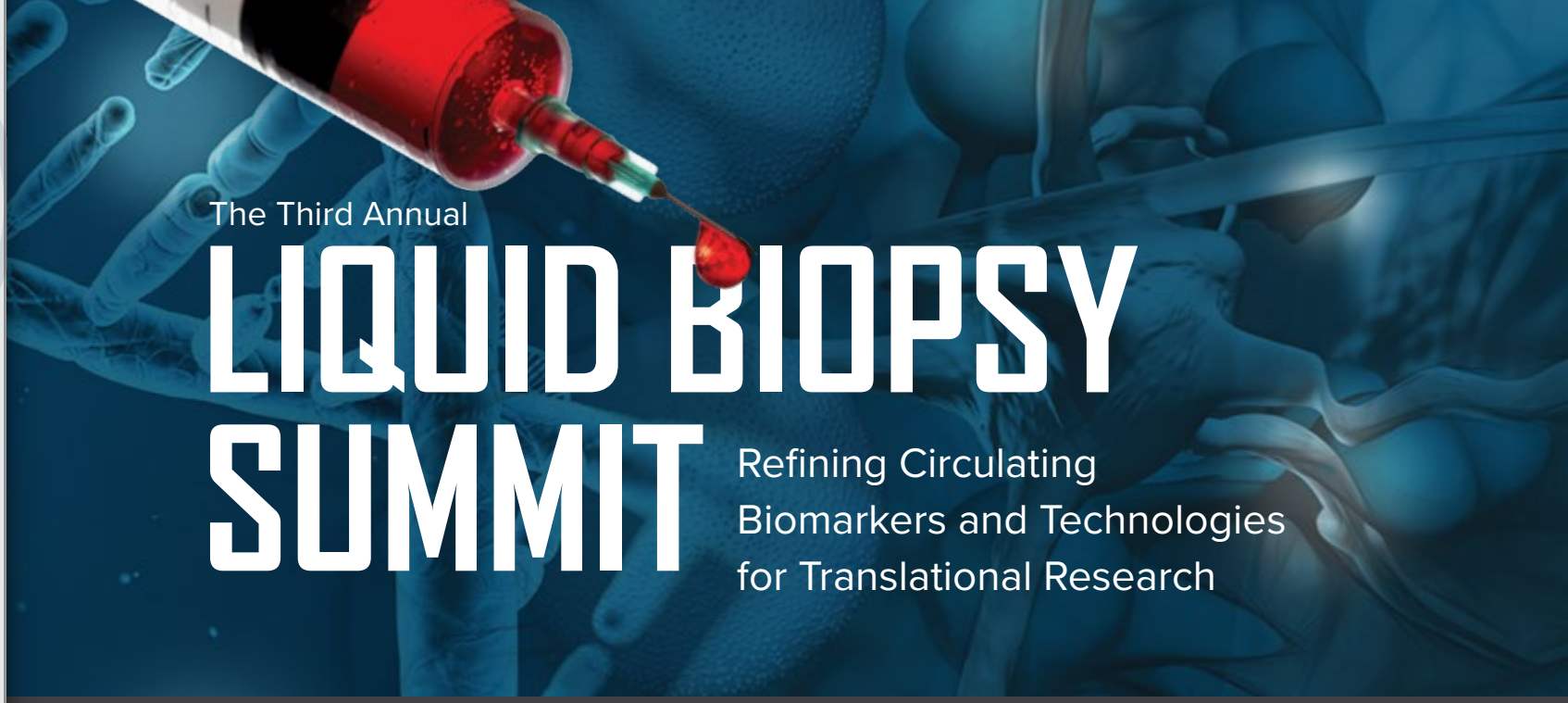
Register by May 11 for SAVINGS UP TO $200!

Register Online!

LiquidBiopsySummitcom



The Third Annual

LIQUID BIOPSY SUMMIT

Refining Circulating Biomarkers and Technologies for Translational Research

JUNE 20-22, 2018 | SAN FRANCISCO, CA | HOTEL KABUKI

BEST VALUE

ALL ACCESS PACKAGE

INCLUDES ACCESS TO ALL PROGRAMS & EVENTS ALL THREE DAYS!

