

4TH ANNUAL MEETING

ACCESS CLINICAL DATA

MONTHS BEFORE IT IS PUBLISHED

WorldCTC⁹⁹

NOVEMBER 12-15 2013 | BOSTON, MA

- > **Evaluate** the Latest Technology
- > **Demonstrate** Clinical Utility
- > **Personalize** Patient Care

“The **World CTC Summit** attracts important members across the entire CTC community.”

Bob Proulx

Silicon Biosystems



BENEFITS OF ATTENDING

Join the CTC Community

- > **Evaluate the Latest Technology**
- > **Demonstrate Clinical Utility**
- > **Personalize Patient Care**

Every year **World CTC** unites the CTC community in Boston to journey right from the latest innovations in the research lab, all the way through to the most recent practical utilities in the clinic.

With over 200 of the leading academics, clinicians, drug developers, technology providers, and regulators all gathering to tackle the biggest challenges in CTC research, **World CTC** will give you the knowledge, ideas and tools you need to progress your CTC research faster.

Whether you are an academic looking to increase your understanding of CTCs in metastatic cancer; a drug developer currently evaluating CTC technology for your next clinical trial or a clinician assessing the practicality of CTCs in your clinical management of patients, **World CTC's** comprehensive program covers the breadth and depth of topics that means no matter what your challenge, there's an answer for you at this year's meeting.

- 1** Be the first to **discover unpublished data** from the latest cutting edge CTC culturing research coming out of *Mass Gen, Stanford University and Baylor College of Medicine*
- 2** **Gain the latest insights on advanced molecular characterization techniques** to yield untold information about the metastatic process with results from *MD Anderson Cancer Centre and Weill Cornell Medical College*
- 3** **Understand the dynamic process of EMT** and the impact for your CTC research going forward with ground-breaking research from *Mass Gen*
- 4** Learn how *MD Anderson and MIT* are **pioneering best practises for developing chemosensitivity assays** and how you can use this knowledge to better predict treatment responses
- 5** **Get unrivalled access to the latest clinical trial results months before they are released** and get the unique opportunity to **directly quiz the drug developers** in our question and answer sessions
- 6** **Critically compare and evaluate the latest techniques in capture and characterization** with our new live technology demonstrations with all of the most innovative technology providers under one roof
- 7** **Make an impact on patient diagnosis and prognosis** by learning how to effectively use **exosomes, cfDNA, and miRNA** with an entire track packed with the latest advances in circulating biomarker research

A **SNAPSHOT** OF ATTENDING COMPANIES LAST YEAR

- | | | | |
|---------------------------|---------------------------|----------------------|--------------------|
| > Yale School of Medicine | > Hershey Cancer Centre | > Veridex | > Progenics |
| > Fox Chase Cancer Centre | > Minerva Biotechnologies | > Novartis | > Epic Sciences |
| > John Hopkins | > Screencell | > Fluxion | > Pfizer |
| > Mass Gen Hospital | > Bristol-Myers-Squibb | > Genentech | > Fred Hutchins |
| > MSKCC | > Janssen | > Silicon Biosystems | > Miami University |
| > Stanford Medical School | > Cynvenio | > EMD Serono | > NCI |

EXPERT SPEAKERS

PLENARY SESSION SPEAKERS INCLUDE:



Eric Schuur
Principal
VMWA



Howard Scher
Chief, Genitourinary
Oncology Service
Memorial Sloan-Kettering
Cancer Center



Eric Lim
Consultant
Thoracic Surgeon, Academic
Division of Thoracic Surgery
The Royal Brompton Hospital



Jeffrey Chalmers
Professor, Department of
Chemical and Biomolecular
Engineering
Ohio State University



Meredith Unger
Global Commercial
Leader Oncology
Janssen Diagnostics



Hsian-Rong Tseng
Professor
University of California



Ulka Vaishampayan
Department of Oncology
Karmanos Cancer Institute



Sabine Mai
Senior Investigator, Professor
University of Manitoba



Naoto Ueno
Section Chief, Translational
Breast Cancer Research, MD
Anderson Cancer Centre



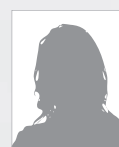
David Lawrence
Chief, Laboratory
of Immunology,
Wadsworth Center
New York State Department
of Health



Ximei Qian
Assistant Professor
Emory University



Vladimir Zharov
Professor, Director
University of Arkansas
for Medical Sciences



Lisa Bleckner
Oncologist
Defense and Veterans
Center for Integrative Pain
Management

ADVANCED CTC APPLICATIONS SPEAKERS INCLUDE:



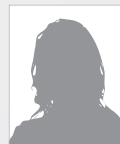
Steven Pirie-Shepherd
Associate Director
Pfizer



Nicholas Dracopoli
Vice President
Janssen



George Martin
Director Technology
Management
Roche



Patricia Burke
Scientist, Translational
Medicine Oncology
MedImmune



Denis Smirnov
Associate Scientific Director,
Oncology Biomarkers
Janssen



Edith Szafer-Glusman
Senior Research Associate,
Development Sciences
Genentech



Lihua Wang
Senior Scientist
NCI-Frederick



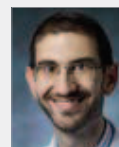
Lidia Sambucetti
Senior Director
SRI International



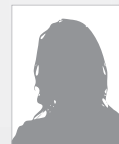
Minetta Liu
Director,
Translational
Breast Cancer Research
Georgetown University



Andrew Hughes
Professor
Weill Cornell
Medical College



Emmanuel Antonarakis
Assistant Professor, Oncology
Sidney Kimmel
Comprehensive
Cancer Center



Ekaterina Galanzha
Assistant Professor
University of Arkansas

EXPERT SPEAKERS CONTINUED...

