ENVIRONMENTAL MUTAGEN SOCIETY

Thirty-Fifth Annual Meeting

Genes, Mutations and Disease: *The Environmental Connection*

Pittsburgh Hilton Towers, Pittsburgh, PA
October 2-6, 2004

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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EVENTS BEING SPONSORED

Saturday, October 2
Forum
FDA, Center for Drug Evaluation and Research

Student Poster Session and Welcoming Reception
Genetic Toxicology Association and Pfizer Global Research and Development

Monday, October 4
Risk Assessment Breakfast
Boehringer Ingelheim Pharmaceuticals, Inc.

Morning and Afternoon Breaks
BioReliance

EMS 2004 Thank You!

EMS sincerely appreciates the effort and hard work of the following people who have helped make this a successful and worthwhile meeting.

Program Committee Members
Chair: Leona D. Samson
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Aisar Atrakchi
Marianne Berrwick
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Kathleen Dixon
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Other Key Individuals
John G. DeLuca
Barry N. Ford
Kay Walsh
Suzanne Wright

EXHIBIT HOURS

Sunday	October 3, 2004	5:30 PM – 7:30 PM
Monday	October 4, 2004	5:30 PM – 7:30 PM
Tuesday	October 5, 2004	9:30 AM – 12:30 PM

POSTER SET-UP AND TAKE-DOWN SCHEDULE

Assigned poster number to match numbers on poster boards

Session	Set-up	Take-down
Sunday	by 3:00 PM	at 7:30 PM
Monday	by 2:00 PM	at 7:30 PM
Tuesday	by 8:00 AM	at 12:30 PM

Poster presenters not attending another session during afternoon are encouraged to attend their posters. All Poster presenters should attend their posters during the late afternoon or morning poster sessions.

FUTURE MEETINGS

September 3-8, 2005
Hyatt Regency San Francisco
San Francisco, California

September 16-22, 2006
Hyatt Regency Vancouver
Vancouver, British Columbia

SATURDAY, OCTOBER 2, 2004

7:30 AM – 9:30 AM

Executive Board Meeting
Duquesne Room

9:30 AM – 12:30 PM

EMS Council Meeting
Benedum Room

11:30 AM - 6:00 PM
Registration
Ballroom Foyer

SATURDAY, OCTOBER 2, 2004

1:30 PM – 4:40 PM

FORUM

**The SHE Cell Transformation Assay Is Back!
Should It Be?**

Ballroom 3

Organizer: Aisar Atrakchi, U.S. FDA

Sponsor: FDA, Center for Drug Evaluation and Research

1:30 PM – 1:35 PM	Introduction *Aisar Atrakchi, U.S. FDA*
1:35 PM – 2:10 PM	SHE: A Cell Transformation Assay, Historical Perspectives, Techniques and Application *James Klaunig, Indiana University School of Medicine*
2:10 PM – 2:45 PM	Performance of this *In Vitro* Model for Predicting Rodent Carcinogenicity *Brian Myhr, Covance Laboratories*
2:45 PM – 3:00 PM	Break
3:00 PM – 3:35 PM	Pharmaceutical Development and the SHE Cell Transformation Assay *James S. Harvey, GlaxoSmithKline*
3:35 PM – 4:10 PM	The Role of the SHE Cell Transformation Assay in Drug Development *David Jacobson-Kram, U.S. FDA*
4:10 PM – 4:40 PM	Panel Discussion and Open Forum

SATURDAY, OCTOBER 2, 2004

5:00 PM – 8:00 PM

Student Poster Session
and
Welcoming Reception

Kings Garden

Sponsors:
Genetic Toxicology Association
and
Pfizer Global Research and Development

SUNDAY, OCTOBER 3, 2004

7:00 AM – 6:00 PM

Registration
Ballroom Foyer

7:00 AM – 8:30 AM

Breakfast Meetings

2005 Program Committee (First Meeting)
Le Bateau Room

Molecular Epidemiology
Special Interest Group
Kings Garden North

Transgenic and *In Vitro* Mutagenesis
Special Interest Group
Kings Garden South

SUNDAY, OCTOBER 3, 2004

8:30 AM – 12:00 PM

Human Variation and
Cancer Susceptibility Symposium

Ballroom 2

Chairpersons
Marianne Berwick, University of New Mexico
and
David Hunter, Harvard School of Public Health

8:30 AM – 8:45 AM	Introduction
8:45 AM – 9:15 AM	DNA Repair Capacity and Cancer *Marianne Berwick, University of New Mexico*
9:15 AM – 9:45 AM	Radical Causes of Human Cancer: Inflammation, Nitric Oxide and p53 *Curtis C. Harris, National Cancer Institute*
9:45 AM – 10:15 AM	Haplotypes and Cancer Risks *David Hunter, Harvard School of Public Health*
10:15 AM – 10:30 AM	Break
10:30 AM – 11:00 AM	DNA Sequence Variation and Linkage Disequilibrium: Roles in Cancer Etiology *Debbie Nickerson, University of Washington*

SUNDAY, OCTOBER 3, 2004

11:00 AM – 11:30 AM	Genetic and Environmental Modifiers of Penetrance in BRCA1 and BRCA2 Carriers *Timothy R. Rebbeck, University of Pennsylvania*
11:30 AM – 12:00 PM	The Role of Methylation in Lung Cancer Etiology *Steve Belinsky, Lovelace Respiratory Research Institute*

SUNDAY, OCTOBER 3, 2004

8:30 AM – 12:00 PM

Platform Session 1

Responses to Environmental Agents

Ballroom 3

Chairpersons
Priscilla K. Cooper, Lawrence Berkeley National Laboratory
and
Joann B. Sweasy, Yale University School of Medicine

	Abstract	
8:30 AM	**30**	**LOW-DOSE IRRADIATION PRIOR TO A CHALLENGE DOSE ALTERS THE MRNA TRANSCRIPT PROFILES OF HUMAN LYMPHOBLASTOID CELLS** Coleman M, Marchetti F, Nelson D, Peterson LE, Yin E, Tucker JD, Wyrobek AJ
8:45 AM	**56**	**DIFFERENTIAL TRANSCRIPTIONAL RESPONSES OF SACCHAROMYCES CEREVISIAE WITH ALTERED DNA REPAIR CAPACITIES** Fry R, Rao A, Samson L
9:00 AM	**131**	**GENOTOXICITY AND CELL CYCLE GENE EXPRESSION CHANGES INDUCED BY NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITORS (NRTIS)** Olivero OA, Tejera AM, Das SA, Divi RL, Poirier MC
9:15 AM	**75**	**HUMAN S CHECKPOINTS: MULTIPLE MECHANISMS INHIBIT REPLICON INITIATION AFTER DNA DAMAGE** Heffernan T, Unsal-Kacmaz K, Heinloth A, Sancar A, Paules RS, Cordeiro-Stone M, Kaufmann WK
9:30 AM	**168**	**REPAIR OF OXIDATIVE BASE DAMAGE IN UV-SENSITIVE SYNDROME CELLS** Spivak G, Hanawalt PC

	Abstract	
9:45 AM	**95**	**XPA AS A RATE-LIMITING FACTOR FOR UV SENSITIVITY AND NUCLEOTIDE EXCISION REPAIR** Köberle B, Roginskaya V, Wood RD
10:00 AM	**148**	**INTERACTION OF TCR AND BER PROTEINS WITH STALLED RNA POLYMERASE II : IMPLICATIONS FOR TRANSCRIPTION-COUPLED REPAIR** Sarker AH, Tsutakawa SE, Kostek S, Hazra T, Ng C, Nogales E, Cooper PK
10:15 AM		Break
10:30 AM	**43**	**THE HUMAN MISMATCH REPAIR PATHWAY AND *O*^{6}-METHYLGUANINE METHYLTRANSFERASE COOPERATE IN THE REPAIR OF *O*^{6}-METHYLGUANINE LESIONS** Drummond J
10:45 AM	**58A**	**GENOMIC INSTABILITY INDUCED BY LOW DOSES OF GAMMA-RADIATION** Gibbons C, Ritter L, Grosovsky AJ
11:00 AM	**125**	**HEMATOPOIETIC AGING IN CROSSLINK REPAIR-DEFICIENT *ERCC1*$^{-/-}$ MICE** Niedernhofer LJ, Prasher J, Lalai A, Touw I, Hoeijmakers JHJ
11:15 AM	**114**	**DEFECTIVE REPAIR OF ALKYLATION DNA DAMAGE IN MICE** Meira LB, Pease K, Kerrison F, Dong M, Fry R, Dedon P, Samson LD
11:30 AM	**181**	**RNAI-MEDIATED POL-BETA SILENCING RESULTS IN INCREASED SENSITIVITY TO TEMOZOLOMIDE** Trivedi RN, Schamus S, Sobol RW
11:45 AM	**136**	**FURTHER DEFINING PROTEIN-PROTEIN INTERACTIONS BETWEEN TWO MULTI-FUNCTIONAL HUMAN DNA REPAIR PROTEINS, XERODERMA PIGMENTOSUM-G AND POLY(ADP-RIBOSE) POLYMERASE** Pluth JM, Zahed Karagaran H, Campeau E, Cooper PK