DAY 1 JUNE 20

BACK-TO-BACK SHORT COURSES

SHORT COURSE 1:

Innovative Technologies for Imaging CTC Phenotype, Drug Response and Metastasis

SHORT COURSE 2:

Making the Most of Clinical Samples: Methods for Standardized Blood Collection

OPENING KEYNOTE

Oanh Dang, PhD, Founder and Principal Consultant, Akamai Strategies, Inc.

Opening of Exhibit Hall & Welcome Reception

DAY 2 JUNE 21

FEATURED SESSIONS & SPEAKERS

Samples & Standards

Robert T. McCormack, PhD, Independent Consultant; formerly Head, Biomarker Strategy, Disease Interception, R&D, Janssen Pharmaceuticals

Isolating & Analyzing CTCs

Richard J. Cote, MD, FRCPath, FCAP, Professor and Joseph R. Coulter Jr. Chair, Department of Pathology & Laboratory Medicine, University of Miami Miller School of Medicine

DAY 3 JUNE 22

FEATURED SESSIONS & SPEAKERS

Exploring Other Applications, Biofluids & Biomarkers

Lydia Sohn, PhD, Professor, Mechanical Engineering, University of California, Berkeley

Analytes for Oncology

Kang Zhang, MD, PhD, Professor, Human Genetics and Nano-Engineering; Founding Director, Institute for Genomic Medicine, University of California, San Diego

Breakout Discussion Groups

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Cambridge HEALTHTECH Institute

Short Courses

Please visit the conference website for more details.

PRE-CONFERENCE LUNCH SHORT COURSE

WEDNESDAY, JUNE 20 | 10:00 AM - 1:00 PM

SC1: Innovative Technologies for Imaging CTC Phenotype, Drug Response and Metastasis

This course covers advanced methods for isolating CTCs and imaging with high-resolution microscopy methods. Application of these techniques to live patient CTCs will be presented to both characterize CTC phenotype and drug responses. Whole-animal imaging techniques to trace CTC metastasis in mice and zebrafish will also be discussed.

Topics to be covered:

- Viable CTC capture technologies and propagation strategies
- Existing microscopy and flow-based imaging technologies
- Emerging confocal, light sheet and superresolution techniques
- Imaging CTC metastasis in zebrafish and mice
- Connecting CTC characteristics with patient outcome and drug response

Who should attend this course:
Oncologists, cancer researchers, pharmaceutical researchers, people involved in clinical trial design and patient selection for clinical trials (responsive vs. non-responsive population identification).

Instructor:
Stuart S. Martin, PhD, Professor of Physiology, Marlene and Stewart Greenebaum NCI Comprehensive Cancer Center, University of Maryland School of Medicine

1:00 - 1:30 pm Lunch Provided for Short Course Participants

PRE-CONFERENCE LUNCH SHORT COURSE

WEDNESDAY, JUNE 20 | 1:30 - 4:30 PM

SC2: Making the Most of Clinical Samples: Understanding the Methods of Standardized Blood Collection, Handling, and Processing to Optimize Circulating Biomarker Analysis

For liquid biopsies, optimal conditions for blood collection and sample preparation are critical to enabling accurate analysis. This short course discusses factors that are important to consider in reducing pre-analytical variability in the collection and handling of blood samples, cell-free DNA isolation and quality analysis. Through a case study reviewing the experiences in workflow optimization from a dedicated hands-on biomarker laboratory, some best practices and tips will be shared on implementing a standardized process.

Topics to be covered:

- Implementing appropriate blood collection and sample handling
- Understanding plasma preparation and cell-free DNA isolation options
- Choosing an appropriate cell-free DNA quality control/ quantification method
- Maintaining standards and consistency with an eye for future clinical implementation

Who should attend this course:
Researchers and lab managers from pharma, biotech and academia working in fields such as molecular oncology, cancer biomarkers, molecular diagnostics, translational research, genetics, and research and development.

Instructors:
Rebecca (Becky) Suttmann, MS, Senior Scientific Researcher, formerly Genentech, Oncology Biomarkers
Phoebe Loh, Global Product Manager PreAnalytiX, Sample Technologies, QIAGEN
Melissa Huang Liu, PhD, Product Manager, 2100 Bioanalyzer System & Applications, Agilent Technologies, Inc.

PRESENT YOUR RESEARCH POSTER AND SAVE $50!

