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Cambridge Healthtech Institute's Inaugural

5 - 7 October 2010

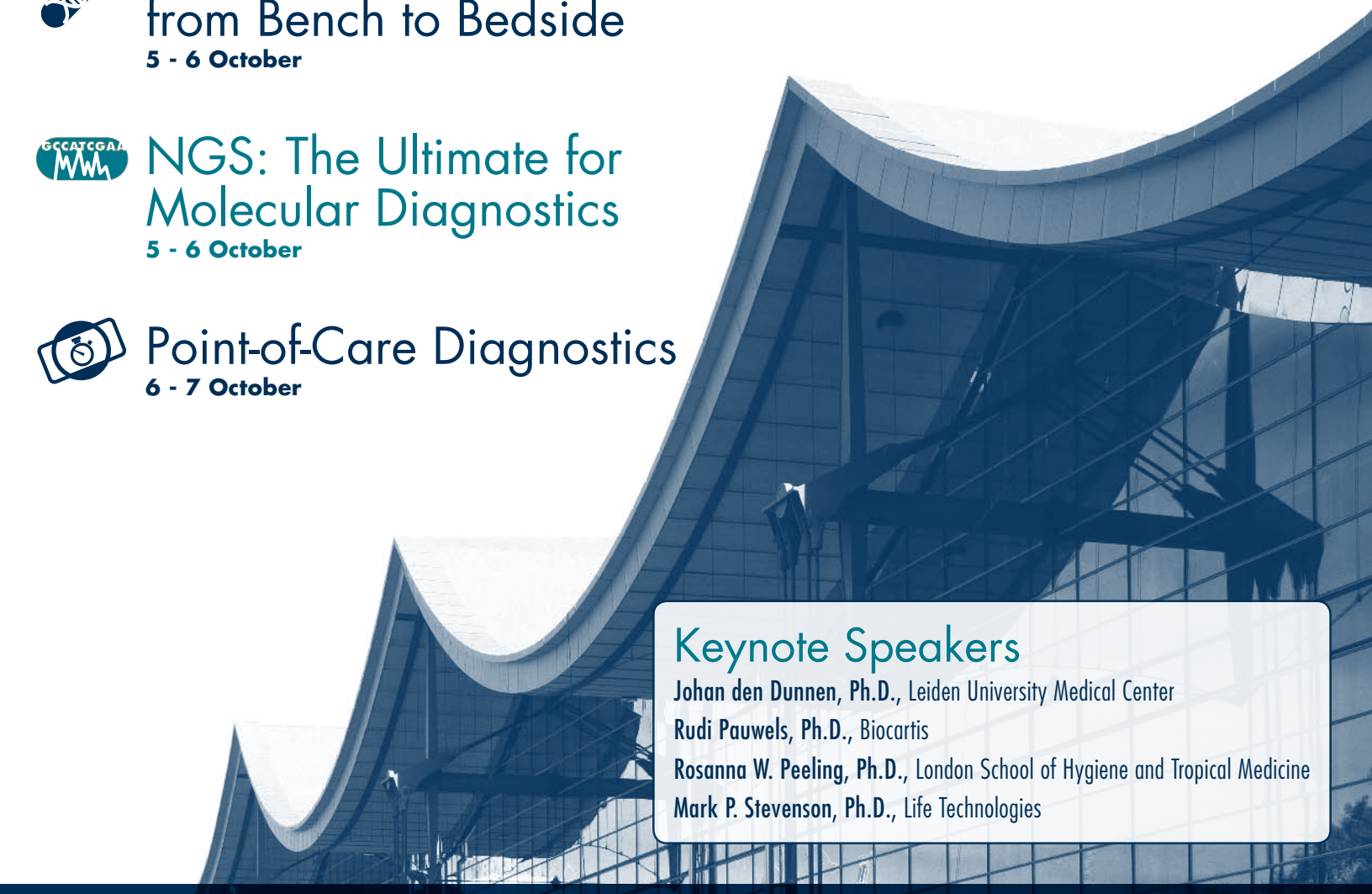
MOLECULAR DIAGNOSTICS EUROPE

Exhibition Grounds • Hannover, Germany

Moving Molecular Diagnostics from Bench to Bedside
5 - 6 October

NGS: The Ultimate for Molecular Diagnostics
5 - 6 October

Point-of-Care Diagnostics
6 - 7 October



Keynote Speakers

Johan den Dunnen, Ph.D., Leiden University Medical Center
Rudi Pauwels, Ph.D., Biocartis
Rosanna W. Peeling, Ph.D., London School of Hygiene and Tropical Medicine
Mark P. Stevenson, Ph.D., Life Technologies

MolecularDiagnosticsEU.com

Cambridge Healthtech Institute
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BIO TECHNICA
Europe's No.1 Event in Biotechnology and Life Sciences

Pre-Conference Short Courses*

Monday, 4 October 9:30 – 13:00

MICRO- AND NANOFLUIDICS IN DIAGNOSTICS AND LIFE SCIENCES: TECHNOLOGIES AND APPLICATIONS

The course is designed for scientists, managers, technicians and engineers who would like to acquire a comprehensive overview of the field of microfluidics. Starting with the underlying physical principles of miniaturization, the course includes an introduction into microfabrication technologies for microfluidic devices covering a wide range of existing materials (glass, silicon, polymers) and manufacturing technologies and describes the complete development cycle of a microfluidic device from the design to the ready-to-use device. Applications of microfluidics in point-of-care and clinical diagnostics, analytical and synthetic chemistry, biotechnology and cell biology will be presented. The course will also provide an insight into the business aspects of the field and the uptake of microfluidic technology in various markets.

