

An AACR Special Conference in Cancer Research
Liquid Biopsy: From Discovery to Clinical Implementation

November 13-16, 2024 | Omni San Diego Hotel | San Diego, California

Conference Cochairs:

Catherine Alix-Panabières, University of Montpellier, Montpellier, France

Luis A. Diaz, Jr., Memorial Sloan Kettering Cancer Center, New York, New York

Maximilian Diehn, Stanford University, Stanford, California

Y.M. Dennis Lo, Chinese University of Hong Kong, Hong Kong ¹

Klaus Pantel, University Medical Center Hamburg-Eppendorf, Hamburg, Germany

¹ unable to attend conference

WEDNESDAY, NOVEMBER 13

Registration

3-7 p.m.

Welcome and Keynote Lectures

6-7:30 p.m. | Salon CDE | CME-eligible

6-6:05	Welcome and Introduction of Keynote Speaker
6:05-6:35	TBD Ash A. Alizadeh, Stanford University, Stanford, California
6:35-6:45	Discussion / Q&A
6:45-6:50	Introduction of Keynote Speaker
6:50-7:20	Revolutionizing drug development and treatment decisions through liquid biopsies Howard I. Scher, Memorial Sloan Kettering Cancer Center, New York, New York
7:20-7:30	Discussion / Q&A

Opening Reception

7:30-9 p.m. | Grand Ballroom Foyer

THURSDAY, NOVEMBER 14

Continental Breakfast

7-8 a.m. | Hall of Fame

Plenary Session 1: Biology Behind Circulating Tumor Cells (CTCs)

8-10:05 a.m. | Salon CDE | CME-eligible

Session Chair: Catherine Alix-Panabières, University of Montpellier, Montpellier, France

**Short-talks from highly rated abstracts*

Liquid Biopsy: From Discovery to Clinical Implementation

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- 8:00-8:05 Introduction
Catherine Alix-Panabières, University of Montpellier, Montpellier, France
- 8:05-8:25 The biology of metastasis-competent CTCs in colon and breast cancer
Catherine Alix-Panabières, University of Montpellier, Montpellier, France
- 8:25-8:35 Discussion / Q&A
- 8:35-8:55 Early cancer dissemination: Circulating tumor cells in ductal carcinoma in situ patients
Sunitha Nagrath, University of Michigan, Ann Arbor, Michigan
- 8:55-9:05 Discussion / Q&A
- 9:05-9:25 Tumor cell-based liquid biopsy to characterize prostate cancer
Daniel A. Haber, Massachusetts General Hospital, Boston, Massachusetts
- 9:25-9:35 Discussion / Q&A
- 9:35-9:45 The CTC signature of melanoma brain metastasis*
Dario Marchetti, The University of New Mexico Comprehensive Cancer Center, Albuquerque, New Mexico*
- 9:45-9:50 Discussion / Q&A
- 9:50-10 The clinical relevance of circulating tumor cell size in head and neck squamous cell carcinoma patients*
Hyeongjung Woo, Department of New Biology, DGIST, Daegu Republic of Korea
- 10-10:05 Discussion / Q&A

Break

10:05-10:25 a.m. | Grand Ballroom Foyer

Plenary Session 2: Biology of Plasma Biomarkers

10:25 a.m.-12:30 p.m. | Salon CDE | CME-eligible

Session Chair: David C. Lyden, Weill Cornell Medicine, New York, New York

- 10:25-10:30 Introduction
David C. Lyden, Weill Cornell Medicine, New York, New York
- 10:30-10:50 The biology of extracellular vesicles
David C. Lyden, Weill Cornell Medicine, New York, New York
- 10:50-11 Discussion / Q&A
- 11-11:20 Modulating cfDNA biology to enhance liquid biopsies
Viktor Adalsteinsson, Broad Institute of MIT and Harvard, Cambridge, Massachusetts

**Short-talks from highly rated abstracts*

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11:20-11:30 Discussion / Q&A

11:30-11:50 The biology of non-coding RNAs: From basic science to patients

George A. Calin, The University of Texas MD Anderson Cancer Center, Houston, Texas

