An AACR Special Conference on

The Role of Telomeres and Telomerase in Cancer Research

February 27-March 2, 2010
Conference Program

Saturday, February 27

6:00 p.m.-7:35 p.m. **Session 1**
Telomere Protection I
Chairperson: Virginia A. Zakian, Princeton University, Princeton, NJ

6:00 **Persistent telomere damage induces bypass of mitosis and tetraploidy**
Titia de Lange, Rockefeller University, New York, NY

6:25 **The roles of Ku and DNA LIGIV at human telomeres**
Eric Hendrickson, University of Minnesota, Minneapolis, MN

6:50 **Dyskeratosis congenita-associated *TINF2* mutations affect TRF1 levels and sister telomere cohesion***
Ghadir Sasa, Baylor College of Medicine, Houston, TX

7:05 **TRF1 mediates mitotic abnormalities induced by Aurora-A overexpression***
Hiroyuki Seimiya, Cancer Chemotherapy Center, Japanese Foundation for Cancer Research, Tokyo, Japan

7:20 **Role of mammalian RAP1 in telomere maintenance, subtelomeric gene silencing, and general transcriptional regulation***
Paula Martinez, Spanish National Cancer Centre (CNIO), Madrid, Spain

7:35 p.m.-9:00 p.m. **Networking Reception**

Sunday, February 28

8:00 a.m.- 9:00 a.m. **Continental Breakfast**

9:00 a.m.-9:45 a.m. **Keynote Presentation**
Chairperson: Titia de Lange, Rockefeller University, New York, NY

9:00 **Targeting telomerase for cancer therapeutics**
Jerry W. Shay, UT Southwestern Medical Center, Dallas, TX

9:45 a.m.-10:00 a.m. **Break**

10:00 a.m.-11:45 a.m. **Session 2**
DNA Damage Response and Cancer I
Chairperson: Roger R. Reddel, Children's Medical Research Institute, Westmead, NSW, Australia

10:00 **Understanding Fanconi anemia**
Simon Boulton, Cancer Research UK, South Mimms, United Kingdom

10:25 **TRF2 controls a cell-extrinsic anticancer barrier via activation of natural killer cells**
Eric Gilson, ENS de Lyon, Lyon, France

10:50 **DNA end processing mediated by Mre11/Rad50 complexes**
Tanya Paull, University of Texas, Austin, TX

11:15 **A mutation in MRE11 that influences telomere recombination pathways and promotes an efficient bypass of telomere senescence***
Arthur J. Lustig, Tulane University, New Orleans, LA

11:30 **Greater variability in telomeres in cancer cells and shorter telomeres in cancer-associated stromal cells are associated with a higher risk of prostate cancer death in surgically treated men***
Alan K. Meeker, Johns Hopkins University School of Medicine, Baltimore, MD

11:45 a.m. -1:45 p.m. **Lunch on Own**

1:45 p.m.-3:20 p.m. **Session 3**
Telomerase I
Chairperson: Titia de Lange, Rockefeller University, New York, NY

1:45 **Telomerase action at human telomeres**
Woodring E. Wright, UT Southwestern Medical Center, Dallas, TX

2:10 **Regulation of telomerase by shelterin and TERRA**
Joachim Lingner, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland

2:35 **An RNAi screen for Tert transcriptional regulators identifies HIF1α as critical for telomerase function in murine embryonic stem cells***
Richard Allsopp, University of Hawaii, Honolulu, HI

2:50 **HPV E6 protein interacts physically and functionally with the cellular telomerase complex***
Xuefeng Liu, Georgetown University, Washington, DC

3:05 **Alternative spliced variants of TERT have extratelomeric function***
Radmila Hrdlickova, University of Texas, Austin, TX

3:20 p.m.-3:35 p.m. **Break**

3:35 p.m.-5:25 p.m. **Session 4**
Telomerase II
Chairperson: Woodring E. Wright, UT Southwestern Medical Center, Dallas, TX

