary 28–March 3	Atlanta Hilton Hotel Atlanta, GA
29	1990	February 12–16	Fountainbleau Hilton Hotel Miami Beach, FL
30	1991	February 26–March 1	Loews Anatole Hotel Dallas, TX

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GENERAL INFORMATION

REGISTRATION FEES

	Member or Post-Doctoral in Training	Non-Member	Student, Full-Time Pre-Doctoral	Guest*
Before Jan. 22	$ 80	$140	$15	$10
After Jan. 22	$105	$165	$30	$10
Continuing Education Courses (each)	$ 50	$ 60	$20	$50

SOT NIGHT AT THE RANCH (includes transportation, open wine and bar, barbeque dinner, and entertainment). Tuesday, February 16, at 7:00 p.m. Tickets are required. Pre-registration by January 22.

ANNUAL BANQUET AND AWARDS PRESENTATION, Thursday, February 18, 7:00 p.m. $32/person. Tickets may be purchased at the Registration Desk through noon, February 16.

*Registration required for access to the hospitality suite.

REGISTRATION DESK—CHANTILLY BALLROOM FOYER

Sunday, February 14	4:00 p.m.– 8:00 p.m.
Monday, February 15	7:00 a.m.– 5:00 p.m.
Tuesday, February 16	7:00 a.m.– 4:00 p.m.
Wednesday, February 17	8:00 a.m.– 4:00 p.m.
Thursday, February 18	8:00 a.m.– 4:00 p.m.

INCOMING MESSAGE CENTER

The Message Center will be in the Registration Area during registration hours. Please inform your office and family of the message center number: **(214) 748-1200, ext. 7798.**

HOTEL ACCOMMODATIONS

The Society of Toxicology 27th Annual Meeting will be headquartered at the Loews Anatole Hotel. Arrangements have been made for the special room rate of $80 for a single room; $96 for a double room; from $250 for a one-bedroom suite; and from $350 for a two-bedroom suite. You are responsible for making your own hotel reservations by **January 15, 1988.** Please contact The Loews Anatole Hotel, 2201 Stemmons Freeway, Dallas, TX 75207. To phone reservations in, call (214) 748-1200. Note: Check-in time is 4:00 p.m. and check-out time is 12:00 noon.

The Society has reserved a block of 1,300 rooms at the Loews Anatole. Housing requests received after that block is filled will be referred by the Anatole to the Stouffer Dallas Hotel, which is located directly across from the Anatole, just a five-minute walk away. For more information regarding alternative accommodations, contact the Annual Meeting Registrar, SOT, 1133 15th Street, N.W., Suite 1000, Washington, D.C. 20005, (202) 293-5935, TLX: 292046 IMGUR, FAX # (202) 775-9631.

AIR TRANSPORTATION

American Airlines, in cooperation with the Society of Toxicology, is offering meeting registrants special discounts: 40 percent discount off American's round trip undiscounted coach fares for those travelling on American Airlines and American Eagle domestic segments to Dallas/Fort Worth for the Annual Meeting; and five percent discount on any special fares (on a space limited basis). To take advantage of this exclusive discount, tickets must be purchased seven days prior to the departure date.

To find out what special fares are available from your departure city, call the Meeting Services Desk, toll free from anywhere in Canada and the United States (including Hawaii, Alaska, Puerto Rico, and the Virgin Islands) seven days a week from 7:00 a.m. to 12:00 midnight central time. **Dial 1-800-433-1790 and ask for STAR FILE #S-92782.**

American Airlines is also offering a special discount for meeting registrants in Europe. To make reservations, telephone the local American Airlines reservation office and ask for the "International Congress Desk" and for STAR FILE #S-92782. The American Airlines agent will access the file for the Society of Toxicology Annual Meeting that includes all information pertinent to the meeting and the specific booking requirements. Call the American Airlines reservations number at the following locations:

Frankfurt 23-05-91	London 01-629-8817	Paris 47-23-00-35
Outside Frankfurt: 0130-4114	Outside London: 0800-010151	French Provinces: 16-0523-00-35

NOTE: A prize drawing will be held following the meeting. One person who booked a ticket through American's Meeting Services Desk will receive two free tickets to the winner's choice of Hawaii, San Juan, or any American Airlines European city.

AIRPORT TRANSPORTATION SERVICES

The Loews Anatole Hotel is a 25-minute drive from the Dallas/Fort Worth Airport. A shuttle service (TBS Shuttle Service) departs to and from the Airport every 30 minutes and the fare is $8.00 per person. Taxi service is approximately $20.

SOT HEADQUARTERS—CORAL 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—ROSETTA ROOM

Monday	10:00 a.m.– 3:30 p.m.*

*registration only

PERIDOT/STEUBEN/TRAVERTINE/WYETH ROOMS

Tuesday–Thursday	9:00 a.m.– 4:00 p.m.

PLACEMENT SERVICE SEMINAR: CAREER PLANNING IN TOXICOLOGY—METROPOLITAN BALLROOM

Monday 4:15 p.m.– 6:00 p.m.

The seminar will cover the following areas: (i) Setting Your Career Planning Objectives: Academic—Industry—Government? (ii) What is the Role of Board Certification? (iii) Continuing Education in Toxicology, (iv) The Other Tools of the Trade: Management—Personnel—Finances.

PRESS ROOM—OPAL ROOM

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

GUEST HOSPITALITY—MEZZANINE LEVEL LOUNGE

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. Guests must be registered for access to the hospitality suite.

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

PLENARY SESSION—KHMER PAVILLION

Tuesday 8:30 a.m.–11:30 a.m.

To acknowledge excellence in Toxicology research, the SOT Program Committee has planned a plenary session that will highlight platform presentations of forefront, top-quality research, selected by the committee from submitted abstracts. As there will be no other scientific sessions scheduled at that time, all meeting registrants should plan to attend this session.

EXHIBITS—CHANTILLY BALLROOM

Monday	6:00 p.m.– 7:30 p.m.
Tuesday–Thursday	8:30 a.m.– 5:00 p.m.

SPECIAL POSTER/DEMONSTRATION SESSION—SAPPHIRE AND TOPAZ ROOMS COMMUNICATING BASIC CONCEPTS IN TOXICOLOGY TO NON-SCIENTISTS

Tuesday (attended)	1:30 p.m.– 4:30 p.m.
Wednesday (displayed)	8:30 a.m.–11:30 p.m.

The SOT Committee on Public Communications provides a special opportunity for SOT members to exchange and share teaching and informational materials, which can be utilized in presenting basic concepts in toxicology to non-scientists, such as secondary school students, health practitioners and the media.

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—RUBY ROOM

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.

PROGRAM SUMMARY

Continuing Education Courses (Pre-Registration Only)

All courses are held on Monday, February 15, 1988

8:00 a.m.–Noon

1. Respiratory Tract Toxicology by Classes of Agents — Grand Ballroom D
2. Methods in Male Reproductive Toxicology: The Evaluation of Spermatogenic Impairment — Grand Ballroom C
3. Genetic Toxicology — Grand Ballroom B

1:30 p.m.–5:30 p.m.

4. Immunotoxicology — Grand Ballroom C
5. Gastrointestinal Toxicology — Grand Dallroom B
6. Endocrine Toxicology — Grand Ballroom D

Plenary Session

Tuesday — Khmer Pavillion
8:30 a.m.–11:30 a.m.
#1-10

Symposia

Day/ Time	Topic	Room	Page
Tuesday 1:30 p.m.	Correlation Between Morphologic and Functional Changes Induced by Xenobiotics: Is Every Change a Sign of Toxicity?	Monet Ballroom	11
Tuesday 1:30 p.m.	Molecular Genetics of Species and Tissue Specific Oncogenesis	Metropolitan Ballroom	12
Wednesday 8:30 a.m.	Toxicology of Medical Device Materials	Monet Ballroom	21
Wednesday 8:30 a.m.	Environmental Contamination: Regulatory Issues and Case Studies	Metropolitan Ballroom	21
Wednesday 1:30 p.m.	The Importance of Combined Exposure in Inhalation Toxicology	Monet Ballroom	30
Wednesday 1:30 p.m.	The Physiology and Toxicology of the Kidney *In Vitro*	Metropolitan Ballroom	30
Thursday 8:30 a.m.	Significance of Negative Data in Evaluating Environmental Toxicological Hazards	Monet Ballroom	37
Thursday 8:30 a.m.	Free Radical Mechanisms in Pathogenesis	Metropolitan Ballroom	38
Thursday 1:30 p.m.	Short-Term Test Validation in Developmental Toxicology: Lessons from Genetic Toxicology	Monet Ballroom	44
Thursday 1:30 p.m.	Specific Mechanisms of Immunotoxicity: Chemical Alterations of Cytokine Activity	Metropolitan Ballroom	45
Friday 8:30 a.m.	The Potential Use of Human Tissues for Toxicity Studies and Testing	Monet Ballroom	52
Friday 8:30 a.m.	Immunologic and Genetic Mechanisms in Carcinogenesis	Metropolitan Ballroom	53

Platform Sessions

Day/ Time	Topic	Room	Page
Tuesday 1:30 p.m.	Inhalation I #10-23	Governors Lecture Hall	12
Tuesday 1:30 p.m.	Biotransformation I #24-37	Senators Lecture Hall	12
Wednesday 8:30 a.m.	Reproductive Toxicology/ Teratology #241-254	Governors Lecture Hall	22
Wednesday 8:30 a.m.	Hepatic/GI Toxicology #255-265	Senators Lecture Hall	22
Wednesday 1:30 p.m.	Molecular/Cellular Toxicology #420-427	Governors Lecture Hall	30
Wednesday 1:30 p.m.	Carcinogenesis #428-435	Senators Lecture Hall	31
Wednesday 1:30 p.m.	Aquatic/Environmental Toxicology #436-444	Grand Ballroom A	31
Wednesday 1:30 p.m.	Biotransformation II #445-453	Grand Ballroom C	32
Thursday 8:30 a.m.	Immunotoxicology #589-601	Governors Lecture Hall	38
Thursday 8:30 a.m.	Inhalation II #602-615	Senators Lecture Hall	39
Thursday 1:30 p.m.	Cardiovascular/Renal #744-756	Governors Lecture Hall	45
Thursday 1:30 p.m.	Metals #757-770	Senators Lecture Hall	46

Poster/Discussion Sessions

Day/ Time	Topic/Abstract #	Room	Page
Tuesday 1:30 p.m.	Immune Reactivity to Chemical and Biological Antigens #38-48	Grand Ballroom A	13
Tuesday 1:30 p.m.	Testicular Toxicity #49-58	Grand Ballroom C	14
Wednesday 8:30 a.m.	Pulmonary Response to Particles #266-276	Grand Ballroom A	23
Wednesday 8:30 a.m.	Benzene Metabolism and Myelotoxicity #277-288	Grand Ballroom C	24
Thursday 8:30 am.	Pharmacokinetic and Toxicity Modeling #616-625	Grand Ballroom A	39
Thursday 8:30 a.m.	*In Vitro* Models: Non-Hepatic Systems #626-635	Grand Ballroom C	40
Thursday 1:30 p.m.	Tumor Promotion #771-780	Grand Ballroom A	46
Thursday 1:30 p.m.	Inflammatory Cells in the Lung #781-791	Grand Ballroom C	47
Friday 8:30 a.m.	Metal Binding Proteins #919-930	Grand Ballroom A	53
Friday 8:30 a.m.	Gluthathione Modulation of Toxicity #931-940	Grand Ballroom C	53

Poster Sessions

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 aithout 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 1:30 p.m.	*Metals #59-112	Chantilly Ballroom	14
Tuesday 1:30 p.m.	Acetaminophen Toxicity #113-134	Chantilly Ballroom	16
Tuesday 1:30 p.m.	*Molecular/Cellular Toxicology #135-167	Chantilly Ballroom	17
Tuesday 1:30 p.m.	Neurochemistry #168-201	Chantilly Ballroom	18
Tuesday 1:30 p.m.	*Reactive Intermediates #202-214	Chantilly Ballroom	19
Tuesday 1:30 p.m.	Aquatic/Environmental Toxicology #215-227	Chantilly Ballroom	20
Wednesday 8:30 a.m.	*Neurotoxicology: Behavior #289-309	Chantilly Ballroom	24
Wednesday 8:30 a.m.	Immunotoxicology/ Hematotoxicology #310-329	Chantilly Ballroom	25
Wednesday 8:30 a.m.	*Food and Drug Toxicology #330-357	Chantilly Ballroom	26
Wednesday 8:30 a.m.	Halogenated Hydrocarbons #358-401	Chantilly Ballroom	27
Wednesday 8:30 a.m.	*Genotoxicology/Mutagenesis #402-419	Chantilly Ballroom	29
Wednesday 1:30 p.m.	*Reproductive Toxicology/ Teratology I #454-482	Chantilly Ballroom	32
Wednesday 1:30 p.m.	*Dermal/Ocular Toxicology #483-520	Chantilly Ballroom	33
Wednesday 1:30 p.m.	*Cardiovascular/Renal #521-551	Chantilly Ballroom	35
Wednesday 1:30 p.m.	*Inhalation I #552-588	Chantilly Ballroom	36
Thursday 8:30 a.m.	*Carcinogenesis #636-684	Chantilly Ballroom	40
Thursday 8:30 a.m.	Pesticides #685-716	Chantilly Ballroom	42
Thursday 8:30 a.m.	*Biotransformation I #717-743	Chantilly Ballroom	43
Thursday 1:30 p.m.	*Biotransformation II #792-836	Chantilly Ballroom	47
Thursday 1:30 p.m.	Solvents #837-859	Chantilly Ballroom	49
Thursday 1:30 p.m.	*Hepatic/GI Toxicology #860-899	Chantilly Ballroom	50
Thursday 1:30 p.m.	Electrophysiology #900-909	Chantilly Ballroom	51
Thursday 1:30 p.m.	*Endocrine System #910-918	Chantilly Ballroom	52
Friday 8:30 a.m.	*Reproductive Toxicology/ Teratology II #941-972	Chantilly Ballroom	54
Friday 8:30 a.m.	Neuropathology #973-989	Chantilly Ballroom	55
Friday 8:30 a.m.	*Inhalation II #990-1015	Chantilly Ballroom	56
Friday 8:30 a.m.	General Toxicology #1016-1055	Chantilly Ballroom	57
Friday 8:30 a.m.	*Biotransformation II #1056-1074	Chantilly Ballroom	59

Poster/Demonstration Session

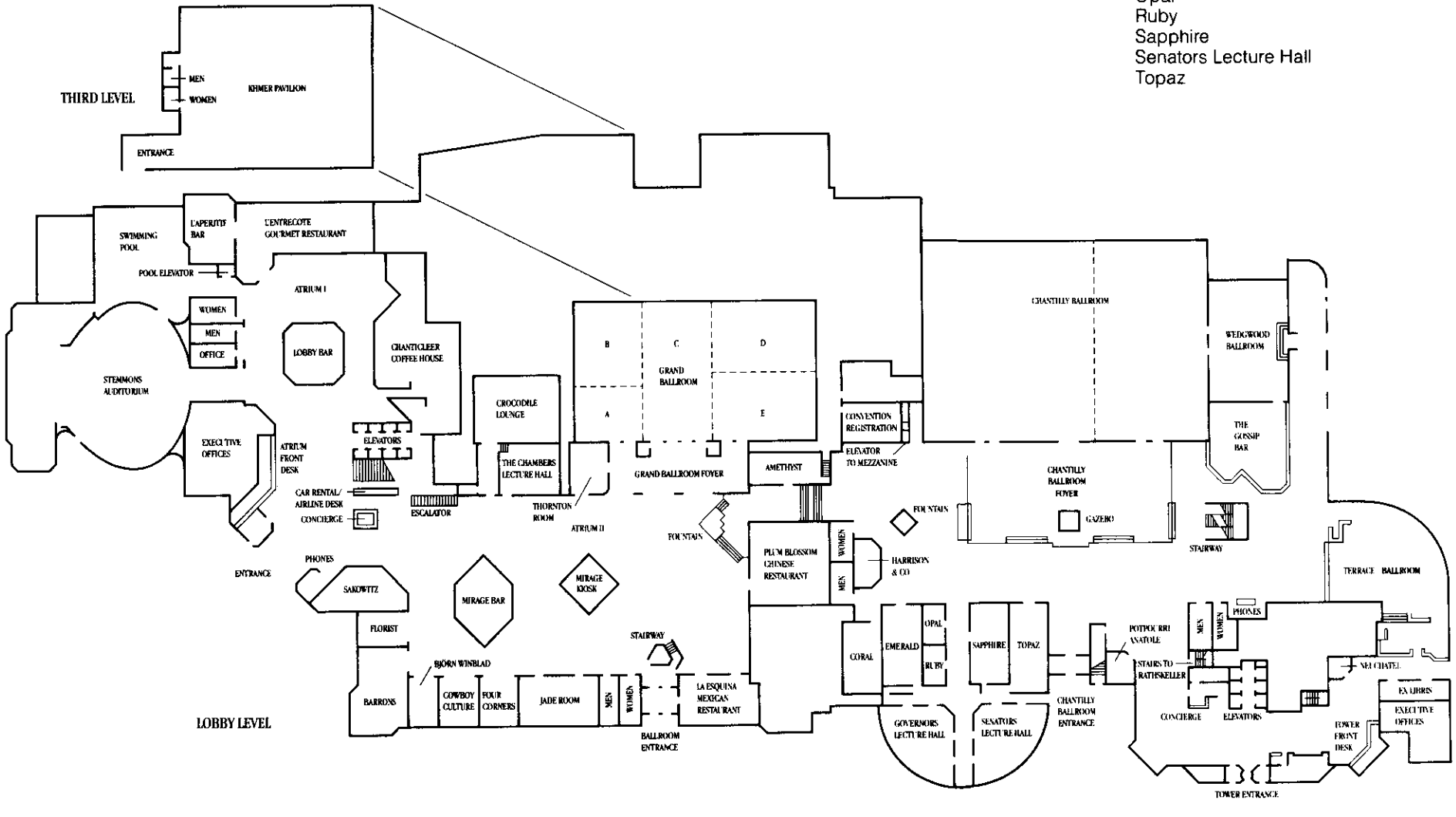
Day/ Time	Topic/Abstract #	Room	Page
Tuesday 1:30 p.m.	Communicating Basic Concepts in Toxicology to Non-Scientists #228-240A	Sapphire and Topaz Rooms	21
Wednesday 8:30– 5:00 p.m.	Display only	Sapphire and Topaz Rooms	21

Smoking is not permitted in scientific sessions

LOEWS ANATOLE HOTEL

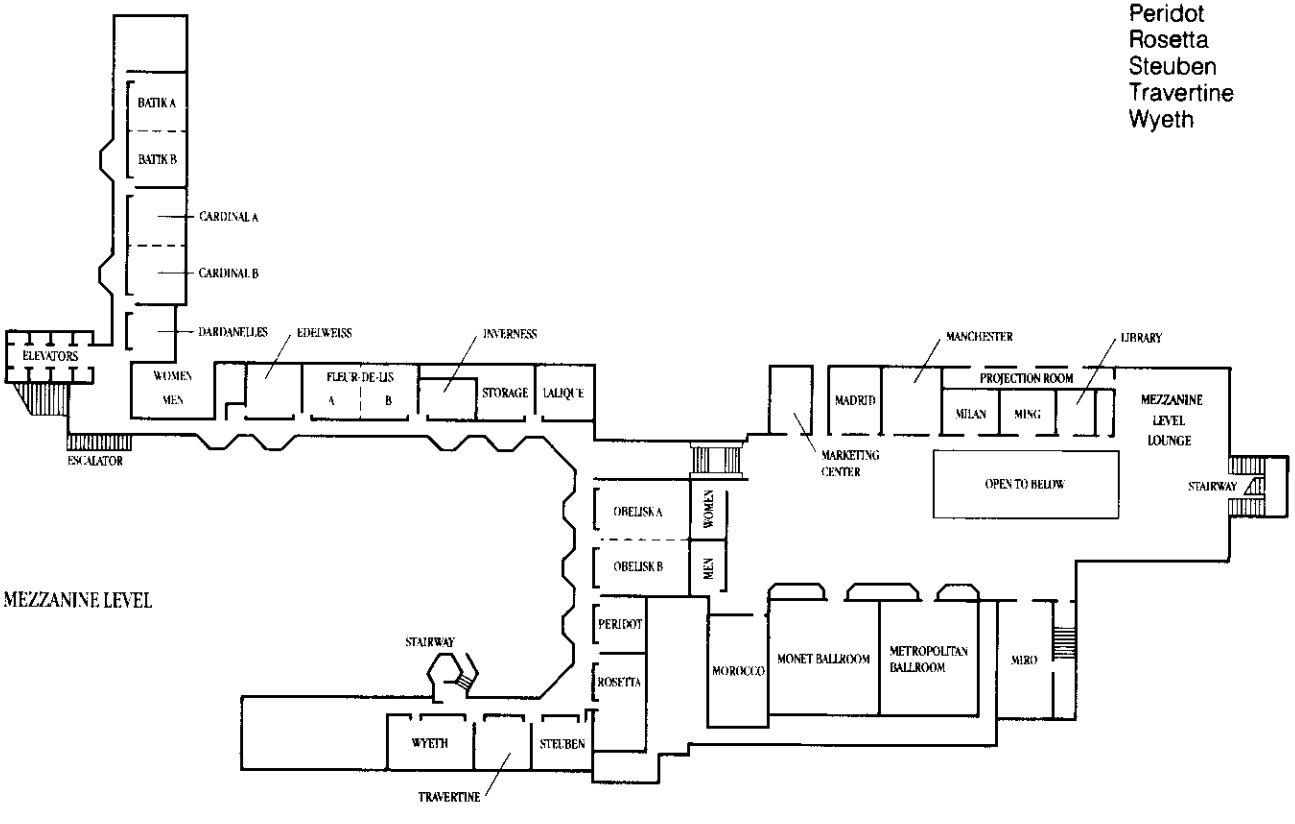
These rooms are on the **Lobby Level**

Chantilly Foyer
Chantilly Ballroom
Wedgwood Ballroom
Grand Ballroom Foyer
Grand Ballroom
Coral
Emerald
Governors Lecture Hall
Jade
Opal
Ruby
Sapphire
Senators Lecture Hall
Topaz

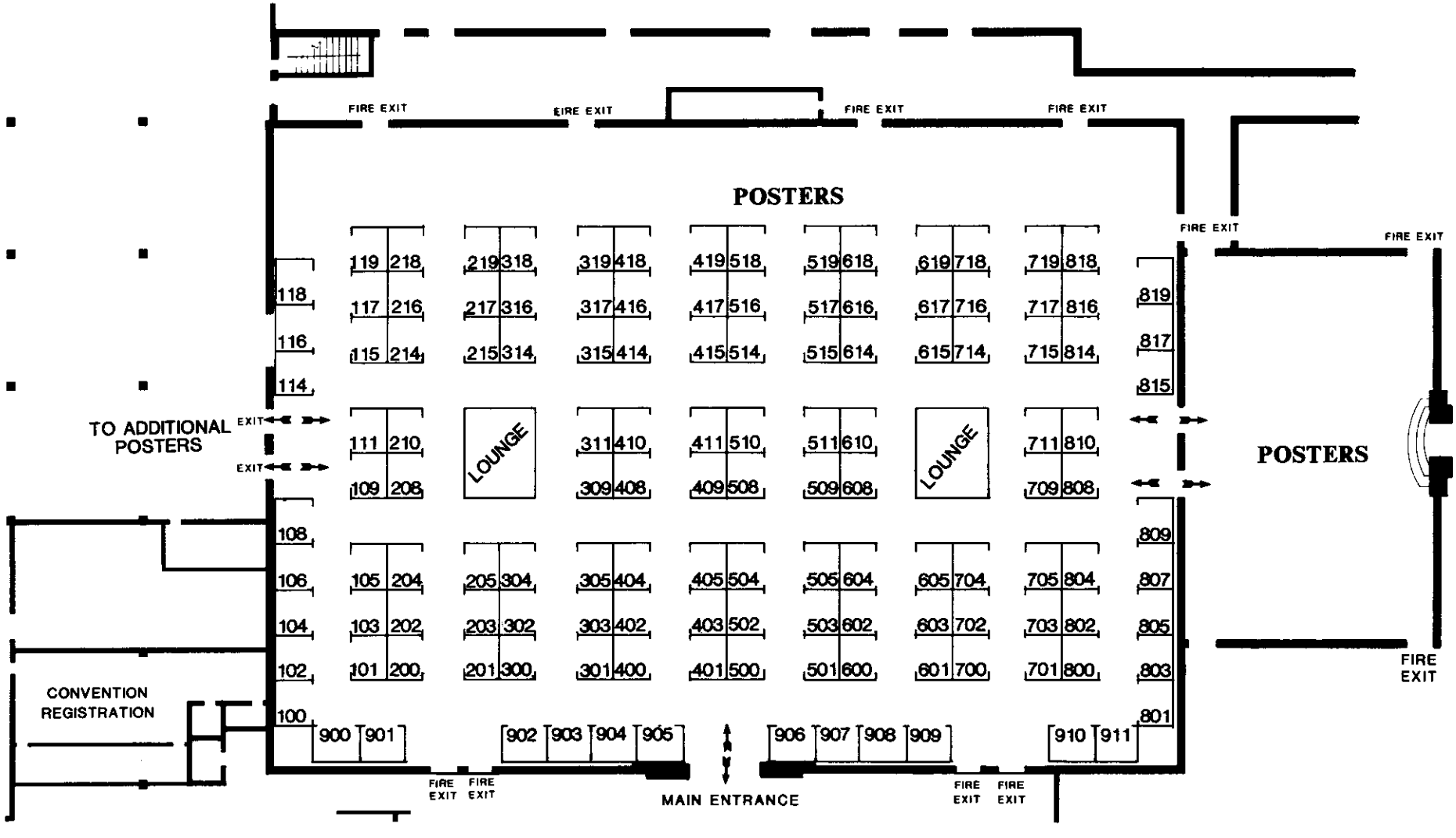


These rooms are on the **Mezzanine Level**

Batik A&B
Cardinal A&B
Dardenelles
Edelweiss
Fleur-De-Lis A&B
Inverness
Lalique
Madrid
Manchester
Milan
Ming
Library
Miro
Metropolitan Ballroom
Monet Ballroom
Morocco
Obelisk A&B
Peridot
Rosetta
Steuben
Travertine
Wyeth



FLOOR PLAN OF EXHIBITS



LOEWS ANATOLE HOTEL

1988 EXHIBITORS

Alphabetical Listing

Company	*Booth(s) #*
Academia Book Exhibits	302
Academic Press	505
Agway, Inc., Country Foods Division	405
Allentown Caging Equipment Co., Inc.	906
Alza Corporation	815, 817
American Board of Toxicology, Inc.	803
Animal Identification and Marking Systems	204
Bench Ltd., Science Recruitment Division	504
Bio Medic Data Systems Inc.	809
Bio-Life Associates, Ltd.	600
Biodynamics Inc.	802
Buckshire Corp.	514
Buxco Electronics, Inc.	605
Charles River Laboratories, Inc.	903, 904, 905
Chemsyn Science Laboratories	518
Clonetics Corporation	714
Colorado Histo-Prep, Inc.	717
Columbus Instruments	400
Costar Corporation	410
Cryo Resources Ltd.	704
Data Sciences, Inc.	419
Dawson Research Corporation	511
DuPont Company	100
Elsevier Science Publishing Co.	404
Environmental Health Research Testing	907
Experimental Pathology Laboratories, Inc. (EPL)	614
Fine Science Tools Inc.	515
GENESYS	108
Harlan Sprague Dawley, Inc.	601
Hazleton Laboratories Corporation	608
Hazleton Research Animals, Inc.	501
Health Designs, Inc.	701, 703
Hemisphere Publishing Corporation	503
Hill Top Companies, The	203, 205
Hilltop Lab Animals, Inc.	509
Huntingdon Research Centre	508, 510
IIT Research Institute	409
Inhausen Research Institute, Inc.	715
Innovative Programming Associates, Inc.	304
S. Karger Publishers, Inc.	814
Lab Products Inc.	401, 403
Laboratory Research Enterprises, Inc.	615
Life Science Research Ltd./Biodynamics	804
Alan R. Liss, Inc.	315
Microbiological Associates, Inc	709, 711
Mini-Mitter Co., Inc.	114
Modular Instruments, Inc.	115
Nalge Company	109, 111
Nicolet Biomedical Instruments	311
Nuaire Inc.	415
Omnitech Electronics, Inc.	603
PPM, Inc.	214
Pathology Associates, Inc.	411
Pergamon Press	201
Purina Mills, Inc.	500, 502
The RCC Group	414
Raven Press	300
Ricerca, Inc.	215
SRI, International	700
Sakura Finetek U.S.A., Inc.	200
San Diego Instruments	705
Springborn Life Sciences, Inc.	800
Stillmeadow, Inc.	408
Suburban Surgical Co., Inc.	610
Tegeris Laboratories	808, 810
Toxicol Laboratories	301
Toxikon	314
TPS, Inc.	318
Unifab Corp.	208, 210
United States Testing Co., Inc., Biological Services Division	702
VCH Publishers, Inc.	105
Vangard International Inc.	602, 604
White Eagle Toxicology Laboratories Inc.	309
Wildlife International, Ltd.	402

CONTINUING EDUCATION COURSES

(PRE-REGISTRATION ONLY — ALL COURSES ARE ON MONDAY, FEBRUARY 15)

8:00 a.m.–Noon

1. **RESPIRATORY TRACT TOXICOLOGY BY CLASSES OF AGENTS**
   Chairperson: Craig S. Barrow, Ph.D., Environmental Sciences Center, PPG Industries, Inc., Pittsburgh, PA

This course provides an in-depth review of respiratory tract toxicology by classes of agents. In order to provide a sound basis for the information to be presented, an overview of respiratory tract structure and function will be presented first. Each speaker will then discuss major classes of agents and their impact on the respiratory system. The course will conclude with a presentation on the relevant and highly complex subject of mixtures.

General Structure, Function and Effects of Irritants. Kevin Morgan, B.V.Sc., Ph.D., Chemical Industry Institute of Toxicology, Research Triangle Park, NC.

Carcinogens. Hanspeter Witschi, M.D., University of California at Davis, Davis, CA.

Allergens. Andrea K. Hubbard, Ph.D., University of Arizona, Tucson, AZ.

Systemically Administered Agents. Robert A. Roth, Ph.D., Michigan State University, East Lansing, MI.

Mixtures. Yves Alarie, Ph.D., University of Pittsburgh, Pittsburgh, PA.

2. **METHODS IN MALE REPRODUCTIVE TOXICITY: THE EVALUATION OF SPERMATOGENIC IMPAIRMENT**
   Chairperson: Harold Zenick, Ph.D., United States Environmental Protection Agency, Washington, DC

Spermatogenesis is a highly synchronized, time-locked process that has been shown to be susceptible to a wide range of chemical and physical agents. An evaluation of the integrity of this process is an integral component of the assessment of potential male reproductive toxicants. However, current approaches are limited and/or inadequate in characterizing spermatogenic impairment. The goal of this workshop is to provide a thorough coverage of selected methods for evaluating spermatotoxicity. The participants will be provided with an understanding of the methodologies. The enhancement of current, routine approaches (e.g., histopathologic evaluations) and the application of other techniques (e.g., sperm evaluations, fertilization tests) will be covered. Speakers will descride the strengths and weaknesses of these approaches as well as their applications to male reproductive risk assessment.

Overview of Spermatogenesis. Harold Zenick, Ph.D., United States Environmental Protection Agency, Washington, DC.

Histologic Approaches to the Evaluation of the Testis and Epdidymis. Lonnie D. Russell, Ph.D., Southern Illinois University, Carbondale, IL.

Methods for Sperm Evaluations. Peter Working, Ph.D., Chemical Industry Institute of Technology, Research Triangle Park, NC.

Strategies for Evaluating the Fertilizing Capacity of Sperm. Sally Perreault-Darney, Ph.D., United States Environmental Protection Agency, Research Triangle Park, NC.

3. **GENETIC TOXICOLOGY**
   Chairperson: David J. Doolittle, Ph.D., R.J. Reynolds Tobacco Co., Winston-Salem, NC.

This course provides a broad perspective in genetic toxicology. The emphasis will be on teaching basic concepts involved in the practice of genetic toxicology and the interpretation of genotoxicity data. In addition, the closing lecture will focus on how genotoxicity data is used in safety assessment.

Principles of Genetic Toxicity Testing. David J. Brusick, Ph.D., Hazleton Laboratories America, Kensington, MD.

Direct Measurement of Genetic Change in Humans. William G. Thilly, Ph.D., Massachusetts Institute of Technology, Cambridge, MA.

The Value of Short-Term Tests in Determining the Mechanism of Action of Chemical Carcinogens. Byron E. Butterworth, Ph.D., Chemical Industry Institute of Technology, Research Triangle Park, NC.

Role of Genetic Toxicology in Risk Assessment, W. Gary Flamm, Ph.D., Food and Drug Administration, Washington, DC.

1:30 p.m.–5:30 p.m.

4. **IMMUNOTOXICOLOGY UPDATE**
   Chairperson: Peter Thomas, Ph.D., Senior Immunotoxicologist, IIT Research Institute, Chicago, IL

The last SOT Continuing Education Course on immunotoxicology was held in 1982. This course provides updated information to toxicologists with respect to immune system structure and function; approaches to elucidating mechanisms; incorporating immunotoxicology into industrial health and safety testing; and future regulatory and risk assessment issues.

Structure, Function and Immunoregulatory Facets of the Immune System. Nancy I. Kerkvliet, Ph.D., Oregon State University, Corvallis, OR.

Approaches to Assessing Mechanisms of Immunotoxicity. Albert E. Munson, Ph.D., Medical College of Virginia, Richmond, VA.

Incorporating Immunotoxicology into Routine Safety Assessments: Challenges Facing the Discipline. Michael Murray, Ph.D., The Procter & Gamble Co., Cincinnati, OH.

Immunotoxicology: Challenges for the Future. Peter Thomas, Ph.D., IIT Research Institute, Chicago, IL.

5. **GASTROINTESTINAL TOXICOLOGY**
   Chairperson: Mark Hite, Sc.D., Wyeth-Ayerst Research, Paoli, PA

This course provides a broad perspective on gastrointestinal toxicology. The presentation will cover the physiology of the principal organs of this system. In addition, the neoplastic and non-neoplastic reactions of the stomach to certain chemicals and drugs will be discussed.

Introduction and Overview of Gastrointestinal Toxicology. Mark Hite, Sc.D., Wyeth-Ayerst Research, Paoli, PA.

Mechanisms of Gastrointestinal Toxicity. Carol T. Walsh, Ph.D., Boston University, School of Medicine, Boston, MA.

Rodent Forestomach Carcinogenesis: Mechanisms of Actions and Significance to Man. Jerry Frantz, V.M.D., Rohm & Haas Co., Spring House, PA.

Effects of Inhibitors of Gastric Acid Secretion. Niilo Havu, M.D., Astra Pharmaceuticals AB, Sodertalje, Sweden.

6. **ENDOCRINE TOXICOLOGY**
   Chairperson: John A. Thomas, Ph.D., Northwestern University, Chicago, IL

This course provides a general overview of endocrine toxicology. In addition, drugs and chemicals affecting ovarian secretion, agents modifying thyroid and parathyroid function and evaluation of the endocrine pancreas will also be presented.

Introduction & Survey of Endocrine Toxicology. John A. Thomas, Ph.D., Northwestern University, Chicago, IL.

Drugs & Chemicals Affecting Ovarian Secretion. Carol Grace Smith, Ph.D., University of Texas, San Antonio, TX.

Agents Modifying Thyroid and Parathyroid Function. Charles C. Capan, Ph.D., Ohio State University, Columbus, OH.

Evaluation of the Endocrine Pancreas: *In vivo & In vitro.* Lawrence J. Fischer, Ph.D., Michigan State University, East Lansing, MI.

TUESDAY MORNING, FEBRUARY 16
8:30 a.m.-11:30 a.m.
KHMER PAVILLION

PLENARY SESSION

Chairpersons: J E Gibson, Chemical Industry Institute of Toxicology, Research Triangle Park, NC
R O McClellan, Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM

#1 8:30 **DOSE-DEPENDENT DISPOSITION OF d-LIMONENE: RELATIONSHIP TO MALE RAT-SPECIFIC NEPHROTOXICITY.** L D Lehman-McKeeman and D Caudill. Miami Valley Laboratories, Procter & Gamble, Cincinnati, OH.

#2 8:50 **HOW DOES CADMIUM CROSS CELL MEMBRANES?** E C Foulkes, Depts. Environ. Health & Physiol., Univ. Cincinnati Med. Ctr., Cincinnati, OH.

#3 9:10 **EFFECT OF TRANSPORT AND BIOTRANSFORMATION ON THE RENAL SITE-SPECIFIC TOXICITY OF DICHLOROVINYL CYSTEINE (DCVC).** G H I Wolfgang, A J Gandolfi, K Brendel, R B Nagle. Arizona Health Sciences Center, University of Arizona, Tucson, AZ.

#4 9:30 **POLYCHLORINATED BIPHENYL CONGENER INDUCTION AND INACTIVATION OF MONOOXYGENASE ACTIVITY IN THE FISH SCUP (STENOTOMUS CHRYSOPS).** J W Gooch, A A Elskus, P J Kloepper-Sams and J J Stegeman. Woods Hole Oceanographic Institution, Woods Hole, MA. Sponsor: M O James

#5 9:50 **CYTOTOXICITY OF BENZYL 1,2,3,4,4-PENTACHLOROBUTA-1,3-DIENYL SULFIDE (I) AND BENZYL 2-CHLORO-1,1,2-TRIFLUOROETHYL SULFIDE (II) IN ISOLATED HEPATOCYTES.** J C Veltman[1], W Dekant[1], F P Guengerich[2], and M W Anders[1], 1) Dept. of Pharmacology, Univ. of Rochester, Rochester, NY, 2) Center for Molecular Toxicology, Vanderbilt Univ., Nashville, TN.

#6 10:10 **INSIGHTS INTO THE RELATIONSHIP BETWEEN CARCINOGEN-DNA ADDUCT FORMATION AND TUMOR LOCATION IN THE RESPIRATORY TRACT FOLLOWING EXPOSURE TO DIESEL EXHAUST.** J A Bond, J R Harkema, J L Mauderly, R O McClellan, and R K Wolff. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM.

#7 10:30 **SUSCEPTIBILITY TO 1,3-BUTADIENE-INDUCED LUEKEMOGENESIS CORRELATES WITH ENDOGENOUS ECOTROPIC RETROVIRAL BACKGROUND IN THE MOUSE.** R D Irons, H P Cathro, W S Stillman, W H Steinhagen, and R S Shah, Chemical Industry Institute of Toxicology, Res Triangle Pk, NC, and M W Cloyd, Univ Texas Med Br, Galveston, TX.

#8 10:50 **DIFFERENTIAL POTENTIAL FOR EXPRESSION OF THE HARVEY-ras ONCOGENE (Ha-ras) IN B6C3F1, C3h/He, AND C57BL/6 MICE.** R L Vorce and J I Goodman. Dept. Pharmacology & Toxicology, Cent. Env. Toxicol., Michigan State Univ., E. Lansing, MI.

#9 11:10 **USE OF RAT HEPATOCYTES CULTURED ON EXTRACELLULAR MATRIX AS AN IMPROVED SYSTEM TO STUDY LIVER GENE EXPRESSION *IN VITRO*.** P S Guzelian, and E G Scheutz. Medical College of Virginia, Richmond, VA.

TUESDAY NOON, FEBRUARY 16
12 noon-1:00 p.m.
MONET BALLROOM

SOT ISSUES SESSION

Chaired by SOT President Jerry B. Hook

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

TUESDAY AFTERNOON, FEBRUARY 16
1:30 p.m.-5:00 p.m.
MONET BALLROOM

SYMPOSIUM: CORRELATION BETWEEN MORPHOLOGIC AND FUNCTIONAL CHANGES INDUCED BY XENOBIOTICS: IS EVERY CHANGE A SIGN OF TOXICITY?

Chairpersons: Z Ruben, G.D. Searle & Company, Skokie, IL; B M Wagner, Nathan S. Kline Research Institute, Orangeburg, NY

Introduction: Z Ruben, G.D. Searle & Company, Skokie, IL

The Relationship Between Cellular Ion Deregulation and Acute and Chronic Toxicity. B F Trump, University of Maryland Medical School, Baltimore, MD

Differential Induction and Regulation of Peroxisomal Enzymes. J K Reddy, Northwestern University, Chicago, IL

Induction of Glutathione Metabolism Enzymes in Toxicity and Carcinogenesis. H C Pitot, The University of Wisconsin, Madison, WI

The Comparative Pathobiology of Protein Droplet Nephropathy. J A Swenberg, CIIT, Research Triangle Park, NC

The Biology and Toxicity of Intralysosomal Concentric Lamellar Bodies Induced by Xenobiotics. M J Reasor, West Virginia University Medical Center, Morgantown, WV

Intracellular Drug Storage. Z Ruben, G.D. Searle & Company, Skokie, IL

TUESDAY AFTERNOON, FEBRUARY 16
1:30 p.m.-5:00 p.m.
METROPOLITAN BALLROOM

SYMPOSIUM: MOLECULAR GENETICS OF SPECIES AND TISSUE SPECIFIC ONCOGENESIS

Chairperson: W F Greenlee, CIIT, Research Triangle Park, NC

Molecular Determinants of Mutation Sequence Specificity. T R Skopek, CIIT, Research Triangle Park, NC

Intracellular Mediators of c-Fos Expression. M Z Gilman, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY

Oncogenesis in Transgenic Mice. V L Bautch, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY

Molecular Mechanisms of Tumor Suppression. J C Barrett, National Institute of Environmental Health Sciences, Research Triangle Park, NC

Dioxin Carcinogenesis—The Search for the Molecular Determinants of Specificity. W F Greenlee, CIIT, Research Triangle Park, NC

TUESDAY AFTERNOON, FEBRUARY 16
1:30 p.m.-5:00 p.m.
GOVERNORS LECTURE HALL

PLATFORM SESSION: INHALATION I

Chairpersons: G L Kennedy, E.I. du Pont de Nemours & Co., Newark, DE
C H Hobbs, Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM

#10 1:30 **ANTIFIBROTIC EFFECT OF POLYINOSINIC-POLYCYTIDYLIC ACID IN BLEOMYCIN MODEL OF LUNG FIBROSIS.** S N Giri, and D M Hyde. Depts. of Vet. Pharmacol. Toxicol. and Anat., Univ. of Calif., Davis, CA.

#11 1:45 **PRETREATMENT WITH CYCLOPHOSPHAMIDE DOES NOT PROTECT AGAINST THE LUNG DAMAGE AND FIBROSIS OF A SECOND DOSE.** R D Smith and J P Kehrer. Division of Pharmacology and Toxicology, College of Pharmacy, The University of Texas at Austin, Austin, TX.

#12 2:00 **GLUTATHIONE IN HYDROPEROXIDE TOXICITY IN RAT ALVEOLAR MACROPHAGES.** H J Forman, G A Loeb, and D C Skelton. Childrens Hospital and University of Southern California, Los Angeles, CA.

#13 2:15 **HALOTHANE-INDUCED INHIBITION OF SUPEROXIDE RADICAL PRODUCTION AND MOBILIZATION OF INTRACELLULAR CALCIUM.** J E Ryer-Powder, H J Forman, and R J Dorio. Childrens Hospital of Los Angeles and University of Southern California, Los Angeles, CA.

#14 2:30 **QUALITATIVE CHANGES IN CYTOCHROME P-450-LINKED MONOOXYGENASE ACTIVITY IN LUNG MICROSOMES AND ISOLATED CLARA CELLS DERIVED FROM OZONE-EXPOSES RATS.** L van Bree, I M C M Rietjens, J A M A Dormans and P J A Rombout. National Institute for Public Health and Environmental Hygiene, Bilthoven, The Netherlands. Sponsor: R Kroes.

#15 2:45 **EFFECT OF OZONE EXPOSURE ON DEFENSE TO RESPIRATORY INFECTION IN THE RAT.** H Van Loveren, Sj Sc Wagenaar, P J A Rombout, and J G Vos. National Institute of Public Health and Environmental Hygiene, Bilthoven, The Netherlands.

#16 3:00 **RAPID INCAPACITATING AND LETHAL EFFECT OF HCL IN GUINEA PIGS DURING EXERCISE.** D E Malek, M F Stock and Y Alarie. Graduate School of Public Health, University of Pittsburgh, Pittsburgh, PA.

#17 3:15 **MEASUREMENT OF TIDAL VOLUME, RESPIRATORY FREQUENCY, O_2 UPTAKE AND CO_2 OUTPUT IN EXERCISING GUINEA PIGS.** Y Alarie and D Malek. Graduate School of Public Health, University of Pittsburgh, Pittsburgh, PA.

#18 3:30 **DOSE-DEPENDENT CHANGES IN AIRWAY CONDUCTANCE AND EDEMA IN GUINEA PIGS EXPOSED TO INHALED ENDOTOXIN.** T Gordon, J Balmes, J Fine and D Sheppard. UCSF, CA

#19 3:45 **BRONCHIAL REACTIVITY TO HISTAMINE: TESTING GUINEA PIGS IN BODY PLETHYSMOGRAPHS.** P S Thorne and M H Karol. Dept. of Industrial Environmental Health Sciences, Univ. of Pittsburgh, Pittsburgh, PA.

#20 4:00 **HISTOCHEMICAL LOCALIZATION OF FORMALDEHYDE DEHYDROGENASE (FDH) ACTIVITY IN THE RAT.** D A Keller, H d'A Heck, H W Randall, and K T Morgan. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.

#21 4:15 **SELECTIVE TOXICITY OF 3-TRIFLUOROMETHYLPYRIDINE (3-FMP) TO RAT OLFACTORY EPITHELIUM.** E A Lock and P M Hext. ICI PLC, Central Toxicology Laboratory, Macclesfield, Cheshire, UK.

#22 4:30 **KINETICS OF NASAL MUCOSAL CARBOXYLESTERASE-MEDIATED HYDROLYSIS OF DIBASIC ESTERS.** C A Patterson, C R Kee, and M S Bogdanffy. E I du Pont de Nemours & Co, Inc, Haskell Laboratory for Toxicology and Industrial Medicine, Newark, DE.

#23 4:45 **SUBCHRONIC INHALATION STUDY IN RATS WITH DIBASIC ESTERS (DBE). RECOVERY OF NASAL LESIONS.** C M Keenan, M S Bogdanffy, and D P Kelly. E I du Pont de Nemours & Co, Inc, Haskell Laboratory for Toxicology and Industrial Medicine, Newark, DE.

TUESDAY AFTERNOON, FEBRUARY 16
1:30 p.m.-5:00 p.m.
SENATORS LECTURE HALL

PLATFORM SESSION: BIOTRANSFORMATION I

Chairpersons: R Snyder, College of Pharmacy, Rutgers University, Piscataway, NJ
G Witz, UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ

#24 1:30 **DIFFERENTIAL METABOLISM AND MUTAGENESIS OF 2-ACETYLAMINOFLUORENE BY HUMAN AND RAT HEPATOCYTES, S9 AND MICROSOMES.** K Rudo[1], [2], W C Dauterman[2], and R Lagenbach[1]. [1]CGTB, NIEHS, RTP, NC. [2]Toxicology Program, NCSU, Raleigh, NC.

#25 1:45 **INDUCTION OF DIFFERENT DRUG METABOLIZING ENZYMES BY CLOTRIMAZOLE IS NOT INITIATED BY THE SAME PARAMETERS OF DRUG EXPOSURE.** W L Hopson and M R Franklin. Department of Pharmacology and Toxicology, University of Utah, Salt Lake City, UT.

#26 2:00 **ISOZYME-SELECTIVE INHIBITION OF THE PULMONARY CYTOCHROME P-450-MEDIATED BIOACTIVATION OF 3-METHYLINDOLE.** G S Yost, J C Huijzer, J D Adams, Jr., and J Y Jaw. Department of Pharmacology and Toxicology, University of Utah, Salt Lake City, UT.

#27 2:15 ***IN VITRO* EFFECTS OF ENVIRONMENTAL ALKANES ON RAT PULMONARY CYTOCHROME P450-DEPENDENT MONOOXYGENASE ACTIVITIES.** J Rabovsky and D J Judy. NIOSH/DRDS. Morgantown, WV. Sponsor: V Castranova.

#28 2:30 **HEPATIC MONOOXYGENASE ACTIVITIES IN THE ADULT RHESUS MONKEY: COMPARISON WITH THE RAT.** J E A Leakey, J Bazare, Jr, H C Cunny, P J Webb, W Slikker, Jr and J R Bailey. Division of Reproductive and Developmental Toxicology, National Center for Toxicological Research, Jefferson, AR.

#29 2:45 **GLUTATHIONE (GSH) DEPLETION AND INHIBITION OF HEPATIC MIXED FUNCTION OXIDASE (MFO) BY A SERIES OF *ALPHA,BETA*-UNSATURATED ALDEHYDES (ABUA).** K O Cooper, G Witz and C Witmer. The Joint Graduate Program in Toxicology, Rutgers University/UMDNJ, Piscataway, NJ.

#30 3:00 **INDUCTION OF CYTOCHROME P-450 BY PHENOBARBITAL AND 3-METHYLCHOLANTHRENE: DIFFERENCES BETWEEN RATS AND HAMSTERS.** D R Dutton, S K McMillen and A Parkinson. Kansas University Medical Center, Kansas City, KS.

#31 3:15 **IDENTIFICATION OF A TCDD-INDUCIBLE HAMSTER LIVER MICROSOMAL PROTEIN IMMUNOCHEMICALLY RELATED TO RAT CYTOCHROME P-450a BUT WITHOUT TESTOSTERONE 7 *ALPHA*-HYDROXYLASE ACTIVITY.** M P Arlotto, S K McMillen and A Parkinson. Kansas University Medical Center, Kansas City, KS.

#32 3:30 **SPECIES DIFFERENCES IN THE OXIDATIVE BIOTRANSFORMATION AND TOXICITY OF DIGITOXIN.** M R Halvorson and A Parkinson. Kansas University Medical Center, Kansas City, KS.

#33 3:45 **PHENOBARBITAL (PB) PROTECTION AGAINST THE LETHAL EFFECT OF MONOCHLOROACETIC ACID (MCA) IN RATS.** J G Mitroka, K R Cooper and R Snyder, Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ.

#34 4:00 **PURIFICATION OF RAT LIVER MICROSOMAL ESTERASES.** A Howell, D Greenway and A Parkinson. Kansas University Medical Center, Kansas City, KS.

#35 4:15 **DEVELOPMENTAL, TISSUE-SPECIFIC, AND INDUCER-MEDIATED EXPRESSION OF RAT CYTOCHROME P-450s.** C J Omiecinski and C M Giachelli. Depts of Envir Hlth and Pharmacology, Univ of Wash, Seattle, WA.

#36 4:30 **ADULT BIOTRANSFORMATION OF XENOBIOTICS FOLLOWING NEONATAL EXPOSURE TO DIETHYLSTILBESTROL (DES).** C A Lamartiniere and G A Pardo. Environmental Health Sciences, University of Alabama at Birmingham, AL.

#37 4:45 ***IN VITRO* BIOACTIVATION OF 2,4-DIAMINOTOLUENE BY AROCHLOR-1254-INDUCED RAT LIVER S9.** M L Cunningham, L T Burka and H B Matthews, NIEHS, Research Triangle Park, NC.

TUESDAY AFTERNOON, FEBRUARY 16
GRAND BALLROOM A

POSTER/DISCUSSION SESSION: IMMUNE REACTIVITY TO CHEMICAL AND BIOLOGICAL ANTIGENS

Chairpersons: A K Hubbard, University of Arizona, Tucson, AZ
M H Karol, University of Pittsburgh, Pittsburgh, PA

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

#38 **CONTACT HYPERSENSITIVITY RESPONSE TO GLUTARALDEHYDE IN GUINEA PIGS AND MICE.** M L Stern, J A McCay, R D Brown and M P Holsapple. Dept of Pharmacology and Toxicology. Medical College of Virginaia/VCU, Richmond, VA.

#39 **STRUCTURE-ACTIVITY STUDIES OF CYCLIC ANHYDRIDES WHICH CAUSE PULMONARY SENSITIZATION.** C L Leach, N S Hatoum, C R Zeiss, and P J Garvin, IIT Research Institute, Veterans Admin., and Amoco Corporation, Chicago, IL.

#40 **A TWO WEEK INTRAVENOUS SAFETY STUDY OF T-CELL MODULATORY PEPTIDE IN RATS.** J E Atkinson, Bio/dynamics, Inc., E Millstone, NJ, J L McCoy, ImmuQuest Laboratories, Inc, Rockville, MD, and S P Richieri, G S Hahn and J M Plummer, Immunetech Pharmaceuticals, San Diego, CA.

#41 **ASSESSMENT OF EFFECTS OF DIETARY EXPOSURE TO TOXIC COMPOUNDS ON LOCAL IMMUNITY IN THE RAT.** J G Vos, and H Van Loveren. National Institute of Public Health and Environmental Hygiene, Bilthoven, The Netherlands.

