

Third International Conference on
Frontiers in Basic Cancer Research
Conference Program

Wednesday, September 18

6:00 p.m.-8:00 p.m.

Welcome and Keynote Lectures

*Session Chairperson: Scott W. Lowe, Memorial Sloan-Kettering
Cancer Center, New York, NY*
Cherry Blossom Ballroom

Lgr5 stem cells in self-renewal and cancer

Hans Clevers, Hubrecht Institute, Utrecht, The Netherlands

Somatic alterations in human cancer genomes

Matthew L. Meyerson, Dana-Farber Cancer Institute, Boston, MA

8:00 p.m.-9:30 p.m.

Opening Reception

National Harbor 2-3

Thursday, September 19

7:00 a.m.-8:00 a.m.

Continental Breakfast

Cherry Blossom Ballroom Lobby

8:00 a.m.-10:00 a.m.

Plenary Session 1: Transcription and Epigenetics

Session Chairperson: Jacqueline A. Lees, MIT Koch Institute for Integrative Cancer Research, Cambridge, MA

Cherry Blossom Ballroom

Title to be announced

Jacqueline A. Lees

Deconstructing p53 pathways in vivo

Laura D. Attardi, Stanford University School of Medicine, Stanford, CA

Chromosomal translocations and transcriptional elongation control in epigenetics and cancer

Ali Shilatifard, Stowers Institute for Medical Research, Kansas City, MO

Genome-wide profiling reveals stimulus-specific functions of p53 in human embryonic stem cells*

Abhinav K. Jain, The University of Texas MD Anderson Cancer Center, Houston, TX

“Guardians of repeats”: Novel and significant relationship of p53 and interferon*

Katerina Leonova, Roswell Park Cancer Institute, Buffalo, NY

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

Break

Cherry Blossom Ballroom Lobby

*Short talks from proffered papers

10:30 a.m.-12:30 p.m. **Plenary Session 2: Post-Transcriptional Regulation**
*Session Chairperson: Davide Ruggero, UCSF Helen Diller Family
Comprehensive Cancer Center, San Francisco, CA*
Cherry Blossom Ballroom

Misregulation of pre-mRNA splicing in cancer
James L. Manley, Columbia University, New York, NY

Translational control of cancer via eIF4E/4E-BPs
Nahum Sonenberg, McGill University, Montreal, QC, Canada

Novel insights into synthetic lethal interactions in cancer: Common nodes in protein synthesis control and nucleotide metabolism
Davide Ruggero

Roles and regulation of wild-type and mutant forms of p53
Carol L. Prives, Columbia University, New York, NY

12:30 p.m.-2:00 p.m. **AACR Women in Cancer Research (WICR) Career Mentoring Session**
Organized by the AACR Women in Cancer Research Council
Annapolis 1-3

This session has been designed for graduate students, medical students and residents, and clinical and postdoctoral fellows. Following a keynote address, attendees will meet, network, and learn from many of the leading senior scientists in cancer research. Topics include careers in industry, writing a CV, careers in translation research, mentoring and supervising, and many more. Although all conference attendees are invited to attend this session, it is geared toward early-career female investigators. A separate registration for this event is recommended (<http://www.surveymonkey.com/s/wicrbasic>). Only conference registrants may participate in this session. Onsite registration will be available on a first-come, first-served basis. Seating is limited.

Co-Chairpersons:

Wen-Jen Hwu, Ph.D., The University of Texas MD Anderson Cancer Center, Houston, TX
Nancy E. Hynes, Ph.D., Friedrich Miescher Institute, Basel, Switzerland
Worta McCaskill-Stevens, M.D., National Cancer Institute, Rockville, MD

Keynote Address:

Karen H. Vousden, Ph.D., Beatson Institute for Cancer Research, Glasgow, United Kingdom

Mentors:

Laura Attardi, Ph.D., Stanford University, Stanford, CA
Susan E. Bates, M.D., National Cancer Institute, Bethesda, MD
William C. Hahn, M.D., Ph.D., Dana-Farber Cancer Institute, Boston, MA
Scott W. Lowe, Ph.D., Memorial Sloan-Kettering Cancer Center, New York, NY
Sara Nayeem, M.D., New Enterprise Associates, Washington, DC
Pier Paolo Pandolfi, M.D., Beth Israel Deaconess Medical Center, Boston, MA
Dana Pe'er, Ph.D., Columbia University, New York, NY
Carol L. Prives, Ph.D., Columbia University, New York, NY
Zena Werb, Ph.D., UCSF Helen Diller Family Comprehensive Cancer Center, San Francisco, CA
Stephen Worland, Ph.D., eFFECTOR Therapeutics, San Diego, CA

12:30 p.m.-2:00 p.m. **Free Time / Lunch on Own**

2:00 p.m.-4:00 p.m. **Plenary Session 3: Noncoding RNAs**
*Session Chairperson: Pier Paolo Pandolfi, Beth Israel Deaconess
Medical Center, Boston, MA*
Cherry Blossom Ballroom

