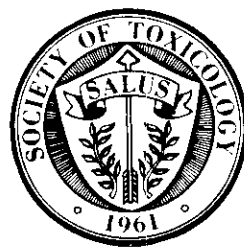


J.T. LANE COPY

SOCIETY OF TOXICOLOGY



24th ANNUAL MEETING PROGRAM

MARCH 18-22, 1985
TOWN & COUNTRY HOTEL
SAN DIEGO, CALIFORNIA

MIXER AND RECEPTION

Monday Evening, March 18, 1985

6:00 P.M. - 7:30 P.M.

MISSION BALLROOM

CASH BAR

Open to all attendees and guests

ISSUES SESSION

Wednesday Afternoon, March 20, 1985

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

TOWN AND COUNTRY ROOM

Chaired by President Frederick W. Oehme

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

ANNUAL BUSINESS MEETING

Wednesday Afternoon, March 20, 1985

4:00 P.M.

TOWN AND COUNTRY ROOM

President Frederick W. Oehme, Presiding

SOT MEMBERS ONLY

ANNUAL BANQUET

Thursday Evening, March 21, 1985

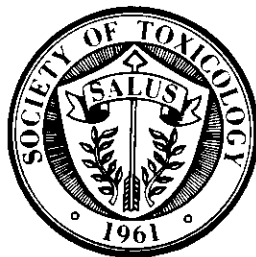
7:00 P.M.

TOWN AND COUNTRY ROOM

Open to all attendees and guests

24th ANNUAL MEETING

Sponsored by



Town and Country Hotel, San Diego, California

March 18-22, 1985

REGISTRATION FEES

	Member or Post- doctoral In Training	Non- Member	Student, Full-time, Predoctoral
Pre-registration	\$55.00	\$85.00	\$10.00
At Conference	65.00	95.00	10.00
Banquet	25.00	25.00	25.00

GENERAL INFORMATION

REGISTRATION — Town and Country Hotel — Mission Ballroom Foyer

Sunday, March 17	1:00 P.M. - 8:00 P.M.
Monday, March 18	7:00 A.M. - 5:00 P.M.
Tuesday, March 19	7:00 A.M. - 4:00 P.M.
Wednesday, March 20	7:00 A.M. - 4:00 P.M.
Thursday, March 21	7:30 A.M. - 4:00 P.M.

HOTEL ACCOMMODATIONS

The Town and Country Hotel is Conference Headquarters. The guest room rates are guaranteed when reservations are made on the hotel form enclosed with the program packet. The hotel accepts major credit cards.

Once capacity has been reached at the Town and Country Hotel, your reservations will be processed at overflow hotels nearby.

AIRPORT TRANSPORTATION SERVICES

Direct transportation service is available from the San Diego Airport baggage claim area to the Town and Country Hotel.

CONFERENCE HEADQUARTERS — Santa Fe Room

Sunday, March 17	1:00 P.M. - 7:00 P.M.
Monday - Thursday	7:00 A.M. - 4:00 P.M.
Friday -	7:00 A.M. - 12:00 P.M.

PLACEMENT SERVICE — DeAnza, Mesa, Adobe & El Camino Rooms

Tuesday, March 19	9:00 A.M. - 5:00 P.M.
Wednesday, March 20	9:00 A.M. - 5:00 P.M.
Thursday, March 21	9:00 A.M. - 5:00 P.M.

PRESS ROOM — Helix Room

Monday - Wednesday	8:00 A.M. - 5:00 P.M.
Thursday	8:00 A.M. - 12:00 P.M.

SPOUSE HOSPITALITY — Tiki Hut

Monday - Wednesday	9:00 A.M. - 4:00 P.M.
Thursday, Friday	9:00 A.M. - 12:00 P.M.

EXHIBIT INFORMATION

All commercial exhibits will be in the Lower Level Exhibit Area.

Tuesday, March 19 8:30 A.M. - 5:00 P.M.

Wednesday, March 20 8:30 A.M. - 5:00 P.M.

Thursday, March 21 8:30 A.M. - 12:00 P.M.

REFRESHMENT STAND — Lower Level Exhibit Area

ABSTRACTS OF PAPERS — THE TOXICOLOGIST

Distributed without charge to all members of the Society of Toxicology in advance of the meeting. Non-members will be given the abstracts with their registration at the meeting. Additional copies will be available at the Conference Registration Desk at \$10.00 each.

SLIDE PREVIEW ROOM — Del Mar Room

Available Sunday 1:00 P.M. - 5:00 P.M.

Monday - Thursday 8:00 A.M. - 5:00 P.M.

Friday 8:00 A.M. - 12:00 P.M.

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

EVENING PROGRAM AT SEA WORLD

Wednesday, March 20

6:30 P.M. - 11:00 P.M.

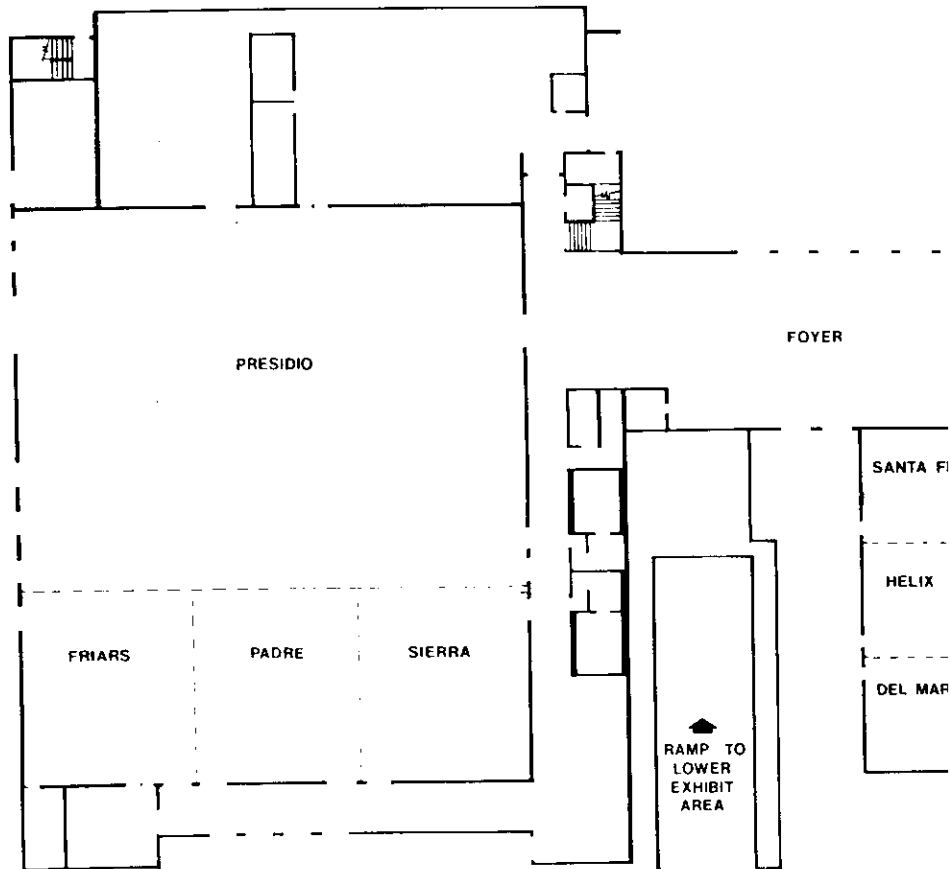
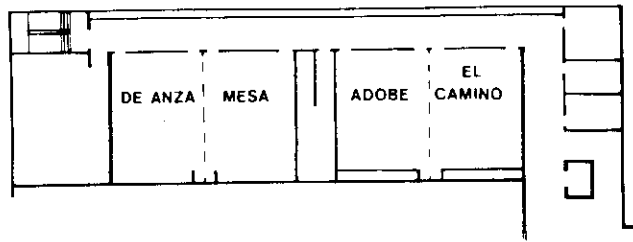
Transportation by bus and dinner included

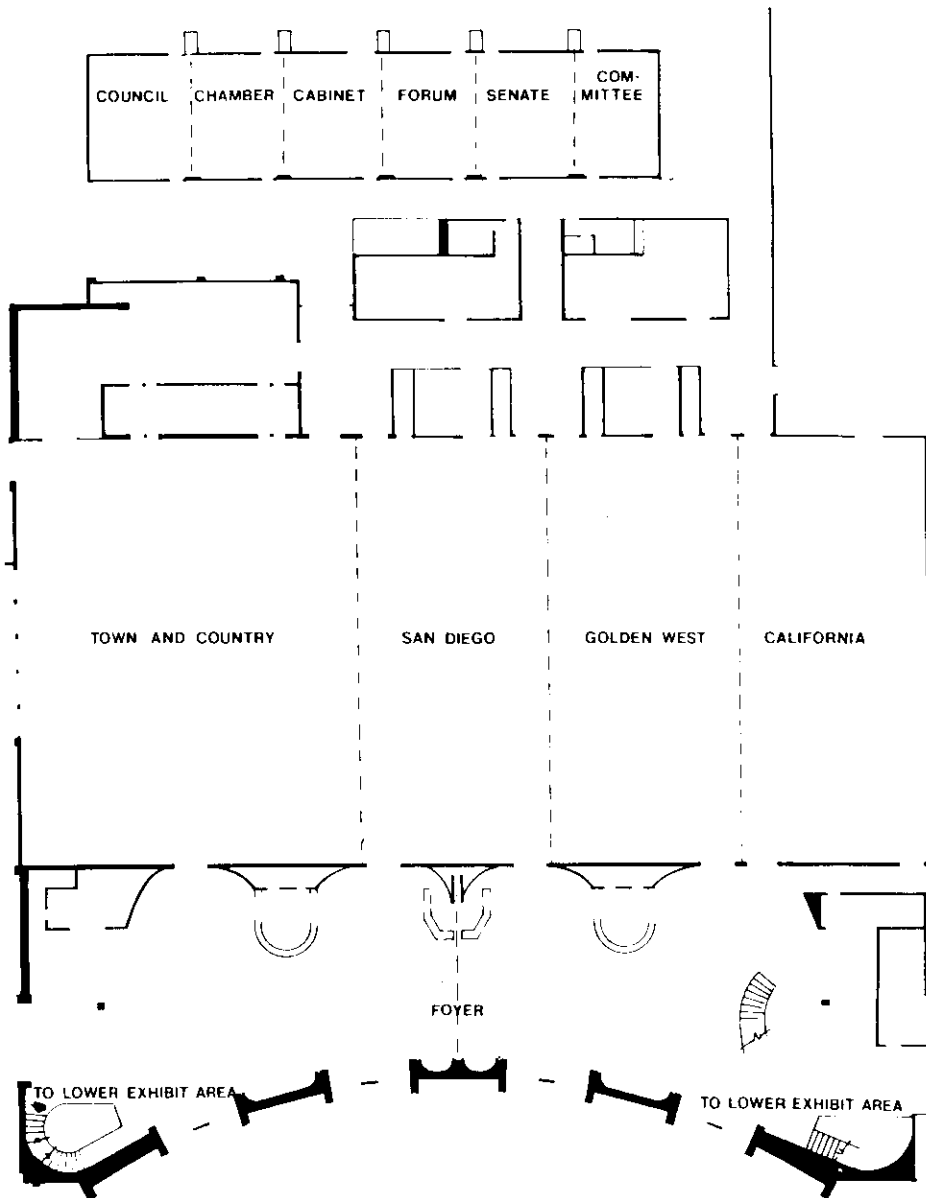
CASH BAR AVAILABLE

Shamu Show / Plus / Seal & Otter Show

Cost: \$30.00 per person

OPEN TO ALL ATTENDEES
AND GUESTS

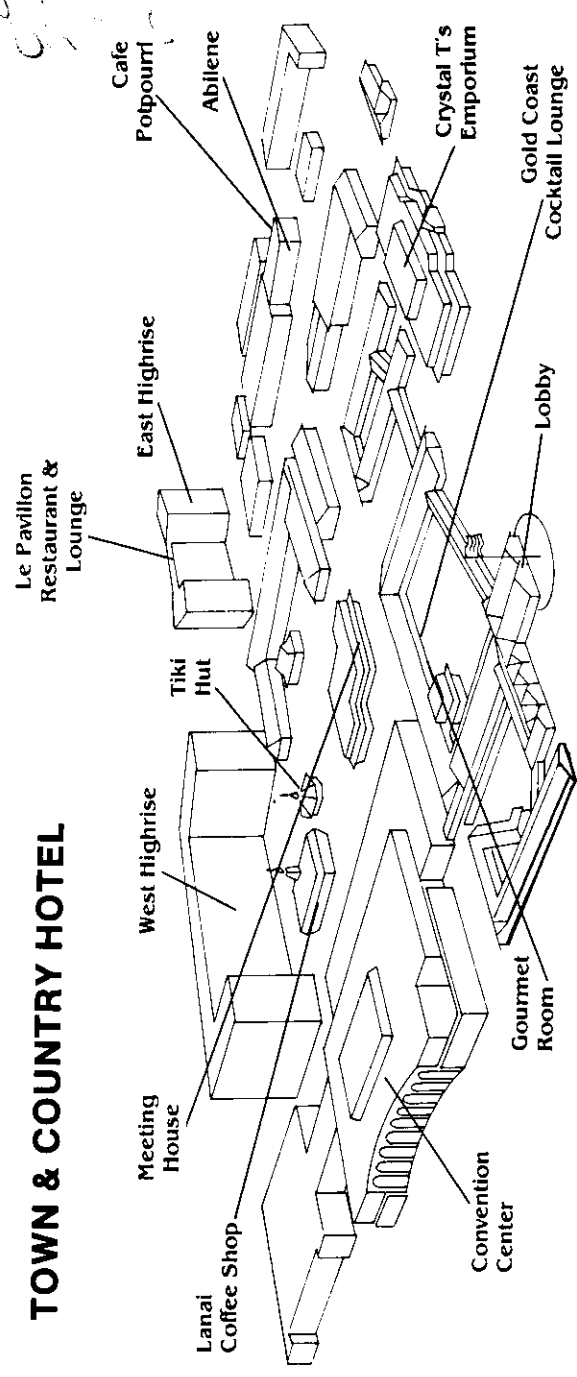




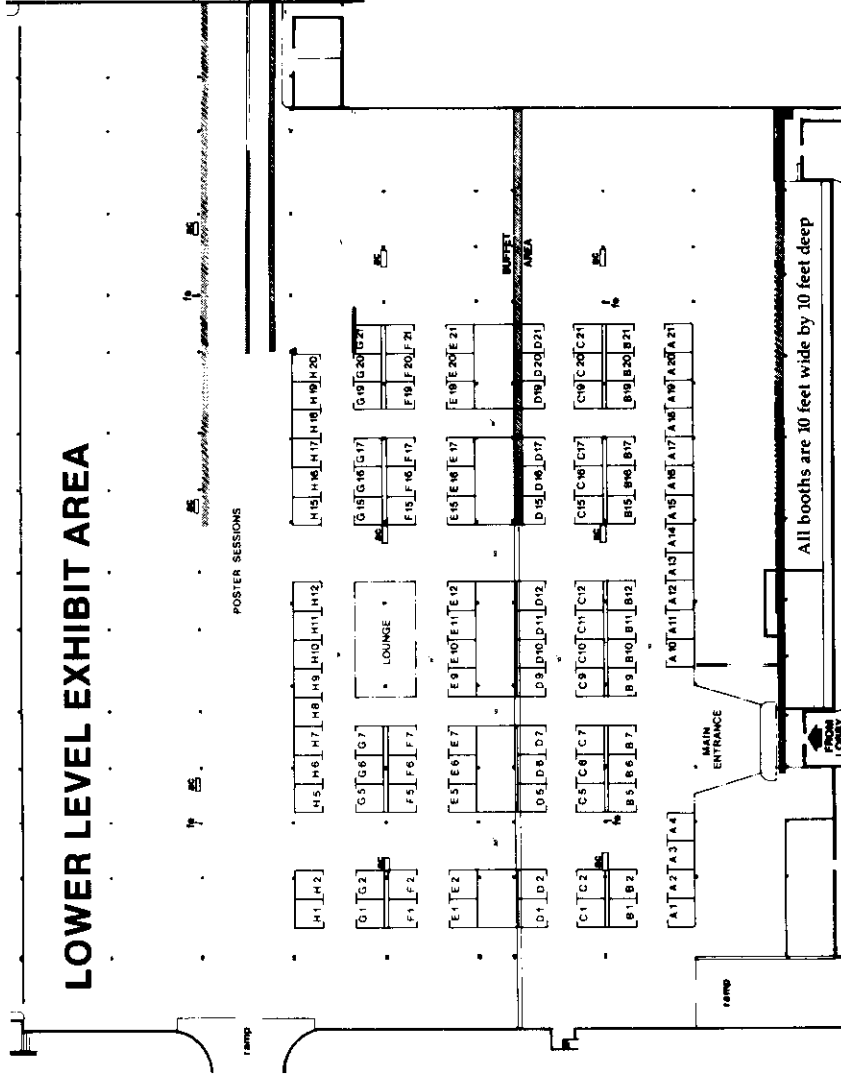
TOWN & COUNTRY HOTEL
San Diego, California

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TOWN & COUNTRY HOTEL



LOWER LEVEL EXHIBIT AREA



PROGRAM SUMMARY

Continuing Education Courses by Pre-Registration

DAY/TIME	TOPIC	ROOM	SEE PAGE
Monday 8:30 A.M.	#1. Inhalation Toxicology	Town & Country	11
Monday 8:30 A.M.	#2. Toxicological Information Searches by Computer	San Diego	11
Monday 1:30 P.M.	#3. Renal Toxicology	Town & Country	12
Monday 1:30 p.m.	#4. Monoclonal Antibodies - Application to Toxicology	Golden West/California	13

Platform Sessions

DAY/TIME	TOPIC	ROOM	SEE PAGE
Tuesday 8:30 A.M.	Renal Toxicology I	Town & Country	14
Tuesday 8:30 A.M.	Immunotoxicology I	San Diego	15
Tuesday 8:30 A.M.	General Toxicology I	Golden West	16
Tuesday 1:30 P.M.	Metabolism/Disposition I	Town & Country	24
Tuesday 1:30 P.M.	Oncogenesis II	San Diego	25
Wednesday 8:30 A.M.	Inhalation Toxicology II	Town & Country	36
Wednesday 8:30 A.M.	Hepatic Toxicology I	San Diego	37
Wednesday 8:30 A.M.	Mechanisms of Toxicity I. General	Golden West	38
Wednesday 1:30 P.M.	Neurotoxicology IV. Behavior	Town & Country	47
Wednesday 1:30 P.M.	Metabolism/Disposition II	San Diego	48
Wednesday 1:30 P.M.	Cardiovascular Toxicology II	Golden West	49
Thursday 8:30 A.M.	Reproduction/Teratology II	Town & Country	58
Thursday 8:30 A.M.	Neurotoxicology V. Neurochemistry	San Diego	59
Thursday 8:30 A.M.	Hematologic Toxicology II	Golden West	60
Thursday 1:30 P.M.	General Toxicology II	Town & Country	70

Thursday 1:30 P.M.	inhalation Toxicology IV	San Diego	71
Friday 8:30 A.M.	Metal Toxicology II	Town & Country	84
Friday 8:30 A.M.	Pesticide Toxicology II	San Diego	85
Friday 8:30 A.M.	Mechanisms of Toxicity V. Cell Culture	Golden West	86

Symposia

DAY/TIME	TOPIC	ROOM	SEE PAGE
Tuesday 8:30 A.M.	#1. Application of Cell Culture to Toxicology	Mission Ballroom	17
Tuesday 1:30 P.M.	#2. Sensory Systems Toxicology: Correlated Measurements of Toxicity	Mission Ballroom	26
Wednesday 8:30 A.M.	#3. New Issues in Regulatory Toxicology and Health Risk Assessment	Mission Ballroom	39
Wednesday 1:30 P.M.	#4. New Investigators Colloquium	Mission Ballroom	50
Thursday 8:30 A.M.	#5. Recent Developments in the Use and Disposal of Hazardous Chemicals in the Research Laboratory	Presidio	61
Thursday 8:30 A.M.	#6. The Biological Activity and Effect of Food Processing Operations on Selected Food Borne Toxicants	California	62
Thursday 1:30 P.M.	#7. Role of Glutathione in Toxicity of Metals		72
Friday 8:30 A.M.	#8. Male-Mediated Reproductive Toxicity	Mission Ballroom	87

Poster Sessions

DAY/TIME	TOPIC	SEE PAGE
(All in Lower Level Exhibit Area)		
Tuesday 8:30 A.M.	Oncogenesis I	17
Tuesday 10:00 A.M.	Neurotoxicology I. Behavior	21
Tuesday 10:00 A.M.	Inhalation Toxicology I	22
Tuesday 1:30 P.M.	Immunotoxicology II	27

Tuesday 1:30 P.M.	Pesticide Toxicology I	34
Tuesday 3:00 P.M.	Renal Toxicology II	30
Tuesday 3:00 P.M.	Halogenated Hydrocarbons	33
Wednesday 8:30 A.M.	Neurotoxicology II. Sensory Systems	39
Wednesday 8:30 A.M.	Hematologic Toxicology I	42
Wednesday 8:30 A.M.	Cardiovascular Toxicology I	43
Wednesday 10:00 A.M.	Neurotoxicology III. Electrophysiology	41
Wednesday 10:00 A.M.	General Toxicology II	44
Wednesday 1:30 P.M.	Reproduction/Teratology I	51
Wednesday 3:00 P.M.	Inhalation Toxicology III	53
Wednesday 3:00 P.M.	Metal Toxicology I	56
Thursday 8:30 A.M.	Hepatic Toxicology II	63
Thursday 10:00 A.M.	Biotransformation I	67
Thursday 1:30 P.M.	Reproduction/Teratology III	73
Thursday 1:30 P.M.	Neurotoxicology VI. Neurochemistry	76
Thursday 3:00 P.M.	Mechanisms of Toxicity II. General	78
Thursday 3:00 P.M.	Mechanisms of Toxicity III. In Vitro	81
Thursday 3:00 P.M.	Mechanisms of Toxicity IV. Oxidative Change	82
Friday 8:30 A.M.	General Toxicology III	88
Friday 8:30 A.M.	Dermal/Ocular Toxicology	93
Friday 10:00 A.M.	Biotransformation II	90

*Smoking is not permitted
in scientific sessions*

CONTINUING EDUCATION COURSES

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

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

1. Inhalation Toxicology

Monday Morning, March 18

8:30 A.M. - 12:00 P.M.

Town & Country Room

Chairman: Dr. Roger O. McClellan, Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM

The course will provide an overview of the respiratory system as it relates to inhaled substances, reviews of the generation and characterization of test atmospheres (gases, vapors and particles) and design of exposure systems. The purpose is to provide a thorough review of principles as well as information about avoidance of possible pitfalls in performing such studies which will impact on interpretation of derived study data.

Relationship of Structure and Function of the Respiratory Tract to Responses of Inhaled Toxicants. Dr. Joe Mauderly, *Lovelace Inhalation Toxicology Research Institute.*

Generation and Characterization of Test Atmospheres: Gases and Vapors. Dr. Craig Barrow, *Biotech Laboratory, Mellon Inst.*

Generation and Characterization of Test Atmospheres: Particles. Dr. Owen Moss, *Battelle Pacific Northeast Laboratory.*

Design of Inhalation Exposure Systems. Dr. Robert T. Drew, *Brookhaven National Laboratory.*

2. Toxicological Information Searches by Computer (Limited Attendance 100)

Monday Morning, March 18

8:30 A.M. - 12:00 P.M. (First Session)

San Diego Room

1:30 P.M. - 5:00 P.M. (Second Session)

Co-Chairs: Miriam Perkins and Jeanne Coshorn, National Library of Medicine, Bethesda, MD

The content and typical search strategies for the National Library of Medicine chemical and toxicological files will be presented. An in-depth discussion of the content, use and

searching methods associated with the chemical and toxicological data bases will include:

Introduction to ELHILL Software
CHEMLINE (Chemical Dictionary Online)
TOXLINE (Toxicology Information Online)
RTECS (Registry of Toxic Effects of Chemical Substances)
TDB (Toxicology Data Bank)

Reference material for the course will include user guides and full information on how to apply for on-line access to the National Library of Medicine network. The course will last the full day (6 hrs).

The course will be presented by Miriam Perkins, Educational Specialist/Chemist with the Toxicology Information Program at the National Library of Medicine, and Jeanne Goshorn, Technical Information Specialist with the Toxicology Information Program at the National Library of Medicine.

3. Renal Toxicology

Monday Afternoon, March 18

1:30 P.M. - 5:00 P.M.

Town & Country Room

Chairman: Dr. William O. Berndt, Univ. of Nebraska
Medical Center

The course will provide reviews of renal morphology and physiology, the nature of mechanisms of nephrotoxic responses, as well as specific discussions of the effects of the kidney and the role of saturated aliphatic hydrocarbons on development of renal toxicity and cancer.

A Review of Renal Morphology. Dr. Benjamin Trump, *Univ. of Maryland School of Medicine.*

Renal Physiology: Background for Nephrotoxicity Studies. Dr. Mary Davis, *Univ. of West Virginia Medical Center.*

Nature of the Nephrotoxic Responses. Dr. William Hewitt, *Smith Kline & French Laboratories.*

Possible Metabolic Mechanisms. Dr. J. Gandolfi, *Univ. of Arizona Health Services Center.*

Effects of Metals on the Kidney. Dr. Bruce Fowler, *NIEHS/NIH.*

Renal Injury and Carcinogenesis. Dr. James Bus, *Chemical Industry Institute of Toxicology.*

4. Monoclonal Antibodies — Application to Toxicology

Monday Afternoon, March 18

1:30 P.M. - 5:00 P.M.

Golden West/California Room

Chairman: Dr. John Thomas, Travenol Laboratories

The course will provide an overview of the role of monoclonal antibodies in their application to toxicology. Basic concepts and techniques will be presented and presently known applications will be discussed. Since this is an evolving field, consideration will be given to regulatory aspects and future directions.

Basic Immunologic Concepts Involving MAB. Edward S. Golub, *Purdue Univ.*

Cell Fusion Technologies: The Hybridoma. Evelyn Niday, *Travenol Laboratories.*

MAB Toxin Conjugates: Practical Applications. John D. Tamerius, *Cytotech, Inc.*

Antibodies in Reversal of Drug Intoxication. Edward Keenan, *Univ. of Oregon Medical Center.*

MAB: Regulatory Considerations. Bruce Merchants, *Hybritech, Inc.*

Future Directions & Remarks — Speaker Panel Discussion.

**TUESDAY MORNING, MARCH 19
TOWN & COUNTRY ROOM**

PLATFORM SESSION: Renal Toxicology I

Co-Chairs: J. Killeen, SDS Biotech Corp., Painesville, OH
J. Riviere, North Carolina State Univ., Raleigh, NC

- #1 8:30 **Triclopyr: 13-Week Dietary Toxicity Study and 4-Week Pharmacokinetic Study in Fischer 344 Rats.**
T.D. Landry, D.L. Eisenbrandt, T.S. Gushow, P.E. Kastl, J.E. Phillips and D.L. Wackerle. Mammalian and Environmental Toxicology Research Laboratory, Dow Chemical USA, Midland, MI.
- #2 8:45 **Gentamicin Nephrotoxicity In Rats with Prior Renal Insufficiency.**
M.P. Carver and J.E. Riviere. North Carolina State Univ., Raleigh, NC.
- #3 9:00 **Cytochrome P-450 (P-450) Dependent Metabolic Activation of MeCCNU.**
R.A. Kramer, M.G. McMenamin and M.R. Boyd. NCI, Bethesda, MD.
- #4 9:15 **Studies on the Sex Difference in Hexachloro-1:3-Butadiene-Induced Nephrotoxicity.**
E.A. Lock and J. Ishmael. Imperial Chemical Industries PLC, Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK.
- #5 9:30 **The Effect of Probenecid on Hexachloro-1:3-Butadiene-Induced Nephrotoxicity.**
E.A. Lock and J. Ishmael. Imperial Chemical Industries PLC, Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK.
- #6 9:45 **Pathology of Acute Hydrocarbon Nephrotoxicity in Male Rats.**
B.G. Short, V.L. Burnett, J.T. Martin and J.A. Swenberg. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.
- #7 10:00 **Effects of 1,3-Dichloropropene (DCP) on Renal Transport and Glutathione (GSH) in the Rat.**
M.M. Jeffrey, J.M. Baggett and W.O. Berndt. Dept. of Pharmacology, College of Medicine, Univ. of Nebraska Medical Center, Omaha, NE.
- #8 10:15 **Prechronic (14-Day) and Subchronic (13-Week) Toxicity of Orally Administered 4-Vinylcyclohexene to Fischer 344 Rats and B6C3F₁ Mice.**
J.J. Collins, M. Powers and A. Manus*. NIEHS, NTP, RTP, NC; *LBI, Kensington, MD. Sponsor: R. Yang.
- #9 10:30 **Chronic Toxicity and Oncogenicity Studies on Ethylene Glycol (EG) in Rats and Mice.**
L.R. DePass, M.D. Woodside, R.H. Garman and C.S. Weil. Bushy Run Research Center, Export, PA.
- #10 10:45 **Sensitivity of Developing Rat Pups to Nephrotoxins.**
R.J. Kavlock. Developmental Biology Division, USEPA, RTP, NC. Sponsor: Neil Chernoff.
- #11 11:00 **The Effects of Unilateral Nephrectomy (UNX) on the Toxicity and Renal Handling of Mercuric Chloride in the Rat.**
M.T. Houser and W.O. Berndt. Univ. of Nebraska Medical Center, Omaha, NE.
- #12 11:15 **Mortality and Hg203 and Cr51 in the Kidney and Liver Following Glutathione Depletion with Diethylmaleate Plus Buthionine Sulfoximine.**
J. McC. Baggett and W.O. Berndt. Dept. of Pharmacology, Univ. of Nebraska Medical Center, Omaha, NE.
- #13 11:30 **Comparative Efficacy of Five Chelating Agents in the Treatment of Experimental Lead Toxicosis.**
J.B. Meldrum. College of Veterinary Medicine, Virginia Tech, Blacksburg, VA. Sponsor: M. Ehrich.
- #14 11:45 **Toxic Manifestation of *In Vivo* Cisplatin on Isolated Perfused Kidney Function.**
K. Miura, D.A. Pasino, R.S. Goldstein and J.B. Hook. Dept. Investigative Toxicology, Smith Kline and French Laboratories, Philadelphia, PA.

**TUESDAY MORNING, MARCH 19
SAN DIEGO ROOM**

PLATFORM SESSION: Immunotoxicology I

Co-Chairs: R. Staab, Exxon Corp., East Millstone, NJ
L. Weiss, USFDA, Washington, DC

- #15 8:30 **AH Receptor Associated Humoral Immunosuppression by Polychlorinated Biphenyls (PCB) is not a Consequence of Thymic Toxicity.**
J.B. Silkworth and L. Antrim. Wadsworth Center for Laboratories and Research, NY State Dept. of Health, Albany, NY. Sponsor: L.S. Kaminsky.
- #16 8:45 **T-Helper Cell Dysfunction Following Exposure to 7,12-Dimethylbenz[*A*]anthracene (DMBA).**
M.J. Murray, E.C. Ward, L.D. Lauer, R.V. House, W.S. Stillman and J.H. Dean. CIIT, Research Triangle Park, NC.
- #17 9:00 **Delta-9-Tetrahydrocannabinol Decreases Host Resistance to Herpesvirus Infection in the Mouse.**
E.M. Mishkin, M.P. Holsapple and G.A. Cabral. Depts. of Pharmacology and Toxicology and of Microbiology and Immunology, Virginia Commonwealth Univ., Richmond, VA. Sponsor: A.E. Munson.
- #18 9:15 **Immunotoxicity of Bis(Tri-N-Butyltin)oxide After Long-Term Exposure of Rats.**
J.G. Vos, A. de Klerk and E.J. Krajnc. National Institute of Public Health and Environmental Hygiene, Bilthoven, The Netherlands.
- #19 9:30 **Alteration of the Chemiluminescent Response of Rat Peritoneal Cells by Chlorine Compounds.**
L.D. Koller, C.A. Osborne and J.H. Exon. Veterinary Medicine, Univ. of Idaho, Moscow, ID.
- #20 9:45 **The Effect of Ammonium Metavanadate on the Murine Immune Response.**
M.D. Cohen and C.I. Wei. Food Science and Human Nutrition Dept., Univ. of Florida, Gainesville, FL. Sponsor: L.O. Lim.
- #21 10:00 **Effects of CdCl₂ and NiCl₂ on Susceptibility to Murine Cytomegalovirus.**
M.J.K. Selgrade, M.J. Daniels and J.A. Graham. Toxicology Branch, HERL, U.S.E.P.A., Research Triangle Park, NC.
- #22 10:15 **Immunotoxic Effects of Aflatoxin B₁ in BALB/c Mice.**
R.V. Reddy, M. Aihara and R.P. Sharma. Utah State Univ., Logan, UT.
- #23 10:30 **Pathological and Biochemical Effects of Vomitoxin in Rodents.**
F. Iverson, E. Lok and E.A. Nera. Food Directorate, Health Protection Branch, Tunney's Pasture, Ottawa, Canada.
- #24 10:45 **Experimental Induction of Dermal and Respiratory Hypersensitivity to Toluene Dithiocyanate by Inhalation Exposure.**
M.H. Karol and J.C. Stadler. Dept. Ind. Env. Hlth. Sci., Univ. of Pittsburgh, Pittsburgh, PA.
- #25 11:00 **The Immune Response of Rats to Inhaled Trimellitic Anhydride (TMA): I. Immune-Mediated Pathology of the Lung.**
N.S. Hatoum, C.L. Leach, J.C. Roger, P.J. Garvin and V.S. Rac. IIT Research Institute and Standard Oil Company (Ind.), Chicago, IL.
- #26 11:15 **The Immune Response of Rats to Inhaled Trimellitic Anhydride (TMA): II. Effects on Serum Antibody, Lung IgG, and Lung Complement.**
C.L. Leach, N.S. Hatoum, H.V. Ratajczak, C.R. Zeiss, J.C. Roger and P.J. Garvin. IIT Research Institute and Standard Oil Company (Ind.), Chicago, IL.
- #27 11:30 **Influenza Virus-Alveolar Macrophage Interaction as an Immunotoxicology Model for Antiviral Immunity.**
G.R. Burieson¹, L.B. Fuller¹ and J.A. Graham². ¹Northrop Services, Inc., Environmental Sciences, ²HERL, U.S.E.P.A., Research Triangle Park, NC.
- #28 11:45 **Modulation of the Immune Response to *Listeria Monocytogenes* by Benzene Inhalation.**
G.J. Rosenthal and C.A. Snyder. NYU Med. Ctr., Dept. of Env. Med., New York, NY.

**TUESDAY MORNING, MARCH 19
GOLDEN WEST ROOM**

PLATFORM SESSION: General Toxicology I

Co-Chairs: S. Carson, St. John's Univ., Brooklyn, NY
V. Petrella, Mt. Airy, MD

- #29 8:30 **Short-Term Oral Toxicology Profile of a Novel Antihypertensive Agent.**
S. Gracon, C. DiFonzo, N. Barsoum, G. McGill, R. Martin, S. Rogers, G. Smith, J. Sturgess and F. de la Iglesia. Warner-Lambert/Parke-Davis Pharm. Res., Ann Arbor, MI and Mississauga, ON.
- #30 8:45 **Oral Toxicity of Methylphenidate.**
W.M. Kluwe^{*}, D. Bristol^{*}, K.M. MacKenzie[†] and T. Jackson[†]. National Toxicology Program^{*}, NIEHS, Research Triangle Park, NC; Hazleton Laboratories America, Inc.[†], Madison, WI.
- #31 9:00 **Preliminary Toxicologic Evaluation of CI-926, a New Antihypertension Agent.**
J. Fitzgerald, D. Pegg, U. Jayasekara, J. Watkins, J. Anderson, E. McGuire and F. de la Iglesia. Path. & Exper. Tox. Warner-Lambert/Parke-Davis Pharm. Res., Ann Arbor, MI.
- #32 9:15 **A 90-Day Subchronic Study with Tripeleminamine Administered to Fischer 344 Rats and B6C3F1 Mice.**
Carlton D. Jackson and Boon-Nam Blackwell. National Center for Toxicological Research, Jefferson, AR. Sponsor: W.T. Allaben.
- #33 9:30 **A 90-Day Subchronic Toxicity Study with Doxylamine Administered to Fischer 344 Rats and B6C3F1 Mice.**
Carlton D. Jackson and Boon-Nam Blackwell. National Center for Toxicological Research, Jefferson, AR. Sponsor: W.T. Allaben.
- #34 9:45 **Toxic Alpha,Beta-Unsaturated Aldehydes Inhibit Superoxide Anion Radical Production *In Vitro* in Stimulated Phagocytic Cells.**
G. Witz, N.J. Lawrie, M.A. Amoruso and B.D. Goldstein. UMDNJ-Rutgers Medical School/Rutgers University, Joint Graduate Program in Toxicology, Piscataway, NJ.
- #35 10:00 **The Use of Endoscopy in the Induction and Monitoring of Gastric Mucosal Lesions in the Rat.**
G.K. Salmon and G.B. Leslie. Smith Kline & French Res. Ltd., Welwyn, Herts, U.K.
- #36 10:15 ***In-Vivo* Model for Gastrointestinal Irritation.**
R.S. Eydeloth. Merck Sharp & Dohme Research Laboratories, West Point, PA.
- #37 10:30 **2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) Modulates Epidermal Growth Factor (EGF) Binding to Basal Cells from a Human Keratinocyte Cell Line.**
L.G. Hudson¹, W.A. Toscano¹ and W.F. Greenlee². ¹Harvard Univ., Boston, MA and ²CIIT, Research Triangle Park, NC.
- #38 10:45 **Effect of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) on Interscapular Brown Adipose Tissue (IBAT).**
M.J. Iatropoulos, T. Tomita and K. Rozman. Dept. of Exper. Pathol., Malcolm Toxicol. Lab., Med. Res. Div., American Cyanamid, Pearl River, NJ; Depts. of Pharmacol., Toxicol. & Ther. and Pathol., Univ. of Kansas Med. Ctr., Kansas City, KS; and Abt. für Toxikol., Ges. für Strahlen- und Umweltforschung mbH München, Neuherberg, F.R.G.
- #39 11:00 ***In Vivo/In Vitro* Determination of Cutaneous Penetration of Residual Monomer from Polyacrylamides.** S.W. Frantz, M.D. Dryzga, N.L. Freshour and P.G. Watanabe. Mammalian and Environmental Toxicology Research Laboratory, Dow Chemical USA, Midland, MI.
- #40 11:15 **Physiological Pharmacokinetic Modeling of Dermal Absorption of Dihalomethane Vapors.**
J.N. McDougal, H.J. Clewell, G.W. Jepson and M.E. Anderson. Air Force Aerospace Medical Research Laboratory, Wright-Patterson AFB, OH.

- #41 11:30 **Subchronic Dermal Toxicity of Vinylcyclohexene Diepoxide in Rats and Mice.**
R.S. Chhabra,* C. Montgomery,* A. Peterst and D. Donofrio.† National Toxicology Program, NIEHS, Research Triangle Park, NC* and Battelle Columbus Laboratories, Columbus, OH.†
- #42 11:45 **Intravenous Toxicologic Evaluation of the Antibacterial Agent Enoxacin®.**
S. Gracon, N. Barsoum, C. DiFonzo, A. Gough, G. McGill, R. Martin, J. Sturgess and F. de la Iglesia. Warner-Lambert/Parke-Davis Pharm. Res., Ann Arbor, MI and Mississauga, ON.

**TUESDAY MORNING, MARCH 19
MISSION BALLROOM**

**SYMPOSIUM 1: Application of Cell Culture
to Toxicology**

***Sponsored by SOT Mechanisms Specialty Section and the
Tissue Culture Association***

Co-Chairs: Daniel Acosta, Univ. of Texas, Austin, TX
June A. Bradlaw, FDA, Washington, DC

**Time
(A.M.)**

- 9:00 **Introduction.**
Daniel Acosta.
- 9:10 **Animal Cell Culture is Becoming an Exact Science.**
Gordon H. Sato and W. Alton Jones, Cell Science Center.
- 9:50 **Mechanisms of Chemical Toxicity and Cellular Protection Systems.**
Donald J. Reed, Oregon State Univ., Corvallis, OR.
- 10:30 **Coffee Break.**
- 10:40 **Evaluation of Chemical and Drug Toxicity with Cell Culture Systems.**
June A. Bradlaw, Food & Drug Administration, Washington, DC.
- 11:20 **Charting a Course for Cell Culture Alternatives to Animal Testing.**
Leon Golberg, Duke Univ. Medical Center, Durham, NC.

**TUESDAY MORNING, MARCH 19
LOWER LEVEL EXHIBIT AREA**

POSTER SESSION: Oncogenesis I

Co-Chairs: R. Bull, USEPA, Cincinnati, OH
A. Canada, Univ. Massachusetts, Oakham, MA

**Displayed: 8:30 A.M. - 11:30 A.M.
Attended: 8:30 A.M. - 10:00 A.M.**

- #43 **Diethylnitrosamine (DEN) and Phenobarbital (PB) Induced Alterations in Rat Hepatic Polyploidy.**
C. Timchalk, A.K. Charles and R. Abraham. Dept. of Pharm. & Tox., Albany Medical College, Albany, NY.

- #44 **Rat Liver Cytosolic Proteins After Mirex (MX) and Diethylnitrosamine (DEN) Exposure.**
C. Timchalk and A.K. Charles. Dept. of Pharm. & Tox., Albany Medical College, Albany, NY. Sponsor: R. Abraham.
- #45 **Kinetic Analysis of DNA Adduct Formation and Hepatocellular Foci Induction in Rats Continuously Exposed to Diethylnitrosamine.**
P.H. Morgan, F.C. Richardson, M.C. Dyroff, J.A. Swenberg and T.B. Starr. Chem. Ind. Inst. Toxicology, Research Triangle Park, NC.
- #46 **Toxicology and Carcinogenesis Studies of Chlorendic Acid in F344 Rats and B6C3F1 Mice.**
J.E. French, H.W. Rutter*, S.V. Machotka* and B.M. Ulland*. National Toxicology Program, NIEHS, RTP, NC; *Hazleton Labs., Vienna, VA. Sponsor: J.H. Mennear.
- #47 **Failure of Clometidine and Sodium Nitrite Alone or in Combination to Produce Putative Preneoplastic Foci in Rat Liver.**
R.A. Becker. IARC, Lyon, France. Sponsor: J.R.P. Cabral.
- #48 **Assessment of 3,4,3',4'-Tetrabromobiphenyl (3,4-TBB) as a Promoter or Initiator of Experimental Hepatocarcinogenesis in Rats.**
D. Dixon, S.D. Sleight, S.D. Aust, R.K. Jensen, M.S. Rezabek, Depts. of Pathology and Biochemistry, Michigan State Univ., East Lansing, MI.
- #49 **Tumor Promotion by Phenobarbital in Mouse Liver.**
M.A. Pereira, S.L. Herren-Freund, J.E. Klaunig and R.J. Ruch. HERL, U.S. Environ. Protect. Agency, Cincinnati, OH; and Dept. of Path., Medical College of Ohio, Toledo, OH.
- #50 **Dietary Vitamin A Effects on Hepatic Tumor Promotion by Polybrominated Biphenyls in Rats.**
M.S. Rezabek, S.D. Sleight, R.K. Jensen, S.D. Aust and D. Dixon. Depts. of Path. and Biochem., Michigan State University, East Lansing, MI.
- #51 **Failure of Various Pure and Complex Mixtures of PCBs to Initiate Carcinogenesis During Liver Growth and Regeneration.**
M.A. Hayes, S.H. Safe, D. Armstrong and R.G. Cameron. Dept. of Pathology, Univ. of Toronto, Toronto, Ontario, Canada.
- #52 **Alternatives to Dietary Administration of 2-Acetylaminofluorene in Resistant Hepatocyte Assays for Carcinogenicity.**
M.A. Hayes, E. Roberts and E. Farber. Dept. of Pathology, Univ. of Toronto, Toronto, Ontario, Canada. Sponsor: I.C. Munro.
- #53 **Effects of 1,1 Dichloroethane (1,1 DCE), 1,2 Dichloroethane (1,2 DCE), and Chloroform (CHCl₃) in Drinking Water on Lung and Liver Tumor Incidence in Mice.**
J.E. Klaunig, R.J. Ruch and M.A. Pereira. Dept. of Pathology, Medical College of Ohio, Toledo, OH and HERL, U.S. EPA, Cincinnati, OH.
- #54 **Induction of GGT+ Foci by Chlorinated Aliphatics in Rat Liver.**
D.L. Story, J.E. Dabbs and C.A. Tyson. SRI International, Menlo Park, CA; and H.A. Milman. U.S. Environmental Protection Agency, Washington, DC.
- #55 **1,1,1-Trichloroethane Formulation: A Chronic Inhalation Toxicity and Oncogenicity Study in Rats and Mice — Part I. Results of Findings in Mice.**
J.F. Quast, L.L. Calhoun and M.J. McKenna. Dow Chemical U.S.A., Mammalian and Environmental Toxicology Research Laboratory, Midland, MI.
- #56 **Inhibition or Promotion of Liver Carcinogenesis in Rainbow Trout.**
J.D. Hendricks, D.W. Shelton, J.E. Nixon and G.S. Bailey. Dept. of Food Sci. & Tech., Oregon State Univ., Corvallis, OR
- #57 **Effect of Some Inhibitors of Chemical Carcinogenesis on Aflatoxin B₁ (AFB₁) Metabolism and Hepatic DNA Binding in Rainbow Trout.**
D.E. Goeger, D.W. Shelton, J.E. Nixon, J.D. Hendricks and G.S. Bailey. Dept. of Food Sci. & Tech., Oregon State Univ., Corvallis, OR.
- #58 **Benzo(a)pyrene Metabolism and DNA Binding in Teleost Skin and Liver Culture.**
D.M. Lucas, J.E. Klaunig, R.J. Ruch and R. Teel. Dept. of Pathology, Medical College of Ohio, Toledo, OH; and Dept. of Physiology and Pharmacology, Loma Linda Univ., Loma Linda, CA. Sponsor: M.A. Pereira.

- #59 **Evaluation of the Carcinogenic Potential of Coffee for the Rat Pancreas.**
B.D. Roebuck, D.L. MacMillan, K.J. Baumgartner and M.L. Ruggiero. Dept. of Pharmacology and Toxicology, Dartmouth Medical School, Hanover, NH.
- #60 **Adduct Levels in Methylbenzyl nitrosamine Esophageal Carcinogenesis.**
T.F. Schrage¹, P.M. Newberne² and S.A. Broitman¹. ¹Boston Univ. Medical School; ²Massachusetts Institute of Technology, Boston, MA.
- #61 **DNA Binding and Quantitation of O⁶-Methylguanosine in Colon and Esophagus Exposed to Methylating Carcinogens in Explant Culture.**
H.A.J. Schut, D. Senitzer, L.A. Grimes and G.D. Stoner. Dept. of Pathology, Medical College of Ohio, Toledo, OH. Sponsor: M.A. Pereira.
- #62 **Twenty-Four Month Dietary Toxicity and Oncogenicity Studies with Carbosulfan in Mice and Rats.**
J.R. DeProspero, M. Weiner, J.D. McCarty, L.E. Geiger, M.J. Norvell and M.J. Fletcher. FMC Corporation, Princeton, NJ.
- #63 **Carcinogenicity Study of Deltamethrin in Mice.**
J.R.P. Cabral and D. Galendo. International Agency for Research on Cancer, Lyon, France.
- #64 **Acrylamide: A 2-Year Toxicity-Oncogenicity Study in Fischer 344 Rats.**
S.J. Gorzinski, K.A. Johnson, K.M. Bodner, R.A. Campbell, R.C. Kraska¹, R.W. Mast² and C.H. Wolf³. Mammalian and Environmental Toxicology Laboratory, Dow Chemical USA, Midland, MI; ¹American Cyanamid Company; ²Standard Oil Company (Ohio); and ³Nalco Chemical Company.
- #65 **Mechanism of Action of Chrysotile Asbestos.**
G.L. Fisher^a, B.T. Mossman^b, A.R. McFarland^c and R.W. Hart^d. Battelle Columbus Laboratories, Columbus, OH^a; The Univ. of Vermont, Burlington, VT^b; Texas A&M Univ., College Station, TX^c; and National Center for Toxicological Research, Jefferson, AR^d.
- #66 **Toxicity and Tumorigenicity of Nickel Sulfide in Strain A/J Mice.**
D.A. McNeill^a, C.E. Chrisp^b and G.L. Fisher^a. Battelle Columbus Laboratories, Columbus, OH^a; and Univ. of Michigan, Ann Arbor, MI^b.
- #67 **Toxicity and Tumorigenicity of Nickel Acetate in Strain A/J Mice.**
D.A. McNeill^a, K.L. McNeill^a, C.E. Chrisp^b and G.L. Fisher^a. Battelle Columbus Laboratories, Columbus, OH^a; and Univ. of Michigan, Ann Arbor, MI^b.
- #68 **Increased Lung Adenoma Incidence in Strain AJ Mice Treated with Chlorinated and Bromated Acetonitriles.**
R.J. Bull¹ and M. Robinson. Toxicology and Microbiology Division, USEPA, Cincinnati, OH; and G. Knutsen. PAI, Ijamsville, MD.
- #69 **Hyperplastic Changes in the Mouse Skin Induced by Alternate Drinking Water Disinfectants.**
M. Robinson¹, R.J. Bull¹ and M. Schamer². Toxicology and Microbiology Division, USEPA; and PAI, Cincinnati, OH.
- #70 **Skin Carcinogenic Activity of Middle Distillate Petroleum Materials.**
R.W. Biles, S.C. Lewis and R.A. Scala. Exxon Corporation, P.O. Box 235, East Millstone, NJ.
- #71 **Evaluation of the Dermal Carcinogenic Potential of Bitumen-Derived Liquids.**
R.H. McKee, W.A. Stubblefield and R.A. Scala. Exxon Corporation, P.O. Box 235, East Millstone, NJ.
- #72 **Tumor Initiation and Promotion Effects of Petroleum Fractions in Mouse Skin.**
J.M. Gerhart, C.A. Halder, N.S. Hatoum, T.M. Warne and P.J. Garvin. IIT Research Institute, Standard Oil Co. (Ind.), Chicago, IL; and Amoco Oil Company, Naperville, IL.
- #73 **Non-DNA-Damaging Pretreatment of Rat Keratinocytes with MNNG Enhances DNA Repair After MNNG-Induced DNA Damage.**
D.H. Sorscher and R.B. Conolly. Program in Toxicology, The Univ. of Michigan, Ann Arbor, MI. Sponsor: M.J. Brabec.
- #74 **Evaluation of E. Coli Heat Stable Toxin (ST) as a Skin Tumor Promoter in Sencar Mice.**
M.R. Moore. Litton Bionetics, Inc., Kensington, MD.

