ENVIRONMENTAL MUTAGEN SOCIETY

Thirty-Third Annual Meeting
Frontiers Beyond the Human Genome

Hilton Hotel, Anchorage, Alaska
April 27-May 2, 2002

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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2002-2005


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

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William Bodell
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Dan Benz
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Pamela Lee
Jenness Majeska
Josephine Simonetti
Liz Von Halle
Kandace Williams
Suzanne Wright

**Symposia Chairpersons**
Sidney Aaron
Cynthia Afshari
SATURDAY, APRIL 27, 2002

8:00 AM – 10:00 AM

Strategic Planning Committee Meeting
Cook Inlet Board Room

3:30 PM – 7:00 PM

Registration
Promenade

1:00 PM – 5:00 PM

EMS Council Meeting
Aspen Room

6:00 PM – 7:30 PM

Student Mixer/Reception
Chart Room

Poster Set-up and Take-down Schedule
Assigned poster number to match numbers on poster boards

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Poster presenters not attending another session during afternoon are encouraged to attend their posters. All Poster presenters should attend their posters during their 8:00 – 9:30 PM evening poster session.
SUNDAY, APRIL 28, 2002

7:30 AM – 5:00 PM

Registration
Promenade

7:00 AM – 8:30 AM

Breakfast Meetings

2003 Program Committee
Birch

Nominating Committee
Prudhoe Bay Room

Student and Young Investigator Breakfast:
Professional Survival Skills
Spruce

FUTURE MEETINGS

May 10-15, 2003
Fountainbleau Hilton
Miami, Florida

2004
To be announced

September 3-8, 2005
Hyatt Regency San Francisco
San Francisco, California
SUNDAY, APRIL 28, 2002

8:30 AM – 12:30 PM

Symposium
Alaska Room

Mitochondrial Damage in Aging and Carcinogenesis
Chairs: George Martin, University of Washington
Douglas Wallace, Emory University

Sponsored by The Ellison Foundation

8:30 AM – 9:00 AM
Gerantogens and Aging Genes
George Martin, University of Washington

9:00 AM – 9:30 AM
Mitochondrial Pathobiology in Mice and Man
Douglas Wallace, Emory University

9:30 AM – 10:00 AM
Point Mutations in Mitochondria
Giuseppe Attardi, California Institute of Technology

10:00 AM – 10:30 AM
Fidelity of Human DNA Polymerase-Gamma and Mitochondrial DNA Mutagenesis
William Copeland, National Institute of Environmental Health Sciences

10:30 AM – 11:00 AM Coffee Break Promenade

11:00 AM – 11:30 AM
Mitochondrial DNA Repair and Changes with Aging and Cancer
Vilhelm Bohr, National Institute on Aging

11:30 AM – 12:00 Noon
Age-Associated Accumulation of Mutations in Mouse Mitochondrial DNA
Magomed Khaidakov, US FDA, National Center for Toxicological Research
SUNDAY, APRIL 28, 2002

9:00 AM – 12:30 PM

Selected Platform Talks
Bristol Bay Ballroom

Exposure, Detection, and Toxicity

Chairs: Toby Rossman, New York University
Ronald Synder, Schering-Plough Research Institute

Abstract

9:00 AM 161 HOW AN ANIMAL MODEL FOR ARSENIC CARCINOGENESIS WAS DERIVED FROM GENETIC TOXICOLOGY STUDIES
Rossman TG, Uddin AN, Burns FJ, Bosland MC

9:30 AM 146 DEVELOPMENT OF AN ALLELE-
SPECIFIC AMPLIFICATION FOR MOUSE P53 CC TO TT MUTATION, A POTENTIAL BIOMARKER FOR ESTIMATING SKIN CANCER RISK
Parsons BL, Couch LH, Miller BJ, Howard PC

9:45 AM 130 MEASURING THE MITOTIC INDEX OF HUMAN LYMPHOCYTE CULTURES BY FLOW CYTOMETRY USING THE HISTONE 3-P mAb BIOMARKER
Muehlbauer PA, Schuler MJ

10:00 AM 131 FLOW CYTOMETRIC ASSESSMENT OF CELL CYCLE, MITOTIC INDEX AND ANEUPLOIDY IN HUMAN LYMPHOCYTE CULTURES USING THE HISTONE 3-P mAb BIOMARKER
Muehlbauer PA, Schuler MJ
SUNDAY, APRIL 28, 2002

Abstract

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10:30 – 11:00AM  Coffee Break  Promenade