Antagonistic interactions among polycistronic oncomir components regulate oncogene-dependent apoptosis

Lin He, University of California, Berkeley, CA

MicroRNAs in oncogenic and tumor suppressor signaling pathways

Joshua Mendell, UT Southwestern Medical Center, Dallas, TX

The noncoding RNA revolution in cancer research

Pier Paolo Pandolfi

Hmga2 promotes lung adenocarcinoma progression as a competing endogenous RNA*

Madhu S. Kumar, London Research Institute, London, United Kingdom

LIN28B promotes growth and tumorigenesis of the intestinal epithelium primarily via Let-7 repression*

Blair Madison, University of Pennsylvania, Philadelphia, PA

4:00 p.m.-7:00 p.m. **Poster Session A / Reception**
National Harbor 2-3

*Short talks from proffered papers

Friday, September 20

7:00 a.m.-8:00 a.m.

Continental Breakfast

Cherry Blossom Ballroom Lobby

Mentoring Roundtables†

Annapolis 1, Annapolis 2, and Annapolis 3

†Advance sign up is required at the Registration Desk in the Cherry Blossom Ballroom Lobby.

8:00 a.m.-10:00 a.m.

Plenary Session 4: Genetic and Functional Heterogeneity

Session Chairperson: Joan S. Brugge, Harvard Medical School, Boston, MA

Cherry Blossom Ballroom

Glioma stem cells and cancer

Luis F. Parada, UT Southwestern Medical Center, Dallas, TX

Heterogeneity in drug sensitivity

Joan S. Brugge

Genetic and functional tumor heterogeneity

Charles Swanton, Cancer Research UK, London, United Kingdom

Single-cell RNA sequencing reveals phenotypic plasticity of drug tolerant clonal populations of cancer cells*

Fernando J. Lopez-Diaz, Salk Institute, La Jolla, CA

Collective invasion in breast cancer requires a conserved basal epithelial program*

Kevin J. Cheung, Johns Hopkins University, Baltimore, MD

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

Break

Cherry Blossom Ballroom Lobby

*Short talks from proffered papers

10:30 a.m.-12:30 p.m. **Plenary Session 5: Stress Response, Apoptosis, Autophagy, and Senescence**
Session Chairperson: Carol L. Prives, Columbia University, New York, NY
Cherry Blossom Ballroom

Dysregulated mTORC1 renders cells critically dependent on desaturated lipids for survival under tumor-like stress

M. Celeste Simon, Abramson Cancer Center, University of Pennsylvania, Philadelphia, PA

Role of autophagy in cancer

Eileen P. White, UMDNJ–The Cancer Institute of New Jersey, New Brunswick, NJ

Activities of wild-type and mutant p53

Karen H. Vousden, Beatson Institute for Cancer Research, Glasgow, United Kingdom

Systematic genetic interaction maps reveal rewiring of the stress response network and resulting vulnerabilities in leukemia and multiple myeloma cells*

Martin Kampmann, University of California, San Francisco, CA

Autophagic degradation of $\Delta 133p53$ during replicative cellular senescence: An isoform-specific protein degradation mechanism for p53*

Izumi Horikawa, National Cancer Institute, Bethesda, MD

12:30 p.m.-2:00 p.m. **Lunch on Own / Free Time**

Mentoring Roundtables†

Annapolis 1, Annapolis 2, and Annapolis 3

†Advance sign up is required at the Registration Desk in the Cherry Blossom Ballroom Lobby.

*Short talks from proffered papers

2:00 p.m.-4:00 p.m.

Plenary Session 6: Cancer Microenvironment

Session Chairperson: Mikala Egeblad, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY
Cherry Blossom Ballroom

Fatty liver disease and the pathogenesis of hepatocellular carcinoma: Role of inflammation and aberrant metabolism

Michael Karin, University of California, San Diego, CA

Tissue tension engages developmental programs to promote tumor progression

Valerie M. Weaver, UCSF Medical Center, San Francisco, CA

Seeing cancer in context: Insights from live imaging of tumor-stroma interactions

Mikala Egeblad-

Fine temporal and spatial dissection of medulloblastoma progression with MADM, a mouse genetic mosaic model*

Brit Ventura, University of Virginia, Charlottesville, VA

Novel Hedgehog co-receptors in pancreatic cancer progression*

Esha Mathew, University of Michigan, Ann Arbor, Ann Arbor, Michigan

4:00 p.m.-7:00 p.m.

Poster Session B / Reception

National Harbor 2-3

Saturday, September 21

7:00 a.m.-8:00 a.m.

Continental Breakfast

Cherry Blossom Ballroom Lobby

Mentoring Roundtables†

Annapolis 1, Annapolis 2, and Annapolis 3

†Advance sign up is required at the Registration Desk in the Cherry Blossom Ballroom Lobby.