- #75 **Transplacental Carcinogenesis and Multihit Theories of Tumor Development.**
D.G. Branstetter. The Upjohn Co., Kalamazoo, MI; P. Conran and P.J. Goldblatt. Medical College of Ohio, Toledo, OH. Sponsor: T.J. Raczniaik.
- #76 **Evaluation of Carcinogenesis Potential in CF1 Mice Receiving Vidarabine.**
S.I. Gracon, C.J. DiFonzo, A.W. Gough, J.M. Sturgess and F.A. de la Iglesia, Path. Exp. Tox., Warner-Lambert/Parke-Davis Pharm. Res., Ann Arbor, MI and Mississauga, Ont.
- #77 **Methylation of the Serum Albumin Gene (SAG) as compared to the Kirsten-Ras Oncogene (Ki-ras) in Hepatocytes (H) and Non-Parenchymal Cells (NPC) of Rat Liver.**
R.L. Vorce and J.I. Goodman, Dept. of Pharmacology and Toxicology, Ctr. for Environmental Toxicology, Michigan State Univ., E. Lansing, MI.
- #78 **MNG and BCES-Induced DNA Damage in Basal Cells and Differentiated Keratinocytes.**
L.T. Mulholland and R.B. Conolly. Program in Toxicology, The Univ. of Michigan, Ann Arbor, MI. Sponsor: I.A. Bernstein.
- #79 **Induction of Unscheduled DNA Synthesis (UDS) in Primary Cultures of Hamster, Rat, Mouse, and Human Hepatocytes.**
K.L. Steinmetz, D.K. Spak, C.E. Green and J.C. Mirsalis. SRI International, Menlo Park, CA. Sponsor: A.D. Mitchell.
- #80 **Dose-Dependent Formation of Aflatoxin B₁-DNA Adducts Within the Transfer RNA Gene Sequences of Rat Liver DNA.**
T. Rick Irvin. Lab. of Toxicology, Dept. of Vet. Anatomy, Texas A&M Univ., College Station, TX. Sponsor: R.E. Morrissey.
- #81 **DNA Strand Breaks: Rapid Analysis in Soft Tissues.**
S.R. Morris and H.G. Shertzer. Univ. of Cincinnati, Medical Center, Cincinnati, OH.
- #82 **Acute and Genotoxicity Studies on 1,3,5-Triacryloylhexahydro-s-Triazine (TAHT).**
R.S. Slesinski, P.J. Guzzie, W.C. Hengler, R.C. Myers and B. Ballantyne. Bushy Run Research Center/Mellon Institute - Union Carbide Corporation, Export, PA.
- #83 **Potent Mutagenic Materials Isolated from Synthetic Rubber.**
C.I. Wei, H.K. Tan and T. Shibamoto. Food Sci. and Human Nutri. Dept., Univ. of Florida, Gainesville, FL; and Dept. of Environ. Toxic., Univ. of California, Davis, CA. Sponsor: L.O. Lim.
- #84 **Genotoxic Properties of an Impurity of Malathion.**
R.J. Richardson, II and T. Imamura. Div. of Toxicology and Physiology, Univ. of California, Riverside, CA.
- #85 **Genetic Toxicological Profile of Carbosulfan.**
M. Weiner, J.D. McCarty, J.R. DeProspo, L.E. Geiger, M.J. Norvell and M.J. Fletcher. FMC Corporation, Princeton, NJ.
- #86 **Activity of Smokers' Urine in the Ames Assay: Humans vs. Rats.**
H.W. Dorough and M.J. Graziano. Dept. of Entomology and Grad. Ctr. for Toxicology. Univ. of Kentucky, Lexington, KY.
- #87 **Sister Chromatid Exchange Induction in Bone Marrow Cells of Mice Exposed Nose-Only to Whole Cigarette Smoke.**
D.L. Putman, R.M. David, J.M. Melhorn, D.R. Dansie, *C.J. Stone and C.J. Henry. Microbiological Associates, Bethesda, MD; and *Lorillard Research Center, Greensboro, NC..
- #88 **Relative Roles of Mutagenicity and Cytotoxicity in the Effects of Complex Organic Mixtures.**
M.S. Swanson, M.L. Cunningham, D.A. Haugen and C.A. Reilly, Jr. Argonne National Laboratory, Argonne, IL. Sponsor: H.P. Witschi.
- #89 **Characterization of DNA Damage and Repair Induced by Metal Compounds in Cultured Human Fibroblasts.**
W. Hamilton-Koch, R.D. Snyder and J.M. LaVelle. Univ. of Connecticut, Storrs, CT; and Stauffer Chemical Co., Farmington, CT.

**TUESDAY MORNING, MARCH 19
LOWER LEVEL EXHIBIT AREA**

POSTER SESSION: Neurotoxicology I. Behavior

Co-Chairs: L. Reiter, NIEHS, RTP, NC
M. Sauerhoff, Stauffer Chemical Co., Farmington, CT

Displayed: 8:30 A.M. - 11:30 A.M.

Attended: 10:00 A.M. - 11:30 A.M.

- #90 **Behavioral Effects of Toluene Inhalation in a Non-Human Primate.**
J.D. Taylor and H.L. Evans. N.Y.U. Medical Center, New York, NY.
- #91 **Behavioral Toxicity in Monkeys Exposed to Low Levels of Lead from Birth.**
D.C. Rice. Health and Welfare Canada, Ottawa, Ontario, Canada. Sponsor: F. Iverson.
- #92 **Modification of Lead-Induced Changes in Behavior and Body Burden by Calcium Disodium Edatate (EDTA).**
D.A. Cory-Slechta and B. Weiss. Div. of Toxicology, Univ. of Rochester School of Med., Rochester, NY.
- #93 **Inhaled Toluene Produces Pentobarbital-Like Discriminative Stimulus Effects in Mice.**
D.C. Rees, E. Coggeshall and R.L. Balster. Dept. of Pharm. and Tox., Medical College of Virginia, Richmond, VA. Sponsor: J.F. Borzelleca.
- #94 **Discriminative Stimulus Properties of Injected Toluene in Mice.**
D.C. Rees and R.L. Balster. Dept. of Pharm. and Tox., Medical College of Virginia, Richmond, VA. Sponsor: J.F. Borzelleca.
- #95 **Effects of Triethyl Tin-SO₄ (TET) in Mice Responding Under a Multiple Schedule of Food Presentation.**
G.R. Wenger and D.E. McMillan. Univ. of Arkansas for Medical Sciences, Little Rock, AR.
- #96 **The Effect of Halothane Exposure on Reactive Synaptogenesis in the Rat.**
E.D. Levin, E. Uemura, R.F. DeLuna and R.E. Bowman. Harlow Primate Lab, Madison, WI. Sponsor: R.E. Peterson.
- #97 **Behavioral Consequences of Intraperitoneal Carbon Monoxide Administration.**
S.B. Fountain, K.C. Raffele and Z. Annau. The Johns Hopkins Univ., Baltimore, MD.
- #98 **Effect of Chlordimeform on Behavioral and Autonomic Thermoregulation in Mice.**
C.J. Gordon* and M.D. Long*. Experimental Biology Division, US Environmental Protection Agency, Research Triangle Park, NC. Sponsor: R. Chadwick.
- #99 **RDX Exposure Sensitizes Rats to Audiogenic Seizures.**
L.J. Burdette and R.S. Dyer. Northrop Services, Inc.; and U.S. E.P.A., Research Triangle Park, NC.
- #100 **Some Behavioral Effects of Sulfolane.**
R.C. MacPhail, D.B. Peele*, K.E. Wiggins and J.D. Farmer. Neurotoxicology Division, U.S. EPA, Research Triangle Park, NC. Sponsor: R.S. Dyer.
- #101 **Comparison of the Behavioral Effects of Endosulfan in Weanling and Adult Rats.**
R.C. MacPhail, P.H. Ruppert, D.B. Peele* and J.D. Farmer. Neurotoxicology Division, U.S. EPA, Research Triangle Park, NC. Sponsor: R.S. Dyer.
- #102 **Acute and Delayed Toxicity of Organophosphorus Esters to Laying Hens in Percutaneous and Oral Dosing Regimens.**
B.M. Francis, R.L. Metcalf and L.G. Hansen. Univ. of Illinois, Urbana, IL.
- #103 **Biochemical and Behavioral Aspects of Organophosphorus Ester Toxicity.**
M. El-Awar and B.M. Francis. Univ. of Illinois, Urbana, IL.
- #104 **Effects of Direct and Indirect-Acting Dopaminergic Agonists on Locomotor Activity of Rats Exposed Perinatally to Polybrominated Biphenyls.**
J.W. Henck and R.H. Rech. Dept. of Pharmacol./Toxicol., Mich. State Univ., East Lansing, MI. Sponsor: W.D. Atchison.

- #105 **Indirect Prenatal and Postnatal Exposure to Trichloroethylene Increases Exploratory and Locomotor Activities in Mature Rats.**
K.E. LaGory¹, D. Zaccaro¹, D.H. Taylor¹, R.J. Prohl¹, R.J. Bull² and R.D. Laurie².
¹Miami Univ., Oxford, OH; and ²Toxicology and Microbiology Division, HERL, USEPA, Cincinnati, OH.
- #106 **The Behavioral Toxicity of the Radiation Protectant WR-2721.**
V. Bogo, A.J. Jacobs and J.F. Weiss. Armed Forces Radiobiology Research Institute, Bethesda, MD. Sponsor: L.J. Jenkins, Jr.
- #107 **Investigation of the Behavioral and Neurochemical Properties of 11-Hydroxy- Δ^9 -Tetrahydrocannabinol and its Fatty Acid Conjugate in the Rat.**
G.C. Haggerty, R. Deskin, P.J. Kurtz, A.F. Fentiman and E. Leighty. Battelle, Columbus, OH.
- #108 **Animal Model of Bismuth Encephalopathy.**
J.F. Ross. The Procter & Gamble Company, Cincinnati, OH. Sponsor: W.B. Gibson.
- #109 **Effects of Trimethyltin on Diurnal Rhythms in Rats and Mice.**
P.J. Bushnell and H.L. Evans. NYU Medical Center, New York, NY.
- #110 **Neurotoxicity Produced in Rats by Concurrent Exposure to Triethyl Lead and 2,5-Hexanedione.**
Daniel M. Lapadula, Hugh A. Tilson, Gerald A. Campbell and Mohamed B. Abou-Donia. Duke Univ. Medical Center, Durham, NC; and Laboratory of Behavioral and Neurological Toxicology, NIEHS, Research Triangle Park, NC.
- #111 **Effects of Lead on Cognitive Function of Black Children from Low Socioeconomic Status (SES) Families: A Replication.**
B.A. Hawk, S.R. Schroeder, S. Robinson, D.A. Otto, P. Mushak and C.N. Barton. Univ. of North Carolina, Chapel Hill, NC; and U.S. Environmental Protection Agency. Sponsor: R. Dyer.

**TUESDAY MORNING, MARCH 19
LOWER LEVEL EXHIBIT AREA**

POSTER SESSION: Inhalation Toxicology I

Co-Chairs: R. Roth, Michigan State Univ., East Lansing, MI
J. Sun, Inhalation Tox. Res. Inst., Albuquerque, NM

Displayed: 8:30 A.M. - 11:30 A.M.
Attended: 10:00 A.M. - 11:30 A.M.

- #112 **Subchronic Inhalation Toxicity of Pinacolyl Alcohol (3,3-Dimethyl-2-Butanol) in Rats.**
J.T. James, R.D. Armstrong, G. Leach, W.C. Hall and R.J. Pellerin. Toxicology Division, Chemical Research and Development Center, Aberdeen Proving Ground, MD. Sponsor E.J. Olajos.
- #113 **Acute Inhalation Toxicity of Pinacolyl Alcohol (3,3-Dimethyl-2-Butanol) in Sprague-Dawley Rats.**
J.T. James, B.P. Infiesto and M.R. Landauer. Toxicology Division, Chemical Research and Development Center, Aberdeen Proving Ground, MD. Sponsor: E.J. Olajos.
- #114 **Inhalation Toxicity of Welding Fumes.**
R.A. Parent, Consultox, Ltd., Baton Rouge, LA; W.B. Coate, Hazleton Laboratories America, Inc., Vienna, VA.
- #115 **Subchronic Inhalation Toxicity of Glutaraldehyde.**
B.J. Greenspan, B. Ballantyne, E.H. Fowler and W.M. Snellings. Bushy Run Research Center, Union Carbide Corporation, Export, PA.

- #116 **Effect of Acrolein on Macrophage Functions and Host Defense in Mice and Rats.**
R.L. Sherwood, C.L. Leach, N.S. Hatoum and C. Aranyi. IIT Research Institute, Chicago, IL.
- #117 **Physiologically Based Simulation Analysis of Gas Uptake Data.**
M.L. Gargas and M.E. Andersen. Air Force Aerospace Medical Research Laboratory, Wright-Patterson AFB, OH.
- #118 **Comparison of Subchronic Inhalation Toxicity of Five Aliphatic Nitriles in Rats.**
V. Roloff, R. Short, W. Ribelin and M. Dietrich. Monsanto Company, Environmental Health, St. Louis, MO.
- #119 **Determination of Benzene in Breath of Smokers and Nonsmokers**
L.D. Gruenke, R. Wester, J.C. Craig and H. Maibach. Univ. of California, San Francisco, San Francisco, CA.
- #120 **Inhalation Toxicity of Two Dye Materials in Fischer-344 Rats.**
R.F. Henderson, J.D. Sun, Y.S. Cheng, T.C. Marshall, J.S. Dutcher, J.A. Pickrell, F.F. Hahn, J.L. Mauderly and C.H. Hobbs. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM.
- #121 **Four-Week Repeated Inhalation Studies of Talc: Pulmonary Retention.**
J.A. Pickrell, J.M. Benson, R.L. Hanson, R.L. Carpenter, C.H. Hobbs and R.K. Jones. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM; and S.C. Brown, NIEHS, National Toxicology Program, Tucson, AZ.
- #122 **Endotracheal Nebulization of Drugs into the Lungs of Anesthetized Animals.**
B.K.J. Leong, J.K. Coombs, E.N. Petzold, A.H. Hanchar and M.L. McNee. The Upjohn Company, Kalamazoo, MI.
- #123 **Inhalation Toxicity of Tulobuterol in Rats and Dogs.**
R.E. Dudley, W.B. Coate,* S.V. Machotka,* I.A. Heyman and J.W. Kesterson. Abbott Laboratories, Drug Safety Evaluation, North Chicago, IL and *Hazleton Laboratories, America, Inc., Vienna, VA.
- #124 **Computer Assisted System for Combustion Toxicology.**
G.V. Alexeeff, J.A. White and N.D. Putas. Weyerhaeuser Company, Longview, WA.
- #125 **Comparison of Two Methods for Evaluation of Combustion Product Toxicity.**
R.C. Anderson, S.A. Hopkinson and M.E. Goldman. Arthur D. Little, Inc., Acorn Park, Cambridge, MA.
- #126 **Evaluation of Toxicity of Combustion Products of Char Forming Materials Under Several Conditions.**
R.C. Anderson, M.J. Mazrimas and M.E. Goldman. Arthur D. Little, Inc., Acorn Park, Cambridge, MA.
- #127 **Inhibition of Alveolar Macrophage Phagocytosis in Rabbits Inhaling Pyrolysis Products of Polytetrafluoroethylene (PTFE).**
J.W. Clayton and D.N. Wheeland. Univ. of Arizona, Tucson, AZ.
- #128 **Development of an Approximate Lethal Exposure Method for Use in Combustion Toxicology.**
G.V. Alexeeff, Y.C. Lee and *S.C. Packham. Weyerhaeuser Company, Longview, WA; and *BETR Sciences, Inc., Salt Lake City, UT.
- #129 **Sensory Irritation Response to Inhaled Aldehydes after Formaldehyde Pretreatment.**
C. Babiuk, W.H. Steinhagen and C.S. Barrow. Chem. Ind. Inst. Tox., Res. Triangle Park, NC.
- #130 **Evaluation of Pressure-Volume and Flow-Volume Loops to Differentiate Between Obstruction and Restriction.**
M. Schaper, R.D. Thompson and Y. Alarie. Dept. Ind. Env. Hlth. Sci., Univ. of Pittsburgh, Pittsburgh, PA.
- #131 **Autoradiographic Assessment of the Disposition of Different Forms of Intratracheally Administered Cadmium in Rat Lung.**
M. Aihara, R.P. Sharma and J.L. Shupe. Toxicology Program, Utah State Univ., Logan, UT.

- #132 **Effects of Amosite Fibers of Different Sizes on Inflammatory Reaction and Epithelial Permeability of the Lung.**
S.H. Gavett, G. Oberdörster, N.L. Marcello and S.R. Drago. Div. Toxicol., Univ. of Rochester Sch. of Med. and Dent., Rochester, NY.
- #133 **Stereological Analysis of the BHT-Diquat Interaction in Murine Pulmonary Alveolus.**
P.A. Coulombe, P.R. Filion and M.G. Côté. Dépt. de Pharmacologie, Univ. de Montréal, Montréal, Canada.
- #134 **Early Indicators of Pulmonary Change Induced by Combustion-Generated Particulates.**
S.J. Stoner, J.W. Clayton and S.E. Wilson. Univ. of Arizona, Tucson, AZ.
- #135 **Effect of Methylcyclopentadienyl Manganese Tricarbonyl (MMT) on Systemic and Pulmonary Hemodynamics.**
D. Cox, D. Penney, R. Gaddis, J. Orr, R. Hanzlik and G. Traiger. Dept. of Pharmacol. & Toxicol. and Med. Chem., School of Pharmacy, Univ. of Kansas, Lawrence, KS.
- #136 **Collagen Metabolism in Normal and Damaged Mouse Lung Tissue Following Treatment with Prednisolone.**
J.P. Kehrer. Division of Pharmacology & Toxicology, College of Pharmacy, The Univ. of Texas, Austin, TX.

**TUESDAY AFTERNOON, MARCH 19
TOWN & COUNTRY ROOM**

PLATFORM SESSION: Metabolism/Disposition I

Co-Chairs: P. Guzelian, Medical College of Virginia, Richmond, VA
H. Zenick, Univ. of Cincinnati, Cincinnati, OH

- #137 1:30 **Induction of Hepatic Microsomal Enzymes in Cotton Rats (*Sigmodon hispidus*).**
J.B. Watkins and P.I. Kraus. Medical Sciences Program, Indiana Univ. School of Medicine, Bloomington, IN.
- #138 1:45 **Hepatic Effects of Interferons in Male CD-1 Mice.**
M.R. Franklin. Dept. of Biochemical Pharmacology and Toxicology, Univ. of Utah, Salt Lake City, UT.
- #139 2:00 **Mixed Function Oxidase Induction and Toxic Effects of Three Commercial PCBs and Selected Congeners in the Avian.**
D. Jones, T.W. Sawyer, K. Rosanoff and S. Safe. Dept. of Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M Univ., College Station, TX.
- #140 2:15 **The Metabolism of Benzo[a]pyrene by PCB- and PBB-Induced Microsomal Enzymes.**
J. Haake, J. Merrill and S. Safe. Dept. of Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M Univ., College Station, TX.
- #141 2:30 **Stereoselective Glucuronidation in Induced Rabbit Hepatic Microsomes.**
B.O. Finley and G.S. Yost. College of Pharmacy, Washington State Univ., Pullman, WA.
- #142 2:45 **Effect of Glutathione Depletion on the Pharmacokinetics and Metabolic Fate of Acetaminophen in the Rat.**
R.E. Galinsky. Dept. of Pharmaceutics, College of Pharmacy, Univ. of Utah, Salt Lake City, UT. Sponsor: M.R. Franklin.
- #143 3:00 **Isolation and Characterization of a Liver Enzyme that Catalyzes Reduction of Chlordane (Kepone).**
D.T. Molowa, S.A. Wrighton, L.C. Mutter, R.V. Blanke and P.S. Guzelian. Depts. of Medicine and Pathology, Virginia Commonwealth Univ., Richmond, VA.

- #144 3:15 **Monochloroacetic Acid: Tissue Distribution in Mice and Rats.**
M.R. Berardi, K.R. Cooper and R. Snyder. Joint Graduate Program in Toxicology, Rutgers Univ. and UMDNJ/Rutgers Medical School, Piscataway, NJ.
- #145 3:30 **Early Pharmacokinetics of Leptophos and Desbromoleptophos.**
E.M. Cozzi, A.J. Bermudez and L.G. Hansen. College of Veterinary Medicine, Univ. of Illinois, Urbana, IL.
- #146 3:45 **Effects of Dietary Fiber on Theobromine Absorption, Metabolism, and Toxicity in the Rat.**
D.M. White, C.A. Shively and S.M. Tarka, Jr. Hershey Foods Corp. - Technical Center, Hershey, PA.
- #147 4:00 **Enhanced Liver Uptake of Liposomes due to Incorporation of Digalactosylodiglyceride (DGDG) in the Lipid Bilayer.**
D.B. Mitchell, T. Baker, C. Marlowe and W.J. Waddell. Procter & Gamble Company, Cincinnati, OH; and Univ. of Louisville, Louisville, KY.
- #148 4:15 **Identification of Metabolites of Gentian Violet in Tissues and Excreta of Rodents.**
J.J. McDonald, B.M. North and C.R. Breeden. National Center for Toxicological Research, Jefferson, AR. Sponsor: W.T. Allaben.
- #149 4:30 **Effects of Butylated Hydroxyanisole (BHA) on Hepatobiliary Disposition of Aflatoxin B₁ (AFB₁) in the Rat.**
D.H. Monroe, C.J. Holeski and D.L. Eaton. Dept. Environmental Health, Univ. of Washington, Seattle, WA.
- #150 4:45 **Cumene Hydroperoxide (CHP) Mediated Denitrification of 2-Nitropropane (2NP) in Uninduced Mouse Liver Microsomes.**
E.K. Marker and A.P. Kulkarni. Toxicology Program, Dept. Environ. and Industrial Health, The Univ. of Michigan, Ann Arbor, MI.

TUESDAY AFTERNOON, MARCH 19 SAN DIEGO ROOM

PLATFORM SESSION: Oncogenesis II

Co-Chairs: A. Rogers, MIT, Cambridge, MA
G. Wolff, NCTR/FDA, Jefferson, AR

- #151 1:30 **Accumulation of Ethylated Guanines in DNA of Hamster Organs During Chronic Diethylnitrosamine (DEN) Exposure.**
A.T. Fong and R.E. Rasmussen. Dept. of Community and Environmental Medicine, Univ. of California, Irvine, CA. Sponsor: A.R. Buckpitt.
- #152 1:45 **Biological Activities of Zeolite (Erionite) in Comparison with Asbestos.**
L.D. Palekar,* J.F. Eyre,* H.C. Price,* B.G. Brown* and D.L. Coffin†. *Northrop Services, inc.; and †U.S. Environmental Protection Agency, Research Triangle Park, NC.
- #153 2:00 **Effects of Chemical Irritants on Protein Synthesis in Mouse Trachea.**
R.E. Bagdon, C.J. Molloy and J.D. Laskin. Graduate Program in Toxicology, UMDNJ-Rutgers Medical School, Piscataway, NJ.
- #154 2:15 **Hyperoxia and Lung Tumor Development.**
R.C. Lindenschmidt and H.P. Witschi. Biology Div., Oak Ridge National Laboratory, Oak Ridge, TN.
- #155 2:30 **Urethane Kinetics and Pulmonary Tumorigenesis.**
W.D. Adams and E.J. O'Flaherty. Dept. Env. Hlth., Univ. of Cincinnati, Cincinnati, OH.
- #156 2:45 **Carcinogenicity Studies of Telone II® in Fischer 344 Rats and B6C3F₁ Mice.**
R.S.H. Yang, G.A. Boorman, D. Creasia, J.K. Haseman, J.E. Huff and J.L. Stookey. National Toxicology Program, NIEHS, RTP, NC; FCRF/NCI, Frederick, MD.

- #157 3:00 **Carcinogenic Responses in F344 Rats and B6C3F₁ Mice Given Benzyl Acetate in Corn Oil by Gavage.**
K.M. Abdo*, G.A. Boorman*, J.K. Haseman*, J.D. Prejeant†, R.B. Thompson† and J.E. Huff*. *National Toxicology Program, RTP, NC; †Southern Research Institute, Birmingham, AL. Sponsor: E. Rauckman.
- #158 3:15 **Effects of Trichloroacetic Acid on Hepatic Carcinogenesis and the Immune System.**
M.J. Parnell, P.A. Talcott, J.H. Exon, G.M. Henningsen and L.D. Koller. Vet. Med., Univ. of Idaho, Moscow, ID.
- #159 3:30 **Transfer of Dimethylnitrosamine (DMN) from Lactating Rats to Neonates Via the Milk and Induction of DNA Damage/Repair in Neonatal Liver.**
D.J. Kornbrust, B.A. Gillis, †S. townsend, *L. Timmons, †D. Dietz and B.A. Schwetz. NIEHS, and †Res. Triangle Inst., Research Triangle Park, NC; and *Midwest Research Inst., Kansas City, MO.
- #160 3:45 **Risk Factors in Gastric Cancer: Early Markers.**
G. Charnley, K. Adams, D. Roth and P.M. Newberne. Massachusetts Institute of Technology, Cambridge, MA.
- #161 4:00 **Rapid Induction of Forestomach Carcinoma in Partially Hepatectomized Wistar Rats Given Butylated Hydroxyanisole.**
R. Abraham, K.-F. Benitz, R. Mankes, G. Patil and R. Lyon. Dept. of Pharmacology and Toxicology, Albany Medical College, Albany, NY.
- #162 4:15 **Zinc-Deficiency, Methylbenzyl nitrosamine (MBN) Carcinogenesis: DNA Synthesis and Adduct Formation.**
P.M. Newberne and T.F. Schrage. Massachusetts Institute of Technology, Cambridge, MA.
- #163 4:30 **Hydrogenated Benzo(a)pyrene derivatives and Skin Tumorigenesis.**
D.D. Mahlum¹, T.J. Wozniak², R.A. Hites² and D.W. Later¹. ¹Pacific Northwest Laboratory, Biology & Chemistry Department, Richland, WA; ²Univ. of Indiana, School of Public and Environmental Affairs, Bloomington, IN.
- #164 4:45 **DMBA (7,12-Dimethylbenzanthracene) Mammary Tumorigenesis in Female, Sprague-Dawley Rats Fed a High Lard Diet.**
A.E. Rogers, B.H. Conner, C. Boulanger and S.Y. Lee. Massachusetts Institute of Technology, Cambridge, MA.

**TUESDAY AFTERNOON, MARCH 19
MISSION BALLROOM**

**SYMPOSIUM 2: Sensory Systems Toxicology:
Correlated Measurements
of Toxicity**

Sponsored by SOT Neurotoxicology Specialty Section

Chairman: Donald A. Fox, Univ. of Houston, Houston, TX

**Time
(P.M.)**

1:30 **Introduction.**
Donald A. Fox.

1:40 **A Comparison of Acrylamide Toxicity in the Cat and Macaque Visual Systems.**
William Merigan, Univ. of Rochester, Rochester, NY.

2:15 **Discussion**

- 2:25 **Lead Toxicity: A Model for Developmental Effects in the Visual System.**
Donald A. Fox, Univ. of Houston, Houston, TX.
- 3:00 **Discussion**
- 3:10 **Coffee Break**
- 3:25 **Vulnerability of the Peripheral Auditory System to Toxic Insults.**
Laurence Fechter, Johns Hopkins Univ., Baltimore, MD.
- 4:00 **Discussion**
- 4:10 **Quantitative Assessment of Symptoms, Sensory Detection Thresholds, Morphometry and Compound Action Potentials in Drug and Toxicant Surveillance.**
Peter James Dyck, Mayo Clinic, Rochester, MN.
- 4:45 **Discussion**
- 4:55 **Conclusions.**
Donald A. Fox.

TUESDAY AFTERNOON, MARCH 19 LOWER LEVEL EXHIBIT AREA

POSTER SESSION: Immunotoxicology II

Co-Chairs: J. Fenters, Illinois Inst. of Tech., Chicago, IL
L. Wong, Revlon Health Care Group, Tuckahoe, NY

Displayed: 1:30 P.M. - 4:30 P.M.
Attended: 1:30 P.M. - 3:00 P.M.

- #165 **Induction of an Immune Response Following Halothane Exposure.**
S.D. Brooks, A.H. Callis, A.J. Gandolfi, I.G. Sipes, L.R. Pohl and H. Satoh. Dept. of Anesthesiology, Univ. of Ariz., Tucson, AZ; and NIH, Bethesda, MD.
- #166 **Specificity of the Antibodies Induced by Halothane Exposure.**
A.H. Callis, S.D. Brooks, A.J. Gandolfi, I.G. Sipes, L.R. Pohl and H. Satoh. Dept. of Anesthesiology, Univ. of Ariz., Tucson, AZ; and NIH, Bethesda, MD.
- #167 **Immunotoxic Effects of Short-Term Exposure to Dimethylvinylchloride.**
P. Thomas, H. Ratajczak and C. Aranyi. IIT Research Institute, Chicago, IL.
Sponsor: J.D. Fenters.
- #168 **Host Resistance After Primary and Secondary Challenge in Mice Treated with Dimethylvinyl Chloride (DMVC).**
J. Fenters, P. Barbera and K. Ketels. IIT Research Institute, Chicago, IL.
- #169 **Suppression of Mouse Serum Complement Levels Following Subchronic Exposure to Dioxins.**
K.L. White, Jr., H.H. Lysy and A.C. Anderson. Depts. of Biostatistics and Pharmacology & Toxicology, Medical College of Virginia, Richmond, VA.
Sponsor: A.E. Munson.
- #170 **Chlorinated Dibenzo-p-Dioxin (CDD) and Dibenzofuran (CDF)-Induced Humoral Immune Suppression.**
N.J. Kerkvliet and J.A. Brauner. College of Veterinary Medicine and Environmental Health Science Center, Oregon State Univ., Corvallis, OR.
- #171 **Direct Suppression of Antibody Production by Cultured Mouse Spleen Cells by 2,3,7,8-TCDD.**
M.P. Holsapple, P.J. McNerney, A.N. Tucker* and M.I. Luster*. Dept. of Pharmacology & Toxicology, Medical College of Virginia, Richmond, VA; and *NIEHS, Research Triangle Park, NC.

- #172 **Effects of Gibberellic Acid and 3,3',4,4'-Tetrachloroazoxybenzene on IGE Antibody Responses in Deer Mice and White Mice.**
L.J. Olson, D.S. Feenstra, R.D. Hinsdill and M.T.S. Hsia. Environmental Toxicology Center, Depts. of Bacteriology and Entomology, Univ. of Wisconsin, Madison, WI.
- #173 **The Altered Immune Responses of Deer Mice (*Peromyscus maniculatus*) Fed Daminozide and Gibberellic Acid.**
L.J. Olson, R.D. Hinsdill and R.C. Bidgood. Environmental Toxicology Center and Dept. of Bacteriology, Univ. of Wisconsin, Madison, WI. Sponsor: M.T.S. Hsia.
- #174 **Effects of Post-Weaning and Perinatal TCAOB Exposure on Immunity and Reproductive Efficiency in Mice.**
M.R. Bleavins, R.D. Hinsdill and M.T.S. Hsia. Univ. of Wisconsin, Madison, WI.
- #175 **The Effects of Benzpyrene Isomers on Host Resistance in B6C3F1 Mice.**
J.H. Butala*, A.E. Munson, H.H. Lysy and K.L. White, Jr. *Gulf Oil Corp., Pittsburgh, PA; Depts. of Pharmacol. and Toxicology, and Microbiol. and Immunol., Medical College of Virginia, Richmond, VA.
- #176 **Differential Immunotoxic Effects of Benzo-(a)-Pyrene in Young and Aged Mice.**
M. Lyte and P.H. Bick. Dept. of Microbiology and Immunology, Medical College of Virginia/VCU, Richmond, VA. Sponsor: S.G. Bradley.
- #177 **Immunotoxic Effects of Benzo-(a)-Pyrene *In Vitro* and *In Vivo*.**
R.H. Blanton, M. Lyte and P.H. Bick. Dept. of Microbiology and Immunology, Medical College of Virginia/VCU, Richmond, VA. Sponsor: S.G. Bradley.
- #178 **Cellular Targets of Benzo-(a)-Pyrene Induced Immunosuppression.**
M.J. Myers, M. Lyte and P.H. Bick. Dept. of Microbiology and Immunology, Medical College of Virginia/VCU, Richmond, VA. Sponsor: S.G. Bradley.
- #179 **The Effects of Chlorine-Based Disinfectants on Multiple Immune Responses in the Rat.**
J.H. Exon and L.D. Koller. Vet. Med. Univ. of Idaho, Moscow, ID.
- #180 **Effect of Exposure Route on Immunosuppression Induced by 7,12-Dimethylbenz[a]anthracene (DMBA).**
E.C. Ward, R.V. House, L.D. Lauer, M.J. Murray and J.H. Dean. CIIT, Res. Tri. Park, NC.
- #181 **Tumor Promoter Induced Immunosuppression in Mice After Topical Application of Phorbol Esters.**
J.J. Dunn and C.S. Baxter. Univ. of Cincinnati, Cincinnati, OH.
- #182 **Immunotoxicological Evaluation of Chlordane.**
K.W. Johnson, K.L. White, Jr. and A.E. Munson. Dept. of Pharmacol. and Toxicol., Med. Coll. of Virginia, VCU, Richmond, VA.
- #183 **Immunomodulatory Effects of Subacute Treatment with Low Doses of OOS-Trimethyl Phosphorothioate.**
K.E. Rodgers, T. Imamura and B. Devens. Div. of Biomedical Sciences and Div. of Toxicology & Physiology, Univ. of California, Riverside, CA.
- #184 **Time Course of Immunosuppression Following Acute OOS-Trimethyl Phosphorothioate Administration.**
K.E. Rodgers, T. Imamura and B. Devens. Div. of Biomedical Sciences and Div. of Toxicology and Physiology, Univ. of California, Riverside, CA.
- #185 **Production of Immunosuppressive Factors by Macrophages Following OOS-Trimethyl Phosphorothioate Treatment.**
K.E. Rodgers, T. Imamura and B.H. Devens. Div. of Biomedical Sciences and Div. of Toxicology & Physiology, Univ. of California, Riverside, CA.
- #186 **Temperature Dependent Phagocytosis of Bacteria *In Vivo*: Effects of the Organophosphate DFP.**
D.R. Steup, G.A.W. Waterhouse and R.B. Forney. Dept. of Pharmacology and Toxicology, Indiana Univ. School of Medicine, Indianapolis, IN.
- #187 **Subacute Exposure of Rats to the Organophosphate, DFP: Lack of Effect on Mitogenesis *In Vitro* or on Antibody Production *In Vivo*.**
G.A.W. Waterhouse, B.S. Martin and R.B. Forney. Dept. of Pharmacology and Toxicology, Indiana Univ. School of Medicine, Indianapolis, IN.

- #188 **Effect of Styrene, Styrene Oxide, and Other Aliphatic Epoxides on Cell-Mediated Immunity.**
M.H. Grayson and S.S. Gill. Div. of Toxicology and Physiology, Univ. of California, Riverside, CA.
- #189 **The Lack of Autoimmune Response in A.SW/SnJ Mice Treated with Procainamide and Hydralazine.**
X. Joseph, C.J.G. Robinson and T. Balazs. Center for Drugs and Biologics, FDA, Washington, DC.
- #190 **Drug-Induced Toxicity in Mouse and Human Lymphocytes.**
L.J. Sauer, D. Wierda, E.R. Walker and M.J. Reasor. West Virginia Univ. Med. Ctr., Morgantown, WV.
- #191 **Suppression of Natural Killer Cell Activity by Antiseizure Drugs.**
N.C. Margaretten and R.P. Warren. Utah State Univ., Toxicology Program, Logan, UT. Sponsor: R.P. Sharma.
- #192 **Effects of *In Vivo* Biological Response Modifiers on the Multiple Immunoassay Rat Model.**
G.M. Henningsen, J.H. Exon, P.A. Talcott, C.A. Osborne, D.A. Schultz and L.D. Koller. Vet. Med., Univ. of Idaho, Moscow, ID.
- #193 **Host Resistance Models for Evaluation of Immunotoxic Agents.**
S.G. Bradley, F. Marciano-Cabral and A.E. Munson. Dept. of Microbiology & Immunology and Pharmacology & Toxicology, Medical College of Virginia, Richmond, VA.
- #194 **Assessment of Humoral Immunity.**
A.E. Munson, H.H. Lysy, A.C. Anderson, M.P. Holsapple and K.L. White, Jr. Depts. of Pharmacology & Toxicology, and Biostatistics, Medical College of Virginia, Richmond, VA.
- #195 **Assessment of Cell-Mediated Immunity.**
J.A. Munson, M.P. Holsapple, K.L. White, Jr., D.L. Musgrove and A.E. Munson. Depts. of Pharmacology & Toxicology, and Biostatistics. Medical College of Virginia, Richmond, VA.
- #196 **Validation of the Mouse Ear Swelling Test (MEST) as an Alternative Dermal Sensitization Model.**
B.J. Dunn, S.C. Gad and D.W. Dobbs. Dept. of Toxicology, Allied Corporation, Morristown, NJ.
- #197 **Development of the Mouse Ear Swelling Test as an Alternative Dermal Sensitization Model.**
S.C. Gad, B.J. Dunn and D.W. Dobbs. Dept. of Toxicology, Allied Corporation, Morristown, NJ.
- #198 **A Rapid Spectrophotometric Method for Assessing Macrophage Phagocytic Activity.**
N.E. Kaminski, F.E. Guthrie and J.F. Roberts. Interdepartmental Toxicology Program, North Carolina State University, Raleigh, NC.
- #199 **Increased Macrophage Activation and Elicitation Following Intraperitoneal Corn Oil Injection.**
P.E. Tam, R.D. Hinsdill and M.R. Bleavins. Univ. of Wisconsin, Madison, WI. Sponsor: M.T.S. Hsia.
- #200 ***In Vitro* Dose and Time Related Effects of T-2 Toxin, A Trichothecene Mycotoxin, on Murine Splenic and Thymic Cell Responses.**
M.J. Taylor, B.J. Hughes and R.P. Sharma. Toxicology Program, Utah State Univ., Logan, UT.
- #201 **Manganese Chloride Enhances Natural Killer (NK) Cell Activity *In Vitro*.**
R.J. Smialowicz, R.R. Rogers, M.M. Riddle, D.G. Rowe and R.W. Luebke. U.S. EPA, Research Triangle Park, NC. Sponsor: N. Chernoff.
- #202 **Chronic Platinum Hypersensitivity Reactions in Monkeys.**
R.E. Biagini, I.L. Bernstein, W.J. Moorman, J.C. Clark and T.R. Lewis. NIOSH, Experimental Toxicology Branch, and Univ. of Cincinnati, Dept. of Internal Medicine, Division of Immunology, Cincinnati, OH.

- #203 ***In Vivo* and *In Vitro* Safety Evaluation Studies of Human Fibronectin.**
R. Chau, B.S. Brar, J. Guba and L.C.K. Wong. Dept. of Drug Safety Evaluation, Revlon Health Care Group, Tuckahoe, NY.
- #204 **Strain Variation in the Pulmonary Response of Mice to Silica: A Possible Role for the Immune System.**
A.H. Callis, J. Wiessner, P.G. Sohnle, G.S. Mandel and N.S. Mandel. Dept. of Anesthesiology, Univ. of Arizona, Tucson, AZ; and Wood VAMC, Wood, WI. Sponsor: A.J. Gandolfi.
- #205 **The Effect of Inhaled Acrolein on the Rat Immune System.**
C.L. Leach, H.V. Ratajczak, N.S. Hatoum, J.M. Gerhart and V.S. Rac. IIT Research Institute, Life Sciences Research, Chicago, IL.
- #206 **Effects of *In Utero* Exposure to 2'-Deoxycoformycin on Immune Function.**
R.W. Luebke, M.M. Riddle, R.R. Rogers, D.G. Rowe and R.J. Smialowicz. U.S. EPA, Research Triangle Park, NC. Sponsor: N. Chernoff.

**TUESDAY AFTERNOON, MARCH 19
LOWER LEVEL EXHIBIT AREA**

POSTER SESSION: Renal Toxicology II

Co-Chairs: B. Fowler, NIEHS, RTP, NC
A.J. Gandolfi, Univ. of Arizona, Tucson, AZ

Displayed: 1:30 P.M. - 4:30 P.M.
Attended: 3:00 P.M. - 4:30 P.M.

- #207 **Protective Effects of Zinc(II)acetate Toward the Toxicity of Nickel(II)acetate in Fischer Rats.**
K.S. Kasprzak, M.P. Waalkes, M. Oshima and L.A. Poirier. National Cancer Institute, FCRF, Frederick, MD. Sponsor: E.K. Weisburger.
- #208 **The Effect of AT-125 on Urinary Excretion of Methylmercury (MM) in the Mouse.**
Kathleen M. Mulder and Paul J. Kostyniak. Department of Pharmacology and Therapeutics, SUNY at Buffalo, School of Medicine, Buffalo, NY.
- #209 **Pathology of Chelate Mobilization of Aged Cadmium Deposits.**
S.G. Jones, M.M. Jones and W.M. Mitchell. Depts. of Chemistry and Pathology and Center in Molecular Toxicology, Vanderbilt Univ., Nashville, TN.
- #210 **Ultrastructural Morphometric Studies of Lead Intranuclear Inclusion Body Formation in Kidney Proximal Tubule Cells: Relationship to Altered Renal Protein Synthetic Patterns.**
B.A. Fowler, P. Mistry and W.W. Victory. Natl. Inst. Env. Hlth. Sci., Research Triangle Park, NC.
- #211 **Inhibition of Chromium-Induced Acute Nephrotoxicity by Ascorbic Acid.**
W.J. Powers, Jr., K.M. Siino and S.C. Gad. Allied Corp., Dept. of Toxicology, Morristown, NJ.
- #212 **Urinary Enzyme Excretion as an Indicator of Cadmium-Metallothionein Induced Renal Toxicity.**
C.A.M. Suzuki and M.G. Cherian. Depts. of Pharmacol. & Toxicol., and Pathol., Univ. of Western Ontario, London, Ontario, Canada.
- #213 **Assessment of Nephrotoxicity in Renal Cortical Slices Exposed to Mercuric Chloride (HgCl₂) and Potassium Dichromate (K₂Cr₂O₇).**
J.H. Smith and M.R. Boyd. NCI, Bethesda, MD.
- #214 **Distribution and Elimination of Mercury in Maturing Rats.**
G.P. Daston, Dept. Biol. Sci., Univ. Wisconsin, Milwaukee, WI. Sponsor: L.L. Hall.

- #215 **Cobalt Chloride Effects on Renal Function**
M.E. Davis. West Virginia Univ. Med. Ctr., Morgantown, WV.
- #216 **Autoradiographic Distribution of Hexachlorobutadiene. Study in the Rat After Single Epicutaneous Application.**
P. Duprat and D. Gradiski. I.N.R.S., 54500 Vandoeuvre-Les-Nancy (France).
- #217 **Acute Nephrotoxicity of 1,2-Dichlorovinyl Cysteine in New Zealand White Rabbits.**
P.M. Silber, A.J. Gandolfi and K. Brendel. Dept. of Pharmacology, Univ. of Arizona, Tucson, AZ.
- #218 **Effect of Halogenated Hydrocarbons on Renal Tubular Organic Acid/Base Transport.**
L.A. Rylander Yueh, K. Brendel and A.J. Gandolfi. Dept. of Pharm., Univ. of Arizona, Tucson, AZ.
- #219 **Effect of 2-Hexanone (HX) Upon 1,2-Dibromo,3-Chloropropane Toxicity.**
M.F. Rajsbeck, E.M. Brown and W.R. Hewitt. Univ. of Missouri - Columbia; and SmithKline & French Lab.
- #220 **Effect of 2-Hexanone (HX) Upon Hepato- and Nephrotoxicity of 1,2-Dibromo- and 1,2-Dichloroethane.**
M.F. Rajsbeck, E.M. Brown and W.R. Hewitt. Univ. of Missouri - Columbia; and SmithKline & French Labs.
- #221 **Effect of 2,5-Hexanedione Pretreatment on Haloalkane Toxicity to Isolated Kidney Tubules.**
S.J. Gee, C.E. Green, D.E. Story and C.A. Tyson. SRI International, Menlo Park, CA.
- #222 **Urinary Bladder and Kidney Lesions Produced in Fischer 344/N Rats and B6C3F₁ Mice After 13-Weeks of 2,2-bis(Bromomethyl)-1,3-Propanediol Administration.**
C.A. Montgomery*, J.K. Dunnick* and F.G. Bock†. *National Toxicology Program, NIEHS, Research Triangle Park, NC; and †Papanicolaou Cancer Research Institute, Miami, FL. Sponsor: R. Chhabra.
- #223 **Inhalation Toxicity of Bromotrifluoroethylene in the Rat.**
G.L. Kennedy, Jr., B.L. Moore and H.C. Chen. E.I. du Pont de Nemours and Co., Inc., Haskell Laboratory for Toxicology and Industrial Medicine, Newark, DE.
- #224 **Acute, Subacute and Subchronic Inhalation Toxicity of Hexafluoroisobutylene (HFIB).**
S.C. Gad, R.W. Darr, A.L. Cramp and G. Hoffman. Dept. of Toxicology, Allied Corporation, Morristown, NJ.
- #225 **Positional Renal Slices for Study of Site Specific Toxicity**
C.E. Ruegg, A.J. Gandolfi, K. Brendel and C.L. Krumdieck. Dept. Pharm., Univ. of Arizona, Tucson, AZ; Dept. Nutritional Science, Univ. of Alabama, Birmingham, AL.
- #226 **The Acute Nephrotoxicity of L-Lysine-L-Phenylalanine in Rats.**
M.H. Thouin, C.D. Port and F.N. Kotsonis. G.D. Searle & Co., Skokie, IL.
- #227 **Subchronic Nephrotoxic Potential of Styrene in Sprague-Dawley Rats.**
L. Labelle and S. Chakrabarti. Dép. Médecine du Travail et Hygiène du Milieu, Fac. Méd., Univ. Montréal, P.Q., Canada.
- #228 **Nephrotoxic Potential of Styrene and Toluene in Rats After Inhalation Exposure.**
L. Dahlstrom-King^a, S. Chakrabarti^a, J. Brodeur^a and B. Tuchweber^b. Dép. Médecine du Travail et Hygiène du Milieu^a, and Dép. Nutrition^b, Fac. Médecine, Univ. Montréal, P.Q., Canada.
- #229 **Comprehensive Evaluation of the Urinary Tract After Chronic Exposure to Cyanurate in Drinking Water.**
T. Cascieri. FMC, Princeton, NJ; S. Barbee. Olin, CT; B. Hammond. Monsanto, MO; T. Inoue. Nissan, NY; N. Ishida. Shikoku, CA; A. Wheeler. ICI, DE.
- #230 **Use of a Rapid Urine Screening Procedure to Determine the Relative Nephrotoxicity of Trimethylpentane Isomers in the Male F-344 Rat.**
D.W. Hobson, A.P. D'Addario, D.E. Uddin, C.T. Olson* and M.P. Serve**. Naval Medical Research Institute/TD, *AFAMRL, **WSU, Wright-Patterson AFB, OH. Sponsor: R.W. Gardier.