11:00 AM  127  Study OF GENOTOXICITY ASSOCIATED WITH CYP450 ISOZYME INDUCTION DUE TO LIVER INFECTION
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11:15 AM  17  DNAADDUCT IN NASAL MUCOSA: A NEW MARKER IN HUMAN STUDIES ON AIR-BORNE CARCINOGENS
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11:30 AM  35  DETECTION OF RANDOM MUTATIONS IN SITU
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11:45 AM  194  FRAMESHIFT MUTATION DETECTED IN SITU IN TUMORS
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12:00 Noon  The Fanconi Anaemia Protein FANCD2 Associates with Damaged DNA In Vivo
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SUNDAY, APRIL 28, 2002

1:30 PM – 5:30 PM

Exhibits Open and Posters
Exposure, Detection, and Toxicity
Aleutian Room

1:30 PM – 5:30 PM

Symposium
Alaska Room

Epithelial Genetic Instability: News from Where it Matters
   Chairs: Richard J. Albertini, University of Vermont
          Raymond Monnat, University of Washington

1:30 PM – 2:00 PM
Introduction
Richard J. Albertini, University of Vermont

2:00 PM– 2:30 PM
Epithelial Mutagenesis in Human Kidney: What’s the ‘Take Home’?
Raymond Monnat, University of Washington

2:30 PM – 3:00 PM
Phylogeny of Cancer
Darryl Shibata, University of Southern California

3:00 PM – 3:30 PM
Chromosomal Instability and Telomere Shortening in Early Gastrointestinal Tumors
Peter Rabinovitch, University of Washington

3:30 PM – 4:00 PM     Coffee Break     Aleutian Room

4:00 PM – 4:30 PM
Genomic Instability Secondary to Infection
Thomas A. Albrecht, UTMB Galveston
SUNDAY, APRIL 28, 2002

4:30 PM – 5:00 PM
**Human Mutation Load Assay (HMLA) Using the p53 Gene of Single Cells from Paraffin-Embedded Human Tissues**
Steve S. Sommer, City of Hope

5:00 PM – 5:30PM
**DNA Polymerase I, an Enzyme that Can Preferentially Replicate Depurinated DNA**
Ulrich Hübscher, University of Zürich

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7:00 PM – 8:00 PM

**Keynote Lecture**
Alaska Room

**Mutations and Micronutrients**

*Bruce Ames*
*Children's Hospital Oakland Research Institute*
Exhibits Open
Posters: Exposure, Detection, and Toxicity
(Posters Attended)
Aleutian Room

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MONDAY, APRIL 29, 2002

7:30 AM – 5:00 PM

Registration
Promenade

7:00 AM – 8:30 AM

Breakfast Meetings

Education and
Student Membership Committee
Aspen

Finance Committee
Prince William Board Room

Future Meetings Committee
Prudhoe Bay Room

Public Relations
and Communications Committee
Cook Inlet Board Room

Student Breakfast Meeting:
Professional Survival Skills
Chart Room
MONDAY, APRIL 29, 2002

8:30 AM – 12:30 PM

Symposium
Alaska Room

Genetic Diversity and Disease
Chairs: JunJian Chen, US FDA,
National Center for Toxicological Research
Martyn Smith, University of California–Berkeley

8:30 AM – 9:00 AM
Introduction
Fred F. Kadlubar, US FDA, National Center for Toxicological Research

9:00 AM – 9:30 AM
SNPing in the Human Genome
Debbie Nickerson, University of Washington

9:30 AM – 10:00 AM
Genetic Architecture and Molecular Mutagenesis of the Human Mitochondrial Genome
Junjian Chen, US FDA, National Center for Toxicological Research

10:00 AM – 10:30 AM
Variations in DNA Repair are Extensive and Relevant to Individual Cancer Risks
Harvey Mohrenweiser, Lawrence Livermore National Laboratory

10:30 AM – 11:00 AM  Coffee Break  Promenade

11:00 AM – 11:30 AM
Gene Environmental Interactions in Breast and Colorectal Cancer
David Hunter, Harvard University

11:30 AM – 12:00 Noon
Gene Environmental Interactions in Leukemia
Martyn Smith, University of California–Berkeley
MONDAY, APRIL 29, 2002

8:30 AM – 12:00 PM

Selected Platform Talks
Bristol Bay Ballroom

DNA Damage and Repair

Chairs: Bea Singer, University of California–Berkeley
William Bodell, University of California–San Francisco