UNDERSTANDING THE SCIENCE BEHIND CTC SPEAKERS INCLUDE:



Sarah Thayer
Department of Surgery
Massachusetts General
Hospital



Stefanie Jeffrey
Chief of Surgical
Oncology Research
Stanford University School
of Medicine



Richard Cote
Professor and Chair, Department
of Pathology, Director
University of Miami



Dario Marchetti
Professor, Pathology and
Immunology, Molecular
and Cellular Biology
Baylor College of Medicine



Wolfram Samlowski
Medical Oncologist
Comprehensive Cancer
Centers of Nevada



Joo Kang
Professor
Harvard University



Peter Kuhn
Associate Professor,
Cell Biology
The Scripps Research
Institute



Hakho Lee
Assistant Professor
Massachusetts General
Hospital



Gianfranco de Feo
Senior Director, North
American Regional Marketing
Affymetrix



Susan Done
Associate Professor
University of Toronto



James Hicks
Professor
Cold Spring Harbor
Laboratory



Pawan Kumar
Assistant Professor
Ohio State University

CIRCULATING BIOMARKER RESEARCH SPEAKERS INCLUDE:



Luis Diaz
Associate Professor
of Oncology, Director of
Translational Medicine
Ludwig Center at John Hopkins



Janusz Rak
Professor
McGill University



Shivani Sharma
Project Scientist
University of California



Peter Kurre
Associate Professor
Oregon Health & Science
University



Xandra Breakefield
Geneticist, Molecular
Neurogenetics
Massachusetts General
Hospital



Paraskevi Giannakakou
Director, Laboratory Research,
Division of Hematology
Weill Cornell Medical
College



David Miyamoto
Physician
Massachusetts General
Hospital



Balaji Panchapakesan
Associate Professor,
Mechanical Engineering
University of Louisville



Matthew O'Donnell
Professor
University of Washington



Lyudmila Bazhenova
Associate Clinical
Professor of Medicine
University of California



Andrew Armstrong
Associate Professor of
Medicine and Surgery
Duke University

INTRODUCING THE AGENDA

Build your Own Personalized Itinerary around your CTC Needs

With the community converging on **World CTC** Boston over 2 days covering the depth and breadth of CTC research, ensuring these are your **2 most valuable days spent out of the office** is essential.

So decide which presentations are must attend for you to unlock your research and **let your World CTC experience begin...**

“ I found the CTC meeting very interesting and made invaluable connections with scientists, clinicians and big pharma companies. Many connections could be made thanks to the speed networking with the exchange of business cards! Great content, this meeting was a real success! **”**

Université Montpellier

TRACK 1: ADVANCED CTC APPLICATIONS

Advanced CTC Applications will provide you with the latest clinical data months before it is released with expert clinical case studies. This track will help you to understand how to best apply CTC technology both at the point of care and in drug development clinical trials. Improve patient outcomes and select the right drug for the right patient.

Speakers include:



Nicholas Dracopoli
Janssen



George Martin
Roche



Edith Szafer-Glusman
Genentech

TRACK 2: UNDERSTANDING THE SCIENCE BEHIND CTC

Understanding The Science Behind CTC will explore the very latest in scientific development to help you better understand the nature of metastatic cancer. This track will look at the cutting edge advances in CTC culturing and development of chemosensitivity assays. Learn how advances in molecular characterization are uncovering the role of EMT in metastasis and the latest discoveries about the heterogeneous nature of CTCs.

Speakers include:



Sarah Thayer
Massachusetts
General Hospital



Stefanie Jeffrey
Stanford University School
of Medicine



Richard Cote
University of Miami

TRACK 3: **NEW FOR 2013** CIRCULATING BIOMARKER RESEARCH

Circulating Biomarker Research will put you in front of the leading researchers developing the use of exosomes and cfDNA as a clinical tool presenting you with brand new clinical data and the unique chance to quiz the researchers on their innovative approaches. You will also get to take back to the lab knowledge of the latest techniques being trialed to capture CTCs and an understanding of how you can work this into your own research.

Speakers include:



Xandra Breakefield
Massachusetts
General Hospital



Luis Diaz
Ludwig Center, John
Hopkins Kimmel Cancer
Center



Andrew Armstrong
Duke University

PRE CONFERENCE WORKSHOPS

WORKSHOP A:

Delivering the Promise of Personalized Medicine

Date: **Tuesday 12th November** Time: **9.00am - 12.00pm**

A Prelude to an Information Rich Future

With advances in CTC technology fuelling innovation, a simple bloodtest that captures and assesses CTCs is able to determine the prognosis of patients with metastatic breast, colorectal or prostate cancer at any time.

These advances offer an objective, quantitative, real-time reading of tumour information so that oncologists can provide optimum care for their patients. This workshop will give you a practical guide to how you can achieve this.

In this workshop you will learn:

- The latest advances in technology development for rare cell capture and isolation



Janssen Diagnostics

About your workshop leader:

Veridex, a Johnson & Johnson company, is an organization dedicated to providing physicians with high-value diagnostic oncology products. Veridex's IVD products may significantly benefit patients by helping physicians make more informed decisions that enable better patient care. Veridex's Clinical Research Solutions provide tools and services that may be used for the selection, identification and enumeration of targeted rare cells in peripheral blood for the identification of biomarkers, aiding scientists in their search for new, targeted therapies.

- What are the prognostic applications for drug and diagnostic development
- How clinical relevance in breast, prostate and colorectal cancer can be achieved

WORKSHOP B:

The Evolving Role of Strategic Partnerships and Collaborations in Biomarker and Companion Diagnostics Development

Date: **Tuesday 12th November** Time: **1.00pm - 4.00pm**

Advances in molecular oncology have necessitated the parallel development of companion diagnostics. Together, they have challenged the pharmaceutical and diagnostic companies to virtually assemble and integrate a broad range of technical, clinical trial and regulatory expertise and services through novel partnerships and collaborations.

This workshop will arm you with the tools you need to access and manage these capabilities and services. Perspectives of pharmaceutical sponsors, diagnostic manufacturers, service providers, research collaborators



John Bloom

President & Special Government Employee
Bloom Consulting Services, LLC

About your workshop leader:

Dr Bloom has 29 years of experience in the pharmaceutical industry with leadership roles in preclinical and clinical drug development. He is regarded as an expert in developing phase-appropriate biomarker strategies for drug development, with emphasis on tailoring to individual patient's needs, defining technical probability of success and product differentiation. As part of this work he established the Diagnostic and Experimental Medicine Division at Lilly accountable for the above.

