

Mutational and Epigenetic Mechanisms of Susceptibility and Risks for Genetic Diseases

Atlanta



**Environmental
Mutagen
Society**

38th Annual Meeting Program

*Hyatt Regency Atlanta
Atlanta, Georgia, U.S.A.
October 20–24, 2007*

Program Chair: Andrew J. Wyrobek, Ph.D.

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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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FRIDAY, OCTOBER 19, 2007

3:00 PM-5:00 PM **DUNWOODY FOYER**
Registration

SATURDAY, OCTOBER 20, 2007

7:00 AM-10:30 AM **DUNWOODY FOYER**
Registration

11:00 AM-6:00 PM **CENTENNIAL III FOYER**
Registration

8:00 AM-12:00 NOON **DUNWOODY ROOM**
SATURDAY WORKSHOP: On-Going Initiatives in Genetic Toxicology
Testing and Risk Assessment

12:00 NOON-2:00 PM **FAIRLIE ROOM**
Executive Board Meeting

12:00 NOON-4:30 PM **CENTENNIAL II BALLROOM**
SATURDAY WORKSHOP: Predicting Chemical Carcinogenicity, Moving
Beyond Batteries

1:30 PM-4:30 PM **COURTLAND ROOM**
YOUNG INVESTIGATOR WORKSHOP: Anatomy of a Successful Grant
Application and a Research Project

2:30 PM-4:30 PM **BAKER ROOM**
EMS Council Meeting

4:30 PM-7:00 PM **CENTENNIAL I BALLROOM**
Student and New Investigator Poster Session, Job Fair,
and Welcome Reception

SUNDAY, OCTOBER 21, 2007

7:00 AM-6:00 PM **CENTENNIAL III FOYER**
Registration

7:00 AM-8:30 AM
BREAKFAST MEETINGS:
Epigenetics SIG **BAKER ROOM**
Molecular Epidemiology SIG **GREENBRIAR ROOM**
Transgenic and *In Vivo* Mutagenesis SIG **DUNWOODY ROOM**

8:30 AM-9:15 AM **CENTENNIAL II BALLROOM**
TOPICAL REVIEW 1: Food Mutagenesis and Dietary Supplements

8:30 AM-9:15 AM **CENTENNIAL III BALLROOM**
TOPICAL REVIEW 2: The Mutagenic Hazards of Contaminated Soil
and Water

9:30 AM-11:30 AM **CENTENNIAL II BALLROOM**
SYMPOSIUM 1: Preserving Chromosome Continuity When DNA Replication
Encounters Damage

9:30 AM-11:30 AM **CENTENNIAL III BALLROOM**
SYMPOSIUM 2: The Role of MicroRNA in Carcinogenesis

9:30 AM-11:30 AM **CENTENNIAL IV BALLROOM**
SYMPOSIUM 3: Identification of Antimutagens, Mechanisms of
Antimutagenicity, and Implications for Public Policy and Health

11:30 AM-1:15 PM **CENTENNIAL II BALLROOM**
EMS TECHNOLOGY LUNCHTIME WORKSHOP: Advances in
Micronucleus Analysis by Flow Cytometry

11:30 AM-1:15 PM **CENTENNIAL III BALLROOM**
EMS TECHNOLOGY LUNCHTIME WORKSHOP: Advances in
Bioinformatics Methods for the Analyses of Global Gene Expression
Networks and Pathways

11:30 AM-1:20 PM **DUNWOODY ROOM**
Marvin S. Legator Student Luncheon (By invitation)

1:30 PM-3:30 PM **CENTENNIAL II BALLROOM**
SYMPOSIUM 4: The Research Legacy of Marvin S. Legator

1:30 PM-3:30 PM **CENTENNIAL III BALLROOM**
SYMPOSIUM 5: Epigenetics: The New Genetic Frontier

1:30 PM-3:30 PM **CENTENNIAL IV BALLROOM**
SYMPOSIUM 6: Nanoparticles Toxicology

3:45 PM-4:45 PM **CENTENNIAL IV BALLROOM**
PLENARY LECTURE: Tumor Suppression, DNA Damage and Growing Old:
Does the End Justify the Means?
Gerald I. Evan, University of California, San Francisco

4:45 PM-7:00 PM **REGENCY V BALLROOM**
POSTER SESSION I AND EXHIBITS

6:00 PM-7:00 PM
COMMITTEE MEETINGS:
2008 Program Committee (*First Meeting*) **BAKER ROOM**
Education and Student Affairs Committee **PIEDMONT ROOM**
Membership and Professional Development Committee **FAIRLIE ROOM**

7:00 PM-9:30 PM **CENTENNIAL IV BALLROOM**
SYMPOSIUM 7: Women in Science: The Engine Behind Discovery

MONDAY, OCTOBER 22, 2007

7:00 AM-6:00 PM **CENTENNIAL III FOYER**
Registration

7:00 AM-8:30 AM
BREAKFAST MEETINGS:
Student and New Investigator Breakfast **BAKER ROOM**
New Technologies SIG **DUNWOODY ROOM**

8:30 AM-9:15 AM **CENTENNIAL II BALLROOM**
TOPICAL REVIEW 3: DNA Repair Machines

8:30 AM–9:15 AM **CENTENNIAL III BALLROOM**
TOPICAL REVIEW 4: Environmental Epigenomics in Human Health and Diseases

9:30 AM–11:30 AM **CENTENNIAL II BALLROOM**
SYMPOSIUM 8: Nucleotide Pool Damage and its Biological Consequences

9:30 AM–11:30 AM **CENTENNIAL III BALLROOM**
SYMPOSIUM 9: Germ Cells and Transgenerational Effects

9:30 AM–11:30 AM **CENTENNIAL IV BALLROOM**
SYMPOSIUM 10: Challenges in Assessing Risk from Low-Dose Chemical Exposures

11:30 AM–1:15 PM **CENTENNIAL II BALLROOM**
EMS TECHNOLOGY LUNCHTIME WORKSHOP: Current Applications of the Comet Assay

11:30 PM–1:15 PM **CENTENNIAL III BALLROOM**
EMS POLICY LUNCHTIME WORKSHOP: Is It Time to Amend the Core Genetic Toxicity Testing Battery? The Mutagenicity Test Battery Reconsidered

1:30 PM–3:30 PM **CENTENNIAL II BALLROOM**
SYMPOSIUM 11: The Replication of Damaged DNA

1:30 PM–3:30 PM **CENTENNIAL III BALLROOM**
SYMPOSIUM 12: Assessment of the Technologies for Molecular Biodosimetry for Human Low-Dose Radiation Exposure

1:30 PM–3:30 PM **CENTENNIAL IV BALLROOM**
SYMPOSIUM 13: Use of Genotoxicity Data in Mode of Action Analysis for Human Health Risk Assessment

3:45 PM–4:45 PM **CENTENNIAL IV BALLROOM**
PLENARY LECTURE: Is There a Human Risk from Potent Mutagens in Cooked Meat?
James S. Felton, Lawrence Livermore National Laboratory

4:45 PM–7:00 PM **REGENCY V BALLROOM**
POSTER SESSION II AND EXHIBITS

6:00 PM–7:00 PM
COMMITTEE MEETINGS:
Awards Committee
Finance and Resource Committee
Hollaender Committee
Public Relations Committee
Publication Policy Committee

FAIRLIE ROOM
DUNWOODY ROOM
GREENBRIAR ROOM
BAKER ROOM
PIEDMONT ROOM

TUESDAY, OCTOBER 23, 2007

7:00 AM–11:30 AM **CENTENNIAL III FOYER**
Registration

7:00 AM–8:30 AM
BREAKFAST MEETINGS:
EMS Executive Board
DNA Repair SIG
Risk Assessment SIG

BAKER ROOM
GREENBRIAR ROOM
DUNWOODY ROOM

8:30 AM–9:15 AM **CENTENNIAL III BALLROOM**
TOPICAL REVIEW 5: DNA Repair at the Crossroads of Cancer and Aging: Rare Human Diseases and Genetic Susceptibility

8:30 AM–9:15 AM **CENTENNIAL IV BALLROOM**
TOPICAL REVIEW 6: Mutagenicity and Carcinogenicity of Air

9:30 AM–10:30 AM **CENTENNIAL IV BALLROOM**
PLENARY LECTURE: Dogs Chasing Cancer Clues
David J. Waters, Gerald P. Murphy Cancer Foundation

10:30 AM–12:00 NOON **CENTENNIAL III BALLROOM**
EMS Business Meeting
Travel Award Presentations and Service Recognition

12:00 NOON–2:00 PM **REGENCY V BALLROOM**
POSTER SESSION III AND EXHIBITS

2:00 PM–7:00 PM
OPEN AFTERNOON
Optional Tour to the Georgia Aquarium—Separate Registration Required
Meet at the corner of Baker and Peach Street at 1:45 PM.

7:00 PM–10:00 PM **CENTENNIAL IV BALLROOM**
Banquet and EMS Awards
Award Presentations by President Martina (Marty) Veigl
Alexander Hollaender Award, EMS Award

WEDNESDAY, OCTOBER 24, 2007

7:00 AM–4:00 PM **CENTENNIAL III FOYER**
Registration

7:00 AM–8:30 AM
BREAKFAST MEETINGS:
2008 Program Committee (Second Meeting)
Germ Cell/Stem Cell/Human Genetics SIG

DUNWOODY ROOM
BAKER ROOM

8:30 AM–9:15 AM **CENTENNIAL III BALLROOM**
TOPICAL REVIEW 7: Environmental Chemicals in Our Blood and Urine: Results for the U.S. Population

8:30 AM–9:15 AM **CENTENNIAL IV BALLROOM**
TOPICAL REVIEW 8: Non-Linear Mechanisms in Low-Dose Radiation Biology

9:30 AM–11:30 AM **CENTENNIAL III BALLROOM**
PLATFORM SESSION 1: DNA Damage and Repair

9:30 AM–11:30 AM **CENTENNIAL IV BALLROOM**
PLATFORM SESSION 2: Epigenetics, Germ Cells

11:30 AM–12:30 PM **CENTENNIAL IV BALLROOM**
PLENARY LECTURE: DNA Repair, Genetic Instability and Cancer: What are the Connections?
Paul Doetsch, Emory University School of Medicine

1:30 PM–3:30 PM **CENTENNIAL III BALLROOM**
PLATFORM SESSION 3: Mutagenesis, Carcinogenesis

1:30 PM–3:30 PM **CENTENNIAL IV BALLROOM**
PLATFORM SESSION 4: Genotoxins, Mutagens, Antimutagens, Biodosimetry, Risk Assessment

3:45 PM–5:45 PM **CENTENNIAL III BALLROOM**
SYMPOSIUM 14: Base Excision Repair As a Tumor Suppressor Mechanism

3:45 PM–5:45 PM **CENTENNIAL IV BALLROOM**
SYMPOSIUM 15: Hot Topics in Human Genetics and Ecogenetics

6:00 PM–8:00 PM **DUNWOODY ROOM**
EMS Council Meeting

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David M. DeMarini, Ph.D. (Chair), Tonia M. Masson (EMS Executive Director)

EMS Committee Meetings

The EMS committees are active throughout the year and have at least one organized meeting during the conference. This year the committees will meet on Sunday and Monday evenings at 6:00 PM. Members are invited to join.

Special Interest Groups—SIGs

The breakfast meetings of the eight society SIGs are a time-tested favorite of the Annual Meetings. The format provides free-form discussions and short presentations of the key challenges. The SIGs provide a casual way for young investigators and seasoned researchers to interact. The SIGs will also play a major role in identifying the scientific topics for symposia and workshop of next year's society meeting in Puerto Rico. There are two additions to the SIGs: Epigenetics and Women in EMS.

The SIG breakfasts start at 7:00 AM each day, as noted in the program. The Women in EMS SIG will be held Tuesday evening as part of a special symposium.

Student and New Investigator Poster Session, Job Fair, and Welcome Reception

The Student and New Investigator Poster Session and Welcome Reception is held on Saturday evening from 4:30 PM–7:00 PM and will highlight the research of students and new investigators. Alongside the poster session, we will run a Job Fair, highlighting the opportunities that exist in the university and government labs. The EMS Student Education Award will be presented during this session in recognition for dedication to student activities.

This session and reception provide an opportunity for students and new or postdoctoral investigators to present their data to the meeting attendees prior to their formal presentation later in the week.

Topical Reviews

There will be eight one-hour topical reviews at this year's meeting, beginning at 8:30 each morning. Lectures will be given by well-recognized experts in their fields who will review the state of their research field, highlight the major research advances, and identify the upcoming challenges.

General Meeting Sponsors

AstraZeneca Pharmaceuticals

*Center for Cancer Research,
National Cancer Institute*

Merck Research Laboratories

*National Institute of Environmental
Health Sciences*

Office of Rare Diseases

Society of Toxicology

Sponsored Events

SATURDAY, OCTOBER 20, 2007

SATURDAY WORKSHOP: ON-GOING INITIATIVES
IN GENETIC TOXICOLOGY TESTING AND RISK
ASSESSMENT

Contributing Sponsors: *Covance Laboratories Ltd.
U.K., The Dow Chemical Company, ILSI-HESI,
Mitsubishi Pharma Corporation, and Sanofi-aventis,
France*

SATURDAY WORKSHOP: PREDICTING CHEMICAL
CARCINOGENICITY, MOVING BEYOND BATTERIES

Primary Sponsor: *U.S. Environmental Protection
Agency*

Contributing Sponsors: *ILS, Inc. and Pfizer Inc.*

STUDENT AND NEW INVESTIGATOR POSTER
SESSION, JOB FAIR, AND WELCOME RECEPTION

Contributing Sponsors: *Amgen, Inc. and Genetic
Toxicology Association*

SUNDAY, OCTOBER 21, 2007

SYMPOSIUM 1: PRESERVING CHROMOSOME
CONTINUITY WHEN DNA REPLICATION
ENCOUNTERS DAMAGE

Primary Sponsor: *Fanconi Anemia Research Fund,
Inc.*

SYMPOSIUM 2: THE ROLE OF MicroRNA IN
CARCINOGENESIS

Primary Sponsor: *The Ellison Medical Foundation*
Contributing Sponsor: *LC Sciences, LLC*

EMS TECHNOLOGY LUNCHTIME WORKSHOP:
ADVANCES IN MICRONUCLEUS ANALYSIS BY FLOW
CYTOMETRY

Primary Sponsor: *Litron Laboratories*

EMS TECHNOLOGY LUNCHTIME WORKSHOP:
ADVANCES IN BIOINFORMATICS METHODS FOR
THE ANALYSES OF GLOBAL GENE EXPRESSION
NETWORKS AND PATHWAYS

Contributing Sponsors: *Genomatix Software GmbH
and Ariadne Genomics, Inc.*

MARVIN S. LEGATOR STUDENT LUNCHEON AND
SYMPOSIUM 4: THE RESEARCH LEGACY OF MARVIN
S. LEGATOR

Primary Sponsor: *Marvin S. Legator Memorial Fund,
University of Texas Medical Branch*

SYMPOSIUM 5: EPIGENETICS: THE NEW GENETIC
FRONTIER

Primary Sponsor: *The Ellison Medical Foundation*
Contributing Sponsor: *National Institute of Allergy
and Infectious Diseases*

SYMPOSIUM 6: NANOPARTICLES TOXICOLOGY

Contributing Sponsors: *Berkeley Biotech, Inc.,
Dynamic Throughput, Inc., and nanoTox™*

SYMPOSIUM 7: WOMEN IN SCIENCE: THE ENGINE
BEHIND DISCOVERY

Primary Sponsor: *The Office of Research on Women's
Health, National Institutes of Health*

MONDAY, OCTOBER 22, 2007

NEW TECHNOLOGIES SPECIAL INTEREST GROUP
BREAKFAST MEETING

Contributing Sponsor: Amgen, Inc.

SYMPOSIUM 8: NUCLEOTIDE POOL DAMAGE AND ITS
BIOLOGICAL CONSEQUENCES

*Contributing Sponsor: NASA Space Radiation
Program, NASA Johnson Space Center*

SYMPOSIUM 10: CHALLENGES IN ASSESSING RISK
FROM LOW-DOSE CHEMICAL EXPOSURES

*Primary Sponsor: U.S. Environmental Protection
Agency Grant No. EP07H000535*

EMS TECHNOLOGY LUNCHTIME WORKSHOP:
CURRENT APPLICATIONS OF THE COMET ASSAY

Primary Sponsor: BioReliance Corporation

EMS POLICY LUNCHTIME: IS IT TIME TO AMEND THE
CORE GENETIC TOXICITY TESTING BATTERY?
THE MUTAGENICITY TEST BATTERY
RECONSIDERED

*Primary Sponsor: The National Toxicology Program,
National Institute of Environmental Health Sciences
Contributing Sponsor: Covance Laboratories Ltd.
U.K.*

SYMPOSIUM 11: THE REPLICATION OF DAMAGED DNA

*Contributing Sponsor: NASA Space Radiation
Program, NASA Johnson Space Center*

SYMPOSIUM 12: ASSESSMENT OF THE TECHNOLOGIES
FOR MOLECULAR BIODOSIMETRY FOR HUMAN
LOW-DOSE RADIATION EXPOSURE

*Primary Sponsor: The Office of Sciences (BER),
U.S. Department of Energy Grant No.
DE-FG02-07ER64474
Contributing Sponsor: National Institute of Allergy
and Infectious Diseases*

SYMPOSIUM 13: USE OF GENOTOXICITY DATA IN
MODE OF ACTION ANALYSIS FOR HUMAN HEALTH
RISK ASSESSMENT

*Primary Sponsor: U.S. Environmental Protection
Agency Grant No. EP07H000535*

TUESDAY, OCTOBER 23, 2007

MORNING BREAK

Primary Sponsor: Covance Inc.

TRAVEL AWARDS

*Primary Sponsor: National Institute of Environmental
Health Sciences Grant No. R13 ES016479-01*

WEDNESDAY, OCTOBER 24, 2007

SYMPOSIUM 15: HOT TOPICS IN HUMAN GENETICS
AND ECOGENETICS

*Contributing Sponsor: NASA Space Radiation
Program, NASA Johnson Space Center*

General Information

Registration Hours

The registration is located in the Centennial Foyer, except as noted below.

Friday	3:00 PM–5:00 PM (Dunwoody Foyer)
Saturday	7:00 AM–10:30 AM (Dunwoody Foyer)
Saturday	11:00 AM–6:00 PM
Sunday	7:00 AM–6:00 PM
Monday	7:00 AM–6:00 PM
Tuesday	7:30 AM–11:30 AM
Wednesday	7:00 AM–4:00 PM

Author Attended Poster and Exhibit Hours

Sunday	4:45 PM–7:00 PM
Monday	4:45 PM–7:00 PM
Tuesday	12:00 NOON–2:00 PM

New Format: Poster Presentations

All Poster presentations should be on display Sunday, October 21, 2007 between 12:00 NOON and 1:30 PM. All posters will be on display Sunday through Tuesday. Each poster should be displayed in the area corresponding with the assigned poster number, each poster board surface accommodates two posters—the poster size is 4 feet by 4 feet. Poster presenters are requested to present their posters during their assigned poster session only. All posters should be removed at 2:00 PM on Tuesday, October 23, 2007.

Photography Policy During Scientific Sessions

Photography of scientific presentations is prohibited without advance specific consent of the presenter(s)/author(s). Session Chairs are asked to strictly enforce this policy and individuals who do not comply will be asked to leave the session. In addition, cameras and recording devices are prohibited in the Exhibit Hall.

First Aid and Security

The Hyatt Regency Atlanta has equipped each meeting room with a house phone for use in case of emergency. If you need medical or security assistance pick up the house phone and dial 55. You can also dial 0 and the hotel operator will connect you to the correct department.

About Safety and Security

There is a possibility of demonstrators given the nature of our conference. Emergencies of this nature range from verbal confrontations, protest, or strikes. We recommend the following procedures in the event of demonstrations:

- Wear your name badge in the Hyatt Regency Atlanta. When leaving the hotel, remove it so as to blend with other people.
- If you see a demonstration or protest beginning, please contact a member of the EMS staff and they will initiate the appropriate response. If you see actions that appear threatening, notify the nearest security officer.
- Do not engage, defend either side, or subdue person(s) in any type of disturbance. Demonstrators are usually trying to attract media attention. Don't help them.
- EMS Representatives will respond to media inquiries. Do not participate in interviews or other media responses.
- In the unlikely event that outsiders disrupt a scientific session or other event, please follow the chairperson's directions and avoid becoming involved in the situation.

Our first priority is safety. The best way to stay safe is to be aware of your surrounding and avoid situation where you feel uncomfortable.



High Museum

Tuesday Afternoon Tour—The Georgia Aquarium (2:00 PM–5:00 PM)

EMS attendees have the opportunity to visit one of the newest attractions in Atlanta, the Georgia Aquarium. The tour as a group is scheduled for Tuesday, October 23 at 2:00 PM. The on-site rate is \$45. The fee includes admission, a \$5 food voucher to Café Aquaria, and transportation. The café is an upscale food court area and offers a selection of “Best in Class” concepts featuring local and national favorites. The café appeals to a broad range of tastes, with options to suit the entire group including: The Grill, Naples Pizza and Pasta, Buckhead Bread, and Ben and Jerry’s Ice Cream.

EMS attendees with tickets for the Georgia Aquarium tour on Tuesday, October 23, 2007, should board the busses at 1:45 PM. Busses will depart from the Hyatt Regency Atlanta Hotel at 2:00 PM. The busses will be parked on the corner of Baker and Peach Street. Simply exit the hotel from the main lobby and take a sharp right, at the corner you will see the coach busses lined up. These same busses will be waiting outside the Georgia Aquarium beginning at 5:00 PM to return you to the hotel.

Stay Connected While You Travel

EMS appreciates how important it is for attendees to stay connected to daily responsibilities in their home locations while attending the meeting. The 38th Annual Meeting will have stations available to check your e-mail and connect to the Internet.

Guest Room Internet Access at the Annual Meeting

The Hyatt Regency Atlanta offers High-Speed Wireless Internet Access in their guest rooms for \$9.95 per 24 hour connection time. They also offer T-Mobile Hotspot Wireless Broadband in the Public Areas. In order to get the T-Mobile Wireless Internet in the public areas attendees must have a T-Mobile phone with Internet capabilities—if a guest has this then the service is free. For all other guests wireless Internet in the public areas is \$9.95 per 24-hour connection time like in the guest rooms.