SUNDAY, OCTOBER 3, 2004

1:00 PM – 4:30 PM

Unusual Mechanisms of Mutation Symposium

Ballroom 2

Chairpersons
Paul Doetsch, Emory University
and
Patricia Foster, Indiana University

1:00 – 1:10 PM Introduction

1:10 – 1:40 PM Stress-Induced Mutagenesis in Bacteria
Patricia Foster, Indiana University

1:40 – 2:10 PM Transcriptional Mutagenesis in Bacteria and Mammals
Paul Doetsch, Emory Univ. School of Medicine

2:10 – 2:40 PM Mutagenesis via Mistranslation
M. Zafri Humayun, University of Medicine and Dentistry of New Jersey

2:40 – 3:10 PM AID-Mediated Somatic Hypermutation
Matthew Scharff, Albert Einstein College of Medicine

3:10 – 3:30 PM Break – Exhibit Hall

3:30 – 4:00 PM Surveillance Mechanisms Discriminating Between Functional and Mutant Transcripts
Miles Wilkinson, University of Texas, MD Anderson Cancer Center

4:00 – 4:30 PM New Mechanisms for Mitochondrial Mutations and Human Disease
Michio Hirano, Columbia University

SUNDAY, OCTOBER 3, 2004

1:00 PM – 4:30 PM

Germ and Stem Cell Mutagenesis Symposium

Ballroom 3

Chairpersons
Sheila M. Galloway, Merck Research Laboratories
and
James F. Crow, University of Wisconsin

1:00 – 1:10 PM	Introduction
1:10 – 1:40 PM	Asymmetric Cell Kinetics and Control of Grown and Mutation in Stem Cells *James Sherley, Massachusetts Institute of Technology*
1:40 – 2:10 PM	Mutation Rates and Apoptosis Control in Cultured Stem Cells *Peter Stambrook, University of Cincinnati*
2:10 – 2:40 PM	Selection in the Male Germ Line and the Paternal Age Effect on Human Mutation *Andrew Wilkie, University of Oxford*
2:40 – 3:10 PM	Genotyping Individual Germ Cells *Norman Arnheim, University of Southern California*
3:10 – 3:30 PM	Break – Exhibit Hall
3:30 – 4:00 PM	Estimation of Human Mutation Rate and Comparisons with the Mouse Genome *Alexey Kondrashov, National Center for Biotechnology Information*
4:00 – 4:30 PM	Assessing Human Germ Cell Mutagenesis in the Post-Genome Era *John J. Mulvihill, University of Oklahoma*

SUNDAY, OCTOBER 3, 2004

4:30 PM – 5:30 PM

Keynote Lecture

Ballroom 3

Philip A. Sharp
Massachusetts Institute of Technology

The Surprising Biology of Short RNAs

SUNDAY, OCTOBER 3, 2004

5:30 PM – 7:30 PM

Exhibits
and
Poster Session 1:
Responses to Environmental Agents

Ballroom 1

Odd numbered posters to be attended from 5:30 PM – 6:30 PM
Even numbered posters to be attended from 6:30 PM – 7:30 PM

Poster	Abstract	
1	**4**	**CYCLOOXYGENASE 2 EXPRESSION IN FIBROSARCOMA CELL LINE EXPOSED TO UVC RADIATION** Cortés AC, Monroy CM, Ruiz JR, Sicard DS, Groot HG
2	**7**	**FUNCTIONAL EVALUATION OF POLYMORPHIC DNA REPAIR GENES, CHROMOSOME ABERRATIONS AND LUNG CANCER** Au WA, Salama SA, Harms C
3	**9**	**CHANGES IN HEPATIC GENE EXPRESSION IN FISHER RATS INDUCED BY DIETARY EXPOSURE TO AROCLOR 1254** Basford TM, Means JC
4	**10**	**BIOMARKERS OF SUSCEPTIBILITY, OXIDATIVE STRESS, AND BIOLOGICAL EFFECT AFTER ACUTE OZONE EXPOSURE IN HUMANS** Bastaki M, Chen CL, Manzanillo P, Beckman K, Tager IB, Balmes JR, Holland NT *Note: Now being presented in Platform Session 3 on Wednesday, October 6, 2004 at 11:45 AM.*
5	**18**	**INDUCTION OF CHROMOSOMAL INSTABILITY AND TUMORS IN B-POL HAPLOINSUFFICIENT MICE** Cabelof DC, Ikeno Y, Sobol RW, Tucker JD, Wilson SH, Richardson A, Heydari AR

Poster	Abstract	
6	**26**	**MUTATIONS INDUCED BY ARISTOLOCHIC ACID IN THE KIDNEY OF BIG BLUE TRANSGENIC RAT** Chen L, Mei N, Chen T
7	**27**	**EFFECT OF SELENIUM ON THE FATE OF MCF-7 CELLS AFTER DOXORUBICIN-INDUCED DNA DAMAGE** Chen Y, Shen S, Waters DJ
8	**44**	**CYTOKINES INDUCE NO-MEDIATED MTDNA DAMAGE AND APOPTOSIS IN OLIGO-DENDROCYTES: PROTECTIVE ROLE OF TARGETING 8-OXOGUANINE GLYCOSYLASE TO MITOCHONDRIA** Druzhyna NM, Wilson GL, LeDoux SP
9	**66**	**MULTIPLE ORGAN MUTATION FREQUENCIES AT THE CII LOCI IN THE BIG BLUE RAT TREATED WITH ETHYLNITROSOUREA** Gunther WC, O'Lone SD, Schuler MJ
10	**70**	***O*^{6}-METHYLGUANINE DNA METHYL-TRANSFERASE LEU84PHE AND BREAST CANCER RISK** Han J, Tranah GJ, Hankinson SE, Samson LD, Colditz GA, Hunter DJ
11	**73**	**NOVEL TRANSCRIPTIONAL REPORTERS FOR THE HUMAN *GADD45* GENE REVEAL THE CRITICAL IMPORTANCE OF DOWNSTREAM ELEMENTS IN MAXIMUM RESPONSE TO GENOTOXIC STRESS** Hastwell PW, Walmsley RM
12	**74**	**A YEAST MODEL OF FRIEDREICH'S ATAXIA: GENOTOXICITY OF MITOCHONDRIAL IRON ACCUMULATION** Haugen AC, Karthikeyan G, Collins JB, Tucker CJ, Resnick MA, Van Houten B

Poster	Abstract	
37	**196**	**ARE BUTADIENE DIEPOXIDE DNA ADDUCTS RECOGNIZED BY NUCLEOTIDE EXCISION REPAIR: AN *IN VIVO* TEST USING XPC KNOCKOUT MICE** Wickliffe JK, Xie J, Galbert LA, Ammenheuser MM, Salazar JJ, Lloyd RS, Ward JB
38	**36A**	**MUTAGENESIS, CYTOTOXICITY AND REPAIR OF 1-METHYLADENINE, 3-ALKYLCYTOSINES, 1-METHYLGUANINE AND 3-ETHYLTHYMINE IN ALKB *ESCHERICHIA COLI*** Delaney JC, Essigmann JM *Note: Now being presented in Platform Session 2 on Monday, October 4, 2004 at 11:45 AM.*
39	**144A**	**COMET FORMATION IN RESPONSE TO IRRADIATION OF LYMPHOCYTES WITH NEUTRONS AND GAMMA RAYS** Rossouw MS, Meehan K, Groenewald WAG, Slabbert JP
40	**163A**	**RESPONSE OF CHO-K1 CELLS TO GAMMA AND NEUTRON RADIATION AS MEASURED BY SINGLE CELL GEL ELECTROPHORESIS (SCGE)** Smit KA, Slabbert J, Meehan KA
41	**34**	**REGULATION OF CYTOCHROME P450 ISOFORMS BY HISTAMINE IN RAT LIVER** Dávila VM, Belmont JA, Albores A, Montero RD
42	**35**	**METHYLATION AS A POTENTIAL MECHANISM OF ADAPTIVE RESPONSE AFTER EXPOSURE TO X-RADIATION** Day TK, Hooker AM, Bhat M, Cormack J, Morley AA, Sykes PJ
43	**71**	**ALTERING DNA BASE EXCISION REPAIR (BER): USE OF NUCLEAR AND MITOCHONDRIAL-TARGETED METHYLPURINE DNA GLYCOSYLASE (MPG) TO SENSITIZE GLIAL CELLS TO ALKYLATING AGENTS** Harrison JF, Kelley MR, Wilson GL, LeDoux SP