Cambridge Healthtech Institute encourages attendees to gain further exposure by presenting their work in the poster sessions.

To secure a poster board and inclusion in the conference materials, your abstract must be submitted, approved and your registration paid in full by **May 11, 2018.**

Reasons you should present your research poster at this conference:

- Your poster will be seen by our international delegation, representing leaders from top pharmaceutical, biotech, academic and government institutions
- You will receive **$50 off** your registration
- Your poster abstract will be published in our conference materials

Visit LiquidBiopsySummit.com/Posters for details.

THE LIQUID BIOPSY SUMMIT Program Agenda

WEDNESDAY, JUNE 20

9:30 am Morning Coffee and Short Course Registration

10:00 am - 1:00 pm Pre-Conference Lunch Short Course
SC1: Innovative Technologies for Imaging CTC Phenotype, Drug Response and Metastasis

1:00 - 1:30 Lunch Provided for Short Course Participants

1:30 - 4:30 Pre-Conference Lunch Short Course
SC2: Making the Most of Clinical Samples: Understanding the Methods of Standardized Blood Collection, Handling, and Processing to Optimize Circulating Biomarker Analysis

4:00 Main Conference Registration

4:45 Organizer's Welcome
Mary Ann Brown, Executive Director, Conferences, Cambridge Healthtech Institute

4:50 Chairperson's Opening Remarks
Jamie Platt, PhD, MB(ASCP), Founder & Managing Director, BRIDGenomics, LLC

5:00 KEYNOTE PRESENTATION: Liquid Biopsy and Its Clinical Impact
Oanh Dang, PhD, Founder and Principal Consultant, Akamai Strategies, Inc.
Liquid biopsy is making its way into the clinic. An overview on the current state of liquid biopsy, what it is and the technologies that are enabling it will be presented. Current applications in NIPT, organ transplant rejection and oncology demonstrate both the potentials and the pitfalls of this emerging technology. Finally, future areas where we will see the impact of liquid biopsies in the clinic will be discussed.

5:45 PANEL DISCUSSION: Enhancing the Science and Clinical Utility of Liquid Biopsies
All agree that the potential of liquid biopsies will allow for detection of disease faster, diagnosis of disease earlier, and tracking of disease progression and treatment response more efficiently. This panel discusses progress in:
- Collection, preservation, and storage of biosamples
- Advances in detection technologies
- Determining reference materials and standards
- Developing safe and effective blood profiling diagnostics
- Creating an open database of liquid biopsy results

Moderator:
Jamie Platt, PhD, MB(ASCP), Founder & Managing Director, BRIDGenomics, LLC
Panelists:
Oanh Dang, PhD, Founder and Principal Consultant, Akamai Strategies, Inc.
Additional Panelists to be Announced

6:30 Welcome Reception in the Exhibit Hall with Poster Viewing

7:30 Close of Day

THURSDAY, JUNE 21

8:00 am Morning Coffee

Samples & Standards

8:25 Chairperson's Remarks
Robert T. McCormack, PhD, Independent Consultant; formerly Head, Biomarker Strategy, Disease Interception, R&D, Janssen Pharmaceuticals

8:30 BloodPAC: Establishing Standards to Accelerate Development and Approval of Liquid Biopsy Technology
Lauren C. Leiman, MS, MBA, Executive Director, Blood Profiling Atlas in Cancer (BloodPAC)
The Blood Profiling Atlas in Cancer (BloodPAC) looks to improve outcomes for patients with cancer through a collaborative infrastructure that enables the sharing of information between stakeholders in industry, academia and regulatory agencies. The goals of BloodPAC are: to aggregate, make freely available, and harmonize for further analysis: i) data from CTC, ctDNA, proteins including tumor associated autoantibodies, and exosome assays; ii) associated clinical data; and iii) sample collection, preparation and handling protocols.

9:00 An Update on the Development of NIST Circulating Cell-Free Tumor DNA Reference Materials
Hua-Jun He, PhD, Research Biologist, Material Measurement Laboratory, NIST
NIST, in collaboration with the Early Detection Research Network (EDRN), is developing reference materials for ctDNA. The proof of concept using synthetic DNA spiked into fragmented human background DNA has been demonstrated. The candidate reference materials have been developed and characterized,

and the cancer biomarker variants have been quantified by digital PCR assays and through different NGS approaches. The ctDNA reference materials would improve the reliability and confidence of the measurement for cell-free DNA biomarkers that show great promise for cancer detection.

