

**DOE Low Dose Radiation Research Program  
Investigators' Workshop IX  
Renaissance M St, Washington, DC  
New Hampshire Ballroom  
April 12-14, 2010**

**Sunday Evening, April 11**

6:30 – 8:30 pm      **Registration, Poster Setup (City Center Ballroom)**  
**Mixer (Hors d'ouerves)**

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**Monday, April 12**

7:30 am      **Registration, Poster Setup, Continental Breakfast**

8:30 am      Introductions and Welcome – (New Hampshire Ballroom)  
*Chair: NF Metting*

**Anna Palmisano**, Associate Director, Office of Science, Director for Biological  
and Environmental Research

**Sharlene Weatherwax**, Division Director, Biological Systems Science Division

**Noelle Metting**, Manager, Low Dose Radiation Research Program

**PLENARY SESSION I—EPIGENETIC MECHANISMS AND RADIATION EXPOSURE**

*Chair: David Boothman*, University of Texas, Southwestern

9:00 am      **Olga Kovalchuk**, University of Lethbridge  
*Low Dose Radiation-Induced Epigenetic Changes in an Animal Model*

9:15am      **Autumn Bernal**, Duke University  
*Imprinted Genes and Transposons: Epigenomic Targets for Low Dose Radiation  
Effects*

9:30 am      **Terumi Kohwi-Shigematsu**, LBNL  
*Genome-wide Changes in Epigenomics Induced by X-irradiation*

9:45 am      **Mary Helen Barcellos-Hoff**, New York University Langone Medical Center  
*Integrative Radiation Biology*

**10:00 am      Coffee break**

**PLENARY SESSION II—GENETIC SUSCEPTIBILITY AND MODELING**

*Chair: David Rocke*, University of California--Davis

- 10:30 am **Allan Balmain**, UC San Francisco  
*Mouse genetic approaches to identification of radiation-induced tumor susceptibility genes*
- 10:45 am **Brynn Voy**, Oak Ridge National Laboratory  
*Molecular Pathways That Mediate Genetic Susceptibility to Low Dose Ionizing Radiation*
- 11:00 am **Philip Hahnfeldt**, Tufts University  
*Implications of Population Heterogeneity for Low-Dose Risk*
- 11:15 am **Guest Speaker: Alice Sigurdson**, NCI/Radiation Epidemiology Branch  
*Radiation-related human cancer susceptibility: Progress and puzzles in the genome-wide studies era*
- 12 noon– 1:30 pm LUNCH (on your own)**

**PLENARY SESSION III—LAWRENCE BERKELEY NATIONAL LABORATORY UPDATE**

*Chair: Joe Gray*

*1:30 -3:00 pm*

LBNL Speakers TBD

- 3:00 pm Coffee break**
- 3:30 pm MONDAY BREAKOUT DISCUSSIONS: Radiation Effects on Cell-Cell Communication**
- Discussion Group A (Potomac Room)**  
*Co-Chairs: Joel Bedford* (Colorado State University) and **Ellie Blakely** (LBNL)  
P.I.s assigned; other Workshop participants may choose either group  
Discussions and summarization of main points
- Discussion Group B (Mt. Vernon Room)**  
*Co-Chairs: Ruth Globus* (NASA-Ames) and **Michael Weil** (Colorado State University)  
P.I.s assigned; other Workshop participants may choose either group  
Discussions and summarization of main points
- 5:00 – 7 pm Poster Session – City Center Ballroom (Hors d'ouerves)**

**Tuesday, April 13**

7:30 am      **Registration, Poster Setup, Continental Breakfast**

**SISTER LOW DOSE RESEARCH PROGRAMS**

*Chair: Noelle Metting, U.S. Department of Energy*

8:30 am      **European Research: MELODI/ DoReMi**  
                 **Guest Speaker: Sisko Salomaa, STUK, Finland**

8:45 am      **Low Dose Research in Japan**  
                 **Guest Speaker: Kazuo Sakai, National Institute of Radiological Sciences/Chiba**

9:00 am      **NASA Space Radiation Program**  
                 **Guest Speaker: Samuel Krenek, NASA-Johnson Space Center**

**PLENARY SESSION IV—RADIO-ADAPTIVE RESPONSES AND MODELING**

*Chair: Peter O'Neill, Oxford University*

9:15 am      **Douglas Boreham, McMaster University**  
                 *The Mechanism of Low Dose Radiation Risk Associated With Diagnostic X-Rays and Gamma-Rays*

9:30 am      **Zhi-Min Yuan, University of Texas Health Science Center San Antonio**  
                 *The c-Abl Signaling Network in the Radio-Adaptive Response*

9:45 am      **Pamela Sykes, Flinders University**  
                 *Development of assays for Identification of mechanisms responsible for low dose radioprotective responses in vivo*

10:00 am     **Francis Cucinotta**  
                 *Mathematical Models of Signal Transduction in Adaptive Responses*

