Functional and Genomic Precision Medicine in Cancer: Different Perspectives, Common Goals

March 11-13, 2025 | Hyatt Regency Boston | Boston, MA

Conference Cochairs:

Anthony G. Letai, Dana-Farber Cancer Institute, Boston, Massachusetts

Elaine R. Mardis, The Institute for Genomic Medicine at Nationwide Children's Hospital, Columbus, Ohio

Peter Horak, German Cancer Research Center, Heidelberg, Germany

Alice Soragni, University of California, Los Angeles, California

Precision medicine applied to oncology aims to match each patient to the right therapy. Heretofore, genomics has been the main tool in performing precision medicine. Yet, many cancer patients lack actionable alterations as there is a limited set of highly predictive biomarkers to accurately match patients to effective therapies. There is a need to extend the benefits of precision medicine to a larger proportion of cancer patients. Therefore, additional strategies need to be explored. One important approach is functional precision medicine, a strategy by which living patient tumor cells are exposed to therapies and signals measured to predict clinical response. The goal of this AACR Special Conference is to share experiences among those in the genomics and functional precision oncology arenas, to accelerate the progress toward routine clinical adoption of combined approaches in the oncology clinic. At this exciting program in Boston we will share technical, clinical, and logistical experiences, as well as our understanding of the barriers to widespread adoption of genomic and functional precision medicine in the treatment of the cancer patient, and how these approaches might be combined to provide more powerful tools than either alone.

AACR Special Conference in Cancer Research   *Program as of 5/22/2025 10:40 AM*
Functional and Genomic Precision Medicine in Cancer: Different Perspectives, Common Goals
Mach 11-13, 2025 | Hyatt Regency Boston | Boston, MA   *Page 1 of 9*

Functional and Genomic Precision Medicine in Cancer: Different Perspectives, Common Goals

March 11-13, 2025 | Hyatt Regency Boston | Boston, MA

TUESDAY, MARCH 11, 2025

Welcome and Keynote Lectures
5-6:30 p.m. | Grand Ballroom | CME-eligible

5-5:05	Welcome and Introduction of Keynote Speaker Elaine R. Mardis, The Institute for Genomic Medicine at Nationwide Children's Hospital, Columbus, Ohio
5:05-5:35	Targets and therapeutics in need of functional insights to get drug development in solid tumors Keith T. Flaherty, Mass General Cancer Center, Cambridge, Massachusetts
5:35-5:45	Discussion / Q&A
5:45-5:50	Introduction of Keynote Speaker Anthony G. Letai, Dana-Farber Cancer Institute, Boston, Massachusetts
5:50-6:20	Functional omics for novel therapeutic combinations in myeloid malignancies Jeffrey W. Tyner, OHSU Knight Cancer Institute, Portland, Oregon
6:20-6:30	Discussion / Q&A

Break
6:30-6:45 p.m.

Plenary Session 1: Functional and Genomic Precision Medicine in Blood Cancers
6:45-8:20 p.m. | Grand Ballroom | CME-eligible
Session Chair: Ann-Kathrin Eisfeld, The Ohio State University Comprehensive Cancer Center, Columbus, Ohio

6:45-6:50	Introduction Ann-Kathrin Eisfeld
6:50-7:10	The genetics of myeloid malignancies: From germline risk to somatic transformation R. Coleman Lindsley, Dana-Farber Cancer Institute, Boston, Massachusetts
7:10-7:20	Discussion / Q&A
7:20-7:40	Ex vivo drug response profiling for response and outcome prediction in hematologic malignancies Sascha Dietrich, University of Düsseldorf, Düsseldorf, Germany
7:40-7:50	Discussion / Q&A

AACR Special Conference in Cancer Research   *Program as of 5/22/2025 10:40 AM*
Functional and Genomic Precision Medicine in Cancer: Different Perspectives, Common Goals
Mach 11-13, 2025 | Hyatt Regency Boston | Boston, MA   *Page 2 of 9*

7:50-8:10	Genomic inclusivity in AML Ann-Kathrin Eisfeld, The Ohio State University Comprehensive Cancer Center, Columbus, Ohio
8:10-8:20	Discussion / Q&A

Opening Reception and Poster Session A
8:30-10 p.m. | Cape Cod and Martha's Vineyard

WEDNESDAY, MARCH 12, 2025

Continental Breakfast
7-8 a.m. | Nantucket

Plenary Session 2: Functional and Genomic Precision Medicine in Solid Tumors
8-9:35 a.m. | Grand Ballroom | CME-eligible
Session Chair: Peter Horak, German Cancer Research Center, Heidelberg, Germany