Poster	Abstract	
44	**76**	**A POLYMORPHISM IN THE DNA REPAIR GENE MGMT INCREASES HUMAN SENSITIVITY TO THE TOBACCO-SPECIFIC NITROSAMINE NNK** Hill CE, Affatato AA, Wolfe KJ, Galbert LA, Wickliffe JK, Abdel-Rahman SZ
45	**78**	**PROTECTIVE EFFECT OF YEAST MAJOR AP ENDONUCLEASE APN1 EXPRESSION IN A MAMMALIAN NEURONAL CELL LINE** Ho R, Rachek LI, Xu Y, Kelley MR, LeDoux SP, Wilson GL
46	**112**	**FUNCTIONAL GENOMIC STUDIES OF HUMAN PEROXIDASES** McLachlan JJ, Josephy PD
47	**127**	**ANALYSIS OF CHANGES IN GENE EXPRESSION IN RAT LIVER AFTER BENZO(A)PYRENE EXPOSURE ASSESSED BY AFFYMETRIX MICROARRAY AND REAL-TIME PCR** N'jai AU, Means JC
48	**145**	**CHRONIC ANTIOXIDANT TREATMENT AND REPRESSION OF FAPY SITES IN GENOMIC DNA OF MAMMALIAN CELLS** Rundell MS, Muellner MG, Wagner ED, Plewa MJ
49	**161**	**IL2 MRNA EXPRESSION LEVELS DEPEND UPON PHA CONCENTRATION AS WELL AS EXPOSURE DURATION** Shi H, Thomas RA, Petibone DM, Tucker JD

MONDAY, OCTOBER 4, 2004

7:00 AM – 6:00 PM

Registration
Ballroom Foyer

7:00 AM – 8:30 AM

Breakfast Meetings

Exhibitor's Breakfast
Brigade Room

ICEM Organizing Committee
Duquesne Room

Germ Cell/Stem Cell Special Interest Group
Kings Garden North

Risk Assessment Special Interest Group
Sponsor:
Boehringer Ingelheim Pharmaceuticals, Inc.
Kings Garden South

Student and New Investigator Breakfast
Benedum Room

MONDAY, OCTOBER 4, 2004

8:30 AM – 12:00 PM

Recombination and the Maintenance of Genome Stability Symposium

Ballroom 2

Chairpersons
Bevin P. Engelward, Massachusetts Institute of Technology
and
John A. Tainer, The Scripps Research Institute

8:30 AM – 8:45 AM	Introduction
8:45 AM – 9:15 AM	Structural Aspects of Recombination Repair *John A. Tainer, The Scripps Research Institute*
9:15 AM – 9:45 AM	Mouse Models for Measuring *In Vivo* DNA Recombination *Bevin P. Engelward, Massachusetts Institute of Technology*
9:45 AM – 10:15 AM	Targeting Recombination Events in Yeast *Michael A Resnick, National Institute of Environmental Health Sciences*
10:15 AM – 10:30 AM	Break – Exhibit Hall
10:30 AM – 11:00 AM	Molecular Mechanisms of Recombination *Steve C. Kowalczkowski, University of California, Davis*
11:00 AM – 11:30 AM	The Interface Between End Joining and Homologous Recombination *Jac Nickoloff, University of New Mexico*

MONDAY, OCTOBER 4, 2004

8:30 AM – 12:00 PM

Platform Session 2
Mechanisms of Mutation

Ballroom 3

Chairpersons
Ronald D. Snyder, Schering-Plough Research Institute
and
Rosalie K. Elespuru, U.S. FDA

	Abstract	
8:30 AM	**167**	**SPONTANEOUS MULTIPLE MUTATIONS SHOW UNIQUE FEATURES THAT CONSTRAIN HYPOTHESES ABOUT MUTATIONAL MECHANISMS AND ULTIMATELY PROVIDE INSIGHT INTO CARCINOGENESIS** Sommer SS, Hill KA, Wang J, Farwell KD, Scaringe WA
8:45 AM	**101**	**HUMAN BREAST TUMORS MANIFEST BOTH HEREDITARY DEFICIENCY AND SOMATIC LOSS OF DNA (NUCLEOTIDE EXCISION) REPAIR** Latimer JJ, Johnson JM, Kelly CM, Grant SG, Vogel V, Brufsky AM, Kelley J
9:00 AM	**188**	**ACCUMULATION OF SIMULATED SOLAR LIGHT INDUCED MOUSE P53 CODON 27 CGT TO TGT MUTATION DURING SKIN TUMOR DEVELOPMENT** Verkler TL, Delongchamp RR, Warbritton A, Couch LH, Miller BJ, Howard PC, Parsons BL
9:15 AM	**172**	**CANCER-ASSOCIATED MUTANTS OF DNA POLYMERASE BETA INDUCE FOCUS FORMATION AND INACCURATE DNA SYNTHESIS** Sweasy JB, Lang T, Maitra M, DiMaio D, Dalal S, Starcevic D

	Abstract	
9:30 AM	**108**	**ATPASE ACTIVITY OF MSH2 PROTEINS FROM TRYPANOSOMA CRUZI CORRELATES WITH DIFFERENCES IN MISMATCH REPAIR EFFICIENCY OBSERVED AMONG VARIOUS PARASITE STRAINS** Machado-Silva A, Augusto-Pinto L, DaRocha WD, Pena SDJ, Teixeira SMR, Machado CR
9:45 AM	**89**	**NO MAJOR ROLE FOR 8-OXOGUANINE IN UVA-MUTAGENESIS** Kappes UP, Rünger TM
10:00 AM	**192**	**NATURALLY OCCURRING H-DNA STRUCTURES ARE MUTAGENIC IN MAMMALIAN CELLS** Wang G, Vasquez KM
10:15 AM		Break – Exhibit Hall
10:30 AM	**80**	**THE FATE OF CHROMOSOMAL DOUBLE STRAND BREAKS IN HUMAN CELLS** Honma M, Sakuraba M, Koizumi T, Hayashi M
10:45 AM	**96**	**MULTIPLE DNA POLYMERASES INVOLVED IN CHEMICALLY-INDUCED FRAMESHIFT MUTAGENESIS IN *ESCHERICHIA COLI* AND *SALMONELLA TYPHIMURIUM*** Kokubo K, Yamada M, Kim SR, Gruz P, Shimizu M, Kanke Y, Nohmi T
11:00 AM	**165**	**CONTRIBUTION OF N-DIALKYL SUBSTITUTION TO THE GENOTOXICITY AND DNA INTERCALATION ABILITY OF DRUGS AND OTHER CHEMICALS** Snyder RD, McNulty J, Zairov G, Hendry LB
11:15 AM	**22**	**A NEW FORM OF RNA EDITING FOUND IN A CHILDHOOD DISEASE CORRECTS A LETHAL STOP CODON** Chan S, Naviaux R, Copeland W
11:30 AM	**204**	**TANDEM REPEAT DNA: APPLICATIONS IN GERMLINE MUTATION ANALYSIS** Yauk CL
11:45 AM	**36A**	**MUTAGENESIS, CYTOTOXICITY AND REPAIR OF 1-METHYLADENINE, 3-ALKYLCYTOSINES, 1-METHYLGUANINE AND 3-ETHYLTHYMINE IN ALKB *ESCHERICHIA COLI*** Delaney JC, Essigmann JM

MONDAY, OCTOBER 4, 2004

1:00 PM – 4:30 PM

Metals, Mutagenesis and Cancer Symposium

Ballroom 2

Chairpersons
Toby G. Rossman, New York University
and
Kathleen Dixon, University of Cincinnati

1:00 PM – 1:10 PM	Introduction
1:10 PM – 1:40 PM	Arsenic as a Co-Carcinogen *Toby G. Rossman, New York University*
1:40 PM – 2:10 PM	Chromium – Mechanisms of Mutagenesis *Kathleen Dixon, University of Cincinnati*
2:10 PM – 2:40 PM	Nickel-Induced Chromatin Damage *Kazimierz S. Kasprzak, National Cancer Institute*
2:40 PM – 3:10 PM	Iron Overload as a Cause of Cancer *Xi Huang, New York University*
3:10 PM – 3:30 PM	Break – Exhibit Hall
3:30 PM – 4:00 PM	Biomarkers of Susceptibility and Effect of Arsenic Carcinogenesis in Human Population *Habibul Ahsan, Columbia University*
4:00 PM – 4:30 PM	Inhibition of Inducible Gene Expression by Chromium *Alvaro Puga, University of Cincinnati*