11:50-12 Discussion / Q&A

12-12:10 ctDNA release kinetics and fragmentation to monitor treatment response and resistance in esophageal adenocarcinoma*

Alexandra Bartolomucci, Research Institute of the McGill University Health Centre, Montreal, Quebec, Canada

12:10-12:15 Discussion / Q&A

12:15-12:25 Biological insights into tissue-agnostic plasma cfDNA methylation signature for surveillance of head and neck tumor recurrence*

Yulia Newton, Adela, Inc., Foster City, California

12:25-12:30 Discussion / Q&A

Lunch on Own / Free Time

12:30-2:45 p.m.

Plenary Session 3: New Technologies for Liquid Biopsy Analyses

2:45-5:05 p.m. | Salon CDE | CME-eligible

Session Chair: Maximilian Diehn, Stanford University, Stanford, California

2:45-2:50 Introduction

Maximilian Diehn, Stanford University, Stanford, California

2:50-3:10 Ultra-sensitive ctDNA technologies

Maximilian Diehn, Stanford University, Stanford, California

3:10-3:25 Discussion / Q&A

3:25-3:45 Heterogeneity of cancer-derived extracellular vesicles

Dolores Di Vizio, Cedars-Sinai Medical Center, Los Angeles, California

3:45-4:00 Discussion / Q&A

4:00-4:20 Circulating proteins

Samir M. Hanash, The University of Texas MD Anderson Cancer Center, Houston, Texas

4:20-4:35 Discussion / Q&A

4:35-4:45 Leveraging mass cytometry for phenotyping CTCs in SCLC liquid biopsies: Tracking therapy resistance at a personalized level*

**Short-talks from highly rated abstracts*

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Loukia G. Karacosta, The University of Texas MD Anderson Cancer Center, Houston, Texas

4:45-4:55 Discussion / Q&A

Poster Session A / Reception

5:15-7:15 p.m. | Salon AB

Evening off / Dinner on Own

7:15 p.m.-

FRIDAY, NOVEMBER 15

Continental Breakfast

7-8 a.m. | Hall of Fame

Plenary Session 4: Early Detection of Primary Cancer and Relapse

8-10:05 a.m. | Salon CDE | CME-eligible

Session Chair: Nickolas Papadopoulos, Johns Hopkins Medicine, Baltimore, Maryland

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| 8-8:05 | Introduction
Nickolas Papadopoulos, Johns Hopkins Medicine, Baltimore, Maryland |
| 8:05-8:25 | Leveraging multiomics and machine learning towards a stepwise approach to multi-cancer screening
Jimmy Lin, Freenome, Inc., South San Francisco, California |
| 8:25-8:35 | Discussion / Q&A |
| 8:35-8:55 | Early detection and cancer screening
Lori Minasian, National Cancer Institute, Bethesda, Maryland |
| 8:55-9:05 | Discussion / Q&A |
| 9:05-9:25 | The CancerSEEK studies
Nickolas Papadopoulos, Johns Hopkins Medicine, Baltimore, Maryland |
| 9:25-9:35 | Discussion / Q&A |
| 9:35-9:45 | The potential of multi-cancer early detection screening for reducing cancer mortality*
Chris Tyson, Exact Sciences Corporation, Madison, Wisconsin |
| 9:45-9:50 | Discussion / Q&A |

**Short-talks from highly rated abstracts*

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- 9:50-10 Screening early detection of HPV-associated oropharynx cancers with multi-feature HPV whole genome sequencing liquid biopsy*
Daniel L. Faden, Massachusetts General Hospital, Harvard Medical School, Boston, Massachusetts
- 10-10:05 Discussion / Q&A

Break

10:05-10:25 a.m. | Grand Ballroom Foyer

Plenary Session 5: Liquid Biopsy Detection and Monitoring of MRD

10:25 a.m.-12:15 p.m. | Salon CDE | CME-eligible

Session Chair: Jeanne Tie, Peter MacCallum Cancer Centre, Melbourne, Victoria, Australia

