30th Annual Meeting

ENVIRONMENTAL MUTAGEN SOCIETY

PROGRAM

MARCH 28-APRIL 1, 1999
THE CAPITAL HILTON
WASHINGTON, DC
The Environmental Mutagen Society was founded in 1969 and is incorporated under the laws of the District of Columbia. Its purpose is to encourage the study of mutagens in the human environment, particularly as they may affect public health, and to engage in and sponsor research and the dissemination of information related to mutagens. Membership is open to all interested scientists.

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1999-2002


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ON-SITE REGISTRATION FEES

Members $415
Non-Members $465
Student Member $175
Student non-Member $200
Spouse/Guest non-Member $125

FUTURE MEETINGS

April 8-13, 2000
Hyatt Regency Superdome
New Orleans, LA

March 16-21, 2001
Paradise Point Resort
San Diego, CA
All of the Plenary Lectures and Concurrent Symposia are located on the second floor of the hotel. Please see the floorplan for the exact locations. The exhibits are in the Congressional Room Sunday, March 28, 1999 - Tuesday, March 30, 1999. The posters are in the Senate and Federal A Rooms, Upper Lobby and Capital Terrace Sunday, March 28, 1999 - Thursday, April 1, 1999. Continental Breakfasts and Coffee Breaks will be in the Upper Lobby or in the exhibits area.

The registration desk will be located in the Foyer on the second floor of the hotel. The hours of operation are as follows: Sat, March 27, 3:30pm-8:00pm; Sun, March 28, 7:30am-5:00pm; Tues, March 30, 7:30am-noon; Wed, March 31, 7:30am-5:00pm; Thurs, April 1, 7:30am-noon.

Council meetings are scheduled for:
Saturday, March 27, 1999, 1:00pm-5:00pm, South American B
Thursday, April 1, 1999, 1:00pm-5:00pm, South American B

The Speaker Prep room is the Ohio Room. It will be open each day for your convenience, for previewing slides.

A hospitality room for spouses and guests will be set up on Monday, March 29, 1999 from 8:30am-9:30am in the Michigan Room. A representative from the DC Convention and Visitors Bureau will be available to offer information on the sites, in and around Washington DC, that may be of interest.

The Capital Hilton Phone: 202-393-1000 Fax: 800-869-4436

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SUSTAINING MEMBERS AND INSTITUTIONAL REPRESENTATIVES 1999 - 2000

Abbott Laboratories: Ronald D. Snyder
American Petroleum Institute: Carol Henry
Baxter Healthcare Corporation: Randy White
BioReliance Corporation: David Jacobson-Kram
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SPONSORS OF THE 30TH ANNUAL MEETING

Astra Pharmaceuticals, LP
Poster Session III

Baxter Healthcare Corporation
Workshop 1

BioReliance Corporation
EMS Reception

Bristol Myers Squibb
Symposium 4

Chrysalis International Preclinical Services
Coffee Break- Wednesday
Symposium 3

Covance Laboratories
EMS Reception
Continental Breakfast Tuesday

Eli Lilly & Co.
Symposium 8

Elsevier Sciences BV
Symposium 10

GD Searle
Hollaender Lecture

Genetic Toxicology Association
Student Reception

Merck & Company
Baird Symposium 11

Olympus Optical Co., LTD
Symposium 6

Procter & Gamble Company
Symposium 5

Taconic Transgenic Division, Taconic Farms, Inc.
Poster Session I

The R.W. Johnson Pharmaceutical Research Institute
Poster Session II
SATURDAY, MARCH 27

3:30 pm - 8:00 pm
REGISTRATION
Foyer 1

1:00 pm - 5:00 pm
COUNCIL MEETING
South American B Room

7:00 pm - 10:00 pm
STUDENT RECEPTION
AND POSTER SESSION
Congressional and Senate Rooms

Sponsor: Genetic Toxicology Association

7:00pm Student Poster Session

STUDENT WORKSHOP
Federal A Room

8:00pm Welcome and Introduction
Alison Director-Myska

8:05pm Presentation
Judith Nyquist, National Research Council

8:30pm Presentation
Kathleen Hill, EMS New Investigator

8:45pm Presentation
Lidia Cosentino, EMS Student Member

9:00pm EMS Education Committee Award Presentation
NATIONAL RESEARCH COUNCIL
Postdoctoral and Senior Research Associateship Awards

Opportunities for research in:
- Cancer
- Genetic Toxicology
- Environmental Toxicology
- Human Genome Study
- Mutation and DNA Repair
  and related areas

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National Institute for Occupational Safety & Health
National Institutes of Health
National Institute of Standards & Technology
Naval Medical Research & Development Command

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Applications accepted continuously throughout the year
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Internet: http://rap.nas.edu/
or

Visit the NRC booth in the exhibit hall

Qualified applicants will be reviewed without regard to race, creed, color, age, sex or national origin.
SUNDAY, MARCH 28

7:30 am - 5:00 pm
REGISTRATION
Foyer 1

7:00 am - 8:00 am
STUDENT/NEW INVESTIGATOR
BREAKFAST ROUND TABLE
Federal B

7:30 am
CONTINENTAL BREAKFAST
Upper Lobby

8:30 am - 11:30 am

SYMPOSIUM 1
Presidential Ballroom

Somatic Mutations in vivo

Presiding:
John Heddle, York University, Toronto, Canada

Although the involvement of somatic mutation in cancer is certain, the origin of these mutations is not. The development of transgenic mice containing shuttle vectors has made the experimental investigation of this problem possible in a way that we could only dream about before. Many of the results obtained are surprising: spontaneous somatic mutations are very common; many arise very early in life rather than late in life, as had often been supposed; there is often a long lag time before the mutant frequencies are maximal after treatment; many carcinogens induce only a small increase in the mutant frequency in the target tissue; and so on. Our understanding of how to use these tools, the use of the tools, and the creation of new tools are all advancing at the same time. So much is happening that no one symposium can include it all.
8:30am  
*gpt-delta Mouse as a New Research Tool for in vivo Mutagenesis*
T. Nohmi, Division of Genetics and Mutagenesis, National Institute of Health Sciences, Tokyo, Japan

9:00am  
*Gene Mutation in lacI Transgenic Rats: Comparison of lacI in Splenocytes and Target Organs and Hprt in Splenocytes*
D. Casciano, National Center for Toxicology Research, Jefferson, AR