Conference Hotel

The conference will be held at the Hyatt Regency Atlanta, 265 Peachtree Street NE, Atlanta, Georgia. With its soaring 22-story atrium lobby and its famous blue dome, Hyatt Regency Atlanta has been a landmark in Atlanta for over 35 years. Hyatt Regency Atlanta is one of the city’s premier hotels and features newly renovated guest rooms, great meeting space and world class service. Located on Peachtree Street, the hotel offers convenient access to numerous business and cultural destinations and is within walking distance of the Georgia Aquarium, CNN Center, World of Coca Cola, Phillips Arena, Georgia Dome, and more. Hyatt Regency Atlanta is accessible to MARTA rapid rail system *via* a covered skywalk to Peachtree Center Mall.

Fitness Center

Hyatt’s new partnership with Life Fitness®, an industry leader in workout equipment, has ensured that their guests will enjoy some of the finest exercise equipment in downtown Atlanta. Their contemporary Fitness Center is located next to the Ivy Tower elevator, and is available to guest of the Hyatt Regency Atlanta at no charge. Each cardio machine is outfitted with a personal LCD monitor for both watching television and monitoring one’s workout. Hyatt’s Stay Fit concierge gives guest access to a complimentary Fitness GPS Forerunner Armband to help runners and walkers easily monitor their heart rate, course and distance, with guided navigation back to the hotel. These pocket-sized systems calculate directions with simple instructions and digital maps so that guests “hit the road” and return to the hotel with ease.

Business Center

The business center, located on the Atlanta Conference Level of the hotel, is a full-service business resource was been specifically created to support the needs of business travelers. The Business Center offers a unique range of services including: copying and printing, mailing and shipping, computer workstations as well as secretarial services upon request.

General Information

Ground Transportation

Transportation from Atlanta Hartsfield International Airport:

- **Shuttle**—Go to the transportation booth at the airport and ask for a shuttle to the Hyatt Regency Atlanta Downtown. The Atlanta Link phone number is (404) 524-3400. No reservations are necessary. It runs 6:00 AM to midnight from the airport and it leaves the hotel every 10 and 40 minutes after each hour. The current price is \$16 one-way/\$28 round-trip per person.
- **Limousine and Taxi**—The hotel Concierge can arrange a limousine service to pick up guests. If you prefer to take a taxi the cost is \$30 plus \$2 for each additional person. All prices are subject to change.
- **Local Rail**—The Atlanta rail system, M.A.R.T.A. (Metro Atlanta Rapid Transit Authority) is \$1.75 per ride and runs approx every 10 minutes. The Hyatt Regency Atlanta is connected to Peachtree Center Train Station *via* Peachtree Center Mall. The hotel stop is 15 minutes from Airport.



M.A.R.T.A. (Metro Atlanta Rapid Transit Authority)

If you will be arriving by Train or bus, the terminals are a short taxi ride from the hotel. Amtrak is located 3 miles north of the Hyatt Regency Atlanta, a taxi to the hotel from the Amtrak station is approximately \$11 plus tax. The Greyhound/Trailways bus terminal is a few miles away as well.

Taxi service within downtown Atlanta has an \$8 minimum.

Future Meetings

October 18–23, 2008
The Rio Mar Grande Resort
Rio Grande, Puerto Rico

October 24–28, 2009
Hyatt Regency St. Louis
St. Louis, Missouri

Agenda

Friday, October 19

3:00 PM–5:00 PM
REGISTRATION

Dunwoody Foyer

Saturday, October 20

7:00 AM–10:30 AM
11:00 AM–6:00 PM
REGISTRATION

Dunwoody Foyer
Centennial III Foyer

8:00 AM–12:00 NOON

Dunwoody Room

SATURDAY WORKSHOP:

**ON-GOING INITIATIVES IN GENETIC TOXICOLOGY
TESTING AND RISK ASSESSMENT**

Separate Registration Required

Chairpersons: *Véronique T. Thybaud*, Sanofi-aventis, France
and *Bhaskar Gollapudi*, The Dow Chemical Company

**Contributing Sponsors: Covance Laboratories
Ltd. U.K., The Dow Chemical Company, ILSI-HESI,
Mitsubishi Pharma Corporation, and Sanofi-aventis,
France**

8:00 AM	INTRODUCTION
8:05 AM	CHOICE OF IN VIVO FOLLOW-UP TESTING IN CASE OF IN VITRO POSITIVE FINDINGS <i>David Kirkland</i> , Covance Laboratories Ltd. U.K.
8:35 AM	IN VIVO COMET ASSAY: UPDATE ON THE ON-GOING VALIDATION COORDINATED BY JACVAM <i>Yoshifumi Uno</i> , Mitsubishi Pharma Corporation, Japan
9:00 AM	RELEVANCE AND FOLLOW-UP OF POSITIVE RESULTS IN IN VITRO GENETIC TOXICITY ASSAYS: AN ILSI-HESI INITIATIVE <i>Bhaskar Gollapudi</i> , The Dow Chemical Company
9:30 AM	UPDATE ON THE MAINTENANCE OF THE ICH S2 GENETIC TOXICOLOGY GUIDELINES <i>Makoto Hayashi</i> , National Institute of Health Sciences, Japan
10:00 AM	BREAK

10:15 AM	APPLICATION OF 3R' PRINCIPLE ON GENETIC TOXICOLOGY EVALUATION: EUROPEAN POSITION FOR COSMETICS AND CHEMICALS <i>Raffaella Corvi</i> , ECVAM, Italy
10:45 AM	APPLICATION OF 3R' PRINCIPLE ON GENETIC TOXICOLOGY EVALUATION: IMPACT ON INDUSTRY AND ON-GOING INITIATIVES <i>Marilyn Aardema</i> , The Procter & Gamble Company
11:15 AM	USE OF WEIGHT OF EVIDENCE AND MODE OF ACTION APPROACHES IN GENETIC TOXICOLOGY RISK ASSESSMENT <i>Rita Schoeny</i> , U.S. Environmental Protection Agency
11:45 AM	CONCLUSION—PERSPECTIVES: OTHER ON-GOING INITIATIVES AND GUIDELINE REVISIONS <i>Bhaskar Gollapudi</i> , The Dow Chemical Company

12:00 NOON–2:00 PM

Fairlie Room

EXECUTIVE BOARD MEETING

2:30 PM–4:30 PM

Baker Room

EMS COUNCIL MEETING

12:00 NOON–4:30 PM Centennial II Ballroom**SATURDAY WORKSHOP:****PREDICTING CHEMICAL CARCINOGENICITY, MOVING BEYOND BATTERIES**

Separate Registration Required

Chairpersons: **Martyn T. Smith**, University of California, Berkeley and **Michael D. Waters**, Integrated Laboratory Systems, Inc.

Primary Sponsor: U.S. Environmental Protection Agency

Contributing Sponsors: ILS, Inc. and Pfizer Inc.

12:00 NOON	MEETING CHECK-IN Lunch available for registered participants
12:15 PM	WELCOME AND OVERVIEW OF WORKSHOP OBJECTIVES Martyn T. Smith , University of California, Berkeley
12:30 PM	INTRODUCTION OF PARTICIPANTS
12:45 PM	APPROACH OF THE WORKING GROUP: OVERVIEW Michael D. Waters , Integrated Laboratory Systems, Inc.
12:55 PM	WHERE HAVE WE BEEN AND WHERE DO WE WANT TO GO: MOTIVATIONS FOR CHANGE Bob Sonawane , U.S. Environmental Protection Agency, Office of Research and Development and Vincent J. Coglian , International Agency for Research on Cancer
1:15 PM	WHERE ARE WE NOW: PRESENTATION OF MECHANISMS FOR CARCINOGENESIS AND CRITICAL ISSUES IN DISTINGUISHING BETWEEN THEM David Eastmond , University of California, Riverside, Nagu Keshava , U.S. Environmental Protection Agency, and Martha Sandy , California Environmental Protection Agency
1:45 PM	QUESTIONS AND DISCUSSION
1:55 PM	IMPACT OF RECENT BREAKTHROUGHS IN CANCER BIOLOGY Martyn T. Smith , University of California, Berkeley
2:20 PM	BREAK

WHERE SHOULD WE GO AND WHAT DO WE DO NEXT?

Chairperson: **Michael Waters**, Integrated Laboratory Systems, Inc.

2:40 PM	PREDICTING ANIMAL CARCINOGENICITY Michael Waters , Integrated Laboratory Systems, Inc.
2:55 PM	IN VITRO TESTS TO PREDICT CANCER Jiri Aubrecht , Pfizer Inc.
3:10 PM	BIOMARKERS OF CANCER RISK IN HUMANS Luoping Zhang , University of California, Berkeley
3:25 PM	DISCUSSION
3:40 PM	FUTURE DIRECTIONS: IMPLICATIONS FOR RESEARCH, RISK ASSESSMENT, AND PUBLIC POLICY Amy D. Kyle , University of California, Berkeley, and Kate Guyton , U.S. Environmental Protection Agency
4:10 PM	COMMENTS FROM PARTICIPANTS
4:20 PM	CLOSING COMMENTS Martyn T. Smith , University of California, Berkeley and Michael D. Waters , Integrated Laboratory Systems, Inc.

1:30 PM–4:30 PM Courtland Room**YOUNG INVESTIGATOR WORKSHOP:****ANATOMY OF A SUCCESSFUL GRANT APPLICATION AND A RESEARCH PROJECT**

Separate Registration Required

Chairpersons: **James S. Felton**, Lawrence Livermore National Laboratory and **Meredith Crosby**, Yale University

1:30 PM	GRANT APPLICATION WRITING EXPERIENCE FROM A VETERAN WHO HAS WON AND LOST James S. Felton , Lawrence Livermore National Laboratory
2:15 PM	EXPERIENCES OF A YOUNG INVESTIGATOR Meredith Crosby , Yale University
3:00 PM	NIH EXTRAMURAL GRANTS ADMINISTRATOR Elizabeth G. Snyderwine , National Cancer Institute
3:45 PM	DISCUSSION / PROBLEMS

4:30 PM–7:00 PM

Centennial I Ballroom

STUDENT AND NEW INVESTIGATOR POSTER SESSION, JOB FAIR, AND WELCOME RECEPTION**Contributing Sponsors:** Amgen, Inc. and Genetic Toxicology Association

The reception is an opportunity to become reacquainted with your colleagues and to view poster presentations of students and new investigators in a casual setting. A lite-fare for snacking and a no-host bar will be available. In addition, a Job Fair with job postings for new investigators will be available for viewing. The esteemed EMS Student Education Award will also be presented during this session.

Sunday, October 21

7:00 AM–6:00 PM

Centennial III Foyer

REGISTRATION

7:00 AM–8:30 AM

BREAKFAST MEETINGS:**EPIGENETICS****Baker Room****SPECIAL INTEREST GROUP***Chairperson:* **Randy L. Jirtle**, Duke University Medical Center

Epigenetics is a new Special Interest Group (SIG). EMS members who are doing epigenetic research, wish to do so, or are just curious are encouraged to become participants of this SIG.

Human epidemiological and animal experimental data indicate that the risk of developing adult-onset chronic diseases like cardiovascular disease, diabetes, obesity, and cancer is influenced by persistent adaptations to prenatal and early postnatal nutrition. Two epigenomic targets that potentially link environmental conditions during early development to adult disease susceptibility are imprinted genes and those with metastable epialleles. Genomic imprinting is an epigenetic form of gene regulation that results in monoallelic, parent-of-origin dependent gene expression. Genes with metastable epialleles have highly variable functions because of stochastic allelic changes in the epigenome rather than mutations in the genome. The importance of epigenetic deregulation of such genes in determining human risk to environmentally-induced diseases is now being actively investigated.

MOLECULAR EPIDEMIOLOGY**Greenbriar Room****SPECIAL INTEREST GROUP***Chairpersons:* **William W. Au**, University of Texas Medical Branch and **Radim J. Sram**, Institute of Experimental Medicine

Molecular epidemiology plays a major role in the assessment of the causative associations between exposure to environmental agents, host factors of susceptibility, and the risks of genetic diseases including cancer and birth defects. This SIG identifies the latest research advances in the development of valid biomarkers of exposure, susceptibility, and disease risks.

TRANSGENIC AND *IN VIVO* MUTAGENESIS SPECIAL INTEREST GROUP **Dunwoody Room**

Chairpersons: **Carrie R. Valentine**, National Center for Toxicological Research, U.S. FDA and **Kathleen A. Hill**, The University of Western Ontario

The mission of the Transgenic and *In Vivo* Mutagenesis Special Interest Group (TIVM-SIG) is to expand our knowledge and expertise in the detection and analysis of spontaneous and induced mutations in whole animal models and transgenic systems. This group reviews and presents data for validation of *in vivo* mutation detection systems, changes in mutant frequency with age and tissue type, and in particular for elevated frequency and altered pattern of mutations with exogenous mutagen exposures. Presentations in Atlanta will focus on the use of the lambda LIZ vector in medaka fish, a genotypic selection assay for the K-ras oncogene in rat colon, detection of Pig-a mutants from rat splenic lymphocytes by flow cytometry, an analysis of microindels in the TP53 gene in human cancer, and a discussion of a planned public database of mutational target and spectral data from transgenic rodent mutation models.

8:30 AM–9:15 AM **Centennial II Ballroom**
TOPICAL REVIEW 1:
FOOD MUTAGENESIS AND DIETARY SUPPLEMENTS

Lynnette R. Ferguson, The University of Auckland Medical School

Natural foodstuffs may contain mutagens, and other mutagens may be generated through processing or cooking methods. Similarly, dietary imbalance may lead to genomic instability, thereby creating a further potential source of human mutation that may enhance the risk of chronic disease. Dietary supplementation, either to restore desired micronutrient levels, or to add so-called non-nutrients in the form of antioxidants, immunonutrients, or other nutraceuticals is increasingly desirable, especially if it is optimized to genotype.

8:30 AM–9:15 AM **Centennial III Ballroom**
TOPICAL REVIEW 2:
THE MUTAGENIC HAZARDS OF CONTAMINATED SOIL AND WATER

Paul A. White, Health Canada

This talk presents an overview of the large body of published work investigating the mutagenic hazards of contaminated soil and water. Topics include sources of mutagenic substances, environmental fate, exposure, and risk of adverse effects for both humans and indigenous biota.

9:15 AM–9:30 AM **Centennial Foyer**
BREAK

9:30 AM–11:30 AM **Centennial II Ballroom**
SYMPOSIUM 1:

PRESERVING CHROMOSOME CONTINUITY WHEN DNA REPLICATION ENCOUNTERS DAMAGE

Chairpersons: **Larry H. Thompson** and **John M. Hinz**, Lawrence Livermore National Laboratory

Primary Sponsor: Fanconi Anemia Research Fund, Inc.

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|----------|----|---|
| 9:30 AM | S1 | MECHANISMS OF COMMON FRAGILE SITE INSTABILITY
<i>Tom Glover</i> , University of Michigan, Ann Arbor |
| 9:50 AM | S2 | ROLE OF Rad9 IN PRESERVING GENOMIC INTEGRITY
<i>Howard Lieberman</i> , Columbia University |
| 10:10 AM | S3 | LATE ACTIVATION OF ATM AND DNA-PKcs KINASES UPON UV-INDUCED REPLICATION STRESS
<i>Benjamin Chen</i> , University of Texas, Dallas |
| 10:30 AM | S4 | WHAT HAPPENS WHEN CROSSLINKED DNA IS REPLICATED?
<i>Laura Niedernhofer</i> , University of Pittsburgh Medical Center |
| 10:50 AM | S5 | FANCONI ANEMIA PROTEINS AND THEIR INTERACTIONS WITH THE REPLICATION FORK
<i>Paul Andreassen</i> , Cincinnati Children's Hospital Medical Center |
| 11:10 AM | S6 | THE FANCONI ANEMIA (FA) PATHWAY LIMITS THE SEVERITY OF MUTAGENESIS
<i>Larry Thompson</i> , Lawrence Livermore National Laboratory |

9:30 AM–11:30 AM Centennial III Ballroom**SYMPOSIUM 2:****THE ROLE OF MicroRNA IN CARCINOGENESIS**

Chairpersons: *Olga Kovalchuk*, University of Lethbridge and *Catherine B. Klein*, New York University School of Medicine

Primary Sponsor: **The Ellison Medical Foundation**

Contributing Sponsor: **LC Sciences, LLC**

- 9:30 AM S7 MicroRNA GENES AND HUMAN CANCER
Carlo M. Croce, Ohio State University
- 10:00 AM S8 ROLE OF MicroRNAs ALTERATIONS IN GENOTOXIC AND NON-GENOTOXIC RODENT HEPATOCARCINOGENESIS
Igor Pogribny, National Center for Toxicological Research, U.S. Food and Drug Administration
- 10:30 AM S9 EPIGENETIC DYSREGULATION IN BREAST CARCINOGENESIS
Olga Kovalchuk, University of Lethbridge
- 10:50 AM S10 MicroRNAs INDUCED BY INFLAMMATORY AND INFECTIOUS STIMULI
Mark Boldin, California Institute of Technology
- 11:10 AM S11 HYPOXIC STRESS REGULATES A DISTINCT CLASS OF MicroRNAs
Meredith E. Crosby, Yale University

9:30 AM–11:30 AM Centennial IV Ballroom**SYMPOSIUM 3:****IDENTIFICATION OF ANTIMUTAGENS, MECHANISMS OF ANTIMUTAGENICITY, AND IMPLICATIONS FOR PUBLIC POLICY AND HEALTH**

Chairpersons: *Dan D. Levy*, U.S. Food and Drug Administration and *Daniel T. Shaughnessy*, National Institute of Environmental Health Sciences

- 9:30 AM S12 IDENTIFICATION OF ANTIMUTAGENS
Errol Zeiger, Errol Zeiger Consulting
- 10:00 AM S13 MECHANISMS OF ANTIMUTAGENESIS
Daniel T. Shaughnessy, National Institute of Environmental Health Sciences
- 10:30 AM S14 ANTIMUTAGENESIS DATA AND FOOD INGREDIENTS
Dan D. Levy, U.S. Food and Drug Administration
- 11:00 AM GENERAL DISCUSSION

11:30 AM–1:15 PM Centennial II Ballroom**EMS TECHNOLOGY LUNCHTIME WORKSHOP:****ADVANCES IN MICRONUCLEUS ANALYSIS BY FLOW CYTOMETRY**

Free Workshop, Advance Registration Required, Lunch Provided, Seating Limited

Chairperson: *Dorothea Torous*, Litron Laboratories

Primary Sponsor: Litron Laboratories

- 11:30 AM APPLICATION OF THE PERIPHERAL BLOOD MICRONUCLEUS ASSAY TO THE BEAGLE DOG
James T. MacGregor, Toxicology Consulting Services
- 11:40 AM FLOW CYTOMETRY BASED MICRONUCLEUS ASSAY AS AN INVESTIGATIVE TOXICOLOGY TOOL
Leslie Recio, ILS, Inc.
- 11:50 AM DETECTION OF ELEVATED %MN-RETs IN BLOODS OF INFANTS AND MOTHERS FOLLOWING PRENATAL AZT EXPOSURE
Jack B. Bishop, National Institute of Environmental Health Sciences
- 12:00 NOON USING FLOW CYTOMETRY TO MEASURE MICRONUCLEI IN MICE EXPOSED TRANSPLACENTALLY AND NEONATALLY TO AZT AND OTHER ANTIRETROVIRAL AGENTS
Robert H. Heflich, National Center for Toxicological Research, U.S. Food and Drug Administration
- 12:10 PM PRACTICAL THRESHOLD FOR MICRONUCLEUS INDUCTION OBSERVED FOR LOW DOSES OF MITOMYCIN C, ARA-C AND COLCHICINE
Stephen D. Dertinger, Litron Laboratories
- 12:20 PM FLOW CYTOMETRIC ANALYSIS OF MOUSE BONE MARROW
Ljubica S. Krsmanovic and *Patricia Escobar*, BioReliance Corporation
- 12:30 PM FLOW CYTOMETRIC ANALYSIS OF RAT BONE MARROW FOR MICRONUCLEI USING THE CD71 MICROFLOW TECHNOLOGY
Ronald D. Fiedler, Pfizer Inc.
- 12:40 PM INTRODUCTION TO IN VITRO MICRONUCLEUS ANALYSIS BY FLOW CYTOMETRY
Jeffrey C. Bemis, Litron Laboratories
- 12:45 PM PANEL DISCUSSION

11:30 AM–1:15 PM Centennial III Ballroom

EMS TECHNOLOGY LUNCHTIME WORKSHOP:

ADVANCES IN BIOINFORMATICS METHODS FOR THE ANALYSES OF GLOBAL GENE EXPRESSION NETWORKS AND PATHWAYS

Free Workshop, Advance Registration Required, Lunch Provided, Seating Limited

Chairperson: *Sanchita Bhattacharya*, Lawrence Berkeley National Laboratory

Contributing Sponsors: Genomatix Software GmbH and Ariadne Genomics, Inc.