9:30 Standardized Improved Pre-Analytical Workflows: The Key to Good Quality Samples for Reliable Diagnostics and Research

Phoebe Loh, Global Product Manager PreAnalytiX, Sample Technologies, QIAGEN

Cellular biomolecule profiles can change significantly during sample collection, transport, storage, archiving and processing. This can make the outcome from diagnostics or research unreliable because the subsequent analytical test will not determine the situation in the patient but an artificial bioanalyte profile generated during the pre-analytical workflow. The EU FP7 SPIDIA consortium could achieve significant progress by developing new pre-analytical workflow technologies and by generating evidence for developing new standard documents. The European Committee CEN/TC 140 "*In vitro* Diagnostic Medical Devices" has released first 9 Technical Specification documents to standardize pre-analytical workflows for different blood, other body fluids and tissue-based molecular applications. They are currently under further development to International Standards within the ISO/Technical Committee 212 "Clinical Laboratory Testing and *In Vitro* Diagnostic Test Systems".

10:00 Sponsored Presentation *(Opportunity Available)*

10:30 Coffee Break in the Exhibit Hall with Poster Viewing

11:00 Using Samples & Standards to Overcome Challenges in Validation Planning

Jamie Platt, PhD, MB(ASCP), Founder & Managing Director, BRIDGenomics, LLC

11:30 FEATURED PRESENTATION: A Public-Private, Pre-Competitive Consortium to Develop ctDNA Reference Materials: A Method for the Madness

Robert T. McCormack, PhD, Independent Consultant; formerly Head, Biomarker Strategy, Disease Interception, R&D, Janssen Pharmaceuticals

Testing for driver and resistance mutations using cell-free circulating tumor DNA (ctDNA) is poised to be the primary enabler of precision medicine. The complexity of the biomarker, reagents, and technologies used to generate results have led to discordance between sites testing the same patient sample. To expedite acceptance of ctDNA testing, our consortium has implemented a project to develop well-validated reference materials to add confidence in ctDNA results interpretation. Such performance information will help expedite acceptance of ctDNA testing for patient care among all stakeholders.

12:15 pm Session Break

12:30 Luncheon Presentation *(Sponsorship Opportunity Available)* **or Enjoy Lunch on Your Own**

1:00 Session Break

Isolating & Analyzing CTCs

2:00 Chairperson's Remarks

Richard J. Cote, MD, FRCPath, FCAP, Professor and Joseph R. Coulter Jr. Chair, Department of Pathology & Laboratory Medicine, University of Miami Miller School of Medicine

2:05 Rapid Analysis of Drug Responses in Live Patient CTCs Using Microfluidic Cell Tethering

Stuart S. Martin, PhD, Professor of Physiology, Marlene and Stewart Greenebaum NCI Comprehensive Cancer Center, University of Maryland School of Medicine

We have developed a microfluidic cell tethering device that secures CTCs for imaging and drug testing, while preserving the cytoskeletal dynamics of non-adherent cells. Using this tethering device, we can test the drug responses of patient tumor cells in less than one hour. Combined with emerging technologies that isolate live CTCs, microfluidic cell tethering provides a platform to rapidly test patient tumor cells and optimize treatments that reduce metastatic potential.

2:35 Droplet Biopsy Microarrays Based on Nanosurfaces: A New Method to Detect and Isolate Invasive Circulating Tumor Cells Based on Negative Selection

Balaji Panchapakesan, PhD, Associate Professor, Mechanical Engineering, Worcester Polytechnic Institute

We present a new method to isolate circulating tumor cells based on negative selection with high rate of recovery and high purity. The droplet biopsy chip with nanosurfaces enables easier isolation of CTCs with depletion of contaminating leukocytes. This is a new paradigm in isolation of CTC and to capture invasive CTCs that do not express any biomarkers.

