



NCI Symposium on Chromosome Biology
“Nuclear Structure, Genome Integrity and Cancer”
Natcher Auditorium, NIH, Bethesda, MD
November 30 – December 1, 2016

Wednesday, November 30, 2016

8:00 a.m. Registration

9:00 a.m. **Welcome Comments**

Gordon Hager, Ph.D., National Cancer Institute

SESSION 1: GENOME STABILITY/TELOMERE INTEGRITY

Chair: Michael Lichten, Ph.D., National Cancer Institute

9:15 a.m. **“A 3D Code in the Human Genome”**

Erez Lieberman-Aiden, Ph.D., Baylor University

9:45 a.m. **“Evolutionarily Conserved Pathways for Genome Stability in Yeast and Human Cells”**

Munira Basrai, Ph.D., National Cancer Institute

10:15 a.m. **“Single-molecule Analysis of mtDNA Replication Uncovers the Basis of the Common Deletion”**

Agnel Sfeir, Ph.D., New York University

10:45 a.m. **“NBS1 Phosphorylation Status Dictates Repair Choice of Dysfunctional Telomeres”**

Sandy Chang, M.D., Ph.D., Yale University

11:15 a.m. **“TZAP—A Novel Telomere-associated Protein Involved in Telomere Length Control”**

Eros Lazzerini Denchi, Ph.D., Scripps University

11:45 a.m. **LUNCH BREAK (ON OWN) AND POSTER SESSION**
(Authors present from 12:30-1:30)

SESSION 2: DNA REPLICATION STRESS

Chair: Andre Nussenzweig, Ph.D., National Cancer Institute

1:30 p.m. **“ATR Signaling and the Replication Stress Response”**

David Cortez, Ph.D., Vanderbilt University

2:00 p.m. **“Stabilizing Haploidy in Mammalian Cells”**

Oscar Fernandez Capetillo, Ph.D., Centro Nacional de Investigaciones Oncológicas, Madrid

2:30 p.m. **“Chromatin Replication and Epigenome Maintenance”**

Anja Groth, Ph.D., University of Copenhagen

3:00 p.m. **“Differential R-loop Modulation by DNA Topoisomerase I Across Long Genes and at Human Replication Origins”**

Frédéric Chédin, Ph.D., University of California, Davis

3:30 p.m. Break

SESSION 3: DOUBLE STRAND BREAK REPAIR

Chair: *Philipp Oberdoerffer, Ph.D., National Cancer Institute*

- 3:45 p.m. **“Breaking Bad: How Aneuploidy Drives Cancer”**
Stephen Elledge, Ph.D., Harvard University
- 4:15 p.m. **“Synthetic Lethality vs. Viability: Order of BRCA2 and PARP1 Loss Matters”**
Shyam Sharan, Ph.D., National Cancer Institute
- 4:45 p.m. **“When RNA Meets DNA: Dangerous Crosstalk in the Genome”**
Karlene Cimprich, Ph.D., Stanford University
- 5:15 p.m. **“Protecting the Genome by Homologous Recombination”**
Maria Jasin, Ph.D., Memorial Sloan Kettering

Thursday, December 1, 2016

SESSION 4: GENOME INSTABILITY & THERAPEUTIC APPROACHES

Chair: *Munira Basrai, Ph.D., National Cancer Institute*

- 9:00 a.m. **“Genetic Determinants of Tumor Development, Therapy Response and Resistance in Mouse Models of BRCA-deficient Breast Cancer”**
Jos Jonkers, Ph.D., Netherlands Cancer Institute
- 9:30 a.m. **“Chromatin Modifications at the Replication Fork”**
Alan D'Andrea, M.D., Harvard University
- 10:00 a.m. **“DNA Strand Break Repair and Human Neurological Disease”**
Keith Caldecott, Ph.D., University of Sussex
- 10:30 a.m. Break
- 10:45 a.m. **“The Genome in the Nucleus: Snaky, Soft and Well Organized”**
Yuval Garini, Ph.D., Bar Ilan University
- 11:15 a.m. **“Topoisomerase-induced DNA Damage at Ribonucleotides Incorporated by DNA Polymerases”**
Yves Pommier, M.D., Ph.D., National Cancer Institute

11:45 a.m. LUNCH BREAK AND ADDITIONAL POSTER VIEWING

SESSION 5: NUCLEAR STRUCTURE & DYNAMICS

Chair: *Thomas Ried, M.D., National Cancer Institute*

- 12:45 p.m. **“Protein Dynamics in the Nucleus: Integrating Genome Wide and Real Time Dynamic Datasets”**
Gordon Hager, Ph.D., National Cancer Institute
- 1:15 p.m. **“Condensin-based Chromosome Organization”**
Tatsuya Hirano, Ph.D., Riken
- 1:45 p.m. **“Interplay Between RecQ Mechanochemistry and Domain Architecture Supports Quality Control of Homologous Recombination”**
Keir Neuman, Ph.D., National Heart, Lung, and Blood Institute
- 2:15 p.m. Break
- 2:30 p.m. **“Data-guided Control of a Cancer Cell”**
Indika Rajapakse, Ph.D., University of Michigan
- 3:00 p.m. **“A Model of the Nuclear Landscape Based on Quantitative Microscopy”**
Thomas Cremer, M.D., Ludwig-Maximilians-University Munich
- 3:30 p.m. **“Aneuploidy and Cancer: A Complicated Relationship”**
Angelika Amon, Ph.D., Massachusetts Institute of Technology
- 4:00 p.m. Concluding Remarks and Adjourn