An AACR Special Conference
Advances in Modeling Cancer in Mice: Technology, Biology, and Beyond

September 24-27, 2017
Disney's Boardwalk Inn
Orlando, Florida

Sunday, September 24

Opening Keynote Session
Session Chairs: Cory Abate-Shen, Columbia University Medical Center, Herbert Irving Comprehensive Cancer Center, New York, New York, and Kevin M. Haigis, Beth Israel Deaconess Medical Center, Boston, Massachusetts
6:00 p.m.-8:00 p.m.

Welcome Remarks
Cory Abate-Shen

Engineering the cancer genome
Tyler Jacks, David H. Koch Institute for Integrative Cancer Research at MIT, Cambridge, Massachusetts

Unearthing mechanisms of malignant progression and resistance of cancer stem cells
Elaine Fuchs, The Rockefeller University, New York, New York

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

Monday, September 25

Continental Breakfast / Networking Roundtables
7:30 a.m.-8:30 a.m.

Plenary Session 1: Technological Advances for Modeling Cancer in Mice
Session Chair: Julien Sage, Stanford University School of Medicine, Stanford, California
8:30 a.m.-10:30 a.m.

Cancer modeling in the CRISPR age
Andrea Ventura, Memorial Sloan Kettering Cancer Center, New York, New York

Modeling colorectal cancer in vivo through CRISPR-based genome editing*
Lukas E. Dow, Weill Cornell Medical College, New York, New York

Quantitative and multiplex analysis of the genomic determinants of tumorigenesis
Monte Winslow, Stanford University School of Medicine, Stanford, California

Capturing the integration of Ras-mutant cells into normal epithelial tissue using live imaging*
Cristiana M. Pineda, Yale University, New Haven, Connecticut

Genetic dissection of cancer development, therapy response, and resistance in mouse models of breast cancer
Jos Jonkers, Netherlands Cancer Institute, Amsterdam, The Netherlands

*Short talk from proffered abstract
Break
10:30 a.m.-11:00 a.m.

Plenary Session 2: Elucidating Cancer Mechanisms Using Mouse Models
Session Chair: Karen M. Cichowski, Brigham & Women's Hospital, Boston, Massachusetts
11:00 a.m.-1:00 p.m.

Driver mutations and cell-of-origin as critical factors determining the phenotypic characteristics of thoracic tumor subtypes
Anton J.M. Berns, Netherlands Cancer Institute, Amsterdam, The Netherlands

The tumor suppressor BAP1 regulates the Hippo pathway in pancreatic ductal adenocarcinoma*
Anwesha Dey, Genentech Inc., South San Francisco, California

Deconstructing p53 pathways in tumor suppression
Laura D. Attardi, Stanford University School of Medicine, Stanford, California

p120 catenin loss drives pancreatic cancer EMT and metastasis through activation of calcium signaling*
Jason R. Pitarresi, University of Pennsylvania, Philadelphia, Pennsylvania

Somatic p53 mutations drive development of triple negative breast cancer with evolutionarily distinct metastases
Guillermina Lozano, The University of Texas MD Anderson Cancer Center, Houston, Texas

Poster Session A Highlights
1:00 p.m.-1:15 p.m.

Somatic engineering of the mammary gland for the development of novel mouse models of triple negative breast cancer
Stefano Annunziato, Netherlands Cancer Institute, Amsterdam, The Netherlands

Potent synergism between FBXW7 and PI3K signalling in a mouse model of endometrial carcinogenesis
Ileana C. Cuevas, UT Southwestern Medical Center, Dallas, Texas

Perturbation of proteostasis is lethal in SMARCB1 deficient tumors
Giannicola Genovese, The University of Texas MD Anderson Cancer Center, Houston, Texas

Cross-species oncogenomics approach identifies PTPN11 as an oncogene and potential therapeutic target in melanoma
Minjung Kim, Moffitt Cancer Center, Tampa, Florida

Investigating mechanisms of obesity-mediated pancreatic cancer progression
Mandar Deepak Muzumdar, Koch Institute at MIT, Cambridge, Massachusetts

Poster Session A / Lunch
1:15 p.m.-3:30 p.m.