8-8:05	Introduction Peter Horak
8:05-8:25	Targeting E3 ubiquitin ligases for precision oncology: Functional genomics identifies an ovarian cancer specific dependence on CRL4 Benjamin D. Hopkins, Cornell University, New York, New York
8:25-8:35	Discussion / Q&A
8:35-8:55	Rapid ex vivo biosensor cultures to assess dependencies in gastroesophageal cancer Jesse S. Boehm, Koch Institute for Integrative Cancer Research at MIT, Cambridge, Massachusetts
8:55-9:05	Discussion / Q&A
9:05-9:25	Integrative multi-omics profiling of rare cancers: Charting new pathways for clinical translation Peter Horak, German Cancer Research Center, Heidelberg, Germany
9:25-9:35	Discussion / Q&A

Break
9:35-9:50 a.m. | Ballroom Foyer

AACR Special Conference in Cancer Research   *Program as of 5/22/2025 10:40 AM*
Functional and Genomic Precision Medicine in Cancer: Different Perspectives, Common Goals
Mach 11-13, 2025 | Hyatt Regency Boston | Boston, MA   *Page 3 of 9*

Functional and Genomic Precision Medicine in Cancer: Different Perspectives, Common Goals

March 11-13, 2025 | Hyatt Regency Boston | Boston, MA

Plenary Session 3: *Ex vivo* Patient-Derived Models to Identify Biomarkers of Response
9:50-11:25 a.m. | Grand Ballroom | CME-eligible
Session Chair: Alice Soragni, University of California, Los Angeles, California

9:50-9:55	Introduction Alice Soragni
9:55-10:15	Organoid models of pancreatic cancer David A. Tuveson, Cold Spring Harbor Laboratory, Cold Spring Harbor, New York
10:15-10:25	Discussion / Q&A
10:25-10:45	Patient-derived tumor organoid models to identify drug susceptibilities in rare cancers Alice Soragni, University of California, Los Angeles, California
10:45-10:55	Discussion / Q&A
10:55-11:15	Cell states and plasticity define drug sensitivity and resistance in pediatric-type diffuse high-grade glioma patient-derived models Chris Jones, The Institute of Cancer Research, Sutton, England
11:15-11:25	Discussion / Q&A

Lunch on Own
11:25 a.m. – 1 p.m.

Panel Discussion 1: Regulatory and Non-Regulatory Challenges to the Wide Adoption of Precision Diagnostics
1-2 p.m. | Grand Ballroom | CME-eligible
Session Chair: Anthony G. Letai, Dana-Farber Cancer Institute, Boston, Massachusetts

1-1:05	Introduction Anthony G. Letai
1:05-1:10	Peter Horak, German Cancer Research Center, Heidelberg, Germany
1:10-1:15	Anthony G. Letai, Dana-Farber Cancer Institute, Boston, Massachusetts
1:15-1:20	Keith L. Ligon, Dana-Farber Cancer Institute, Boston, Massachusetts
1:20-2	Panel Discussion

AACR Special Conference in Cancer Research *Program as of 5/22/2025 10:40 AM*
Functional and Genomic Precision Medicine in Cancer: Different Perspectives, Common Goals
Mach 11-13, 2025 | Hyatt Regency Boston | Boston, MA *Page 4 of 9*

Functional and Genomic Precision Medicine in Cancer: Different Perspectives, Common Goals
March 11-13, 2025 | Hyatt Regency Boston | Boston, MA

Plenary Session 4: Vertebrate Models for Modeling Disease and Guiding Therapy
2:15-3:50 p.m. | Grand Ballroom | CME-eligible
Session Chair: Genevieve C. Kendall, The Ohio State University, Nationwide Children's Hospital, Columbus, Ohio

2:15-2:20	Introduction Genevieve C. Kendall
2:20-2:40	Comprehensive in vivo phenotyping of fusion-driven pediatric sarcomas Genevieve C. Kendall, The Ohio State University, Nationwide Children's Hospital, Columbus, Ohio
2:40-2:50	Discussion / Q&A
2:50-3:10	RNA-based precision medicine predicts sensitivity to selinexor in select pancreatic ductal adenocarcinoma patients Álvaro Curiel-García, Columbia University Irving Medical Center, New York, New York
3:10-3:20	Discussion / Q&A
3:20-3:40	Single mouse testing (SMT): An alternative approach to encompass clinical heterogeneity of pediatric cancers Peter J. Houghton, UT Health Science Center at San Antonio, San Antonio, Texas
3:40-3:50	Discussion / Q&A

Break
3:50-4 p.m.

