3rd Digital Pathology Congress

UNDERSTANDING & UTILIZING DIGITAL PATHOLOGY AS A TOOL FOR ADVANCING PATHOLOGY PRACTICE & ENABLING ENHANCED PATIENT CARE

Following the success of their 2015 meeting, which attracted over 300 delegates and 32 exhibitors, Global Engage is pleased to announce the 3rd Digital Pathology Congress which will be held from November 30th to December 2nd 2016 at the London Heathrow Marriott in London, UK. The conference is part of their successful Personalised Medicine series which includes events on precision medicine, synthetic biology, the human microbiome, biologics and digital PCR. The meeting is also the sister meeting to the US and Asian Digital Pathology meetings taking place in July, and August 2016 respectively.

The continuing growth and advances in digital pathology solutions is transforming the industry. With wide ranging applications and benefits including reduction in lab costs, increased workflow efficiency, greater interconnectivity, effective training/education methods, improved decision making is enabling enhanced patient care. The result is that Digital Pathology is rapidly gaining momentum worldwide.

Attracting over 330 industry & academic experts in 2016, working in all areas of pathology this three day interactive meeting will provide the opportunity to take home cutting edge strategies, analysis techniques, case study examples and methods to allow you to fully understand both the technology and accompanying informatics and image analysis tools and utilize digital pathology to its greatest potential. There will be two pre-conference workshops run by Indica Labs and Philips which will be taking place on 30th November before the main two-day conference programme begins on 1st December.

The conference will comprise of a vibrant exhibition room, full of technology providers showcasing their technologies and other solutions, networking breaks allowing interaction with your peers, poster presentation sessions, expert-led case study presentations and incisive Q&A panel discussions during two separate tracks which will examine the topics below.

Confirmed Speakers Include:

Fiona Carragher
Deputy Chief Scientific Officer, NHS England

Darren Treanor
Consultant Histopathologist & Hon. Clinical Associate Professor, Leeds Teaching Hospitals NHS Trust and University of Leeds, UK & Guest Professor in Digital Pathology, Linköping University, Sweden

Rohit Bhargava
Professor, Department of Bioengineering, University of Illinois at Urbana-Champaign, USA

Conference Synopsis

Digital Pathology - Strategy and Technology
- Introduction, benefits & future developments of Digital Pathology
- Implications on pathology practice
  o Uses in education and training
  o International trade and its ramifications
- Converting to/inTEGRATION of digital pathology
  o User implementation experiences
- Technology advances in digital pathology
- Standardisation in Digital Pathology
- Regulations in Digital Pathology
- Quality assurance, control and improvement
- Validation methods

Pathology Informatics
- Acquisition, processing, archiving & retrieval of WSI
- Improving WSI workflow efficiency
- Cloud computing / storage solutions
- Access through mobile devices
- Pathology PACS
- Pathology IT
- Integration with LIMS / LIS
- Telepathology
  o Virtual networks
  o Use in remote areas

Virtual Microscopy & Digital Image Analysis
- Overcoming challenges in image analysis
  o Image standardization
  o Troubleshooting guide
- Computer aided diagnoses
- User interfaces
- Image registration
- Image quality and scanning speed
- Quantitative image analysis research
- Visualization methods for diagnosis and prognosis
- Image Processing
- Pattern recognition
- Scoring & Annotation tools
- Algorithm development / Image analysis algorithms