- #231 **Biochemical Characterization of Hydrocarbon Nephrotoxicity in Male F-344 Rats Continuously Exposed to Jet Fuel Vapor for 90 Days.**
A.P. D'Addario, D.W. Hobson, D.E. Uddin and E.R. Kinkead. Naval Medical Research Institute/TD, *U. Cal. (Irv.), Wright-Patterson AFB, OH.
- #232 **JP-5 Emergency Exposure Limit (EEL) Evaluation.**
C.L. Gaworski, A.P. D'Addario*, D.W. Hobson*, R.H. Bruner** and J.D. MacEwen. Univ. of Cal. Irv., *NMRI/TD, **AFAMRL, Wright Patterson AFB, OH.
- #233 **Inhalation Toxicity and Teratogenicity of Vapors from Steam Cracked Residues.**
W. Dalbey, G. Clark*, T. Roy, P. James* and C. Gopinath*. Mobil Oil Corp., Princeton, NJ; and *Huntingdon Research Centre, Huntingdon, England.
- #234 **Effect of Cytochrome P-450 Induction and Inhibition on the Disposition of [¹⁴C-4,5]-2,2,4-Trimethylpentane in Male Fischer-344 Rats.**
M.W. Kloss, M.G. Cox, R.M. Norton and J.S. Bus. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.
- #235 **The Selective Induction of ω - and β -Oxidation of Fatty Acids in the Liver and Kidney of Male Rats Administered 2,2',4-Trimethylpentane.**
E.A. Lock, M.D. Stonard and C.R. Elcombe. Imperial Chemical Industries PLC, Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK.
- #236 **Disposition and Metabolism of N-Methylpyrrolidone in the Rat.**
D.A. Wells and G.A. Digenis. College of Pharmacy and Graduate Center for Toxicology, Univ. of Kentucky, Lexington, KY. Sponsor: H.W. Dorough.
- #237 **Subchronic Feeding Study in Rats with Five Pyridazinone Compounds Structurally Related to DS-29399.**
M. Mizens, W.R. Brown*, J.C. Killeen, Jr. and J.A. Ignatoski. Dept. of Safety Assessment, SDS Biotech Corp., Painesville, OH; *Research Pathology Services, Inc., New Britain, PA.
- #238 **Subchronic Toxicity of Propantheline Bromide in Fischer 344/N Rats and B6C3F₁ Mice.**
J.K. Dunnick*, C.A. Montgomery* and D.C. Jessup†. *National Toxicology Program, NIEHS, Research Triangle Park, NC; †International Research and Development Corp., Mattawan, MI. Sponsor: R. Chhabra.
- #239 **Acute Toxicity of Tetrahydrobiopterin in Mice.**
A.B. Combs, E. Lewandowski and K. Folkers*. College of Pharmacy, and *Institute for Biomedical Research, Univ. of Texas, Austin, TX.
- #240 **Surgical Isolation of Rat Kidney: A Technique to Directly Measure Renal Excretion of Xenobiotics.**
A. Koizumi, M.D. Dryzga, R.J. Nolan, J.C. Ramsey and J.H. Saunders. The Dow Chemical Co., Midland, MI.
- #241 **In Vitro Nephrotoxicity of Cephaloridine in Aging Rats.**
R.S. Goldstein, D.A. Pasino and J.B. Hook. Smith Kline and French Laboratories, Dept. Investigative Toxicology, Philadelphia, PA.
- #242 **Oral Toxicity Studies of Fenoldopam Mesylate in Rats and Dogs.**
E.M. Yuhas, D.G. Morgan, E. Arena, R.P. Kupp and R.C. Sullivan. Pathology and Toxicology Dept., SmithKline & French Laboratories, Philadelphia, PA.
- #243 **Relative Nephrotoxicity of Vancomycin and Ristocetin in Female, C57BL Mice.**
W.R. Hewitt and A.C. Silver. Dept. of Invest. Toxicol., Smith Kline & French Labs., Philadelphia, PA.
- #244 **An In Vitro Nephrotoxicity Assay.**
J.F. Sina, C.L. Bean, C. Noble and M.O. Bradley. Merck Institute for Therapeutic Research, West Point, PA. Sponsor: Mark Hite.
- #245 **Studies on Subchronic Oral Hepatorenal Toxicities of Toluene in Fisher-344 Rats.**
D. Houde and S. Chakrabarti. Dép. Médecine Travail et Hygiène Milieu, Fac. Méd., Univ. Montréal, P.Q., Canada.

**TUESDAY AFTERNOON, MARCH 19
LOWER LEVEL EXHIBIT AREA**

POSTER SESSION: Halogenated Hydrocarbons

Co-Chairs: G. Becking, NIEHS, RTP, NC
P. Watanabe, Dow Chemical Co., Midland, MI

Displayed: 1:30 P.M. - 4:30 P.M.

Attended: 3:00 P.M. - 4:30 P.M.

- #246 **Release of ^{14}C -2,4,5,2',4',5'-Hexachlorobiphenyl (6-CB) from Primary Hepatocyte Culture.**
L.A. Rau, C.R. Elcombe and M.J. Vodcicnik. Medical College of Wisconsin, Milwaukee, WI; and Central Toxicology Lab., ICI, Inc., Macclesfield, U.K.
- #247 **Polychlorinated Dibenzofurans: Quantitative Structure-Activity Relationships (QSAR).**
G. Mason, B. Keys, B. Zmudska, T. Sawyer, J. Piskorska-Pliszceynska, L. Safe, M. Romkes and S. Safe. Dept. of Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M Univ., College Station, TX.
- #248 **Hepatomegaly and Lipid Metabolism in Rats Treated with 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD).**
B.J. Christian, L.A. Menahan and R.E. Peterson. Univ. of Wisconsin, Madison, WI.
- #249 **Bioavailability of Dioxin from Soil from a Manufacturing Site.**
T.H. Umbreit, E.J. Hesse, D. Patel¹ and M.A. Gallo. UMDNJ-Rutgers Medical School, Piscataway, NJ; and ¹N.J. Dept. of Environmental Protection, Trenton, NJ.
- #250 **Toxicity of TCDD in Guinea Pigs Fed by Total Parenteral Nutrition (TPN).**
T.A. Gasiewicz, C-J. Huang-Lu, R. Baggs and D. Redmond. Env. Hlth. Sci. Ctr., Univ. of Rochester, Rochester, NY.
- #251 **The Role of Ornithine Decarboxylase Induction in the Toxicity of 2,3,7,8-TCDD.**
K. Farrell and S. Safe. Dept. of Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M Univ., College Station, TX.
- #252 **Hydrogen Peroxide and Free Radicals in TCDD Induced Microsomal and Mitochondrial Malondialdehyde Formation.**
S.J. Stohs, M.Q. Hassan, Z.A.F. Al-Bayati and W.J. Murray. Dept. Biomedical Chemistry, Univ. of Nebraska Medical Center, Omaha, NE.
- #253 **Adenine (Ad) and Its Analogue Induce changes in Lipid Parameters in Control and 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD)-Exposed Rats Which Affect Toxicity.**
C.M. Schiller, R. Walden, C.M. Adcock and C.R. Shoaf. Laboratory of Pharmacology, National Institute of Environmental Health Sciences, Research Triangle Park, NC.
- #254 **The Effect of TCDD Exposure on the Concentration of Ketone Bodies in the Rat.**
J.A. Sweatlock and T.A. Gasiewicz. Env. Hlth. Sci. Ctr., Univ. of Rochester, Rochester, NY.
- #255 **Responses of Lactating Dairy Cows to Polychlorinated Biphenyls.**
L.B. Willett, H.I. Durst and T.-T.Y. Liu. Ohio State Univ./Ohio Agricultural Research & Development Center, Wooster, OH.
- #256 **Dermal Absorption Kinetics of Liquid Bromochloroethane in Rats.**
G.W. Jepson, J.N. McDougal and M.E. Andersen. Air Force Aerospace Medical Research Laboratory, Wright-Patterson AFB, OH.
- #257 **The Synthesis, Separation and Biologic Properties of PCB Enantiomers.**
L.W. Robertson, F. Oesch and M. Püttmann. Institute of Toxicology, University of Mainz, D-6500 Mainz, FRG.

- #258 **Comparison of the Uptake and Elimination of Inhaled Trichloroethylene and 1,1,1-Trichloroethane.**
 J.L. Maedgen, E.J. Fairchild, C.E. Dallas* and J.V. Bruckner. Univ. of Texas Sch. Public Hlth., Houston, TX; *Dept. of Pharm. and Toxicol., Univ. of Georgia College of Pharmacy, Athens, GA.
- #259 **Aquatic Toxicity Testing with Several Chlorinated Propanes and Propenes.**
 T.J. Long, T.W. Fuhremann, F.R. Johannsen, G.J. Levinskas and C.M. Thompson. Monsanto Company, St. Louis, MO; and Analytical Bio-Chemistry Laboratories, Inc., Columbia, MO.
- #260 **Structural and Chemical Requirements of Hydroxylated Polychlorinated Biphenyls (PCBOH) for Inhibition of Energy-Dependent Swelling of Rat Liver Mitochondria (RLM).**
 K.V. Ebner and W.E. Braselton. Dept. of Pharmacology/Toxicology, Mich. State Univ., East Lansing, MI. Sponsor: J.I. Goodman.
- #261 **Alterations in Functional Vitamin A Metabolism Caused by Polybrominated Biphenyls.**
 R.K. Jensen, M.H. Zile, M.E. Collum, S.D. Sleight and S.D. Aust. Depts. of Pathology, Food Science and Human Nutrition and Biochemistry, Michigan State Univ., East Lansing, MI.
- #262 **Food Contamination: New Toxicology Concerns About an Old Problem.**
 A.M. Fan, I. Hertz-Picciotto and R.J. Jackson. California Dept. of Health Services (DHS), Berkeley, CA. Sponsor: P.E. Berteau.

**TUESDAY AFTERNOON, MARCH 19
 LOWER LEVEL EXHIBIT AREA**

POSTER SESSION: Pesticide Toxicology I

Co-Chairs: L. Hall, USEPA, RTP, NC
 K. Pavkov, Stauffer Chemical Co., Farmington, CT

Displayed: 1:30 P.M. - 4:30 P.M.

Attended: 1:30 P.M. - 3:00 P.M.

- #263 **Extraction and Analysis of Chlordimeform and Demethylchlordimeform from Mammalian Tissues.**
J.A. Rieger and L.V. Allen. Univ. of Oklahoma College of Pharmacy, Oklahoma City, OK.
- #264 **Skin Penetration of Fourteen Pesticides in Young and Adult Rats.**
P.V. Shah¹, H.L. Fisher², M.R. Sumler¹ and L.L. Hall². ¹NSI, ²USEPA, HERL, DBD, RTB, Research Triangle Park, NC.
- #265 **Acute and Subchronic Dermal Toxicity Evaluations of 4,5-Dichloro/4 Chloro-2-n-Octyl 3(2H)-Isothiazolone (DCOI).**
 P.K. Chan, M.E. Murphy, G.P. O'Hara, J.N. Moss and J.M. Smith. Rohm and Haas Company, Spring House, PA.
- #266 **Dermal Absorption and Disposition of Chlordecone in Young and Adult Rats.**
L.L. Hall, H.L. Fisher, M.R. Sumler and P.V. Shah. USEPA, HERL, DBD, RTB, & Northrop Services, Inc., RTP, NC.
- #267 **A Comparison of Dermal Penetration of Certain Pesticides *In Vivo* and *In Vitro* in Mice.**
 R.E. Grissom and F.E. Guthrie. Interdepartmental Toxicology Program, North Carolina State Univ., Raleigh, NC.

- #268 **Five Month Oral (Diet) Toxicity/Infectivity Study of *Bacillus thuringiensis* in Sheep.**
W.M. Hadley, S.W. Burchiel, T.D. McDowell, J.P. Thilsted, C.M. Hibbs, J.A. Whorton, P.W. Day and R.E. Stoll. College of Pharmacy and School of Medicine, Univ. of New Mexico, Albuquerque, NM; New Mexico Veterinary Diagnostic Services, Albuquerque, NM; Sandoz Research Institute, East Hanover, NJ. Sponsor: R.C. Schnell.
- #269 **Kinetics and Purification of an Organofluorophosphate Hydrolyzing Activity in *Tetrahymena Thermophila*.**
R.E. Savage, Jr., D.M. Satanek, M.V. Haley, D.W. Johnson and W.G. Landis. Research Directorate, CRDC, Aberdeen Proving Ground, MD.
- #270 **Interactions of Organochlorine Compounds with Hepatic Estrogen Receptors from Channel Catfish.**
J.E. Chambers and M.H. Fulton. Dept. of Biological Sciences, Mississippi State Univ., Mississippi State, MS.
- #271 **Carbosulfan: Avian Toxicology.**
G.M. Rand, J.D. DeProspero, R.A. Robinson and M.J. Fletcher. FMC Corporation, Princeton, NJ.
- #272 **Effect of Particle Size on Inhalation Toxicity of Chlorfenvinphos.**
S. Tsuda, M. Iwasaki, M. Yoshida, T. Ikeda and Y. Shirasu. Institute of Environmental Toxicology, Kodaira, Tokyo 187, Japan.
- #273 **A Phosphorothionate Isomer Protects Against the Penumotoxicity Caused by O,O,S-Trimethyl Phosphorothioate (OOS-TMP).**
J. Gandy and T. Imamura. Div. of Toxicology and Physiology, Univ. of California, Riverside, CA.
- #274 **Correlation of Blood Cholinesterase Levels with Toxicity of Agent GB in CD Rats.**
J.F. Young, B.J. Gough, R.L. Suber and D.W. Gaylor. National Center for Toxicological Research, Jefferson, AR.
- #275 **Kathon® NW Biocide: One-Month Oral Toxicity Study in Rabbits.**
G.P. O'Hara, L.J. DiDonato, J.N. Moss and J.M. Smith. Rohm and Haas Co., Spring House, PA.
- #276 **Effect of Impurities of Malathion on Removal of 5-Hydroxytryptamine (5-HT) in Isolated Perfused Rat Lung.**
E. Rosso and T. Imamura. Div. of Toxicology and Physiology, Univ. of California, Riverside, CA.
- #277 **Effects of Perinatal Exposure to Ethylenethiourea on the Thyroid of Rats and Mice Exposed as Adults.**
R.S. Chhabra,* G.E. Wilkinson, B.D. Carlton, P.J. Kurtz, S.L. Grumbein and J.D. Toft. National Toxicology Program, NIEHS, Research Triangle Park, NC* and Battelle Columbus Labs, Columbus, OH.
- #278 **Mechanism of Action of U-40481A on Skeletal Muscle Contractility.**
V.C. Ravikumar and J.A. Rieger. Dept. of Pharmacodynamics & Toxicology, Univ. of Oklahoma College of Pharmacy, Oklahoma City, OK.

Tuesday Evening, March 19, 1985

SPECIALTY SECTION MEETINGS

5:30 P.M. - 7:00 P.M.

Rooms to be Announced

**WEDNESDAY MORNING, MARCH 20
TOWN & COUNTRY ROOM**

PLATFORM SESSION: Inhalation Toxicology II

Co-Chairs: R. Parent, Consultox, Ltd., Baton Rouge, LA
J. Stevens, CIBA-GEIGY Corp., Greensboro, NC

- #279 8:30 **Pulmonary Effects in Asthmatics Exposed to 0.3 ppm NO₂ During Repeated Exercise.**
L.J. Roger, D.H. Horstman, W.F. McDonnell, H. Kehrl, E. Seal, R.S. Chapman and E.J. Massaro. Clinical Studies Branch, US EPA, Chapel Hill, NC.
- #280 8:45 **Relationship Between Lung Function and Composition in Rats Subchronically Exposed to Chlorine.**
D.L. Costa, R.S. Kutzman and R.T. Drew. Medical Dept., Brookhaven National Laboratory, Upton, NY.
- #281 9:00 **Chronic Effect of Cotton Dust Inhalation in a Guinea Pig Model.**
M.A. Ellakkani, Y. Alarie, D. Weyel and M.H. Karol. Dept. Ind. Env. Hlth. Sci., Univ. of Pittsburgh, Pittsburgh, PA.
- #282 9:15 **Measuring Nasal Airway Resistance (NAR) During Inhalatory Exposures.**
J.S. Martin and M.F. Tansy. Temple Univ., Philadelphia, PA.
- #283 9:30 **Concurrent Aerosol Exposure Potentiates Lung Response to Ozone.**
D.L. Warren, D.J. Guth and J.A. Last. CPRC, Univ. of California, Davis, CA.
- #284 9:45 **Mucous Glycoprotein Content of Pulmonary Lavage Fluid of the Rat.**
J.B. Morris. School of Pharmacy, Univ. of Connecticut, Storrs, CT.
- #285 10:00 **Modulation of Acute NO₂ Toxicity by Vitamin E in the Rat Lung.**
D.J. Guth and R.D. Mavis. Division of Toxicology, Univ. of Rochester Medical Center, Rochester, NY.
- #286 10:15 **Toluene Diisocyanate (TDI) Induced Airway Hyper-Responsiveness and Inflammation in Guinea Pigs.**
T. Gordon, D. Sheppard, D.M. McDonald, S. Distefano and L.A. Scypinski. Cardiovascular Research Institute, UCSF, San Francisco, CA.
- #287 10:30 **Evaluation of the Pulmonary Effects of HDI Trimer Aerosols in Guinea Pigs.**
J.S. Ferguson, M.M. Schaper and Y. Alarie. Dept. Ind. Env. Hlth. Sci., Univ. of Pittsburgh, Pittsburgh, PA.
- #288 10:45 **A Physiologically-Based Kinetic Model (PB-KM) for Inhaled CCl₄ in the Rat.**
D.J. Paustenbach, H.J. Clewell, M.L. Gargas and M.E. Andersen. Syntex Corporation, Palo Alto, CA; and Air Force Aerospace Medical Research Laboratory, Wright-Patterson AFB, OH.
- #289 11:00 **Effect of Concentration on the Disposition of Inhaled ¹⁴C-Butadiene in B₆C₃F₁ Mice.**
J.S. Dutcher, J.A. Bond and R.F. Henderson. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM; L.S. Birnbaum. NIEHS, Research Triangle Park, NC.
- #290 11:15 **Disposition of Nickel Sulfate Solutions Following Intratracheal Instillation.**
M.A. Medinsky and C.H. Hobbs. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM.
- #291 11:30 **Metabolism and Disposition of ¹⁴C-Methyl Bromide in Fischer-344 Rats After Inhalation.**
J.A. Bond, J.S. Dutcher, M.A. Medinsky and R.F. Henderson. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM; L.S. Birnbaum. NIEHS, RTP, NC.
- #292 11:45 **Interactions of Inhaled Mixtures: An Example with Dibromomethane (DBM) and Isoflurane (ISO).**
H.J. Clewell, III, M.L. Gargas and M.E. Andersen. Air Force Aerospace Medical Research Laboratory, Wright-Patterson AFB, OH.

**WEDNESDAY MORNING, MARCH 20
SAN DIEGO ROOM**

PLATFORM SESSION: Hepatic Toxicology I

Co-Chairs: W. Bidlack, Univ. Southern California, Los Angeles, CA
R.M. McClain, Hoffmann LaRoche Inc., Nutley, NJ

- #293 8:30 **Morphometric Analysis of Erythromycin Estolate-Induced Changes in Cultured Hepatocytes.**
E.M.B. Sorensen and Daniel Acosta. Dept. of Pharmacology and Toxicology, The Univ. of Texas, Austin, TX.
- #294 8:45 **Interference of Intracellular Calcium Dynamics in CCl₄ Injury of Cultured Rat Hepatocytes.**
K.S. Santone and D. Acosta. College of Pharmacy, The Univ. of Texas, Austin, TX.
- #295 9:00 **Multiple Drug Metabolism: A Model for Drug Toxicity Using Hepatocytes Prepared from a Percoll Gradient.**
R.C. Brown and W.R. Bidlack. Dept. of Pharmacology and Nutrition, USC School of Medicine, Los Angeles, CA.
- #296 9:15 **Comparative Cytopathology of Monolayer Rat Hepatocytes Exposed to Lethal Concentrations of Aflatoxin B₁ and Acetaminophen.**
M.A. Hayes and D.B. Pickering. Dept. of Pathology, Univ. of Guelph, Guelph, Ontario, Canada. Sponsor: I.C. Munro.
- #297 9:30 **Accumulation of Activated Macrophages in the Liver Following Acetaminophen Treatment of Rats.**
A.M. Piaro, S. Ji and D.L. Laskin. Graduate Program in Toxicology, Rutgers Univ., Piscataway, NJ.
- #298 9:45 **CCl₄ Induced Changes in Hepatic DNA, RNA, Lipid, Protein and Glycogen in Chlordecone Pretreated and Normal Rats.**
Andrea N. Bell and Harihara M. Mehendale. Dept. Pharmacol. & Toxicol., Univ. MS Med. Ctr., Jackson, MS.
- #299 10:00 **Halothane Hepatotoxicity in Several Strains of Guinea Pig.**
R.C. Lind, A.J. Gandolfi and I.G. Sipes. Dept. of Anesthesiology, Univ. of Arizona, Tucson, AZ.
- #300 10:15 **The Protective Action of SKF 525-A Towards Bromobenzene and Acetaminophen Induced Hepatotoxicity.**
Z. Liu and M.R. Franklin. Dept. of Biochemical Pharmacology and Toxicology, Univ. of Utah, Salt Lake City, UT.
- #301 10:30 **Potentiation of Acetaminophen Toxicity in Mice by DFMO, an Ornithine Decarboxylase Inhibitor.**
W. Dairman and L.P. Juhasz. Hoffmann-LaRoche Inc., Nutley, NJ.
- #302 10:45 **Potentiation of Acetaminophen Toxicity in Dogs Treated with Diazepam.**
R.M. McClain, S.E. Sadek, A.R. Catala, A.A. Levin and A.A. Holazo. Departments of Toxicology and Pathology, Hoffmann-La Roche Inc., Nutley, NJ.
- #303 11:00 **Species Differences in the Inhibition of Acetaminophen-Glucuronyl Transferase (ACET-GT) by Diazepam and its Metabolites.**
A.A. Levin, E. Adler and R.M. McClain. Dept. of Toxicology and Pathology, Hoffmann-La Roche Inc., Nutley, NJ.
- #304 11:15 **Effect of Carbon Disulfide and Phenobarbital on Hepatic Cholesterol Metabolism in the F344 Rat.**
J.E. Simmons, R.A. Sloane and E.W. Van Stee. National Institute of Environmental Health Sciences, RPT, NC; and Dept. of Environmental Sciences and Engineering, UNC - Chapel Hill, NC. Sponsor: D.J. Holbrook, Jr.
- #305 11:30 **Biologic and Toxic Effects of 1,4-Bis-[2(3,5-Dichloropyridyloxy)]benzene in Mice.**
S. Lovering, M. Kelley and S. Safe. Dept. of Physiology and Pharmacology, and Anatomy, College of Veterinary Medicine, Texas A&M Univ., College Station, TX.

- #306 11:45 **Analysis of Mirex- and Chlordane-Increased Biliary Tree Permeability by Mathematical Modeling and Segmented Retrograde Intrabiliary Injection (SRII).**
L.R. Curtis. Oak Creek Laboratory of Biology, Oregon State Univ., Corvallis, OR.
Sponsor: R.E. Larson.

**WEDNESDAY MORNING, MARCH 20
GOLDEN WEST ROOM**

**PLATFORM SESSION: Mechanisms of
Toxicity I. General**

Co-Chairs: L. Kaminsky, New York State Dept. Health, Albany, NY
A. Sevanian, Univ. Southern California, Los Angeles, CA

- #307 8:30 **Investigation of the Potential Genotoxicity of *Cis(Z)*-1,3-Dichloropropene (Z-DCP).**
T.M. Brooks, K.R. Huckle, D.H. Hutson, K.L. Lang, C.J. Logan, W.P. Watson and
A.S. Wright. Shell Research Limited, Sittingbourne Research Centre, Sittingbourne,
Kent, U.K. Sponsor: D.G. Clark.
- #308 8:45 **Evidence that Epichlorohydrin (ECH) is Not a Metabolite of 1,2-Dibromo-3-
Chloropropane (DBCP) in the Rat.**
R. Gingell, P.W. Beatty, H.R. Mitschke, R.L. Mueller, V.L. Sawin and A.C. Page.
Toxicology Research, Shell Development Co., Houston, TX.
- #309 9:00 **A Quantitative Post-Labeling Assay for the Principal Vinyl Chloride-DNA Adduct.**
W.P. Watson, A.E. Crane, R. Davies, R.J. Smith and A.S. Wright. Shell Research
Limited, Sittingbourne Research Centre, Sittingbourne, Kent, U.K. Sponsor:
D.G. Clark.
- #310 9:15 **Purification and Characterization of Human and Rat Liver Microsomal Cyto-
chromes P-450 Responsible for 4-Hydroxylation of Mephenytoin, a Prototype of
Genetic Polymorphism.**
T. Shimada and F.P. Guengerich. Dept. of Biochemistry and Center in Molecular
Toxicology, Vanderbilt Univ., Nashville, TN.
- #311 9:30 **Xenobiotic Metabolism by Prostaglandin Synthetase.**
S.A. Lacy and J.G. Babish. Dept. of Preventive Medicine, NYS College of
Veterinary Medicine, Cornell Univ., Ithaca, NY.
- #312 9:45 **Evidence to Suggest the Presence of an Active Cellular Oncogene (c-onc) in the
B6C3F1 Mouse Liver.**
T.R. Fox and P.G. Watanabe. Mammalian and Environmental Toxicology Research
Laboratory, Dow Chemical U.S.A., Midland, MI.
- #313 10:00 **Biological Toxins as Possible Inhibitors of Gap-Junctional Communication.**
J.E. Trosko, C.M. Jone, L. Parker and C.C. Chang. Dept. of Pediatrics and Human
Development, Michigan State Univ., East Lansing, MI.
- #314 10:15 **Phorbol Myristate Acetate (PMA) and Metabolic Cooperation: Examination of
Cell Pre-Treatment, Dose, Duration and Cell Density Parameters.**
T.G. Hartman and J.D. Rosen. Dept. of Food Science, Cook College, Rutgers
Univ., New Brunswick, NJ. Sponsor: M.A. Gallo.
- #315 10:30 **A New Mechanism for Sulfane S Transfer from Sodium Thiosulfate to Cyanide.**
C.A. Tyson, S.J. Gee and S.E. LeValley. SRI International, Menlo Park, CA.
- #316 10:45 **The Ah Receptor: Physical and Chemical Affectors of Stability.**
J.E. Kester and T.A. Gasiewicz. Env. Hlth. Sci. Ctr., Univ. of Rochester,
Rochester, NY.
- #317 11:00 **Induction of Cytochrome P-448 Mediated Mixed Function Oxidases by Pyrolysis
Products Containing Tetrabromodibenzo-p-Dioxins.**
M.L. Taylor, A.B. Rifkind, T.O. Tiernan, B. Ramalingam, J.H. Garrett and D.J.
Wagel. Depts. of Pharmacol. & Toxicol., Chemistry and Brehm Laboratory,
Wright State Univ., Dayton, OH; and Dept. of Pharmacol., Cornell Univ., New
York, NY.

- #318 11:15 **Cholesterol Epoxide Hydrolase Activity in Rat Liver Microsomes.**
A. Sevanian and L. McLeod. Institute for Toxicology, Univ. of Southern California.
- #319 11:30 **Detection of Carbon Tetrachloride (CCl₄)-Induced Lipid and Protein Oxidation *In Vivo* Using Oxygen-18.**
 G.E. Hatch and R. Slade. Toxicol. Branch, HERL, USEPA, Res. Tri. Pk., NC;
 J. Santrock and J.M. Hayes. Dept. Chem., Indiana Univ., Bloomington, IN.
 Sponsor: J.A. Graham.
- #320 11:45 **Oxygen Consumption and Circulating Concentrations of Thyroid Hormones in Rats Treated with 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD).**
 C.L. Potter, R.W. Moore and R.E. Peterson. Univ. of Wisconsin, Madison, WI.

WEDNESDAY MORNING, MARCH 20

MISSION BALLROOM

SYMPOSIUM 3: New Issues in Regulatory Toxicology and Health Risk Assessment

Co-Chairs: Michael L. Dourson, U.S. Environmental Protection Agency, Cincinnati, OH
 A. Wallace Hayes, R.J. Reynolds Industries, Winston-Salem, NC

Time (A.M.)

- 8:30 **The Scientific Framework for Regulatory Decisions.**
 Bernard D. Goldstein, USEPA, Washington, DC.
- 9:00 **Application of Pharmacokinetic Techniques to the Expression of Toxicant Dose.**
 Eileen J. O'Flaherty, Univ. of Cincinnati, Cincinnati, OH.
- 9:30 **Ranking the Severity of Toxic Effects — Useful Applications.**
 Rolf Hartung, Univ. of Michigan, Ann Arbor, MI. Patrick R. Durkin, Syracuse
 Research Corporation, Syracuse, NY.
- 10:00 **Coffee Break**
- 10:15 **Improving the Use of Risk Assessment in Regulation.**
 Joseph Rodericks, ENVIRON Corporation, Washington, DC.
- 10:45 **Reflections on Risk and Regulatory Policy.**
 Christopher Wilkinson, Cornell Univ., Ithaca, NY.
- 11:15 **Panel Discussion.**

WEDNESDAY MORNING, MARCH 20

LOWER LEVEL EXHIBIT AREA

POSTER SESSION: Neurotoxicology II. Sensory Systems

Co-Chairs: M. Abou-Donia, Duke Univ. Medical Center, Durham, NC
 H. Lowndes, New Jersey Medical Center, Newark, NJ

Displayed: 8:30 A.M. - 11:30 A.M.

Attended: 8:30 A.M. - 10:00 A.M.

- #321 **Auditory and Visual Evoked Potentials in Children with Undue Lead Absorption.**
 D.A. Otto, S.B. Baumann, G.S. Robinson, S.R. Schroeder, D.G. Kleinbaum, C.N.
 Barton and P. Mushak. U.S. Environmental Protection Agency, Research
 Triangle Park, NC. Sponsor: R.S. Dyer.

- #322 **Rod Photoreceptors are Selectively Altered by Lead: Electrophysiological, Biochemical and Morphological Studies.**
D.A. Fox, D.B. Farber and L.W.-F. Chu. Coll. of Optometry, Univ. Houston, Houston, TX; and Jules Stein Eye Instit., UCLA Schl. Med., Los Angeles, CA.
- #323 **Effects of Developmental and Continuous Lead Exposure on the Functional Properties of Retinogeniculate (RG) and -Collicular (RC) Responses in Adult Hooded Rats.**
D. Impelman, R.D. Wilson and D.A. Fox. U. Houston, College Optometry, Houston, TX; and USDA, College Station, TX.
- #324 **Synaptic Functions in Retinocollicular (RC) Pathway of Rats with 2,5-Hexanedione (HD) Neuropathy: A Preferential Small Fiber System Effect.**
R.D. Wilson, D. Impelman and D.A. Fox. USDA, College Station, TX; and U. Houston, Coll. Optometry, Houston, TX.
- #325 **Morphologic Correlates of Impaired Visual Function Produced by Carbon Disulfide in Primates.**
T.A. Eskin, R.W. Wood, D. Zehl and W.H. Merigan. Environ. Hlth. Sci. Ctr., Univ. of Roch. Med. Ctr., Rochester, NY.
- #326 **A Possible α 2-Adrenergic Mode of Chlordimeform Action on Rat Visual Function.**
W.K. Boyes and V.C. Moser. Neurotoxicology Division, U.S. EPA, Research Triangle Park, NC. Sponsor: R.S. Dyer.
- #327 **Effects of a Type I or Type II Pyrethroid on Paired Visual Evoked Potentials.**
R.S. Dyer and W.K. Boyes. Neurophysiology Branch, NTD, HERL, USEPA, Research Triangle Park, NC.
- #328 **Postradiation Blood Flow in the Visual Cortex of Primates.**
L.G. Cockerham, E.L. Pautler and J.D. Hampton. Physiol. Dept., Armed Forces Radiobiology Research Institute, Bethesda, MD.
- #329 **Late Positive Brain Waves (P3) Elicited by Auditory Stimuli in Lead Exposed Children.**
S.B. Baumann, G.S. Robinson, D.A. Otto, C.N. Barton, P. Mushak and S.R. Schroeder. U.S. Environmental Protection Agency, Research Triangle Park, NC. Sponsor: R.S. Dyer.
- #330 **Circadian Rhythm (CR) in Aminoglycoside-Induced Ototoxicity.**
W. McKinney, B. Evans, A. Yonovitz and M.H. Smolensky. Graduate School of Biomedical Sciences and School of Public Health, Univ. of Texas Health Science Center at Houston, TX. Sponsor: Jeffrey C. Theiss.
- #331 **Comparative Ototoxicity of Gentamicin in Sprague-Dawley and Fisher-344 Rats.**
M.J. Sullivan, K.E. Rarey and R.B. Conolly. The Univ. of Michigan, Ann Arbor. Sponsor: M.J. Brabec.
- #332 **Subchronic Methylpyridine (MP) Exposure Does Not Mimic Acute MP Effects on Brainstem Auditory Evoked Responses of Rats.**
R. Janssen and R.S. Dyer. Neurophysiology Branch, Neurotoxicology Division, U.S. EPA, RTP, NC.
- #333 **Interactive Effects of Pyrethroid Insecticides and Picrotoxin on Motor Activity and the Acoustic Startle Response.**
K.M. Crofton and L.W. Reiter. Curriculum in Toxicology, UNC, Chapel Hill, NC; and Neurotoxicology Division, U.S. EPA, Research Triangle Park, NC.
- #334 **Toluene-Induced Ototoxicity by Subcutaneous Administration.**
G.T. Pryor and R.A. Howd. SRI International, Menlo Park, CA.
- #335 **Recovery from Sensorimotor Effects of Hexachlorophene.**
R.R. Albee, D.L. Eisenbrandt, J.L. Mattsson and S.K. Weiss. Dow Chemical U.S.A., Mammalian & Environmental Toxicology Research Laboratory, Midland, MI. Sponsor: P.G. Watanabe.
- #336 **Cutaneous Sensory Receptors are Reduced in Number Following Acrylamide Administration.**
B.D. Goldstein. Dept. of Pharmac. and Toxicol., Medical College of Georgia, Augusta, GA.

- #337 **Electrophysiological Changes in Peripheral Sensory Receptors Following Sub-Acute Administration of Soman.**
B.D. Goldstein, Dept. of Pharmac. and Toxicol., Medical College of Georgia, Augusta, GA.

**WEDNESDAY MORNING, MARCH 20
LOWER LEVEL EXHIBIT AREA**

**POSTER SESSION: Neurotoxicology III.
Electrophysiology**

Co-Chairs: M. Abou-Donia, Duke Univ. Medical Center, Durham, NC
H. Lowndes, New Jersey Medical Center, Newark, NJ

Displayed: 8:30 A.M. - 11:30 A.M.
Attended: 10:00 A.M. - 11:30 A.M.

- #338 **Lindane Does Not Antagonize Recurrent Collateral Inhibition in Dentate Gyrus.**
R.M. Joy and T.E. Albertson. Health Sciences Neurotoxicology Unit, Schs. Med. and Vet. Med., Univ. of California, Davis, CA.
- #339 **Time Course of Various Toxicological Effects of Lindane in the Rat.**
D. Woolley, L. Zimmer and D. Dodge. Univ. of California, Davis, CA.
- #340 **Cholinergic Mechanism in Trimethyltin Chloride (TMT) Toxicity to the Hippocampus.**
D.G. Robertson, J. French, R.H. Gray and F.A. de la Iglesia. Env. Ind. Health. Tox. Progr., Univ. of Michigan; Pharm./Path. Exp. Tox., Warner-Lambert/Parke-Davis Pharm. Res., Ann Arbor, MI.
- #341 **Soman Depresses the Spinal Monosynaptic Reflex Without Producing a Delayed Neurotoxicity.**
B.D. Goldstein and D.R. Fincher. Dept. of Pharmac. and Toxicol., Medical College of Georgia, Augusta, GA.
- #342 **Effect of Dithioburet Treatment in Rats on Acetylcholine Disposition in an *In Vitro* Nerve-Muscle Preparation.**
K.D. Williams, M.H. Weiler and R.E. Peterson. School of Pharmacy, Univ. of Wisconsin, Madison, WI.
- #343 **Effects of Acute Dithioburet Treatment at the Rat Neuromuscular Junction.**
Sally A. Yoder and William D. Atchison. Dept. of Pharmacol./Toxicol, Ctr. for Environ. Toxicol., and College of Vet. Med., Mich. State Univ., East Lansing, MI.
- #344 **Extracellular Calcium-Dependent and -Independent Effects of Methylmercury on Spontaneous Release of Acetylcholine.**
W.D. Atchison. Dept. Pharmacol./Toxicol., Ctr., for Environ. Toxicol., Mich. St. Univ., E. Lansing, MI.
- #345 **Effects of Cadmium on Cholinergic Transmission in the Rat Diaphragm.**
B.V.R. Sastry and L.K. Owens. Dept. of Pharmacology, Vanderbilt Univ., Nashville, TN.
- #346 **The Nature of the Toxic Action of *Bacillus thuringiensis* Var *Israelensis* δ -Endotoxin.**
G.J.P. Singh and S.S. Gill. Div. of Toxicology and Physiology, Univ. of California, Riverside, CA.
- #347 **Electrophysiologic Effects of Pyridostigmine on Rat Peripheral Nerve.**
R.J. Anderson, W. Chamberlain and M. Roesner. Environ. and Indust. Health Dept., Univ. of Michigan; and Dept. Pharmacol., Warner-Lambert/Parke-Davis, Pharmaceutical Research, Ann Arbor, MI.

- #348 **Influence of Metal Ion Concentrations on Spontaneous Motility of the Rat Duodenum.**
M. Werley and M.F. Tansy. Temple Univ., Philadelphia, PA.
- #349 **Effect of Chronic Exposure to Lead on *In Vitro* Contractile Response of the Rat Forestomach.**
C.T. Walsh, E.B. Ryden and K.M. Harnett. Dept. of Pharmacology, Boston Univ. Medical Center, Boston, MA. Sponsor: J.K. Marquis.

WEDNESDAY MORNING, MARCH 20
LOWER LEVEL EXHIBIT AREA

POSTER SESSION: Hematologic Toxicology I

Co-Chairs: H.W. Leung, San Diego State Univ., San Diego, CA
G. Witz, Rutgers Medical School, Piscataway, NJ

Displayed: 8:30 A.M. - 11:30 A.M.

Attended: 8:30 A.M. - 10:00 A.M.

- #350 **Influence of Organic Solvents on the Anticoagulant Response to Warfarin in Rats.**
S. Chakrabarti. Dép. Médecine du Travail et Hygiène du Milieu, Fac. Méd., Univ. Montréal, P.Q., Canada.
- #351 **Serum Brodifacoum Concentrations and Coagulopathic Effects in Anticoagulant Poisoned Dogs Treated with Vitamin K₁.**
M.J. Murphy, A.C. Ray, B. Woody and J.C. Reagor. Texas Veterinary Medical Diagnostic Laboratory, College Station, TX.
- #352 **Species Comparison of Bone Marrow Perturbations in Mice and Rats Exposed to Ethylene Oxide.**
S. Lock, R.E. Hand, Jr. and F. Stenglein. Biology Division, Oak Ridge National Laboratory, Oak Ridge, TN.
- #353 **The Use of Fetal Tissue to Demonstrate the Cytostatic Effects of Ethylene Oxide (EO).**
D.M. Popp, S. Lock and R.A. Popp. Oak Ridge National Laboratory, Oak Ridge, TN.
- #354 **Target Organ Accumulation and Toxicity of Titanocene Dichloride (TDC) in F344 Rats.**
M.P. Dieter, C.W. Jameson, J.E. French, R.R. Maronpot, R.D. Brown* and H. Lilja. NIEHS, RTP, NC; *E.G.&G., Mason Research Institute, Worcester, MA. Sponsor: J.H. Mennear.
- #355 **Polycythemia Induced in Wistar Rats by Methylmercury and Ethylnitrosourea.**
G.M. Henningsen, Loren D. Koller and J.H. Exon. Vet. Med., Univ. of Idaho, Moscow, ID.
- #356 **Pyrimidine 5'-Nucleotidase Isoenzyme Characteristics in Lead Exposure.**
C.R. Angle, S.J. Stohs, L.R. Cook and M.A. Mitchell. Univ. of Nebraska Medical Center, Omaha, NE.
- #357 **Parathion (Pt)- and Paraoxon (Px)-Induced Changes in Murine Hematopoietic Cells.**
G.P. Casale¹, V.S. Gallicchio², P.M. Bartholomew³ and T.D. Watts². ¹Dept. Pharmacodyn-Tox, Un. NE Med. Ctr., Omaha, NE; ²Therap. Radiol., Yale Un. Sch. Med., New Haven, CT; and ³Dept. Pharm-Tox, Univ. CT, Storrs, CT.
- #358 **Alterations in ⁵⁹FE Distributions in Rainbow Trout Following Toluene and Benzene Exposure.**
J. Schell and K. Cooper. JGP in Toxicology, Rutgers Univ., Piscataway, NJ. Sponsor: R. Snyder.
- #359 **Determination of Muconaldehyde, A Potential Hematotoxic Metabolite of Benzene, by High Pressure Liquid Chromatography.**
L. Latriano, *S.B.T. Duncan, *R. Hartwick, B.D. Goldstein and G. Witz. Dept. Environ. Comm. Med., UMDNJ-Rutgers Med. Sch./JGPT, Rutgers Univ., *Chemistry Dept., Rutgers Univ., Piscataway, NJ.

- #360 **Subchronic Oral Toxicology of 4-Chloro-3-Nitroaniline.**
J.L. O'Donoghue. Health and Environment Laboratories, Eastman Kodak Co., Rochester, NY. Sponsor: C.J. Terhaar.
- #361 **Effect of Dietary Pectin on the Target Organ Toxicity of Nitrobenzene (NB).**
R.D. Irons, T.E. Hamm, Jr. and D.E. Rickert. C.I.I.T., Research Triangle Park, NC.
- #362 **Hemolytic Anemia Induced by an Anxiomodulator Agent (CGS 15975A).**
J.R. Hazelette, W. Classen, J.B. Scott, J.D. Green, R.H. Spaet, V.M. Traina and R.M. Diener. Research Dept., Pharmaceuticals Div., CIBA-GEIGY Corp., Summit, NJ.
- #363 **Acute Toxicity and Metabolism of 3,4-Dichlorobenzoyloxyacetic Acid (3,4-DCBAA), a Potential Anti-Sickling Agent.**
R.C. Peffer, A.S. Mehanna, J.D. Alvin, D.J. Abraham and M.A. Zemaitis. Univ. of Pittsburgh School of Pharmacy, Pittsburgh, PA.
- #364 **Synthetic Heme Model Compounds and Their Coordination Chemistry with Type III Inhibitors of Cytochrome P-450.**
W.D. McGuinn, A.F. Schreiner and E. Hodgson. Interdepartmental Toxicology Program and Dept. of Chemistry, North Carolina State Univ., Raleigh, NC.
- #365 **Characterization of Lactational Iron Deficiency of Long-Evans Rats as a Result of Sodium Nitrite Consumption.**
A.C. Roth, G.E. Herkert, E.L. George and M.K. Smith. U.S. EPA, HERL, Cincinnati, OH. Sponsor: M.A. Pereira.

**WEDNESDAY MORNING, MARCH 20
LOWER LEVEL EXHIBIT AREA**

POSTER SESSION: Cardiovascular Toxicology I

Co-Chairs: J. Dent, Smith Kline & French Labs., Philadelphia, PA
S. Lock, Oak Ridge Nat'l Lab., Oak Ridge, TN

Displayed: 8:30 A.M. - 11:30 A.M.

Attended: 8:30 A.M. - 10:00 A.M.

- #366 **Noninvasive Measurement of Systemic Arterial Blood Pressure (BP) in the Conscious Dog.**
J.C. Pettersen, R. Linnartz and R.E. Stoll. Sandoz Research Institute, E. Hanover, NJ; and *Univ. of Conn., Toxicology Program, Sch. of Pharm. U-92, Storrs, CT. Sponsor: S.D. Cohen.
- #367 **Elimination of Thioridazine 5-Sulfoxide Isomers in Rat and Man.**
P.W. Hale, Jr. and A. Poklis. Dept. of Pharmacology, St. Louis Univ., St. Louis, MO. Sponsor: Vernon Green.
- #368 **Cross-Resistance Between Isoproterenol (I) and Dihydrotychsterol-Hydralazine (D-H)-Induced Cardiac Lesions in Rats.**
X. Joseph and T. Balazs. CDB, FDA, Washington, DC.
- #369 **The Effects of Perfluoro-N-Decanoic Acid (PFDA) on Membrane Fatty Acid Composition and Adenylate Cyclase Activity in the Rat Heart.**
G.D. Pilcher and A.E. Langley. Dept. of Pharm. and Tox., Wright State Univ., Dayton, OH. Sponsor: R.L. Koerker.
- #370 **Aging Related Differences in Myocardial Uptake of Digoxin in Mice.**
T.S. Chen. Dept. of Pharmacology and Toxicology, Univ. of Louisville, Louisville, KY.
- #371 **Elevated Blood Pressure in Rats Exposed to Solvent Refined Coal-II (SRC-II) Heavy Distillate.**
L.B. Sasser, D.L. Lundstrom, D.L. Springer and D.D. Mahlum. Pacific Northwest Laboratory, Biology & Chemistry Dept., Richland, WA.

- #372 **Mouse Tumorigenesis Studies with the Beta Blocker Bevantolol.**
U. Jayasekara, J. Anderson, J. Fitzgerald, S. Kim, E. McGuire, J. Watkins and F. de la Iglesia. Path. Exp. Tox., Warner-Lambert/Parke Davis Pharm. Res., Ann Arbor, MI.
- #373 **Systemic Toxicity Evaluation of a Phenylene(oxy)-Bis 2,2-Dimethylpentanoic Acid, a Lipid Regulating Agent.**
E.J. McGuire, J.E. Fitzgerald, J.A. Anderson, J.R. Watkins, L.K. Andrews and F.A. de la Iglesia. Path. & Exp. Tox., Warner-Lambert/Parke-Davis Pharm. Res.; and Env. Ind. Health, Univ. of Michigan, Ann Arbor, MI.
- #374 **Preliminary Toxicologic Evaluation of a Novel Cardiotonic Agent.**
R.H. De Wit, G.K. Peter, J.E. Fitzgerald and F.A. de la Iglesia. Path. & Exp. Tox., Warner-Lambert/Parke-Davis Pharm. Res., Ann Arbor, MI.
- #375 **Oral Safety Evaluation of a Non-Sulfur Angiotensin Converting Enzyme Inhibitor.**
R. Chau, B.S. Brar, T.P. Pruss, E.S. Neiss and L.C.K. Wong. Dept. of Drug Safety Evaluation, Revlon Health Care Group, Tuckahoe, NY.
- #376 **Intravenous Safety Evaluation of a New Cardioselelective Beta-Blocker.**
L.C.K. Wong, R. Chau and B.S. Brar. Dept. of Drug Safety Evaluation, Revlon Health Care Group, Tuckahoe, NY.
- #377 **Carcinogenicity of Captafol in B6C3F₁ Mice.**
M. Hirose, Y. Kurata, T. Ogiso, S. Fukushima and N. Ito. 1st Dept. of Pathology, Nagoya City Univ. Medical School, Nagoya, Japan. Sponsor: J.R.P. Cabral.
- #378 **Effects of Chlordimeform on Cardiovascular Functional Parameters in the Postweanling Rat.**
W.P. Watkinson. USEPA, EBD, RTP, NC. Sponsor: R. Chadwick.

**WEDNESDAY MORNING, MARCH 20
LOWER LEVEL EXHIBIT AREA**

POSTER SESSION: General Toxicology II

Co-Chairs: R. Meeks, Univ. of Alabama, Birmingham, AL
T. Trautman, General Mills, Inc., Minneapolis, MN

Displayed: 8:30 A.M. - 11:30 A.M.

Attended: 10:00 A.M. - 11:30 A.M.

- #379 **Profile: A Computerized System for Toxicological Information and Biological Potency Evaluation.**
A.M. Fan, B.R. Weir, N. Tesche, S.P. Rinne and W.S. Simmons. Systems Applications, Inc., San Rafael, CA. Sponsor: A. Furst.
- #380 **Comparative Toxicity of Dimethyl-Stilbenoic Acid and 6-Methyl-Dimethyl-Stilbenoic Acid In Fisher 344 Rats.**
D. Emmerling and P. Kurtz. Battelle Memorial Institute, Columbus, OH.
- #381 **Chronic Oral Toxicity of Nizatidine, a New H₂-Antagonist, in Rats and Dogs.**
K.S. Probst and L.F. Fisher. Lilly Research Laboratories, Greenfield, IN. Sponsor: J.L. Emmerson.
- #382 **A 90-Day Subchronic Toxicity Study with Triprolidine Administered to Male and Female B6C3F₁ Mice and Fischer 344 Rats.**
G.M. Cronin, R.J. Brown and H. Han Hsu. National Center for Toxicological Research, Jefferson, AR. Sponsor: W.T. Allaben.
- #383 **Carbosulfan: Aquatic Toxicology.**
G.M. Rand, J.D. DeProspero, R.A. Robinson and M.J. Fletcher. FMC Corporation, Princeton, NJ.

- #384 **The Influence of Chlorine Dioxide in Drinking Water on the Fecal Excretion of Dietary Iodide in the Rat.**
J.P. Bercz¹, L.W. Condie¹, I. Vaghy², L.L. Jones¹ and R.M. Harrington¹. ¹Toxicology and Microbiology Division, HERL, USEPA, Cincinnati, OH; and ²Experimental Pathology Laboratories, Herndon, VA.
- #385 **The Effect of Chlorine Dioxide in Drinking Water on the *In Vivo* Radioiodine Uptake by the Monkey Thyroid Gland.**
R.M. Harrington^{1,2}, J.P. Bercz¹ and H.G. Shertzer². ¹Toxicology and Microbiology Division, HERL, USEPA, Cincinnati, OH; and ²Dept. of Environmental Health, Univ. of Cincinnati Medical Center, Cincinnati, OH.
- #386 **A 90-Day Subchronic Toxicity Study with Thenyldiamine Administered to Male and Female B6C3F1 Mice and Fischer 344 Rats.**
G.M. Cronin and Ted Sloan, National Center for Toxicological Research, Jefferson, AR. Sponsor: W.T. Allaben.
- #387 **A 90-Day Subchronic Toxicity Study with Caffeine Administered to B6C3F1 Mice and Fischer 344 Rats.**
William T. Allaben and Paul Ross, National Center for Toxicological Research, Jefferson, AR.
- #388 **Subchronic Toxicity Study with Tributyl Phosphate in Rats.**
T. Cascieri, E.J. Ballester, L.R. Seaman, R.F. McConnell, J.W. Thackara and M.J. Fletcher. FMC Corp., Princeton, NJ. Sponsor: G.M. Rand.
- #389 **Acute Toxicity Evaluation of Two Dyes and a By-Product of an Explosive.**
I.A. Muni, E.G. Gordon and J.B. Goodband, Bioassay Systems Corp., Woburn, MA.
- #390 **Subchronic Oral Toxicity of a Diuretic Agent (Abbott-49816) in Rats With and Without Electrolyte Supplementation.**
C.L. Yang, M.C. Pratt, I.A. Heyman, P.K. Cusick, S. Lehrer and J.W. Kesterson. Abbott Labs., North Chicago, IL.
- #391 **Acute and Subchronic Toxicity of a Non-Sulfhydryl Angiotensin Converting Enzyme (ACE) Inhibitor - SCH 33844.**
P.T. La Rocca, G.C. McCormick, J.D. Frantz, R.J. Szot, H.E. Black and E. Schwartz. Schering Corporation, Lafayette, NJ.
- #392 **Separation and Identification of Enolase Isozymes by High-Pressure Anion-Exchange Chromatography.**
A.I. Soiefer, M.S. Miller, M.I. Sabri and P.S. Spencer. Institute of Neurotoxicology, Albert Einstein College of Medicine, Bronx, NY.
- #393 **Reference Range Values for Routine Clinical Pathology Determinations on Laboratory Animals.**
R.A. Schroer, F. Gohs, P. Gallo and M. Brodeck. Medical Research Division, American Cyanamid Company, Pearl River, NY. Sponsor: F.J. Mecler.
- #394 **Subchronic Toxicity of Synthetic Capsaicin (N-Vanillylnonanamide) in Rats.**
R.J. Schwen, L.C. Jones and C.L. Alden. The Procter & Gamble Co., Miami Valley Laboratories, Cincinnati, OH. Sponsor: E.V. Buehler.
- #395 **Acute Toxicity of Carbosulfan.**
J.D. McCarty, J.R. DeProspero, M. Weiner, L.E. Geiger, M.J. Norvell and M.J. Fletcher. FMC Corporation, Princeton, NJ.
- #396 **Earthworm Toxicity Testing: A Potential Alternative to Range-Finding with Mammalian Systems.**
D.E. McLain¹, E.F. Neuhauser², C.S. Weil¹ and J.G. Babish². Union Carbide Corporation, Bushy Run Research Center, Export, PA¹; and Cornell Univ., Ithaca, NY².
- #397 **Acute and Subacute Oral Toxicity Studies of 1,1,1-Trichloroethane (TRI) in Rats.**
J.V. Bruckner, S. Muralidhara, W.F. MacKenzie, G.M. Kyle and R. Luthra. Dept. of Pharmacology and Toxicology, College of Pharmacy, Univ. of Georgia, Athens, GA.
- #398 **Depression of Rat Adrenal Microsomal Cytochrome P-450 After Administration of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD).**
C.A. Mebus and W.N. Piper. Dept. of Pharmacology, Univ. of Nebraska Med. Ctr., Omaha, NE.