3:35 **Recognizing short *S. cerevisiae* telomeres for elongation**
Virginia A. Zakian, Princeton University, Princeton, NJ

4:00 **Telomerase, stem cells, and Wnt signaling**
Steven E. Artandi, Stanford University School of Medicine, Stanford, CA

4:25 **A role for sumo modification in telomere localization and length maintenance***
Helder Ferreira, Friedrich Miescher Institute for Biomedical Research, Basel, Switzerland

4:40 **RTEL is required for genome stability and telomere maintenance***
Evert-Jan Uringa, Terry Fox Laboratory, BC Cancer Research Centre, Vancouver, BC, Canada

4:55 **RecQ helicases interact with shelterin proteins and take part in maintenance and repair of telomeric DNA***
Avik Ghosh, National Institute on Aging, Baltimore, MD

5:10 **The interaction of β-catenin and telomerase and its role during carcinogenesis***
Falk Mancke, Institute of Molecular Medicine and Cell Research, Freiburg, Germany

5:25 p.m.-7:30 p.m. **Dinner on Own**

7:30 p.m.-10:00 p.m. **Poster Session A**

Monday, March 1

7:30 a.m.-8:30 a.m. **Continental Breakfast**

8:30 a.m.-10:15 a.m. **Session 5**
DNA Damage Response and Cancer II
Chairperson: Lorraine S. Symington, Columbia University Medical Center, New York, NY

8:30 **Double-strand break repair and genomic integrity**
Maria Jasin, Memorial Sloan-Kettering Cancer Center, New York, NY

8:55 **Mechanisms underlying translocations in B lineage cells**
Frederick W. Alt, Children's Hospital Boston, Boston, MA

9:20 **Genetic analysis of chromosome break metabolism in eukaryotic cells**
John H. J. Petrini, Memorial Sloan-Kettering Cancer Center, New York, NY

9:45 **The role of DNA repair in the sensitivity of telomeric regions to double-strand breaks in human cells***
John P. Murnane, University of California, San Francisco, CA

10:00 **Self-complementary mutant telomeric repeats engage an alternative fusion pathway in human cancer cells***
Bradley A. Stohr, University of California, San Francisco, CA

10:15 a.m.-10:30 a.m. Break

10:30 a.m.-12:05 p.m. Session 6
Telomere Protection II
Chairperson: María A. Blasco, Spanish National Cancer Center, Madrid, Spain

10:30 **Telomere metabolism during the cell cycle revealed by analyzing single telomeres in human cells**
Fuyuki Ishikawa, Kyoto University, Kyoto, Japan

10:55 **Evolution of telomere protein complexes involved in telomere replication and new telomere synthesis**
Carolyn Price, University of Cincinnati, Cincinnati, OH

11:20 **FEN1 facilitates replication fork re-initiation and ensures telomere stability***
Sheila A. Stewart, Washington University, St. Louis, MO

11:35 **Evidence for chromosome end protection by two distinct telomere architectures***
Anita Kazda, Gregor Mendel Insitute of Molecular Plant Biology, Vienna, Austria

11:50 **Telomere lengths, pulmonary fibrosis, and telomerase (tert) mutations***
Christine Kim Garcia, UT Southwestern Medical Center, Dallas, TX

12:05 p.m.-2:05 p.m. Lunch on Own

2:05 p.m.-3:50 p.m. Session 7
Stem Cells, Cancer, and Telomeres
Chairperson: Jerry W. Shay, UT Southwestern Medical Center, Dallas, TX

2:05 **Reprogramming of chromosome ends: A key step in the generation of iPS cells**
María A. Blasco, Spanish National Cancer Center, Madrid, Spain

2:30 **Heritable mutations in telomerase genes and cancer**
Peter M. Lansdorp, University of British Columbia, Vancouver, BC, Canada

2:55 **Vaccination strategies against telomerase in cancer**
Gary W. Middleton, St. Luke's Cancer Centre, Guildford, United Kingdom