8:30 AM  Introduction  Bea Singer

Abstract

9:00 AM  97  THE FIDELITY OF Y FAMILY DNA POLYMERASES: FUNCTIONAL AND MECHANISTIC IMPLICATIONS
Kunkel TA

9:15 AM  88  THE PARTICIPATION OF EUKARYOTIC POLYNUCLEOTIDE KINASES IN DNA STRAND BREAKS REPAIR

9:30 AM  181  HUMAN APURINIC/APYRIMIDINIC ENZYMES FOR THE ASSESSMENT OF BIOLOGICAL FUNCTIONS
Shen JC, Loeb LA

9:45 AM  149  IDENTIFICATION OF A NOVEL PROTEIN - PROTEIN INTERACTION BETWEEN TWO MULTI-FUNCTIONAL HUMAN DNA REPAIR PROTEINS, XERODERMA PIGMENTOSUM-G AND POLY(ADP-RIBOSE) POLYMERASE
Pluth JM, Davalos AR, Campisi J, Cooper PK
MONDAY, APRIL 29, 2002

Abstract

10:00 AM  9  AP ENDONUCLEASE, PARP AND XRCC1 PROTEINS INTERACT WITH A TRUNCATED DNA POLYMERASE β, A DNA REPAIR PROTEIN
Banerjee S, Bhattacharyya N

10:15 AM  117  ANALYSIS OF GENETIC CHANGES INVOLVED IN CARCINOGEN-INDUCED MALIGNANT TRANSFORMATION OF A HUMAN FIBROBLAST CELL STRAIN IN CULTURE
McCormick JJ, Battle MA, O’Reilly S, Boley SE, Zhang J, Maher VM

10:30 AM – 11:00 AM  Coffee Break, Promenade

11:00 AM  100  CHARACTERIZATION OF CANCER-ASSOCIATED DNA POLYMERASE BETA MUTANTS
Lang T, Starcevic D, Lamos-Gross A, Glazer PM, Sweasy JB

11:15 AM  156  IDENTIFICATION OF A SUBSET OF TYPE II 1-COMPOUNDS AS DINUCLEOTIDES CONTAINING 8,5'-CYCLO-2'-DEOXY-ADENOSINE
Randerath K, Zhou GD, Somers RL, Robbins JH, Brooks PJ

11:30 AM  71  HOT SPOTS FOR CHROMOSOMAL INSTABILITY IN HUMAN CELLS

Summary  Bill Bodell
MONDAY, APRIL 29, 2002

12:15 PM – 1:30 PM

Business Meeting and Student Achievement Awards
Spruce
Boxed Lunches Provided

1:30 PM – 5:30 PM

Exhibits Open
Posters: DNA Damage and Repair
Aleutian Room
MONDAY, APRIL 29, 2002

1:30 PM – 5:30 PM

Symposium
Alaska Room

Double-Stranded Breaks: The Ultimate End Game
Chairs: Mike Resnick, National Institute of Environmental Health Sciences
Larry Thompson, Lawrence Livermore National Laboratory

1:30 PM – 2:00 PM
Double-Strand Breaks: The Ends Justify the Means
Mike Resnick, National Institute of Environmental Health Sciences

2:00 PM – 2:30 PM
Homologous Recombination and Genomic Integrity in Mammalian Cells
Maria Jasin, Sloan-Kettering

2:30 PM – 3:00 PM
The Role of RAD51 Paralogs in Homologous Recombinational Repair
Larry Thompson, Lawrence Livermore National Laboratory

3:00 PM – 3:30 PM
Arrested Replication as a Source for DNA Strand Breaks
Jim Cleaver, University of California–San Francisco

3:30 PM – 4:00 PM Coffee Break Aleutian Room

4:00 PM – 4:30 PM
Functions of RAD52 Group Proteins in Recombination and DNA Repair
Patrick Sung, University of San Antonio

4:30 PM – 5:00 PM
Dynamic Interactions Between RAD52 Group Proteins in Living Cells
Roland Kanaar, Erasmus University, The Netherlands

5:00 PM – 5:30 PM
Protein Interactions in Recombinational Repair in Human Cells
David Schild, Lawrence Berkeley National Laboratory
MONDAY, APRIL 29, 2002

7:00 PM – 8:00 PM

Keynote Lecture
Alaska Room

Genomic Views of Human History

Mary-Claire King
University of Washington
BIORELIANCE AD
Exhibits
Posters: DNA Damage and Repair
(Posters Attended)
Aleutian Room