He is a recognized expert in the development of companion diagnostics in an R&D setting with an extensive track record in partnering.

and regulators will be explored, through informal, facilitated discussion. You will leave with an increased knowledge of how to review and implement best business practices within your organization.


AGENDA DAY 1: WEDNESDAY 13TH NOVEMBER

7.50 CHAIRMAN'S OPENING REMARKS

PLENARY SESSION LATEST INSIGHTS ON CAPTURE, ENUMERATION & CHARACTERIZATION

8.00 Progress in Using Circulating Tumor Cell Information to Improve Metastatic Breast Cancer Therapy

- A comprehensive review of the current progress being made to use CTCs as a tool to improve treatment of metastatic breast cancer
- A comparative analysis of the latest technologies and methodologies to capture and characterize CTCs with the end goal of improving patient treatment
- Discussion of potential future directions this field can take in order to achieve the goal of optimizing breast cancer therapy

 **Eric Schuur**
VMWA

8.30 Circulating Tumor Cells as Biomarkers: Validation and Qualification in the Context of Unmet Medical Needs

- Disease mechanism of prostate cancer and the role of CTCs in prognosis
- Assessing circulating cells as surrogate drug efficacy markers in the clinic
- Potential for development of new therapies to prostate cancer

 **Howard Scher**
Memorial Sloan-Kettering Cancer Center

9.00 Clinical Experience of Antibody Independent CTC Isolation for Lung Cancer Diagnosis and Mutation Detection

- EpCAM as an epithelial marker and its use to isolate CTCs
- Diagnosis of lung cancer using H&E morphology rather than antibody expression
- Experiences with an antibody independent microfluidics biochip

 **Eric Lim**
The Royal Brompton Hospital

9.30 MORNING REFRESHMENTS & SPEED NETWORKING

ADVANCED CTC APPLICATIONS

PRACTICAL APPLICATIONS IN DRUG DEVELOPMENT & CLINICAL TRIALS

11.00 Can Circulating Tumor Cells play a Role in Guiding ADC Drug Development and Therapy?

- Are solid tumor ADC targets expressed on CTCs
- Can we enumerate and characterize target expressing CTCs
- What correlation is there between CTC target expression and expression in the primary tumor
- How will we use target expressing CTCs to develop ADC therapies

 **Steven Pirie-Shepherd** Pfizer

UNDERSTANDING THE SCIENCE BEHIND CTC

LATEST RESEARCH: ADVANCED TECHNIQUES FOR CULTURING CTCs

11.00 Latest Clinical Data: What the Capture, Growth and Genetic Analysis of CTC in PDAC Can Tell us About this Disease

- Detection of CTCs in patients with resectable PDAC using ScreenCell device and subsequent *in vitro* growth confirming tumorigenicity
- The use of selective deep sequencing to demonstrate the feasibility of identifying mutations present in the primary tumor and their corresponding CTC


 **Sarah Thayer**
Massachusetts General Hospital

CIRCULATING BIOMARKER RESEARCH

EXPLORING THE POTENTIAL OF ctDNA & EXOSOMES IN THE CLINIC

11.00 The Clinical Application of Circulating Tumor DNA

- Dynamics of circulating tumor DNA in patients with cancer
- An overview of the available technology to detect ctDNA
- Interrogation of ctDNA for early detection and monitoring of minimal residual disease
- The application of ctDNA technology for disease monitoring and detection of therapeutic resistance


 **Luis Diaz**
Ludwig Center at John Hopkins Kimmel Cancer Center

AGENDA DAY 1: WEDNESDAY 13TH NOVEMBER CONTINUED...

ADVANCED CTC APPLICATIONS

11.30 Circulating Tumor Cells: From Enumeration to Comprehensive Characterization

- Biomarker contribution to development of targeted therapies
- Use of biomarkers to confirm MOA and predict efficacy
- Role of CTC-derived biomarkers to direct and monitor therapy

 **Nicholas Dracopoli**
Janssen

12.00 In Vitro Production of CTCs using 3D Cultures of Human Tumor Tissues and Established Tumor Cell Lines


- Demonstrating the ability to produce and collect CTCs from cultured metastatic tumor tissue and established pancreatic cancer cell lines using a 3D perfusion culture system
- Results showing that CTCs can be produced by highly metastatic cancer cell lines grown *in vitro*, but that poorly metastatic cancer cell lines produce far fewer CTCs
- A valuable new approach for the study of CTCs *in vitro* with direct applicability for developing improved diagnostic assays for CTCs

 **George Martin** Roche

UNDERSTANDING THE SCIENCE BEHIND CTC

11.30 Circulating Tumor Cells and Disseminating Tumor Cells as Guides to Drug Selection

- The roles of CTCs and DTCs in the therapeutic management of solid tumors
- Analytic methods and personalized models for drug testing

 **Stefanie Jeffrey**
Stanford University School of Medicine

12.00 Novel Nanotechnology Approaches to Circulating Tumor Cell Capture and Characterization

- Introduction to a precision-engineered and novel parylene-microfilter-based, antigen expression-agnostic, open platform that allows capture, enumeration and characterization of CTCs
- The use of nanotechnology to give a longitudinal assessment of CTC as a 'liquid biopsy'
- Practical applications of CTCs as a companion diagnostic and to monitor cancer progression therapeutic efficacy

 **Richard Cote**
University of Miami

CIRCULATING BIOMARKER RESEARCH

11.30 Oncogenic Extracellular Vesicles as Effective Cancer Biomarkers

- Examining the intercellular trafficking of membrane-derived extracellular vesicles and the alteration of these processes in cancer
- Utilizing extracellular vesicles to give unprecedented access to driver mutations, molecular subtypes, drug targets and other actionable information in cancer

 **Janusz Rak** McGill University

12.00 Exploring Exosomes at the Nanoscale for Cancer Diagnosis

- Investigating the nanoscale morphological, biomechanical and surface biomolecular properties of single exosomes for diagnostic applications and for developing new cell delivery systems
- Effectively using Scanning Probe Microscopy to study the nanoscale characteristics of exosomes
- Further understanding the nanoscale characteristics of exosomes at the vesicular and sub-vesicular level