MONDAY, OCTOBER 4, 2004

1:00 PM – 4:30 PM

Microbes, Mutation and Malignancy Symposium

Ballroom 3

Chairpersons
David Schauer, Massachusetts Institute of Technology
and
Lorne Hofseth, University of South Carolina

1:00 PM – 1:10 PM	Introduction
1:10 PM – 1:40 PM	Colonic Infection and Cancer Susceptibility *David Schauer, Massachusetts Institute of Technology*
1:40 PM – 2:10 PM	Induction of a Mutator Phenotype in Inflamed Tissues *Lorne Hofseth, University of South Carolina*
2:10 PM – 2:40 PM	Carcinogenicity of *Helicobacter pylori* Infection *Pelayo Correa, Louisiana State University*
2:40 PM – 3:10 PM	Lessons Learned from Molecular Profiling of Human Hepatocellular Cancer *Xin Wei Wang, National Cancer Institute*
3:10 PM – 3:30 PM	Break – Exhibit Hall
3:30 PM – 4:00 PM	Introduction of Genetic Instability by Human Papillomavirus Oncoproteins *Denise Galloway, Fred Hutchinson Cancer Research Center*
4:00 PM – 4:30 PM	The Role of T Cells in Toxicity and Carcinogenicity Induced by Alkylating Agents *Barry Gold, Eppley Institute, University of Nebraska*

MONDAY, OCTOBER 4, 2004

4:30 PM – 5:30 PM

Keynote Lecture

Ballroom 3

David Botstein, Princeton University

Genome-Wide Transcriptional Responses to Environmental Change

MONDAY, OCTOBER 4, 2004

5:30 PM – 7:30 PM

Exhibits and Poster Session 2: Mechanisms of Mutation

Ballroom 1

Odd numbered posters to be attended from 5:30 PM – 6:30 PM
Even numbered posters to be attended from 6:30 PM – 7:30 PM

Poster	Abstract	
1	**3**	**EFFECTS OF *MSH3* GENE DELETION ON TARGETED HOMOLOGOUS RECOMBINATION IN *ERCC1* WILD-TYPE OR *ERCC1* KNOCK-OUT CELL LINES** Adair GM, Robison T, Della-Coletta L, Talbert LL, Nairn RS
2	**8**	**A NOVEL PROTEIN, MGC5306 INTERACTS WITH A DOMINANT NEGATIVE MUTANT OF DNA POLYMERASE BETA, A BASE-EXCISION REPAIR PROTEIN** Banerjee S, Wang L, Bhattacharyya N, Kim R, Chelsea D
3	**16**	**FUNCTIONAL STUDIES OF THE HUMAN MLH1 GENE** Buermeyer AB, Mohd AB, Nguyen M, Ing B, Palama B
4	**17**	**ARSENIC COMUTAGENICITY WITH BENZO(A)PYRENE IN SKIN OF BIG BLUE TRANSGENIC MICE** Bukvic A, Andringa A, Genter MB, Dixon K
5	**31**	**PCR-DGGE BASED DETECTION OF INCREASED FREQUENCIES OF MITOCHONDRIAL DNA MUTATIONS IN INFANTS EXPOSED *IN UTERO* TO AZT-3TC** Cook DL, Ming JM, Walker VE

MONDAY, OCTOBER 4, 2004

Poster	Abstract	
6	**47**	**MOLECULAR EPIDEMIOLOGY OF HUMAN LUNG CANCER: ANALYSIS USING THE IARC TP53 DATABASE** Elespuru RK, Jenning SM
7	**50**	**CELL VIABILITY AS EVALUATED BY CLONING EFFICIENCY IS THE MAJOR FACTOR AFFECTING *IN VIVO* HPRT SOMATIC MUTATION FREQUENCIES** Evdokimova VN, Babra B, Grant SG
8	**52**	**FACTORS DETERMINING MUTAGENIC POTENCY** Felton JS, Knize MG, Malfatti M, Lau E, Colvin M, Hatch F, Lightstone F
9	**62**	**EXPLORING GENE'S FUNCTIONALITY AND EFFECT OF ENVIRONMENTAL CARCINOGENS USING MUTATION DATABASES** Gorlov IP, Gorlova OY, Amos CI
10	**63**	**ELEVATED SOMATIC MUTATION FREQUENCIES IN HOMOZOYGOTES AND HETEROZYGOTES FOR INACTIVATING MUTATIONS IN THE GENES OF THE FA/BRCA PATHWAY OF DNA REPAIR** Grant SG, Evdokimova VN, Das R, Rubinstein WS, Latimer JJ, Auerbach AD
11	**64**	**STRUCTURE-FUNCTION DEFECTS OF HUMAN MITOCHONDRIAL DNA POLYMERASE IN AUTOSOMAL DOMINANT PROGRESSIVE EXTERNAL OPHTHALMOPLEGIA** Graziewicz MA, Longley MJ, Bienstock RJ, Zeviani M, Copeland WC

Poster	Abstract	
19	**123**	**EFFECTS OF SOYBEAN PROCESSING BY-PRODUCT ON SPONTANEOUS MUTATION IN MISMATCH-REPAIR DEFICIENT CELLS** Mure K, Plewa MJ, Takeshita T, Rossman TG, Klein CB
20	**132**	**THE WERNER SYNDROME PROTEIN AND DNA REPAIR PATHWAYS AT TELOMERIC DNA** Opresko PL, Otterlei M, Fan J, Kolvraa S, Wilson DM, Seidman MM, Bohr VA
21	**137**	**CHARACTERISTICS OF INDUCED NSTABILITY AT A MOUSE TANDEM REPEAT LOCUS** Polyzos AA, Parfett CL, Healy C, Yu T, Douglas G, Yauk CL
22	**140**	**CONDITIONAL EXPRESSION OF HOGG1 IN MITOCHONDRIA IMPROVES MITOCHONDRIAL REPAIR OF NO-INDUCED DNA DAMAGE AND ENHANCES CELL SURVIVAL** Rachek LI, LeDoux SP, Wilson GL
23	**142**	**MISMATCH REPAIR ROLE IN DNA DAMAGE RESPONSES** Rajasekaran B, Gao Y
24	**143**	**ARSENIC AND MITOTIC RECOMBINATION IN MICE** Robbins S, Fischer J, Stambrook PJ, Stringer S, Al-Zoughool M, Kannamkumarath S, Stringer J
25	**150**	**INCREASED LEVELS OF SINGLE-STRAND DNA BREAKAGE AND ALKALI-LABILE SITES BUT NOT DOUBLE STRAND BREAKS IN SPERM OF OLDER MEN** Schmid TE, Baumgartner A, Marchetti F, Young S, Anderson D, Eskenazi B, Wyrobek AJ

Poster	Abstract	
26	**151**	***IN VITRO* CHARACERIZATION OF NITROSYLATION-MEDIATED MUTAGENIC ACTIVATION OF SOY ISOFLAVONES** Schrader TJ, Fine J, Langlois I
27	**152**	**SPONTANEOUS AND RADIATION-INDUCED INSTABILITY IN THE HUMAN LYMPHOBLASTOID CELL LINE TK6** Schwartz JL, Jordan R, Evans HH, Lenarczyk M, Liber H
28	**155**	**BENZO[A]PYRENE (B[A]P) MUTAGENIC MECHANISMS** Seo KY, Yin J, Nagalingam A, Lee D, Chandani S, Loechler EL
29	**163**	**LACK OF MUTAGENICITY OF CHROMIUM PICOLINATE IN THE CHO/HGPRT MUTATION ASSAY: RESULTS FROM STANDARD TESTS AND A TEST WITH A 48-HOUR EXPOSURE PERIOD** Slesinski RS, San R, Clarke J, Juturu V, Komorowski JR
30	**171**	**CEDU (5-(2-CHLOROETHYL)-2'-DEOXY-URIDINE), A SALMONELLA POSITIVE, NON-CLASTOGENIC NUCLEOSIDE ANALOGUE THAT INDUCES A:T TO G:C TRANSITIONS *IN VIVO*** Suter W, Staedtler F, Plappert-Helbig U, Glowienke S, Racine R, Wolf R, Martus HJ
31	**175**	**POLYAMINES FACILITATE THE FORMATION OF THE MUTAGENIC DNA ADDUCT 1, N^2-PROPANODG FROM ACETALDEHYDE AND DNA: IMPLICATIONS FOR THE MECHANISM OF ALCOHOL-RELATED CARCINOGENESIS** Theruvathu JA, Nath RG, Brooks PJ