- #399 **Toxicity Testing Program of Chemicals in Priority Hazardous Waste Sites at the National Toxicology Program.**
R.S.H. Yang, E.J. Rauckman and W.M. Kluwe. National Toxicology Program, NIEHS, RTP, NC.
- #400 **Toxicity Programs Supporting Product Development Activities in the Pharmaceutical Industry.**
M. Palese Lund. Syntex Pharmaceuticals, Palo Alto, CA. Sponsor: D.W. Hallesy.
- #401 **A Refined Approach to the Establishment of Health Criteria for Water Contaminants.**
R. Scofield and D.P.H. Hsieh. Dept. of Environmental Toxicology, Univ. of California, Davis, CA.
- #402 **Tumor Profiles in Charles River COB*CD* Sprague Dawley Derived Rats.**
B.M. Sparano, M. Brodeck, F. Gohs and P. Gallo. Medical Research Division, American Cyanamid Co., Pearl River, NY.
- #403 **General Education in Environmental Toxicology.**
M. Kamrin. Center for Environmental Toxicology, Michigan State Univ., East Lansing, MI. Sponsor: J.E. Trosko.
- #404 **Estimation and Analysis of the Dose-Response Surfaces Associated with Drug Combinations.**
R.P. Solana, J. Wilson, W.H. Carter, F. Kessler and R.A. Carchman. Depts. of Radiology, Biostatistics, and Pharmacology and Toxicology, Medical College of Virginia, Richmond, VA.
- #405 **Safety Studies with Radiation-Sterilized Chicken Meat: I. Chronic Toxicity and Oncogenicity in CD-1 Mice.**
J.P. Christopher, R.R. Dahlgren, K.L. Monti, D.C. Ronning, L.A. Campbell, D.W. Thayer and E. Wierbicki. Eastern Regional Research Center, USDA-ARS, Philadelphia, PA. Sponsor: A.M. El-hawari.
- #406 **Comparative Acute Toxicity Studies with Caffeine in B6C3F1 Mice and Fischer 344 Rats.**
William T. Allaben. National Center for Toxicological Research, Jefferson, AR.
- #407 **Effect of Food Restriction on Guinea Pig Organ Weights and Histopathology: A Comparison to Streptozotocin.**
M.S. Schlosser, J.C. Kapeghian and A.J. Verlangieri. Atherosclerosis Research Laboratories, Dept. of Pharmacology, School of Pharmacy, Univ. of Mississippi, University, MS. Sponsor: W.M. Davis.
- #408 **Myocardial Damage in Mice Associated with Semi-Purified Diet.**
Floyd R. Fullerton and David L. Greenman. National Center for Toxicological Research, Jefferson, AR. Sponsor: W.T. Allaben.
- #409 **Preclinical Evaluation of Bactoboln (NSC-325014) in CD2F₁ Mice and Fischer 344 Rats.**
J.G. Page, M.B. Beneke, S.T. Hubbard and M.D. Kastello. Battelle Columbus Laboratories, Columbus, OH.
- #410 **Changes in Pulmonary Proteinase Inhibitor and Elastase Activity Following Acute BCNU Administration.**
E.J. Jarvi and R.E. Larson. College of Pharmacy, Oregon State Univ., Corvallis, OR.
- #411 **Pathogenesis of 4-Ipomeanol-Induced Pulmonary Edema in Mice and Inhibition by Piperonyl Butoxide Pretreatment.**
S.K. Durham and W.L. Castleman. Dept. of Pathology, Cornell Univ., Ithaca, NY. Sponsor: J.G. Babish.
- #412 **Pathogenesis of Lung Injury Produced by O,O,S-Trimethyl Phosphorothioate (OOS-TMP): Role of Protease and Antiprotease.**
L. Hasegawa and T. Imamura. Div. of Toxicology and Physiology, Univ. of California, Riverside, CA.
- #413 **Cancelled.**

- #414 **Cyclic AMP Dependent Induction of the Pulmonary Mixed Function Oxidase System (MFO).**
V.H. Schaeffer and R.J. Rubin. Dept. Env. Hlth. Sci., Johns Hopkins Univ., Baltimore, MD.
- #415 **Compartmental Specificity of Silica-Induced Phospholipidosis in the Lungs of Rats.**
*L.A. Dethloff, L.B. Gilmore and G.E.R. Hook. NIEHS/NIH, Research Triangle Park, NC; and the *Curriculum in Toxicology, Univ. of North Carolina, Chapel Hill, NC. Sponsor: G.W. Lucier.
- #416 **5-Hydroxytryptamine Receptor Antagonists and Monocrotaline Pyrrole-Induced Cardiopulmonary Toxicity.**
P.E. Ganey, K.H. Sprugel, K.E. Boner and R.A. Roth. Dept. of Pharmacol./Toxicol., Michigan State Univ., East Lansing, MI.
- #417 **Fatty Acid Synthesis in BCNU-Induced Pulmonary Injury.**
A.C. Smith, R.A. Gram and M.R. Boyd. NCI, Bethesda, MD.
- #418 **Hepatic Microsomal Lipid Composition After Acetone Administration to Rats.**
E.P. Hayes, G. Witz and P. Scala. Dept. Environ. Comm. Med., UMDNJ-Rutgers Medical School/Rutgers U., Joint Grad. Prog. in Toxicology, Piscataway, NJ.
- #419 **Toxicology as "Integrated" Molecular Biology.**
S. Ji. Rutgers Univ., Piscataway, NJ.
- #420 **The Metabolism of Cis- and Trans-Decalin in Male Fischer 344 Rats.**
C.T. Olson, K.O. Yu, D.W. Hobson and M.P. Serve. Toxic Hazards Division, Toxicology Branch, Air Force Aerospace Medical Research Laboratory, Wright-Patterson AFB, OH. Sponsor: B.O. Stuart.
- #421 **Role of the Gut Flora and Oral Nitrate on the Endogenous Formation of Nitrosoproline.**
A.K. Mallett, I.R. Rowland, R.C. Cottrell and S.D. Gangolli. B.I.B.R.A., Carshalton, Surrey, UK.

Wednesday Noon, March 20, 1985

ISSUES SESSION

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

Town and Country Room

Chaired by President Frederick W. Oehme

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

**WEDNESDAY AFTERNOON, MARCH 20
TOWN & COUNTRY ROOM**

PLATFORM SESSION: Neurotoxicology IV. Behavior

Co-Chairs: Z. Annau, Johns Hopkins Univ., Baltimore, MD
H. Tilson, NIEHS, RTP, NC

- #422 1:30 **Vitamin A Acetate: A Behavioral Teratology Study in Rats. II.**
S.A. Kutz, N.J. Troise, R.E. Cimprich, S.M. Fischer and P.J. DeBaecke. Stuart Pharmaceuticals, Division of ICI Americas Inc., Wilmington, DE.

- #423 1:45 **Developmental Toxicity of Secalonic Acid in Mice.**
V.E.V. St. Omer and C.S. Reddy. Developmental Toxicology Laboratory, College of Veterinary Medicine, Univ. of Missouri, Columbia, MO. Sponsor: M.F. Ralsbeck.
- #424 2:00 **Model of Benzodiazepine Dependence in Mice.**
E.J. Gallaher, S.A. Henauer, C.J. Jacques and L.E. Hollister. VA Medical Center, Palo Alto, CA; and Stanford Univ. School of Medicine. Sponsor: R.A. Howd.
- #425 2:15 **Behavioral Effects of Chronic Manganese (Mn) Administration in Rats: Locomotor Activity Studies.**
J.P. Nachtman, R.E. Tubben and R.L. Commissaris. Dept. Pharmaceut. Sci., College of Pharmacy & AHP, Wayne St. Univ., Detroit, MI.
- #426 2:30 **Effect Upon Operant Behavior of Rats from Inhaling Sub-Lethal Levels of Pyrolysates from a Polyimide and Polyurethane Foam.**
W.H. Lawrence, John Autian and Caroline Sanford. Materials Science Toxicology Labs., Dept. of Medicinal Chemistry, Colleges of Pharmacy and Dentistry, Univ. Tenn. Center for the Health Sciences, Memphis, TN.
- #427 2:45 **Comparative Effects of Four Organophosphates on Open Field Behavior in the Rat.**
F.O. Risinger and W.M. Bourn. School of Pharmacy, Northeast Louisiana Univ., Monroe, LA. Sponsor: R. Don Brown.
- #428 3:00 **Correlation of Pharmacological Effects and Biodisposition of ³H-Diisopropyl-fluorophosphate (DFP) in Mice After Inhalation.**
J.A. Scimeca and B.R. Martin. Dept. of Pharm. and Tox., MCV-VCU, Richmond, VA. Sponsor: J.R. Hayes.
- #429 3:15 **Effects of Physostigmine on Three Measures of Motor Function in Male Rats.**
G.J. Leach, M.R. Landauer, M.A. DeLeonardis, K.L. Foster, A.A. Pare and M. Pare. Toxicology Div., Chemical Research and Development Center, Aberdeen Proving Ground, MD. Sponsor: R.E. Savage, Jr.
- #430 3:30 **Subchronic Toxicity Evaluation of Tricresyl Phosphate in F344 Rats and B6C3F1 Mice.**
Randy Deskin, Arthur Peters, Perry Kurtz, Betsy Carlton, Garrett Dill and Richard Irwin*. Battelle-Columbus, OH; and *NTP, RTP, NC.
- #431 3:45 **Duration and Intensity of Behavioral Change After Sublethal Exposure to Soman in Male Rats.**
G.C. Haggerty, P.J. Kurtz and R.D. Armstrong. Battelle Mem. Inst., Columbus, OH; and Army Chem. Res. and Dev. Ctr., Aberdeen Proving Ground, MD.

**WEDNESDAY AFTERNOON, MARCH 20
SAN DIEGO ROOM**

PLATFORM SESSION: Metabolism/Disposition II

Co-Chairs: D. Eaton, Univ. of Washington, Seattle, WA
R. Hanzlik, Univ. of Kansas, Lawrence, KS

- #432 1:30 **Metabolism and Covalent Binding of Ortho-Substituted Bromobenzenes *In Vitro*.**
J.A. Buben, N. Narasimhan, R.A. Wiley and R.P. Hanzlik. Dept. of Medicinal Chemistry, Univ. of Kansas, Lawrence, KS.
- #433 1:45 **Effects of Chemical Probes on Covalent Binding (CVB) of Bromobenzene (BB) and Derivatives.**
R.P. Hanzlik, J. Buben and N. Narasimhan. Dept. of Medicinal Chemistry, Univ. of Kansas, Lawrence, KS.
- #434 2:00 **Metabolism (MET) and Covalent Binding (CVB) of [3-H/14-C]-Bromobenzene (BB).**
N. Narasimhan, J. Buben and R.P. Hanzlik. Dept. of Medicinal Chem., Univ. of Kansas, Lawrence, KS.

- #435 2:15 **Absorption, Metabolism and Excretion of 2- and 4-Chlorophenol in Rats.**
H.M. Carpenter, R.C. Bender and D.R. Buhler. Dept. of Agric. Chem. and Environ. Hlth. Sci. Ctr., Oregon State Univ., Corvallis, OR.
- #436 2:30 **Toxicokinetics, Subcellular Distribution and Covalent Binding of [³H]-Bleomycin in Hamster After Intratracheal Administration.**
S.N. Giri, M.J. Schiedt and W.R. Levy. Dept. Vet. Pharmacol. & Toxicol., Univ. of Calif., Davis, CA.
- #437 2:45 **Metabolic Disposition of Cyanide.**
S. Nizamani, R.L. Morgan, D.D. Sylvester, P. Leung, C. Tamulinas and J.L. Way. Dept. of Medical Pharmacology and Toxicology, Texas A&M Univ., College Station, TX.
- #438 3:00 **Metabolism and Disposition of ¹⁴C-Ethylene Carbonate and ¹⁴C-Ethylene Glycol in Male Fischer 344 Rats.**
T.R. Hanley, Jr., P.W. Langvardt, T.F. Rusek, P.G. Watanabe and A.M. Schumann. Mammalian and Environmental Toxicology Research Laboratory, Dow Chemical U.S.A., Midland, MI.
- #439 3:15 **Pharmacokinetics of 1,1,1-Trichloroethane (MC) in Humans, Rats, and Mice After Inhalation or Drinking Water Administration.**
R.H. Reitz, A.M. Schumann, D.W. Osborne and R.J. Nolan. Dow Chemical Co., Midland, MI.
- #440 3:30 **Inhalation Pharmacokinetics of Cis- and Trans-1,3-Dichloropropene in Rats Exposed to TELONE* II Vapors.**
W.T. Stott, P.E. Kastl and M.J. McKenna. Mammalian and Environmental Toxicology Research Laboratory, Midland, MI.
- #441 3:45 **In Vitro Metabolism of Senecionine.**
B. Kedzierski and D.R. Buhler. Dept. of Agricultural Chemistry and Environmental Health Sciences Center, Oregon State Univ., Corvallis, OR.

**WEDNESDAY AFTERNOON, MARCH 20
GOLDEN WEST ROOM**

PLATFORM SESSION: Cardiovascular Toxicology II

Co-Chairs: T. Chen, Univ. of Louisville, Louisville, KY
D. Menzel, Duke Univ. Medical Center, Durham, NC

- #442 1:30 **Preliminary Toxicological Evaluation of a Non Sulfhydryl Angiotensin Converting Enzyme Inhibitor (CI-925).**
J.A. Anderson, L.K. Andrews, A. Aust, J.E. Fitzgerald and F.A. de la Iglesia. Path. & Exp. Tox., Warner-Lambert/Parke-Davis Pharm. Res., Ann Arbor, MI.
- #443 1:45 **Effects of Routes of Administration on Toxicity of Carbon Monoxide (CO).**
K.C. Chen, P.S. Lee and J.J. McGrath*. Biomedical Science Dept., GM Research Labs, Warren, MI; and *Dept. of Physiology, Texas Tech Univ. School of Medicine, Lubbock, TX. Sponsor: E.W. Lee.
- #444 2:00 **Intravenous Toxicology of a New Cardiotonic Agent.**
S. Rogers, N. Barsoum, C. DiFonzo, S. Gracon, B. Houston, R. Martin, G. Smith, J. Sturgess and F. de la Iglesia. Warner-Lambert/Parke-Davis Pharm. Res., Ann Arbor, MI, and Mississauga, ON.
- #445 2:15 **Selenium-Calcium Interactions in the Myopathic Hamster.**
I.S. Jamall and J.A. Zimmerman. Toxicology and Biology Programs, St. John's Univ., New York, NY. Sponsor: S. Carson.

- #446 2:30 **Arsenate Cardiotoxicity Assessed Non-Destructively in Intact Perfused Rat Heart by P-31 NMR.**
S.J. Kopp, A.A. Daar, J.M. Feliksik, J.P. Tow, D.G. Peace and R.C. Prentice. Dept. of Physiology and NMR Laboratory, Chicago College of Osteopathic Medicine, Chicago, IL.
- #447 2:45 **Uncoupling of Oxidative Phosphorylation and Hydrogen Peroxide Generation as a Possible Mechanism of Adriamycin and Daunomycin-Induced Cardiotoxicity.**
V. Shirhatti and G. Krishna. NHLBI, Bethesda, MD. Sponsor: J.R. Gillette.
- #448 3:00 **Heart Rate Monitoring as an Indicator of Acute Toxicity of Antiappetite Drugs in Rats.**
L.R. Weiss and J.A. Vick. Center for Drugs and Biologics, Food and Drug Admin., Washington, DC.
- #449 3:15 **Acute and Subchronic Toxicology of T-2 in Monkeys - A Pilot Study.**
C.R. Hassler. Battelle Columbus Laboratories, Columbus, OH. Sponsor: G.L. Fisher.
- #450 3:30 **The Effects of Hepatic Microsomal Enzyme Inducers and Inhibitors on the Toxicity of Lobeline.**
H.L. Kim and A.C. Ray. Dept. of Veterinary Physiology and Pharmacology, Texas A&M Univ., College Station, TX.

**WEDNESDAY AFTERNOON, MARCH 20
MISSION BALLROOM**

SYMPOSIUM 4: New Investigators Colloquium

Sponsored by SOT Education Committee

Chairperson: D. Keller, Duke Univ. Medical Center, Durham, NC

**Time
(P.M.)**

- 1:30 **Introduction.**
R.I. Krieger, Univ. of Idaho, Moscow, ID.
- 1:40 **The Cardiolpulmonary Toxicity of Monocrotaline: A Possible Role for the Platelet and Its Vasoactive Mediators.**
P.E. Ganey, Michigan State Univ., East Lansing, MI.
- 2:10 **Discussion.**
- 2:15 **Purification and Characterization of the FAD-Containing Monooxygenase: Species and Tissue Comparison.**
P.J. Sabourin, North Carolina State Univ., Raleigh, NC.
- 2:45 **Discussion.**
- 2:50 **Tolerance to Organophosphate Cholinesterase Inhibitors.**
P.M. Bartholomew, Univ. of Connecticut, Storrs, CT.
- 3:20 **Discussion.**
- 3:25 **Coffee Break.**
- 3:40 **Mechanism of Chloroform-Induced Nephrotoxicity.**
J.H. Smith, Michigan State Univ., East Lansing, MI.
- 4:10 **Discussion.**
- 4:15 **Conclusion.**

**WEDNESDAY AFTERNOON, MARCH 20
LOWER LEVEL EXHIBIT AREA**

POSTER SESSION: Reproduction/Teratology I

Co-Chairs: T. Phillips, Texas A&M Univ., College Station, TX
G. Yost, Washington State Univ., Pullman, WA

Displayed: 1:30 P.M. - 4:30 P.M.

Attended: 1:30 P.M. - 3:00 P.M.

- #451 **Autoradiographic Studies on the Distribution of ¹⁴C-Vinyl Chloride in the Pregnant Mouse.**
P. Duprat, J.P. Fabry and D. Gradiski. I.N.R.S., 54500 Vandoeuvre-Les-Nancy (France).
- #452 **Inhalation Toxicity and Fertility Studies with Propionitrile.**
D.J. Velasquez, L.D. Kier, D.C. Thake, M.V. Roloff and R.D. Short. Monsanto Company, Environmental Health, St. Louis, MO.
- #453 **Role of Prostaglandins in Retinoid Toxicity.**
C.J. Viau and S.D. Harrison, Jr. Grad. Ctr. for Toxicology, Univ. of Kentucky, Lexington, KY.
- #454 **Examination of Potential Reproductive Effects of Aqueous Ethylene Dibromide Solution Administered to Long-Evans Rats by Gavage.**
B.D. Carlton, D.L. Habash, K.A. Colling, A.H. Basaran, I.D. Osis and M.K. Smith. Battelle Columbus Labs, Columbus, OH; and USEPA, HERL, Cincinnati, OH. Sponsor: G.L. Fisher.
- #455 **Ethylene Dibromide (EDB) Residues in Chickens During and After Feeding of Contaminated Diet.**
E. Lehning, T. Whalen and D. Polin. State of Michigan (Geigley) Lab and Dept. of Animal Science, Michigan State Univ., E. Lansing, MI.
- #456 **The Spermatotoxic Effects of Ethylene Dibromide (EDB).**
M. Hurtt and H. Zenick. Dept. of Envir. Hlth., Univ. of Cincinnati, Cincinnati, OH.
- #457 **Relationship Between Blood and Seminal Concentrations for 2-Ethoxyethanol (EE) and Ethylene Dibromide (EDB).**
D. Oudiz, M. Hurtt and H. Zenick. Dept. of Envir. Hlth., Univ. of Cincinnati, Cincinnati, OH.
- #458 **Developmental Studies of Acetonitrile and Haloacetonitriles in the Long-Evans Rat.**
E.L. George, H. Zenick*, J.M. Manson† and M.K. Smith. U.S. EPA, Cincinnati, OH; *Dept. of Environmental Health, U. of Cincinnati; †Smith, Kline & French Labs, Philadelphia, PA.
- #459 **Comparison of the *In Vivo* and *In Vitro* Effects of 2-Methoxy-, 2-Ethoxy- and 2-Butoxyacetic Acids in Rat Testis.**
P.M.D. Foster, S.C. Lloyd and D.M. Blackburn. Imperial Chemical Industries PLC, Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK. Sponsor: E.A. Lock.
- #460 **Testicular Toxicity of 2-Methoxyacetaldehyde, a Possible Metabolite of Ethylene Glycol Monomethyl Ether, in the Rat.**
P.M.D. Foster, S.C. Lloyd and D.M. Blackburn. Imperial Chemical Industries PLC, Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK. Sponsor: E.A. Lock.
- #461 ***In Vitro* Effects of Ethoxyacetic Acid on Energy Metabolism in Isolated Pachytene Spermatoocytes.**
D. Oudiz, H. Zenick and M. Radike. Dept. Envir. Hlth., Univ. Cincinnati, Cincinnati, OH.
- #462 **2-Methoxyethanol (ME) Depletes Testicular Lactate in Rats.**
P.J. Beattie and M.J. Brabec. Dept. of Env. & Ind. Health, Toxicology Program, The Univ. of Michigan, Ann Arbor, MI.

- #463 **Localization of Radioactivity from 2-Methoxyethanol (1,2-¹⁴C) in Maternal and Conceptus Compartments.**
R.B. Sleet, J.A. John-Greene and F. Welsch. C.I.I.T., Research Triangle Park, NC.
- #464 **Dibutyl Phthalate (DBP) Alters Testicular Steroidogenesis and Interstitial Fluid (IF) Production in Rats.**
G.L. Rehnberg, L.E. Gray, Jr., J.F. Hein and R.R. Barbee. USEPA, Herl, DBD, RTB, RTP, NC. Sponsor: N. Chernoff.
- #465 **Age as a Factor in Male Reproductive Toxicity to Di-n-Butyl Phthalate (DBP).**
J.A. Ward, H. Zenick and W.W. Wilfinger*. Depts. Environ. Hlth. and Physiol.*, Univ. Cincinnati, Cincinnati, OH.
- #466 **Reproductive Toxicity of Dietary Diethylhexyl Phthalate (DEHP) in Mouse Breeding Pairs.**
J.R. Reel*, A.D. Lawton*, R.W. Tyl* and J.C. Lamb, IV†. Research Triangle Institute*, and National Toxicology Program†, NIEHS, Research Triangle Park, NC.
- #467 **Correlation of Dose-Dependent Functional Pathophysiological Changes Induced by Di-(2-Ethylhexyl)-Phthalate (DEHP).**
D.K. Agarwal,* S. Eustis*, J.C. Lamb, IV*, J.R. Reel,† and W.M. Kluwe*. *National Toxicology Program, NIEHS, Research Triangle Park, NC and †Research Triangle Institute, Research Triangle Park, NC.
- #468 **The Teratogenic Effect of Inhaled Acrolein Vapor in Sprague-Dawley Rats.**
J.M. Gerhart, N.S. Hatoum and C.L. Leach. IIT Research Institute, Life Sciences Research, Chicago, IL.
- #469 **Reproductive Dysfunction Associated with Acrylamide Treatment.**
H. Zenick, E. Hope and K. Smith*. Dept. Environmental Health, Univ. of Cincinnati and *HERL, USEPA, Cincinnati, OH.
- #470 **Teratogenic Response of Dimethylacetamide in Rats.**
F.R. Johansen and G.J. Levinkas. Monsanto Co., St. Louis, MO; and L.J. Schardein. International Research and Development Corp., Mattawan, MI.
- #471 **Toxicity of Some Glycol Ethers and Alkoxyacetic Acids in Primary Testicular Cell Cultures.**
T.J.B. Gray, E.J. Moss, D.M. Creasy and S.D. Gangolli. B.I.B.R.A., Carshalton, Surrey, UK.
- #472 **The Role of Metabolism in Ethylene Glycol Monomethyl Ether Induced Testicular Toxicity.**
E.J. Moss, D.M. Creasy, T.J.B. Gray and S.D. Gangolli. B.I.B.R.A., Carshalton, Surrey, UK.
- #473 **Developmental Phase Specific Teratogenic Effects of Ethylene Glycol Monomethyl Ether (EGME) in CD-1 Mice.**
V.L. Horton, R.B. Sleet, J.A. John-Greene and F. Welsch. C.I.I.T., Research Triangle Park, NC.
- #474 **Inhalation Teratology Evaluation of Methyl-t-Butyl Ether in Rats and Mice.**
C.C. Conaway¹, R.E. Schroeder² and N.K. Snyder³. Clement Associates Inc., Arlington, VA¹; Bio/dynamics Inc., East Millstone, NJ²; Atlantic Richfield Co., Los Angeles, CA³.
- #475 **Lethality and Testicular Effect in Male Rats Following Acute Inhalation Exposure to ODRAM®.**
S.M. MacAskill, G.M. Zwicker and G.L. Sprague. Stauffer Chemical Company, Environmental Health Center, Farmington, CT.
- #476 **Studies with an Inhibitor of Ovulation in the Rat.**
C.M. Milne, R.L. Hasmall and M.C. Middleton. Imperial Chemical Industries PLC, Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK. Sponsor: E.A. Lock.
- #477 **Metabolic Studies with an Inhibitor of Ovulation in the Rat.**
A.J. Gray, A.L. Worthington and M.C. Middleton. Imperial Chemical Industries PLC, Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK. Sponsor: E.A. Lock.

- #478 **Alteration of Lactate Metabolism in Sertoli Cells and Spermatocytes by 1,2-Dibromo-3-Chloropropane.**
G.E. Miller, M.J. Welsh and M.J. Brabec. Program in Toxicology and the Dept. of Anatomy and Cell Biology, The Univ. of Michigan, Ann Arbor, MI.
- #479 **Reproductive Function of Adult Male Rats Following Neonatal Exposure to 1,2-Dibromo-3-Chloropropane.**
E.M.K. Lui. Dept. of Pharmacol. and Toxicol., Univ. of Western Ontario, London, Ont., Canada.
- #480 **Teratologic Evaluation of Inhaled Methyl Isobutyl Ketone (MIBK) in Fischer 344 Rats and CD-1 Mice.**
R.W. Tyl¹, K.A. France¹, L.C. Fisher¹, T.R. Tyler², R.D. Phillips³ and E.J. Moran⁴. ¹Bushy Run Research Center, Export, PA; ²Union Carbide Corp., Danbury, CT; ³EXXON Corp., East Millstone, NJ; and ⁴Chemical Manufacturers Association, Washington, DC.
- #481 **Reproductive Effects of Dioxin Contaminated Soil from a Manufacturing Site.**
T.H. Umbreit, E.J. Hesse, D. Patel¹ and M.A. Gallo. UMDNJ-Rutgers Medical School, Piscataway, NJ; and ¹N.J. Dept. of Environmental Protection, Trenton, NJ.
- #482 **Testicular Toxicity of 1,3-Dinitrobenzene in the Rat.**
D.M. Blackburn, S.C. Lloyd, A.J. Gray and P.M.D. Foster. Imperial Chemical Industries PLC, Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK. Sponsor: E.A. Lock.
- #483 **Dominant Lethal Study of Nitrobenzene in Male Rats.**
C.J. Rushbrook, T.A. Jorgenson and W.H. Farland. SRI International, Menlo Park, CA; and U.S.E.P.A., Washington, DC. Sponsor: A.D. Mitchell.
- #484 **Relationship Between Breeding Performance and Testicular/Epididymal Functioning in Male Sprague-Dawley Rats Exposed to Nitrobenzene (NB).**
W.F. Blazak, C.J. Rushbrook, T.L. Ernst, B.E. Stewart, D. Spak, D. DiBiasio-Erwin and V. Black. SRI International, Menlo Park, CA. Sponsor: A.D. Mitchell.
- #485 **Teratogenicity of Hexabrominated Naphthalene, a Toxic Contaminant of Polybrominated Biphenyls, in C57B1/6N Mice.**
C.P. Miller, M.W. Harris and L.S. Birnbaum. NIEHS, Research Triangle Park, NC.
- #486 **Reproductive Dysfunction in Mink and Ferrets Exposed to Hexachlorobenzene.**
M.R. Bleavins, R.J. Aulerich and R.K. Ringer. Michigan State Univ., East Lansing, MI. Sponsor: M.T.S. Hsia.
- #487 **Toxicokinetics of 7,12-Dimethylbenz[a]anthracene (DMBA) in Rats Fed High Lard or Control Diet.**
C.T. Walsh, S. Lee and A.E. Rogers. Dept. of Nutrition and Food Science, M.I.T. and Dept. of Pharmacology and Pathology, Boston Univ. Medical Center, Boston, MA.
- #488 **The Role of Halogenation in the Teratogenicity of Diphenyl Ethers.**
B.M. Francis and R.L. Metcalf. Univ. of Illinois, Urbana, IL.

**WEDNESDAY AFTERNOON, MARCH 20
LOWER LEVEL EXHIBIT AREA**

POSTER SESSION: Inhalation Toxicology III

Co-Chairs: G. Fisher, Battelle Columbus Labs, Columbus, OH
G. Oberdoerster, Univ. of Rochester, Rochester, NY

Displayed: 1:30 P.M. - 4:30 P.M.

Attended: 3:00 P.M. - 4:30 P.M.

- #489 **Sensitivity of Mathematical Model Ozone (O₃) Dosimetry to Anatomical and Ventilatory Parameters of Laboratory Animals.**
John H. Overton, Jr. and Frederick J. Miller. HERL, U.S.E.P.A. Res. Tri. Pk., NC.
Sponsor: Judith A. Graham.

- #490 **A Quantitative Methodology for Assessing Health Effects of Inhaled Toxicants.**
E.D. Smolko¹, R.L. Wolpert¹, D.J. McKee² and D.B. Menzel¹, Depts. of Pharmacology and Medicine, Comprehensive Cancer Center, Duke Univ. Med. Center, Durham, NC¹; and OAQPS, USEPA, Research Triangle Park, NC².
- #491 **Nasal Deposition of Acetone and Ethanol Vapors - A Physiologic Model.**
J.B. Morris and D.G. Cavanagh. School of Pharmacy, Univ. of Connecticut, Storrs, CT.
- #492 **Ozone-Induced Inhibition of Theophylline Metabolism: Effect of Age and Sex.**
A.T. Canada and E.J. Calabrese. U. Mass. Med. Ctr., Worcester, MA.
- #493 **Ozone Studies on Glucose-6-Phosphate Dehydrogenase Deficient Red Cells.**
M.A. Amoroso, D. Easton, J. Ryer, G. Witz and B.D. Goldstein. Dept. of Environmental & Community Medicine, UMDNJ-Rutgers Medical School/Rutgers Univ. Joint Graduate Program in Toxicology, Piscataway, NJ.
- #494 **Effect of Short Term Ozone Exposure on Pulmonary Functions in Guinea Pigs.**
P. Doherty Miller, H.F. Lam, D. Ainsworth and M.O. Amdur. Dept. of Nutrition and Food Sci., Massachusetts Institute of Technology, Cambridge, MA.
- #495 **Effects of Ozone on Dietary Vitamin E Uptake and Turnover in the Mouse Lung.**
D.L. Morgan, T.L. Furlow and D.B. Menzel. Depts. of Pharmacology and Medicine, Comprehensive Cancer Center, Duke Univ. Medical Center, Durham, NC.
- #496 **Functional Effects of Ozone in Awake Rats.**
J.S. Tepper, M.J. Wiester, M.F. Weber, M.E. King and J.A. Graham. Northrop Services Inc., RTP, NC; and U.S.E.P.A., RTP, NC.
- #497 **Effects of NO₂ on Pulmonary Function in Aging Rats.**
M.A. Stevens, C.J. Setzer, F.J. Miller and J.A. Graham. Northrop Services Inc., RTP, NC; and U.S.E.P.A., RTP, NC.
- #498 **Effects of Acute Nitrogen Dioxide (NO₂) Exposures on Lung Clearance Pathways.**
T.A. Vollmuth, K. Driscoll and R.B. Schlesinger. Institute of Environmental Medicine, New York Univ. Medical Center, New York, NY.
- #499 **Lung Cell Proliferation After Short-Term Exposure to Diesel Exhaust, Carbon Black or Nitrogen Dioxide.**
E.S. Wright. Biomedical Science Dept., GM Research Labs, Warren, MI. Sponsor: E.W. Lee.
- #500 **Assessment of Elastase Instillation, Elastase Instillation and Chronic NO₂ Inhalation, and Chronic NO₂ Inhalation as Inducers of Emphysema.**
D.M. Stavert, D.C. Archuleta, L.M. Holland and B.E. Lehnert. Life Sciences Division, Los Alamos National Laboratory, Los Alamos, NM. Sponsor: P.E. Morrow.
- #501 **Effects of Short-Term Inhalation Exposures to Red Phosphorus Butyl Rubber (RP/BR) Combustion Products in Rats.**
C. Aranyi, J.N. Bradof, M. Furedi, R.L. Sherwood and S.C. Vana. IIT Research Institute, Chicago, IL. Sponsor: J.D. Fenters.
- #502 **Nasal Toxicity of Sulfur Dioxide in the Rat.**
D.G. Cavanagh and J.B. Morris. School of Pharmacy, Univ. of Connecticut, Storrs, CT.
- #503 **A Comparison of Combustion Toxicity of Flexible Polyurethane Foams (FPUF) Using Different Test Methods.**
R.A. Orzel and F.E. Ahmed. Consumer Product Safety Commission (CPSC), Bethesda, MD.
- #504 **Combustion Toxicity of Fire Retarded (FR) and Non-Fire Retarded (NFR) Flexible Polyurethane Foam (PUF).**
B.C. Levin, M. Paabo, M.L. Fultz, C. Bailey and W. Yin. National Bureau of Standards; and R.A. Orzel. Consumer Product Safety Commission, Washington, DC.
- #505 **Effects of Combustion Gases on Escape Performance of the Baboon and the Rat.**
H.L. Kaplan, A.F. Grand, W.G. Switzer, W.R. Rogers and G.E. Hartzell. Southwest Research Institute, San Antonio, TX; and C.R. Crane. Federal Aviation Administration, Oklahoma City, OK.

- #506 **Toxicological Effects of the Interactions of Fire Gases and Their Use in a Toxic Hazard Assessment Computer Model.**
B.C. Levin, M. Paabo, C. Bailey, S.E. Harris and J.L. Gurman. National Bureau of Standards, Gaithersburg, MD.
- #507 **Comparative Toxicity of Quartz and Coal Combustion Fly Ash.**
C.H. Hobbs, R.L. Carpenter, J.M. Benson, D.E. Bice, F.F. Hahn, R.F. Henderson, J.L. Mauderly, J.A. Pickrell and R.K. Wolff. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM.
- #508 **Transmigration of Titanium Dioxide (TiO₂) Particles in Rats After Inhalation Exposure.**
K.P. Lee, H.J. Trochimowicz and C.F. Reinhardt. Haskell Laboratory, E.I. du Pont de Nemours & Co., Inc., Elkton Rd., Newark, DE.
- #509 **DNA-Protein Cross-Linking Induced by Formaldehyde (FA) in the Rat Respiratory Mucosa: Dependence on FA Concentration in Normal Rats and in Rats Depleted of Glutathione (GSH).**
M. Casanova-Schmitz and H. d'A. Heck. Chem. ind. Inst. Toxicol., Research Triangle Park, NC.
- #510 **Acetaldehyde (AA) But Not Formaldehyde (FA) Depletes Nasal Mucosal Glutathione: An Investigation of the Role of Organic Peroxides.**
C-W. Lam, M. Casanova-Schmitz and H. d'A. Heck. Chem. ind. Inst. Toxicol., Res. Tri. Pk., NC.
- #511 **Biological Fate of Different 1-Nitropyrene Aerosols After Repeated Inhalation Exposures in Rats.**
J.D. Sun, R.K. Wolff and R.O. McClellan. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM.
- #512 **Distribution of Benzo(a)pyrene in the Mouse Following Intratracheal or Intranasal Instillation.**
C.T. Schnizlein and A.E. Munson. Dept. of Pharmacol. and Toxicol. Medical College of Virginia, VCU, Richmond, VA.
- #513 **Excretion Rates of 1-Nitropyrene in Rats Following Acute and Extended Inhalation Exposures.**
R.K. Wolff, J.D. Sun, J.A. Bond and R.O. McClellan. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM.
- #514 **Nitrosamine Formation in the Isolated Ventilated Perfused Lung.**
C.R. Shoaf, J.R. Stokes and D.B. Menzel. Depts. of Pharmacology and Medicine, Comprehensive Cancer Center, Duke Univ. Medical Center, Durham, NC.
- #515 **Comparative Pulmonary Pathology Following Intratracheal Instillation of Asbestos.**
M.R. Osheroff, J.R. Lehmann, D.L. Costa and R.T. Drew. Brookhaven National Laboratory, Upton, NY.
- #516 **Recovery and Characterization of Lung-Deposited Kevlar® Aramid Fibers in Rats.**
D.P. Kelly, S.J. Williams, G.L. Kennedy, Jr. and K.P. Lee. E. I. du Pont de Nemours and Co., Inc., Haskell Laboratory for Toxicology and Industrial Medicine, Newark, DE.
- #517 **Early Indicators of Lung Injury During Hyperoxic Exposure in the Rat.**
D.T. Kirkpatrick and R.D. Mavis. Division of Toxicology, Univ. of Rochester Medical Center, Rochester, NY.
- #518 **Methyl Bromide Toxicity: A Target Organ?**
S.B. Haber,¹ R.T. Drew,¹ S. Eustis,² and R.S.H. Yang.³ ¹Medical Dept., Brookhaven National Laboratory, Upton, NY; ²Experimental Pathology Laboratories, RTP, NC; and ³National Toxicology Program, NIEHS, RTP, NC.
- #519 **Sulfite-Binding Proteins in Rat and Human Cells.**
D.A. Keller and D.B. Menzel. Depts. of Pharmacology and Medicine, Comprehensive Cancer Center, Duke Univ. Medical Center, Durham, NC.
- #520 **Acute and Subchronic Inhalation Toxicity of 1,4-Butanediol in Rats.**
L.A. Kinney, B.A. Burgess, E.F. Stula and G.L. Kennedy, Jr.. E. I. du Pont de Nemours and Co., Inc., Haskell Laboratory, Newark, DE.

- #521 **Species Differences in Butadiene Metabolism Between Mouse and Rat as Evaluated by Inhalation Pharmacokinetics and Covalent Binding of Reactive Butadiene Metabolites.**
R.J. Laib, R. Kreiling and H.M. Bolt. Institut für Arbeitsphysiologie, Dortmund, FRG. Sponsor: H. Kappus.
- #522 **Strain SEC Mice are Sensitive to Ethylene Oxide.**
R.A. Popp, F. Stenglein and S. Lock. Oak Ridge National Laboratory, Oak Ridge, TN.

**WEDNESDAY AFTERNOON, MARCH 20
LOWER LEVEL EXHIBIT AREA**

POSTER SESSION: Metal Toxicology I

Co-Chairs: C. Ward, Gulf Oil Corp., Pittsburgh, PA
R. Skalko, East Tennessee State Univ., Johnson City, TN

Displayed: 1:30 P.M. - 4:30 P.M.

Attended: 3:00 P.M. - 4:30 P.M.

- #523 **Dosage-Dependent Gastrointestinal Absorption of Cadmium.**
D. Goon and C.D. Klaassen. Dept. of Pharmacology, Toxicology and Therapeutics, Univ. of Kansas Medical Center, Kansas City, KS.
- #524 **A Metallothionein-Like Protein in the Liver of the American Alligator.**
J.M. Lopez and J.U. Bell. Depts. of Physiological Sciences and Pharmacology and Therapeutics, Univ. of Florida, Gainesville, FL.
- #525 **Induction of Metal-Binding Proteins as an Adaptive Mechanism to Environmental Metal Exposure.**
W.H. Benson and W.J. Birge. Division of Pharmacology, Toxicology and Nuclear Pharmacy, School of Pharmacy, Northeast Louisiana Univ., Monroe, LA; and the Graduate Center for Toxicology, Univ. of Kentucky, Lexington, KY. Sponsor: T.H. Eickholt.
- #526 **Age Dependent Changes in Gastrointestinal Transport and Particulate Retention in Rats.**
J.W. Laskey, G.L. Rehnberg, J.F. Hein and S.C. Laws. USEPA, HERL, DBD, RTP, RTP, NC. Sponsor: L. Hall.
- #527 **Role of Glutathione (GSH) and Hepatic Glutathione S-Transferase (GST) in the Biliary Excretion of Methylmercury, Cadmium and Zinc.**
Z. Gregus and F. Varga. Dept. Pharmacol., Univ. Med. School of Pécs, Pécs, Hungary.
- #528 **Methionine as a Sulfhydryl Source for Zn-Induced Metallothionein in Cultured Rat Hepatocytes.**
A.F. Stein, W.M. Bracken and C.D. Klaassen. Dept. Pharmacol., Toxicol., & Therap., Univ. Kansas Medical Center, Kansas City, KS.
- #529 **Induction of Hepatic Metallothionein by Chelating Agents in Mice.**
P.L. Goering, S.K. Tandon and C.D. Klaassen. Dept. of Pharmacology, Toxicology and Therapeutics, Univ. of Kansas Medical Center, Kansas City, KS.
- #530 **Metal-Induced Metallothionein Synthesis in Primary Rat Hepatocyte Cultures.**
W.M. Bracken and C.D. Klaassen. Dept. Pharmacol., Toxicol., & Therap., Univ. Kansas Med. Ctr., Kansas City, KS.
- #531 **Cellular Toxicity of Trimethyl Tin (TMT) in Cultured Rat Hepatocytes.**
J.G. Pounds and K.R. Reuhl. Natl. Ctr. for Toxicol. Res., Jefferson, AR; and Natl. Res. Council, Ottawa, Ontario, Canada.

- #532 **The Cellular Metabolism of Cadmium: A Kinetic Analysis in Cultured Rat Hepatocytes.**
M.A. Clevenger and J.G. Pounds. Natl. Ctr. for Toxicol. Res., Jefferson, AR; and Div. of Interdisc. Toxicol., Univ. of Arkansas for Med. Sci., Little Rock, AR.
- #533 **Cellular Lead Homeostasis and Toxicity in Cultured Bovine Brain Capillary Endothelial (BBE) Cells.**
A.C. Nye and J.G. Pounds. Natl. Ctr. for Toxicol. Res., Jefferson, AR; and Div. Interdisc. Toxicol., Univ. of Ark. for Med. Sci., Little Rock, AR; and P.D. Bowman and G.W. Goldstein, Univ. Michigan, Ann Arbor, MI.
- #534 **Lead Nitrate Induces Certain Biochemical Properties Characteristic of Hepatocyte Nodules in Rat.**
M.W. Roomi, A. Columbano, G.M. Ledda and D.S.R. Sarma. Dept. of Pathology, Univ. of Toronto, Toronto, Ont., Canada. Sponsor: P.G. Wells.
- #535 **Effects of Maternal Zn, Cu and Fe Deficiency on Hepatic Metallothionein and Metal Distribution in Newborn Rats.**
K.R. Gallant and M.G. Cheria. Depts. Pharmacol. & Toxicol., Path., Univ. of Western Ontario, London, Ontario, Canada.
- #536 **Safety Evaluation Studies of Trace Metal Additives Zn, Cr, Cu and Mn in Rats, Rabbits and Dogs.**
L.C.K. Wong and B.S. Brar. Dept. of Drug Safety Evaluation, Revlon Health Care Group, Tuckahoe, NY.
- #537 **Pharmacokinetics of Soluble Nickel Aerosols in Rats.**
D.L. Deal, M.I. Tayyeb and D.B. Menzel. Depts. of Pharmacology and Medicine, Comprehensive Cancer Center, Duke Univ. Medical Center, Durham, NC.
- #538 **Comparative Toxicity of Four Nickel Compounds to Rat Lung.**
J.M. Benson, R.F. Henderson and R.O. McClellan. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM; and A.H. Rebar, Purdue Univ., W. Lafayette, IN.
- #539 **Differential Effect of Lead Upon Regulatory Enzymes Activated by Calcium.**
Gary W. Goldstein and Diane Ar. Depts. of Pediatrics and Neurology, Univ. of Michigan, Ann Arbor, MI. Sponsor: J.G. Pounds.
- #540 **Modification of Lead Toxicity and Distribution by Dietary Sulfur Amino Acids in Growing Chicks.**
D.M. Latta and W.E. Donaldson. Toxicology Program. N.C. State Univ., Raleigh, NC.
- #541 **Mechanism of Renal Lead-Binding Protein (PbBP) Reversal of δ -Aminolevulinic Acid Dehydratase (ALAD) Inhibition by Lead (Pb).**
P.L. Goering and B.A. Fowler. Natl. Inst. Env. Hlth. Sci., Research Triangle Park, NC.
- #542 **The Influence of Lactose and Milk Replacer on Lead Absorption and Lead Toxicity in Calves Fed Grain-Hay Diet.**
J. Zmudzki and G.R. Bratton. Dept. of Veterinary Anatomy, Texas A&M Univ., College Station, TX. Sponsor: S. Safe.
- #543 **Binding of Manganese in Human and Rat Plasma.**
A.M. Scheuhammer and M.G. Cheria. Dept. of Pathol., Univ. of Western Ontario, London, Ontario, Canada.
- #544 **Biochemical and Ultrastructural Studies on Thallium-Mediated Alterations in Hepatic Mixed Function Oxidase (MFO) Activity.**
J.S. Woods. Univ. of Washington. Seattle, WA; and B.A. Fowler. NIEHS, NIH, Research Triangle Park, NC.
- #545 **Hepatic and Extrahepatic Effects of Arsenic on Heme Metabolism.**
M.E. Cebrian, J.C. Connelly and J.W. Bridges. The Robens Institute, Univ. of Surrey, Guildford, Surrey, UK.
- #546 **Metabolism and Distribution of Gallium Arsenide and Arsenic Oxides in Hamsters Following Intratracheal Instillation.**
M.H. Rosner and D.E. Carter. Univ. of Arizona, Tucson, AZ.
- #547 **Inhalation Toxicity of Lithium Combustion Aerosols.**
B.J. Greenspan and M.D. Allen. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM.

- #548 **Acute Beryllium Toxicity in Rats and Mice.**
L.E. Sendelbach, H.P. Witschi and A.F. Tryka. Univ. Tenn.-Oak Ridge Grad. Sch.
Biomed. Sci. and Biol. Div., ORNL, Oak Ridge, TN.
- #549 **Moved to 11:45 A.M. Friday (Platform) Metal Tox II**

Wednesday Afternoon, March 20, 1985

ANNUAL BUSINESS MEETING

4:00 P.M.

Town and Country Room

President Frederick W. Oehme, Presiding

SOT MEMBERS ONLY

**THURSDAY MORNING, MARCH 21
TOWN & COUNTRY ROOM**

PLATFORM SESSION: Reproduction Teratology II

Co-Chairs: E. Faustman-Watts, Univ. of Washington, Seattle, WA
S. Tarka, Hershey Foods Corp., Hershey, PA

- #550 8:30 **Teratogenicity of N- and Iso-Propanol at High Inhalation Levels in Rats.**
B.K. Nelson, W.S. Brightwell, D.R. Mackenzie, A. Khan, J.R. Burg, W.W. Weigel
and P.T. Goad. National Institute for Occupational Safety and Health, Cincinnati,
OH; and Intox Laboratories, Redmond, AR. Sponsor: Trent R. Lewis.
- #551 8:45 **In Vitro Embryotoxicity of Two Direct Acting Alkylating Agents, Methylnitrosourea
(MNU) and Ethylnitrosourea (ENU).**
E. Faustman-Watts, M. Varnum, D. Gage and J. Lottsfeldt. Dept. of Env. Health,
Univ. of Washington, Seattle, WA.
- #552 9:00 **A Teratology Study in Rats with Diazinon Technical, an Organophosphate
Insecticide.**
W.R. Campbell. CIBA-GEIGY Corp., Agricultural Division, Greensboro, NC; R.
Infurna and A. Arthur. CIBA-GEIGY Corp., Pharmaceuticals Division, Summit,
NJ. Sponsor: J.T. Stevens.
- #553 9:15 **Two Deuterated Procarbazine Analogs Differ in Depression of Spermatogenesis
in Mice.**
G.S. Yost and M.G. Horstman. College of Pharmacy, Washington State Univ.,
Pullman, WA.
- #554 9:30 **Sequential Changes in Testes, Epididymides and Spermatozoa After Acute
Exposure to m-Dinitrobenzene (DNB).**
R.A. Hess, R.E. Linder and L. Strader. Northrop Services, Inc.; & USEPA,
Developmental Biology, Research Triangle Park, NC. Sponsor: N. Chernoff.
- #555 9:45 **Environmental Testicular Toxicity: Tubulin Dysfunction?**
K. Boekelheide. Division of Biology and Medicine, Brown Univ., Providence, RI.
Sponsor: D.G. Graham.
- #556 10:00 **Clometidine Does Not Affect Masculinity in Male Rat Offspring.**
T.F. Walker and J. Bott. Smith Kline & French Res. Ltd., Welwyn, U.K. Sponsor:
G.B. Leslie.