#42 **EVALUATION OF SURFACTANT TA FOR SYSTEMIC ANAPHYLAXIS IN GUINEA PIGS.** C L Yang, S Tekeli, and D R Patterson. Abbott Laboratories, Abbott Park, IL.

#43 **ON THE POPLITEAL LYMPH NODE (PLN) ASSAY FOR THE DETECTION OF AUTOIMMUNOGENS IN MICE.** X Joseph, J P Uetrecht, and T Balazs, FDA, Washington, DC and Univ. of Toronto, Toronto, Ontario, Canada.

#44 **LOCALIZATION OF HALOTHANE-INDUCED ANTIGEN IN SITU BY SPECIFIC ANTI HALOTHANE METABOLITE ANTIBODIES.** T P Roth, A K Hubbard, A J Gandolfi, Department of Anesthesiology, University of Arizona, Tucson, AZ.

#45 **PREPARATION OF HAPTEN-CONJUGATE ANTIGENS EFFECTIVE IN DETECTION OF ANTIBODIES IN PERSONS EXPOSED TO DIPHENYLMETHANE-4,4¹-DIISOCYANTE (MDI).** R Jin and M H Karol Jilin Province, People's Republic of China and Dept. Ind. Env. Hlth. Sci., Univ. Pittsburgh, Pittsburgh, PA.

#46 **ELICITATION OF A CELL MEDIATED IMMUNE RESPONSE TO A REACTIVE INTERMEDIATE OF HALOTHANE.** A K Hubbard, T P Roth and A J Gandolfi. Dept Anesthesiology, University of Arizona, Tucson, AZ.

#47 **ELICITATION OF IMMUNE RESPONSES IN GUINEA PIGS FOLLOWING INHALATION EXPOSURES TO RAT URINARY PROTEINS.** J C Stadler. E I duPont de Nemours and Co, Haskell Laboratory for Toxicology and Industrial Medicine, Newark, DE. Sponsor: L S Mullin.

#48 **ACTIVE REGULATION OF THE AFFERENT PHASE OF CONTACT ALLERGY FOLLOWING CONVENTIONAL SENSITISATION.** I Kimber, J Mitchell and A Kinnaird, Immunology Group, Central Toxicology Laboratory, ICI Plc, Alderley Park, Cheshire, U.K. Sponsor: I F H Purchase

TUESDAY AFTERNOON, FEBRUARY 16
GRAND BALLROOM C

POSTER/DISCUSSION SESSION: TESTICULAR TOXICITY

Chairpersons: T A Marks, Upjohn Company, Kalamazoo, MI
R E Chapin, NIEHS, Research Triangle Park, NC

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

#49 **EFFECT OF ZINC ON THE DISTRIBUTION AND TOXICITY OF CADMIUM IN ISOLATED INTERSTITIAL CELLS OF THE RAT TESTES.** T. Koizumi and M P Waalkes. Laboratory of Comparative Carcinogenesis, National Cancer Institute-FCRF, Frederick, MD.

#50 **CADMIUM INDUCES TWO SMALL PHOSPHOPROTEINS IN SERTOLI CELL CULTURES.** S R Clough, M J Welsh and M J Brabec. Dept. Chemistry Eastern Michigan University, Ypsilanti, MI

#51 **CYTOTOXICITY OF SIX METALS TO TESTICULAR CELLS *IN VITRO*.** C D Brown, Q Li and M J Brabec. Dept. Chemistry, Eastern Michigan University, Ypsilanti, MI.

#52 **THE EFFECTS OF SALIGENIN CYCLIC-o-TOYLYL PHOSPHATE (SCOTP) ON PRIMARY SERTOLI CELL CULTURES.** R E Chapin, S G Somkuti*, J L Phelps, J J Heindel, D M Lapadula*, M Othman*, and M B Abou-Donia*. Developmental and Reproductive Toxicology, NTP, NIEHS, Research Triangle Park, and *Department of Pharmacology, Duke University Medical Center, Durham, NC.

#53 **MONO-2-ETHYLHEXYL PHTHALATE (MEHP) STIMULATES PROTEIN AND RNA SYNTHESIS IN RAT SERTOLI CELL CULTURES.** A C Savage, D M Creasy, and T J B Gray. BIBRA, Carshalton, Surrey, England.

#54 **STAGE-SPECIFIC UNSCHEDULED DNA SYNTHESIS (UDS) IN RAT SPERMATOGENIC CELLS.** K S Bentley and P K Working, Chemical Industry Institute of Toxicology, Research Triangle Park, NC.

#55 **DI-N-PENTYL PHTHALATE (DPP) INDUCED INFERTILITY: CORRELATION WITH SERUM ANDROGEN BINDING PROTEIN (sABP).** P Lindstrom, M Harris, M Ross, J C Lamb, R Chapin. DART, STB, NIEHS/NTP, Research Triangle Park, NC.

#56 **CIRCADIAN FLUCTUATION OF GLUTATHIONE (GSH) LEVELS IN THE REPRODUCTIVE TRACT OF THE MALE RAT.** H K Bates, R D Harbison, J Gandy, Pathology Associates, Inc./NCTR, Jefferson, AR and University of Arkansas for Medical Sciences, Little Rock, AR.

#57 **DECREASED TESTICULAR GLUTATHIONE (GSH) LEVELS DO NOT EXACERBATE THE REPRODUCTIVE TOXICITY OF 1,3-DINITROBENZENE (m-DNB) IN MALE RATS.** V Slott, R Linder, L Strader, S Perreault. USEPA, HERL, Reproductive Tox. Br., RTP, NC. Sponsor: R Chadwick

#58 **TESTICULAR TOXICITY OF THE CHLORONITROBENZENES.** K L Mohr and P K Working. CIIT, Research Triangle Park, NC.

TUESDAY AFTERNOON, FEBRUARY 16
CHANTILLY BALLROOM

POSTER SESSION: METALS

Chairperson: Z A Shaikh, University of Rhode Island, Kingston, RI

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

#59 **INHALATION TOXICITY OF COBALT SULFATE.** J R Bucher, National Toxicology Program, Research Triangle Park, NC, and B J Chou, R A Renne, J R Decker, H A Ragan, Battelle Pacific Northwest Laboratories, Richland, WA.

#60 **CHARACTERIZATION OF NICKEL CHLORIDE-RESISTANT BALB/C-3T3 MOUSE FIBROBLAST CELLS.** X W Wang, R J Imbra and M Costa. Institute of Environmental Medicine, New York University Medical Center, Tuxedo, NY.

#61 **NICKEL-MAGNESIUM INTERACTION IN SPECIFIC PROTEIN BINDING TO MOUSE SATELLITE DNA.** D M Latta, R J Imbra and M Costa. Institute of Environmental Medicine, New York University Medical Center, Tuxedo, NY.

#62 **NICKEL GENOTOXICITY IN TYPE II ALVEOLAR EPITHELIAL CELLS.** A M Burke, C R Shoaf and D B Menzel. Duke U. Med. Ctr., Depts. Pharm. and Med., Compre. Cancer Ctr., Durham, NC.

#63 **RISK FACTORS OF LUNG CANCER AMONG CADMIUM SMELTER EMPLOYEES.** S Lamm, M Anderson, S Tirey, W Taylor. Consultants in Epidemiology and Occupational Helath, Inc., Washington, DC.

#64 **A MODULATING ROLE FOR THE TESTES IN THE RESPONSE OF THE ADULT MALE RAT TO CADMIUM.** M Mautino and J U Bell. Department of Physiological Sciences, University of Florida, Gainesville, FL.

#65 **CADMIUM AND POSTMENOPAUSAL BONE LOSS.** *M H Bhattacharyya, [1]P H Stern, and *C Kuhn. *Argonne National Laboratory, Argonne, IL and [1]Northwestern University, Chicago, IL.

#66 **EFFECT OF CADMIUM ON EPITHELIAL TRANSPORT SYSTEMS IN WINTER FLOUNDER: STUDIES WITH BRUSH BORDER MEMBRANE VESICLES.** C Bevan, R K H Kinne, E Kinne-Saffran, and E C Foulkes, U. Cincinnati, Col. Med., Dept. Environ. Health, Cincinnati, OH; Max-Planck-Institut fur Systemphysiologie, Dortmund, FRG; and MDIBL, Salsbury Cove, ME.

#67 **EFFECT OF CADMIUM TREATMENT *IN VIVO* ON GLUCOSE PRODUCTION FROM HEPATOCYTES.** R R Bell, J L Early, V K Nonavinakere and Z Mallory. Florida A&M University, College of Pharmacy, Tallahassee, FL. Sponsor: R C Schnell.

#68 **THE EFFECT OF SODIUM ON THE ACCUMULATION OF CADMIUM BY SINUSOIDAL HEPATIC PLASMA MEMBRANE VESICLES.** H B Eastman and J M Frazier. Johns Hopkins University, Baltimore, MD.

#69 **CALMODULIN MODULATION OF CD-INDUCED INHIBITION OF MICROTUBULE (MT) ASSEMBLY.** B A Perrino and I N Chou, Dept. of Microbiology, Boston Univ. Sch. of Medicine, Boston, MA Sponsor: C T Walsh.

#70 **CADMIUM-INDUCED ALTERATIONS IN PULMONARY ANTIOXIDANT ENZYMES AND METAL LEVELS.** P K Bennett and I S Jamall. Toxicology Program, St. John's University, NY.

#71 **DEPRESSION OF SUPEROXIDE PRODUCTION IN LAVAGED LUNG CELLS FOLLOWING CADMIUM CHLORIDE EXPOSURE.** S H Gavett, N M Corson and G Oberdorster. Env. Health Sci. Ctr., Univ. of Rochester, Rochester, NY.

#72 **DMPA INCREASES 109-CADMIUM EXCRETION.** M M Aposhian, W Zheng, P Tobias, K Brendl, R M Maiorino and H V Aposhian. Univ. Arizona, Tucson, AZ.

#73 **DIFFERENTIAL EFFECTS OF CADMIUM AND METHYL-MERCURY ON Na-K-ATPase INHIBITION BY 5,5'-DITHIOBIS-(2-NITRO-BENZOIC ACID) AND N-ETHYLMALEIMIDE.** K I Ahammadsahib and D Desaiah. Dept. of Neurology, Univ. MS. Med. Ctr., Jackson, MS.

#74 **EFFECTS OF SUBCHRONIC EXPOSURE TO ARSINE ON IMMUNE FUNCTION AND HOST RESISTANCE.** G J Rosenthal, M M Fort, D R Germolec, M F Ackermann, P Blair, K R Lamm, and M I Luster. NIEHS, NIH, Research Triangle Park, NC.

#75 **ARSINE: TOXICITY DATA FROM SHORT-TERM INHALATION EXPOSURES.** M P Moorman[1], R A Sloane[1], B Adkins[2], R W O'Connor[2], S L Eustis[1], and B A Fowler[1]. [1]National Institute of Environmental Health Sciences; [2]Northrop Environmental Sciences, Research Triangle Park, NC.

#76 **EVIDENCE FOR OXIDATIVE DAMAGE TO ERYTHROCYTES IN RATS AND MICE INDUCED BY ARSINE GAS.** P C Blair, M Bechtold, M B Thompson, C R Moorman, M P Moorman and B A Fowler, NIEHS, Research Triangle Park, NC.

#77 **ARSINE (AsH_3) AND GALLIUM ARSENIDE (GaAs)-INDUCED ALTERATIONS IN HEME METABOLISM.** W E Bakewell, P L Goering, M P Moorman, and B A Fowler, NIEHS, Research Triangle Park, NC

#78 **EFFECT OF ARSENIC ON CARBOHYDRATE METABOLISM AFTER SINGLE OR REPEATED INJECTION IN GUINEA PIGS.** F X Reichl, L Szinicz, H Kreppel, B Fichtl, and W Forth. Walther-Straub-Institute for Pharmacology and Toxicology, Munchen, FRG. Sponsor: D A Cory-Slechta.

#79 **DEVELOPMENT OF AN *IN VITRO* SCREEN FOR ARSENIC ANTIDOTES USING PYRUVATE DEHYDROGENASE COMPLEX ENZYME ACTIVITY.** D W Hobson, T H Snider, M J Chang and R L Joiner. Battelle Columbus Division, Columbus, OH. Sponsor: C T Olson.

#80 **COMPARATIVE TOXICITY AND TISSUE DISTRIBUTION OF ANTIMONY POTASSIUM TARTRATE IN RATS AND MICE DOSED BY DRINKING WATER (DW) OR INTRAPERITONEAL INJECTION (IP).** M P Dieter, C W Jameson, NIH, NIEHS, National Toxicology Program, RTP, NC ; J W Lodge, Research Triangle Institute, RTP, NC; M Hejtmancik, S L Grumbein, A C Peters, Battelle Columbus Division, Columbus, OH

#81 **EFFECT OF METHYLMERCURY ON LYMPHOCYTE MICROTUBULES AND MITOGENIC RESPONSIVENESS.** K R Reuhl and D L Brown, Neurotoxicology Lab., Dept. Pharmacology and Toxicology, Rutgers University, Piscataway, NJ and Dept. Biology, University of Ottawa, Ottawa, Ontario, Canada. Sponsor: H L Lowndes.

#82 **BRAIN HALFLIFE OF METHYLMERCURY IN THE MONKEY IS LONGER THAN BLOOD HALFLIFE.** D C Rice. Health Protection Branch, Ottawa, Ontario, CANADA.

#83 **ROLE OF HEPATIC GSH AND RENAL *GAMMA*-GTP IN RENAL UPTAKE OF METHYLMERCURY AND INORGANIC MERCURY IN MOUSE.** A Naganuma, T Tanaka and N Imura, Dept. of Public Health, Sch. of Pharmaceutical Sciences, Kitasato University, Minato-ku Tokyo, Japan.

#84 **THE EFFECTS OF KETAMINE:XYLAZINE ANESTHESIA ON HEPATIC SULFHYDRYL (SH) DISPOSITION AND BILIARY EXCRETION OF CH_3Hg.** C A White and C D Klaassen. Univ. of Kansas Med. Ctr, Kansas City, KS.

#85 **MICROSCOPIC DISTRIBUTION OF HG IN $HGCL_2$-EXPOSED MOUSE KIDNEY.** P M Rodier and B Kates, Department of Obstetrics and Gynecology, University of Rochester, Rochester, NY. Sponsor: T W Clarkson.

#86 **HEIGHTENED VULNERABILITY TO LEAD DURING ADVANCED AGE.** D A Cory-Slechta. Environmental Health Sciences Center, Dept. of Biophysics, Univ. of Rochester School of Medicine, Rochester, NY.

#87 **COMBINED EFFECTS OF LEAD AND AGING ON KIDNEY FUNCTION.** C Cox, G L Diamond and D A Cory-Slechta. Environmental Health Sciences Center, University of Rochester School of Medicine, Rochester, NY.

#88 **MODELING THE EFFECT OF EXPOSURE DURATION ON BLOOD LEAD LEVELS.** M W Himmelstein and E J O'Flaherty. Department of Environmental Health, University of Cincinnati, Cincinnati, OH.

#89 **EFFECTS OF VITAMIN B_6 ON LEAD TOXICITY IN THE RAT.** C McGowan, V Wiley and L Matthews. Food Science and Human Nutrition Department, University of Florida, Gainesville, FL.

#90 **LEAD EXPOSURE AND SKELETAL DEVELOPMENT.** J D Hamilton and E J O'Flaherty. Department of Environmental Health, University of Cincinnati, Cincinnati, OH.

#91 **EFFECT OF LEAD ON INTRACELLULAR Ca^{2+} IN ROS 17/2.8 OSTEOBLASTIC BONE CELLS DETERMINED BY ^{19}F-NMR.** F A X Schanne, T L Dowd, R K Gupta, and J F Rosen. Depts. of Pediatrics, Pathology, Physiology and Biophysics,Albert Einstein College, Bronx, NY.

#92 **LEAD METABOLISM IN CULTURED OSTEO BLASTIC BONE (OB) CELLS.** G J Long. University of Ark. for Med. Sciences, Little Rock, AR. J F Rosen. Albert Einstein Coll. Med., Bronx, NY. J G Pounds. Brookhaven National Laboratory, Upton, NY.

#93 **DO LEAD TOXICITY AND DIETARY FAT INTERACT WITH LEUKOTRIENE PRODUCTION?** S Knowles and W E Donaldson. N.C. State Univ., Raleigh, NC.

#94 **INTERACTION OF TOXIC DIETARY LEVELS OF LEAD AND SELENIUM.** W E Donaldson and C McGowan. North Carolina State Univ., Raleigh, NC.

#95 **INDUCTION AND ACTIVATION OF RAT RENAL EPOXIDE HYDROLASE BY LEAD.** E Graichen, B Conway, K Phipps, T Leonard, Smith Kline & French Laboratories, Swedeland, PA.

#96 **EFFECT OF LEAD TOXICITY ON INTRACELLULAR CALCIUM HOMEOSTASIS** J G Pounds. Brookhaven National Laboratory, Upton, NY.

#97 **THE DISTRIBUTION OF LEAD IN MILK AND THE FATE OF MILK LEAD IN THE GASTROINTESTINAL TRACT OF SUCKLING RATS.** J R Beach and S J Henning. Biology Department, University of Houston, Houston, TX.

#98 **L-X-RAY FLUORESCENCE (XRF): A RAPID ASSESSMENT OF CORTICAL BONE LEAD (Pb) IN Pb-TOXIC CHILDREN.** J F Rosen, M E Markowitz, S T Jenks, D N Slatkin, and L Wielopolski, Dept. Ped., Albert Einstein Coll. Med., Montefiore Med. Ctr., Bronx, NY; Med. Dept., Brookhaven National Lab., Upton, NY.

#99 **ASSESSMENT OF LEAD EXPOSURE OF EGYPTIAN WORKERS IN DIFFERENT LEAD-RELATED OCCUPATIONS** A M Soffar, S El-Melegy, A Abd-El-Hakeim and S A Soliman* Dept. of Biochemistry, Faculty of Medicine, Tanta University, Tanta, and Laboratory of Environmental Chemistry and Toxicology, Faculty of Agriculture Alexandria University, Alexandria, Egypt.

#100 **RISK ASSESSMENT FOR LEAD IN FIRST-DRAW WATER.** M J Miller and A J Grey. Bureau of Toxic Substance Assessment, New York State Department of Health, Albany, NY.

#101 **LEAD EXPOSURE IN AN OUTDOOR FIRING RANGE.** R K Tripathi[1], P C Sherertz[1], G C Llewellyn[1], C W Armstrong[1], A S Phillips[2], and S L Ramsey[3]. VA Dept. of Health[1], VA Dept. of Labor and Industry[2], and VA State Police Academy[3], Richmond, VA.

#102 **BIOTRANSFORMATION OF THE METAL CHELATING AGENT MESO-2,3-DIMERCAPTOSUCCINIC ACID (DMSA).** R M Maiorino, D C Bruce and H V Aposhian. Dept. Molecular & Cellular Biology, University of Arizona, Tucson, AZ.

#103 **GLUTATHIONE CONTENT OF THE BILE IS INCREASED BY THE ADMINISTRATION OF THE METAL CHELATING AGENT, DMPA.** W Zheng and H Vasken Aposhian. Dept Pharm & Toxic and Dept Mol & Cell Biol, Univ of Arizona, Tucson, AZ.

#104 **PHYSICO-CHEMICAL PROPERTIES OF THE CHELATING AGENT DMSA AND ITS DIMETHL ESTER.** M Rivera, H V Aposhian, and Q Fernando. Dept Chem and Dept Mol & Cell Biol, Univ. Ariz. Tuscon, AZ.

#105 **THE EFFECTS OF 5-THIO-D-GLUCOSE, N-2-MERCAPTO-GLYCINE, AND OTHER SULFHYDRYLS ON THE BINDING OF MERCURY IN BRAIN AND OTHER TISSUES OF MICE.** K Amoako-Ababio. Department of Pharmacodynamics, University of Oklahoma College of Pharmacy, Oklahoma City, OK. Sponsor: J A Rieger.

#106 **pH AND CITRATE EFFECTS ON BIOAVAILABILITY OF ALUMINUM (Al) FROM DRINKING WATER (DW).** B Fulton, S Jaw, and E Jeffrey. U. of Illinois, Urbana, IL.

#107 **METAL INHIBITION OF CALMODULIN ACTIVITY IN MONKEY BRAIN.** R Nath, P J S Vig and D Desaiah, Dept. of Biochem. PGIMER, Chandigarh, India and Dept. Neurol. Univ. Miss. Med. Ctr. Jackson, MS.

#108 **MULTIELEMENTAL ANALYSIS OF THE HEPATOPANCREAS OF SELENIUM-EXPOSED SUNFISH.** E M B Sorensen, T L Bauer[1], and M G Krause[1]. College of Pharmacy, Department of Pharmacology and Toxicology, [1]Nuclear Engineering Teaching Laboratory, Department of Mechanical Engineering, University of Texas, Austin, TX.

#109 **HISTOPATHOLOGICAL ALTERATIONS IN TELEOSTS FOLLOWING SELENATE EXPOSURE.** C S Boecker and E M B Sorensen. College of Pharmacy, Division of Pharmacology and Toxicology, University of Texas, Austin, TX.

#110 **THE EFFECTIVENESS OF VARIOUS *ALPHA*-KETOCARBOXYLIC ACIDS IN PREVENTING SULFIDE-INDUCED LETHALITY.** A S Hume and M D Dulaney, Jr. Dept. of Pharmacology and Toxicology, University of MS Medical Center, Jackson, MS.

#111 **PYRUVIC ACID PROTECTION AGAINST SULFIDE LETHALITY.** M D Dulaney, Jr. and A S Hume Dept of Pharmacology and Toxicology, University of MS Medical Center, Jackson, MS.

#112 **ABSORPTION AND ELIMINATION OF I_2 AND I^- IN THE RAT.** K D Stout and R J Bull. Pharmacology/Toxicology Program, College of Pharmacy, Washington State University, Pullman, WA.

TUESDAY AFTERNOON, FEBRUARY 16
CHANTILLY BALLROOM

POSTER SESSION: ACETAMINOPHEN TOXICITY

Chairperson: E A B Brown, U.S.D.A., McLean, VA

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

#113 **THE ROLE OF PHARMACOKINETICS AND METABOLISM IN AGE-DEPENDENT ACETAMINOPHEN NEPHROTOXICITY IN MALE SPRAGUE-DAWLEY RATS.** J B Tarloff, R S Goldstein, R S Sozio and J B Hook. Dept. of Investigative Toxicology, Smith Kline & French Laboratories, King of Prussia, PA.

#114 **DIFFERENTIAL ACETAMINOPHEN TOXICITY AS A FUNCTION OF GENOTYPE IN MICE.** D W Roberts, R W Benson, N R Pumford, D W Potter, K L Rowland, J A Hinson, and G L Wolff. National Center for Toxicological Research, Jefferson, AR.

#115 **ACETAMINOPHEN HEPATOTOXICITY IN OBESE ZUCKER RATS: MECHANISM OF RESISTANCE.** I Chaudhary, P J McNamara, R A Blouin. Graduate Center for Toxicology, University of Kentucky, Lexington, KY. Sponsor: L Robertson.

#116 ***IN VITRO* METABOLISM AND THE AGE-DEPENDENCY OF ACETAMINOPHEN (APAP)-INDUCED HEPATOTOXICITY IN CD-1 MICE.** J T Brady, W P Beierschmitt, D S Wyand, E A Khairallah and S D Cohen. Univ. of Connecticut, Toxicology Program, Storrs, CT.

#117 **SELECTIVE PROTEIN ARYLATION AND THE AGE DEPENDENCY OF ACETAMINOPHEN (APAP) HEPATOTOXICITY.** W P Beierschmitt, J T Brady, J B Bartolone, E A Khairallah, and S D Cohen. Toxicology Program, Univ. of Connecticut, Storrs, CT.

#118 **COMPARISON OF IMMUNOCHEMICALLY DETECTED PROTEINS BOUND BY ACETAMINOPHEN (APAP) IN LIVER, KIDNEY AND LUNG.** S D Cohen, W P Beierschmitt, J B Bartolone, and E A Khairallah. Toxicology Program, Univ. of Connecticut, Storrs, CT.

#119 **ANALYSIS OF COVALENT BINDING AND CHARACTERIZATION OF THE MAJOR ACETAMINOPHEN (APAP) PROTEIN ADDUCTS.** J B Bartolone, R B Birge, S D Cohen and E A Khairallah. Univ. of CT, Storrs, CT.

#120 **IMMUNOCHEMICAL DETECTION OF 2,6-DIMETHYL ACETAMINOPHEN (2-6-DMA) PROTEIN ADDUCTS.** R B Birge, J B Bartolone, S D Cohen, and E A Khairallah. Univ. of CT, Storrs, CT.

#121 **MECHANISMS OF *IN VITRO* ACETAMINOPHEN INHIBITION OF RESPIRATION IN HEPATIC MITOCHONDRIA.** L L Meyers, W P Beierschmitt, E A Khairallah, and S D Cohen. Toxicology Program, University of Connecticut, Storrs, CT.

#122 **EFFECT OF PREGNENOLONE-16*ALPHA*-CARBONITRILE (PCN) ON ACETAMINOPHEN-INDUCED HEPATOTOXICITY IN HAMSTERS.** C Madhu and C D Klaassen. Univ. of Kansas Med. Ctr, Kansas City, KS.

#123 **CYTOCHROME P-450-MEDIATED CATALYSIS WITH CUMENE HYDROPEROXIDE OF ACETAMINOPHEN TO N-ACETYL-P-BENZOQUINONE IMINE AND N-ACETYL-P-BENZOSEMIQUINONE IMINE.** D W Potter, and J A Hinson. National Center for Toxicological Research, Jefferson, AR.

#124 **EVIDENCE FOR THE *IN VIVO* FORMATION OF p-BENZOQUINONE AS A REACTIVE INTERMEDIATE IN ACETAMINOPHEN METABOLISM.** G A Pascoe, C J Calleman, and T A Baillie. Dept. of Medicinal Chemistry, University of Washington, Seattle, WA. Sponser: S D Nelson.

#125 **EFFECTS OF SULFUR-DEFICIENT DIET ON ACETAMINOPHEN METABOLISM AND TOXICITY IN RATS.** V F Price, & D J Jollow. Dept. Pharmacol. Med. U of SC, Chas., SC

#126 **IMMUNOCHEMICAL QUANTITATION OF ACETAMINOPHEN-PROTEIN ADDUCTS IN MICE.** N R Pumford, J A Hinson, D W Potter, K L Rowland, and D W Roberts. Natl. Ctr. Res., Jefferson, AR and Univ. Arkansas Medical Sciences, Little Rock, AR.

#127 **ACTIVATION OF LIVER MACROPHAGES (MP) FOR KILLING OF HEPATOCYTES (HC) FOLLOWING ACETAMINOPHEN (AA) TREATMENT OF RATS.** D L Laskin and A M Pilaro. Toxicology, Rutgers University, Piscataway, NJ.

#128 **ON THE PREDICTION OF CHEMICAL TOXICITY *IN VITRO*: BIOTRANSFORMATION OF ACETAMINOPHEN (APAP) AND 7-OH-ACETYLAMINOFLUORENE (7-OH-AAF).** C Harris, K L Stark and M R Juchau. Department of Pharmacology, University of Washington, Seattle, WA.

#129 **POTENTIAL INVOLVEMENT OF A REVERSIBLE INHIBITION OF MITOCHONDRIAL RESPIRATION IN ACETAMINOPHEN-INDUCED METABOLIC ACIDOSIS AND COMA.** R Esterline and S Ji. Rutgers University, Piscataway, NJ.

#130 **CYTOCHROME P-450-INDEPENDENT ACETAMINOPHEN HEPATOTOXICITY IN ACUTELY ALCOHOL TREATED RATS.** S Ray, R Esterline and S Ji Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ.

#131 **NEPHROTOXICITY OF ACETAMINOPHEN IN THE RAT - EFFECTS OF ANTIDOTES.** W Moller-Hartmann, and C P Siegers, Institute of Toxicology, Medical University of Lubeck, Lubeck, FRG.

#132 **ASCORBIC ACID ESTERS PROTECT AGAINST ACETAMINOPHEN (APAP) HEPATOTOXICITY IN MICE: POSSIBLE ROLE IN GLUTATHIONE (GSH) REGENERATION.** A K Mitra and V C Ravikumar. Division of Pharmacology & Toxicology, School of Pharmacy, Northeast Louisiana University, Monroe, LA.

#133 **OLTIPRAZ-INDUCED PROTECTION IN ACETAMINOPHEN HEPATOTOXICITY IN MALE HAMSTERS. II. ACETAMINOPHEN METABOLISM.** M H Davies* and R C Schnell, S.C. Johnson and Son, Inc.*, Racine, WI and North Dakota State University, Fargo, ND.

#134 **OLTIPRAZ-INDUCED PROTECTION IN ACETAMINOPHEN HEPATOTOXICITY IN MALE HAMSTERS. I. ACETAMINOPHEN TOXICOKINETICS.** R C Schnell, L J Lutz and M H Davies*, S. C. Johnson and Son, Inc.*, Racine, WI and North Dakota State University, Fargo, ND.

TUESDAY AFTERNOON, FEBRUARY 16
CHANTILLY BALLROOM
POSTER SESSION: MOLECULAR/CELLULAR TOXICOLOGY

Chairperson: R D Irons, CIIT, Research Triangle Park, NC

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

#135 **STUDIES ON THE MECHANISM OF COUMARIN-INDUCED HEPATOTOXICITY IN THE RAT.** B G Lake, T J B Gray, J G Evans, J A Beamand, and K L Hue. BIBRA, Carshalton, Surrey, England.

#136 **ALLYLAMINE AND ACROLEIN TOXICITY IN CULTURED FIBROBLASTS AND MYOCYTES FROM NEONATAL RAT HEART.** M Toraason, M E Luken, M J Breitenstein, J A Kureger, and R E Biagini. CDC, NIOSH, Experimental Toxicology Branch, Robert A. Taft Laboratories, Cincinnati, OH

#137 **MOLECULAR BASIS OF INDUCIBILITY OF CYTOCHROME P-450 IN OBESE RODENT MODEL.** P Jones, I Chaudhary, L Robertson, R A Blouin. Department of Biochemistry and Graduate Center for Toxicology, University of Kentucky, Lexington, KY.

#138 **SYNERGISTIC TOXIC INTERACTIONS OF HEXACHLOROBENZENE (HCB) AND 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD) IN THE RAT.** M A Li, M A Denomme, R Towner, B Leece and S Safe, Department of Veterinary Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M University, College Station, TX and Department of Chemistry and Biochemistry, University of Guelph, Guelph, Ontario, Canada.

#139 **DNA BINDING FORMS OF RAT Ah RECEPTOR COMPLEX.** R R Hannah, Washington State University, Pullman, WA. Sponsor: R J Bull.

#140 **METAL OXYANION INHIBITION OF THE Ah RECEPTOR.** M E Jazwin and R R Hannah, Washington State University, Pullman, WA. Sponsor: R J Bull

#141 **MOLECULAR PROPERTIES OF THE Ah RECEPTOR COMPLEX USING DIFFERENT POLYCHLORINATED AROMATIC RADIOLIGANDS.** J Piskorska-Pliszczynska and S Safe, Department of Veterinary Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M University, College Station, TX.

#142 **TCDD EFFECTS ON MOUSE UTERINE CYTOSOLIC PROTEINS.** S A MacKenzie, D S Brandewene, P Scala, T H Umbreit, and M A Gallo. Jt. Grad. Prog. in Toxicology, UMDNJ-R.W. Johnson Medical School/Rutgers Univ., Piscataway, NJ.

#143 **A CANTHARIDIN BINDING SITE IN MOUSE LIVER CYTOSOL: CORRELATION OF BINDING AFFINITY AND ACUTE TOXICITY.** M J Graziano, A L Waterhouse, and J E Casida. Pesticide Chemistry and Toxicology Laboratory, Dept. of Entomological Sciences, U of California, Berkeley, CA.

#144 **MEASUREMENT OF SERUM ALBUMIN GENE EXPRESSION AS A FUNCTIONAL INDICATOR OF HEPATOTOXICITY.** J S Ray, R L Vorce, R K Jensen and J I Goodman, Dept. Pharm./Tox., Cent. Env. Tox., Michigan State Univ., E. Lansing, MI and (RKJ) Path. Tox. Res., The Upjohn Co., Kalamazoo, MI.

#145 **GENE EXPRESSION EFFECTS OF TOXIC AGENTS: USE OF 2-D ELECTROPHORESIS TO MONITOR CHANGES IN THE EXPRESSION OF HUNDREDS OF LIVER PROTEINS FOLLOWING EXPOSURE OF MICE TO A VARIETY OF XENOBIOTICS.** N L Anderson*, F A Giere**, and N G Anderson*. Large Scale Biology Corp.*, Rockville, MD and Lake Forest College**, Lake Forest, IL.

#146 **ETHANOL POTENTIATION OF THE HEPATOTOXIC RESPONSE TO ACUTE COCAINE ADMINISTRATION IN MICE.** C S Boyer and D R Petersen, Hepatobiliary Research Center, Molecular and Environmental Toxicology Program, and School of Pharmacy, University of Colorado Health Sciences Center, Denver, CO.

#147 **SYNERGISTIC EFFECT OF ETHANOL AND AMITRIPTYLINE (AMI) ON NA,K-ATPASE ACTIVITY OF SYNAPTIC PLASMA MEMBRANES.** M A Carfagna[1] and B B Muhoberac[2], Department of Pharmacology/Toxicology, Indiana University School of Medicine[1] and Department of Chemistry[2], Indiana University-Purdue University at Indianapolis, IN Sponsor: R B Forney, Sr.[1]

#148 ***ALPHA* TOCOPHERYL SUCCINATE AS A UNIQUE AND POTENT CYTOPROTECTIVE AGENT.** M W Fariss. Environmental Toxicology, Department of Pathology, Medical College of Virginia/Virginia Commonwealth University, Richmond, VA.

#149 **INTRACELLULAR *ALPHA*-TOCOPHEROL CONTENT AND CHEMICAL TOXICITY IN HEPATOCYTES.** M S Sandy, D Di Monte, and M T Smith. School of Public Health, University of California, Berkeley, CA.

#150 **COMPARATIVE TOXICITY OF DI(2-ETHYLHEXYL) PHTHALATE (DEHP) AND DI-N-OCTYL PHTHALATE (DOP).** A B DeAngelo, J Cicmanec, L P McMillan, and P A Wernsing. U.S. Environmental Protection Agency Health Effects Research Laboratory, Cincinnati, OH.

#151 **EFFECT OF FATTY ACIDS AND PEROXIDES ON ENDOTHELIAL CELL MEMBRANE STRUCTURE AND FUNCTION.** J M Patel, E R Block, and M K Raizada. College of Medicine, University of Florida and VAMC, Gainesville, FL.

#152 **COMPARATIVE EFFECTS OF BIS-(*BETA*-CHLOROETHYL) SULFIDE (BCES) ON THE DNA OF BASAL AND DIFFERENTIATED KERATINOCYTES** R Scaverelli, F L Vaughan and I A Bernstein. Toxicology Program. Dept. Env. Ind. Health, Univ. of Michigan, Ann Arbor, MI.

#153 **THE EFFECT OF BIS-(*BETA*-CHLOROETHYL) SULFIDE (BCES) ON DNA SYNTHESIS OF A STRATIFIED KERATINOCYTE CULTURE SYSTEM.** S Zaman, F L Vaughan and I A Bernstein. Toxicology Program, Dept. Env. Ind. Health, Univ. of Michigan, Ann Arbor, MI.

#154 **STUDIES ON THE EFFECT OF NONGENOTOXIC DRINKING WATER CONTAMINANTS ON LIVER DNA SYNTHESIS AND ON THE ACTIVATION OF ONCOGENES IN DIFFERENT MOUSE STRAINS.** T V Reddy, A B DeAngelo, M A Pereira[1], F B Daniel, J C Kandala[2] and R V Guntaka[2]. U.S. EPA, HERL, Cincinnati, OH, EHRT[1], Cincinnati, OH and University of Missouri[2], Columbia, MO.

#155 **THE EFFECT OF THE PYRROLIZIDINE ALKALOID SENECIONINE AND THE ALKENALS TRANS-4-OH-2-HEXENAL AND TRANS-2-HEXENAL ON INTRACELLULAR CALCIUM COMPARTMENTATION IN ISOLATED HEPATOCYTES.** D S Griffin and H J Segall. VM/Pharmacology and Toxicology, University of California, Davis, CA.

#156 **CELLULAR AND MOLECULAR EFFECTS OF DI-N-OCTYLTIN DICHLORIDE (DOTC) ON THE RAT THYMUS.** S G Volsen, N Barrass, M P Scott and K Miller, BIBRA, Carshalton, England. Sponsor: S D Gangolli.

#157 **EFFECTS OF QUINOLONES ON PROTEOGLYCANS (PGs) IN ADULT AND JUVENILE CANINE CARTILAGE.** M J Palmoski, P D Williams, D A Laska, J S Bean. Bristol-Meyers, Syracuse, NY.

#158 **BACILLUS THURINGIENSIS ISRAELENSIS CYTOLYTIC TOXIN: INTERACTION WITH CELL MEMBRANE.** E Chow, L Shi, S S Gill. Division of Toxicology and Physiology, University of California, Riverside, CA.

#159 **PURIFICATION AND CHARACTERIZATION OF AN EPOXIDE HYDROLASE FROM THE MITOCHONDRIAL/PEROXISOMAL FRACTION OF MOUSE LIVER.** S S Gill and C Chang, Division of Toxicology and Physiology, University of California, Riverside, CA.

#160 **ANATOXIN-A (S) EFFECTS ON ISOLATED MUSCLE.** E G Hyde and W W Carmichael. Wright State University, Dayton, OH. Sponsor: R Koerker.

#161 **COMPARATIVE ASPECTS OF OXIDATIVE CELL INJURY.** C E Thomas and D J Reed, Dept. of Biochemistry & Biophysics, Oregon State Univ., Corvallis, OR.

#162 **PARAQUAT RESISTANCE DUE TO ALTERATIONS IN GLUTATHIONE ENZYMES AND NOT INCREASED SUPEROXIDE DISMUTASE OR CATALASE.** M J Kelner and R Bagnell, University of California-San Diego, CA.

#163 **THE EFFECTS OF A MIXTURE OF 25 GROUNDWATER CONTAMINANTS ON SOME BIOCHEMICAL INDICES IN F344 RATS.** H Kermani, B Ferguson, S Gangjee, A Greenwell, F Harrington, W Jenkins, R Melnick, K Tomaszewski, R Yang, NIEHS/NTP, Research Triangle Park, NC.

#164 **ERYTHROCYTE GLUTATHIONE S-TRANSFERASE: A POSSIBLE MARKER OF CHEMICAL EXPOSURE.** S V Singh, G A S Ansari and Y C Awasthi, University of Texas Medical Branch, Galveston, TX.

#165 **OXIME REACTIVATION OF OP-TREATED ACHE IN CULTURED MUSCLE.** M J Hooper, P S Nieberg, B W Wilson. University of California, Davis, CA.

#166 **HOMOGENIZING MEDIUM MAKES A BIG DIFFERENCE IN THE MEASUREMENT OF THE EFFECT OF CCl_4 ON SUBCELLULAR CALCIUM TRANSPORT.** V Prakash and A Agarwal. Toxicology Research and Training Center, John Jay College of CUNY, New York, NY. Sponsor: H M Mehendale

#167 **PRINCIPLE OF "EMERGENT TOXICOLOGICAL ENDPOINTS" SUGGESTED BY ACETAMINOPHEN TOXICITY DATA.** S Ji and R Esterline. Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ

TUESDAY AFTERNOON, FEBRUARY 16
CHANTILLY BALLROOM
POSTER SESSION: NEUROCHEMISTRY

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

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

#168 **ETHANOL-INDUCED MICROENCEPHALY AND INHIBITION OF PHOSPHOINOSITIDE METABOLISM.** L G Costa and W Balduini, Dept. of Environmental Health, Univ. of Washington, Seattle, WA.

#169 **ETHYLENE DIBROMIDE (EDB): MULTIGENERATIONAL NEUROTOXIC EFFECTS OF PATERNAL EXPOSURE.** L L Hsu[1], M S Legator[2], and P M Adams[3], Depts. of HBC&G[1], and PM&CH[2], UTMB, Galveston, TX and Dept. of Psychiatry, UTHSC[3], Dallas, TX Sponsor: G A S Ansari.

#170 **EFFECTS OF NEUROFILAMENTOUS AXONOPATHY-PRODUCING NEUROTOXICANTS UPON FAST ANTEROGRADE TRANSPORT.** D W Sickles. Medical College of Georgia, Augusta, GA.

#171 **2,5-HEXANEDIONE-INDUCED ALTERATIONS IN AXONAL PROTEIN AND PHOSPHOLIPID PHOSPHORYLATION.** K L Horan, R M LoPachin, D Caprette and J Eichberg. Dept. Pharmacology and Dept. Biochemistry and Biophysical Sciences, U. Houston, Houston, TX.

#172 **MICROSOMAL ATPASE ACTIVITY FOLLOWING LONG-TERM EXPOSURE TO 2,5-HEXANEDIONE.** J K Pearson and D W Sickles. Medical College of Georgia, Augusta, GA.

#173 **THE DECREASE IN AXONAL TRANSPORT OF PROTEINS IN THE RAT OPTIC SYSTEM PRODUCED BY XYLENE INHALATION IS REVERSED BY ETHANOL CONSUMPTION.** S Padilla, C N Pope*, and D P Lyerly**, U.S. EPA, **Northrop Services, RTP, NC.

#174 **EFFECTS OF LEAD AND POTASSIUM ON RETINAL ATPASES.** S D Rubinstein and D A Fox. University of Houston, College of Optometry, Houston, TX.

#175 **ISOLATED RAT RETINAL MITOCHONDRIAL RESPIRATION: *IN VITRO* AND *IN VIVO* LEAD STUDIES.** D A Fox, C J Medrano and S D Rubinstein. University of Houston, College of Optometry, Houston, TX.

#176 **INCREASES IN FREE INTRACELLULAR Ca^{++} ACCOMPANY EXPOSURE OF NEUROHYBRIDOMA CELLS TO THE INSECTICIDE, LINDANE.** R M Joy, V W Burns and L G Stark. Depts. of Pharmacology/Toxicology and Physiological Sciences, School of Veterinary Medicine and Dept. of Pharmacology, School of Medicine, University of California, Davis, CA.

#177 **BLOCK OF ^{45}Ca UPTAKE BY METHYLMERCURY (MeHg) INTO NERVE TERMINALS IS Na-DEPENDENT AND PARTIALLY REVERSIBLE.** T J Shafer and W D Atchison. Dept. Pharmacol./Tox., Michigan State Univ., E. Lansing, MI.

#178 **NO CORRELATION BETWEEN METHYLMERCURY-INDUCED TRANSMITTER RELEASE AND CALCIUM EFFLUX FROM SYNAPTOSOMES.** D Minnema, Dept. Environ. Hlth., U. Cinnati., Cinnati., OH. Sponsor: P Hammond.

#179 **EFFECTS OF MERCURIC CHLORIDE (Hg) ON SPONTANEOUS TRANSMITTER RELEASE AND Na^+, K^+-ATPASE (NKA) IN SYNAPTOSOMES.** M F Hare and D Minnema. Dept. Envion. Hlth., U. Cinnati., Cincinnati, OH. Sponsor: E J O'Flaherty.

#180 **MANGANESE TRANSPORT ACROSS THE BLOOD-BRAIN BARRIER IN THE RAT.** L E Kerper, M Aschner, J D Obourn, and T W Clarkson. Environmental Health Sciences Center, School of Medicine and Dentistry, University of Rochester, Rochester, N Y.

#181 **COLCHICINE-INDUCED ALTERATIONS IN THE STIMULATED TURNOVER OF INOSITOLPHOSPHATES IN THE RAT HIPPOCAMPUS.** P Tandon, J G Harry, and H A Tilson. NIEHS Research Triangle Park, NC.

#182 **EFFECTS OF ALUMINIUM OF CHOLINERGIC NEURONES IN RAT BRAIN REAGGREGATE CULTURES.** P M Collins & C K Atterwill. Sponsor: G Leslie. Smith Kline & French Research Ltd., The Frythe, Welwyn, Herts, U.K.

#183 **STUDIES ON ECMA-INDUCED CHOLINERGIC LESIONS AND NEUROTROPHIC FACTORS IN RAT BRAIN REAGGREGATE CULTURES.** C K Atterwill, P Collins, A Pillar and A Prince. Sponsor: G Leslie. Dept Toxicology, Smith Kline & French Research Ltd., Welwyn, U.K. and Dept. Pharmacology, Kings College, London, England.

#184 ***IN VITRO* METHODS FOR ASSESSING NEUROTOXICITY.** G C Siek & J K Marquis. Dept. of Pharmacology & Experimental Therapeutics, Boston University School of Medicine, Boston, MA.

#185 **PHARMACOKINETIC EVALUATION OF PYRIDOSTIGMINE IN THE RHESUS MONKEY.** G Wintjes, J Chinn, A Staubus*, T Hayes, R Joiner, and W Kluwe. Battelle Columbus Division and *Ohio State University, Columbus, OH.

#186 **PERSISTENT REDUCTION OF BRAIN SEROTONIN (5-HT) BY MDMA IN THE RHESUS MONKEY.** W Slikker, Jr., E Wood, S F Ali, A C Scallet, G D Newport, J R Bailey and M G Kolta. NCTR, Jefferson, AR.

#187 **DISPARATE CONSEQUENCES OF TWO DISTINCT 6-HYDROXYDOPAMINE (6-OHDA) BRAIN LESIONS IN RATS.** B E Mileson, R B Mailman. University of North Carolina Curriculum in Toxicology and Biological Sciences Research Center, Chapel Hill, NC.

#188 **TRIADIMEFON INDUCES STEREOTYPED BEHAVIOR AND ALTER BIOGENIC AMINE ACTIVITY IN RATS.** Q D Walker, M H Lewis, K C Crofton, and R B Mailman, University of North Carolina, Curriculum in Toxicology and Biological Sciences Research Center, Chapel Hill, NC, and Environmental Protection Agency, Research Triangle Park, NC.

#189 **MODULATION OF MPP^+ NEUROTOXOCITY *IN VITRO*.** S J Simmons and M F D Notter. University of Rochester, Rochester, NY Sponsor: V G Laties.

#190 **SPECIES DIFFERENCES IN THE SUBSTRATE AND INHIBITOR SPECIFICITY OF BRAIN ACETYLCHOLINESTERASE.** J R Kemp and K B Wallace. Dept. of Pharmacol., Univ. of Minnesota, Duluth, MN.

#191 **NEUROCHEMICAL PITUITARY-HYPOTHALAMUS-PINEAL MEASUREMENTS IN STEERS GRAZED ON ENDOPHYTE INFECTED FESCUE.** J K Porter[1], L B Lipham[2], J A Stuedemann[3], and F N Thompson[2]. [1]R.B. Russell Agricultural Research Center, USDA/ARS, Athens, GA, [2]University of Georgia, College of Veterinary Medicine, Athens, GA and [3]Southern Piedmont Conservation Research Center, USDA/ARS, Watkinsville, GA. Sponsor: W P Norred.

#192 **EFFECT OF CYANIDE ON BRAIN ANTIOXIDANT ENZYMES AND LIPID PEROXIDATION.** G E Isom, J L Borowitz and B K Ardelt. Dept. of Pharmacology & Toxicology, School of Pharmacy and Pharmacal Sciences, Purdue University, West Lafayette, IN.

#193 **PYRETHROID INSECTICIDES ALTER MEMBRANE POTENTIAL IN FISH AND RAT BRAIN SYNAPTOSOMES.** J T Eells and P A Bandettini. Medical College of Wisconsin, Milwaukee, WI. Sponsor: M J Vodicnik.

#194 **EFFECT OF TRIORTHOCRESYL PHOSPATE (TOCP) ON MEMBRANE BOUND ATPASES IN HEN BRAIN AND SPINAL CORD.** J A Wisler, H R Besch, Jr., and R B Forney, Sr., Indiana University School of Medicine, Indianapolis, IN.

#195 **ALTERED PHOSPHORYLATION OF PHOSPHOLIPIDS IN HEN SCIATIC NERVE BY TRI-o-CRESYL PHOSPHATE: POSSIBLE ROLE IN ORGANOPHOSPHORUS-INDUCED DELAYED NEUROPATHY (OPIDN).** C N Pope* and S Padilla. Neurotox. Div., EPA, RTP, NC.

#196 **EFFECT OF DIISOPROPYL PHOSPHOROFLUORIDATE (DFP) ON AXONAL TRANSPORT IN THE CAT.** C D Carrington, D M Lapadula, and M B Abou-Donia. Duke University Medical Center, Durham, NC.

#197 **BRAIN REGIONAL SPECIFICITY OF GUANOSINE 3',5'-MONOPHOSPHATE (cGMP) RESPONSE TO DIISOPROPYLFLUOROPHOSPHATE (DFP) ADMINISTRATION.** L Davenport, G Gianutsos, and S D Cohen. Toxicology Program, University of Connecticut, Storrs, CT.

#198 **NEUROPATHY TARGET ESTERASE (NTE) IN CHICKENS AFTER TREATMENT WITH ISOPROPYL METHYLPHOSPHONOFLUORIDATE (SARIN-TYPE I & II).** J A Crowell, R M Parker, T J Bucci, and *J C Dacre. Pathology Associates Inc., NCTR, Jefferson, AR and *US Army Biomedical R&D Laboratory, Fort Detrick, Fredrick, MD.

#199 **ENZYME INHIBITION IN CHICKS INJECTED WITH DES BROMOLEPTOPHOS AT TWO PERIODS DURING INCUBATION** M Farage-Elawar and B M Francis. University of Illinois, Urbana, IL.

#200 **DELAYED NEUROPATHY OF METHYL-CYANOFENPHOS, O-METHYL-O-(4-CYANOPHENYL) PHENYLPHOSPHONOTHIOATE, IN CHICKEN.** S A Soliman, K A Osman, N S Ahmed, K S El-Gendy, and I E El-Shennawy.* Laboratory of Environmental Chemistry and Toxicology, Faculties of Agriculture and Medicine*, Alexandria University, Alexandria, Egypt.

#201 **ANTICHOLINESTERASE EFFECTS OF TRITOLYL PHOSPHATE (TTP) IN THE RAT.** A J Krueger, J J Yang, T A Roy. Mobil Environmental Health and Science Laboratory, Princeton, NJ. Sponsor: C Kommineni.

TUESDAY AFTERNOON, FEBRUARY 16
CHANTILLY BALLROOM
POSTER SESSION: REACTIVE INTERMEDIATES

Chairperson: E S Wright, General Motors Research Laboratories, Warren, MI

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

#202 **AMINO ACID ADDUCTS FROM LIVER PROTEINS OF BROMOBENZENE TREATED RATS.** P E Weller and R P Hanzlik. Department of Medicinal Chemistry, University of Kansas, Lawrence, KS.

#203 **INVESTIGATIONS INTO THE ROLE OF BIOTRANSFORMATION IN THE COLVALENT BINDING OF 1,2,3-TRICHLOROPROPANE (TCP) TO HEPATIC PROTEIN AND DNA.** G L Weber and I G Sipes. Dept. of Pharmacology and Toxicology, College of Pharmacy, University of Arizone, Tucson, AZ.

#204 **COVALENT INTERACTION OF A REDUCTIVELY ACTIVATED 5-NITROIMIDAZOLE WITH DNA.** G L Kedderis, L S Argenbright, and G T Miwa. Merck Sharp & Dohme Research Laboratories, Rahway, NJ.

#205 **MECHANISMS OF 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) INDUCED DNA-DAMAGE, BACTERIAL MUTAGENICITY AND CYTOTOXICITY IN ISOLATED RAT LIVER CELLS.** J A Holme*, E J Soderlund*, G Brunborg*, J Omichinski*, S D Nelson**, and E Dybing*. Natl. Inst. Publ. Hlth., Oslo, Norway* and Univ. Washington, Dept. Med. Chem., Seattle, WA**.

#206 **SPIN TRAPPING OF FREE RADICALS *IN VIVO*: A NEW APPROACH TO TOXICOLOGY.** P B McCay, L A Reinke, E K Lai, C M DuBose. Sponsor: R A Floyd. Okla. Medical Research Foundation, Okla. City OK.

#207 **CALCULATIONS ON THE REACTIVITY OF ACRYLATE ANION WITH BIOLOGICAL NUCLEOPHILES.** C H Reynolds and C B Frederick. Rohm and Haas Co., Spring House, PA.

#208 **PROTECTIVE EFFECT OF DILTIAZEM AGAINST COCAINE INDUCED HEPATOTOXICITY AND HEPATIC LIPID PEROXIDATION.** K A Suarez and S Bhonsle. Dept. of Pharmacology, Chicago College of Osteopathic Medicine, Chicago, IL.

