An AACR Special Conference on

Stem Cells, Development, and Cancer

March 3-6, 2011
The Fairmont Hotel Vancouver
Vancouver, BC, Canada

Thursday, March 3

7:00 p.m.-8:40 p.m. **Keynote Session: Connecting Stem Cells, Development, and Cancer**

7:00 p.m.-7:10 p.m.
Introduction and Welcome
Geoffrey M. Wahl, Salk Institute for Biological Studies, La Jolla, CA, and Connie J. Eaves, BC Cancer Agency, Vancouver, BC, Canada

7:10 p.m.-7:55 p.m.
Skin stem cells in morphogenesis and cancer
Elaine V. Fuchs, Howard Hughes Medical Institute, Rockefeller University, New York, NY

7:55 p.m.-8:40 p.m.
Role of Polycomb repressors in stem cells, cancer, and development
Maarten van Lohuizen, The Netherlands Cancer Institute, Amsterdam, The Netherlands

8:40 p.m.-10:00 p.m. **Opening Reception**

Friday, March 4

8:00 a.m.-10:05 a.m. **Session 1: Stem Cells during Development**
Chairperson: Geoffrey M. Wahl, Salk Institute for Biological Studies, La Jolla, CA

8:00 a.m.-8:35 a.m. **Developmental signaling in stem cells and cancer**
Tannishtha Reya, Duke University Medical Center, Durham, NC

8:35 a.m.-9:10 a.m. **Mechanisms regulating hematopoietic stem cell development**
Hanna Mikkola, University of California, Los Angeles, CA

9:10 a.m.-9:45 a.m. **Characterization of mammary stem cell activity and expression profiles during fetal development**
Geoffrey M. Wahl

9:45 a.m.-10:05 a.m. **Hedgehog signaling specifies positional identity and fate in adult neural stem cells***
Rebecca A. Ihrie, University of California, San Francisco, CA

10:05 a.m.-10:35 a.m. **Coffee Break**

10:35 a.m.-12:40 p.m. **Session 2: Reprogramming Mechanisms**
Chairperson: Andras Nagy, University of Toronto Mount Sinai Hospital, Toronto, ON, Canada

10:35 a.m.-11:10 a.m. **Dissecting the mechanisms of cellular reprogramming**
Konrad Hochedlinger, Massachusetts General Hospital, Boston, MA

11:10 a.m.-11:45 a.m. **Transposon mediated reprogramming provides a powerful tool for understanding stem cell induction**
Andras Nagy

11:45 p.m.-12:20 p.m. **Human aging and iPS cells**
Juan Carlos Izpisúa Belmonte, Salk Institute for Biological Studies, La Jolla, CA

12:20 p.m.-12:40 p.m. **Reprogramming the metastatic phenotype using embryonic neural crest microenvironmental signals***
Paul M. Kulesa, Stowers Institute for Medical Research, Kansas City, MO

*Indicates proffered presentations from selected abstracts.

12:40 p.m.-3:40 p.m. **Poster Session A and Lunch**

3:40 p.m.-5:10 p.m. **Session 3: Epigenetics**
Chairperson: Maarten van Lohuizen, The Netherlands Cancer Institute, Amsterdam, The Netherlands

3:40 p.m.-4:15 p.m. **Cell fate and chromatin differences between sister chromatids**
Peter M. Lansdorp, BC Cancer Research Center, Vancouver, BC, Canada

4:15 p.m.-4:50 p.m. **DNA methylation abnormalities in cancer: Origins and translational implications**
Stephen B. Baylin, Johns Hopkins University School of Medicine, Baltimore, MD

4:50 p.m.-5:10 p.m. **Epigenetic regulation of stemness and malignancy in Ewing tumors***
Guenther H.S. Richter, Technische Universitaet Muenchen, Munich, Germany

Saturday, March 5

8:00 a.m.-10:05 a.m. **Session 4: Tissues from ES and iPS Cells**
Chairperson: Inder M. Verma, Salk Institute for Biological Studies, La Jolla, CA

8:00 a.m.-8:35 a.m. **Evaluating the safeness of human induced pluripotent stem cells**
Kazutoshi Takahashi, Kyoto University, Center for iPS Cell Research and Application (CiRA), Kyoto, Japan

8:35 a.m.-9:10 a.m. **Using embryonic development as a platform to direct differentiation of human pluripotent stem cells into intestinal tissue in vitro**
James M. Wells, Cincinnati Children's Hospital Medical Center, Cincinnati, OH

9:10 a.m.-9:45 a.m. **Glioblastoma: Cancer stem cells and reprogramming**
Inder M. Verma

9:45 a.m.-10:05 a.m. **Microfluidic culture of isolated human embryonic stem cell colonies from single cell suspensions***
Darek J. Sikorski, University of British Columbia, Vancouver, BC, Canada

*Indicates proffered presentations from selected abstracts.