Digital Pathology Applications and Research Case Studies
Research case studies utilizing digital pathology in:-
- Clinical trials support
- Diagnosis/Diagnostics
- Next generation sequencing
- Biomarker analysis/research/quantification
- Tissue-based research/imaging
- Biobanking
- Precision/personalised medicine
- Image analysis
<table>
<thead>
<tr>
<th>Confirmed Speakers and Session Chairs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fiona Carragher</strong></td>
</tr>
<tr>
<td>Deputy Chief Scientific Officer, NHS</td>
</tr>
<tr>
<td>England</td>
</tr>
<tr>
<td><strong>Carolina Wähley</strong></td>
</tr>
<tr>
<td>Professor, Centre for Image Analysis, Uppsala University, Sweden</td>
</tr>
<tr>
<td><strong>David Sneed</strong></td>
</tr>
<tr>
<td>Professor, UHCW NHS Trust Coventry</td>
</tr>
<tr>
<td><strong>Vera Timmermans</strong></td>
</tr>
<tr>
<td>Associate Professor &amp; Head, Department of Pathology, Rigshospitalet, University of Copenhagen, Denmark</td>
</tr>
<tr>
<td><strong>Dorit Merhof</strong></td>
</tr>
<tr>
<td>Professor &amp; Head of Institute of Imaging &amp; Computer Vision, RWTH Aachen University, Germany</td>
</tr>
<tr>
<td><strong>Alexi Baidoshvili</strong></td>
</tr>
<tr>
<td>Pathologist in LabPON, Project Team, LabPON, The Netherlands</td>
</tr>
<tr>
<td><strong>Juhana Hakumäki</strong></td>
</tr>
<tr>
<td>Director and Chief Physician, Diagnostic Imaging Center, Kuopio University Hospital (KUH), Finland</td>
</tr>
<tr>
<td><strong>Rohit Bhargava</strong></td>
</tr>
<tr>
<td>Professor, Department of Bioengineering, University of Illinois at Urbana-Champaign, USA</td>
</tr>
<tr>
<td><strong>Josien Pluim</strong></td>
</tr>
<tr>
<td>Professor of Medical Image Analysis, Eindhoven University of Technology, The Netherlands</td>
</tr>
<tr>
<td><strong>Florian Markowetz</strong></td>
</tr>
<tr>
<td>Group Leader, University of Cambridge /CRUK Cambridge Institute, UK</td>
</tr>
<tr>
<td><strong>Sebastian Brandner</strong></td>
</tr>
<tr>
<td>Professor &amp; Chair of Neuropathology, National Hospital for Neurology and Neurosurgery, &amp; Dept. of Neurodegenerative Disease, University College London, UK</td>
</tr>
<tr>
<td><strong>Carine El Sissy</strong></td>
</tr>
<tr>
<td>Laboratory of Integrative Cancer Immunology, INSEERM/ Georges Pompidou European Hospital (HEGP), France</td>
</tr>
<tr>
<td><strong>Tim Helliwell</strong></td>
</tr>
<tr>
<td>Vice President, Royal College of Pathologists/Consultant Histopathologist, University of Liverpool, UK</td>
</tr>
<tr>
<td><strong>David Clark</strong></td>
</tr>
<tr>
<td>Consultant Histopathologist, PathLinks NHS Pathology Services, Northern Lincolnshire &amp; Goole NHS Foundation Trust</td>
</tr>
<tr>
<td><strong>Inger Nina Farstad</strong></td>
</tr>
<tr>
<td>Professor, Division of Laboratory Medicine, Oslo University Hospital and Institute of Clinical Medicine, Norway</td>
</tr>
<tr>
<td><strong>Michael Dictor</strong></td>
</tr>
<tr>
<td>Medical Director, Telemedicine Clinic</td>
</tr>
<tr>
<td><strong>Bethany Williams</strong></td>
</tr>
<tr>
<td>Leadership and Management Fellow in Digital Pathology, Leeds Teaching Hospitals NHS Trust, University of Leeds, NHS Future Leaders Programme</td>
</tr>
<tr>
<td><strong>Holly Raymond</strong></td>
</tr>
<tr>
<td>Senior Scientist and Head, Quantitative histopathology, Janssen, USA</td>
</tr>
<tr>
<td><strong>Paul van Diest</strong></td>
</tr>
<tr>