- 10:25-10:30 Introduction
Jeanne Tie, Peter MacCallum Cancer Centre, Melbourne, Victoria, Australia
- 10:30-10:50 Early detection of MRD in cancer patients
Klaus Pantel, University Medical Center Hamburg-Eppendorf, Hamburg, Germany
- 10:50-11 Discussion / Q&A
- 11-11:20 ctDNA based detection of MRD in colorectal cancer: Towards clinical implementation
Jeanne Tie, Peter MacCallum Cancer Centre, Melbourne, Victoria, Australia
- 11:20-11:30 Discussion / Q&A
- 11:30-11:50 Liquid biopsy in head and neck cancers: A model for tissue-agnostic MRD detection
Scott V. Bratman, University of Toronto, Toronto, Ontario, Canada
- 11:50-12 Discussion / Q&A
- 12-12:10 Genome-wide analyses of cfDNA fragmentomes for therapeutic monitoring of patients with pancreatic cancer*
Carolyn A. Hruban, The Sidney Kimmel Comprehensive Cancer Center, Johns Hopkins University School of Medicine, Baltimore, Maryland
- 12:10-12:15 Discussion / Q&A

Lunch on Own / Free Time

12:15-2:30 p.m.

Plenary Session 6: Monitoring Tumor Evolution in Cancer Patients

2:30-4:35 p.m. | Salon CDE | CME-eligible

Session Chair: Klaus Pantel, University Medical Center Hamburg-Eppendorf, Hamburg, Germany

**Short-talks from highly rated abstracts*

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- 2:30-2:35 Introduction
Klaus Pantel, University Medical Center Hamburg-Eppendorf, Hamburg, Germany
- 2:35-2:55 Cell-free DNA fragmentomics for cancer detection and monitoring
Jillian A. Phallen, Johns Hopkins University School of Medicine, Baltimore, Maryland
- 2:55-3:05 Discussion / Q&A
- 3:05-3:25 TBD
Jacqui A. Shaw, University of Leicester, Leicester, England
- 3:25-3:35 Discussion / Q&A
- 3:35-3:55 AI-guided SNV detection for monitoring tumor fraction and somatic mutations
Adam Widman, Memorial Sloan Kettering Cancer Center, New York, New York
- 3:55-4:05 Discussion / Q&A
- 4:05-4:15 Application of Liquid Biopsy-RECIST (LB-RECIST) criteria to track metastatic colorectal cancer (mCRC) molecular response in first-line (1L) setting: findings from the PLATFORM-B study*
Valentino Martelli, Hospital del Mar Research Institute, Barcelona, Spain
- 4:15-4:20 Discussion / Q&A
- 4:20-4:30 High purity CTC RNA sequencing identifies poor prognosis lineage states in castrate resistant prostate cancer*
Marina N. Sharifi, University of Wisconsin-Madison, Madison, Wisconsin
- 4:30-4:35 Discussion / Q&A

Special Session: Proffered Talks from Highly-Rated Abstracts

4:45-6:15 p.m. | Salon CDE | CME-eligible

Session Chair: Jillian A. Phallen, Johns Hopkins University School of Medicine, Baltimore, Maryland

- 4:45-4:55 Advance prostate cancer detection through epigenomic profiling of cell-free DNA*
Mohamed Adil, University of Washington, Seattle, Washington
- 4:55-5 Discussion / Q&A
- 5-5:10 Comprehensive epigenomic profiling from plasma to inform drug development, cancer biology, and therapy selection*
Carl Barrett, Precede Biosciences, Boston, Massachusetts
- 5:10-5:15 Discussion / Q&A
- 5:15-5:25 Highly accurate detection of early-stage colorectal cancer using tumor and immune extracellular vesicles biomarkers*