11:30 AM	THE CHALLENGE OF BIOINFORMATICS <i>Sanchita Bhattacharya</i> , Lawrence Berkeley National Laboratory
11:40 AM	MULTIPLE LINES OF EVIDENCE—A SYSTEMS BIOLOGY APPROACH TO MICROARRAY ANALYSIS: COMBINING EXPERIMENTAL DATA, LITERATURE AND SEQUENCE ANALYSIS TO STUDY GENE REGULATION <i>Sheila Sanders</i> , Genomatix Software, Inc.
12:10 PM	AUTOMATIC INFORMATION EXTRACTION FROM SCIENTIFIC LITERATURE AND PATHWAY ANALYSIS FOR TOXICOLOGY <i>Anton Yuryev</i> , Ariadne Genomics, Inc.
12:30 PM	GENE EXPRESSION SIGNATURES THAT PREDICT RESPONSES TO ENVIRONMENTAL EXPOSURES <i>Rebecca Fry</i> , Massachusetts Institute of Technology
1:00 PM	QUESTIONS AND DISCUSSION

11:30 AM–1:20 PM Dunwoody Room

MARVIN S. LEGATOR STUDENT LUNCHEON

Event for invited local students and mentors; by invitation only

Chairpersons: *Joginder Nath*, West Virginia University and *Jonathan B. Ward, Jr.*, University of Texas Medical Branch

Primary Sponsor: Marvin S. Legator Memorial Fund, University of Texas Medical Branch

12:30 PM	WELCOME AND ORIENTATION <i>Joginder Nath</i> , West Virginia University and <i>Jonathan B. Ward, Jr.</i> , University of Texas Medical Branch
12:40 PM	CAREERS IN RESEARCH <i>James Gentile</i> , Research Corporation
1:00 PM	OPPORTUNITIES FOR YOUNG SCIENTISTS IN THE EMS <i>David M. DeMarini</i> , U.S. Environmental Protection Agency

1:30 PM–3:30 PM Centennial II Ballroom

SYMPOSIUM 4:

THE RESEARCH LEGACY OF MARVIN S. LEGATOR

Chairpersons: *Joginder Nath*, West Virginia University and *Jonathan B. Ward, Jr.*, University of Texas Medical Branch

Primary Sponsor: Marvin S. Legator Memorial Fund, University of Texas Medical Branch

1:30 PM	WELCOME AND INTRODUCTION <i>Joginder Nath</i> , West Virginia University
1:35 PM	S15 THE LEGACY OF MARVIN LEGATOR <i>Jonathan B. Ward, Jr.</i> , University of Texas Medical Branch
1:50 PM	S16 INSIGHTS INTO THE MOLECULAR BASIS OF 1,3 BUTADIENE-MEDIATED MUTAGENESIS <i>R. Stephen Lloyd</i> , Oregon Health Sciences University
2:20 PM	S17 BIOMONITORING OF EXPOSURE TO CHEMICAL CARCINOGENS <i>Radim J. Sram</i> , Institute of Experimental Medicine, Prague
2:50 PM	S18 PROTECTING COMMUNITIES FROM ENVIRONMENTAL HAZARDS-THE SECRET HISTORY OF THE WAR ON CANCER <i>Devra Davis</i> , University of Pittsburgh Cancer Institute
3:20 PM	DISCUSSION

1:30 PM–3:30 PM Centennial III Ballroom

SYMPOSIUM 5:

EPIGENETICS: THE NEW GENETIC FRONTIER

Chairpersons: *Randy L. Jirtle*, Duke University Medical Center and *Hilde E. van Gijssel*, Valley City State University

Primary Sponsor: The Ellison Medical Foundation
Contributing Sponsor: National Institute of Allergy and Infectious Diseases

1:30 PM	S19 DNA METHYLATION: AN INTERFACE BETWEEN THE SOCIAL ENVIRONMENT AND OUR GENOMES <i>Moshe Szyf</i> , McGill University
2:00 PM	S20 EPIGENETIC MECHANISMS IN MEMORY FORMATION <i>J. David Sweatt</i> , University of Alabama
2:30 PM	S21 EPIGENETIC TARGETS FOR THE DIAGNOSIS AND TREATMENT OF CANCER <i>Allen Yang</i> , USC / Norris Comprehensive Cancer Center
3:00 PM	S22 EPIGENETICS OF NON-TARGETED RADIATION EFFECTS <i>Igor Koturbash</i> , University of Lethbridge

1:30 PM–3:30 PM Centennial IV Ballroom

SYMPOSIUM 6:**NANOPARTICLES TOXICOLOGY**

Chairpersons: **Fanqing Frank Chen**, Lawrence Berkeley National Laboratory and **Nancy A. Monteiro-Riviere**, North Carolina State University, Center for Chemical Toxicology Research and Pharmacokinetics

Contributing Sponsors: Berkeley Biotech, Inc., Dynamic Throughput, Inc., and nanoTox™

- 1:30 PM S23 TOXICOGENOMIC ANALYSIS OF NANOPARTICLES
Fanqing Frank Chen, Lawrence Berkeley National Laboratory
- 1:45 PM S24 CONCEPTS OF NANOTOXICOLOGY
Gunter Oberdörster, University of Rochester
- 2:00 PM S25 AIRBORNE NANOPARTICLE AND OXIDATION
Don Lucas, Environmental Energy Technologies Division, Lawrence Berkeley National Laboratory
- 2:15 PM S26 NANOTOXICITY EVALUATION PLATFORMS
David W. Hobson, H&H Scientific Services, LLP
- 2:30 PM S27 DERMAL EXPOSURE TO NANOMATERIALS
Nancy A. Monteiro-Riviere, North Carolina State University, Center for Chemical Toxicology Research and Pharmacokinetics
- 2:45 PM S28 CORRELATING THE PHYSICAL AND CHEMICAL PROPERTIES OF NANOPARTICLES TO THEIR BIOLOGICAL ACTIVITY
Vicky Colvin, Rice University
- 3:00 PM S29 NANOTECHNOLOGY FOR HEALTH AND THE ENVIRONMENT: HOW DID WE GET HERE AND WHERE ARE WE GOING?
Sally Tinkle, National Institute of Environmental Health Sciences
- 3:15 PM DISCUSSION

3:30 PM–3:45 PM Centennial Foyer
BREAK

3:45 PM–4:45 PM Centennial IV Ballroom

PLENARY LECTURE (PL1):**TUMOR SUPPRESSION, DNA DAMAGE AND GROWING OLD: DOES THE END JUSTIFY THE MEANS?**

Gerald I. Evan, University of California, San Francisco

4:45 PM–7:00 PM Regency V Ballroom

POSTER SESSION I AND EXHIBITS**DNA DAMAGE AND REPAIR**

- P1 THE INFLUENCE OF NUCLEOTIDE POOLS ON HOW CELLS CHOOSE TO REPAIR CHROMOSOME BREAKS
MD Burkhalter, DA Ramsden. University of North Carolina, Chapel Hill, NC, United States
- P4 EFFECTS OF MSH3 GENE DELETION ON TARGETED HOMOLOGOUS RECOMBINATION IN ERCC1 WILD-TYPE OR ERCC1 KNOCK-OUT CELLS
GM Adair, B Rowley, T Robison, M Lowery, L Della Coletta, A Bolt, RS Nairn. Univ TX MD Anderson Cancer Center, Smithville, TX, United States
- P7 Rad51d-DEFECTIVE CHO CELLS SHOW RADIOSENSITIVITY AND RADIATION-INDUCED CHROMOSOMAL ABERRATIONS IN S AND G2 PHASES OF THE CELL CYCLE
JM Hinz, PF Wilson, SS Urbin, PB Nham, LH Thompson. Lawrence Livermore National Laboratory, Livermore, CA, United States
- P10 UNLEASHING FANCI/BRIP1 FROM BRCA1 ALTERS THE DNA DAMAGE RESPONSE
R Litman, M Peng, J Xia, S Cantor. UMASS Medical School, Worcester, MA, United States
- P13 DEVELOPMENT AND CHARACTERIZATION OF AN ANTIBODY AGAINST DNA INTERSTRAND CROSSLINKS
TB McClendon^{1,2}, LJ Niedernhofer^{1,2}. ¹Department of Molecular Genetics and Biochemistry, University of Pittsburgh School of Medicine, Pittsburgh, PA, United States, ²University of Pittsburgh Cancer Institute, Hillman Cancer Center, Pittsburgh, PA, United States
- P16 USE OF A shRNA CHO CELL WRN KNOCKDOWN TO INVESTIGATE MAMMALIAN RECOMBINATION PATHWAYS
JJ Rahn, L Della Coletta, M Lowery, GM Adair, RS Nairn. UT MD Anderson Cancer Center Science Park Research Division, Smithville, TX, United States
- P19 DEVELOPMENT OF A NON-MAMMALIAN VERTEBRATE MODEL SYSTEM TO INVESTIGATE MECHANISMS AND PATHWAYS OF GENOMIC INSTABILITY IN VIVO
WW Kuhne, L Ding, WS Dynan. Medical College of Georgia, Augusta, GA, United States
- P22 STRUCTURE-FUNCTION STUDIES OF DNA BINDING BY THE N-TERMINAL DOMAIN OF γPms1
ME Arana, SF Holmes, JM Fortune, LC Pedersen, TA Kunkel. National Institutes of Health/NIEHS, Research Triangle Park, NC, United States
- P25 FANCD2 MONOUBIQUITINATION IN ERCC1-XPF DEFICIENT CELLS IN RESPONSE TO INTERSTRAND CROSSLINK DAMAGE
NR Bhagwat¹, AR Robinson¹, LJ Niedernhofer². ¹Department of Human Genetics, GSPH, University of Pittsburgh, Pittsburgh, PA, United States, ²Department of Molecular Genetics and Biochemistry, University of Pittsburgh School of Medicine, Pittsburgh, PA, United States

EPIGENETICS, GERM CELLS

- P37 **TRANSGENERATIONAL DAMAGE INDUCED BY N-NITROSODIMETHYLAMINE (NDMA) IN *Drosophila melanogaster***
P Ramos-Morales, JJH Herrera-Bazan, JA Munoz-Moya, A Munoz-Hernandez, H Rivas-Martinez, BR Hernandez-Bernal. UNAM, Mexico DF, United States
- P39 **ASSESSING THE ROLE OF DNA METHYLATION IN THE SUSCEPTIBILITY TO DEVELOP ALCOHOL-INDUCED LIVER INJURY**
CL Powell¹, CP Craig², M Tsuchiya², WY Tak², DW Threadgill¹, I Rusyn². ¹Department of Genetics, University of North Carolina, Chapel Hill, NC, United States, ²Department of Environmental Sciences and Engineering, University of North Carolina, Chapel Hill, NC, United States
- P41 **MAJOR EPIGENETIC MECHANISMS OF CARCINOGENESIS REVIEWED**
K-T Chung, The University of Memphis, Memphis, TN, United States
- P43 **RE-ANALYSIS OF DOSE-RATE EFFECT AFTER MAMMALIAN LOW LET GERM CELLS IRRADIATION: IMPLICATION FOR HUMAN RISK ASSESSMENT**
A Vaglenov¹, A Karadjov², B Fedorenko³. ¹The University of Findlay, Findlay, OH, United States, ²National Centre of Radiobiology and Radiation Protection, Sofia, Bulgaria, ³Institute for Biomedical Problems, Moscow, United States
- P45 **CHROMODOMAIN HELICASE DNA BINDING PROTEIN 2 AND DNA DAMAGE RESPONSE SIGNALLING**
S Rajagopalan, P Nagarajan, S Venkatachalam. University of Tennessee, Knoxville, TN, United States

MUTAGENESIS, CARCINOGENESIS

- P48 **ACCUMULATION OF K-RAS MUTATION IN RAT COLON AFTER AZOXYMETHANE EXPOSURE**
PB McKinzie¹, RR Delongchamp², BL Parsons¹. ¹Division of Genetic and Reproductive Toxicology, National Center for Toxicological Research, Jefferson, AR, United States, ²Division of Personalized and Nutritional Medicine, National Center for Toxicological Research, Jefferson, AR, United States
- P52 **COMPARATIVE TOXICOGENOMICS OF Ah RECEPTOR MEDIATED HEPATOTOXICITY IN C57BL/6 MICE: EVALUATION OF THE TCDF TOXIC EQUIVALENCY FACTOR**
AUN¹jai^{1,2}, DR Boverhof^{1,2}, LD Burgoon^{1,2}, E Dere^{1,2}, YS Tan^{1,2}, JC Rowlands³, RA Budinsky³, KE Stebbins³, TR Zacharewski^{1,2}. ¹Department of Biochemistry and Molecular Biology, Michigan State University, East Lansing, MI, United States, ²National Food Safety & Toxicology, Center for Integrative Toxicology, Michigan State University, East Lansing, MI, United States, ³The Dow Chemical Company, Midland, MI, United States
- P55 **MUTAGENICITY AND GENE EXPRESSION CHANGES INDUCED BY COMFREY IN RAT LIVER**
N Mei, L Guo, JC Fuscoe, T Chen. National Center for Toxicological Research, Jefferson, AR, United States

- P58 **TEMPORAL HEPATIC EXPRESSION PROFILES INDUCED BY α, p' -DDT IN THE RAT**
N Kiyosawa^{1,2}, JC Kwekel¹, LD Burgoon^{1,3}, TR Zacharewski^{1,3}. ¹Department of Biochemistry and Molecular Biology, Michigan State University, East Lansing, MI, United States, ²Medicinal Safety Research Laboratories, Daiichi Sankyo Co., Ltd., Fukuroi, Shizuoka, Japan, ³Michigan State University, Toxicogenomic Informatics and Solutions, LLC, East Lansing, MI, United States
- P61 **VARIATIONS IN GENE EXPRESSION COPY NUMBERS AND ENZYME ACTIVITIES OF CYTOCHROME P450 1B1 (CYP1B1) AND NAD(P)H:QUINONE OXIDOREDUCTASE (NQO1) DETERMINE THE LEVEL OF BENZO(A)PYRENE-DNA ADDUCT FORMATION IN MAMMARY EPITHELIAL CELLS**
M Shockley¹, R Divi¹, K Channa², M Poirier¹. ¹National Cancer Institute, NIH, Bethesda, MD, United States, ²EPA, Research Triangle Park, NC, United States
- P64 **DIFFERENCES IN LYMPHOCYTE CALPAIN ACTIVITY FROM CONTROL AND DIABETIC PATIENTS**
A Díaz-Villaseñor¹, J Méndez², E Ochoa², F Lara², R Zacarías², M Cebrián³, M Hiriart⁴, P Ostrosky-Wegman¹. ¹Instituto de Investigaciones Biomédicas, UNAM, Mexico City, Mexico, ²Clínica de Diabetes, Hospital Gea González, Mexico City, Mexico, ³Sección Externa de Toxicología, CINVESTAV, Mexico City, Mexico, ⁴Instituto de Fisiología Celular, UNAM, Mexico City, Mexico
- P67 **RELATIVE EXPRESSION OF BAX SPLICE VARIANTS UPON RADIATION EXPOSURE IN HUMAN LYMPHOBLASTOID CELLS**
M Banda, R Thomas, J Tucker. Wayne State University, Detroit, MI, United States
- P70 **GENE EXPRESSION PROFILES IN NORMAL HUMAN MAMMARY EPITHELIAL CELLS (NHMECs) EXPOSED TO BENZO(A)PYRENE (BP) IN THE PRESENCE OR ABSENCE OF CHLOROPHYLLIN**
K John^{1,2}, C Keshava³, DL Richardson², A Weston^{1,2}, J Nath¹. ¹West Virginia University, Morgantown, WV, United States, ²National Institute for Occupational Safety and Health, CDC, Morgantown, WV, United States, ³National Center for Environment Assessment, USEPA, Washington, DC, United States
- P73 **LEGACY OF CONTAMINANT EXPOSURE: TRANSGENERATIONAL RESISTANCE DISCLOSED IN THE PROTEOME**
TM Andacht¹, MF Oleksiak², M Norris¹, RN Winn¹. ¹University of Georgia, Athens, GA, United States, ²University of Miami, Miami, FL, United States
- P76 **DNA COPY-NUMBER INSTABILITY IN CHRONIC, LOW-DOSE GAMMA-IRRADIATED TK6 LYMPHOBLASTOID CLONES**
RR Kimmel¹, S Agnani¹, Y Yang¹, R Jordan¹, JL Schwartz². ¹Fred Hutchinson Cancer Research Center, Seattle, WA, United States, ²University of Washington, Seattle, WA, United States

- P79 **GENOTOXICITY OF TEN CIGARETTE SMOKE CONDENSATES IN FOUR TEST SYSTEMS: COMPARISONS AMONG ASSAYS AND CONDENSATES**
DM DeMarini¹, R Gudi², A Szkudlinska², M Rao², L Recio³, M Keh⁴, PE Kirby⁴, G Polzin⁵, PA Richter². ¹US EPA, Research Triangle Park, NC, United States, ²BioReliance, Rockville, MD, United States, ³ILS, Durham, NC, United States, ⁴SITEK, Rockville, MD, United States, ⁵CDC, Atlanta, GA, United Kingdom
- P82 **THE CYTOTOXIC EFFECTS OF BENZO[A]PYRENE, BENZO[A]PYRENE-7,8-DIHYDRODIOL, AND BENZO[A]PYRENE-7,8-DIHYDRODIOL-9,10-EPOXIDE ON HORMONE-SENSITIVE PROSTATE CARCINOMA CELL LINE LNCaP**
OF Nwagbara, SF Darling-Reed, M Abazinge, RD Thomas, RD Gragg. Florida A&M University, Tallahassee, FL, United States
- P85 **GENOMIC INSTABILITY CORRELATES WITH ABILITY OF HUMAN BREAST EPITHELIAL CELLS TO INCORPORATE ZIDOVUDINE (AZT) INTO DNA**
JP Borojerdi¹, Y Ward², MC Poirier¹, OA Olivero¹. ¹Laboratory of Cancer Biology and Genetics, CCR, National Cancer Institute, NIH, Bethesda, MD, United States, ²Cell and Cancer Biology Branch, CCR National Cancer Institute, NIH, Bethesda, MD, United States
- P88 **CYTOTOXICITY AND GENOTOXICITY OF SILVER NANOPARTICLES IN HUMAN AND MARINE CELL LINES**
SS Wise^{1,2}, MD Mason³, AH Holmes^{1,2}, LC Savery^{1,2}, T Li Chen^{1,2}, BC Goodale^{1,2}, F Shaffiey^{1,2}, JP Wise, Jr^{1,2}, G Craig³, RB Walter⁴, R Payne⁵, IAR Kerr⁵, M Spaulding⁶, JP Wise, Sr^{1,2}. ¹Wise Laboratory of Environmental and Genetic Toxicology, Portland, ME, United States, ²Maine Center for Toxicology and Environmental Health, Portland, ME, United States, ³Department of Chemical and Biological Engineering, University of Maine, Orono, ME, United States, ⁴Texas State University, San Marcos, TX, United States, ⁵Ocean Alliance, Lincoln, MA, United States, ⁶Ocean Foundation, Washington, DC, United States
- P90 **IMMUNOHISTOCHEMICAL DETERMINATION AND COMPARISON OF POLYCYCLIC AROMATIC HYDROCARBON (PAH)-DNA ADDUCT LEVELS IN PERIPHERAL AND TRANSITION ZONES OF HUMAN PROSTATE**
MM Pratt¹, K John¹, P Sirajuddin¹, N Ragavan², FL Martin², OA Olivero¹, MC Poirier¹. ¹Carcinogen-DNA Interactions Section, National Cancer Institute, Bethesda, MD, United States, ²Biomedical Sciences Unit, Lancaster University, Lancaster, United Kingdom
- P92 **FREQUENCY OF CHROMOSOME ABERRATIONS AFTER EXPOSURE TO ¹³¹I IN THYROID CANCER PATIENTS**
A Hernandez-Jardines¹, B Molina¹, V Del Castillo¹, M Papadakis³, T Rivera³, J Azorin², S Frias Vazquez¹. ¹Instituto Nacional de Pediatría, Mexico DF, Mexico, ²Instituto Nacional de Cancerología, Mexico DF, Mexico, ³Universidad Autónoma Metropolitana, Mexico DF, Mexico
- P94 **DNA DAMAGE IN LYMPHOCYTES AND BUCCAL MUCOSA CELLS OF CHILDREN WITH MALIGNANT TUMORS UNDERGOING CHEMOTHERAPY**
DA Ribeiro¹, EM Minicucci², B Camargo³, MC Costa³, LR Ribeiro², DMF Salvadori². ¹Federal University of São Paulo - UNIFESP, Santos, SP, Brazil, ²Botucatu Medical School - São Paulo State University - UNESP, Botucatu, SP, Brazil, ³A C Camargo Hospital, São Paulo, SP, Brazil
- P96 **THE DEVELOPMENT OF NON-NATURAL NUCLEOTIDES AS ADJUNCTIVE CHEMOTHERAPEUTIC AGENTS**
AJ Berdis, I Lee, X Zhang, B Devadoss. Case Western Reserve University, Cleveland, OH, United States
- P98 **EVALUATION OF METHYLPHENIDATE IN HUMAN PERIPHERAL BLOOD LYMPHOCYTES FOR CHROMOSOMAL ABERRATIONS AND MICRONUCLEI**
R Doppalapudi, R Garcia, E Defensor, E Riccio, J Mirsalis. SRI International, Menlo Park, CA, United States
- P100 **CYTOGENETIC ANALYSES OF LYMPHOCYTES IN WORKERS OCCUPATIONALLY-EXPOSED TO NICKEL**
M Camargo, H Restrepo, O Zea. University of Antioquia, Medellin, Colombia
- P102 **BENZENE INDUCES ANEUPLOIDY OF SEX CHROMOSOMES AND CHROMOSOME 21 IN THE SPERM OF OCCUPATIONALLY-EXPOSED CHINESE MEN**
C Xing^{1,2}, B Eskenazi³, G Li², RH Weldon³, E Kurtovich³, S Young³, T Schmid¹, L Zhang³, SM Rappaport³, AJ Wyrobek¹, F Marchetti¹. ¹Lawrence Berkeley National Laboratories, Berkeley, CA, United States, ²Chinese Center for Disease Control and Prevention, Beijing, China, ³University of California, Berkeley, Berkeley, CA, United States
- P103 **GENOTOXICITY ASSESSMENT USING A GADD45a-GFP REPORTER ASSAY IN A p53 COMPETENT HUMAN CELL HOST: METABOLIC ACTIVATION, FLOW CYTOMETRY AND DATA UPDATE**
RM Walmsley^{1,2}, N Billinton², CP Jagger², PW Hastwell³, AW Knight², L Birrell², PA Cahill². ¹University of Manchester, Manchester, United Kingdom, ²Gentronix Ltd, Manchester, United Kingdom, ³GSK, Ware, United Kingdom
- GENOTOXINS, MUTAGENS, ANTIMUTAGENS, BIODOSIMETRY, RISK ASSESSMENT**
- P106 **NATURAL CO-OCCURRENCE OF AFLATOXIN AND CYCLOPIAZONIC ACID, AND THEIR FUNGI PRODUCTION OF CORN GROWN IN EGYPT**
M Deabes, H Amra, E Damaty, G Rowayshed. National Research Center, Cairo, Egypt
- P109 **Saccharomyces cerevisiae AND PROBIOTEC BACTERIA POTENTIALLY INHIBIT AFLATOXINS PRODUCTION IN VITRO AND IN VIVO STUDIES. I. WITH SPECIAL REFERENCE TO THEIR ANTIOXIDANT ACTIVITY IN ALBINO RAT**
H Amra, G Rowayshed, E Damaty, S Nada, M Deabes. National Research Center, Cairo, Egypt