#209 **STUDIES ON DAPSONE-N-HYDROXYLAMINE (DDS-NOH) INDUCED MORPHOLOGICAL CHANGES IN RAT ERYTHROCYTES.** R A Budinsky, J V Simson, V Price, and D J Jollow, Depts Pharmacol & Anatomy, Med U SC, Chas., SC.

#210 **BUTYLATED-HYDROXYTOULUENE (BHT) INDUCED INCREASES IN NAD(P)H-QUINONE-REDUCTASE(QR) ACTIVITY IN MOUSE LUNG AND LUNG CELLS.** D Siegel, A Malkinson and D Ross. Molecular and Environmental Toxicology Program, School of Pharmacy, University of Colorado, Boulder, CO.

#211 **OXIDATION OF CATECHOL BY HORSERADISH PEROXIDASE AND HUMAN LEUKOCYTE PEROXIDASE. REACTIONS OF o-BENZOSEMIQUINONE (BSQ) AND o-BENZOQUINONE (BQ).** V V Subrahmanyam, A Sadler, and D Ross. Molecular and Environmental Toxicology Program, School of Pharmacy, University of Colorado, Boulder, CO.

#212 **EVALUATION OF 3-METHYL-2-BENZOTHIAZOLINONE HYDRAZONE HYDROCHLORIDE (MBTH) FOR ACUTE TOXICITY, PRIMARY IRRITANCY, AND MUTAGENICITY.** R C Myers, R S Slesinski, and B Ballantyne, Bushy Run Research Center, Union Carbide Corporation, Export, PA.

#213 **EVIDENCE FOR REACTIVE CHLOROALDEHYDE INTERMEDIATES IN THE METABOLISM OF 1-CHLORO-2-METHYLPROPENE (DMVC).** P Srinvias and L T Burka. NIEHS, Research Triangle Park, NC. Sponsor: H B Matthews.

#214 **RESPONSE OF MOUSE BRAIN TO SUBCUTANEOUS ADMINISTRATION OF BUTYL 2-CHLOROETHYL SULFIDE.** N M Elsayed, S T Omaye, G J Klain, J L Inase, E T Dahlberg, and D W Korte. Letterman Army Institute of Research. San Francisco, CA.

TUESDAY AFTERNOON, FEBRUARY 16
CHANTILLY BALLROOM

POSTER SESSION: AQUATIC/ENVIRONMENTAL TOXICOLOGY

Chairperson: M A Kamrin, Michigan State University, East Lansing, MI

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

#215 **LETHAL AND SUBLETHAL POTENCY OF VARIOUS DIOXIN CONGENERS TO THE JAPANESE MEDAKA EMBRYO (ORYZIAS LATIPES).** J D Wisk and K R Cooper. Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ.

#216 **DIETHYLNITROSAMINE INDUCED HEPATIC CARCINOGENESIS IN THE BROWN BULLHEAD (ICTALURUS NEBULOSUS) CATFISH.** J A Hampton, P J Goldblatt and J E Klaunig. Department of Pathology, Medical College of Ohio, Toledo, OH.

#217 **COMPARISON OF UPTAKE AND DISTRIBUTION OF DIETHYLNITROSAMINE (DENA) IN ORIZIAS LATIPES AND PIMEPHALES PROMELAS.** T L Holliday, M E Davis, *D E Hinton. West Virginia University Medical Center, Morgantown, WV *School of Vet. Medicine, University of California, Davis, CA.

#218 **METABOLISM AND LIPID PEROXIDATION IN THE TROUT AND RAT.** Y Singh, S McEuen, D Warren, D Hinton and M Miller. Dept of Env Tox and Vet Med, Univ of California, Davis, CA. Sponsor: L Shull.

#219 **A MODEL SYSTEM FOR STUDYING THE INTESTINAL ABSORPTION OF A HEPATOTOXIN FROM BLUE-GREEN ALGAE.** A M Dahlem,[1] A S Hassan,[1], S P Swanson,[1] W W Carmichael,[2] and V R Beasley.[1] Department of Veterinary Biosciences,[1] Urbana, IL, and Department of Biological Sciences, Wright State University, Dayton, OH.

#220 ***IN VITRO* GLUCOSE AND SULFATE CONJUGATION OF 4-METHYL UMBELLIFERONE (4-MeU) BY THE SPINY LOBSTER (PANULIRUS ARGUS).** J D Schell and M O James. C.V. Whitney Laboratory and Dept. Medicinal Chemistry, Univ. of Florida, St. Augustine, FL.

#221 **TISSUE DISTRIBUTION, METABOLISM AND ELIMINATION OF PENTACHLORODIPHENYL ETHER IN THE RAT.** E Komsta, I Chu, D C Villeneuve, F Benoit and D Murdoch. Environmental Health Directorate, Health Protection Branch, Ottawa, Ontario. Canada.

#222 **A COMPARATIVE STUDY OF MACROPHAGE: DEVELOPMENT OF A FISH MODEL FOR TOXICOLOGICAL STUDIES.** J T Zelikoff, R B Schlesinger, K S Squibb, J M O'Conner. New York University Med. Cntr., Inst. of Env. Med., Tuxedo, NY.

#223 **EFFECT OF METHOD AND DURATION OF EXPOSURE OF PIPERONYL BUTOXIDE ON THE HEPATIC MONOOXYGENASE ACTIVITY OF RAINBOW TROUT.** D A Erickson, M L Haasch, and J J Lech. Department of Pharmacology and Toxicology, Medical College of Wisconsin, Milwaukee, WI.

#224 **COMPARATIVE INDUCTION OF HEPATIC CYTOCHROME P450 mRNA AND CATALYTIC ACTIVITY IN VARIOUS SPECIES: STUDIES USING A COMPLEMENTARY DNA PROBE.** M L Haasch, P Wejksnora, J J Lech. Medical College of Wisconsin and University of Wisconsin-Milwaukee, Milwaukee, WI.

#225 **A VIBRATING ELECTRODE STUDY OF EXTRACELLULAR MEMBRANE CURRENTS FROM ACETABULARIA EXPOSED TO TRIBUTYLTIN METHOXIDE.** S B Baumann, Northrop Services, Inc, Research Triangle Park, NC. Sponsor: K T Kitchin.

#226 **WATER QUALITY CRITERIA FOR HEXACHLOROETHANE.** P S Hovatter, K A Davidson, and R H Ross, Oak Ridge National Laboratory, Oak Ridge, TN. Sponsor: P Y Lu.

#227 **ORGANOSILANES: HEALTH AND ENVIRONMENTAL EFFECTS.** M W Daugherty, R H Ross, Oak Ridge National Laboratory*. Oak Ridge, TN. P Wagner, J S Leitzke. U.S. Environmental Protection Agency (USEPA), Washington, D.C. Sponsor: P Y Lu.

TUESDAY AFTERNOON, FEBRUARY 16
SAPPHIRE AND TOPAZ ROOMS

POSTER/DEMONSTRATION SESSION: COMMUNICATING BASIC CONCEPTS IN TOXICOLOGY TO NON-SCIENTISTS

Chairperson: J S Woods, Battelle Seattle Research Center, Seattle, WA

Displayed: 1:30 p.m.-4:30 p.m. Also on Display Wednesday 8:30 a.m.-4:30 p.m.
Attended: 1:30 p.m.-4:30 p.m.

#228 **TSCA INTERAGENCY TESTING COMMITTEE (ITC).** E K Weisburger. National Cancer Institute, Bethesda, MD.

#229 **HAZARD COMMUNICATION: THE CASE FOR CATEGORY 4 "CANCER INFORMATION".** J E Betso, R J Kociba. The Dow Chemical Company, Midland, MI.

#230 **AN INTERACTIVE ROLE FOR TOXICOLOGISTS IN COMMUNITY RISK MANAGEMENT.** J S Heath and J Fessenden-Raden, Cornell University, Ithaca, NY.

#231 **THE ENVIRONMENTAL AND OCCUPATIONAL HEALTH INFORMATION PROGRAM (EOHIP): A BROAD-BASED APPROACH TO COMMUNICATING RISK TO THE PUBLIC.** A Gotsch, R Kashdan, C Rovins. UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ. Sponsor: M Gallo.

#232 **PESTICIDE INFORMATION PROFILES.** A M Beale and A L Craigmill. Environmental Toxicology Extension, University of California, Davis, CA.

#233 **PUBLIC INFORMATION SLIDE TAPE PROGRAMS.** S Kaupanger and A L Craigmill, Environmental Toxicology Extension, University of California at Davis, Davis, CA.

#234 **THE TOXICOLOGY RESOURCE INFORMATION SERVICE.** J S Woods, Battelle Seattle Research Center, Seattle, WA and A L Craigmill, University of California, Davis, CA.

#235 **POISON CONTROL CENTERS (PCCS): A UNIQUE OCCUPATIONAL/ENVIRONMENTAL HEALTH RESOURCE FOR THE PUBLIC.** C S Clark, V H Sublet, L T Sigell, J F Bonfiglio, Drug and Poison Information Center (DPIC) and Dept. Envir. Hlth., Univ. of Cincinnati, Cinti, OH. Sponsor: C S Baxter.

#236 **THE INQUIRY-RESPONSE SYSTEM AS A MEANS OF PUBLIC EDUCATION.** M A Kamrin. Center for Environmental Toxicology, Michigan State University, East Lansing, MI.

#237 **SUMMARY OF LITERATURE REVIEW ON METALS IN HUMAN URINE AS A BIOLOGICAL INDICATOR OF EXPOSURE.** P Y Lu, J Stengel*, S M Hubner, B C Pal, and R A Faust, Oak Ridge National Laboratory**, Oak Ridge, TN.

#238 **HEALTH EFFECTS ASSOCIATED WITH BROMINE AND BROMINE COMPOUNDS.** F M Martin, Oak Ridge National Laboratory*, Oak Ridge, TN. Sponsor: P Y Lu.

#239 **IMMUNOTOXICITY AND RISK ASSESSMENT OF CONTAMINANTS IN DRINKING WATER.** S Sriharan, Selma University, Selma, AL and E V Ohanian, Office of Drinking Water, EPA, Washington, DC. Sponsor:E V Ohanian.

#240 **HAZARD EVALUATION OF AFLATOXIN IN FOOD.** P E Berteau and A M Fan. Hazard Evaluation Section, Calif Dept Health Services, Berkeley, CA.

#240A **THE INTEGRATED RISK INFORMATION SYSTEM (IRIS) OF THE U S ENVIRONMENTAL PROTECTION AGENCY (U S EPA).** J C Swartout, J Patterson, R Picardi, P Preuss, U S Environmental Protection Agency, Office of Health and Environmental Assessment, Cincinnati, Ohio and Washington, DC. Sponsor: P Fenner-Crisp.

WEDNESDAY MORNING, FEBRUARY 17
8:30 a.m.-12:00 p.m.
MONET BALLROOM

SYMPOSIUM: TOXICOLOGY OF MEDICAL DEVICE MATERIALS

Chairpersons: P L Goering, Food and Drug Administration, Rockville, MD; W D Galloway, Food and Drug Administration, Rockville, MD

Current Problems Associated with Toxicity Evaluation of Medical Device Materials and Future Research Needs. S J Northup, Travenol Laboratories, Round Lake, IL

The Cage Implant System for Determining *In Vivo* Biocompatibility of Medical Device Materials. R E Marchant, Case Western Reserve University, Cleveland, OH

Carcinogenecity of Metal Alloys for Use in Orthopedic and Dental Prostheses: Clinical Laboratory Studies. F W Sunderman, Jr., University of Connecticut Medical School, Farmington, CT

Immunotoxicity of Blood/Synthetic Membrane Interactions: Clinical and Laboratory Studies. L W Henderson, Veterans Administration, San Diego, CA

Toxicologic Implications of Silicones in Animals and Man. R. Abraham, Abraham Associates Limited, Albany, NY

WEDNESDAY MORNING, FEBRUARY 17
8:30 a.m.-12:00 noon
METROPOLITAN BALLROOM

SYMPOSIUM: ENVIRONMENTAL CONTAMINATION: REGULATORY ISSUES AND CASE STUDIES

Chairpersons: W R Hartley, U.S. Environmental Protection Agency, Washington, DC; T C Marshall, International Technology Corporation, Knoxville, TN

Use of Drinking Water Criteria in Environmental Contamination Issues. W R Hartley, U.S. Environmental Protection Agency, Washington, DC

Toxicological Basis of Current Models to Determine Clean-up Levels for Contaminants in Ground Water. H S Brown, Clark University, Worcester, MA

Toxicological Basis for EPA Drinking Water Criteria and Health Advisory Development. E V Ohanian, U.S. Environmental Protection Agency, Washington, DC

Common Toxicological Research Issues Related to Drinking Water Criteria and Environmental Remedial Actions. C D Klaassen, University of Kansas Medical Center, Kansas City, KS

Risk Assessment of a Former Pesticide Production Facility. T C Marshall, International Technology Corporation, Knoxville, TN

The Risk Associated with Low Levels of 1,1,1-TCE in Ground Water. J L Byard, James L. Byard, Toxicology Consultants, Inc., El Macero, CA

Assessing the Human and Environmental Risks Posed by Contaminated Soil. D Paustenbach, Syntex Corporation, Palo Alto, CA

Alternative Approaches to Evaluating the Potential Health Threat of Leaking Underground Gasoline Storage Tanks. T Starr, CIIT, Research Triangle Park, NC

WEDNESDAY MORNING, FEBRUARY 17
8:30 a.m.-12:00 p.m.
GOVERNORS LECTURE HALL

PLATFORM SESSION: REPRODUCTIVE TOXICOLOGY/TERATOLOGY

Chairpersons: C A Kimmel, USEPA, Washington, DC
P J Beattie, General Motors Corporation, Detroit, MI

#241 8:30 **NEONATAL IMPRINTING OF RAT HEPATIC MICROSOMAL BENZO[a]PYRENE HYDROXYLASES BY AROCLOR 1254.** J M Haake and S Safe, Reprod. Develop. Toxicol., Natl. Ctr. for Toxicol. Res., Jefferson, AR and Department of Veterinary Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M University, College Station, TX.

#242 8:45 **MITOCHONDRIAL INHIBITION BY CATIONIC RHODAMINES AS A POSSIBLE TERATOGENICITY MECHANISM.** S Ranganathan and R D Hood. Biology Department, The University of Alabama, Tuscaloosa, AL.

#243 9:00 **pKa VALUE DETERMINES RETINOID EMBRYOTOXICITY *IN VITRO*.** C E Steele, R Marlow, J Turton and R M Hicks. SK&F Research Ltd., Welwyn, U.K. and Middlesex Hospital Medical School, London, U.K. Sponsor: G B Leslie

#244 9:15 **POLYCHLORINATED BIPHENYL (PCB) CONGENERS WHICH ANTAGONIZE THE TERATOGENIC EFFECTS OF 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD) IN C57BL/6 MICE.** L Biegel, J M Haake, S Safe, K Mayura and T D Phillips, Department of Veterinary Physiology and Pharmacology and Department of Veterinary Public Health, College of Veterinary Medicine, Texas A&M University, College Station, TX.

#245 9:30 **THE ROLE OF ALTERATION IN THE DISTRIBUTION OF SECALONIC ACID D IN THE ANTITERATOGENIC EFFECT OF DMSO.** M M R Eldeib and C S Reddy. Department of Veterinary Biomedical Sciences, University of Missouri-Columbia, MO.

#246 9:45 **SECRETION OF HIGH CONCENTRATIONS OF CIMETIDINE INTO RAT MILK DURING LACTATION.** L A Dostal, R W Weaver, and B A Schwetz, National Toxicology Program, NIEHS, Research Triangle Park, NC.

#247 10:00 **2,5-HEXANEDIONE-INDUCED TESTICULAR INJURY AND MICROTUBULE ALTERATION.** K Boekelheide. Brown University, Providence, RI.

#248 10:15 **ASSOCIATION OF SPERM, REPRODUCTIVE ORGAN WEIGHT AND VAGINAL CYTOLOGY (SMVCE) DATA WITH FERTILITY OF SWISS (CD-1) MICE.** R E Morrissey, J C Lamb IV*, B A Schwetz, J L Teague[1], and R W Morris[1]. NTP/NIEHS, Research Triangle Park, NC; *US EPA, Washington, DC; and [1]ASA, Research Triangle Park, NC.

#249 10:30 **THE EFFECTS OF A SYMPATHOLYTIC HYPOTENSIVE AGENT (LOSULAZINE) ON THE ACCESSORY SEX GLANDS OF THE MALE RAT.** G M Mesfin, A E Buhl, T A Marks, M J Higgins, and M V Williams. The Upjohn Co., Kalamazoo, MI.

#250 10:45 **THE SEMINAL VESICLE AS A TARGET ORGAN OF TOXICITY.** R E Bagdon, C J Molloy and J D Laskin, Joint Graduate Program in Toxicology, UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ.

#251 11:00 **TOXIC SIDE EFFECTS OF CHEMOTHERAPEUTIC AGENTS ON THE RAT TESTIS: A STUDY OF THE SHORT-TERM MORPHOLOGICAL PATTERNS OF RESPONSE.** J A Pickford, and L D Russell. Dept. of Physiology, Southern Illinois University, Carbondale, IL. Sponsor: D P Waller.

#252 11:15 **DEVELOPMENTAL TOXICITY OF BROPIRIMINE.** T A Marks, D L Black, S M Poppe and R D Terry, The Upjohn Company, Kalamazoo, MI.

#253 11:30 **TOXICITY STUDIES OF 2,3,4,6 - TETRACHLOROPHENOL** A T Bathija, B R Sonawane, C DeRosa and R Rubenstein. US EPA, Washington, DC. Sponsor: P A Fenner-Crisp.

#254 11:45 **A COMPARISON OF THE DEVELOPMENTAL TOXICITY OF OCTABROMODIPHENYLOXIDE AND PENTABROMODIPHENYLOXIDE IN CRL:CD®(SD)BR RATS.** A M Hoberman, E A Lochry, M N Pinkerton and M S Christian, Argus Research Laboratories, Inc., Horsham, PA. Ethyl Corporation, Baton Rouge, LA.

WEDNESDAY MORNING, FEBRUARY 17
8:30 a.m.-12:00 p.m.
SENATORS LECTURE HALL

PLATFORM SESSION: HEPATIC/GI TOXICOLOGY

Chairpersons: T J Raczniak, Upjohn Company, Kalamazoo, MI
J E Simmons, USEPA, Research Triangle Park, NC

#255 8:30 **CYTOTOXICITY MEASUREMENTS WITH PRIMARY CULTURES OF CRYOPRESERVED (CP) RAT HEPATOCYTES.** K S Santone, D C Melder and G Powis. Mayo Clinic, Department of Pharmacology, Rochester, MN.

#256 8:45 **OPTIMIZATION OF CRYOPRESERVATION PROCEDURES FOR RAT AND HUMAN HEPATOCYTES.** L J Loretz, A P Li, M W Flye and A G E Wilson. Monsanto Environmental Health Laboratory and Washington Univ Med School, St. Louis, MO.

#257 9:00 **ROLE OF THE 4S BINDING PROTEIN IN THE INDUCTION OF ARYL HYDROCARBON HYDROXYLASE IN THE RAT.** M Harris, C Kamps and S Safe, Departments of Veterinary Physiology and Pharmacology and Biochemistry and Biophysics, Texas A&M University, College Station, TX.

#258 9:15 **2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD) ANTAGONISTS PROTECT AGAINST TCDD-MEDIATED PORPHYRIA.** C Yao and S Safe, Department of Veterinary Physiology and Pharmacology, College of Veterinary Medicine and Department of Biochemistry and Biophysics, Texas A&M University, College Station, TX.

#259 9:30 **EFFECTS OF NITROUS OXIDE AND BODY WEIGHT ON THE GUINEA PIG MODEL OF HALOTHANE HEPATOTOXICITY.** R C Lind and A J Gandolfi, Department of Anesthesiology, University of Arizona, Tucson, AZ.

#260 9:45 **TEMPORAL SEPARATION OF K^+ AND Ca^{++} MOVEMENTS IN CULTURED RAT LIVER SLICES TREATED WITH MODEL HEPATOTOXINS.** M S Connors, M V Bell, A J Gandolfi, and K Brendel. Department of Pharmacology and Anesthesiology, Health Sciences Center, University of Arizona, Tucson, AZ.

#261 10:00 **MECHANISM-BASED TOXICITY OF HMG-CoA REDUCTASE INHIBITORS (HRI's) IN RABBITS.** D Kornbrust, C P Peter and J S MacDonald. Merck Sharp & Dohme Research Laboratories, West Point, PA.

#262 10:15 **HEPATIC ENERGY STATUS DURING CCL_4 TOXICITY IN RATS PRETREATED WITH CHLORDECONE, MIREX AND PHENOBARBITAL.** K S Prasada Rao, U M Joshi and H M Mehendale. Department of Pharmacology and Toxicology, University of Mississippi Medical Center, Jackson, MS.

#263 10:30 **SUBACUTE 14-DAY INHALATION TOXICITY OF 2-METHYLFURAN IN THE SPRAGUE-DAWLEY RAT.** S Laham and S Anderson, Environmental Health Directorate, Health and Welfare Canada, Ottawa; and N Hamelin, Bio-Research Laboratories Ltd.,Senneville, Canada.

#264 10:45 **p-XYLENE POTENTIATION OF CARBON TETRACHLORIDE HEPATOTOXICITY.** J E Simmons, E C Grose, BL Robinson, and J W Allis, Health Effects Research Laboratory, USEPA, Research Triangle Park, NC

#265 11:00 **EFFECT OF 24-HOUR INFUSION OF SK&F 93944 ON HEPATIC FUNCTION IN RAT, DOG, AND MONKEY.** A Poole, W Hewitt, and G Betton. Smith Kline & French Research Ltd., Welwyn, UK and Philadelphia, PA. Sponsor: J B Hook.

WEDNESDAY MORNING, FEBRUARY 17
GRAND BALLROOM A

POSTER/DISCUSSION SESSION: PULMONARY RESPONSE TO PARTICLES

Chairpersons: R F Henderson, Lovelace Inhalation Toxicology Reserach Institute, Albuquerque, NM
R C Lindenschmidt, Procter & Gamble Company, Cincinnati, OH

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

#266 **RESPONSES OF THE LUNG TO INHALED CARBON BLACK AND INHALED DILUTED DIESEL EXHAUST.** R F Henderson, R K Wolff, J L Mauderly and R O McClellan. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM.

#267 **PULMONARY EFFECTS OF COMBINED INHALATION EXPOSURES OF RATS TO OIL SHALE DUST AND DIESEL EXHAUST.** J A Pickrell, E B Barr, A F Eidson, R F Henderson, J R Harkema, and J L Mauderly. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM.

#268 **SUBCHRONIC INHALATION TOXICITY OF NICKEL OXIDE TO RATS AND MICE.** C H Hobbs, J M Benson, D G Burt, Y S Cheng, J K Dunnick*, A F Eidson, P J Haley, and J A Pickrell. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM; *NIEHS/ Research Triangle Park, NC.

#269 **SUBCHRONIC INHALATION TOXICITY OF NICKEL SULFATE TO RATS AND MICE.** J M Benson, D G Burt, Y S Cheng, J K Dunnick*, A F Eidson, F F Hahn, C H Hobbs, and J A Pickrell. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM; *NIEHS/NTP, RTP, NC.

#270 **A SUBCHRONIC INHALATION STUDY OF A SPECIAL TEST TONER IN RATS.** R Kilpper[1], U Mohr[2], S Takenaka[2], O Creutzenberg[2], R Mermelstein[1], and H Muhle[2], [1]Corporate Environmental Health & Safety, Xerox Corporation, Rochester, NY; [2]Fraunhofer Institute for Toxicology, Hannover, FRG; [3]University of Rochester, Rochester, NY.

#271 **LONG-TERM INHALATION STUDY OF TEST TONER IN RATS.** R Mermelstein,[1] U Mohr,[2] W Koch,[2] C Dasenbrock,[2] R Kilpper,[1] J MacKenzie,[1] P Morrow[3] and H Muhle[2], [1]Corporate Environmental Health and Safety, Xerox Corporation, Rochester, NY; [2]Fraunhofer Institute for Toxicology, Hannover, FRG; [3]University of Rochester, Rochester, NY.

#272 **PULMONARY DEPOSITION, CLEARANCE AND RETENTION OF TEST TONER, TIO_2 AND QUARTZ DURING A LONG TERM INHALATION STUDY IN RATS** H Muhle,[1] B Bellman,[1] O Creutzenberg[1], W Stober,[1] R Kilpper,[2] J MacKenzie,[2] P Morrow[3] and R Mermelstein[2] [1] Fraunhofer Institute for Toxicology, Hannover, FRG; [2] Corporate Environmental Health & Safety, Xerox Corporaion, Rochester, NY [3] University of Rochester, Rochester, NY.

#273 **BRONCHOALVEOLAR LAVAGE FLUID (BALF) ANALYSIS FOLLOWING ALUMINUM OXIDE (Al_2O_3) AND TITANIUM DIOXIDE (TIO_2) ADMINISTRATION.** M A Perkins, R C Lindenschmidt, K E Driscoll, J K Maurer, and J M Higgins. Procter & Gamble, Miami Valley Laboratories, Cincinnati, OH.

#274 **BRONCHOALVEOLAR LAVAGE FLUID (BALF) ANALYSIS FOLLOWING SILICA ADMINISTRATION.** R C Lindenschmidt, K E Driscoll, J K Maurer, M A Perkins, and J M Higgins. Procter & Gamble, Miami Valley Laboratories, Cincinnati, OH.

#275 **DIFFERENTIAL RESPONSES IN RATS FOLLOWING ACUTE INHALATION OF NUISANCE DUSTS.** M A Hartsky and D B Warheit. Du Pont-Haskell Lab., Newark, DE.

#276 **PARTICLE-MACROPHAGE RELATIONSHIPS DURING THE CLEARANCE OF PARTICLES FROM THE ALVEOLAR MACROPHAGE COMPARTMENT.** B E Lehnert, K E Toevs, Y E Valdez, and R J Sebring. Los Alamos National Laboratory, Los Alamos, NM.

WEDNESDAY MORNING, FEBRUARY 17
GRAND BALLROOM C

POSTER/DISCUSSION SESSION: BENZENE METABOLISM AND MYELOTOXICITY

Chairpersons: R D Irons, CIIT, Research Triangle Park, NC
G F Kalf, Thomas Jefferson University, Philadelphia, PA

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

#277 **SHORT-TERM INHALATION EXPOSURE TO BENZENE PRODUCES MYELODYSPLASTIC SYNDROME AND LEUKEMIA IN C57BL/6 MICE.** H P Cathro, W S Stillman, W H Steinhagen and R D Irons, CIIT, Research Triangle Park, NC.

#278 **LIVER CYTOSOLIC METABOLISM OF TRANS, TRANS-MUCONALDEHYDE TO TRANS, TRANS-MUCONIC ACID.** T A Kirley, B D Goldstein, and G Witz. Joint Graduate Program in Toxicology, UMDNJ-Robert Wood Johnson Medical School/Rutgers University, Piscataway, NJ.

#279 **METABOLISM OF ^{3}H-BENZENE IN F344/N RATS AND B6C3F$_1$ MICE: SPECIES AND DOSE EFFECT.** P J Sabourin, L S Birnbaum*, G Lucier*, and R F Henderson. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM; *NIEHS, Research Triangle Park, NC.

#280 **INDUCTION OF MICRONUCLEI BY BENZENE AND ITS METABOLITES.** H Shimada, T Sato and S Takayama. Research Institute of Daiichi Seiyaku Co., Ltd., Tokyo, Japan.

#281 **PROTECTION AGAINST BENZENE-INDUCED MYELO-AND GENOTOXICITY IN MICE BY NON-STEROIDAL ANTI-INFLAMMATORY AGENTS.** S J Pirozzi, J R Renz, M J Schlosser, and G F Kalf. Dept. of Biochemistry and Molecular Biology, Jefferson Medical College, Thomas Jefferson Univ., Philadelphia, PA.

#282 ***IN VITRO* AND *IN VIVO* STUDIES OF BENZENE METABOLITE REACTIONS WITH DNA, NUCLEOSIDES AND NUCLEOTIDES.** H Bauer, E Dimitriadis, K R Cooper, and R Snyder, Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ.

#283 **HPLC ANALYSIS OF [^{32}P]-POST LABELED DNA ADDUCTS FROM BENZENE TREATED RATS.** R L Guy, and R Snyder. Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ.

#284 **EFFECTS OF BENZENE METABOLITES IN COMBINATION ON FE UPTAKE INTO ERYTHROCYTES IN MICE.** E Dimitriadis, R L Guy, P Hu, K R Cooper and R Snyder. Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ.

#285 **ACTIVATION OF BONE MARROW MACROPHAGES (MP) AND PMN FOLLOWING BENZENE TREATMENT OF MICE.** L MacEachern, R Snyder, and D Laskin. Rutgers University, Piscataway, NJ.

#286 **HYDROQUINONE INHIBITS MACROPHAGE REGULATION OF STROMAL CELL DEPENDENT B-LYMPHOPOIESIS.** A King, K Landreth, and D Wierda. Depts. of Pharmacology/Toxicology and Microbiology and Immunology, West Virginia University Medical Center, Morgantown, WV.

#287 **BONE MARROW STROMAL MACROPHAGE PRODUCTION OF INTERLEUKIN-1 ACTIVITY IS ALTERED BY BENZENE METABOLITES.** D J Thomas, D Wierda. Dept. of Pharmacology and Toxicology, West Virginia University Medical Center, Morgantown, WV.

#288 **ACTIVATION OF PHENOL AND HYDROQUINONE TO COVALENTLY BINDING METABOLITES BY MOUSE MACROPHAGE LYSATES.** M J Schlosser and G F Kalf. Department of Biochemistry and Molecular Biology, Jefferson Medical College, Thomas Jefferson University, Philadelphia, PA.

WEDNESDAY MORNING, FEBRUARY 17
CHANTILLY BALLROOM

POSTER SESSION: NEUROTOXICOLOGY: BEHAVIOR

Chairperson: L Reiter, USEPA, Research Triangle Park, NC

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

#289 **EARLY VERSUS DELAYED BEHAVIORAL EFFECTS OF ACUTE TRIETHYLTIN EXPOSURE.** Y L T Ting, S B Fountain, H L Andre, and T J Teyler. Department of Neurobiology, NE Ohio Univs Coll of Med, Rootstown, OH. Sponsor: Z Annau.

#290 **NEONATAL EXPOSURE TO TRIMETHYLTIN (TMT) DISRUPTS THE ONTOGENY OF LONG-TERM OLFACTORY MEMORY IN THE RAT.** M E Stanton. U. S. Environmental Protection Agency, Research Triangle Park, NC. Sponsor: P J Bushnell.

#291 **THE ACUTE EFFECTS OF BIS(TRI-N-BUTYLTIN)OXIDE ON MOTOR ACTIVITY: ORAL VS. INHALATION EXPOSURE.** K M Crofton, M E Hiteshew, L P Sheets, V M Boncek, K F Dean, and L W Reiter, Neurotoxicology Division, US EPA, RTP, NC and Northrop Services, Inc, Environmental Services, RTP, NC.

#292 **ANALYSIS OF THE CONGNITIVE IMPAIRMENT INDUCED IN RATS BY TRIMETHYLTIN: AUTOMAINTAINED REVERSAL LEARNING.** D New*, P J Bushnell, and D D Dunn*. Neurotoxicology Division US EPA, RTP, NC and *Northrop Services, Inc. - Environmental Sciences, RTP, NC.

#293 **ANALYSIS OF THE COGNITIVE IMPAIRMENT INDUCED IN RATS BY TRIMETHYLTIN: EPISODIC MEMORY AND VISUAL DISCRIMINATION.** P J Bushnell, D D Dunn*, and D New*. Neurotoxicology Division, US EPA, RTP, NC and *Northrop Services, Inc.-Environmental Sciences, RTP, NC.

#294 **IMPAIRMENT OF CONDITIONED AVOIDANCE RESPONSE (CAR) INDUCED BY ALUMINUM IN MICE.** H Yen-Koo, T Balazs and H Baer. Food and Drug Administration, Washington, DC.

#295 **CHELATORS ATTENUATE THE BEHAVIORAL CONSEQUENCES OF CADMIUM ADMINISTRATION.** D B Peele, J D Farmer, and R C MacPhail. Northrop Environmental Sciences, RTP, NC, and U.S. EPA, RTP, NC.

#296 **MANGANESE ADMINISTRATION INDUCES PERSISTING EFFECTS ON EFFORTFUL BEHAVIORAL RESPONSES.** B Weiss and M C Newland, Environmental Health Sciences Center, Univ of Rochester School of Medicine and Dentistry, Rochester NY.

#297 **CHOLINESTERASE INHIBITION AND NEUROBEHAVIORAL EFFECTS IN PARAOXON-TREATED LONG-EVANS RATS.** W O Cook, S S Singh, V R Beasley, and J A Dellinger. Dept. of Veterinary Biosciences, University of Illinois, Urbana, IL.

#298 **DDT AND PICROTOXIN EFFECTS ON THE ACOUSTIC STARTLE RESPONSE (ASR) IN PREWEANLING RATS RESEMBLE THE EFFECTS OF TYPE I AND TYPE II PYRETHROIDS.** L P Sheets, K M Crofton and L W Reiter. Neurotox Div., EPA, RTP, NC.

#299 **ASSESSMENT OF MEMORY DEFICITS FOLLOWING REPEATED ORGANOPHOSPHATE EXPOSURE.** K Raffaele, D Olton, and Z Annau. The Johns Hopkins University, Baltimore, MD.

#300 **EFFECT OF THE ANTICHOLINESTERASE PARAOXON ON SHUTTLE AVOIDANCE BEHAVIOR AND BRAIN MUSCARINIC RECEPTORS.** J E Chambers and H W Chambers. Depts. of Biol. Sci. and Entomology, Miss. State Univ., Miss. State, MS.

#301 **REVERSIBILITY AND TOLERANCE TO TRICRESYL PHOSPHATE-INDUCED NEUROTOXIC EFFECTS IN F344 RATS.** G B Freeman, R Irwin[1], R Trejo, M Hejtmancik, M Ryan, and A C Peters. Battelle Columbus Division, Columbus, OH, and [1]NIEHS, Research Triangle Park, NC.

#302 **THE INTERACTION OF CARBON MONOXIDE WITH ETHANOL, CHLORPROMAZINE, PENTOBARBITAL OR d-AMPHETAMINE ON FIXED-RATIO PERFORMANCE IN THE MOUSE.** J S Knisely, D C Rees, R L Balster, and L J Thomas. Dept of Pharmacology and Toxicology, Medical College of Virginia, Richmond, VA.

#303 **PROCONVULSIVE ACTIVITY OF QUINOLONE ANTIBIOTICS IN AN ANIMAL MODEL.** P D Williams and D R Helton, Lilly Research Laboratories, Toxicology Division, Greenfield, IN.

#304 **ZACOPRIDE: A PROMISING RADIATION ANTIEMETIC.** *V Bogo, *C Boward, N Fiala and A Dubois *Behavioral Sciences Dept., AFRRI; and Dept. of Medicine, USUHS; Bethesda, MD

#305 **BEHAVIORAL ASSESSMENT OF XYLENE AND ETHYLBENZENE USING THE STARTLE REFLEX OF THE RAT.** J M Russo, National Institute for Occupational Safety and Health, Cincinnati, OH, and M Junnila, Finnish Institute of Occupational Health, Helsinki, Finland. Sponsor: W K Anger.

#306 **COGNITIVE EFFECTS OF LONG-TERM CHRONIC NEUROLEPIC ADMINISTRATION.** E D Levin and P E Johansson. Psychiatric Research Center, Ulleraker Hospital, Uppsala, SWEDEN. Sponsor: D E Woolley.

#307 **BEHAVIORAL IMPAIRMENT IN THE RAT AFTER COLCHICINE LESIONS OF THE NUCLEUS BASALIS.** W R Mundy and H A Tilson. NIEHS, Res. Tri. Park, NC.

#308 **THE DIRECT APPLICATION OF NMDA TO THE HIPPOCAMPUS PRODUCES MEMORY DEFICITS IN RATS.** B C Rogers, W R Mundy, P Pediaditakis, and H A Tilson. Toxiciology Curriculum, University of North Carolina, Chapel Hill, NC and NIEHS, Research Triangle Park, NC.

#309 **BEHAVIORALLY CONDITIONED SUPPRESSION OF MURINE T-DEPENDENT ANTIBODY RESPONSES.** G E Schulze, R W Benson, M G Paule, D W Roberts, NCTR, Jefferson, AR. Sponsor: W Slikker, Jr.

WEDNESDAY MORNING, FEBRUARY 17
CHANTILLY BALLROOM

POSTER SESSION: IMMUNOTOXICOLOGY/HEMATOTOXICOLOGY

Chairperson: L J Sauers, Procter & Gamble Company, Cincinnati, OH

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

#310 **RELATIONSHIP OF HYPOTHALAMO-PITUITARY-ADRENAL (HPA) ACTIVITY TO IMMUNE FUNCTION IN MICE EXPOSED TO BENZENE AND TOLUENE.** G C Hsieh, R P Sharma, and R D R Parker. Toxicology Program, Utah State University, Logan, UT.

#311 **PERINATAL IMMUNOTOXICITY OF BENZENE.** D Wierda, R W Leubke and R J Smialowicz. Dept. Pharmacology and Toxicology, West Virginia University Medical Center, Morgantown, WV and U S EPA, Research Triangle Park, NC.

#312 **THE USE OF CULTURED HUMAN PERIPHERAL BLOOD LYMPHOCYTES (PBL) FOR IMMUNOTOXICOLOGY EVALUATION.** J B Cornacoff, A N Tucker and J H Dean. CIIT, Research Triangle Park, NC.

#313 **THE DISRUPTION OF LYMPHOCYTE TRANSMEMBRANE SIGNALLING BY XENOBIOTICS.** L M Thurmond, R V House, J H Dean. CIIT, RTP, NC.

#314 **MODULATION OF PHA-INDUCED T-CELL CALCIUM MOBILIZATION BY DMBA.** T A Thompson, R H Fincher, and S W Burchiel, University of New Mexico College of Pharmacy, Albuquerque, NM.

#315 **EFFECTS OF 2-ACETYLAMINOFLUORENE ON *IN VITRO* IMMUNE RESPONSES IN MURINE SPLENOCYTES.** K H Yang, D H Kim, T Kawabata*, and M P Holsapple*. Korea Advanced Institue of Science and Technology, Seoul, Korea and *Medical College of Virginia, Richmond, VA.

#316 **EFFECTS OF ACUTE ADMINISTRATION OF O,O,S-TRIMETHYL PHOSPHOROTHIOATE ON THE RESPIRATORY BURST AND PHAGOCYTIC ACTIVITY OF SPLENIC AND PERITONEAL LEUKOCYTES.** K E Rodgers, and D D Ellefson, School of Medicine, University of Southern California, Los Angeles, CA.

#317 **HOST RESISTANCE TO MURINE MALARIA IN ADENOSINE DEAMINASE-DEFICIENT MICE.** R W Luebke, A C Adams, C B Copeland, M M Riddle, R R Rogers and R J Smialowicz. U.S. EPA, Research Triangle Park, NC.

#318 **IMMUNOTOXICITY OF TRIBUTYLTIN OXIDE IN RATS EXPOSED AS ADULTS OR PRE-WEANLINGS.** R J Smialowicz, M M Riddle, R. R. Rogers, R W Luebke, C B Copeland and A C Adams. U.S. EPA, Research Triangle Park, NC.

#319 **FLOW CYTOMETRIC ANALYSIS OF LYMPHOCYTE SUBPOPULATIONS IN MICE EXPOSED TO 2,3,7,8-TCDD: CONSTITUTIVE AND FACULTATIVE EXPRESSION.** J A Brauner and N I Kerkvliet. College of Veterinary Medicine, Oregon State University, Corvallis, OR.

#320 **INHIBITION OF HUMAN SERUM COMPLEMENT (C') ACTIVITY BY DIISOPROPYLFLUOROPHOSPHATE (DFP) AND SELECTED ANTICHOLINESTERASE INSECTICIDES.** S Bavari, J J Connolly, and G P Casale. Univ. Of Nebraska Medical Center, College of Pharmacy, Omaha, NE.

#321 **THE IMMUNOMODULATORY ROLE OF D-[ALA^2] METHIONINE ENKEPHALINAMIDE IN INHIBITION THE TUMOR EXPRESSION OF PYB6 TREATED MICE.** B Srisuchart, L E Sikorski, A E Munson, S E Loveless. Dept. of Pharmacology and Toxicology, Medical College of Virginia/VCU, Richmond, VA, and E I duPont de Nemours & Co, Inc, Glenolden, PA.

#322 **SUPPRESSION OF HUMORAL IMMUNITY BY MONONITROTOLUENES (A STRUCTURAL ACTIVITY STUDY).** H H Lysy, J A MacCay, K L White, Jr. and A E Munson. Depts. of Pharmacology and Toxicology, and Biostatistics. Medical College of VA/VCU, Richmond, VA.

#323 **IMMUNOTOXICOLOGY IN THE RAT: AN IMPROVED MODEL.** J L Bussiere, J H Exon and G G Mather. Dept. Veterinary Science, University of Idaho, Moscow, ID.

#324 **IMMUNE MODULATION PRODUCED BY INTRATRACHEAL INSTILLATION OF GALLIUM ARSENIDE.** J A McCay, E E Sikorski, K L White, Jr. and A E Munson. Department of Pharmacology and Toxicology. Medical College of Virginia/VCU, Richmond, VA.

#325 **DIFFERENTIAL EFFECTS OF COADMINISTRATION OF AMINOACETONITRILE ON DIMETHYLNITROSAMINE — INDUCED IMMUNOSUPPRESSION AND HEPATOTOXICITY PRODUCED *IN VIVO*.** H G Haggerty, L H Boise, S D Jordan, and M P Holsapple. Dept. of Phamacology & Toxicology, Medical College of Virginia/VCU, Richmond, VA.

#326 **ADHERENT AND NON-ADHERENT FRACTIONS OF SPLENOCYTES ARE TARGETS OF BENZO(a)PYRENE [B(a)P] AND 7,12-DIMETHYLBENZATHRACENE (DMBA) INDUCED SUPPRESSION OF THE HUMORAL IMMUNE RESPONSE.** K L White, Jr, M C Parrott, and T T Kawabata. Depts. of Pharmacology and Toxicology, and Biostatistics. Medical College of Va/VCU, Richmond, VA.

#327 **ASSESSMENT OF HEMOGLOBIN ISOVARIENTS AS A FACTOR OF CHEMICAL-INDUCED POLYCYTHEMIA IN WISTAR RATS.** G M Henningsen, T D Eurell[1], and L D Koller[2]. NIOSH, DBBS, ABPB, BMRS, Cincinnati, OH; [1]Dept. Vet. Bioscience, Univ. Illinois, Urbana, IL; and [2]Coll. Vet. Med., Oregon St. Univ., Corvalis, OR.

#328 **HEMATOPOIETIC EFFECTS IN FEMALE B6C3F1 MICE EXPOSED TO ARSINE GAS.** H L Hong, B A Fowler and G A Boorman. National Institute of Environmental Health Sciences (NIEHS), Research Triangle Park, NC. Sponsor: G A Boorman.

#329 **THIRTEEN-WEEK DOSED FEED TOXICITY STUDIES OF m-NITROBENZOIC ACID IN F344 RATS AND B6C3F$_1$ MICE.** K M Abdo[1], M Elwell[1], B S Levine[2], L T Mulligan[2], R Kovath[3]. [1]NIEHS, NTP, RTP, NC; [2]Department of Pharmacology, Microbiological Associates, Bethesda, MD;[3] PAI, Ijamsville, MD.

WEDNESDAY MORNING, FEBRUARY 17
CHANTILLY BALLROOM

POSTER SESSION: FOOD & DRUG TOXICOLOGY

Chairperson: J A S Allen, Glaxo, Inc., Research Triangle Park, NC

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

#330 **ACUTE, SUBCHRONIC, AND CHRONIC TOXICITY STUDIES OF THE CARDIOTONIC ISOMAZOLE (LY175326) IN RATS AND DOGS.** J R Means, G E Sandusky, and D B Meyers. Lilly Research Laboratories, Toxicology Division, Greenfield, IN.

#331 **ACUTE AND SUBACUTE TOXICOLOGIC EVALUATION OF THE ANGIOTENSIN-CONVERTING-ENZYME INHIBITOR SQ 29,852.** R A Soltys, C A Johnson, M M Miller, R J Shuren, D L Tuomari, Y H Yoon, A DePaoli, and P L Sibley. The Squibb Institute for Medical Research, New Brunswick, NJ. Sponser: J S Kulesza.

#332 **VITAMIN K DEPENDENT TOXICITY OF LY163443 SODIUM, A NEW LTD$_4$ ANTAGONIST, IN LABORATORY RATS.** R B L van Lier, J P McGrath, and L D Cherry, Toxicology Division, Lilly Research Laboratories, Greenfield, IN.

#333 **TOXICITY OF A NOVEL ANTICONVULSANT, 2-AMINO-N-(2-METHYL-1,2-DIPHENYLETHYL) ACETAMIDE (PR 934-423A).** C F Luke, D W Moore, G C Palmer, M L Coan, J C Strand, and C F Morris. Pennwalt Pharmaceutical Division Rochester, NY.

#334 **ACUTE AND SUBACUTE TOXICITY OF THE ANTICONVULSANT CI-953.** R Walker, M Seefeld, and G Wolfe, Warner-Lambert/Parke-Davis Res. Inst., Mississauga, ON, and Ann Arbor, MI; and Hazelton Laboratories America, Inc., Vienna, VA.

#335 **EXCRETION AND TISSUE DISTRIBUTION OF METHYLPHENIDATE-HCl (MPH) IN RATS AND MICE AFTER A SINGLE ORAL DOSE.** C R Duerson, D E Carter, I G Sipes, Department of Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

#336 **TOXICITY OF ELSAMICIN, A POTENTIAL ANTICANCER AGENT.** T J Davidson, C L Bregman, R A Buroker, R S Hirth, and H Madissoo, Department of Pathology and Toxicology, Bristol-Myers Company, Syracuse, NY.

#337 **RELATIVE BIOAVAILABILTIY OF TISSUE RESIDUES OF POLYETHER IONOPHORE ANTIBIOTIC (P-2546) IN RATS.** C K Parekh, S M Ghiasuddin, J W Fernandes, and T M Sullivan. Research & Development, Pitman-Moore, Inc., Northbrook, IL.

#338 **LIPID AND VITAMIN LEVELS IN 30 DAY OLD RATS ADMINISTERED SODIUM SACCHARIN SINCE CONCEPTION.** E M Garland, P Kraft*, R Shapiro[1] and S M Cohen, Univ. Nebraska Med. Ctr., Omaha, NE, *PepsiCo, Valhalla, NY, and [1]Nutr. Intl. Inc., New Brunswick, NJ.

#339 **EFFECTS OF ASPARTAME ON PENTYLENETETRAZOL(PTZ)-INDUCED CONVULSIONS IN CD-1 MICE.** P C Jobe, A F Bettendorf, S M Lasley, and J W Dailey. The University of Illinois College of Medicine at Peoria, Peoria, IL.

#340 **INDUCTION OF CLEAR CYTOPLASMIC VACUOLES (CCV) IN CULTURED CELLS BY SC-35311.** S N Anderson, Z Ruben, H T Gaud, and R B Johnson and V Gupta, R&D, G.D. Searle & Co., Skokie, IL.

#341 **THE EFFICACY OF SUPERACTIVATED CHARCOAL IN TREATING RATS EXPOSED TO A LETHAL ORAL DOSE OF POTASSIUM CYANIDE.** R J Lambert, B L Kindler and D J Schaeffer. Illinois Animal Poison Information Center, Dept. of Veterinary Biosciences, University of Illinois, Urbana, IL.

#342 **SUBCHRONIC ORAL TOXICITY STUDY OF CYCLOPIAZONIC ACID (CPA) IN MALE SPRAGUE-DAWLEY RATS.** K A Voss, W P Norred, R J Cole and J W Dorner. Richard B. Russell Research Center, ARS, USDA, Athens, GA and the National Peanut Laboratory, ARS, USDA, Dawson, GA.

#343 **KINETICS AND METABOLISM OF THE RADIOPROTECTIVE AGENT, S-2-(3-METHYLAMINOPROPYLAMINO) ETHYLPHOSPHOROTHIOIC ACID (WR 3689), IN RHESUS MACAQUES.** A Buckpitt, H Chung, D Baggot, S Hietala, D Johnson and M Goldman. Institute for Environmental Health Research, UC Davis, Davis, CA and Walter Reed Army Medical Center, Washington, DC.

#344 **KINETICS AND METABOLISM OF SULFADIMETHOXINE IN CHANNEL CATFISH.** C M F Michel, K S Squibb, J T Zelikoff and J M O'Connor. NYU Med. Ctr., Inst. Env. Med., Tuxedo, NY.

#345 **SUBCHRONIC TOXICITY OF ORALLY-ADMINISTERED THEOPHYLLINE (GAVAGE AND DOSED-FEED) IN F344 RATS AND B6C3F$_1$ MICE.** J J Collins[1], J C Lamb IV[2], A G Manus[3], J Heath[3], and T Makovec[3]. [1]NTP, NIEHS, RTP, NC;[2]EPA, Washington, DC; [3]Southern Research Inst., Birmingham, AL.

#346 **THE EFFECT OF SUCROSE POLYESTER (SPE) ON THE ABSORPTION (ABS) OF SELECTED DRUGS IN SPRAGUE-DAWLEY (SD) RATS.** K Y Johnson, M W Perkins, and F E Wood, Jr., Procter & Gamble, Cincinnati, OH. Sponsor: R C Lindenschmidt

#347 **PRECHRONIC TOXICITY OF SCOPOLAMINE HYDROBROMIDE IN RODENTS.** D D Dietz*, E J Rauckman*, J D Prejean[1], A G Manus[1], J E Heath[1], and D R Farnell[1], *NIEHS/NTP, Research Triangle Park, NC, and [1]Southern Research Institute, Birmingham, AL.

#348 **PATHOLOGY OF SK&F L-94901, A POTENT THYROMIMETIC IN THE RAT.** S J Kennedy, C K Atterwill & A Poole, Smith Kline & French Research Ltd, The Frythe, Welwyn, Herts, U.K. Sponsor: J Hook.

#349 **HIPPOCAMPAL HISTOPATHOLOGY IN ETHANOL-EXPOSED RATS.** R M Sioco, N D T Nguyen, E J Root, S W Leslie, and E M B Sorensen. Division of Pharmacology and Toxicology, College of Pharmacy, University of Texas, Austin, TX.

#350 **EFFECTS OF DOXYLAMINE SUCCINATE ADMINISTERED TO FISCHER 344 RATS FOR 65 WEEKS.** C D Jackson, G M Cronin, and B N Blackwell, National Center for Toxicological Research and Pathology Associates Inc., Jefferson, AR. Sponsor: G W Wolff.

#351 **LOW DIETARY BIOAVAILABILITY OF OXALIC ACID PRESENT IN REFINED SUGAR BEET PULP COMPARED TO SPINACH AND SODIUM OXALATE.** C F Hanson, Okla. State Univ., Stillwater, OK, V H Frankos, ENVIRON Corp., Washington, DC, W O Thompson, Med. Coll. GA., Augusta, GA. Sponsor: R G Tardiff.

#352 **SPONTANEOUS AND INDUCED ACCUMULATION OF *ALPHA*-2u-GLOBULIN IN THE KIDNEY CORTEX OF RATS AND MICE.** G M Ridder, E C Von Bargen, R D Parker, and C L Alden. Proctor & Gamble, Cincinnati, OH. Sponsor: Lehman McKeeman.

#353 **QUANTITATION OF ETHOXYQUIN IN MOUSE TISSUES.** H L Kim, Veterinary Physiology and Pharmacology, Texas A&M University, College Station, TX. Sponsor: S Safe.

#354 **CONTINUOUS INTRAVENOUS INFUSION STUDIES WITH 2',3'-DIDEOXYADENOSINE (ddA) IN BEAGLE DOGS.** J G Page, M E Placke, K A Colling, L E Mezza, G M Wientjes, C K Grieshaber*, and J E Tomaszewski*. Battelle Columbus Division, Columbus, OH and *National Cancer Institute, Bethesda, MD.

#355 **SINGLE-DOSE PHARMACOKINETICS AND BIOAVAILABILITY STUDY OF 2',3'-DIDEOXYADENOSINE (ddA) IN BEAGLE DOGS AND RATS.** M E Placke, J G Page, K A Colling, G M Wientjes, C K Grieshaber*, and J E Tomaszewski*. Battelle Columbus Division, Columbus, OH and *National Cancer Institute, Bethesda, MD.

#356 **ASSESSMENT OF THE CHRONIC ORAL TOXICITY OF d-LIMONENE IN DOGS.** D R Webb, D K Hysell and C L Alden. The Procter & Gamble Co., Cincinnati, OH.

#357 **TOXICITY STUDIES WITH QUININE HYDROCHLORIDE.** J C Colley, J A Edwards, R Heywood and D Purser. Huntingdon Research Centre, Cambs., England.