**Short-talks from highly rated abstracts*

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- 5:25-5:30 Todd Hembrough, Nexosome Oncology, Durham, North Carolina
Discussion / Q&A
- 5:30-5:40 Robust disease monitoring using CSF liquid biopsies collected from children
undergoing cellular therapy for malignant central nervous system tumors*
Anna Kostecka, St. Jude Children's Research Hospital, Memphis, Tennessee
- 5:40-5:45 Discussion / Q&A
- 5:45-5:55 Novel digital PCR ctDNA monitoring assay evaluating exceptional responders to
combination immune-oncology (IO) therapy*
Daniel Stetson, AstraZeneca, Waltham, Massachusetts
- 5:55-6 Discussion / Q&A
- 6-6:10 Chromatin landscapes and cell-free DNA fragmentation in colorectal cancer
development*
Nicholas A. Vulpescu, Johns Hopkins University School of Medicine, Baltimore,
Maryland
- 6:10-6:15 Discussion / Q&A

Poster Session B / Reception

6:15-8:15 p.m. | Salon AB

Evening off / Dinner on Own

8:15 p.m.-

SATURDAY, NOVEMBER 16

Continental Breakfast

7-8 a.m. | Hall of Fame

Plenary Session 7: Liquid Biopsy and Immunotherapy

8-10:05 a.m. | Salon CDE | CME-eligible

Session Chair: Luis A. Diaz, Jr., Memorial Sloan Kettering Cancer Center, New York, New York

- 8-8:05 Introduction
Luis A. Diaz, Jr., Memorial Sloan Kettering Cancer Center, New York, New York
- 8:05-8:25 Fragmentomic features of cell-free DNA predict late-stage melanoma treatment
benefit and survival
Aaron B. Beasley, Edith Cowan University, Joondalup, Australia
- 8:25-8:35 Discussion / Q&A

**Short-talks from highly rated abstracts*

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8:35-8:55	TBD Luis A. Diaz, Jr., Memorial Sloan Kettering Cancer Center, New York, New York
8:55-9:05	Discussion / Q&A
9:05-9:25	Validation of liquid biopsy approaches for the care of children with cancer Brian D. Crompton, Dana-Farber Cancer Institute, Boston, Massachusetts
9:25-9:35	Discussion / Q&A
9:35-9:45	A T-cell signature in circulating cell-free DNA at time of diagnosis predicts response to checkpoint inhibition* Benjamin Schuster-Boeckler, Ludwig Cancer Research, University of Oxford, Oxford, United Kingdom
9:45-9:50	Discussion / Q&A
9:50-10	Plasma proteomic biomarkers reveal biological insights about the tumor microenvironment in melanoma patients after PD1 blockade* Samuel J. Wright, Broad Institute of MIT and Harvard, Cambridge, Massachusetts
10-10:05	Discussion / Q&A

Break

10:05-10:25 a.m. | Grand Ballroom Foyer

Plenary Session 8: Computational Science in Liquid Biopsy Analyses

10:25 a.m.-12:30 p.m. | Salon CDE | CME-eligible

Session Chair: Núria Malats Riera, Spanish National Cancer Research Centre (CNIO), Madrid, Spain

10:25-10:30	Introduction Núria Malats Riera
10:30-10:50	A DNA methylation atlas of normal human cell types Tommy Kaplan, The Hebrew University of Jerusalem, Jerusalem, Israel
10:50-11	Discussion / Q&A
11-11:20	Methods for tumor subtype classification using cell-free DNA Gavin Ha, Fred Hutchinson Cancer Center, Seattle, Washington
11:20-11:30	Discussion / Q&A
11:30-11:50	Multimodal-data integration Núria Malats Riera, Spanish National Cancer Research Centre (CNIO), Madrid, Spain
11:50-12	Discussion / Q&A
12-12:10	Transfer learning for accurate tissue of origin classification from cfDNA methylation*

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- 12:10-12:15 Shiva Farashahi, Harbinger Health, Cambridge, Massachusetts
Discussion / Q&A
- 12:15-12:25 A novel framework for epigenome-dependent multimodal fragment-signature
analysis reveals insights into cell-free DNA generation in cancer*
Yoo-Na Kim, Harvard Medical School, Boston, Massachusetts
- 12:25-12:30 Discussion / Q&A

Closing Comments and Departure

12:30 p.m. | Salon CDE

**Short-talks from highly rated abstracts*