**10:15 am      Coffee break**

**PLENARY SESSION V—RADIATION BIOLOGY—LEVELS OF COMPLEXITY**

*Chair: Janet Baulch, University of Maryland*

10:45 am     **Michael Cornforth, University of Texas Medical Branch**  
                 *Heritable Genetic Changes in Cells Recovered from Irradiated 3D Tissue Constructs*

11:00 am     **Munira Kadhim, Oxford Brookes University**  
                 *Mechanisms Underlying Cellular Responses to Low Dose/Low LET Ionizing Radiation in Primary Hemopoietic Cells*

11:15 am     **Norman Kleiman, Columbia University**

*Radiation cataract as a model for low-dose ionizing radiation exposure and genetic determinants of radiosensitivity*

- 11:30 am **Charles Limoli**, University of California—Irvine  
*Neurodegeneration in Response to Low-Dose Photon Irradiation: Strategies for Preserving Cognition*
- 11:45 am **William Dynan**, Medical College of Georgia  
*Exploring links between persistent DNA damage, genome instability, and aging in the Japanese Medaka fish model*
- 12:00 – 1:30 pm **LUNCH (on your own)**
- 1:30 pm **Eric Hall**, Columbia University  
*Meeting Report: Low Dose Radiation Epidemiology—what have we learned?*

**PLENARY SESSION VI—TRAVEL AWARD PRESENTATIONS**

*Chair: Bill Morgan, PNNL*

2:00 – 3:00 pm (1 hr)

**Mahdokht Behravan**, Tufts University

*Title TBD*

**Manuela Buonanno**, New Jersey Medical School Cancer Center

*Radiation quality and long-term biological effects in irradiated normal human cells and neighboring bystanders: The role of oxidative metabolism*

**Ignacio Fernandez-Garcia**, NYU Langone School of Medicine

*A link between stem cells and the EMT phenotype induced by IR and TGF $\beta$*

**Jody Filkowski**, University of Lethbridge

*Title TBD*

**Lahcen Jaafar**, Medical College of Georgia

*Development of a 53BP1 transgenic Japanese medaka fish (*Oryzias latipes*) for investigation of long-term effects of low dose radiation exposure*

**James Jacobus**, University of Iowa

*LET is a critical factor in accelerating development of lymphoma in irradiated Bax transgenic C57/B6 mice*

**Amit Mittal**, Northwestern University

*The Effects of Radiation on Development of Prostate Cancer and Prostatic Hyperplasia in Canine Model*

**Yuanlin Peng**, Colorado State University

*Radiation Induced Chromatid-type Aberrations after Irradiation of Late-S/G2 Cells: Roles of Homologous Recombination and Non-Homologous End Joining*

**Kristina Taylor**, McMaster University

*Induction of DNA Damage by Low Dose PET scans*

**Tyler Weeks**, UC/Davis

*Development of Coherent Anti-Stokes Raman Scattering (CARS) Cytometry for Characterizing the Low-Dose Tissue Response*

**Erik F Young**, Columbia University

*Genetic Control of the Trigger for the G2/M Checkpoint*

**3:00 pm**      **Coffee break**

**3:30 pm**      **Tuesday BREAKOUT DISCUSSIONS: Radio-Adaptive Responses**

**Discussion Group A** (*Potomac Room*)

*Co-Chairs: Sally Amundson* (Columbia University) and **Randy Jirtle** (Duke University)

P.I.s assigned; other Workshop participants may choose either group  
Discussions with summarization of main points

**Discussion Group B** (*Mt. Vernon Room*)

*Co-Chairs: Doug Spitz* (Iowa State University) and **Tony Brooks** (WSU/PNNL)

P.I.s assigned; other Workshop participants may choose either group  
Discussions with summarization of main points

**5:00 – 7 pm**    **Poster Session – City Center Ballroom** (Hors d'ouerves)

## **Wednesday, April 14**

**7:30 am**      **Continental Breakfast**

### **PLENARY SESSION VII—LOW DOSE PROGRAM PROJECTS**

*Chair: Daila Gridley*, Loma Linda University

**8:30 am**      **Lynn Hlatky**, Tufts University

*Multi-Scale Systems Biology of Low-Dose Carcinogenesis Risk*

**9:00 am**      **Bobby Scott**, Lovelace Radiation Research Institute

*Biological Bases for Radiation Adaptive Responses in the Lung*

**9:30 am**      **Gayle Woloschak**, Northwestern University

*Effects of Low Dose Irradiation on NFkB Signaling Networks and Mitochondria*

**10:00 am**      **Coffee break**

**10:30 am**      **Breakout Discussion Reports**

**Monday's Topic – Radiation Effects on Cell-Cell Communication**

TBD (Drs Bedford, Blakely, Globus, Weil)

**Tuesday's Topic – Radio-Adaptive Responses**

TBD (Drs Amundson, Jirtle, Spitz, Brooks)

**~ 11:30 am**    **Meeting Adjourned**