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POLYMORPHISMS IN THE DNA REPAIR GENE XRCC1 AND SUSCEPTIBILITY TO ALCOHOLIC LIVER CIRRHOSIS IN OLDER SOUTHEASTERN BRAZILIANS
Abdel-Rahman SZ, Rossit AR, Cabral IR, Hackel C, da Silva RMA, Conforti-Froes NDT

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GLUTATHIONE S-TRANSFERASE POLYMORPHISMS IN GASTRIC CANCER IN TWO COLOMBIAN POPULATIONS
Acosta CP, Rodriguez XB, Torres MM, Salej J, Groot de Restrepo H

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SCREENING A MUTANT TAA LIBRARY FOR ENZYMES WITH THE ABILITY TO INCORPORATE FLUORESCENTLY LABELED NUCLEOTIDES
Anderson JP, Glick E, Angerer B, Rigler R, Loeb LA

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DNA MISMATCH REPAIR PROTEIN INTERACTIONS WITHIN HUMAN NUCLEAR EXTRACTS
Bembenek NI, Williams KJ

| 5      | 22       |

MITOCHONDRIAL DNA MUTATIONS IN PROSTATE CANCER AND ITS PRECURSOR LESIONS: A LASER CAPTURE MICRODISSECTION BASED APPROACH
Chen JZ, Mukunyadzi P, Gokden N, Greene G, Lang NP, Kadlubar FF

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ROLE OF TOPOISOMERASES IN THE REPAIR OF UV-INDUCED DNA DAMAGE IN SACCHAROMYCES CEREVISIAE
Cline SD, Hanawalt PC
MONDAY, APRIL 29, 2002

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| 15     | 84       | ARREST OF RNA POLYMERASES AT PROXIMALLY LOCATED, SITE-SPECIFIC DNA LESIONS  
Kalogeraki VS, Hanawalt PC |
| 16     | 85       | A NOVEL PROTEIN FROM *E. COLI* THAT PROTECTS FROM THE DNA DAMAGING AGENT N-METHYL-N’-NITRO-NITROSOGUANIDINE  
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| 17     | 98       | PROTEIN-PROTEIN INTERACTIONS OF THE HUMAN NER FACTORS HHR23A AND HHR23B  
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| 18     | 103      | CONSEQUENCES OF REPLICATION ARREST IN MAMMALIAN CELLS  
Limoli CL |
| 19     | 105      | ROLE OF XRCC2 IN HOMOLOGOUS RECOMBINATIONAL REPAIR  
Liu N |
| 20     | 126      | EFFECT OF HYDROXYUREA AND CATALASE ON CHROMOSOMAL DAMAGE AND G2 ARREST IN FANCONI ANEMIA LYMPHOBLASTS FROM GROUPS FA-A, FA-B, FA-C, FA-D1 AND FA-E  
Molina B, Ortiz R, Gomez L, Legarreta L, Velasco ML, Carnevale A, Frias S |
| 21     | 129      | DNA-PK CATALYTIC SUBUNIT IS AN ACTIVATING FACTOR OF KU-ASSOCIATED EXONUCLEASE ACTIVITY  
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| 22     | 133      | APPLICATION OF DNA MICROARRAY TO ANALYSIS OF EXPRESSION PROFILE AFTER UVC IRRADIATION TO HUMAN MONONUCLEAR CELLS IN BLOOD  
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        | Ohsawa K, Sugiura M, Nakagawa S, Sasaki YF, Kimura M |
| 24     | GENOTOXICITY PROFILES OF COMMON ALKYL HALIDES AND ALKYL ESTERS  
        | Osowski JJ, Ackerman JI, Reagan JK, Hlavacova A, Masucci ME, Ku WW, Aubrecht J |
| 25     | FUNCTIONAL ANALYSIS OF PUTATIVE REGULATORY ELEMENTS IN THE REGULATION OF CHINESE HAMSTER APURINIC/APYRIMIDINIC ENDONUCLEASE GENE (CHAPE1)  
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| 26     | THE ROLE OF MMR IN THE RESPONSE OF HUMAN CELLS TO PHIP TREATMENT  
        | Rebetez M, Duc R, Morgenthaler-Leong PM |
| 27     | PREDICTING CANCER RISK AND TREATMENT TOXICITY BY MICROARRAY ANALYSIS OF TRANSCRIPTIONAL RESPONSES TO DNA DAMAGE  
        | Rieger KR, Tusher VG, Hong W, Tang J, Tibshirani R, Chu G |
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| 30     | USING XPD GENE KNOCKOUT TO CONSTRUCT CHO CELLS THAT MIMIC CELLS FROM HUMAN UV-SENSITIVE DISORDERS  
        | Salazar EP, Tebbs RS, Thompson LH |
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|        | 1,3-BUTADIENE AND ITS METABOLITES-INDUCED DNA DAMAGE IN HUMAN AND MOUSE CELLS  
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|        | Silber J, Bobola MS, Eraker D, Ojemann G, Berger M |
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<td>Tebbs RS, Estrella CE, Cleaver JE, Thompson LH</td>
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<td>Veigl ML, Boothman DA, Strickfaden S, Polinkovsky A, Sedwick WD</td>
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<td>Wang L, Roy SK, Eastmond DA</td>
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<td>WHY DIDN’T THE HUMAN INTERVENTION STUDIES TELL US THAT DIETARY FIBRE PROTECTS AGAINST CANCER? Ferguson L</td>
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<td>FURTHER CHARACTERIZATION OF AN EPITHELIAL CELL LINE FROM MUTATM MOUSE White PA, Douglas GR, Gingerich J, Soper L, Parfett C, Yu T, Seligy V</td>
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<td>NATURAL DNA POLYMERASE λ, AN ENZYME THAT CAN PREFERENTIALLY REPLICATE DEPURINATED DNA Ramadan K, Shevelev, Maga G, Hübscher U</td>
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<td>DNA DAMAGE REPAIR-MEDIATED TRANSLOCATION IN KU/P53-DEFICIENT PRO-B CELL LYMPHOMAS Difilippantonio MJ, Petersen S, Chen HT, Nussenzweig A, Ried T</td>
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<td>NUCLEOSOME POSITIONING AND REGULATORY PROTEIN BINDING MODULATE NUCLEOTIDE EXCISION REPAIR ON THE TRANSCRIBED STRAND OF THE MET17 PROMOTOR OF SACCHAROMYCES CEREVISIAE Powell N, Ferreiro J, Karabetsou N, Mellor J, Waters R</td>
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covance AD
TUESDAY, APRIL 30, 2002