- #557 10:15 **Toxic Effect of Cobalt on Male Reproduction.**
N.G. Pedigo, M.B. Anderson and W.J. George. Depts. of Pharmacology and Anatomy, Tulane Univ. School of Medicine, New Orleans, LA. Sponsor: R.E. Billings.
- #558 10:30 **The Potential Role of the Carnitine Acetyltransferase System in Cadmium-Induced Sterility in Male Fischer 344 Rats.**
F. Adatsi, R.C. James and R.D. Harbison. Div. of Toxicol., Univ. Ark. for Medical Sciences, Little Rock, AR.
- #559 10:45 **Testicular Effects of Bis(2-Methoxyethyl)Ether in the Adult Male Rat: Equimolar Dose Comparison with 2-Methoxyethanol and 2-Ethoxyethanol.**
K.L. Cheever, W.W. Weigel, D.E. Richards, J.B. Lal and H.B. Plotnick. TMS, DBBS, NIOSH, Cincinnati, OH. Sponsor: T.R. Lewis.
- #560 11:00 **Reduced Hepatic Low Density Lipoprotein Binding and Adipose Lipase Activity in Rabbits Treated with 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD).**
D.W. Bombick, D.W. Brewster and F. Matsumura. Pesticide Research Center, Michigan State Univ., East Lansing, MI.
- #561 11:15 **Evaluation of the Reproductive and Developmental Toxicity of EDS Hydro-treated Naphtha.**
R.H. McKee, J.P. Hinz and K.A. Traul. Exxon Corporation, East Millstone, NJ; Bio/dynamics Inc., East Millstone, NJ. Sponsor: R.A. Kuna.
- #562 11:30 **Alterations of Pubertal Development: A Model System for Screening Chemicals for Reproductive Effects.**
L.E. Gray, Jr., J. Ostby, J. Ferrell and K. Gray. USEPA, HERL, DBD, RTB, RTP, NC. Sponsor: N. Chernoff.
- #563 11:45 **Effects of Ethanol on Reproduction in SHR Rats.**
R. Mankes, R. Lefevre, R. Lyon, J. Fieseher and A. Santiago. Dept. of Pharmacology and Toxicology, Albany Medical College, Albany, NY.

**THURSDAY MORNING, MARCH 21
SAN DIEGO ROOM**

**PLATFORM SESSION: Neurotoxicology V.
Neurochemistry**

Co-Chairs: H. Evans, NYU Medical Center, New York, NY
B. Wilson, Univ. of California, Davis, CA

- #564 8:30 **Effect of Toxaphene and Toxaphene Fractions on Rat Brain Synaptosomal ATPases.**
C.H. Trottman, K.S. Prasada Rao, W. Morrow, G.A. Pollock and D. Desaiah. Dept. Chem., Jackson State Univ., Calif. Dept. Hlth. Serv., Berkeley, CA; and Dept. Neurol., Univ. Miss. Med. Ctr., Jackson, MS.
- #565 8:45 **Effect of Toxaphene on Synaptosomal Ca²⁺-ATPase and Rat Brain Subcellular Calmodulin.**
D. Desaiah, C.H. Trottman and K.S. Prasada Rao. Dept. Neurol., Univ. Miss. Med. Ctr., and Dept. Chem., Jackson State Univ., Jackson, MS.
- #566 9:00 **In Vitro Activation of Tyrosine Hydroxylase by Organophosphates.**
J.K. Marquis and Y. Tsuzuki. Boston Univ. School of Medicine, Boston, MA.
- #567 9:15 **Distribution of the Molecular Forms of Acetylcholinesterase (AChE) in Human Brain.**
E.B. Fishman, G.C. Siek, T.M. Biagioni, R.D. MacCallum and J.K. Marquis. Boston Univ. School of Medicine, Boston, MA.
- #568 9:30 **Human Serum A-Esterases: O,O-Dimethyl-O-2,2-Dichlorovinyl Phosphate Hydrolase.**
M. Pierini, A. Moretto and M. Lotti. Istituto di Medicina del Lavoro, Università di Padova, Italy.

- #569 9:45 **Delayed Neurotoxicity of Technical and Purified EPN in Chicken.**
Salah A. Soliman and G. Wayne Sovocool. Dept. of Pesticide Chemistry, Faculty of Agriculture, Alexandria Univ., Alexandria, Egypt; and Environmental Monitoring Systems Laboratory, USEPA, Las Vegas, NV.
- #570 10:00 **Effect of Methyl and Ethyl Derivation on the Delayed Neurotoxicity of O-Alkyl O-(4-Bromo-2,5-Dichloro Phenyl) Phenylphosphonothioates.**
Salah A. Soliman. Dept. of Pesticide Chemistry, Faculty of Agriculture, Alexandria Univ., Alexandria, Egypt.
- #571 10:15 **Acute and Delayed Neurotoxicity of Methyl and Ethyl Phosphonothionates**
R.L. Metcalf, B.M. Francis and R.A. Metcalf. Univ. of Illinois, Urbana, IL.
- #572 10:30 **Phenylmethylsulfonyl Fluoride (PMSF) Pretreatment Protects Rats from Organophosphate-Induced Delayed Neuropathy (OPIDN).**
B. Veronesi, S. Padilla, D. Newland, * A. Inman* and D. Lyerly. * US Environmental Protection Agency; and *Northrop Services, Inc., RTP, NC. Sponsor: R. Dyer.
- #573 10:45 **GABA Regulates the [³⁵S]-Butylbicyclophosphorothionate Receptor and Its Coupling with the Binding Domains of a Pyrethroid and a Barbiturate.**
Josef Seifert and John E. Casida. Pestic. Chem. Toxicol. Lab., Dept. Entomol. Sci., Univ. Calif., Berkeley, CA.
- #574 11:00 **An Approach to Oxime Selection in Treatment of Organophosphorous Poisoning.**
D.W. Hanke, C.K. Burdick and M.S. Beckett. US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD. Sponsor: W.E. Sultan.
- #575 11:15 **Acute Effects of Soman, Sarin and Tabun on Cyclic Nucleotide Metabolism in Rat Striatum.**
D.D. Lieu, B. Hoskins and I.K. Ho. Dept. Pharmacol. & Toxicol., Univ. of Mississippi Med. Ctr., Jackson, MS.
- #576 11:30 **The Role of Methylation in the Anticonvulsant Action of Diazepam.**
M.W. Gill, M.R. Connors and R.A. Schatz. Tox. Prgm., Northeastern U., Boston, MA.
- #577 11:45 **Alterations in the Levels of Tissue Tryptophan in the Rat Following TCDD Exposure.**
J.A. Sweatlock and T.A. Gasiewicz. Env. Hlth. Sci. Ctr. Univ. of Rochester, Rochester, NY.

**THURSDAY MORNING, MARCH 21
GOLDEN WEST ROOM**

PLATFORM SESSION: Hematologic Toxicology II

Co-Chairs: G. Lucier, NIEHS, RTP, NC
R. Snyder, Rutgers Univ., Piscataway, NJ

- #578 8:30 ***In Vitro* Growth of Canine Bone Marrow Progenitor Cells and Its Potential Applications in Investigative Toxicology.**
A. Deldar, L. Weiss, A. Apostoli, H. Lewis and J. Bloom. School of Veterinary Medicine, Univ. of Pennsylvania and Smith Kline & French Laboratories, Philadelphia, PA. Sponsor: W.R. Hewitt.
- #579 8:45 **Lead- and Cadmium-Induced Alterations in Murine Bone Marrow Detected Using Multiparameter Flow Cytometry.**
S.W. Burchiel, W.M. Hadley, C.L. Cameron, R.H. Fincher, T.W. Lim and C.C. Stewart. Immunopharmacology Laboratory, Univ. of New Mexico College of Pharmacy, Albuquerque, NM; and the Los Alamos National Laboratory, Los Alamos, NM. Sponsor: A.R. Dahl.
- #580 9:00 **Assay of Human Erythrocyte Pyrimidine and Deoxypyrimidine 5'-Nucleotidase by Reversed-Phase Isocratic High Performance Liquid Chromatography (HPLC).**
L.R. Cook, M.A. Mitchell, C.R. Angle and S.J. Stohs. Univ. of Nebraska Medical Center, Omaha, NE.

- #581 9:15 **Characteristics of Benzene Metabolism by the Liver and Major Erythropoietic Organ of the Rainbow Trout, *Salmo gairdneri*.**
V. Kindt, K. Cooper and R. Snyder. Joint Grad. Prog. in Tox., UMDNJ-Rutgers Univ., Piscataway, NJ.
- #582 9:30 **Inhibitory Action of Benzene on DNA Synthesis in the *In Vitro* System.**
E.W. Lee, C.D. Garner and J.T. Johnson. Biomedical Science Dept., GM Research Labs, Warren, MI.
- #583 9:45 **Acetaldehyde and Hydroquinone Synergistically Increase the Frequency of Sister Chromatid Exchange in Human Lymphocytes.**
S.A. Knadle. Laboratory of Radiobiology and Environmental Health, Univ. of California, San Francisco, CA. Sponsor: G.M. Decad.
- #584 10:00 **DNA or Nucleoside Adducts with Hydroquinone (HQ) and Benzoquinone (BQ).**
L. Jowa, G.F. Kalf, G. Witz and R. Snyder. Joint Graduate Program in Toxicology, Rutgers Univ., and UMDNJ/Rutgers Medical School, Piscataway, NJ; and Thomas Jefferson Univ., Philadelphia, PA.
- #585 10:15 ***In Vitro* Challenge to α -Naphthoflavone (ANF) Increases the Sensitivity of the Sister Chromatid Exchange (SCE) Assay in Detecting Cigarette Smoking.**
K. Lundgren and G. Lucier. NIEHS, RTP, NC.
- #586 10:30 **Effects of Chlordecone on Isolated Ovine Erythrocytes.**
S.D. Soileau and D.E. Moreland. Toxicol. Prog., Dept. of Crop Science, N.C. State Univ., Raleigh, NC.
- #587 10:45 **Computer Simulations for Definition of Toxic and Therapeutic Dosage Regimens for Tissue-Type Plasminogen Activator.**
A.K. Robison, R.W. Gross and B.E. Sobel. Washington Univ., St. Louis, MO. Sponsor: A.G.E. Wilson.
- #588 11:00 **Inhalation Toxicity of Raw Shale Oil in the Rat.**
T. Gordon, D.V. Cramer, J.W. Goode and D.E. Strother. Gulf Life Sciences Center, Pittsburgh, PA.
- #589 11:15 **Comparative Studies of Anguidine (DAS) in Rats and Mice.**
P.M. Newberne and W.F. Busby, Jr. Massachusetts Institute of Technology, Cambridge, MA.
- #590 11:30 **Anguidine (DAS) and CFU-S System.**
V. Suphakarn and P.M. Newberne. Massachusetts Institute of Technology, Cambridge, MA.

**THURSDAY MORNING, MARCH 21
PRESIDIO ROOM**

**SYMPOSIUM 5: Recent Developments in the Use and
Disposal of Hazardous Chemicals
in the Research Laboratory**

Sponsored by SOT Technical Committee

**Time
(A.M.)**

9:00 **OSHA & RCRA.**
Leonard Vance, OSHA, Washington, DC.

- 9:40 **Minimizing Chemical Contamination In Chemical Studies.**
Thomas Hamm, Stanford Univ., Palo Alto, CA.
- 10:10 **Coffee Break.**
- 10:25 **Destruction of Toxic Chemicals in Laboratory Wastes.**
Eric B. Sansone, National Cancer Institute, Frederick, MD.
- 10:55 **High Temperature Incineration of Wastes from Toxicology Research.**
Garris Parker, CIIT, Research Triangle Park, NC.
- 11:25 **Panel Discussion.**

**THURSDAY MORNING, MARCH 21
CALIFORNIA ROOM**

**SYMPOSIUM 6: The Biological Activity of and Effect
of Food Processing Operations on
Selected Food Borne Toxicants**

***Sponsored by Society of Toxicology and the
Institute of Food Technologists***

Co-Chairs: P.L. Kraft, PepsiCo, Inc., Valhalla, NY
S.T. Omaye, U.S. Dept. of Agriculture, Presidio of San Francisco, CA

**Time
(A.M.)**

- 8:30 **Introduction.**
P.L. Kraft.
- 8:35 **Removal of Xenobiotics from Vegetable Oils by Conventional Processing.**
B.S. Appleton, Best Foods Res. Ctr., CPC Int'l, Inc., Union, NJ.
- 9:00 **Discussion.**
- 9:10 **Plant Protease Inhibitors in Processed Foods.**
R.A. Burns, Mead Johnson & Co., Evansville, IN.
- 9:35 **Discussion.**
- 9:45 **Pesticide Residues in Foods.**
J.R. Coughlin, General Foods Corp., White Plains, NY.
- 10:10 **Discussion.**
- 10:20 **Coffee Break.**
- 10:35 **Mutagen Formation During Commercial Food Processing Operations.**
C.A. Krone, Nat'l Marine Fisheries Service, Seattle, WA. W.T. Iwaoka, State Dept. of Health, Honolulu, HI.
- 11:00 **Wholesomeness of Irradiated Foods.**
J.H. Skala, U.S. Dept. Agriculture, Presidio of San Francisco, CA. E. McGown, Letterman Army Institute of Research, Presidio of San Francisco, CA.
- 11:25 **Discussion.**
- 11:35 **Summary.**
S.T. Omaye, U.S. Dept. Agriculture, Presidio of San Francisco, CA.

**THURSDAY MORNING, MARCH 21
LOWER LEVEL EXHIBIT AREA**

POSTER SESSION: Hepatic Toxicology II

Co-Chairs: L. Condie, USEPA, Cincinnati, OH
R. Kapp, Bio/Dynamics, Inc., East Millstone, NJ

Displayed: 8:30 A.M. - 11:30 A.M.

Attended: 8:30 A.M. - 10:00 A.M.

- #591 **Vitamin E Protects Against Glutathione Depletion in Isolated Rat Hepatocytes: Potential Role in Glutathione Synthesis.**
G.A. Pascoe, K. Olafsdottir, M.W. Fariss and D.J. Reed. Dept. of Biochemistry and Biophysics, Oregon State Univ., Corvallis, OR.
- #592 **Toxicity and Biotransformation of Volatile Halogenated Anesthetics in Rat Hepatocyte Suspensions.**
A.B. DiRenzo, A.J. Gandolfi, S.D. Brooks and K. Brendel. Depts. Anesthesiology and Pharmacology, Univ. of Arizona, Tucson, AZ.
- #593 **The Role of 4-Bromophenol and 4-Bromocatechol in Bromobenzene Covalent Binding and Toxicity.**
D.A. Dankovic and R.E. Billings. Dept. of Pharmacology, Univ. of Texas Medical School, Houston, TX.
- #594 **Absence of Thiobarbituric Acid-Reactive Substances (TBARS) in Isolated Rat Hepatocytes During a Toxic Chemical Insult.**
M.W. Fariss,¹ G.A. Pascoe and D.J. Reed. Dept. of Biochemistry and Biophysics, Oregon State Univ., Corvallis, OR.
- #595 **Mechanisms Involved in the Acute Toxicity of Gossypol to Isolated Hepatocytes.**
A. de Peyster, M. Sandy and M.T. Smith. School of Public Health, Univ. of California, Berkeley, CA.
- #596 **An *In Vitro* Model for Toxicity Testing Using Hepatocytes Freshly Isolated from Adult Mammals.**
G. Krack, P. Vossen and M. Roberfroid. Unit of Biochemical Toxicology, Catholic Univ. of Louvain, Belgium. Sponsor: I. Glenn Sipes.
- #597 **Toxicity of 2-Aminofluorene (2AF) and 2-Acetylaminofluorene (2AAF) in Rabbit Hepatocytes.**
C.A. McQueen, M.J. Miller, B.M. Merrill and G.M. Williams. American Health Foundation, Valhalla, NY.
- #598 **Oxygen-Mediated Cell Injury in the Killing of Cultured Hepatocytes by Bromobenzene.**
R.J. Gerson and J.L. Farber. Dept. of Pathol., Hahnemann Univ., Philadelphia, PA.
- #599 **The Mechanism of SK&F 92994 (Oxmetidine) Cytotoxicity in Isolated Rat Hepatocytes.**
G.F. Rush. Dept. of Invest. Toxicol., Smith Kline and French Labs., Philadelphia, PA. Sponsor: W.R. Hewitt.
- #600 **Effects of Hepatotoxins on Mouse and Rat Hepatocytes from Preneoplastic/Neoplastic Lesions and from Partial Hepatectomized Animals.**
L.W. Chang, M.A. Pereira, J.E. Klaunig and R.J. Ruch. HERL, U.S. EPA, Cincinnati, OH; and Dept. of Path. Medical College of Ohio, Toledo, OH.
- #601 **Novel Dynamic Organ Culture System for Hepatotoxicity Studies.**
P.F. Smith, P.J. Shubat, A.J. Gandolfi, C.L. Krumdieck and K. Brendel. Dept. Pharmacology, Univ. Arizona, Tucson, AZ.
- #602 **The Interactive Hepatotoxicity of CCl₄ and Chlorobenzenes.**
E.R. Stine and I.G. Sipes. Dept. of Pharm./Tox., Coll of Pharm., Univ. of Arizona, Tucson, AZ.

- #603 **Effect of Carbamazepine on the Acute Hepatotoxicity of Trichloroethylene and Styrene in Rats.**
M. Lapierre¹, G. Sirois¹, S. Chakrabarti², M.G. Côté³. ¹F. de Pharmacie, ²Dép. Méd. Trav. et Hyg. Mil., & ³Pharmacol. Fac. Méd., Univ. Montréal, Montréal, Q. Canada.
- #604 **Apparent Induced Tolerance to Acute Hepatotoxicity of Trichloroethylene Due to Prior Subchronic Exposure.**
L. Rouisse^a, S. Chakrabarti^b and B. Tuchweber^b. Dép. Médecine Travail et Hygiène Milieu^a; and Dép. Nutrition^b, Fac. Médecine, Univ. Montréal, P.Q., Canada.
- #605 **Effect of Cimetidine on the Acute Hepatotoxicity and Metabolism of Trichloroethylene in Rats.**
H. Landriault¹, G. Sirois¹, S. Chakrabarti², M.G. Côté³. ¹Fac. de Pharmacie, ²Dép. Méd., Trav. et Hyg. Mil. & ³Pharmacol. Fac. de Méd., Univ. de Montréal, Q., Canada.
- #606 **Protective Role of Glutathione in Hepatotoxicity Due to Allyl Alcohol.**
Mostafa Z. Badr and Ronald G. Thurman. Dept. of Pharmacology, Univ. of N.C., Chapel Hill, NC.
- #607 **Hepatotoxicity of the Cis and Trans Isomers of 1,2-Dichloroethylene in the Rat.**
D.A. McMillan and R.C. Schnell. Dept. Pharmacodyn-Tox. Col. Pharmacy, Univ. Nebr. Med. Ctr., Omaha, NE.
- #608 **Inhibition of Allyl Alcohol Induced Hepatic Necrosis in Temporary Bile Duct Ligated Rats.**
W.C. Kershaw, D.A. Barsotti, T.B. Leonard, G.L. Lage and J.G. Dent. Philadelphia College of Pharmacy & Science and SKF Labs., Philadelphia, PA.
- #609 **Oral Toxicity of Carbon Tetrachloride: Acute, Subacute and Subchronic Studies in Rats.**
J.V. Bruckner, S. Muralidhara, R. Luthra, G.M. Kyle and W.F. MacKenzie. Dept. of Pharmacology and Toxicology, College of Pharmacy, Univ. of Georgia, Athens, GA.
- #610 **Studies of Carbon Tetrachloride (CCl₄) Hepatotoxicity as a Function of Time of Exposure.**
R. Ramanathan, S. Muralidhara and J.V. Bruckner. Dept. of Pharmacology and Toxicology, College of Pharmacy, Univ. of Georgia, Athens, GA.
- #611 **Diltiazem Protection Against Acetaminophen-Induced Hepatic Necrosis in Mice.**
A.-B. Kobusch, M. Charbonneau, G.L. Plaa, M.G. Côté and P. du Souich. Université de Montréal, Montréal, Québec, Canada.
- #612 **Cystamine Treatment of Galactosamine-Induced Hepatic Damage: Hepatic Non-Protein Sulfhydryl Levels.**
J.R. MacDonald, A.J. Gandolfi and I.G. Sipes. Depts. of Pathol. UCSF School of Med., San Francisco, CA; Anesthes., and Pharmacol. & Toxicol., Univ. of Arizona, Tucson, AZ.
- #613 **Plasma Membrane Alterations and Covalent Binding to Organelles After an Hepatotoxic Dose of Acetaminophen (APAP).**
G.L. Ginsberg and S.D. Cohen. Toxicology Program, Sch. of Pharm., Univ. of Conn., Storrs, CT.
- #614 **Characterization of Ranitidine-Acetaminophen (APAP) Interactions in F344 Rats: Effects on APAP Hepatotoxicity.**
T.B. Leonard, D.G. Morgan, and J.G. Dent. Depts. of Drug Metabol. and Path., Smith Kline and French Labs., Philadelphia, PA.
- #615 **Ranitidine (RA) Potentiation of Acetaminophen (APAP)-Induced Hepatotoxicity in F344 Rats: Role of Metabolism.**
S.A. Rogers, J.F. Newton, J.G. Dent and T.B. Leonard. Dept. of Drug Metabolism, Smith Kline & French Labs., Philadelphia, PA.
- #616 **Amelioration of Acetaminophen Hepatotoxicity in Male Rats by Zinc.**
A.M. Pour, D.A. McMillan, A. Blacker and R.C. Schnell. Dept. Pharmaco-Tox, Col. Pharm, Un. Nebr. Med. Ctr., Omaha, NE.

- #617 **Morphological and Biochemical Characteristics of Perfluorooctanoate-Induced Liver Enlargement.**
T.P. Pastoor, K.P. Lee and P.J. Gillies. E.I. duPont de Nemours & Co., Inc., Haskell Laboratory for Toxicology and Industrial Medicine, Elkton Rd., Newark, DE.
- #618 **Effect of Thiobenzamide (TB) on Hepatocellular Membrane-Bound Enzymes.**
J.A. Zempel and G.J. Traiger. Dept. of Pharmacology & Toxicology, Univ. of Kansas, Lawrence, KS.
- #619 **Relationship Between Hepatic Glutathione Depletion and Inhibition of Protein Synthesis Induced by Administration of Hepatotoxic Chemicals.**
L.J. Fischer, M.D. Green and G.J. Nichols. Dept. of Pharmacology, Univ. of Iowa, Iowa City, IA.
- #620 **Enhancement of Iron-Induced *In Vivo*-Lipid Peroxidation by Compounds Undergoing Redox Cycling.**
M. Younes, S. Cornelius and C.-P. Siegers. Institut für Toxikologie, Medizinische Hochschule Lübeck, D-2400 Lübeck, FRG.
- #621 **The Role of Iron in the Acetaminophen- and CCl₄-Induced Lipid Peroxidation and Hepatotoxicity.**
M. Younes and C.-P. Siegers. Institut für Toxikologie, Medizinische Hochschule Lübeck, D-2400 Lübeck, FRG.
- #622 **Liperoxidative Properties of Phenobarbital in Rat Liver.**
M.M. Iba. Graduate Program in Toxicology, Rutgers Univ., Piscataway, NJ.
- #623 **Response of Hepatic Glutathione (GSH) and GSH-Related Enzyme Activities to Dithiothione (DTT) Administration in Male Mice.**
M.H. Davies, A. Blacker and B.C. Schnell. Pharmacodyn.-Toxicol., Col. Pharm., Un. Neb. Med. Ctr., Omaha, NE.
- #624 **Peroxisome Inducing Potential of a Lipid Regulating Agent, a Phenylene(oxy)bis 2,2-Dimethylpentanoic Acid, in Rat Hepatocytes.**
E.J. McGuire, J.A. Lucas, R.H. Gray and F.A. de la Iglesia. Path. & Exp. Tox., Warner-Lambert/Parke-Davis Pharm. Res., and Env. Ind. Health, Univ. of Michigan, Ann Arbor, MI.
- #625 **Hepatic Peroxisome Analysis of Rats Given Methyl Isoamyl Ketone or 2-Ethylhexanol.**
J.L. O'Donoghue Health and Environment Laboratories, Eastman Kodak Co., rochester, NY. Sponsor: C.J. Terhaar.
- #626 **Effect of Chlordecone and Mirex on the Acute Hepatotoxicity of Acetaminophen in Mice.**
B.L. Fouse and E. Hodgson. Interdepartmental Toxicology Program, N.C. State Univ., Raleigh, NC.
- #627 **Modification of Biliary Tree Permeability in Rats Treated with a Manganese-Bilirubin Combination.**
P. Ayotte and G.L. Plaa. Dépt. de Pharmacologie, Université de Montréal, Montréal, Québec, Canada.
- #628 **Hepatotoxicity of 1,1-Dichloroacetone: Comparison to and Interaction with Carbon Tetrachloride.**
L.W. Condie and R.D. Laurie. Toxicology and Microbiology Division, HERL, USEPA, Cincinnati, OH.
- #629 **Hepatic Lesion Associated with Administration of Chlorowax 40® to F344/N Rats.**
J.R. Bucher and C.A. Montgomery. National Toxicology Program, RTP, NC; R. Thompson and J.D. Prejean. Southern Res. Inst., Birmingham, AL. Sponsor: W.M. Kluwe.
- #630 **A New, Simple Model to Evaluate Zone-Specific Damage Due to Hypoxia in the Perfused Rat Liver: Time Course and Effect of Nutritional State.**
B. Bradford and R. Thurman. Dept. Pharmacology, U. of N.C., Chapel Hill, NC.

- #631 **Induction of Hepatomegally Associated with Peroxisome Proliferation by an Alkoxytetrazoylacetophenone.**
P.I. Eacho, P.S. Foxworthy, W.D. Johnson and D.M. Hoover. Lilly Research Laboratories, Toxicology Division, Greenfield, IN. Sponsor: J.L. Emmerson.
- #632 **Paradoxical Effect of the Glutathione (GSH) Biosynthesis Inhibitor, Buthionine Sulfoximine (BSO), on Hepatotoxicity of the Metabolically-Activated Alkylating Agent, 2-Methylfuran (2-MF).**
V. Ravindranath and M.R. Boyd. NCI, Bethesda, MD.
- #633 **Correlation Between Acetone-Potentiated CCl₄-Induced Liver Injury and Plasma Concentrations After Inhalation or Oral Administration.**
M. Charbonneau, P. du Souich and G.L. Plaa. Dépt. de Pharmacologie, Université de Montréal, Montréal, Québec, Canada.
- #634 **Liver and Lipid Effects of Diethylhexyl Phthalate (DEHP) and Diethylhexyl Adipate (DEHA) in Fischer 344 Rats.**
A. Lington¹, B. Schneider¹, E. Moran¹, M. Stoltz², J. Windels² and M. El-hawari². Chemical Manufacturers Association, Washington, DC¹; and Midwest Research Institute, Kansas City, MO².
- #635 **Mechanism for Inhibition of Hepatic Ketogenesis by Valproate.**
M.J. Olson and R.G. Thurman. Dept. of Pharmacology, U. of North Carolina, Chapel Hill, NC.
- #636 **Modifications in Rat Hepatobiliary Function Following Treatment with Ketones and Chloroform.**
L.A. Hewitt, P. Ayotte and G.L. Plaa. Dépt. de Pharmacologie, Université de Montréal, Montréal, Québec, Canada.
- #637 **Pancreatic Hepatocytes in Rats.**
M.S. Rao, V. Subbarao, D.G. Scarpelli and J.K. Reddy. Northwestern Univ. Medical School, Chicago, IL.
- #638 **Selenium Influence on the Liver Response to Ozone Inhalation.**
N. Elsayed, M. Mustafa, A. Hacker, K. Kuehn and G. Schrauzer. Schools of Medicine and Public Health, Univ. of California, Los Angeles, CA; and Dept. of Chemistry, Univ. of California, San Diego. Sponsor: A. Sevanian.
- #639 **Age-Related Changes in Intestinal Transport.**
W.C. Eastin and L.S. Birnbaum. National Toxicology Program, NIEHS, Research Triangle Park, NC.
- #640 **Studies on the mechanisms of Ulcerogenic Activity of Propionitrile: Interactions at Target Sites.**
E.P. Cannon-Cooke and A.E. Ahmed. Univ. of Texas Medical Branch, Galveston, TX.
- #641 **Histopathologic Effects of Dietary Soybean Isolate on the Mouse Pancreas.**
C.C. Willhite, F.D. Wilson, P.V. Allen and J.C. Smith. Toxicology Research Unit, WRRRC, ESDA, Albany, CA.
- #642 **Drug-Induced Inhibition of Hepatic Excretion in Rats.**
D.G. Hoyt and R.E. Larson. College of Pharmacy, Oregon State Univ., Corvallis, OR.
- #643 **A 14-Week Vapor Inhalation Toxicity Study of Methyl Isobutyl Ketone.**
R.D. Phillips¹, E.J. Moran², D.E. Dodd³, E.H. Fowler³, J. O'Donoghue⁴ and C.D. Kary¹. ¹Exxon Corp., E. Millstone, NJ; ²CMA, Washington, DC; ³Union Carbide Corp., Export, PA; ⁴Eastman Kodak, Rochester, NY; ⁵Shell Development Co., Houston, TX.
- #644 **Subchronic Inhalation Toxicity of Methyl Isoamyl Ketone in Rats.**
G.V. Katz, E.R. Renner, Jr. and C.J. Terhaar. Toxicological Sciences, Health and Environment Laboratories, Eastman Kodak Company, Rochester, NY.
- #645 **The Effects of Ethylene Oxide (EO) Exposure on Tissue Glutathione (GSH) Levels in Rats and Mice.**
J.A. McKelvey and M.A. Zemaitis. Bushy Run Research Center, Export, PA; and Univ. of Pittsburgh School of Pharmacy, Pittsburgh, PA.

**THURSDAY MORNING, MARCH 21
LOWER LEVEL EXHIBIT AREA**

POSTER SESSION: Biotransformation I

Co-Chairs: P. Cusick, Abbott Laboratories, N. Chicago, IL
A.J. Trevor, Univ. of California, San Francisco, CA

Displayed: 8:30 A.M. - 11:30 A.M.

Attended: 10:00 A.M. - 11:30 A.M.

- #646 **Localizations of Xenobiotic-Metabolizing Enzymes in Nasal Tissues of Untreated and 3-Methylcholanthrene (MC) and Aroclor 1254 (A) Pretreated Rats.**
J.M. Voigt, F.P. Guengerich and J. Baron. Toxicology Center, Dept. of Pharmacology, Univ. of Iowa, Iowa City, IA; and Dept. of Biochemistry, Vanderbilt Univ., Nashville, TN.
- #647 **Purification and Reconstitution of the Cytochrome P-450 Monooxygenase System from Human Placenta.**
M.M. Lewandowski and E. Hodgson. Interdepartmental Toxicology Program, North Carolina State Univ., Raleigh, NC.
- #648 **Characterization of Monoclonal Antibodies to Rat Microsomal Cytochrome P-450(c), Purified After Arochlor 1254 Administration.**
Z. Amelizad and F. Oesch. Institute of Toxicologie, Univ. of Mainz, D-6500 Mainz, FRG. Sponsor: L.W. Robertson.
- #649 **Cytochrome P-450 Induction by 3-Methylcholanthrene (MC) and Its Antagonism by 2,2-Dimethyl-5-*t*-Butyl-1,3-Benzodioxole (DBBD).**
J.C. Cook and E. Hodgson. Interdepartmental Toxicology Program, North Carolina State Univ., Raleigh, NC.
- #650 **Effects of Pretreatment with Pyrazole (PYR) and Inducers of Mixed Function Oxidases on DNA Repair Elicited by Dimethylnitrosamine (DMN) in Rat Hepatocytes *In Vitro* and *In Vivo*.**
D.J. Kornbrust and †D.D. Dietz. NIEHS, and †Research Triangle Institute, Research Triangle Park, NC.
- #651 **The Ah Receptor Role in the Induction of Cytochrome P-450 by Methylene dioxy-phenyl (MDP) Compounds.**
J.C. Cook and E. Hodgson. Interdepartmental Toxicology Program, North Carolina State Univ., Raleigh, NC.
- #652 **Oxidation of Phorate by Purified FAD-Containing Monooxygenase and Purified Cytochrome P-450 Isozymes.**
P.E. Levi, P.J. Sabourin and E. Hodgson. Interdepartmental Toxicology Program, North Carolina State Univ., Raleigh, NC.
- #653 **A Rapid and Sensitive Assay of 7-Ethoxycoumarin O-Deethylase.**
N.H. Lee, C. DiOrio and P.A.G. Malya. Stuart Pharmaceuticals, A Division of ICI Americas Inc., Wilmington, DE. Sponsor: L.E. Gongwer.
- #654 **Selective Induction of the Polycyclic Aromatic Hydrocarbon (PAH) Metabolizing Enzyme System.**
F.C. Lee, J.K. Park, E.K. Kim, J.H. Ko, J.S. Lee and K.Y. Kim. Korea Ginseng & Tobacco Research Institute, Daejeon, Korea. Sponsor: K.H. Yang.
- #655 **Microsomal Enzyme Induction Following Repeated Administration of MV-678 in Dogs.**
R.P. Clement, T.Y. Chin, G.M. Zwicker, R.A. Williams, J.M. Killinger and R.I. Freudenthal. Stauffer Chemical Company, Farmington, CT.
- #656 **Neonatal Phenobarbital (PB) Imprinting: Examination for Specific Forms of Cytochrome P-450.**
D.M. Bagley and J.R. Hayes. Dept. Pharmacol. and Toxicol., Medical College of VA, Richmond, VA.

- #657 **Induction of the Microsomal Metabolism of Phenoxazone and Its Alkyl and Aryl Ethers in Rat.**
S. Thompson^a, C.R. Elcombe^b, R.T. Mayer^c and M.D. Burke^a. Dept. of Pharmacology, Aberdeen Univ.^a, Central Toxicology Labs, I.C.I., p.l.c., Alderley Park, U.K.^b, USDA, College Station, U.S.A.^c Sponsor: M.T. Smith.
- #658 **Effects of Perfluoro-n-Decanoic Acid (PFDA) on Microsomal Enzymes in Rat Liver.**
M.J. Van Rafelghem and M.E. Andersen. Air Force Aerospace Medical Research Laboratory, Wright-Patterson AFB, OH.
- #659 **Selected Changes in Hepatic Microsomal Enzyme Activity Following Food Restriction or Streptozotocin in the Guinea Pig.**
J.C. Kapeghian, M.J. Schlosser and A.J. Verlangieri. Atherosclerosis Research Laboratories, Dept. Pharmacol., Sch. Pharmacy, Univ. of Mississippi, University, MS. Sponsor: W.L. Guess.
- #660 **Effects of Dietary Choline and Fat on Xenobiotic-Metabolizing Enzyme Activities in Rat and Woodchuck Hepatic Microsomal Fractions.**
K.A. Frederick, J.N. Boyd, J.G. Babish and B.C. Tennant. Depts. of Preventive Medicine and Clinical Sciences, New York State College of Veterinary Medicine, Cornell Univ., Ithaca, NY.
- #661 **Purification and Characterization of the Dog Hepatic Cytochrome P-450 Isozyme(s) Responsible for the Metabolism of Certain Polychlorinated Biphenyls.**
D.B.A. Duignan, J.R. Halpert and I.G. Sipes. Dept. of Pharmacology and Toxicology, College of Pharmacy, Univ. of Arizona, Tucson, AZ.
- #662 **Studies on the Regulation of Glutathione Transferase and Peroxidase Activities in the Rat Following Treatment with Inducers.**
L.W. Robertson, F. Oesch and H. Schramm. Institute of Toxicologie, Univ. of Mainz, D-6500 Mainz, FRG.
- #663 **Effects of 3-Methylcholanthrene (MC) and Aroclor 1254 Pretreatments on the Distribution of Carcinogen-Metabolizing Enzymes Within the Rat Pancreas.**
T.T. Kawabata, F.P. Guengerich and J. Baron. Dept. of Pharmacology, The Univ. of Iowa, Iowa City, IA; and Dept. of Biochemistry, Vanderbilt Univ., Nashville, TN.
- #664 **Distribution of Epoxide Hydrolase Activity in Mouse Liver Mitochondrial Fractions.**
S. Kaur and S.S. Gill. Division of Toxicology and Physiology, Univ. of California, Riverside, CA.
- #665 **Metabolism Dependent Covalent Binding of Nicotine to Rabbit Liver Microsomal Macromolecules.**
M.K. Shigenaga, W. Chen, A.J. Trevor and N. Castagnoli, Jr. Univ. of California, San Francisco, CA.
- #666 **Metabolism of Acetaminophen in Rats Exposed to Cigarette Smoke.**
M.J. Graziano and H.W. Dorough. Dept. of Entomology and Graduate Center for Tox., Univ. of Kentucky, Lexington, KY.
- #667 **Influence of Subchronic Exposure of Trichloroethylene on the Metabolic Disposition of Acetaminophen in Rats.**
A. Morin¹, P. Colin¹, G. Sirois¹ and S. Chakrabarti². ¹Faculté de Pharmacie, and ²Dép. Méd. Trav. & Hyg. Mil., Fac. de Méd., Univ. de Montréal, Montréal, Québec, Canada.
- #668 **Metabolism and Distribution of Lindane in the Developing Animal.**
M.F. Copeland, R.W. Chadwick, N. Cooke, D.A. Whitehouse and D.M. Hill. U.S. EPA, Research Triangle Park, NC.
- #669 **Urinary Ethylene Glycol in Rats as Biological Indicator of Ethylene Oxide Exposure.**
C. Amar and M. Gérin. Dép. Médecine du Travail et Hygiène du Milieu, Fac. Médecine, Univ. Montréal, Montréal, P.Q., Canada. Sponsor: J. Brodeur.
- #670 **Effect of Diethylmaleate (DEM) on Acrylamide (AC) Metabolism in Rats.**
D.W. Petersen and J.J. Lech. Medical College of Wisconsin, Milwaukee, WI.
- #671 **Effect of Alteration of Cytochrome P-450 Activity on Ethylene Dichloride (EDC) Toxicity in Mice Following Inhalation Exposure.**
R.J. Francovitch, N.A. Schor and W.J. George. Depts. of Pharmacology and Pathology, Tulane Medical School, New Orleans, LA. Sponsor: R.E. Billings.

- #672 **Alteration of Benzo(a)pyrene Metabolism in Rat Lung by the Organic Solvent, p-Xylene.**
A. Roberts, M. Bogdanffy, D. Brown and R.A. Schatz. Tox. Prgm., Northeastern U., Boston, MA.
- #673 **Inhibition of Rat Liver Aldehyde Dehydrogenases by Acrolein.**
D.Y. Mitchell and D.R. Petersen, School of Pharmacy, Univ. of Colo., Boulder, CO.
- #674 **Structural Analogs of Chloramphenicol as Suicide Substrates of Rat Liver Cytochrome P-450.**
N.E. Miller and J.R. Halpert. Dept. of Pharmacology and Toxicology, Univ. of Arizona, Tucson, AZ. Sponsor: I.G. Sipes.
- #675 **Inactivation of Cytochrome P-450 by the Iminium Ion Metabolite of Phencyclidine.**
M.K.P. Hoag, A.J. Trevor and N. Castagnoli, Jr. Univ. of California, San Francisco, CA.
- #676 **Glucuronidation of 7-Hydroxycoumarin (HC) in Periportal (PP) and Pericentral (PC) Regions of the Lobule in Livers from Untreated and 3-Methylcholanthrene (MC)-Treated Rats.**
J.G. Conway,^a F.C. Kauffman,^b T. Tsukada^b and R.G. Thurman^a. Depts. of Pharmacology, U. of N.C., Chapel Hill, NC^a; and U. of Maryland, Baltimore, MD.^b
- #677 **Microbial Metabolism and Detoxification of Polycyclic Aromatic Hydrocarbons.**
C.E. Cerniglia and R. Heflich. National Center for Toxicological Research, Jefferson, AR. Sponsor: J.A. Hinson.
- #678 **Alkylation of Bronchiolar Epithelial Cells by 3-Methylindole Metabolites in the Horse.**
G.M. Becker, M.R. Nocerini, J.R. Carlson and R.G. Breeze. Dept. Vet. Microbiol. and Pathology and Dept. Animal Sci., Washington State Univ., Pullman, WA; and Dept. Anesthesiology, Arizona Health Sci. Ctr., Tucson, AZ. Sponsor: A.J. Gandolfi.
- #679 **Species and Strain Differences in Hepatic Microsomal Testosterone Metabolism.**
R. Bannister, M. Kelley, B. Keys and S. Safe. Dept. of Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M Univ., College Station, TX.
- #680 **Mammalian Hepatic Metabolism *In Vitro* of 2,6 Dichloro-4-Nitroaniline.**
L.A. Basting, C.M. Witmer and M.A. Gallo. UMDNJ-Rutgers Medical School/Rutgers Univ., Joint Graduate Program in Toxicology, Piscataway, NJ.
- #681 **Comparative Metabolism and Disposition of Propylene Glycol Monomethyl Ether (PGME) Alpha and Beta Isomers^a.** R.R. Miller, P.W. Langvardt, L.L. Calhoun and M.A. Yahrmarkt. Mammalian and Environmental Toxicology Research Laboratory, Dow Chemical U.S.A., Midland, MI.
- #682 **Trichloroethylene Potentiates Carbon Tetrachloride-Induced Hepatotoxicity.**
D.A. Wiersma and I.G. Sipes. Dept. of Pharmacol. & Toxicol., Coll. of Pharm., Univ. of Arizona, Tucson, AZ.
- #683 **Hepatoprotection by Cianidanol Against Halothane-Induced Liver Injury in Rats.**
C.-P. Siegers, K.P. Wilhelm, D. Sellin^a and M. Younes. Institute für Toxikologie und ^aPathologie, Medizinische Hochschule Lübeck, D-2400 Lübeck, FRG.
- #684 **Effect of Gamma-Irradiated Sewage Solids (GISS) as a Dietary Supplement on Xenobiotic Biotransformation in Sheep.**
J.B. Watkins, G.S. Smith and D.M. Hallford. Indiana Univ. School of Medicine, Bloomington, IN; and New Mexico State Univ., Las Cruces, NM.
- #685 **The Effects of N-Substituted Imidazole Drugs on the Disposition of the "Non-classical" Antifolate Trimetrexate *In Vitro* and *In Vivo*.**
J.J. Heusner, R.E. Galinsky, M.R. Franklin, W.P. Tong and J.J. McCormack. College of Pharmacy, Univ. of Utah Salt Lake City, UT; and Pharmacology Dept. Univ. of Vermont, Burlington, VT.
- #686 **Effects of Hepatic Glutathione Depletion on the DNA Binding and Hepatobiliary Disposition of Aflatoxin B₁ *In Vivo*.**
C.J. Holeski and D.L. Eaton. Depts. of Pathology and Environmental Health, Univ. of Washington, Seattle, WA.
- #687 **Metabolism of Dinitrobenzenes by Isolated Rat Hepatocytes.**
P.A. Cossum and D.E. Rickert. CIIT, Research Triangle Park, NC.

- #688 **Effect of Bile Acids on Progesterone Binding in Rat Liver Microsomes.**
A. Ghoshal, S. Gracon, L. Stuhne-Sekalec, W.H. Roomi, R.G. Cameron, F.A. de la Iglesia and G. Feuer. Dept. of Clinical Biochemistry and Pathology, Univ. of Toronto, Canada; and Warner-Lambert/Parke-Davis Pharmaceutical Research, Ann Arbor, MI.
- #689 **Pharmacokinetics and Metabolism of a Dermal Dose of [¹⁴C]2,5-Hexanedione in Hens.**
E. Suwita, A.A. Nomeir and M.B. Abou-Donia. Duke Univ. Medical Center, Durham, NC.
- #690 **Joint Neurotoxic Action of Methyl iso-Butyl Ketone (MIBK), Methyl n-Butyl Ketone (MnBK) and n-Hexane: Induction of Cytochrome P-450.**
Daniel M. Lapadula, Gerald A. Campbell and Mohamed B. Abou-Donia. Duke Univ. Medical Center, Durham, NC.
- #691 **Kinetics of ¹⁴C-Trimethyltin in the Rat.**
M.G. Paule, J.C. Lipscomb and W. Slikker, Jr.. Division of Teratogenesis Research, National Center for Toxicological Research, Jefferson, AR.
- #692 **Uptake, Disposition and Elimination of Acrylamide in Rainbow Trout.**
D.W. Petersen, K.M. Kleinow, R.C. Kraska and J.J. Lech. Medical College of Wisconsin, Milwaukee, WI; and American Cyanamid Co., Wayne, NJ.
- #693 **Metabolism and Covalent Binding of Diethylstilbestrol (DES) to Syrian Golden Hamster Kidney Slices.**
S.P. Adams and A.C. Notides. Univ. of Rochester Medical Center, Dept. of Radiation Biology and Biophysics, Toxicology Training Program, Rochester, NY. Sponsor: T.A. Gasiewicz.
- #694 **Deuterium Isotope Effect on the Expiration and Tissue Distribution of 1,2-Dibromoethane.**
D.J. Armstrong, R. Kutob and I.G. Sipes. Dept. of Pharm./Tox., Coll. of Pharmacy, Univ. of Arizona, Tucson, AZ.
- #695 **Studies in Rats to Measure the Intestinal Lymphatic Absorption of LY154356, a New Non-Steroidal Anti-Inflammatory Agent.**
G.K. Hanasono, J.L. Masten and G.S. Grimes. Toxicology Division, Lilly Research Laboratories, Greenfield, IN.

**THURSDAY AFTERNOON, MARCH 21
TOWN & COUNTRY ROOM**

PLATFORM SESSION: General Toxicology II

Co-Chairs: J. Kehrer, Univ. of Texas, Austin, TX
H. Levinsky, Pfizer Central Res. Lab., Groton, CT

- #696 1:30 **Peroral Subacute Toxicity Study of Orpanoxin in Beagle Dogs.**
R.A. Levin, M.L. Sutton, T.C. Graham, E.P. Denine and L.E. Van Petten. Drug Safety Assessment Dept., Norwich Eaton Pharmaceuticals, Inc., a Procter & Gamble Co., Norwich, NY.
- #697 1:45 **Two Year Chronic Oral Toxicity/Carcinogenicity Study on the Munitions Compound Trinitrotoluene (TNT) in Rats.**
B.S. Levine, E.M. Furedi, D.E. Gordon, V.S. Rac, J.J. Barkley and P.M. Lish. Life Sciences Dept., IIT Research Inst., Chicago, IL; and USAMBRDL, Ft. Detrick, Frederick, MD.
- #698 2:00 **The Rat as a Test System for Vaginal Metabolism Studies.**
W.B. Gibson. The Procter & Gamble Company, Cincinnati, OH.
- #699 2:15 **Toxicology of Magnetic Fields.**
B.J. Kelman, R.L. Rommereim and D.D. Mahlum. Biology and Chemistry Dept., Pacific Northwest Laboratory, Richland, WA.

- #700 2:30 **t-Butyl Glycidyl Ether: 90-Day Vapor Inhalation Study in Rats, Mice and Rabbits.**
J.F. Quast and R.R. Miller. Dow Chemical U.S.A., Mammalian and Environmental Toxicology Research Laboratory, Midland, MI.
- #701 2:45 **The Toxicology of Dental Products Containing Sanguinarine and Sanguinaria Extract.**
H. Schwartz, P.J. Becci, S.L. Yankell, H.H. Perry-Barnes and G.L. Southard. Essex Testing Clinic, Inc., Verona, NJ; Food and Drug Research Laboratories, Inc., Waverly, NY; Univ. of Pennsylvania, Philadelphia, PA; Vipont Laboratories, Inc., Fort Collins, CO.
- #702 3:00 **The Acute Toxicological Profile of Sanguinarine and Sanguinaria Extract.**
H. Schwartz, P.J. Becci, H.H. Perry-Barnes and G.L. Southard. Essex Testing Clinic, Inc., Verona, NJ; Food and Drug Research Laboratories, Inc., Waverly, NY; Vipont Laboratories, Inc., Fort Collins, CO.
- #703 3:15 **Subchronic Toxicity of an Alpha 1-Adrenergic Blocker in Rats and Dogs.**
T. Terrell, D. Bidlack, J. Averre, M. Wilson, R. Hull and F. Andrew. Syntex Research, Institute of Toxicologic Sciences, Palo Alto, CA.
- #704 3:30 **Cellular Localization of Aldehyde Dehydrogenase Activity by Histochemistry in Glycol Methacrylate (GMA) Embedded Tissues.**
M.S. Bogdanffy, H.W. Randall and K.T. Morgan. CIIT, Research Triangle Park, NC. Sponsor: J.A. Swenberg.
- #705 3:45 **Differential Oral Toxicity of Two Lots of Tracazolate in Rats Attributed to Differences in Particle Size.**
M.T. Koeferl, M.A. Hermes, T. Williams, R.B. Stow and P.J. DeBaecke. Stuart Pharmaceuticals, Division of ICI Americas, Inc., Wilmington, DE. Sponsor: S.A. Kutz.
- #706 4:00 **Fourteen Day Intrathecal Safety Evaluation Study of Salmon Calcitonin in Dogs.**
L.C.K. Wong, B.S. Brar, R. Chau, J.W. Dietrich, T.P. Pruss and E.S. Neiss. Revlon Health Care Group, R&D Division, Tuckahoe, NY.
- #707 4:15 **Fourteen Day Intrathecal Safety Evaluation Study of Salmon Calcitonin in Rats.**
J.W. Dietrich, B.S. Brar, R. Chau, L.C.K. Wong, T.P. Pruss and E.S. Neiss. Dept. of Drug Safety Evaluation, Revlon Health Care Group, Tuckahoe, NY.
- #708 4:30 **Body Burden of Environmental Contaminants from Acute Exposure to Percutaneous Absorption While Bathing or Swimming.**
R.C. Wester and H.I. Maibach. Dept. of Dermatology, Univ. of California School of Medicine, San Francisco, CA.
- #709 4:45 **A Simple But Efficient Statistical Method for Trend and Heterogeneity Analysis of Subjectively Graded Incidences.**
Ajit K. Thakur, Hazleton Laboratories America, Inc., Vienna, VA. Sponsor: Frederick E. Reno.