Learning Objectives:

- Understand the basic physical principles and scaling laws governing miniaturization
- Identify the suitable material for a given microfluidic application
- Understand the basic technologies available for the microfabrication of glass, silicon and polymer materials and follow the device manufacturing process from design to the finished microfluidic device
- Get to learn application examples of microfluidic devices in a wide range of disciplines
- Understand the current state of the markets and obstacles in the commercialization process

Short Course Instructor:
Claudia Gärtner, Ph.D., CEO, microfluidic ChipShop

Monday, 4 October 14:00 – 17:00

CREATING SYNERGY – INTRODUCTION TO BIOMEDICAL DATA FUSION

Systems biology and personalized medicine increasingly require a synergistic consideration of different molecular or clinical data sets. Making such heterogeneous data available is only the first step for obtaining the big picture through a coherent analysis, i.e. data fusion. This introductory tutorial will provide a broad overview of the different options and methodologies for making the most of your data through data fusion.

Who Should Attend:
Researchers with a basic understanding of omics data analysis who want to combine data from different sources for extracting maximal information

- A principled approach to data fusion
- Powerful methods from machine learning, multivariate statistics and pattern recognition
- How to deal with any kind of data
- QTL mapping of omics data
- Application examples in cancer and diabetes

Short Course Instructors:
Juergen von Frese, Ph.D., Managing Director, Data Analysis Solutions DA-SOL GmbH

Marc-Emmanuel Dumas, Ph.D., Lecturer in Systems Biomedicine, Imperial College

HOTEL & TRAVEL INFORMATION

Conference Venue:

Hannover Exhibition Grounds
Deutsche Messe
Messegelände
30521 Hannover
GERMANY

Please go to the following website for general visitor info and to make a hotel reservation:
http://www.biotechnica.de/visitorservice

Monday, 4 October 14:00 – 17:00

WHAT ARE THE KEY TRENDS IN MICROFLUIDICS FOR THE NEXT 5 YEARS?

Yole Développement will present a marketing analysis of microfluidic technologies, market and related applications and trends. The vision of key players in the industry will be presented. This will be an open networking place for microfluidics experts and managers of life science companies.

This short course is aimed at those who wish to get up-to-date on news and recent developments, and to understand how diagnostic companies are applying microfluidic technology. Yole Développement has designed this program for Executives (CEO, CTO, Marketing, Commercial, Business Development, R&D Managers…), investors, and academics.

- Overview of the microfluidic market for In-Vitro Diagnostics
- Market segmentation and description of the applications
- Key drivers and requirements
- Insight to emerging technologies
- Recommendation for market entry

Short Course Instructor:
Frédéric Breussin, Project Manager, Microfluidics, Yole Développement

*Separate Registration Required.

Your conference registration includes access to the Biotechnica Exhibition Hall!

ABOUT BIOTECHNICA

Geared to "Evolution of business and research" BIOTECHNICA 2010 invites you to Europe's leading gathering for biotechnology and life sciences, staged annually in Hannover, Germany. For three days the exhibition halls, the conference rooms and the partnering meeting boxes will be alive with exhibitors and visiting professionals from all over the world, together with investors and distinguished speakers from business, science and politics - all here to discuss the latest products, innovations, research findings and market opportunities.

Maximize your sales prospects. From research and product development, equipment, process technology and services to production and marketing: the exhibition section of BIOTECHNICA charts the biotech industry's value-adding chain from start to finish. Alongside the big industry players and SMEs, which have their own stands at the show, young and emerging biotech firms and scientific establishments are given ideal opportunities to showcase their work at the many group display stands representing national and international BioClusters and industry associations.

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Moving Molecular Diagnostics from Bench to Bedside

5 - 6 October

"SAMPLE IN - ANSWER OUT" DIAGNOSTIC SYSTEMS

TUESDAY, 5 OCTOBER

9:00 Conference Registration and Morning Coffee

CANCER: MOLECULAR BIOMARKERS FOR CLINICAL VALUE

9:30 Chairperson's Opening Remarks

9:35 Tumor-Derived Circulating DNA as Predictive Biomarker in Oncology

Tim Ward, Ph.D., Staff Scientist, Clinical and Experimental Pharmacology, Paterson Institute for Cancer Research, University of Manchester, United Kingdom

Recent advances in the molecular characterization of tumor material have highlighted the importance of DNA mutations in the response of cancer patients to modern targeted therapy. It is now possible to determine the mutation status of cancers from isolated circulating tumor DNA. Such a simple blood test heralds the possibility of customized targeted therapy.

10:05 Detecting Molecular Malignancy in Gliomas: Robust Copy Number Analysis of Chromosome 1p and 19q, CDKN2A, PTEN and EGFR (Rearrangements) Using MLPA Analysis

Judith Jeuken, Ph.D., Pathology, Nijmegen University Medical Center, The Netherlands

MLPA analysis investigating glioma biomarkers were previously developed and used to evaluate >350 diffuse gliomas (including 34 primary tumors and their recurrences). A model to establish molecular malignancy was developed which is of additional clinical value next to the histopathological classification as it allows identification of so far unexpected (aggressive) tumor behavior and will thereby ultimately aid in therapeutic decision making.

10:35 Coffee Break

11:00 Probes and Tools for Real Time Optical Imaging of Cancer and Infection

Mark Bradley, Ph.D., Professor, Chemical Biology, University of Edinburgh, United Kingdom

This presentation will discuss cellular labeling for real time optical tracking to sites of infection, smart probes for *in vivo* monitoring of inflammation and infection, as well as dual modality probes and theranostics in action.

11:30 Molecular Biomarkers for Prostate Cancer

Bastiaan J. de Leeuw, CEO, NovioGendix, The Netherlands

PCA3 has proven to be a valuable new tool in the diagnosis of prostate cancer. How far has PCA3 come to address the clinical need for biomarkers in prostate cancer diagnosis and prognosis? What should we expect from new markers in development? This presentation outlines the development of PCA3 from its discovery to its current implementation and reimbursement.