7:00 AM – 8:30 AM

Breakfast Meetings

DNA Repair Group
Katmai Room

Exhibitors’ Breakfast
Prince William Board Room

Molecular Epidemiology Group
Dillingham Room

Risk Assessment Group
Cook Inlet Board Room

8:30 AM – 6:00 PM

High-Speed Catamaran Glacier Tour

7:00 PM – 10:00 PM

Banquet Dinner: Hilton Hotel
Alaska Ballroom

EMS and Hollaender Awards

Speaker
Carl Hild: The Alaskan Wilderness
WEDNESDAY, MAY 1, 2002

7:30 AM – 5:00 PM

Registration
Promenade

7:00 AM – 8:30 AM

Breakfast Meetings

Awards and Honors Committee
Prudhoe Bay Room

Germ-Cell/Stem Cells/
Human Genetics Group
Birch

Membership and Professional
Development Committee
Willow

Organization Committee
Cook Inlet Board Room

Student New Investigator Committee
Fireweed Room
WEDNESDAY, MAY 1, 2002

8:30 AM – 12:30 PM

Symposium
Alaska Room

Complex DNA Lesions: Repair and Mutagenesis
Chairs: Peter Glazer, Yale University
Robb Moses, Oregon Health Sciences University

8:30 AM – 9:00 AM
Mutagenesis and Recombination Induced by DNA Triple Helix Formation
Peter Glazer, Yale University

9:00 AM – 9:30 AM
Unusual DNA Conformations are Mutagenic: Implications for Hereditary Neurological Diseases and Polycystic Kidney Disease
Robert Wells, Texas A&M University

9:30 AM – 10:00 AM
CAG Expansion in Human Disease is Caused by Stabilization of Hairpins with a Mismatch Repair Complex During Gap Repair
Cynthia McMurray, Mayo Clinic

10:00 AM – 10:30 AM
Fanconi Anemia Gene Function in Repair of Interstrand Crosslinks
Robb Moses, Oregon Health and Science University

10:30 AM – 11:00 AM Coffee Break Promenade

11:00 AM – 11:30 AM
Recognition and Processing of Interstrand Cross-Links in Mammalian Cells
Randy Legerski, MD Anderson

11:30 AM – 12:00 Noon
Break-and-Repair Pathways of Immunoglobulin Gene Switch Recombination and Somatic Hypermutation
Nancy Maizels, University of Washington