THURSDAY AFTERNOON, MARCH 21

SAN DIEGO ROOM

PLATFORM SESSION: Inhalation Toxicology IV

Co-Chairs: F. Kinoshita, Hercules Inc., Wilmington, DE
J. Schardein, Int'l Research & Development Corp., Mattawan, MI

- #710 1:30 **Early Lung Free Cell Response to Cadmium: Differential Lavage Characteristics of Alveolar Macrophages and Polymorphonucleated Leukocytes.**
B.E. Lehnert, Y.E. Valdez, J.E. London and D.M. Smith. Life Sciences Division, Los Alamos National Laboratory, Los Alamos, NM. Sponsor: P.E. Morrow.
- #711 1:45 **Kinetics of Intratracheally Instilled CdCl₂ and Cd-Thionein.**
Y.H. Lee and G. Oberdörster. Div. of Toxicology, Univ. of Rochester School of Medicine and Dentistry, Rochester, NY.
- #712 2:00 **Lung Toxicity of Different Cd Compounds.**
G. Oberdörster, Y.H. Lee, D.J. Guth, R.D. Mavis, N.L. Marcello, S.R. Drago and C.E. Baylock. Div. of Toxicology, Univ. of Rochester School of Medicine and Dentistry, Rochester, NY.

- #713 2:15 **Analysis of the Lung's Free Cell Response to a Toxic Insult by Multiparameter Flow Cytometry.**
B.E. Lehnert and Y.E. Valdez. Life Sciences Division, Los Alamos National Laboratory, Los Alamos, NM. Sponsor: P.E. Morrow.
- #714 2:30 **Inhalation of Inorganic Dusts Facilitates Complement Activation and Macrophage Accumulation at Sites of Particle Deposition.**
D.B. Warheit, L.H. Hill and A.R. Brody. Lab. of Pulm. Function and Tox. NIEHS, Research Triangle Park, NC. Sponsor: G.L. Kennedy, Jr.
- #715 2:45 **Toxicity of Brass Particulates for Pulmonary Macrophages.**
R.S. Anderson, L.L. Gutshall, Jr. and S.A. Thomson. Chemical Research and Development Center, Aberdeen Proving Ground, MD. Sponsor: E.J. Olajos, Jr.
- #716 3:00 **Retention and Clearance of Diesel Particulate in the Lungs of Rats.**
K.A. Strom and B.D. Garg. Biomedical Science Dept., GM Research Labs, Warren, MI. Sponsor: E.W. Lee.
- #717 3:15 **Pulmonary Clearance of Intratracheally Instilled Ni₃S₂ and TiO₂ in Mice.**
G.L. Finch, G.L. Fisher* and T.L. Hayes. Donner Laboratory, Lawrence Berkeley Laboratory, Berkeley, CA; *Toxicology Section, Battelle Laboratory, Columbus, OH.
- #718 3:30 **Assessment of Early Alveolar Clearance and Macrophage Function Following Acute Inhalation of Sulfuric Acid Mist.**
B.D. Naumann and R.B. Schlesinger. Institute of Environmental Medicine, New York Univ. Medical Center, New York, NY.
- #719 3:45 **Translocation of Particles from the Lungs to the Pleural Space and Mediastinal Lymph Nodes.**
S. Hyler, Y.E. Valdez and B.E. Lehnert. Life Sciences Division, Los Alamos National Laboratory, Los Alamos, NM. Sponsor: P.E. Morrow.
- #720 4:00 **Two-Year Inhalation Toxicity Study of Petroleum Coke (Delayed Process) in Rats and Monkeys.**
D. Klonne^a, J. Burns^b, C. Halder^c, C. Holdsworth^d and C. Ulrich^e. BRRC, Export, PA^a; Hazleton, Vienna, VA^b; Standard Oil (IN), Chicago, IL^c; API, Washington, DC^d; IRDC, Mattawan, MI^e.
- #721 4:15 **Thirty Day Repeated Dose Toxicity of REV 2871 Inhaled by Rats and Mice.**
D.K. Craig and L.C.K. Wong. Litton Bionetics, Inc., Rockville, MD; and Revlon Health Care Group, Tuckahoe, NY.
- #722 4:30 **Acute Inhalation Toxicity of REV 2871 Delivered Nose-Only to Experimental Animals.**
L.C.K. Wong and D.K. Craig. Revlon Health Care Group, Tuckahoe, NY; and Litton Bionetics, Inc., Rockville, MD.
- #723 4:45 **Changes in the Chemical Composition of the Rat Lung Following Subchronic Inhalation Exposure to Cobalt and Tungsten Carbide.**
R.S. Kutzman, R.N. Shiotsuka and R.T. Drew. Medical Dept., Brookhaven National Laboratory, Upton, NY.

**THURSDAY AFTERNOON, MARCH 21
MISSION BALLROOM**

**SYMPOSIUM 7: The Role of Glutathione in
Toxicology of Metals**

Sponsored by SOT Metals Specialty Section

Chairperson: B.R. Nechay, Univ. of Texas Medical School, Galveston, TX

**Time
(P.M.)**

1:30 **Introduction.**
B.R. Nechay, Univ. of Texas Medical School, Galveston, TX.

- 1:40 **Metal-Induced Inhibition of Glutathione Requiring Enzymes.**
E.J. Massaro, Pennsylvania State Univ., University Park, PA.
- 2:10 **Discussion.**
- 2:20 **Coffee Break.**
- 2:35 **The Role of Glutathione in Hepatotoxicity of Metals.**
C.D. Klaassen, Univ. of Kansas Medical Center, Kansas City, KS.
- 3:05 **Discussion.**
- 3:15 **The Role of Glutathione in Biliary Excretion of Metals.**
N. Ballatori, Yale Univ., New Haven, CT. T.W. Clarkson, Univ. of Rochester School of Medicine, Rochester, NY.
- 3:45 **Discussion.**
- 3:55 **Renal Glutathione and the Uptake of Mercury.**
W.O. Berndt, Univ. of Nebraska Medical Center, Omaha, NE.
- 4:25 **Discussion.**
- 4:40 **Conclusion.**

THURSDAY AFTERNOON, MARCH 21 LOWER LEVEL EXHIBIT AREA

POSTER SESSION: Reproduction/Teratology III

Co-Chairs: I.Y. Rosenblum, Philadelphia Coll. Pharmacy & Sci., Philadelphia, PA
G.M. Wang, California Dept. Food & Agric., Sacramento, CA

Displayed: 1:30 P.M. - 4:30 P.M.

Attended: 1:30 P.M. - 3:00 P.M.

- #724 **Placental and Milk Transfer of Phosfolan and Mephosfolan in Mouse.**
Nabila M. Bakry, A.K. Salama and H.A. Aly. Plant Protection Dept., Faculty of Agriculture, Univ. of Alexandria, Egypt.
- #725 **Lack of Dominant Lethal Effects of O,O-Dimethylphosphorochloridothioate in Male Rats.**
J.M. Kronenberg, T.W. Fuhremann, F.R. Johannsen and G.J. Levinskas. Monsanto Company, St. Louis, MO; and J.L. Schardein. International Research and Development Corporation, Mattawan, MI.
- #726 **Tamoxifen Effects on Rat Uterine Luminal Epithelium.**
W.S. Branham, D.R. Zehr, C.J. Nelson and D.M. Sheehan. Div. of Teratogenesis Research and Div. of Biometry, National Center for Toxicological Research, Jefferson, AR; and Dept. of Biology, Univ. of Central Arkansas, Conway, AR.
- #727 **Testicular Sorbitol Dehydrogenase Activity Increases After Exposure to Different Toxicants.**
R.E. Chapin, R.R. Swaisgood and J.C. Lamb, IV. National Toxicology Program, NIEHS, Research Triangle Park, NC.
- #728 **Assessment of Pituitary Function.**
R.L. Cooper, J.M. Goldman and L.E. Gray, Jr. EPA, HERL, DBD, RTB, RTP, NC; K.W. Lyles and D.L. Ellison. VA Med. Ctr., Durham, NC. Sponsor: N. Chernoff.
- #729 **Delayed Development of Reproductive Functions and Alteration of Dopamine Receptor Binding in Hypothalamus of Rats Exposed Prenatally to Phenytoin and Phenobarbital.**
S. Takagi, P.K. Seth, F.R. Alleva and T. Balazs. Daiichi Seiyaku Co., LTD, Tokyo; Food & Drug Administration Washington, DC.
- #730 **Prenatal Exposure to Nitrofen Causes Anomalous Development of Para- and Mesonephric Duct Derivatives in the Hamster.**
L.E. Gray, Jr., J. Ferrell and J. Ostby. USEPA, HERL, DBD, RTB, RTP, NC. Sponsor: N. Chernoff.

- #731 **Pharmacologic Probing of Renal Dysfunction in the Neonatal Rat.**
J.A. Gray and R.J. Kavlock. Northrop Services, Inc.; U.S. EPA, RTP, NC. Sponsor: Neil Chernoff.
- #732 **Evaluation of the Teratogenic Potential of Isophorone by Inhalation.**
K.A. Traul¹, J.P. Hinz¹, D.R. Peterson¹, T.R. Tyler² and R.D. Phillips³. ¹Bio/dynamics Inc., E. Millstone, NJ; ²Union Carbide Corp., Danbury, CT; ³Exxon Corp., E. Millstone, NJ.
- #733 **Teratology Studies of Orpanoxin in Sprague-Dawley Rats and New Zealand White Rabbits.**
M.L. Sutton and E.P. Denine. Preclinical Toxicology, Norwich Eaton Pharmaceuticals, Inc., Norwich, NY, a Procter & Gamble Company.
- #734 **General Reproduction, Perinatal and Postnatal Studies of Orpanoxin in Sprague-Dawley Rats.**
M.L. Sutton and E.P. Denine. Preclinical Toxicology, Norwich Eaton Pharmaceuticals, Norwich, NY, a Procter & Gamble Company.
- #735 **The Development of Estrous Cycle Dependent Running Wheel Activity (RWA) in the Female SD, LE and F344 Rat.**
L.E. Gray, Jr., J. Ostby and J. Ferrell. USEPA, HERL, DBD, Reproductive Toxicology Branch, RTP, NC. Sponsor: N. Chernoff.
- #736 **Genotoxicity in Male Germ Cells: A Mechanistic Approach.**
T.P. Coogan, I.Y. Rosenblum, D.A. Barsotti and S. Heyner. Dept. of Pharmacology & Toxicology, Philadelphia College of Pharmacy & Science, Philadelphia, PA.
- #737 **Uptake of Cadmium by Isolated Interstitial Cells of the Rat Testes.**
M.P. Waalkes and L.A. Poirier. National Cancer Institute, FCRF, Frederick, MD. Sponsor: E.K. Weisburger.
- #738 **Examination of Potential Reproductive Effects of Chlorine Administered to Long-Evans Rats by Gavage.**
M.K. Smith, D.L. Habash, K.A. Colling, A.H. Basaran, I.D. Osis and B.D. Carlton. USEPA, HERL, Cincinnati, OH; Battelle Columbus Labs, Columbus, OH. Sponsor: M.A. Pereira.
- #739 **Comparison of Distilled Water (DW) and corn Oil (CO) Vehicle Controls from Historical Teratology Study Data.**
C.A. Kimmelf, C.J. Price*, B.M. Sadler*, R.W. Tyl* and F.S. Gerling*. †Reproductive Effects Assessment Group, U.S. Environmental Protection Agency, Washington, DC; *Research Triangle Institute, Research Triangle Park, NC.
- #740 **Prenatal Induction of Supernumerary Ribs in the Rodent: Role of Maternal Stress.**
N. Chernoff, P. Parsons and R.J. Kavlock. EPA, DBD, RTP, NC.
- #741 **Disposition of Ethanol in Blood and Uterine Fluid of Estrous Rats.**
H. Goeden and H. Zenick. Dept. of Envir. Hlth., Univ. of Cincinnati, Cincinnati, OH.
- #742 **Developmental Toxicity Evaluation of Bisphenol A (BPA) in Rats and Mice.**
J.D. George, C.J. Price, R.W. Tyl, M.C. Marr and C.A. Kimmel*. Research Triangle Institute, Research Triangle Park, NC; *Reproductive Effects Assessment Group, U.S. Environmental Protection Agency, Washington, DC.
- #743 **Inhibition of Ovarian Oestradiol Production by a Substituted Triazole and Its Relationship to Delayed Ovulation in the Rat.**
M.C. Middleton, S.C. Watson, R.L. Hasmall and C.M. Milne. Imperial Chemical Industries PLC, Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK. Sponsor: E.A. Lock.
- #744 **The Effect of Metronidazole on Fertility and Testicular Function in Male Rats.**
R.M. McClain, J.C. Downing and J.H. Edgcomb. Dept. of Toxicology and Pathology, Hoffmann-La Roche Inc., Nutley, NJ.
- #745 **Effects of Vaginally Applied Octoxynol on Pregnant Rats.**
D.P. Waller, L. Simonson and M. Barry. Colleges of Pharmacy and Nursing, Univ. of Illinois at Chicago, Chicago, IL. Sponsor: M.A. Evans.
- #746 **Teratogenicity In Vitro of Aflatoxin B₁ (AFB₁): Role of Biotransformation.**
F.T. Geissler and E.M. Faustman-Watts. Dept. of Env. Health, Univ. of Washington, Seattle, WA.

- #747 **Diacetoxyscirpenol Induced Prenatal Dysmorphogenesis in the Mouse.**
K. Mayura, E. Smith, N. Heidelbaugh and T.D. Phillips. Dept. of Veterinary Public Health, Texas A&M Univ., College Station, TX.
- #748 **Effect of Secalonic Acid D on the Developing Fetal Mouse Palate.**
C.S. Reddy. Univ. of Missouri, Columbia, MO. Sponsor: M.F. Raisbeck.
- #749 **Effects of Perinatal and Adult ETU Exposure on Maturation and Reproduction in Adult Rats and Mice.**
B.D. Carlton, P.J. Kurtz, S.L. Grumbein and R.S. Chhabra, Battelle Columbus Labs, Columbus, OH; National Toxicology Program, NIEHS, Research Triangle Park, NC.
- #750 **Embryotoxic Effects of Two Alkylating Agents on Japanese Medaka Fish (*Oryzias latipes*) Embryos.**
F.P. Solomon and E.M. Faustman-Watts. Dept. of Env. Health, Univ. of Washington, Seattle, WA.
- #751 **Reproductive Toxicity of Methyldopa in the Male Fischer 344/N Rat.**
J.K. Dunnick, M.W. Harris, L.B. Hall, R.E. Chapin and J.C. Lamb, IV. National Toxicology Program, NIEHS, RTP, NC.
- #752 **Reproductive and Developmental Toxicity of an Alpha 1-Adrenergic Blocker in Rats.**
F. Andrew, T. Terrell, G. Thacker, N. Onizuka and C. Zustak. Institute of Toxicologic Science, Syntex Research, Palo Alto, CA.
- #753 **Failure of Perinatally Administered Barbiturates to Affect Mating Behavior in Male Hamsters.**
F.R. Alleva and T. Balazs. CDB, FDA, Washington, DC.
- #754 **Effects of Exposure to Benomyl or Carbendazim on Male Reproduction in Prepubertal and Adult Sprague-Dawley Rats.**
S.D. Carter (Laws) and J.W. Laskey. USEPA, HERL, Research Triangle Park, NC. Sponsor: N. Chernoff.
- #755 **Teratogenicity Study in Rats with a Candidate Antileishmanial Drug.**
J.A. Trutter, R.H. Cox and R.S. Durlow. Hazleton Laboratories America, Inc., Vienna, VA; D.W. Korte, Jr., Walter Reed Army Institute of Research, Washington, DC. Sponsor: F.E. Reno.
- #756 **Three Generation Reproduction Study in Rats Administered Cyanurate.**
A.G. Wheeler, ICI Americas, Inc., Wilmington, DE; S.J. Barbee. Olin Corp., New Haven, CT; B.G. Hammond, Monsanto Co., St. Louis, MO; T. Inoue. Nissan Chem. Ind., New York, NY; N. Ishida. Shikoku Chem. Corp., Orange, CA; J.L. Schardein, International Research and Development Corp., Mattawan, MI; T. Cascieri. FMC Corp., Princeton, NJ.
- #757 **Neonatal 1,2-Dibromo-3-Chloropropane Exposure and Sexual Differentiation of Hepatic Functions in Adult Male Rats.**
E.M.K. Lui, Dept. of Pharmacol. and Toxicol., Univ. of Western Ontario, London, Ont., Canada.
- #758 **Influence of Perinatal Pre-Exposure on the Toxicity of Diphenylhydantoin to Adult Rats and Mice.**
P.J. Kurtz, B.D. Carlton, S.L. Grumbein and R.S. Chhabra*. Battelle Columbus Labs, Columbus, OH; *National Toxicology Program, NIEHS, Research Triangle Park, NC.
- #759 **Safety Studies with Radiation-Sterilized Chicken Meat: III. Chronic Toxicity and Reproductive Performance in Beagle Dogs.**
J.P. Christopher, F.A. Ruecker, K.L. Monti, D.C. Ronning, D.W. Thayer and E. Wierbicki. Eastern Regional Research Center, USDA-ARS, Philadelphia, PA. Sponsor: A.M. El-hawari.
- #760 **Safety Studies with Radiation-Sterilized Chicken Meat: II. Multigeneration Reproduction in CD-1 Mice.**
J.P. Christopher, R.R. Dahlgren, K.L. Monti, D.C. Ronning, D.W. Thayer and E. Wierbicki. Eastern Regional Research Center, USDA-ARS, Philadelphia, PA. Sponsor: A.M. El-hawari.

THURSDAY AFTERNOON, MARCH 21
LOWER LEVEL EXHIBIT AREA

**POSTER SESSION: Neurotoxicology VI.
Neurochemistry**

Co-Chairs: S. Cohen, Univ. of Connecticut, Storrs, CT
D. Woolley, Univ. of California, Davis, CA

Displayed: 1:30 P.M. - 4:30 P.M.

Attended: 1:30 P.M. - 3:00 P.M.

- #761 **A Model for Trimethyllead Neurotoxicity in the Rat.**
J. Caldwell-Kenkel and M.R. Krigman. The Univ. of North Carolina, Chapel Hill, NC.
- #762 **Distribution of Trimethyllead in the Rat Following Acute Administration.**
J. Caldwell-Kenkel, D. Orren, P. Mushak and M.R. Krigman. The Univ. of North Carolina, Chapel Hill, NC.
- #763 **Inhibition of Na⁺, K⁺-ATPase and of [³H] GABA Uptake by Organotin Compounds in Mouse Brain *In Vitro*.**
L.G. Costa. Dept. of Environmental Health, Univ. of Washington, Seattle, WA.
- #764 **Triethyltin Inhibition of ATPase Activities in Tissue Homogenates from Adult and Neonatal Rats.**
K.E. Stine¹, L.W. Reiter² and J.J. Lemasters³. ¹Dept. of Management, Clemson Univ., Clemson, SC; ²Neurotoxicology Division, US EPA, RTP, NC; and ³Lab. for Cell Biology, Dept. of Anatomy, Univ. of North Carolina, Chapel Hill, NC.
- #765 **Temperature-Dependent Accumulation of Methylcyclopentadienyl Manganese Tricarbonyl (MMT) in Brain Slices of Both Rats and Mice.**
P.A. McGinley, J.B. Morris and G. Gianutsos. Section of Pharmacology and Toxicology, School of Pharmacy, Univ. of Connecticut, Storrs, CT.
- #766 ***In Vivo* Effects of Cadmium Chloride on Brain ATPases and Catecholamine Uptake.**
M. Hobson, B. Rajanna, M. Boykins and D. Desai. Dept. Natural and Appl. Sci., Selma Univ., Selma, AL; and Dept. Neurol., Univ. Miss. Med. Ctr., Jackson, MS.
- #767 **Neurotoxic Effect of Manganese on Biogenic Amine Levels and Turnover in Different Regions of Mouse Brain.**
B. Srisuchart and R.P. Sharma. Toxicology Program, Utah State Univ., Logan, UT.
- #768 ***In Vitro* and *In Vivo* Effects of Vanadate on K⁺-Dependent Phosphatase Activities from Subcellular Fractions of Brain, Kidney and Liver.**
R.J. Keller and R.P. Sharma. Toxicology Program, Utah State Univ., Logan, UT.
- #769 ***In Vitro* Lead(Pb)-Induced Release of Dopamine from Superfused Striatal Synaptosomes.**
D.J. Minnema and I.A. Michaelson. Dept. Environ. Hlth., Univ. of Cincinnati, Cincinnati, OH. Sponsor: P.B. Hammond.
- #770 **Regional and Temporal Selectivity of Lead Induced Neurochemical Changes in Neonates: Correlation with Behavioral Abnormalities.**
B. Callahan, D. Brown, R. Schatz and M. Cleaves. Toxicology Program, Northeastern Univ., Boston, MA.
- #771 ***In Vitro* Peroxidation Decreases the Lipid Fluidity of Neostriatal Membranes.**
G. Witz, N.J. Lawrie, M.A. Amoruso, F.S. Cabbat* and R.E. Heikkila*. Dept. of Environmental & Community Medicine, and *Dept. of Neurology, UMDNJ-Rutgers Medical School, Piscataway, NJ.
- #772 **Effect of Ionizing Radiation on Myelin Synthesis in Rat Brain Reaggregate Cultures.**
A.J. Jacobs¹, W.M. Maniscalco² and J.N. Finkelstein^{1,2}. Division of Toxicology¹ and Division of Neonatology², Univ. of Rochester School of Medicine, Rochester, NY. Sponsor: V.G. Laties.
- #773 **Failure of Piperonyl Butoxide to Alter TOCP Lethality or Delayed Neurotoxicity in Rats.**
G.L. Sprague, B.L. Fordan, A.A. Bickford and T.R. Castles. Toxicology Dept., Stauffer Chemical Company, Farmington, CT; and Univ. of California, Davis, CA.

- #774 **Dose-Related Beneficial and Adverse Effects of Dietary Corticosterone on Organophosphate-Induced Delayed Neuropathy (OPIDN) in Chickens.**
M. Ehrich, W.B. Gross and B.S. Jortner. Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA.
- #775 **The Effect of Hepatic Mixed-Function Oxidase Enzyme Inducers on the Development of Diisopropyl Fluorophosphate-Induced Delayed Neurotoxicity.**
L.F. Calabrese, Jr. and S.J. Bursian. College of Veterinary Medicine and Dept. of Animal Science, Michigan State Univ., E. Lansing, MI. Sponsor: D. Polin.
- #776 **Distribution of Neurotoxic Esterase Activity in the Brain of Control and Organophosphate-Treated Hens.**
T.D. Sabourin, J.W. Reveley and L.B. Goss. Battelle Columbus Laboratories, Environ. Health Sci. Section, Columbus, OH.
- #777 **O-Ethyl-O'-(2-Diisopropylaminoethyl)methylphosphonite Neurotoxicity in Hens.**
E.J. Olajos, J. Bergmann and H. Wall. Toxicology Div., Chemical Rsch. and Development Ctr., U.S. Army, APG, MD; and Med. Rsch. and Inst. for Chem. Defense, U.S. Army, APG, MD.
- #778 **Subchronic (13-Week) Toxicity of Orally Administered Sodium Azide to Fischer 344 Rats and B6C3F₁ Mice.**
K.M. Abdo¹, K. Kanagalingum², W. Hall² and C.A. Montgomery¹. NIEHS, National Toxicology Program, RTP, NC; Microbiological Associates, Bethesda, MD. Sponsor: J. Mennear.
- #779 **Absence of Delayed Neurotoxicity and Increased Plasma Butyrylcholinesterase Activity in Triallate Treated Hens.**
Daniel Lapadula, Frederick Johannsen and Mohamed B. Abou-Donia. Duke Univ. Medical Center, Durham, NC; and Monsanto Company, St. Louis, MO.
- #780 **Competitive Inhibition of Neurotoxic Esterase Isozymes by Paraoxon.**
C.D. Carrington and M.B. Abou-Donia. Dept. of Pharmacology, Duke Univ. Medical Center, Durham, NC.
- #781 **The Effect of Tri-O-Cresyl Phosphate (TOCP) on 2',3'-Cyclic Nucleotide 3'-Phosphohydrolase Activity in Rat Neural and Non-Neural Tissues.**
M.K. Schlager, P.A. Pleban and E.J. Olajos. Dept. of Chemical Sciences, Old Dominion Univ., Norfolk, VA; and Toxicology Div., Chemical Rsch. and Development Ctr., U.S. Army, APG, MD.
- #782 **Organophosphate Activation, Isufenphos, and an *In Vitro* Assay for Delayed Neuropathic Potential.**
E. Chow, M.M. McChesney and B.W. Wilson. Univ. of California, Davis, CA.
- #783 **Competitive Acetylcholinesterase (AChE) Inhibitors as Potential Organophosphonate Antidotes.**
R.A. Howd, S.E. Jackson, J.L. Crase and R.A. Kenley. SRI International, Menlo Park, CA; and Syntex Research Div., Palo Alto, CA.
- #784 **Effects of Tricresyl Phosphate on Spinal Cord, Serum, and Brain Cholinesterase in F344 Rats.**
Randy Deskin, Larry Marsh, Arthur Peters and Richard Irwin*. Battelle-Columbus, OH; and *National Toxicology Program, RTP, NC.
- #785 **Bovine and Rodent Cholinesterase Sensitivity to *In Vitro* Inhibition by Organophosphates.**
S.D. Cohen, R.A. Williams, J.M. Killinger and R.I. Freudenthal. Stauffer Chemical Co., Env. Hlth. Ctr., Farmington, CT; and Tox. Program, Sch. Pharm., UCONN, Storrs, CT.
- #786 **Tolerance Development to the Cholinergic Toxicity of Malathion in CD-1 Mice.**
P.M. Bartholomew, G. Gianutsos and S.D. Cohen. Toxicology Program, Sch. of Pharm., Univ. of Conn., Storrs, CT.
- #787 **Tissue Differences in Cholinesterase Inhibition and Muscarinic Receptor Changes in CD-1 Mice Made Tolerant to Malathion.**
P.M. Bartholomew, G. Gianutsos and S.D. Cohen. Toxicology Program, Sch. of Pharm., Univ. of Conn., Storrs, CT.

- #788 **The Protective Action of Glutathione on the Effects of Diethyldithiocarbamate (DDC) on Astrocytes in Culture.**
M. Toulon, L.D. Trombetta, I. Jamall Dept. of Pharmaceutical Sciences, St. John's Univ., Jamaica, NY. Sponsor: S. Carson.
- #789 **Tremor and Hyperthermia Produced by p,p'-DDT are Associated with Dose- and Time-Related changes in Brain Biogenic Amine and Amino Acid Levels in Rats.**
H.A. Tilson, P.M. Hudson, P.H. Chen and J.S. Hong. Laboratory of Behavioral and Neurological Toxicology, N.I.E.H.S., Research Triangle Park, NC.
- #790 **Effect of Pyrethroids on Basal and Calmodulin Activated Adenylate Cyclase and Ca²⁺ ATPase in Rat Brain.**
K. Ahammad, K.S. Prasada Rao and D. Desaiiah. Dept. Neurol., Univ. Miss. Med. Ctr., Jackson, MS.
- #791 **Studies on the Bioactivation of the Selective Nigrostriatal Toxin 1-Methyl-4-Phenyl-1,2,3,6-Tetrahydropyridine(MPTP).**
K. Chiba, L.A. Peterson, K.P. Castagnoli, P.S. Caldera-Munoz, A.J. Trevor and N. Castagnoli, Jr. Univ. of California, San Francisco, CA.
- #792 **Impairment in Biochemical Processes in Rat Brain Mitochondria Induced by Chlorphentermine.**
L. Zychlinski and M.R. Montgomery. Colleges of Medicine and Public Health, Univ. of South Florida and VA Hospital, Tampa, FL.
- #793 **Early Neurochemical Alterations in Rats Prenatally Exposed to Reserpine.**
S.F. Ali, J. Buelke-Sam, W. Slikker, Jr., G.D. Newport and G.L. Kimmel. Div., Teratogenesis Res., National center for Toxicological Research, Jefferson, AR.
- #794 **Lack of Neuropathological Changes After Exposure to Butyl Benzyl Phthalate.**
E.C. Robinson, F.R. Johannsen and D.K. Branch. Monsanto Company, St. Louis, MO.
- #795 **Alterations in Rat CNS Axonal Cytoskeletal Proteins Induced by 2,5-Hexanedione Exposure.**
A.P. DeCaprio and E.A. O'Neill. Wadsworth Center for Laboratories & Research, NY State Dept. of Health, Albany, NY. Sponsor: L.S. Kaminsky.
- #796 **Time Course and Specificity of Acrylamide Inhibition of Oxidative Enzymes.**
D.W. Sickles, B.G. Goldstein and J.K. Pearson. Dept. of Anatomy and Pharmacology and Toxicology, Medical College of Georgia, Augusta, GA.

**THURSDAY AFTERNOON, MARCH 21
LOWER LEVEL EXHIBIT AREA**

POSTER SESSION: Mechanisms of Toxicity II. General

Co-Chairs: G. Alexeeff, Weyerhaeuser Co., Longview, WA
E. Sowinski, Uniroyal, Inc., Middlebury, CT

Displayed: 1:30 P.M. - 4:30 P.M.

Attended: 3:00 P.M. - 4:30 P.M.

- #797 **Effect of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin on Adipose Tissue Lipoprotein Lipase.**
D.W. Brewster and F. Matsumura. Pesticide Research Center, Michigan State Univ., East Lansing, MI.
- #798 **Reduced Hepatic Low Density Lipoprotein Binding and Adipose Lipase Activity in Rabbits Treated with 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD).**
D.W. Bombick, D.W. Brewster and F. Matsumura. Pesticide Research Center, Michigan State Univ., East Lansing, MI.

- #799 **Effect of Hexachlorobenzene (HCB) on Toxicity, Enzyme Induction and Thyroid Status in Rats Fed Various Amounts of Ca⁺⁺ and Vitamin D.**
K. Rozman, J. Gorski, P. Rozman and A. Parkinson. Dept. of Pharmacol., Toxicol. & Therap., Univ. of Kansas Med. Ctr., Kansas City, KS; and Abt. fur Toxikol., Ges. fur Strahlen- und Umweltforschung mbH Munchen, Neuherberg, F.R.G.
- #800 **Role of Thyroid Hormones in the Toxicity of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin.**
K. Rozman, H. Greim, T. Pazdernik and A. Parkinson. Dept. of Pharmacol., Toxicol. & Therap., Univ. of Kansas Medical Center, Kansas City, KS; and Abt. für Toxikologie, Gesellschaft für Strahlen- und Umweltforschung mbH München, Neuherberg, F.R.G.
- #801 **Effect of Cold Exposure on 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) Toxicity.**
K. Rozman. Dept. of Pharmacol., Toxicol. & Therap., Univ. of Kansas Medical Center, Kansas City, KS; and Abt. fur Toxikologie, Gesellschaft fur Strahlen- und Umweltforschung mbH Munchen, Neuherberg, F.R.G.
- #802 **Teratogenicity of TCDD in Mice: Enhancement by Hydrocortisone.**
L.S. Birnbaum, M.W. Harris, C.P. Miller, R.C. Pratt and J.C. Lamb. NIEHS, Research Triangle Park, NC.
- #803 **2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) Binds the Nuclear Receptor for Thyroxine.**
J.D. McKinney, K. Chae, S. Jordan, M. Luster and A. Tucker. NIEHS, RTP, NC; and S. Oatley. Dept. of Chemistry, U. of CA, San Diego, CA.
- #804 **Membrane Structural/Functional Perturbations Induced by Gossypol.**
R.D. Sauerheber. Rees-Stealy Research Foundation; P.A. Hyslop. Scripps Clinic and Research Foundation; A. de Peyster. San Diego State Univ., San Diego, CA. Sponsor: H.-W. Leung.
- #805 **Induction of Acute Porphyria in Japanese Quail by Aroclor 1254.**
C.L. Miranda, M.C. Henderson, J.-L. Wang and D.R. Buhler. Dept. of Agric. Chem. and Environ. Hlth. Sci. Ctr., Oregon State Univ., Corvallis, OR.
- #806 **Pituitary and Thyroid Function in Rats After Perinatal Thiocyanate Exposure.**
W. Heydens. Monsanto Co. Environmental Health Laboratory, St. Louis, MO; B. Hartung, W. Schramm and M. Khazaeli. The Univ. of Michigan, Ann Arbor, MI.
- #807 **The Effect of Sodium Thiosulfate (ST) and Alpha Adrenergic Antagonists on Plasma Thiocyanate (SCN).**
J.C. Pettersen and S.D. Cohen. Univ. CT, Toxicology Program, Sch. Pharm., Storrs, CT.
- #808 **Effect of Soman on Aminophospholipid (APL) Distribution in Electroplex (E): Use of 2,4,6-Trinitrobenzenesulphonic Acid (TNBS).**
B.A. Weber and P. Rosenberg. Univ. of Conn., Toxicology Program, Sch. of Pharm., Storrs, CT. Sponsor: S.D. Cohen.
- #809 **Factors Affecting the *In Vitro* Metabolism of 1,2-Dibromo-3-Chloropropane (DBCP) by Rat Hepatic Microsomes.**
P.W. Beatty, R.L. Mueller, A.C. Page and R. Gingell. Toxicology Research, Shell Development Co., Houston, TX.
- #810 **Nitrosamines in Tobacco Smoke, Dimethylnitrosamine and N-Nitrosopyrrolidine, and Their Effects on Cell Injury.**
B.V.R. Sastry, J.H. Patton, M.J. Surber and E.J. Landon. Dept. of Pharmacology, Vanderbilt Univ., Nashville, TN.
- #811 **Localization of Covalently-Bound Metabolites of [¹⁴C]Nitrosornicotine in Tissues of Mice.**
C. Marlowe and W.J. Waddell. Dept. Pharmacol. & Toxicol., Univ. of Louisville, Louisville, KY.
- #812 **A Study of the Transportability of Hydroxyalkyl-Alkyl Nitrosamines into Intact Liver Nuclei.**
B. Gold and L. Hines. Eppley Institute for Research in Cancer and Dept. of Biomedical Chemistry, Univ. of Nebraska Medical Center, Omaha, NE.

- #813 **Acute Toxicity and Irritancy of Glutaraldehyde.**
B. Ballantyne, R.H. Garman, B.J. Greenspan and R.C. Myers. Bushy Run Research Center, Union Carbide Corporation, Export, PA.
- #814 **Inhibition of Protein Synthesis by Diethylmaleate in Mice *In Vivo*.**
L.G. Costa and S.D. Murphy. Dept. of Environmental Health, Univ. of Washington, Seattle, WA.
- #815 **Stability of Rat Liver Post-Mitochondrial Supernatant (S-9) Following Long-Term Storage at -75° C.**
J.W. Oldham, J.F. Pritchard, R.F. Preston, C.T. Nomides, W.E. Patton and J.D. Paulson. McNeil Pharmaceutical, Spring House, PA.
- #816 **Kinetics of Benzyl Chloride in Rat.**
S.E. Gerges, A.H. Abu-Hadeed, A.M. Kadry and M.S. Abdel-Rahman. Toxicology Lab., Pharmacology Dept., NJ Med. School, UMDNJ, Newark, NJ.
- #817 **Amlodarone-Induced Phospholipidosis in Rats.**
Mark J. Reasor and Elizabeth R. Walker. West Virginia Univ., Medical Center, Morgantown, WV; and Karl Y. Hostetler. V.A. Medical Center and Univ. of California, San Diego, CA.
- #818 **Effect of Glucocorticoid Treatment on Lethality of T-2 Mycotoxin in Mice.**
R.F. Fricke. US Army Medical Research Institute of Infectious Diseases, Ft. Detrick, Frederick, MD. Sponsor: R.M. Mhatre.
- #819 **Vascular Perfusion: A Determinant of Elemental Analysis in Organ/Tissue Samples.**
G.D. Miller, T.F. Massaro and E.J. Massaro. Center for Air Environment Studies, the Pennsylvania State Univ., University Park, PA.
- #820 **Changes in Serum Citrate Concentrations as an Index of Sodium Fluoroacetate (SFA) Toxicity.**
A.A. Levin and T. Bosakowski. Dept. of Toxicology and Pathology, Hoffmann-La Roche Inc., Nutley, NJ. Sponsor: R.M. McClain.
- #821 **Inhibition of Thiourea Binding to Rat Lung and Liver Microsomes.**
H.W. Leung and D.W. Hiipakka. Div. Occup. & Env. Health, Grad. Sch. Pub. Health, San Diego State Univ., San Diego, CA.
- #822 **Rapid Adaption of the Rat Hindgut Flora to Cyclamate *In Vitro*.**
A.K. Malfett, I.R. Rowland, C.A. Bearne, R.J. Purchase and S.D. Gangolli. B.I.B.R.A., Carshalton, Surrey, UK.
- #823 **Problems Associated with the Use of Radiolabeled DNA Precursors to Assess Chemically Induced DNA Damage and Repair.**
P.L. Ribeiro, R.S. Mitra and I.A. Bernstein. Program in Toxicology, Dept. of Env. and Ind. Health, The Univ. of Michigan, Ann Arbor, MI.
- #824 **DNA Binding of Benzo(a)pyrene in the Presence of Complex Mixtures.**
D.L. Springer, M.E. Frazier, K.L. Hopkins and D.D. Mahlum. Biology & Chemistry Dept., Pacific Northwest Laboratory, Richland, WA.
- #825 **Pyridine Nucleotides Generate Superoxide Anion (O₂⁻) from Groundstate Molecular Oxygen Upon Irradiation with 270-405 nm Ultraviolet Light.**
M.L. Cunningham and M.J. Peak. Division of Biological and Medical Research, Argonne National Laboratory, Argonne, IL. Sponsor: H.P. Witschi.
- #826 **Aldehydes and Hydrazine-Induced Methylation of DNA Guanine.**
W.S. Bosan, C.E. Lambert and R.C. Shank. Univ. of California, Irvine, CA.
- #827 **Monocrotaline and Indicine N-Oxide: Association of DNA Damage with Biological Effects.**
T.W. Petry,¹ C.A. McQueen² and I.G. Sipes.¹ Univ. of Arizona, Tucson, AZ; and ²Naylor Dana Institute, Valhalla, NY.

**THURSDAY AFTERNOON, MARCH 21
LOWER LEVEL EXHIBIT AREA**

POSTER SESSION: Mechanisms of Toxicity III. In Vitro

Co-Chairs: H. Birnbaum, Calgon Corp., Pittsburgh, PA
W. Siddiqui, Dow Corning Corp., Midland, MI

Displayed: 1:30 P.M. - 4:30 P.M.

Attended: 3:00 P.M. - 4:30 P.M.

- #828 ***In Vitro* Toxicity of Welding Fumes to Rat Alveolar Macrophages.**
R.A. Parent, Consultox, Ltd., Baton Rouge, LA; W.B. Coate and J. Cavagnaro, Hazleton Laboratories America, Inc., Vienna, VA.
- #829 **Cytotoxic Effect of Diesel Particle Hydrocarbons on Alveolar Macrophage and Lung Epithelial Cells *In Vitro*.**
C.S. Wheeler, Biomedical Science Dept., GM Research Labs, Warren, MI.
Sponsor: E.W. Lee.
- #830 **Effect of Ozone (O₃) on Prostacyclin (PGI₂) Synthesis in Pulmonary Endothelium (E) *In Vitro*.**
M.C. Madden, H.P. Nichols, L.M. Kwock and M. Friedman, Univ. of North Carolina, Chapel Hill, NC. Sponsor: D.J. Holbrook, Jr.
- #831 **An *In Vitro* System for Exposure of Lung Cells to Gases.**
R. Valentine and R.B. Schiesinger, Institute of Environmental Medicine, New York Univ. Medical Center, New York, NY.
- #832 **Asbestos and Benzo(a)pyrene Induced Changes in Tracheal Organ Cultures. Enhanced Sensitivity in Tissues from Younger Animals.**
M.E. Placke, M.J.W. Chang and G.L. Fisher, Toxicology and Health Sciences Section, Battelle Columbus Labs., Columbus, OH.
- #833 **Long-Term Organ Culture of Adult Periphoreal Lung and *In Vitro* Development of Interstitial Fibrosis Following Exposure to Silica Dust.**
M.E. Placke and G.L. Fisher, Battelle Columbus Laboratories, Columbus, OH.
- #834 **Entry and Exit of 2,2',4,4',5,5' Hexabromobiphenyl in Cultures of Mouse 3T3L1 Adipocytes.**
A.L. Kraus and I.A. Bernstein, Depts. of Biochemistry and Env. and Ind. Health, Toxicology Program, The Univ. of Michigan, Ann Arbor, MI.
- #835 **Role of Mitochondrial Glutathione (GSH) in Protecting Against Cellular Toxicity of Formaldehyde (CH₂O) in Isolated Rat Hepatocytes.**
R.H. Ku and R.E. Billings, Univ. of Texas Med. Sch., Dept. of Pharmacol., Houston, TX.
- #836 **Kinetics of Mirex Uptake by Mouse Hepatocytes *In Vitro*.**
A.K. Charles and D.P. Rosenbaum, Dept. of Pharmacology & Toxicology, Albany Medical College, Albany, NY. Sponsor: R. Abraham.
- #837 **The Effect of Iron on Lead Metabolism in Cultured Rat Hepatocytes.**
G.J. Long and J.G. Pounds, Natl. Cntr. for Toxicol. Res., Jefferson, AR; and Div. of Interdisc. Toxicol., Univ. of Arkansas for Med. Sci., Little Rock, AR.
- #838 **Differential Uptake, Binding and Metabolism of Aflatoxin B₁ in Primary Fetal Bovine Kidney Cells and Madin Darby Bovine Kidney Cells.**
M. Yoneyama, R.A. Coulombe, Jr. and R.P. Sharma, Toxicology Program, Utah State Univ., Logan, UT.
- #839 **Coated Pits and Possible Mechanisms of Toxicity: Some Theoretical Considerations.**
R.B. Raffa, Dept. of Pharmacology, Thomas Jefferson Medical College, Philadelphia, PA. Sponsor: J.J. Kocsis.
- #840 **Xenobiotic Metabolizing Enzymes of the Non-Parenchymal Cells of the Rat Liver.**
W.M. Lafranconi, H.R. Giatt and F. Oesch, Institute of Toxicology, Univ. of Mainz, Mainz, West Germany. Sponsor: L.W. Robertson.

- #841 **The Testing of Di(2-Ethylhexyl)phthalate (DEHP), Mono(2-Ethylhexyl)phthalate (MEHP), Di(2-Ethylhexyl)adipate (DEHA) and 2-Ethylhexanol (2EH) in a Battery of Genotoxicity Assays.**
E.D. Barber. Eastman Kodak Co.; A. Mulholland. Ethyl Corp.; and D.R. Jagannath, M. Cifone, M. Cimino, B. Myhr and J. Rundell. Litton Bionetics, Inc. Sponsor: B.D. Astill.
- #842 **Variable Toxicity of Trichothecene Mycotoxins in Cell Culture Systems.**
W.L. Thompson, J.C. O'Brien, R.W. Wannemacher, Jr. US Army Medical Research Institute of Infectious Diseases, Ft. Detrick, Frederick, MD. Sponsor: P.M. Newberne.
- #843 **Reduction of Cadmium-Induced Cytotoxicity in Cultured Rat Liver Cells by 5-azacytidine Pretreatment.**
M.P. Waalkes, M.J. Wilson and L.A. Poirier. National Cancer Institute, FCRF, Frederick, MD. Sponsor: E.K. Weisburger.
- #844 **Inhibition of Protein Synthesis in Isolated Rat Hepatocytes as an Index of Cellular Toxicity.**
J.M. Frazier, W.S. Din and L. Collins. The Johns Hopkins Univ., Baltimore, MD.
- #845 **An *In Vitro* Cutaneous Irritancy Testing System Using Rat Keratinocytes.**
F.L. Vaughan, S. Zaman, R. Scavarelli, R.H. Gray and I.A. Bernstein. Dept. Environ. Indust. Hlth., Toxicol. Prog., Univ. of Michigan, Ann Arbor, MI.
- #846 **Use of Rat Hepatocytes Obtained from Percoll Gradient Centrifugation in DNA Damage and Repair Synthesis Studies.**
M.T.S. Hsia, B.L. Kraemer and S.K. Duddy. Env. Tox. Ctr. and Dept. of Entomol., Univ. of Wisconsin, Madison, WI.
- #847 **Mucosal Lesions in Urinary Bladder Organ Culture Following Exposure to Naphthylamine Analogues.**
M.E. Placke and A.E. Chin. Battelle Columbus Laboratories, Columbus, OH.
- #848 **Macromolecular Covalent Binding of ¹⁴C-Nitropyrene in Normal and Antibiotic-Treated Rats.**
P.H. Ayres, J.D. Sun and J.A. Bond. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM.

**THURSDAY AFTERNOON, MARCH 21
LOWER LEVEL EXHIBIT AREA**

**POSTER SESSION: Mechanisms of Toxicity IV.
Oxidative Damage**

Co-Chairs: R. Infurna, CIBA-GEIGY, Inc., Summit, NJ
T.H.F. Smith, IBM Corp., Purchase, NY

Displayed: 1:30 P.M. - 4:30 P.M.
Attended: 3:00 P.M. - 4:30 P.M.

- #849 **A Study of the Dose-Response Relationship Between Cyanide (CN) and Cytochrome Oxidase (CYT OX).**
J.C. Pettersen and S.D. Cohen. Univ. Ct, Toxicology Program, Sch. of Pharm., Storrs, CT.
- #850 **Effect of Nitrogen Dioxide (NO₂) on Antioxidant Enzyme Profile in Endothelial Cells (EC).**
J.M. Patel and E.R. Block. Univ. of Florida College of Med. and VAMC, Gainesville, FL.
- #851 **Production and Degradation of Hydrogen Peroxide in Liver Homogenates Prepared from Rats or Mice Treated with Di-(2-Ethylhexyl)phthalate (DEHP).**
K.E. Tomaszewski, D.K. Agarwal, R.L. Melnick, E.J. Rauckman and W.M. Kluwe. National Toxicology Program, NIEHS, RTP, NC.
- #852 **Model Reactions of Superoxide Radical Anions ($\cdot\text{O}_2^-$) in Aprotic Media.**
A.R. Shoaf and R.D. Harbison. Div. of Toxicol. Univ. Ark. for Med. Sci.; A. Shaikh. Dept. Chem., Univ. Ark., Little Rock, AR.

- #853 **Quantitative Cytochemical Studies on the Role of Lipid Peroxidation in Chemical Toxicity to the Liver and Kidney.**
M.T. Smith, H.J.C. Wirt and S. Thompson. School of Public Health, Univ. of California, Berkeley, CA.
- #854 **Role of Lipid Peroxidation in the Cytotoxicity of Paraquat and Other Bipyridyl Herbicides.**
M.S. Sandy and M.T. Smith. School of Public Health, Univ. of California, Berkeley, CA.
- #855 **Metabolism of Xenobiotics to Toxic Quinones in a Superoxide-Generating System.**
D.A. Eastmond and M.T. Smith. School of Public Health, Univ. of California, Berkeley, CA.
- #856 **Cooxidation of Butylated Hydroxyanisole (BHA) and Butylated Hydroxytoluene (BHT) by Prostaglandin Synthetase (PGS).**
D.C. Thompson, M.A. Trush, D.G. Lange and Y.N. Cha. Dept. Env. Health Sci., Johns Hopkins Univ., Baltimore, MD.
- #857 **Effects of Aromatic Nitro Compounds on Mouse Liver Mitochondria.**
L.O. Lim, R. Bortell and A.H. Neims. Dept. Pharmacology and Therapeutics, College of Medicine, Univ. of Florida, Gainesville, FL.
- #858 **Effects of Peroxisome-Proliferating Liver Carcinogens on Glutathione-Related Enzymes.**
G.M. Williams and E. Butler. Naylor Dana Institute for Disease Prevention, American Health Foundation, Valhalla, NY.
- #859 **Mitoxantrone and Ametantrone Inhibit Iron- and Iron: Adriamycin-Stimulated Lipid Peroxidation in Rabbit Hepatic Microsomes.**
Mary Ann Gray and Raymond F. Novak. Dept. of Pharmacology, Northwestern Univ. Medical and Dental Schools, Chicago, IL.
- #860 **NADPH Depletion by Paraquat Can be Moderated by Glucose.**
T.M. Sullivan and M.R. Montgomery. Univ. of South Florida and Haley VA Hospital, Tampa, FL.
- #861 **In Vitro Toxicology of Paraquat, Chlordecone, and Hexachlorophene for Rat Lung Fibroblasts.**
G.N. Cosma and D.G. Wenzel. Dept. of Pharmacol. and Toxicol., Univ. of Kansas, Lawrence, KS. Sponsor: G.J. Traiger.

Thursday Evening, March 21, 1985

SOT REGIONAL CHAPTER MEETINGS

5:30 P.M. - 7:00 P.M.

Rooms to be Announced

Thursday Evening, March 21, 1985

ANNUAL BANQUET

Complimentary Wine

Courtesy, Charles River Breeding Laboratories, Inc.

7:00 P.M.