9:30am  
* Preferential Repair of Endogenous Loci during Low Chronic Treatment*
L. Cosentino, York University, Toronto, Canada

10:00am  
*Organ-specific Mutation Frequencies and Spectra in Aging Mice with Defects in Genome Stability Systems*
J. Vijg, Beth Israel Hospital, Boston, MA

10:30am  
*Loss of Functional Heterozygosity in a Mouse Model: Implications for Human Disease*
J. Tischfield, Indiana Univ. School of Medicine, Indianapolis, IN
SUNDAY, MARCH 28

9:00 am - 11:30 am

SYMPOSIUM 2
Part 1
South American AB

Watershed and Drinking Water Toxicology: Studies at the EPA

Organized by:
Thomas Hughes and Larry Claxton
Environmental Carcinogenesis Division (ECD), EPA
Research Triangle Park, NC

Chair: Thomas Hughes

9:00am INTRODUCTION: Short Term Tests That Can Detect Genotoxicants in Watersheds and Drinking Water
Thomas Hughes, ECD, RTP

9:30am Sediments in our Rivers and Estuaries – Are They Toxic?
Michael Lewis, Gulf Ecology Division, Gulf Breeze, FL

10:00am Coffee Break

10:30am Tumors in Fish as Indicators of Carcinogens in our Watersheds
George Gardner, Atlantic Ecology Division, Narragansett, RI

11:00am Laboratory Studies with Fish as Indicators of Toxicity
Rodney Johnson, Mid-Continent Ecology Division, Duluth, MN

11:30am Lunch
SUNDAY, MARCH 28

1:00 pm - 5:00 pm

SYMPOSIUM 2
Part 2
South American AB

Watershed and Drinking Water Toxicology:
Studies at the EPA

Organized by:
Thomas Hughes and Larry Claxton
Environmental Carcinogenesis Division (ECD), EPA
Research Triangle Park, NC

Chair: Larry Claxton

1:00pm  INTRODUCTION: Drinking Water Research at the NHEERL, EPA, RTP
Larry Reiter, National Health and Environmental Effects Research Lab (NHEERL), RTP, NC

1:30pm  Searching for Water-Borne Carcinogens and Their Sources
Larry Claxton, Director of ECD, RTP

2:00pm  The Carcinogenicity of Dichloroacetic Acid in Drinking Water
Tony DeAngelo, ECD, RTP

2:30pm  Construction of a BBDR Cancer Model for the Water Disinfectant
Dichloroacetic Acid
Jim Rabinowitz, ECD, RTP

3:00pm  Break

3:30pm  Arsenic in Drinking Water: More Than One Proposed Mechanism for Cancer
Marc Mass, ECD, RTP

4:00pm  The Micronucleus Bioassay as a Potential Biomarker for Toxicity of Drinking Water
Andy Kligerman, ECD, RTP

4:30pm  2001 – Research Data Needed for the New Drinking Water Regulations
Rita Schoeny, EPA HQ, Washington, DC
SUNDAY, MARCH 28

1:00pm - 4:00pm

WORKSHOP 1
Federal B Room

Interpretation of Mutation Data for Cancer Risk Assessment

Sponsor: Baxter Healthcare Corporation

Discussion Leaders:
Martha Moore, US-EPA, Research Triangle Park, NC
Dan Casciano, National Center for Toxicology Research, Jefferson, AR
SUNDAY, MARCH 28

1:00pm - 4:00pm

SYMPOSIUM 3
Presidential Ballroom

New Technologies in Cytogenetics and Gene Expression

Sponsor: Chrysalis International Preclinical Services

Chair: Joe Gray, U. C. San Francisco

1:00pm  INTRODUCTION: Joe Gray

1:15pm  Prospects for Mutation Detection Using FISH
        David Ward, Yale University

1:55pm  Microarray Analysis of Genomic Aberrations in Cancer
        Donna Albertson, U. C. San Francisco

2:35pm  Coffee Break

2:55pm  Expression array analysis of DNA repair genes
        Andy Wyrobek, Lawrence Livermore National Laboratory

3:35pm  FISH For Interphase Translocation Detection
        Speaker to be Announced
SUNDAY, MARCH 28

4:30pm - 6:30pm

POSTER SESSION I
Senate Room/Federal Room A/Upper Lobby/Capital Terrace
Sponsor: Taconic Transgenic Division, Taconic Farms, Inc.

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<td>The phenotype of transgenic mice deficient for the endogenous thymidine kinase gene Dobrovolsky VN, Bucci TJ, Mushkelishvili L, Heflich RH</td>
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<td>Effect of O6-alkylguanine-DNA alkyltransferase on mutation induction by ENU in spermatogonial cells and liver cells of Muta Mouse® -Including the data of partial hepatectomy Hara T, Noshiro A, Sui H, Kawakami K, Shibuya T</td>
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        | Kunishige M, Halangoda A, Heinmoller E, Riemer AM, Turner DM, Hill KA, Sommer SS |
| 18     | **DNA Adduct formation and Molecular analysis of in vivo lacI mutations in the mammary tissue of Big Blue® Rats exposed to 7,12-dimethylbenz(a)anthracene (DMBA)**
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| 19     | **Germ cell-specific mutation induction by a combined chemical/radiation treatment**
        | Martus HJ, Novak M, Blecher D, van Duyn-Doedhart A, Suter W, Gossen JA, van Buul PPW |
| 20     | **Transgene methylation and in vivo spontaneous mutation frequency**
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| 21     | **Comparison of cII mutant frequencies in liver and lung tumors in Big Blue® mice treated with carcinogens**
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| 22     | **Dose Fractionation Does Not Affect Induction of Mutations by Benzo[a]Pyrene and Dibenzo[a,l]Pyrene in lacI Transgenic Mouse Lung**
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        | Shane BS, Smith DL, deBoer JG, Glickman BW, Cunningham ML |
| 25     | **Can the Mutagenicity of Weak or Non-Mutagenic Carcinogens be Detected at the cII Locus in Big Blue® Transgenic Mice?**
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**ANTI-CARCINOGENESIS/MUTAGENESIS**

