AMP Association for Molecular Pathology

AMP EUROPE 2018

Achieving Dramatic Insights into Molecular Oncology and Precision Medicine

Rotterdam, The Netherlands

April 30 – May 2, 2018

www.amp-europe-congress.com

FINAL PROGRAM

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About AMP

Who We Are

The Association for Molecular Pathology (AMP) was founded in 1995 to provide structure and leadership to the emerging field of molecular diagnostics. AMP's 2,400+ members include individuals from academic and community medical centers, government, and industry; including pathologist and doctoral scientist laboratory directors; basic and translational scientists; technologists; and trainees. Through the efforts of its Board of Directors, Committees, Working Groups, and members, AMP is the primary resource for expertise, education, and collaboration in one of the fastest growing fields in healthcare. AMP members influence policy and regulation around the globe, ultimately serving to advance innovation in the field and protect patient access to high quality, appropriate testing.

Mission

The Association for Molecular Pathology is a not-for-profit scientific society that advances the clinical practice, science, and excellence of molecular and genomic laboratory medicine through education, innovation, and advocacy to enable highest quality health care.

How to Get Involved

AMP is the premier organization representing the needs and interests of the international molecular diagnostics community. AMP members receive a host of valuable benefits including access to our official publication, *The Journal of Molecular Diagnostics*, discounted registration fees for AMP sponsored events, instant access to experts in the field through AMP's Members-Only community CHAMP, free access to many online learning materials, and a wide-variety of other resources and opportunities.

Join the global community of molecular pathology professionals and make AMP your professional home! To join visit: *www.amp.org/join*

Mary Steele Williams, MNA, MT(ASCP)SM
Executive Director

Sara Hamilton, CMP
Director of Meetings & Exhibits

Laurie Menser
Director of Strategic Development

AMP Association for Molecular Pathology

Congress Information

Committee & Advisors


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Organizing Committee

Andrea Ferreira-Gonzalez, PhD
Virginia Commonwealth University, USA

Winand Dinjens, PhD
Erasmus MC, The Netherlands

Rami Mahfouz, MD, MPH
American University of Beirut Medical Center, Lebanon

Ernst-Jan Speel, PhD
Maastricht University Medical Center, The Netherlands

Albrecht Stenzinger, MD
Institute of Pathology, Germany

Laura Tafe, MD
Dartmouth Hitchcock Medical Center, USA

For conflict disclosures of the Organizing Committee, please see amp-europe-congress.com

Contacts

Scientific Organization

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United States of America

Legal Organizer (PCO)

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amp-europe@mci-group.com
www.amp-europe-congress.com

Registration

registration.berlin@mci-group.com

Exhibition and Sponsoring

amp-sponsoring@mci-group.com

General Information A–Z

About Rotterdam

Rotterdam welcomes you! A city of modern architecture, bursting with its cosmopolitan energy. Rotterdam's dramatic skyline gives you a completely new perspective to The Netherlands. Everywhere within the compact city center is easy to reach, so you can easily explore and discover Rotterdam to get to know the city. An abundance of restaurants and cuisines, a choice of hotels; a culturally exciting mix of galleries, museums and theaters; an array of cafes and bars and a renowned nightlife scene: Rotterdam gives you endless possibilities at every street corner!

Act of God

It is mutually agreed that in the event of total or partial cancellation of the congress due to fire, strike, natural disaster (either threatened or actual), government regulations or incidents not caused by the organizer, which would prevent its scheduled opening or continuance, the congress may be partially postponed or terminated as a whole. In this case, participants are not entitled to reclaim refunds on no account. Participants are obliged to have civil liability insurance.

Certificate of Attendance

All registered participants will receive a certificate of attendance. You will be able to claim your certificate online. The link and instructions will be sent to all the participants after the congress.

Cloakroom

The Cloakroom is located at the main entrance of Willem Burger Complex, in front of the registration area.

Opening Hours

Monday, April 30	8:00 AM–7.45 PM
Tuesday, May 1	7:30 AM–6:45 PM
Wednesday, May 2	7:30 AM–5:30 PM

Congress Documents

Registration fee for participants covers: admission to scientific sessions and industry symposia, admission to the exhibition, lunch and coffee breaks.

Congress Language

The official language of the congress is English. Simultaneous translation will not be provided.

Congress Venue

De Doelen International Congress
Centre Rotterdam
Willem Burger Kwartier
Kruisplein 40
3012 CC Rotterdam
The Netherlands

Currency

The Euro (€) is the official currency in The Netherlands. You can change money at banks and currency exchanges in airports or train stations. Classic credit cards are American Express, MasterCard and Visa; Diners Club is rarely used, but accepted by major hotels, petrol stations or large shops. Otherwise cash will be accepted.

Electricity

In The Netherlands electricity is supplied at 230V, 50Hz, the power sockets are of type F (continental European standard). Adapters are widely available in electronics stores.

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General Information A–Z

Helpful Phone Numbers

Taxi Rotterdam: +31 10 237 2018
+31 10 403 0303
Fire Service: 112
Police: 112

Insurance

The congress organizers do not accept any liability for damages and/or loss of any kind which may be incurred by the congress. Participants or by any persons accompanying them. Delegates participate in all events at their risk. Participants are advised to take out insurances against loss, accidents or damage that could occur during the congress. Verbal agreements will not be binding unless they are confirmed in writing.

Internet Access

Free wireless internet access is available in the venue. Therefore a password is required.

Name: AMPEurope
Password: Rotterdam2018

Please ensure the wireless connection on your device is configured and your device is correctly protected for wireless usage. No technical support will be provided.

Liability Disclaimer

The organizers cannot be held liable for any hindrance or disruption of congress proceedings arising from political, social or economic events or any other unforeseen incidents beyond their control. The organizers will accept no liability for any personal injuries sustained or for loss or damage to property belonging to congress participants, either during or as a result of the congress or during all events. Registration of a participant entails acceptance of these conditions.

Lost & Found

A Lost & Found box will be placed at the registration desk.

Name Badge

The name badge will be the official meeting document and should be worn at all times in order to gain entry to the meeting rooms and the exhibition halls. Admission to the conference will not be allowed without badge identification. In case of lost or forgotten badges, an administration fee of € 20 will be charged.

Parking Facilities

There are several parking possibilities at the congress center. Kruisplein/Schouwburgplein and Weena Qpark parking lots are in immediate proximity.

Photography, Audio, Video and Mobile Phone Policy

Audio, photo and video recording by any device (e.g. cameras, laptops, PDAs, mobile phones, watches) is strictly prohibited during all oral and poster sessions, unless prior permission is obtained from the congress organizer. Use of mobile phones is strictly prohibited during scientific sessions. Mobile phones must be switched off while attending sessions.

Poster Visits

Odd Numbers

Tuesday, May 1 9:30 AM–10:15 AM

Even Numbers

Wednesday, May 2 9:30 AM–10:15 AM

General Information A–Z

Presenting Speakers

Speaker are requested to hand in their presentations per e-mail (amp-europe@mci-group.com) prior to the congress. In case this has not been done please hand in the file at least one hour before your session at the technician's desk at the back of the plenary room.

Program Changes

The organizer reserves the right to make changes if necessary. No full or partial refunds are made to the attendees in the event of cancellations or other changes in the program. Please note that changes will be posted at the registration desk and at the entrance of the session halls. Participants will be informed about the changes.

Public Transportation

Depending on which method of transport you use, the names of stations below are the closest to the congress venue. The venue is approx. 5 minutes walking distance away from every station. For detailed information: www.ret.nl/en

Train Rotterdam Centraal Station
Metro Centraal Station
Tram Kruisplein with number 4, 7, 8, 20, 21, 23 and 25
Bus Centraal Station, bus numbers 33, 38, 40 and 44

Registration

You can still register online and directly in Rotterdam. However, waiting can be eased, if participants register online in advance. Pre-registered participants will receive a barcode which is required on-site in order to print the badge. Therefore, it is essential to have the barcode ready. Self-printing stations are located directly in front of the registration desk.

Registration Desk

The registration desk is situated on the ground floor, in the foyer of the Willem Burger Complex.

Opening Hours

Monday, April 30 8:00 AM–6:30 PM
Tuesday, May 1 7:30 AM–6:30 PM
Wednesday, May 2 7:30 AM–5:30 PM

Registration Fees

	On-Site
Delegate, AMP Member	€ 500
Delegate, AMP Affiliate Society Member[2]	€ 550
Delegate, Non-AMP Member	€ 580
Medical/Technical Assistants (MTA)	€ 390
Students[1]	€ 250
Day Ticket[4]	€ 200

Proof of current status needs to be provided along with the registration.

[1] Student: A delegate who is an undergraduate, graduate or medical student.
[2] AMP Affiliate Society: The German Society of Pathology, The Hong Kong Society for Molecular Diagnostic Sciences, The Korean Society for Laboratory Medicine, The Molecular Pathology Association of India, The Brazilian Society of Clinical Pathology and Laboratory Medicine (SBPC), The Italian Society of Pathology and Translational Medicine (SIPMET)
[4] without EACCME certification

Smoking

Smoking is strictly prohibited in the congress venue by law.