- P112 **THE SOURCES AND GENOTOXIC ACTIVITY OF CONTAMINATED INDOOR AIR**
G Chen, PA White, R Maertens. Health Canada, Ottawa, ON, Canada
- P115 **GSTM1, GSTT1, GSTP1, CYP2E1, CYP1A1, AND XRCC1 GENE POLYMORPHISM AND THE RISK OF HEAD AND NECK CANCER IN BRAZIL**
GJF Gattás¹, OA Curioni^{1,2}, P Kohler¹, MS Siraque¹, MB de Carvalho², V Wünsch-Filho³. ¹Medical School, University of São Paulo, São Paulo, SP, Brazil, ²Heliópolis Hospital, São Paulo, SP, Brazil, ³School of Public Health, University of São Paulo, São Paulo, SP, Brazil
- P118 **MOLECULAR AND BIOCHEMICAL EVALUATION OF GENETIC EFFECTS OF LATEX OF CALOTROPIS PROCERA (Ati.) ON *Aspergillus terreus***
S Qari. Biology Department, Genetics, Teachers College, Uom Al-Qura University, Makkah, Saudi Arabia
- P121 **TECHNIQUE FOR CULTURING MACACA MULATTA PERIPHERAL LYMPHOCYTES FOR FISH AND CLASSICAL CYTOGENETIC ANALYSES**
DM Petibone¹, SM Morris², CE Hotchkiss³, DR Mattison⁴, JD Tucker¹. ¹Wayne State University, Detroit, MI, United States, ²US Food and Drug Administration, Jefferson, AR, United States, ³The Bionetics Corporation, Jefferson, AR, United States, ⁴National Institutes of Health, HHS, Bethesda, MD, United States
- P124 **HOW TO SETUP AND QUALIFY NEW HIGH THROUGHPUT SCREENING ASSAYS IN A CONTRACT RESEARCH LABORATORY**
K Pant, SW Bruce, JE Sly, CA Elias, PA Escobar. BioReliance, Rockville, MD, United States
- P127 **COMPARATIVE MUTAGENIC EFFECT OF STRUCTURALLY SIMILAR FLAVONOIDS, QUERCETIN AND TAXIFOLIN, ON THE TESTER STRAINS SALMONELLA TA102 AND *E coli* WP-2**
P Makena, K-T Chung. The University of Memphis, Memphis, TN, United States
- P130 **CYTOTOXICITY AND ITS IMPACT ON THE IN VIVO COMET ASSAY**
MZ Vasquez. Helix3 Inc., Morrisville, NC, United States
- P133 **GENOTOXIC EFFECT OF DICHLOROMETHANE ON HUMAN LYMPHOCYTES IS ASSOCIATED WITH THE ACTIVITY OF GSTT1**
A Olvera, A Albores, L Vega. Cinvestav-IPN, Mexico City, Mexico
- P136 **AUTOMATED IN VITRO MICRONUCLEUS SCORING: ADHERENT CHO-K1 AND V79 CELLS REPRESENT AN EFFICIENT SCREENING PLATFORM**
S Bryce¹, J Bemis¹, S Avlasevich¹, J Nicolette², A Illi-Love², M Diehl², P Escobar³, S Kumar³, W Madraymootoo³, S Dertinger¹. ¹Litron Laboratories, Rochester, NY, United States, ²Abbott, Global Preclinical Safety, Abbott Park, IL, United States, ³BioReliance Corp., Rockville, MD, United States

- P139 **THE MUTAGENIC HAZARD AND CARCINOGENIC RISK OF COMPLEX PAH MIXTURES IN CONTAMINATED SOILS**
CL Lemieux¹, A Long^{1,2}, S Lundstedt³, M Tysklind³, PA White¹. ¹Safe Environments Programme, Health Canada, Ottawa, ON, Canada, ²Department of Biology, University of Ottawa, Ottawa, ON, Canada, ³Department of Chemistry, University of Umeå, Umeå, Sweden
- P142 **DNA DAMAGE ANALYSIS OF PAKISTANI AGRICULTURAL WORKERS EXPOSED TO MIXTURE OF PESTICIDES: A FOLLOW-UP STUDY**
JA Bhalli¹, T Ali¹, AR Asi², QM Khan¹. ¹Environmental Toxicology Lab., National Institute for Biotechnology and Genetic Engineering (NIBGE), Faisalabad, Pakistan, ²Pesticides Chemistry Lab. National Institute of Agriculture and Biology (NIAB), Faisalabad, Pakistan

6:00 PM–7:00 PM

COMMITTEE MEETINGS:

**2008 PROGRAM COMMITTEE
(FIRST MEETING)**

Baker Room

Chairperson: **Priscilla K. Cooper**, Lawrence Berkeley National Laboratory

**EDUCATION AND STUDENT
AFFAIRS COMMITTEE**

Piedmont Room

Chairperson: **Olga Kovalchuk**, University of Lethbridge

Members: Amal M. Abu-Shakra, Meredith E Crosby, David M. DeMarini, David A. Eastmond, James Gentile, Kathleen A. Hill, Suzanne M. Morris, Janice M. Pluth, Peter J. Stambrook, and Paul A. White

**MEMBERSHIP AND PROFESSIONAL
DEVELOPMENT COMMITTEE**

Fairlie Room

Chairpersons: **Kandace J. Williams**, Medical University of Ohio and **Ofelia Ana Olivero**, National Cancer Institute, NIH

Members: C. Sid Aaron, William W. Au, R. Daniel Benz, Jack B. Bishop, Stefano Bonassi, Junjian Chen, E. Maria Donner, David A. Eastmond, Barry N. Ford, Glenda J. Gentile, Kathleen A. Hill, Randy L. Jirtle, Mats Ljungman, Barbara L. Parsons, Janice M. Pluth, W. David Sedwick, Martyn T. Smith, Ronald D. Snyder, Steve S. Sommer, Larry H. Thompson, Carrie R. Valentine, Martina L. Veigl, Robert C. von Borstel, and Elizabeth S. Von Halle

7:00 PM–10:00 PM

Centennial IV Ballroom

SYMPOSIUM 7:**WOMEN IN SCIENCE: THE ENGINE BEHIND DISCOVERY**

Chairpersons: **Janice Pluth**, Lawrence Berkeley National Laboratory and **Glenda Gentile**, University of Arizona

Primary Sponsor: The Office of Research on Women's Health, National Institutes of Health

- | | | |
|---------|-----|---|
| 7:00 PM | S30 | EARLY EPIGENETIC AND GENETIC EVENTS IN CARCINOGENESIS
<i>Thea D. Tlsty</i> , University of California, San Francisco |
| 7:45 PM | S31 | ATRAZINE EFFECTS ON HUMAN MENSTRUAL CYCLE
<i>Wendie A. Robbins</i> , University of California, Los Angeles |
| 8:05 PM | S32 | BIOMARKER STUDIES IN MINORITY WOMEN
<i>Nina Titenko Holland</i> , University of California, Berkeley |
| 8:25 PM | S33 | A TEST OF THE LIPOPHILIC MUTAGEN HYPOTHESIS OF BREAST CANCER
<i>Kathleen A. Hill</i> , The University of Western Ontario |
| 8:45 PM | | BREAK FOR REFRESHMENTS AND NO-HOST BAR |
| 8:55 PM | | PANEL DISCUSSION & WOMEN'S SIG MEETING |
| 9:25 PM | | NETWORKING |

Monday, October 22

7:00 AM–6:00 PM

Centennial III Foyer

REGISTRATION

7:00 AM–8:30 AM

BREAKFAST MEETINGS:**STUDENT AND NEW INVESTIGATOR BREAKFAST****Baker Room**

Chairperson: **Olga Kovalchuk**, University of Lethbridge

Student and New Investigator registrants are invited to attend.

NEW TECHNOLOGIES**Dunwoody Room****SPECIAL INTEREST GROUP**

Chairpersons: **Ronald D. Snyder**, Schering-Plough Research Institute and **Martyn T. Smith**, University of California, Berkeley

Contributing Sponsor: Amgen, Inc.

The New Technologies SIG has as its objective to provide a forum for the introduction and discussion of emerging technologies as they apply to the broad fields of interest to the Society and its members. By way of example, one discussion area of this SIG might be in what ways the ability to view the entire *in vitro* or *in vivo* transcriptome by microarray analysis following genotoxic insult helps us either in screening for genotoxicity or understanding the mechanisms of genotoxicity.

8:30 AM–9:15 AM

Centennial II Ballroom

TOPICAL REVIEW 3:**DNA REPAIR MACHINES**

John A. Tainer, The Scripps Research Institute and Lawrence Berkeley National Laboratory

An emerging view of structural biology indicates that DNA repair pathways depend upon repair proteins acting as amazingly efficient macromolecular machines for the specific detection and removal of DNA damage in the context of 100 million fold excess of normal over damaged DNA sites. The stunningly high levels of many types of endogenous DNA damage makes the normal functioning of these machines critical for life and furthermore overwhelmingly controls the levels of risk from environmental mutagens. A unified understanding of the strengths and limitations of these DNA repair machines provides an informed basis to understand how different environmental toxins impact mutagenesis and human health.

8:30 AM–9:15 AM

Centennial III Ballroom

TOPICAL REVIEW 4:**ENVIRONMENTAL EPIGENOMICS IN HUMAN HEALTH AND DISEASES***Randy L. Jirtle, Duke University Medical Center*

The epigenome consists of the DNA methylation marks and histone modifications involved in controlling gene expression. It is accurately reproduced during mitosis and can be inherited transgenerationally. The innate plasticity of the epigenome also enables it to be reprogrammed by nutritional, chemical and physical factors. To fully understand the etiology of the most devastating diseases that plague humans, the full complexity of the human epigenome will ultimately need to be characterized. Moreover, the elucidation of the interactions of environment with the epigenome should allow for the development of novel epigenetic-based diagnostic, prevention, and therapeutic strategies for human diseases.

9:15 AM–9:30 AM

Centennial Foyer

BREAK

9:30 AM–11:30 AM

Centennial II Ballroom

SYMPOSIUM 8:**NUCLEOTIDE POOL DAMAGE AND ITS BIOLOGICAL CONSEQUENCES**

Chairpersons: *Takehiko Nohmi, National Institute of Health Sciences* and *Margherita Bignami, Istituto Superiore di Sanità*

Contributing Sponsor: NASA Space Radiation Program, NASA Johnson Space Center

- 9:30 AM S34 THE ROLES OF Y-FAMILY DNA POLYMERASES IN OXIDATIVE MUTAGENESIS
Takehiko Nohmi, National Institute of Health Sciences
- 10:00 AM S35 METABOLISM AND INCORPORATION OF EXOGENOUS 8-oxodG INTO DNA IN CELL CULTURE AND MICE: AN ALTERNATIVE PROMUTAGENIC PATHWAY COMPARED TO OXIDATION OF NUCLEOTIDES AND DNA
Paul T. Henderson, Lawrence Livermore National Laboratory
- 10:30 AM S36 DEFENSES AGAINST DAMAGE IN NUCLEOTIDE POOLS AND THE SUPPRESSION OF CARCINOGENESIS, NEURODEGENERATION, AND HEART FAILURE
Yusaku Nakabeppu, Kyushu University

11:00 AM S37

REDUCED HUNTINGTON'S DISEASE-LIKE STRIATAL NEURODEGENERATION IN MICE EXPRESSING A HUMAN 8-oxodGTPase
Margherita Bignami, Istituto Superiore di Sanità

9:30 AM–11:30 AM

Centennial III Ballroom

SYMPOSIUM 9:**GERM CELLS AND TRANSGENERATIONAL EFFECTS**

Chairpersons: *Francesco Marchetti, Lawrence Berkeley National Laboratory* and *Yuri E. Dubrova, University of Leicester*

- 9:30 AM S38 TRANSGENERATIONAL EFFECTS IN MAMMALS: A STORY OF A STABLE INSTABILITY
Yuri E. Dubrova, University of Leicester
- 10:00 AM S39 GERM-CELL MEDIATED GENOMIC INSTABILITY: FISHING FOR ANSWERS
Richard N. Winn, University of Georgia
- 10:30 AM S40 SETTING AND PERTURBING DNA METHYLATION PATTERNS IN MALE GERM CELLS: CONSEQUENCES FOR FERTILITY AND THE NEXT GENERATION
Jacquetta Trasler, McGill University
- 11:00 AM S41 MAINSTREAM TOBACCO SMOKE CAUSES PATERNAL GERMLINE DNA SEQUENCE MUTATION
Carole Yauk, Health Canada (Presented by George Douglas, Health Canada)
- 11:15 AM S42 EFFECTS OF SECOND-HAND SMOKE ON MALE GERM CELLS AND EARLY EMBRYONIC DEVELOPMENT
Francesco Marchetti, Lawrence Berkeley National Laboratory

9:30 AM–11:30 AM

Centennial IV Ballroom

SYMPOSIUM 10:**CHALLENGES IN ASSESSING RISK FROM LOW-DOSE CHEMICAL EXPOSURES**

Chairpersons: *Nagu Keshava, U.S. Environmental Protection Agency* and *Paul A. White, Health Canada*

Primary Sponsor: U.S. Environmental Protection Agency Grant No. EP07H000535

- 9:30 AM S43 CHALLENGES IN ASSESSING RISK FROM LOW-DOSE CHEMICAL EXPOSURES
Nagu Keshava, U.S. Environmental Protection Agency

- 9:40 AM S44 USE OF TOXIGENOMICS TO IDENTIFY CARCINOGENIC MOA TO INFORM DOSE-RESPONSE DECISIONS
Jiri Aubrecht, Pfizer Inc.
- 10:10 AM S45 AVAILABILITY OF DATA IN THE LOW DOSE REGION AND THEIR USES IN RISK ASSESSMENT
Jeffrey Ross, U.S. Environmental Protection Agency
- 10:40 AM S46 TESTING FOR ADDITIVITY IN THE LOW DOSE REGION OF AN ENVIRONMENTALLY RELEVANT MIXTURE OF 18 PHAHs WITH DISCUSSION FOR GUIDELINES ON USE
LeAnna G. Stork, Monsanto
- 11:10 AM S47 APPLICATION OF MODE OF ACTION AND DOSE-RESPONSE INFORMATION IN A CHEMICAL MIXTURES RISK ASSESSMENT
Jason Lambert, U.S. Environmental Protection Agency

11:30 AM–1:15 PM Centennial II Ballroom
EMS TECHNOLOGY LUNCHTIME WORKSHOP:
CURRENT APPLICATIONS OF THE COMET ASSAY

Free Workshop, Advance Registration Required, Lunch Provided, Seating Limited

Chairpersons: **Patricia Escobar**, BioReliance Corporation and **Raymond Tice**, National Institute of Environmental Health Sciences

Primary Sponsor: BioReliance Corporation

- 11:30 AM GENERAL OVERVIEW OF THE COMET ASSAY
Diana Anderson, University of Bradford
- 11:55 AM UPDATE IN THE INTERNATIONAL VALIDATION OF THE IN VIVO COMET ASSAY
Yoshifumi Uno, Mitsubishi Pharma Corporation, Japan
- 12:20 PM ESTIMATING DNA REPAIR IN HUMAN CELLS WITH THE COMET ASSAY
Andrew Collins, University of Oslo
- 12:45 PM THE COMET ASSAY USED FOR BIOMONITORING IN HUMAN POPULATION STUDIES
Maria Dusinska, Norwegian Institute for Air Research (NILU)
- 1:10 PM DISCUSSION

11:30 AM–1:15 PM Centennial III Ballroom
EMS POLICY LUNCHTIME WORKSHOP:

IS IT TIME TO AMEND THE CORE GENETIC TOXICITY TESTING BATTERY? THE MUTAGENICITY TEST BATTERY RECONSIDERED

Free Workshop, Advance Registration Required, Lunch Provided, Seating Limited

Chairpersons: **David M. DeMarini**, U.S. Environmental Protection Agency and **David A. Eastmond**, University of California–Riverside

Primary Sponsor: The National Toxicology Program, National Institute of Environmental Health Sciences
Contributing Sponsor: Covance Laboratories Ltd. U.K.

- 11:30 AM INTRODUCTION
David M. DeMarini, U.S. Environmental Protection Agency
- 11:40 AM A HISTORICAL PERSPECTIVE ON THE CURRENT TEST BATTERY: ITS STRENGTHS AND WEAKNESSES
Errol Zeiger, Errol Zeiger Consulting
- 12:05 PM EUROPEAN LEGISLATION AND THE NEED FOR MORE PREDICTIVE IN VITRO TESTS
David J. Kirkland, Covance Laboratories Ltd. U.K.
- 12:30 PM NEW STRATEGIES FOR IMPROVING THE PREDICTIVITY OF SHORT-TERM TESTS
Ronald D. Snyder, Schering-Plough Research Institute
- 12:55 PM DISCUSSION

1:30 PM–3:30 PM Centennial II Ballroom

SYMPOSIUM 11:**THE REPLICATION OF DAMAGED DNA**

Chairpersons: *Graham C. Walker*, Massachusetts Institute of Technology and *Richard D. Wood*, University of Pittsburgh

Contributing Sponsor: NASA Space Radiation Program, NASA Johnson Space Center

- 1:30 PM S48 STUDIES OF LEADING AND LAGGING STRAND DNA REPLICATION FIDELITY IN YEAST
Thomas A. Kunkel, National Institute of Environmental Health Sciences
- 1:55 PM EXPLOITING MUTAGENIC REPLICATION TO DEVELOP NOVEL CHEMOTHERAPEUTIC AGENTS
Anthony J. Berdis, Case Western Reserve University
- 2:20 PM S50 A HAND-OFF MECHANISM FOR PRIMOSOME ASSEMBLY IN REPLICATION RESTART
James L. Keck, University of Wisconsin–Madison
- 2:45 PM S51 SUPPRESSION OF GENOMIC INSTABILITY BY THE MAMMALIAN RAD5 PATHWAY THROUGH PCNA POLYUBIQUITINATION
Kyungjae Myung, National Human Genome Research Institute
- 3:10 PM S52 FUNCTION AND CONTROL OF TRANSLESION DNA POLYMERASES
Graham C. Walker, Massachusetts Institute of Technology

1:30 PM–3:30 PM Centennial III Ballroom

SYMPOSIUM 12:**ASSESSMENT OF THE TECHNOLOGIES FOR MOLECULAR BIODOSIMETRY FOR HUMAN LOW-DOSE RADIATION EXPOSURE**

Chairpersons: *Matthew A. Coleman*, Lawrence Livermore National Laboratory and *Narayani Ramakrishnan*, National Institute of Allergy and Infectious Diseases

Primary Sponsor: The Office of Sciences (BER), U.S. Department of Energy Grant No. DE-FG02-07ER64474

Contributing Sponsor: National Institute of Allergy and Infectious Diseases

- 1:30 PM S53 MODEL SYSTEMS AND CURRENT APPROACHES IN BIODOSIMETRY
Matthew A. Coleman, Lawrence Livermore National Laboratory
- 1:40 PM BRIEF OVERVIEW OF BIODOSIMETRY PROJECTS IN THE NIH RAD/NUC PROGRAM
Narayani Ramakrishnan, National Institute of Allergy and Infectious Diseases
- 1:50 PM S54 RAPID ASSESSMENT OF GENE EXPRESSION SIGNATURES FOR BIODOSIMETRY
Sally Amundson, Columbia University
- 2:20 PM S55 PERSISTENCE OF GENE EXPRESSION CHANGES FOLLOWING LOW DOSES OF IONIZING RADIATION
James D. Tucker, Wayne State University
- 2:35 PM S56 FLOW CYTOMETRIC SCORING OF RADIATION-INDUCED MICRONUCLEI: RETICULOCYTE- AND LYMPHOCYTE-BASED APPROACHES
Stephen D. Dertinger, Litron Laboratories
- 2:50 PM S57 IN VIVO MURINE DOSE-RESPONSE CALIBRATION CURVES FOR EARLY-RESPONSE EXPOSURE ASSESSMENT USING MULTIPLE RADIATION-RESPONSIVE BLOOD PROTEIN BIOMARKERS
Natalia I. Ossetrova, Armed Forces Radiobiology Research Institute
- 3:20 PM S58 DETERMINATION OF MARKER GENES FOR THE EXPOSURE OF ARISTOLOCHIC ACID IN RAT KIDNEY BY CROSS-PLATFORM COMPARISON AND BIOLOGICAL FUNCTION CHOICE
Tao Chen, National Center for Toxicological Research, U.S. Food and Drug Administration

1:30 PM–3:30 PM Centennial IV Ballroom

SYMPOSIUM 13:**USE OF GENOTOXICITY DATA IN MODE OF ACTION ANALYSIS FOR HUMAN HEALTH RISK ASSESSMENT**

Chairpersons: *Channa Keshava*, U.S. Environmental Protection Agency and *Kerry L. Dearfield*, USDA, FSIS, OPHS

Primary Sponsor: U.S. Environmental Protection Agency Grant No. EP07H000535

- 1:30 PM S59 USE OF GENOTOXICITY DATA IN MODE OF ACTION ANALYSIS FOR HUMAN HEALTH RISK ASSESSMENT
Channa Keshava, U.S. Environmental Protection Agency
- 1:40 PM S60 ESTABLISHING A CARCINOGENIC MODE OF ACTION USING MUTAGENICITY DATA
Rita Schoeny, U.S. Environmental Protection Agency
- 2:10 PM S61 USE OF GENOTOXICITY DATA TO ASSESS LINEARITY OF CARCINOGENIC RESPONSE
David A. Eastmond, University of California, Riverside
- 2:40 PM S62 CYTOGENETIC DAMAGE AND GENETIC VARIANTS IN INDIVIDUALS SUSCEPTIBLE TO ARSENIC-INDUCED CANCER
Ashok K. Giri, Indian Institute of Chemical Biology
- 3:10 PM S63 MODE OF ACTION ANALYSIS TO ADDRESS HERITABLE MUTATIONS: ACRYLAMIDE AS AN EXAMPLE
Kerry L. Dearfield, USDA, FSIS, OPHS