 **Shivani Sharma**
University of California

12.30 LUNCH

1.30 CTC Enumeration and Molecular Characterization in a Phase 1 Study of IGF-1 and IGF-2 Inhibition by MEDI-573

- A first-hand look at results from a Phase 1 study of IGF-1 and IGF-2 inhibition by MEDI-573 which included CTC enumeration and characterization
- Investigation of CTC numbers as a prognostic indicator and as a biomarker of response to MEDI-573 therapy, and to evaluate the expression of IGF-1R on CTC and any correlation with treatment

 **Patricia Burke** MedImmune

1.30 The Identification and Characterization of Breast Cancer CTCs Competent for Brain Metastasis

- Characterization of CTCs isolated from blood mononuclear cells of breast cancer patients, and development of circulating tumor cell line
- Revealed for the first time, evidence characterizing breast cancer CTCs, leading to the description of a protein signature suggestive of metastatic competency to the brain

 **Dario Marchetti**
Baylor College of Medicine

1.30 Biomarker Opportunities of Extracellular Vesicles in Leukemia

- An introduction to extracellular vesicle cargo and its role as a powerful regulator of cancer cell fate in the microenvironment
- The mechanistic role for vesicles during leukemogenesis and significant potential for biomarker discovery based on recent research
- Potential of extracellular vesicles as targets in treatment of Leukemia

 **Peter Kurre**
Oregon Health & Science University

AGENDA DAY 1: WEDNESDAY 13TH NOVEMBER CONTINUED...

ADVANCED CTC APPLICATIONS

2.00 Molecular Characterization of Circulating Tumor Cells: Approaches and Limitations

- The various molecular strategies that can be utilized to characterize CTCs recovered from blood of cancer patients
- Common challenges faced when capturing and characterizing CTCs
- Application of molecular characterization techniques in clinical trials and drug development

 **Denis Smirnov** Janssen

2.30 Evaluation of PTEN Status in CTCs and Matched Tumor Tissue From Patients with Castrate-Resistant Prostate Cancer (CRPC)


- How a blood-based assay that determines PTEN status in CRPC patients could enable informed treatment decisions
- Conclusions of results from study illustrating the high percentage of PTEN loss in CRPC patients and the potential for using CTCs as a non-invasive, real-time biopsy
- Overview of future study plans where PTEN status will be determined using assays in an upcoming Phase II trial

 **Edith Szafer-Glusman**
Genentech

UNDERSTANDING THE SCIENCE BEHIND CTC


2.00 Culture and Characterization of Circulating Tumor Cells in Melanoma and Other Cancers

- How CTCs can be accurately detected and isolated from the blood of participants in clinical trials with melanoma using novel laboratory techniques
- Correlations between research results on blood samples and participant's medical condition
- Results from subsequent culture and characterization of CTCs

 **Wolfram Samlowski**
Comprehensive Cancer Centers of Nevada

2.30 A Combined Micromagnetic-Microfluidic Device for Rapid Capture and Culture of Rare Circulating Tumor Cells

- Introduction to a combined microfluidic-micromagnetic cell separation device that has been developed to isolate, detect and culture circulating tumor cells from whole blood
- Advantages of using this isolation approach to ensure cells remain viable and they can be easily removed and expanded in culture for additional analytical studies or potential drug sensitivity testing

 **Joo Kang** Harvard University

CIRCULATING BIOMARKER RESEARCH

2.00 Gaining Genetic Insights into Brain Tumors using Extracellular Vesicles in Biofluids

- Understanding the role that extracellular vesicles can serve, as robust and non-invasive biomarkers for tumor status
- Using RNA in CSF and serum microvesicles from brain tumor patients to detect mutations in EGFR and IDH1 by RT-PCR, BEAMing and deep sequencing
- Genetic insights that were gained into brain tumors using extracellular vesicles collected in biofluids

 **Xandra Breakefield**
Massachusetts General Hospital

2.30 PANEL SESSION: cfDNA and Exosomes in the Clinic

- The application of cfDNA technology for disease monitoring and detection
- Understanding the role that extracellular vesicles can serve, as robust and non-invasive biomarkers
- Discussion of various capture techniques available and the advantages and disadvantages of these techniques in the clinical setting

 **Xandra Breakefield**
Massachusetts General Hospital

 **Luis Diaz**
John Hopkins Kimmel Cancer Center

 **Shivani Sharma**
University of California

3.00 AFTERNOON REFRESHMENTS & NETWORKING

“ It has been fantastic to interact with so many people with the same interest. The way the conference is organized really helps promote discussion and collaboration. World CTC is the best opportunity to get up to date on current standards and latest innovations in the field! **”**

Massachusetts General Hospital

AGENDA DAY 1: WEDNESDAY 13TH NOVEMBER CONTINUED...

PLENARY SESSION LATEST INSIGHTS ON CAPTURE, ENUMERATION & CHARACTERIZATION

3.30 Multiparameter Analysis of Potential Circulating Tumor Cells

- Potential of rare tumor cells to represent the evolution/ progression of cancer
- Definition of CTC linked to technology to detect/identify CTC
- How results presented can expand definitions of a CTC

 **Jeffrey Chalmers**
Ohio State University

4.00 The Value of Diagnostics to Pharma: Counting CTCs and R&D Dollars

- The interdependence of drugs and diagnostics raises questions as to where value lies and investments should be made
- Janssen Pharma has an active oncology portfolio requiring diagnostic companions as well as efforts to advance the field of dynamic biomarkers and CTCs
- This talk will describe the efforts being made to understand the value of diagnostic assets to our drug portfolio including the impact of investments in CTC platforms to improve our drug discovery efforts

 **Meredith Unger**
Janssen Diagnostics

4.30 Performing Validation Studies in the Oncology Clinic: Detection and Isolation of CTC using NanoVelcro-Embedded Microchips

- Introduction to a new type of cell-affinity assay, capable of detecting CTCs in blood collected from metastatic cancer patients
- Understand the uniqueness of nanostructured surfaces, which facilitate local topographical interactions between CTCs and substrates
- Demonstration of the ability to capture CTCs in whole blood samples with significantly improved efficiency and selectivity

 **Hsian-Rong Tseng**
University of California

5.00 CIRCULATING TUMOR CELL RESEARCH TROUBLESHOOTING SESSION


This session gets to the heart of the most pressing issues in Circulating Tumor Cell research, in a unique problem-solving format you will have a chance to work with your peers to tackle questions such as:

- What should an agreed definition of CTC look like?
- What are the advantages and disadvantages of various capture techniques available and which is most suitable?
- How will culturing CTCs change the face of research?
- How close are we to routine clinical use and what steps need to be taken to ensure that we get there?