WEDNESDAY MORNING, FEBRUARY 17
CHANTILLY BALLROOM
POSTER SESSION: HALOGENATED HYDROCARBONS

Chairperson: G F Rush, Smith Kline & French Laboratories, Philadelphia, PA

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

#358 **THE EFFECT OF TCDD ON RAT HEPATIC VITAMIN A LEVELS, AND RETINOYL-AND P-NITROPHENOL-UDP GLUCURONOSYL TRANSFERASE (GT) ACTIVITIES.** R H Powers, L C Gilbert and S D Aust. Department of Biochemistry, Michigan State University, East Lansing, MI.

#359 **SELECTIVE ENHANCEMENT OF TERATOGENICITY IN MICE BY TCDD AND VITAMIN A (RA).** L S Birnbaum, M W Harris, and R E Morrissey. NIEHS, Research Trinagle Park, NC.

#360 **THE EFFECT OF 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD) ON HEPATIC GLUCURONIDATION OF RETINOIC ACID.** P A Bank, K L Salyers, and M H Zile, Dept. of Food Science and Human Nutrition, Michigan State University, E. Lansing, MI. Sponsor: S Sleight.

#361 **FACTORS INFLUENCING THE INDUCTION OF DNA SINGLE STRAND BREAKS IN RATS BY 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN.** Z Z Wahba, S J Stohs, T A Lawson, W J Murray. University of Nebraska Medical Center, Omaha, NE.

#362 **2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD)-INDUCED LIPID PEROXIDATION IN RESPONSIVE AND NON-RESPONSIVE MICE.** S J Stohs and H Mohammadpour. University of Nebraska Medical Center, Omaha, NE.

#363 **THE EFFECT OF 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD), 2,3 DICHLORODIBENZO-P-DIOXIN (DCDD), AND 2,3,7 TRICHLORODIBENZO-p-DIOXIN (TrCDD) ON CYTOCHROME P450 GENERATED REACTIVE OXYGEN.** D S Brandwene, P C Kahn. Rutgers University, Joint Graduate Program in Toxicology, Piscataway, NJ. Sponsor: G Witz.

#364 **IMPLICATIONS OF TCDD-ESTROGEN INTERACTIONS.** T H Umbreit and M A Gallo. Dept. Enviromental and Community Medicine, UMDNJ/Robt. W. Johnson Medical School, Piscataway, NJ.

#365 **COMPARATIVE EFFECTS OF 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN AND PROGESTERONE AS ANTIESTROGENS IN THE FEMALE RAT UTERUS.** M Romkes and S Safe, Department of Veterinary Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M University, College Station, TX.

#366 **ANTIATROPHY EFFECT OF 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD) ON RAT GASTRIC MUCOSA AND ITS POSSIBLE RELATIONSHIP TO HYPERGASTRINEMIA.** H M Theobald, T A Mably, G B Ingall, and R E Peterson. Sch. Pharmacy, Univ. Wisc., Madison, WI.

#367 **DECREASED GASTRIC ACID SECRETION AS A POSSIBLE MECHANISM OF HYPERGASTRINEMIA IN 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD)-TREATED RATS.** T A Mably, H M Theobald, and R E Peterson. Sch. Pharmacy, Univ. Wisc., Madison, WI.

#368 **DIFFERENTIAL HISTOPATHOLOGY IN TCDD-TREATED AND PAIR-FED RATS.** M J Iatropoulos, J R Gorski, D Perera, G Muzi, R J Arceo, L W D Weber and K Rozman. University of Kansas Medical Center, Kansas City, KS U.S.A. and Institut fur Toxikologie, GSF Munchen, Neuherberg, F.R.G. and Medical Research Division, American Cyanamid, Pearl River, NY.

#369 **TISSUE-SPECIFIC ALTERATIONS OF *DE NOVO* FATTY ACID SYNTHESIS IN TCDD-TREATED RATS.** J R Gorski, LWD Weber and K Rozman. University of Kansas Medical Center, Kansas City, KS and Inst. fur Toxikol., GSF Munchen, Neuherberg, F.R.G.

#370 **CORTICOSTERONE MODULATES ACUTE TOXICITY OF TCDD IN RATS.** K Rozman, J R Gorski, T Rozman and H Greim. University of Kansas Medical Center, Kansas City, KS and Institut fur Toxikologie, GSF Munchen, Neuherberg, F.R.G.

#371 **CORTICOSTERONE DECREASES TOXICITY OF TCDD IN HYPOPHYSECTOMIZED RATS.** M Hofler, J R Gorski and K Rozman. University of Kansas Medical Center, Kansas City, KS and Institut fur Toxikologie, GSF Munchen, Neuherberg, F.R.G.

#372 **REDUCED GLUCONEOGENESIS IN TCDD-TREATED RATS.** LWD Weber, JR Gorski and K Rozman. University of Kansas Medical Center, Kansas City, KS and Institut fur Toxikologie, GSF Munchen, Neuherberg, F.R.G.

#373 **PHARMACOKINETICS (PK) OF VOLATILE HALOCARBONS: COMPARISON OF SINGLE ORAL BOLUS VERSUS GASTRIC INFUSION OF 1,1,1-TRICHLOROETHANE (TRI).** S Muralidhara, R Ramanathan, J M Gallo*, C E Dallas, and J V Bruckner. Depts. of Pharmacol. & Toxicol. and Pharmaceutics*, College of Pharmacy, University of Georgia, Athens, GA.

#374 **TRICHLOROETHYLENE (TCE) AND THE AREA UNDER CURVES (AUC) FOR ITS METABOLITES IN BLOOD.** J L Larson and R J Bull. Pharmacology/Toxicology Program, College of Pharmacy, Washington State University, Pullman, WA.

#375 **PRECISION AND ACCURACY OF PHYSIOLOGICALLY-BASED PHARMACOKINETIC MODELS IN REGULATORY RISK ASSESSMENTS.** F Y Bois, L Zeise and T N Tozer. Department of Pharmacy, University of California San Francisco and California Public Health Foundation, Berkeley, CA Sponsor: C C Willhite.

#376 **PHARMACOKINETICS (PK) OF VOLATILE HALOCARBONS: COMPARISON OF SINGLE ORAL BOLUS VERSUS INFUSION OF TRICHLOROETHYLENE(TCE).** R Ramanathan, S Muralidhara, J M Gallo*, C E Dallas, and J V Bruckner. Depts. of Pharmacol. & Toxicol. and *Pharmaceutics, College of Pharmacy, University of Georgia, Athens, GA.

#377 **DIFFERING TOXICITY AFTER SUBACUTE TRICHLOROETHYLENE (TCE) EXPOSURE IN AQUEOUS AND CORN OIL GAVAGE VEHICLES IN MICE.** B A Merrick, M Robinson and L W Condie. USEPA, HERL, Cincinnati, OH.

#378 **A STUDY OF THE JOINT ACTION OF CARBON TETRACHLORIDE (CCL_4) AND TRICHLOROETHYLENE (C_2HCL_3) FOLLOWING SIMULTANEOUS GAVAGE ADMINISTRATION IN THE RAT.** R H Granger, T M O'Hara, L W Condie*, and J F Borzelleca. Depts. of Pathology and Pharmacology/Toxicology, Medical College of VA, Richmond, VA and *U.S.E.P.A., Cincinnati, OH.

#379 **THE SYNERGISTIC HEPATOTOXICITY OF CARBON TETRACHLORIDE AND TRICHLOROETHYLENE IN MALE F-344 RATS.** D A McMillan, M Tokars, C Eskelson and I G Sipes. Dept. of Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

#380 **A STUDY OF THE JOINT HEPATOTOXIC ACTION OF CARBON TETRACHLORIDE (CCL_4) AND CHOLOROFORM ($CHCL_3$) FOLLOWING SIMULTANEOUS GAVAGE ADMINISTRATION IN THE RAT.** T M O'Hara, R H Granger, L W Condie* and J F Borzelleca. Dept. of Phathology and Pharmacology/Toxicology, Medical College of VA, Richmond, VA and *U.S.E.P.A., Cincinnati, OH.

#381 **THE INFLUENCE OF STRUCTURAL ANALOGUES OF CARBON TETRACHLORIDE (CCL_4) ON HEPATOCYTE FUNCTIONS *IN VITRO*.** J B Coleman, L W Condie*, J F Borzelleca and R G Lamb. Dept. of Pharmacology/Toxicology, Medical College of VA, Richmond, VA and *U.S.E.P.A., Cincinnati, OH.

#382 **METABOLISM AND DISPOSITION OF LOW DOSE CCL_4 IN PARTIALLY HEPATECTOMIZED, CHLORDECONE PRETREATED RATS.** R A Young, F Siddiqui, and H M Mehendale Univ. Miss. Med. Ctr., Jackson, MS

#383 **TIME-COURSE OF LIVER INJURY AND ^{3}H-THYMIDINE INCORPORATION IN CHLORDECONE-POTENTIATED $CHCL_3$ HEPATOTOXICITY.** K R Purushotham and H M Mehendale. Department of Pharmacology and Toxicology, University of Mississippi Medical Center, Jackson, MS.

#384 **STATUS OF SOME ENZYMES INVOLVED IN POLYAMINE METABOLISM DURING CHLORDECONE (CD)-INDUCED POTENTIATION OF CCL_4 HEPATOTOXICITY.** S B Rao, R A Young and H M Mehendale, University of Mississippi Medical Center, Department of Pharmacology and Toxicology, Jackson, MS.

#385 **BIOCHEMICAL EFFECTS OF THREE CARCINOGENIC CHLORINATED METHANES IN RAT LIVER.** K T Kitchin and J L Brown. Health Effects Research Laboratory, US EPA, Research Triangle Park, NC.

#386 **MONOCHLOROACETATE (MCA) INCREASES CHLOROFORM ($CHCL_3$) AND VINYLIDENE CHLORIDE (VDC) TOXICITIES.** M E Davis and W O Berndt. West Virginia Univ Medical Center, Morgantown, WV and Univ of Nebraska Medical Center, Omaha, NE

#387 **DIFFERENTIAL POTENCY OF POLYCHLORINATED BIPHENYLCONGENERS ON CYTOCHROMES P-450 AND ACCUMULATION OF UROPORPHYRIN IN CHICK EMBRYO HEPATOCYTES.** S I Shedlofsky, L E Rodman, L W Robertson, and A T Swim. VA Hosp. & Grad. Ctr. for Toxicology, University of Kentucky, Lexington, KY.

#388 **CHIRAL EFFECTS IN THE INDUCTION OF DRUG-METABOLIZING ENZYMES USING SYNTHETIC ATROPISOMERS OF POLYCHLORINATED BIPHENYLS.** M Puttmann, A Mannschreck, and L W Robertson. Graduate Center for Toxicology, University of Kentucky, Lexington, KY and Department of Organic Chemistry, University of Regensburg, Regensburg FRG.

#389 **A UNIQUE APPROACH TO THE SYNTHESIS OF 2,3,4,5-SUBSTITUTED POLYBROMINATED BIPHENYLS (PBBs): QUANTITATION IN FIREMASTER FF-1 AND FIREMASTER BP-6.** G Kubiczak, F Oesch, and L W Robertson. Graduate Center for Toxicology, University of Kentucky, Lexington, KY and Institute of Toxicology, University of Mainz, Mainz FRG.

#390 **TERATOGENICITY OF 2,3,4,7,8-PENTACHLORODIBENZOFURAN(F-PeCDF) IN F344 RATS.** L A Couture, M W Harris, and L S Birnbaum. NIEHS, RTP, NC and UNC, Chapel Hill, NC.

#391 **IMMUNOTOXICITY OF POLYCHLORINATED DIBENZOFURANS: STRUCTURE-ACTIVITY RELATIONSHIPS AND INTERACTIVE EFFECTS.** D Davis and S Safe, Department of Veterinary Medicine, Texas A&M University, College Station, TX.

#392 **TOXICITY OF PERFLUORODECANOIC ACID (PFDA) IS UNLIKE THAT OF TCDD.** D W Brewster, M W Harris and L S Birnbaum. NIEHS, Research Tri. Pk., NC.

#393 **TERATOLOGIC EVALUATION OF PERFLUORODECANOIC ACID (PFDA) IN C57BL/6N MICE.** M W Harris and L S Birnbaum, Systemic Toxicology Branch, NIEHS, RTP, NC.

#394 **DIFFERENTIAL EFFECTS OF DIETARY SELENIUM ON GLUTATHIONE-DEPENDENT ENZYME ACTIVITIES IN RATS TREATED WITH PEROXISOME PROLIFERATORS.** L C Chen, T Borges, L W Robertson, H P Glauert and C K Chow. Graduate Center for Toxicology and Department of Nutrition & Food Science, University of Kentucky, Lexington, KY.

#395 **EFFECTS OF CIPROFIBRATE AND PERFLUORODECANOIC ACID ON LIPID METABOLISM AND GROWTH OF MALE SPRAGUE-DAWLEY RATS FED 2 LEVELS OF SELENIUM.** T Borges, L C Chen, L W Robertson, C K Chow, and H P Glauert. Graduate Center for Toxicology and Department of Nutrition & Food Science, University of Kentucky, Lexington, KY

#396 **SPECIES DIFFERENCES IN RENAL NECROSIS AND DNA DAMAGE, DISTRIBUTION AND METABOLISM OF 1,2-DIBROMO-3-CHLOROPROPANE (DBCP).** E J Soderlund*, M Lag*, J G Omichinski*, J A Holme*, G Brunborg*, S D Nelson**, and E Dybing*. Natl. Inst. Publ. Hlth., Oslo, Norway* and Univ. Washington, Dept. Med. Chem., Seattle, WA**.

#397 **SUBACUTE AND SUBCHRONIC TOXICOLOGICAL RESPONSES OF RATS AFTER ORAL EXPOSURE TO CHLOROPICRIN (CP).** L W Condie, M Robinson, and B A Merrich. USEPA, Health Effects Research Laboratory, Cincinnati, OH.

#398 **MORPHOMETRIC ANALYSIS AND STRENGTH DETERMINATION OF OSTEOSCLEROTIC BONE RESULTING FROM HEXACHLOROBENZENE (HCB) EXPOSURE.** J E Andrews[1] and W E Donaldson[2]. [1]U.S.E.P.A., HERL, RTP, NC; [2]NCSU, Toxicology Program, Raleigh, NC.

#399 **1,3-DICHLOROPROPANONE REDUCES CARDIAC OUTPUT.** R D Laurie and T K Wessendarp. USEPA, HERL, Cincinnati, OH. Sponsor: L W Condie.

#400 **THE INTERACTION OF HALOACETONITRILES (HAN) WITH GLUTATHIONE AND GLUTATHIONE-S-TRANSFERASE (GSH-T).** E L C Lin and C W Guion. U.S. EPA, HERL, Cincinnati, OH. Sponsor: T V Reddy.

#401 **DETERMINATION OF THE SUBCHRONIC ORAL TOXICITY OF HALOCARBON 27-S OIL.** E R Kinkead[1], B T Culpepper[1], S S Henry[1], R S Kutzman[1], J F Wyman[2], R H Bruner[2]. [1]Northrop Services, Inc., Dayton, OH, [2]NMRI/TD, Wright Patterson Air Force Base, OH.

WEDNESDAY MORNING, FEBRUARY 17
CHANTILLY BALLROOM

POSTER SESSION: GENOTOXICOLOGY/MUTAGENESIS

Chairperson: A P Li, Monsanto Company, St. Louis, MO

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

#402 **LOCUS AND SPECIES SPECIFICITY IN MUTAGENESIS.** W Caspary[1], R Langenbach[1], D McGregor[2], B Myhr[3], A Mitchell[4], B Penman[5], C Crespi[5]. [1]NIEHS, Research Triangle Park, NC, [2]IRI, Musselburgh, Scotland, [3]LBI, Kensington, MD, [4]SRI, Menlo Park, CA, and [5]Gentest, Woburn, MA. Sponsor: J R Bucher.

#403 **THE PREDICTIVE CAPABILITY OF THE *IN VITRO* UDS AND *IN VIVO* RODENT HEPATOCYTE UDS AND SDS ASSAYS FOR RODENT HEPATOCARCINOGENS.** J W Spalding[1], D A Casciano[2], and J C Mirsalis[3]. [1]NIEHS, Research Triangle Park, NC, [2]NCTR, Jefferson, AR, and [3]SRI International, Menlo Park, CA. Sponsor: J K Dunnick.

#404 **HUMAN CARCINOGENS: DETECTION OF GENETIC TOXICITY.** M D Shelby, NIEHS, Research Triangle Park, NC. Sponsor: J H Mennear.

#405 **EXCRETION OF MUTAGENS BY GREENHOUSE WORKERS FOLLOWING EXPOSURE TO PESTICIDES** B S Shane, J M Scarlett Krantz, W S Reid and D J Lisk, Louisiana State University, Baton Rouge, LA and Cornell University, Ithaca, NY. Sponsor: C R Short.

#406 **STRUCTURE-ACTIVITY RELATIONSHIPS OF PYRROLIZIDINE ALKALOID INDUCED GENOTOXICITY.** J R Hincks, H Y Kim, H J Segall and R A Coulombe, Jr. Graduate Programs in Toxicology and Molecular Biology and Biochemistry,Departments of Veterinary Sciences, Utah State University, Logan, UT, and Pharmacology and Toxicology, School of Veterinary Medicine, University of California, Davis, CA.

#407 **LACK OF CORRELATION BETWEEN THE DEBRISOQUINE POLYMORPHISM AND AFLATOXIN B_1 (AFB_1) GENOTOXICITY.** C A McQueen, B M Way and G M Williams. American Health Foundation, Valhalla, NY.

#408 **PARAMETERS OF HYDROXYL FREE RADICAL MEDIATED DNA DAMAGE.** J E Schneider, M M Browning, J J Watson, and R A Floyd, Oklahoma Medical Research Foundation, Oklahoma City, OK.

#409 **HYDROXLY FREE RADICAL MEDIATED FORMATION OF 8-HYDROXYGUANINE IN ISOLATED DNA.** R A Floyd[1], M S West[1], K L Eneff[1], W E Hogsett[2], and D T Tingey[2], Oklahoma Medical Research Foundation[1], Oklahoma City, OK. and Environmental Research Laboratory, U.S.E.P.A., Corvallis, OR.

#410 **THE GENOTOXIC POTENTIAL OF CONDENSATE FROM A CIGARETTE WHICH DOES NOT BURN TOBACCO.** D J Doolittle, G T Burger, A W Hayes and C K Lee. R.J. Reynolds Tobacco Co, Winston-Salem, NC.

#411 **THE GENOTOXIC ACTIVITY OF GLYCEROL IN AN *IN VITRO* TEST BATTERY.** C K Lee, G T Burger, A W Hayes, and D J Doolittle. R.J. Reynolds Tobacco Co, Winston-Salem, NC.

#412 **A STUDY ON THE MUTAGENICITY OF LOW TAR CIGARETTE SMOKE.** O T Chortyk, J L Baker, and W J Chamberlain. Tobacco Quality and Safety Research Unit, USDA, Athens, GA. Sponsor: W P Norred.

#413 **GENOTOXICITY STUDIES OF TETRANDRINE.** T Ong, J D Stewart, C H Lu, H-X Jian, and W-Z Whong. Division of Respiratory Disease Studies, NIOSH, Morgantown, WV. Sponsor: V Castranova

#414 **MUTAGENICITY OF AZIDOALANINE: POSSIBLE ROLE OF TRANSAMINATION.** J M LaVelle, J B Mangold, M R Mischke, Toxicology Program, Section of Pharmacology and Toxicology and Section of Medicinal Chemistry, School of Pharmacy, University of Connecticut, Storrs, CT.

#415 **QUANTITATION OF UNSCHEDULED DNA SYNTHESIS (UDS) IN HEPATOCYTES FROM RATS TREATED WITH THE PEROXISOME PROLIFERATOR WY-14,643 (WY).** R C Cattley, T Smith-Oliver, B E Butterworth, and J A Popp, CIIT, RTP, NC. Sponsor: E Gross-Bermudez.

#416 **SYNTHESES OF N-OXIDIZED DERIVATIVES OF 4,4'-METHYLENEBIS(2-CHLOROANILINE) (MBOCA) AND THEIR DIRECT MUTAGENICITIES TOWARD S. TYPHIMURIUM TA98 AND TA100.** B I Kuslikis, T H Chen and W E Braselton. Dept. of Pharmacology and Toxicology, Michigan State Univ., East Lansing, MI. Sponsor: W D Atchison.

#417 **SISTER CHROMATID EXCHANGE IN EPILEPTIC PATIENTS ON ANTICONVULSANT THERAPY.** V B Winge, B Schaumann*, V F Garry. University of Minnesota, Environmental Pathology Laboratory, Minneapolis, MN. *Veterans Administration Medical Center, Neurology Service, Minneapolis, MN.

#418 **A FILTER BINDING ASSAY TO DETECT CHROMIUM-INDUCED DNA-PROTEIN CROSSLINKS IN ISOLATED NUCLEI.** T P Coogan and M Costa. Institute of Environmental Medicine, New York University Medical Center, Tuxedo, NY.

#419 **INDUCTION OF ANEUPLOIDY BY Ni(II) AND Cr(VI) IN A HUMAN/MOUSE HYBRID CELL SYSTEM.** K Conway, [1]R S Athwal and M Costa. Inst. of Environmental Medicine, NYU Medical Ctr., Tuxedo, NY and [1]Dept. of Microbiology, NJ Medicla School, Newark, NJ.

WEDNESDAY NOON, FEBRUARY 17
12:00 noon-1:00 p.m.
TERRACE BALLROOM

THIRD ANNUAL BURROUGHS WELCOME TOXICOLOGY SCHOLAR AWARD LECTURE

F P Guengerich, Vanderbilt University, Nashville, TN
Chairperson: T S Miya, University of North Carolina, Chapel Hill, NC

WEDNESDAY AFTERNOON, FEBRUARY 17
1:30 pm - 3:30 pm
MONET BALLROOM

SYMPOSIUM: THE IMPORTANCE OF COMBINED EXPOSURES IN INHALATION TOXICOLOGY

Sponsored by the SOT Inhalation Specialty Section

Chairpersons: R F Henderson, Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM; R B Schlesinger, New York University Medical Center, New York, NY

Experimental Problems and Strategies in Assessing Effects of Exposures to Mixtures. J Doull, University of Kansas Medical Center, Kansas City, KS

Interaction Between Radiation and Chemicals in the Induction of Lung Cancer. A Kennedy, Harvard School of Public Health, Boston, MA

Influence of Particulate Matter on the Biological Fate of Inhaled Organic Chemicals. J Bond, Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM

Toxic Interactions Between Inorganic Gases and Particles. J A Last, University of California at Davis, Davis, CA

WEDNESDAY AFTERNOON, FEBRUARY 17
1:30 p.m.-3:30 p.m.
METROPOLITAN BALLROOM

SYMPOSIUM: THE PHYSIOLOGY AND TOXICOLOGY OF THE KIDNEY IN VITRO

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

Review of Normal Renal Functional Anatomy. C H Nadolney, U.S. Environmental Protection Agency, Washington, DC

Primary Cultures of Kidney Epithelial Cells in Hormonally Defined Medium. M L Taub, National Institutes of Health, Rockville, MD

A Renal Cell Culture Model for Cadmium (CD) Nephrotoxicity. D A Sens, Medical University of South Carolina, Charleston, SC

The Application of Renal Cells in Culture in Studying Drug-Induced Nephrotoxicity. P. D. Williams, Lilly Research Laboratories, Greenfield, IN

Proximal Tubule Cells in Primary Culture as an *In Vitro* Model for Studying Nephrotoxicity. P J Kostyniak, State University of New York at Buffalo, Buffalo, NY

WEDNESDAY AFTERNOON, FEBRUARY 17
1:30 p.m.-3:30 p.m.
GOVERNORS LECTURE HALL

PLATFORM SESSION: MOLECULAR/CELLULAR TOXICOLOGY

Chairpersons: J H Dean, CIIT, Research Triangle Park, NC
E Faustman, University of Washington, Seattle, WA

#420 1:30 **EFFECTS OF AMITRIPTYLINE ON CALCIUM UPTAKE AND HIGH ENERGY PHOSPHATES IN PRIMARY MYOCARDIAL CELL CULTURES.** D Acosta, Y Park, *J Bradlaw, and A A Welder. University of Texas College of Pharmacy, Austin, TX and *Food and Drug Administration, Washington, DC.

#421 1:45 **STUDIES ON THE MECHANISM OF PSORALEN INDUCED PHOTOTOXICITY USING HUMAN EPIDERMAL A431 CELLS.** F Mermelstein, M A Gallo, and J D Laskin, UMDNJ-Robert W Johnson Medical School, Piscataway, NJ.

#422 2:00 **THE PSORALEN RECEPTOR AS A MEDIATOR OF CHEMICAL PHOTOTOXICITY** J D Laskin, E J Yurkow and M A Gallo, UMDNJ-Robert W Johnson Medical School, Piscataway, NJ.

#423 2:15 **ALLYLAMINE (AAM)-INDUCED ALTERATIONS IN THE PHOSPHOINOSITIDE/INOSITOL PHOSPHATE PROFILE OF CULTURED AORTIC SMOOTH MUSCLE CELLS.** L R Cox, S K Murphy, and K Ramos*. Philadelpha College of Pharmacy & Science, Phila, PA and *Texas Tech University Health Sciences Center, Lubbock, TX.

#424 2:30 **IS LIVER ENDONUCLEASE ACTIVITY STIMULATED BY ELEVATED CYTOSOLIC Ca^{++} INDUCED BY HALOGENATED HYDROCARBONS? II. *IN VITRO* STUDIES.** R M Long, D R Schoenberg, and L Moore, Dept. of Pharmacology, USUHS, Bethesda, MD.

#425 2:45 **FORMATION OF CARBON DIOXIDE FREE RADICAL BY LIVER MITOCHONDRIA FROM KREB CYCLE INTERMEDIATES WHEN HYDRALAZINE IS PRESENT.** P K Wong, J L Poyer, C M DuBose, and R A Floyd, Oklahoma Medical Research Foundation, Oklahoma City, OK.

#426 3:00 **FORMATION OF FREE RADICAL PRODUCTS FROM HYDRALAZINE BY RED BLOOD CELLS AND OXYHEMOGLOBIN.** J L Poyer, C M DuBose, and R A Floyd, Oklahoma Medical Research Foundation, Oklahoma City, OK.

#427 3:15 **6-METHYL-1,3,8-TRICHLORODIBENZOFURAN (MCDF) AND RELATED ANALOGS AS 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD) ANTAGONISTS: STRUCTURE-ACTIVITY RELATIONSHIPS.** B Astroff and S Safe, Department of Veterinary Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M University, College Station, TX.

WEDNESDAY AFTERNOON, FEBRUARY 17
1:30 p.m.-3:45 p.m.
SENATORS LECTURE HALL

PLATFORM SESSION: CARCINOGENESIS

Chairpersons: A Sivak, Arthur D. Little, Inc., Cambridge, MA
P T Thomas, IIT Research Institute, Chicago, IL

#428 1:30 **CHRONIC ORAL TOXICITY/CARCINOGENICITY STUDY OF FORMALDEHYDE IN RATS.** J J Clary, H P Til, R A Woutersen, V M H Hollanders, and V J Feron. Hoechst Celanese Corporation, Somerville, NJ. TNO-CIVO Toxicology and Nutrition Institute. Zeist. The Netherlands.

#429 1:45 **NASAL TUMOURS AND DAMAGE TO THE OLFACTORY EPITHELIUM IN FORMALDEHYDE-EXPOSED RATS WITH A SEVERELY INJURED NASAL MUCOSA.** V J Feron, R A Woutersen, A van Garderen-Hoetmer, J B Bruijntjes and A Zwart. TNO-CIVO Toxicology and Nutrition Institute, Zeist, The Netherlands

#430 2:00 **EARLY CELL PROLIFERATIVE AND CYTOTOXIC EFFECTS OF ORAL PHENACETIN ON RAT NASAL MUCOSA.** M S Bogdanffy, T J Mazaika, and W J Fasano. E I du Pont de Nemours & Co, Inc, Haskell Laboratory for Toxicology and Industrial Medicine, Newark, DE.

#431 2:15 **TISSUE HYDROXYLATION OF METHYL-n-AMYLNITROSAMINE (MNAN) IN NEONATAL TO ADULT RATS AND HAMSTERS.** S S Mirvish, C Ji, and S Rosinsky. Eppley Inst Res Cancer, Omaha, NE.

#432 2:30 **RESIDENCE TIME AND TUMOR-INITIATING ACTIVITY OF BENZO[A]PYRENE AND A COMPLEX MIXTURE.** D D Mahlum. Battelle, Pacific Northwest Laboratory, Richland, WA.

#433 2:45 **FAT, VITAMIN A DEFICIENCY AND CALORIC INTAKE COLON CARCINOGENESIS.** P M Newberne, D Bueche, and T F Schrager. Mallory Institute of Pathology. Boston, MA

#434 3:00 **EFFECT OF HEATING OR THE PRESENCE OF VEGETABLES AND FRUIT IN HUMAN DIETS ON THE SPONTANEOUS TUMOR RATE IN RATS.** G M Alink[1], H A Kuiper[2], R B Beems[3], and J H Koeman[1]. [1]Department of Toxicology, Agricultural University, Wageningen, [2]Institute for Quality Control of Agricultural Products (RIKILT), Wageningen, [3]TNO-CIVO Toxicology and Nutrition Institute, Zeist, The Netherlands. Sponsor: V J Feron.

#435 3:15 **LONG TERM EFFECTS OF CLOFIBRATE TREATMENT IN THE PRIMATE (CALLITHRIX JACCHUS).** M J Tucker, J C Topham, A M Marsden ICI PIC Pharmaceuticals Div. Macclesfield U K

WEDNESDAY AFTERNOON, FEBRUARY 17
1:30 p.m.-3:45 p.m.
GRAND BALLROOM A

PLATFORM SESSION: AQUATIC/ENVIRONMENTAL TOXICOLOGY

Chairpersons: W H Benson, Northeast Louisiana University, Monroe, LA
J W Henck, Warner-Lambert/Park-Davis Co., Ann Arbor, MI

#436 1:30 **THE INFLUENCE OF HUMIC ACID ON TRACE METAL COMPLEXATION AND CHROMIUM SPECIATION.** R A Stackhouse and W H Benson, College of Pharmacy and Health Sciences, Northeast Louisiana University, Monroe, LA.

#437 1:45 **SEQUESTRATION OF ENVIRONMENTAL CADMIUM IN GILL AND LIVER CYTOSOLIC PROTEINS OF THE FRESHWATER TELEOST, LEPOMIS MACROCHIRUS.** C F Watson, K N Baer, and W H Benson, College of Pharmacy and Health Sciences, Northeast Louisiana University, Monroe, LA.

#438 2:00 **THE DISPOSITION OF URL-^{14}C-DICOFOL IN THE RING DOVE: THE QUESTION OF DDE AND EGGSHELL THINNING.** B A Narloch, S E Schwarzbach and L R Shull. Departments of Environmental Toxicology and of Avian Science, University of California, Davis, CA.

#439 2:15 **EFFECT OF REFERENCE HEPATOTOXINS UPON HEPATIC INTEGRITY AND P-450 ISOZYMES IN THE WINTER FLOUNDER (PSEUDOPLEURONECTES AMERICANUS).** K M Kleinow[1], B F Droy[2], D R Buhler[3] and D E Williams[3]. Louisiana State University[1], Baton Rouge, LA., West Virginia University[2], Morgantown, WV., Oregon State University[3], Corvalis, OR. Sponsor: J J Lech.

#440 2:30 **INFLUENCE OF ENVIRONMENTAL FACTORS ON THE RADIATION EFFECTS IN GRANARY WEEVIL: CHANGES IN EPICUTICULAR HYDROCARBONS.** S Sriharan[1], T P Sriharan[2], S Sellers[3], W Bertsch[4] and R S Saini[5]. [1,2]Selma University, Selma, AL, [3,4]The University of Alabama, University, AL and [5]Tuskegee University, Tuskegee, AL, all in the USA. Sponsor: E V Ohanian.

#441 2:45 **BIOASSAY AND ANALYSIS OF PINE NEEDLES FOR POLYCHLORINATED DIBENZO-p-DIOXINS (PCDDs) AND DIBENZOFURANS (PCDFs): A NOVEL MONITORING SYSTEM FOR AIR POLLUTANTS.** T Zacharewski, S Safe, A Reischl, M Reissinger, H Thoma and O Hutzinger, Department of Veterinary Physiology and Pharmacology, College of Veterinary Medicine, Texas A & M University, College Station, TX, and Ecological Chemistry and Geochemistry, Unversity of Bayreuth, Bayreuth, FRG.

#442 3:00 **HEPATOTOXICITY OF ALLYL FORMATE AND EFFECT ON TROUT LIVER GLUTATHIONE.** B F Droy, M E Davis, and *D E Hinton. Dept. of Pharmacology and Toxicology, WVU School of Medicine, Morgantown, WV. *School of Vet. Medicine, University of Cal.-Davis.

#443 3:15 **CYTOTOXICITY OF FUSARIUM MONILIFORME CONTAMINATED CORN.** W P Norred, C W Bacon, J K Porter and R D Plattner, Richard B. Russell Agricultural Research Center, ARS/USDA, Athens GA and Northern Regional Research Center, ARS/USDA, Peoria, IL

#444 3:30 **A CALIFORNIA PROGRAM FOR EVALUATION OF CHEMICAL CONTAMINATION OF FISH.** A M Fan, G A Pollock, and R J Jackson. Hazard Evaluation Section, Calif. Dept Health Services (CDHS), Berkeley, CA.

WEDNESDAY AFTERNOON, FEBRUARY 17
1:30 p.m.-3:45 p.m.
GRAND BALLROOM C

PLATFORM SESSION: BIOTRANSFORMATION II

Chairpersons: L S Birnbaum, NIEHS, Research Triangle Park, NC
P J Sabourin, Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM

#445 1:30 **A GAS PHASE TECHNIQUE FOR DETERMINING THE KINETIC CONSTANTS OF CHEMICAL METABOLISM IN THE RAT.** M L Gargas and M E Andersen, AAMRL/TH Wright-Patterson AFB, OH.

#446 1:45 **PHARMACOKINETIC DISTRIBUTION OF INTRATRACHEALLY ADMINISTERED MICROCRYSTALLINE AND GRAIN PARTICLE-ADSORBED AFLATOXIN B_1 IN THE RAT.** J M Huie, R A Coulombe, Jr., and R P Sharma Graduate Programs in Toxicology and Molecular Biology and Biochemistry, Department of Veterinary Sciences, Utah State University, Logan, UT.

#447 2:00 **WATER-SOLUBLE METABOLITES OF 2-AMINO-3-METHYLIMIDAZO-[4,5-F]QUINOLINE (IQ) AND 2-AMINO-3,4-DI-METHYLIMIDAZO[4,5-F]QUINOLINE (MeIQ).** J Alexander, J A Holme, G Becher, and H E Wallin, Dept. of Toxicology, National Institute of Public Health, Oslo, Norway. Sponsor: E Dybing

#448 2:15 **BLOOD CLEARANCE OF CYCLOPIAZONIC ACID IN MALE BROILER CHICKENS.** M E Wilson, W M Hagler, Jr, J M Cullen, and R J Cole. Department of Poultry Science, North Carolina State University, Raleigh, NC. Sponsor: W E Donaldson.

#449 2:30 **SPECIES-SPECIFIC OPTIC NEUROPATHY BY METHYLTHIOACETATE IN RABBITS.** D W Rosenberg, C M Cisson, Z A Wong. Chevron Environmental Health Center, Inc., Richmond, CA.

#450 2:45 **CHANGES IN MORPHINE PHARMACOKINETICS AFTER ETHANOL INDUCTION OF UDP-GLUCURONYLTRANSFERASES.** S Narayan, D J Kuntz, and G S Yost. Department of Pharmacology and Toxicology, University of Utah, Salt Lake City, UT.

#451 3:00 **SUBSTRATE SELECTIVITY OF PURIFIED ETHANOL-INDUCED UDP-GLUCURONYLTRANSFERASE FROM RABBIT HEPATIC MICROSOMES.** R M Hutabarat and G S Yost. Department of Pharmacology and Toxicology. University of Utah, Salt Lake City, UT.

#452 3:15 **CHARACTERIZATION OF GLUTATHIONE S-TRANSFERASE ACTIVITY TOWARD VARIOUS SUBSTRATES IN HUMAN MONONUCLEAR LEUKOCYTES.** J A Richards, D L Eaton, S K Hornung, A G Motulsky and B D Hammock, University of Washington, Seattle, WA and University of California-Davis, Davis, CA.

#453 3:30 **ANALYSIS AND SCREENING OF XENOBIOTIC MERCAPTURIC ACID CONJUGATES USING NEGATIVE IONIZATION AND TANDEM MASS SPECTROMETRY.** C K Winter, A D Jones*, and H J Segall, Department of Veterinary Pharmacology and Toxicology and *Facility for Advanced Instrumentation, University of California, Davis, CA.

WEDNESDAY AFTERNOON, FEBRUARY 17
CHANTILLY BALLROOM

POSTER SESSION: REPRODUCTIVE TOXICOLOGY/TERATOLOGY I

Chairperson: J C Lamb, IV, USEPA, Washington, DC

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

#454 **CHICK EMBRYO RETINA CELL CULTURE: TERATOGEN SCREEN AND MECHANISTIC PROBE.** G P Daston, J E Yonker, D Baines and J I Poynter, Miami Valley Laboratories, Procter & Gamble, Cincinnati, OH.

#455 **THE HYDRA ASSAY AS A PRESCREEN FOR TERATOGENIC MYCOTOXINS.** E E Smith, E A Maull, M A Taylor, B A Clement and T D Phillips. Veterinary Public Health, Texas A&M University, College Station, TX.

#456 **APPLICATION OF PREIMPLANTATION RODENT EMBRYO CULTURE SYSTEMS TO MONITOR THE ABORTICATIVE TOXICITY OF AFLATOXIN B1.** P C Mertes and T R Irvin. Lab of Toxicology, Veterinary Anatomy Department, Texas A&M, College Station, Texas, Sponsor: A C Ray

#457 **COMPARISON OF DYSMORPHOLOGY INDUCED *IN VITRO* BY TWO YOLK SAC ACTIVE TERATOGENS IN RAT.** F Elderkin, R Marlow and S J Freeman, SK&F Research Ltd., Welwyn, Herts, UK Sponsor: J B Hook

#458 **INHIBITION OF DNA SYNTHESIS IN WHOLE EMBRYO CULTURE BY METHOXYACETIC ACID (MAA) AND ATTENUATION OF THE EFFECTS BY ACETATE AND FORMATE.** F Welsch and DB Stedman, C.I.I.T., Research Triangle Park, NC.

#459 **ATTENUATION OF THE INCIDENCE OF 2-METHOXYETHANOL-INDUCED DIGIT MALFORMATIONS BY SARCOSINE.** C Mebus and F Welsch. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.

#460 ***IN VIVO* AND *IN VITRO* TOXICITY OF FOUR HALOGENATED DIPHENYL ETHERS.** B M Francis, S A Engl, and M Farage-Elawar. University of Illinois, Urbana, IL.

#461 **PLACENTAL TRANSFER OF FLUOXETINE IN THE RAT.** R C Pohland, T K Byrd, M Hamilton, and J R Koons. Lilly Research Laboratories, Greenfield, IN.

#462 **PHARMACOKINETIC MODELS FOR FETAL EXPOSURE TO DEVELOPMENTAL TOXICANTS.** A H Marcus, P Feder, D Hobson. Battelle Columbus Division, Research Triangle Park, NC and Columbus, OH.

#463 **MULTIPLE P450 ISOZYMES IN THE CONCEPTUS DURING EARLY ORGANOGENESIS.** H L Yang, M J Namkung and M R Juchau, Department of Pharmacology, University of Washington, Seattle, WA.

#464 **THE EFFECT OF EXPOSURE TO 14C-2,4,5,2',4',5'-HEXACHLOROBIPHENYL (6-CB) ON PLASMA TESTOSTERONE (T) IN NEONATAL MALE RATS.** P D Calvert, B J Ring and M J Vodicnik. Medical College of Wisconsin, Milwaukee, WI.

#465 **EFFECTS OF NEONATAL EXPOSURE TO AROCLOR 1254 ON ADULT RAT HEPATIC MICROSOMAL TESTOSTERONE METABOLISM.** M Kelley, J M Haake and S Safe, Department of Veterinary Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M University, College Station, TX and Reprod. Develop. Toxicol., Natl. Ctr. for Toxicol. Res., Jefferson, AR.

#466 **ETHYLENE GLYCOL MONOMETHYL ETHER (EGME) EFFECTS ON TESTIS LACTATE DEHYDROGENASE (LDH) AND SORBITOL DEHYDROGENASE (SDH) IN THE 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.

#467 **TESTICULAR XENOBIOTIC METABOLISM IN HUMANS.** K W DiBiasio, M H Silva, B D Hammock, and L R Shull. Depts. of Toxicology and Entomology, University of California, Davis, CA.

#468 **THE METABOLISM OF TRI-o-CRESYL PHOSPHATE (TOCP) BY RAT TESTIS.** S G Somkuti, R E Chapin[1], D M Lapadula, M A Othman, and M B Abou-Donia. Dept. of Pharmacology, Duke Univ. Med. Center, Durham, NC, and [1]Dev. and Reproductive Toxicology, NTP, NIEHS, NC.

#469 **CATIONIC MODULATION OF ADENYLATE CYCLASE (AC) ACTIVITY IN A HETEROGENOUS POPULATION OF MALE GERM CELLS (MGC).** L Beebe, K Pendino, R O Warwick Jr., and D A Barsotti. Philadelphia College of Pharmacy & Science, Phila., PA and A.T.S.D.R., Atlanta, GA.

#470 **LDH-C4: A SPECIFIC MARKER OF ACUTE-PHASE TESTICULAR DAMAGE.** S C J Reader, C Shingles and M D Stonard. ICI plc, Central Toxicolgy Laboratory, Macclesfield, Cheshire, U.K.

#471 **AUTOMATED SPERM ANALYSIS: EPICHLOROHYDRIN (ECH) A MODEL COMPOUND.** G P Toth[1], J A Stober[1], E J Read[2], H Zenick[3], M K Smith[1]. [1]HERL, USEPA, Cincinnati, OH, [2]Computer Sciences Corporation, Cincinnati, OH, [3]USEPA, Washington, DC.

#472 **SILICONE IMPLANTS IN THE RAT VAS DEFERENS.** D P Waller, A Martin, M Szarley, A R Nikurs, N A Nuzzo, and L J D Zaneveld, University of Illinois at Chicago, and Rush Presbyterian-St. Lukes Medical Center, Chicago, IL.

#473 **RESTRICTING MATING TRIALS ENHANCES THE DETECTION OF ETHOXYETHANOL (EE)-INDUCED FERTILITY IMPAIRMENT IN RATS.** E D Clegg and H Zenick, U.S. Environmental Protection Agency, Washington, DC

#474 **THE EVALUATION OF 3 MOUSE STRAINS IN THE CONTINUOUS BREEDING DESIGN (RACB) USING ETHYLENE GLYCOL MONOMETHYL ETHER (EGME).** D K Gulati*, E Hope*, L Barnes*, R Mounce*, R Morrissey[1], and R E Chapin[1]. *Environmental Health Research & Testing, Inc., Lexington, KY, and [1]National Toxicology Program (NTP), NIEHS, Research Triangle Park, NC.

#475 **REPRODUCTIVE TOXICITY IN MALE RATS FOLLOWING ORAL ADMINISTRATION OF CGS 15863.** G Batastini, R H Spaet, R N Infurna, E T Yau, and V M Traina, Research Dept., Pharmaceuticals Div., CIBA-GEIGY Corp., Summit, NJ.

#476 **TESTICULAR TOXICITY OF 2-METHOXYETHANOL APPLIED DERMALLY TO OCCLUDED AND NONOCCLUDED SITES IN MALE RATS.** M H Feuston, K R Bodnar, M J Belcak, S L Kerstetter, and C P Grink. Mobil Oil Corporation, Princeton, NJ.

#477 **ACRYLAMIDE (ACR)-INDUCED FERTILIZATION FAILURE IN RATS.** V Sublet[1], M K Smith,[2] and H Zenick,[2] Dept. of Environ. Hlth. Univ. of Cincinnati, Cincinnati, OH[1], U.S. EPA, Cincinnati, OH[2] and U.S. EPA, Washington, DC.[3]

#478 **DIACETOXYSCIRPENOL-INDUCED TESTICULAR INJURY IN F344 RATS.** M W Conner, B H Conner, L Wagonner-Pogue, A E Rogers. Boston Univ. School of Medicine, Boston, MA.

#479 **EVALUATION OF THE EFFECTS OF NIACIN AND ZINC SUPPLEMENTATION ON METHYLXANTHINE-INDUCED TESTICULAR ATROPHY IN RATS.** C A Shively, J L Apgar, N J Worley, and S M Tarka, Jr. Hershey Foods Corporation Technical Center, Hershey, PA.

#480 **CHARACTERIZATION OF AN *IN VITRO* MODEL TO ASSESS MALE GERM CELL (MGC) TOXICITY.** K Pendino, L Beebe, R O Warwick Jr., and D A Barsotti. Philadelphia College of Pharmacy & Science, Phila., PA, and A.T.S.D.R., Atlanta, GA.

#481 **GOSSYPOL INDUCED CHANGES IN ZINC CONTENT OF HAMSTER EPIDIDYMAL SPERMATOZOA.** Y Wang and D P Waller, University of Illinois at Chicago, Chicago, IL.

#482 **EFFECT OF LINURON ON THE BRAIN - PITUITARY - TESTICULAR REPRODUCTIVE AXIS IN THE RAT.** G L Rehnberg, J M Goldman, R L Cooper, J F Hein, W K McElroy, K C Booth, and L E Gray, Jr. USEPA, HERL, DCTD, RTP, NC. Sponsor: R W Chadwick

WEDNESDAY AFTERNOON, FEBRUARY 17
CHANTILLY BALLROOM

POSTER SESSION: DERMAL/OCULAR TOXICOLOGY

Chairperson: A Davidovich, Hoffmann-La Roche, Inc., Nutley, NJ.

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

#483 **SKIN ABSORPTION AS A ROUTE OF EXPOSURE FOR FUNGAL TOXINS.** B W Kemppainen, R T Riley, and J G Pace. Department of Pharmacal Sciences, School of Pharmacy, Auburn University, AL; USDA-ARS, Athens, GA; USAMRIID, Frederick, MD.

#484 ***IN VIVO* PERCUTANEOUS ABSORPTION OF 4 PESTICIDES, AS AFFECTED BY ANATOMIC REGIONS OF THE RAT.** L L Tromp, C Brownie, and F E Guthrie. Toxicology Program , N.C. State University, Raleigh, NC.

#485 **DERMAL ABSORPTION KINETICS OF NEAT AND AQUEOUS VOLATILE ORGANIC CHEMICALS.** D L Morgan, J R Tuschall, R S Kutzman, Northrop Services, Inc., RTP, NC, and D R Mattie, AAMRL/TH, WPAFB, OH.

#486 **ALKANE INDUCED EDEMA AND BARRIER DYSFUNCTION.** S J Moloney and J J Teal. Avon Products, Suffern, NY. Sponsor: J Chang.

#487 **UTILIZATION OF LANTHANUM TO DETECT CHANGES IN THE PERMEABILITY BARRIER OF RAT SKIN AFTER EXPOSURE TO SIX ORGANIC SOLVENTS.** C J Hixson, J N McDougal*, M R Chase, and D R Mattie. AAMRL/THT, Wright-Patterson AFB, OH, *EOARD, NY. Sponsor: M E Andersen.

#488 **EVALUATING PERCUTANEOUS ABSORPTION PROPERTIES OF A LIGHT PETROLEUM MIDDLE DISTILLATE IN MICE.** J J Yang, T A Roy, W Neil, A J Krueger. Mobil Environmental and Health Science Laboratory, Princeton, NJ. Sponsor: C Kommineni.

#489 **PERCUTANEOUS PENETRATION OF NICOTINE IN YOUNG AND ADULT RATS.** L L Hall, H L Fisher, M R Sumler*, and P V Shah*. U.S. EPA, *Northrop Services, Inc., Research Triangle Park, NC.

#490 **DERMAL ABSORPTION OF DISODIUM AND MONOSODIUM METHYLARSENATES (DSMA AND MSMA) IN YOUNG AND ADULT RATS.** S P Shrivastava, H L Fisher*, M R Sumler, P V Shah, and L L Hall*. Northrop Services, Inc., *US EPA Research Triangle Park, NC.

#491 **DERMAL AND TRANSDERMAL TOXICITY OF THE CALCIUM IONOPHORE, A23187.** R W Wannemacher, Jr., D L Bunner, and R E Dinterman. U.S. Army Medical Research Institute of Infectious Diseases, Fort Detrick, Frederick, MD.

#492 **DERMAL ABSORPTION OF POLYCHLORINATED DIBENZOFURANS (PCDFs) AND TCDD.** Y B Banks-Case, D W Brewster, and L S Birnbaum. NIEHS, Research Triangle Park, NC.

#493 **EVALUATING THE PERCUTANEOUS ABSORPTION OF POLYNUCLEAR AROMATICS USING *IN VITRO* TECHNIQUES AND STRUCTURE ACTIVITY RELATIONSHIPS.** T A Roy, W Neil, J J Yang, A M Starrett, A J Krueger. Mobil Environmental Health and Science Laboratory, Princeton, NJ. Sponsor: M A Mehlman.

#494 ***IN VIVO* AND *IN VITRO* SKIN ABSORPTION OF PCBs.** R C Wester, H I Maibach, D A W Bucks, J McMaster, M Mobayen, *R Sarason and *A Moore. Department of Dermatology, University of California at San Francisco, and *The California Primate Research Center at Davis, CA.

#495 **DESIGN OF CHEMICALS TO TEST PERCUTANEOUS ABSORPTION (PA) PARAMETERS.** D H Gould. US Environmental Protection Agency, Washington, DC.

#496 ***IN VITRO* PENETRATION OF PESTICIDES THROUGH HUMAN NEWBORN FORESKIN.** H Shehata-Karam, N A Monteiro-Riviere* and F E Guthrie. Toxicology Program, North Carolina State University, *North Carolina State University School of Veterinary Medicine, Raleigh, NC.

#497 **MAINTENANCE OF SKIN VIABILITY DURING *IN VITRO* PERCUTANEOUS ABSORPTION/METABOLISM STUDIES.** S W Collier, N M Sheikh, A Sakr, J L Lichtin, R F Stewart, R L Bronaugh, Division of Toxicology, FDA, Washington DC and University of Cincinnati, College of Pharmacy, Cincinnati, OH

#498 **ABSORPTION, DISTRIBUTION, AND ELIMINATION OF ^{14}C-BENZETHONIUM CHLORIDE (BTC) IN FISCHER 344 RATS AFTER IV ADMINISTRATION OR DERMAL APPLICATION.** J D Johnson, J W Chinn, M Heitmancik, W M Kluwe, A C Peters, and W C Eastin*. Battelle Columbus Division, Columbus, OH and *NIEHS, Research Triangle Park, NC.

#499 **SIGNIFICANT FIRST-PASS BIOACTIVATION OF PARATHION (P) DURING PERCUTANEOUS ABSORPTION IN THE ISOLATED PERFUSED PROCINE SKIN FLAP (IPPSF).** M P Carver, P E Levi, and J E Riviere. Toxicology Prog. & School of Vet. Med., NCSU, Raleigh, NC.

#500 **INTERSTRAIN AND SPECIES DIFFERENCES IN XENOBIOTIC METABOLIZING CAPACITY IN SKIN: EVIDENCE OF ENHANCED ACTIVITY IN SENCAR MICE.** J E Storm, R F Stewart, and R L Bronaugh. Div. of Toxicology, FDA, Washington, DC.

#501 **EFFECTS OF UVA IRRADIATION ON ACTIVE OXYGEN SCAVENGING ENZYMES IN DOG AND MOUSE BLOOD.** D G Robertson, D L Bailey, and R A Martin. Dept. Path. & Exp. Tox., Parke-Davis Pharm. Res. Div., Warner-Lambert Co., Ann Arbor, MI.

#502 **NINE-DAY REPEATED DOSE CUTANEOUS TOXICITY OF DIETHYLENE GLYCOL MONOHEXYL ETHER (DGHE) IN ALBINO RABBITS.** S W Frantz, M W Gill, J P Van Miller, P E Losco, C M Troup, and B Ballantyne. Bushy Run Research Center, Export, PA and Union Carbide Corporation, Danbury, CT.

#503 **DERMAL TOXICITY OF A HIGH BOILING (BP 250-450°C) COAL LIQUEFACTION PRODUCT IN THE RAT.** I. Chu[1], D C Villeneuve[1], M Cote[2], V Secours[1], R Oston[1], and V E Valli[3]. [1]Environmental Health Directorate,Ottawa, Ontario, [2]Department of Pharmacology, University of Montreal, Montreal, Quebec and [3]Biopath Analysts Ltd, Guelph, Ontario.