Poster	Abstract	
32	**182**	**AZO DYES ARE MAJOR CONTRIBUTORS TO THE MUTAGENIC ACTIVITY DETECTED IN THE CRISTAIS RIVER WATERS** Umbuzeiro G, Freeman HS, Warren SH, de Oliveira DP, Terao Y, Watanabe T, Claxton LD
33	**183**	**COMPARISON OF *IN VIVO* MUTATION IN GENE *A* OF *IPHI*X174 TO *ILACI* AND *ICII* OF LAMBDA FROM SPLENIC LYMPHOCYTES IN TRANSGENIC MICE** Valentine CR, Rainey HF, Delongchamp RR
34	**187**	**METHYLATION PATTERNS UNDERLYING EPIGENETIC REGULATION OF GENE EXPRESSION IN MISMATCH REPAIR-DEFECTIVE COLON CANCER CELL LINES** Veigl ML, Young B, Polinkovsky A, Strickfaden S, Sedwick WD
35	**190**	**EVIDENCE FOR OCCASIONAL "MUTATION SHOWERS" AND THEIR ENHANCEMENT IN P53-DEFICIENT MICE** Wang J, Hill KA, Farwell KD, Nasrawi S, Tsai KP, Sommer SS
36	**198**	**THE ROLE OF DNA POLYMERASE ZETA IN GENOME MAINTENANCE AND MOUSE DEVELOPMENT** Wittschieben J, Patil V, Skarja S, Gan G, Gollin S, Wood R
37	**201**	**IDENTIFY THE HUMAN HOMOLOGUE OF DNA MISMATCH REPAIR GENES (MSH2 AND MLH1) FROM *DICTYOSTELIUM*** Xu XS, Zhang Y, Wang G
38	**206**	**INVOLVEMENT OF HMGB1 PROTEIN IN HUMAN DNA MISMATCH REPAIR** Yuan F, Gu L, Guo S, Wang H, Li GM

Poster	Abstract	
39	**182A**	**GENETIC POLYMORPHISMS OF THE DNA REPAIR GENE *XRCC1*, AND RISK OF ACUTE LYMPHOBLASTIC LEUKEMIA IN COLOMBIAN CHILDREN** Uribe GI, Torres MM, Groot H
40	**20**	**DIRECTED EVOLUTION OF ALKB USING A PHAGEMID-BASED SYSTEM OF RANDOM MUTAGENESIS *IN VIVO*** Camps M, Johnson BP, Loeb L
41	**42**	**DETERMINANTS OF MITOCHONDRIAL GENETIC STABILITY IN *SACCHAROMYCES CEREVISIAE*** Doudican NA, Shadel GS, Doetsch PW
42	**46**	**DNA MISMATCH REPAIR AT A HUMAN ONCOGENIC HOT SPOT OF MUTATION** Edelbrock MA, Schroering AG, Fernstrom MJ, He H, Bathala S, Williams KJ
43	**68**	**STRUCTURE-FUNCTION ANALYSIS OF DNA POLYMERASE BETA AND *O*^{6}-METHYLGUANINE-MODIFIED NUCLEOTIDE DISCRIMINATION** Hamid S, Eckert KA
44	**104**	**CHARACTERIZATION OF THE ROLE OF THE LOOP REGION OF DNA POLYMERASE BETA IN POLYMERIZATION FIDELITY** Lin GC, Sweasy JB
45	**156**	**MUTAGENIC AND CYTOTOXIC POTENTIAL OF N3-METHYLADENINE: EFFECTS OF N3-METHYLADENINE ON POLYMERASE PROCESSIVITY AND FIDELITY** Settles S, Monti P, Iannone R, Varadarajan S, Fronza G, Gold B
46	**164**	**EFFECTS OF PHIP, A FOOD-BORNE CARCINOGEN, ON MUTAGENESIS AND TUMORIGENESIS IN MLH1-DEFICIENT MICE** Smith-Roe SL, Crain SS, Palama BK, Buermeyer AB

TUESDAY, OCTOBER 5, 2004

7:00 AM – 12:30 PM

Registration
Ballroom Foyer

7:00 AM – 8:30 AM

Breakfast Meetings

EMS Executive Board
Duquesne Room

DNA Repair Special Interest Group
Kings Garden North

Hollaender Committee
Le Bateau Room

Membership and Professional Development Committee
Kings Garden South

Public Relations and Communications Committee
Brigade Room

TUESDAY, OCTOBER 5, 2004

8:30 AM – 9:30 AM

Keynote Lecture

Ballroom 3

Elizabeth Blackburn
University of California, San Francisco

**Telomeres and Genomic Stability:
When Ends Don't Meet**

TUESDAY, OCTOBER 5, 2004

9:30 AM – 12:30 PM

Exhibits
and
Poster Session 3:
Exposure Detection and Toxicity

Ballroom 1

Odd numbered posters to be attended from 9:30 AM – 11:00 AM
Even numbered posters to be attended from 11:00 AM – 12:30 PM

Poster	Abstract	
1	**5**	**INTERPRETATION OF INCREASES IN MICRONUCLEI IN CHO CELLS IN THE PRESENCE OF APOPTOSIS** Armstrong MJ, Cunningham CL, Fleckenstein CM, Greenwood SK, Hill RB, McKnight CG, Galloway SM
2	**11**	**DAMAGE-RECOVERY HOT SPOTS IDENTIFIED BY GENOMIC PHENOTYPING AND LOCALIZATION MAPPING** Begley TJ, Rosenbach AS, Ideker T, Samson LD
3	**21**	**INDUCED CYTOTOXICITY AND MUTAGENICITY OF HUMAN LYMPHO-BLASTOID CELLS (TK6) EXPOSED TO STAVUDINE, LAMIVUDINE AND STAVUDINE-LAMIVUDINE** Carter MM, Cook Jr DL, Torres S, Walker DM, Walker VE
4	**23**	**NITROREDUCTASE AND *N*-ACETYL-TRANSFERASE ACTIVITIES IN THE MUTA™MOUSE** Chen G, White PA, Gingerich J, Soper L, Douglas GR
5	**24**	**THE MUTAGENIC HAZARDS OF AQUATIC SEDIMENTS: A REVIEW** Chen GC, White PAW

TUESDAY, OCTOBER 5, 2004

Poster	Abstract	
6	**28**	**ANALYSIS OF RADIATION-INDUCED MICRONUCLEI INVOLVING CHROMOSOME 1 AND 4 BY FISH TECHNIQUE** Chung HW, Kim TY, Cho YH, Kim SY, Ha SW
7	**33**	**DEVELOPMENT OF A MICRONUCLEUS ASSAY IN THE EPIDERM™ HUMAN 3D SKIN MODEL** Curren RD, Mun GC, Gibson DP, Aardema MJ
8	**36**	**FLOW CYTOMETRIC ANALYSIS OF MICRONUCLEATED RETICULOCYTES IN MICE AFTER MULTIPLE BLOOD SAMPLING** De Boeck M, van der Leede BM, De Smedt A, Steemans M, Van Goethem F, Lampo A, Vanparys P
9	**37**	**HUMAN BLOOD MICRONUCLEUS SCORING: APPLICATIONS IN SICKLE CELL DISEASE** Dertinger S, Ware R, Howard T, Torous D, Avlasevich S, Tometsko C
10	**38**	**POST-BIRTH MITOCHONDRIAL TOXICITY OF *IN UTERO* NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITOR (NRTI) EXPOSURES IN A PRIMATE MODEL** Divi RL, Leonard SL, Nagashima K, Harbaugh SW, Harbaugh JW, St. Claire MC, Poirier MC
11	**40**	**FREQUENCY OF MICRONUCLEATED ERYTHROID CELLS IN AZT-TREATED TK-PROFICIENT AND TK-DEFICIENT MICE** Dobrovolsky VN, Heflich RH, McGarrity LJ, VonTungeln LS, Beland FA
12	**49**	**AN *IN VIVO-IN VITRO* STUDY PROTOCOL FOR THE CONDUCT OF THE RAT PERIPHERAL BLOOD LYMPHOCYTE (RPBL) CHROMOSOME ABERRATIONS (CA) ASSAY** Erexson GL, Farabaugh CS, Yung KM, Stojhovic GP
13	**51**	**FACTORS AFFECTING SPONTANEOUS MUTANT FREQUENCY IN THE MICROTITRE MOUSE LYMPHOMA CELL THYMIDINE KINASE LOCUS ASSAY (MLA)** Fellows M, Clements J, Shaw K, Thompson A, O'Donovan M