5.30 CHAIRMAN'S CLOSING REMARKS

5.45 NETWORKING DRINKS RECEPTION

NETWORKING DRINKS RECEPTION

 **After an intense day of learning you will certainly welcome some refreshing drinks in a relaxing environment.** Continue your conversations with your newly-formed contacts and reflect on insights gained from the first day while continuing to forge new relationships with other CTC experts.

*Sponsorship opportunities available
Please contact nick.alderslade@hansonwade.com



AGENDA DAY 2: THURSDAY 14TH NOVEMBER

8.25 CHAIRMAN'S OPENING REMARKS

PLENARY SESSION LATEST INSIGHTS ON CAPTURE, ENUMERATION & CHARACTERIZATION

8.30 Using CTCs as a Prognostic Marker in a Phase II Trial Bevacizumab and Satraplatin

- How correlative testing for CTC count and biomarker characterization for Excision Repair Cross-Complementation Group 1 (ERCC1)
- Conclusions formed from the study including that CTC and ERCC1 testing may help select patients more likely to benefit from satraplatin based therapy

 **Ulka Vaishampayan**
Karmanos Cancer Institute

9.00 3D Nuclear Telomere Parameters Define CTC Sub-populations

- Introduction to the 3D telomere platform for cancer diagnosis
- Overview of quantitative software (TeloView and TeloScan)
- 3D telomeric profiles of CTCs isolated using the ScreenCell device

 **Sabine Mai**
University of Manitoba

9.30 Phase II Study Purging of Circulating Tumor Cells from Metastatic Breast Cancer Patients

- Clinical case study: The relationship of high-dose chemotherapy (HDCT) and circulating tumor cells in controlling metastatic breast cancer
- Challenges encountered and lessons learned during this study
- How this study will be used to investigate the role of CTCs in breast cancer

 **Naoto Ueno**
MD Anderson Cancer Centre

10.00 MORNING REFRESHMENTS & NETWORKING

ADVANCED CTC APPLICATIONS

DEMONSTRATING CLINICAL UTILITY: LATEST ADVANCES IN THE CLINICAL SETTING

11.00 Strategies for Analysis of CTC-Based Pharmacodynamic Biomarkers in Clinical Development of Targeted Anti-Cancer Therapeutics

- Assay strategies for assessing pharmacodynamic biomarkers in CTCs in clinical trials
- Development and evaluation of an antibody-independent CTC capture technology to analyze biomarkers in patients
- How assessment of CTC-based pharmacodynamic biomarkers can have value for rapidly assessing drug activity in clinical development therapeutics

 **Lihua Wang**
NCI-Frederick

UNDERSTANDING THE SCIENCE BEHIND CTC

INCREASING OUR UNDERSTANDING OF CANCER BIOLOGY USING MOLECULAR CHARACTERIZATION

11.00 Mathematics of the Fluid Phase of Solid Tumors: Do CTCs Have a Destination?

- A Markov Chain mathematical model that describes the metastatic pathways
- Seeding, self-seeding and re-seeding along the timeline of metastasis
- What if the adrenal gland would be a lymphatic destination in lung cancer?

 **Peter Kuhn**
The Scripps Research Institute

CIRCULATING BIOMARKER RESEARCH

THE LATEST INNOVATION IN CAPTURE & CHARACTERIZATION

11.00 Microfluidic Isolation and Molecular Characterization of Circulating Tumor Cells

- Progress on the development of a series of microfluidic devices to capture, image, and molecularly characterize rare CTCs shed into the blood
- A detailed description of our recent efforts to dissect the molecular and cell biology of CTCs
- The potential of this analysis to non-invasively monitor and predict treatment responses

 **David Miyamoto**
Massachusetts General Hospital

AGENDA DAY 2: THURSDAY 14TH NOVEMBER CONTINUED...

ADVANCED CTC APPLICATIONS

11.30 Biomarker CTC Detection to Guide Therapeutic Choices

- Use of the FAST (Fiber-optic Array Scanning Technology) system to locate CTCs while rapidly scanning blood cells on a planar substrate, enabling high-throughput, high-content scanning of fluorescently labeled CTCs
- Development of biomarker analysis on CTCs for use in the selection of treatment options for cancer patients

 **Lidia Sambucetti**
SRI International

12.00 Practical Considerations for the Incorporation of CTC Analyses in Clinical Trials

- Analysis of prospective clinical trials demonstrating clinical utility when CTC enumeration is performed in conjunction with imaging and clinical evaluations
- Steps that are needed in order to increase the detection threshold of CTCs and to allow for further phenotypic and genotypic characterization
- Translation into use of CTC analysis in earlier stages of breast cancer for diagnosis and/or more effective clinical management

 **Minetta Liu**
Georgetown University

UNDERSTANDING THE SCIENCE BEHIND CTC

11.30 Microfluidic Cell Sorter (μ FCS) for On-chip Capture and Analysis of Single Cells

- The diagnostic and therapeutic applications of CTC and challenges in their purification, quantification and characterization
- Introduction to a novel microfluidic cell sorter (μ FCS) device for the detection and molecular analysis of circulating tumor cells
- The potential clinical application of the technology is demonstrated by capturing and genetically analyzing CTCs in tumor-bearing mice

 **Hakho Lee**
Massachusetts General Hospital

12.00 Translating Genomic Discoveries to the Clinic: The Right Tools for the Job

- Understanding the most current challenges and successes in PGx development
- How to speed-up discovery, validation and clinical deployment of biomarker signatures
- Choosing the right scientific tools for translation into the clinic

