



Conference Co-Chairpersons

Gideon Bollag, Plexxikon, Inc., Berkeley, CA
Elaine R. Mardis, Washington University School of Medicine, St. Louis, MO
Gordon B. Mills, The University of Texas MD Anderson Cancer Center, Houston, TX
David B. Solit, Memorial Sloan Kettering Cancer Center, New York, NY

This AACR Precision Medicine Series conference will focus on the critical points at which cancer becomes resistant to treatment. Research presented will address acquired resistance (secondary genetic alterations or changes in signaling pathways), adaptive resistance (DNA/RNA/protein or microenvironment-mediated), preexisting resistance from tumor heterogeneity or clonal selection, and lessons learned from “extreme” responders to therapy. This conference will also focus on new technologies, diagnostics, and noninterventional assessments to detect emerging resistance to treatment. Elucidating resistance mechanisms and exploiting cancer vulnerabilities to therapeutics will ultimately improve cancer therapy and patient care. This conference explores topics that will appeal to clinicians, as well as, basic, translational, and clinical scientists ranging from academics to industry.

The AACR would like to thank the following organizations for their generous support of this conference.

Professional Educational Grants

Genentech **Pfizer** **Novartis**

The AACR thanks the following organizations for their generous support of the travel awards provided at this conference.

Award Supporters



Center to
Reduce
Cancer Health
Disparities



Conference Program

Wednesday, June 18

7:30 p.m.-8:30 p.m. **Opening Keynote Session**
Grand Cypress Ballroom DEF

Immunologic heterogeneity of cancer: Determinants of response and resistance to immunotherapy

Suzanne L. Topalian, Johns Hopkins Kimmel Comprehensive Cancer Center, Baltimore, MD

8:30 p.m.-10:00 p.m. **Opening Reception**
Upper Pool Deck

Thursday, June 19

7:00 a.m.-8:00 a.m. **Continental Breakfast**
Portico West

8:00 a.m.-10:00 a.m. **Plenary Session 1: Adaptive Resistance**
Grand Cypress Ballroom DEF
Session Chairperson: Matthew J. Ellis, Washington University Siteman Cancer Center, St. Louis, MO

Matrix-dependent adaptive responses to targeted therapies

Joan S. Brugge, Harvard Medical School, Boston, MA

Mutations, drugs and breast cancer: How are we going to figure it out?

Matthew J. Ellis

Using comprehensive proteomic approaches to map signaling adaptations to BRAF and BRAF/MEK inhibition

Keiran S.M. Smalley, Moffitt Cancer Center & Research Institute, Tampa, FL

Adaptive resistance of patient-derived ovarian cancer cells to PI3K/mTOR inhibition*

Ioannis Zervantonakis, Harvard Medical School, Boston, MA

10:00 a.m.-10:30 a.m. **Break**
Portico West

*Short talks from proffered papers.

10:30 a.m.-12:30 p.m. **Plenary Session 2: Noninterventional Assessment of Emerging Resistance or Increasing Tumor Burden**
Grand Cypress Ballroom DEF
*Session Chairperson: Nitzan Rosenfeld, Cancer Research UK
Cambridge Research Institute, Cambridge, United Kingdom*

Circulating tumor cells in lung cancer: Biomarkers, biology, and mouse models to study drug resistance

Caroline Dive, Cancer Research UK Manchester Institute, Manchester, United Kingdom

Monitoring the cancer genome in plasma using circulating tumor DNA

Nitzan Rosenfeld

Title to be announced

Jorge S. Reis-Filho, Memorial Sloan Kettering Cancer Center, New York, NY

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

2:30 p.m.-4:00 p.m. **Panel Discussion – Barriers to Implementing Liquid Biopsy Monitoring**

Grand Cypress Ballroom DEF

Panelists:

Caroline Dive, Cancer Research UK Manchester Institute, Manchester, United Kingdom

Nitzan Rosenfeld, Cancer Research UK Cambridge Research Institute, Cambridge, United Kingdom

Filip Janku, The University of Texas MD Anderson Cancer Center, Houston, TX

Howard I. Scher, Memorial Sloan Kettering Cancer Center, New York, NY

Elaine R. Mardis, Washington University School of Medicine, St. Louis, MO

4:00 p.m.-6:00 p.m. **Plenary Session 3: Extreme Resistance**

Grand Cypress Ballroom DEF

Session Chairperson: David B. Solit, Memorial Sloan Kettering Cancer Center, New York, NY

Genetic predictors of drug sensitivity

David B. Solit

Title to be announced

José Baselga, Memorial Sloan Kettering Cancer Center, New York, NY

Kinase-impaired BRAF mutations as predictors of resistance and sensitivity

Faye M. Johnson, The University of Texas MD Anderson Cancer Center, Houston, TX

Identification of ERK1/2 mutations that confer resistance to MAPK pathway inhibitors*

Eva M. Goetz, Dana-Farber Cancer Institute, Boston, MA

*Short talks from proffered papers.