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| 68     | Photoreactivation Abrogates UVR-Induced Growth Arrest in a Marsupial Cell Line  
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| 69     | Mutation analysis of p53 gene in skin squamous cell carcinomas from PUVA treated psoriasis patients: PUVA and UVB Type Mutations  
Ren ZP, McNiff J, Ho V, Gasparro FP |
| 70     | Proto-oncogene activation and genotoxic instability in beryllium-induced transformed BALB/c-3T3 cells  
Whong W-Z, Song B, Klishis M, Spruill MD, Ong T-M |
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| 71     | The Genetic Effects of Some Chloroacetanilides and Related Compounds  
Dearfield KL, McCarroll NE, Protzel A, Stack HF, Jackson MA, Waters MD |
| 72     | Chromosomal aberrations, sister chromatid exchanges and mitotic activity in human lymphocytes after occupational exposure to pulsed ultrasound  
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| 73     | Results of Short-term Tests for Mutagenic Carcinogens - Evidence Published in the IARC Monographs  
Jackson MA, Stack HF, Waters MD |
| 74     | Statistical Analyses of In vivo Rodent Micronucleus Assay  
Kim B, Cho M, Kwak HI |
| 75     | Assessment of human health risk from environmental pollution in Upper Silesia, Poland  
Motykiewicz G, Zemla B, Chorazy M, Santella RM |
| 76     | Recognition of structural alerts in genotoxicity  
Muster W, Gocke E, Kirchner S, Marchant C |
| 77     | Development of a Graphic Activity Profile Database for Endocrine Disrupting Chemicals  
Stack HF, Jackson MA, Waters MD |
| 78     | Evaluation of the added value of the single cell gel electrophoresis test to the standard battery of genetic toxicology tests  
Van Gompel JAJ, Thilemans L, Geerts K, Vanparys P |
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**Poster Abstract**

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| 79     | Genotoxic Spectra of Salsolinol, a dopaminergic isoquinoline neurotoxin  
Ryu JC, Youn JY, Choi YJ, Jung YJ, Surh JJ, Chang IM |
| 80     | Copper-Mediated Enhancement of Salsolinol-induced DNA Strand Scission and Genotoxicity  
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| 81     | Chromosomal Aberrations and Micronuclei Frequencies in Neurocysticercotic Patients Treated with Praziquantel  
Herrera LA, Ramirez T, Sotelo J, Corona T, Rodriguez U, Lorenzo M, Ramos F |
| 82     | Oral Cancer in Southern Thailand  
Kietthubthew S, Sriplung H, Au W W |
| 83     | Induction of P53 Protein by the Antiparasitic Drug Metronidazole  
Menendez D, Rojas E, Ostrosky-Wegman P |
| 84     | Susceptibility to Cytotoxic Effects of Arsenic in Ataxia Telangiectasia Cells  
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| 85     | Induction of Genetic Alterations in Germ Cells and Somatic Cells of Mice by Chronic Exposures to Ethylene Oxide  
Preston RJ, Abernethy DJ, Donner EM, Meyer K, Pluta L, Wong B, Ricio L |
| 86     | Use of Genetically Modified CHO Cells to Characterize the Genotoxic Activity of a Coffee Substitute and Grilled Meat Extracts  
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| 87     | The Comet assay with mouse multiple organs: Results with 206 chemicals evaluated by the IARC and U.S. NTP  
Sasaki YF, Ueno S, Madarame H, Tsuda S |
| 88     | Repair Capacity of individuals exposed to gasoline. SCGE-Challenge Assay  
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SUNDAY, MARCH 28

7:30 pm - 9:00 pm

PLENARY TALK

Presidential Ballroom

Nuclear Structure and DNA Organization and Function

Don Coffee
Johns Hopkins University

8:30 pm - 10:00 pm

EMS RECEPTION
Congressional/Senate/Federal A

Sponsors:
BioReliance, Corporation and Covance Laboratories
MONDAY, MARCH 29

7:30am
CONTINENTAL BREAKFAST
Congressional/Senate

7:30am-8:30am
COMMITTEE MEETINGS

Alexander Hollaender
South American A

Education/Student
South American B

Organization
Federal B

Program
California

IAEMS
Massachusetts
MONDAY, MARCH 29

8:30am - 11:30am

SYMPOSIUM 4
Presidential Ballroom

Chromosome Structure and Function

Sponsor: Bristol Myers Squibb Pharmaceutical Research

Chair: Peter Stambrook, University of Cincinnati

8:30am  Telomere dynamics in yeast
         Arthur Lustig, Tulane University

9:10am  P53 mutation, centrosome hyperamplification and chromosome instability in human cancer
         Kenji Fukasawa, University of Cincinnati

9:50am  Coffee Break

10:10am Mitotic checkpoints and human chromosome segregation
        Frank McKeon, Harvard University

10:50am Mammalian centromeres and artificial chromosomes
        Howard Cooke, Edinburgh University
MONDAY, MARCH 29

11:30am - 12:30pm

EMS AWARDS
Presidential Ballroom

12:30pm - 1:30pm

EMS BUSINESS MEETING
Presidential Ballroom
MONDAY, MARCH 23

1:30pm - 4:30pm

SYMPOSIUM 5
South American AB

Linking Cytogenetic and Somatic Cell Mutation Biomarkers to Future Cancer Risk

Sponsor: The Procter and Gamble Company

Chairs: Nathaniel Rothman, NCI, and Douglas Bell, NIEHS

1:30pm  INTRODUCTION: A Molecular Epidemiologic Perspective, Nathaniel Rothman, NIH/NCI/EPN

1:50pm  Chromosomal Damage in Peripheral Blood Lymphocytes and Risk of Cancer in Humans
Stefano Bonassi, Instituto Nazionale per la Ricerca sul Cancro, Genova, Italy

2:25pm  Potential Applications of Mutational Biomarkers in Prospective Epidemiology Studies
Martyn Smith, University of California

3:00pm  Biology and Below Threshold Mutation Assays
Vincent L. Wilson, Louisiana State University

3:30pm  MutEx/ACB-PCR for the Detection of Point Mutations in Somatic Cells
Barbara L. Parsons, National Center for Toxicological Research, Jefferson, AR

4:00pm  Discussant
Richard Albertini, University of Vermont
MONDAY, MARCH 29

1:30 pm - 4:30 pm

SYMPOSIUM 6
Presidential Ballroom

Genetox Test Procedures
Sponsor: Olympus Optical Company

Chairs: Jim MacGregor, FDA, Rockville, MD
D. Kirkland, Covance Laboratories, North Yorks, UK