Town and Country Room

OPEN TO ALL ATTENDEES AND GUESTS

TICKETS AVAILABLE AT THE REGISTRATION DESK

**FRIDAY MORNING, MARCH 22
TOWN & COUNTRY ROOM**

PLATFORM SESSION: Metal Toxicity II

Co-Chairs: H. Chung, Walter Reed Army Med. Ctr., Washington, DC
J.G. Pounds, NCTR/FDA, Jefferson, AR

- #862 8:30 **Cellular Metabolism of Lead: A Kinetic Analysis in Cultured Osteoclastic Bone Cells.**
J.F. Rosen and J.G. Pounds, Albert Einstein College of Medicine, Montefiore Medical Center, Bronx, NY; and National Center for Toxicological Research, Jefferson, AR.
- #863 8:45 **Statistical Analysis for the Characterization of the Joint Action of Cadmium and Mercury in Cultured Rat Hepatocytes.**
J.G. Pounds, R.A. Mittelstaedt and R.L. Kodell. Natl. Ctr. for Toxicol. Res., Jefferson, AR; and Div. of Interdisc. Toxicol., Univ. of Arkansas for Med. Sci., Little Rock, AR.
- #864 9:00 **Interaction of Trimethyltin and Oxygen: Hepatotoxicity.**
K.R. Reuhl and J.G. Pounds. Ecotoxicology Group, Div. Biol. Sci., Nat. Res. Council, Ottawa, Canada; and Natl. Ctr. Toxicol. Res. Jefferson, AR.
- #865 9:15 **Effect of Selenium on Cadmium-Induced Alterations in *delta*-Aminolevulinic Acid Dehydratase Activity in Male Rats.**
Marcus B. Iszard and J.L. Early. College of Pharmacy and Pharmaceutical Sciences, Florida A&M Univ., Tallahassee, FL. Sponsor: R. Craig Schnell.
- #866 9:30 **Disposition of Cadmium Following Oral Administration is Dosage Dependent.**
L.D. Lehman and C.D. Klaassen. Dept. Pharmacol., Toxicol., & Therap., Univ. Kansas Med. Ctr., Kansas City, KS.
- #867 9:45 **Effect of Cadmium Pretreatment on the Behaviour of Methylmercury and on the Disposition of the Essential Zinc and Copper in the Tissue of Rats.**
E. Komsta-Szumaska. Alberta Environmental Centre, Vegreville, Canada. Sponsor: M.G. Cherian.
- #868 10:00 **A Comparison of the Effects of Inhalation of Cadmium Chloride (CdCl₂) and Cadmium Oxide (CdO) in the Liver.**
E.C. Grose, J.A. Graham and W.C. Dauterman.^{*} U.S.E.P.A., HERL, Toxicology Branch, RTP, NC; and ^{*}Interdepartmental Toxicology Program, North Carolina State Univ., Raleigh, NC.
- #869 10:15 **Age Differences in Zinc Dependent Synthesis of Metallothionein (MT) in Mouse Liver.**
D.J. Thomas, R.A. Winchurch and J.J. Chisolm, Jr. Depts. Ped. and Surg., Johns Hopkins School of Medicine, Baltimore, MD. Sponsor: J.M. Frazier.
- #870 10:30 **Role of Metallothionein (MT) in the Metabolism of Zinc and Copper in the Liver of Lipopolysaccharide W (LPSW)-Treated Neonatal Mice.**
D.J. Thomas, R.A. Winchurch and J.J. Chisolm, Jr. Depts. of Ped. and Surg., Johns Hopkins School of Medicine, Baltimore, MD. Sponsor: J.M. Frazier.
- #871 10:45 **Lead and Cobalt-Heme: Effects on Cytochrome P450 and Progesterone Binding in Rat Liver Microsomes.**
R.G. Cameron, W.H. Roomi, L. Stuhne-Sekalec and G. Feuer. Dept. of Clinical Biochemistry and Pathology, Univ. of Toronto, Toronto, Canada.
- #872 11:00 **The Effects of Zinc Chloride on the Tissue Distribution of Cobalt.**
D.W. Rosenberg, G.S. Drummond and A. Kappas. The Rockefeller Univ. Hospital, New York, NY. Sponsor: H.H. Cornish.
- #873 11:15 **Metabolism and Toxicity of Alkylmetals in Rat Hepatocyte Cultures.**
D.L. Novicki, P. Mushak, M.R. Krigman. U.N.C. at Chapel Hill, NC.

- #874 11:30 **An Estimation of the Health Risk to Children from Arsenic-Treated Wooden Playground Structures.**
R.D. Schlag, P.E. Berteau and L.A. Garcia. California Dept. of Health Services, Berkeley, CA.
- #549 11:45 **Inorganic and Organic Mercury Toxicity to Growing Quail: PO vs. IM Exposure.**
E.F. Hill. U.S. Fish and Wildlife Service, Patuxent Wildlife Research Center, Laurel, MD.

**FRIDAY MORNING, MARCH 21
SAN DIEGO ROOM**

PLATFORM SESSION: Pesticide Toxicology II

Co-Chairs: J. Borzelleca, Medical College of Virginia, Richmond, VA
A. Gregory, Consumer Product Safety Comm., Bethesda, MD

- #875 8:30 **Accumulation and Disposition of Dieldrin in Rainbow Trout Following Subchronic Exposure: Effect of Ration and Preexposure.**
P.J. Shubat and L.R. Curtis. Oak Creek Laboratory of Biology, Oregon State Univ., Corvallis, OR. Sponsor: L.J. Weber.
- #876 8:45 **Respiratory Effects of Repeated Paraquat Injections.**
H. Burleigh-Flayer, K.L. Wong and Y. Alarie. Dept. of Indus. Environ. Health Sci., Univ. of Pittsburgh, Pittsburgh, PA.
- #877 9:00 **Telone* II Soil Fumigant: A 13-Week Inhalation Study in Rats and Mice.**
W.T. Stott, J.T. Young, L.L. Calhoun and J.E. Battjes. Mammalian and Environmental Toxicology Research Laboratory, Dow Chemical U.S.A., Midland, MI.
- #878 9:15 **The Effect of Chiral Desbromoleptophos Oxon Isomers on Acute and Delayed Neurotoxicity.**
B.K. Eya and T.R. Fukuto. Div. of Toxicology and Physiology, Univ. of California, Riverside, CA.
- #879 9:30 **Respiratory Sinus Arrhythmia (RSA): A Noninvasive Measure of Cholinergic Function.**
J.A. Dellinger and R.L. Metcalf. Dept. of Veterinary Biosciences, Univ. of Illinois, Urbana, IL. Sponsor: L.G. Hansen.
- #880 9:45 **Effect of Dermal Application of Phosphamidon-92 Technical (Technical) on Different Tissues in Albino Rat.**
G. Usha and Syed S.H. Qadri. Toxicology Unit, Regional Research Laboratory, Hyderabad - 500007, India.
- #881 10:00 **The Percutaneous Absorption of Difolatan In Adult Male Rats.**
C.M. Cisson, Y.S. Chen, Z.A. Wong and J.A. MacGregor. Chevron Environmental Health Center, Inc.; and Chevron Chemical Company, Richmond, CA.
- #882 10:15 **Biphasic Effects of Exposure Duration on Toxicity of Intermittent Environmental Acidity (H₂SO₄) and H₂OS₄/Aluminum Combination (HAC) on Rainbow and Brook Trout.**
L.R. Curtis, W.K. Seim and L.K. Siddens. Oak Creek Laboratory of Biology, Oregon State Univ., Corvallis, OR. Sponsor: L.J. Weber.
- #883 10:30 **Hyperamino Aciduria Induced by Malathion Impurities in the Rat.**
S. Keadtisuke and T.R. Fukuto. Division of Toxicology and Physiology, Univ. of California, Riverside, CA.
- #884 10:45 **Chronic Toxicity and Carcinogenesis Studies of Gentian Violet in Mice.**
N.A. Littlefield, D.W. Gaylor, B.N. Blackwell and C. Hewitt. National Center for Toxicological Research, Jefferson, AR. Sponsor: J.G. Pounds.

- #885 11:00 **Subchronic Toxicity and Hepatic Effects of CINCH® Herbicide in Rats and Mice.**
S.Z. Cagen, P.W. Beatty, D.R. Patterson, H.C. Wimberly, R. Gingell, C.M. Parker
 and R.L. Mueller. Toxicology Research, Shell Development Co., Houston, TX.
- #886 11:15 **Effect of Bilharziasis and Pesticide Exposure on Biogenic Amines.**
 A.M. Soffar, A.A. Rafie, N. Sallam, S. El-Melegy, S. Noaman and A. Fouda. Dept.
 of Biochem., Faculty of Medicine, Tanta Univ., Tanta, Egypt. Sponsor: S.A. Soliman.
- #887 11:30 **Acute, 14-Day and Subchronic Toxicity of Potassium Picloram (PIC) Administered
 to Rats Via the Drinking Water.**
L.W. Condie, J.R. Hayes† and J.F. Borzelleca†. USEPA, Cincinnati, OH; †Dept.
 Pharmacol. and Toxicol., Medical College of VA, Richmond, VA.
- #888 11:45 **Physiological Roles of Cholinesterases and Their Implication for Anticholin-
 esterase Exposure.**
 Brian Dementi, Robert Jaeger and Van Seabaugh. U.S. Environmental Protection
 Agency (EPA), Washington, DC.

**FRIDAY MORNING, MARCH 22
 GOLDEN WEST ROOM**

**PLATFORM SESSION: Mechanisms of Toxicity V.
 Cell Culture**

Co-Chairs: I. Bernstein, Univ. of Michigan, Ann Arbor, MI
 G. Traiger, Univ. of Kansas, Lawrence, KS

- #889 8:30 **Optimisation of a Metabolic Activation System for Use in the Mouse Lymphoma
 L5178Y tk⁺tk⁻ Mutation System.**
 D.B. McGregor R. Martin, C.G. Riach and W.J. Caspary. Inveresk Research
 International Ltd., Musselburgh, Scotland; and Cellular & Genetic Toxicology
 Branch, NIEHS, Research Triangle Park, NC.
- #890 8:45 **Effects of the Fungal Toxin Cytochalasin B on Growth and Differentiation of B16
 Melanoma Cells in Culture.**
J.D. Laskin. UMDNJ-Rutgers Medical School, Piscataway, NJ.
- #891 9:00 **Correlations Between SCE Frequency, Reduced Cell Survival, and HGPRT
 Mutations in Chinese Hamster Ovary Cells Exposed to N-Oxidized Aryl Compounds.**
 S.M. Morris, R.L. Kodell, F.A. Beland and R.H. Heflich. NCTR, Jefferson, AR.
 Sponsor: J.G. Pounds.
- #892 9:15 **Gravity-Flow Alkaline Elution: A Rapid Method to Detect Carcinogen-Induced
 Single-Stranded DNA Breaks.**
 J.R. Hincks and R.A. Coulombe, Jr. Toxicology Program, Utah State Univ.,
 Logan, UT. Sponsor: R.P. Sharma.
- #893 9:30 **Comparative Metabolism and Toxicity Assessments Using Human Hepatocytes.**
 C.E. Green, C.A. Tyson, J.C. Mirsalis and W.F. Blazak. SRI International, Menlo
 Park, CA.
- #894 9:45 **Proposed Teratogenic Mechanism of Action for Procarbazine Hydrochloride in
 13-14 DPC Embryonic Rat Nuclei.**
 D.S. Johnson, I.A. Muni, G.N. Wogan and P.M. Newberne. Bioassay Systems
 Corporation, Woburn, MA; Massachusetts Institute of Technology, Dept. of
 Nutrition and Food Science, Cambridge, MA.
- #895 10:00 **Maternal and Fetal ¹⁴C Excretion and Tissue Distribution Patterns for Labelled
 Procarbazine Hydrochloride Administered During Organogenesis in Rats.**
 D.S. Johnson, I.A. Muni, G.N. Wogan and P.M. Newberne. Bioassay Systems
 Corporation, Woburn, MA. Massachusetts Institute of Technology, Dept. of
 Nutrition and Food Science, Cambridge, MA.

- #896 10:15 **Chronic Toxicity and Carcinogenicity Evaluation of Prosthetic Intraocular Lens Materials After Long-Term Intramuscular Implantation in Rats.**
C. DiFonzo, N. Barsoum, S. Gracon, A. Gough, R. Martin, J. Sturgess and F. de la Iglesia. Warner-Lambert/Parke-Davis Pharm. Res., Ann Arbor, MI, and Mississauga, ON.
- #897 10:30 **Biologic & Toxicologic Effects of Intranasally Instilled Salmon Calcitonin.**
J.W. Dietrich, B.S. Brar, R. Chau, L.C.K. Wong, T.P. Pruss & E.S. Neiss. Dept. of Drug Safety Evaluation, Revlon Health Care Group, Tuckahoe, NY.
- #898 10:45 **Lead Causes an Increase in Somatic Mutation in Rats *In Vivo*.**
A.W. Ader and I.A. Bernstein. Depts. of Environ. & Ind. Health, Toxicology, and Biochemistry, The Univ. of Michigan, Ann Arbor, MI.
- #899 11:00 **Alveolar Macrophage Cytoskeletal Damage Induced by Physicochemically Characterized Mineral Dusts.**
P.S. Thorne, R.M. Albrecht and E.N. Lightfoot. Univ. of Wisconsin, Madison, WI.
Sponsor: M.H. Karol.
- #900 11:15 **Toxicity of Fibers in Cultured Lung Epithelial Cells.**
A.P. Li and C.A. Myers.
Environmental Health Laboratory, Monsanto Co., St. Louis, MO.

**FRIDAY MORNING, MARCH 22
MISSION BALLROOM**

SYMPOSIUM 8: Male-Mediated Reproductive Toxicology

***Sponsored by SOT Reproductive and Developmental
Toxicology Specialty Section***

Chairman: Granville Nolen, Procter & Gamble Co., Cincinnati, OH

- Time
(A.M.)**
- 8:30 **Introduction.**
Granville Nolen.
- 8:35 **Quantitative and Qualitative Evaluation of Spermatozoa from Animal Models.**
Rupert P. Amann, Colorado State Univ., Fort Collins, CO.
- 9:00 **Discussion.**
- 9:15 **Drug Effects on Human Sperm: Implications for Genetic Damage and Infertility.**
Andrew J. Wyrobek, Lawrence-Livermore Laboratory, Livermore, CA.
- 9:40 **Discussion.**
- 9:55 **Coffee Break.**
- 10:10 **Genetic Risks Based on Tests Other Than Transmitted Mutations in Mammals May Be Exaggerated.**
William Russell, Oak Ridge National Laboratory, Oak Ridge, TN.
- 10:35 **Discussion.**
- 10:50 **Adverse Effects on the Offspring Following Paternal Administration of Cyclophosphamide.**
Jacquette Trasler, McGill Univ., Montreal, Canada.
- 11:15 **Discussion.**

**FRIDAY MORNING, MARCH 22
LOWER LEVEL EXHIBIT AREA**

POSTER SESSION: General Toxicology III

Co-Chairs: C. Clark, Daniel Silverstein Assoc., New York, NY
C.E. Mendoza, Nat'l Defence Canada, Alberta, Canada

Displayed: 8:30 A.M. - 11:30 A.M.

Attended: 8:30 A.M. - 10:00 A.M.

- #901 **Lethality Study in CD2F₁ Mice and Toxicity Studies in Fischer 344 Rats and Beagle Dogs of Benzoquinolinedione (BIDA, NSC-308847).**
J.T. Liao, W.T. Collins, R.V. Karcher, R.A. Hiles, S.D. Erk, S. Frick and M.D. Kastello. Springborn Institute for Bioresearch, Inc., Spencerville, OH; and Battelle Columbus Laboratories, McLean, VA.
- #902 **Toxicological Manifestations of Dietary Exposure to 3,4,5,3',4',5'-Hexachlorobiphenyl in Mink.**
R.J. Aulerich, S.J. Bursian, R.F. Nachreiner, B.A. Olson, J.R. Hochstein, T.C. Hornshaw and K.A. Koudele. Dept. of Animal Science and College of Veterinary Medicine, Michigan State Univ., E. Lansing, MI. Sponsor: D. Polin.
- #903 **Kathon® NAR Biocide - 3-Month Rat Drinking Water and One-Generation Reproductive Study in the Rat.**
G.P. O'Hara, L.J. DiDonato, J.N. Moss and J.M. Smith. Rohm and Haas Co., Spring House, PA.
- #904 **Acute Toxicity Battery of Tar Sands Products and Intermediates.**
R.W. Biles, W.A. Stubblefield. Exxon Corporation, East Millstone, NJ. Sponsor: G.F. Egan.
- #905 **Preclinical Evaluation of Bactobolin (NSC-325014) in Beagle Dogs.**
J.G. Page, M.B. Beneke, S.T. Hubbard and M.D. Kastello. Battelle Columbus Laboratories, Columbus, OH.
- #906 **Toxicity Evaluation of Insulin-Containing Vesicles Administered I.V. to Beagle Dogs for 14 Consecutive Days.**
E.B. Gordon, M. King and D.B. Mitchell, Bioassay Systems Corporation, Woburn, MA; and Procter and Gamble, Cincinnati, OH. Sponsor: I.A. Muni.
- #907 **Subacute Oral Toxicity Evaluation of an Anxiolytic Agent.**
G. Smith, N. Barsoum, C. DiFonzo, S. Gracon, R. Martin, J. Sturgess and F. de la Iglesia. Warner-Lambert/Parke-Davis Pharm. Res., Ann Arbor, MI, and Mississauga, ON.
- #908 **Acute and Subchronic Toxicity of SCH 34343 - A New Penem Antibiotic.**
T. Massa, D.G. Perkins, G.Z. Kaminska, J.D. Frantz, G.C. McCormick, R. Lake, M. Klein, B.F. Murphy, R.J. Szot, H.E. Black and E. Schwartz. Schering Corporation, Lafayette, NJ.
- #909 **Proliferative Liver Lesions in Rats Induced by Methyl Carbamate.**
P.C. Chan and J.A. Quest. National Toxicology Program, NIEHS, Research Triangle Park, NC. Sponsor: W.M. Kluwe.
- #910 **Prechronic Toxicity of Orally Administered 4-Nitrotoluene in F344 Rats and B6C3F₁ Mice.**
D.W. Bristol¹ and A. Mannus². ¹NIEHS, National Toxicology Program, RTP, NC; ²Litton Bionetics, Inc., Kensington, MD. Sponsor: R. Chhabra.
- #911 **Toxicity of Microencapsulated Trichloroethylene (TCE) in Rats.**
R. Melnick, T. Goehl, B. Collins, C.W. Jameson, R. Maronpot, A. Greenwell, F. Harrington, R. Wilson, K. Tomaszewski and D. Agarwal. National Toxicology Program, NIEHS, RTP, NC.
- #912 **Health Status of Rats Housed in Ventilated Rodent Caging as Compared to Conventional Rodent Caging.**
J.R. Cushman and Z.A. Wong. Chevron Environmental Health Center, Inc., Richmond, CA.

- #913 **An Evaluation of the Health Hazards from Pesticides in Water Supplies Outside of the United States.**
R. Scofield and D.P.H. Hsieh. Dept. of Environmental Toxicology, Univ. of California, Davis, CA.
- #914 **Comparative Subchronic Effects of Chloroform Administered to Mice in Corn Oil or 2% Emulphor in Water.**
J.M. Brown, E.F. Meierhenry, C.J. Rushbrook, T.A. Jorgenson, J.R. Meier and R.J. Bull. SRI International, Menlo Park, CA; and HERL, USEPA, Cincinnati, OH.
- #915 **Some Aspects of the Use of Orbital Sinus Bleeding in Rodent Toxicity Studies.**
M.T. Koeferl, R.B. Stow, T. Williams, B. Flynn, L.J. Ziemba, P.A.G. Malya and P.J. DeBaecke. Stuart Pharmaceuticals, Division of ICI Americas, Inc., Wilmington, DE. Sponsor: S.A. Kutz.
- #916 **Evidence for Methylmercury Stimulation of Arachidonic Acid Metabolism in Rat Heart, Aorta and Platelets.**
A.I. Ally, K.R. Reuhl and D.R. Miller. Div. Biol. Sci., NRC of Canada, Ottawa, Ont., Canada. Sponsor: Joel G. Pounds.
- #917 **A Time- and Dose-Dependent Supersensitivity to Norepinephrine in the Rat Caudal Artery Following Pretreatment with BCNU.**
C.L. Rawson and R.E. Larson. College of Pharmacy, Oregon State Univ., Corvallis, OR.
- #918 **Toxic Interaction of Doxorubicin and Ubiquinone-10 Antagonists.**
O. Tabora and A.B. Combs. Div. of Pharmacology and Toxicology, College of Pharmacy, Univ. of Texas, Austin, TX.
- #919 **Adduct Formation of Toxic Alpha, Beta-Unsaturated Aldehydes with 2-Thio-barbituric Acid.**
G. Witz, A. Zaccaria, N.J. Lawrie, H.J. Ferran, Jr.* and B.D. Goldstein. UMDNJ-Rutgers Medical School, Piscataway, NJ; and Univ. of New England, Biddleford, ME.
- #920 **Analysis of 4-Methylpyrazole Plasma and Urine Levels by HPLC and Use in Therapy of Alcohol Poisonings.**
K.E. McMartin, T.D. Collins and T.P. Hewlett. Dept. of Pharmacology, Section of Toxicology, L.S.U. Medical Center, Shreveport, LA.
- #921 **Specific Analysis of Thioethers by High Pressure Liquid Chromatography (HPLC).**
R. Tardif and M. Gérin. Dép. Médecine du Travail et Hygiène du Milieu, Fac. Médecine, Univ. Montréal, Montréal, P.Q., Canada. Sponsor: J. Brodeur.
- #922 **Specific Analysis of Bromobenzene Metabolites by High Pressure Liquid Chromatography (HPLC).**
G. Truchon and M. Gérin. Dép. Médecine du Travail et Hygiène du Milieu, Fac. Médecine, Univ. de Montréal, Montréal, P.Q., Canada. Sponsor: J. Brodeur.
- #923 **The Measurement of Diene Conjugation in Plasma by HPLC - A Possible Non-Invasive Assay of Lipid Peroxidation.**
S. Thompson and M.T. Smith, School of Public Health, Univ. of California, Berkeley, CA.
- #924 **Analysis of n-Hexane and Related Chemicals by Capillary Gas Chromatography and High Performance Liquid Chromatography (HPLC).**
Amin A. Nomeir and Mohamed B. Abou-Donia. Duke Univ. Medical Center, Durham, NC.
- #925 **Nicotine Racemization During Cigarette Smoking.**
W.F. Pool, C.S. Godin and P.A. Crooks. College of Pharmacy, Univ. of Kentucky, Lexington, KY. Sponsor: H.W. Dorough.
- #926 **Computer Aided "Real Time" Aerosol Particle Statistics.**
M.D. Rausa. Dept. of the Army, Chemical Research & Development Center, Aberdeen Proving Ground, MD. Sponsor: J.T. Weimer.
- #927 **Advances in the Detection and Determination of Mycotoxins Via Capillary GC/Quadrupole Mass Spectrometry.**
B.A. Clement and T.D. Phillips. Dept. of Veterinary Public Health, Texas A&M Univ., College Station, TX.

- #928 **Application of an Electrochemical Detection Method for the Analysis of Deoxynivalenol (Vomitoxin) In Fungal Cultures.**
V.L. Sylvia, J.L. Green, N.D. Heidelbaugh and T.D. Phillips. Dept. of Veterinary Public Health, Texas A&M Univ., College Station, TX.
- #929 **Pulmonary Toxicology of T-2 Mycotoxin.**
D.A. Creasia, D. Thurman, R.W. Wannemacher, Jr. and D.L. Bunner. US Army Medical Research Institute of Infectious Diseases, Ft. Detrick, Frederick, MD. Sponsor: R.M. Mhatre.
- #930 **Four-Week Inhalation Studies of Talc: Effects.**
S.C. Brown. NIEHS, National Toxicology Program, Tucson, AZ; and J.A. Pickrell, J.M. Benson, R.K. Jones, R.L. Carpenter and R.L. Hanson. Lovelace Inhalation Toxicology Research Institute, Albuquerque, NM.
- #931 **Silica-Induced Hyperplasia and Hypertrophy of Type II Cells in the Lungs of Rats.**
B.E. Miller, L.A. Dethloff and G.E.R. Hook. Laboratory of Pulmonary Function and Toxicology, NIEHS/NIH, Research Triangle Park, NC; and Curriculum in Toxicology, Univ. of North Carolina, Chapel Hill, NC. Sponsor: D.J. Holbrook.
- #932 **Alterations in Alveolar Clearance After 4-Ipomeanol Induced Necrosis of Clara and Ciliated Cells in the Terminal Bronchiole of the Rat.**
P.E. Newton, J.R. Latendresse II, D.R. Mattie and C. Pfladderer. Univ. of California, Irvine and Air Force Aerospace Medical Research Laboratory, Wright-Patterson AFB, OH. Sponsor: J.D. MacEwen.
- #933 **Effect of Intratracheal T-2 Mycotoxin on Respiratory Gas Exchange in the Rat.**
D.G. Martin, D. Creasia and G.W. Parker. Pathophysiology Division, US Army Research Institute of Infectious Diseases, Fort Detrick, Frederick, MD. Sponsor: R.M. Mhatre.
- #934 **Biosynthesis of Radiolabeled Deoxynivalenol by *Fusarium roseum* in Liquid Culture.**
J.L. Green, V.L. Sylvia, N.D. Heidelbaugh and T.D. Phillips. Dept. of Veterinary Public Health, Texas A&M Univ., College Station, TX.
- #935 **Subacute Effects of Cyclopiazonic Acid in Rats.**
R.E. Morrissey, W.P. Norred, D.M. Hinton, R.J. Cole and J. Dornier. Russell Center, USDA-ARS, Toxicology Unit, Athens, GA; and National Peanut Research Laboratory, USDA-ARS, Dawson, GA.
- #936 **Analysis of Cell Kinetics and Bronchoalveolar Lavage Fluid After Bleomycin.**
G. Godfrey, R.C. Lindenschmidt, L.E. Sendelbach and H.P. Witschi. Biol. Div., ORNL and UT-Grad. Sch. Biomed. Sci., Oak Ridge, TN.
- #937 **Cell Kinetics in Acute Lung Injury Produced by Antineoplastic Agents.**
H.P. Witschi and R.C. Lindenschmidt. Biol. Div., ORNL, Oak Ridge, TN.

**FRIDAY MORNING, MARCH 22
LOWER LEVEL EXHIBIT AREA**

POSTER SESSION: Biotransformation III

Co-Chairs: R. Chadwick, USEPA, RTP, NC
J.B. Watkins, Indiana Univ. Sch. Medicine, Bloomington, IN

Displayed: 8:30 A.M. - 11:30 A.M.
Attended: 10:00 A.M. - 11:30 A.M.

- #938 **The Effect of Deuterium Substitution on Phenezine Metabolism.**
M.D. Watanabe and P.R. Ortiz de Montellano. Dept. of Pharmaceutical Chemistry, Univ. of California, San Francisco, CA.
- #939 **Pyrazinamide Disposition in the Male Wistar Rat.**
L.W. Whitehouse, K. Bailey and B.H. Thomas. Drug Toxicology Division, Health Protection Branch, Ottawa, Canada.

- #940 **Strategies to Promote Removal of Persistent Chemicals from Tissue Stores.**
K. Rozman, T. Rozman and H. Greim. Abt. für Toxikologie, Gesellschaft für Strahlen- und Umweltforschung mbH München, Neuherberg, F.R.G.; and Dept. of Pharmacol., Toxicol. & Therap., Univ. of Kansas Medical Center, Kansas City, KS.
- #941 **Effect of Acetone (A), Methyl-n-Butyl Ketone (MnBK) and Streptozotocin-Induced Diabetes (SID) on the Hepatic Mixed Function Oxidase System.**
A.-B. Kobusch, G.L. Plaa and P. du Souich. Dépt. de Pharmacologie, Université de Montréal, Montréal, Québec, Canada.
- #942 **Biotransformation of Paraoxon and P-Nitrophenol by Isolated Perfused Mouse Livers.**
L.G. Sultatos. Dept. of Pharmacology, LSU Medical School, New Orleans, LA.
- #943 **Pharmacokinetics of ¹⁴C-Cyclopiazonic Acid in Male Fischer 344 Rats.**
W.P. Norred, R.E. Morrissey, R.J. Cole and J.E. Dorner. Russell Research Center, ARS, USDA, Athens, GA; and National Peanut Laboratory, ARS, USDA, Dawson, GA.
- #944 **Metabolism of Methyl Isoamyl Ketone (MIAK) in the Rat.**
G.D. DiVincenzo, D.A. Ziegler, M.L. Hamilton, D. Guest and J. Dedinas. Eastman Kodak Company, Rochester, NY.
- #945 **A Drug Metabolism Program in Support of Drug Toxicity Studies.**
J.M. Jaffe. Sandoz Research Institute, Sandoz, Inc., East Hanover, NJ. Sponsor: R.E. Bagdon.
- #946 **Metabolic Studies with Di-(2-Ethylhexyl)adipate (DEHA) in the Mouse.**
D. Guest¹, F. Pallas², S. Northup¹, E. Moran¹ and M. El-hawari². Phthalate Esters Panel, Chemical Manufacturers Association¹, and Midwest Research Institute².
- #947 **Species Differences in the Disposition and Metabolism of Di-(2-Ethylhexyl)adipate (DEHA).**
M. El-hawari¹, E. Murrill¹, M. Stoltz¹, H. Skalsky² and D. Guest². Midwest Research Institute², and Phthalate Esters Panel, Chemical Manufacturers Association¹.
- #948 **Disposition and Metabolism of Diisononyl Phthalate (DINP) in Fischer 344 Rats: Single Dosing Studies.**
M. El-hawari¹, E. Murrill¹, M. Stoltz¹, F. Pallas¹, A. Lington² and J. Baldwin². Midwest Res. Inst., Kansas City, MO¹; and Exxon Corp., East Millstone, NJ².
- #949 **Disposition and Metabolism of Diisononyl Phthalate (DINP) in Fischer 344 Rats: Multiple Dosing Studies.**
A. Lington¹, J. Baldwin¹, E. Murrill², M. Stoltz², F. Pallas² and M. El-hawari². Exxon Corporation, East Millstone, NJ¹; and Midwest Research Institute, Kansas City, MO².
- #950 **Non-Linearity of Metabolism of DEHP with Dose and Prior Exposure.**
E. Robinson. Monsanto Co., St. Louis, MO; A. Lington. Exxon Corp., East Millstone, NJ; G. DiVincenzo. Eastman Kodak, Rochester, NY; M. Chadwick, A. Branfman, D. Silveira and M. McComish. A.D. Little, Inc., Cambridge, MA.
- #951 **Species Differences in the Metabolism of DEHP in Monkeys, Rats, and Mice.**
E. Moran. Chemical Manufacturers Assn., Washington, DC; A. Lington. Exxon Corp., East Millstone, NJ; G. DiVincenzo. Eastman Kodak, Rochester, NY; E. Robinson. Monsanto Co., St. Louis, MO; M. Chadwick, A. Branfman, M. McComish and D. Silveira. A.D. Little, Inc., Cambridge, MA.
- #952 **Oral Administration of the 2-Ethylhexyl (Isooctyl) Ester of 2,4-D to Fischer 344 Rats.**
S.W. Frantz and B.E. Kropscott. Mammalian and Environmental Toxicology Research Laboratory, Dow Chemical USA, Modland, MI. Sponsor: J.C. Ramsey.
- #953 **Mifobate Pharmacokinetics After Single Intravenous and Oral Doses in Cynomolgus Monkeys.**
K.K. Hwang, J. Battor, C.L. Yong, D. Drees and R. Browne. Dept. of Metabolism, Marion Laboratories, Inc., Kansas City, MO.
- #954 **The Percutaneous Absorption of Hydroquinone in Dogs.**
D. Guest, M.L. Hamilton and G.D. DiVincenzo. Health and Environment Laboratories, Eastman Kodak Company, Rochester, NY.
- #955 **Age-Related Changes in the Metabolism and Excretion of Allyl Isothiocyanate.**
S.J. Borghoff and L.S. Birnbaum. NIEHS, Research Triangle Park, NC.

- #956 **Disposition of O-Benzyl-p-Chlorophenol in Rats.**
L.R. Kao and L.S. Birnbaum, NIEHS, Research Triangle Park, NC.
- #957 **Effect of Environmental Chemicals on Toxicant Metabolism as Determined by *In Vitro* Enzyme Activity and a Model Substrate Assay.**
R.W. Chadwick, G.P. Carlson, B.A. Trela and M.F. Copeland. U.S. EPA, Research Triangle Park, NC; and Purdue Univ., Lafayette, IN.
- #958 **Glucuronidation of 4,4'-Dichlorobiphenyl (DCB) Metabolites.**
R.F. Volp. Dept. of Chemistry, Murray State Univ., Murray, KY. Sponsor: J.B. Watkins.
- #959 **The Effect of Dose on the Excretion of O,O-Bis(1-Chloro-2-Propyl)-O-(2-Propionic Acid)phosphate (BPAP), a Major Metabolite of Tris(1-Chloro-2-Propyl)phosphate (TCPP) in the Rat.**
R.P. Clement, T.Y. Chin, J.P. Lehman, J.M. Tremblay and R.I. Freudenthal. Stauffer Chemical Co., Environ. Health Ctr., Farmington, CT.
- #960 **Urinary Metabolites of Furfural and Furfuryl Alcohol in F344/N Rats.**
R.D. Irwin, S.B. Enke and J.D. Prejean. TRTP, National Toxicology Program, NIEHS, RTP, NC; SoRI, Birmingham, AL. Sponsor: R. Chhabra.
- #961 **Identification of Aflatoxin P₁-Glucuronide in Bile of Rats Given Aflatoxin B₁.**
D.L. Eaton, G.M. Bellamy and D.A. Kalman, Dept. Environmental Health, Univ. of Washington, Seattle, WA.
- #962 **Effects of Butylated Hydroxyanisole (BHA) on Acetaminophen Hepatotoxicity and Metabolism *In Vivo*.**
G.A. Hazelton, J.J. Hjelle and C.D. Klaassen. Dept. Pharmacol., Toxicol., & Therap., Univ. Kansas Medical Center, Kansas City, KS.
- #963 **Effect of Butylated Hydroxyanisole (BHA) on Hepatic Glucuronidation and Biliary Excretion of Drugs in Mice.**
Z. Gregus and C.D. Klaassen. Dept. of Pharmacology, Toxicology, and Therapeutics, Univ. of Kansas Medical Center, Kansas City, KS.
- #964 **Age- and Sex-Dependent Induction of Liver Microsomal Benzo[a]pyrene Hydroxylase Activity in Rats Treated with Pregnenolone-16 α -Carbonitrile (PCN).**
J.R. Gorski, M.P. Arlotto, J.V. Wade, C.D. Klaassen and A. Parkinson. Dept. of Pharmacology, Toxicology and Therapeutics, Univ. of Kansas Medical Center, Kansas City, KS.
- #965 **Depletion of Hepatic UDP-Glucuronic Acid by Compounds Subject to Glucuronidation.**
S.R. Howell, G.A. Hazelton and C.D. Klaassen. Dept. of Pharmacology, Toxicology, and Therapeutics, Univ. of Kansas Medical Center, Kansas City, KS.
- #966 **Differences in the Activation and Induction Properties of UDP-Glucuronosyltransferase Activity Toward Digitoxigenin-Monodigitoxoside in Rat and Mouse Liver Microsomes.**
G.A. Hazelton and C.D. Klaassen. Dept. of Pharmacology, Toxicology and Therapeutics, Univ. of Kansas Medical Center, Kansas City, KS.
- #967 **Inhibition of Energy Metabolism and Its Effect on Hepatic UDP-Glucuronic Acid and Adenosine 3'-Phosphate 5'-Phosphosulfate (PAPS) Concentrations *In Vivo*.**
R.L. Dills and C.D. Klaassen. Dept. of Pharmacology, Toxicology and Therapeutics, Univ. of Kansas Medical Center, Kansas City, KS.
- #968 **Capacity-Limited Conjugation of Acetaminophen in Mice.**
J.J. Hjelle, G.A. Hazelton and C.D. Klaassen. Dept. of Pharmacology, Toxicology and Therapeutics, Univ. of Kansas Medical Center, Kansas City, KS.
- #969 **Effect of Sodium Selenite on Metabolism of Acetaminophen and Bromobenzene in Male Rats.**
R.C. Schnell, B.A. Merrick, K.S. Park, S.J. Weir and M.H. Davies. Dept. Pharmacodyn-Toxicol., Col. Pharmacy, Univ. Nebr. Med. Ctr., Omaha, NE.
- #970 **Comparative Hepatic Metabolism of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) in the Guinea Pig, Rat, and Hamster.**
V.J. Wroblewski and J.R. Olson. Dept. of Pharmacology and Therapeutics, SUNY at Buffalo, NY. Sponsor: P.J. Kostyniak.

- #971 **Kinetics of Conjugation and Oxidation of Nitrobenzyl Alcohols by Rat Hepatic Enzymes.**
D.E. Rickert, J.D. deBethizy, M.R. Glover and G.L. Kedderis. CIIT, Research Triangle Park, NC.
- #972 **Isomeric Differences in the Bioactivation of Mononitrotoluenes: Role of Enterohepatic Circulation.**
J.P. Chism and D.E. Rickert. Chem. Ind. Inst. Toxicol., Research Triangle Park, NC.
- #973 **Metabolism of (¹⁴C-2,3) Acrylic Acid and (¹⁴C-2,3) Ethyl Acrylate by Male Sprague-Dawley Rats.**
J.D. deBethizy, J.R. Udinsky, K.L. McCarthy, J.M. Smith and H.E. Scribner. Toxicology Dept., Rohm and Haas Company, Spring House, PA.
- #974 **Oxygen Requirements for the Reductive Biotransformation of Halothane.**
R.C. Lind, A.B. DiRenzo, A.J. Gandolfi, I.G. Sipes and K. Brendel. Dept. of Anesthesiology, Univ. of Arizona, Tucson, AZ.
- #975 **Metabolism of the Pyrrolizidine Alkaloid Metabolite Trans-4-Hydroxy-2-Hexenal (t-4HH) by Liver Cytosolic and Mitochondrial Aldehyde Dehydrogenase (ALDH).**
M.W. Lame and H.J. Segall. VM/Pharmacology & Toxicology, Univ. of California, Davis, CA.
- #976 **Trans-4-Hydroxy-2-Hexenal (t-4HH): A Reactive Aldehyde Isolated from the Macrocytic Pyrrolizidine Alkaloid (PA) Senecionine.**
H.J. Segall, D.W. Wilson, J.L. Dallas and W.F. Haddon. VM/Pharmacology & Toxicology, VM/Pathology, Biological Chemistry, Univ. of California, Davis, CA; and WRRRC, USDA, Albany, CA.
- #977 **Effects of Dimethylaminoethanol on Hepatic Aldehyde Metabolism and the Pentose Phosphate Shunt.**
R.G. Little and D.R. Petersen. School of Pharmacy, Univ. of Colorado, Boulder, CO.
- #978 **Methyl N-Butyl Ketone (MBK) Induced Ketosis in Rats.**
D. Pilon, J. Brodeur and G.L. Plaa. Dép. Pharmacologie et Méd. du Trav. et Hyg. du Milieu, Université de Montréal, Montréal, Québec, Canada.
- #979 **Pharmacokinetic Disposition of Intratracheally and Orally Administered Aflatoxin B₁ in the Rat.**
R.A. Coulombe, Jr. and R.P. Sharma. Toxicology Program, Utah State Univ., Logan, UT.
- #980 **Metabolic Disposition of ¹⁴C-Lodoxamide Tromethamine (LT) by Inhalation (IN), Intravenous (IV), and Oral (PO) Routes of Administration in the Monkey.**
E.N. Petzold, A.J. Hanchar, B.K.J. Leong, J.K. Coombs and H.G. Johnson. The Upjohn Company, Kalamazoo, MI.
- #981 **Formation of Glutathione Conjugates of Benzo(a)pyrene Epoxides *In Vitro* and its Inhibition by Glutathione S-Sulfonate.**
K.H. Leung and D.B. Menzel. Depts. of Pharmacology and Medicine, Comprehensive Cancer Center, Duke Univ. Med. Center, Durham, NC.
- #982 **Effects of Acetone on Microsomal Metabolism of Acetonitrile to Cyanide.**
J.J. Freeman and E.P. Hayes. Dept. Environ. Comm. Med., UMDNJ-Rutgers Medical School/Rutgers U., Joint Grad. Prog. in Toxicology, Piscataway, NJ.

**FRIDAY MORNING, MARCH 22
LOWER LEVEL EXHIBIT AREA**

POSTER SESSION: Dermal/Ocular Toxicology

Co-Chairs: C. Auletta, Bio/Dynamics, Inc., East Millstone, NJ
C. Schiller, NIEHS, RTP, NC

Displayed: 8:30 A.M. - 11:30 A.M.

Attended: 8:30 A.M. - 10:00 A.M.

- #983 **Dermal Absorption and Tissue Distribution of Phthalate Diesters.**
A.E. El Sisi, D.E. Carter and I.G. Sipes. Dept. of Pharm./Tox., Coll. of Pharmacy, Univ. of Arizona, Tucson, AZ.

- #984 **Dermal Absorption (A) of T-2 Mycotoxin (T-2) in Guinea Pigs (GP).**
R.W. Wannemacher, Jr., D.L. Bunner, J.G. Pace and R.E. Dinterman. US Army Medical Research Institute for Infectious Diseases, Frederick, MD. Sponsor: P.M. Newberne.
- #985 **Dermal Disposition of Diisononyl Phthalate (DINP) in Fischer 344 Rats.**
M. Stoltz¹, M. El-hawari¹ and A. Lington². Midwest Research Institute, Kansas City, MO¹; and Exxon Corporation, East Millstone, NJ²
- #986 **Comparative Effectiveness of Topical Treatments for Hydrofluoric Acid Burns.**
W.M. Bracken, F. Cuppage, R.L. McLaury, C.J. Kirwin and C.D. Klaassen. Phillips Petroleum Co., Bartlesville, OK; and Dept. of Pathol. and Dept. of Pharmacol., Toxicol., & Therap., Univ. Kansas Medical Center, Kansas City, KS.
- #987 **The Effects of Occlusion on Primary Skin Irritation.**
G. Cruzan, C.J. D'Aleo and E.J. Singer. Mobil Oil Corporation, Princeton, NJ.
- #988 **Composite Skin Irritation Test.**
G. Cruzan, C.J. D'Aleo and E.J. Singer. Mobil Oil Corp., Princeton, NJ.
- #989 ***In Vivo* and *In Vitro* Toxic Responses of Mouse Skin.**
R.G. Helman, J.W. Hall and J.Y. Kao. Univ. of Tennessee, Knoxville, TN and Oak Ridge National Laboratory, Oak Ridge, TN.
- #990 **Stereologic Analysis of Skin in Dermatotoxicity Studies.**
W.C. Cullen, R.G. Helman and J.Y. Kao. Univ. of Tennessee, Knoxville, TN; and Oak Ridge National Laboratory, Oak Ridge, TN.
- #991 **Mediators of Chemically Induced Skin Irritation.**
E. Patrick and A. Burkhalter. Dept. of Pharmacology, Univ. of California, San Francisco, CA. Sponsor: H.I. Maibach.
- #992 **Serum Creatine Phosphokinase (CPK) Activity and Tissue Damage in Rabbits and Monkeys After Intramuscular Injections of Clindamycin Hydrochloride and Clindamycin Phosphate.**
S.C. Halladay, D.L. Thoma-Laurie and D.G. Fairchild. Syntex Research, Palo Alto, CA.
- #993 **Evaluation of Acute Hematotoxicity of Hydroxylamine Sulfate by Dermal Routes in Rats and Rabbits.**
S.C. Gad, M.J. Derelanko, F.A. Gavigan and P.C. Babich. Dept. of Toxicology, Allied Corporation, Morristown, NJ.
- #994 **A Model for the Study of Chemically Induced Hair Loss.**
R.J. Staab, R.B. Bradfield and H.I. Maibach. Exxon Corporation, East Millstone, NJ; Nutrition & The Law, Orinda, CA; Univ. of California Hospital, U.C. Medical Center, San Francisco, CA.
- #995 **A Modified Walker Burn Model to Evaluate Therapeutic Topical Preparations.**
K.N. Smith and I.A. Muni. Bioassay Systems Corporation, Woburn, MA.
- #996 **The Effect of a Damaged Skin Barrier on Percutaneous Absorption in Rats.**
R.L. Bronaugh and R.F. Stewart. Division of Toxicology, Food and Drug Administration, Washington, DC.
- #997 **Application of a New Occlusive Patch Test System (Hilltop Chamber) to Dermal Irritancy Testing in the Albino Rabbit.**
M. Kaminsky, M.M. Szivos and K.R. Brown. Beecham Products, Western Hemisphere Research, Parsippany, NJ.
- #998 **Nine-Day Dermal Toxicity Study of Methoxy Polyethylene Glycol-350 (Carbowax® MPEG-350) in Rabbits.**
D.E. McLain, J.H. Coleman and T.R. Tyler. Union Carbide Corporation, Bushy Run Research Center, Export, PA.
- #999 **The Excited Skin Syndrome in the Laboratory Mouse.**
E. Patrick¹, H.I. Maibach² and A. Burkhalter¹. Dept. of Pharmacology¹, and Dermatology², Univ. of California, San Francisco, CA.

- #1000 **Investigation of Butyl Benzyl Phthalate as an Allergen.**
E.C. Robinson and F.R. Johannsen. Monsanto Company, St. Louis, MO; J.R. Little and K.D. Little, Washington Univ. School of Medicine, St. Louis, MO.
- #1001 **Isocyanate Dose-Related Dermal Irritation and Delayed Contact Hypersensitization in Guinea Pigs.**
R.A. Davis, C.S. Auletta* and M.A. Friedman. American Cyanamid Company, Wayne, NJ; and *Bio/dynamics Inc., East Millstone, NJ.
- #1002 **Effect of Solvents on the Expression of Phototoxicity Potential of Fragrance Oils in an *In Vitro* Yeast Assay.**
S.T. Springer and P.C. Merker. Vicks Research Center, Shelton, CT.
- #1003 **Bis-(B-Chloroethyl) Sulfide Alters Carbohydrate Metabolism in Cultures of Rat Basal Cells.**
M.J. Brabec, T. Hsu and R. Scavarelli. Program in Toxicology, Dept. Env. Ind. Hlth., The Univ. of Michigan, Ann Arbor, MI.
- #1004 **A Topical Oral Mucosal Irritation Model: A Gross and Histopathological Study in Guinea Pigs.**
D. Doughty, T.E. Murchison* and P.C. Merker. Vicks Research Center, Shelton, CT; and *Dawson Research Corporation, Orlando, FL.
- #1005 **Evaluation of Corneal Changes Following Ocular Exposure to Benzalkonium Chloride Preservative Systems in Rabbits and Monkeys.**
D.L. Thoma-Laurie, S.C. Halladay and D.G. Fairchild. Syntex Research, Palo Alto, CA; and L.H. Campbell, Animal Eye Clinic, Menlo Park, CA.
- #1006 **Ophthalmic Toxicology of Dibenzoxazepine.**
B. Ballantyne. Applied Toxicology Dept., Union Carbide Corporation, Danbury, CT.
- #1007 **Corneal Pachometry in the Objective Evaluation of Eye Irritancy.**
B. Ballantyne. Applied Toxicology Dept., Union Carbide Corporation, Danbury, CT.
- #1008 **A Rapid Cell Culture Assay of Product Formulations and Comparison with the Draize Rabbit Eye Test.**
R.E. Bagdon. Robert Edward Bagdon, Inc., Livingston, NJ; and D.L. Prince. Gibraltar Biological Laboratories, Fairfield, NJ.
- #1009 **Dose-Effect Relationship for Ocular Irritation of Cyclohexanone in Aqueous Dilutions.**
R.L. Morgan, S.S. Sorenson and T.R. Castles. Stauffer Chemical Company, Richmond, CA.
- #1010 **Ocular Irritation of Two Chemicals when Applied Either to the Cornea or the Conjunctival Sac of the Rabbit.**
S.J. Williams, G.J. Graepel and G.L. Kennedy, Jr. E.I. du Pont de Nemours and Co., Inc., Haskell Laboratory for Toxicology and Industrial Medicine, Newark, DE.
- #1011 **Evaluation of Intraocular Lens Materials After Long-Term Implantation in the Eye of Monkeys.**
C. DiFonzo, N. Barsoum, S. Gracon, A. Gough, J. Sturgess and F. de la Iglesia. Warner-Lambert/Parke-Davis Pharm. Res., Ann Arbor, MI, and Mississauga, ON.
- #1012 **Toxicology of Preemergent Herbicide S734.**
R.A. Cardona and M.R. Dupre. Uniroyal Chemical, Bethany, CT; D.H. McGee. International Research and Development Corp., Mattawan, MI.
- #1013 **Ocular Changes in Beagle Dogs Following Oral Administration of CGS 14796C, an Aromatase Inhibitor.**
D.M. Schiavo, J.D. Green, V.M. Traina and R.M. Diener. Research Dept., Pharmaceuticals Div., CIBA-GEIGY Corp., Summit, NJ.