3:30 PM–3:45 PM Centennial Foyer

BREAK

3:45 PM–4:45 PM Centennial IV Ballroom

PLENARY LECTURE (PL2):**IS THERE A HUMAN RISK FROM POTENT MUTAGENS IN COOKED MEAT?**

James S. Felton, Lawrence Livermore National Laboratory

4:45 PM–7:00 PM Regency V Ballroom

POSTER SESSION II AND EXHIBITS**DNA DAMAGE AND REPAIR**

- P2 THE TP53 GENE IS A KEY REGULATOR OF THE RADIOADAPTIVE RESPONSE FOR DNA DAMAGE IN VIVO
TE Schmid, F Marchetti, A Polyzos, S Bhatnagar, AJ Wyrobek. Lawrence Berkeley National Laboratory, Berkeley, CA, United States
- P 5 SCREENING *Mycobacterium Tuberculosis* GENOME FOR GENES INVOLVED IN CELLULAR RESPONSE TO NITROSATIVE STRESS
S-H Park, L Hart, W Cao. Department of Genetics and Biochemistry South Carolina Experiment Station, Clemson University, Clemson, SC, United States
- P 8 HUMAN DNA POLYMERASE η (POLN): RESIDUES IMPORTANT FOR ITS LOW FIDELITY AND BYPASS ACTIVITY
KT Takata, RD Wood. University of Pittsburgh, Pittsburgh, PA, United States
- P 11 GENETIC CHARACTERIZATION OF THE ROLE OF BACTERIAL DNA MISMATCH REPAIR IN SODIUM NITRITE MUTAGENESIS
SM Deschenes. Sacred Heart University, Fairfield, CT, United States
- P 14 THE RELATION BETWEEN DNA DAMAGE AND HYPERGLYCEMIA IN KK-Ay MICE
K Hashimoto^{1,2}, W Takasaki¹, T Yamoto¹, S Manabe¹, I Sato², S Tsuda². ¹Medicinal Safety Laboratories, Daiichi Sankyo Co., Ltd., Fukuroi, Shizuoka, Japan, ²Faculty of Agriculture, Iwate University, Morioka, Iwate, Japan
- P 17 INFLUENCE OF POLYMORPHISMS IN DNA REPAIR GENES ON THE INITIAL REPAIR OF MMS-INDUCED DNA DAMAGE, AS MEASURED BY THE COMET ASSAY
*C Ryk*¹, MN Routledge², JM Allan³, CP Wild², R Kumar^{1,4}, B Lambert¹, S Hou^{1,5}. ¹Department of Biosciences and Nutrition, Karolinska Institute, Huddinge, Sweden, ²Molecular Epidemiology Unit, The LIGHT Laboratories, University of Leeds, Leeds, United Kingdom, ³Epidemiology & Genetics Unit, Department of Biology, University of York, York, United Kingdom, ⁴Division of Molecular Genetic Epidemiology, German Cancer Research Centre, Heidelberg, Germany, ⁵AstraZeneca R&D Sodertalje, Safety Assessment, Genetic Toxicology, Sodertalje, Sweden
- P 20 PROFILING KEY PHOSPHO-PROTEIN KINETICS IN DIFFERENT CELL TYPES AFTER LOW AND HIGH LET EXPOSURE
MK Whalen, SK Gurai, *JM Pluth*. Lawrence Berkeley National Lab, Berkeley, CA, United States
- P 23 POST-TRANSLATIONAL PHOSPHORYLATION OF hMSH6 AND MISMATCH RECOGNITION ACTIVITY
S Kaliyaperumal, K Williams. University of Toledo Health Science Campus, Toledo, OH, United States
- P 26 WITHDRAWN

- P 28 **FACTORS AFFECTING DNA REPAIR GENE EXPRESSION LEVELS: IMPACT ON THE USE OF mRNA EXPRESSION TO PREDICT ACUTE SIDE EFFECTS OF RADIOTHERAPY**
O Popanda¹, A Woelfelschneider¹, C Lilla¹, C Mayer¹, J Debus², H Bartsch¹, J Chang-Claude¹, P Schmezer¹. ¹German Cancer Research Center, Heidelberg, Germany, ²Radiology, University Hospital, Heidelberg, Germany

- P 30 **ANALYSIS OF CHROMOSOMAL STRUCTURAL DAMAGE IN LYMPHOCYTES AND SPERM FROM HODKIN'S DISEASE PATIENTS TREATED WITH MOPP/ABVD(P) CHEMOTHERAPY WITH OR WITHOUT RADIOTHERAPY**
S Frias Vazquez^{1,2}, C Salas¹, O Lopez de Lara², JJ Olivares², B Molina², A Niembro³, V Lozano³, R Rivera Luna¹, A Carnevale¹. ¹Instituto Nacional de Pediatría, Mexico DF, Mexico, ²Universidad Autonoma de la Ciudad de Mexico, Mexico DF, Mexico, ³Instituto Nacional de Cancerología, Mexico DF, Mexico, ⁴ISSSTE Coord Med Genómica, Mexico DF, Mexico

- P 32 **GENETIC ANALYSIS OF DNA STRAND BREAK REPAIR AND LOSS OF HETEROZYGOSITY IN p53 DEFICIENT AND WILDTYPE HEMATOPOIETIC STEM CELLS SHOWS HAPLOTYPE DEPENDENT EFFICIENCY OF REPAIR**
JE French, VI Parron. NIEHS, NIH, Research Triangle Park, NC, United States

- P 34 **WITHDRAWN**

- P 36 **A HIGH RESOLUTION OLIGONUCLEOTIDE CpG ISLAND MICROARRAY**
 C Foo², C Hopkins¹, D Roberts¹. ¹Agilent Technologies, Santa Clara, CA, United States, ²UCSF, San Francisco, CA, United States

EPIGENETICS, GERM CELLS

- P 38 **Micro-RNA REGULATION OF STROKE RECOVERY**
MD Lowings, B Kolb, O Kovalchuk. University of Lethbridge, Lethbridge, AB, Canada

- P 40 **CYTOSINE METHYLATION IN CG REPEATS INCREASES LOCAL GENETIC INSTABILITY**
G Wang, K Vasquez. UT MD Anderson Cancer Center, Science Park, Smithville, TX, United States

- P 42 **miRNA REGULATION IN HUMAN BYSTANDER TISSUE SUGGESTS COMMON BYSTANDER REGULATORY ELEMENTS**
FJ Zemp¹, OA Sedelnikova², WM Bonner², O Kovalchuk¹. ¹University of Lethbridge, Lethbridge, AB, Canada, ²National Cancer Institute, Bethesda, MD, United States

- P 44 **SYNERGISTIC EFFECTS OF ESTROGEN AND IONIZING RADIATION ON THE EPIGENETIC PROCESSES IN THE RAT MAMMARY GLAND**
I Koturbash, O Kovalchuk. University of Lethbridge, Lethbridge, Alberta, Canada

- P 46 **EVIDENCE FOR PROMOTER METHYLATION EFFECTS ON PROXIMAL SPLICING OF MLH1 mRNA IN COLON CANCER CELL LINES**
E Tiedtke¹, DW Sedwick², A Skandalis¹. ¹Brock University, St. Catharines, ON, Canada, ²Case Western Reserve University, Cleveland, OH, United States

- P 47 **GENETIC DISSECTION OF SUSCEPTIBILITY/ RESISTANCE TO IONIZING RADIATION BY USE OF RECOMBINANT CONGENIC STRAIN MICE**
A Vaglenov¹, B Kaltenboeck², W Brawner², D Carpenter², A Fortin³, H Brandhorst², L Yihang². ¹The University of Findlay, Findlay, OH, United States, ²Auburn University, Auburn, AL, United States, ³Emerillon Therapeutics, Inc., Montreal, QC, Canada

MUTAGENESIS, CARCINOGENESIS

- P 49 **GENES INVOLVED IN INFLAMMATORY RESPONSES FOLLOWING EXPOSURE TO CIGARETTE SMOKE IN NORMAL HUMAN BRONCHIAL EPITHELIAL (NHBE) CELLS**
R Parsanejad¹, W Fields^{1,2}, T Steichen², B Bombick², D Doolittle^{1,2}. ¹Department of Physiology and Pharmacology, Wake Forest University School of Medicine, Winston-Salem, NC, United States, ²Research and Development, R.J. Reynolds Tobacco Company, Winston-Salem, NC, United States

- P 51 **8OG CAN LEAD TO RAS ACTIVATION IN A MAMMALIAN MODEL OF TRANSCRIPTIONAL MUTAGENESIS**
TT Saxowsky, PW Doetsch. Emory University School of Medicine, Atlanta, GA, United States

- P 54 **MECHANISTIC INVESTIGATION OF A TEST ARTICLE-INDUCED INCREASE IN MITOTIC INDEX IN THE HPBL CHROMOSOME ABERRATION ASSAY**
B Mahadevan, P Nioi, M Mack, B Martin, E Sullivan, R Snyder. Schering-Plough Research Institute, Summit, NJ, United States

- P 57 **ACB-PCR MEASUREMENT OF K-Ras CODON 12 MUTATION IN A/J MOUSE LUNG EXPOSED TO BENZO[A]PYRENE: A DOSE-RESPONSE ASSESSMENT**
F Meng¹, G Knapp², T Green², J Ross², B Parsons¹. ¹National Center for Toxicological Research, Jefferson, AR, United States, ²Environmental Protection Agency, Research Triangle Park, NC, United States

- P 60 **THE RELATIVE ABILITY OF CANNABIS AND TOBACCO SMOKE TO INDUCE CHROMOSOMAL DAMAGE IN MURINE PULMONARY CELLS**
 RM Maertens¹, PA White¹, W Rickert², G Levasseur³, GR Dougals¹, S Desjardins³. ¹Safe Environments Programme, Health Canada, Ottawa, ON, Canada, ²Labstat International Inc., Kitchener, ON, Canada, ³Drug Strategy and Controlled Substances Programme, Health Canada, Ottawa, ON, Canada

- P 63 **CHRONIC OXIDATIVE DNA DAMAGE CAUSES CHROMOSOME INSTABILITY IN YEAST *Saccharomyces cerevisiae***
N Degtyareva¹, L Cheng¹, P Mieczkowski², P Doetsch¹. ¹Department of Biochemistry, Emory University School of Medicine, Atlanta, GA, United States, ²Department of Molecular Genetic and Microbiology, Duke University Medical Center, Durham, NC, United States

- P 66 **MAJOR DNA REPAIR PATHWAYS INFLUENCING TRANSCRIPTIONAL MUTAGENESIS IN *Escherichia coli***
CL Clauson, B Weiss, PW Doetsch. Emory University, Atlanta, GA, United States

- P 69 **DUN1-MEDIATED PATHWAY THAT CONTROLS RIBONUCLEOTIDE REDUCTASE INDUCTION IS REQUIRED FOR BOTH AFLATOXIN B1 (AFB1)-ASSOCIATED SISTER CHROMATID EXCHANGE (SCE) AND MUTATION IN *Saccharomyces cerevisiae* (YEAST)**
MT Fasullo^{1,3}, M Sun³, P Egner². ¹State University of New York at Albany, Albany, NY, United States, ²Johns Hopkins University, Baltimore, MD, United States, ³Ordway Research Institute, Albany, NY, United States
- P 72 **MUTAGENICITY AND LOSS OF HETEROZYGOSITY (LOH) OF MICROSATELLITES MARKERS IN CHROMOSOME 11B OF MOUSE LYMPHOMA CELLS TREATED WITH TAXOL**
MR Schisler, AJ Wood, DR Geter, BB Gollapudi, SD Seidel. The Dow Chemical Company, Midland, MI, United States
- P 75 **MITOCHONDRIAL DNA SEQUENCE VARIANTS IN MICE TREATED TRANSPLACENTALLY WITH AZT**
 N Kunugita¹, RA Mittelstaedt², LS Von Tungeln², FA Beland², RH Heflich². ¹University of Occupational and Environmental Health, Kitakyushu, Japan, ²National Center for Toxicological Research, Jefferson, AR, United States
- P 78 **REGULATION OF *Saccharomyces cerevisiae* DNA POLYMERASE ETA TRANSCRIPT AND PROTEIN**
R Pabla, D Rozario, W Siede. UNT Health Science Center, Fort Worth, TX, United States
- P 80 **THE NEWLY DEFINED ACCEPTANCE AND EVALUATION CRITERIA FOR THE MOUSE LYMPHOMA ASSAY AND THEIR IMPACT AND RELEVANCE**
A Poth, S Kunz, E Wollny. RCC Germany, Rossdorf, Hessian, Germany
- P 81 **ABASIC SITES ARE STRONG BLOCKS TO MULTISUBUNIT RNA POLYMERASES AT THE INCORPORATION AND EXTENSION STEPS, AND INCORPORATION FOLLOWS THE "A-RULE"**
TF Cheng, PJ Brooks. NIH, Rockville, MD, United States
- P 84 **GENOTOXICOLOGICAL AND ECOTOXICOLOGICAL EVALUATION OF CYANOBACTERIAL STRAINS USING PLANT AND FISH BIOASSAYS**
HD Laughinghouse IV^{1,2}, D Prá², A Rieger², ME Silva-Stenico³, MF Fiore³, SIR Franke^{4,3}. ¹John Carroll University, University Heights, OH, United States, ²Universidade de Santa Cruz do Sul – UNISC, Laboratório de Biotecnologia e Genética, Santa Cruz do Sul, Rio Grande do Sul, Brazil, ³Universidade de São Paulo, CENA, Laboratório de Biologia Celular e Molecular, Piracicaba, São Paulo, Brazil, ⁴Universidade de Santa Cruz do Sul – UNISC, Curso de Nutrição, Santa Cruz do Sul, Rio Grande do Sul, Brazil
- P 87 **SPONTANEOUS MUTATION FREQUENCIES IN SPLEEN IN THE *lacI* AND Φ X174 TRANSGENIC MOUSE MUTATION ASSAYS**
CR Valentine, HF Rainey, JM Farrell, JG Shaddock, VN Dobrovolsky, RR Delongchamp. National Center for Toxicological Research, FDA, USA, Jefferson, AR, United States
- GENOTOXINS, MUTAGENS, ANTIMUTAGENS, BIODOSIMETRY, RISK ASSESSMENT**
- P 104 **CONTAMINATION WITH TRITIUM INDUCED GENETIC INSTABILITY**
Y Saintigny, BS Lopez. Commissariat à l'Energie Atomique - IRCM, Fontenay aux Roses, France
- P 107 **EVALUATION OF GENOTOXIC POTENTIAL OF RADIOFREQUENCY ELECTROMAGNETIC FIELD (RF-EMF) IN DUCKWEE**
P Cvjetko¹, S Radic¹, K Malaric², M Tkalec¹, M Pavlica¹. ¹Faculty of Science, University of Zagreb, Zagreb, Croatia, ²Faculty of Electrical Engineering and Computing, University of Zagreb, Zagreb, Croatia
- P 110 **CORRELATION STUDIES BETWEEN GROWTH PROCESSES IN PLANTS AND GENETIC ENDPOINTS IN MICE BONE MARROW CELLS**
BP Patlolla¹, BS Sekhon². ¹Alcorn State University, Alcorn State, MS, United States, ²Jackson State University, Jackson, MS, United States
- P 113 **MULTI-LABORATORY EVALUATION OF AN AUTOMATED, HIGH CONTENT IN VITRO MICRONUCLEUS ASSAY**
S Dertinger¹, S Bryce¹, S Avlasevich¹, J Bemis¹, M De Boeck², F Van Goethem², D Beerens², H Aerts², J Collins³, P Ellis³, A White³, J Harvey³, R Rees³, A Lynch³, M Lukamowicz⁴, A Elhajouji⁴. ¹Litron Laboratories, Rochester, NY, United States, ²Johnson and Johnson Pharmaceutical R&D, Beerse, Belgium, ³GlaxoSmithKline R&D, Ware, United Kingdom, ⁴Novartis Pharma AG, Muttens, Switzerland
- P 116 **MECHANISMS UNDERLYING PREVENTION OF GENOMIC INSTABILITY IN BREAST TUMOR CELLS BY GENISTEIN AND LYCOPENE**
 AK Batoon, J Leszczynska, CB Klein. New York University, Tuxedo, NY, United States
- P 119 **DOSE-RESPONSE AND APPARENT THRESHOLDS FOR DNA ADDUCTS AND CYTOGENETIC EFFECTS IN RATS TREATED WITH MMS**
LH Pottenger, F Zhang, MR Schisler, GD Charles, CM Wiscinski, MJ Bartels, BB Gollapudi. Toxicology and Environmental Research and Consulting, The Dow Chemical Company, Midland, MI, United States
- P 122 **BIOLOGICAL MONITORING AND DNA DAMAGE EVALUATION OF OCCUPATIONAL EXPOSURE TO ORGANIC SOLVENTS**
 H Groot¹, DM Narváez¹, S Ortiz¹, AF Rodríguez¹, C Torres², M Varona³. ¹Laboratorio de Genética Humana, Universidad de los Andes, Bogotá, Colombia, ²Universidad El Bosque, Bogotá, Colombia, ³Instituto Nacional de Salud, Bogotá, Colombia
- P 125 **ASSOCIATION OF DNA DAMAGE AND THE POLYMORPHISMS OF THE ENZYMES CYP2E1, GSTM1 AND GSTT1 IN A POPULATION EXPOSED TO ORGANIC SOLVENTS**
 H Groot¹, AF Rodríguez¹, S Ortiz¹, DM Narváez¹, C Torres², M Varona³. ¹Laboratorio de Genética Humana, Universidad de los Andes, Bogotá, Colombia, ²Universidad El Bosque, Bogotá, Colombia, ³Instituto Nacional de Salud, Bogotá, Colombia

- P 128 **REV1 INHIBITION REDUCES THE INCIDENCE OF CARCINOGEN-INDUCED MURINE LUNG TUMORS**
CD Dumstorf, SM Mukhopadhyay, WZ Zacharias, WM McGregor. University of Louisville, Louisville, KY, United States
- P 131 **EVALUATION OF CYTOTOXICITY INDICATORS FOR AN IN VITRO ALKALINE COMET ASSAY IN PRIMARY RAT HEPATOCYTES: UTILITY IN AVOIDING FALSE POSITIVE RESULTS**
S Gill, R Gealy, J Barnum, A Kraynak, R Storer, S Galloway. Merck & Co., Inc., West Point, PA, United States
- P 134 **DETECTION OF MUTAGENS DERIVED FROM 3,3'-DICHLOROBENZIDINE IN RIVER WATER FLOWING THROUGH AN INDUSTRIAL AREA IN WAKAYAMA, JAPAN**
T Ohe¹, T Watanabe², T Hasei², K Wakabayashi³. ¹Kyoto Women's University, Kyoto, Japan, ²Kyoto Pharmaceutical University, Kyoto, Japan, ³National Cancer Center Research Institute, Tokyo, Japan
- P 137 **ENVIRONMENTAL EFFECTS ON THE QUALITY OF MICROARRAY GENE EXPRESSION MEASUREMENTS**
JC Fuscoe, T Han, CD Melvin, VG Desai, CL Moland, AT Scully. FDA/NCTR, Jefferson, AR, United States
- P 140 **IN VITRO MICRONUCLEUS AND SISTER CHROMATID EXCHANGE ANALYSES IN CHINESE HAMSTER OVARY CELLS FOLLOWING EXPOSURE TO WHOLE CIGARETTE SMOKE**
KW Fowler, KM Harger, WT Morgan, BR Bombick, DJ Doolittle. R. J. Reynolds Tobacco, Winston-Salem, NC, United States
- P 143 **IDENTIFICATION OF NOVEL TP53 REGULATED GENES INDUCED BY IONIZING RADIATION**
F Bourguet¹, A Krefft¹, LE Peterson², MA Coleman¹. ¹Chemistry, Materials and Life Sciences, LLNL, Livermore, CA, United States, ²Dept. of Public Health. The Methodist Hospital, Houston, TX, United States

6:00 PM-7:00 PM**COMMITTEE MEETINGS:****AWARDS COMMITTEE****Fairlie Room**

Chairperson: **P.J. Brooks**, National Institute on Alcohol Abuse and Alcoholism

Members: Andrew B. Buermeyer, Rosalie K. Elespuru, Bevin P. Engelward, Takehiko Nohmi, and Jennifer C. Sasaki

FINANCE AND RESOURCE COMMITTEE**Dunwoody Room**

Chairperson: **Barbara S. Shane**, National Institute of Environmental Health Sciences

Members: Jack B. Bishop, David A. Eastmond, James C. Fuscoe, B. Bhaskar Gollapudi, Andrew D. Kligerman, Michael J. Plewa, and Ronald D. Snyder

HOLLAENDER COMMITTEE**Greenbriar Room**

Chairperson: **Mats Ljungman**, The University of Michigan

Members: Amal M. Abu-Shakra, Ben Anane Aidoo, William W. Au, Daniel A. Casciano, James Gentile, Helena Groot de Restrepo, Peggy J. Guzzie, Philip C. Hanawalt, Nina Titenko Holland, Gopala Krishna, Mugimane Manjanatha, Joginder Nath, Lucia Regina Ribeiro, Delbert M. Shankel, and Michael D. Waters

PUBLIC RELATIONS COMMITTEE**Baker Room**

Chairperson: **Carrie R. Valentine**, National Center for Toxicological Research, U.S. FDA

Members: David A. Eastmond, Barry N. Ford, Kathleen A. Hill, Pamela S. Lee, Jenness B. Majeska, Suzanne M. Morris, Patricia Ostrosky-Wegman, Barbara L. Parsons, and H. Frank Stack

PUBLICATION POLICY COMMITTEE**Piedmont Room**

Chairperson: **Sheila M. Galloway**, Merck Research Laboratories

Members: Pablo Arenaz, Antone L. Brooks, Robert H. Heflich, George R. Hoffmann, Malcolm J. Lippert, Shyamal K. Majumdar, Michael D. Shelby, Peter J. Stambrook, Vincent L. Wilson, and Errol Zeiger

Tuesday, October 23**7:00 AM–11:30 AM****Centennial III Foyer****REGISTRATION****7:00 AM–8:30 AM****BREAKFAST MEETINGS:****EMS EXECUTIVE BOARD****Baker Room****DNA REPAIR****Greenbriar Room****SPECIAL INTEREST GROUP**

Chairpersons: **Larry H. Thompson**, Lawrence Livermore National Laboratory and **Mats Ljungman**, The University of Michigan

The DNA Repair Special Interest Group is for scientists interested in the molecular mechanisms of how cells and organisms respond to DNA damaging agents. Interests include: induction of DNA damage, DNA repair enzymology, activation of DNA damage response pathways, mechanisms of mutagenesis, and physiological consequences of DNA repair deficiencies.