Plenary Session 5: Challenges of Intra-Tumor and Intra-Patient Heterogeneity for Precision Medicine
4-5:35 p.m. | Grand Ballroom | CME-eligible
Session Chair: Elaine R. Mardis, The Institute for Genomic Medicine at Nationwide Children's Hospital, Columbus, Ohio

4-4:05	Introduction Elaine R. Mardis
4:05-4:25	The evolutionary origins of cancer lethality Paul C. Boutros, UCLA Jonsson Comprehensive Cancer Center, Los Angeles, California
4:25-4:35	Discussion / Q&A
4:35-4:55	Addressing genomic heterogeneity in glioblastoma personalized vaccine design Elaine R. Mardis

AACR Special Conference in Cancer Research *Program as of 5/22/2025 10:40 AM*
Functional and Genomic Precision Medicine in Cancer: Different Perspectives, Common Goals
Mach 11-13, 2025 | Hyatt Regency Boston | Boston, MA *Page 5 of 9*

4:55-5:05   Discussion / Q&A

5:05-5:25   Measuring single-cell mass: Biological insights and clinical translation
Scott R. Manalis, Koch Institute for Integrative Cancer Research at MIT, Cambridge, Massachusetts

5:25-5:35   Discussion / Q&A

Panel Discussion 2: Challenges in Tissue Acquisition and Handling for Precision Medicine
5:40-6:40 p.m. | Grand Ballroom | CME-eligible
Session Chair: Alice Soragni, University of California, Los Angeles, California

5:40-5:45   Introduction
Alice Soragni

5:45-5:50   Peter Horak, German Cancer Research Center, Heidelberg, Germany

5:50-5:55   Benjamin D. Hopkins, Cornell University, Larchmont, New York

5:55-6:00   Chris Jones, The Institute of Cancer Research, Sutton, England

6:00-6:05   Padmanee Sharma, The University of Texas MD Anderson Cancer Center, Houston, Texas

6:05-6:40   Panel Discussion

Lightning Lectures
6:45-7:15 p.m. | Grand Ballroom | CME-eligible
Session Chair: Anthony G. Letai, Dana-Farber Cancer Institute, Boston, Massachusetts

6:45-6:50   Introduction
Anthony G. Letai

6:50-6:55   Employing fresh tumor samples and long-term cultures for personalized drug response profiling in childhood solid cancers
Heike Peterziel, Hopp Children's Cancer Center, German Cancer Research Center, Heidelberg, Germany

6:55-7:00   Enhancing clinical decision-making ex vivo drug sensitivity profiling to rapidly complement molecular profiling in pediatric precision medicine
Marlinde Schoonbeek, Princess Máxima Center, Utrecht, Netherlands

7:00-7:05   Deep learning-based integration of tumor omics and functional drug screening for precision treatment selection in high-risk and metastatic breast tumors

AACR Special Conference in Cancer Research   *Program as of 5/22/2025 10:40 AM*
Functional and Genomic Precision Medicine in Cancer: Different Perspectives, Common Goals
Mach 11-13, 2025 | Hyatt Regency Boston | Boston, MA   *Page 6 of 9*

Casey Sederman, University of Utah, Salt Lake City, Utah

7:05-7:10   Clinical trial of an implantable microdevice to evaluate drug responses in ovarian cancer
Elizabeth H. Stover, Dana-Farber Cancer Institute, Boston, Massachusetts

7:10-7:15   Saturation mutational scanning uncovers druggability of all FGFR kinase point mutations
Carla Tangermann, DKFZ German Cancer Research Center / DKTK Freiburg, Freiburg, Germany

Poster Session B / Reception
7:15-8:45 p.m. | Cape Cod and Martha's Vineyard

THURSDAY, MARCH 13, 2025

Continental Breakfast
7-8 a.m. | Nantucket

Plenary Session 6: New Omics for Precision Medicine
8-9:35 a.m. | Grand Ballroom | CME-eligible
Session Chair: Thomas Kislinger, Princess Margaret Cancer Centre, Toronto, Ontario, Canada

8-8:05   Introduction
Thomas Kislinger

8:05-8:25   Phosphoproteome profiling for clinical decision-making in molecular tumor boards
Bernhard Küster, Technical University of Munich, Freising, Germany
8:25-8:35   Discussion / Q&A

8:35-8:55   Pan-cancer *N*-glycoproteomic atlas of patient-derived xenografts uncovers FAT2 as a therapeutic target for head and neck cancers
Thomas Kislinger, Princess Margaret Cancer Centre, Toronto, Ontario, Canada
8:55-9:05   Discussion / Q&A

9:05-9:25   Mapping pancreatic cancer 'tumor neighborhoods" with spatial approaches
M. Celeste Simon, Abramson Family Cancer Research Institute, Philadelphia, Pennsylvania
9:25-9:35   Discussion / Q&A