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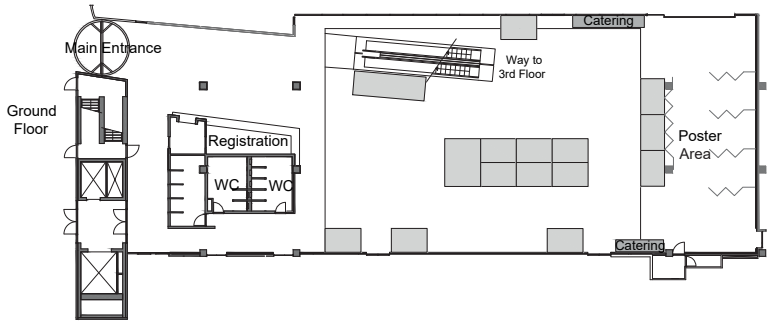
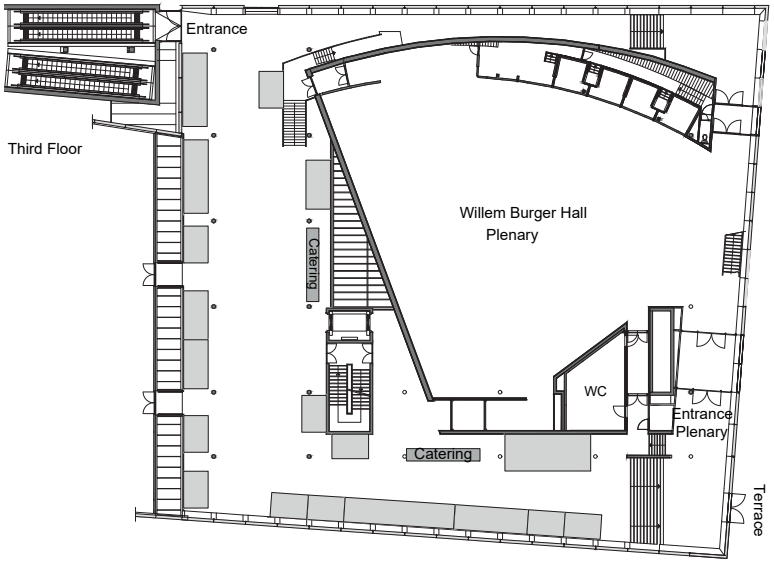
Social Program

The Get Together will take place in the Exhibit Hall on Monday, April 30, 6:15 PM.

Time Zone

The Netherlands use Central European Time (CET), which is 1 hour ahead of Greenwich Mean Time (GMT+1).





Scientific Program

Monday, April 30

8:00 AM–9:00 AM	Registration
9:00 AM–10:45 AM	Opening Remarks **Emerging Knowledge** Recent Advances in Liquid Biopsies: Challenges and Solutions
	Break
11:00 AM–12:00 PM	**Innovation Lab** Quality Control and Assessment in Cancer Diagnostics
	Break
12:15 PM–1:15 PM	**Industry Symposium**
1:15 PM–2:15 PM	**Lunch Break** Exhibition Hall
2:15 PM–3:15 PM	**Abstract Session #1**
	Break
3:30 PM–4:30 PM	**Industry Symposium**
4:30 PM–5:15 PM	**Coffee Break/Judging Poster Awards** Exhibition Hall
5:15 PM–6:15 PM	**Emerging Knowledge** CRISPR
6:15 PM–7:30 PM	**Get Together** Exhibition Hall

Tuesday, May 1

8:00 AM–9:30 AM	**Emerging Knowledge** Biological Themes Across Tumor Types
9:30 AM–10:15 AM	**Coffee Break/ Odd Posters** Exhibition Hall
10:15 AM–11:15 AM	**Industry Symposium**
	Break
11:30 AM–1:00 PM	**Innovation Lab** Tumor Mutational Burden
1:00 PM–2:00 PM	**Lunch Break** Exhibition Hall
2:00 PM–3:00 PM	**Industry Symposium**
	Break
3:15 PM–4:15 PM	**Abstract Session #2**
4:15 PM–5:15 PM	**Innovation Lab** Single Cell Sequencing
5:15 PM–6:15 PM	**Innovation Lab** AMP NGS Guidelines

Wednesday, May 2

8:00 AM–9:30 AM	**Emerging Knowledge** Immunotherapies
9:30 AM–10:15 AM	**Coffee Break/ Even Posters** Exhibition Hall
10:15 AM–11:15 AM	**Industry Symposium**
	Break
11:30 AM–1:00 PM	**Innovation Lab** Battle of Bioinformatics Pipeline
1:00 PM–2:00 PM	**Lunch Break** Exhibition Hall
2:00 PM–3:00 PM	**Industry Symposium**
	Break
3:15 PM–5:00 PM	**Emerging Knowledge** Clinically Significant Big Data
	Award Recognition & Closing Remarks

Scientific Program

Monday, April 30

9:00 AM–9:15 AM **Opening Remarks**

Andrea Ferreira-Gonzalez (Richmond, USA)

9:15 AM–10:45 AM Emerging Knowledge

Recent Advances in Liquid Biopsies: Challenges and Solutions

Moderators: *Andrea Ferreira-Gonzalez (Richmond, USA)*
Ernst-Jan Speel (Maastricht, The Netherlands)

Session Description: This session will focus on how characterizing and monitoring tumor genomes with biological fluid-base samples could achieve significant improvements in precision medicine. As tumors shed parts of themselves into the circulation, analyses of circulating tumor cells, circulating tumor DNA, and tumor-derived exosomes, often referred to as "liquid biopsies", may enable tumor genome characterization by minimally invasive means. As data accumulates and test performance continues to improve, exciting applications are on the horizon for detection of disease faster, diagnosis of disease earlier, and tracking of disease progression and treatment response more efficiently. The presenters in this track bring together the most up-to-date information and current state-of-the-field for liquid biopsy as well as identifying current challenges and solutions.

Session Objectives: After attending this session, participants should be able to:

- Understand how to apply liquid biopsies for the advancement of precision medicine.
- Evaluate the scope of clinical utility for liquid biopsies in cancer.
- Understand the current challenges and possible solutions for the implantation of liquid biopsy in cancer management.

9:15 AM–10:00 AM **CANCER-ID: European Network for Validation of Liquid Biopsy Tests**
Anna Babayan (Hamburg, Germany)

10:00 AM–10:45 AM **Personalized Liquid Biopsy: Applications in Colorectal, Bladder, Breast, Lung and Beyond**
C. Jimmy Lin (San Carlos, USA)

11:00 AM–12:00 PM Innovation Lab

Quality Control and Assessment in Cancer Diagnostics

Moderator: *Rami Mahfouz (Beirut, Lebanon)*

Session Description: This session will focus on quality control applications in cancer diagnostics with emphasis on cell free DNA with the emerging need as more and more testing is relying on liquid biopsies. Internal and external quality assurance will be discussed as well the potential need for the availability of reference material that will help in technical and diagnostic standardization.

Session Objectives: After attending this session, participants should be able to:

- Describe quality measures for cancer diagnostic testing especially using cell free DNA.
- Learn about the existence of reference material, if any, for standardization of analytical testing and control assessment.
- Realize the importance of proficiency testing in cell free DNA analysis and interpretation.

11:00 AM–11:30 PM **The Role of Reference Materials for Improving Quality of Cancer Diagnostics**
Sandi Deans (Sheffield, UK)

11:30 AM–12:00 PM **Improving the Proficiency of Molecular Diagnostics by External Quality Assessment (EQA)**
Michael Neumaier (Heidelberg, Germany)

12:15 PM–1:15 PM **Industry Symposium**
Please see page 51 for more information.

1:15 PM–2:15 PM **Lunch Break**
Exhibition Hall

2:15 PM–3:15 PM Abstracts
Abstract Session #1

Moderator: *Rami Mahfouz (Beirut, Lebanon)*

Session Description: Oral Presentations from Selected abstracts

Session Objectives: After attending this session, participants should be able to:
- Analyze presentations of abstracts highlighted by the Organizing Committee as particularly significant.
- Evaluate the scientific merit and significance of these selected studies through further discussion with the authors.

2:15 PM–2:30 PM **Comprehensive Molecular Characterization of Metastatic Cancer Using Whole-Genome Sequencing: a Dutch National Initiative**
Paul Roepman (Amsterdam, The Netherlands)

2:30 PM–2:45 PM **Multitumor Profiling of Lymphocyte Activation Gene 3 (LAG-3) and Association with Immune Cell Phenotypes**
Mustimbo Roberts (Princeton, USA)

2:45 PM–3:00 PM **Exploratory Analysis of Janus Kinase 1 (JAK1) Loss-of-Function (LoF) Mutations in Patients With DNA Mismatch Repair-Deficient/Microsatellite Instability-High (dMMR/MSI-H) Metastatic Colorectal Cancer (mCRC) Treated With Nivolumab + Ipilimumab in CheckMate-142**
Danielle Greenawalt (Princeton, USA)

3:00 PM–3:15 PM **QIAseq Digital Sequencing and Biomedical Genomics Workbench: Application to Liquid Biopsy in Bladder Cancer**
Francesco Lescai (Aarhus, Denmark)

3:30 PM–4:30 PM **Industry Symposium**
Please see page 53 for more information.