RISK ASSESSMENT**Dunwoody Room****SPECIAL INTEREST GROUP**

Chairpersons: **Barbara L. Parsons**, National Center for Toxicological Research, U.S. FDA and **David A. Eastmond**, University of California, Riverside

The Risk Assessment Special Interest Group (SIG) within the Environmental Mutagen Society is a mid-sized, eclectic, and congenial group of individuals with shared interests in the broad area of risk assessment, particularly as it relates to genetic toxicology, mutagenesis, and carcinogenesis. This core group of scientist within EMS has been assembling each year at the EMS Meeting since 1997 to discuss a wide range of topics that are pertinent to risk assessment.

8:30 AM–9:15 AM**Centennial III Ballroom****TOPICAL REVIEW 5:****DNA REPAIR AT THE CROSSROADS OF CANCER AND AGING: RARE HUMAN DISEASES AND GENETIC SUSCEPTIBILITY**

Priscilla K. Cooper, Lawrence Berkeley National Laboratory

As evidenced by a number of rare human genetic diseases involving DNA repair defects and by mouse models, DNA repair processes are now understood to be critical for maintaining genetic integrity and genomic function and stability in the face of abundant endogenously generated DNA damage as well as the typically low environmental exposures to a wide range of genotoxins. A number of recent research advances using these systems place DNA repair squarely at the crossroads of cancer and aging, and mechanistic understanding of key processes is progressing rapidly. This talk reviews mammalian cell mechanisms in multiple DNA repair pathways, with an emphasis on disease relevance, repair pathway intersections, coordination with replication and transcription, and dynamic multi-protein interactions as regulatory mechanisms.

8:30 AM–9:15 AM**Centennial IV Ballroom****TOPICAL REVIEW 6:****MUTAGENICITY AND CARCINOGENICITY OF AIR**

Larry D. Claxton, U.S. Environmental Protection Agency

Scientists have known since the 1940's that urban air can be carcinogenic and since the 1970's that air can be mutagenic. However, how much do we really know? And what questions do we need to answer for the future? This presentation explores what is known and not known about the carcinogenicity and mutagenicity of both indoor and outdoor air so you can decide.

9:15 AM–9:30 PM**Centennial Foyer****BREAK**

Primary Sponsor: Covance Inc.

9:30 AM–10:30 AM**Centennial IV Ballroom****PLENARY LECTURE (PL3):****DOGS CHASING CANCER CLUES**

David J. Waters, Gerald P. Murphy Cancer Foundation

10:30 AM–12:00 NOON Centennial III Ballroom**EMS BUSINESS MEETING**

Including Travel Award Presentations and Service Recognition, Officer Reports, and Select Committee Reports

12:00 NOON–2:00 PM Regency V Ballroom**POSTER SESSION III AND EXHIBITS****DNA DAMAGE AND REPAIR**

P3 ROLE OF SINGLE STRANDED BREAK REPAIR AND XRCC1 IN NEURODEGENERATION

A Kulkarni, D McNeill, D Wilson III. National Institute of Aging, Baltimore, MD, United States

P 6 XANTHINE DNA GLYCOSYLASE ACTIVITY FROM MISMATCH-SPECIFIC URACIL DNA GLYCOSYLASE (MUG)

H-W Lee, C Wright, W Cao. Department of Genetics and Biochemistry South Carolina Experiment Station Clemson University, Central, SC, United States

P 9 NOVEL XANTHINE DNA GLYCOSYLASE (XDG) ACTIVITIES IN MAMMALIAN AND YEAST SYSTEMS

L Dong¹, RA Glass¹, LB Meira², LD Samson², W Cao¹. ¹Clemson University, Clemson, SC, United States, ²Massachusetts Institute of Technology, Cambridge, MA, United States

P 12 XANTHINE DNA GLYCOSYLASE ACTIVITY IN SMUG1 DNA GLYCOSYLASE FROM *Geobacter Metallireducens*

R Mi, W Cao. Clemson University, Clemson, SC, United States

P 15 THE ROLE OF COMMON BASE EXCISION REPAIR VARIANTS IN CANCER SUSCEPTIBILITY

J Yamtich, WC Speed, E Straka, K Kidd, JB Sweasy. Yale University, New Haven, CT, United States

P 18 ENDONUCLEASE V-MEDIATED DEAMINATION DNA REPAIR: FROM SINGLE-MOLECULE STUDY TO MAMMALIAN SYSTEMS

W Cao. Department of Genetics and Biochemistry, Clemson, SC, United States

P 21 POST-TRANSLATIONAL MODIFICATION OF ENZYMES INVOLVED IN REPAIR OF OXIDATIVE DNA DAMAGE IN *SACCHAROMYCES CEREVISIAE*

LM Griffiths, D Swartzlander, PW Doetsch. Emory University, Atlanta, GA, United States

P 24 DNA DAMAGE CAUSES OXIDATIVE STRESS IN *Saccharomyces cerevisiae*?

LA Rowe, M Hopkins, NP Degtyareva, PW Doetsch. Emory University, Atlanta, GA, United States

P 27 TUMOR-ASSOCIATED VARIANTS OF DNA POLYMERASE δ AND A FUNCTIONAL LINK TO CANCER ETIOLOGY

KA Donigan, JB Sweasy. Yale University, New Haven, CT, United States

P 29 UNNATURAL SUBSTRATES REVEAL THE IMPORTANCE OF 8-oxoG FOR IN VIVO MISMATCH RECOGNITION AND REPAIR BY MutY GLYCOSYLASE

AL Livingston¹, VL O'Shea¹, T Kim³, ET Kool³, SS David^{2,1}. ¹University of Utah, Salt Lake City, UT, United States, ²University of California at Davis, Davis, CA, United States, ³Stanford University, Stanford, CA, United States

P 31 APPLICATION OF PROTEIN FOOTPRINTING, CROSSLINKING, AND MASS SPECTROMETRY IN MAPPING Ape1 CONTACTS DURING BER PROGRESSION

ET Yu, SP Gaucher, K Sale, MM Young, MZ Hadi. Sandia National Labs, Livermore, CA, United States

P 33 THE ACETALDEHYDE-DERIVED ADDUCT N2-ETHYL-2'-DEOXYGUANOSINE BLOCKS RNA POL II AT THE EXTENSION STEP, AND T7 RNA POLYMERASE AT THE INSERTION STEP

T-F Cheng, PJ Brooks. NIAAA NIH, Rockville, MD, United States

P 35 EXPRESSION OF p53 REGULATED GENES IN FANCONI ANEMIA CELLS AFTER MITOMYCIN C AND HYDROXYUREA EXPOSURE

A Martinez¹, J Hinz^{1,2}, L Gomez-Laguna¹, B Molina¹, H Acuna¹, S Frias¹, M Coleman². ¹Instituto Nacional de Pediatría, Lab., Citogenética, Mexico, ²CMLS, Lawrence Livermore National Laboratory, Livermore CA, United States

MUTAGENESIS, CARCINOGENESIS

P 50 COMPARATIVE INVESTIGATIONS ON THE GENOTOXICITY PROFILE OF GLUTARALDEHYDE AND FORMALDEHYDE—WHAT MAKES THE DIFFERENCE?

G Speit, S Neuss, P Schuetz, O Schmid. Ulm University, Ulm, Germany

P 53 FREQUENCY OF MICRONUCLEATED ERYTHROCYTES IN THE PERIPHERAL BLOOD OF JUVENILE MALE RHESUS MONKEYS, *Macaca Mulatta*, DETERMINED BY FLOW CYTOMETRY

M Myers¹, M Bishop¹, C Hotchkiss³, C-J Lin¹, J Chen¹, D Mattison², S Morris¹. ¹National Center for Toxicological Research/FDA/HHS, Jefferson, AR, United States, ²National Institute of Child Health and Development/NIH/HHS, Bethesda, MD, United States, ³The Bionetics Corporation, Jefferson, AR, United States

P 56 DEVELOPMENT OF A METHOD FOR MEASURING PIG-A GENE MUTANTS IN RAT LYMPHOCYTES USING SELECTION WITH PROAEROLYSIN

D Miura^{1,2}, V Dobrovolsky¹, N Mei¹, Y Kasahara², Y Katsuura², R Heflich¹. ¹Division of Genetic and Reproductive Toxicology, National Center for Toxicological Research, Jefferson, AR, United States, ²TEIJIN Pharma Limited, Tokyo, Japan

- P 59 **EU COSMETICS ASSOCIATION'S (COLIPA) PROJECT ON DEVELOPMENT OF GENOTOXICITY TESTING IN 3D HUMAN SKIN MODELS**
MJ Aardema¹, K Reisinger², G Ouedraogo³, R Curren⁴, CAM Krul⁵, R Corve⁶, S Pfuhler⁷. ¹The Procter & Gamble Co, Cincinnati, OH, United States, ²Phenion GmbH and Co KG, Duesseldorf, Germany, ³L'Oreal, Aulnay sous Bois, France, ⁴Institute for Invitro Sciences, Gaithersburg, MA, United States, ⁵TNO, Zeist, Netherlands, ⁶ECVAM, Ispra, Italy, ⁷Wella/Procter & Gamble, Fribourg, Switzerland
- P 62 **DETECTION OF MUTANT TUMOR CANCER BIOMARKERS BY BEAMing**
 B Karakas¹, RK Elespuru¹, J Weaver², F Diehl³, BH Park³. ¹FDA/Center for Devices & Radiological Health, Silver Spring, MD, United States, ²FDA/Center for Drugs, Silver Spring, MD, United States, ³Johns Hopkins University Sidney Kimmel Cancer Center, Baltimore, MD, United States
- P 65 **VALIDATION OF IN VITRO MICRONUCLEUS STUDY IN HUMAN LYMPHOCYTES**
 CS Farabaugh, CA Middendorf, RS Leatherberry, MM Escobar, LF Stankowski, Jr. Covance Laboratories, Inc., Vienna, VA, United States
- P 68 **FURTHER DEVELOPMENT AND VALIDATION OF THE IN VITRO MICRONUCLEUS ASSAY IN THE EpiDerm™ 3D RECONSTRUCTED HUMAN SKIN MODEL**
 T Hu¹, GC Mun², Y Kaluzhny³, P Hayden³, B Barnett¹, N Wilt³, M Klausner³, RD Curren², MJ Aardema¹. ¹Procter & Gamble, Cincinnati, OH, United States, ²Institute for In Vitro Sciences, Gaithersburg, MD, United States, ³MatTek Corporation, Ashland, MA, United States
- P 71 **ECVAM RETROSPECTIVE VALIDATION OF THE MICRONUCLEUS TEST IN VITRO**
 R Corvil¹, S Albertini², T Hartung¹, S Hoffmann¹, D Maurici³, S Pfuhler⁴, J van Benthem⁵, P Vanparys⁶. ¹ECVAM, IHCP, JRC of the European Commission, Ispra, Italy, ²F. Hoffmann-La Roche, Basel, Switzerland, ³EFSA, Parma, Italy, ⁴Cosmital, P&G, Marly, Switzerland, ⁵RIVM, Bilthoven, Netherlands, ⁶Johnson & Johnson Pharmaceutical, Beerse, Belgium
- P 74 **CONDITIONS AFFECTING MUTATION FREQUENCY IN THE MOUSE LYMPHOMA FORWARD MUTATION ASSAY**
 J Sahm, FQ Luo. Covance Laboratories Inc., Vienna, VA, United States
- P 77 **AN IN VITRO ALTERNATIVE SYSTEM FOR GENOTOXIC SCREENING OF COMPOUNDS**
 AG Mahabir, MM Schaap, CFM Hendriksen, H van Steeg, J van Benthem. National Institute of Public Health and the Environment, Bilthoven, Netherlands
- P 83 **BHAS CELL TRANSFORMATION ASSAY AS A PREDICTOR OF CARCINOGENICITY**
 A Porth, S Kunz, A Heppenheimer. RCC Germany, Rossdorf, Hessian, Germany
- P 86 **NOVEL IN VIVO MUTATION ASSAY BASED ON THE ENDOGENOUS PIG-A LOCUS**
 S Bryce, J Bemis, S Dertinger. Litron Laboratories, Rochester, NY, United States
- P 89 **EXPERIENCE WITH A COMBINED IN VIVO MICRONUCLEUS AND COMET ASSAY TEST PROTOCOL IN MICE AND RATS**
 L Recio¹, C Hobbs-Riter¹, K Shephard¹, C Baldetti¹, J Winters¹, W Caspary², R Tice², K Witt². ¹ILS, Inc, Research Triangle Park, NC, United States, ²NIEHS/NTP, Research Triangle Park, NC, United States
- P 91 **MICROINDEL DUE TO HIGHLY ERROR-PRONE PROCESSES**
 SS Sommer^{1,2}, K Ki^{1,2}, D Gu¹, KD Gonzalez¹, KA Hill^{1,3}, WA Scaringe¹. ¹City of Hope National Medical Center, Duarte, CA, United States, ²Nanhua University, Hengyang, Hunan, China, ³University of Western Ontario, London, ON, Canada
- P 93 **CHEMICAL INDUCED BYSTANDER EFFECT: EVIDENCE AND SIGNIFICANCE**
 R Asur, RA Thomas, JD Tucker. Wayne State University, Detroit, MI, United States
- P 95 **REOXYGENATION FOLLOWING HYPOXIA ACTIVATES DNA-DAMAGE CHECKPOINT SIGNALING PATHWAYS THAT SUPPRESS CELL CYCLE PROGRESSION IN CULTURED HUMAN LYMPHOCYTES**
 BM Kim^{1,2}, JY Choi², YJ Kim², HD Woo². ¹Cancer Research Institute, Seoul, United States, ²School of Public Health, Seoul National University, Seoul, United States
- P 97 **GENE POLYMORPHISM AND THE RISK OF CUTANEOUS MALIGNANT MELANOMA IN BRAZIL**
 F Toledo Gonçalves, S RP Souza, J Eluf Neto, P Kohler, GJF Gattás. Medical School São Paulo University, São Paulo, SP, Brazil
- P 99 **A ROLE FOR THYMINE NUCLEOTIDE INSUFFICIENCY IN BREAST CARCINOGENESIS?**
 BJ Barclay¹, D Murray². ¹Planet Biotechnologies Inc., St Albert, AB, Canada, ²Cross Cancer Institute, Edmonton, AB, Canada
- P 101 **PATHOGENIC MUTATIONS IN PEO1 CAUSE BIOCHEMICAL DEFECTS IN THE HUMAN MITOCHONDRIAL DNA HELICASE**
 MJ Longley, FS Sharief, WC Copeland. NIEHS, NIH, Research Triangle Park, NC, United States

**GENOTOXINS, MUTAGENS, ANTIMUTAGENS,
BIODOSIMETRY, RISK ASSESSMENT**

- P105 **ANTIMUTAGENIC EFFECTS OF CAFFEIC ACID PHENETHYL ESTER (CAPE) IN HUMAN BREAST CANCER CELLS AND RELATIONSHIP TO GENE EXPRESSION**
JL Lyon¹, JM Leszczynska¹, J Wu², K Frenkel², CB Klein¹. ¹New York University School of Medicine, Tuxedo, NY, United States, ²New York University School of Medicine, New York, NY, United States
- P 108 **RECENT ADVANCES USING THE CD71 BASED FLOW CYTOMETRIC MICRONUCLEUS ANALYSIS METHOD**
D Torous¹, J Bishop⁴, R Fiedler⁶, R Heflich⁵, L Krsmanovic⁷, J MacGregor³, L Recio², S Dertinger¹. ¹Litron Laboratories, Rochester, NY, United States, ²Integrated Laboratory Systems, Research Triangle Park, NC, United States, ³Toxicology Consulting Services, Arnold, MD, United States, ⁴NIEHS, Research Triangle Park, NC, United States, ⁵NCTR, Jefferson, AR, United States, ⁶Pfizer, Groton, CT, United States, ⁷BioReliance, Rockville, MD, United States
- P 111 **THE EFFECT OF AGE ON XENOBIOTIC METABOLIZING ENZYME ACTIVITY IN RAT LIVER MICROSOMES**
C Mills¹, MJ DeVito². ¹North Carolina Central University, Durham, NC, United States, ²United States Environmental Protection Agency/NHEERL, Durham, NC, United States
- P 114 **ASSESSMENT OF MUTAGENICITY IN HAIRDRESSERS BY CYTOGENETIC TESTS**
MP Galiotte¹, P Kohler¹, G Mussi², GJF Gattás¹. ¹Legal Medicine, Ethics and Occupational Health, University of São Paulo Medical School, São Paulo, SP, Brazil, ²Occupational Health Service, Hospital das Clínicas, São Paulo University Medical School, São Paulo, SP, Brazil
- P 117 **INDEPENDENT VALIDATION OF THE GREENSCREEN HC GADD45A-GFP GENOTOXICITY ASSAY USING FIFTY PROPRIETARY AND NON-PROPRIETARY COMPOUNDS**
AJ Olaharski¹, S Kirchner², H Uppal¹, K Kolaja¹. ¹Hoffmann-La Roche, Palo Alto, CA, United States, ²Hoffmann-La Roche, Basel, Switzerland
- P 120 **HUMAN BIOMONITORING STUDIES IN THE INDIAN POPULATION USING THE ALKALINE COMET ASSAY**
Al Dhawan, M Bajpayee, A Pandey, D Parmar. Industrial Toxicology Research centre, Lucknow, UP, India
- P 123 **FAILURE OF ANTIMONY TRIOXIDE TO INDUCE MICRONUCLEI OR CHROMOSOMAL ABERRATIONS IN RAT BONE MARROW AFTER SUB-CHRONIC ORAL DOSING**
D Kirkland¹, J Whitwell¹, J Deyo², T Serex³. ¹Covance Laboratories, Harrogate, United Kingdom, ²Eastman Chemical Company, Kingsport, TN, United States, ³Arcadis BBL, Walnut Creek, CA, United States
- P 126 **GENOMIC INSTABILITY IN SHOW WORKERS MODULATED BY POLYVITAMIN-POLYMINERAL TREATMENT. EVALUATION OF THERAPEUTIC EFFECT BEFORE AND AFTER 4 MONTHS 2 TABLETS DAILY INTAKE OF CENTRUM USING PANCENTROMERIC FISH**
A Vaglenov¹, S Lalchev², R Marcos³, A Creus³. ¹The University of Findlay, Findlay, OH, United States, ²Medical University, Sofia, Bulgaria, ³Autonomous University of Barcelona, Barcelona, Spain
- P 129 **INTERACTION BETWEEN BLEOMYCIN AND AMINOACRIDINES IN AN ASSAY FOR MUTAGENIC AND RECOMBINAGENIC EFFECTS IN YEAST**
GR Hoffmann, MV Ronan, KE Sylvia, JP Tartaglione. College of the Holy Cross, Worcester, MA, United States
- P 132 **GENOTOXICITY OF POLYMERIC GENE CARRIER, POLYETHYLENIMINE (PEI) AND POLYAMIDOAMINE (PAMAM) DENDRIMER, IN HUMAN BLOOD LYMPHOCYTES DETERMINED BY SINGLE CELL GEL ELECTROPHORESIS AND MICRONUCLEUS ASSAY**
YJ Choi, SJ Kang, HK Jeon, YJ Kim, HW Chung. School of Public Health, Seoul National University, Seoul, South Korea
- P 135 **EFFECTS OF CO-EXPOSURE TO ELECTROMAGNETIC FIELDS AND CLASTOGENS ON DNA DAMAGE DETERMINED BY THE ALKALINE COMET ASSAY AND CHROMOSOMAL ABERRATION TEST**
M Lee¹, J-Y Kim². ¹Department of Biology, University of Incheon, Incheon, South Korea, ²Korea Institute of Toxicology, KRICT, Daejeon, South Korea
- P 138 **EVALUATION OF KAVA EXTRACTS AND KAVALACTONE STANDARDS FOR MUTAGENICITY AND TOXICITY**
P Whittaker², J Clarke¹, V Dunkel², L Jaeger², H Seifried³, J Betz³, R San¹. ¹BioReliance, Rockville, MD, United States, ²FDA-CFSAN, College Park, MD, United States, ³NIH, Bethesda, MD, United States
- P 141 **IDENTIFICATION OF PERSISTENT GENE EXPRESSION BIOSIGNATURES FOR ACUTE RADIATION EXPOSURE**
R Kulkarni, RA Thomas, JD Tucker. Wayne State University, Detroit, MI, United States
- P 144 **GENOTOXICITY AND APOPTOSIS INDUCED BY HYDROQUINONE AND BENZOQUINONE IN HL-60 AND JURKAT CELLS**
YJ Kim, JY Choi, HD Woo, YJ Choi, SJ Kang, HW Chung. School of Public Health, Seoul National University, Seoul, South Korea

2:00 PM–7:00 PM

OPEN AFTERNOON

Optional Tour to the Georgia Aquarium,
Separate Registration Required

Meet at the corner of Baker and Peach Street at 1:45 PM.

7:00 PM–10:00 PM

Centennial IV Ballroom

BANQUET AND EMS AWARDS

Award Presentations

by President Martina (Marty) Veigl

Alexander Hollaender Award

EMS Award

Wednesday, October 24

7:00 AM–4:00 PM

Centennial III Foyer

REGISTRATION

7:00 AM–8:30 AM

BREAKFAST MEETINGS

**2008 PROGRAM COMMITTEE
(SECOND MEETING)**

Dunwoody Room

*Chairperson: Priscilla K. Cooper, Lawrence Berkeley National
Laboratory*

GERM CELL/STEM CELL/HUMAN

Baker Room

GENETICS SPECIAL INTEREST GROUP

*Chairpersons: Jack B. Bishop, National Institute of
Environmental Health Sciences and Steve S. Sommer,
City of Hope*

The Germ Cell and Human Genetic Disease Special Interest Group is for scientists interested in topics about germ-cell mutagenesis, and the challenges of finding human germ-cell and stem-cell mutagens and the consequences of these mutations to human health. Interests includes: the study of germ cell biology as it relates to spontaneous and induced mutagenesis; characterization of germline mutagenesis in the etiology of human diseases; determining how many of deleterious mutations arise through actions of exogenous chemical, physical or biological agents; interpreting the consequences of deleterious mutations; devising methods through use of the new technology for application to detecting presumptive human mutagens; and serving as a focal point for discussions of germ-cell and stem-cell mutagenesis research.