10:05 a.m.-10:35 a.m. **Coffee Break**

10:35 a.m.-1:15 p.m. **Session 5: Tissue Stem Cells**

Chairperson: Elaine V. Fuchs, Howard Hughes Medical Institute, Rockefeller University, New York, NY

10:35 a.m.-11:10 a.m.
Epithelial stem cells and lung repair
Brigid L.M. Hogan, Duke University Medical Center, Durham, NC

11:10 a.m.-11:45 a.m.
Regulation of proliferation and differentiation in adult stem cell lineages
Margaret T. Fuller, Stanford University School of Medicine, Stanford, CA

11:45 p.m.-12:20 p.m.
Hematopoietic stem cells: Not all are created equal
Connie J. Eaves, BC Cancer Agency, Vancouver, BC, Canada

12:20 p.m.-12:55 p.m.
The breast epithelial hierarchy and its implications for tumorigenesis
Jane E. Visvader, Walter and Eliza Hall Institute of Medical Research, Parkville, VIC, Australia

12:55 p.m.-1:15 p.m.
A JAK2 activating mutation subverts hematopoietic stem cells by increasing proliferation, survival, and differentiation while compromising overall long-term self-renewal activity*
David G. Kent, Cambridge Institute for Medical Research, Cambridge, Cambridgeshire, England

1:15 p.m.-2:30 p.m. **Lunch on own**

*Indicates proffered presentations from selected abstracts.

2:30 p.m.-5:00 p.m. Session 6: Hot Topics: New Tools on the Horizon

Chairperson: Connie J. Eaves, BC Cancer Agency, Vancouver, BC, Canada

2:30 p.m.-3:05 p.m.
Blood stem cell fate control in engineered stem cell-niches
Peter Zandstra, Donnelly Centre for Cellular and Biomolecular Research, University of Toronto, Toronto, ON, Canada

3:05 p.m.-3:25 p.m.
Outgrowth of single cells in a tissue context driven by oncogene-induced cellular translocation*
Cheuk T. Leung, Harvard Medical School, Boston, MA

3:25 p.m.-3:45 p.m.
GATA6-mediated upregulation of LGR5 is essential for colorectal tumorigenesis*
Shinnosuke Tsuji, Institute for Molecular and Cellular Biosciences, The University of Tokyo, Tokyo, Japan

3:45 p.m.-4:05 p.m.
Immunophenotypic diversity in acute myeloid leukemia as defined by 31-parameter single-cell mass cytometry*
Erin F. Simonds, Stanford University School of Medicine, Stanford, CA

4:05 p.m.-4:25 p.m.
Development of multiplexed single cell expression and genotyping assays to assess intercellular variability, sample heterogeneity and clonality in AML and CML patient samples*
Amy L. Paguirigan, Fred Hutchinson Cancer Research Center, Seattle, WA

4:25 p.m.-5:00 p.m.
Microfluidic tools for dissecting cellular heterogeneity
Carl L. Hansen, University of British Columbia, Vancouver, BC, Canada

5:00 p.m.-8:00 p.m. Poster Session B and Reception

*Indicates proffered presentations from selected abstracts.

Sunday, March 6

8:00 a.m.-10:05 a.m. **Session 7: Cancer, Stem Cells, and Clonal Evolution I**

Chairperson: Ann F. Chambers, London Regional Cancer Program, London, ON, Canada

8:00 a.m.-8:35 a.m.
Role of clonal evolution in pancreatic cancer progression
Christine A. Iacobuzio-Donahue, Johns Hopkins Hospital, Baltimore, MD

8:35 a.m.-9:10 a.m.
Dynamic heterogeneity and clonal evolution of the metastatic phenotype
Ann F. Chambers

9:10 a.m.-9:45 a.m.
Prostate tissue stem cells and cancer progression
Owen N. Witte, University of California, Los Angeles, CA

9:45 a.m.-10:05 a.m.
Gata3 prevents prostate cancer progression*
Maxime Bouchard, McGill University, Montreal, QB, Canada

10:05 a.m.-10:25 a.m. **Coffee Break**

10:25 a.m.-12:10 p.m. **Session 8: Cancer, Stem Cells, and Clonal Evolution II**

Chairperson: Meenhard Herlyn, The Wistar Institute, Philadelphia, PA

10:25 a.m.-11:00 a.m.
Slow-cycling self-renewing JARID1B-positive cells are essential for long-term maintenance of malignant melanoma
Meenhard Herlyn

11:00 a.m.-11:35 a.m.
Reversible tolerance to anti-cancer drugs
Jeffrey Settleman, Genentech, Inc., South San Francisco, CA

11:35 a.m.-12:10 p.m.
Defining similarities and differences between normal neural stem cells and brain tumor stem cells
Peter Dirks, The Hospital for Sick Children, Toronto, ON, Canada

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