 **Gianfranco de Feo**
Affymetrix

CIRCULATING BIOMARKER RESEARCH

11.30 Development of a HER2-Based GEDI Microfluidic Device for the Molecular Characterization of CTCs from Metastatic Breast Cancer Patients

- Application of CTCs as a reliable and accessible source of tumor tissue enabling molecular analysis of CTCs and potential insight into the molecular basis of clinical resistance to MTD therapy
- A prospective study to characterize the GEDI-captured CTCs isolated from MBC patients at baseline during the course of therapy and at disease progression in order to gain insights into mechanisms of MTD-resistance

 **Paraskevi Giannakakou**
Weill Cornell Medical College

12.00 Digital Profiling of Circulating Tumor Cells: Towards Point-of-Care Molecular Diagnostics

- Efforts to develop a hand-held electronic device for profiling molecular surface receptors directly in circulating tumor cells
- Scientific efforts, opportunities and challenges faced in the development of a new generation of electronic devices to profile circulating tumor cells for clinical applications

 **Balaji Panchapakesan**
University of Louisville

12.30 LUNCH & NETWORKING



AGENDA DAY 2: THURSDAY 14TH NOVEMBER CONTINUED...

ADVANCED CTC APPLICATIONS

1.30 Patient-Specific Drug Efficacy Analysis on Circulating Tumor Cells Captured from Peripheral Blood

- The metastatic adhesion cascade of CTCs – mimicking leukocyte trafficking
- Rapid isolation of viable CTCs using e-selectin and halloysite nanotubes
- An easy-to-adopt CTC isolation protocol
- Therapeutic targeting of CTCs to prevent metastasis

 **Andrew Hughes**
Weill Cornell Medical College

2.00 Insights from CTCs about Response and Resistance to Abiraterone and Enzalutamide in Patients with Castration-Resistant Prostate Cancer

- How CTC enumeration was used as exploratory outcomes in a Phase II trial of Metastatic Castration-Resistant Prostate Cancer
- Challenges associated with using CTCs as a exploratory outcome and subsequent lessons learned

 **Emmanuel Antonarakis**
Sidney Kimmel Comprehensive Cancer Center

2.30 *In vivo* CTCs in Blood, Lymph and Cerebrospinal Fluid: Dynamic Cross-Correlations and Amplification for Cancer Diagnosis

- A new platform of multicolour, multi-fluid *in vivo* flow cytometry for real-time ultrasensitive molecular detection of CTCs
- Advantages of this new system including improved sensitivity compared to available CTC-assays, and significant extension of biomedical applications
- Results showing that the presented approach can break some important diagnostic limitations of existing methods and permits prevention, or at least inhibition, of metastatic progression

 **Ekaterina Galanzha**
University of Arkansas

UNDERSTANDING THE SCIENCE BEHIND CTC

1.30 Identifying Genomic Signatures within Circulating Breast Cancer Cells

- Advantages of profiling the whole genome of CTCs to identify genomic alterations which may be developed into CTC specific markers
- Methods to investigate how CTCs are represented in primary tumors and how they respond to treatment
- Determining heterogeneity of genetic regions and their chemosensitivity

 **Susan Done**
University of Toronto

2.00 Genome-Wide Analysis of CTCs from Breast and Prostate Cancer

- The use of single nucleus sequencing (SNS) to enable the genomic profiling of individual cancer cells, providing information on tumor initiation, evolution and genetic heterogeneity
- Update on the progress in using 'fluid biopsies' to monitor cancer treatment and direct therapy in prostate and other cancers

 **James Hicks**
Cold Spring Harbor Laboratory

2.30 How Tumor-Associated Endothelial Cells Promote Tumor Metastasis by Chaperoning CTCs and Protecting them from Anoikis

- Study designed to examine if tumor-associated endothelial cells could promote tumor cell metastasis
- Results from study demonstrating that endothelial cells overexpressing Bcl-2 (EC-Bcl-2) show significantly higher e-selectin expression and exhibit enhanced tumor cell binding
- Conclusions drawn suggesting a novel role for tumor-associated endothelial cells in binding to tumor cells, protecting them from anoikis and chaperoning them to distal sites

 **Pawan Kumar**
Ohio State University

CIRCULATING BIOMARKER RESEARCH


1.30 Non-Invasive Trapping and Imaging of Circulating Tumor Cells

- A new system that can image rare CTCs with simultaneous non-invasive detection at a flow rate twice that of a human radial artery
- The advantages to capturing and imaging CTCs *in vivo* over *in vitro*
- Applications for this technology as an invaluable tool in optimally managing metastatic disease

 **Matthew O'Donnell**
University of Washington

2.00 Performance of HD-CTC Assay in Non Small Cell Lung Cancer

- Development of a fluid phase biopsy that identifies CTCs and preserves cytologic features in HD for diagnostic pathology imaging requirements
- The use of HDCTCs for enumeration and molecular characterization studies
- Discussing the proposed clinical utility of CTC in NSCLC

 **Lyudmila Bazhenova**
University of California

2.30 Development of a Novel CTC Assay Based on Mesenchymal Biomarker Capture

- The importance of epithelial plasticity in mediating cancer metastasis across a range of epithelial cancers, and the role this plasticity plays in the transient loss of the epithelial phenotype
- Detailed explanation of our approach to develop a novel assay based on this plasticity biology
- Advances this method holds over current epithelial-based assays

 **Andrew Armstrong**
Duke University

AGENDA DAY 2: THURSDAY 14TH NOVEMBER CONTINUED...