8:30 AM–9:15 AM

Centennial III Ballroom

TOPICAL REVIEW 7:**ENVIRONMENTAL CHEMICALS IN OUR BLOOD AND URINE: RESULTS FOR THE U.S. POPULATION***James L. Pirkle, Centers for Disease Control*

The Centers for Disease Control and Prevention (CDC) measures environmental chemicals in the blood and urine of Americans as part of its ongoing National Health and Nutrition Examination Survey (NHANES). In 2005, CDC released the Third National Report on Human Exposure to Environmental Chemicals, which is the most extensive assessment ever made of exposure of the U.S. population, involving 148 environmental chemicals. CDC is currently working on the 4th National Report that will include approximately 275 environmental chemicals. The population exposure assessment emphasizes potentially vulnerable or at-risk population groups. CDC plans to expand this effort to measure each year at least 400 priority toxic substances in the U.S. population to identify exposures of health significance, identify at risk special population groups, assess trends in exposure levels and monitor the effectiveness of preventions targeted at reducing exposure.

8:30 AM–9:15 AM

Centennial IV Ballroom

TOPICAL REVIEW 8:**NON-LINEAR MECHANISMS IN LOW-DOSE RADIATION BIOLOGY***Jeffrey L. Schwartz, University of Washington*

Over the past two decades there has been an explosion of information concerning cellular effects of low dose and low dose rate exposures to ionizing radiation. Low dose exposures can induce an array of different phenomena including adaptive responses, low dose hypersensitivity, bystander effects, and induced genetic instability. While most studies of these phenomena have focused on ionizing radiation, there is a growing number of reports linking exposure to other genotoxic agents to these responses. Clearly, these phenomena should influence estimates of genotoxic risk following exposure to mutagenic agents. How this occurs remains an open question. This presentation reviews what is known about these phenomena and addresses key unanswered questions concerning their involvement in genotoxic risk assessment.

9:15 AM–9:30 PM

Centennial Foyer

BREAK

9:30 AM–11:30 AM

Centennial III Ballroom

PLATFORM SESSION 1:**DNA DAMAGE AND REPAIR**

Chairpersons: David M. Wilson III, National Institute on Aging, NIH and Thomas E. Schmid, Lawrence Berkeley National Laboratory

- 9:30 AM 1 **A NOVEL TARGET FOR HUMAN EXONUCLEASE1 (hExo1) IN CLASS SWITCH RECOMBINATION**
A Vallur, N Maizels. University of Washington, Seattle, WA, United States
- 9:45 AM 2 **PHYSICAL AND FUNCTIONAL INTERACTION OF NEIL2 WITH XPG, CSB AND RNA POLYMERASE II: IMPLICATIONS FOR TRANSCRIPTION-COUPLED REPAIR OF OXIDATIVE DNA DAMAGE**
A Sarker¹, T Hazra², B Haltiwanger¹, C Ng¹, E Nogales³, M Sankar², P Cooper¹. ¹Lawrence Berkeley Lab, Berkeley, CA, United States, ²University of Texas Medical Branch, Galveston, TX, United States, ³University of California, Berkeley, Berkeley, CA, United States
- 10:00 AM 3 **TELOMERIC PROTEIN POT1 REGULATES PROCESSING OF TELOMERIC ENDS BY THE WERNER SYNDROME HELICASE/ EXONUCLEASE**
G Sowd¹, M Lei², PL Opresko¹. ¹University of Pittsburgh, Dept. of Environ. and Occup. Health, Pittsburgh, PA, United States, ²University of Michigan, Dept. of Biol. Chem., Ann Arbor, MI, United States
- 10:15 AM 4 **DNA POLYMERASE η REDUCES THE γ -H2AX RESPONSE TO PSORALEN INTERSTRAND CROSSLINKS IN HUMAN CELLS**
S Mogi^{1,2}, CE Butcher^{2,1}, DH Oh^{1,2}. ¹University of California, San Francisco, San Francisco, CA, United States, ²VA Medical Center, San Francisco, CA, United States
- 10:30 AM 5 **THE MISMATCH REPAIR PROTEINS, MSH2 AND MLH1, CONTRIBUTE DIFFERENTLY TO CELLULAR RESPONSES TO DNA INTERSTRAND CROSSLINKS IN HUMAN CELLS**
Q Wu, K Vasquez. University of Texas M.D. Anderson Cancer Center, Smithville, TX, United States
- 10:45 AM 6 **IMPACT OF PATHOGENIC MUTATIONS IN HUMAN MLH1 ON MutLalpha HETERODIMER STABILITY AND FUNCTION IN MAMMALIAN CELLS**
AB Buermeyer, AB Mohd, KJ Hippchen, SE Nelson, B Ing, BK Palama. Oregon State University, Corvallis, OR, United States

11:00 AM 7 **REPAIR OF OXIDATIVE-DNA DAMAGE AND THE RISK OF SMOKING-RELATED CANCERS**
T Paz-Elizur¹, D Elinger¹, R Ben-Yosef², M Krupsky³, Y Leitner-Dagan¹, A Vexler², Z Svilya¹, E Schechtman⁴, L Freedman³, Z Livneh¹. ¹Weizmann Institute of Science, Rehovot, Israel, ²Sourasky Medical Center, Tel Aviv, Israel, ³Sheba Medical Center, Tel Hashomer, Israel, ⁴Ben Gurion University, Beer Sheva, Israel

11:15 AM 8 **GENERATION OF MUTANT ABH2 ENZYMES SHOWING ENHANCED PROTECTION AGAINST METHYLATION TOXICITY**
M Camps¹, ET Adman^{1,2}, CN Bower^{1,2}, BP Johnson^{1,2}, T Lindahl^{1,3}, B Sedgwick^{1,3}, LA Loeb^{1,2}. ¹UC Santa Cruz, Santa Cruz, CA, United States, ²University of Washington, Seattle, WA, United States, ³Cancer Research UK London Research Institute, South Mimms, Hertfordshire, United Kingdom

9:30 AM–11:30 AM Centennial IV Ballroom
PLATFORM SESSION 2:
EPIGENETICS, GERM CELLS

Chairpersons: **W. David Sedwick**, Case Western Reserve University, **Dana C. Dolinoy**, Duke University, and **Diana Anderson**, University of Bradford

9:30 AM 9 **ROLE OF CHROMODOMAIN HELICASE DNA BINDING PROTEIN 2 IN MAMMALIAN DEVELOPMENT AND TUMORIGENESIS**
P Nagarajan, T Onami, S Rajagopalan, R Donnell, S Venkatachalam. University of Tennessee, Knoxville, TN, United States

9:45 AM 10 **VARIABLE HISTONE MODIFICATIONS AT THE VIABLE YELLOW AGOUTI (A^V) METASTABLE EPIALLELE**
DC Dolinoy, RL Jirtle. Duke University Department of Radiation Oncology, Durham, NC, United States

10:00 AM 11 **MicroRNAome DE-REGULATION IN BREAST CANCER DRUG RESISTANCE**
JN Filkowski¹, J Meservy¹, Y Ilnytsky¹, VF Chekhun², IP Pogribny³, O Kovalchuk¹. ¹University of Lethbridge, Lethbridge, AB, Canada, ²Institute of Experimental Pathology, Oncology and Radiobiology, Kiev, Ukraine, ³NCTR, Jefferson, AR, United States

10:15 AM 12 **EPIGENETIC SIGNATURE OF RADIATION EXPOSURE IN THE MALE GERMLINE**
J Tamminga, O Kovalchuk. University of Lethbridge, Lethbridge, AB, Canada

10:30 AM 13 **EVALUATION OF SPERMATOZOA AS A PREDICTOR OF GERMLINE MUTATIONS USING λ TRANSGENIC MEDAKA**
MB Norris, RN Winn. University of Georgia, Athens, GA, United States

10:45 AM 14 **TOBACCO SMOKING COMPROMISES THE GENETIC INTEGRITY OF MOUSE SPERM**
AA Polyzos¹, TE Schmid¹, B Piña-Guzmán², B Quintanilla-Vega², F Marchetti¹. ¹Lawrence Berkeley National Laboratory, Berkeley, CA, United States, ²CINVESTAT, Mexico City, Mexico

11:00 AM 15 **EFFECT OF CHLOROPHENOXY HERBICIDES ON DEVELOPMENT AND GROWTH OF *Drosophila melanogaster* DURING MULTI GENERATIONAL EXPOSURE**
MA Bata, BM Blunck, HM Gienger, HE van Gijssel. Valley City State University, Valley City, ND, United States

11:15 AM 16 **VARIANCE IN RADIATION INDUCED TANDEM REPEAT MUTATION RATES AMONG FAMILIES AND STAGES OF SPERMATOGENESIS IN THE MEDAKAFISH**
TC Glenn¹, OT Tsyusko¹, K Aizawa¹, Y Yi¹, D Coughlin¹, KL Jones¹, TG Hinton¹, JD Zimbrick². ¹Savannah River Ecology Lab, Aiken, SC, United States, ²Colorado State, Fort Collins, CO, United States

11:30 AM–12:30 PM Centennial IV Ballroom
PLENARY LECTURE (PL4):
DNA REPAIR, GENETIC INSTABILITY AND CANCER: WHAT ARE THE CONNECTIONS?

Paul Doetsch, Emory University School of Medicine

1:30 PM–3:30 PM Centennial III Ballroom**PLATFORM SESSION 3:****MUTAGENESIS, CARCINOGENESIS**

Chairpersons: **Steve S. Sommer**, City of Hope and
Nina Holland, University of California, Berkeley

- 1:30 PM 17 **HIGH MOBILITY GROUP PROTEIN B1 AFFECTS MUTAGENESIS AND CELL DEATH CAUSED BY UVC AND PSORALEN-INDUCED DNA DAMAGE**
S Lange, K Vasquez. University of Texas MD Anderson Cancer Center, Science Park Research Division, Smithville, TX, United States
- 1:45 PM 18 **DNA POLYMERASE THETA (POLQ) CAN EXTEND FROM MISMATCHES AND FROM BASES OPPOSITE A (6-4) PHOTOPRODUCT**
M Seki, R Wood. UPCI, Pittsburgh, PA, United States
- 2:00 PM 19 **EXPRESSION MICROARRAY ANALYSIS IDENTIFIED GAMMA-GLUTAMYL TRANSFERASE EXPRESSION LEVEL AS A POSSIBLE BIOMARKER FOR ARSENIC SENSITIVITY**
TG Rossman, EV Komissarova, AN Uddin. New York University School of Medicine, Tuxedo, NY, United States
- 2:15 PM 20 **MUTATION SHOWERS OVER THE DNA LANDSCAPE**
J Wang¹, VL Buettner¹, KD Gonzalez¹, WA Scaringe^{1,2}, K Tsai¹, N Liu¹, D Gu^{1,2}, W Li¹, KA Hill^{1,3}, SS Sommer¹. ¹City of Hope National Medical Center, Molecular Genetics, Duarte, CA, United States, ²City of Hope National Medical Center, Bioinformatics Group, Duarte, CA, United States, ³University of Western Ontario, London, ON, Canada
- 2:30 PM 21 **INTESTINAL BACTERIA PLAY A CRUCIAL ROLE IN THE CARCINOGENIC RISK FROM 2-amino-1-methyl-6-phenylimidazo[4,5-B]pyridine**
L Vanhaecke¹, MG Knize², L Derycke³, F Le Curieux⁴, M Bracke³, W Verstraete¹. ¹University of Ghent, Laboratory of Microbial Ecology and Technology, Ghent, Belgium, ²Lawrence Livermore National Laboratory, Chemistry, Materials, and Life Sciences Directorate, Livermore, CA, United States, ³Ghent University, Laboratory of Experimental Carcinology, Ghent, Belgium, ⁴Pasteur Institute of Lille, Laboratory of Genetic Toxicology, Lille, France
- 2:45 PM 22 **SNPs IN THE TRANSCRIBED REGIONS OF THE HUMAN GENOME: RELATIVE EFFECTS OF MUTABILITY AND SELECTION**
IP Gorlov, OY Gorlova, CI Amos. M.D. Anderson Cancer Center, Houston, TX, United States

- 3:00 PM 23 **EVIDENCE FROM MUTATION SPECTRA THAT DNA POLYMERASE η IS THE PREFERRED TRANSLESION DNA POLYMERASE AND MAY BE ERROR-FREE OR ERROR-PRONE**
LJ Stallons^{1,2}, TJ Burke^{1,2}, WG McGregor^{1,2}. ¹University of Louisville, Louisville, KY, United States, ²JG Brown Cancer Center, Louisville, KY, United States
- 3:15 PM 24 **GENOTOXIC EFFECTS OF FORMALDEHYDE ON HUMAN BLOOD STEM AND PROGENITOR CELLS**
L Zhang, W Guo, Z Ji, K Xin, B Yang, MT Smith. University of California, Berkeley, Berkeley, CA, United States

1:30 PM–3:30 PM Centennial IV Ballroom**PLATFORM SESSION 4:****GENOTOXINS, MUTAGENS, ANTIMUTAGENS, BIODOSIMETRY, RISK ASSESSMENT**

Chairpersons: **Andrew D. Kligerman**, and **William O. Ward**,
 U.S. Environmental Protection Agency

- 1:30 PM 25 **MODE OF ACTION FRAMEWORKS FOR RISK ASSESSMENT: A CRITICAL ANALYSIS**
KZ Guyton, S Barone, Jr, RC Brown, SY Euling, J Jinot, S Makris. US EPA, Washington, DC, United States
- 1:45 PM 26 **INVESTIGATIONS INTO THE MODE OF ACTION (MOA) OF ARSENIC USING THE SINGLE CELL GEL (SCG) ASSAY AND CYTOGENETICS**
AD Kligerman¹, JA Campbell², AH Tennant¹. ¹U.S. Environmental Protection Agency, Research Triangle Park, NC, United States, ²NCBA, SEE, Washington, DC, United States
- 2:00 PM 27 **EVALUATION OF DOSIMETRY AND GENOTOXIC EFFECTS OF LOW-DOSE ACRYLAMIDE EXPOSURE USING THE MOUSE MICRONUCLEUS ASSAY**
E Zeiger¹, L Recio², T Fennell³, J Haseman⁴, J Swenberg⁵, D Marroni⁶, M Friedman⁷. ¹Zeiger Consulting, Chapel Hill, NC, United States, ²ILS, Inc, Research Triangle Park, NC, United States, ³Fennell, Research Triangle Park, NC, United States, ⁴Haseman Consulting, Chapel Hill, NC, United States, ⁵University of North Carolina, Chapel Hill, NC, United States, ⁶SNF S.A.S., ZAC de Milieux, Andrézieux, France, ⁷SNF S.A.S., Oveido, FL, United States
- 2:15 PM 28 **MULTIWALLED CARBON NANOTUBE-INDUCE CYTOTOXICITY, GENOTOXICITY AND APOPTOSIS IN NORMAL HUMAN DERMAL FIBROBLAST CELLS**
A Patlolla, P Tchounwou. Jackson State University, Jackson, MS, United States

- 2:30 PM 29 **USE OF GENE EXPRESSION ANALYSIS INCORPORATING OPERON-TRANSCRIPTIONAL COUPLING AND TOXICANT DOSE RESPONSE TO DISTINGUISH AMONG STRUCTURAL HOMOLOGUES OF MX**
B Ward, C Swartz, N Hanley, S Warren, D DeMarini. United States EPA, Durham, NC, United States
- 2:45 PM 30 **ATM REPRESSES DNA END DEGRADATION IN AN ATP-DEPENDENT MANNER**
E Rahal¹, Y Li³, LA Henriksen¹, JJ Turchi², K Dixon¹. ¹University of Arizona, Tucson, AZ, United States, ²Indiana University School of Medicine, Indianapolis, IN, United States, ³University of Cincinnati College of Medicine, Cincinnati, OH, United States
- 3:00 PM 31 **EPIGALLOCATECHIN GALLATE (EGCG), A MAJOR CONSTITUENT OF GREEN TEA, POISONS HUMAN TYPE II TOPOISOMERASES**
OJ Bandle¹, N Osheroff^{1,2}. ¹Department of Biochemistry, Vanderbilt University School of Medicine, Nashville, TN, United States, ²Medicine (Hematology/Oncology), Vanderbilt University School of Medicine, Nashville, TN, United States
- 3:15 PM 32 **BIOINFORMATICS ANALYSES OF LOW- AND HIGH-DOSE RADIATION INDUCED SIGNALING PATHWAYS IN MOUSE BRAIN TISSUE AS PREDICTED FROM TRANSCRIPT PROFILING**
S Bhattacharya, F Marchetti, AJ Wyrobek. Lawrence Berkeley National Lab, Berkeley, CA, United States

3:30 PM–3:45 PM**BREAK****3:45 PM–5:45 PM Centennial III Ballroom****SYMPOSIUM 14:****BASE EXCISION REPAIR AS A TUMOR SUPPRESSOR MECHANISM**

Chairpersons: **Joann B. Sweasy**, Yale University School of Medicine and **Susan S. Wallace**, University of Vermont

- 3:45 PM S64 **GENETIC VARIATION IN BASE EXCISION REPAIR GENES IN RELATION TO SKIN CANCER RISK**
Jiali Han, Harvard University
- 4:15 PM S65 **GENOME STABILITY CALLS FOR BALANCED BASE EXCISION REPAIR PROTEIN EXPRESSION**
Robert W. Sobol, Jr., University of Pittsburgh
- 4:45 PM S66 **FROM 8-oxo-G TO MAP: INSIGHTS INTO LESION RECOGNITION AND BASE REMOVAL BY MutY AND MUTYH**
Sheila David, University of California, Davis
- 5:15 PM S67 **CANCER-ASSOCIATED VARIANTS OF DNA POLYMERASE BETA**
Joann Sweasy, Yale University School of Medicine

3:45 PM–5:45 PM Centennial IV Ballroom**SYMPOSIUM 15:****HOT TOPICS IN HUMAN GENETICS AND ECOGENETICS**

Chairperson: **John J. Mulvihill**, University of Oklahoma Health Sciences Center

Contributing Sponsor: NASA Space Radiation Program, NASA Johnson Space Center

- 3:45 PM S68 **PRENATAL GENETICS: CURRENT STATUS**
W. Allen Hogge, University of Pittsburgh
- 4:15 PM **REALLY TREATING GENETIC DISEASES: ENZYME REPLACEMENT AND GENE THERAPY**
Roscoe O. Brady, National Institute of Neurological Disorders and Stroke
- 4:45 PM S70 **ONCOGENES AND HUMAN MALFORMATION SYNDROMES**
Margaret P. Adam, Emory University
- 5:15 PM S71 **POLYGENIC ESTIMATION OF BREAST CANCER RISK**
John J. Mulvihill, University of Oklahoma

6:00 PM–8:00 PM**Dunwoody Room****EMS COUNCIL MEETING**

EXHIBITS

Exhibits are located in Regency V Ballroom and will be attended at the following times:

Sunday, October 21, 2007	4:45 PM–7:00 PM
Monday, October 22, 2007	4:45 PM–7:00 PM
Tuesday, October 23, 2007	12:00 NOON–2:00 PM

AGILENT TECHNOLOGIES

BOOTH 18

2850 Centerville Road
Wilmington, DE 19808
United States

Tel: (302) 633-8558
Fax: (302) 239-4810
E-mail: Elaine.baccino@agilent.com
Web site: www.agilent.com/chem

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Fax: (513) 573-9241
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2150 Woodward Street, Suite 100
Austin, TX 78744
United States

Tel: (512) 651-0191 ext. 6398
Fax: (512) 721-4803
E-mail: rkeenan@asuragen.com
Web site: www.asuragen.com

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14920 Broschart Road
Rockville, MD 20850
United States

Tel: (301) 738-1000
Fax: (301) 610-2590
E-mail: kelton.chapman@bioreliance.com
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2233 Argentina Road, Suite 303
Mississauga, ON L5N 2X7
Canada

Tel: (905) 542-2900
Fax: (905) 542-1011
E-mail: enestmann@cantox.com
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22022 Transcanadienne
Senneville, QC H9X 3R3
Canada

Tel: (514) 630-8200
Fax: (514) 630-8230
E-mail: Nathalie.g.poirier@ca.crl.com
Web site: www.criver.com

Charles River Laboratories offers a comprehensive range of genotoxicity assays for lead candidate selection, safety assessment and worldwide regulatory submission. We also offer specialist methods for peptides, degradants/impurities, medical devices, volatiles and gases, determination of mode of action, miniaturized methods for compounds with limited availability, and target organ testing.

Categories: All Routes, Complete Range of Toxicology, Regulatory Assays, Screening Assay Capabilities

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3301 Kinsman Boulevard
Madison, WI 53704
United States

Tel: (888) COVANCE
E-mail: info@covance.com
Web site: www.covance.com

As the global leader in safety assessment services, Covance provides a full range of general and specialty toxicology services. For over 25 years, Covance has worked with a wide range of industries conducting regulatory genetic toxicology testing, and developing new screening assays to speed discovery and investigative assays to elucidate mechanism of action. The experience and regulatory knowledge of our global scientific staff provides you with a flexible approach to meeting your safety assessment requirements.

Categories: Genetic Toxicology Services, Specialty Safety Assessment Services, Toxicology Services

FASEB

BOOTH 7

9650 Rockville Pike
Bethesda, MD 20814-3998
United States

Tel: (301) 634-7930
Fax: (301) 634-7353
E-mail: cadams@faseb.org

FASEB MARC Program provides a variety of activities to support the training of minority students, postdoctorates, faculty, and scientists in the biomedical and behavioral sciences. We offer travel awards for scientific meetings, research conferences, and student summer research opportunities programs. We also sponsor Career Development Programs including grantsmanship training seminars.

HELIX3 INC.

BOOTH 1

100 Southcenter Court, Suite 900
Morrisville, NC 27560
United States

Tel: (919) 462-8105
Fax: (919) 462-8106
E-mail: info@helix3inc.com
Web site: www.helix3inc.com

Helix3 is a GLP contract research organization and the most experienced in the world regularly performing *in vitro* and *in vivo* comet assay and research studies for regulatory submissions. Also responsible for assisting in the development of Kinetic Imaging's KometGLP[®] software and its validation according to FDA 21 CFR Part 11, the Helix3 team stands out as the leader in GLP compliant contract research and comet assay services.