#504 **A 13-WEEK SKIN IRRITATION STUDY WITH ACRYLIC ACID IN 3 STRAINS OF MICE.** A S Tegeris, M F Balmer, F M Garner, W C Thomas, S R Murphy, J E McLaughlin, J L Seymour; Tegeris Laboratories, Inc., Laurel, MD and Basic Acrylic Monomer Manufacturers Association, Washington, DC.

#505 **COMPARATIVE EFFECTS OF TRIETHANOLAMINE (TEA) AND DIETHANOLAMINE (DEA) IN SHORT-TERM DERMAL STUDIES.** R Melnick*, M Heitmancik, L Mezza, M Ryan, R Persing, and A Peters. Battelle Columbus Division, Columbus, OH and *NIEHS, Research Triangle Park, NC.

#506 **SHORT-TERM TOXICOLOGY STUDIES OF THE MONOMER OF 1,2-DIHYDRO-2,2,4-TRIMETHYLQUINOLINE IN F344/N RATS AND B6C3F$_1$ MICE (SKIN PAINT).** J E French; *A G Manus; *J Heath; *R Thompson; J J Collins; NIEHS, RTP, NC and *SORI, Birmingham, AL Sponsor: J Bucher.

#507 **EVALUATION OF MODIFIED METHODS FOR DETERMINING SKIN IRRITATION IN ANIMALS AND HUMANS.** G A Nixon, E A Bannan, T W Gaynor, D H Johnston and J F Griffith. The Proctor & Gamble Co, Miami Valley Laboratories, Cincinnati, OH.

#508 **EFFECT OF VITAMIN A ACETATE ON IRRITANT INFLAMMATORY RESPONSES IN MICE.** E Patrick, *S Volsen and *K Miller, Dermatology Department, University of California, San Francisco, CA and *Immunology Department, British Industrial Biological Research Association, Carshalton, Surrey, Great Britain. Sponsor: H I Maibach.

#509 **MODIFICATION OF THE NON-IMMUNOLOGIC CONTACT URTICARIA PREDICTIVE ASSAY IN GUINEA PIGS.** H I Maibach and E Patrick, Department of Dermatology, University of California, San Francisco, CA.

#510 **CORRELATION OF AN *IN VITRO* KERATINOCYTE SYSTEM WITH THE RABBIT PRIMARY DERMAL IRRITATION MODEL.** K C Norbury, W J Powers, and P Tischio Ortho Pharmaceutical Corp. Research Laboratories of Raritan, NJ.

#511 **CONTACT SENSITIZATION FOLLOWING APPLICATION OF A PYRIDOSTIGMINE BROMIDE TRANSDERMAL DRUG DELIVERY SYSTEM.** G L Harris, J L Allen, and H I Maibach. Pathology/Toxicology Department, Riker Labs/3M Co. St. Paul, MN and University of California, San Francisco, CA.

#512 **GUINEA PIG SKIN SENSITIZATION TESTING OF FIVE CHEMICALS USING THE MAXIMIZATION AND CLOSED PATCH TESTS.** G W Trimmer and J J Freeman. Exxon Biomedical Sciences, Inc., East Millstone, NJ

#513 **HAIRLESS GUINEA PIGS: USE IN PHOTOTOXICITY TESTING.** F L Fort and R V Kotz. Abbott Laboratories, Abbott Park, IL.

#514 **A COMPARATIVE METHOD OF PRESENTING DRAIZE EYE IRRITATION SCORES.** G A Smith, C E Dick. S C Johnson & Son, Racine, WI.

#515 **A MODIFIED CHORIOALLANTOIC MEMBRANE (CAM) ASSAY: A PRACTICAL ALTERNATIVE TO THE DRAIZE EYE TEST.** D M Bagley, P Y Rizvi, B M Kong, S J De Salva, Colgate-Palmolive Co., Piscataway, NJ.

#516 **REDUCTION IN THE NUMBER OF RABBITS USED TO ASSIGN EYE IRRITATION CLASSIFICATIONS WITH CORNEAL PACHYMETRY.** R L Morgan, S S Sorenson and T R Castles. Stauffer Chemical Co. Toxicology Department, Richmond, CA.

#517 **EFFECTS OF *BETA*-ADRENOCEPTOR AGONISTS ON THE RETINA OF RATS AND HAMSTERS.** G R Lankas and H L Allen. Merck Sharp & Dohme Research Laboratories, West Point, PA. Sponsor: R T Robertson.

#518 **MULTISPECIES COMPARISON OF CORNEAL LESIONS PRODUCED DURING A 2-WEEK VAPOR EXPOSURE TO PROPYLENE GLYCOL MONOPROPYL ETHER (PGPE).** D R Klonne, D E Dodd, B Ballantyne, and P E Losco. Bushy Run Research Center/Union Carbide Corp., Export, PA.

#519 **OCULAR TOXICITY OF SYSTEMIC EXPOSURE TO BUTYL 2-CHLOROETHYL SULFIDE (BS).** G J Klain, S T Schuschereba, L M McKinney, and S T Omaye, Letterman Army Inst. of Res., San Francisco, CA.

#520 **THE TOXICOLOGY AND PATHOLOGY OF 5-AMINOSALICYLIC ACID KERATOCONJUNCTIVITIS SICCA IN THE BEAGLE DOG.** E C Joseph, G R Betton, K C Barnett and J M Faccini. SK&F Research Ltd. Welwyn, Herts, U.K; The Animal Health Trust, Kennett, Newmarket, Suffolk, U.K, Les Oulches, Blere, France. Sponsor: J B Hook.

POSTER SESSION: CARDIOVASCULAR/RENAL

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

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

#521 ***IN VITRO* ALTERATION OF EPOXIDE HYDROLASE (EH) ACTIVITY BY METABOLITES OF THE RENAL CYSTOGEN 2-AMINO-4,5-DIPHENYLTHIAZOLE (DPT).** J T Hjelle, T Guenthner, R Whalen, G R Flouret, and F A Carone. Univ Illinois College of Medicine at Peoria and Chicago, IL and Northwestern Univ Medical School, Chicago, IL. Sponsor: S M Lasley.

#522 **EFFECT OF DEFEROXAMINE ON ANOXIA-INDUCED INJURY ON RAT RENAL SLICES.** W Hewilt and A Silver. Smith Kline & French Labs, King of Prussia, PA.

#523 **RENAL CYSTEINE CONJUGATE *BETA*-LYASE (*BETA*-LYASE)-MEDIATED TOXICITY STUDIED WITH PRIMARY CULTURES OF HUMAN PROXIMAL TUBULAR CELLS (HPTC).** J C Chen, J L Stevens, and T W Jones. Univ. of MD School of Medicine, Balto., MD and W. Alton Jones Cell Science Center, Lake Placid, NY.

#524 **EFFECT OF OXYGEN TENSION AND ANTIOXIDANTS ON SUSPENSIONS OF ISOLATED RAT RENAL PROXIMAL TUBULES (RPT).** J E Dabbs, C E Green, K L Allen, C A Tyson, and *E J Rauckman. SRI International, Menlo Park, CA and *National Toxicology Program, NIEHS, Research Triangle Park, NC.

#525 **A RAT KIDNEY PROXIMAL TUBULE CELL (RPTC) CULTURE MODEL FOR CHRONIC RENAL TOXICITY STUDIES.** P B Hatzinger and J L Stevens. W Alton Jones Cell Science Center, Lake Placid, NY. Sponsor: T W Jones.

#525A **STRUCTURE ACTIVITY RELATIONSHIP OF CYSTEINE CONJUGATE TOXICITY IN RAT KIDNEY MITOCHONDRIA.** J L Stevens and P J Hayden. W Alton Jones Cell Science Center, Lake Placid, NY. Sponsor: T W Jones.

#526 **OCHRATOXIN A (OTA) TRANSPORT IN RENAL PLASMA MEMBRANE VESICLES.** P P Sokol, P D Holohan, C R Ross, SUNY-Health Sci. Ctr., Syracuse, NY. Sponsor: P D Williams.

#527 **ACUTE, SUBACUTE, AND CHRONIC ORAL TOXICITY STUDIES WITH BENAZEPRIL, A NOVEL ANGIOTENSIN CONVERTING ENZYME (ACE) INHIBITOR.** J Hazelette, H Han Hsu, J Green, and V Traina. Res. Dept., Pharma. Div., CIBA-GEIGY Corp., Summit, NJ.

#528 **NEPHROTOXICITY OF D- AND L-ARGININE IN RATS.** J M Andress, C P Chengelis, S C Gad, C D Port, and M S Tegtmeyer. G.D. Searle & Co., Skokie, IL.

#529 **THE TOXICITY OF 2-METHYL-1,4-NAPHTHOQUINONE (M) AND TWO THIOETHER CONJUGATES.** P C Brown and T W Jones. Department of Pathology, University of Maryland School of Medicine, Baltimore, MD.

#530 **STUDIES OF METHYLCYCLOHEXANE INDUCED NEPHROTOXICITY AND METABOLISM IN MALE FISCHER 344 RATS.** M J Parnell, G M Henningsen, K O Yu, M P Serve, and G M McDonald. Harry G. Armstrong Aerospace Medical Research Laboratory, Toxic Hazards Division, Wright-Patterson AFB, OH.

#531 **THE INTERACTION OF SODIUM THIOSULFATE ($Na_2S_2O_3$) AND 1,4-(N,N-DIMETHYL) TETRASULFIDE WITH GUINEA PIG LIVER RHODANESE.** S I Baskin and S D Kirby. US Army Med. Res. Inst. Chem. Defense, APG, MD.

#532 **STUDIES OF *IN VIVO* NEPHROTOXIC POTENTIAL OF CYSTEINE CONJUGATES AND MERCAPTURATES OF STYRENE AND BROMOBENZENE.** S Chakrabarti and A Malick. Med.trav.hyg.mil., Faculte de medecine, Universite de Montreal, Montreal, Quebec, Canada.

#533 **INABILITY OF PHENOBARBITAL TO MODIFY GENTAMICIN-INDUCED NEPHROTOXICITY IN RAT.** S Kacew. Dept. of Pharmacology, Univ. of Ottawa, Ottawa, Ontario.

#534 **INFLUENCE OF DECREASED RENAL MASS ON GENTAMICIN (G) NEPHROTOXICITY: ULTRASTRUCTURAL MORPHOMETRIC AND FUNCTIONAL STUDIES IN DOGS.** D L Frazier, B Fowler and J E Riviere. Univ. Tn. College Vet. Med., Knoxville, TN; NIEHS, Research Triagle Park, NC; North Carolina State Univ. Sch. Vet. Med.; Raleigh, NC.

#535 **ANALYSIS OF 2,4,4-TRIMETHYL-2-PENTANOL (TMP-OH) BINDING TO MALE RAT KIDNEY *ALPHA*-2U-GLOBULIN (*ALPHA*2U) AND OTHER PROTEINS.** S J Borghoff, J Strasser, Jr., M Charbonneau, and J A Swenberg. CIIT, Research Triangle Park, NC.

#536 **COMPARISON OF *ALPHA*-2U-GLOBULIN ISOLATED FROM THE URINE OF ALBINO AND NON-ALBINO MALE RATS.** T E Eurell, M J Parnell*, and G M Henningsen**. Dept. of Vet. Biosci., Univ. of IL., *AAMRL, Wright-Patterson AFB, OH., and **NIOSHDBBS, Cincinnati, OH.

#537 ***IN VITRO* HYDROLYSIS OF [14C]-*ALPHA*-2U-GLOBULIN (*ALPHA*2U) ISOLATED FROM MALE RAT KIDNEY.** M Charbonneau, J Strasser, S J Borghoff and J A Swenberg. CIIT, Research Triangle Park, NC.

#538 **LOCALIZATION OF *ALPHA*-2U-GLOBULIN WITHIN RENAL PROTEIN DROPLETS OF MALE RATS EXPOSED TO 2,2,4-TRIMETHYLPENTANE (TMP).** V L Burnett, B G Short, J A Swenberg, Chemical Industry Institute of Toxicology, Research Triangle Park, NC.

#539 **FUEL HYDROCARBON-INDUCED HYALINE DROPLET (HD) NEPHROPATHY IN MALE RATS DURING AGING.** C V R Murty[1], M J Olson[2], B D Garg[2], and A K Roy[1]. [1]Dept. of Biol. Sci., Oakland U., Rochester, MI, [2]Biomed. Sci. Dept., GM Res. Labs., Warren, MI. Sponsor: E W Lee

#540 **POSSIBLE INHIBITION OF RENAL PHAGOLYSOSOMAL (PL) PROTEOLYSIS BY GASOLINE IN MALE RAT: EVIDENCE FROM IMMUNOELECTRON MICROSCOPIC LOCALIZATION OF *ALPHA*-2U-GLOBULIN.** M J Olson[1], M A Mancini[2], B D Garg[1], and A K Roy[2]. [1]Biomed. Sci. Dept., GM Res. Labs., Warren, MI. [2]Dept. of Biol. Sci., Oakland U., Rochester, MI. Sponsor: E W Lee

#541 **RENAL PROTEIN DROPLET FORMATION IN MALE FISCHER 344 RATS AFTER ISOPHORONE (IPH) TREATMENT.** J Strasser, Jr., M Charbonneau, S J Borghoff, M J Turner and J A Swenberg. CIIT, Research Triangle Park, NC.

#542 **A POSSIBLE THRESHOLD IN THE TOXICITY OF THE PYRROLIZIDINE ALKALOID, MONOCROTALINE.** P J Shubat and R J Huxtable, Dept. of Pharmacology Univ. of AZ, Tucson, AZ Sponsor: A J Gandolfi

#543 **EFFECTS OF ERYTHROSIN B(EB) ON MYOCARDIAL MYOCYTE REAGGREGATE CULTURES (MMR)** L K Earl, K Kesingland, C Holland & C K Atterwill, Smith Kline & French Research, The Frythe, Welwyn, UK. Sponsor: J B Hook

#544 **ELECTROCARDIOGRAPHIC EFFECTS OF INODILATOR PHOSPHODIESTERASE INHIBITORS IN BEAGLE DOGS.** M J Evis, E C Joseph and T F Walker. SK&F Research Ltd., Welwyn, Herts, U.K. Sponsor: J B Hook.

#545 **MYOCARDIAL TOXICITY OF CHLORINATED HYDROCARBONS IN DRINKING WATER.** B F Nagy, J P Bercz and L W Condie. U.S. EPA, Health Effects Research Laboratory, Cincinnati, OH

#546 **HYPOTENSIVE RESPONSE FROM ACUTE AND SUBACUTE EXPOSURE TO DIPHENYLIODONIUM HEXAFLUOROARSENATE (PIFA).** S L Yurasevecz, E A Emmett, I S Farrukh, T P Kennedy, R J Rubin and L W Smith. General Electric Company, Pittsfield, MA and Johns Hopkins University, Baltimore, MD.

#547 **SUBCHRONIC CARDIOVASCULAR EFFECTS OF SOMAN INTOXICATION.** R Moutvic, C R Hassler, and R L Hamlin*. Battelle Columbus Division, Columbus, OH and *Ohio State University, Columbus. Sponsor: G L Fisher.

#548 **EFFECT OF PRENATAL EXPOSURE TO SODIUM SALICYLATE (NaS), ASPIRIN (ASA), OR GENTAMICIN (G) ON BLOOD PRESSURE IN RATS.** G L Johnson, F R Alleva and T Balazs. FDA, Washington, DC.

#549 **CARDIOMEGALY IN NEONATAL RATS EXPOSED TO 500 PPM CARBON MONOXIDE.** F J Clubb, Jr, D G Penney, and S P Bishop. Dept Path, UTHSCD, Dallas, TX, Dept Physiol, WSU, Detroit, MI. Dept Path, UAB, Birmingham, AL. Sponsor: Z Ruben.

#550 **REVERSAL OF PROPRANOLOL TOXICITY WITH AMINOPHYLLINE, AMRINONE OR FORSKOLIN.** J Vick, V Whitehurst, X Joseph and T Balazs Food and Drug Administration Washington, DC.

#551 **CHLORINATED DRINKING WATER DECREASES SERUM HIGH DENSITY LIPOPROTEIN IN TWO MONKEY SPECIES.** J P Bercz[1], L Jones[1], T Mills[2], J Stober[1], J Cicmanec[1], and L Condie[1]. [1]U.S. EPA, Health Effects Research Laboratory, Cincinnati, OH, [2]Computer Sciences Corporation, Cincinnati, OH.

WEDNESDAY AFTERNOON, FEBRUARY 17
CHANTILLY BALLROOM
POSTER SESSION: INHALATION I

Chairperson: R J Jaeger, New York Medical Center, New York, NY

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

#552 **INCREASED LEVELS OF LUNG DNA ADDUCTS IN RATS EXPOSED TO PARTICLE-ASSOCIATED BENZO(A)PYRENE (BP) COMPARED TO PURE BP.** R K Wolff, J A Bond, J D Sun, R F Henderson, and J L Mauderly. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM.

#553 **COMPARATIVE PHARMACOKINETICS OF INHALED AND INGESTED 1,1-DICHLOROETHYLENE (DCE) IN RATS.** C E Dallas, R Ramanathan, S Muralidhara, J M Gallo* and J V Bruckner. Depts. of Pharmacol. & Toxicol. and Pharmaceutics*, College of Pharmacy, University of Georgia, Athens, GA.

#554 **A COMPARISON OF THE TOXICITY OF ASBESTOS, NONASBESTOS FIBERS, AND SEMI-METALLIC BRAKE RESIDUE IN A MACROPHAGE-LIKE CELL LINE.** C S Wheeler and C D Garner. Biomedical Science Dept., GM Research Labs, Warren, MI. Sponsor: E S Wright.

#555 **DELAYED NITROGEN DIOXIDE (NO_2)-ASSOCIATED TYPE II CELL HYPERPLASIA WITH INCREASING CONCENTRATIONS OF INHALED NO_2.** D F Kusewitt, D M Stavert, M J Behr, and B E Lehnert. Los Alamos National Laboratory, Los Alamos, NM.

#556 **CONCENTRATION VERSUS TIME IS THE MORE IMPORTANT EXPOSURE VARIABLE IN NITROGEN DIOXIDE-INDUCED ACUTE LUNG INJURY.** D M Stavert and B E Lehnert Los Alamos National Laboratory, Los Alamos, NM.

#557 **COMPARISONS OF NITROGEN DIOXIDE (NO_2) AND NITRIC OXIDE (NO) AS INDUCERS OF ACUTE PULMONARY INJURY WHEN INHALED AT RELATIVELY HIGH CONCENTRATIONS FOR BRIEF PERIODS.** M J Behr, D F Kusewitt, D M Stavert, and B E Lehnert. Los Alamos National Laboratory, Los Alamos, NM.

#558 **TOLERANCE TO OZONE (O_3) INDUCED BY PREEXPOSURE TO CADMIUM CHLORIDE ($CDCL_2$) AEROSOL.** H W Balfoort, H J Th Bloemen, L van Bree, J A M A Dormans, and P J A Rombout. National Institute for Public Health and Environmental Hygiene, Bilthoven, The Netherands. Sponsor: R Kroes.

#559 **TOXICOKINETIC EVALUATIONS OF BEAGLE DOGS THAT INHALED BERYLLIUM OXIDE.** G L Finch, J A Mewhinney, M D Hoover, P J Haley, A F Eidson, D E Bice, and A G Harmsen. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM Sponsor: R O McClellan.

#560 **SEX AND SPECIES DIFFERENCES IN THE INHALATION TOXICITY OF THIOPHENE.** R Irwin[1], M Hejtmancik, M Ryan, D Craig, and A Peters. Battelle Columbus Division, Columbus, OH and [1]NIEHS, Research Triangle Park, NC.

#561 ***ALPHA*-TOCOPHEROL AND ASCORBATE OXIDATION IN LIPOSOMES EXPOSED TO NO_2.** C R Shoaf and D B Menzel. Duke U. Med. Ctr., Depts. Pharm. and Med., Compre. Cancer Ctr., Durham, NC.

#562 **EVALUATION OF CARBON DIOXIDE RESPONSE CURVES IN GUINEA PIGS.** M Schaper, K Detwiler and Y Alarie, University of Pittsburgh, Pittsburgh, PA

#563 **SIMULTANEOUS MEASUREMENTS OF WHOLE BODY PLETHYSMOGRAPHIC PRESSURE AND TRANSPULMONARY PRESSURE DURING AIR BREATHING AND CO_2 CHALLENGE.** M F Stock, Y Alarie and M Schaper. University of Pittsburgh, Pittsburgh, PA.

#564 **COMPUTERIZATION OF PULMONARY FUNCTION STUDIES IN LABORATORY ANIMALS.** H Burleigh-Flayer[a], M Schaper, R Thompson, and Y Alarie. Bushy Run Research Center/Union Carbide Corporation, Export, PA[a] and Dept. Ind Env. Hlth. Sci., University of Pittsburgh, PA.

#565 **DETERMINING THE LC50 FOR RATS EXPOSED BY INHALATION TO DIMETHYLPHOSPHOROCHLORIDOTHIOATE.** S M MacAskill, K L Pavkov, and G L Sprague, Environmental Health Center, Stauffer Chemical Company, Farmington, CT.

#566 **INFLUENCE OF THE LUNG TOXIN PARAQUAT ON THE FREQUENCY AND FORM OF SPONTANEOUSLY GENERATED AUGMENTED BREATHS IN UNANESTHETIZED RATS.** D J Murphy and D A Culp. Dept. of Investigative Toxicology, Smith Kline & French Laboratories, King of Prussia, PA. Sponsor: G F Rush.

#567 **FACTORS ASSOCIATED WITH DECREASES IN THE VOLUME OF AUGMENTED BREATHS FOLLOWING ACUTE PULMONARY DAMAGE.** D A Culp and D J Murphy. Dept. of Investigative Toxicology, Smith Kline & French Labs, King of Prussia, PA Sponsor: G F Rush.

#568 **REDUCTION OF HCN AND THE ACUTE INHALATION TOXICITY OF COMBUSTION PRODUCTS BY COPPER ADDITIVES** B C Levin, J L Gurman, M Paabo, H M Clark and M F Yoklavich. National Bureau of Standards, Gaithersburg, MD.

#569 **EFFECT OF PARTICLE SIZE ON INHALATION TOXICITY OF FENTHION.** S Tsuda, M Yoshida, M Murao, M Iwasaki, and Y Shirasu. Institute of Environmental Toxicology, Tokyo, Japan.

#570 **CALCIUM TRANSPORT IN PROGRESSIVE LUNG DAMAGE AND RECOVERY FROM DAMAGE.** A K Agarwal and J W Coleman. Toxicology Research and Training Center, John Jay College of CUNY, New York, NY. Sponsor: H M Mehendale

#571 **ASSESSMENT OF OLFACTORY FUNCTION AFTER INHALATION EXPOSURE OF RATS TO METHYL BROMIDE.** M Hurtt, D A Thomas, K T Morgan, and P K Working. CIIT, Research Triangle Park, NC.

#572 **A COMPARATIVE STUDY OF TEST METHODS USED TO DETERMINE THE TOXIC POTENCY OF PVC SMOKE.** W G Switzer, and H L Kaplan Southwest Research Institute, San Antonio, TX and M M Hirschler, BFGoodrich, Avon Lake, OH.

#573 **TOXIC EFFECTS OF VARIOUS NITROSAMINES ON NASAL TISSUES OF RATS.** S D Sleight and C Rangga-Tabbu. Department of Pathology, Michigan State Univ., East Lansing, MI.

#574 **LIMITATIONS OF THE UPITT METHOD FOR THE SCREENING OF MATERIALS FOR THE TOXIC POTENCY OF SMOKE.** H L Kaplan,[1] M M Hirschler[2] and W G Switzer[1]. [1]Southwest Research Institute, San Antonio, TX; [2] BFGoodrich, Avon Lake, OH

#575 **EFFECT OF CHLORPROMAZINE ON PARAQUAT AND NADPH-DEPENDENT LIPID PEROXIDATION IN LUNG MICROSOMES.** P O Ogunbiyi and H P Misra. VA-MD Regional College of Veterinary Medicine, Virginia Tech, Blacksburg, VA.

#576 **SENSORY IRRITATION STRUCTURE ACTIVITY RELATIONSHIPS OF SOME BENZYLCHLORIDE CONGENERS.** B R Dudek, M V Roloff, R D Short, M A Council. Monsanto Company, St. Louis, MO.

#577 **PERTURBATION OF LUNG SUBCELLULAR CALCIUM TRANSPORT BY PARAQUAT.** J W Coleman and A K Agarwal. Toxicology Research and Training Center, John Jay College of CUNY, New York, NY. Sponsor: H M Mehendale

#578 **INDUCTION OF OXIDATIVE-STRESS IN UPPER RESPIRATORY TRACT (URT) TISSUES.** D G Cavanagh and J B Morris. Toxicology Program, School of Pharmacy, University of Connecticut, Storrs, CT.

#579 **METABOLIC CHARACTERIZATION OF ISOLATED, ENRICHED RAT LUNG CELL FRACTIONS.** S Lacy, J Mangum, and J Everitt. Sponsor: J Gibson. CIIT, Research Triangle Park, NC.

#580 **ACCUMULATION OF CYSTAMINE BY RAT LUNG SLICES.** C P L Lewis, *G M Cohen and L L Smith. Imperial Chemical Industries PLC, Central Toxicology Laboratory, Macclesfield, Cheshire, UK, and *School of Pharmacy, University of London, UK. Sponsor: E A Lock.

#581 **COMPARATIVE PULMONARY TOXICITY OF TWO ORGANOMETALLIC COMPOUNDS; CYCLOPENTADIENYL MANGANESE TRICARBONYL (CMT) AND METHYLCYCLOPENTADIENYL MANGANESE TRICARBONYL (MMT).** R J Clay and J B Morris Toxicology Program, School of Pharmacy, University of Connecticut, Storrs, CT.

#582 **INTRATRACHEAL INSTILLATION (ITI) OF AROMATIC-RICH HYDROCARBONS (ARH) AND 3-METHYLCHOLANTHRENE (MC) SUSPENDED IN A LECITHIN EMULSION (L).** J P Hinz, J J Freeman and F T Whitman. Exxon Biomedical Sciences, Inc., East Millstone, NJ.

#583 **PULMONARY TOXICITY OF ETHOXYLATES GIVEN ENDOTRACHEALLY TO RATS.** T R Tyler[1], R C Myers[2], S M Christopher[2], & E H Fowler[2], Union Carbide Corp., Danbury, CT[1], Bushy Run Research Center, Export, PA[2].

#584 **CHRONIC PULMONARY CHANGES INDUCED BY O,O,S-TRIMETHYL PHOSPHOROTHIOATE (OOS-TMP) IN RATS** M J J Gijbels* and S K Durham, *TNO-IVEG, Rijswijk, The Netherlands, and Hoffman-La Roche, Nutley, NJ Sponsor: T Imamura

#585 **PULMONARY INJURY INDUCED BY TRIMETHYL PHOSPHOROTHIOATE (OOS-TMP) IN MICE.** S K Durham* and T Imamura. *Hoffmann-La Roche, Nutley, NJ and Zyma Pharmaceutical, Nyon, Switzerland.

#586 **ATROPINE PRETREATMENT DOES NOT ABROGATE O,O,S-TRIMETHYLPHOSPHOROTHIOATE-(OOS-TMP) INDUCED BRONCHIOLAR INJURY IN MICE.** T Imamura and S.K. Durham*, Zyma Co., Nyon, Switzerland, and *Hoffmann-La Roche, Nutley, NJ.

#587 **PULMONARY RESPONSE TO AMIODARONE (AD) IN RATS.** M J Reasor, C L Ogle, E R Walker, R C Lantz, West Virginia Univ. Medical Center, Morgantown, WV and S Kacew, University of Ottawa, Ottawa, Ontario, Canada.

#588 **PULMONARY CHANGES FOLLOWING INTRATRACHEAL INSTILLATION OF GALLIUM ARSENIDE AND ARSENIC AND GALLIUM OXIDES IN HAMSTERS AND RATS.** M H Rosner, and D E Carter. College of Pharmacy, University of Arizona, Tucson, AZ.

WEDNESDAY AFTERNOON, FEBRUARY 17
4:00 p.m.-5:30 p.m.
TERRACE BALLROOM

ANNUAL SOT BUSINESS MEETING

President Jerry B. Hook, Presiding
SOT Members Only

THURSDAY MORNING, FEBRUARY 18
8:30 a.m.-12:00 noon
MONET BALLROOM

SYMPOSIUM: SIGNIFICANCE OF NEGATIVE DATA IN EVALUATING ENVIRONMENTAL TOXICOLOGICAL HAZARDS

Chairpersons: J Higginson, Institute for Health Policy, Georgetown University Medical Center, Washington, DC; P J Gehring, Dow Chemical Company, Midland, MI

Biostatistical Background to the Concepts of Negative Studies: Negative versus Non-Informative. D Krewski, Environmental Health Center, Ottawa, Ontario

Limitations and Implications of Negative Experimental Laboratory Studies. D B Clayson, Toxicological Research Division, Health and Welfare Canada, Ottawa, Ontario

The Evaluation of Negative Epidemiological Studies; Meta-analysis; Publication Bias and Risk Characterization in the United States. P A Buffler, School of Public Health, University of Texas, Houston, TX

Epidemiology and Negative Data: Their Significance at the International Level; Implications for Regulation. R R Cook, Dow Chemical Company, Midland, MI.

THURSDAY MORNING, FEBRUARY 18
8:30 a.m.-12:00 noon
METROPOLITAN BALLROOM

SYMPOSIUM: FREE RADICAL MECHANISMS IN PATHOGENESIS

Chairperson: J P Kehrer, College of Pharmacy, The University of Texas at Austin, Austin, TX

Introduction and Overview. J P Kehrer, College of Pharmacy, The University of Texas at Austin, Austin, TX

Radical Mediated Mechanisms of Chemical Activation. M A Trush, School of Hygiene & Public Health, The Johns Hopkins University, Baltimore, MD

Impact of Peroxide Metabolism in Chemical Carcinogenesis. A Sevanian, School of Pharmacy, University of Southern California, Los Angeles, CA

Free Radical Mechanisms in Asbestos-Induced Diseases. B T Mossman, University of Vermont, College of Medicine, Burlington, VT

Oxidative Stress in Chemical Toxicity to Hepatocytes. M T Smith, School of Public Health, University of California-Berkeley, Berkeley, CA

THURSDAY MORNING, FEBRUARY 18
8:30 a.m.-12:00 p.m.
GOVERNORS LECTURE HALL

PLATFORM SESSION: IMMUNOTOXICOLOGY

Chairpersons: M J Murray, Procter & Gamble Company, Cincinnati, OH
N I Kerkvliet, College of Veterinary Medicine, Oregon State University, Corvalis, OR

#589 8:30 **THE ROLE OF METABOLISM IN CARBON TETRACHLORIDE-MEDIATED IMMUNOSUPPRESSION.** N E Kaminski, M Y Chapman, S D Jordan, and M P Holsapple. Dept. of Pharmacology and Toxicology, Medical College of VA/VCU, Richmond, VA.

#590 8:45 **HPLC SEPARATION OF BENZO(a)PYRENE [B(a)P] METABOLITES GENERATED BY SPLENIC MICROSOMES OF UNTREATED MICE.** T T Kawabata and K L White, Jr. Depts. of Pharmacology and Toxicology, and Biostatistics. Medical College of Virginia/VCU, Richmond, VA.

#591 9:00 **ROLE OF ADRENAL CORTICOSTERONE (CS) IN SUPPRESSION OF CYTOTOXIC T LYMPHOCYTE (CTL) RESPONSE FOLLOWING EXPOSURE TO 3,4,5,3',4',5'-HEXACHLOROBIPHENYL (HxCB).** N I Kerkvliet, B B Smith and L B Steppan. College of Veterinary Medicine, Oregon State University, Corvallis, OR.

#592 9:15 **INHIBITION OF ANTI-HAPTEN ANTIBODY RESPONSE IN ADOPTIVE HOST RECONSTITUTED WITH T CELLS FROM 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD) EXPOSED MICE.** R S Tomar and N I Kerkvliet. College of Veterinary Medicine, Oregon State University, Corvallis, OR.

#593 9:30 **ALTERATION IN PGE_2 PRODUCTION FOLLOWING *IN VIVO* EXPOSURE TO DIMETHYLNITROSAMINE (DMN).** M J Myers, J F Lockwood, and L B Schook, Laboratory of Molecular Immunology, Dept. of Animal Sciences, Univeristy of Illinois, Urbana, IL.

#594 9:45 **DIMETHYLNITROSAMINE (DMN)-INDUCED CHANGES IN TNF-*ALPHA* - EXPRESSION AS DETECTED BY NORTHERN BLOT ANALYSIS.** J F Lockwood, M J Myers & L B Schook. University of Illinois, Urbana, IL.

#595 10:00 **METABOLISM OF TRIPHENYLPHOSPHATE (TPP) BY HUMAN MONOCYTES: POSSIBLE ASSAY FOR DETERMINING EXPOSED INDIVIDUALS AT RISK.** D Paxman, J Jinot, M Trush, and F Hirata. Division of Toxicological Sciences, Johns Hopkins School of Hygiene and Public Health, Baltimore, MD.

#596 10:15 **EFFECT OF CIGARETTE SMOKE ON THE IMMUNE RESPONSE.** R Chilukuri, M Sopori, L Donaldson and K Nelson. Lovelace Medical Foundation, Albuquerque, NM. Sponsor: J M Benson.

#597 10:30 **PERIPHERAL BLOOD (PB) T CELL PHENOTYPES IN HUMANS AFTER TREATMENT WITH A T CELL MONOCLONAL ANTIBODY (OKT3).** G M Shopp, A M Harford, L M Ashmore, J E Seppelt, L J Gibel, and W A Sterling, Jr. Lovelace Medical Foundation, and University of New Mexico School of Medicine, Albuquerque, NM. Sponsor: J M Benson.

#598 10:45 **DELTA-9-TETRAHYDROCANNABINOL INHIBITS MACROPHAGE FUNCTIONAL COMPETENCE.** G A Cabral* and E M Mishkin. Department of Microbiology and Immunology, Virginia Commonwealth University, Richmond, VA. Sponsor: S G Bradley

#599 11:00 **ALTERATION OF F344 INFLUENZA-SPECIFIC CTL ACTIVITY FOLLOWING ACUTE PHOSGENE INHALATION.** J P Ehrlich[1] and G R Burleson[2]. [1]NYU Med Center. Institute of Environmental Medicine, [1,2]Northrop Services, Inc., Environmental Sciences, RTP, NC.

#600 11:15 **PHOSGENE-SUPPRESSED PULMONARY NATURAL KILLER ACTIVITY: STUDIES ON THE MECHANISM OF IMMUNOSUPPRESSION.** G R Burleson[1], L L Keyes[1], M C Madden[2], and M Friedman[2]. [1]Northrop Services, Inc., Environmental Sciences, RTP, NC. [2]University of North Carolina, Chapel Hill, NC.

#601 11:30 **EFFECTS OF INHALATION OF PHOSGENE ON BACTERIAL, VIRAL AND NEOPLASTIC DISEASE SUSCEPTIBILITIY MODELS IN MICE.** M J K Selgrade, J W Illing, D M Starnes, and M J Daniels. U.S. Environmental Protection Agency, Research Triangle Park, NC.

THURSDAY MORNING, FEBRUARY 18
8:30 a.m.-12:00 p.m.
SENATORS LECTURE HALL

PLATFORM SESSION: INHALATION II

Chairpersons: M A Medinsky, Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM
D E Gardner, Northrop Services, Inc., Research Triangle Park, NC

#602 8:30 **SUBCHRONIC EXPOSURE OF GUINEA PIGS TO A NON-IRRITATING CONCENTRATION OF COTTON DUST.** I Vyas, A Ogundiran, C Gatty, K Spear and M Karol. Dept. Ind. Env. Health Sci., Univ. Pgh., Pittsburgh, PA.

#603 8:45 **HISTOMORPHOMETRIC EXAMINATION OF GUINEA PIGS EXPOSED SUBCHRONICALLY TO A NON-IRRITATING CONCENTRATION OF COTTON DUST.** B Cockrell, C Rehfeld, C Gatty, and M Karol. EPL, Inc. Herndon, VA and Dept. Ind. Env. Hlth. Sci., Univ. Pittsburgh, Pittsburgh, PA.

#604 9:00 **TIME COURSE OF TOXIC PULMONARY EFFECTS FOLLOWING INHALATION OF TEFLON PYROLYSIS PRODUCTS.** D B Warheit, W C Seidel, J R Bamberger, and M A Hartsky. Du Pont-Haskell Lab., Newark, DE.

#605 9:15 **INHALATION TOXICITY OF FLUOROPOLYMER/WOOD SMOKES IN A FULL-SCALE FIRE.** R Valentine, B B Baker, J K Bonesteel, D J Kasprzak; F B Clarke[1]; and C H Herpol and M Jannssens[2]. E.I. du Pont de Nemours & Co., Wilmington, DC; Benjamin/Clarke Associates, Kensington, MD[1]; and State University of Ghent, Belgium[2].

#606 9:30 **DIMETHYLETHANOLAMINE (DMEA): ACUTE, 2-WEEK, AND 13-WEEK INHALATION TOXICITY STUDIES IN RATS.** E H Fowler, D R Klonne, D E Dodd, I M Pritts, C M Troup, D J Nachreiner, and B Ballantyne. Bushy Run Research Center/Union Carbide Corp., Export, PA.

#607 9:45 **INHALATION TOXICITY OF 3-TRIFLUOROMETHYL PYRIDINE (3-FMP).** P M Hext, B A Gaskell and G H Pigott, ICI Central Tox. Lab. Macclesfield, UK. Sponsor: E A Lock

#608 10:00 **THE INFLUENCE OF HYPOXIA ON THE ACUTE TOXICITY OF HALON 1211 FIRE RETARDANT.** S Ugwu, J Thilsted* and B R Smith. The College of Pharmacy, University of New Mexico, Albuquerque, NM. *Veterinary Diagnostic Services, New Mexico Dept. of Agric. Albuquerque, NM.

#609 10:15 **THE GENERATION AND CONTROL OF VINYLIDENE FLUORIDE, A FLAMMABLE GAS, FOR INHALATION TOXICOLOGY.** D K Craig[1], and W C Eastin, Jr., Litton Bionetics, Inc., Rockville, MD and NIEHS, Research Triangle Park, NC.

#610 10:30 **INTERACTION OF AMPHIPHILIC DRUGS WITH PHOSPHOLIPID VESICLES.** U M Joshi, K S Prasada Rao, B Coudert, T M Dwyer and H M Mehendale. Department of Pharmacology and Toxicology, University of Mississippi Medical Center, Jackson, MS.

#611 10:45 **ORGANIC-FREE RADICALS IN FRESHLY FRACTURED COAL DUST AND ITS EFFECT ON CYTOTOXICITY.** V Vallyathan, B Jafari and N S Dalal Div. Respir. Dis. Studies, NIOSH, and West Virginia Univ., Morgantown, WV

#612 11:00 **UPTAKE IN BLOOD OF ^{14}C DURING AND FOLLOWING EXPOSURE TO METHYL ISOCYANATE ($^{14}CH_3NCO$).** J Ferguson, Y Alarie, M F Stock, A L Kennedy and W E Brown. University of Pittsburgh and Carnegie Mellon University, Pittsburgh, PA.

#613 11:15 **A HISTOLOGICAL AND BIOCHEMICAL ANALYSIS OF THE *IN VIVO* TARGETS OF INHALED RADIOACTIVE METHYL ISOCYANATE.** A L Kennedy, Y Alarie, and W E Brown, Carnegie Mellon Univ. and Univ. of Pittsburgh, Pittsburgh, PA.

#614 11:30 **APPLICATION OF SHORT-TERM LUNG BIOASSAYS TO RISK ASSESSMENT FOR METALS.** B D Beck[1] & J D Brain[2], Gradient Corporation, Cambridge, MA[1] & Harvard School Pub. Hlth., Boston, MA[2]

#615 11:45 **FACTORS INFLUENCING THE ESTIMATION OF HAZARD FROM AN ACCIDENTAL ARSINE RELEASE.** G V Alexeeff, California Department of Health Services, Berkeley, CA.

THURSDAY MORNING, FEBRUARY 18
GRAND BALLROOM A

POSTER/DISCUSSION SESSION: PHARMACOKINETIC AND TOXICITY MODELING

Chairpersons: R H Reitz, Dow Chemical Company, Midland, MI
R B Conolly, Northrop Services, Inc., Dayton, OH

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

#616 **A BIOLOGICALLY-BASED COMPUTER SIMULATION MODEL FOR HEPATOCYTOTOXICITY.** J M Gearhart[1], L J Goodpaster[1], M E Andersen[2] and R B Conolly[1], 1 Northrop Services Inc., Dayton, OH, 2 AAMR/THWP AFB, OH.

#617 **BIOLOGICALLY-BASED COMPUTER SIMULATION OF DOSE-RESPONSE (D-R) CURVES FOR CYTOTOXIC CHEMICAL CARCINOGENS.** R B Conolly[1], H J Clewell, III[2], R H Reitz[3], and M E Andersen[2], 1 Northrop Services Inc., Dayton, OH, 2 AAMRL/TH. WPAFB, OH, 3 Dow Chemical Co., Midland, MI.

#618 **A PHYSIOLOGICAL PHARMACOKINETIC DESCRIPTION OF THE TISSUE DISTRIBUTION AND ENZYME INDUCTION OF 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN IN THE RAT.** H W Leung, *M E Andersen, R H Ku, and D J Paustenbach. Syntex (USA) Inc., Palo Alto, CA, and *Consultant, Dayton, OH.

#619 **A BIOLOGICALLY-BASED PHARMACOKINETIC MODEL FOR DERMAL ABSORPTION.** C B Frederick and I M Chang-Mateu. Rohm and Haas Co., Spring House, PA.

#620 **INSIGHT INTO THE INTERSPECIES DIFFERENCES IN BENZENE TOXICITY PROVIDED BY A PHYSIOLOGICAL MODEL.** M A Medinsky, P J Sabourin, R F Henderson. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM and L S Birnbaum, G Lucier, NIEHS, RTP, NC.

#621 ***IN VITRO* STUDIES OF METHYLENE CHLORIDE (MEC) METABOLISM IN HUMAN AND ANIMAL TISSUES: USE IN PHYSIOLOGICALLY-BASED PHARMACOKINETIC (PB-PK) MODELS.** R H Reitz, A L Mendrala and F P Guengerich. Dow Chemical Co., Midland, MI, and Vanderbilt Univer., Nashville, TN.

#622 **PHYSIOLOGICAL PHARMACOKINETIC MODEL FOR HEXACHLOROBENZENE (HCB) IN THE SPRAGUE-DAWLEY RAT AND RHESUS MONKEY.** A G E Wilson, K K Rozman, J D Wilson, and R A Freeman. Monsanto Company, St. Louis, MO and University of Kansas Medical Center, Kansas City, KS.

#623 **PHYSIOLOGICALLY-BASED COMPUTER SIMULATION OF CHLOROPENTAFLUOROBENZENE (CPFB) PHARMACOKINETICS AND ITS QUANTITATION IN EXPIRED BREATH: A NON-INVASIVE TOOL FOR EVALUATING EXPOSURE HISTORY.** A Vinegar, D W Winsett, R B Conolly, and *M E Andersen. Northrop Services, Inc., Dayton, OH and *AAMRL/TH, Wright Patterson AFB, OH.

#624 **PHYSIOLOGICALLY-BASED PHARMACOKINETIC (PB-PK) MODEL OF INHALED METHANOL: A SPECIES COMPARISON.** V L Horton and D E Rickert. CIIT, Research Triangle Park, NC, and Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC.

#625 **PHYSIOLOGICALLY BASED PHARMACOKINETICS OF COBALT REMOVAL FROM THE LUNG AND ITS DEPOSITION AND ELIMINATION FROM THE BODY.** J R Boger III, D B Menzel, R J Francovitch, R L Wolpert, M I Tayyeb, and C R Shoaf. Depts. Pharm. and Med., Duke U. Compre. Cancer Ctr., Durham, NC.

THURSDAY MORNING, FEBRUARY 18
GRAND BALLROOM C

POSTER/DISCUSSION SESSION: *IN VITRO* MODELS—NON-HEPATIC SYSTEMS

Chairpersons: D Acosta, College of Pharmacy, University of Texas, Austin, TX
L J Fischer, Michigan State University, East Lansing, MI

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

#626 **CLONAL INSULIN-PRODUCING CELL LINES AS MODELS OF CYPROHEPTADINE-INDUCED PANCREATIC *BETA*-CELL TOXICITY.** C P Miller and L J Fischer. Dept. of Pharm/Tox. and Ctr. Env. Tox., Mich. State Univ., E. Lansing, MI.

#627 **COMPARISON OF CHROMIUM-INDUCED DNA LESIONS IN CULTURED HUMAN AND MOUSE CELL LINES.** H S Park and C M Witmer, Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ.

#628 **THE CARDIOTOXIC AGENT ALLYLAMINE: AN INHIBITOR OF THE MITOCHONDRIAL ELECTRON TRANSPORT CHAIN.** G W Winston, R E Biagini*, S Narayan, R Talbot and M Toraason* Louisiana State Univ., Inst. Environ. Studies, Baton Rouge, LA and *CDC, NIOSH, Exptl. Toxicol. Br., Cincinnati, OH.

#629 **BIOCHEMICAL BASIS OF ALLYLAMINE (AAM)-INDUCED VASCULAR CYTOTOXICITY.** K Ramos, S L Grossman*, and L R Cox*. Texas Tech University Health Sciences Center, Lubbock, TX and *Philadelphia College of Pharmacy & Science, Philadelphia, PA.

#630 **COCAINE TOXICITY IN PRIMARY CARDIAC MUSCLE AND NON-MUSCLE CELL CULTURES.** A A Welder, [1]M A Smith, *K Ramos, and D Acosta. University of Texas College of Pharmacy, Austin, TX [1]University of New Mexico College of Pharmacy, Albuquerque, NM and *Texas Tech Health Sciences Center, Department of Pharmacology, Lubbock, TX.

#631 **ISOLATION AND CHARACTERIZATION OF FOUR SUBGROUPS OF MAMBA (DENDROASPIS) CARDIOTOXINS USING PRIMARY CULTURES OF RAT MYOCARDIAL CELLS.** P M Mbugua*, A A Welder, D Acosta. University of Texas, College of Pharmacy, Austin, Texas and *Unversity of Nairobi, Kenya.

#632 **GROWTH OF HUMAN LUNG FIBROBLASTS FOLLOWING EXPOSURE TO SODIUM SULFIDE.** L J Hayden, S N Faust and S H Roth, Division of Toxicology, University of Calgary, Calgary, Alberta, Canada. Sponsor: F G Biddle.

#633 **SUPEROXIDE ANION (02-) PRODUCTION INDUCED BY CHRYSOTILE ASBESTOS IN THE GUINEA PIG ALVEOLAR MACROPHAGE (AM).** P L Roney, and A Holian. Univ. of Texas Health Science Center, Houston, TX. Sponsor: E J Fairchild II

#634 **EFFECT OF PEROXISOME PROLIFERATORS ON SOME MARKER ENZYMES AND ON MORPHOLOGICAL TRANSFORMATION OF SYRIAN HAMSTER EMBRYO CELLS.** T Sanner, and S-O Mikalsen. Lab Environ Occup Cancer, Inst Cancer Research, Oslo, Norway. Sponsor: E Dybing.

#635 **ALTERED *IN VITRO* GROWTH CHARACTERISTICS OF CANINE TRACHEAL EPITHELIAL CELLS FOLLOWING EXPOSURE TO N-METHYL-N'-NITRO-N'-NITROSOGUANIDINE (MNNG).** A F Hubbs, F F Hahn, and D G Thomassen. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM and Colorado State University, Fort Collins, CO. Sponsor: J M Benson.

THURSDAY MORNING, FEBRUARY 18
CHANTILLY BALLROOM

POSTER SESSION: CARCINOGENESIS

Chairperson: M S Bogdanffy, 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.

#636 **EVALUATION OF UNSCHEDULED DNA SYNTHESIS (UDS) AND S-PHASE SYNTHESIS (SPS) FOLLOWING TREATMENT WITH p-DICHLOROBENZENE** K L Steinmetz, J P Bakke, C M Hamilton, K C Pardo, M Ramsey, and J C Mirsalis. SRI International, Menlo Park, CA. Sponsor: C E Green.

#637 **COMPARISON OF ETHYLENE OXIDE AND 4-AMINO-BIPHENYL HEMOGLOBIN ADDUCTS IN CIGARETTE SMOKERS.** L Latriano, R Perera, D Brenner, A M Jeffrey, Columbia Univ., Inst. Cancer Res./Env. Sci. Div., New York, NY.

#638 **CHRONIC TOXICITY AND ONCOGENICITY STUDY OF 2,6-DIETHYLANILINE.** T G Pullin, R W Naismith, J F Hardisty, E B Whorton Jr, G L Ter Haar. Ethyl Corporation, Baton Rouge, LA.

#639 **COMPARISON OF DOSE BY MASS AND NUMBER OF MINERAL FIBERS IN THE INDUCTION OF MESOTHELIOMA IN RATS.** D L Coffin,[1] L D Palekar,[2] P M Cook,[3] and A G Stead.[1] [1]US Environmental Protection Agency, RTP, NC., [2]Northrop Services, Inc., RTP, NC and [3]US Environmental Protection Agency, Duluth, MN.

#640 **A 90-DAY STUDY OF PETROLEUM MIDDLE DISTILLATE-INDUCED DERMAL IRRITATION.** J J Freeman, R D Phillips, R H McKee, R T Plutnick, and R A Scala, Exxon Biomedical Sciences, East Millstone, NJ

#641 **COMPARATIVE EFFECTS OF TWO MOUSE SKIN TUMOR INITIATORS IN THREE MOUSE STRAINS.** W C Eastin Jr., M R Hejtmancik, G E Wilkinson, and A C Peters. NIEHS, Research Triangle Park, NC, Battelle Columbus Division, Columbus, OH.

#642 **DERMAL INITIATION/PROMOTION STUDY OF o-BENZYL-p-CHLOROPHENOL (BCP) IN SWISS CD-1 MICE.** M Hejtmancik, M Ryan, A C Peters, *W C Eastin, and L S Birnbaum. Battelle Columbus Division, Columbus, OH and *NIEHS, Research Triangle Park, NC.

#643 **THE DERMAL CARCINOGENIC POTENTIAL OF LUBRICANT BASE OILS AND CUTTING FLUIDS.** R H McKee, R A Scala, and C Chauzy. Exxon Biomedical Sciences, Inc., East Millstone, NJ and Centre Henri Becquerel, Rouen, France.

#644 **EFFECT OF DURATION OF DERMAL EXPOSURE TO BENZO-a-PYRENE ON THE CARCINOGENIC RESPONSE IN MICE.** G Cruzan, S R Carter, and G E Cox. Mobil Oil Corporation, Princeton, NJ.

#645 **CHRONIC TOXICITY AND CARCINOGENESIS STUDIES OF SULFAMETHAZINE IN FISCHER 344 RATS.** N A Littlefield, D W Gaylor, R R Allen, and W G Sheldon. National Center for Toxicological Research, Jefferson, AR. Sponsor: G L Wolff.

#646 **CHRONIC ORAL TOXICITY AND CARCINOGENICITY STUDY OF VINYL ACETATE ADMINISTERED IN DRINKING WATER.** D C Shaw, and A J Zubaidy Hazleton UK, Harrogate, England; J J Clary, R W Rickard, T R Tyler, M B Vinegar and F Carpanini.

#647 **COMPARATIVE TOXICITY AND CARCINOGENICITY OF THREE ISOMERIC AMINO-NITROPHENOLS.** R Irwin, J B Bishop, J E Huff. NTP-NIEHS, Research Triangle Park, N.C. Sponsor: R Chhabra.

#648 **BUTENEDIAL - A PREDICTED METABOLITE OF 1,3-BUTADIENE.** M G Bird,[1] D Lewis,[2] G Witz,[3] D V Parke[2]. Exxon Biomedical Sciences, Inc., E. Millstone, NJ. [2]Surrey University, Guildford, Surrey, UK. [3]UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ.

#649 **CARCINOGENIC ACTIVITY ASSOCIATED WITH 1,3-DICHLOROACETONE IN THE MOUSE SKIN ASSAY.** M Robinson, and B A Merrick. Toxicology and Microbiology Division, HERL, USEPA, Cincinnati, OH.

#650 **TOXICOLOGY AND CARCINOGENESIS STUDIES OF MONURON.** P C Chan, D S Goldman, and G A Boorman. National Institute of Environmental Health Sciences, Research Triangle Park, NC. Sponsor: R Yang.

#651 **AGING DECREASES HEPATIC METABOLISM OF AZOXYMETHANE (AZO) BUT NOT COLONIC METABOLISM OF METHYLAZOXYMETHANOL (MAM).** T McMahon, J Peggins and M Weiner. University of Maryland School of Pharmacy, Baltimore, MD. Sponsor: C U Eccles.