11:45 Speaker to be Announced

12:00 Sponsored Presentation (Opportunities Available)

12:30 Lunch for Purchase in the Exhibit Hall

13:45 Dedicated Poster Viewing in the Exhibit Hall

INFECTIOUS DISEASE: RAPID DETECTION STRATEGIES

14:30 Chairperson's Remarks

14:35 Regulatory Considerations

Erik Vollebregt, Lawyer, Greenberg Traurig, LLP, The Netherlands

Regulatory and legal requirements for putting diagnostics on the market evolve continuously and become ever more complicated, due to rapidly changing EU legislation and international standards. Companies should start taking regulatory and legal requirements into account already in the design phase in order not to have to make costly and time consuming changes underway.

15:05 A Genomic Fingerprinting Microarray for Identification of Pathogenic Bacteria

Juerg E. Frey, Ph.D., Group Leader, Molecular Diagnostics and Epidemiology, Plant Protection; Federal Department of Economic Affairs, FDEA Agroscope Changins-Wädenswil Research Station, Switzerland

A strategy will be presented to produce genetic fingerprints enabling identification of pathogenic and other bacteria below the species level. Hybridization patterns of test specimen are generated using a generic microarray of short oligonucleotide probes and identification is achieved with high confidence based on a comparison to a reference database. The microarray enables differentiation between bacterial strains, pathovars, and strains with and without a large plasmid. Prospects for further development of this strategy will be discussed.

15:35 Refreshment Break

16:00 Sponsored Presentation (Opportunity Available)

16:30 Towards "Same Day" Blood Culture Pathogen Detection: It's Here, and It's Easy

Vanya Gant, M.D., Ph.D., Head of Departments of Microbiology and Infectious Diseases, University College Hospitals, NHS Foundation Trust, United Kingdom

Rapid identification of sepsis causing bacteria drives focused therapy and better outcomes. Several molecular platforms designed to detect and speciate bacteria and fungi from blood cultures exist, but few are widely implemented. Many systems continue to fail because they are either too complicated or not robust enough for everyday laboratory use. The speaker will discuss the reasons for this failed "implementation gap" between a technically "perfect" system and one which will work every day in busy routine diagnostics laboratories. Additional strategic developments for such a robust platform with promising new data will also be discussed.

17:00 Speed is of the Essence - Metagenomic Analysis of Microbes in the Clinic

Colin Davenport, Ph.D., Clinical Research Group, Hannover University Medical School, Germany

The continually decreasing costs and increasing flexibility of Next Generation Sequencing make future application in the clinic highly likely. Sequencing is highly sensitive and has been found reliable by many independent research groups. However, a number of thresholds remain before adoption is possible. Time to readout is critical, and sample preparation, the sequencing itself and the analysis process are all still problematic. We present methods of speeding up the reliable bioinformatic analysis of millions of sequence reads and reanalyse existing clinical metagenomes. We envisage high throughput sequencing services will become available at the bedside, but not in the near future.

17:30 Panel Discussion with Afternoon Speakers

18:15 Interactive Breakout Discussion Groups: NGS and Data Quality for Diagnostic Applications

Graham Taylor, Ph.D., Professor, University of Leeds Institute of Molecular Medicine, St. James's University Hospital, UK

Topics to be discussed include:

- Sources of error and methods to address them
- Run quality
- Amplification
- Detection of low abundance variants
- Platform specific errors
- Alignment errors and artifacts
- Contamination

Sequencing Cancer Genomes: Potential Healthcare Applications

Phil Stephens, Ph.D., Senior Scientist, Cancer Genome Project, Sanger Institute, United Kingdom

Topics to be discussed include:

- Identification of novel therapeutic targets
- Characterisation of mechanisms of resistance to targeted therapeutics
- Surrogate marker of cell kill in early phase clinical trials
- Monitoring tumor response to therapy in real-time – Reducing toxicity, preventing drug waste
- Identifying disease relapse before clinically evident (pre-emptive therapy)
- Choosing intensity of adjuvant therapy based on risk stratification
- Personal medicine

Circulating Tumor Cells and Cell Free Nucleic Acids: A Real Time Access to the Cancer Genome

Tim Ward, Ph.D., Staff Scientist, Clinical and Experimental Pharmacology, Paterson Institute for Cancer Research, University of Manchester, United Kingdom

Topics to be discussed include:

- Can we use circulating DNA as a surrogate for tumor DNA?
- Does circulating DNA represent the cancer genome?
- Will micro RNA be more informative?
- Can we undertake molecular characterisation of low numbers of circulating cancer cells?

What Does Success Look Like for an Infectious Disease Molecular Diagnostics Test, and Which of the Following Factors Drive This?

Vanya Gant, M.D., Ph.D., Head of Departments of Microbiology and Infectious Diseases, University College Hospitals, NHS Foundation Trust, United Kingdom

- Ease of use?
- Ease of implementation?
- Speed?
- Gap in existing market?
- Robustness?
- Price?
- Performance?

19:15 – 21:00 CHI Networking Reception

WEDNESDAY, 6 OCTOBER

9:00 Conference Registration and Morning Coffee

PLENARY KEYNOTES – THE FUTURE OF MOLECULAR DIAGNOSTICS

CONNECTING SCIENCE AND BUSINESS FOR CLINICAL IMPACT

9:30 Chairperson's Opening Remarks

Kevin Davies, Ph.D., Editor-in-Chief, Bio-IT World

9:35 Applications of Next-Generation Sequencing in an Academic Medical Hospital: From Single Molecules to a Complete Female Genome

Johan den Dunnen, Ph.D., Head, Leiden Genome Technology Center (LGTC), Human and Clinical Genetics, Leiden University Medical Center, The Netherlands

Medical application of full human genome sequencing to resolve a health problem will soon be a realistic option. Within our academic hospital we have started to implement next-generation sequencing with applications covering many subjects: candidate disease genes, bacterial genomes, single molecules sequencing and the sequencing of a complete female genome. We experienced that technologically, human genome sequencing is feasible, but computationally it was at the limits of our possibilities. The problem resides in interpretation, where efficient analytical tools are largely lacking.