HUNTINGDON LIFE SCIENCES

BOOTH 13

P.O. Box 2360
Mettlers Road
East Millstone, NJ 08875-2360
United States

Tel: (732) 873-2550
Fax: (732) 873-3992
E-mail: sales@princeton.huntingdon.com
Web site: www.huntingdon.com

Huntingdon Life Sciences provides a comprehensive range of preclinical safety testing for the Pharmaceutical, Agrochemical, Industrial Chemical and other industries. With testing facilities in the USA and U.K., 1400 staff worldwide and half a century of experience, our expertise in safety testing is unrivalled. For the last 25 years, HLS has played an integral role in shaping worldwide Genetic Toxicology regulations through its participation in international inter-laboratory validation trials and with its lead scientists on important advisory committees. In addition to our complete regulatory packages, we offer screening assays, mechanistic investigations, and a range of other *in vitro* and *in vivo* assays.

IIT RESEARCH INSTITUTE

BOOTH 5

10 W. 35th Street
Chicago, IL 60616
United States

Tel: (312) 567-4966
Fax: (312) 567-4106
E-mail: creyes@iitri.org
Web site: www.iitri.org

IIT Research Institute (IITRI) has provided non-clinical research and development services to the U.S. Government and to Sponsors in the pharmaceutical, biotechnology, chemical and personal products industries for more than 40 years. IITRI scientists work in the broad fields of toxicology, inhalation toxicology, microbiology, molecular biology, carcinogenesis, and cancer prevention.

Categories: Contract Research Organization, Genetic Toxicology Screening, GLP Genetic Toxicology Testing, Preclinical Safety Testing

LOATS ASSOCIATES, INC.**BOOTH 20**

201 East Main Street
Westminster, MD 21157
United States

Tel: (410) 876-8055
Fax: (410) 876-5843
E-mail: loats@loats.com
Web site: www.loats.com

Loats Associates, Inc. designs and manufactures image analysis systems for automated biomedical and scientific analysis. Products include automation of the *in vivo*-micronucleus assay, metaphase finding for biodosimetry and chromosome aberration assay, automated high resolution colony counting, quantitative analysis of the COMET assay, Sperm Finding and Documentation System, and advanced image analysis for autoradiography.

Categories: Assay Automation, Biomedical Image Analysis Systems, Computerized Microscopy Systems, Image Analysis

METASYSTEMS GROUP, INC.**BOOTH 12**

24 Church Street
Watertown, MA 02472
United States

Tel: (617) 924-9950
Fax: (617) 924-9954
E-mail: hwhitney@metasystems.org
Web site: www.metasystems.org

MetaSystems provides innovative genetic imaging and slide scanning systems for automation in the Life Sciences. MetaCyte for automated FISH and IHC analysis and Spot Counting. RCDetect for rare cell detection, Isis for FISH imaging, with software upgrades including CGH and mFISH analysis, and Ikaros for automatic karyotyping plus patient database.

Categories: Comet Assay Analysis Systems, Micronuclei Analysis Systems, Genetic Imaging Systems, Metaphase Search

MIDWEST BIORESEARCH**BOOTH 19**

8025 Lamon Avenue
Skokie, IL 60077
United States

Tel: (847) 972-2500
Fax: (847) 972-2506
E-mail: mschlosser@midwestbioresearch.com
Web site: www.midwestbioresearch.com

Midwest BioResearch (MBR) is on your bench for drug disposition and toxicology. We are a GLP-compliant services organization founded by former managers and directors from major pharmaceutical companies. Our services include genetic toxicity screens and regulatory assays, protein and small molecule bioanalysis, structure identification and related activities, coupled with safety assessment and risk management. MBR can help you accelerate your programs through discovery into development and beyond.

Categories: Consulting, Pharmaceutical, Regulatory Compliance, Screening

MOLTOX (MOLECULAR TOXICOLOGY, INC.)**BOOTH 17**

157 Industrial Park Drive
Boone, NC 28607
United States

Tel: (828) 264-9099
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E-mail: sales@moltox.com
Web site: www.moltox.com

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Categories: Genetic Toxicology

PERCEPTIVE INSTRUMENTS, LTD**BOOTH 9**

Blois Meadow Business Centre
Steeple Bumpstead
Haverhill, Suffolk CB9 7BN
United Kingdom

Tel: 44 144 073 0773
Fax: 44 144 073 0630
E-mail: paul@perceptive.co.uk
Web site: www.perceptive.co.uk

We develop image analysis & data processing software for genetic toxicology. Sorcerer colony counter—Ames Study Manager provides a complete solution for Ames tests. Historical Controls program now available. Sorcerer is also used for MLA and UDS. Comet Assay IV is the premium system for high throughput comet assay.

RCC NA**BOOTH 8**

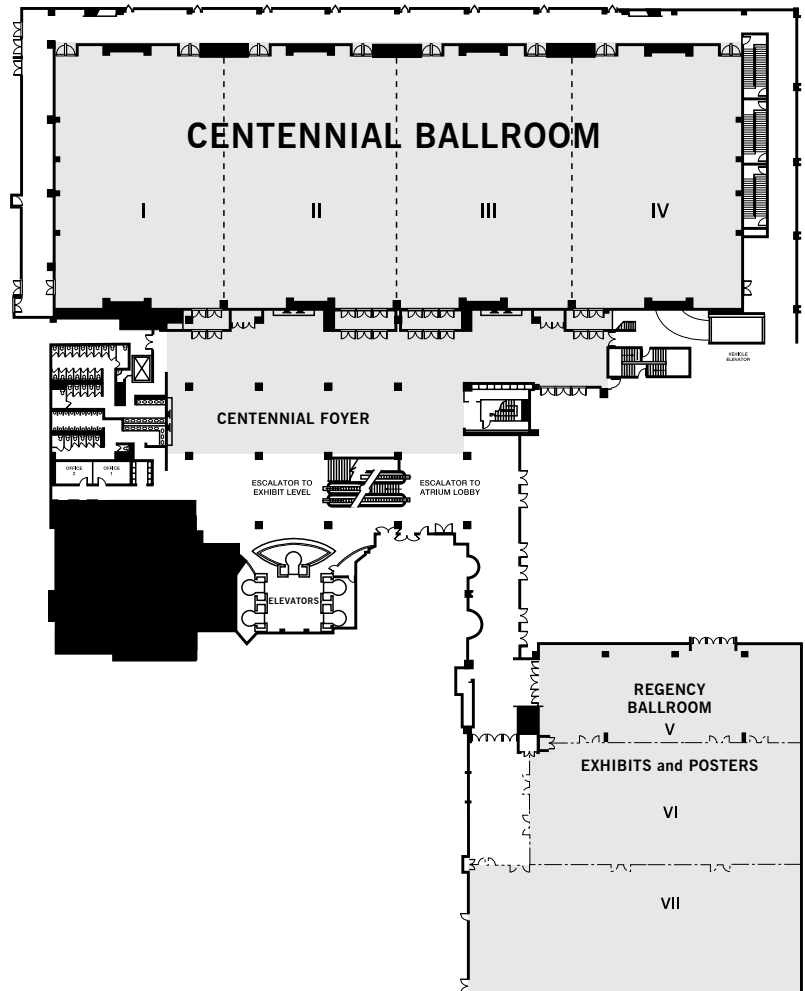
8520 Allison Pointe Boulevard, Suite 400
Indianapolis, IN 46250
United States

Tel: (800) 793-7287
Fax: (317) 806-6090
E-mail: askRCC@harlan.com
Web site: www.rcc-na.com

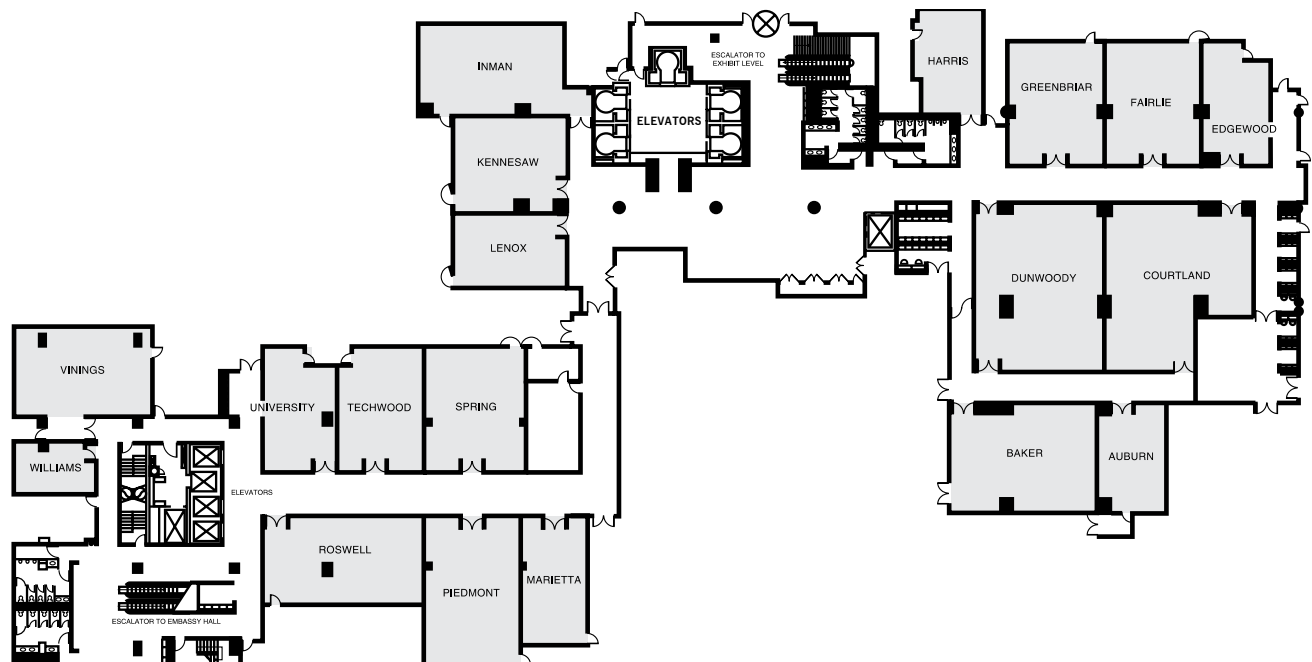
Cytotest Cell Research [CCR] is the genetic toxicology and cell biology operational unit of RCC Ltd, whose headquarters are in Itingen, Switzerland. The institute has been GLP-certified, and providing a high quality contract-research service, since its inception in 1986. Services are provided in the fields of regulatory testing and research-based projects, and include: Genetic Toxicology, Biochemistry, Cytotoxicity, Immunology, Cell Biology, Environmental Monitoring, Biocompatibility, Virus Detection, and Molecular Biology. Please visit our Web site: www.rccltd.ch

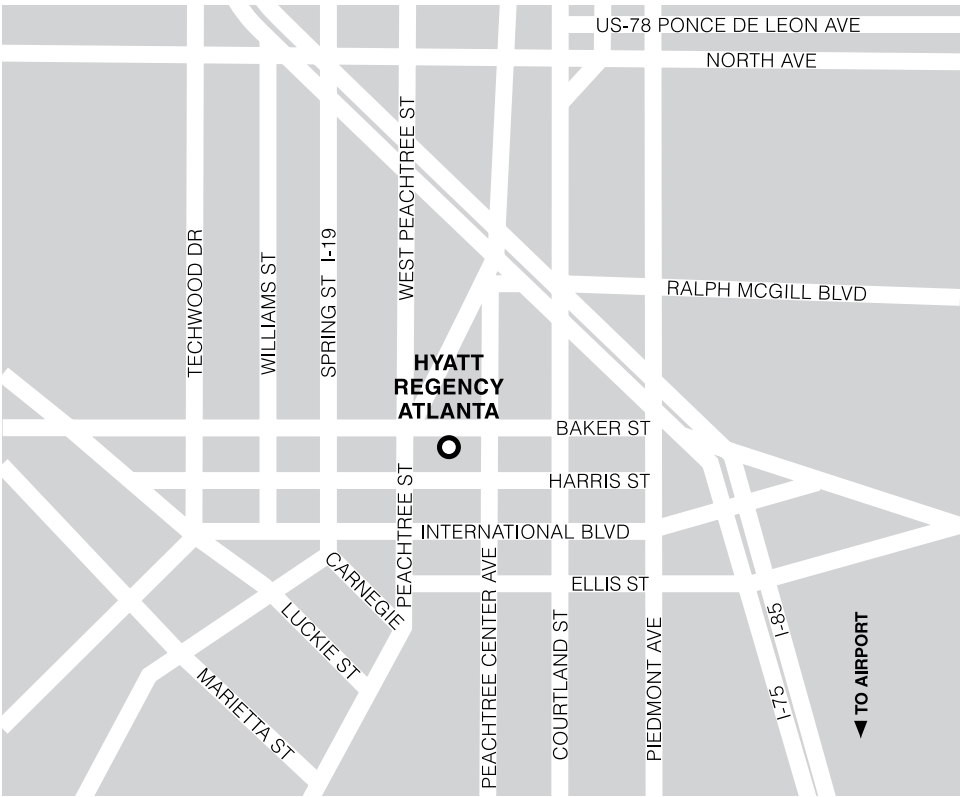
Categories: Genetic Toxicology Services, Pharmacokinetic Studies, Toxicokinetic Studies, Xenograft Model Studies

BALLROOM LEVEL

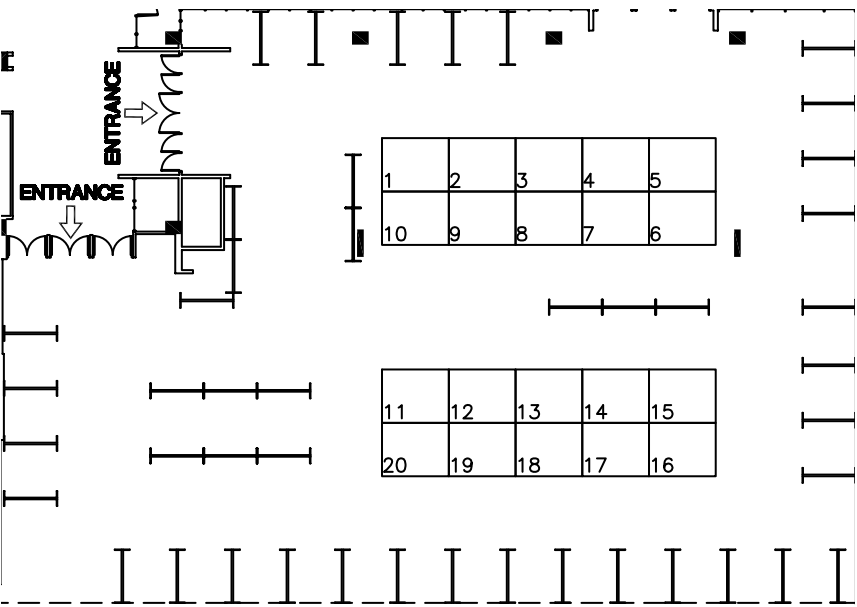


ATLANTA CONFERENCE LEVEL





**EXHIBITS and POSTERS LOCATED in
REGENCY BALLROOM V & VI on BALLROOM LEVEL**



Local Restaurants

The following restaurants are a 5–15 minute walk from the hotel. A taxi to each of these restaurants approximately \$8 each way.

Avanzare at Hyatt Regency Atlanta

Cuisine: Continental Steak

Phone Number: (404) 577-1234

Azio

Cuisine: Italian

Phone Number: (404) 222-0808

Benihana

Cuisine: Japanese

Phone Number: (404) 522-9627

Dailey's

Cuisine: Continental

Phone Number: (404) 681-3303

Durango

Cuisine: Tex Mex / Steak

Phone Number: (404) 222-0103

Fire of Brazil

Cuisine: Brazilian

Phone Number: (404) 525-5255

French American Brasserie

Cuisine: French

Phone Number: (404) 266-1440

Hard Rock Café

Cuisine: American

Phone Number: (404) 688-7625

HSU'S

Cuisine: Chinese

Phone Number: (404) 659-2788

Kafe Kobenhavn at the Hyatt Regency Atlanta

Cuisine: Continental

Phone Number: (404) 577-1234

Max Lager

Cuisine: Continental

Phone Number: (404) 525-4400

Metro Cafe (24 Hour Diner)

Cuisine: Variety

Phone Number: (404) 577-1420

Morton's

Cuisine: Steak

Phone Number: (404) 577-4366

Pacific Rim

Cuisine: Pan Asian & Thai

Phone Number: (404) 893-0019

Peachtree Center Mall—Food Court

Cuisine: Variety (not open Sunday night)

Pitty Pat's Porch

Cuisine: Southern

Phone Number: (404) 525-8228

Ray's in the City

Cuisine: Seafood

Phone Number: (404) 524-9224

Steak & Ale

Cuisine: Steak / American

Phone Number: (404) 577-6770



October 2008 in Puerto Rico!

Join EMS for the 39th Annual Meeting

October 18–23, 2008
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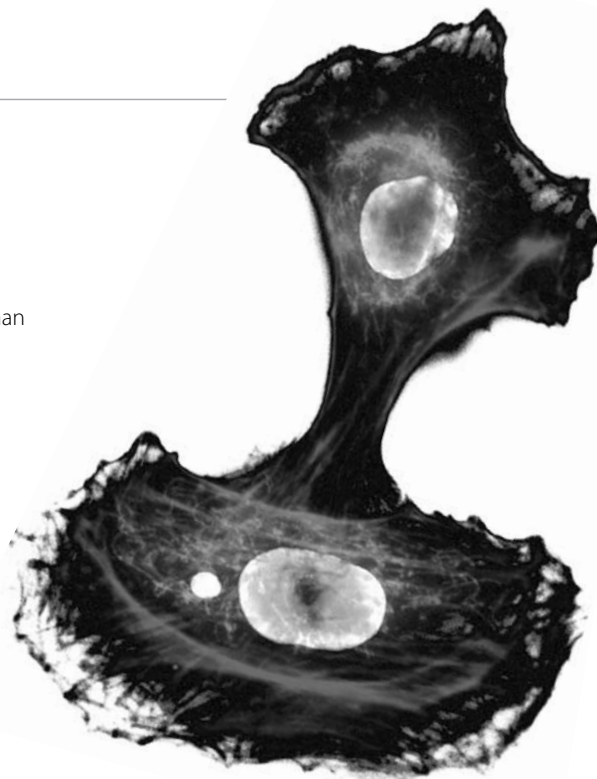
**Environmental
Mutagen
Society**

2008 EMS President: Andrew J. Wyrobek, Ph.D.
2008 Program Chair: Priscilla K. Cooper, Ph.D.

For toxicology testing, experience matters

BioReliance® Toxicology Services

With more than 35 years of genetic toxicology experience and more than 55 years of mammalian toxicology experience, BioReliance® Toxicology Services is your contract research partner for successful product safety testing. BioReliance® Toxicology Services provides comprehensive toxicology testing and problem solving that can rapidly move your product from discovery to market. Dedicated staff, state-of-the-art technologies, and unparalleled regulatory expertise are available to support your product development program and facilitate the regulatory approval process.



Areas of expertise

Genetic toxicology

- Standard ICH and OECD-compliant GLP assays for drugs and chemicals
- Full range of "Tier II" genetic toxicology assays (including SHE and Comet)

Mammalian toxicology

- Transgenic and 2-year carcinogenicity rodent assays
- Extensive expertise with Tg.rasH2, p53+/-, Tg.AC, and SENCAR mouse models
- Acute through chronic toxicity assays with drugs, chemicals, vaccines, and DNA-based therapeutics

Compound profiling

- qPCR biodistribution assays
- Non-GLP screening genetic toxicology assays for lead optimization
- Quick, inexpensive assays that conserve test article

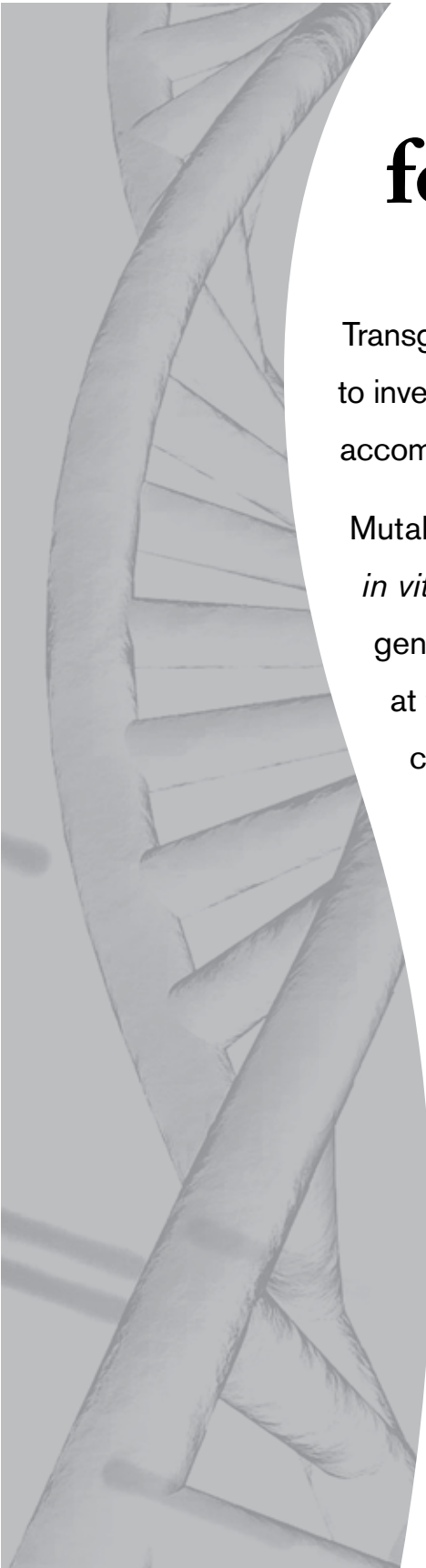
Client support

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- Quality systems and compliance
- Regulatory and technical support

For more information please visit

www.bioreliance.com/toxicology_intro.html.





MutaTM Mouse Assays for genetic toxicology

Transgenic mutation models such as MutaMouse can be used to investigate mutagenic potential *in vivo*, and are a useful accompaniment to the standard genotoxicity testing battery.

MutaMouse assays are useful when concerns are raised *in vitro* from positive gene mutation tests. Evaluations of gene mutation can be measured in any tissue, including at the site of contact, following the administration of chemicals by any exposure route.

Covance has many years of experience with the MutaMouse assay, from its early development through to the current regulatory acceptance. Covance also maintains the MutaMouse breeding colony and therefore has priority access to these animals. Contact us today for information about how we can help with all of your genotoxicity evaluations.

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Notes



38th Annual Meeting of the Environmental Mutagen Society

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38th Annual Meeting of the Environmental Mutagen Society

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