#652 **CARDIAC GLUTATHIONE AND CARDIOTOXICITY IN HIGH DOSE CANCER CHEMOTHERAPY.** D P Rodeheaver, D B Menzel, T M Bashore, R J Herfkens and W P Peters, Duke U. Med. Ctr., Depts. Pharm. and Med., Compre. Cancer Ctr., Durham, NC.

#653 **MODIFICATION OF N-METHYL-N'-NITRO-N-NITROSOGUANIDINE-INDUCED STOMACH CARCINOGENESIS BY PHENOLIC ANTIOXIDANTS IN RATS.** S Tamano, M Hirose, S Fukushima, Y Kurata and N Ito. 1st. Dept. Pathol., Nagoya City Univ. Med. Sch., Nagoya, Japan.

#654 **EFFECTS OF ANTI-INFLAMMATORY AGENTS, A GLUTATHIONE DEPLETING AGENT AND OTHER ANTIOXIDANTS ON THE DEVELOPMENT OF BHA-INDUCED RAT FORESTOMACH HYPERPLASIA.** S Yamaguchi, A Masuda, S Fukushima, M Hirose and N Ito. 1st Dept. Pathol., Nagoya City Univ. Med. Sch. Nagoya, Japan.

#655 **EFFECT OF AGING ON PROSTATE CARCINOGENESIS INDUCED BY 3,2'-DIMETHYL-4-AMINOBIPHENYL(DMAB) IN F344 RATS.** A Nakamura, T Shirai, S Fukushima and N Ito. 1st Department of Pathology, Nagoya City University Medical School, Nagoya, Japan.

#656 **CELL KINETICS OF PEPSINOGEN DECREASED PYLORIC GLAND CELLS, A PUTATIVE PRENEOPLASTIC LESION, IN RATS TREATED WITH MNNG.** M Mutai, M Tatematsu, K Imaida, and N Ito. 1st Dept. Pathol., Nagoya City Univ. Med. Sch., Nagoya, Japan.

#657 **MARKED ENHANCING POTENTIAL OF PRIOR N-METHYL-N-NITROSOUREA (MNU) TREATMENT ON RAT TUMORIGENESIS IN VARIOUS ORGANS INDUCED BY 6 DIFFERENT CARCINOGENS.** S Uwagawa, K Imaida, H Tsuda, T Masui and N Ito. 1st Dept. Pathol., Nagoya City Univ. Med. Sch., Nagoya, Japan.

#658 **VINYLACETATE: INHALATION TOXICITY AND CARCINOGENICITY STUDY IN RATS AND MICE.** P E Owen and C A Thompson Hazleton U K, Harrogate, England; J J Clary, R W Rickard, T R Tyler and M B Vinegar

#659 **7-(2,3-EPOXYPROPOXY)ACTINOMYCIN D(EPA), A LESS TOXIC AND MORE POTENT ANALOGUE OF ACTINOMYCIN D (AMD).** D P Rosenbaum, and S K Sengupta, Department of Pharmacology, Boston University School of Medicine, Boston, MA. Sponsor: J K Marquis

#660 **PERINATAL CARCINOGENESIS INDUCED BY INHALED VINYL CHLORIDE.** M J Radike, J Warkany[a], K Stemmer, E Bingham. University of Cincinnati College of Medicine, [a]Institute for Developmental Research, Childrens' Hospital, Cincinnati, OH. Sponsor: D. Warshawsky

#661 **INFLUENCE OF VIRAL INFECTIONS ON TUMOR INCIDENCES, BODY WEIGHT AND SURVIVAL OF FISCHER 344 RATS.** G N Rao, J Edmondson, and J K Haseman. National Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, NC.

#662 **TRANSPLACENTAL (TP) TUMORIGENESIS BY N-NITROSOETHYLUREA (NEU), N-NITROSODIETHYLAMINE (NDEA), AND N-NITROSODIMETHYLAMINE (NDMA) IN MICE.** L M Anderson, J M Rice, and A Hagiwara, National Cancer Institute, Frederick, MD

#663 **RELATIONSHIP OF LYSOSOMAL PROTEIN OVERLOAD IN THE KIDNEY AND TUBULAR TUMORIGENESIS.** C L Alden, R Parker, M F Ezra, E Von Bargen, G M Ridder. The Procter & Gamble Company, Cincinnati, OH.

#664 **RELATIONSHIP OF OXIDATIVE DAMAGE TO CARCINOGENICITY WITH THE PEROXISOME PROLIFERATORS DI(2-ETHYLHEXYL)PHTHALATE (DEHP) AND WY-14,643 (WY).** J G Conway[a], K E Tomaszewski[b], R C Cattley[a], D S Marsman[a], R L Melnick[b] and J A Popp[a]. CIIT[a] and NIEHS[b] Research Triangle Park, NC Sponsor: D E Rickert.

#665 **DICHLOROACETATE (DCA) INDUCED DNA STRAND BREAKS APPEAR BEFORE PEROXISOME PROLIFERATION.** M A Nelson, R J Bull, and *D L Springer Pharmacology/Toxicology Program, College of Pharmacy, Washington State University, Pullman, WA *Battelle-Pacific Northwest Laboratory, Richland, WA.

#666 **INHIBITION OF MOUSE HEPATOCYTE INTERCELLULAR COMMUNICATION BY ACTIVATED OXYGEN.** P A Nigrovic, R J Ruch, and J E Klaunig. Dept. of Pathology, Medical College of Ohio, Toledo, OH.

#667 **KINETICS OF THE INHIBITION OF MOUSE HEPATOCYTE INTERCELLULAR COMMUNICATION BY THE LIVER TUMOR PROMOTER PHENOBARBITAL.** R J Ruch and J E Klaunig. Medical College of Ohio, Toledo, OH.

#668 **PHENOBARBITAL PROMOTION IN INFANT B6C3F1 MICE: INFLUENCE OF GENDER AND INITITATOR.** J E Klaunig, C M Weghorst, M A Pereira, E Lin, and T R Weghorst. Depart. of Pathology, Medical College of Ohio, Toledo, OH and HARL, USEPA, Cincinnati, OH.

#669 **MECHANISM OF INHIBITION OF INTERCELLULAR COMMUNICATION BY THE PROMOTERS DDT, PHENOBARBITAL, AND LINDANE IN MALE B6C3F1 MOUSE HEPATOCYTES.** N E Schultz, R J Ruch, and J E Klaunig. Dept. of Pathology, Medical College of Ohio, Toledo, OH.

#670 **MODIFICATIONS OF AFLATOXIN B_1 BIOTRANSFORMATION *IN VITRO* AND DNA BINDING *IN VIVO* BY DIETARY BROCCOLI IN RATS.** H S Ramsdell and D L Eaton. Department of Environmental Health, University of Washington, Seattle, WA.

#671 ***IN VIVO* DNA BINDING DOSE-RESPONSE STUDIES WITH AFB1 AND THE ANTI-CARCINOGEN INDOLE-3-CARBINOL (I3C).** R Dashwood, D Arbogast, A Fong, J Hendricks, and G Bailey. Oregon State University, Corvallis, OR. Sponsor: D Selivonchick.

#672 **EXAMINATION OF EVIDENCE FOR THE INTRACELLULAR FORMATION OF AN ADDUCT, N^6-HYDROXYMETHYLDEOXY-ADENOSINE (hm6dA), BY FORMALDEHYDE.** M Casanova and H d'A Heck. CIIT, Research Triangle Park, NC.

#673 **FORMATION OF CROSS-LINKED ADDUCTS ON REACTION OF AMINO ACIDS WITH FORMALDEHYDE AND DEOXYRIBONUCLEOSIDES OR DNA.** T R Fennell, F H Deal, and J A Swenberg. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.

#674 **DETECTION OF N^2,3-ETHENOGUANINE AND 7-(2-OXOETHYL)GUANINE IN DNA FROM RATS CHRONICALLY EXPOSED TO ACRYLONITRILE.** S A M Koch, V E Walker and J A Swenberg. CIIT, Research Triangle Park, NC.

#675 **FORMATION AND PERSISTENCE OF DNA ADDUCTS IN RAT HEPATIC TISSUE FOLLOWING PRETREATMENT WITH 3,3'-DICHLOROBENZIDINE.** C S Nessel and M M Iba, Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ.

#676 **PREPARATION OF DNA ADDUCTS FOR CHEMICAL CHARACTERIZATION STUDIES, USING ISOLATED RAT HEPATOCYTES.** D A Dankovic, D L Springer, D B Mann, B L Thomas, and R M Bean. Pacific Northwest Laboratory, Dept. of Biology and Chemistry, Richland, WA.

#677 **CHARACTERIZATION OF NON-CLASSICAL BaP ADDUCTS TO DNA.** D L Springer, B L Thomas, D A Dankovic, D B Mann, E K Chess and R M Bean. Battelle, Northwest Pacific Laboratory, Richland, WA.

#678 ***IN VIVO* INDUCTION OF DNA-PROTEIN CROSSLINKS IN RAT TRACHEAL IMPLANTS EXPOSED TO FORMALDEHYDE (HCHO) AND BENZO(A)PYRENE (BAP).** G N Cosma, A S Wilhite, and A C Marchok, Biology Division, Oak Ridge National Laboratory, Oak Ridge, TN. Sponsor: M Costa.

#679 **SPECIES DIFFERENCES IN SUSCEPTIBILITY TO LIVER CARCINOGENS IN MEDIUM-TERM BIOASSAY SYSTEM.** M Kagawa[1], K Imaida[1], H Tsuda[1], S Nagase[2], and N Ito[1]. [1]1st Dept. Pathol., Nagoya City Univ. Med. Sch., Nagoya, [2]Dept. Chem., Sasaki Inst., Tokyo, Japan.

#680 **CARCINOGENIC RISK ASSESSMENT OF VINYL CHLORIDE.** J P Christopher, F Cavender, and J H Brantner. California Department of Health Services, Toxic Substances Control Division; Sacramento, CA, and Dynamac Corporation, Rockville, MD.

#681 **A COMPARISON OF GUIDELINES IN THE CARCINOGENIC RISK ASSESSMENT OF CHLORDANE.** F Cavender, N Page, and B Cook. Dynamac Corporation, Rockville, MD.

#682 **DIETARY FACTORS IN ESOPHAGEAL CARCINOGENESIS.** T F Schrager, D Bueche, M Conner, P M Newberne. Mallory Institute of Toxicology. Boston, MA.

#683 **A DIETARY CARCINOGENICITY STUDY OF GELLAN GUM IN THE ALBINO MOUSE.** H A Birnbaum, P Batham, D Engel, B E Osborne, J K Baker. H. A. Birnbaum Assoc. Inc., W. Palm Beach, FL, Bio-Research Labs, Ltd., Montreal, QUE, Kelco Div. of Merck & Co., Inc., San Diego, CA.

#684 **DIETARY IRON ENHANCES THE TUMOUR RATE IN DIMETHYL-HYDRAZINE-INDUCED COLON CARCINOGENESIS IN MICE.** C P Siegers, D Buhmann, and M Younes. Institute of Toxicology, Medical University of Lubeck, Lubeck, FRG.

THURSDAY MORNING, FEBRUARY 18
CHANTILLY BALLROOM

POSTER SESSION: PESTICIDES

Chairperson: W H Benson, School of Pharmacy, Northeast Louisiana University, Monroe, LA

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

#685 **ASSESSMENT OF NEUROTOXICITY IN WORKERS OCCUPATIONALLY EXPOSED TO ORGANOPHOSPHORUS PESTICIDES.** D Otto, D Svendsgaard and S Soliman. USEPA, RTP, NC and University of Alexandria, Egypt. Sponsor: H K Hudnell.

#686 **GEL EXCLUSION CHROMATOGRAPHY OF DETERGENT SOLUBILIZED NEUROTOXIC ESTERASE (NTE).** V Z Wilson[1], C N Pope* and S Padilla. Neurotox. Div., EPA, and [1]Northrop Services, RTP, NC.

#687 **2-PAM REACTIVATION OF CHOLINESTERASE IN WHOLE BLOOD, RBC, AND PLASMA IN RHESUS MONKEYS FOLLOWING *IN VITRO* TREATMENT WITH PARAOXON.** K S Harlin and J A Dellinger. Univ. of Illinois, Urbana, IL.

#688 **SERUM PARAZOXONASE AND SENSITIVITY TO PARAOXON TOXICITY.** B E McDonald, B Richter, A Motulsky, G S Omenn, S D Murphy, C Furlong and L G Costa. Departments of Environmental Health and Medical Genetics, University of Washington, Seattle, WA.

#689 **SUBCHRONIC AND CHRONIC TOXICITY STUDIES IN THE DOG WITH ETHION TECHNICAL.** L B Kedderis, D E Bailey, D L St. Clair, L E Geiger, and M J Fletcher. FMC Corporation, Princeton, NJ and Hazleton Laboratories, Vienna, VA.

#690 **THREE GENERATION REPRODUCTION STUDY IN RATS WITH ETHION TECHNICAL.** M Weiner[1], J DeProspo[1], C Salamon[2], M J Fletcher[1] and L E Geiger. [1]FMC Corporation, Princeton, NJ [2]American Biogenics Corporation, Decatur, IL.

#691 **DEMETHYLATION OF METHYL ORGANOPHOSPHATES BY RAT HEPATIC GLUTATHIONE S-TRANSFERASE.** J P Rank and D L Eaton, Department of Environmental Health, University of Washington, Seattle, WA.

#692 **THE ROLE OF GLUTATHIONE IN THE DETOXIFICATION OF METHYL PARATHION *IN VIVO* IN THE MOUSE.** L G Sultatos and L Woods, Dept. Pharmacol. Univ. Med. Dent. of New Jersey, Newark, NJ.

#693 **ACUTE ORAL TOXICITY STUDY IN CYNOMOLGUS MONKEYS WITH ALDICARB RESIDUE IN BANANAS AND WATERMELON.** J A Trutter, F E Reno, R H Cox, R L Baron[a], and J M Charles[a]. Hazleton Laboratories America, Inc., Vienna, VA, [a]Rhone-Poulenc Ag Company, Research Triangle Park, NC.

#694 **BIOASSAYS FOR ALDICARB IN WATERMELON.** B W Wilson, T E Archer, J N Seiber, M E Stelljes, J D Henderson, and J B Knaak University of California, Davis and California Department of Health Services.

#695 **CHOLINESTERASE INHIBITION IN MICE AFTER 1-,12- OR 24-MONTH DIETARY ADMINISTRATION OF IMIDAN®.** A C Katz, D W Frank, J C Turnier and G L Sprague. Environmental Health Center, Stauffer Chemical Company, Farmington, CT.

#696 **PROPHYLACTIC AND THERAPEUTIC EFFICACY OF MEMANTINE AND ATROPINE AGAINST CARBOFURAN ACUTE TOXICITY IN RAT.** R C Gupta and W L Kadel, Breathitt Veterinary Center, Murray State University, Hopkinsville, KY.

#697 **RABBIT BLOOD PRESSURE, TEMPERATURE, BODY WEIGHT AND ERYTHROCYTE AND PLASMA CHOLINESTERASE ACTIVITY DURING SEVEN-DAY SOMAN ADMINISTRATION.** C-Y Hu, C-Y Hung and C P Robinson, College of Pharmacy, University of Oklahoma, Health Sciences Center, Oklahoma City, OK

#698 **A COMPARISON OF THE SUBCHRONIC TOXICITY OF FENVALERATE AND ITS SS-ISOMER IN THE RAT.** L A Malley and P W Lee. E. I. du Pont de Nemours & Co., Inc., Haskell Laboratory for Toxicology and Industrial Medicine, Newark, DE. Sponsor: L S Mullin.

#699 **A COMPARATIVE EVALUATION OF THE LETHALITY OF FENVALERATE AND THE FENVALERATE FORMULATION PYDRIN®,** E G Williamson, M J Kallman, M C Wilson, Department of Pharmacology, School of Pharmacy, University of Mississippi, University, MS.

#700 **THE EFFECTS OF A BENZODIAZEPINE RECEPTOR ANTAGONIST AND PICROTOXIN ON FENVALERATE TOXICITY.** K M Tolson and W M Bourn, School of Pharmacy, Northeast Louisiana University, Monroe, LA. Sponsor: P J Medon.

#701 **BIS(TRI-N-BUTLTIN)OXIDE (TBTO) TOXICITY TESTING IN THE RAT: PRESENT STATUS.** E I Krajnc, P W Wester, J G Vos and C A van der Heijden. National Institute of Public Health and Environmental Hygiene, Bilthoven, The Netherlands. Sponsor: J G Vos.

#702 **CHRONIC TOXICITY/ONCOGENICITY FEEDING STUDIES IN SPRAGUE-DAWLEY RATS AND CF1 MICE WITH ETHION.** J D McCarty, L D Morrow, J R DeProspo, L B Kedderis, and M J Fletcher. FMC Corp., Princeton, NJ and American Biogenics Corp., Decatur, IL.

#703 **THE CARCINOGENIC POTENTIAL OF TERMITE-CONTROL PESTICIDES.** D V Singh, N P Page, and V J Cogliano. U.S. Environmental Protection Agency, Washington, DC, and Dynamac Corp., Rockville, MD.

#704 **DIETARY CHRONIC TOXICITY AND ONCOGENICITY STUDIES OF TRICLOPYR IN RATS AND MICE.** D L Eisenbrandt, T D Landry, H M Firchau, S Tsuda, and J F Quast. METRL, The Dow Chemical Company, Midland, MI and IET, Tokyo, Japan.

#705 **CHRONIC TOXICITY AND ONCOGENICITY OF INHALED TECHNICAL GRADE 1,3-DICHLOROPROPENE (DCP) IN RATS AND MICE.** W T Stott, K A Johnson, L G Lomax and L L Calhoun, The Dow Chemical Co., Midland, MI.

#706 **LIVER EFFECTS OF LACTOFEN (COBRA HERBICIDE) IN RATS AND CHIMPANZEES.** P Leber, C Fisher#, RCouch, M Erickson*, E Butler, H Maruyama and G Williams+. #PPG Ind., Barberton, OH, *Primate Research Inst., Holloman AFB, NM and +Naylor Dana Inst., Valhalla, NY.

#707 **PEROXISOMAL PROLIFERATION IN PRIMARY RAT HEPATOCYTES INDUCED BY LACTOFEN (COBRA HERBICIDE) AND ITS METABOLITES.** K Allen, C Tyson#, and P Leber*. #SRI International, Menlo Park, CA and *PPG Industries, Barberton, OH.

#708 **INDUCTION OF HEPATIC PEROXISOME PROLIFERATION BY LACTOFEN, A DIPHENYL ETHER HERBICIDE.** E G Butler, T Tanaka, H Maruyama, A P Leber and G M Williams. American Health Foundation, Valhalla, NY.

#709 **PHARMACOKINETICS OF LACTOFEN AND METABOLITES IN THE MOUSE, RAT, RHESUS MONKEY AND CHIMPANZEE.** J H Ross and C R Fisher. PPG Industries, Inc., Barberton, OH.

#710 **MODIFICATION OF HEPATOTOXICITY OF TOCP AND MO BY CHRONIC ETHANOL INGESTION.** K Maita, N Nakashima, and Y Shirasu. Inst. of Environmental Toxicology, Tokyo, JAPAN.

#711 **THE SUBCHRONIC EFFECTS OF ETHYLENE DIBROMIDE ON CYTOCHROME P-450 LEVELS AND GLUTATHIONE-S-TRANSFERASES IN RAT LIVER AND KIDNEY.** J W Hauswirth, Center for Veterinary Medicine, Food and Drug Administration, Belstville, MD. Sponsor: T M Farber.

#712 **COMPARATIVE TOXICITY OF 4-ALKYL THIOCARBAMATES IN DOGS AND RATS FOLLOWING REPEATED ORAL ADMINISTRATION.** M W Sauerhoff, D R Saunders, and G L Sprague. Environmental Health Center, Stauffer Chemical Company, Farmington, CT.

#713 **TOXICITY OF MIXTURES OF HERBICIDES, FOUND IN GROUNDWATER, IN MICE.** A K Chaturvedi, L M Dix, W L Liu, I E Berg, and G Padmanabhan, Departments of Civil Engineering, Pharmaceutical Sciences/Toxicology, and Veterinary Science, North Dakota State University, Fargo, ND.

#714 **COMPARISON OF CAPILLARY SUPERCRITICAL FLUID CHROMATOGRAPHY (SFC) AND HIGH PERFORMANCE LIQUID CHROMATOGRAPHY (HPLC) FOR THE ANALYSIS OF PESTICIDES IN BIOLOGICAL SYSTEMS.** E R Campbell[1], D W Later[2], D N Dankovic[2], R C Zangar[2] and D L Springer[2]. [1]Lee Scientific, Inc., Salt Lake City, UT and [2]Battelle, Pacific Northwest Laboratories, Richland, WA.

#715 **METABOLISM AND ELIMINATION OF A FLUORINATED SULFONAMIDE INSECTICIDE IN THE RAT.** R O Manning, S Muralidhara, J V Bruckner, M E Mispagel* and J M Bowen*. Dept. of Pharmacol. & Toxicol., College of Pharmacy, and *Dept. of Physiol. & Pharmacol., College of Veterinary Medicine, University of Georgia, Athens, GA.

#716 **DOSE-DEPENDENT PHARMACOKINETICS AND MAXIMUM TOLERATED DOSE OF OXADIXYL IN MICE.** Y H Atallah, and C C Yu. Environmental Sciences, Sandoz Crop Protection Corporation, Des Plaines, IL.

THURSDAY MORNING, FEBRUARY 18
CHANTILLY BALLROOM

POSTER SESSION: BIOTRANSFORMATION I

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

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

#717 **THE METABOLISM AND NEPHROTOXICITY OF TETRALIN IN FISCHER 344 RATS.** M P Serve', C T Olson, B M Llewellyn, R H Bruner, K O Yu, and D W Hobson. Wright State University, Dayton, OH and Armstrong Aerospace Medical Research Laboratory, WPAFB, OH.

#718 **THE ROLE OF INTESTINAL MICROFLORA ON DEEPOXIDATION OF TRICHOTHECENE MYCOTOXINS.** S P Swanson, C Helasek, W B Buck and H D Rood. Dept. of Vet. Biosciences, Univ. of Illinois, Urbana, IL.

#719 **BILIARY EXCRETION OF 7,12-DIMETHYLBENZ(A)ANTHRACENE (DMBA) METABOLITIES IN MALE AND FEMALE SPRAGUE-DAWLEY RATS.** S T Vater and D Warshawsky. University of Cincinnati College of Medicine, Cincinnati, OH

#720 **EFFECT OF CALORIC RESTRICTION ON HEPATIC DNA SYNTHESIS AND XENOBIOTIC-METABOLIZING ENZYMES IN RATS.** R A Pegram, W T Allaben, and M W Chou. National Center for Toxicology Research, Jefferson, AR.

#721 **INCREASE IN THE HEPATIC BREAKTHROUGH THRESHOLD FOR PARATHION AND PARAOXON IN DDE-PRETREATED RATS.** J M Becker amd T Nakatsugawa. State University of New York College of Environmental Science and Forestry, Syracuse, NY.

#722 **CHLORDECONE (CD) PREEXPOSURE-ALTERED DISPOSITION (PAD) OF A SUBSEQUENT DOSE EXHIBITS THRESHOLD AND SATURATION IN MICE.** L R Curtis and H M Carpenter. Oak Creek Lab, Dept. of Fisheries and Wildlife, Oregon State Univ., Corvallis, OR.

#723 **EFFECTS OF LINDANE ON THE DIURETIC RESPONSE AND HEPATORENAL TOXICITY OF FUROSEMIDE IN RATS.** H Landriault[1], G Sirois[1] and S Chakrabarti[2]. [1]Fac. de Pharmacie et [2]Dept. Med. Trav. et Hyg. Mil. Universite de Montreal, Que. Canada.

#724 **EFFECT OF ORTHOVANADATE ON BILIARY EXCRETORY FUNCTION IN STREPTOZOTOCIN-INDUCED DIABETIC RATS.** J B Watkins, III and M E Bauman, Medical Sciences Program, Indiana University School of Medicine, Bloomington, IN.

#725 **BIOAVAILABILITY OF 5-AMINOSALICYLIC ACID (5-ASA) FROM MIXED DIET IN RATS.** K K Hwang, A K Mandagere, D T Drees and J P Lacz. Marion Laboratories, Kansas City, MO.

#726 **TESTICULAR METABOLISM OF DINITROBENZENES (DNB).** D D Nystrom, P K Working, K S Bentley and D E Rickert. CIIT, Research Triangle Park, NC.

#727 **DOSE MONITORING OF EXPOSURE TO 4,4'-METHYLENEBIS[2-CHOROANILINE] (MBOCA) BY DETERMINATION OF HEMOGLOBIN ADDUCTS.** W E Braselton, T H Chen and B I Kuslikis. Dept. of Pharmacol./Toxicol., Michigan State Univ., E. Lansing, MI. Sponsor: J I Goodman

#728 **COVALENT BINDING OF [^{14}C]-ETHYLENE DIBROMIDE WITH ALBUMIN.** G A S Ansari, B S Kaphalia, D Sunio and J C Gan, Divisions of Chemical Pathology and Biochemistry, University of Texas Medical Branch, Galveston, TX.

#729 **CONCURRENT MEASUREMENT OF GLUTATHIONE S-TRANSFERASE AND EPOXIDE HYDROLASE ACTIVITY BY HPLC.** P L Stapleton and D L Eaton, Dept. Environmental Health, Univ. Washington, Seattle, WA.

#730 **COMPARISON OF THE MURINE AND HUMAN LIVER CYTOSOLIC EPOXIDE HYDROLASE (CEH).** E C Dietze, J Magdalou, R N Wixtrom, M H Silva, and B D Hammock. Department of Entomology and Environmental Toxicology, University of California, Davis, CA.

#731 **ISOLATION AND CHARACTERIZATION OF A RABBIT MICROSOMAL EPOXIDE HYDROLASE cDNA.** C Hassett, S M Turnblom, A DeAngeles, and C J Omiecinski. Dept. of Environmental Health, University of Washington, Seattle, WA.

#732 **AGE-RELATED CHANGES IN COLONIC GLUCURONIDATION OF 4-METHYLUMBELLIFERONE (4-MU): INHIBITION BY METHYLAZOXYMETHANOL (MAM).** M Weiner, T McMahon, and M Centra. University of Maryland School of Pharmacy, Baltimore, MD. Sponsor: C U Eccles.

#733 **EFFECT OF UDP-GLUCURONOSYLTRANSFERASE (GT) INDUCERS ON INTESTINAL UDP-GLUCURONIC ACID (UDP-GA) CONCENTRATION.** D Goon and C D Klaassen. Univ. of Kansas Med. Ctr, Kansas City, KS.

#734 **CIRCADIAN VARIATION IN HEPATIC UDP-GLUCURONIC ACID (UDP-GA) DOES NOT AFFECT GLUCURONIDATION OF XENOBIOTICS.** S R Howell and C D Klaassen. Univ. Missouri-Kansas City, Kansas City, MO and Univ. Kansas Medical Center, Kansas City, KS.

#735 **SIMULTANEOUS ANALYSIS OF MORPHINE AND MORPHINE 3-GLUCURONIDE BY ION PAIR HIGH PERFORMANCE LIQUID CHROMATOGRAPHY.** D J Kuntz, S Narayan, and G S Yost. Department of Pharmacology and Toxicology, University of Utah, Salt Lake City, UT.

#736 **MECHANISMS OF PENTACHLOROPHENOL-INDUCED INHIBITION OF CONJUGATIVE ENZYME SYSTEMS.** M G Miller and Y Singh, Dept of Environ Toxicol, Univ of California, Davis, CA. Sponsor: L Shull

#737 **DISTRIBUTION OF ACRYLONITRILE (ACN) IN TISSUES OF CONTROL AND GLUTATHIONE (GSH) DEPLETED B6C3F1 MICE.** D E Rickert, A E Roberts and D Pilon. CIIT, Research Triangle Park, NC.

#738 **EFFECT OF ROUTE OF ADMINISTRATION AND GSH DEPLETION ON THE IRREVERSIBLE ASSOCIATION OF ACRYLONITRILE (ACN) WITH TISSUE MACROMOLECULES IN RATS.** D Pilon, A E Roberts and D E Rickert, CIIT, Research Triangle Park, NC.

#739 **METABOLISM OF THE ACROLEIN-GLUTATHIONE ADDUCT S-(2-ALDEHYDO-ETHYL)GLUTATHIONE BY SPRAGUE-DAWLEY RATS.** D Y Mitchell and D R Petersen. School of Pharmacy, Molecular and Environmental Toxicology Program, University of Colorado, Health Sciences Center, Denver, CO.

#740 **ENHANCEMENT OF THE ACUTE TOXICITY OF 2-THIOTRIAZONE (TTZ) IN RATS BY GLUTATHIONE DEPLETION.** T M Tate, and W Flory. Louisiana State Univ. Baton Rouge, LA.

#741 **GLUTATHIONE TRANSFERASE-DEPENDENT METABOLISM OF 1,3-BIS(2-CHLOROETHYL)-1-NITROSOUREA.** C G Evans, P Doane-Setzer, and M T Smith. School of Public Health, University of California, Berkeley, CA

#742 **CHARACTERIZATION OF RODENT EMBRYONIC GLUTATHIONE S-TRANSFERASE ACTIVITY TOWARD VARIOUS SUBSTRATES.** E M Faustman, P L Stapleton, and D L Eaton. Dept. of Environmental Health, Univ. of Washington, Seattle, WA.

#743 ***IN VIVO* FORMATION OF 2-CHLOROETHYLSTEARATE: A FATTY ACID CONJUGATE OF 2-CHLOROETHANOL.** B S Kaphalia and G A S Ansari, Department of Pathology, University of Texas Medical Branch, Galveston, TX.

THURSDAY AFTERNOON, FEBRUARY 18
1:30 p.m.-5:00 p.m.
MONET BALLROOM

SYMPOSIUM: SHORT-TERM VALIDATION IN DEVELOPMENTAL TOXICOLOGY: LESSONS FROM GENETIC TOXICOLOGY

Sponsored by SOT Reproductive and Developmental Toxicology Specialty Section

Chairperson: R Skalko, East Tennessee State University, Johnson City, TX

The Empirical Validation of *In Vitro* Genetic Toxicity Assays. R W Tennant, National Institute of Environmental Health Sciences, Research Triangle Park, NC

Use of Structure-Activity Relationships for Construction of Short-Term Test Batteries in Genetic Toxicology. H S Rosenkranz, Case Western Reserve University, Cleveland, OH

Overview of Short-Term Tests in Developmental Toxicity and Application of Structure-Activity Relationships. N A Brown, Medical Research Council Laboratories, Surrey, UK

Validation Efforts for Batteries of Short-Terms in Developmental Toxicology. G A Kimmel, U.S. Environmental Protection Agency, Washington, DC

THURSDAY AFTERNOON, FEBRUARY 18
1:30 p.m.-5:00 p.m.
METROPOLITAN BALLROOM

SYMPOSIUM: SPECIFIC MECHANISMS OF IMMUNOTOXICITY: CHEMICAL ALTERATIONS OF CYTOKINE ACTIVITY

Chairpersons: P H Bick, Lilly Research Laboratories, Greenfield, IN; J H Exon, University of Idaho, Moscow, ID

Alterations in Macrophage Differentiation and Activiation After Exposure to Dimethylnitrosamine. L B Schook, University of Illinois at Urbana-Champaign, Urbana, IL

Involvement of Alveolar Macrophages in Asbestosis Associated Pulmonary Disease. G Rosenthal, National Institute of Environmental Health Sciences, Research Triangle Park, NC

Cellular Thiol Involvement in Immunotoxic Mechanisms. D A Lawrence, The Albany Medical College of Union University, Albany, NY

Benzene Immunotoxicity: The Role of the Hemopoietic Microenvironment. D Wierda, West Virginia University Medical School, Morgantown, WV

THURSDAY AFTERNOON, FEBRUARY 18
1:30 p.m.-5:00 p.m.
GOVERNORS LECTURE HALL

PLATFORM SESSION: CARDIOVASCULAR/RENAL

Chairpersons: M Charbonneau, CIIT, Research Triangle Park, NC
P D Williams, Lilly Research Laboratories, Greenfield, IN

#744 1:30 **EFFECTS OF DECALIN AND JP-10 ON THE FUNCTION AND MORPHOLOGY OF MALE RAT KIDNEYS.** D R Mattie, R H Bruner, T J Hoeflich, and J M Kendrick. AAMRL/THT, Wright-Patterson AFB OH. Sponsor: M P Serve'

#745 1:45 **FUEL HYDROCARBON-INDUCED SUBCELLULAR ALTERATIONS IN KIDNEY OF MALE RATS.** B D Garg[1], M J Olson[1], L C Li[1] and A K Roy[2], [1]Biomed. Sci. Dept., GM Res. Labs., Warren, MI and [2]Dept. Biol. Sci., Oakland U., Rochester, MI. Sponsor: E W Lee

#746 2:00 **ASSESSMENT OF THE ABILITY OF SEVERAL *IN VITRO* MODELS TO PREDICT THE NEPHROTOXICITY OF *BETA*-LACTAM ANTIBIOTICS.** S M Ford, D A Laska, G H Hottendorf, and P D Williams. Bristol-Meyers Co., Syracuse NY.

#747 2:15 **ROLE OF OXIDATIVE STRESS IN CEPHALORIDINE-INDUCED NEPHROTOXICITY.** R S Goldstein, R S Sozio, J B Tarloff and J B Hook. Smith Kline & French Laboratories, Dept. of Investigative Toxicology, King of Prussia, PA.

#748 2:30 **DIFFERENTIAL SENSITIVITY OF RENAL PLASMA MEMBRANES TO MERCURIC (HG) AND CHROMATE (CR) ION TOXICITY.** R E Jensen and W O Berndt. Dept of Pharmacology, Univ. NE Med. Ctr., Omaha, NE.

#749 2:45 **COMPLEXING ACTIVITY OF 2,3-DIMERCAPTO-1-PROPANE SULFONATE (DMPS) AND ITS DISULFIDE OXIDATION PRODUCT (DMPSS) IN RAT KIDNEY.** G L Diamond, J M Klotzbach, and J R Stewart. University of Rochester School of Medicine and Dentistry, Rochester, NY.

#750 3:00 **INTERACTION OF DICHLOROMALEIC ACID (DCMA) WITH THE NEPHROTOXIN MALEIC ACID (MA).** W R Christenson, M E Davis and W O Berndt. Depts. Pharmacology Univ. NE Med. Ctr., Omaha, NE and West VA Univ., Morgantown, WV.

#751 3:15 **INTERACTION OF DICHLOROMALEIC ACID (DCMA) WITH THE HEPATOTOXIN CARBON TETRACHLORIDE (CCL_4).** W O Berndt, M E Davis, and W R Christenson. Depts. Pharmacology Univ. NE Med. Ctr., Omaha, NE and West VA Univ., Morgantown, WV.

#752 3:30 **ASSESSMENT OF VASCULAR ENDOTHELIAL AND RENAL TUBULAR CELLS TO PREDICT CYCLOSPORIN (CS) TOXICITY.** A Vickers, R Hauser, and V Fischer. Drug Safety Assessment, Sandoz Ltd., Basle, Switzerland. Sponsor: G W Lucier.

#753 3:45 **ENDOTHELIAL CELLS AS A MODEL FOR CYCLOSPORIN (CS) INDUCED VASCULAR EFFECTS.** P Donatsch, C Tapparelli, P Cooper, and A Vickers. Drug Safety Assessment, Sandoz Ltd, Basle, Switzerland. Sponsor: G W Lucier.

#754 4:00 **RELATIVE IMPORTANCE OF GLUTATHIONE PEROXIDASE AND CATALASE FOR PREVENTION OF PEROXIDATION TO THE HEART.** I S Jamall and T W Simmons, Toxicology Program and Biological Sciences, St. John's University, NY.

#755 4:15 **ENERGY-DEPENDENT ENZYME RELEASE FROM HYPOXIC HEART TISSUE PERFUSED WITH CALCIUM-FREE MEDIUM.** Y Park and J P Kehrer. Division of Pharmacology and Toxicology, College of Pharmacy, The University of Texas at Austin, Austin, TX.

#756 4:30 **CARDIOVASCULAR STUDIES ON THE SAFETY OF PHENYLPROPANOLAMINE (PPA) IN DOGS.** L R Weiss and J A Vick, Biotox Assoc, Wheaton, MD and FDA, Drug Biology Div, Washington, DC.

THURSDAY AFTERNOON, FEBRUARY 18
1:30 p.m.-5:00 p.m.
SENATORS LECTURE HALL

PLATFORM SESSION: METALS

Chairpersons: E Foulkes, College of Medicine, University of Cincinnati, Cincinnati, OH
D Cory-Slechta, University of Rochester, Rochester, NY

#757 1:30 **RETENTION OF CADMIUM (CD) IN RODENT, CANINE AND PRIMATE LUNG: IMPLICATIONS FOR EXTRAPOLATION MODELLING OF CHRONIC EFFECTS.** G Oberdorster and C Cox. Environmental Health Sciences Center, University of Rochester, Rochester, NY.

#758 1:45 **A PHYSIOLOGICALLY-BASED TOXICOKINETIC MODEL OF THE GROWING RAT SKELETON.** E J O'Flaherty. Department of Environmental Health, University of Cincinnati, Cincinnati, OH.

#759 2:00 **ANALYTICAL COMPONENTS IN MODELING TRANSPLACENTAL MOVEMENTS OF THE HEAVIEST METALS (Z GREATER THAN/EQUAL TO 82).** B J Kelman and M R Sikov. Biology and Chemistry Department, Pacific Northwest Laboratory, Richland, WA.

#760 2:15 **AN EXPLANATION FOR SEX AND STRAIN DIFFERENCES IN RENAL UPTAKE OF METHYLMERCURY IN MOUSE.** N Imura, T Tanaka, K Kobayashi and A Naganuma. Dept. of Publich Health, School of Pharmaceutical Sciences, Kitasato University, Minato-ku, Tokoyo, Japan.

#761 2:30 **METHYLMERCURY SELECTIVELY EFFECTS CYTOSKELETON AND MITOTIC TIMING.** P R Sager, D W Matheson. Environmental Health Center, Stauffer Chemical Co., Farmington CT. Spon: M W Sauerhoff.

#762 2:45 **LEAD TOXICITY IN RAT BRAIN SYNAPTOSOMES.** M Boykin, M Hobson, S Rajanna, and Rajanna, B. Division of Natural and Applied Sciences, Selma University, Selma, AL. Sponsor: K P Rao.

#763 3:00 **UNIQUE PROPERTIES OF EACH OF THE WATER SOLUBLE DIMERCAPTO CHELATING AGENTS.** H V Aposhian, W Zheng, R M Maiorino, M M Aposhian, M Rivera and Q Fernando. Dept Mol & Cell Biol and Dept Chemistry, Univ. Arizona, Tucson, AZ.

#764 3:15 **TOXICITY STUDIES OF NICKEL.** R Rubenstein, A T Bathija, C DeRosa and B R Sonawane. US EPA, Washington, DC Sponsor: P A Fenner-Crisp.

#765 3:30 **ACUTE DEPLETION OF PULMONARY LAVAGE CELLS, INHIBITION OF 5'NUCLEOTIDASE ACTIVITY, AND ENHANCED LIPID PEROXIDATION IN ALVEOLAR MACROPHAGES OF RATS FOLLOWING PARENTERAL INJECTION OF NICKEL CHLORIDE.** F W Sunderman Jr, L L An, O Zaharia, S H Y Wong, and S M Hopfer, University of Connecticut Med. Sch., Farmington, CT.

#766 3:45 **REVERSIBLE CYTOSKELETAL INJURY INDUCED BY NI(II) COMPOUNDS.** I N Chou. Dept. of Microbiology, Boston University School of Medicine, Boston, MA. Sponsor: C T Walsh.

#767 4:00 **INHIBITORY EFFECT OF IRON ON THE CARCINOGENICITY OF NICKEL SUBSULFIDE IN F344/NCr RATS.** K S Kasprzak, Laboratory of Comparative Carcinogenesis, National Cancer Institute, FCRF, Frederick, MD.

#768 4:15 **INTEGRATION OF PHARMACOKINETICS AND GENOTOXICITY DAMAGE TO ASSESSMENT OF NICKEL EXPOSURE RISKS.** D B Menzel, A M Burke, C R Shoaf, R L Wolpert, and J R Boger III, Duke U. Med. Ctr., Depts. Pharm. and Med., Compre. Cancer Ctr., Durham, NC.

#769 4:30 **INDUCTION OF MUTATION AND ANCHORAGE INDEPENDENCE IN HUMAN FIBROBLASTS BY CHROMIUM(VI) AND CHROMIUM(III) COMPOUNDS.** K Biedermann and J R Landolph. Univ. of Southern Calif., School of Medicine, Los Angeles, CA.

#770 4:45 **EFFECTS OF CU(II) (3,5-DIPS)$_2$ ON SOLID EHRLICH CELL TUMOR IN MICE.** L W Chang, D Torregrosa, S L Kasemeier, and J R J Sorenson. Univ. of Arkansas for Medical Sciences, Little Rock, AR.

THURSDAY AFTERNOON, FEBRUARY 18
GRAND BALLROOM A

POSTER/DISCUSSION SESSION: TUMOR PROMOTION

Chairpersons: J A Popp, CIIT, Research Triangle Park, NC
J E Klaunig, Medical College of Ohio, Toledo, OH

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

#771 **CELL TYPE RESPONSE TO DIFFERENT CHEMICAL MODULATORS OF GAP JUNCTION FUNCTION.** D Bombick, G Zhang, and J E Trosko. Department of Pediatrics and Human Development, Michigan State University, East Lansing, MI.

#772 **THE ROLE OF BARBITURATE METABOLISM IN THE INHIBITION OF INTERCELLULAR COMMUNICATION BETWEEN CULTURED HEPATOCYTES.** C M Weghorst and J E Klaunig. Depart. of Pathology, Medical College of Ohio, Toledo, OH

#773 **ADDITIVE AND SYNERGISTIC INTERACTIONS BETWEEN SELECTED INHIBITORS OF GAP-JUNCTIONAL COMMUNICATION IN THE CHINESE HAMSTER V79 LUNG FIBROBLAST ASSAY.** L J Mills[1], D L Robson[1], and A R Malcolm. SAIC and [2]USEPA, Narragansett, RI.

#774 **INHIBITION OF INTERCELLULAR COMMUNICATION IN PRENEOPLASTIC RAT HEPATOCYTES INDUCED BY THE SOLT-FARBER MODEL.** S G Lilly and J E Klaunig. Dept. of Pathology, Medical College of Ohio, Toledo, OH.

#775 **THE EFFECT OF SEVERAL INHIBITORS OF SKIN TUMOR PROMOTION ON PROTEIN KINASE C ACTIVITY *IN VITRO*.** C L Crawford and R C Smart. Toxicology Program, North Carolina State University, Raleigh, NC.

#776 **EVALUATION OF DEOXYCHOLIC ACID (DCA) PROMOTION IN RAT LIVER.** L K Garvey, O Lyght, and J A Popp. Chemical Industry Institute of Toxicology, Research Triangle Park, NC. Sponsor: J E Gibson

#777 **ACTIVITIES OF GENETOXIC AND NONGENOTOXIC CARCINOGENS AND NONCARCINOGENS IN THE METABOLIC COOPERATION ASSAY.** R Langenbach[1], J S Bohrman[2], J Spalding[1], J Burg[2], E Elmore[3], D McGregor[4], M Toraason[2], [1]CGTB, NIEHS, RTP, NC. [2]NIOSH, Cincinnati, OH. [3]Northrop Inc., RTP, NC. [4]Inveresk, Inveresk, Scotland. Sponsor: E J Rauckman.

#778 **TUMOR PROMOTING ACTIVITIES OF ETHYLPHENYLACETYLUREA AND DIETHYLACETYLUREA, THE RING HYDROLYSIS PRODUCTS OF THE KNOWN PROMOTING AGENTS PHENOBARBITAL AND BARBITAL, IN RAT LIVER AND KIDNEY INITIATED BY N-NITROSODIETHYLAMINE.** R W Nims, R A Lubet, J M Rice, J M Ward, and *B A Diwan. National Cancer Institute and *Program Resources, Inc., Frederick, MD.

#779 **MORPHOLOGICAL CHANGES INDUCED BY 12-0-TETRADECANOYLPHORBOL-13-ACETATE (TPA) AND SN-1-2-DIDECANOYLGLYCEROL (DIC_{10}) ON CD-1 MOUSE SKIN *IN VIVO*.** N A Monteiro-Riviere and R C Smart. Toxicology Program and School Vet. Med., North Carolina State University, Raleigh, NC.

#780 **TUMOR-PROMOTING ACTIVITY OF FURNACE OIL FRACTIONS IN CD-1 MICE.** W D Johnson, N S Hatoum, S L Schmitt, T M Warne, J K Yermakoff, and P J Garvin. IIT Research Institute and Amoco Corporation, Chicago, IL.

THURSDAY AFTERNOON, FEBRUARY 18
GRAND BALLROOM C

POSTER/DISCUSSION SESSION: INFLAMMATORY CELLS IN THE LUNG

Chairpersons: R A Roth, Michigan State University, East Lansing, MI
V Castranova, West Virginia University Medical Center, Morgantown, WV

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

#781 **ALTERATIONS IN RAT ALVEOLAR MACROPHAGE (AM) PRODUCTION OF INTERLEUKIN-1 (IL-1) FOLLOWING INHALATION OF OZONE.** M A Amoruso, D L Laskin, J B Liesch, J Joselevitz-Goldman, B D Goldstein and F M Robertson. UMDNJ-RW Johnson Medical School and Rutgers Universtiy, Piscataway, NJ.

#782 **THE EFFECTS OF *IN VIVO* SILICA AND TITANIUM DIOXIDE (TiO_2) EXPOSURE ON INTERLEUKIN-1 (IL-1) AND TUMOR NECROSIS FACTOR *ALPHA* (TNF*ALPHA*) SECRETION BY RAT ALVEOLAR MACROPHAGES (AM).** K E Driscoll, R C Lindenschmidt, J Higgins, and M Perkins. Procter & Gamble, Cincinnati, OH.

#783 **SECRETION OF HYDROGEN PEROXIDE (H_2O_2), INTERLEUKIN 1 (IL-1) AND TUMOR NECROSIS FACTOR (TNF) BY RAT ALVEOLAR MACROPHAGES FOLLOWING ASBESTOS EXPOSURE.** M M Fort, R K Kumar, R Bennett, A R Brody, M I Luster and G J Rosenthal. NIEHS/NIH, Research Triangle Park, NC.

#784 **OZONE-INDUCED PROLIFERATION OF ALVEOLAR MACROPHAGES.** J A Hotchkiss, J R Harkema, and R F Henderson. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM.

#785 **EFFECT OF 1,3 AND 6 HOUR OZONE EXPOSURE ON ALVEOLAR MACROPHAGE SUPEROXIDE PRODUCTION.** Jane Warren, M A Amoruso, B D Goldstein. UMDNJ-RW Johnson Medical School/Rutgers Univ, Joint Grad Prog in Toxicology, Piscataway, NJ.

#786 **FIBROGENIC AND PROLIFERATIVE RESPONSE TO ASBESTOS INHALATION IN LUNG PARENCHYMA OF NORMAL AND COMPLEMENT DEFICIENT (C5-) MICE.** P D McGavran, C J Butterick, L H Overby and A R Brody. NIEHS, RTP, NC and UNC. Sponsor: G W Lucier.

#787 **CHARACTERIZATION OF OXIDANT GENERATION BY CELLS LAVAGED FROM OZONE-EXPOSED RATS.** M A Trush, M A Aiken, R L Esterline, D J P Bassett. Dept. Env. Hlth Sci., Johns Hopkins Univ., Balto., MD.

#788 **TEMPORAL CHANGES IN LYMPHOID CELLS DURING OZONE EXPOSURE OF BALB/C MICE.** M R Bleavins* and D Dziedzic. General Motors Research Labs, Warren, MI. Sponsor: E W Lee.

#789 **ALVEOLAR EOSINOPHILIC INFLAMMATORY RESPONSE INDUCED BY EXPOSURE TO GLASS FIBERS.** L R Pustilnik and A K Hubbard. Sponsor: A J Gandolfi. Dept. of Pharmacology/Toxicology, Univ of AZ, Tucson, AZ.

#790 **INJURY TO ISOLATED RAT LUNGS PERFUSED WITH PHORBOL MYRISTATE ACETATE (PMA) AND NEUTROPHILS IS ATTENUATED BY PRETREATMENT OF EITHER LUNG CELLS OR NEUTROPHILS WITH ASPIRIN.** L J Carpenter and R A Roth, Dept. of Pharmacol./Toxicol., Ctr. for Environ. Toxicol., Michigan State Univ., E. Lansing, MI.

#791 **EFFECTS OF SILICA EXPOSURE ON ALVEOLAR MACROPHAGES (AM): ACTION OF TETRANDRINE.** V Castranova, W H Pailes, and C Li. Div. Respir. Dis. Studies, NIOSH, Morgantown, WV.

THURSDAY AFTERNOON, FEBRUARY 18
CHANTILLY BALLROOM

POSTER SESSION: BIOTRANSFORMATION II

Chairperson: G F Rush, Smith Kline & French Laboratories, Philadelphia, PA

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

#792 **MODIFICATION OF BOVINE PHASE I AND PHASE II METABOLISM BY TRANS-STILBENE OXIDE.** J D Kendall, M F Raisbeck and G E Rottinghaus. Univ. of Mo., College of Vet. Med., Columbia, MO.

#793 **INVESTIGATION OF THE CELLULAR AND METABOLIC MECHANISMS OF 2-BUTOXYETHANOL (BE) INDUCED HEMATOTOXICITY IN RATS AND ASSESSMENT OF HUMAN RISK *IN VITRO*.** B I Ghanayem and H B Matthews. NIH/NIEHS, Research Triangle Park, NC.

#794 **EFFECT OF MICROSOMAL ENZYME INDUCERS ON THE *IN VITRO* GLUCURONIDATION OF THYROXINE.** R A Barter and C D Klaassen. Univ. of Kansas Medical Center, Kansas City, KS.

#795 **ACTIVATION AND DEGRADATION OF PHOSPHOROTHIONATE INSECTICIDES BY RAT BRAIN AND LIVER** C S Forsyth and J E Chambers, Dept. Biol. Sci., Miss. State Univ., Miss. State, MS.

#796 **METABOLISM OF ORGANONITRILES AND CYANIDE BY RAT NASAL TISSUE ENZYMES.** A R Dahl and B A Waruszewski, Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM.

#797 **METABOLISM OF 3,4-METHYLENEDIOXYMETHAMPHETAMINE (MDMA) BY RAT LIVER MICROSOMES.** R Gollamudi, M Lopez, J Leakey, P Webb and W Slikker, Jr. U. Tenn., Memphis, TN and NCTR, Jefferson, AR.

#798 **THE OXIDATION OF PHORATE BY HEPATIC, RENAL AND PULMONARY MICROSOMES FROM MICE FOLLOWING *IN VIVO* TREATMENT WITH XENOBIOTICS.** S Kinsler, P E Levi, and E Hodgson. Toxicology Program, North Carolina State University, Raleigh, NC.

#799 ***IN VIVO* AND *IN VITRO* METABOLISM OF DEHA IN THE RAT.** J C Lhuguenot, M C Cornu, Y Keith, and C R Elcombe[1], ENS.BANA, GIS Tox Cell. Dijon, France. [1]Imperial Chemical Industries, Central Toxicology Laboratory, Alderley Park, Cheshire, UK. Sponsor: A. Rico

#800 **MICROSOMAL METABOLISM OF CHLOROPROPANES.** R F Volp, Department of Chemistry, Murray State University, Murray, KY. Sponsor: J B Watkins.

#801 **GESTATION-DEPENDENT VARIATION IN AFLATOXIN B1 ACTIVATION BY RAT LIVER MICROSOMES.** F E Wall and T R Irvin, Laboratory of Toxicology, Veterinary Anatomy Department, Texas A&M, College Station, TX Sponsor: A C Ray

#802 **METABOLISM OF ACRYLONITRILE (ACN) TO 2-CYANOETHYLENE OXIDE (ANO) IN F-344 RAT LUNG CELLS AND MICROSOMES AND LIVER MICROSOMES.** A E Roberts, S Lacy, D Pilon, and D E Rickert. CIIT, Research Triangle Park, NC.

#803 **ENZYMIC BASIS OF THE ACTIVATION OF 3,3'-DICHLOROBENZIDINE BY LIVER MICROSOMES TO MUTAGENS AND LIPID-BINDING DERIVATIVES.** M M Iba, B Lang, and P E Thomas, Department of Pharmacology and Toxicology, Rutgers University, Piscataway, NJ, and Roche Institute of Molecular Biology, Nutley, NJ.

#804 **COMPARATIVE METABOLISM OF 4-VINYL-CYCLOHEXENE (VCH) IN FEMALE RAT AND MOUSE HEPATIC MICROSOMES.** B J Smith and I G Sipes. University of Arizona, Dept. of Pharm & Tox., Tucson, AZ.