12:00 Noon – 12:30 PM
ADP-Ribosylation of DNA by Pierisin, an Apoptogenic Peptide from Cabbage Butterfly
Takashi Sugimura, National Cancer Institute, Japan
**WEDNESDAY, MAY 1, 2002**

9:00 AM – 12:30 PM

**Selected Platform Talks**
Bristol Bay Ballroom

**Health Effects and Epidemiology**
*Chairs: Curt Harris, National Institutes of Health*  
*Miriam Poirier, National Institutes of Health*

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<td>9:00 AM</td>
<td>179</td>
<td>EFFECTS OF THE ANTI-MUTAGENS VANILLIN AND CINNA-MALDEHYDE ON SPONTANEOUS MUTATION IN E. COLI LACI STRAINS AND ON GLOBAL GENE EXPRESSION IN SALMONELLA TA104 AND HUMAN HEPG2 CELLS</td>
<td>Shaughnessy DT, DeMarini DM</td>
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<td>FIRST TRIMESTER OF PREGNANCY EXPOSURE TO TOBACCO SMOKE AND RISK OF CHILDHOOD CNS TUMORS: A META-ANALYSIS</td>
<td>Gontijo AMMC, Einarson TR</td>
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<td>9:30 AM</td>
<td>47</td>
<td>MATERNAL EXPOSURES TO GLYCOL ETHERS: CLINICAL AND CYTOGENETIC FINDINGS</td>
<td>El-Zein RA, Abdel-Rahman SZ, Morris DL, Leg-gator MS</td>
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<td>9:45 AM</td>
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<td>EFFECT OF INDIVIDUAL GLUTATHIONE S-TRANSFERASE GSTM1, GSTT1 AND GSTP1 POLYMORPHISMS ON THE GENOTOXICITY OF HYDROQUINONE</td>
<td>Gaspar J, Silva MC, Faber A, Rueff J</td>
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Abstract

10:00 AM 32 GENETIC POLYMORPHISM OF GLUTATHIONE S-TRANSFERASE (GST) A1 THAT PREDICTS LOW HEPATIC EXPRESSION OF GSTA1 IS ASSOCIATED WITH INCREASED SURVIVAL OF BREAST CANCER FOLLOWING CYCLOPHOSPHAMIDE CHEMOTHERAPY

10:15 AM DEVELOPMENTAL PATTERN OF O6-METHYLGUANINE-DNA METHYLTRANSFERASE ACTIVITY IN HUMAN BRAIN AND IMPLICATIONS FOR NEUROCARCINOGENESIS
Silber J, Bobola MS, Blank A

10:30 AM – 11:00 AM Coffee Break, Promenade

11:00 AM 21 MUTANT FREQUENCIES AND SPECTRA OF MUTATIONS IN THE LIVER LACI AND CII GENES OF LAMBDA/LACI TRANSGENIC MICE TREATED AS NEONATES WITH 4-AMINOBIPHENYL
Chen T, Mittelstaedt RA, Heflich RH, Moore MM, Parsons BL

11:15 AM 28 RESIDUAL MUTAGENICITY OF THE ALASKAN OIL SPILL ORGANICS
Claxton LD, Warren S, Kremer F, Short JW

11:30 AM 218 TOXICOGENOMICS AND THE CHEMICAL EFFECTS IN BIOLOGICAL SYSTEMS (CEBS) KNOWLEDGE BASE
Waters MD, Tennant RW and the staff of the NTC
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<td>11:45 AM</td>
<td><strong>78</strong> SPONTANEOUS TANDEM-BASE MUTATIONS SHOW TISSUE SPECIFIC FREQUENCIES, ACCUMULATE WITH AGE AND OCCUR PREFERENTIALLY AS G:C TO T:A AND GG TO TT MUTATIONS AT SPECIFIC SITES</td>
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<td>Hill K, Wang J, Halangoda A, Sommer S</td>
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<td>12:00 Noon</td>
<td><strong>7</strong> PERSISTENT BIOLOGICAL EFFECTS FROM EXPOSURE TO ENVIRONMENTAL MUTAGENS</td>
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<td>12:15 PM</td>
<td><strong>25</strong> PREDICTING TREATMENT TOXICITY IN CANCER PATIENTS FROM MICRO-ARRAYS</td>
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<td>Chu G, Tusher VG, Rieger K, Hong WJ, Tang J, Tibshirani R</td>
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1:30 PM – 5:30 PM