10:05 Drivers, Challenges and Opportunities to Bring Diagnostics Closer to the Points of Need

Rudi Pauwels, Ph.D., Founding Director & CEO, Biocartis, Switzerland

The rapidly expanding atlas of molecular-based biomarkers and the advent of novel technologies are creating new opportunities to improve the outcome for the individual patient by providing tools to implement a more personalized and increasingly more molecular-based medicine. These trends occur and will likely accelerate in a climate of intensive changes and pressures that relate to the various industries, healthcare players and regulatory bodies involved. Although technical, regulatory, economic, business and adoption hurdles need to be overcome, the overall need of affordable healthcare for all is likely to be an important selection pressure – if not critical determinant – for the future evolution of healthcare.

10:35 Coffee Break

11:00 Sponsored Presentation (Opportunity Available)

11:30 Bringing Next-Generation Sequencing to the Clinic

Mark P. Stevenson, Ph.D., President and COO, Life Technologies, USA

While the pace of technological improvements has led to lowering of costs, the next frontier will be in demonstrating clinical utility. In select cases, diagnostic tests limited to a panel of genes fail to correctly diagnose all patients who have the clinical manifestations of the disease. We will highlight collaborative work on Charcot-Marie-Tooth and Noonan Syndrome using NGS. In acquired diseases, we are focusing on cancer, where the mutation profiles are so complex that whole genomic approaches are preferred. Key issues around privacy, reimbursement, education, and regulation are essential to realizing the clinical power of NGS.

12:00 Panel Discussion with Plenary Keynote Speakers

Moderator: Kevin Davies, Ph.D., Editor-in-Chief, Bio-IT World

The explosion of next-generation sequencing and other tools for high-throughput genomic analysis is already proving its value, for example in identifying mutations underlying rare Mendelian disorders and rationalizing cancer treatments. But the extraordinary volume and complexity of these data make the informatics of data analysis more costly and time-consuming than generating the original data. As one scientist said, "What use is the $1,000 genome if it costs $20,000 to do the analysis?" In this panel discussion, Doctors den Dunnen, Pauwels and Stevenson discuss the challenges of clinically interpreting next-gen genomic data and delivering those data in a timely and accessible fashion to the bedside.

12:30 Lunch for Purchase in the Exhibit Hall

13:00 Dedicated Poster Viewing in the Exhibit Hall

13:30 Close of Conference

NGS: The Ultimate for Molecular Diagnostics

5 - 6 October

MEDICAL SEQUENCING AND MUTATION DISCOVERY

TUESDAY, 5 OCTOBER

9:00 **Conference Registration and Morning Coffee**

INFECTIOUS DISEASE: Sequencing Microbes to Metagenomes Enables Diagnostics to Prognostics

9:30 **Chairperson's Opening Remarks**

9:35 **Next-Generation Sequencing in the Analysis of Polymicrobial Infections: Some Essential Considerations**

Geraint Rogers, PhD, Pharmaceutical Science, King's College London, UK

The development of next-generation sequencing presents an unparalleled opportunity to investigate the highly complex microbial interactions that are involved in many clinical infections; however, without due consideration of factors such as appropriate sample acquisition and handling, exclusion of non-viable microbial cells, and downstream data processing, the insight provided by its application is greatly diminished. Areas of experimental design key to successful infection analysis will be discussed.

10:05 **Comparative Genomics to Understand the Population Structure and Evolution of the Major Human Pathogen *Mycobacterium Tuberculosis***

Stefan Niemann, Ph.D., Head, Molecular Mycobacteriology, National Reference Center for Mycobacteria, Research Center Borstel, Germany

Whole genome sequencing using "next-generation" technologies allows the cost-effective re-sequencing of larger collections of major human pathogens, e.g. clinical isolates of the *Mycobacterium tuberculosis* complex (MTBC). This process allows deciphering a much more accurate picture of the global population structure and evolution of the MTBC. It will shed light on the micro evolutionary processes occurring in *M. tuberculosis* strains during spread, especially in the context of multidrug resistance.

10:35 **Coffee Break**

11:00 **The Human Intestinal Metagenome**

S. Dusko Ehrlich, Ph.D., Research Director and MetaHIT Coordinator, Department of Microbiology and Food Chain (MICA), INRA, France

Using metagenomic sequencing an extensive catalog of the gut microbial genes prepared from fecal samples of 124 individuals of the European origin was generated, assembled and analyzed. The catalog contains 3.3 million non-redundant microbial genes, 150 times more than the human gene complement, contains an overwhelming majority of the prevalent microbial genes present in the cohort and likely includes a large proportion of the prevalent human intestinal microbial genes opening avenues towards new diagnostic and prognostic tools, based on associations of bacterial genes and human disease.

11:30 **Novel Diagnostic Opportunities for Oral Health through Application of NGS**

Bart Keijser, Ph.D., Principal Investigator, Microbial Genomics, TNO, NL

TNO and the Academic Centre for Dentistry Amsterdam (ACTA) have joined forces in the aim to a full fundamental insight in biological processes and etiological factors that underlie conservation of oral health and to develop of novel, integrated approaches for diagnostics and prevention in oral care. Data generated on the temporal and spatial dynamics of the oral ecosystem, interaction with the host, and in relation to oral health status will be presented. This combined approach has proven to be a powerful strategy to elucidate fundamental interactions between the oral microbiota and the host in relation to maintenance of oral health status.