4:30 PM–5:15 PM **Coffee Break**
Exhibition Hall Judging Poster Awards

5:15 PM–6:15 PM Emerging Knowledge
CRISPR

Moderators: *Andrea Ferreira-Gonzalez (Richmond, USA)*
Ernst-Jan Speel (Maastricht, The Netherlands)

Session Description: RNA plays important and diverse roles in biology, but molecular tools to manipulate and measure RNA are limited. We demonstrate that RNA-targeting CRISPR effector Cas13 can be engineered for mammalian cell RNA knockdown, binding, and RNA editing. Cas13 can be heterologously expressed in mammalian and plant cells for targeted knockdown of either reporter or endogenous transcripts, targeted RNA binding for transcript imaging, and programmable RNA editing. We also combine Cas13a with isothermal amplification to establish a CRISPR-based diagnostic (CRISPR-Dx), providing rapid DNA or RNA detection with attomolar sensitivity and single-base mismatch specificity. We use this Cas13a-based molecular detection platform, termed SHERLOCK, to detect specific strains of Zika and Dengue virus, distinguish pathogenic bacteria, genotype human DNA, and identify cell-free tumor DNA mutations. Our results establish CRISPR-Cas13 as a flexible platform for RNA targeting with wide applicability for studying RNA or therapeutics.

Session Objectives: After attending this session, participants should be able to:
- Describe how CRISPR technology can be modified to target RNA.
- Understand how CRSIPR technology could be used in the clinical laboratory.
- Identify challenges for adoption of CRISPR technology for the clinical laboratory.

5:15 PM–6:15 PM **Harnessing RNA Targeting CRISPR Systems for Transcriptome Engineering and Human Health**
Omar Abudayyeh (Cambridge, USA)

6:15 PM–7:15 PM **Get Together**
Exhibition Hall

Notes

Scientific Program

Tuesday, May 1

8:00 AM–9:30 AM Emerging Knowledge
Biological Themes Across Tumor Types

Moderators: *Winand Dinjens (Rotterdam, The Netherlands)*
Ernst-Jan Speel (Maastricht, The Netherlands)

Session Description: Currently, molecular diagnostic DNA testing is guiding selection of cancer patients who most likely will benefit from targeted treatment (precision medicine). This selection is largely based on the combination of a specific tumor type and the presence or absence of specific mutations in the DNA. Information present in the transcriptome is largely ignored. In this session the clinical importance of similar DNA alterations in different tumor types as well as the use of a combination of both DNA and transcriptomic analyses for drug response prediction will be addressed.

Session Objectives: After attending this session, participants should be able to:
- Understand the value of DNA mutation assessment for precision medicine across tumor types.
- Realize the advantages and shortcomings of DNA testing for targeted treatment of cancer.
- Describe how the combination of transcriptome and DNA analysis may improve drug response prediction in cancer patients.

8:00 AM–8:45 AM **New Insights in the Pathogenesis of MSI Cancers**
Aysel Ahadova (Heidelberg, Germany)

8:45 AM–9:30 AM **Next Generation Pathology Molecular Diagnostics: Combining DNA and RNA Analysis for Treatment**
Rene Bernards (Amsterdam, The Netherlands)

9:30 AM–10:15 AM **Coffee Break**
Exhibition Hall Visit Posters and Exhibit (Odd-numbered Posters Attended)

10:15 AM–11:15 AM **Industry Symposium**
Please see page 53 for more information.

11:30 AM–1:00 PM Innovation Lab
Tumor Mutational Burden

Moderators: *Winand Dinjens (Rotterdam, The Netherlands)*
Albrecht Stenzinger (Heidelberg, Germany)

Session Description: Many challenges exist in assaying mutational burden in cancer (TMB). This interactive session will explore how oncology can best use TMB and what diagnostic information is needed to predict response to immunotherapy.

Session Objectives: After attending this session, participants should be able to:
- Understand and describe the underlying biology and concept of tumor mutational burden (TMB).
- Understand and describe the prerequisites and specific characteristics of assays measuring TMB.
- Describe and interpret the clinical utility of TMB.

11:30 AM–12:15 PM **Microsatellite Instability in Relation to PDL1 Expression and Tumor Mutational Burden in Cancer Patients**
Ari M. VanderWalde (Germantown, USA)

12:15 PM–1:00 PM **Novel mRNA Vaccines for Personalized Cancer Immunotherapy**
Alina Klein (Mainz, Germany)

1:00 PM–2:00 PM **Lunch Break**
Exhibition Hall

2:00 PM–3:00 PM **Industry Symposium**
Please see page 53 for more information.

3:15 PM–4:15 PM Abstracts
Abstract Session #2

Moderator: *Ernst-Jan Speel (Maastricht, The Netherlands)*

Session Description: Oral Presentations from Selected abstracts.

Session Objectives: After attending this session, participants should be able to:
- Analyze presentations of abstracts highlighted by the Organizing Committee as particularly significant.
- Evaluate the scientific merit and significance of these selected studies through further discussion with the authors.

3:15 PM–3:30 PM **Assessment of Circulating Tumor DNA in Patients With Metastatic Colorectal Cancer Treated with Cetuximab Monotherapy**
Lindsay Angus (Rotterdam, Netherlands)

3:30 PM–3:45 PM **External Quality Assessment Schemes for Gene Mutation Testing in Oncology: Comparison of Performance between FFPE-Tissue and ctDNA in Plasma**
Kaat Van Casteren (Leuven, Belgium)

3:45 PM–4:00 PM **Development and Characterization of Multigene Molecular Cytopathology Cell Slides as a Potential Fine Needle Aspirate (FNA)-Mimetic Specimen for Proficiency Testing**
Sonika Saddar (Milpitas, USA)

4:00 PM–4:15 PM **Use of Highly Multiplexed Reference Materials to Facilitate Validation of a Clinical NGS Tumor Fusion RNA Assay**
Dan Brudzewsky (Gaithersburg, USA)

4:15 PM–5:15 PM Innovation Lab
Single Cell Sequencing

Moderators: *Rami Mahfouz (Beirut, Lebanon)*
Albrecht Stenzinger (Heidelberg, Germany)

Session Description: This session will explore technologies for Single Cell Sequencing using state-of-the-art NGS techniques and their applications in understanding the function of individual cancer cells by providing a higher resolution of cellular differences and functions in the proper corresponding microenvironment.

Session Objectives: After attending this session, participants should be able to:
- Identify the variable technologies available for Single Cell Sequencing.
- Compare the sensitivities of the variable techniques employed in Single Cell Sequencing.
- Estimate the importance of Single Cell Sequencing in diagnostic and research applications.

4:15 PM–5:15 PM **Simultaneous Analysis of Cancer Clones and Immune Microenvironments Through Single Cell RNA Sequencing**
Trevor Pugh (Toronto, Canada)

5:15 PM–6:15 PM Innovation Lab

AMP NGS Guidelines

Moderators: *Andrea Ferreira-Gonzalez (Richmond, USA)*
Albrecht Stenzinger (Heidelberg, Germany)

Session Description: In 2017, AMP partnered with various stakeholders to develop and publish two related published guideline manuscripts in The Journal for Molecular Diagnostics: 1) Guidelines for Validation of Next Generation Sequencing (NGS)-based Oncology Panels: A Joint Consensus Recommendation of the Association for Molecular Pathology and College of American Pathologists and 2) Standards and Guidelines for the Interpretation and Reporting of Sequence Variants in Cancer: A Joint Consensus Recommendation of the Association for Molecular Pathology, American Society of Clinical Oncology, and College of American Pathologists. This session will be a discussion of how the guidelines were developed and will provide practical case-based implementation advice for laboratories both currently performing somatic NGS and those considering bringing these technologies into their laboratories.

Session Objectives: After attending this session, participants should be able to:

- Discuss key points of the guideline for validation of NGS-based oncology tests.
- Discuss key points of the guideline for the classification, interpretation, and reporting of somatic sequence variants in NGS-based oncology panels.
- Evaluate utility of these guidelines for development, validation, interpretation and reporting of the laboratory developed NGS tests using clinical case scenarios.

5:15 PM–6:15 PM **Practice Guidelines for Validation, Interpretation and Reporting of NGS-Based Oncology Tests**
Marina N. Nikiforova (Pittsburgh, USA)

Scientific Program

Wednesday, May 2

8:00 AM–9:30 AM Emerging Knowledge
Immunotherapies

Moderator: *Albrecht Stenzinger (Heidelberg, Germany)*

Session Description: This session will provide an update on immunotherapies as well as insights into tumor mutational burden (TMB) and microsatellite instability (MSI) as predictors of response to treatment with checkpoint blockers.

Session Objectives: After attending this session, participants should be able to:
- Understand the underlying concept and biology of immunooncology (IO) and checkpoint blockade in particular.
- Understand and describe the emerging role of genomic biomarkers predicting IO response.
- Describe and interpret the design and characteristics of assays measuring TMB and MSI.

8:00 AM–8:45 AM **Immunotherapies in Cancer, 21st Century Vaccines**
Carl Figdor (Nijmegen, The Netherlands)

8:45 AM–9:30 AM **Tumor Mutational Burden-MSI**
Hugo Horlings (Amsterdam, The Netherlands)

9:30 AM–10:15 AM Exhibition Hall **Coffee Break**
Visit Posters and Exhibit (Even-numbered Posters Attended)

10:15 AM–11:15 AM **Industry Symposium**
Please see page 55 for more information.

11:30 AM–1:00 PM Innovation Lab
Battle of the Bioinformatics Pipeline

Moderators: *Winand Dinjens (Rotterdam, The Netherlands)*
Albrecht Stenzinger (Heidelberg, Germany)

Session Description: Several companies' NGS analysis pipelines will "wrestle" with data files that have been provided in advance. The obtained results will be presented consecutively by the companies, after which a general discussion with involvement of participants will take place about the concordant and discrepant results. This session is expected to be both enjoyable and very informative.