#805 **THE METABOLISM OF CHLOROBENZENE, THE DICHLOROBENZENES AND BIPHENYL BY RAT AND HUMAN LIVER SLICES IN DYNAMIC ORGAN CULTURE.** A J Weir, J Barr, K Brendel, and I G Sipes. Dept. of Pharmacology and Toxicology, College of Pharmacy, University of Arizona, Tucson, AZ.

#806 **METABOLISM OF 4-ISOPROPYLBIPHENYL IN PRECISON-CUT LIVER SLICES.** J M Firriolo, K Brendel and D E Carter. Dept. Pharm. and Tox., University of Arizona, Tucson, AZ.

#807 **PARTIAL RETENTION OF BIOTRANSFORMATION IN CRYOPRESERVED PRECISION-CUT LIVER SLICES.** S M Wishnies, A R Parrish, I G Sipes, A J Gandolfi, and K Brendel. Departments of Pharmacology and Toxicology, Health Sciences Center, University of Arizona, Tucson, AZ.

#808 **CAFFEINE (CAF) METABOLISM IN RAT AND HUMAN HEPATOCYTES AND LIVER S9.** C E Green, V P Hanko, H W Nolen, G R Gordon, J H Peters, and C A Tyson. SRI International, Menlo Park, CA.

#809 **THE METABOLISM OF N-NITROSOTHIAZOLIDINE BY ISOLATED RAT HEPATOCYTES.** D Cragin and T Shibamoto, Department of Environmental Toxicology, University of California at Davis, Davis, CA. Sponsor: A Buckpitt

#810 **METABOLISM OF THE ANTILEISHMANIAL DRUG, WR 6026, IN HAMSTER, DOG AND MONKEY ISOLATED HEPATOCYTES.** L A Shipley, T G Brewer, W A Clark, A D Theoharides, and H Chung, Department of Pharmacology, Walter Reed Army Institute of Research, Washington DC.

#811 **NON-SUICIDAL OXIDATION OF PARATHION BY CELL-FREE AND ISOLATED HEPATOCYTE SYSTEMS IN THE PRESENCE OF A SUBSTRATE BUFFER.** T Nakatsugawa and J Timoszyk. State University of New York College of Environmental Science and Forestry, Syracuse, NY.

#812 **HIGH PERFORMANCE LIQUID RADIOCHROMATOGRAPHIC ASSAY OF LIVER MICROSOMAL N,N-DIMETHYLANILINE MONOOXYGENASE ACTIVITY.** M Chen and M M Iba, Dept. of Pharmacology and Toxicology, Rutgers University, Pisacataway, NJ.

#813 **EVALUATION OF HPLC WITH RADIOMETRIC DETECTION FOR PHARMACOKINETIC STUDIES.** L E Bates, K T McManus and J D deBethizy. R.J. Reynolds Tobacco Co, Winston-Salem, NC.

#814 **MODELING HALOCARBON METABOLISM RATES (VMAX) USING QUANTITATIVE STRUCTURE-ACTIVITY RELATIONSHIPS (QSAR).** *S L Dixon, M L Gargas, and M E Andersen. *Wright State University, and AAMRL/TH, Wright-Patterson AFB, OH.

#815 **HUMAN SMOKING BEHAVIORS IMPACT CIGARETTE SMOKE YIELDS.** D W Griffith, J H Robinson, C L Chamberlin, J H Reynolds and A W Hayes. R.J. Reynolds Tobacco Co, Winston-Salem, NC.

#816 **NICOTINE YIELDS AND PLASMA CONCENTRATIONS DURING HUMAN SMOKING.** J H Robinson, J D deBethizy, R A Davis, D W Griffith, J H Reynolds and A W Hayes. R.J. Reynolds Tobacco Co, Winston-Salem, NC.

#817 **BIOAVAILABILITY OF NICOTINE FROM A NEW CIGARETTE THAT DOES NOT BURN TOBACCO.** J D deBethizy, J H Robinson, R A Davis, D W Griffith, J H Reynolds and A W Hayes. R.J. Reynolds Tobacco Co, Winston-Salem, NC.

#818 **TOXICOKINETICS OF N-NITROSOMETHYL(2-HYDROXYETHYL)AMINE (NMHA) IN THE RAT.** A J Streeter, R W Nims, J A Hrabie[1], Y-H Heur, and L K Keefer. Chemistry Section, Laboratory of Comparative Carcinogenesis and [1]Program Resources, Inc., National Cancer Institute, Frederick Cancer Research Facility, Frederick, MD.

#819 **PHARMACOKINETICS OF CYANIDE.** T C Marrs and J E Bright. CDE Porton Down, Salisbury, Wilts, England.

#820 **DISPOSITION AND METABOLISM OF ^{14}C-TOLUENE DIISOCYANATE (TDI) FOLLOWING ORAL AND INHALATION EXPOSURE IN RATS.** M Stoltz[1], D Czarnecki[1], F Pallas[1], M El-hawari[1], and G Sangha[2]. Midwest Research Institute, Kansas City, MO[1] and Mobay Corporation, Stilwell, KS[2].

#821 **METABOLISM AND DISPOSITION OF TETRACHLOROPHTHALIC ANHYDRIDE IN THE RAT.** W P Ridley, J Warren and R S Nair. Monsanto Company, Environmental Health Laboratory, St. Louis, MO.

#822 **EFFECT OF DOSE ON THE DISPOSITION AND METABOLISM OF FURFURYL ALCOHOL (FOL) IN FISCHER 344 RATS FOLLOWING ORAL ADMINISTRATION.** D M Silveira, A A Nomeir, M M McComish, and M Chadwick. Arthur D. Little, Inc., Acorn Park, Cambridge, MA.

#823 **EFFECT OF DOSE ON THE DISPOSITION AND METABOLISM OF FURFURAL (FAL) IN FISCHER 344 RATS FOLLOWING ORAL ADMINISTRATION.** A A Nomeir, M M McComish, D M Silveira and M Chadwick. Arthur D. Little, Inc., Acorn Park, Cambridge, MA.

#824 **PHARMACOKINETICS OF ACRYLAMIDE AFTER MULTIPLE DOSES IN RATS.** C E Dragula and D E Carter. College of Pharmacy, University of Arizona, Tucson, AZ.

#825 **BILIARY EXCRETION OF 2(S)-HYDROXY-3(R)-(2-CARBOXYETHYLTHIO)-3-[2-(8-PHENYLOCTYL)-PHENYL]PROPANOIC ACID, (SK&F 104353) IN SPRAGUE-DAWLEY RATS.** R Gagnon, M Carbonaro, G Joseph, R Eckardt, J F Newton and J Kao. Dept. of Drug Metabolism, SK&F Labs King of Prussia, PA.

#826 **METABOLIC FATE AND PHARMACOKINETICS (PK) OF SULOTROBAN, 4-(2-PHENYLSULPHONYLAMINOETHYL) PHENOXYACETIC ACID (BM 13.177) IN SPRAGUE-DAWLEY RATS.** J Kao, R Gagnon, M Carbonaro, G Joseph, P Levandoski and G Rhodes. Dept. Drug Metabolism, SK&F Labs, King of Prussia, PA.

#827 **THE DISTRIBUTION AND BINDING OF 14 C-± GOSSYPOL IN MALE SPRAGUE-DAWLEY RATS BY WHOLE-BODY AUTORADIOGRAPHY.** M A Othman, *E A Gross, *K T Morgan, and M B Abou-Donia. Duke University, Durham, NC. *Chemical Industry Institute of Toxicology, Research Triangle Park, NC.

#828 **ABSORPTION, DISTRIBUTION, AND EXCRETION (ADE) OF LOW MOLECULAR WEIGHT LINEAR POLYCARBOXYLATES (LMWLP) IN SPRAGUE-DAWLEY (SD) RATS.** S E Cappelli and F E Wood, Jr., Procter & Gamble, Cincinnati, OH. Sponsor: G P Daston.

#829 **ABSORPTION, DISTRIBUTION, AND ELIMINATION (ADE) OF TWO 35-CARBON KETONES FOUND IN TRIGLYCERIDE OILS.** F E Wood, Jr., S J H Stoll, and S E Capelli, Procter & Gamble, Cincinnati, OH. Sponsor: G P Daston.

#830 **BIOTRANSFORMATION OF CITRAL IN RATS.** J J Dilibetto, G Usha, L T Burka, L S Birnbaum. NIEHS, Research Triangle Park, NC.

#831 **VEHICLE AND pH EFFECTS ON THE DERMAL PENETRATION OF ACRYLIC ACID: *IN VITRO - IN VIVO* CORRELATIONS.** R W D'Souza and W R Francis. Miami Valley Laboratories, Procter & Gamble Company, Cincinnati, OH. Sponsor: G P Daston.

#832 **PHARMACOKINETICS AND METABOLISM OF [1R, CIS]- AND [1R, TRANS]- ISOMERS OF TETRAMETHRIN IN RATS.** I S Silver and W C Dauterman. Toxicology Program, North Carolina State University, Raleigh, NC.

#833 **NITRAPYRIN: KINETICS AND METABOLISM IN THE FISCHER 344 RAT.** C Timchalk, M D Dryzga and R A Campbell. H&ES, The Dow Chemical Co., Midland, MI. Sponsor: A M Schumann.

#834 **EXCRETION BALANCE AND PHARMACOKINETIC EVALUATION OF 14C-DIPHENYLIODONIUM HEXAFLUOROARSENATE (PIFA) AFTER INTRAVENOUS, ORAL AND INTRATRACHEAL ADMINISTRATION IN RATS.** L W Smith, J L Eiseman, A K Thakur and S L Yurasevecz. General Electric Company, Pittsfield, MA and Hazleton Laboratories, Vienna, VA.

#835 **PHARMACOKINETICS AND MATERIAL BALANCE OF BIS[2-(DIMETHYLAMINO)ETHYL] ETHER (DMAEE) FOLLOWING A SINGLE CUTANEOUS APPLICATION TO FISCHER 344 RATS AND NEW ZEALAND WHITE RABBITS.** C B Jensen, S W Frantz, M J Tallant, C M Grosse, R H Garman and B Ballantyne. Bushy Run Research Center/Union Carbide Corp., Export, PA.

#836 ***IN VIVO* METABOLISM OF METHACRYLONITRILE TO CYANIDE IN RATS.** R Cavazos, M Y H Farooqui, and W W Day. Dept. of Biology, Pan American University, Edinburg, TX.

THURSDAY AFTERNOON, FEBRUARY 18
CHANTILLY BALLROOM

POSTER SESSION: SOLVENTS

Chairperson: J Y Bruckner, University of Georgia, Athens, GA

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

#837 **SUBCHRONIC TOXICITY STUDIES IN RATS WITH m- AND p-XYLENES.** B Sonawane, R Rubenstein, A Bathija, C DeRosa, G Wolfe and E N Albert U.S. Environmental Protection Agency, Washington, DC; Hazelton Laboratories, Rockville, MD and George Washington Univ; Washington, DC.

#838 **RESPONSES OF MOUSE BRAIN, LUNG AND LIVER TO p-XYLENE ADMINISTRATION.** L King, A Roberts, D Brown and R Schatz. Toxicology Program, Northeastern Univ., Boston, MA

#839 **EFFECT OF XYLENE ISOMERS ON RAT BRAIN MICROSOMAL MEMBRANES AND GLUTHATHIONE LEVELS.** T AuCoin, G Furman, C LeBel, A Roberts and R Schatz. Toxicology Program, Northeastern Univ., Boston, MA.

#840 **ALTERATIONS IN RAT LUNG MICROSOMAL BENZO(a)PYRENE METABOLISM BY XYLENE ISOMERS.** J Melia, A Roberts, D Brown and R Schatz. Northeastern Univ., Boston, MA.

#841 **TOLUENE INDUCED DECREASE OF PHOSPHATIDYLETHANOLAMINE IN SYNAPTOSOMAL LIPIDS.** C LeBel and R Schatz Toxicology Program, Northeastern Univ., Boston, MA.

#842 **HPLC DETECTION OF TRANS, TRANS-MUCONIC ACID IN RATS EXPOSED TO BENZENE.** J M Mitchell, B D Goldstein, G Witz. UMDNJ-R W Johnson Med Sch/Rutgers Univ, Joint Grad Prog in Toxicology, Piscataway, NJ.

#843 **NEUROBEHAVIORAL AND TOXICOKINETIC CHANGES DURING SUBCHRONIC INHALATIONAL EXPOSURE TO STYRENE IN THE RAT.** B M Kulig and P C Bragt. Medical Biological Laboratory TNO, Rijswijk, The Netherlands. Sponsor: H A Tilson.

#844 **THE COMPARATIVE TOXICITY OF COMBUSTION PRODUCTS OF HIGH IMPACT POLYSTYRENE (HIPS) WITH AND WITHOUT DECABROMODIPHENYLOXIDE/ANTIMONY TRIOXIDE (DBDPO/Sb_2O_3) AS A FLAME RETARDANT USING 2,3,7,8-TETRABROMODIBENZO-p-DIOXIN (TBDD) AND 2,3,7,8-TETRABROMODIBENZOFURAN (TBDF) AS POSITIVE CONTROLS.** M Pinkerton (1), R Kociba (2), R Petrella (2), D McAllister (3), M Willis, J Fulfs (4), H Thoma, O Hutzinger (5). Ethyl Corp., Baton Rouge, LA (1); Dow Chem. Corp., Midland, MI (2); Great Lakes Chem. Corp., W. Lafayette, IN (3); Inhausen Research Instit., Ft. Collins, CO (4);and U. of Bayreuth, W. Germany (5).

#845 ***IN VITRO* PRENATAL TOXICITY OF GLYCOL ETHERS EVALUATED VIA RODENT EMBRYO CULTURE SYSTEMS.** K D Best, E K Stevens, and T R Irvin. Div of Engineering Toxicology, TX Eng Expt Station and Vet Anatomy Dept, Texas A&M Univ, Coll Sta, TX Sponsor: A C Ray

#846 **EVALUATION OF ETHYLENE GLYCOL MONOHEXYLETHER (EGHE) FOR GENOTOXICITY USING A BATTERY OF FOUR *IN VITRO* TEST SYSTEMS.** R S Slesinski, P J Guzzie, E R Morabit and B Ballantyne. Bushy Run Research Center and Union Carbide Corp., Export, PA.

#847 **A TERATOLOGY SCREENING STUDY IN RATS WITH CYCLOPENTANONE.** G M Rusch[3], D E Rodwell[2], M D Nemec[1] and E J Tasker[1]. [1]WIL Research Laboratories, Inc., Ashland, OH. [2]Springborn Life Sciences, Inc., Spencerville, OH. [3]Allied Corporation, Morristown, NJ.

#848 **A TERATOLOGY SCREENING STUDY IN RATS WITH N-HEXANOL.** D E Rodwell[2], M D Mercieca[2], G M Rusch[3] and E J Tasker[1]. [1]WIL Research Laboratories, Inc., Ashland, OH. [2]Springborn Life Sciences, Inc., Spencerville, OH. [3]Allied Corporation, Morristown, NJ.

#849 **NO EVIDENCE OF TOXICITY ASSOCIATED WITH SUBCHRONIC DERMAL EXPOSURE OF RABBITS TO BUTOXYPROPANOL.** J D Innis and G A Nixon, The Procter & Gamble Co., Cincinnati, OH. Sponsor: W B Gibson.

#850 **BUTOXYPROPANOL IS NOT A DEVELOPMENTAL TOXIN IN RABBITS EXPOSED BY THE DERMAL ROUTE.** W B Gibson, G A Nolen, Procter & Gamble, Cincinnati, OH and M S Christian, Argus Research Labs, Inc., Horsham, PA.

#851 **EFFECT OF METABOLISM OF CARBON DISULFIDE (CS_2) ON ITS HEPATO- AND NEURO-TOXICITY: INTRAPERITONEAL (IP) VS. INHALATION EXPOSURE.** R J Rubin and R B Kroll, Johns Hopkins Univ., Baltimore, MD.

#852 **THE MECHANISM OF ORGANIC SOLVENT TRANSPORT IN THE BLOOD.** C W Lam,* T J Galen,* J F Boyd,* and D L Pierson. NASA Biomedical Laboratories Branch and *KRUG International, Johnson Space Center, Houston, TX.

#853 **EFFECT OF CARBON DISULFIDE (CS_2) ON RENAL FUNCTION IN THE RAT.** R B Kroll and R J Rubin, Johns Hopkins Univ., Baltimore, MD.

#854 **TOXICOKINETICS OF ACETONITRILE I. BLOOD LEVELS, EXHALATION, AND URINARY EXCRETION OF 2-^{14}C-ACETONITRILE IN MICE.** G I Hussein, J P Loh, and A E Ahmed Department of Pathology, The University of Texas Medical Branch, Galveston, TX.

#855 **TOXICOKINETICS OF ACETONITRILE II. AUTORADIOGRAPHIC DISTRIBUTION AND BINDING OF 2-^{14}C-ACETONITRILE IN MICE.** J P Loh, G I Hussein, and A E Ahmed Department of Pathology, The University of Texas Medical Branch, Galveston, TX

#856 **CHARACTERIZATION OF ^{14}C-BUTADIENE ADDUCT FORMATION TO HEMOGLOBIN IN MICE AND RATS.** J D Sun, A R Dahl, J A Bond, R F Henderson and L S Birnbaum* Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM; NIEHS, Research Triangle Park, NC.

#857 **SUBCHRONIC TOXICITY OF PYRIDINE IN RATS.** C DeRosa, H Choudhury, R Rubenstein, A Bathija, and B Sonawane. U.S. EPA, Washington, DC.

#858 **COMPARATIVE TOXICITY OF THREE DIMETHYLAMINES IN THE ALBINO RABBIT BY 9-DAY REPEATED CUTANEOUS EXPOSURE.** M W Gill, J P Van Miller, S W Frantz, R H Garman, C M Troup, P E Losco, and B Ballantyne. Bushy Run Research Center, Export, PA and Union Carbide Corp., Danbury, CT.

#859 **SUSTAINED INTRAPERITONEAL DELIVERY OF 1,1,1-TRICHLOROETHANE BY A CERAMIC DELIVERY SYSTEM.** D E Hollenbach*, P K Bajpai*, L M Morris*, M L Gargas, R B Drawbaugh, and M E Andersen. AAMRL/TH, Wright-Patterson AFB, OH.

THURSDAY AFTERNOON, FEBRUARY 18
CHANTILLY BALLROOM
POSTER SESSION: HEPATIC/GI TOXICOLOGY

Chairperson: L Fisher, Michigan State University, East Lansing, MI

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

#860 **CHARACTERIZATION OF THE PRIMING EFFECT OF LITHOCHOLATE ON RAT, PERITONEAL NEUTROPHILS.** L J Dahm and R A Roth. Dept. of Pharmacol/Toxicol., Ctr. for Environ. Toxicol., Michigan State Univ., E. Lansing, MI.

#861 **INDUCTION OF PEROXISOMAL *BETA*-OXIDATION IN CULTURED RAT, DOG AND MONKEY HEPATOCYTES BY BEZAFIBRATE, CIPROFIBRATE, AND LY171883.** P S Foxworthy and P I Eacho. Lilly Research Laboratories, Toxicology Division, Greenfield, IN.

#862 **HEPATOTOXICITY DUE TO 2-ETHYLHEXANOL IS O_2-DEPENDENT IN THE PERFUSED RAT LIVER.** B Keller and R Thurman. Dept. of Pharmacol., U. of N.C., Chapel Hill, NC.

#863 **HEPATOTOXICITY DUE TO MENADIONE IS POTENTIATED BY ETHANOL IN PERFUSED RAT LIVER.** P E Ganey and R G Thurman, Dept. of Pharmacol., Univ. of North Carolina at Chapel Hill, NC

#864 ***IN VITRO* LC_{50} DETERMINATION OF SOLUBILIZED 2,3,4-TRIMETHYLPENTANE USING PRIMARY RAT HEPATOCYTES.** N J DelRaso and D R Mattie*. Northrop Services, Inc. Dayton, OH. *AAMRL/THT, Wright-Patterson AFB, OH. Sponsor: R S Kutzman.

#865 **CORRELATION OF MORPHOLOGICAL (APOPTOSIS) AND BIOCHEMICAL (SERUM ALANINE TRANSAMINASE-ALT) INDICES OF HEPATOTOXICITY IN FASTED FEMALE MICE TREATED INTRAPERITONEALLY WITH 1,1-DICHLOROETHYLENE (DCE).** G P Bond, J C Garrison and E M Uyeki. University of Kansas Medical Center, Kansas City, KS.

#866 **EFFECTS OF SESQUITERPENE LACTONES ON MITOCHONDRIAL OXIDATIVE PHOSPHORYLATION.** T R Narasimhan, H L Kim, and S H Safe, Department of Veterinary Physiology and Pharmacology, Texas A&M University, College Station, TX.

#867 **THE MECHANISM OF TRIETHYLPHOSPHINEGOLD CHLORIDE (TEPAu)-INDUCED CYTOTOXICITY: DISTURBANCES IN INTRACELLULAR CALCIUM HOMEOSTATIS IN ISOLATED RAT HEPATOCYTES.** G F Rush, D W Alberts, D K Mirabelli and G D Hoke. Smith Kline & French Laboratories, King of Prussia, PA.

#868 **THE MECHANISM OF TRIETHYLPHOSPHINEGOLD CHLORIDE-INDUCED CYTOTOXICITY: ROLE OF CELLULAR THIOLS.** D W Alberts, G D Hoke, C K Mirabelli and G F Rush. Smith Kline & French Laboratories, King of Prussia, PA.

#869 **MECHANISM OF TRIETHYLPHOSPHINEGOLD CHLORIDE TOXICITY TO ISOLATED RAT LIVER MITOCHONDRIA: INDUCTION OF Ca^{2+}-CYCLING.** G D Hoke, C K Mirabelli, and G F Rush. Smith Kline & French Laboratories, King of Prussia, PA.

#870 **ATTENUATION OF THE *IN VITRO* CYTOTOXICITY OF SK&F 104524 IN ISOLATED RAT HEPATOCYTES BY FRUCTOSE.** P F Smith*, G D Hoke, D W Alberts, D K Mirabelli, and G F Rush. Dept. of Investigative Toxicology, Smith Kline & French Labs, King of Prussia, PA and *Merck, Sharp & Dohme Research Labs, West Point, PA.

#871 **SEQUENTIAL ULTRASTRUCTURAL HEPATIC, PULMONARY AND RENAL CHANGES DUE TO MICROCYSTIS AERUGINOSA HEPATOTOXIN IN THE RAT.** S B Hooser, E J Basgall, V R Beasley, W M Haschek. College of Vet. Medicine, Univ. of Illinois, Urbana, IL.

#872 **THE EFFECTS OF METHYLENEDIOXYPHENYL (MDP) COMPOUNDS ON HEPATIC MICROSOMAL PROTEINS OF C57BL/6MICE (II).** Y C Chui, M Lewandowski, P Levi, and E Hodgson. Toxicology Program, North Carolina State University, Raleigh, NC.

#873 **L-2-OXOTHIAZOLIDINE-4-CARBOXYLIC ACID (OTZ) PROTECTION AGAINST 1,1-DICHLOROETHYLENE (DCE) HEPATOTOXICITY IS ASSOCIATED WITH DECREASES IN TOXIN METABOLISM AND LIVER CYTOCHROME P450.** M T Moslen, R F Whitehead, A E Ferguson and M F Kanz, Chemical Pathology Laboratory, University of Texas Medical Branch, Galveston, TX.

#874 **INORGANIC PHOSPHATE (PI) AS AN ENDOGENOUS INDICATOR OF 1-1, DICHLOROETHYLENE (DCE)-HEPATOBILIARY INJURY.** L Kaphalia, M F Kanz and M T Moslen. Chemical Pathology Labortory, University of Texas Medical Branch, Galveston, TX.

#875 **SPECIES DIFFERNECNES IN NAFENOPIN-INDUCED HEPATIC PEROXISOME PROLIFERATION.** J G Evans, B G Lake, T J B Gray, C J North, and S D Gangolli. BIBRA, Carshalton, Surrey, England.

#876 **RENAL AND HEPATIC TOXICITY OF A BENZOPYRAN-4-ONE IN THE CYNOMOLGUS MONKEY.** E Macallum, G Smith, N Barsoum, R Walker and P Greaves, Warner-Lambert/Parke-Davis Res. Inst., Mississauga, ON Sponsor: F A de la Iglesia.

#877 **THE INDUCTIVE EFFECT OF MIREX AND CHLORDECONE ON THE CYTOCHROME P-450 MONOOXYGENASE SYSTEM.** M Lewandowski, P Levi and E Hodgson. Toxicology Program, North Carolina State University, Raleigh, NC.

#878 **APPLICATION OF THE LIVER-TO-SPLEEN RATIO OF TRACER UPTAKE AS A HEPATIC FUNCTIONAL ASSAY IN RATS: MEASUREMENT OF $CC1_4$ TOXICITY.** T R Ward, J W Allis and J E Simmons. Health Effects Research Laboratory, U.S. Environmental Protection Agency, Research Triangle Park, NC.

#879 **HEPATOTOXICITY AND RECOVERY FROM SUBCHRONIC ADMINISTRATION OF LOW DOSES OF CCL_4.** J W Allis, T R Ward, B L Robinson And J E Simmons. Health Effects Research Lab, U.S.E.P.A., Research Triangle Park, NC.

#880 **ACUTE TOXICITY OF MICROCYSTIN-LR IN THE RAT: A COMPARATIVE DOSE-RESPONSE STUDY USING SERUM CHEMISTRIES AND MORTALITY AS INDICES.** R D LeClaire, W B Lawrence, K A Bostian and K A Mereish. United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Frederick, MD. Sponsor: R W Wannemacher.

#881 **ATTENUATION OF TOXIC INJURY IN HEPATOCYTE MONOLAYERS WITH PHOSPHOLIPASE AND PROTEASE INHIBITORS.** J R MacDonald. Dept. of Path., UCSF College of Medicine, San Francisco, CA.

#882 **ETHANOL (ETH) DECREASES THE TOXICITY OF Cd.** W C Kershaw, T Iga and C D Klaassen. Univ. Kansas Med. Ctr, Kansas City, KS.

#883 **THE DIFFERENTIAL EFFECTS OF HEPATOTOXICANTS ON THE SULFATION PATHWAY IN RAT LIVER.** T J Maziasz, J Liu, C Madhu and C D Klaassen University of Kansas Medical Center, Kansas City, KS.

#884 **THE EFFECTS OF *ALPHA*, *BETA*-UNSATURATED ALDEHYDES (ABUA) ON THE LIVER.** G Witz, K O Cooper, K R Cooper and C Witmer. The Joint Graduate Program in Toxicology, Rutgers University/UMDNJ, Piscataway, NJ.

#885 **THE EVALUATION OF NEUROENDOCRINE CELL POPULATIONS AND MUCOSAL HEIGHT IN THE RAT STOMACH.** C S Dormer, Smith Kline & French Research Ltd, The Frythe, Welwyn, Herts, U.K. Sponsor: J Hook.

#886 **EFFECTS OF LONG-TERM DIETARY RESTRICTION ON HEPATIC DRUG METABOLIZING ENZYMES (DME) IN RATS.** K Phipps, E Graichen, R Goldstein and T Leonard. Smith Kline & French Laboratories, Swedeland, PA.

#887 **EFFECT OF DOSING VEHICLES ON THE SUBACUTE HEPATOTOXICITY OF CARBON TETRACHLORIDE (CCL_4) IN RATS.** H J Kim and J V Bruckner. Dept. Pharmacol. & Toxicol., College of Pharmacy, University of Georgia, Athens, GA.

#888 **EFFECT ON LIVER FUNCTION OF MOLSIDOMINE AND ITS METABOLITE 3-MORPHOLINOSYDNONIMINE IN PATIENTS WITH HEPATIC CIRRHOSIS.** K H Heger, J R Weiser. University of Lubeck, Department of Internal Medicine, West Germany. Sponsor: O Strubelt.

#889 **DISTRIBUTION AND RELEASE OF MARKER ENZYMES IN THE IN-SITU PERFUSED RAT LIVER WITH DIGITONIN AND ISOTOPE 14c-GLYCOCHOLATE.** J R Weiser, K Worz. University of Lubeck, West Germany, and University of California, CA. Sponsor: O Strubelt

#890 **EFFECTS OF FLAVONOIDS ON LIVER CELL INJURY.** 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.

#891 **SERUM AND HEPATIC RETINOID REDUCTION AND MORPHOLOGIC CHANGES INDUCED BY 3,4,3',4'-TETRACHLOROBIPHENYL (TCB) IN THE RAT LIVER.** A Brouwer* and S K Durham,* Univ. of Wageningen, The Netherlands and Hoffmann-La Roche, Nutley, NJ Sponsor: W H Halliwell

#892 **EFFECT OF *ALPHA*-NAPHTHYL ISOTHIOCYANATE AND CCL_4 INTERACTION ON HEPATOCELLULAR DAMAGE.** W D Zinermon, V Prakash and A Agarwal. Toxicology Research and Training Center, John Jay College of CUNY, New York, NY. Sponsor: H M Mehendale.

#893 **CELLULAR FUNCTIONS OF PRIMARY HEPATOCYTE CULTURE FROM RATS FED HIGH SELENIUM DIETS.** L A Doody, L R Shull. Department of Environmental Toxicology, University of California, Daivs, CA.

#894 **VALPROIC ACID HEPATOTOXICITY IN RAT, PIG AND HUMAN LIVER SLICES.** R Fisher, A J Gandolfi, H Nau, and K Brendel. Department of Pharmacology, University of Arizona, Tucson, AZ.

#895 **METHYL ISOBUTYL-KETONE (MIBK) 2,2,4-TRIMETHYLPENTANE (TMP) ON CHOLESTASIS.** L Dahlstrom-King and G L Plaa, Department de Pharmacologie, Universite de Monteal, Quebec, Canada.

#896 **AN EVALUATION OF FENBENDAZOLE FOR LIVER TOXICITY IN GOATS, QUAIL AND RATS.** R R Dalvi, Sch. of Vet. Med., Tuskegee University, Tuskegee, AL.

#897 **BIOCHEMICAL AND PATHOLOGICAL EFFECTS OF KETOCONAZOLE ON THE LIVERS OF MALE SWISS WEBSTER MICE FOLLOWING SUBACUTE ADMINISTRATION.** L W Whitehouse, R Mueller, A Pakuts. Drug Toxicology, Health Protection Branch, Tunney's Pasture, Ottawa, Canada. Sponsor: B H Thomas.

#898 **SUBCHRONIC ORAL TOXICITY STUDY OF SULFUR MUSTARD IN RATS.** L B Sasser, R A Miller, and J A Cushing. Biology and Chemistry Department, Pacific Northwest Laboratory, Richland, WA.

#899 **REDUCTION OF DIACETOXYSCIRPENOL (DAS) TOXICITY IN RATS BY ATROPINE AND METHYLATROPINE.** D E Marlarkey, B H Conner and A E Rogers. Pathology Dept., Boston Univ. Sch. of Medicine, Tufts Univ. Sch. of Veterinary Medicine, Boston, MA.

THURSDAY AFTERNOON, FEBRUARY 18
CHANTILLY BALLROOM

POSTER SESSION: ELECTROPHYSIOLOGY

Chairperson: T B Moore, University of Michigan, Ann Arbor, MI

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

#900 **CNS EXCITABILITY CHANGES PRODUCED BY ACUTE EXPOSURE TO SOLVENTS.** R Dyer, Neurophysiology Branch, USEPA Research Triangle Park, NC.

#901 **TOLUENE NEUROTOXICITY IN RATS AFTER SIMULATION OF HUMAN SOLVENT ABUSE FOR 14 WEEKS.** S J Gorzinski, J L Mattsson, T S Gushow and M A Zimmer*. The Dow Chemical Company, Midland, MI and *Dow Corning Corp., Midland, MI.

#902 **EFFECTS OF ACETYLCHOLINESTERASE INHIBITION ON SPATIAL VISION IN RATS.** W K Boyes and H K Hudnell. U.S.E.P.A., Research Triangle Park, NC.

#903 **EFFECT OF VERAPAMIL ON ORGANOPHOSPHATE-INDUCED DELAYED NEUROPATHY (OPIDN) IN HENS.** H A N El-Fawal, B S Jortner and M Ehrich. Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA.

#904 **STEREOSPECIFIC ACTION OF THE PYRETHROID DELTAMETHRIN ON SODIUM CHANNELS.** L D Brown and T Narahashi. Department of Pharmacology, Northwestern University Medical School, Chicago, IL.

#905 **FORMAMIDINES, LIDOCAINE AND CLONIDINE DIFFERENTIALLY ALTER AMYGDALOID KINDLING.** M E Gilbert and C Mack, Northrop Environmental Sciences, RTP, NC. Sponsor: P J Bushnell.

#906 **NEUROPHYSIOLOGICAL EFFECTS OF PERINATAL METHIMAZOLE ADMINISTRATION: A POSITIVE CONTROL STUDY.** R R Albee, J L Mattsson, H D Kirk, K A Johnson and W J Breslin. The Dow Chemical Company, Midland, MI.

#907 **CARBOXYHEMOGLOBIN AND HUMAN VISUAL FUCTION.** H K Hudnell and V A Benignus. USEPA, and the University of North Carolina, Chapel Hill, NC.

#908 **ACUTE ADMINISTRATION OF DITHIOBIURET CAUSES TRANSIENT DEPRESSION OF NEUROMUSCULAR TRANSMISSION.** J M Spitsbergen and W D Atchison. Dept. of Pharmacol./Tox., and Center for Environ. Tox., Mich. Stat Univ., E. Lansing, MI.

#909 **INTRACELLULAR RECORDING OF CA1 PYRAMIDAL CELL RESPONSES FOLLOWING EXPOSURE TO TRIMETHYLTIN.** A R Garber, D L Armstrong, M J Wayner, and F Montemayor. Brain Research Laboratory, Division of Life Sciences, University of Texas at San Antonio, San Antonio, TX.

THURSDAY AFTERNOON, FEBRUARY 18
CHANTILLY BALLROOM

POSTER SESSION: ENDOCRINE SYSTEM

Chairperson: G L Wolff, FDA, National Center for Toxicological Research, Jefferson, AR

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

#910 **CYPROHEPTADINE (CPH) PROTECTION AGAINST ALLOXAN (AL) TOXICITY.** A K Chatterjee and L J Fischer. Dept. of Pharm/Tox and Ctr. for Env. Tox., Mich. State Univ., E. Lansing, MI

#911 **DIFFERENTIAL RESPONSES OF GENETICALLY IDENTICAL MICE TO STREPTOZOTOCIN TREATMENT.** G L Wolff[1], D L Greenman[1], and L G Frigeri[2]. National Center for Toxicological Research, Food and Drug Administration, Jefferson, AR[1], and Whittier Institute, La Jolla, CA[2].

#912 **ADRENALECTOMY ABATES SELENIUM-INDUCED HYPER-GLYCEMIA.** Z Mallory, J L Early, H M McLean, and V K Nonavinakere. Florida A&M University, College of Pharmacy, Tallahassee, FL. Sponsor: R C Schnell

#913 **DIFFERENTIAL EFFECTS OF SINGLE AND REPEATED DOSES OF IBOPAMINE ON SERUM ALDOSTERONE LEVELS IN THE RAT.** B E Fishman and R F Walker, Smith Kline and French Laboratories, King of Prussia, PA Sponsor: J M Manson

#914 **INDUCTION OF LEYDIG CELL TUMORS AND INCREASED BLOOD GONADOTROPINS PRODUCED BY SRI 200-110 IN THE RAT.** S Roberts, T Nett, H Hartman, T Adams, C Smith, R Robison and R Stoll, Dept of PSA Sandoz, E Hanover, NJ, Dept of Physiol Biophys Colorado St Univ, Ft Collins, CO and Dept of Animal Sci, UC Davis, CA.

#915 **EFFECT OF 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD) ON THE REGULATION OF PLASMA LUTEINIZING HORMONE (LH) CONCENTRATION IN MALE RATS.** R C Bookstaff, R W Moore, and R E Peterson. School of Pharmacy, Univ. of Wis., Madison, WI.

#916 **EFFECTS OF 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD) ON THE PROFILE OF STEROIDS SECRETED BY PERFUSED RAT TESTES.** R W Moore, J M Kleeman, and R E Peterson, Sch. of Pharmacy and Env. Tox. Ctr., Univ. Wisc., Madison, WI.

#917 **EFFECTS OF 2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD) ON TESTOSTERONE (T) PRODUCTION BY ISOLATED PERFUSED TESTES.** J M Kleeman, R W Moore and R E Peterson. Evn. Toxicol. Ctr. and Sch. of Pharmacy, Univ. of Wis., Madison, WI.

#918 **EFFECTS OF SPIRONOLACTONE INGESTION ON SERUM THYROTROPIN AND THYROID HORMONES IN THE MALE RAT.** D E Semler and F M Radzialowski. Product Safety Assessment, G.D. Searle Research and Development, Skokie, IL. Sponsor: S C Gad.

FRIDAY MORNING, FEBRUARY 19
8:30 a.m.-12:00 noon
MONET BALLROOM

SYMPOSIUM: THE POTENTIAL USE OF HUMAN TISSUES FOR TOXICITY STUDIES AND TESTING

Sponsored by SOT Technical Committee

Chairpersons: J M Frazier, The Johns Hopkins University, Baltimore, MD; C A Tyson, SRI International, Menlo Park, CA

Introduction. J M Frazier, The Johns Hopkins University, Baltimore, MD

Legal and Ethical Considerations Associated with Using Fetal Tissues in Research. C R McCarthy, National Institutes of Health, Bethesda, MD

Malignant Transformation of Human Fibroblasts as a Carcinogenesis Model. J J McCormick, Michigan State University, East Lansing, MI

Current Status of Human Organ and Cell Culture Technology for Ocular Research and Testing. D R Meyer, Southwest Medical School, University of Texas Health Science Center at Dallas, Dallas, TX

Technical Approaches to Using Human Liver for Research Purposes. G Powis, Mayo Clinic, Rochester, MN

Use of Human Tissue and Organs in Research—An Alternative to the Animal Resource. L Ducat, National Disease Research Interchange, Philadelphia, PA

Closing Remarks. C A Tyson, SRI International, Menlo Park, CA.

FRIDAY MORNING, FEBRUARY 19
8:30 a.m.-12:00 noon
METROPOLITAN BALLROOM

SYMPOSIUM: IMMUNOLOGIC AND GENETIC MECHANISMS IN CARCINOGENESIS

Sponsored by SOT Carcinogenesis, Immunotoxicology, and Mechanisms Specialty Sections

Chairpersons: E V Buehler, Hill Top Research, Ind., Cincinnati, OH; G P Carlson, School of Pharmacy and Pharmacal Sciences, West Lafayette, IN.

Introduction. J A Swenberg, CIIT, Research Triangle Park, NC

Immunologic Mechanisms of Host Resistance to Tumors. R Herberman, Pittsburgh Cancer Institute, Pittsburgh, PA

Modulation of Immune Function by U.V. Irradiation. M Kripke, The University of Texas System Cancer Center, Houston, TX

Insertion and Expression of Chemically Defined DNA Lesions in Bacterial and Mammaliam Cells. J Essigman, Massachusetts Institute of Technology, Boston, MA

DNA Repair Processes in Mammalian Cells. A Pegg, Milton Hershey Medical Center, Hershey, PA

Discussant. J A Swenberg, CIIT, Research Triangle Park, NC

FRIDAY MORNING, FEBRUARY 19
GRAND BALLROOM A

POSTER/DISCUSSION SESSION: METAL BINDING PROTEINS

Chairpersons: B A Fowler, University of Maryland, Baltimore, MD
C D Klaassen, University of Kansas Medical Center, Kansas City, KS

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

#919 **TISSUE AND AGE DISTRIBUTION STUDIES OF THE HIGH AFFINITY RENAL LEAD-BINDING PROTEIN BY WESTERN BLOT ANALYSIS.** R Racine, D E O Gilg, G E Duval, and B A Fowler. NIEHS, Research Triangle Park, NC.

#920 **ISOLATION AND INITIAL CHARACTERIZATION OF A HIGH AFFINITY LEAD-BINDING PROTEIN (PbBP) FROM RAT BRAIN.** G E DuVal and B A Fowler. National Institute of Environmental Health Sciences, Research Triangle Park, NC.

#921 **ONTOGENIC CHANGE IN METALLOTHIONEIN (MT) GENE INDUCTION BY CADMIUM IN C57BL/6J MICE.** D J Thomas, S Morris, and P C Huang, Dept Peds, U Neb Med Ctr, Omaha, NE and Dept Biochem, Johns Hopkins U, Baltimore, MD.

#922 **INDUCTION OF MURINE HEPATIC METALLOTHIONEIN BY POLYINOSINIC ACID-POLYCYTIDILIC ACID.** J M Lopez and J U Bell. Department of Physiological Sciences, University of Florida, Gainesville, FL.

#923 **ZINC (Zn) INTERACTION WITH ALA DEHYDRATASE (ALAD) IS REGULATED BY METALLOTHIONEIN (ZnMT) AND APOTHIONEIN.** B A Fowler, P L Goering, and G E DuVal. National Institute of Environmental Health Sciences, Research Triangle Park, NC.

#924 **DOSE-RESPONSE RELATIONSHIP BETWEEN URINARY CADMIUM AND METALLOTHIONEIN IN A JAPANESE POPULATION.** T Kido, Z A Shaikh, H Kito, R Honda*, and K Nogawa*. University of Rhode Island, Kington, RI and *Kanazawa Medical University, Kanazawa, Japan.

#925 **THE ROLE OF TESTICULAR METAL-BINDING PROTEINS IN STRAIN-DEPENDENT RESISTANCE TO CADMIUM IN THE MOUSE.** M P Waalkes, A Perantoni, M R Bhave, and S Rehm. Laboratory of Comparative Carcinogenesis National Cancer Institute-FCRF, Frederick, MD.

#926 **TISSUE OF CADMIUM AND METALLOTHIONEIN FOLLOWING SUBCHRONIC CD EXPOSURE IN THE GUINEA PIG.** Z Suntres, and E M K Lui. University of Western Ontario, London, Ont., Canada.

#927 **INCREASED METALLOTHIONEIN LEVELS DURING LACTATION.** D Solaiman, Chemistry Department, Duquesne University, Pittsburgh, PA. M H Bhattacharyya, Biological and Medical Research Division, Argonne National Laboratory, Argonne, IL. J S Garvey, Biology Department, Syracuse University, Syracuse, NY.

#928 **METALLOTHIONEIN (MT) PROTECTS AGAINST METAL TOXICITY IN RAT PRIMARY HEPATOCYTE CULTURES.** J Liu, W C Kershaw and C D Klaassen. Univ. of Kansas Med. Ctr, Kansas City, KS.

#929 **ACUTE PARENTERAL EXPOSURE TO FORMALDEHYDE (HCHO) INDUCES HEPATIC METALLOTHIONEIN (MT) SYNTHESIS IN MICE.** P L Goering, Center for Devices and Radiological Health, Food and Drug Administration, Rockville, MD.

#930 **CD-METALLOTHIONEIN NEPHROTOXICITY IN INBRED STRAINS OF MICE.** L E Sendelbach, W C Kershaw and C D Klaassen. Univ. of Kansas Medical Center, Kansas City, KS.

FRIDAY MORNING, FEBRUARY 19
GRAND BALLROOM C

POSTER/DISCUSSION SESSION: GLUTATHIONE MODULATION OF TOXICITY

Chairpersons: G Witz, UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ
J A Hinson, National Center for Toxicological Research, Jefferson, AR

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

#931 **PHENOBARBITAL-INDUCED CYTOSOLIC CYTOPROTECTIVE MECHANISMS THAT OFFSET INCREASES IN NADPH CYTOCHROME P-450 REDUCTASE ACTIVITY IN MENADIONE-MEDIATED CYTOTOXICITY.** W S Utley and H M Mehendale. Dept. Pharmacol. & Toxicol., Univ. Miss. Med. Ctr., Jackson, MS.

#932 **PEROXISOME PROLIFERATORS (PPS) ALTER GLUTATHIONE REDOX STATUS IN RAT HEPATOCYTE CULTURES.** T J B Gray, B G Lake, J A Beamand, S A Korosi, and S D Gangolli. BIBRA, Carshalton, Surrey, England.

#933 **DEPRESSION OF HEPATIC GLUTATHIONE BY OPIOID ANALGESIC DRUGS IN MICE.** N P Skoulis, R C James, R D Harbison, and S M Roberts, University of Arkansas for Medical Sciences, Little Rock, AR.

#934 **THE ROLE OF CONJUGATE PATHWAYS IN THE ACTIVATION OF 1,2-DIBROMO-3-CHLOROPROPANE TO TESTICULAR DNA-DAMAGING PRODUCTS.** J G Omichinski*, G Brunborg*, J A Holme*, E J Soderlund*, S D Nelson**, and E Dybing*. Natl. Inst. Publ. Hlth., Oslo, Norway* and Univ. Washington, Dept. Med. Chem., Seattle, WA.**

#935 **DIFFERENTIAL NEPHROTOXICITY OF QUINONE-GLUTATHIONE CONJUGATES.** S S Lau, B A Hill and T J Monks*. Division of Pharmacology, College of Pharmacy, University of Texas at Austin, Austin, TX and *University of Texas System Cancer Center, Science Park-Research Division, Smithville, TX.

#936 **EFFECTS OF GLUTATHIONE(GSH) DEPLETION ON MODULATING CYTOSKELETAL PERTURBATION 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: C T Walsh.

#937 **THE EFFECT OF GLUTATHIONE ON THE BINDING OF THE NITROSO METABOLITE OF 4-AMINOBIPHENYL TO HEMOGLOBIN.** B W Manning, J O Lay, K L Dooley, F F Kadlubar, and J A Hinson. Natl. Ctr. for Toxicol. Res., Jefferson, AR and Univ. of Arkansas for Medical Sciences, Little Rock, AR.

#938 **IMMUNOCYTOCHEMICAL LOCALIZATION OF GLUTAMINE TRANSAMINASE K, A RAT KIDNEY CYSTEINE CONJUGATE *BETA*-LYASE.** T W Jones, C Qin, and J L Stevens. University of Maryland School of Medicine, Baltimore, MD and W. Alton Jones Cell Science Center, Lake Placid, NY.

#939 **THE ROLE OF GLUTATHIONE (GSH) IN MULTIDRUG RESISTANT (MDR) HUMAN MYELOMA CELLS.** W T Bellamy*, R T Dorr, University of Arizona Cancer Center, Tucson, AZ. Sponsor: A J Gandolfi.

#940 **GLUTATHIONE DEPLETION BY ACRYLATE AND METHACRYLATE ESTERS *IN VITRO*: STRUCTURE ACTIVITY RELATIONSHIPS.** T McCarthy, E Hayes, C Schwartz, G Witz. UMDNJ-R W Johnson Med School/Rutgers U, Joint Grad Prog in Toxicology, Piscataway, NJ.

FRIDAY MORNING, FEBRUARY 19
CHANTILLY BALLROOM
POSTER SESSION: REPRODUCTIVE TOXICOLOGY/TERATOLOGY II

Chairperson: E Faustman, University of Washington, Seattle, WA

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

#941 **REPRODUCTIVE PROFILES OF SPRAGUE-DAWLEY MALE RATS FROM TWO ANIMAL SUPPLIERS.** K R Bodnar, S L Kerstetter, and M H Feuston. Mobil Oil Corporation, Princeton, NJ.

#942 **METHOXYCHLOR BLOCKS IMPLANTATION IN RATS.** A M Cummings. USEPA, HERL, DCTD, RTB, Research Triangle Park, NC. Sponsor: R Chadwick

#943 **LINDANE AFFECTS FEMALE REPRODUCTIVE FUNCTION BY IMPAIRING ESTROGEN RECEPTORS.** R L Cooper, R W Chadwick, J M Goldman, G Rehnberg, K C Booth, J Hein and W K McElroy, USEPA, HERL, RTB & GBB, Research Triangle Park, NC

#944 **LINDANE-INDUCED OBESITY AND LESIONS IN THE REPRODUCTIVE SYSTEM OF FEMALE FISHER 344 RATS.** R W Chadwick, R L Cooper, J Chang, G L Rehnberg, and K W McElroy. U.S. E.P.A., Research Triangle Park, NC.

#945 **EVIDENCE FOR THE FORMATION OF SUPPLEMENTARY CORPORA-LUTEA IN PREGNANT AND PSUEDOPREGNANT RATS.** D A Garside* & G R Foxcroft. *SK&F Research Ltd., Welwyn, UK, & Nottingham University, Sutton Bonnington, UK. Sponsor: J B Hook

#946 **BROPIRIMINE INDUCED NECROSIS OF UTERINE DECIDUA DURING GESTATION.** D G Branstetter, T A Marks, D L Black, S M Poppe, and R D Terry, The Upjohn Company, Kalamazoo, MI.

#947 **EFFECT OF LINDANE ON HYPOTHALAMIC CONTROL OF PITUITARY-OVARIAN FUNCTION.** M L Mole, R L Cooper, R W Chadwick, and J M Goldman. USEPA, HERL, RTB & GBB, Research Triangle Park, NC.

#948 **METHOXYCHLOR (M) ALTERS ESTROGEN (E) DEPENDENT RUNNING-WHEEL ACTIVITY (RWA), THE REPRODUCTIVE TRACT AND PITUITARY (PIT) FUNCTION IN THE FEMALE RAT.** L E Gray, Jr., J Ostby, J Ferrell and J Goldman. USEPA, HERL, DCTD, Reproductive Toxicology Branch, Research Triangle Park, NC. Sponsor: R Kutzman.

#949 **CORRELATION OF EMBRYOTOXICITY AND BACTERIAL MUTAGENICITY OF SOIL COMTAMINATED WITH MUNICIPAL SEWAGE SLUDGE.** T R Irvin, E K Stevens, and K C Donnelly. Div of Engineering Toxicology, TX Eng Expt Station and Vet Anatomy Dept, Texas A&M, College Station, TX, Sponsor: A C Ray.

#950 **A TWO-GENERATION REPRODUCTION STUDY IN RATS WITH DIBUTYLPHENYL-PHOSPHATE IN RATS.** C H Farr, R S Nair, F R Johannsen, Monsanto Co, St Louis, MO; and J K Lemen, Hazleton Laboratories America, Vienna, VA.

#951 **TELONE II® SOIL FUMIGANT: TWO-GENERATION INHALATION REPRODUCTION STUDY IN F-344 RATS.** W J Breslin, H D Kirk, C M Streeter, J F Quast and J R Szabo. H&ES, The Dow Chemical Company. Sponsor: K S Rao.

#952 **CHRONIC CAFFEINE EXPOSURE ADVERSELY AFFECTS REPRODUCTIVE OUTCOME IN THE MONKEY.** S G Gilbert, K R Reuhl, D C Rice, and B Stavric. Toxicology Research Division, Bureau of Chemical Safety, Food Directorate, Health Protection Branch, Health and Welfare Canada, Tunney's Pasture, Ottawa, Ontario Canada.

#953 **THE EFFECT OF DIET AND LITTER SIZE ON THE DIFFERENTIAL ELIMINATION OF 14C-2,4,5,2',4',5'-HEXACHLOROBIPHENYL (6-CB) FROM LACTATING MICE.** B J Ring, K R Seitz, L A Gallenberg and M J Vodicnik. Medical College of Wis., Milwaukee, WI.

#954 **THE BEHAVIORAL EFFECTS OF PERINATAL ORAL EXPOSURE TO PYRETHROIDS ON RAT PUPS.** L Sylianco-Wu, M C Wilson and M J Kallman, Departments of Psychology and Pharmacology, School of Pharmacy, University of Mississippi, University, MS.

#955 **EVALUATION OF THE DEVELOPMENTAL TOXICITY OF NEOHEPTANOIC ACID (NHA) IN RATS.** J H Smith, P J Wier, R W Biles and R A Scala. Exxon Biomedical Sciences, Inc., East Millstone, NJ.

#956 **DEVELOPMENTAL EFFECTS OF CODEINE IN LVG HAMSTERS AND CD-1 MICE.** C A Kimmel,[1]C J Price, [1]R B Sleet, [1]J D George, [1]M C Marr, *R E Morrissey and *B A Schwetz. NTP/REAG, US EPA, Washington, DC; +Research Triangle Institute, Research Triangle Park, NC; and *NTP/NIEHS, Research Triangle Park, NC.

#957 **ON NEONATAL MORTALITY OF RAT OFFSPRING WHOSE SIRES RECEIVED METHADONE BEFORE MATING.** F R Alleva, S Takagi, and T Balazs, Food and Drug Administration, Washington, DC.

#958 **TERATOLOGICAL EVALUATION OF GELLAN GUM IN RATS.** B E Osborne, H A Birnbaum, K Robinson, C Thibault, B G Procter, J K Baker. Bio-Research Labs, Ltd., Montreal, QUE., H. A. Birnbaum Assoc. Inc., W. Palm Beach, FL, Kelco Div. of Merck & Co., Inc., San Diego, CA.

#959 **RELATIVE TERATOGENICITY OF NITROFEN ANALOGS: UNCHLORINATED, MONOCHLORINATED AND DICHLORINATED-PHENYL 4'-NITROPHENYL ETHERS** E O Higgins, M Horn, and B M Francis. University of Illinois, Urbana, IL.