12:00 **Sponsored Presentation** (Opportunities Available)

12:30 **Lunch for Purchase in the Exhibit Hall**

13:45 **Dedicated Poster Viewing in the Exhibit Hall**

CANCER: Deep Sequencing for Genomic Rearrangements

14:30 **Chairperson's Remarks**

14:35 **Systems Medicine Perspective towards Bionetworks-Based Discovery of Biomarkers and Biologic Agents in Cancer**

Dimitrios Roukos, M.D., Ph.D., Associate Professor, Department of Surgery, Ioannina University School of Medicine, Greece

Emerging evidence suggests that cancer initiation, progression and metastases are driven by interacting genes, signaling pathways and cancer cell interactions. The cancerous process is further complicated by the impact of environmental factors, lifestyle, genetic ancestry and susceptibility to cancer. This presentation will describe how systems medicine and biology approaches may lead to biomarkers and biologic drugs in cancer prevention and treatment. Challenges and expectations to understand the complex genotype-phenotype map towards personalized medicine will be discussed.

15:05 **Highly Sensitive Detection of Genome Instability Using Next-Generation Sequencing**

Francesca Ciccarelli, Ph.D., Principal Investigator, IFOM, European Institute of Oncology, Italy

We have developed a highly sensitive procedure to measure genomic instability that is based on the re-sequencing of a cancer genomic region using next-generation sequencing technology. Using this approach, we detect genomic instability even in nonneoplastic tissues of cancer patients, thus showing that our procedure is more sensitive of currently used methods. This constitutes the proof of principle for the development of a more sensitive molecular assay of genomic instability.

15:35 **Refreshment Break**

16:00 **Sponsored Presentation** (Opportunity Available)

16:30 **Use of Cancer-Specific Genomic Rearrangements to Quantify Disease Burden in Plasma from Patients with Solid Tumors**

Phil Stephens, Ph.D., Sr. Scientist, Cancer Genome Project, Sanger Inst., UK

Next-generation sequencing allows rapid and cost effective identification of patient-specific rearrangements in cancer samples. We mapped genomic rearrangements in over 100 solid tumors and identified at least one somatically acquired rearrangement in each sample. We developed PCR assays for tumor specific rearrangements which were able to detect a single copy of the tumor genome in plasma from the patient without false positives. In the future, this strategy could be readily established in diagnostic laboratories, with major impact on monitoring of disease status and personalizing treatment of solid tumors.

17:00 **Genetic Diagnosis of Familial Breast Cancer Using Clonal Sequencing**

Graham Taylor, Ph.D., Professor, University of Leeds Institute of Molecular Medicine, St. James's University Hospital, UK

Clonal "next-generation" sequencing is cheap and dirty. Bombastic claims about cheap access to genome sequences need to be balanced with the risk that low quality data could generate false negative and false positive results. In the case of germline mutations, the low quality can often be compensated by read depth. This may not be an option for tumor samples containing mixed populations. This presentation will explore the cost, risks and benefits of deploying clonal sequencing in a diagnostic setting with examples in familial cancers and in tumor analysis.

17:30 **Deep Clonal Sequencing of Archival Tumor Samples Increases Mutation Detection Success**

Neil Gibson, Ph.D., Team Leader, Research and Genetics, AstraZeneca, UK

To determine whether tp53 mutation is predictive of clinical response to AZD7762, it is necessary to sequence the gene at high sensitivity in clinical tumor samples. We describe a method for the next-generation clonal sequencing of the tp53 gene in formalin fixed tumors that enables mutation detection down to an estimated clonal frequency of 5% combined with high data generation success. We also discuss the practical requirements of a sequence-based diagnostic assay for highly polymorphic genes such as tp53.

18:15 **Interactive Breakout Discussion Groups**

Please see Page 4 for details.

19:15 – 21:00 **CHI Networking Reception**

WEDNESDAY, 6 OCTOBER

9:30 **PLENARY KEYNOTE SESSION**

Please see Page 4 for details.

13:30 **Close of Conference**

Point-of-Care Diagnostics

FROM LAB BENCH TO RAPID TESTING DEVICES

6 - 7 October

WEDNESDAY, OCTOBER 6

13:00 Conference Registration

OVERVIEW

14:00 Chairperson's Remarks

Penny Wilson, Ph.D., Lead Specialist, Detection and Identification of Infectious Agents, Technology Strategy Board, UK

KEYNOTE PRESENTATION

14:05 Overview on POCT for Infectious Diseases: Its Promises and Challenges

Rosanna W. Peeling, Ph.D., Professor, Diagnostics Research, London School of Hygiene and Tropical Medicine

Recent advances in real- time nucleic acid amplification and rapid detection technologies have led to the development of highly sensitive and specific diagnostic tests for infectious diseases that can potentially be used at the point of care. Results from POCTs can be used to guide clinical management decisions, including appropriate treatment. For diseases such as HIV, tuberculosis and sexually transmitted infections, the use of POCT would be of enormous public health benefit in that partner notification or contact tracing can be initiated without delay, thereby interrupting the chain of transmission and reducing the reservoir of infection in the community. However, substantial challenges remain in making POCTs that are affordable, simple, robust, and can be implemented at all levels of the health care system with their quality and performance assured.

14:35 An Overview of the Diagnostics Related Programmes at NICE

Nick Crabb, Ph.D., Associate Director, Diagnostics Assessment Programme, National Institute for Health and Clinical Excellence, UK

Over the past year, NICE has been engaged in establishing two new programmes for the assessment of medtech products, including diagnostics. These initiatives build on experience of assessing medtech products within established NICE programmes and represent a major investment in bespoke capacity for medical devices and diagnostics. This presentation will provide an overview of the two medtech programmes with a focus on the assessment of diagnostic technologies.