Session Objectives: After attending this session, participants should be able to:
- Appreciate the complexity and difficulty in NGS data analysis and interpretation.
- Appreciate that there is still no gold standard for NGS data analysis and that most pipelines are to some extent complementary.
- Take into consideration and implement these analysis uncertainties in data reporting for patient care.

Agilent Technologies
Elias Hage (Amstelveen, The Netherlands)

Qiagen
Tim Bonnert (Manchester, UK)

Thermo Fisher Scientific
Greg Tyrelle (The Hague, The Netherlands)

1:00 PM–2:00 PM Exhibition Hall **Lunch Break**

2:00 PM–3:00 PM **Industry Symposium**
Please see page 55 for more information.

3:15 PM–4:45 PM	Emerging Knowledge **Clinically Significant Big Data**
Moderator:	*Laura Tafe (Lebanon, USA)*
Session Description:	This session will provide insight into how tomorrow's healthcare will depend on innovation in data analytics and health informatics.
Session Objectives:	After attending this session, participants should be able to: • Describe opportunities for improving patient care using electronic health record databases. • Identify resources that patient providers may utilize to learn more information about patients similar to their own. • Discuss how Big Data initiatives can advance biomarker discovery and translational medicine.
3:15 PM–4:00 PM	**Turning Little Data into Big Data: Data Science and the Omics** *Mark Hoffman (Missouri, USA)*
4:00 PM–4:45 PM	**Oncology Research Information Exchange Network (ORIEN)** *William S. Dalton (Tampa, USA)*
4:45 PM–5:00 PM	**Award Recognition & Closing Remarks** *Andrea Ferreira-Gonzalez (Richmond, USA)* *Rami Mahfouz (Beirut, Lebanon)*

Omar Abudayyeh,
Broad Institute, Cambridge, MA, USA

Aysel Ahadova, PhD
Heidelberg University, Heidelberg, Germany

Rene Bernards, PhD
Netherlands Cancer Institute, Amsterdam, The Netherlands

Tim Bonnert, PhD
Qiagen, Manchester, UK

William S. Dalton, MD, PhD
M2Gen, Tampa, FL, USA

Sandi Deans, PhD
UK National External Quality Assessment Service (UK NEQAS), Sheffield, UK

Carl Fidgor, PhD
Radboud University, Nijmegen, The Netherlands

Elias Hage, PhD
Agilent Technologies, Amstelveen, The Netherlands

Mark Hoffman, PhD
The Children's Mercy Hospital, Missouri, KS, USA

Hugo Horlings, MD, PhD
Netherlands Cancer Institute, Amsterdam, The Netherlands

Alina Klein, PhD
BioNTech AG, Mainz, Germany

C. Jimmy Lin, MD, PhD, MHS
Natera, San Carlos, CA, USA

Michael Neumaier, MD
Heidelberg University, Heidelberg, Germany

Marina N. Nikiforova, MD
University of Pittsburgh Medical Center, Pittsburgh, PA, USA

Klaus Pantel, MD
University Medical Center Hamburg-Eppendorf (UKE), Hamburg, Germany

Trevor Pugh, PhD
Princess Margaret Cancer Centre, University Health Network, Toronto, Canada

Greg Tyrelle, PhD
Thermo Fisher Scientific, The Hague, The Netherlands

Ari M. VanderWalde, MD, MPH
West Cancer Center, Memphis, TN, USA

Omar O. Abudayyeh, is an MD-PhD student in the Harvard-Massachusetts Institute of Technology (MIT) Health Sciences and Technology program. In the laboratory of Feng Zhang at the Broad Institute of MIT and Harvard, Cambridge, Massachusetts, USA, his doctoral research focuses on the discovery and characterization of novel CRISPR proteins, such as Cpf1, C2c1 and Cas13a/C2c2, in bacteria for the purpose of expanding the genome-editing toolbox and studying mammalian biology. His recent work has focused on using the RNA-targeting CRISPR system Cas13 for building a transcriptome engineering toolbox for applications in diagnostics and therapeutics.

Aysel Ahadova, PhD, is working as a postdoctoral fellow in the Department of Applied Tumor Biology, University Hospital Heidelberg. She graduated from Azerbaijan Medical University in 2011 and came to Germany to work on her doctoral thesis under the supervision of Magnus von Knebel Doeberitz and Matthias Kloor. Her research mainly focuses on microsatellite instability and its consequences for tumor development and progression. One particular topic of her research is colorectal carcinogenesis in Lynch syndrome. She works on revealing the molecular nature of Lynch syndrome-associated cancers in order to improve the therapeutic and preventive options for patients with hereditary cancer predisposition.

René Bernards, PhD, his laboratory at the Netherlands Cancer Institute uses functional genomic approaches to find vulnerabilities of cancers that can be exploited therapeutically. Using the concept of synthetic lethality, his laboratory searches for combinations of drugs that are lethal for cancer cells and for vulnerabilities of cancer cells of a defined genotype. As one example, his laboratory identified the combination of a BRAF inhibitor and an EGFR inhibitor as effective for the treatment of BRAF mutant colon cancer. There are currently eleven clinical trials ongoing that test the efficacy of the cancer therapies suggested by genetic screens from his laboratory. He also developed the first clinically used gene expression test for early breast cancer: MammaPrint.

Tim Bonnert, PhD, heads the Field Application Scientist team for QIAGEN Bioinformatics in EMEA providing scientific support and training to customers implementing QIAGEN's secondary analysis and tertiary interpretation solutions for NGS data. He is based in the UK and joined QIAGEN in 2011 after 6 years of leading the Applied Science group at Rosetta Biosoftware working with transcriptomics, proteomics and genomics applications. He received his Ph.D. in antibody phage display from the University of Cambridge and has over 12 years of pharmaceutical research experience in molecular biology, bioinformatics, and biomarker discovery using a range of molecular profiling techniques.

Scientific Program
Speakers Biographies

William S. Dalton, MD, PhD, is a medical oncologist and molecular pharmacologist with an interest in new drug discovery and mechanisms of drug resistance. He is also the past President and CEO of the H. Lee Moffitt Cancer Center in Tampa, Florida, USA. He founded a health information solutions company called M2Gen, and helped form ORIEN (Oncology Research Information Exchange Network), a data sharing alliance, comprised of seventeen of the nation's leading cancer centers. The mission of ORIEN is to accelerate cancer discovery and deliver hope through collaborative learning and partnerships. Dr. Dalton helped to develop an IRB approved protocol called Total Cancer Care (TCC) designed to follow patients throughout their lifetime, with patients consenting to provide clinical, tissue, and molecular data to support precision medicine. All ORIEN members agree to use the same TCC protocol and consent and have developed standards for data generation and sharing. The ORIEN system is now being used to identify new cancer biomarkers to predict treatment response, molecular pathways to determine mechanisms of resistance, and development of evidence-based clinical decision support tools at the point of care. He has over 200 publications, and numerous patents in the fields of drug discovery and computer/ information networking.

Sandi Deans, PhD, is a Consultant Clinical Scientist and the Director of Genomics Quality Assessment (GenQA) part of the UK National External Quality Assessment Service (UK NEQAS) which is based in the Department of Laboratory Medicine, Royal Infirmary of Edinburgh. The EQA Scheme delivers assessment of molecular genetic testing, molecular pathology testing, cytogenomic testing, newborn screening, prenatal diagnosis, preimplantation genetic diagnosis, variant interpretation and a technical next generation sequencing scheme; ensuring high quality genomic testing, end to end. Dr Deans is the National Laboratory and Scientific Lead within the NHS England 100,000 Genomes Project Genomic Implementation Unit and collaborates closely with Genomics England to deliver high quality whole genome sequencing for both the rare diseases and cancer programs. Dr Deans is a Honorary Reader in Genomic Medicine at Edinburgh University and a Senior Honorary Lecturer in the Medical School, University of St. Andrews.

Carl Figdor, PhD, is a professor of Immunology and head of the department of Tumor Immunology at the Radboudumc in Nijmegen. He obtained his Masters degree in biology in 1979 from the University of Utrecht and his PhD degree in medicine in 1982 from the University of Amsterdam working at the Netherlands Cancer Institute, where he got tenured in 1985 and started his own research group. In

1992 Carl Figdor became Professor in Cell Biophysics at the University of Twente, and in 1994 he moved to the Radboud University Medical Center in Nijmegen to start a new department on Tumor Immunology. Here he initiated a large translational program exploiting the immune system to fight cancer. Until 2010, he was scientific director of the RIMLS, Radboud Institute for Molecular Life Sciences, a research institute within the domain of molecular mechanisms of disease that became internationally recognized during his leadership In 2006, he won the Spinoza Prize, which is also known as "the Dutch Nobel Prize", for his groundbreaking research on the use of immune cells against cancer and for the translation of fundamental research into patient care. His research interests focus on the molecular mechanisms controlling antigen presenting cells, in particular dendritic cells. Carl Figdor was one of the first to use dendritic cell therapy in patients. He modified dendritic cells to 'teach' a patient's immune system to recognize tumor cells. Major current research projects include the use of antigen loaded dendritic cell vaccines in the treatment of cancer patients and the generation of synthetic dendritic cells. Professor Figdor received several prizes and honors including the Van Loghem Award (1999), Eijkman Medal (2000), Spinoza prize (2006), Dutch Cancer Foundation research award, the ERC Advanced Grant (2010) and the NWO Gravity Grant (2013). He is a member of the Academia Europaea and the Royal Dutch Academy of Arts and Sciences. He became a Knight in the Order of the Dutch Lion in 2012.