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<td>Micheline Kirsch-Volders, Vrije Universiteit Brussels, Belgium</td>
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<td>Photochemical Induced Mutation and Clastogenicity</td>
<td>Elmar Gocke, F. Hoffman-La Roche Ltd, Basel, Switzerland</td>
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<td>2:10 pm</td>
<td>Mouse Lymphoma</td>
<td>Martha Moore, US-EPA, Research Triangle Park, NC</td>
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<td>Cytotoxicity In The Chromosomal Aberration Test</td>
<td>Sheila Galloway, Merck Research Labs, West Point, PA</td>
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<td>2:40 pm</td>
<td>Comet Assay</td>
<td>Ray Tice, Integrated Laboratory Systems, RTP, NC</td>
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<td>3:00 pm</td>
<td>Coffee Break</td>
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<td>3:20 pm</td>
<td>In vivo Micronucleus Test</td>
<td>Makoto Hayashi, National Institute of Health Services, Japan</td>
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<td>3:40 pm</td>
<td>In vivo Transgenic Mutation Models</td>
<td>John Heddle, York University, Toronto, Canada</td>
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<td>4:00 pm</td>
<td>Identification Of Adducts</td>
<td>David Phillip, Institute of Cancer Research, Surrey, UK</td>
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<td>4:15 pm</td>
<td>Statistics In Genotoxicity Testing</td>
<td>David Lovell, Pfizer Central Research, Kent, UK</td>
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Adair GM, Rolig RL, Legerski RJ, Nairn RS |
| 2 6    | Identification of DNA Damage-inducible transcripts in Drosophila melanogaster  
Al-Hajj M, Smith PD |
| 3 12   | Homologous recombination at an endogenous locus in V79 Chinese hamster cells is increased by overexpression of the CgRad51 protein  
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| 4 20   | Cell cycle variation in expression levels of base excision repair genes  
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| 5 22   | Rad51 paralog XRCC3 contributes to DNA repair and resistance to damage throughout the cell cycle  
Brookman KW, Liu N, Thompson LH |
| 6 32   | The frameshift inducing agent, ICR191, causes increased mutation in mismatch repair-deficient human cancer cells  
Chen WD, Sedwick WD, Markowitz SD, Aminoshaire B, Ma AH, Veloso N, Veigl ML |
| 7 33   | Screening for DNA repair gene deficiencies in a healthy human population using a protein truncation assay  
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<td>Role of DNA-dependent protein kinase (DNA-PK) in DNA end-joining in Xenopus egg extracts</td>
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<td>De Boeck M, Hartwig A, Kirsch-Volders M</td>
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<td>Defining the damage recognition and catalytic mechanisms of the major human endonuclease</td>
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<td>Erzberger JP, Hadi MZ, Mohrenweiser H, Wilson III DM</td>
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<td>Saccharomyces cerevisiae RAD51 is Required for DNA Damage-Induced Sister-Chromatid Exchanges</td>
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<td>Fasullo M, Bennett T, Samarakoon R, Bissonnette J</td>
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<td>Methyl methanesulfonate-induced mutational specificity in mismatch repair-deficient human</td>
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<td>González C, Nájera O, Toledo G, Cortés E, Betancourt M, Ortiz R</td>
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<td>Kolanko CJ, Prasanna PGS, Nath J, Xapsos MA, Blakely WF</td>
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<td>DNA base excision repair (BER) and gene transfer: Use of the human N-methylpurine DNA</td>
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<td>Limp-Foster M, Xu Y, Williams DA, Kelley MR</td>
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<td>alleles of the hPMS2 gene from a patient with sporadic colon cancer</td>
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<td>Ma AH, Xia L, Swinerl S, Modrich P, Veigl ML, Markowitz SD, Sedwick WD</td>
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18 167 Somatic alterations induction by azide compounds and the effect of DNA repair: PAPIT1: IN207196
   Ramos-Morales P, Ordaz MG, Islas MJ, Rivas H, Dorantes AY, Ramirez A

19 197 Changes in the DNA Repair and Redox Capacity of Human Keratinocytes Exposed to Very Low Doses of Arsenic
   Snow ET, Hu Y, Chouchane S, Yan CC

20 229 Comparison of gene-specific repair capacity between tumor and normal cells assayed by multiplex quantitative PCR and RT-PCR
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21 237 Use of DNA base excision repair (BER) genes to protect cells: Retroviral expression of the yeast AP endonuclease (APN1) enhances the level of protection of mammalian cells against DNA oxidative and alkylating agents
   Xu Y, Parsons S, Hansen WK, Williams DA, Kelley MR

22 244 Human DNA repair systems: An overview
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23 61 Folate, vitamin B12, homocysteine status and DNA damage in young Australian adults
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24 72 High Rate of Interchromosomal Gene Conversion in Genomically Unstable Human Cells
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25 104 Genomic Instability in Silica- and Cadmium-Chloride Transformed BALB/c-3T3 and Tumor Cell Lines by RAPD Analysis

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| 28     | 178 Genomic instability induced by low-energy protons and gamma rays: analysis of chromosome aberrations and HPRT mutants in the progeny of irradiated human lymphocytes  
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| 29     | 190 Effect of Viral Transformation upon Nucleotide Excision Repair in Human Cells: Implications for Carcinogenic Mechanisms  
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| 30     | 228 Genetic instability of microsatellite sequences and p53 mutations in lung cancer patients in Taiwan  
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| 31     | 238 Hypermutability in PMS2 knockout mice  
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**DNA AND PROTEIN ADDUCTS**

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| 35     | 84 Methylation of nearest neighbor cytosines and the ratio of 1S vs 1R adducts formed by three isomers of 3,4-Dihydroxy-1,2-epoxy-1,2,3,4-tetrahydronobenzene(c)phenanthrene  
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36  109  Benzo[a]pyrene treatment of the estuarine fish, Fundulus heteroclitus, collected from a PCB-contaminated site results in decreased hepatic DNA adducts compared to reference site
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37  172  Understanding peroxyl radical-induced DNA damage at the molecular level
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38  185  Transcription Coupled Repair of Benzo[a]pyrene Diol Epoxide DNA Adducts in Human Cells
Schild LJ, Smith CA, Hanawalt PC, Baird WM,

39  192  Quantitation of metal-DNA adducts by inductively coupled plasma mass spectrometry as a biomarker for exposure to toxic metals
Singh J, McLean JA, Pritchard DE, Carlisle DL, Montaser A, Patierno SR