15:05 The Future Direction and Opportunity for Point-of-Care Diagnostics

Mark Davis, CEO, Mologic Ltd , UK (invited)

15:35 Refreshment Break

POINT-OF-CARE IN CLINICAL SETTINGS

16:00 Sponsored Presentation (Opportunity Available)

16:30 Blood Glucose POCT in Intensive Care Unit Patients

Hans Günther Wahl, M.D., Ph.D., Director, Medizinisches Labor Wahl, Lüdenscheid; and Professor, University Hospital, Gießen and Marburg, Department of Clinical Chemistry and Molecular Diagnostics, Germany

Hyperglycaemia is commonly found in critically ill patients. Most hospitals by now use tight glycaemic control protocols for their patients in intensive care units to maintain normoglycaemia. In almost all cases, this will be done by POCT. This presentation will focus on glucose assay principles, specimen matrices, influences and interferences of glucose measurements and the numerous evaluation reports on point-of care glucose testing devices.

17:00 Implementing and Supporting POCT for Glucose, Cardiac Markers, Coagulation Parameters, Blood Gases and Ions in a Hospital Setting: Technical, Regulatory and Logistic Challenges

Viviane Van Hoof, M.D., Ph.D., Professor, Head of Department, Clinical Chemistry, University Hospital Antwerp, Belgium

In 2003, the central laboratory of the Antwerp University Hospital started the implementation of POCT for glucose, cardiac markers, ions, blood gases and coagulation parameters. In 2008, POCT accounted for 25% of the 9 million tests that were performed in the hospital. A POCT cell of lab technicians takes care of logistics and monitors quality control results that have to be compliant with those applied for central lab testing. We describe the technical, logistic and regulatory issues of POCT implementation and support.

18:30 – 21:00 BIOTECHNICA Night: Beer Hall, Full Dinner Reception, Live Band

THURSDAY, OCTOBER 7

9:00 Conference Registration and Morning Coffee

AMPLIFICATION, DETECTION AND READOUT TECHNOLOGIES

9:30 Chairperson's Opening Remarks

Frédéric Breussin, Project Manager Microfluidics, Yole Développement

9:35 Microfluidics: From the Bench to the Bedside

Luc Gervais, University Hospital Basel and IBM Zurich Research Lab

Microfluidics integrate functions that can together preserve valuable samples and reagents, increase sensitivity of a test, and accelerate mass transport limited reactions. But a main challenge is to incorporate reagents into microfluidics and to make microfluidics simple to use for point-of-care diagnostics. We integrate microfluidic functional elements and reagents such as detection antibodies (dAbs), capture antibodies (cAbs) and analyte molecules for making one-step immunoassays: the integrated device only requires the addition of a 5 µL sample of human serum or blood to trigger a cascade of events powered by capillary forces to detect proteins within minutes. This work may spur the adoption of fluorescence immunoassays.

10:05 Towards Diagnostics on a Single Chip

Christopher J. Backhouse, Ph.D., Professor, Electrical & Computer Engineering, University of Alberta, Edmonton, Canada

The confluence of CMOS and BioMEMS will soon enable true lab on chip systems - i.e., inexpensive, portable and compact systems composed of little more than a single BioMEMS chip. The talk will describe the present state of the art as well as presenting late-breaking results.

10:35 Coffee Break

11:00 Sponsored Presentation (Opportunity Available)

11:30 High-Speed, Single-Molecule Detection for Point-of-Care Diagnostics

Cameron Frayling, CEO, Base4Innovation, UK

Founded in late 2007, Base4 is developing solid-state nanodevices for interrogating individual biomolecules at very high speed. Using these nanodevices along with standard molecular biology, new approaches to biological analysis are possible.

12:00 Microfluidic Technologies for Point-of-Care Testing

Frédéric Breussin, Project Manager Microfluidics, Yole Développement

From bedside to battlefield, point-of-care diagnostics is seen as one solution to helping solve the future healthcare challenges. Although the market potential is huge for microfluidic technologies, significant hurdles remain in the technology itself and its fusion into the healthcare system. This presentation provides an overview of the market drivers, key technical and economic requirements of microfluidic technologies for point-of-care diagnostics. In particular, we describe the analysis steps and their

challenges, such as sample preparation, miniaturization and integration, sample volume, required sensitivity, Microfluidics value and supply chain.

12:30 Lunch for Purchase in the Exhibit Hall

13:45 Dedicated Poster Viewing in the Exhibit Hall

ENABLING TECHNOLOGIES FOR DIAGNOSTICS

14:30 Chairperson's Remarks

Steven Buchsbaum, Ph.D., Senior Program Officer, Global Health Technologies, Bill & Melinda Gates Foundation, US (invited)

14:35 Integrated Innovation and Point-of-Care Diagnostics

Abdallah S. Daar, Ph.D., Chief Science and Ethics Officer, Grand Challenges Canada

Grand Challenges Canada Point-of-Care Diagnostics program is directed primarily at researchers in low- and middle-income countries, that seeks to create a new class of point-of-care (POC) diagnostics that will be easy to use, low cost, multiplexed and able to assess disease stage and provide information on prognosis. Grand Challenges Canada is a unique and independent not-for-profit organization dedicated to improving the health and well-being of people in developing countries by integrating scientific, technological, business and social innovation both in Canada and in the developing world.

15:05 Development and Implementation of Rapid Diagnostics for Developing Countries

Gerd Michel, Ph.D., Senior Technology Officer, R&D, Foundation for Innovative New Diagnostics (FIND), Switzerland

In collaborative efforts, based on private-public-partnerships, FIND is working with industrial and academic institutions to develop and implement rapid tests for neglected diseases such as tuberculosis, malaria, sleeping sickness and others. Recent progress has been demonstrated by new product development, novel biomarker discovery and successful worldwide implementation of key testing technologies strongly supported by the WHO and other international organizations.