Elias Hage, PhD, is an application scientist at Agilent Technologies where he provides pre- and post-sales functional and technical support for all Agilent clinical software solutions. Before joining Agilent, he obtained a PhD in virus genomics from the Hanover Medical School where he worked extensively with next generation sequencing technologies with a focus on establishing/ devising sample preparation methods and bioinformatic techniques.

Mark Hoffman, PhD, serves as the Chief Research Information officer for Children's Mercy Hospital (CMH) and the Children's Research Institute. Dr. Hoffman has delivered a TED talk on the "Envirome" and won the iThermometer category in the Google wearable devices in healthcare challenge in 2015. He is an inventor on 19 issued patents and a member of the American Academy of Inventors. Dr. Hoffman is the PI on a CDC funded laboratory data warehouse project. Prior to CMH, he served as VP for Research and Genomics at Cerner, where he led the development of their molecular diagnostics solution, their clinical trials capability, initiatives in public health and their "big data" research efforts.

Scientific Program
Speakers Biographies

Hugo Horlings, MD, PhD, is a certified surgical pathologist from the Netherlands (2014). His areas of expertise include breast, gynecological and molecular pathology. He has been awarded with a Translational research fellowship 2014–2018 from the Dutch Cancer Society to obtain training in clinical genomics – the application of large scale and high throughput genomic technologies in clinical settings. This will maximize his ability as a pathologist to make personalized medicine a reality. Dr. Horlings has pursued his training in the laboratories of Prof. Marc van de Vijver, Prof. Rene Bernards, Prof David Huntsman and in collaboration with several other experts at Stanford University and Rockefeller University USA. Currently, he is starting his own research group at the Netherlands Cancer Institute. The main research interest of the group is to define genetic properties of breast and ovarian carcinomas associated with cancer- immune interactions and response to immunotherapy.

Alina Klein, PhD, is currently a project manager at BioNTech AG, Mainz, Germany. She received a Master's Degree in Biomedical Science at the Philipps University of Marburg, Germany and a PhD in Biochemistry at the Goethe University Frankfurt am Main, Germany. Her PhD work mostly focused on the cellular transfer of fluorescent probes and their observation via live cell (super-resolution) microscopy. As a project manager at BioNTech she is interested in the development of personalized cancer vaccines and their clinical testing.

Cheng-Ho Jimmy Lin, MD, PhD, MHS, is the Chief Scientific Officer, Oncology, at Natera. He comes from a long history as a pioneer in cancer genomics. Most recently, he led the clinical genomics program at the National Cancer Institute (NCI) at the National Institutes of Health (NIH). Previously, at Johns Hopkins and Washington University in St. Louis, Dr. Lin was part of one of the first clinical genomics labs in academia and led the computational analyses of the first ever exome sequencing studies in cancer, including breast, colorectal, pancreatic, glioblastoma, medulloblastoma, and melanoma. He has published in top academic journals, such as Science, Nature, and Cell, and has been an expert in national and international media outlets, such as New York Times, Forbes, Bloomberg Businessweek, Washington Post, and the Financial Times. Dr. Lin holds an MHS in Bioinformatics, a PhD in Cellular and Molecular Medicine, and an MD from Johns Hopkins University as well dual majors in Cognitive Science and Molecular Biophysics and Biochemistry from Yale University.

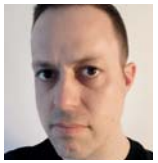
Michael Neumaier, MD, is a Clinical Chemist and Laboratory Physician. He holds the chair for Clinical Chemistry of Heidelberg University in Germany. He is the vice Dean of his Medical Faculty, the director of the Institute for Clinical Chemistry and member of the Executive Board at the University Hospital

Mannheim. Since 2009 he is a member of the German National Gene Diagnostics commission at the Robert-Koch-Institute, Berlin, a long-standing member in the advisory board of the German Medical Council and chairman of the working group on Quality Management in Molecular Diagnostics. In the German Society for Clinical Chemistry and Laboratory Medicine (DGKL), he acts – by appointment of the German Chamber of Physicians – as a director of the comprehensive national external quality assessment (EQA) system run by the Reference Institute for Bioanalytics (RfB). Since 1998, he has initiated and organized various regular EQA programs for molecular diagnostics with up to 700 participating laboratories. Between 2014 and 2016, Prof. Neumaier was President of DGKL. Since 2018 he is President of the EFLM. His main scientific interests are the pathobiochemistry of malignant disease, the development and validation of methods for the molecular diagnostics of cancer in bodily fluids and the molecular immunology of innate immune cells expressing variable immunoreceptors.

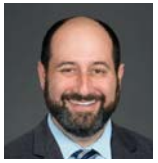
Marina N. Nikiforova, MD, FCAP, is Professor of Pathology and Director of the Molecular & Genomic Pathology Laboratory at the University of Pittsburgh Medical Center (UPMC). Dr. Nikiforova has a longstanding clinical and research interests in genomics of thyroid cancer and brain tumors and she has led the development of a novel NGS-based tests for preoperative diagnosis of thyroid cancer in FNA samples (ThyroSeq) and for diagnosis, prognostication and treatment of adult and pediatric brain tumors (GlioSeq). Dr. Nikiforova is a member of the Association for Molecular Pathology (AMP) where she served on Nominating committee, Program Committee, and as a Chair of Solid Tumors subdivision. During past two years, Dr. Nikiforova served as a Chair of the Clinical Practice Committee and on the Board of Directors at AMP. Under her leadership, the committee has developed analytical and clinical guidelines for NGS analysis and variant interpretation in cancer. She is also a member of the Laboratory Practice Committee at the American Thyroid Association (ATA). Dr. Nikiforova has published over 150 peer-reviewed scientific articles and five book chapters, most of which in the area of molecular diagnostics of cancer.

Klaus Pantel, MD, is Chairman of the Institute of Tumour Biology at the University Medical Center Hamburg-Eppendorf. The institute is part of the Centre of Experimental Medicine and the University Cancer Center Hamburg (UCCH). Prof Pantel graduated in 1986 from Cologne University in Germany and completed his thesis on mathematical modelling of haematopoiesis in 1987. After his postdoctoral period in the USA on hematopoietic stem cell regulation (Wayne State University, Detroit), he performed research at the Institute of Immunology, University of Munich for 10 years. The pioneer work of Prof Pantel in the field of cancer micrometastasis, circulating tumor cells and circulating nucleic acids (ctDNA, microRNAs) is reflected by more than 400 publications in excellent high ranking biomedical and scientific journals (incl. NEJM, Lancet, Nature Journals, Cancer Cell, Science Translational Medicine, Cancer Discovery, PNAS, JCO, JNCI, Cancer Res.) and has been awarded the AACR Outstanding Investigator Award 2010, German Cancer Award 2010, and ERC Advanced Investigator Grant 2011. Moreover, Prof Pantel coordinates the European IMI consortium CANCER-ID (www.cancer-id.eu) on blood-based “Liquid Biopsies” in lung and breast cancer comprising 37 partner institutions from academia, non-profit organizations and industry.

Trevor Pugh, PhD, FACMG, is a cancer genomics researcher and clinical molecular geneticist interested in understanding clonal shifts in cancer and non-cancerous cell populations in serial biopsies and circulating tumor DNA collected during clinical trials, particularly immunotherapies. He is also working to decipher subclonal genetic relationships amongst metastatic sites suggestive of effective combination treatments, and to discover oncogenic mechanisms underlying tumors of unknown etiology including breast, brain, neuroendocrine, gynecological, pediatric, and other rare cancers. Dr. Pugh is appointed as Scientist at the Princess Margaret Cancer Centre and Assistant Professor in the University of Toronto Department of Medical Biophysics. He is Scientific Director of the Princess Margaret Genomics Centre and Director of the Translational Genomics Laboratory, a joint initiative with the Ontario Institute for Cancer Research to enable clinically-oriented genomics projects. He also spends a portion of his time as a clinical molecular geneticist within the University Health Network Laboratory Medicine Program.



Greg Tyrelle, PhD, is currently a Field Bioinformatics Territory Specialist with Thermo Fisher Scientific, based in the Netherlands. He consults with Thermo Fisher Scientific customers in the Europe, Middle-East and Africa region to support their next generation sequencing bioinformatics needs. This includes implementation of custom software, and data analysis pipelines for novel assay development. He has worked across numerous application domains in genomics and sequencing from basic research to clinical diagnostics. Previously he has worked on whole genome sequencing analysis and lead a team in Taiwan to design probes and annotate microarray data.