*Short talks from proffered papers

8:00 a.m.-10:00 a.m. **Plenary Session 7: Cancer Metabolism**
*Session Chairperson: Lewis C. Cantley, Weill Cornell Medical
College of Cornell University, New York, NY*
Cherry Blossom Ballroom

PI3K and cancer metabolism
Lewis C. Cantley

mTOR, metabolism, and cell growth control in cancer
John Blenis, Harvard Medical School, Boston, MA

Linking cancer metabolism to epigenetic reprogramming
Craig B. Thompson, Memorial Sloan-Kettering Cancer Center, New York, NY

Medulloblastoma-associated mutations in the DEAD box RNA helicase DDX3X impair protein translation*
Yasmine A. Valentin-Vega, St. Jude Children's Research Hospital, Memphis, TN

Bringing the Outside In: Macropinocytosis and cancer therapeutics*
Cosimo Commisso, New York University School of Medicine, New York, NY

10:00 a.m.-10:30 a.m. **Break**
Cherry Blossom Ballroom Lobby

10:30 a.m.-12:30 p.m. **Plenary Session 8: Metastasis**
*Session Chairperson: Joan Massagué, Memorial Sloan-Kettering
Cancer Center, New York, NY*
Cherry Blossom Ballroom

Metastasis pathways
Joan Massagué

Regulation of metastasis in breast cancer
Zena Werb, UCSF Helen Diller Family Comprehensive Cancer Center, San Francisco, CA

Cell fate determinants as regulators of cancer metastasis
Yibin Kang, Princeton University, Princeton, NJ

Interleukin-4 receptor α chain regulates the growth of primary and metastatic mammary tumors*
Katherine T. Venmar, Vanderbilt University, Nashville, TN

Lineage labeling elucidates the natural history of metastatic colonization*
Nicole M. Aiello, University of Pennsylvania, Philadelphia, PA

*Short talks from proffered papers

12:30 p.m.-2:00 p.m. **Free Time / Lunch on Own**

Mentoring Roundtables†

Annapolis 1, Annapolis 2, and Annapolis 3

†Advance sign up is required at the Registration Desk in the Cherry Blossom Ballroom Lobby.

2:00 p.m.-4:00 p.m.

Plenary Session 9: Interpreting the Cancer Genome

Session Chairperson: Stephen J. Elledge, Harvard Medical School, Boston, MA

Cherry Blossom Ballroom

Haploinsufficiency in cancer

Stephen J. Elledge

Functional genomics, experimental models, and cancer

William C. Hahn, Dana-Farber Cancer Institute, Boston, MA

Towards rationale therapy: Dealing with inter- and intratumor heterogeneity

Dana Pe'er, Columbia University, New York, NY

Unraveling mechanisms of tumor suppression in vivo

Scott W. Lowe, Memorial Sloan-Kettering Cancer Center, New York, NY

4:00 p.m.-7:00 p.m.

Poster Session C / Reception

National Harbor 2-3

Sunday, September 22

7:00 a.m.-8:00 a.m.

Continental Breakfast

Cherry Blossom Ballroom Lobby

Mentoring Roundtables†

Annapolis 1, Annapolis 2, and Annapolis 3

†Advance sign up is required at the Registration Desk in the Cherry Blossom Ballroom Lobby.

8:00 a.m.-10:00 a.m. **Plenary Session 10: Signaling I – Cancer Signaling Networks**
*Session Chairperson: Frank McCormick, UCSF Helen Diller
Family Comprehensive Cancer Center, San Francisco, CA*
Cherry Blossom Ballroom

Targeting cancer cell dependencies on developmental signal transduction pathways
Lawrence Lum, UT Southwestern Medical Center, Dallas, TX

Targeting Ras proteins in human cancer
Frank McCormick

Hippo signaling in development and cancer
Duoja Pan, Johns Hopkins Medical Institutes, Baltimore, MD

Hedgehog signaling in urothelial stem cell physiology and malignancy
Philip A. Beachy, Stanford University, Stanford, CA

10:00 a.m.-10:15 a.m. **Break**
Cherry Blossom Ballroom Lobby

10:15 a.m.-12:15 p.m. **Plenary Session 11: Signaling II – Signaling and Drug
Resistance**
*Session Chairperson: Kevin Shannon, University of California,
San Francisco, CA*
Cherry Blossom Ballroom

Title to be announced
Neal Rosen, Memorial Sloan-Kettering Cancer Center, New York, NY

Title to be announced
Kevan Shokat, University of California, San Francisco, CA

Targeting hyperactive Ras in cancer
Kevin Shannon

**Hypoxia induces lapatinib resistance in ErbB2-positive breast cancer cells via
regulation of DUSP2***
Sergey V. Karakashev, Drexel University College of Medicine, Philadelphia, PA

**Combined inhibition of ribosome function and ribosomal RNA gene transcription
cooperate to delay relapse and extend survival in MYC-driven tumors***
Richard B. Pearson, Peter MacCallum Cancer Centre, East Melbourne, Victoria, Australia

*Short talks from proffered papers