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40  13  Development of UMU-Test System: Bioactivation of aromatic amines by human P450 1A2, NADPH-P450 Reductase and/or O-acetyltransferase-expressing Salmonella typhimurium strains
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41  44  The Use of Alternative Metabolic Activation Systems in In Vitro Genetic Toxicology Assays
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42  102  Human P450 1A2 enzymes with altered catalytic activities: generation by random mutagenesis and detection by a rapid phenotypic screen
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43  113  Detection of photochemical-induced mutations at the gpt locus in AS52 Chinese hamster ovary cells (AS52/XPRT Assay): development and definition of system
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| 67     | 43       | SHE cell transformation assay carcinogenicity predictions for 6 compounds in the ILSI program on alternative carcinogenicity models  
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| 68     | 60       | The Mouse Lymphoma Assay (MLA) using the microtitre methodology: historical data and cell cleansing  
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| 69     | 65       | Effects of pulmonary surfactant on the cytotoxicity and genotoxicity of respirable quartz and kaolin  
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| 70     | 75       | Evaluation of the rat chronic micronucleus assay: Summary of the 13th collaborative study by CSGMT/JEMS-MMS  
Hamada S, Morita T, Wakata A, Sutou S, Shimada H, Nakajima M, Hayashi M |
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| 71     | Strain differences in the rat to induction of micronuclei by cyclophosphamide  
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| 72     | Evaluation of the mutagenic activity and mode of action of bromate, an ozonation disinfection by-product  
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| 73     | Hydrogen peroxide and nitric oxide generators induce genotoxic effects in G12 transgenic Chinese hamster cells  
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| 74     | Use of the alkaline Comet Assay in routine testing in vitro: comparative investigation with the micronucleus and Ames tests  
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| 75     | Genotoxic Effect of 2,4-Dichlorophenoxycetic Acid Measured with the Comet Assay in Mouse  
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| 76     | Anemia-Induced Micronucleus Formation in Mice  
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| 77     | The Effect of Acetonitrile on the Incidence of Micronucleated Polychromatic Erythrocytes in Mouse Bone Marrow and Peripheral Blood  
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| 78     | Evaluation of the Genotoxicity of Stevioside and Steviol using in vitro Mouse Lymphoma L5178Y Gene Mutation Assay and in vivo Hepatocyte Micronucleus Assay  
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| 79     | Genotoxicity of Radio Fields Generated from Analog, TDMA, CDMA, and PCS Technology Evaluated using a ThreeTest in vitro Battery  
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| 80     | Mutagenicity of Selected Nitrated Polycyclic Aromatic Compounds in Human Cells  
Phousongphouang PT, Arey J, Eastmond DA, Covarrubias M, Grosovsky AJ |
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| 81 170 | Inhibitory effect of Cysteine on the micronuclei induced by cisplatin in mouse  
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| 82 217 | Analysing micronuclei in rat peripheral blood by flow cytometry after long-term dosing with cyclophosphamide or 2-acetyl aminofluorene  
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| 83 220 | The usefulness of rat tibia as an additional source of bone marrow for the micronucleus assay  
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| 84 225 | Genotoxicity of radio frequency fields generated from analog, TDMA, CDMA, and PCS in human blood cells evaluated using the single cell gel (SCG) electrophoresis and the cytochalasin B micronucleus (CB-MN) assay  
Vasquez MV, Clancy JC, Blackwell DB, Donner MD, Tice RT, Hook GH, McRee DM |
| 85 227 | Predictions and correlations of carcinogenic potentials of specific nickel compounds by short-term in vitro assays using C3H 10T1/2 mouse embryo cells  
Verma A, Ohshima S, Ramnath J, Thakore KN, Landolph JR |
| 86 248 | Cell transforming potential of beryllium in cultured mammalian cells  
Zhou G, Hubbs AF, Battelli L, Keshava N, Ong T-M, Whong W-Z |
MONDAY, MARCH 29

7:30pm - 8:30pm

PUBLIC LECTURE
Presidential Ballroom

Safety of Soft Drinks

Richard Adamson
National Soft Drink Association
Washington, DC

ZENECA
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Based on over two decades of pioneering genetic toxicology research and regulatory testing, CTL provides a wide range of clients with genetic toxicology services from our portfolio including:

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TEL: 44 (0) 1625 514534 FAX: 44 (0) 1625 517314 EMAIL: Ann.Evans@CTL.Zeneca.com
TUESDAY, MARCH 30

7:30am
CONTINENTAL BREAKFAST
Congressional/Senate
Federal A Rooms
Sponsor: Covance Laboratories Inc.

7:30-8:30am
COMMITTEE MEETINGS

EMM Journal
Federal B Room

Nominating
Pan American Room

Public Relations
Massachusetts Room

Membership/Professional Development
New York Room

Strategic Planning
California Room
TUESDAY, MARCH 30

8:30am - 11:30am
SYMPOSIUM 7
Presidential Ballroom

The Continual Maintenance Of Genomic Integrity:
The Base Excision Repair Pathway

Chair: David M. Wilson, III, Lawrence Livermore National Laboratory

8:30am  INTRODUCTION:
The Continual Maintenance of Genomic Integrity: The Base Excision Repair Pathway
David M. Wilson, III

8:50am  Crystal Structures and Mechanistic Insights for Human and E. coli 3-Methyladenine DNA Glycoylase
Tom Ellenberger, Harvard Medical School, Boston, MA

9:30am  Two Pathways Of Base Excision Repair: A DNA Polymerase Beta-Dependent Pathway And A PCNA-Dependent Pathway
Yoshihiro Matsumoto, Fox Chase Cancer Center, Philadelphia, PA

10:10am  Coffee Break

10:30am  DNA Ligases In Base Excision Repair
Alan Tomkinson, Institute of Biotechnology, San Antonio, TX

11:10am  Use of DNA Base Excision Repair Genes in Gene Therapy: Translational Applications
Mark R. Kelley, James Whitcomb Riley Hospital for Children, Indianapolis, IN
TUESDAY, MARCH 30

8:30am - 11:30am
SYMPOSIUM 8
South American AB

Risk Assessment Principles

Sponsor: Eli Lilly & Co.