Poster	Abstract	
14	**55**	**OPTIMIZATION AND APPLICATION OF THE *IN VITRO* MICRONUCLEUS ASSAY FOR THE EVALUATION OF CIGARETTE SMOKE CONDENSATE** Fowler KW, Morgan WT, Doolittle DJ, Bombick BR
15	**57**	**AN IMPROVED, SEMI-AUTOMATED METHOD FOR MEASURING *HPRT/HPRT* GENE MUTATIONS IN MOUSE AND HUMAN LYMPHOCYTES** Galbert LA, Guerin AT, Carmical JR, Herring SM, Abdel-Rahman SZ, Ward JB, Wickliffe JK
16	**58**	**CYTOCHROME P4501A1 (CYP1A1) INDUCTION IS SUPPRESSED BY COAL DUST EXPOSURE IN THE OVINE LUNG** Ghanem M, Hubbs AF, Kashon M, Weissman D, Porter D, Vallyathan V, Batelli LA, Nath J
17	**59**	**TESTING THE SPECIFICITY OF THE *IN VIVO* RODENT SKIN MICRONUCLEUS ASSAY AS DEVELOPED BY NISHIKAWA ET AL., FOR CHEMICALS NEGATIVE IN DERMAL CARCINOGENESIS ASSAYS** Gibson DP, Krsmanovic LS, Aardema MJ
18	**67**	**GENOTOXICITY OF AIR PARTICULATE MATTER FROM MEXICO CITY, MEXICO, CONTAINING HIGH LEVELS OF METALS** Gutiérrez ME, Roubicek DA, Sordo M, Cebrián ME, DeVizcaya A, Ostrosky P
19	**81**	**DEVELOPMENT OF MICROWELL SYRIAN HAMSTER EMBRYO (SHE) CELL MICRONUCLEUS (MN) ASSAY** Hu T, Gibson DP, Aardema MJ
20	**83**	**MULTI-LABORATORY VALIDATION OF A FLOW CYTOMETRIC MICRONUCLEUS ASSAY: METHOTREXATE RESULTS: ADDITIONAL RAT PERIPHERAL BLOOD ANALYSIS IN STANDARD AND NON-STANDARD VEHICLES** Hynes GM, Lynch AM, Torous DK

TUESDAY, OCTOBER 5, 2004

Poster	Abstract	
28	**133**	**VALIDATION OF A MODIFICATION OF THE SYRIAN HAMSTER EMBRYO (SHE) CELL TRANSFORMATION ASSAY AT PH 6.7 USING DIFFERENT CELL ISOLATES AND THE RODENT CARCINOGEN 2,4-DIAMINOTOLUENE** Pant K, Reece JD, Gibson DP, Aardema M, San R
29	**135**	**THE GENOTOXICITY OF THE DRINKING WATER DISINFECTION BY-PRODUCT IODOACETIC ACID IS REDUCED BY MODULATORS OF OXIDATIVE STRESS** Plewa MJ, Cemeli E, Anderson D, Wagner ED
30	**138**	**SEMI-QUANTITATION OF POLYCYCLIC AROMATIC HYDROCARBON (PAH)-DNA ADDUCTS IN HUMAN CERVIX BY IMMUNO-HISTOCHEMISTRY AND THE AUTOMATED CELLULAR IMAGING SYSTEM (ACIS)** Pratt MM, Castle PE, Schiffman M, Glass AG, Scott DR, Rush BB, Poirier MC
31	**146**	**RADIATION-INDUCED CHROMOSOMAL DAMAGE IN TRANSGENIC MICE WITH VARIOUS *P53* GENOTYPES** Rupa DS, Rausch L, Lin S, Bakke J, Orduna J, Chang P
32	**147**	**USING THE TREATED ACID MINE WATER FOR THE RAINBOW TROUT PRODUCTION AT DOGWOOD LAKE IN WEST VIRGINIA** Salem M, Semmens KJ, Tierny A, Viadero R, Nath J
33	**176**	**SIMPLE TARGET DETECTION FROM MRNA BY ROLLING CIRCLE AMPLIFICATION (RCA) IN SOLUTION** Thomas RA, Itoh S, Petibone DM, Shi H, Tucker JD
34	**179**	**FLOW CYTOMETRIC ANALYSIS OF MICRONUCLEI IN RODENT AND HUMAN BLOOD USING A NEWLY DEVELOPED THREE-COLOR LABELING METHOD** Torous DK, Dertinger SD, MacGregor JT, Bishop ME, Ponten I, Chen Y, Tometsko CR

Poster	Abstract	
35	**194**	**MUTATIONAL AND TRANSCRIPTIONAL RESPONSE OF SALMONELLA TO MX: CORRELATION OF MUTATIONAL DOSE RESPONSE TO CHANGES IN GENE EXPRESSION** Ward WO, Porwollik S, Warren SH, McClelland M, DeMarini DM
36	**197**	**ZIDOVUDINE IS THE MUTAGENIC COMPONENT OF COMBINATION ANTIRETROVIRAL DRUG THERAPY ADMINISTERED TO CD-1 MOUSE PUPS IN A TREATMENT REGIMEN SIMILAR TO THAT USED IN HUMANS FOR PREVENTION OF MOTHER-TO-CHILD TRANSMISSION OF HIV** Witt KL, Tice RR, Wolfe GW, Bishop JB
37	**199**	**AN ASSESSMENT OF CUMENE HYDROPEROXIDE IN THE *IN VIVO* COMET ASSAY IN MOUSE SKIN** Wolfreys AM, Clay P, Elliott B, Jones E
38	**202**	**THE SCGE STUDY OF DNA DAMAGE ON GERM CELL OF RAT INDUCED BY NITROAROMATIC COMPOUNDS** Xu J
39	**203**	**COMPREHENSIVE EVALUATION OF SIX COMMERCIALLY AVAILABLE MICROARRAYS** Yauk CL, Berndt ML, Williams A, Douglas GR
40	**205**	**ANTIMUTAGENIC ACTIVITY OF SPEARMINT (MENTHA SPICATA L.)** Yu TW, Dashwood RH, Xu M
41	**2**	**ROLE OF DNA REPAIR PROTEINS IN THE FORMATION OF ANAPHASE BRIDGES** Acilan C, Gollin SM, Saunders WS
42	**19**	**DEVELOPMENT OF A RAPID SCREEN FOR ANEUGENIC AND CLASTOGENIC AGENTS USING P53 AS A MARKER OF GENOTOXICITY** Camacho H, Roy SK, Eastmond DA

TUESDAY, OCTOBER 5, 2004

TUESDAY, OCTOBER 5, 2004

12:30 PM – 5:30 PM

Free afternoon

Fall Foliage Cruise and Andy Warhol Museum Tour
Ticket Required
Meet in Hotel Lobby
12:45 PM

5:30 PM – 7:00 PM

Business Meeting
and
EMS Student Awards

Ballroom 3

7:00 PM – 10:00 PM

Banquet and EMS Awards

Ballroom 1

WEDNESDAY, OCTOBER 6, 2004

7:00 AM – 1:00 PM

Registration
Ballroom Foyer

7:00 – 8:30 AM

Breakfast Meetings

2005 Program Committee (Second Meeting)
Brigade Room

Education and Student Affairs Committee
Liberty Room

Genomics Special Interest Group
Duquesne Room

New Technologies Special Interest Group
Benedum Room

WEDNESDAY, OCTOBER 6, 2004

8:30 AM – 12:00 PM

Multiple Roles for DNA Mismatch Repair Symposium

Ballroom 2

Chairpersons
Thomas A. Kunkel
National Institute of Environmental Health Sciences
and
Margaret Hsieh
National Institute of Diabetes and Digestive and Kidney Diseases

8:30 AM – 8:45 AM	Introduction
8:45 AM – 9:15 AM	Mismatch Repair Role in DNA Damage Responses *Baskaran Rajasekaran, University of Pittsburgh*
9:15 AM – 9:45 AM	Mismatch Repair and Mutagenesis Due to Oxidative Stress *Margherita Bignami, Istituto Superiore di Sanita*
9:45 AM – 10:15 AM	Function of Mismatch Repair Proteins in Meiosis *Rhonda H. Borts, University of Leicester*
10:15 AM – 10:30 AM	Break
10:30 AM – 11:00 AM	Mouse Models of Mismatch Repair *Winfried Edelmann, Albert Einstein College of Medicine*
11:00 AM – 11:30 AM	Studies of the Early Steps in Mismatch Repair *John B. Hayes, Oregon State University*
11:30 AM – 12:00 PM	The Structural Biology of Mismatch Repair *WeiYang, National Institute of Diabetes and Digestive and Kidney Diseases*