Ari M. VanderWalde, MD, MPH, is Director of Clinical Research at West Cancer Center and Associate Vice Chancellor of Research at University of Tennessee Health Science Center in Memphis, Tennessee. He received his medical degree in 2005 from the University of Pennsylvania, obtained a Masters in Biomedical Ethics from the University of Pennsylvania and a Masters in Public Health from Harvard. He completed internal medicine training at UCLA, and fellowship hematology/oncology at City of Hope Comprehensive Cancer Center. He is board-certified in Internal Medicine and Medical Oncology. At West Cancer Center,

Dr. VanderWalde serves as Chair of the Protocol Review Committee, co-chair of the Molecular Oncology Tumor Board, and Chair of the Cutaneous Malignancy Tumor Board. He additionally serves as the Chair of the Clinical Trials Governance Board at University of Tennessee, the Medical Director of the Clinical Trial Network of Tennessee (CTN2), and the Executive Director of the Office of Clinical Research. Dr. VanderWalde has conducted multiple studies in immunotherapy and targeted therapy, including serving as PI for a number of immunotherapy and targeted therapy basket trials. He is a recipient of grants from the American Association of Cancer Research, Stand Up to Cancer, and the Hope Foundation, among others.

Poster Exhibition

Poster Exhibition

Poster Information

All posters are on display in the exhibit hall on the ground floor.

Award Applicants must attend their posters on:

Monday, April 30, 4:30 PM–5:15 PM
Interviews with members of the poster reviewing committees

Wednesday, May 2, at 4:45 PM
Awards Recognition & Closing Remarks

The Award Applicant posters will be indentified by a card mounted on the poster board.

First/Presenting Authors, including Award

Applicants, must attend their posters respectively on:

Tuesday, May 1, 9:30 AM–10:15 AM
Odd-numbered posters attended

Wednesday, May 2, 9:30 AM–10:15 AM
Even-numbered posters attended

Authors who have more than one even- or odd-numbered poster may either ask another author to attend their additional poster or attend it themselves during the other session. In the latter case, the author should place a note on the poster board alerting attendees that they will attend the poster in the alternate session.

Poster Set-Up/Removal

Posters should be set-up Monday, April 30, 10:00 AM–3:30 PM. All posters must remain on display through 4:00 PM on Wednesday, May 2. Posters remaining past 4:30 PM will be removed and discarded. Please note that poster-viewing is not eligible for Continuing Education credit.

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O12	QIAseq Digital Sequencing and Biomedical Genomics Workbench: Application to Liquid Biopsy in Bladder Cancer *F. Lescai*
O13	Comprehensive Molecular Characterization of Metastatic Cancer Using Whole-Genome Sequencing: a Dutch National Initiative *P. Roepman*
O14	Exploratory Analysis of Janus Kinase 1 (JAK1) Loss-of-Function (LoF) Mutations in Patients With DNA Mismatch Repair-Deficient/Microsatellite Instability-High (dMMR/MSI-H) Metastatic Colorectal Cancer (mCRC) Treated With Nivolumab + Ipilimumab in CheckMate-142 *Z. Boyd*
O15	Development and Characterization of Multigene Molecular Cytopathology Cell Slides as a Potential Fine Needle Aspirate (FNA)-Mimetic Specimen for Proficiency Testing *Q. Zheng*
O16	External Quality Assessment Schemes for Gene Mutation Testing in Oncology: Comparison of Performance between FFPE-Tissue and ctDNA in Plasma *K. Van Casteren*
O17	Use of Highly Multiplexed Reference Materials to Facilitate Validation of a Clinical NGS Tumor Fusion RNA Assay *D. Brudzewsky*
O18	Assessment of Circulating Tumor DNA in Patients with Metastatic Colorectal Cancer Treated with Cetuximab Monotherapy *L. Angus*

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P02	Methylation Profiling for Improved Tissue Diagnosis of CNS Tumors: the Utrecht Experience on >150 Cases *W. de Leng*
P03	Tumor Intrinsic Properties Associate With Differential Effects on CD8+ Tumor-Infiltrating Lymphocyte Density and Immune Gene Expression in Non-Small Cell Lung Cancer (NSCLC) Samples *C. Hedvat*
P04	Comprehensive Routine Diagnostic Screening to Identify Predictive Mutations and Copy Number Gains in FFPE Tumor Material *A. Eijkelenboom*
P05	Comparison of Comprehensive Solid Tumor DNA/RNA Panels for the Detection of Small Nucleotide Variants, Copy Number Variants and Fusions *P. Sabatini*
P06	Structural Variation Detection by Proximity Ligation from FFPE Tumor Tissue *C. Troll*
P07	Robust Measurement of Signal Transduction Pathway Activity in Cancer Using RNA Sequencing on Cells and FFPE tissue *S. van den Bosch*
P08	Number of Fusions Detected in FFPE Cancer Tissue Depends on RNA Isolation Method *J. Doh, H. Wei*
P09	Incorporation of Gene Expression Profiling for Cell-Of-Origin Determination (Lymph2Cx Testing) Using Formalin-Fixed Paraffin-Embedded Tissue Sections in Routine Workflow for the Work-Up of Diffuse Large B-Cell Lymphoma Cases *R. Robetorye*
P10	Improved Methods for Next Generation Sequencing Library Cleanup and Size Selection *C. Cowles*
P11	TP53 Mutations in Circulating Cell-Free DNA as Longitudinal Biomarker for High-Grade Serous Ovarian Cancer *S. R. Vitale*
P12	Validation of the GeneReader NGS System and Its Workflow for BRCA 1/2 Sequencing Test *E. Lee*

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P13	MYD88 Mutation Detection by Ultra-Sensitive Droplet Digital PCR Reveals High Potential of Aqueous Humor to Detect Vitreoretinal Lymphoma *L Hiemcke-Jiwa*
P14	Accurate Determination of DNA Concentration for Next Generation Sequencing Applications Is Harder Than You Think *N. Iley*
P15	Using the Genereader NGS System to Identify Pathogenic Mutations in Challenging Homopolymer Regions of BRCA1 and BRCA2 *N. Dennison*
P16	Evaluation of Customizable Circulating Tumor DNA (ctDNA) Reference Materials with Multiple Assays *D. Brudzevsky*
P17	Microsatellite Instability Analysis and NGS with Fragmented Sample Types *S. Lewis*
P18	Development of Well Characterized Breast, Lung, and Brain Cancer Copy Number Variation Reference Materials *D. Brudzewsky*
P19	Detection of Microsatellite Instability in Circulating Cell-Free DNA from Colorectal Cancer Patients *P. M. Ward*
P20	Patients Treated for Gastrointestinal Neoplasms Show Higher Abundance of Lactobacilli in Their Stool Compared to Non-Treated Patients through Application of 16S rRNA Gene Sequencing *O. Youssef*
P21	Whole Exome Sequencing and Data Analysis of FFPE Tumor Samples to Find Clinically Relevant Alterations for Pediatric Cancer Treatment *E. Varkondi*
P22	Accurate FLT3-ITDs and CEBPA Variant Detection in Acute Myeloid Leukemia by Anchored Multiplex PCR and Next Generation Sequencing *N. Nair*
P23	Using the GeneReader NGS System and QIAact Lung All-in-One Assay to Detect Complex Mutations and Fusions *S. Hughes*
P24	Using the GeneReader NGS System and QIAact Myeloid DNA UMI Panel to Detect Complex Mutations in Myeloid Leukemia *O. Biglia*

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P26 Performance of Different Specimen Types and Quantitation on Ampliseq Cancer Hotspot Panel V2.0 Kit over Three Years
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P27 Detection of EGFR Mutations in Circulating Cell-Free DNA (cfDNA) from Plasma Samples of Patients with Non-Small Cell Lung Cancer Using the Oncomine Lung cfDNA Assay
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P28 The Use of a Hybridisation-Based Enrichment Approach to Achieve the Complete Coverage by Next-Generation Sequencing (NGS) of Difficult to Sequence Genes (CALR, CEBPA, FLT3) Associated with Myeloid Disorders
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P29 Speeding Clinical Reporting of Targeted Sequencing of Cancer Gene-Panels through Seamless Integration of Data Quality Control, Mutation Genomic and Clinical Annotations, and Drug Sensitivity Options
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P30 Performance Evaluation of LymphoTrack Clonality Assays on Ion PGM and Ion S5 Platforms
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P34 Using GeneReader NGS System to Identify Mutations in BRCA 1/2 Genes in Matched FFPE and Blood Samples
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P35 A Comparative Study of PD-L1 Protein Expression Using the Ventana SP263 Diagnostic Assay and PD-L1 Mrna Expression Using Rnascope in Formalin Fixed Paraffin Embedded Samples of Non-Small Cell Lung Cancer (NSCLC), Head and Neck Squamous Cell Carcinoma (HNSCC) and Urothelial Carcinoma (UC)
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P39 Evaluation and Application of RNA Fusion Gene Panel for the Patients with Acute Leukemia
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S. Echwald

P44 Implementation of the GeneReader NGS System in a Molecular Pathology Laboratory
A. Boesl

P45 Anchored Multiplex PCR Enables Sensitive NGS-Based Mutation Detection in the Context of Large Primer Panels
V. Johnson

P46 Analytical Validation of Digital Spatial Profiling – a Novel Approach for Multiplexed Characterization of Protein Distribution and Abundance in FFPE Tissue Sections
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P47 How Variabilities in Tumor Liquid Biopsy Workflows Can Be Tackled with cfDNA Reference Standards
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P50	ISO Accreditation of a Complete Next Generation (NGS) Sequencing Workflow for BRCA1/2 Analysis *S. Marchini*
P51	The Analysis of FFPE Samples by Next-Generation Sequencing (NGS) of Key Genes for Research into Breast and Ovarian Cancers *J. Chan*
P52	Allele-Specific Real Time Polymerase Chain Reaction (PCR) Versus Peptide Nucleic Acid Clamping for Low Copy Epidermal Growth Factor Receptor (EGFR) Mutation Detection in Liquid Biopsy Samples *P. M. Das*
P53	Rapid, Multi-Gene Mutation Detection Panel for Metastatic Colorectal Cancer *A. Stanco*
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P56	Clinical Correlation between Translocation Variant and Outcome in Philadelphia Chromosome-Positive Chronic Myeloid Leukemia and Acute Lymphoblastic Leukemia Patients *Z. Ahmed*
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P58	Molecular Profiling in Colorectal Carcinoma: a Tertiary Centre Experience from Eastern India *P. Gupta*
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Monday, April 30, 2018