Organized by: Martha Moore, US-EPA, RTP, NC

8:30am John A. Vandenberg
US EPA, Research Triangle Park, NC

9:30am Rory Conolly
CIIT, Research Triangle Park, NC

10:30am Justin Teeguarden
Rochester, MN

12:00pm - 1:00pm

HOLLAENDER LECTURE
Presidential Ballroom

Sponsor: GD Searle and Company

Using Transgenic Mice to Understand the Mode of Action of Carcinogens

Frank Gonzalez
National Cancer Institute, Bethesda, MD

7:00pm
Odyssey Cruise
First bus from Capital Hilton (16th & K St. Entrance)
leaves promptly at 6:00pm.
WEDNESDAY, MARCH 31

7:30-8:30am

Special Interest Breakfasts
Transgenics
South American B
Environmental Genomics
Federal B Room
Risk Assessment
South American A

8:30am - 12:10pm

SYMPOSUIM 9
Presidential Ballroom

Mutator Phenotype In Cancer

Chair: Snorri Thorgeirsson
National Cancer Institute, Bethesda, MD

8:30am  Gastrointestinal Cancer of the Microsatellite Mutator Phenotype
Manuel Peruchó, La Jolla Cancer Research Center, La Jolla, CA

9:10am  Tissue-Specific Accumulation of Point Mutations and Genome Rearrangements in Aging Mice: Role of DNA Damage Processing and Repair
Jan Vijg, Harvard University, Boston, MA

9:50am  Origins of a Mutator Phenotype of Cancer
Lawrence Loeb, University of Washington, Seattle, WA

10:30am  Coffee Break

10:50am  MUTATION RESEARCH AWARD LECTURE:
Studies of DNA Replication Fidelity and DNA Mismatch Repair
Thomas A. Kunkel, National Institute of Environmental Health Sciences, Research Triangle Park, NC

11:30am  Chromosomal Instability in Cancer
Daniel P. Cahill, Johns Hopkins Oncology Center, Baltimore, MD
WEDNESDAY, MARCH 31

1:30pm - 4:30pm

SYMPOSIUM 10
Presidential Ballroom

Disease Susceptibility:
Is It The Genes Or The Exposures

Sponsor: Elsevier Sciences BV

Chair: Harvey Mohrenweiser
Lawrence Livermore National Laboratory, Livermore, CA

1:30pm Variation as a Tool for Understanding Biology: A Key Element in the Functional Genomic Era
Harvey Mohrenweiser

2:10pm Pharmacogenetics and Individualization of Therapy
Richard Weinshilboum, Mayo Medical School/Mayo Clinic,
Rochester, MN

2:50pm Coffee Break

3:10pm Cardiovascular Disease: A Case Study of a Disease with Multifactorial Inheritance and Genetic Susceptibility
Mike Province, Washington Univ. School of Medicine, St. Louis, MO

3:40pm Screening for Genetic Variation and Disease Susceptibility: Promises, Pitfalls and Reality
DNA Damage and Repair

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**WEDNESDAY, MARCH 31**

4:30pm-6:30pm

**POSTER SESSION III**

*Congressional/Senate/Federal A/Capital Terrace*

*Sponsor: Astra Pharmaceuticals, L.P.*

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| 1 | 5 | Detection of hyperploidy in bladder epithelial cells of rats treated with ortho-phenylphenol using fluorescence in situ hybridization  
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| 2 | 21 | The Use Of Syrian Hamster Embryo Cells In A High Throughput Micronucleus Screening Assay  
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| 3 | 38 | Whole Chromosome Painting Probes Made From Single Microdissected Chromosomes  
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| 8 | 100 | Radiation-induced misrejoined breakpoints in human chromosomes: random or non-random?  
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<td>Genetic characterization of two cell lines derived from a single Wilms' tumor Rossi MR, Nath J, Wenger SL, Todd JH, Sens DA, Somji S, Garrett S</td>
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<td>Translocation Analysis of Mice Exposed in vivo to Low Levels of Chronic Gamma Radiation Sorensen KJ, Grawe J, Abramsson-Zetterberg L, Tucker JD</td>
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Hyperdiploidy of chromosomes 1 and 7 and breakage affecting the 1q12 region in Go lymphocytes and granulocytes of benzene-exposed workers from China
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Frequency of chromosomal aberrations in lymphocytes of patients before and after initiation of anti-HIV drug therapy with dideoxynucleosides

Activity of isophosphamide and cyclophosphamide in the in vitro human lymphocyte cytogenetics assay using human liver S9 metabolic activation
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29 37 Proofreading Infidelity in Saccharomyces cerevisiae  
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30 39 Mutagenic specificity of four nitro group-containing aromatic amines in Salmonella typhimurium xenometrix strains  
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32 63 Assessment of genotoxic action of lead using acridine orange staining and micronucleus assay in rat peripheral blood  
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34 77 The mutagenic repair polymerase zeta is responsible for carbon source-dependent variation in spontaneous mutation rates  
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35 79 A novel assay for mitochondrial DNA synthesis: non-correlation with UDS cytoplasmic grain counts  
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36 85 On the relationship between mutant frequency and time in vivo  
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37 93 Spindle poisons induce gene mutations through mitotic nondisjunction in mouse lymphoma cells  
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38 94 Characterization of p53 protein in Chinese hamster cell lines: CHO-K1, CHO-WBL, and CHL  
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| 42     | 128      | Creation of Heterozygous Thymidine Kinase Gene Target in a Mismatch Repair Deficient Human Colon Cancer Cell Line which Displays Reversible Expression of hMLH1 and hPMS2 Proteins  
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| 48     | 154      | Mutation spectra in Salmonella TA98, TA100, AND TA104 of two phenylbenzothiazole mutagens (PBTA-1 AND PBTA-2) detected in the Nishitakase River in Kyoto, Japan  
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**GERM CELL STUDIES**

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**ENVIRONMENTAL STUDIES - WATER**

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<td>Correlations of water quality parameters with mutagenicity of drinking water samples. Schenck KM, Lykins, Jr. BW</td>
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WEDNESDAY, MARCH 31

7:30pm - 10:20pm

SYMPOSIUM I1
Presidential Ballroom

Structural and Biological Consequences
of DNA Modification

Sponsor: Merck & Company

Chairs: William Baird, Oregon State University
Anthony Dipple, National Cancer Institute, Frederick, MD

7:30pm INTRODUCTION: Introduction to DNA Adducts and their Repair
William Baird

7:40pm DNA Adduct Structures in Relation to Biological Effects
Nick Geacintov, New York University, New York, NY

8:20pm Targeted Gene Knockouts Mediated by Triple Helix Forming Oligonucleotides
Michael Seidman, NIH, GRC, NIA, Baltimore, MD

9:00pm PAH Adduct Induced Mutations and Effects on Cell Cycle
Tony Dipple

9:40pm Site Specific Mutagenesis With Carcinogen Adducts and Oxidative Damage
John Essignmann, MIT, Cambridge, MA