*Short talk from proffered abstract
Plenary Session 3: Modeling the Tumor Microenvironment
Session Chair: Kwok-Kin Wong, New York University (NYU) Langone Medical Center, New York, New York
4:00 p.m.-6:00 p.m.

Metabolic recycling in cancer
Marcia Haigis, Harvard Medical School, Boston, Massachusetts

Lineage specifiers SOX2 and NKX2-1 inversely regulate lung tumor immune microenvironment*
Trudy G. Oliver, University of Utah, Salt Lake City, Utah

Evaluation of the microenvironment in anti-tumor immune responses
Marcus W. Bosenberg, Yale University School of Medicine, New Haven, Connecticut

Contribution of mutant microenvironment to hereditary cancer: Single-cell gene expression profiling of a genetically engineered mouse model of human hereditary BRCA1-related breast cancer*
Carman M. Li, Harvard Medical School, Boston, Massachusetts

Tumor microenvironment: Stroma-tumor cell signaling defined by a cross-species approach
Gustavo W. Leone, Medical University of South Carolina Hollings Cancer Center, Charleston, South Carolina

Tuesday, September 26

Continental Breakfast / Networking Roundtables
7:30 a.m.-8:30 a.m.

Plenary Session 4: Stem Cells and Developmental Pathways in Cancer
Session Chair: Michael M. Shen, Columbia University College of Physicians & Surgeons, New York, New York
8:30 a.m.-10:30 a.m.

Intra- and inter-tumoral heterogeneity and response to therapy in mouse models of SCLC
Julien Sage, Stanford University School of Medicine, Stanford, California

Elucidating mechanisms of p53-deficient breast cancer development via lineage tracing and clonal analysis*
Zhe Li, Brigham & Women's Hospital and Harvard Medical School, Boston, Massachusetts

Imaging stem cell signals in cancer heterogeneity and therapy resistance
Tannishtha Reya, University of California San Diego, La Jolla, California

Altered nucleolar trafficking of the Blm helicase in the mouse reduces size, increases DNA damage and tumor susceptibility, and facilitates premature aging*
Joanna L. Groden, The Ohio State University College of Medicine, Columbus, Ohio

Lessons from modeling neural tumors in mice
Luis F. Parada, Memorial Sloan Kettering Cancer Center, New York, New York

Break
10:30 a.m.-11:00 a.m.

*Short talk from proffered abstract
Plenary Session 5: Genetics, Genomics, and Systems Biology
Session Chair: Monte M. Winslow, Stanford University School of Medicine, Stanford, California
11:00 a.m.-1:00 p.m.

Normal and cancer stem cells in multistage carcinogenesis
Allan Balmain, UCSF Helen Diller Family Comprehensive Cancer Center, San Francisco, California

Clonal dynamics during breast cancer dormancy and recurrence*
James V. Alvarez, Duke University, Durham, North Carolina

The global proteome and phospho-proteome of K-Ras mutant tissues
Kevin M. Haigis, Beth Israel Deaconess Medical Center, Boston, Massachusetts

RNA sequencing–based analysis of transposon-induced tumors reveals novel insights into disease pathogenesis*
David A. Largaespada, University of Minnesota, Minneapolis, Minnesota

Of mice and men: Using systems biology approaches to study human cancer
Cory Abate-Shen, Columbia University Medical Center, Herbert Irving Comprehensive Cancer Center, New York, New York

Lunch on Own
1:00 p.m.-2:30 p.m.

Plenary Session 6: Beyond Genetically Engineered Mouse Models
Session Chair: Guillermina Lozano, The University of Texas MD Anderson Cancer Center, Houston, Texas
2:30 p.m.-4:15 p.m.