15:35 Refreshment Break

STANDARDS FOR SYSTEM INTEGRATION

16:00 Sponsored Presentation (Opportunity Available)

16:30 Using VitalPAC to Integrate Point-of-Care Diagnostic Results into Clinical Pathways In Real-Time

Roger Killen, Managing Director, The Learning Clinic, UK

VitalPAC is a point-of-care, real-time, clinical system running on hand-held computers in the hands of front-line nursing and medical staff. It is used to identify patient deterioration, and to collect and feedback on key diagnostic findings of a patient's condition (e.g. MRSA/c.diif status, sepsis, etc.), then in real-time to drive (and audit) adherence with hospital protocols based on diagnostic findings.

17:00 Panel: UPTAKE OF POINT-OF-CARE DEVICES

Moderator: Penny Wilson, Ph.D., Lead Specialist, Detection & Identification of Infectious Agents, Technology Strategy Board, UK

Distinguished Panelist: Doris-Ann Williams, Director General, British In Vitro Diagnostics Association, UK

Additional Panelists to be Announced

- Regulation
- Accreditation
- Acceptable Patient Pathways
- Standards
- Responsibilities
- Attitudes Towards Self-Testing

17:30 Close of Conference

SPONSORSHIP AND EXHIBIT INFORMATION

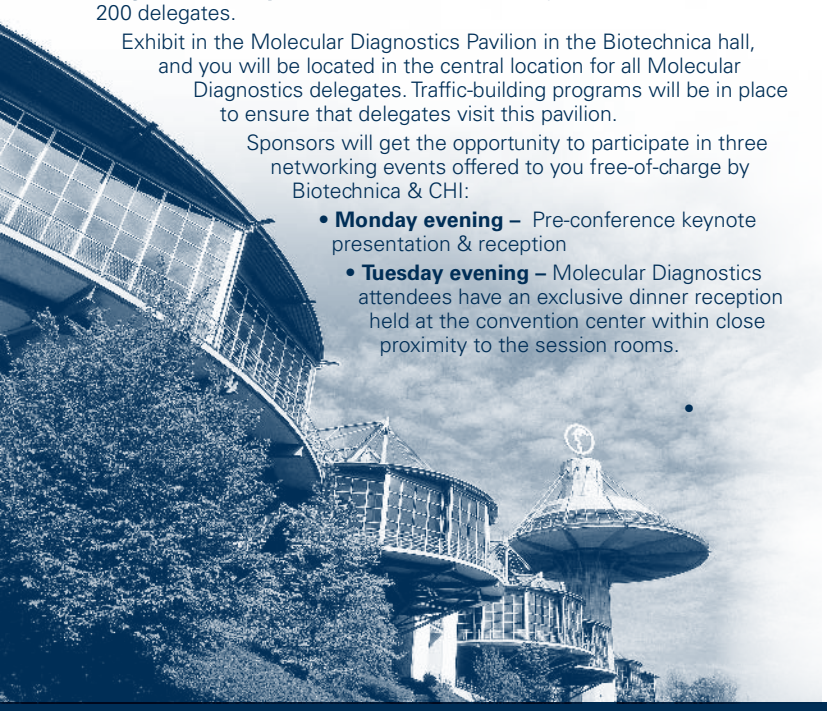
Whether you are ready to present an exciting new technology, preparing for a new product launch, or need feedback on a specific idea, **Molecular Diagnostics Europe** offers the perfect platform for you to present to a high-level, targeted audience.

The Biotechnica exhibit hall will host 13,000 attendees over the course of the event. Co-location with Biotechnica will allow you to exhibit as part of the larger event and reach your target audience in the **Molecular Diagnostics Europe** session rooms, with an expected attendance of 200 delegates.

Exhibit in the Molecular Diagnostics Pavilion in the Biotechnica hall, and you will be located in the central location for all Molecular Diagnostics delegates. Traffic-building programs will be in place to ensure that delegates visit this pavilion.

Sponsors will get the opportunity to participate in three networking events offered to you free-of-charge by Biotechnica & CHI:

- **Monday evening –** Pre-conference keynote presentation & reception
- **Tuesday evening –** Molecular Diagnostics attendees have an exclusive dinner reception held at the convention center within close proximity to the session rooms.



Wednesday evening – A second social hosted by Biotechnica in the Bavarian Beer Hall, complete with dinner and a traditional German band.

These receptions are an excellent opportunity to network with your target audience. Attendance is included in selected sponsorship packages.

SPONSORSHIP OPPORTUNITIES:

Podium Presentations
A 15 or 30 minute podium presentation as part of the main conference (may also include a table-top in the foyer during the exclusive Molecular Diagnostics Tuesday evening dinner reception).

Coffee Breaks (exclusive per break)
Coffee breaks will be held in close proximity of the conference sessions. Table-tops will be available for sponsoring company to display corporate product literature.

Session Chair (exclusive per session)
An executive from your company will chair a session (a group of talks) on the main conference program. Includes a brief introduction to the entire session and the individual speakers.

Exhibitor Information
Exhibitors at Molecular Diagnostics Europe will enjoy facilitated networking opportunities with more than 200 high-level decision-makers. Speak face-to-face with prospective clients and showcase your latest product, service or solution.

Marketing support from CHI and Biotechnica will include:
- combined brochure mailings of 150,000
- email campaigns of 1 million impressions

For more information on sponsorship and exhibit opportunities, please contact:

Katelin Fitzgerald
Manager, Business Development
+1 - 781-972-5458
kfitzgerald@healthtech.com

MOLECULAR DIAGNOSTICS EUROPE

5 - 7 October 2010
Exhibition Grounds Hannover, Germany

HOW TO REGISTER:

Online: MolecularDiagnosticsEU.com

Key Code 1070F

Email: reg@healthtech.com **Phone:** +1-781-972-5400 Option 1 **Fax:** +1-781-972-5425

Mail Registration to:
CHI Cambridge Healthtech Institute
250 First Avenue, Suite 300
Needham, MA 02494, USA

1. REGISTRATION INFORMATION

❑Mr. ❑Ms. ❑Mrs. ❑Dr. ❑Prof.
Name _____
Job Title _____ Div./Dept. _____
Company _____
Address _____
City/State/Postal Code _____
Country _____
Telephone _____
How would you prefer to receive notices from CHI? Email: ❑Yes ❑No Fax: ❑Yes ❑No
Email* _____ Fax _____

*Email is not a mandatory field. However, by excluding your email you will not receive notification about online access to pre-conference presenter materials, conference updates, networking opportunities and requested eNewsletters.