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THURSDAY, APRIL 1

7:30am

SPECIAL INTEREST BREAKFASTS
Germ Cell: South American A Room
Repair: Federal B Room

8:30am-9:30am

PLENARY TALK
Presidential Ballroom

Predicting Protein Structure From DNA Sequence

John Moult, CARP, Rockville, MD

9:30am - 12:30pm

SYMPOSIUM 12
Presidential Ballroom

DNA Repair: Structural And Functional Studies

Chair: William F. Morgan
U. C. San Francisco, San Francisco, CA

9:30am Double-Strand Break Repair and at-Risk Motifs (ARMS) as Factors in Genome Stability
Michael A. Resnick, NIEHS, NIH, Research Triangle Park, NC

10:10am Role of DNA-PK in DNA Damage Repair and Lymphomagenesis
Gloria C. Li, Memorial Sloan Kettering Cancer Center, New York, NY

10:50am Structure-Function Studies of The Human Mre11/Rad50 Complex
James P. Carney, Lawrence Berkeley National Laboratory, Berkeley, CA

11:50am Crystallographic Structures of DNA Repair Complexes
John A. Tainer, Scripps Research Institute, La Jolla, CA
THURSDAY, APRIL 1

8:00am – 3:00pm

CONTINUING EDUCATION COURSE
ON THE NEW EPA
Pan American Room
(Pre-Registrants only)

Cancer Risk Assessment Guidelines

3:00 pm

ADJOURNMENT
1:00 pm - 5:00 pm

COUNCIL MEETING
South American B Room

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The Tombs, F. Scott's, and 1789 restaurants.
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BioReliance
14920 Broschart Road, Rockville, MD 20850
Phone: 301-603-9240 Fax: 301-603-9327

BioReliance (formerly Microbiological Associates), is a Contract Research Organization (CRO) providing regulatory-compliant biological testing services to a variety of pharmaceutical, biopharmaceutical, medical device, and chemical companies worldwide. BioReliance offers complete genetic toxicology services in a number of well-characterized test systems. Our expertise also includes mammalian and molecular toxicology.

Charles River Laboratories
251 Ballardvale Street, Wilmington, MA 01887
Phone: 978-658-6000 Fax: 978-658-7132

Charles River Laboratories offers a wide range of specialty research animal models and Contract Research Services including small and large animal research services, diagnostic and molecular testing. New services offered include PCR testing, RFLP testing, microsatellite testing, southern and slot blot assays and biosafety and analytical testing.

Chrysalis Preclinical Services North America
100 Discovery Drive, Scott Technology Park, Olyphant, PA 18447
Phone: 800-300-8114 Fax: 570-586-3450

Chrysalis is a recognized leader in providing preclinical drug development services to the pharmaceutical, biotechnology and chemical industries. We specialize in: Toxicology-Genetic/Cytogenetic, Acute, Chronic/Subchronic, Reproductive/Developmental; Safety and General Pharmacology; Immunology; PK/ADME

Covance Laboratories Inc.
3301 Kinsman Blvd., Madison, WI 53704
Phone: 608-242-2645 Fax: 608-242-7963

Covance provides mutagenicity testing for international registration of pharmaceutical, food, biotechnology, agrochemical, and industrial products. With the world’s largest molecular and cellular toxicology facilities, combined with the talents and experience of internationally respected scientists, Covance provides an extensive range of investigative studies including ICH battery for genotoxicity testing, regulatory consulting, DNA adduct detection, SHE cell transformation assay, aneuploidy detection using FISH, photomutagenicity, and transgenics.
Elsevier Science
655 Ave of Americas, New York, NY 10010
Phone: 212-633-3758 Fax: 212-633-3112

EMS Membership/info Booth
Liz Von Halle
113 Wendover Circle, Oak Ridge, TN 37830
Phone: 423-483-5805 Fax: 423-574-9888

Faxitron X-ray Corporation
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225 Larkin Dr. Suite 1, Wheeling, IL 60090
Phone: 847-459-9729 Fax: 847-459-9740

Faxitron X-Ray Corporation is the leading manufacturer of cabinet X-ray systems with more than 5000 units installed worldwide for imaging and irradiation. The Faxitron® is available for sample irradiation in a variety of cabinet sizes and radiation output with energy ranges form 10 to 160kVp. Units are completely shielded and interlocked for safe operation in a laboratory setting, requiring no special license or training.

Loats Associates, Inc.
Donna Heartley
201 East Main Street, Westminster, MD 21157
Phone: 410-876-8055 Fax: 410-876-5843

LAI provides comprehensive cost-effective bioautomation for the performance of GENTOX assays. Gentox-bioautomation increases productivity, reduced manpower, improved reliability and immediate customized reports. Automated assays include mouse micronucleus, chromosome-aberration and SCGE COMET. LAI's High-Resolution Colony Counter incorporates automated MLA and AMES. Extensions also permit soft agar and 96-well plate microtitre MLA.

Moltox
Ray Cameron
157 Industrial Park Dr., Boone, NC 28607
Phone: 828-264-9099 Fax: 828-264-0103

MOLTOX products include most materials required for Genetic Toxicology testing; e.g., bacteriological media, ControlChem chemical packages, STDiscs, ECDiscs, S9's and activation mix components. MOLTOX prepared bacteriological media are custom formulated and meet or exceed NCCLS criteria. MOLTOX S9's include those derived from laboratory rodent, dog, monkey and human liver - standard as well as custom tissues, buffers and inducing agents are available.

National Research Council/
National Academy of Sciences
Jane Dell'Amore
2101 Constitution Avenue, NW (TI2114), Washington, DC 20418
Phone: 202-334-2768 Fax: 202-334-2759

The National Research Council offers awards for postdoctoral scientific research at participating U.S. government laboratories. NCR exhibit representatives will
provide information to meeting attendees on the nature and scope of this program, including application procedures to be followed. Information is also available at world wide web address http://rap.nas.edu

PharMingen
10975 Torreyana Road, San Diego, CA 92121
Phone: 619-812-8800 Fax: 619-812-888

PharMingen supplies mAbs to mouse, rat, human, and rabbit CD antigens, adhesion molecules, cytokines, and cytokine receptors. Cell biology reagents include antibodies to cyclins and cyclin-dependent kinase inhibitors in addition to the usual immunosuppresors, oncproteins, signal transduction, and apoptosis-related molecules, and neurological proteins. PharMingen’s molecular biology line features BaculoGold baculovirus reagents, GST vector kits, and Ligation Independent Cloning products.