3.00 AFTERNOON REFRESHMENTS & NETWORKING

PLENARY SESSION LATEST INSIGHTS ON CAPTURE, ENUMERATION & CHARACTERIZATION

3.30 Performing Cellular and Molecular Analysis of CTCs using Microfluidic Sorting of Blood Cells

- Using a microfluidic, size-based, sorting array to capture soluble analytes or cells for performing cellular and molecular analysis
- Achieving a more systemic diagnostic and prognostic analysis using quantification by GCSPR and plasma or cell-released analytes by coupled fluorescence

 **David Lawrence**
New York State Department of Health


4.00 Using Multiplexed Molecular Profiling and Quantification of CTCs as Predictive Biomarkers of Cancer Prognosis

- A new method using Surface-Enhanced Raman Spectroscopy (SERS) to characterize CTC biomarker expression
- Learn how the assay can be used to increase the detection sensitivity and provide an efficient, quantitative, and inexpensive platform
- How this work can be rapidly translated into clinical testing for molecular profiling of CTCs

 **Ximei Qian**
Emory University


4.30 Achieving Non-Invasive Detection and Elimination of CTCs using *in vivo* Photoacoustic Blood Cancer Test

- A novel ultra-sensitive flow cytometry schematic for *in vivo*, non-invasive photoacoustic CTC detection
- Demonstration in tumor-bearing mouse models and spiked human blood samples of detection of CTCs prior to the development of metastases
- Potential for this technology to provide breakthroughs in early CTC detection and metastasis prevention and an overview of upcoming pilot clinical trials

 **Vladimir Zharov**
University of Arkansas for Medical Sciences

5.00 Effect of Regional Anaesthesia Vs General on CTCs

- Investigating the effect on CTCs in women when regional anaesthesia is administered over general anaesthesia
- Is there a link between a stronger immune system in the regional anaesthesia group, and a diminished number of CTCs postoperatively
- Developing a translational format using CTCs to determine if enhanced immunity may contribute to a decrease in the number of postoperative CTC

 **Lisa Bleckner**
Defense and Veterans Center for Integrative Pain Management

5.30 CHAIRMAN'S CLOSING REMARKS

WORLD CTC MEDIA PARTNERS



POST CONFERENCE WORKSHOPS

WORKSHOP C:

Understanding the Role of Circulating Tumor Cells (CTCs) in Cytology

Date: **Friday 15th November** Time: **8.30am - 11.30am**

With CTCs continuing to show increasing clinical utility, their role in cytology has never been more under the microscope. This session will provide lab techs, clinicians and pathologists with a detailed introduction to CTCs, a brief history and background of CTCs, followed by a review of current technology, supporting literature and a demonstration of how the technology can be implemented in the laboratory.

Key points of the session will include: instrumentation (CellTrack Autoprep system), enumeration of CTCs for predicting progression-free and overall survival in metastatic breast cancer patients, specimen collection,



Malini Harigopal

Assistant Professor of Pathology,
Yale School of Medicine

About your workshop leader:

Malini graduated from Gandhi Medical College in 1980 and is currently the Assistant Professor of Pathology at the Yale School of Medicine. Her research interests include cancer biomarkers; breast; thyroid; immunohistochemistry; AQUA method of analysis in tissue microarrays and cytologic material. She has been working with CTCs in the cytopathology clinic for a number of years to help improve patient diagnosis.

quality control, interpretation of results, limitations, clinical trial conclusions, and novel methods for CTC identification.

- Integrate the methods of CTC detection into the practice of cytopathology
- Identify and evaluate CTCs in peripheral blood using CellSearch System
- Recognize the potential role of the cytopathologist in the process of measuring CTCs

WORKSHOP D:

Fluid Biopsy of Solid Tumors: Its Many Uses in Clinical Research and Therapy Management

Date: **Friday 15th November** Time: **12.30pm - 3.30pm**

Drug targets on CTCs are currently being identified and used as predictive biomarkers for therapeutic stratification of cancer patients. CTC burden is already validated as a prognostic biomarker. Initial data is emerging for the use of the fluid biopsy as a diagnostic tool.

This workshop will arm you with the tools you need to access and manage these capabilities and services. Perspectives of pharmaceutical sponsors, diagnostic manufacturers, service providers, research collaborators and regulators will be explored, through informal facilitated discussion. You will leave with an increased knowledge of how to review and implement best business practices within your organization.



Peter Kuhn

Associate Professor, Cell Biology
Scripps Research Institute

About your workshop leader:

Peter has a career-long commitment in personalized medicine and individualized cancer patient care. Since 2002 his primary appointment is with Scripps Research, where making cancer a managed disease is the theme of research. His laboratory has developed a reliable way to detect and to characterize CTCs isolated from the blood.

Leaving this workshop you will understand:

- The use of CTCs as a predictive biomarker to stratify cancer patients in clinical trials
- Applications of the fluid biopsy as companion and prognostic Dx
- How to use rare cells in the blood to achieve broad profiling for risk assessment
- Best practises for use of the fluid biopsy as a tool to aid cancer research

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Affymetrix provides cancer research tools for whole-genome analysis to single-gene validation using a broad range of clinical samples. Our solutions for expression profiling, GWAS, copy number, and miRNA provide the most comprehensive and integrated view of the genome to enable faster translation of cancer discoveries to cancer treatment. Affymetrix' breakthrough QuantiGene® ViewRNA in situ hybridization assays enable multiplex RNA detection at single-molecule sensitivity with exceptional specificity for FFPE or OCT-embedded tissue sections, cultured cells, and circulating tumor cells.
www.affymetrix.com



Janssen Diagnostics is a leading scientific research organization that pioneers tools and services that may be used for the selection, identification and enumeration of targeted rare cells in peripheral blood for the identification of biomarkers, aiding scientists in their search for new, targeted therapies. Janssen Diagnostics pioneered the automated detection, capture and enumeration of CTCs more than a decade ago and continues to lead with industry firsts with the introduction of the first Circulating Endothelial Cell kit in 2007 and the introduction of the first CMC kit in 2011.
www.janssendiagnostics.com



ScreenCell was set-up with the belief that just enumerating CTC without easily characterizing them, was not enough to allow the early detection of disease, the discovery of biomarkers to predict treatment responses and potentially follow up the disease progression. ScreenCell devices were designed compatible with existing In vitro Diagnostics (IVD) assays and platforms, enabling the effective isolation of fixed or healthy live tumour cells, thus allowing enumeration and cytomorphology evaluation as well as cell culture and molecular biology.
www.screencell.com

Exhibitors:



Fluxion Biosciences has developed the IsoFlux System for isolating CTC with high recovery, purity, viability, and transfer efficiency to downstream analyses. Fluxion's proprietary microfluidic approach delivers highly uniform and concentrated magnetic fields that enable more efficient recovery of target cells coupled to immunomagnetic particles. The benchtop instrument outputs target cells ready for use in PCR, FISH, sequencing, and microscopy-based assays. The IsoFlux System has been adopted by big pharma, biotech, diagnostic developers, and clinical researchers across the world to pursue their CTC, biomarker discovery, and oncology diagnostics programs.
www.fluxionbio.com