AACR Special Conference in Cancer Research   *Program as of 5/22/2025 10:40 AM*
Functional and Genomic Precision Medicine in Cancer: Different Perspectives, Common Goals
Mach 11-13, 2025 | Hyatt Regency Boston | Boston, MA   *Page 7 of 9*

Functional and Genomic Precision Medicine in Cancer: Different Perspectives, Common Goals

March 11-13, 2025 | Hyatt Regency Boston | Boston, MA

Break
9:35-9:50 a.m. | Ballroom Foyer

Plenary Session 7: Machine Learning to Integrate Multiple Data Layers
9:50-11:25 a.m. | Grand Ballroom | CME-eligible
Session Chair: Eliezer M. Van Allen, Dana-Farber Cancer Institute, Boston, Massachusetts

9:50-9:55	Introduction Eliezer M. Van Allen
9:55-10:15	Harnessing patient biopsies and AI for rapid, personalized cancer therapy discovery Taran Gujral, Fred Hutchinson Cancer Center, Seattle, Washington
10:15-10:25	Discussion / Q&A
10:25-10:45	Michael Hoffman, University of Toronto, ON, Canada
10:45-10:55	Discussion / Q&A
10:55-11:15	Multi-omic machine learning models for precision cancer medicine Eliezer M. Van Allen, Dana-Farber Cancer Institute, Boston, Massachusetts
11:15-11:25	Discussion / Q&A

Break / Box Lunches Available
11:25 a.m.-12 p.m.

Plenary Session 8: Immunotherapy-predictive Biomarkers
12-1:35 p.m. | Grand Ballroom | CME-eligible
Session Chair: Padmanee Sharma, The University of Texas MD Anderson Cancer Center, Houston, Texas

12-12:05	Introduction Padmanee Sharma
12:05-12:25	Patient-derived non-Hodgkin lymphoma tumoroids: A tool for precision immuno-oncology Patricia Perez-Galan, IDIBAPS Barcelona, Spain
12:25-12:35	Discussion / Q&A
12:35-12:55	From the clinic to the lab: Investigating mechanisms of response and resistance to immune checkpoint therapy Padmanee Sharma, The University of Texas MD Anderson Cancer Center, Houston, Texas

AACR Special Conference in Cancer Research   *Program as of 5/22/2025 10:40 AM*
Functional and Genomic Precision Medicine in Cancer: Different Perspectives, Common Goals
Mach 11-13, 2025 | Hyatt Regency Boston | Boston, MA   *Page 8 of 9*

Functional and Genomic Precision Medicine in Cancer: Different Perspectives, Common Goals

March 11-13, 2025 | Hyatt Regency Boston | Boston, MA

12:55-1:05	Discussion / Q&A
1:05-1:25	Organoid human cancer immunity models in motion Anne Rios, Princess Maxima Center for Pediatric Oncology, CS Utrecht, The Netherlands
1:25-1:35	Discussion / Q&A

Break
1:35-1:50 p.m.

Plenary Session 9: Clinical Trial Design for Optimal Implementation of Precision Medicine

1:50-3:25 p.m. | Grand Ballroom | CME-eligible
Session Chair: Philipp Staber, Medical University of Vienna, Vienna, Austria

1:50-1:55	Introduction Philipp Staber
1:55-2:15	Assess the clinical efficacy of test guided personalized treatments: The focus is on the assay Philipp Staber, Medical University of Vienna, Vienna, Austria
2:15-2:25	Discussion / Q&A
2:25-2:45	Using cancer stem cells to advance functional medicine in the era of precision oncology Pier Paolo Claudio, University of Mississippi Medical Center, Jackson, Mississippi
2:45-2:55	Discussion / Q&A
2:55-3:15	Harnessing functional and genomic biomarkers in oncology clinical trials: Challenges and opportunities Elena Garralda, Vall d'Hebron Institute of Oncology, Barcelona, Spain
3:15-3:25	Discussion / Q&A

Closing Remarks

3:25 p.m. | Grand Ballroom

Anthony G. Letai, Dana-Farber Cancer Institute, Boston, Massachusetts
Elaine R. Mardis, The Institute for Genomic Medicine at Nationwide Children's Hospital, Columbus, Ohio
Peter Horak, German Cancer Research Center, Heidelberg, Germany
Alice Soragni, University of California, Los Angeles, California

AACR Special Conference in Cancer Research　　　　　　　　　　　*Program as of 5/22/2025 10:40 AM*
Functional and Genomic Precision Medicine in Cancer: Different Perspectives, Common Goals
Mach 11-13, 2025 | Hyatt Regency Boston | Boston, MA　　　　　　　　　　　*Page 9 of 9*