GEMMs and GEOs to characterize pancreatic cancer initiation and progression
David A. Tuveson, Cold Spring Harbor Laboratory Cancer Center, Cold Spring Harbor, New York

Organoid models of bladder cancer
Michael M. Shen, Columbia University College of Physicians & Surgeons, New York, New York

Investigating lung cancer cells-of-origin using three dimensional organoid cultures*
Christine Fillmore Brainson, University of Kentucky, Lexington, Kentucky

The tumor immune landscape and heterogeneity projects
Pier Paolo Pandolfi, Beth Israel Deaconess Medical Center, Boston, Massachusetts

Break
4:15 p.m.-4:45 p.m.

Keynote Address
Session Chair: Katerina A. Politi, Yale Cancer Center, New Haven, Connecticut
4:45 p.m.-5:40 p.m.

Interrogating cancer drivers and dependencies using non-germline mouse models
Scott W. Lowe, Memorial Sloan Kettering Cancer Center, New York, New York

*Short talk from proffered abstract
Poster Session B Highlights
5:40 p.m.-5:55 p.m.

A genetically engineered mouse model of de novo bone metastasis
Juan Martin Arriaga, Columbia University Medical Center, New York, New York

Neutrophils and Snail orchestrate the establishment of a pro-tumor microenvironment in lung adenocarcinoma
Etienne Meylan, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland

Acinar cell expansion: A new step in pancreatic tumorigenesis
Patrick Neuhofer, Stanford University, Stanford, California

Activating K-RasA146T mutations induce Mapk-dependent hyperproliferation in the intestinal epithelium
Emily Poulin, Beth Israel Deaconess Medical Center, Boston, Massachusetts

BRAF inhibition and cytokine therapy for melanoma: a novel rational combined approach
Gabriele Romano, The University of Texas MD Anderson Cancer Center, Houston, Texas

A SOX9+ bile duct progenitor as a cell of origin of hepatocellular carcinoma
Patrick Viatour, Children's Hospital of Philadelphia, Philadelphia, Pennsylvania

Poster Session B / Reception
6:00 p.m.-8:30 p.m.

Wednesday, September 27

Continental Breakfast / Networking Roundtables
7:30 a.m.-8:15 a.m.

Plenary Session 7: Targeting the Tumor Microenvironment
Session Chair: Martin McMahon, University of Utah Huntsman Cancer Institute, Salt Lake City, Utah
8:15 a.m.-9:45 a.m.

Lung cancer mouse models for preclinical testing of novel and immune therapies
Kwok-Kin Wong, New York University (NYU) Langone Medical Center, New York, New York

The immune microenvironment in lung cancer: Lessons from mouse models
Katerina A. Politi, Yale Cancer Center, New Haven, Connecticut

Targeting the drug- and immune-privileged sanctuary of pancreas cancer
Sunil R. Hingorani, Fred Hutchinson Cancer Research Center, Seattle, Washington

Selective lethality of cisplatin in pancreatic cancer is dependent on mitotic functions of BRCA2*
Kenneth P. Olive, Columbia University Medical Center, New York, New York

Break
9:45 a.m.-10:15 a.m.

*Short talk from proffered abstract
Plenary Session 8: Using Mouse Models to Study Drug Resistance
Session Chair: Marcus W. Bosenberg, Yale University School of Medicine, New Haven, Connecticut
10:15 a.m.-12:15 p.m.

Using mouse models to improve cancer therapy
Michael T. Hemann, David H. Koch Institute for Integrative Cancer Research at MIT, Boston, Massachusetts

In vivo screens assessing drug response and resistance in acute leukemias characterized by hyperactive Ras signaling
Kevin M. Shannon, University of California San Francisco, San Francisco, California

Mutational activation of PI3-kinase-α promotes de-differentiation of BRAFV600E-driven lung tumor cells
Martin McMahon, University of Utah Huntsman Cancer Institute, Salt Lake City, Utah

Using mouse models to develop therapies for Ras-driven cancers
Karen M. Cichowski, Brigham & Women's Hospital, Boston, Massachusetts

Meeting Summary
12:15 p.m.-1:00 p.m.

Closing Remarks
Julien Sage, Stanford University School of Medicine, Stanford, California

Departure
1:00 p.m.

*Short talk from proffered abstract