Sitek Research Labs
15235 Shady Grove Road, Rockville, MD 20850
Phone: 301-926-4900 Fax: 301-926-8891

SITEK Research Laboratories, established in 1984, provides high quality testing services for safety evaluation of chemicals and pharmaceuticals for regulatory submissions. Testing services are provided in the areas of genetic toxicology, general toxicology, in vitro toxicology, analytical chemistry, drug absorption metabolism and pharmacokinetics. Our laboratories located in Rockville, Maryland are state-of-the-art. We are a fully compliant GLP laboratory having JMAFF certification and AALAC accredited animal facilities. Our study reports are submitted to regulatory agencies worldwide and we have never had a study rejected. Let us help your company with its research and testing needs.

SRI International
333 Ravenswood Avenue, Menlo Park, CA 94025
Phone: 650-859-6459 Fax: 650-859-2889

SRI International has an integrated program for pharmaceutical R&D. Our quality services in Genetic Toxicology meeting OECD and ICH guidelines for regulatory submission include: microbial mutagenesis, UDS, mammalian cell mutagenesis, transgenic rodent mutagenesis, and in vivo and in vitro cytogenetics supported by expertise in toxicology, PK/metabolism, analytical chemistry, and formulation design.

Stratagene
11011 North Torrey Pines Road, La Jolla, CA 92037
Phone: 800- 424-5444 or (619) 535-5400 Fax: 619- 535-0071

Stratagene’s exhibit will feature products for Molecular Biology research. Our high quality products include instruments and systems for plasmids, phage, yeast, neuron and cell biology cloning, lambda packaging extracts, high efficiency competent E. coli and yeast, protein expression, nucleic acid hybridiza-
tion, PCR sequencing and mutagenesis. We also have unique modification and restriction enzymes, vectors, tissue culture media reagents, laboratory plastics and safety equipment.

Stockton Press
345 Park Avenue, South, New York, NY 10010-1707
Phone: 212-726-9244 Fax: 212-696-0052

Stockton Press is the publisher of a wide range of books and periodicals in the toxicology and environmental epidemiology fields, including the journals: TOXICOLOGY AND INDUSTRIAL HEALTH; ENVIRONMENTAL EPIDEMIOLOGY AND TOXICOLOGY; JOURNAL OF EXPOSURE ANALYSIS AND ENVIRONMENTAL EPIDEMIOLOGY; HUMAN AND EXPERIMENTAL TOXICOLOGY, and other highly ranked journals in the field of cancer research.

Taconic
273 Hoover Avenue, Germantown, NY 12526
Phone: 518-537-5200 Fax: 518-537-7287

Taconic Transgenic Models and Services features transgenic models specified to reduced latency mutagenicity and carcinogenicity studies. Included are: TSG-p53 knock-out mouse, deficient in the p53 tumor suppressor gene, PIM transgenic mouse, pre-disposed to lymphomas by chemical induction and TSG-p53/Big Blue® transgenic mouse, allowing tumor and mutation endpoints in one model.

TOPAZ Technologies
12710 Research Blvd., Suite 300, Austin, TX 78759
Phone: 512-219-2329 Fax: 512-249-8780

TOPAZ provides software applications and development services to the Pharmaceutical industry. We have just released version 1.0 of the GeneTox product, a complete Genetic Toxicology data capture and reporting system. This includes a Protocol module and an Ames module, designed in collaboration with Schering Plough, and intended to yield a “paperless lab” environment. A Formulation module will be released in Q2, with Micronucleus and Chromosome aberration modules by the end of 1999. At the show we will be demonstrating the GeneTox application, and can also discuss your custom software development needs.

Transgenomic
2032 Concourse Drive, San Jose, CA 95131
Phone: 408-432-3230 Fax: 408-432-3231

Transgenomic’s WAVE DNA Fragment Analysis System offers sensitive and automated high-throughput screening of mutant DNA sequences in the presence of an excess of wild type sequence. Using Temperature Modulated Heteroduplex Analysis (aka DHPLC), homoduplexes are easily distinguished from heteroduplexes formed by a sequence mismatch between mutant and wild type DNA.
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Toxicology data is only as good as the company behind it.

The basis for any study should be good science. Good science begins with an experienced, well-trained staff and world-class facilities. The design and reporting of all toxicology testing performed at BioReliance is overseen by senior-level scientists with an average of 20 years of experience in genetic, mammalian and molecular toxicology. Please contact us to discuss your testing needs.

BioReliance
14920 Broschart Road
Rockville, MD 20850-3349 USA
Phone: 301.738.1000
Fax: 301.610.2590
E-mail: info@bioreliance.com
Web Site: www.bioreliance.com
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<td><strong>Committee Meetings</strong></td>
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<td>7:00-8:00 am</td>
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<td><strong>SYMPOSIUM 1</strong></td>
<td><strong>Alexander Hollaender</strong></td>
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<td>8:30 am-11:30 am</td>
<td>South American A</td>
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<td><strong>SYMPHOSIUM 2</strong></td>
<td><strong>Organization</strong></td>
<td><strong>SYMPOSIUM 4</strong></td>
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<td>Watershed Drinking Water Technology</td>
<td>Program</td>
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<td>California</td>
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<td><strong>EMS AWARDS</strong></td>
<td><strong>EMS BUSINESS MEETING</strong></td>
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<td>1:00 pm-4:00 pm</td>
<td>11:30 am-12:30 pm</td>
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<td>Interpretation of Mutation Data for Cancer Risk Assessment</td>
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<td><strong>SYMPHOSIUM 5</strong></td>
<td><strong>SYMPHOSIUM 6</strong></td>
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<td><strong>SYMPOSIUM 3</strong></td>
<td>Mutation Biomarkers and Future Cancer Risk</td>
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**STUDENT RECEPTION AND POSTER SESSION**
7:00-10:00 pm
Congressional/Senate/ Federal A
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<td><strong>Committee Meetings</strong>&lt;br&gt;7:30-8:30 am&lt;br&gt;EMM Journal&lt;br&gt;Federal B Room&lt;br&gt;Nominating&lt;br&gt;Pan American Room&lt;br&gt;Public Relations&lt;br&gt;Massachusetts Room&lt;br&gt;Membership/Professional Development&lt;br&gt;New York Room&lt;br&gt;Strategic Planning&lt;br&gt;California Room</td>
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