WEDNESDAY, OCTOBER 6, 2004

8:30 AM – 12:00 PM

Platform Session 3
Exposure, Detection and Toxicity

Ballroom 3

Chairpersons
David DeMarini, U.S. EPA
and
Carol L. Yauk, Health Canada

	Abstract	
8:30 AM	**200**	**TRANSCRIPTOME PROFILING OF DOSE RESPONSE IN HUMAN LYMPHOBLASTOID CELLS EXPOSED TO IONIZING RADIATION** Wyrobek AJ, Coleman MA, Krishnan K, Marchetti F, Nelson D, Tucker JD, Futado M, Hill F, Manohar C
8:45 AM	**92**	**TRANSCRIPTIONAL RESPONSE TO DIESEL PARTICULATE EXTRACT (SRM1975) AND MODULATION BY CHLOROPHYLLIN IN NORMAL HUMAN MAMMARY EPITHELIAL CELLS USING DNA MICROARRAYS** Keshava C, Whipkey DL, Weston A
9:00 AM	**153**	**DOSE RESPONSE FOR GENE EXPRESSION IN THE LIVERS OF BIG BLUE® RATS TREATED WITH A GENOTOXIC AND NON-GENOTOXIC CARCINOGEN** Seidel SD, Kan HL, Stott WT, Sparrow BR, Gollapudi BB
9:15 AM	**121**	**INTRA- AND INTER-LABORATORY VARIABILITY DOES NOT PRECLUDE IDENTIFICATION OF HYDROXYUREA MOLECULAR SIGNATURE** Muller A, Boitier E, Hu T, Carr G, Lefevre AC, Aardema M, Thybaud V

	Abstract	
9:30 AM	**1**	**PROTEIN ARRAY METHOD FOR ASSESSING *IN VITRO* BIOMATERIAL-INDUCED CYTOKINE EXPRESSION** Abu-Shakra A, Li Y, Schutte R, Reichert WM
9:45 AM	**169**	**CYTOGENETIC ANALYSIS USING FLUORESCENCE *IN SITU* HYBRIDIZATION (FISH) TO EVALUATE THE IMPACT OF ENVIRONMENTAL EXPOSURE TO PAHS** Sram RJ, Beskid O, Binkova B, Chvatalova I, Rossner P, Smerhovsky Z
10:00 AM	**173**	**NON-LINEAR DOSE RESPONSE TO LOW DOSES OF X-RADIATION** Sykes PJ, Cormack J, Domel RU, Burch WM, Swinburne SJ, Morley AA, Hooker AM
10:15 AM		Break
10:30 AM	**48**	**PHIP-INDUCED CHROMOSOMAL INSTABILITY: A PROSTATE CANCER CASE-CONTROL STUDY** El-Zein R, Etzel C, Lopez M, Gu Y, Spitz M, Strom S
10:45 AM	**180**	**RELATIONSHIPS BETWEEN EXPOSURE CONCENTRATION, EXPOSURE DURATION, LEVELS OF DNA INCORPORATION OF DRUGS AND MUTAGENIC EFFECTS IN HUMAN LYMPHOBLASTOID TK6 CELLS EXPOSED *IN VITRO* TO AZT, 3TC, AND AZT-3TC** Torres SM, Walker VE, Olivero OA, Carter M, Cook D, Poirier M, Walker DM
11:00 AM	**110**	**EVALUATION OF MUTAGENICITY IN BIG BLUE (BB) MICE ADMINISTERED ACRYLAMIDE (AA) AND GLYCIDAMIDE (GA) IN DRINKING WATER FOR 4 WEEKS** Manjanatha MG, Aidoo A, Shelton SD, Bishop ME, McDaniel LP, Doerge DR

	Abstract	
11:15 AM	**178**	**CYTOGENETIC BIOMONITORING: MICRONUCLEI FORMATION AND CHANGES IN ANTIOXIDANTS IN FARM WORKERS OCCUPATIONALLY EXPOSED TO LOW LEVELS OF PESTICIDES IN KENTUCKY** Tope AM, Bebe FN, Panemangalore M
11:30 AM	**99**	**RADIATION-INDUCED GENOMIC DNA METHYLATION CHANGES – THE BIOLOGICAL SIGNIFICANCE AND POSSIBLE MECHANISMS** Kovalchuk OV, Raiche JN, Slovack MK, Pogribny IP
11:45 AM	**10**	**BIOMARKERS OF SUSCEPTIBILITY, OXIDATIVE STRESS, AND BIOLOGICAL EFFECT AFTER ACUTE OZONE EXPOSURE IN HUMANS** Bastaki M, Chen CL, Manzanillo P, Beckman K, Tager IB, Balmes JR, Holland NT

WEDNESDAY, OCTOBER 6, 2004

1:00 PM – 4:30 PM

DNA Helicases, Mutation, Cancer and Aging Symposium

Ballroom 2

Chairpersons
Raymond J. Monnat, University of Washington
and
Lawrence A. Loeb, University of Washington

1:00 PM – 1:10 PM	Introduction
1:10 PM – 1:40 PM	Human Diseases with Early Aging Are Defective in DNA Repair *Vilhelm Bohr, National Institute on Aging*
1:40 PM – 2:10 PM	Interactions of Bypass Polymerases, p53 and Recombination in Maintaining Genome Integrity *James Cleaver, University of California, San Francisco*
2:10 PM – 2:40 PM	Mutagenesis, Genetic Instability and Clonal Evolution in Human Cell Lineages *Barry A. Finette, University of Vermont*
2:40 PM – 3:10 PM	Werner Syndrome, Polymorphisms and Cancer *Lawrence A. Loeb, University of Washington*
3:10 PM – 3:30 PM	Break
3:30 PM – 4:00 PM	Werner Syndrome Protein Function and Disease Pathogenesis *Raymond J. Monnat, University of Washington*
4:00 PM – 4:30 PM	Loss of Genomic Integrity in Early Carcinogenesis *Thea Tlsty, University of California, San Francisco*

WEDNESDAY, OCTOBER 6, 2004

1:00 PM – 4:30 PM

Mitochondria at the Crossroads of Life and Death Decisions Symposium

Ballroom 3

Chairpersons
Susan P. LeDoux
University of Alabama, Mobile
and
Bennett Van Houten
National Institute of Environmental Health Sciences

1:00 PM – 1:10 PM	Introduction
1:10 PM – 1:40 PM	Targeting DNA Repair Enzymes to the Mitochondria *Susan P. LeDoux, University of Alabama, Mobile*
1:40 PM – 2:10 PM	Consequences of Iron-Mediated Mitochondrial DNA Damange *Bennett Van Houten, National Institute of Environmental Health Sciences*
2:10 PM – 2:40 PM	Molecular Genetics of Human Mitochondrial Respiratory Chain Defects *Eric A. Shoubridge, McGill University*
2:40 PM – 3:10 PM	Mitochondrial Uptake of AP-Endonuclease A Base Excision Repair Enzyme *Sankar Mitra, University of Texas, Galveston*
3:10 PM – 3:30 PM	Break

3:30 PM – 4:00 PM	Consequences of Mutations in DNA Polymerase Gamma *William C. Copeland, National Institute of Environmental Health Sciences*
4:00 PM – 4:30 PM	p53 Mediated Apoptosis Through Direct Interactions with the Mitochondria *Ute Moll, State University of New York at Stony Brook*

WEDNESDAY, OCTOBER 6, 2004

4:30 PM – 5:30 PM

Keynote Lecture

Ballroom 3

Douglas Lauffenburger
Massachusetts Institute of Technology

Systems Biology Approach to
Cell Phenotypic Decision Processes

5:30 PM – 6:30 PM

EMS Council Meeting

Duquesne Room

EXHIBIT HOURS

Sunday	October 3, 2004	5:30 PM – 7:30 PM
Monday	October 4, 2004	5:30 PM – 7:30 PM
Tuesday	October 5, 2004	9:30 AM – 12:30 PM

EMS EXHIBITORS

ADMET Group **Booth 5**
15235 Shady Grove Road, Suite 303, Rockville, MD 20850
Tel: 301-926-4900 Fax: 301-926-8891

The ADMET Group has joined the forces of SITEK Research Laboratories, Inc., In Vitro ADMET Laboratories, LLC, SB Chemtox LLC and Tissue Transformation Technologies, Inc. (T-Cubed). The ADMET Group provides testing in the areas of: In Vitro Cytotoxicity, Genotoxicity, Biomonitoring for Genetic Alterations, Biocompatability of Medical/Dental Devices, Drug Discovery Screening, Metabolism, Pre-Manufacturing Formulations Development, HPLC/LC-MS/LC-MSMS Assays, Chemical Specification test for API, Clinical Product Specification, and Physiochemical Characterization of API. The ADMET Group also provides research products and testing services for In Vitro Drug Absorption, Bioavailability, Interspecies Metabolism and Drug-drug Interaction Studies.