12:15 PM–1:15 PM Industry Symposium
Agilent Technologies: NGS in Pathology: Challenges, Considerations and Solutions

Moderator: *Harpinder Mundi (London, UK)*

12:15 PM–12:45 PM **NGS in Pathology – Challenges, Considerations and Solutions**
Wouter Bossuyt (Niels, Belgium)

12:45 PM–1:15 PM **Whole-Exome Sequencing on Formalin-Fixed Paraffin-Embedded Tumour Samples**
Richarda de Voer (Breda, The Netherlands)

3:30 PM–4:30 PM Industry Symposium
Roche Diagnostics: Next-Generation Sequencing With AVENIO ctDNA Analysis Kits: Technological and Scientific Overview

Moderator: *John Palma (Pleasanton, USA)*

3:30 PM–3:35 PM **Welcome**
John Palma (Pleasanton, USA)

3:35 PM–3:45 PM **Technological Overview of AVENO ctDNA Analysis Kits**
Marcus Droege (Rotkreuz, Switzerland)

3:45 PM–4:05 PM **Use of ctDNA NGS for Monitoring and Surveillance in Oncology Research**
John Palma (Pleasanton, USA)

4:05 PM–4:30 PM **Application of Circulating Tumor DNA in the Context of Non-Small Cell Lung Cancer**
Steffen Dietz (Heidelberg, Germany)

Tuesday, May 1, 2018

10:15 AM–11:15 AM	Industry Symposium **Illumina: The Pathway Towards Comprehensive Tumour Profiling and the Evolution of TMB into Clinical Research**
Moderator:	*Ilja Stap (Cambridge, UK)*
10:15 AM–10:20 AM	**Introduction** *Ilja Stap (Cambridge, UK)*
10:20 AM–10:45 AM	**Evaluation of the TruSight™ Tumor 170 (TST170) Assay and its Value in Clinical Research** *Carina Heydt (Cologne, Germany)*
10:45 AM–11:10 AM	**Predictive Genetic Biomarkers for Checkpoint Blockers** *Albrecht Stenzinger (Heidelberg, Germany)*
11:10 AM–11:15 AM	**Summary** *Ilja Stap (Cambridge, UK)*
2:00 PM–3:00 PM	Industry Symposium **NanoString Technologies: Powering Precision Oncology Research With 3D Biology™ Technology: High Plex Multi-Analyte Profiling on FFPE With Spatial Resolution**
2:00 PM–2:30 PM	**Powering Precision Oncology Research With 3D Biology™ Technology: High Plex Multi-Analyte Profiling on FFPE With Spatial Resolution** *Joseph Becheem (Seattle, USA)*
2:30 PM–3:00 PM	**RNA Profiling of Gene Fusion Events in Lung Cancer and Sarcomas Using NanoString nCounter Platform** *Leon van Kempen (Groningen, The Netherlands)*

Wednesday, May 2, 2018

10:15 AM–11:15 AM	Industry Symposium **Agena Bioscience**
10:15 AM–10:45 AM	**Why Liquid Biopsy is Important in Clinical Routine …** *Ron van Schaik (Rotterdam, The Netherlands)*
10:45 AM–11:15 AM	**ALK-EML4 Fusions in ctDNA of Lung Cancer Patients in the Clinical Practice** *Antoinette Lemoine (Paris, France)*
2:00 PM–3:00 PM	Industry Symposium **QIAGEN: The Power of Precision Medicine in Breast and Overian Cancer**
Moderator	*Kai Wesche (Hilden, Germany)*
2:05 PM–2:20 PM	**PITX2 DNA Methylation, a Novel Validated Marker in High-Risk Breast Cancer** *Olaf G. Wilhelm (Munich, Germany)*
2:20 PM–2:35 PM	**Identification of BRCA1/2 Pathogenic Variants in Both Solid Tumor Samples and Liquid Biopsies by GeneReader NGS** *Sergio Marchini (Milano, Italy)*
2:35 PM–2:50 PM	**Standardized Interpretation and Actionable Reporting of Challenging BRCA Mutations** *Anika Joecker (Hilden, Germany)* *Beate Litzenburger (Hilden, Germany)*
2:50 PM–3:00 PM	**Question and Answer Discussion** *Kai Wesche (Hilden, Germany)*

The Industrial Exhibition will take place on the Ground and Third Floor.

Opening Hours

Monday, April 30, 2018	8:30 AM–7:30 PM
Tuesday, May 1, 2018	9:00 AM–3:30 PM
Wednesday, May 2, 2018	9:00 AM–5:00 PM

List of Exhibitors and Sponsors

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STRATEC Molecular	G15
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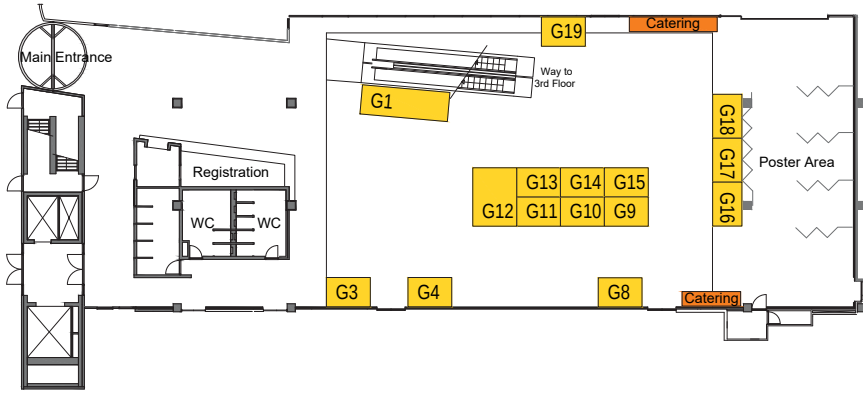
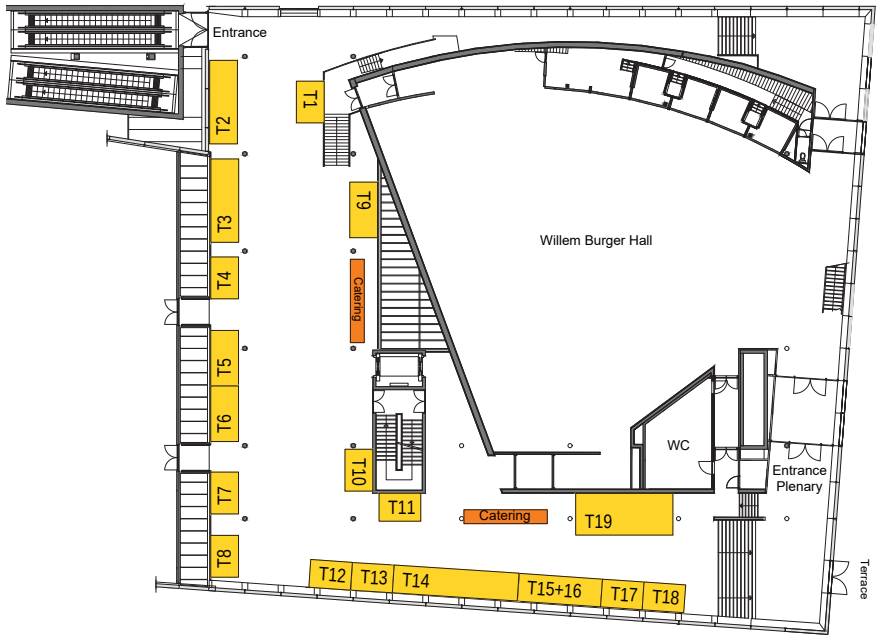
Ground Floor



Third Floor



Agena Bioscience

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We Empower Precision Medicine

Agena Bioscience is advancing genomics in healthcare and precision medicine. Our highly sensitive, cost-effective mass spectrometry-based platform, the MassARRAY® System, is used in fields such as cancer profiling for solid tumors and liquid biopsies, inherited genetic disease testing, pharmacogenetics, and clinical research. We are a leader dedicated to enabling clinical laboratories worldwide delivering targeted genomic testing.

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Archer® target enrichment assays utilize Anchored Multiplexed PCR (AMP™) chemistry to generate highly enriched sequencing libraries for comprehensive mutation profiling and immune repertoire characterization by NGS. Complemented by a powerful suite of assay design and bioinformatics analysis software, Archer FusionPlex®, VariantPlex® and Reveal ctDNA® assays facilitate complex mutation identification, and Immunoverse™ assays enable quantitative profiling of the expressed immune repertoire.

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Beckman Coulter empowers the research community with solutions that simplify and improve results for complex biomedical testing. The SPRI-paramagnetic bead-based reagents provide fast and efficient isolation of nucleic acids from many sample types. Our Ampure XP is a gold standard in NGS applications. Our Biomek Systems automate applications in molecular biology resulting in a standardize workflow with increased productivity.