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Achievement

1967	Gabriel L. Plaa
1968	Allan H. Conney
1969	Samuel S. Epstein
1970	.....	Sheldon D. Murphy
1971	.....	Yues Alarie
1972	.....	Robert L. Dixon
1973	.....	No Award
1974	.....	Morris F. Cranmer
1975	.....	Ian C. Munro
1976	.....	Curtis D. Klaassen
1977	.....	James E. Gibson
1978	.....	Raymond D. Harbison
1979	.....	Michael R. Boyd
1980	.....	Philip G. Watanabe
1981	.....	No Award
1982	.....	Frederick P. Guengerich
1983	.....	No Award
1984	.....	Melvin E. Anderson

Arnold J. Lehman

1980	Allan H. Conney
1981	Gabriel L. Plaa
1982	Gary M. Williams
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1968	R.T. Williams
1969	Harold C. Hodge
1970	Don D. Irish
1971	Kenneth P. DuBois
1972	O. Garth Fitzhugh
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1976	Ted A. Loomis
1977	Robert B. Forney
1978	No Award
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Eydelloth, R.S.	36	Fowler, E.H.	115,643
Eyre, J.F.	152	Fox, D.A.	322,323,324
		Fox, T.R.	312
F		Foxworthy, P.S.	631
		France, K.A.	480
Fabry, J.P.	451	Francis, B.M.	102,103,488,571
Fairchild, D.G.	992,1005	Francovitch, R.J.	671
Fairchild, E.J.	258	Franklin, M.R.	138,300,685
Fan, A.M.	262,379	Frantz, J.D.	391,908
Farber, D.B.	322	Frantz, S.W.	39,952
Farber, E.	52	Frazier, J.M.	844
Farber, J.L.	598	Frazier, M.E.	824
Fariss, M.W.	591	Freeman, J.J.	982
Fariss, M.W.	594	Frederick, K.A.	660
Farland, W.H.	483	French, J.	340
Farmer, J.D.	100,101	French, J.E.	46,354
Farrell, K.	251	Freshour, N.L.	39
Faustman-Watts, E.M.	551,	Freudenthal, R.I.	655,785,959
	746,750	Frick, S.	901
Feenstra, D.S.	172	Fricke, R.F.	818
Feliksik, J.M.	446	Friedman, M.	830
Fenters, J.D.	168	Friedman, M.A.	1001
Fentiman, A.F.	107	Fuhremann, T.W.	259,725
Ferguson, J.S.	287	Fukushima, S.	377
Ferran, H.E.	919	Fukuto, T.R.	878,883
Ferrell, J.	562,730,735	Fuller, L.B.	27
Feuer, G.	688,871	Fullerton, F.R.	408
Fieseher, J.G.	563	Fulton, M.H.	270
Filion, P.R.	133	Fultz, M.C.	504
Finch, G.L.	717	Furedi, E.M.	501,697
Fincher, D.R.	341	Furlow, T.L.	495
Fincher, R.H.	579		
Finkelstein, J.N.	772	G	
Finley, B.L.	141	Gad, S.C.	196,197,211,224,993
Fischer, L.J.	619	Gaddis, R.	135
Fischer, S.M.	422	Gage, D.	551
Fisher, G.L.	65,66,67,717,	Galendo, D.	63
	832,833		

Galinsky, R.E.	142,685	Goeger, D.E.	57
Gallaher, E.J.	424	Gold, B.	812
Gallant, K.R.	535	Goldblatt, P.J.	75
Gallicchio, V.S.	357	Goldman, J.M.	728
Gallo, M.A.	249,481,680	Goldman, M.E.	125,126
Gallo, P.	393,402	Goldstein, B.D.	34,336,337,341, 359,493,796,919
Gandolfi, A.J.	165,166,209, 217,218,225,299, 592,601,612,974	Goldstein, G.W.	533,539
Gandy, J.	273	Goldstein, R.S.	14,241
Ganey, P.E.	416	Goodband, J.B.	389
Gangolli, S.D.	421,471,472,822	Goode, J.W.	588
Garcia, L.A.	45	Goodman, J.I.	77
Gardier, R.W.	230	Goon, D.	523
Garg, B.D.	716	Gopinath, C.	233
Gargas, M.L.	117,288,292	Gordon, C.J.	98
Garman, R.H.	9,813	Gordon, D.E.	697
Garner, C.D.	582	Gordon, E.B.	389,906
Garrett, J.H.	317	Gordon, T.	286,588
Garvin, P.J.	25,26,72	Gorski, J.R.	799,964
Gasiewicz, T.A.	250,254,316,577	Gorzinski, S.J.	64
Gavett, S.H.	132	Goss, L.B.	776
Gavigan, F.A.	993	Gough, A.W.	42,76,896,1011
Gaworski, C.L.	232	Gough, B.J.	274
Gaylor, D.W.	274,884	Gracon, S.I.	29,42,76,444,688, 896,907,1011
Gee, S.J.	221,315	Gradiski, D.	216,451
Geiger, L.E.	62,85,395	Graepel, G.J.	1010
Geissler, F.T.	746	Graham, J.A.	21,27,496,497,868
George, E.L.	365,458	Graham, T.C.	696
George, J.D.	742	Gram, R.A.	417
George, W.J.	557,671	Grand, A.F.	505
Gerges, S.E.	816	Gray, A.J.	477,482,731
Gerhart, J.M.	72,205,468	Gray, L.E., Jr.	464,562,728, 730,735
Gérin, M.	669,837,921,922	Gray, K.	562
Gerling, F.S.	739	Gray, M.A.	859
Gerson, R.J.	598	Gray, R.H.	340,624,845
Ghoshal, A.	688	Gray, T.J.B.	471,472
Gianutsos, G.	765,786,787	Grayson, M.H.	188
Gibson, W.B.	698	Graziano, M.J.	86,666
Gill, M.W.	576	Green, C.E.	79,221,893
Gill, S.S.	188,346,664	Green, J.D.	362,1013
Gillies, P.J.	617	Green, J.L.	928,934
Gillis, B.	159	Green, M.D.	619
Gilmore, L.B.	415	Greenlee, W.F.	37
Gingell, R.	308,809,885	Greenman, D.L.	408
Ginsberg, G.L.	613	Greenspan, B.J.	115,547,813
Giri, S.N.	436	Greenwell, A.	911
Glatt, H.R.	840	Gregus, Z.	527,963
Glover, M.R.	971	Greim, H.	800,940
Goad, P.T.	550	Grimes, G.S.	695
Godfrey, G.	936	Grimes, L.A.	61
Godin, C.S.	925	Grissom, R.E.	267
Goeden, H.	741	Grose, E.C.	868
Goehl, T.	911	Gross, R.W.	587
Goering, P.L.	529,541	Gross, W.B.	774
Gohs, F.	393,402		

Gruenke, L.D.	119	Hartman, T.G.	314
Grumbein, S.L.	277,749,758	Hartung, R.	806
Guba, J.	203	Hartwick, R.	359
Guengerich, F.P.	310,646,663	Hartzell, G.E.	505
Guest, D.	944,946,947,954	Hasegawa, L.	412
Gurman, J.L.	506	Haseman, J.K.	156,157
Gushow, T.S.	I	Hasmall, R.L.	476,743
Guth, D.J.	283,285,712	Hassan, M.Q.	252
Guthrie, F.E.	198,267	Hassler, C.R.	449
Gutshall, L.L., Jr.	715	Hatch, G.E.	319
Guzelian, P.S.	143	Hatoum, N.S.	25,26,72,116, 205,468
Guzzie, P.J.	82	Haugen, D.A.	88
H		Hawk, B.A.	111
Haake, J.	140	Hayes, E.P.	418,982
Habash, D.L.	454,738	Hayes, J.M.	319
Haber, S.B.	518	Hayes, J.R.	656,887
Hacker, A.	638	Hayes, M.A.	51,52,296
Haddon, W.F.	976	Hayes, T.L.	717
Hadley, W.M.	268,579	Hazelette, J.R.	362
Haggerty, G.C.	107,431	Hazelton, G.A.	962,965,966,968
Hahn, F.F.	120,507	Heck, H.d'A.	509,510
Hainje, M.	634	Heflich, R.H.	677,891
Halder, C.A.	72,720	Heidelbaugh, N.D.	747,928,934
Hale, P.	367	Heikkila, R.E.	771
Haley, M.V.	269	Hein, J.F.	464,526
Hall, J.W.	989	Helman, R.G.	989,990
Hall, L.B.	751	Henauer, S.A.	424
Hall, L.L.	264,266	Henck, J.W.	104
Hall, W.C.	112,778	Henderson, M.C.	805
Halladay, S.C.	992,1005	Henderson, R.F.	120,289,291, 507,538
Hallford, D.M.	684	Hendricks, J.D.	56,57
Halpert, J.R.	661,674	Hengler, W.C.	82
Hamilton, M.L.	944,954	Henningsen, G.M.	158,192,355
Hamilton-Koch, W.	89	Henry, C.J.	87
Hamm, T.E., Jr.	361	Herkert, G.E.	365
Hammond, B.G.	229,756	Hermes, M.A.	705
Hampton, J.D.	328	Herren-Freund, S.L.	49
Hanasono, G.K.	695	Hertz-Picciotto, I.	262
Hanchar, A.H.	122	Hess, R.A.	554
Hanchar, A.J.	980	Hesse, E.J.	249,481
Hand, R.E., Jr.	352	Heusner, J.J.	685
Hanke, D.W.	574	Hewitt, C.	884
Hanley, T.R., Jr.	438	Hewitt, L.A.	636
Hansen, L.G.	102,145	Hewitt, W.R.	219,220,243
Hanson, R.L.	121,930	Hewlett, T.P.	920
Hanzlik, R.P.	135,432,433,434	Heydens, W.	806
Harbison, R.D.	558,560,852	Heyner, S.	736
Harnett, K.M.	349	Heyman, I.A.	123,390
Harrington, F.	911	Hibbs, C.M.	325
Harrington, R.M.	384,385	Hiipakka, D.W.	821
Harris, M.W.	485,751,802	Hiles, R.A.	901
Harris, S.E.	506	Hill, D.M.	668
Harrison, S.D.	453	Hill, E.F.	549
Hart, R.W.	65	Hill, L.H.	714

Hincks, J.R.	892	Hutson, D.H.	307
Hines, L.	812	Hwang, K-K.	953
Hinsdill, R.D.	172,173,174,199	Hyder, S.	719
Hinton, D.M.	935	Hyslop, P.A.	804
Hinz, J.P.	561,732		
Hirose, M.	377	I	
Hites, R.A.	163		
Hjelle, J.J.	962,968	Iatropoulos, M.J.	38
Ho, I.K.	575	Iba, M.M.	622
Hoag, M.K.P.	675	Ignatoski, J.A.	237
Hobbs, C.H.	120,121,290,507	Ikeda, T.	272
Hobson, D.W.	230,231,232,420	Imamura, T.	84,183,184,185, 273,276,412
Hobson, M.	766	Impelman, D.	323,324
Hochstein, J.R.	902	Infiesto, B.P.	113
Hodgson, E.	364,626,647,649, 651,652	Infurna, R.	552
	224	Inman, A.	572
Hoffman, G.	224	Inoue, T.	229,756
Holazo, A.A.	302	Irons, R.D.	361
Holdsworth, C.E.	720	Irvin, T.R.	80
Holeski, C.J.	149,686	Irwin, R.D.	43,784,960
Holland, L.M.	500	Ishida, N.	229,756
Hollister, L.E.	424	Ishmael, J.	4,5
Holsapple, M.P.	17,171,194,195	Iszard, M.B.	865
Hong, J.S.	789	Ito, N.	377
Hook, G.E.R.	415,931	Iverson, F.	23
Hook, J.B.	14,241	Iwasaki, M.	272
Hoover, D.M.	631		
Hope, E.	469	J	
Hopkins, K.L.	824		
Hopkinson, S.A.	125	Jackson, C.D.	32,33
Hornshaw, T.C.	902	Jackson, R.J.	262
Horstman, D.H.	279	Jackson, S.E.	783
Horstman, M.G.	553	Jackson, T.	30
Horton, V.L.	473	Jacobs, A.J.	106,772
Hoskins, B.	575	Jaeger, R.B.	888
Hostetler, K.Y.	817	Jaffe, J.M.	945
Houde, D.	245	Jagannath, M.	841
House, R.V.	180	Jamall, I.S.	445,788
Houser, M.T.	11	James, J.T.	112,113
Houston, B.	444	James, P.	233
Howd, R.A.	334,783	James, R.C.	558
Howell, S.R.	965	Jameson, C.W.	354,911
Hoyt, D.G.	642	Janssen, R.	332
Hsia, M.T.S.	172,174,846	Jarvi, E.J.	410
Hsieh, D.P.H.	401,913	Jayasekara, M.U.	31,372
Hsu, H.H.	382	Jeffrey, M.M.	7
Hsu, T.	1003	Jensen, R.K.	48,50,261
Huang-Lu, C-J.	250	Jepson, G.W.	40,256
Hubbard, S.T.	409,905	Jessup, D.C.	238
Huckle, K.R.	307	Ji, S.	297,419
Hudson, L.G.	37	Johannsen, F.R.	259,470,725, 779,794,1000
Hudson, P.	789	John-Greene, J.A.	463,473
Huff, J.E.	156,157	Johnson, D.S.	894,895
Hughes, B.J.	200	Johnson, D.W.	269
Hull, J.B.	703		
Hurtt, M.	456,457		

Johnson, H.G.	980	Kennedy, G.L., Jr.	223,516,
Johnson, J.T.	582		520,1010
Johnson, K.A.	64	Kerkvliet, N.I.	170
Johnson, K.W.	182	Kershaw, W.C.	608
Johnson, W.D.	631	Kessler, F.K.	404
Jone, C.M.	313	Kester, J.E.	316
Jones, D.H.	139	Kesterson, J.W.	123,390
Jones, L.C.	394	Ketels, K.V.	168
Jones, L.L.	384	Keys, B.	247,679
Jones, R.K.	121,930	Khan, A.	550
Jordan, S.	803	Khazaeli, M.	806
Jorgenson, T.A.	483,914	Kier, L.D.	452
Jortner, B.S.	774	Killeen, J.C., Jr.	237
Joseph, X.	189,368	Killinger, J.M.	655,785
Jowa, L.	584	Kim, E.K.	654
Joy, R.M.	338	Kim, H.L.	450
Juhasz, L.P.	301	Kim, K.Y.	654
		Kim, S.N.	372
K		Kimmel, C.A.	739,742
Kadry, A-R.M.	816	Kimmel, G.L.	793
Kalf, G.F.	584	Kindt, M.V.	581
Kalman, D.A.	961	King, M.	906
Kaminska, G.Z.	907,908	King, M.E.	496
Kaminski, N.E.	198	Kinkead, E.R.	231
Kaminsky, M.	997	Kinney, L.A.	520
Kamrin, M.A.	403	Kirkpatrick, D.T.	517
Kanagalingum, K.	778	Kirwin, C.J.	986
Kao, J.Y.	989,990	Klaassen, C.D.	523,528,529,530,
Kao, L.R.	956		866,962,963,964,965,
Kapeghian, J.C.	407,659		966,967,968,986
Kaplan, H.L.	505	Klaunig, J.E.	49,53,58,600
Kappas, A.	872	Klein, M.	908
Karcher, R.V.	901	Kleinbaum, D.G.	321
Karol, M.H.	24,281	Kleinow, K.M.	692
Kary, C.D.	643	Klonne, D.R.	720
Kasprzak, K.S.	207	Kloss, M.W.	234
Kastello, M.D.	409,901,905	Kluwe, W.M.	30,399,467,851
Kastl, P.E.	1,440	Knadle, S.A.	583
Katz, G.V.	644	Knutsen, G.	68
Kauffman, F.C.	676	Ko, J.H.	654
Kaur, S.	664	Kobusch, A.-B.	611,941
Kavlock, R.J.	10,731,740	Kodell, R.L.	863,891
Kawabata, T.T.	663	Koeferl, M.T.	705,915
Keadtisuke, S.	883	Koizumi, A.	240
Kedderis, G.L.	971	Koller, L.D.	19,158,179,192,355
Kedzierski, B.	441	Komsta-Szumaska, E.	867
Kehrer, J.P.	136	Kopp, S.J.	446
Kehrl, H.	279	Kornbrust, D.J.	159,650
Keller, D.A.	519	Korte, D.W., Jr.	755
Keller, R.J.	768	Kostyniak, P.J.	208
Kelley, M.	305,679	Kotsonis, F.N.	226
Kelly, D.P.	516	Koudele, K.A.	902
Kelman, B.J.	699	Krack, G.	596
Kenley, R.A.	783	Kraemer, B.L.	846
		Krajnc, E.I.	18
		Kramer, R.A.	3

Kraska, R.C.	64,692	Later, D.W.	163
Kraus, A.L.	834	Latriano, L.	359
Kraus, P.I.	137	Latta, D.M.	540
Kreiling, R.	521	Lauer, L.D.	16,180
Krigman, M.R.	761,762,873	Laurie, R.D.	105,628
Krishna, G.	447	Lawrie, N.J.	919
Kronenberg, J.M.	725	LaVelle, J.M.	89
Kropscott, B.E.	952	Lawrence, W.H.	426
Krumdieck, C.L.	225,601	Lawrie, N.J.	34,771
Ku, R.H.	835	Laws, S.C.	526
Kuehn, K.	638	Lawton, A.D.	466
Kulkarni, A.P.	150	Leach, C.L.	25,26,116,205,468
Kupp, R.P.	242	Leach, G.J.	112,429
Kurata, T.	377	Lech, J.J.	670,692
Kurtz, P.J.	107,277,380,430, 431,749,758	Ledda, G.M.	534
Kutob, R.	694	Lee, E.W.	582
Kutz, S.A.	422	Lee, F.C.	654
Kutzman, R.S.	280,723	Lee, J.S.	654
Kwock, L.M.	830	Lee, K.P.	508,516,617
Kyle, G.M.	397,609	Lee, N.H.	653
		Lee, P.S.	443
		Lee, S.Y.	164,487
		Lee, Y.C.	124,128
		Lee, Y.H.	711,712
L		Lefevre, R.	563
Labelle, L.	227	Lehman, L.D.	866
Lacy, S.A.	311	Lehman, J.P.	959
Lafrancesco, W.M.	840	Lehmann, J.R.	515
Lage, G.L.	608	Lehnert, B.E.	500,710,713,719
LaGory, K.E.	105	Lehning, E.	455
Laib, R.J.	521	Lehrer, S.B.	390
Lake, R.	908	Leighty, E.	107
Lal, J.B.	559	Lemasters, J.J.	764
Lam, C.-W.	510	Leonard, T.B.	608,614,615
Lam, H.F.	494	Leong, B.K.J.	122,980
Lamb, J.C., IV	466,558,727, 751,802	Leslie, G.B.	35
Lambert, C.E.	826	Leung, H.-W.	821
Lame', M.W.	975	Leung, K.H.	981
Landauer, M.R.	113,429	Leung, P.	437
Landis, W.G.	269	LeValley, S.E.	315
Landriault, H.	605	Levi, P.E.	652
Landon, E.J.	810	Levin, A.A.	302,303,820
Landry, T.D.	1	Levin, B.C.	504,506
Lang, K.L.	307	Levin, E.D.	96
Lange, D.G.	856	Levin, R.A.	696
Langley, A.E.	369	Levine, B.S.	697
Langvardt, P.W.	438,681	Levinskas, G.J.	259,470,725
Lapadula, D.M.	110,690,779	Levy, W.R.	436
Lapierre, M.	603	Lewandowski, E.	239
La Rocca, P.T.	391	Lewandowski, M.M.	647
Larson, R.E.	410,642,917	Lewis, S.C.	70
Laskey, J.W.	526,754	Lewis, H.B.	578
Laskin, D.L.	297	Lewis, T.L.	202
Laskin, J.D.	153,890	Lj, A.P.	900
Last, J.A.	283	Liao, J.T.	901
Latendresse, J.R., II	932	Lieu, D.D.	575

Lightfoot, E.N.	899	McDonald, D.M.	286
Lilja, H.	354	McDonald, J.J.	148
Lim, L.O.	857	McDonnell, W.F.	279
Lim, T. (Tae-Wha)	579	McDougal, J.N.	40,256
Lind, R.C.	299,974	McDowell, T.D.	268
Lindenschmidt, R.C.	154,936,937	McFarland, A.R.	65
Linder, R.E.	554	McGee, D.H.	1012
Lington, A.W.	634,948,949, 950,951,985	McGill, E.	29,42
Linnartz, R.	366	McGinley, P.A.	765
Lipscomb, J.C.	691	McGregor, D.B.	889
Lish, P.M.	697	McGrath, J.J.	443
Little, J.R.	1000	McGuinn, W.D.	364
Little, K.D.	1000	McGuire, E.J.	31,372,373,624
Little, R.G.	977	McKee, D.J.	490
Littlefield, N.A.	884	McKee, R.H.	71,561
Liu, T-T.Y.	255	McKelvey, J.A.	645
Liu, Z.	300	McKenna, M.J.	55,440
Lloyd, S.C.	459,460,482	McKinney, J.D.	803
Lock, E.A.	4,5,235	McKinney, W.	330
Lock, S.	352,353,522	McLain, D.E.	396,998
Logan, C.J.	307	McLaury, R.L.	986
Lok, E.	23	McLeod, L.	318
London, J.E.	710	McMartin, K.E.	920
Long, M.D.	98	McMenamin, M.G.	3
Long, T.J.	259	McMillan, D.A.	607,616
Lopez, J.M.	524	McMillan, D.E.	95
Lotti, M.	568	McNee, M.L.	122
Lottsfeldt, J.	551	McNeill, D.A.	66,67
Lovering, S.	305	McNeill, K.L.	67
Lucas, D.M.	58	McNerney, P.J.	171
Lucas, J.A.	624	McQueen, C.A.	597,827
Lucier, G.W.	585		
Luebke, R.W.	201,206	M	
Lui, E.M.K.	479,757	MacAskill, S.M.	475
Lundgren, K.	585	MacCallum, R.D.	567
Lundstrom, D.L.	371	MacDonald, J.R.	612
Luster, M.I.	171,803	MacEwen, J.D.	232
Luthra, R.	397,609	MacKenzie, K.M.	30
Lyles, K.W.	728	MacKenzie, W.F.	397,609
Lyte, M.	176,177,178	MacMillan, D.L.	59
Lysy, H.H.	169,175,194	MacPhail, R.C.	100,101
Lyon, R.	161,563	Machotka, S.V.	46,123
Lyerly, D.	572	Mackenzie, D.R.	550
		Madden, M.C.	830
Mc		Maedgen, J.L.	258
McCarthy, K.L.	973	Mahlum, D.D.	163,371,699,824
McCarty, J.D.	62,85,395	Maibach, H.I.	119,708,994,998
McChesney, M.M.	782	Mallett, A.K.	421,822
McClain, R.M.	302,303,744	Malya, P.A.G.	653,915
McClellan, R.O.	511,513,538	Mandel, G.S.	204
McComish, M.	950,951	Mandel, N.S.	204
McConnell, R.F.	388	Maniscalco, W.M.	772
McCormack, J.J.	685	Mankes, R.F.	161,563
McCormick, G.C.	391,908	Mannus, A.	910
		Manson, J.M.	458

Manus, A.G.	8	Miller, F.J.	489,497
Marcello, N.L.	132,712	Miller, G.D.	819
Marciano-Cabral, F.	193	Miller, G.E.	478
Margaretten, N.C.	191	Miller, M.J.	597
Marker, E.K.	150	Miller, M.S.	392
Marlowe, C.	147,811	Miller, N.E.	674
Maronpot, R.R.	354,911	Miller, P.D.	494
Marquis, J.K.	566,567	Miller, R.R.	681,700
Marr, M.C.	742	Milman, H.A.	54
Marsh, L.	784	Milne, C.M.	476,743
Marshall, T.C.	120	Minnema, D.J.	769
Martin, B.R.	428	Miranda, C.L.	805
Martin, B.S.	187	Mirsalis, J.C.	79,893
Martin, D.G.	933	Mishkin, E.M.	17
Martin, J.L.	6	Mistry, P.	210
Martin, J.S.	282	Mitchell, D.B.	147,906
Martin, R.	889	Mitchell, D.Y.	673
Martin, R.A.	29,42,444,896,907	Mitchell, M.A.	356,580
Mason, G.	247	Mitra, R.S.	823
Massa, T.	908	Mittelstaedt, R.A.	863
Massaro, E.J.	279,819	Mitschke, H.R.	308
Massaro, T.F.	819	Miura, K.	14
Mast, R.W.	64	Mizens, M.	237
Masten, J.L.	695	Molloy, C.J.	153
Matsumura, F.	797,798	Molowa, D.T.	143
Mattie, D.R.	932	Monroe, D.H.	149
Mattsson, J.L.	335	Montgomery, C.A.	41,222,
Mauderly, J.L.	120,507		238,629,778
Mavis, R.D.	285,517,712	Montgomery, M.R.	792,860
Mayer, R.T.	657	Monti, K.L.	405,759,760
Mayura, K.	747	Moore, B.L.	223
Mazrimas, M.J.	126	Moore, M.R.	74
Mebus, C.A.	398	Moore, R.W.	320
Medinsky, M.A.	290,291	Moorman, W.J.	202
Mehanna, A.S.	363	Moran, E.J.	480,634,643,946,951
Mehendale, H.M.	298	Moretto, A.	568
Meier, J.R.	914	Moreland, D.E.	586
Meierhenry, E.F.	914	Morgan, D.G.	242,614
Meldrum, B.	13	Morgan, D.L.	495
Melhorn, J.M.	87	Morgan, K.T.	704
Melnick, R.L.	851,911	Morgan, P.H.	45
Menahan, L.A.	248	Morgan, R.L.	437,1009
Menzel, D.B.	490,495,514,	Morin, A.	667
	519,537,981	Morris, J.B.	284,491,502,765
Merigan, W.H.	325	Morris, S.M.	891
Merker, P.C.	1002,1004	Morris, S.R.	81
Merrick, B.A.	969	Morrissey, R.E.	935,943
Merrill, B.M.	597	Morrow, W.	564
Merrill, J.	140	Moser, V.C.	326
Metcalf, R.A.	571	Moss, E.J.	471,472
Metcalf, R.L.	571,102,488,879	Moss, J.N.	265,275,903
Michaelson, I.A.	769	Mossman, B.T.	65
Middleton, M.C.	476,477,743	Mueller, R.L.	308,809,885
Miller, B.E.	931	Mulder, K.M.	208
Miller, C.P.	485,802	Mulholland, A.	841
Miller, D.R.	916	Mulholland, L.T.	78

Muni, I.A.	389,894,895,995	Novak, R.F.	859
Munson, A.E.	175,182,193,	Novicki, D.L.	873
	194,195,512	Nye, A.C.	533
Munson, J.A.	195		
Muralidhara, S.	397,609,610	O	
Murchison, T.E.	1004	Oatley, S.	803
Murphy, B.F.	908	Oberdörster, G.	132,711,712
Murphy, M.E.	265	O'Brien, J.C.	842
Murphy, M.J.	351	O'Donoghue, J.L.	360,625,643
Murphy, S.D.	814	Oesch, F.	257,648,662,840
Murray, M.J.	16,180	O'Flaherty, E.J.	155
Murray, W.J.	252	Ogiso, T.	377
Murrill, E.	947,948,949	O'Hara, G.P.	265,275,903
Musgrove, D.L.	195	Ohshima, M.	207
Mushak, P.	111,321,329,762,873	Olafsdottir, K.	591
Mustafa, M.G.	638	Olajos, E.J.	777,781
Mutter, L.C.	143	Oldham, J.W.	815
Myers, C.A.	900	Olson, B.A.	902
Myers, M.J.	178	Olson, C.T.	230,420
Myers, R.C.	82,813	Olson, J.R.	970
Myhr, B.	841	Olson, L.J.	172,173
		Olson, M.J.	635
N		O'Neill, E.A.	795
Nachreiner, R.F.	902	Onizuka, N.K.	752
Nachtman, J.P.	425	Orr, J.	135
Narasimhan, N.	432,433,434	Orren, D.	762
Naumann, B.D.	718	Ortiz de Montellano, P.R.	938
Neims, A.H.	857	Orzel, R.A.	503,504
Neiss, E.S.	706,707,897	Ostby, J.	562,730,735
Nelson, B.K.	550	Osborne, C.A.	19,192
Nelson, C.J.	726	Osborne, D.W.	439
Nera, E.A.	23	Osheroff, M.R.	515
Neuhauser, E.F.	396	Osis, I.D.	454,738
Newberne, P.M.	60,160,162,589,	Otto, D.A.	111,321,329
	590,893,894,895	Oudiz, D.	457,461
Newland, D.	572	Overton, J.H., Jr.	489
Newport, G.D.	793	Owens, L.K.	345
Newton, J.F.	615		
Newton, P.E.	931,932	P	
Nichols, G.J.	619	Paabo, M.	504,506
Nichols, H.P.	830	Pace, J.G.	984
Nixon, J.E.	56,57	Packham, S.C.	128
Nizamani, S.	437	Padilla, S.	572
Noaman, S.	886	Page, A.C.	308,809
Noble, C.	244	Page, J.G.	409,905
Nocerini, M.R.	678	Palekar, L.D.	152
Nolan, R.J.	240,439	Palese Lund, M.	400
Nomeir, A.A.	689,924	Pallas, F.	946,948,949
Nomides, C.T.	815	Paré, A.A.	429
Norred, W.P.	935,943	Paré, M.	429
North, B.M.	148	Parent, R.A.	114,828
Northrup, S.	946	Park, J.K.	654
Norton, R.M.	234	Park, K.S.	969
Norvell, M.J.	62,85,395	Parker, C.M.	885
Notides, A.C.	693		

Parker, G.W.	933	Placke, M.E.	832,833,847
Parker, L.	313	Pleban, P.A.	781
Parkinson, A.	799,800,964	Plotnick, H.B.	559
Parnell, M.J.	158	Pohl, L.R.	165,166
Parsons, P.	740	Poirier, L.A.	207,737,843
Pascoe, G.A.	591,594	Poklis, A.	367
Pasino, D.A.	14,241	Polin, D.	455
Pastoor, T.P.	617	Pollock, G.A.	564
Patel, D.	249,481	Pool, W.F.	925
Patel, J.M.	850	Popp, D.M.	353
Patil, G.	161	Popp, R.A.	353,522
Patrick, E.	991,999	Port, C.D.	226
Patterson, D.R.	885	Potter, C.L.	320
Patton, J.H.	810	Pounds, J.G.	531,532,533,862, 863,864
Patton, W.E.	815	Pour, A.M.	616
Paule, M.G.	691	Powers, M.	8
Paulson, J.D.	815	Powers, W.J., Jr.	211
Paustenbach, D.J.	288	Pratt, R.C.	802
Paulter, E.L.	328	Prejean, J.D.	157,629,960
Pazdernik, T.	800	Prentice, R.C.	446
Peace, D.C.	446	Preston, R.F.	815
Peak, M.J.	825	Price, C.J.	739,742
Pearson, J.K.	796	Price, H.C.	152
Pedigo, N.G.	557	Prince, D.L.	127,1008
Peele, D.B.	100,101	Pritchard, J.F.	815
Peffer, R.C.	363	Probst, K.S.	381
Pegg, D.	31	Pruss, T.P.	706,707,897
Pellerin, R.J.	112	Pryor, G.T.	334
Penney, D.	135	Purchase, R.J.	822
Pereira, M.A.	49,53,600	Putman, D.L.	87
Perkins, D.G.	908	Püttmann, M.	257
Perry-Barnes, H.H.	701,702		
Peter, C.K.	374		
Peters, A.C.	41,430,784	Q	
Petersen, D.R.	673,977	Qadri, S.S.H.	880
Petersen, D.W.	670,692	Quast, J.F.	55,700
Peterson, D.R.	732	Quest, J.A.	909
Peterson, L.A.	791		
Peterson, R.E.	248,320,342	R	
Petry, T.W.	827	Rac, V.S.	25,205,697
Petterson, J.C.	366,807,849	Radike, M.	461
Petzold, E.N.	122,980	Raffa, R.B.	839
Pfledderer, C.	932	Rafie, A.A.	886
Pfohl, R.J.	105	Raisbeck, M.F.	219,220
Phillips, J.E.	I	Rajanna, B.	766
Phillips, R.D.	480,643,732	Ramalingam, B.	317
Phillips, T.D.	747,927,928,934	Ramanathan, R.	610
Pickering, D.B.	296	Ramsey, J.C.	240
Pickrell, J.A.	120,121,507,930	Rand, G.M.	271,383,388
Pierini, M.	568	Randall, H.W.	704
Pilaro, A.M.	297	Randall, J.R.	53
Pilcher, G.D.	369	Rao, K.S.P.	564,565,790
Pilon, D.	978	Rao, M.S.	637
Piper, W.N.	398	Rarey, K.E.	331
Piskorska-Pliszceynska, J.	247		
Plaa, G.L.	611,627,633,636,941,978		

Rasmussen, R.E.	151	Robinson, R.A.	271,383
Ratajczak, H.V.	26,167,205	Robinson, S.	111,321
Rau, L.A.	246	Robison, A.K.	587
Rauckman, E.J.	399,851	Rodgers, K.E.	183,184,185
Rausa, M.D.	926	Roebuck, B.D.	59
Ravindranath, V.	632	Roesner, M.	347
Ravikumar, V.C.	278	Roger, J.C.	25,26
Rawson, C.L.	917	Roger, L.J.	279
Ray, A.C.	351,450	Rogers, A.E.	164,487
Reagor, J.C.	351	Rogers, R.R.	201,206
Reasor, M.J.	190,817	Rogers, S.	29,444
Rebar, A.H.	538	Rogers, S.A.	615
Rech, R.H.	104	Rogers, W.R.	505
Reddy, C.S.	423,748	Roloff, M.V.	118,452
Reddy, J.K.	637	Romkes, M.	247
Reddy, R.V.	22	Rommereim, R.L.	699
Redmond, D.	250	Ronning, D.C.	405,759,760
Reed, D.J.	591,594	Roomi, M.W.	534,688,871
Reel, J.R.	466,467	Rosanoff, K.	139
Rees, D.C.	93,94	Rosen, J.D.	314
Rehnberg, G.L.	464,526	Rosen, J.F.	862
Reilly, C.A., Jr.	88	Rosenbaum, D.P.	836
Reinhardt, C.F.	508	Rosenberg, D.W.	872
Reiter, L.W.	333,764	Rosenberg, P.	808
Reitz, R.H.	439	Rosenblum, I.Y.	736
Renner, E.R., Jr.	644	Rosenthal, G.J.	28
Reno, F.E.	755	Rosner, M.H.	546
Reuhl, K.R.	531,864,916	Ross, J.F.	108
Reveley, J.W.	776	Ross, P.	387
Rezabek, M.S.	48,50	Rosso, E.	276
Riach, C.G.	889	Roth, A.C.	365
Ribeiro, P.	823	Roth, D.	160
Ribelin, W.E.	118	Roth, R.A.	416
Rice, D.	91	Rouisse, L.	604
Richards, D.E.	559	Rouse, R.V.	16
Richardson, F.C.	45	Rowe, D.G.	201,206
Richardson, R.J.	84	Rowland, I.R.	421,822
Rickert, D.E.	361,687,971,972	Roy, T.	233
Riddle, M.M.	201,206	Rozman, K.	38,799,800,801,940
Rieger, J.A.	263,278	Rozman, P.	799
Rifkind, A.B.	317	Rozman, T.	940
Ringer, R.K.	486	Rubin, R.J.	414
Rinne, S.P.	379	Ruch, R.J.	49,58,600
Risinger, F.O.	427	Ruecker, F.A.	759
Riviere, J.E.	2	Ruegg, C.E.	225
Roberfroid, M.	596	Ruggiero, M.L.	59
Roberts, A.E.	672	Rundell, J.	841
Roberts, E.	52	Ruppert, P.H.	101
Roberts, J.F.	198	Rusek, T.F.	438
Robertson, D.G.	340	Rush, G.F.	599
Robertson, L.W.	662,257	Rushbrook, C.J.	483,484,914
Robinson, C.J.G.	189	Rutter, H.A.	46
Robinson, E.C.	794,950,951,1000	Ryden, E.B.	349
Robinson, G.S.	329	Ryer, J.	493
Robinson, M.	68,69	Rylander Yueh, L.A.	218

S		Schroeder, R.E.	474
Sabourin, P.J.	652	Schroeder, S.R.	111,321,329
Sabourin, T.D.	776	Schroer, R.A.	393
Sabri, M.I.	392	Schultz, D.A.	192
Sadek, S.E.	302	Schumann, A.M.	438,439
Sadler, B.M.	739	Schut, H.A.J.	61
Safe, L.	247	Schwartz, E.	391,908
Safe, S.	139,140,247,251,305,679	Schwartz, H.	701,702
Safe, S.H.	51	Schwen, R.J.	394
Salama, A.K.	724	Schwetz, B.A.	159
Sallam, N.	886	Scimeca, J.	428
Salmon, G.K.	35	Scofield, R.	401,912,913
Sandy, M.S.	595,854	Scott, J.B.	362
Sanford, C.	426	Scribner, H.E.	973
Santiago, A.	563	Scypinski, L.A.	286
Santone, K.S.	294	Seabaugh, V.	888
Santrock, J.	319	Seaman, L.R.	388
Sarma, D.S.R.	534	Seal, E.	279
Sasser, L.B.	371	Seifert, J.	573
Sastry, B.V.R.	345,810	Segall, H.J.	975,976
Satanek, D.M.	269	Seim, W.K.	882
Satoh, H.	165,166	Selgrade, M.K.	21
Sauerheber, R.D.	804	Sellin, D.	683
Sauers, L.J.	190	Sendelbach, L.E.	548,936
Saunders, J.H.	240	Senitzer, D.	61
Savage, R.E., Jr.	269	Serve, M.P.	230
Sawin, V.L.	308	Serve, P.M.	420
Sawyer, T.W.	139,247	Seth, P.K.	729
Scala, P.	418	Setzer, C.J.	497
Scala, R.A.	70,71	Sevanian, A.	318
Scarpelli, D.G.	637	Shah, P.V.	264,266
Scavarelli, R.	845,1003	Shaikh, A.	852
Schaeffer, V.H.	414	Shank, R.C.	826
Schamer, M.	69	Sharma, R.P.	22,131,200,767, 768,838,979
Schaper, M.M.	130,287	Sheehan, D.M.	726
Schardein, J.L.	470,725,756	Shelton, D.W.	56,57
Schatz, R.A.	576,672,770	Sheppard, D.	286
Schell, J.D.	358	Shertzer, H.C.	81,385
Scheuhammer, A.M.	543	Sherwood, R.L.	116,501
Schiavo, D.M.	1013	Shibamoto, T.	83
Schiedt, M.J.	436	Shigenaga, M.K.	665
Schiller, C.M.	253	Shimada, T.	310
Schlag, R.D.	874	Shiotsuka, R.N.	723
Schlager, M.K.	781	Shirasu, Y.	272
Schlesinger, R.B.	498,718,831	Shirhatti, V.	447
Schlosser, M.J.	407,659	Shively, C.A.	146
Schneider, B.	634	Shoaf, A.R.	852
Schnell, R.C.	607,616,623,969	Shoaf, C.R.	253,514
Schnizlein, C.T.	512	Short, B.G.	6
Schor, N.A.	671	Short, R.D.	118,452
Schrager, T.F.	60,162	Shubat, P.J.	601,875
Schramm, H.	662	Shupe, J.L.	131
Schramm, W.	806	Sickles, D.W.	796
Schrauzer, G.N.	638	Siddens, L.K.	882
Schreiner, A.F.	364	Siegers, C.-P.	620,621,683

Siek, G.C.	567	Sorenson, S.S.	1009
Siino, K.M.	211	Sorscher, D.H.	73
Silber, P.	217	Southard, G.L.	701,702
Silkworth, J.B.	15	Sovocool, G.W.	569
Silveira, D.	950,951	Spaet, R.H.	362
Silver, A.C.	243	Spak, D.K.	79,484
Simmons, J.E.	304	Sparano, B.M.	402
Simmons, W.S.	379	Spencer, P.S.	392
Simonson, L.	745	Sprague, G.L.	475,773
Sina, J.F.	244	Springer, D.L.	371,824
Singer, E.J.	987,988	Springer, S.T.	1002
Singh, G.J.P.	346	Sprugel, K.H.	416
Sipes, I.G.	165,166,209,299, 602,612,661,682, 694,827,974,983	Srisuchart, B.	767
Sirois, G.	603,605,667	Staab, R.J.	994
Skalsky, H.	947	Stadler, J.	24
Slade, R.	319	Starr, T.B.	45
Sleet, R.B.	463,473	Stavert, D.M.	500
Sleight, S.D.	48,50,261	Stein, A.F.	528
Slesinski, R.S.	82	Steinhagen, W.H.	129
Slikker, W., Jr.	691,793	Steinmetz, K.L.	79
Sloan, T.	386	Stenglein, F.	522
Sloane, R.A.	304	Stevens, M.A.	497
Smialowicz, R.J.	201,206	Steup, D.R.	186
Smith, A.C.	417	Stewart, B.E.	484
Smith, D.M.	710	Stewart, C.C.	574
Smith, E.	747	Stewart, R.F.	996
Smith, G.	29,444,907	Stillman, W.S.	16
Smith, G.S.	684	Stine, E.R.	602
Smith, J.C.	641	Stine, K.E.	764
Smith, J.H.	213	St. Omer, V.E.V.	423
Smith, J.M.	265,275,903,973	Stohs, S.J.	252,356,580
Smith, K.N.	995	Stokes, J.R.	514
Smith, M.K.	365,454,458, 469,738	Stoll, R.E.	268,366
Smith, M.T.	595,853,854, 855,923	Stoltz, M.L.	947,948,949,985
Smith, P.F.	601	Stonard, M.D.	235
Smith, R.J.	309	Stone, C.J.	87
Smolensky, M.	330	Stoner, G.D.	61
Smolko, E.D.	490	Stoner, S.J.	134
Snellings, W.M.	115	Stookey, J.L.	156
Snyder, C.A.	28	Story, D.L.	54,221
Snyder, N.K.	474	Stott, W.T.	440,877
Snyder, R.	144,581,584	Stow, R.B.	705,915
Snyder, R.D.	89	Strader, L.	554
Sobel, B.E.	587	Strom, K.A.	716
Soffar, A.M.	886	Strother, D.E.	588
Sohnle, P.G.	204	Stubblefield, W.A.	71,904
Soiefer, A.I.	392	Stuhne-Sekalec, L.	688,871
Soileau, S.D.	586	Stula, E.F.	520
Solana, R.P.	404	Sturgess, J.M.	29,42,76,444,896, 907,1011
Soliman, S.A.	569,570	Subbarao, V.	637
Solomon, F.P.	750	Suber, R.L.	274
Sorensen, E.M.B.	293	Sullivan, M.J.	331
		Sullivan, R.C.	242
		Sullivan, T.M.	860
		Sultatos, L.G.	942

Sumler, M.R.	264,266	Thompson, W.L.	842
Sun, J.D.	120,511,513,848	Thomson, S.A.	715
Suphakarn, V.	590	Thorne, P.	899
Surber, M.J.	810	Thouin, M.H.	226
Sutton, M.L.	696,733,734	Thurman, D.	929
Suwita, E.	689	Thurman, R.G.	606,630,635,676
Suzuki, C.A.M.	212	Tiernan, T.O.	317
Swaigood, R.R.	727	Tilson, H.A.	110,789
Swanson, M.X.	88	Timchalk, C.	43,44
Sweatlock, J.A.	254,577	Timmons, L.	159
Swenberg, J.A.	6,45	Toft, J.D.	277
Switzer, W.G.	505	Tomaszewski, K.E.	851,911
Sylvester, D.	437	Tomita, T.	38
Sylvia, V.L.	928,934	Tong, W.P.	685
Szivos, M.M.	997	Toscano, W.A.	37
Szot, R.J.	391,908	Toulon, M.	788
		Tow, J.P.	446
T		Townsend, S.	159
Tabora, O.	918	Traiger, G.J.	135,618
Takagi, S.	729	Traina, V.M.	362,1013
Talcott, P.A.	158,192	Traul, K.A.	561,732
Tam, P.E.	199	Trela, B.A.	957
Tamulinas, C.	437	Tremblay, J.M.	959
Tan, H.K.	83	Trevor, A.J.	665,675,791
Tandon, S.K.	529	Trochimowicz, H.J.	508
Tansy, M.F.	282,348	Troise, N.J.	422
Tardif, R.	921	Trombetta, L.	788
Tarka, S.M., Jr.	146	Trosko, J.E.	313
Taylor, D.H.	105	Trottman, C.H.	564,565
Taylor, D.J.	90	Truchon, G.	837,922
Taylor, M.J.	200	Trush, M.A.	856
Taylor, M.L.	317	Trutter, J.A.	755
Tayyeb, M.I.	537	Tryka, A.F.	548
Teel, R.	58	Tsuda, S.	272
Tennant, B.C.	660	Tsukada, T.	676
Tepper, J.S.	496	Tsuzuki, Y.	566
TerHaar, C.J.	644	Tubben, R.E.	425
Terrell, T.G.	703,752	Tuchweber, B.	228,604
Tesche, N.	379	Tucker, A.N.	171,803
Thacker, G.T.	752	Tyl, R.W.	466,480,739,742
Thackara, J.W.	388	Tyler, T.R.	480,732,998
Thake, D.C.	452	Tyson, C.A.	54,221,315,893
Thakur, A.K.	709		
Thayer, D.W.	405,759,760	U	
Thilsted, J.P.	268	Uddin, D.E.	230,231
Thoma-Laurie, D.L.	992,1005	Udinsky, J.R.	973
Thomas, B.H.	939	Uemura, E.	96
Thomas, D.J.	869,870	Ulland, E.B.	46
Thomas, P.	167	Ulrich, C.E.	720
Thompson, C.M.	259	Umbreit, T.H.	249,481
Thompson, D.C.	856	Usha, G.	880
Thompson, R.B.	157,629		
Thompson, R.D.	130	V	
Thompson, S.	657	Vaghy, I.	384
Thompson, S.	853,923	Valdez, Y.E.	710,713,719

Valentine, R.	831	Weigel, W.W.	550,559
Vana, S.C.	501	Weil, C.S.	9,396
Van Petten, L.E.	696	Weiler, M.H.	342
Van Rafelghem, M.J.	658	Weiner, M.	62,85,395
Van Stee, E.W.	304	Weir, B.R.	379
Varga, F.	527	Weir, S.J.	969
Varnum, M.	551	Weiss, J.F.	106
Vaughan, F.L.	845	Weiss, L.	578
Velasquez, D.J.	452	Weiss, L.R.	448
Verlangieri, A.J.	407,659	Weiss, S.K.	335
Veronesi, B.	572	Wells, D.A.	236
Viau, C.J.	453	Welsch, F.	463,473
Vick, J.A.	448	Welsh, M.J.	478
Victery, W.W.	210	Wenger, G.R.	95
Vodicnik, M.J.	246	Wenzel, D.G.	861
Voigt, J.M.	646	Werley, M.	348
Vollmuth, T.A.	498	Wester, R.C.	119,708
Volp, R.F.	958	Weyel, D.	281
Vorce, R.L.	77	Whalen, T.	455
Vos, J.G.	18	Wheeler, A.G.	229,756
Vossen, P.	596	Wheeler, C.S.	829
		White, D.M.	146
		White, J.A.	124
		White, K.L., Jr.	169,175,182,
			194,195
W		Whitehouse, D.A.	668
Waalkes, M.P.	207,737,843	Whitehouse, L.W.	939
Wackerle, D.L.	1	Whorton, J.A.	268
Waddell, W.J.	147,811	Wiggins, K.E.	100
Wade, J.V.	964	Wierbicki, E.	405,759,760
Wagel, D.J.	317	Wierda, D.	190
Walden, R.	253	Wiersma, D.A.	682
Walker, E.R.	190,817	Wiessner, J.	204
Walker, T.F.	556	Wiester, M.J.	496
Wall, H.	777	Wiley, R.A.	432
Waller, D.P.	745	Wilfinger, W.W.	465
Walsh, C.T.	349,487	Wilhelm, K.P.	683
Wang, J.L.	805	Wilkinson, G.E.	277
Wannemacher, R.W., Jr.	842,929,984	Willett, L.B.	255
Ward, E.C.	16,180	Willhite, C.C.	641
Ward, J.A.	465	Williams, G.M.	597,858
Warheit, D.B.	714	Williams, K.D.	342
Warne, T.M.	72	Williams, R.A.	655,785
Warren, D.L.	283	Williams, S.J.	516,1009,1010,
Warren, R.P.	191	Williams, T.	705,915
Watanabe, M.D.	937,938	Wilson, B.W.	782
Watanabe, P.G.	39,312,438	Wilson, D.W.	976
Waterhouse, G.A.W.	186,187	Wilson, F.D.	641
Watkins, J.B., III	137,684	Wilson, J.D.	404
Watkins, J.R.	31,372,373	Wilson, M.C.	703
Watkinson, W.P.	378	Wilson, M.J.	843
Watson, S.C.	743	Wilson, R.	911
Watson, W.P.	307,309	Wilson, R.D.	323,324
Watts, T.D.	357	Wilson, S.E.	134
Way, J.L.	437	Wimberly, H.C.	885
Weber, B.A.	808	Winchurch, R.A.	869,870
Weber, M.F.	496		
Wei, C.I.	20,83		

Windels, J.	634	Yoneyama, M.	838
Wirt, H.J.C.	853	Yong, C.L.	953
Witmer, C.M.	680	Yonovitz, A.	330
Witschi, H.P.	154,548,936,937	Yoshida, M.	272
Witz, G.	34,359,418,493, 584,771,919	Yost, G.S.	141,553
Wogan, G.N.	894,895	Younes, M.	620,621,683
Wolf, C.H.	64	Young, J.F.	274
Wolff, R.K.	507,511,513	Young, J.T.	877
Wolpert, R.L.	490	Yu, K.O.	420
Wong, K.L.	876	Yuhas, E.M.	242
Wong, L.C.K.	203,376,536, 706,707,721,722,897		
		Z	
Wong, Z.A.	881,912	Zaccaria, A.	919
Wood, R.	325	Zaccaro, D.	105
Wood, J.S.	544	Zaman, S.	845
Woodside, M.D.	9	Zehl, D.	325
Woody, B.	351	Zehr, D.R.	726
Woolley, D.E.	339	Zeiss, C.R.	26
Worthington, A.	477	Zemaitis, M.A.	363,645
Wozniak, T.J.	163	Zempel, J.A.	618
Wright, A.S.	307,309	Zenick, H.	456,457,458,461, 465,469,741
Wright, E.S.	499		
Wrighton, S.A.	143	Ziegler, D.A.	944
Wroblewski, V.J.	970	Ziembra, L.	915
		Zile, M.H.	261
Y		Zimmer, L.J.	339
Yahrmarkt, M.A.	681	Zimmerman, J.A.	445
Yang, C.L.	390	Zmudska, B.	247
Yang, R.S.H.	156,399,518	Zmudzki, J.	542
Yankell, S.L.	701	Zustak, C.S.	752
Yin, W.	504	Zwicker, G.M.	475,655
Yoder, S.A.	343	Zychlinski, L.	792

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FUTURE MEETINGS

Meeting	Year	Dates	Location
25	1986	March 3-7	Hyatt Regency Hotel New Orleans, LA
26	1987	March 16-20	Washington Hilton Hotel Washington, DC
27	1988	February 14-19	Loew's Anatole Hotel Dallas, TX
28	1989	February 26- March 3	Atlanta Hilton Hotel Atlanta, GA
29	1990	March 11-16	Adam's Mark Hotel St. Louis, MO
30	1991	February 21- March 1	Loew's Anatole Hotel Dallas, TX