3:20 ***In vivo* and *in vitro* inhibition of multiple types of cancer stem cells by the novel telomerase inhibitor imetelstat***
Robert J. Tressler, Geron Inc., Menlo Park, CA

3:35 **Telomerase inhibitor imetelstat sensitive and resistant response phenotypes in non-small cell lung cancer***
Robin E. Frink, UT Southwestern Medical Center, Dallas, TX

3:50 p.m.-4:05 p.m. **Break**

4:05 p.m.-5:40 p.m. **Session 8**
Telomere Length Regulation
Chairperson: Joachim Lingner, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland

4:05 **Regulation of telomere replication and end protection in budding yeast**
Vicki Lundblad, Salk Institute Cancer Center, La Jolla, CA

4:30 **Telomere-driven epigenetic changes during aging**
Jan Karlseder, Salk Institute for Biological Studies, La Jolla, CA

4:55 **The Est3 protein of *Saccharomyces cerevisiae* stimulates telomerase catalytic activity through direct interaction with Est2p***
Katherine L. Friedman, Vanderbilt University, Nashville, TN

5:10 **Enzymatic requirements of human telomerase for telomere homeostasis and cellular immortalization***
Yasmin D'Souza, McGill University, Lady Davis Institute of the Jewish General Hospital, Montréal, QC, Canada

5:25 **3'end processing of telomerase RNA in fission yeast***
Wen Tang, Stowers Institute for Medical Research, Kansas City, MO

5:40 p.m.-8:00 p.m. **Dinner on Own**

8:00 p.m.-10:30 p.m. **Poster Session B**

Tuesday, March 2

7:30 a.m.-8:30 a.m. **Continental Breakfast**

8:30 a.m.-10:05 a.m. **Session 9**
Telomere Protection III
Chairperson: Vicki Lundblad, Salk Institute Cancer Center, La Jolla, CA

8:30 **DNA-templated telomere synthesis in cancer and normal cells**
Roger R. Reddel, Children's Medical Research Institute, Westmead, NSW, Australia

8:55 **Telomere dysfunction and fusion in chronic lymphocytic leukemia: Evidence for telomere crisis**
Duncan Baird, Cardiff University, Cardiff, United Kingdom

9:20 **Embryonic stem cells and ALT cancer cells share key chromatin players and a common pathway in the regulation of telomere chromatin integrity***
Lee H. Wong, Murdoch Childrens Research Institute, Parkville, VIC, Australia

9:35 **Interaction of MUS81 and BLM is required for telomere recombination***
Qin Yang, Washington University, St. Louis, MO

9:50 **ALT-immortalized human cells are critically dependent on the Fanconi anemia protein FANCD2 to limit BLM-dependent recombination and amplification of telomeric repeat DNA***
M. Stephen Meyn, Hospital for Sick Children, Toronto, ON, Canada

10:05 a.m.-10:20 a.m. **Break**

10:20 a.m.-12:05 p.m. **Session 10**
Genome Instability
Chairperson: Maria Jasin, Memorial Sloan-Kettering Cancer Center, New York, NY

10:20 **Mechanism and regulation of DNA end resection**
Lorraine S. Symington, Columbia University Medical Center, New York, NY

10:45 **Cellular senescence and telomeric DNA damage**
Fabrizio d'Adda di Fagagna, F.I.R.C. Institute for Molecular Oncology, Milan, Italy

11:10 **Interplay between homologous recombination and end joining in maintaining genome stability**
Andre Nussenzweig, National Cancer Institute, Bethesda, MD

11:35 **Telomere dysfunction induced senescence limits human cancer progression***
Utz Herbig, New Jersey Medical School-UMDNJ, Newark, NJ

11:50 **Upregulation of mammalian Sirt1 does not increase longevity but improves health and protects from cancer***
Manuel Serrano, Spanish National Cancer Research Centre, Madrid, Spain

Departure

*Indicates proffered presentation from selected abstracts