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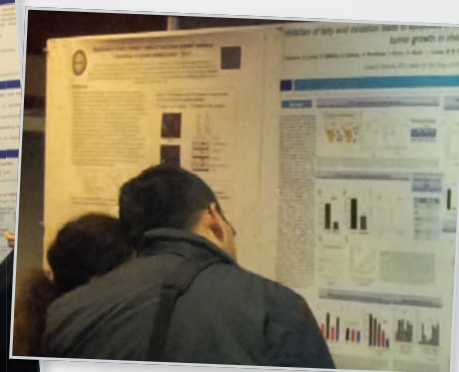
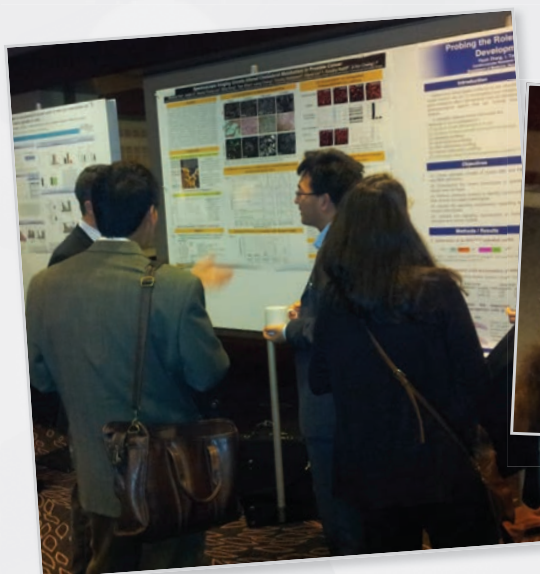


Epic Sciences provides customized assay development services to aid biotechnology and pharmaceutical companies in clinical trials and drug discovery. The company also offers a liquid biopsy which has broad applicability for both the enumeration and molecular characterization of CTCs which will facilitate cancer management through earlier diagnosis, staging, and therapeutic selection. Epic Sciences was incorporated in 2008 and is based in San Diego, California.
www.epicsciences.com

NETWORKING

Present a Poster

This year's dedicated poster session is open to drug developers, academics and clinicians and is a fantastic platform to present your contribution to the CTC field.



As a poster author you will be invited to display and present your work in a dedicated poster area during the networking drinks reception.

The informal and interactive setting of the poster session provides **an opportunity for you to demonstrate the originality, quality, and clarity of your work. It's a great chance to converse with conference participants, invite feedback from your peers, as well as see how others are pioneering new science.**

*Posters are not to be used for sales or marketing purposes and all abstracts are subject to approval of Hanson Wade. Posters can be up to A0 size and need to be submitted to info@hansonwade.com by **26th October 2013**.*

If your abstract is not received and approved by the poster deadline, the discount will be reversed and your registration charged.

WHAT'S MORE...

As a thanks for presenting your work at the meeting you will receive **\$50 off** the registration rate.

LOCATION INFORMATION

Revere Hotel Boston Common

200 Stuart Street

Boston

MA 02116

Tel: +1 617.482.1800

Web: www.reverehotel.com



PRICING & REGISTRATION

PRIORITY CODE: **MKT**

ACADEMIC/CLINICAL PRICING DETAILS:

Package	Register and Pay before 12th July	Register and Pay before 23rd August	Register and Pay before 4th October	Standard Pricing
2 day conference	\$1299 (save \$300)	\$1399 (save \$200)	\$1499 (save \$100)	\$1599

Workshops: \$399 (Each). Get an extra \$100 off with each workshop that you add.

DRUG DEVELOPER / SOLUTION PROVIDER PRICING:

Package	Register and Pay before 12th July	Register and Pay before 23rd August	Register and Pay before 4th October	Standard Pricing
2 day conference	\$2099 (save \$300)	\$2199 (save \$200)	\$2299 (save \$100)	\$2399

Workshops: \$599 (Each). Get an extra \$100 off with each workshop that you add.

REGISTRATION DETAILS:

Online: www.ctc-summit.com
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 Email: register@hansonwade.com
 Mail: **Hanson Wade**
304 Park Avenue South
11th Floor
New York, NY 10010

TERMS & CONDITIONS

Cancellation and Substitution Policy:

Cancellations must be received in writing. If the cancellation is received more than 14 days before the conference attendees will receive a full credit to a future conference. Cancellations received 14 days or less (including the fourteenth day) prior to the conference will be liable for the full fee. A substitution from the same organization can be made at any time.

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Please note that discounts are only valid when three or more delegates from one company book and pay at the same time.

Alumni Discount SAVE 10%: As a previous attendee of World CTC Boston we want to thank you for your continued support in helping to grow this community and taking part in the idea sharing and collaboration. To thank you for your loyalty, we are pleased to offer you the opportunity to save an additional 10% off the registration rate.

Present a poster SAVE \$50*: This year's dedicated poster session is open to drug developers, academics and clinicians and is a fantastic platform for you to present your contribution to the CTC field. Meet other attendees and get direct feedback on your work, as well as see how others are pioneering new science. As a thanks for presenting your work at the meeting you will receive \$50 off the registration rate.

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Next Generation Scientist Scheme:** World CTC Boston has always believed that the future of cancer research lies in today's students and is committed to the future endeavors of science by encouraging the continued growth of upcoming researchers and scientists. To support this vision of encouraging education and informational exchange, we are offering 1 Student/ post doc place at 50% of the academic rate, when booked in conjunction with one standard or academic registration (only 10 available!)

**Maximum 1 half price student place per standard booking.

All discount offers (including team discounts) require payment at the time of registration to receive any discount. 'Early Bird' discounts require payment at time of registration and on or before the cut-off date to receive any discount. All discount offers cannot be combined with any other offer. The conference fee includes lunch, refreshments and course documentation. The fee does not include travel or hotel accommodation.