Friday, June 20

7:00 a.m.-9:30 a.m.

Poster Session A and Continental Breakfast

Grand Cypress Ballroom GHI

9:30 a.m.-11:30 a.m.

Plenary Session 4: Preexisting Resistance

Grand Cypress Ballroom DEF

Session Chairperson: Elaine R. Mardis, Washington University School of Medicine, St. Louis, MO

Using genomics to study preexisting resistance

Elaine R. Mardis

Correlating cancer heterogeneity to treatment response and relapse

Elli Papaemmanuil, Wellcome Trust Sanger Institute, Cambridge, United Kingdom

Title to be announced

Roger S. Lo, University of California, Los Angeles, CA

Identifying biomarkers of drug response and resistance using personalized Drosophila models of colorectal cancer*

Erdem Bangi, Icahn School of Medicine at Mount Sinai, New York, NY

A melanoma transcriptional state distinction influences sensitivity to MAPK pathway inhibitors*

Cory Johannessen, The Broad Institute of Harvard and MIT, Cambridge, MA

11:30 a.m.-1:30 p.m.

Lunch on Own / Free Time

1:30 p.m.-3:30 p.m.

Plenary Session 5: Acquired Resistance

Grand Cypress Ballroom DEF

Session Chairperson: Gordon B. Mills, The University of Texas MD Anderson Cancer Center, Houston, TX

Functionalizing the cancer genome

Gordon B. Mills

Strategies to overcome acquired resistance to kinase inhibitors

Gideon Bollag, Plexxikon, Inc., Berkeley, CA

Acquired resistance to targeted therapeutics in hematologic malignancies

Neil P. Shah, University of California, San Francisco School of Medicine, San Francisco, CA

ERK pathway activation is associated with acquired resistance to AZD9291, a third-generation irreversible inhibitor targeting EGFR sensitizing (EGFRm+) and resistance (T790M) mutations in NSCLC*

Cath Eberlein, AstraZeneca, Macclesfield, Cheshire, United Kingdom (*not designated for CME credit*)

A co-clinical assessment of patterns of BRAF inhibitor resistance*

Lawrence N. Kwong, The University of Texas MD Anderson Cancer Center, Houston, TX

*Short talks from proffered papers.

3:30 p.m.-6:00 p.m.

Poster Session B and Reception
Grand Cypress Ballroom GH1

Saturday, June 21

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

Continental Breakfast
Portico West

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

Plenary Session 6: Utility of Models in Predicting Resistance
Grand Cypress Ballroom DEF
*Session Chairperson: Andrew E. Aplin, Thomas Jefferson University
Kimmel Cancer Center, Philadelphia, PA*

Studying therapy response and resistance in mouse models of human breast cancer

Jos Jonkers, Netherlands Cancer Institute, Amsterdam, The Netherlands

ERK activity in mutant BRAF melanoma – A live report

Andrew E. Aplin

Modeling resistance to MAPK pathway inhibitors in melanoma preclinical models

Nancy K. Pryer, Novartis Institutes for BioMedical Research, Emeryville, CA

The strength of drug selection determines the maximum fitness cost of resistance mutations in culture and xenografts*

Lee A. Albacker, Harvard Medical School, Boston, MA

Microparticles derived from drug-resistant cells regulate miR-503 and PYK2 to promote migration and invasion in breast cancer*

Mary Bebawy, University of Technology Sydney, Ultimo, Australia

10:00 a.m.-10:15 a.m.

Break
Portico West

*Short talks from proffered papers.

10:15 a.m.-12:15 p.m.

Plenary Session 7: New Technologies and Diagnostics

Grand Cypress Ballroom DEF

*Session Chairperson: Nicholas E. Navin, The University of Texas MD
Anderson Cancer Center, Houston, TX*

Molecular and genomic characterization of invasive circulating tumor cells (iCTCs) from men with metastatic castration-resistant prostate cancer (mCRPC)

Pamela L. Paris, UCSF Helen Diller Family Comprehensive Cancer Center, San Francisco, CA

Enumeration of circulating tumor cells for studying cancer drug sensitivity

Z. Hugh Fan, University of Florida, Gainesville, FL

Investigating breast cancer diversity and evolution with single-cell genomics

Nicholas E. Navin

Single cell phosphoproteomics identifies adaptive network dynamics of mTOR inhibitor resistance and defines effective combination therapy in glioblastoma*

Young Shik Shin, University of California, Los Angeles, CA

12:15 p.m.

Departure

*Short talks from proffered papers.