Applied Imaging Corporation **Booth 10**
120 Baytech Drive, San Jose, CA 95134, United States
Tel: 408-719-6407 Fax: 408-719-6401
Web site: www.aicorp.com

Applied Imaging is the world leader in Automated Imaging and Image Analysis for the characterization of molecular markers in genetics and pathology laboratories.

BioReliance **Booth 1**
14920 Broschart Road, Rockville, MD 20850, United States
Tel: 301-610-2632 Fax: 301-610-2590
E-mail: pmulligan@bioreliance.com
Web Site: www.bioreliance.com

BioReliance, founded in 1947, as Microbiological Associates, is a Contract Service Organization (CSO) providing regulatory-compliant biological testing services to a variety of pharmaceutical, biopharmaceutical, medical device and chemical companies worldwide. BioReliance offers complete genetic toxicology services in a number of well-characterized test systems. Our expertise also includes mammalian and molecular toxicology, formulation development, stability testing and diagnostic services for laboratory animals.

Covance, Inc. **Booth 3**
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E-mail: info@covance.com
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Covance provides genetic and molecular toxicology testing services supporting the discovery, development and registration of pharmaceutical, food, medical device, agrochemical, and industry products. As the world's largest provider of genetic and molecular toxicology services, Covance offers a wide range of standard screening and regulatory studies, as well as customized programs and regulatory consultancy.

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Faxitron X-Ray manufactures and markets source systems for high resolution imaging, radiation source systems for laboratory scale sterilization studies and a mouse densitometer for determining whole body composition.

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Web Site: www.huntingdon.com

Huntingdon Life Sciences provides a comprehensive range of preclinical safety testing for the Pharmaceutical, Argochemical, Industrial Chemical and other industries. With testing facilities in the USA and UK, 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.

Loats Associates, Inc. **Booth 12**
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 has the lowest cost, highest throughput, common platform, multi-assay for automated microscopy, *in vivo* bone marrow micronucleus, *in vitro*, binucleated, COMET, METAPHASE and CAB/SCE analysis. We also specialize in automated microscope slide delivery/retrieval (up to 200 slides), and advanced 2D/3D image analysis systems for tissue, cell and pathology analysis.

MD Biotech, Inc. **Booth 4**
511 Burroughs Street, Morgantown, WV 26505, United States
Tel: 304-598-1101 Fax: 304-598-1183
E-Mail: bobkolanko@mdbioinc.com
Web Site: www.mdbiotechinc.com

MD Biotech, Inc. is a biotechnology research and development company that has been established to take advantage of many bioimaging, biosensor, automation and high-throughput technologies. These technologies include military, drug discovery, and cell-based microscopy systems. AutoComet™, an automated comet assay microscopy system, is the first in a series of high-throughput systems to be released. AutoComet™ is designed to support the time-efficient acquisition of comet assay data with sensitivity and accuracy.

MetaSystems **Booth 14**
32 Hammond Road, Belmont, MA 02478, United States
Tel: 617-489-9950 Fax: 617-489-9952
E-Mail: metasystems_us@man.com
Web Site: www.metasystems.org

MetaSystems provides genetic imaging and high-throughput automatic slide scanning systems for spot counting, Comet assay, micronuclei, metaphase search, tissue array analysis, rare cell detection, automatic karyotyping, FISH imaging, CGH, mFISH and color banding analysis as well as specialty DNA probes.

Moltox **Booth 13**
157 Insdustrial Park Drive, PO Box 1189, Boone NC 28607, United States
Tel: 828-264-9099 Fax: 828-264-0103
Email: sales@moltox.com

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

NCI, Division of Cancer Biology **Booth 8**
Division of Extramural Activities, 6130 Executive Blvd., Suite 500
Rockville, MD 20892, United States
Tel: 301- 496-8636 Fax: 301- 496-8656
E-mail: tarnovish@mail.nih.gov

The NCI Models of Human Cancer C (NCIHCC) is a collaborative program designed to derive and characterize mouse models, and to generate resources, information and innovative approaches to the application of mouse models in cancer research.

Novus Biologicals Inc. **Booth 6**
P.O. Box 802, Littleton, CO 80160, United States
Tel: 303-730-1950 Fax: 303-730-1966
E-mail: novus@novusbio.com
Web Site: www.novusbio.com

Perceptive Instruments **Booth 7**
Blis Meadow Business Centre, Steeple Bumpstead, Haverhill,
Suffok CB9 7BN, United Kingdom
Tel: 44 1 440 730 773 Fax: 44 1 440 730 630

Perceptive Instruments develops and markets products for use in genetic toxicology laboratories. These include automatic colony counting systems for the Ames test and Mouse Lymphona Assay and image analysis systems for Unscheduled DNA synthesis and the Comet Assay. We will be presenting, for the first time in the US, our Ames Study Manager program for conducting and reporting Ames test studies according to regulatory guidelines, e.g. OECD471, ICH S2A. It is also designed to be compliant with FDA 21 CFR Part 11 Final Rule on Electronic Records & Electronic Signatures.

Wiley **Booth 16**
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Meeting Room Locations

Our meeting and function rooms are located on different levels of the hotel. The following list shows the location of the rooms.

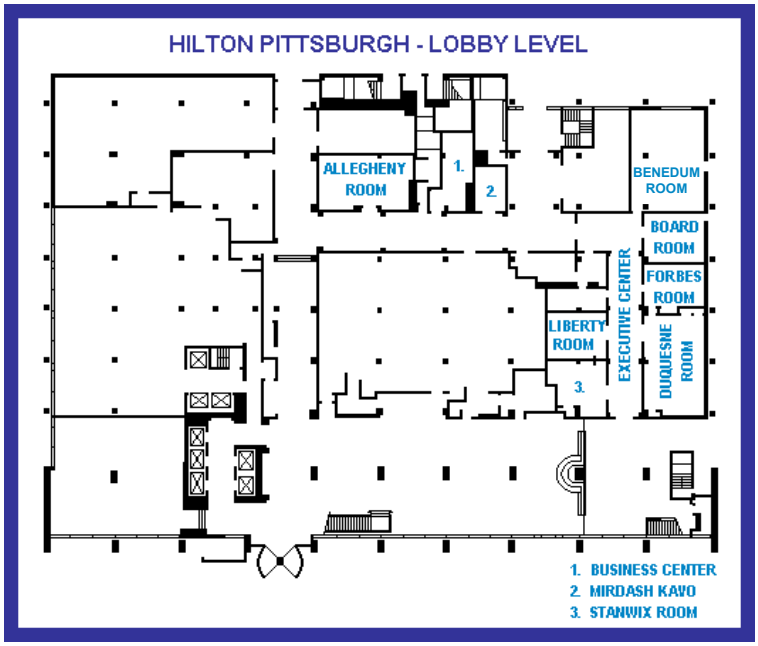
Lobby
Benedum Room
Duquesne Room
Liberty Room

Mezzanine
Ballrooms 1, 2, 3
Ballroom Foyer
Brigade Room
Kings Garden North
Kings Garden South
Le Bateau Room

ON-SITE REGISTRATION FEES

EMS Meeting	Registration	Tour &Registration
Member	$475	$540
Non-Member	$625	$690
Post-Doctoral	$325	$390
Graduate or Undergraduate Student	$225	$290
Guest		$225
Saturday Forum Only	$175	


HILTON PITTSBURGH - MEZZANINE LEVEL
GRAND BALLROOM
Stage
1
2
4
3
1.
2.
3.
4.
5.
KINGS PLAZA
KINGS TERRACE
BALLROOM FOYER
KINGS GARDEN NORTH
KINGS GARDEN SOUTH
LE BATEAU
1. CHARTIER
2. TRADERS
3. RIVERS
4. BLACK DIAMOND
5. BRIGADE


HILTON PITTSBURGH - LOBBY LEVEL
ALLEGHENY ROOM
1.
2.
BENEDUM ROOM
BOARD ROOM
FORBES ROOM
EXECUTIVE CENTER
LIBERTY ROOM
DUQUESNE ROOM
3.
1. BUSINESS CENTER
2. MIRDASH KAVO
3. STANWIX ROOM