2. PRICING INFORMATION

SHORT COURSE PRICING

	Commercial	Academic, Government, Hospital-affiliated	Student
1 Short Course	❑ €495	❑ €295	❑ €125
2 Short Courses	❑ €725	❑ €495	❑ €195

❑ Micro- and Nanofluidics in Diagnostics and Life Sciences **(9:30 - 13:00)**

❑ Creating Synergy - Intro to Biomedical Data Fusion **(14:00 - 17:00)**
OR
❑ Key Trends in Microfluidics **(14:00 - 17:00)**

EVENT PRICING

	Commercial	Academic, Government, Hospital-affiliated	Student
Early Registration Deadline until 16 July	❑ €1495	❑ €695	❑ €450
Advance Registration Deadline until 3 September	❑ €1595	❑ €755	❑ €450
Registrations after 3 September and on-site	❑ €1745	❑ €805	❑ €450

Please select the 2 conferences you're most likely to attend

5-6 October (Choose One)
❑ Moving Molecular Diagnostics from Bench to Bedside
❑ NGS: The Ultimate for Molecular Diagnostics

6-7 October
❑ Point-of-Care Diagnostics

INDIVIDUAL CONFERENCE PRICING

	Commercial	Academic, Government, Hospital-affiliated	Student
Early Registration Deadline until 16 July	❑ €995	❑ €495	❑ €300
Advance Registration Deadline until 3 September	❑ €1095	❑ €545	❑ €300
Registrations after 3 September and on-site	❑ €1245	❑ €625	❑ €300

Please select one conference

5-6 October
❑ Moving Molecular Diagnostics from Bench to Bedside
❑ NGS: The Ultimate for Molecular Diagnostics

6-7 October
❑ Point-of-Care Diagnostics

COMPLIMENTARY BIOTECHNICA EVENTS

REQUIRED if you wish to attend these complimentary events. A ticket will be sent to you prior to the event. TICKETS NOT AVAILABLE ON-SITE.

❑ Monday, 4 October - BIOTECHNICA Opening and EUROPEAN BIOTECHNICA AWARD Ceremony plus Reception
❑ Wednesday, 6 October - BIOTECHNICA Night – Original Bavarian Beer Hall, full dinner reception, and band

DISCOUNTS

Poster Discount	❑ €35 off	❑ €35 off	❑ €35 off

REGISTER 3 - 4TH IS FREE Individuals must register for the same conference or conference combination and submit completed registration form together for discount to apply. Please reproduce this registration form as needed.

GROUP DISCOUNTS AVAILABLE! Special rates are available for multiple attendees from the same organization.
For more information on group discounts contact **David Cunningham at +1-781-972-5472**

❑ Please send me information on BIOTECHNICA's Partnering, an online networking tool
❑ I cannot attend but would like to purchase the Molecular Diagnostics Europe conference CD for €600 (plus shipping). Massachusetts delivery will include sales tax.

3. PAYMENT INFORMATION

❑ Enclosed is a check or money order payable to Cambridge Healthtech Institute, drawn on a U.S. bank, in U.S. currency.
❑ Invoice me, but reserve my space with credit card information listed below.
Invoices unpaid two weeks prior to conference will be billed to credit card at full registration rate. Invoices must be paid in full and checks received by the deadline date to retain registration discount. If you plan to register on site, please check with CHI beforehand for space availability.
❑ Please charge: ❑ Visa (13-16 digits) ❑ MasterCard (16 digits)

Card # _____
Cardholder _____
Signature _____
Cardholder's Address (if different from above) _____
City/State/Postal Code _____
Country _____

Please refer to the Registration Code below:

CAMBRIDGE HEALTHTECH MEDIA GROUP

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❑ **Weekly Update**
The latest industry news, commentary and highlights from Bio•IT World

❑ **eCliniqua**
Innovative management in clinical trials

Present a Poster and Save €35!

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 **1:00 pm EDT, 8 September, 2010.** Register online, or by phone, fax or mail. Indicate that you would like to present a poster and you will receive abstract submission instructions via email.

I am interested in presenting a poster at
❑ **Molecular Diagnostics Europe**
Title _____

CHI Insight Pharma Reports
A series of diverse reports designed to keep life science professionals informed of the salient trends in pharmaceutical technology, business, clinical development, and therapeutic disease markets. For a detailed list of reports, visit **InsightPharmaReports.com**, or contact Rose LaRaia, rlaraia@healthtech.com, +1-781-972-5444.

Barnett Educational Services
Barnett is a recognized leader in clinical education, training, and reference guides for life science professionals involved in the drug development process. For more information, visit **www.barnettinternational.com.**

Additional Registration Details
Each registration includes all conference sessions, posters and exhibits, food functions, and access to the conference proceedings link.

Handicapped Equal Access
In accordance with the ADA, Cambridge Healthtech Institute is pleased to arrange special accommodations for attendees with special needs. All requests for such assistance must be submitted in writing to CHI at least 30 days prior to the start of the meeting.

Substitution/Cancellation Policy
In the event that you need to cancel a registration, you may:

- Transfer your registration to a colleague within your organization. Credit your registration to another Cambridge Healthtech Institute program.
- Request a refund minus a €75 processing fee per conference.
- Request a refund minus the cost (€600) of ordering a copy of the CD .

NOTE: Cancellations will only be accepted up to two weeks prior to the conference. Program and speakers are subject to change.

Video and or audio recording of any kind is prohibited onsite at all CHI events.