**Exhibits**

**Posters:** Health Effects and Epidemiology

Aleutian Room
WEDNESDAY, MAY 1, 2002

1:30 PM – 5:30 PM

Symposium
Alaska Room

When Polymerases are Arrested, Who is at Fault, and What are the Options?
Chairs: Joann Sweasy, Yale University
Phil Hanawalt, Stanford University

1:30 PM – 2:00 PM
Introduction - Phil Hanawalt, Stanford University

2:00 PM – 2:30 PM
Amino Acid Residues Distant from the Active Site Govern Fidelity in DNA Polymerase Beta
Joann Sweasy, Yale University

2:30 PM – 3:00 PM
Crystal Structure of a Lesion Bypass Polymerase: Implications for Fidelity and Processivity
Janice Pata, Yale University

3:00 PM – 3:30 PM
Why Do Polymerases Pause and Misincorporate at 0'-alkyl G: Kinetic Analysis with Replicative Polymerases?
Fred Guengerich, Vanderbilt University

3:30 PM – 4:00 PM  Coffee Break  Aleutian Room

4:00 PM – 4:30 PM
Endogenous DNA Damage and Mutagenesis: Role of Polymerase and the 3' to 5' Exonuclease in Mutations; Avoidance and DNA Synthesis
Kristin Eckert, Pennsylvania State University
WEDNESDAY, MAY 1, 2002

4:30 PM – 5:00 PM
**Human DNA Polymerase ETA (XPV): Interactions with Damaged DNA and Other Protein Factors**
Fumio Hanaoka, Osaka University, Japan

5:00 PM – 5:30 PM
**RNA Polymerase Behavior at Lesion Sites in DNA: Implications for Transcription Coupled DNA Repair**
Silvia Tornaletti, Stanford University
WEDNESDAY, MAY 1, 2002

7:00 PM – 8:00 PM

Keynote Lecture
Alaska Room

Viral Quasispecies and Error Threshold

Manfred Eigen
Max-Planck Institut
SRI AD
### Posters

**Health Effects and Epidemiology**

(Posters Attended)

Aleutian Room

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<td><strong>SOMATIC MUTATION FREQUENCIES IN TRANSGENIC BIG BLUE MICE EXPOSED TO CHORNOBYL RADIATION</strong></td>
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<td><strong>MUTAGENICITY MONITORING OF URBAN AIR PARTICLES PM10 IN THE CZECH REPUBLIC</strong></td>
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<td>Cerna M, Pastorkova A, Smid J, Binkova B</td>
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<td><strong>MITOCHONDRIAL DAMAGE IN UMBILICAL CORD AND CORD BLOOD LYMPHOCYTES OF INFANTS EXPOSED IN UTERO TO ZIDOVUDINE (AZT) AND LAMIVUDINE (3TC)</strong></td>
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THURSDAY, MAY 2, 2002

7:30 AM – Noon

Registration
Promenade

7:00 AM – 8:30 AM

Breakfast Meetings

2003 Program Committee (Second Meeting)
Birch

EMS Executive Board
Cook Inlet Board Room

Hollaender Committee
Prince William Board Room

Technology Group
Prudhoe Bay Room

Transgenic and In Vivo Mutagenesis
Interest Group
Chart Room
THURSDAY, MAY 2, 2002

8:30 AM – 12:30 PM

Symposium
Alaska Room

New Perspectives from Functional Genomics and Proteomics

Chairs: Leona Samson, Massachusetts Institute of Technology
Cynthia Afshari, National Institute of Environmental Health Sciences

8:30 AM – 9:00 AM
Functional Genomics and Alkylation Resistance
Leona Samson, Massachusetts Institute of Technology

9:00 AM – 9:30 AM
Probing the Mechanism of Action of Non-Mutagenic Carcinogens with cDNA Microarrays
Cynthia Afshari, National Institute of Environmental Health Sciences

9:30 AM – 10:00 AM
Transcriptional Responses to Low-Dose Radiation Exposure—A Model for Genotoxic Stress Responses at Sub-Toxic Doses
Al Fornace, National Institutes of Health

10:00 AM – 10:30 AM
Proteomics without Polyacrylamide: Qualitative and Quantitative Analysis
David Goodlett, Institute for Systems Biology

10:30 AM – 11:00 AM  Coffee Break  Promenade

11:00 AM – 11:30 AM
Loss of Genomic Integrity in Pre-Neoplastic Cells
Thea Tlsty, University of California—San Francisco

11:30 AM – 12:00 Noon
Recombining: Applications for Functional Genomics in the Post-genome Era
Neil Copeland, National Cancer Institute