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www.discover.bio-rad.com

Bio-Rad Laboratories is a world leader in providing products for the life science research and diagnostic markets. In our Life Science Group, we build the industry leading solutions for oncology research, including the highly sensitive Droplet Digital™ PCR technology and our new technology for single-cell sequencing, the ddSEQ™ Single-Cell Isolator.

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Bristol-Myers Squibb is a global biopharmaceutical company focused on discovering, developing and delivering innovative medicines for patients with serious diseases. We are focused on helping patients in disease areas including oncology, cardiovascular, immunoscience and fibrosis. Each day, our employees work together for patients – it drives everything we do.

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Over 50 years, Bruker has enabled scientists to make breakthrough discoveries and develop new applications. With our partners, Bruker is enabling innovation in Life Sciences, routine pathology, microbiology and molecular diagnostics. MALDI Tissuetyper allows measurements from FFPE tissue. It is able to measure proteins, peptides, lipids, drugs, and metabolites. Detected compounds can be visualized as a fused image.

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Celemics, the 1st NGS target enrichment kit manufacturer in both Asia and Europe, has secured itself in the global market as a pioneer of Target Enrichment methodology and sample preparation for DNA sequencing and genetic testing.

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Covaris is the recognized industry leader for DNA fragmentation. Adaptive Focused Acoustics® (AFA™) is the gold standard for shearing DNA and RNA in Next-Generation Sequencing applications, without GC bias or thermal-induced damage. Covaris Focused-ultrasonicators are recommended by all major NGS sequencing platform providers, and are used by leading Genome Centers.

Diatech Pharmacogenetics

Italy
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www.diatachpharmacogenetics.com

Diatech Pharmacogenetics supports its own research efforts developing, producing and commercializing pharmacogenetic tests CE IVD implemented in the personalised and predictive medicine, with priority focused on the most invasive therapies: anti-cancer treatments. The kits developed by Diatech target to personalize both standard chemotherapy and radiotherapy and molecular targeted drugs, leading to higher efficacy and reduced side effects.

Epigenomics

Booth No. G3
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david.bull@epigenomics.com
www.epigenomics.com

Epigenomics has two commercial products – Epi proColon is the first and only FDA-approved blood test for colon cancer screening (CE in 2016) & Epi proLung is intended for nodule adjudication for lung cancer (CE in 2017). Both can be performed on your RT PCR equipment. Also available is a DNA extraction/Bisulfite conversion pre-analytical kit (CE in 2018) for various applications.

ExScale Biospecimen Solutions AB

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www.exscalebio.com

ExScale is a Swedish company specializing in processes and know-how for nucleic acid extraction from human tissue specimens. With the business idea to market the Next Generation Extraction technology, NGEx®, our mission is to help drive the advancement of personalized cancer medicine and contribute to improved management of cancer patients and related research.

GC biotech BV

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www.gcbiotech.com

GC biotech sources the latest developments in automation and reagents for diagnostics and life science research from around the world. We aim to help you take your research to a higher level. GC biotech also manufactures CleanNA. With CleanNA, GC biotech develops and manufactures magnetic bead-based kits with a focus on high throughput nucleic acid purification.

GeneFirst Ltd

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GeneFirst is a molecular diagnostics company working in cancer diagnostics using liquid biopsy. We develop proprietary qPCR and NGS technologies for cancer mutation detection. Our novel library preparation method overcomes all limitations associated with the current technologies such as inefficiency, complex and low sensitivity. It is suitable for sensitively detecting cancer biomarkers in plasma and other challenging materials.

Illumina

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Illumina is a leading developer, manufacturer, and marketer of life science tools and integrated systems for large-scale analysis of genetic variation and function. Our customers include a broad range of academic, government, pharmaceutical, biotechnology, and other leading institutions around the globe. For further details please visit www.illumina.com.

LexaGene

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www.lexagene.com

LexaGene is developing an on-site pathogen detection instrument, the LX6, that can process six liquid samples at a time, returning results in about one hour. Using microfluidics, the instrument concentrates pathogens and then purifies the DNA and RNA before assembling and performing 22 qPCR tests. Its open-access feature allows end users to load their own assays for customized genetic testing.

MRC-Holland

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www.mlpa.com

Multiplex Ligation-dependent Probe Amplification (MLPA®) is the gold standard for DNA copy number quantification and is used worldwide to study both hereditary disorders and tumours. MLPA can also be applied to investigate the methylation status of DNA sequences. Up to 60 DNA sequences can be analysed in a single reaction in high-throughput manner, with results being available within 24h.

NanoString Technologies

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www.nanostring.com

NanoString is a life sciences company focused on cancer research and diagnostics. Proven in over 1,000 peer-reviewed publications, the nCounter® System can combine with 3D biology™ technology to create novel biomarkers. The Prosigna® Breast Cancer Prognostic Gene Signature Assay provides FDA 510(k)-cleared diagnostics with the nCounter Dx Analysis System.

New England Biolabs GmbH

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New England Biolabs, Inc. is the industry leader in the discovery and production of enzymes for molecular biology applications and now offers the largest selection of recombinant and native enzymes for genomic research. NEB continues to expand its product offerings into areas related to PCR/qPCR, sample preparation for Next-Gen-Seq, and RNA analysis. NEB is represented in Europe by subsidiaries.

OncoDNA S.A.

Booth No. G10
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+32 71 183500
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www.oncodna.com

OncoDNA is a Belgian-based cancer theranostic company which aims to support oncologists in their treatment choices and/or help to monitor the evolution of cancer. OncoDNA solutions are based on a combination of the most relevant and advanced technologies to shed light on the complex mechanisms that drive cancer development and contribute to the knowledge applied to the fight against cancer.

Oxford Gene Technology (OGT)

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www.ogt.com

Oxford Gene Technology (OGT) provides world-class genetics research solutions. OGT's Cytocell®, CytoSure™ and SureSeq™ range of fluorescence in situ hybridisation (FISH), microarray and next generation sequencing (NGS) products deliver high-quality genetic analysis. OGT was recently acquired (June 2017) by Sysmex Corporation (Sysmex), a Japanese in vitro diagnostic organisation expanding Sysmex's life science business and reinforcing its initiatives towards personalised medicine.

Oxford Nanopore Technologies Ltd.

Booth No. T5
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+44 845 0347900
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www.nanoporetech.com

Oxford Nanopore Technologies has developed the world's first nanopore DNA sequencer. The MinION is a portable, real-time, long-read, low-cost device designed to bring easy biological analyses to anyone, whether in scientific research or real-world applications such as disease/pathogen surveillance, environmental monitoring, food chain surveillance, or microgravity biology. The GridION and PromethION devices serve users with larger projects or more samples.

Philips Molecular Pathway Dx

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Philips OncoSignal Molecular Pathway Diagnostics reveals the activity of the signal transduction pathways that drive tumor growth, having the potential to offer accurate therapy response prediction for informed personalized cancer treatment decisions. This is achieved by measuring mRNA transcribed from target genes of the pathway transcription factors, and data interpretation with computational pathway models.

Promega Corporation

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Promega Corporation provides innovative solutions for forensics, life science, clinical research, and molecular diagnostics. With a portfolio of more than 3,000 products, Promega has a breadth of solutions spanning the clinical laboratory's workflow. Promega is a trusted partner, with more than 35 years of manufacturing experience, to supply the robust and reliable solutions you need for your molecular assay.

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QIAGEN is the leading global provider of Sample to Insight solutions to transform biological materials into valuable molecular insights. Sample technologies isolate and process DNA, RNA and proteins from blood, tissue and other materials. Assay technologies make these biomolecules visible and ready for analysis. Bioinformatics software and knowledge bases interpret data to report relevant, actionable insights.

Roche Diagnostics

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At Roche Diagnostics, our focus is to improve the lives of patients, from research to lab tests to personalized healthcare; we touch the entire spectrum of diagnostics users. Roche Diagnostics is a member of the Roche Group, which is headquartered in Basel, Switzerland.

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SeraCare is a leading partner to global IVD manufacturers and clinical testing laboratories. Our expanding portfolio of QC products and technologies for genomic diagnostics includes reference materials for tumor sequencing, germline mutation testing, NIPT, and infectious disease. Today, SeraCare is advancing data integration with products for better QC and regulatory compliance.

SOPHiA GENETICS

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SOPHiA GENETICS is a health tech company which has developed SOPHiA Artificial Intelligence, the universal and innovative technology for clinical genomics. By facilitating the rapid adoption of genomic testing worldwide, turning data into actionable clinical insights and facilitating knowledge sharing, we are democratizing Data-Driven Medicine to help save patients' lives around the world.

STEMCELL Technologies

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At STEMCELL science is our foundation. Driven by our mission to advance scientific research globally, we offer more than 2,500 tools and services supporting discoveries in regenerative medicine, tissue engineering, gene therapy, immunotherapy and disease research. Inspired by knowledge, innovation and quality, we are Scientists Helping Scientists.

Stilla Technologies

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Stilla Technologies focuses on accelerating the development of next-generation genetic tests by providing innovative instrumentation for digital PCR. In 2016, Stilla Technologies launched the Naica System, the first and only dPCR solution to offer 3-color multiplexing. Other key features of the system are the speed, simplicity and versatility of its workflow.

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Editorial Deadline
April 12, 2018

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IONL18NP01085 03/18