3:05 Sponsored Presentation *(Opportunity Available)*

3:35 Refreshment Break in the Exhibit Hall with Poster Viewing

4:15 Noninvasive Liquid Biopsies: Culturing Cancer Cells from Urine and Blood CTCs for Precision Medicine

Xuefeng Liu, MD, Professor, Pathology, Georgetown University

We discuss: 1) culturing cancer cells from the urine of bladder cancer patients or circulating tumor cells (CTCs) from blood using conditional reprogramming

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(CR) technique, 2) characterization of CR cells at cellular and genetic levels, 3) therapeutic response of urine CR cells and tumor CR cells. This rapid, efficient and noninvasive method for generating cultures of bladder cancer cells and CTCs can be used potentially for high-throughput drug screening, predicting patient clinical responses, and for monitoring tumor initiation and recurrence.

4:45 Start-Up Spotlights

Explore emerging liquid biopsy platforms as presented by start-up companies. This is an unparalleled opportunity to compare and contrast promising platforms that are pushing the promise of personalized medicine.

Liquid Biopsy Testing Using 2PG's MoM

Trevor J. Morin, PhD, CSO, Two Pore Guys, Inc.

2PG developed a handheld diagnostic device that allows the detection of any molecule of interest, including nucleic acids, proteins, metabolites, drugs, and small molecules. The technology employs solid-state nanopores that allow single molecule counting using purely electrical sensing, obviating the need for optics, chemistries, or electrochemical sensors. This presentation demonstrates how 2PG used the device to quantitate circulating tumor DNA from cancer positive clinical blood samples.

Additional Start-Ups to be Announced

(If you are interested in being featured in the Summit's Start-Up Spotlights, please contact Rod Eymael at 781-247-6286 or reymael@healthtech.com)

5:15 FEATURED PRESENTATION: Capture, Interrogation, Imaging, Automated Analysis and Culture of CTC: Strategies for the Development of a Transformative Tool to Understand Cancer

Richard J. Cote, MD, FRCPath, FCAP, Professor and Joseph R. Coulter Jr. Chair, Department of Pathology & Laboratory Medicine, University of Miami Miller School of Medicine

Circulating tumor cells (CTCs) are important clinical biomarkers for cancer diagnosis, prognosis and target identification. Recently, we have described the presence of circulating Cancer Associated Fibroblasts (cCAF), which may have great importance. We discuss integrated platforms for capture and novel imaging of CTC/cCAF, efforts to automate the analysis of CTC/cCAF images, and live CTC capture, which could lead to expansion, propagation, and creation of an important new biospecimen for cancer discovery.

6:00 Close of Day

FRIDAY, JUNE 22

7:30 am Breakfast Breakout Discussion Groups

Chew over continental breakfast and provocative discussion topics with your peers. These are moderated discussions with brainstorming and interactive problem-solving, allowing conference participants from diverse backgrounds to exchange ideas and experiences and develop future collaborations around a focused topic.

Please visit the conference website for more details.

Exploring Other Applications, Biofluids & Biomarkers

9:00 Chairperson's Remarks

James Hicks, PhD, Professor, Department of Biological Sciences, University of Southern California

9:05 Validation of a Microbial Cell-Free DNA Sequencing Test for Infectious Disease

Timothy Blauwkamp, PhD, CSO and Co-Founder, Karius, Inc.

Microbial cell-free DNA sequencing offers great potential to noninvasively identify a wide range of pathogens, but a number of challenges associated with such comprehensive testing must be addressed. We share our experience developing and validating a next-generation sequencing test that identifies and quantifies microbial cfDNA in plasma from 1,250 clinically relevant pathogens. Particular attention will be paid to the novel strategies and experiments that we employed to characterize performance across such a broad range of pathogens throughout the validation studies.

9:35 Validation of Aqueous Humor cfDNA as a Predictor of Tumor Response in Retinoblastoma

Jesse Berry, MD, Assistant Professor, Ophthalmology, University of Southern California

Retinoblastoma is a pediatric eye cancer initiated by a RB1 tumor suppressor gene mutation. Investigating the RB1 pathway has provided insight into the mechanism of tumorigenesis for virtually all human cancers. However, leveraging this knowledge for retinoblastoma has been elusive because we cannot biopsy the tumor for risk of extraocular spread. We recently overcame this barrier to biopsy by using the aqueous humor as a liquid biopsy.