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THURSDAY, MAY 2, 2002

9:00 AM – 12:30 PM

Selected Platform Talks
Bristol Bay Ballroom

Mechanisms of Mutagenesis
Chairs: Tom Kunkel and Roel Schaaper
National Institute of Environmental Health Sciences

9:00 AM  Introduction  Roel Schaaper

Abstract

9:30 AM  53  BIOCHEMICAL CHARACTERIZATION OF MURINE DNA POLYMERASE IOTA AND ITS COMPARISON TO HUMAN POLYMERASE IOTA
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9:45 AM  104  HUMAN DNA POLYMERASE EPSILON LOCALIZES WITH DNA REPLICATION AND PCNA IN LATE, BUT NOT EARLY S PHASE
Linn S, Fuss J

10:00 AM  74  HUMAN DNA POLYMERASE BETA CATALYZES EXPANSION OF CTG/CAG TRI-NUCLEOTIDE REPEATS AT STRAND BREAKS
Hartenstine MJ, Goodman MF, Petruska J

10:15 AM  64  HIGH THROUGHPUT IN VITRO PRODUCTION AND SCREENING OF POLYMERASES
Glick EG, Anderson JPA, Loeb LA

10:30 AM – 11:00 AM  Coffee Break  Promenade
THURSDAY, MAY 2, 2002

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Kanuri M, Minko IG, Nechev LV, Harris TM, Harris CM, Lloyd RS

11:15 AM 110  EFFECT OF LOSS OF TRANSLESION SYNTHESIS POLYMERASES OR A PROTEIN INVOLVED IN DAMAGE AVOIDANCE ON THE FREQUENCY OF MUTATIONS INDUCED IN HUMAN CELLS BY CARCINOGENS
Maher VM, Li Z, Wang XD, McNally K, McCormick JJ, Lawrence CW, Xiao W

11:30 AM 137  INvolvEMENT OF DNA POL IV (DINB) OF ESCHERICHIA COLI IN CHEMICALLY-INDUCED MUTAGENESIS
Nohmi T, Kim SR, Matsui K, Gruz P, Shimizu M, Yamada M

11:45 AM 207  IDENTIFICATION OF IN VIVO MUTANTS FROM MOUSE SPLENIC LYMPHOCYTES BY SINGLE BURST ANALYSIS OF THE FORWARD MUTATIONAL ASSAY FOR GENE A OF φX174
Valentine CR, Raney JL, Shaddock JG, Dobrovolsky VN

12:00 Noon 186  QUANTITATIVE CHARACTERIZATION OF ABERRANT SPLICING IN HUMANS
Skandalis A, Uribe E, Ninniss P

Summary  Tom Kunkel
THURSDAY, MAY 2, 2002

1:30 PM – 5:30 PM

Posters on Mechanisms of Mutagenesis
Aleutian Room

1:30 PM – 5:30 PM

Symposium
Alaska Room

Nanotechnology and Single-Molecules
Chairs: John Essigmann, Massachusetts Institute of Technology
Sidney Aaron, Pharmacia

1:30 PM – 2:00 PM
Introduction
John Essigmann, Massachusetts Institute of Technology

2:00 PM – 2:30 PM
Biomolecular Diagnostics of Nucleic Acid in Single Cells In Situ
Jim Tucker, Lawrence Livermore National Laboratory

2:30 PM – 3:00 PM
Chemosensors: Nano-Receptors in the Service of Analytical Chemistry
Anthony Czarnik, Sensors for Medicine & Science, Inc.

3:00 PM – 3:30 PM
Canary B-Cell Sensor for Rapid Identification of Pathogens
Eric Schwoebel, Lincoln Laboratories, Massachusetts Institute of Technology

3:30 PM – 4:00 PM
Coffee Break  Promenade

4:00 PM – 4:30 PM
Single-Molecule DNA Sequencing
Rudolf Rigler, Karolinska Institute
THURSDAY, MAY 2, 2002

4:30 PM – 6:00 PM

EMS Council Meeting
Aspen

7:00 PM – 8:00 PM

Keynote Lecture
Alaska Room

Genomics, Proteomics, and Systems Biology

Leroy Hood
Institute for Systems Biology
THURSDAY, MAY 2, 2002

8:00 PM – 9:30 PM

**Posters**

**Mechanisms of Mutagenesis**

(Posters Attended)

Aleutian Room

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Glaab WE, Mitchell LS, Miller JE, Vlasakova K, Skopek TR |

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