#960 **DEVELOPMENTAL TOXICITY EVALUATION OF NITROFURAZONE (NF) IN RABBITS.** C J Price, J D George, M C Marr, *C A Kimmel, [1]R E Morrissey and [1]B A Schwetz. Research Triangle Institute, Research Triangle Park, NC; *NTP/Reproductive Effects Assessment Group, US-EPA, Washington, DC and [1], Research Triangle Park, NC.

#961 **EVALUATION OF THE EFFECTS OF SCOPOLAMINE HYDROBROMIDE ON FERTILITY IN RATS.** L D Anderson, J E Shaw, M E Prevo, ALZA Corp., Palo Alto, CA. F E Reno, Hazleton Laboratories America, Inc., Vienna, VA.

#962 **DEVELOPMENTAL TOXICITY OF SCOPOLAMINE HYDROBROMIDE (SCOP) IN RATS AND MICE.** J D George, C J Price, M C Marr, *C A Kimmel, [1]R E Morrissey, and [1] B A Schwetz. Research Triangle Institute, Research Triangle Park, NC; *NTP/REAG, US EPA, Washington, DC; and [1]NTP/NIEHS, Research Triangle Park, NC.

#963 **EVALUATION OF THE EMBRYOTOXIC AND TERATOGENIC POTENTIAL OF SCOPOLAMINE HYDROBROMIDE IN RATS AND RABBITS.** J E Shaw, L D Anderson, M E Prevo, ALZA Corp., Palo Alto, CA., F E Reno, Hazleton Laboratories America, Inc., Vienna, VA.

#964 **DEVELOPMENTAL TOXICITY OF OCHRATOXIN A IN EXTRACORPOREALLY MAINTAINED, POSTIMPLANTATION RAT EMBRYOS.** K Mayura, J F Edwards, E A Maull and T D Phillips. College of Veterinary Medicine, Texas A&M University, College Station, TX.

#965 **DEVELOPMENTAL PHASE SPECIFIC EFFECTS OF METHOXYACETIC ACID (MAA) IN FISCHER-344 RATS.** R B Sleet, C B Myers, and M C Marr. Research Triangle Institute, Research Triangle Park, NC. Sponsor: R E Morrissey.

#966 **DEVELOPMENTAL TOXICITY EVALUATION OF ETHYLENE GLYCOL (EG) AEROSOL BY NOSE-ONLY (NO) OR WHOLE-BODY (WB) EXPOSURE IN CD®-1 MICE.** R W Tyl, B Ballantyne[a], L C Fisher, D L Fait, D R Klonne, I M Pritts and D E Dodd, Bushy Run Research Center, Export, PA and Union Carbide Corp.[a], Danbury, CT.

#967 **DEVELOPMENTAL TOXICITY OF INHALED 1,3 BUTADIENE IN RODENTS.** P L Hackett, M R Sikov, J R Decker, J J Evanoff, T J Mast, B L Hardin[1], and B A Schwetz[2]. Pacific Northwest Lab., Richland, WA. [1]NIOSH, Cincinnati, OH.[2]NTP, Research Triangle Park, NC.

#968 **PERINATAL INHALATION EXPOSURE OF RATS TO N-HEXANE.** T J Mast, P L Hackett, J R Decker, R L Romereim, B L Hardin[1], R E Morrissey and B A Schwetz[2]. Pacific Northwest Lab., Richland, WA. [1]NIOSH, Cincinnati, OH.[2]NTP, Research Triangle Park, NC.

#969 **TWO GENERATION REPRODUCTION STUDY OF VINYL ACETATE ADMINISTERED IN DRINKING WATER.** L Irvine and D C Shaw, Hazleton UK, Harrogate, England; J J Clary, R W Rickard, T R Tyler, M B Vinegar and F Carpanini

#970 **DEVELOPMENTAL TOXICITY EVALUATION OF 1,3-DIPHENYLGUANIDINE (DPG) IN CD® RATS.** J W Barnett Jr, F R Johannsen, Monsanto Company, St. Louis, MO; and D E Rodwell, WIL Research Laboratories, Ashland, OH.

#971 **TERATOGENICITY EVALUATION OF 3-CHLOROPHENOXYPROPIONIC ACID (CPA) BY GAVAGE TO NZW RABBITS.** L C Fisher, R W Tyl, T A Savine and J M Charles[a]. Bushy Run Research Center, Export, PA and Rhone-Poulenc Ag Company[a], Research Triangle Park, NC.

#972 **TERATOGENICITY OF THE ORGANOPHOSPHORUS INSECTICIDE MALATHION IN *XENOPUS LAEVIS*.** J E Snawder and J E Chambers. Dept. Bio Sci., Miss. State Univ., Mississippi State, MS.

FRIDAY MORNING, FEBRUARY 19
CHANTILLY BALLROOM

POSTER SESSION: NEUROPATHOLOGY

Chairperson: P J Kurtz, Stauffer Chemical Co., Farmington, CT

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

#973 **EARLY DEGENERATIVE AND REGENERATIVE CHANGES AT THE NEUROMUSCULAR JUNCTION [NMJ] IN ACRYLAMIDE NEUROPATHY.** R L DeGrandchamp and H E Lowndes. Neurotoxicology Laboratories, Rutgers College of Pharmacy, Piscataway, NJ.

#974 **THE RELATIONSHIP BETWEEN NEUROFILAMENTOUS AXONAL SWELLINGS AND AXONAL DEGENERATION.** M M Halleck and B G Gold. Neurotox. Lab, Rutgers College of Pharmacy, Piscataway, NJ. Sponsor: H E Lowndes.

#975 **COMPARISON OF ULTRASTRUCTURAL ALTERATIONS IN CARBON DISULFIDE AND DIETHYLDITHIOCARBAMATE NEUROPATHIES.** B G Gold, C Zola and R McClendon. Neurotox Lab, Rutgers College of Pharmacy, Piscataway, NJ Sponsor: H E Lowndes.

#976 **ACUTE RESPONSE OF THE FETAL TELENCHEPHALON TO MATERNAL ETHANOL EXPOSURE IN THE RAT.** L A Kotkoskie and S Norton. University of Kansas Medical Center, Kansas City, KS.

#977 **A MODEL SYSTEM FOR REVERSIBLE AND IRREVERSIBLE RESPONSES OF THE DEVELOPING CENTRAL NERVOUS SYSTEM TO TOXIC AGENTS.** S Norton, L Kotkoskie and B F Kimler. University of Kansas Medical Center, Kansas City, KS.

#978 **EFFECTS OF TRICHLOROETHYLENE ON MYELINATION OF HIPPOCAMPUS.** S A Spohler, L G Isaacson, and D H Taylor. Miami University, Oxford, OH. Sponsor: P McCauley.

#979 **SERUM LEVELS OF *BETA*-N-METHYLAMINO-L-ALANINE (BMAA) AND SELECTIVE AMINO ACIDS IN PRIMATES CHRONICALLY (P.O.) ADMINISTERED BMAA.** G E Kisby, P S Spencer, D N Roy, and R C Robertson. Institute of Neurotoxicology, Albert Einstein College of Medicine, Bronx, NY.

#980 **DISTRIBUTION OF ELEMENTS IN AXOTOMIZED NERVES DETERMINED BY MICROPROBE ANALYSIS.** V L Randall, R M LoPachin and A J Saubermann. Univesity of Houston, College of Pharmacy and The Microprobe Center, UTHSC, Houston, TX.

#981 **NEUROTOXIC EFFECT OF SEVERAL COMPOUNDS ON THE BRAIN OF THE REVERSIBLE OSMOTIC OPENING OF BLOOD-BRAIN BARRIER IN RATS.** K Kakihata, T Hoshina and M Nomura. Reasearch Institute, Daiichi Seiyaku Co., Ltd., Tokyo, Japan. Sponsor: S Takayama.

#982 **PERSISTENCE OF MANGANESE IN *GLOBUS PALLIDUS* AND SUBSTANTIA NIGRA REVEALED BY MAGNETIC RESONANCE IMAGING.** M C Newland, T L Ceckler, B Weiss. Environmental Health Sciences Center, Univ. of Rochester School of Medicine and Dentistry, Rochester, NY.

#983 **PYRROLE OXIDATION AND PROTEIN CROSSLINKING IN n-HEXANE NEUROPATHY.** M B St. Clair, V Amarnath, M A Moody, D C Anthony, C W Anderson, and D G Graham. Duke University Medical Center, Durham, NC and Hampton-Sidney College, Hampton-Sidney, VA.

#984 **AGGREGATION OF VIMENTIN FILAMENTS BY NEUROTOXIC COMPOUNDS.** D W Matheson and P R Sager. Environmental Health Center, Stauffer Chemical Co., Farmington CT. Sponsor: G L Sprague.

#985 **TRIMETHYLTIN PRODUCES "EXCITOTOXIC-LIKE" DAMAGE TO MOUSE CORTICAL EXPLANTS.** A I Soiefer, S M Ross, M Seelig, P S Spencer. Institute of Neurotoxicology, Albert Einstein College of Medicine, Bronx, NY.

#986 **DISRUPTION OF AUDITORY FUNCTION BY CHEMICAL ASPHYXIANTS AND NOISE.** L D Fechter. The Johns Hopkins University School Of Hygiene, Baltimore, MD.

#987 **EFFECT OF METYRAPONE IN CHICKENS AND INTERACTION WITH TRI-ORTHO-TOLYL PHOSPHATE (TOTP).** M Ehrich, B S Jortner and W B Gross. Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA.

#988 **EFFECT OF *BETA*-NAPHTHOFLAVONE ON TOLYL SALIGENIN PHOSPHATE-INDUCED DELAYED NEUROTOXICITY.** S J Bursian, E Lehning, L Correll and M Ehrich, Department of Animal Science, Michigan State University, East Lansing, MI and Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA.

#989 **NEGATIVE DELAYED NEUROPATHY STUDY IN CHICKENS AFTER TREATMENT WITH ISOPROPYL METHYLPHOSPHONOFLUORIDATE (SARIN, TYPE I).** R M Parker, J A Crowell, T J Bucci, and *J C Dacre. Pathology Associates, Inc., NCTR, Jefferson, AR and *US Army Biomedical R&D Laboratory, Fort Detrick, MD.

FRIDAY MORNING, FEBRUARY 19
CHANTILLY BALLROOM
POSTER SESSION: INHALATION II

Chairperson: G. Oberdoerster, University of Rochester, Rochester, NY

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

#990 **THE SUBCHRONIC INHALATION TOXICITY OF BISPHENOL A IN FISCHER 344 RATS.** L G Lomax and K D Nitschke, The Dow Chemical Company, Midland, MI. Sponsor: P G Watanabe

#991 **ACUTE AND 9-DAY VAPOR INHALATION STUDIES WITH N,N,N',N'-TETRAMETHYLETHYLENEDIAMINE (TMEDA).** D E Dodd, B Ballantyne, E H Fowler, I M Pritts, and D J Nachreiner, Bushy Run Research Center/Union Carbide Corp., Export, PA.

#992 **ACUTE TOXICOLOGY STUDIES ON TRIS(DIMETHYLAMINO) SILANE (TDMAS).** B Ballantyne, D E Dodd, R C Myers, D J Nachreiner and I M Pritts. Bushy Run Research Center/Union Carbide Corp., Export, PA.

#993 **ACUTE INHALATION TOXICITY OF ACROLEIN (AC) VAPOR AND ITS INFLUENCE ON METHOXYDIHYDROPYRAN (MDP) INHALATION TOXICITY.** I M Pritts, B Ballantyne, D E Dodd, and D J Nachreiner, Bushy Run Research Center/Union Carbide Corp., Export, PA.

#994 **TOXICOLOGIC EFFECTS OF INHALED SODIUM POLYACRYLATE PARTICLES IN THE F-344 RAT.** M F Tansy[1], M Werley[1], J S Martin[1], F M Kendall[1], and M Ensley[2]. [1]Temple University, Philadelphia, PA, and [2]Stockhausen, Inc., Greensboro, NC.

#995 **TOXICOLOGIC EFFECTS OF 13-WEEK INHALATION EXPOSURE TO ACETONITRILE IN RATS AND MICE.** J H Roycroft[1], R H Miller[2], H A Ragan[2], B J Chou[2], [1]National Toxicology Program, NIEHS, RTP, NC. [2]Battelle Pacific Northwest Laboratories, Richland, WA. Sponsor: R Chhabra.

#996 **ULTRASTRUCTURAL CHANGES IN OLFACTORY EPITHELIUM OF RATS FOLLOWING INHALATION EXPOSURE TO METHYL BROMIDE.** D A Thomas, O Lyght, and K T Morgan. CIIT, Research Triangle Park, NC. Sponsor: E Gross-Bermudez.

#997 **SUBCHRONIC INHALATION TOXICITY OF ETHYLAMINE (EA) VAPOR IN F-344 RATS.** D W Lynch, W J Moorman, T R Lewis, P Stober, R D Hamlin*, and R L Schueler**. NIOSH, Cincinnati, OH; *Dept. Vet. Physiology and Pharmacology, Ohio State Univ., Columbus, OH; and **Research Pathol. Assoc., Inc., Sykesville, MD.

#998 **TWO-WEEK VAPOR INHALATION STUDY ON PROPYLENE GLYCOL MONOPROPYL ETHER (PGPE) IN F-344 RATS.** P E Losco, D R Klonne, D E Dodd, C M Troup, and B Ballantyne, Bushy Run Research Center/Union Carbide Corporation, Export, PA.

#999 **TOXICITY OF 2-METHYL-5,6-CYCLOPENTAPYRIMIDINE (MCPP) FOLLOWING ORAL OR INHALATION EXPOSURES IN RATS.** G L Kennedy Jr, E.I. du Pont de Nemours & Co, Inc., Haskell Laboratory for Toxicology and Industrial Medicine, Newark, DE.

#1000 **ACUTE INHALATION TOXICITY OF ETHYLENE OXIDE/PROPYLENE OXIDE COPOLYMERS.** B A Burgess, L A Kinney and G L Kennedy, Jr. E I du Pont de Nemours and Co, Inc, Haskell Laboratory for Toxicology and Industrial Medicine, Newark, DE.

#1001 **INHALATION SUBCHRONIC TOXICITY STUDY OF N-HEXANE IN B6C3F$_1$ MICE.** J K Dunnick[1], D G Graham[2], R S H Yang[1], S B Haber [3], [1]NIEHS/NTP, Research Triangle Park, NC, [2]Duke University, Durham, NC, and [3] Brookhaven National Laboratory, Upton, NY.

#1002 **TWO-WEEK AEROSOL INHALATION STUDY ON POLYETHYLENE GLYCOL (PEG) 3350 IN F-344 RATS.** C M Troup[1], D R Klonne[1], D E Dodd[1], P E Losco[1], and T R Tyler[2], Bushy Run Research Center, Export, PA[1], Union Carbide Corp., Danbury CT[2].

#1003 **SUBCHRONIC INHALATION TOXICITY: 90-DAY STUDY WITH BENOMYL.** A W Singer, D P Kelly, M C Carakostas, and D B Warheit. Du Pont-Haskell Lab., Newark, DE.

#1004 **REPEATED INHALATION TOXICITY STUDY OF SYNTHETIC GRAPHITE IN RATS.** S A Thomson, C L Crouse, D C Burnett, R J Hilaski, Chemical Research, Development and Engineering Center, APG, MD. Sponsor: J T Weimer.

#1005 **FOUR-WEEK INHALATION STUDY OF TEREPHTHALIC ACID.** J D Jernigan, C L Leach, N S Hatoum, D M Talsma, and P J Garvin. Amoco Corporation and IIT Research Institute, Chicago, IL.

#1006 **NINETY-DAY INHALATION STUDY IN RATS, COMPARING SMOKE FROM CIGARETTES WHICH BURNED OR ONLY HEATED TOBACCO. 1. CIGARETTES, EXPERIMENTAL DESIGN.** A W Hayes, C R E Coggins, P H Ayres, G T Burger, and A T Mosberg. R.J. Reynolds Tobacco Co., Winston-Salem, NC.

#1007 **NINETY-DAY INHALATION STUDY IN RATS, COMPARING SMOKE FROM CIGARETTES WHICH BURNED OR ONLY HEATED TOBACCO. 2. NOSE-ONLY INHALATION SYSTEM; SMOKE CHEMISTRY.** R A James, J T Avalos, A T Mosberg, C R E Coggins, and P H Ayres. R.J. Reynolds Tobacco, Winston-Salem, NC.

#1008 **NINETY-DAY INHALATION STUDY IN RATS, COMPARING SMOKE FROM CIGARETTES WHICH BURNED OR ONLY HEATED TOBACCO. 3. BLOOD COMPOSITION.** C R E Coggins, A T Mosberg, G T Burger, A W Hayes, and P H Ayres R.J. Reynolds Tobacco Co, Winston-Salem, NC.

#1009 **NINETY-DAY INHALATION STUDY IN RATS, COMPARING SMOKE FROM CIGARETTES WHICH BURNED OR ONLY HEATED TOBACCO. 4. MINUTE VENTILATION.** A T Mosberg, C R E Coggins, G T Burger, A W Hayes, R L Phelps, S A Reynolds, and P H Ayres, R.J. Reynolds Tobacco Co., Winston-Salem, NC.

#1010 **NINETY-DAY INHALATION STUDY IN RATS, COMPARING SMOKE FROM CIGARETTES WHICH BURNED OR ONLY HEATED TOBACCO. 5. BODY WEIGHT CHANGE, ORGAN WEIGHTS.** P H Ayres, C R E Coggins, G T Burger, A W Hayes, L Gerald, and A T Mosberg, R.J. Reynolds Tobacco Co., Winston-Salem, NC.

#1011 **NINETY-DAY INHALATION STUDY IN RATS, COMPARING SMOKE FROM CIGARETTES WHICH BURNED OR ONLY HEATED TOBACCO. 6. HISTOPATHOLOGY.** G T Burger, C R E Coggins, A W Hayes, P H Ayres, A T Mosberg, and J W Sagartz, R.J. Reynolds Tobacco Co, Winston-Salem NC and Veritas Labs, Burlington, NC.

#1012 **SUBCHRONIC INHALATION STUDY IN RATS, COMPARING SMOKE FROM A CIGARETTE WHICH BURNS AND ONE THAT ONLY HEATS TOBACCO.** A P Wehner, R A Renne, B J Greenspan and O R Moss, Battelle Northwest Labs, Richland, WA., A W Hayes, G T Burger and A T Mosberg. R J Reynolds Tobacco Co., Winston-Salem, NC.

#1013 **SUBCHRONIC INHALATION STUDY IN HAMSTERS, COMPARING SMOKE FROM A CIGARETTE WHICH BURNS AND ONE THAT ONLY HEATS TOBACCO.** R A Renne, A P Wehner, B J Greenspan, O R Moss, H A Ragan, R B Westerberg, C W Wright and H S DeFord, Battelle Northwest Labs, Richland, WA., G T Burger, A W Hayes and A T Mosberg, R J Reynolds Tobacco Co., Winston-Salem, NC.

#1014 **EXTENDED INHALATION EXPOSURES OF RATS TO CIGARETTE SMOKE.** L Gerald, P H Ayres, A T Mosberg, A W Hayes, G T Burger, J W Sagartz, and C R E Coggins. R.J. Reynolds Tobacco Co, Winston-Salem, NC and Veritas Labs, Burlington, NC.

#1015 **INHALATION STUDIES OF HUMECTANT AEROSOLS IN RATS.** B J Greenspan, O R Moss, A P Wehner, R A Renne, H A Ragan, R B Westerberg and C W Wright, Battelle Northwest Laboratories, Richland, WA., R Deskin, A W Hayes, G T Burger and A T Mosberg, R J Reynolds Tobacco Co., Winston-Salem, NC.

FRIDAY MORNING, FEBRUARY 19
CHANTILLY BALLROOM

POSTER SESSION: GENERAL TOXICOLOGY

Chairperson: B K J Leong, Upjohn Company, Kalamazoo, MI

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

#1016 **TOXICITY OF DIACETOXYSCRIPENOL IN YOUNG CHICKENS.** A A Ademoyero and P B Hamilton. N C State University, Raleigh, NC. Sponsor: W E Donaldson.

#1017 **EVALUATION OF ACUTE INTRAMUSCULAR IRRITATION POTENTIAL OF SC-34871, MORPHINE, AND HALOPERIDOL IN THE MALE RABBIT.** G C Haggerty, R Guy, and S Levin. G.D. Searle & Co., Skokie, IL.

#1018 **EVALUATION OF NINE KCL PRODUCTS FOR TOPICAL G.I. IRRITATION IN THE RABBIT COLON MODEL.** M Prevo, C McCarthy. ALZA Corporation, Palo Alto, CA. Sponsor: D W Hallesy

#1019 **SUBCHRONIC TOXICITY OF ORALLY ADMINISTERED CALCIUM MODULATOR IN BEAGLE DOGS.** M D Seefeld and J R Watkins. Parke-Davis Pharm. Res. Div., Warner-Lambert Co., Ann Arbor, MI

#1020 **ACUTE AND SUBCHRONIC TOXICITY OF SUBSTITUTED TARTRATES (ST)** D W Petersen, The Procter & Gamble Company, Ivorydale Technical Center, Cincinnati, OH Sponsor: J F Griffith.

#1021 **SUBCHRONIC INTRAVENOUS TOXICITY OF AMSACRINE, AN ANTICANCER CHEMOTHERAPEUTIC COMPOUND, IN RATS.** D G Pegg and J R Watkins. Parke-Davis Pharm. Res. Div., Warner-Lambert Co., Ann Arbor, MI.

#1022 **PRECHRONIC TOXICITY OF p-NITROBENZOIC ACID IN RATS AND MICE.** B S Levine[1], K M Abdo[2], R Kovatch[3], M Elwell[2], and L T Mulligan[1] [1]Microbiological Assoc., Bethesda, MD;[2]NTP, NIEHS, RTP, NC; and [3]Pathology Assoc., Ijamsville, MD.

#1023 **COMPARATIVE TOXICITY OF ISOMERIC CRESOLS IN RATS AND MICE: RESULTS OF 28-DAY DOSED FEED STUDIES.** E J Rauckman, D D Dietz, *M Wenk., *T Mulligan, *L Brennecke and *M Stedman. National Toxicology Program, NIEHS, NTP NC. *Microbiological Associates Inc., Bethesda, MD.

#1024 **CHRONIC TOXICITY AND ONCOGENICITY OF CGA-12223 [O-(5-CHLORO-1-(1-METHYL-ETHYL)-(H-1,2,4-TRIAZOL-3-YL)0,0-DIETHYL PHOSPHOROTHIOATE] ORGANOPHOSPHATE PESTICIDE IN RATS AND MICE.** W Phelps*, M Tisdel*, J Stevens*, K MacKenzie, R Hiles, S Henwood, T Palmer, and R Hall. CIBA-GEIGY Corporation*, Greensboro, NC and Hazleton Laboratories America, Inc, Madison, WI.

#1025 **DIETARY HAZARD ASSESSMENT FOR INFANTS AND CHILDREN.** J M Bankowska, L Zeise, and R J Jackson. Hazard Evaluation Section, Calif Dept Health Services (CDHS), Berkley, CA. Sponsor: C C Willhite.

#1026 **THE EFFECTS OF ETHYLENE OXIDE (ETO) STERILIZATION ON THE *IN VITRO* TOXICITY OF A BONE REPLACEMENT MATERIAL.** C E Hastings, S A Martin, J R Heath, P I Fitzgerald, J L Mansfield, and J O Hollinger. U S Army Institute of Dental Research, Washington, DC. Sponsor: R K Tripathi.

#1027 **CONSUMER EXPOSURE ASSESSMENTS FOR DISHWASHING PRODUCTS.** P J Hakkinen, C C Kuta, D W Petersen, and T M Rothgeb. The Procter & Gamble Company, Packaged Soap and Detergent Development Division, Cincinnati, OH Sponsor: J F Griffith.

#1028 **CONSUMER PRODUCTS: RISK ASSESSMENT PROCESS FOR CONTACT SENSITIZATION.** T L Nusair, P J Danneman, J Stotts and P H S Bay. The Procter & Gamble Company, Cincinnati, OH. Sponsor: J F Griffith.

#1029 **AN APPROACH TO ASSESS CONSUMER EXPOSURE TO AIRBORNE MATERIALS FROM GRANULAR LAUNDRY DETERGENTS.** P M McNamee, T L Nusair, P J Hakkinen and M M Macomber. The Procter and Gamble Company, Cincinnati, OH. Sponsor: J F Griffith.

#1030 **OCCUPATIONAL CRITERIA FOR CHEMICAL AGENTS.** D M Opresko, R H Ross, Oak Ridge National Laboratory, Oak Ridge, TN; J C Dacre, U.S. Army Biomedical Research and Development Laboratory, Fort Detrick, Frederick, MD. Sponsor: P Y Lu.

#1031 **CONSIDERATION OF TOXICOLOGICAL INTERACTIONS IN THE DEVELOPMENT OF REGULATORY CRITERIA FOR KETONE MIXTURES.** S M DiZio and J J Wong. California Department of Health Services Toxic Substances Control Division, Sacramento, CA. Sponsor: J P Christopher.

#1032 **TOXICOLOGY OF A CHEMICAL MIXTURE OF 25 GROUNDWATER CONTAMINANTS: CHEMISTRY DEVELOPMENT.** R S H Yang, T J Goehl, NIEHS/NTP, RTP, NC, R Brown, A Chatham, D W Arneson, R Buchanan, R Harris, Midwest Res. Inst., Kansas City, MO.

#1033 **EVALUATION OF NONCANCER HEALTH HAZARDS ASSOCIATED WITH WASTE-TO-ENERGY FACILITIES.** M A Marty*, G V Alexeeff, J F Collins, and N Gravitz. California Department of Health Services (CDHS), Berkeley, CA., *consultant to CDHS.

#1034 **A PRELIMINARY RISK ASSESSMENT METHODOLOGY FOR INDIRECT EXPOSURE TO MUNICIPAL WASTE COMBUSTOR EMISSIONS.** P McGinnis, *L Fradkin, *R Bruins, **D Cleverly, ***G Dawson, J Lewis. Syracuse Research Corporation, Cincinnati, OH., U S Environmental Protection Agency, *ECAO, Cincinnati, OH. and **OAQPS, Research Triangle Park, NC. ***CF Northwest, Richland, WA. Sponsor: R G York.

#1035 **COMPUTER BASED ANALYSIS OF LEAD TOXICITY ON ATPASE KINETICS IN RAT BRAIN SYNAPTOSOMES.** S Rajanna, M Abston, and B Rajanna, Department of Computer Science and Mathematics, and Division of Natural and Applied Sciences, Selma University, Selma, AL. Sponsor: K P Rao.

#1036 **OVERVIEW OF ASBESTOS STUDIES WITH RESPECT TO FIBER TYPE AND SIZE.** Y M Patel, J Cotruvo, and E V Ohanian. US Environmental Protection Agency, Office of Drinking Water, Washington, DC.

#1037 **SCREENS AND GRAPHICAL METHODS OF ANALYSIS IN TOXICOLOGY.** S C Gad, Department of Toxicology, G.D. Searle and Co., Skokie, IL.

#1038 **TOXPERT AN EXPERT PRODUCT RISK ASSESSMENT SYSTEM.** R J Soto, T G Osimitz, R E Turk, and R D Stewart, S C Johnson and Son, Inc., Racine, WI.

#1039 **LIMITATIONS OF CHRONIC RODENT BIOASSAYS FOR THE QUANTITATIVE RISK ASSESSMENT OF HUMAN CARCINOGENS.** J P Rieth and T B Starr. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.

#1040 **MINERAL FIBER CYTOTOXICITY TO RAT PLEURAL MESOTHELIAL CELLS.** L D Palekar,[1] J F Eyre,[1] D G Rocha,[1] and D L Coffin.[2] [1]Northrop Services, Inc. and [2]US EPA, RTP, NC.

#1041 **COMPARISONS BETWEEN ATROPINE AND METHYLATROPINE IN PRODUCING A PHARMACOLOGIC VAGOTOMY: A NEW METHOD FOR QUANTIFICATION.** H T Jansen and J A Dellinger. University of Illinois, Urbana, IL.

#1042 **DEVELOPMENT OF A DIELECTROPHORETIC ASSAY FOR CELLULAR TOXICOLOGY.** M B Fatmi and S B Baumann, Northrop Services, Inc.: R J Spiegel, U. S. Environmental Protection Agency, Research Triangle Park, NC. Sponsor: R W Luebke.

#1043 **SERUM ASAL (ARGININOSUCCINATE LYASE) IN ALLYL ALCOHOL-INDUCED HEPATIC INJURY IN RATS.** A F Plocinski, J C Kapeghian, E O Heard, E R Lasinski, M A Mehesy, D J O'Connor, J D Green, and V M Traina. Div. of Tox./Path. and Res. Stat. Services, Research Dept., Pharma. Div., CIBA-GEIGY Corp., Summit, NJ.

#1044 **SERUM ASAL (ARGININOSUCCINATE LYASE) FOLLOWING HEPATIC INJURY AFTER *ALPHA*-NAPHTHYLISOTHIOCYANATE (ANIT) IN RATS.** D J O'Connor, J C Kapeghian, E R Lasinski, M A Mehesy, A F Plocinski, E O Heard, J D Green, and V M Traina. Div. of Tox./Path. and Res. Stat. Services, Research Dept., Pharma. Div. CIBA-GEIGY Corp., Summit, NJ.

#1045 **SERUM ASAL (ARGININOSUCCINATE LYASE): A POTENTIAL MARKER FOR HEPATIC INJURY IN THE MONKEY.** J C Kapeghian, E R Lasinski, M A Mehesy, D J O'Connor, J D Green, and V M Traina. Div. of Tox./Path. and Res. Stat. Serv., Research Dept., Pharma. Div., CIBA-GEIGY Corp., Summit, NJ.

#1046 **MAGNETIC RESONANCE IMAGING OF DEN-INDUCED HEPATIC TUMORS IN RATS.** T A Neubecker, K A Stitzel, #J A Popp, *K H Taber-Maier. Procter & Gamble Co, Cincinnati, OH; #Chemical Industry Institute of Toxicology, Research Triangle Park, NC; *Baylor College of Medicine, Houston, TX. Sponsor: L Lehman-McKeeman

#1047 **URINE SEDIMENT ANALYSIS IN DOGS TREATED WITH HEXACHLORO-1:3 BUTADIENE (HCBD) AS A MODEL OF NEPHROTOXICITY.** D Chevalier, F Verdier, Y Bailly, P Delort, P Duprat, C Leroux. Merck Sharp & Dohme-Chibret Research Center, Riom France.

#1048 **VENEPUNCTURE-ASSOCIATED STRESS IN THE RAT.** D R Gask and R J Barrett. Department of Toxicology and Pathology, Smith Kline and French Ltd., Welwyn, Herts, UK. Sponsor: J B Hook.

#1049 **EFFECT OF REDUCING THE NUMBER OF ANIMALS IN ACUTE TOXICITY/IRRITATION TESTS ON U.S. AND EUROPEAN LABELING REQUIREMENTS.** J Solti and J J Freeman. Exxon Biomedical Sciences, Inc., East Millstone, NJ

#1050 **SUBCHRONIC EVALUATION IN THE RAT TO A MICROCHIP IMPLANT USED FOR ANIMAL IDENTIFICATION.** D J Ball, R L Robison, R E Stoll, and G E Visscher. Sandoz Research Institute, East Hanover, NJ.

#1051 **STABILITY OF SOME MICROENCAPSULATED CHEMICALS PREPARED FOR TOXICOLOGICAL APPLICATIONS,** G O Kuhn, G L Singmaster, and D W Arneson, Midwest Research Institute, Kansas City, MO Sponsor: M El-hawari

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#1054 **AN IMPROVED METHOD FOR THE EXTRACTION OF NUCLEIC ACIDS FROM FORMALIN-FIXED TISSUE.** N C Barrass, M J Davies, S G Volsen, J G Evans and S D Gangolli, BIBRA, Barshalton, England.

#1055 **SORPTION OF AFLATOXINS FROM PEANUT OIL BY ALUMINOSILICATES.** M D Machen, B A Clement, E C Shepherd, A B Sarr, R E Pettit* and T D Phillips. Veterinary Public Health and *Plant Pathology and Microbiology, Texas A&M University, College Station, TX

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CHANTILLY BALLROOM

POSTER SESSION: BIOTRANSFORMATION III

Chairperson: J D deBethizy, R.J. Reynolds Tobacco Co., Winston-Salem, NC

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

#1056 **COMPARISON OF THE EFFECTS OF SESBANIA DRUMMONDII ON THE HEPATIC MICROSOMAL MIXED FUNCTION MONOOXYGENASE SYSTEMS OF CHICKENS AND RATS.** M I Banton, W Flory, G W Winston, P L H Jowett and S Narayan. Louisiana State Univ., Baton Rouge, LA.

#1057 **EPOXIDATION OF ALDRIN BY ISOLATED HEPATOCYTES PREPARED FROM CONTROL AND INDUCED MICE.** S A Conly, P E Levi, and E Hodgson. Toxicology Program, North Carolina State University, Raleigh, NC.

#1058 ***IN VITRO* INHIBITION OF MOUSE HEPATIC MIXED-FUNCTION OXIDASE (MFO) ACTIVITIES BY METHYLENEDIOXYPHENYL (MDP) COMPOUNDS.** P Levi, Y C Chui, M Lewandowski, and E Hodgson. Toxicology Program, North Carolina State University, Raleigh, NC.

#1059 **EFFECTS OF DIETARY PROTEIN ON PHASE I AND PHASE II DETOXIFICATION MECHANISMS.** L E Butler and W C Dauterman. Toxicology Program. N.C. State Univ., Raleigh, NC.

#1060 **EFFECTS OF PHENOBARBITAL (PB) OR 3-METHYLCHOLANTHRENE (MC) PRETREATMENT ON THE METABOLISM OF CARBARYL (C) BY RAT LIVER.** E V Knight, A P Alvares, and B H Chin. Dept. of Pharmacology, Uniformed Services University, Bethesda, MD and the MITRE Corp., McLean, VA.

#1061 **EFFECTS OF MODULATORS OF CYTOCHROME P-450 ACTIVITY AND GLUTATHIONE LEVELS ON 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) TISSUE DISTRIBUTION.** E Dybing*, M Lag*, J G Omichinski*, E J Soderlund*, and S D Nelson**. Nat'l. Inst. Publ. Hlth., Oslo, Norway* and Univ. Washington, Dept. Med. Chem., Seattle, WA**.

#1062 **SPECIES DIFFERENCES IN THE CYTOCHROME P-450-DEPENDENT HYDROXYLATION OF TESTOSTERONE.** A J Sonderfan and A Parkinson. Kansas University Medical Center, Kansas City, KS.

#1063 **COMPARATIVE STUDY OF THE EFFECT OF CIGARETTE SMOKE ON THE RAT PULMONARY CYTOCHROME P-450.** K-M Chang, P H Ayres, J R Hayes, G T Burger A W Hayes and J D deBethizy. R.J. Reynolds Tobacco Co, Winston-Salem, NC.

#1064 **2,2,2-TRIFLUOROETHANOL INTESTINAL AND BONE MARROW TOXICITY: THE ROLE OF ITS METABOLISM TO 2,2,2-TRIFLUOROACETALDEHYDE AND TRIFLUOROACETIC ACID.** J M Fraser and L S Kaminsky. Wadsworth Ctr. for Laboratories and Research, NY State Dept. of Health, Albany, NY.

#1065 **AGE RELATED DIFFERENCES IN THE METABOLISM OF ALLYL ALCOHOL TO ACROLEIN BY SPRAGUE DAWLEY (SD) RATS.** J R Cannon, P J Harvison and G L Lage. Philadelphia College of Pharmacy and Science, Philadelphia, PA.

#1066 **ETHANOL INHIBITS HEPATIC METABOLISM OF INTRAVENOUSLY ADMINISTERED MORPHINE IN RATS.** D R Steup and R B Forney, Sr., Department of Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN.

#1067 **CROSS-COMPETITION STUDIES WITH THE ETHANOL-INDUCIBLE ANILINE HYDROXYLASE USING SELECTED MONOOXYGENASE SUBSTRATES.** S Narayan and G W Winston. Institute for Environmental Studies and Department of Biochemistry, Louisiana State University, Baton Rouge, LA. Sponsor: C R Short

#1068 **ETHANOL INDUCED FATTY ACID ETHYL ESTER FORMATION *IN VIVO* AND *IN VITRO* BY RAT LUNG.** J E Manautou and G P Carlson. Dept. of Pharmacol. & Toxicol., Sch. of Pharmacy, Purdue Univ., W. Lafayette, IN.

#1069 **EFFECT OF ETHANOL ON THE DISTRIBUTION OF FOLATE DERIVATIVES IN THE KIDNEY OF THE RAT.** B H Eisenga, T D Collins, and K E McMartin. Dept. of Pharmacology, Section of Toxicology, LSU Medical Center, Shreveport, LA.

#1070 **FURTHER EVIDENCE FOR THE ROLE OF QUINONE REDUCTASE (QR) IN *IN VIVO* ETHANOL (EtOH) METABOLISM.** J H Chung and R J Rubin, Johns Hopkins Univ., Baltimore, MD.

#1071 ***IN VITRO* EVALUATION OF CATALASE-MEDIATED METHANOL (M) OXIDATION IN THE EYE AND LIVER OF FOLIC ACID SUFFICIENT (FAS) AND DEFICIENT (FAD) LONG-EVANS RATS.** T B Moore and E Lee. Biomedical Science Dept., General Motors Research Labs., Warren, MI.

#1072 **HUMAN TERM PLACENTAL PEROXIDASE(HTPP): PARTIAL PURIFICATION, CHARACTERIZATION AND *IN VITRO* BINDING STUDY WITH 2-AMINOFLUORENE (2-AF).** J L Nelson[1] and A P Kulkarni[2], University of Michigan[1], Ann Arbor, MI and Florida Toxicology Research Center, University of South Florida[2], Tampa, FL.

#1073 **NEONATAL RAT SKIN PEROXIDASE MEDIATED BINDING OF 7,8-BENZO(a)PYRENE DIHYDRODIOL AND 2-AMINOFLUORENE TO DNA AND PROTEIN *IN VITRO*.** B H Strohm[1] and A P Kulkarni*, Toxicology Program, University of Michigan[1], Ann Arbor, MI and Florida Toxicology Research Center, University of South Florida*, Tampa, FL.

#1074 **PEROXYL RADICAL-DEPENDENT ACTIVATION OF NON-BAY REGION POLYCYCLIC AROMATIC HYDROCARBONS.** G A Reed, M E Layton, and M J Ryan. University of Kansas Medical Center, Kansas City, KS.

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Abbott Laboratories
North Chicago, Illinois

Alcon Laboratories, Inc.
Fort Worth, Texas

Allied Corporation
Morristown, New Jersey

American Petroleum Institute
Washington, D.C.

AMOCO Corporation
Chicago, Illinois

ARCO
Los Angeles, California

Arthur D. Little, Inc.
Cambridge, Massachusetts

Bio/dynamics, Inc.
East Millstone, New Jersey

Boehringer Ingleheim Pharmaceuticals
Ridgefield, Connecticut

Bristol-Myers Corporation
(Clairol Products Division)
Stamford, Connecticut

Burroughs Wellcome Company
Research Triangle Park,
North Carolina

Chevron Environmental Health Center, Inc.
Richmond, California

Ciba-Geigy Corporation
Greensboro, North Carolina

The Coca-Cola Company
Atlanta, Georgia

Colgate-Palmolive Company
Piscataway, New Jersey

Dow Chemical Company
Midland, Michigan

E. I. du Pont de Nemours & Company
Wilmington, Delaware

Eastman Kodak Company
Rochester, New York

Exxon Corporation
East Millstone, New Jersey

FMC Corporation
Princeton, New Jersey

G.D. Searle & Company
Skokie, Illinois

Glaxo
Research Triangle Park,
North Carolina

Hazleton Laboratories Corporation
Vienna, Virginia

Hercules Inc.
Wilmington, Delaware

Hoechst-Celanese Corporation
New York, New York

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

Hoffmann-La Roche, Inc.
Nutley, New Jersey

International Research & Development Corporation
Matawan, Michigan

Lilly Research Laboratories
Greenfield, Indiana

Merck Sharp & Dohme Research Laboratories
West Point, Pennsylvania

Merrell Dow Pharmaceuticals, Inc.
Cincinnati, Ohio

Mobay Chemical Corporation
Stilwell, Kansas

Mobil Oil Corporation
Princeton, New Jersey

Monsanto Company
St. Louis, Missouri

Ortho Pharmaceutical Corporation
Raritan, New Jersey

Pennwalt Corporation
King of Prussia, Pennsylvania

PEPSICO
Valhalla, New York

Pfizer, Inc.
Groton, Connecticut

Philip Morris USA
Richmond, Virginia

Pillsbury Company
Minneapolis, Minnesota

The Procter & Gamble Company
Cincinnati, Ohio

Rhone-Poulenc Ag Company
Research Triangle Park, North Carolina

RJR Nabisco Inc.
Winston-Salem, North Carolina

Rohm & Haas Company
Spring House, Pennsylvania

Sandoz Research Institute
East Hanover, New Jersey

Schering Corporation
Bloomfield, New Jersey

Smith Kline & French Laboratories
Philadelphia, Pennsylvania

Squibb Institute for Medical Research
New Brunswick, New Jersey

The Standard Oil Company
Cleveland, Ohio

Stauffer Chemical Company
Westport, Connecticut

Sterling-Winthrop Research Institute
Rensselaer, New York

Stuart Pharmaceuticals
(ICI Americas, Inc.)
Wilmington, Delaware

Syntex Research
Palo Alto, California

Travenol Laboratories, Inc.
Round Lake, Illinois

Union Carbide Corporation
Danbury, Connecticut

Uniroyal, Inc.
Middlebury, Connecticut

The Upjohn Company
Kalamazoo, Michigan

Wallace Laboratories
Cranbury, New Jersey

Warner-Lambert/Parke-Davis
Ann Arbor, Michigan

Wyeth Laboratories, Inc.
Paoli, Pennsylvania

AWARDS

Achievement

1967	Gabriel L. Plaa
1968	Allan H. Conney
1969	Samuel S. Epstein
1970	Sheldon D. Murphy
1971	Yves Alaire
1972	Robert L. Dixon
1973	No Award
1974	Morris F. Cranmer
1975	Ian C. Munro
1976	Curtis D. Klaassen
1977	James E. Gibson
1978	Raymond D. Harbison
1979	Michael R. Boyd
1980	Philip G. Watanabe
1981	No Award
1982	Frederick P. Guengerich
1983	No Award
1984	Melvin E. Andersen
1985	Alan R. Buckpitt
1986	Sam Kacew
1987	James S. Bus

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
1987	Gabriel L. Plaa

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
1974	William B. Deichmann
1975	Frederick Coulston
1976	Verald K. Rowe
1977	Harry W. Hays
1978	Julius M. Coon
1979	David W. Fassett
1980	Bernard L. Oser
1981	John H. Weisburger
1982	Harold M. Peck
1983	Perry J. Gehring
1984	Tom S. Miya
1985	Carrol S. Weil
1986	Ted A. Loomis
1987	Bo Holmstedt

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
1987	John Kao
	Frances K. Patterson
	Jerry Hall

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
1987	John P. Frawley

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
1987–92	Richard P. Mailman
1987–92	Bruce D. Hammock

1987 SOCIETY OF TOXICOLOGY GRADUATE FELLOWSHIP AWARD RECIPIENTS' PRESENTATIONS

HAZLETON LABORATORIES CORPORATION FELLOWSHIP

Recipient: Marjorie Romkes, Department of Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

#365—"Comparative Effects of 2, 3, 7, 8-Tetrachlorodibenzo-p-Dioxin and Progesterone as Antiestrogens in the Female Rat Uterus"

Poster Session, Wednesday, February 17, 8:30–11:30 a.m. in the Chantilly Ballroom.

HOFFMANN-LA ROCHE, INC. FELLOWSHIP

Recipient: Andrew G. King, West Virginia University Medical Center, Department of Pharmacology & Toxicology, Morgantown, WV.

#286—"Hydroquinone Inhibits Macrophage Regulation of Stromal Cell Dependent B-Lymphoiesis"

Poster/Discussion Session, Wednesday, February 17, 8:30–11:30 a.m. in Grand Ballroom C.

THE PROCTER & GAMBLE COMPANY FELLOWSHIP

Recipient: Randall J. Ruch, Department of Pathology, Medical College of Ohio, Toledo , OH.

#667—"Kinetics of the Inhibition of Mouse Hepatocyte Intercellular Communication by the Liver Tumor Promoter Phenobarbital"

Poster Session, Thursday, February 18, 8:30–11:30 a.m. in the Chantilly Ballroom.

STAUFFER CHEMICAL COMPANY FELLOWSHIP

Recipient: Lydia R. Cox, Philadelphia College of Pharmacy & Science, Philadelphia, PA.

#423—"Allyamine (AMM)-Induced Alterations in the Phosphoinositide/Inositol Phosphate Profile of Cultured Aortic Smooth Muscle Cells"

Platform Session, Wednesday, February 17 at 2:15 p.m. in the Governors Lecture Hall.

Procter & Gamble Company Fellowship

1979	Paul W. Ferguson
1980	Anthony P. De Caprio
1981	Cheng Wang
1982	Samson Chow
1983	Laurie Basting
1984	Philip Bartholomew
1985	Russell Esterline
1986	Leonard Sauers
1987	Randall Ruch

Hazleton Laboratories Corporation Fellowship

1984	Patricia Ganey
1985	Kevin Gaido
1986	Lisa Naser
1987	Marjorie Romkes

Hoffmann-La Roche, Inc. Fellowship

1987	Andrew G. King

Stauffer Chemical Company Fellowship

1987	Lydia R. Cox

Author Index

The numerals following author's name refer to abstract numbers.

Cooper, K.O.	29,884
Cooper, K.R.	33,215,282,284,884
Cooper, P.	753
Cooper, R.L.	482,943,944,947
Copeland, C.B.	317,318
Cornacoff, J.B.	312
Cornu, M.C.	799
Correll, L.	988
Corson, N.M.	71
Cory-Slechta, D.A.	86,87
Cosma, G.N.	678
Costa, L.G.	168,688
Costa, M.	60,61,418,419
Cote, M.	503
Cotruvo, J.	1036
Couch, R.	706
Coudert, B.	610
Coulombe, R.A.	406,446
Council, M.A.	576
Couture, L.A.	390
Cox, C.	87,757,1051
Cox, G.E.	644
Cox, L.R.	423,629
Cox, R.H.	693
Cragin, D.	809
Craig, D.K.	560,609
Craigmill, A.L.	232,233,234
Crawford, C.L.	775
Creasy, D.M.	53
Crespi, C.	402
Creutzenberg, O.	270,272
Crofton, K.M.	188,291,298
Cronin, G.M.	350
Crouse, C.L.	1004
Crowell, J.A.	198,989
Cruzan, G.	644
Cullen, J.M.	448
Culp, D.A.	566,567
Culpepper, B.T.	401
Cummings, A.M.	942
Cunningham, M.L.	37
Cunny, H.C.	28
Curtis, L.R.	722
Cushing, J.A.	898
Czarnecki, D.	820
D'Souza, R.W.	831
Dabbs, J.E.	524
Dacre, J.C.	198,898,989,1030
Dahl, A.R.	796,856
Dahlberg, E.T.	214
Dahlem, A.M.	219
Dahlstrom-King, L.	895
Dahm, L.A.	860
Dailey, J.W.	339
Dalal, N.S.	611
Dallas, C.E.	373,376,553
Dalvi, R.R.	896
Daniel, F.B.	154
Daniels, M.J.	601
Dankovic, D.A.	676,677
Dankovic, D.N.	714
Danneman, P.J.	1028
Dasenbrock, C.	271
Dashwood, R.	671
Datson, G.P.	454
Daugherty, M.W.	227
Dauterman, W.C.	24,832,1059
Davenport, L.	197
Davidson, K.A.	226
Davidson, T.J.	336
Davies, M.H.	133,134
Davies, M.J.	1054
Davila, J.C.	890
Davis, D.	391
Davis, M.E.	217,386,442,750,751
Davis, R.A.	816,817
Dawson, G.	1034
Day, W.W.	836
De Salva, S.J.	515
Deal, F.H.	673
Dean, J.H.	312,313
Dean, K.F.	291
DeAngeles, A.	731
DeAngelo, A.B.	150,154
deBethizy, J.D.	813,816,817,1063
Decker, J.R.	59,967,968
DeFord, H.S.	1013
DeGrandchamp, R.L.	973
Dekant, W.	5
Dellinger, J.A.	297,687,1041
Delort, P.	1047
DelRaso, N.J.	864
Denomme, M.A.	138
DePaoli, A.	331
DeProspo, J.	690,702
DeRosa, C.	253,764,837,857
Desaiah, D.	73,107
Deskin, R.	1015
Detwiler, K.	562
Di Monte, D.	149
Diamond, G.L.	87,749
DiBiasio, K.W.	467
Dick, C.E.	514
Dieter, M.P.	80
Dietz, D.D.	347,1023
Dietze, E.C.	730
Diliberto, J.J.	830
Dimitriadis, E.	282,284
Dinterman, R.E.	491
Diwan, B.A.	778
Dix, L.M.	713
Dixon, S.L.	814
DiZio, S.M.	1031
Doane-Setzer, P.	741
Dodd, D.E.	518,606,966,991,992, 993,998,1002
Donaldson, J.	596
Donaldson, W.E.	93,94,398
Donatsch, P.	753
Donnelly, K.C.	949
Doody, L.A.	893
Dooley, K.L.	937
Doolittle, D.J.	410,411
Dorio, R.J.	13
Dorman, J.A.	14,558
Dormer, C.S.	885
Dorner, J.W.	342
Dorr, R.T.	939
Dostal, L.A.	246
Dowd, T.L.	91
Dragula, C.E.	824
Drawbaugh, R.B.	859
Drees, D.T.	725
Driscoll, K.E.	273,274,782
Droy, B.F.	439,442
Dryzga, M.D.	833
Dubois, A.	304
DuBose, C.M.	206,425,426
Dudek, B.R.	576
Duerson, C.R.	335
Dulaney, M.D.	110,111
Dunn, D.D.	292,293
Dunnick, J.K.	268,269,1001
Duprat, P.	1047
Durham, S.K.	584,585,586,891
Dutton, D.R.	30
DuVal, G.E.	919,920,923
Dwyer, T.M.	610
Dybing, E.	205,396,934,1061
Dyer, R.S.	900
Dziedzic, D.	788
Eacho, P.I.	861
Earl, L.K.	543
Early, J.L.	67,912
Eastin, W.C.	498,609,641,642
Eastman, H.B.	68
Eaton, D.L.	452,670,691,729,742
Eckardt, R.	825
Edleib, M.M.	245
Edmondson, J.	661
Edwards, J.A.	357
Edwards, J.F.	964
Eells, J.T.	193
Ehrich, M.	903,987,988
Ehrlich, J.P.	599
Eichberg, J.	171
Eidson, A.F.	267,268,269,559
Eiseman, J.L.	834
Eisenbrandt, D.L.	704
Eisenga, B.H.	1069
El-Fawal, H.A.	903
El-Gendy, K.S.	200
El-Hawari, M.	820
El-Melegy, S.	99
El-Shennawy, I.E.	200
Elawar, M.F.	199
Elcombe, C.R.	799
Elderkin, F.	457
Ellefson, D.D.	316
Elmore, E.	777
Elsayed, N.M.	214
Elskus, A.A.	4
Elwell, M.	329,1022
Emmett, E.A.	546
Eneff, K.L.	409
Engel, D.	683
Engl, S.A.	460
Ensley, M.	994
Erickson, D.A.	223
Erickson, M.	706
Eskelson, C.	379
Esterline, R.	129,130,167
Esterline, R.L.	787
Eurell, T.	536
Eurell, T.D.	327
Eustis, S.L.	75
Evanoff, J.J.	967
Evans, C.G.	741
Evans, J.G.	135,875,1054
Everitt, J.	579
Evis, M.J.	544
Exon, J.H.	323
Eyre, J.F.	1040
Ezra, M.F.	663
Faccini, J.M.	520
Fait, D.L.	966
Fan, A.M.	240,444
Farage-Elawar, M.	460
Fariss, M.W.	148
Farmer, J.D.	295
Farnell, D.R.	347
Farooqui, M.Y.	836
Farr, C.H.	950
Farrukh, I.S.	546
Fasano, W.J.	430
Fatmi, M.B.	1042
Faust, R.A.	237
Faust, S.N.	632
Faustman, E.M.	742
Fechter, L.D.	986
Feder, P.	462
Fennell, T.R.	673
Ferguson, A.E.	873
Ferguson, B.	163
Ferguson, J.	612
Fernandes, J.W.	337
Fernando, Q.	104,763
Feron, V.J.	428,429
Ferrell, J.	948
Fessenden-Raden, J.	230
Feuston, M.H.	476,941
Fiala, N.	304
Fichtl, B.	78
Finch, G.L.	559

Notes