10:05 Sponsored Presentation *(Opportunity Available)*

10:20 Coffee Break in the Exhibit Hall with Last Chance for Poster Viewing

11:00 EV Phosphoproteomics as the New Source of Biomarkers for Disease Diagnostics

Anton Iliuk, PhD, President and CTO, Tymora Analytical Operations

Recent discoveries in the field of extracellular vesicles (EVs) show promise in circumventing the problems plaguing current liquid biopsy methods, while retaining all the potential benefits. The vast majority of current EV studies, however, focus on microRNA and DNA, with virtually nothing reported on their phosphoproteomes. As phosphorylation is a major player in cancer and other disease progression, EV phosphoproteins offer enormous potential as indicators of cellular states and for *in vitro* disease diagnosis.

11:30 FEATURED PRESENTATION: Tumor-Derived Exosome Detection

Lydia Sohn, PhD, Professor, Mechanical Engineering, University of California, Berkeley

12:15 pm Session Break

12:30 Luncheon Presentation *(Sponsorship Opportunity Available)* **or Enjoy Lunch on Your Own**

1:00 Session Break

Analytes for Oncology

1:30 Chairperson's Remarks

Rebecca (Becky) Suttmann, MS, Senior Scientific Researcher, formerly Genentech, Oncology Biomarkers

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1:35 FEATURED PRESENTATION: Circulating Tumor DNA Methylation Markers for Diagnosis and Prognosis of Hepatocellular Carcinoma

Kang Zhang, MD, PhD, Professor, Human Genetics and Nano-Engineering; Founding Director, Institute for Genomic Medicine, University of California, San Diego

We identified an HCC-specific methylation marker by comparing HCC tissue and normal blood leukocytes and showed that methylation profiles of HCC tumor DNA and matched plasma ctDNA are highly correlated. We constructed a diagnostic prediction model with high diagnostic specificity and sensitivity and was highly correlated with tumor burden, treatment response, and stage. Additionally, we constructed a prognostic prediction model that effectively predicted prognosis and survival.

2:15 Can ctDNA Complement Mammography to Improve Breast Cancer Diagnosis?

Margaret Van Meter, MD, Director, Breast Oncology, Intermountain Healthcare

Using the recently launched CREST study as a framework for discussion, I review existing data on the prognostic and predictive value of ctDNA in breast cancer and discuss the rationale for exploring its use in the screening setting. I address analytic issues related to use of ctDNA in breast cancer screening as well as in the setting of known breast cancer.

2:45 Real-Time Application of ctDNA Testing for Patients with Gastrointestinal Malignancies

Pashtoon M. Kasi, MD, Assistant Professor, Oncology, College of Medicine, Mayo Clinic

3:15 Detecting DNA Methylation Patterns in Patient Plasma to Improve Cancer Diagnostics

Brendan Miller, Research Fellow, National Human Genome Research Institute, National Institutes of Health

We designed a technique that can detect rare methylated DNA fragments in plasma indicative of a tumor for a fraction of the cost, in less time, and using less material than current sequencing approaches and applied this on small amounts of plasma from patients with ovarian cancer. We correctly classified 65% of the samples as being positive for cancer using our threshold based on the background found in healthy individuals.

3:45 Real-World Results of Liquid Biopsy in Advanced/Metastatic Solid Tumors and Potential "Clinical Actionability"

Glen J. Weiss, MD, MBA, Director, Phase I Clinical Research, Beth Israel Deaconess Medical Center

When tumor tissue is exhausted, a new tumor biopsy is contraindicated, and/or there has been intervening targeted therapy, the minimally invasive liquid biopsy serves a unique niche in the clinic. Here we report initial liquid biopsy results from patients with advanced/metastatic solid tumors and review results for potential "clinical actionability". This lecture highlights some of the current data on biomarkers being used and evaluated for treatment selection and monitoring along with cost implications.

4:15 Conference Wrap-Up

Mary Ann Brown, Executive Director, Conferences, Cambridge Healthtech Institute

4:30 Close of Conference

HOTEL & TRAVEL INFORMATION

CONFERENCE VENUE & HOTEL:

Hotel Kabuki
1625 Post Street
San Francisco, CA 94115
Phone: 415-922-3200

Reservations:
Go to the travel page of LiquidBiopsySummit.com

Discounted Room Rate: $225 s/d

Discounted Room Rate Cut-off Date: May 23, 2018

Go to the travel page of LiquidBiopsySummit.com for additional information.

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