<td>Professor of Pathology, Head of Department, University Medical Center Utrecht, Netherlands</td>
</tr>
<tr>
<td><strong>Geert Lijtens</strong></td>
</tr>
<tr>
<td>Assistant Professor, Diagnostic Image Analysis Group, Radboud University Medical Center, The Netherlands</td>
</tr>
<tr>
<td><strong>Hasan Rizvi</strong></td>
</tr>
<tr>
<td>Consultant Pathologist, Barts Health NHS Trust &amp; Associate Director, Post-Graduate Medical Education UCLPartners, &amp; Lead for Histopathology E-learning, London School of Pathology UK [SESSION CHAIR]</td>
</tr>
<tr>
<td><strong>Michel Vandenberghhe</strong></td>
</tr>
<tr>
<td>Post-Doctoral Scientist, Personalised Healthcare and Biomarkers - Tissue Diagnostics, AstraZeneca, UK [SESSION CHAIR]</td>
</tr>
<tr>
<td><strong>Christian Müizenmayer</strong></td>
</tr>
<tr>
<td>Group Manager Medical Image Processing, Fraunhofer IIS, Germany [SESSION CHAIR]</td>
</tr>
<tr>
<td><strong>Branko Perunovic</strong></td>
</tr>
<tr>
<td>Clinical Director of Laboratory Medicine at Sheffield Teaching Hospitals NHS foundation Trust</td>
</tr>
<tr>
<td><strong>Darren Treanor</strong></td>
</tr>
<tr>
<td>Consultant Histopathologist &amp; Hon. Clinical Associate Professor, Leeds Teaching Hospitals NHS Trust and University of Leeds, UK &amp; Guest Professor in Digital Pathology, Linköping University, Sweden</td>
</tr>
<tr>
<td><strong>Bas Hulsken</strong></td>
</tr>
<tr>
<td>CTO Philips Digital Pathology Solutions</td>
</tr>
<tr>
<td><strong>Bela Molnar</strong></td>
</tr>
<tr>
<td>Physician at Semmelweis University’s 2nd Department of Internal Medicine, Hungary &amp; CEO, 3D Histech</td>
</tr>
<tr>
<td><strong>Peter Hamilton</strong></td>
</tr>
<tr>
<td>Philips Business Lead for Image Analysis and Belfast R&amp;D Hub &amp; Honorary Professor of Pathology Imaging, Queen’s University Belfast, UK</td>
</tr>
<tr>
<td><strong>Niroshan Ramachandran</strong></td>
</tr>
<tr>
<td>Senior Director of Product Management for 3D Biology Products, NanoString Technologies</td>
</tr>
<tr>
<td><strong>Kate Lillard Tunstall</strong></td>
</tr>
<tr>
<td>Chief Scientific Officer, Indica Labs Inc</td>
</tr>
<tr>
<td><strong>Hermann Herbst</strong></td>
</tr>
<tr>
<td>Professor &amp; Director, Department of Pathology, Vivantes Hospitals, Berlin, Germany</td>
</tr>
<tr>
<td><strong>Keith Kaplan</strong></td>
</tr>
<tr>
<td>Chief Medical Officer, Coista, Practicing Pathologist, Publisher, TissuePathology.com</td>
</tr>
<tr>
<td><strong>Stefan Dojcinov</strong></td>
</tr>
<tr>
<td>Consultant Pathologist/Laboratory Director, Department of Cellular Pathology, University Hospital of Wales, Cardiff and Vale NHS Trust, UK</td>
</tr>
<tr>
<td><strong>Peter Rieger</strong></td>
</tr>
<tr>
<td>Head Erasmus MC Tissue Bank, Erasmus MC, The Netherlands</td>
</tr>
<tr>
<td><strong>Peter Bankhead</strong></td>
</tr>
<tr>
<td>Senior Research Fellow, Pathology Imaging Group, Centre for Cancer Research and Cell Biology, Queen’s University Belfast, UK</td>
</tr>
<tr>
<td><strong>Stewart Kennedy</strong></td>
</tr>
<tr>
<td>Managing Director, Pisces Scientific, UK</td>
</tr>
</tbody>
</table>
Confirmed Speakers and Session Chairs continued…

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dave Bottoms</td>
<td>Programme Support Manager, North of England Clinical Networks, NHS England</td>
</tr>
<tr>
<td>Kaushik Dasgupta</td>
<td>Consultant Histopathologist, North Tees and Hartlepool NHS Foundation Trust, UK</td>
</tr>
<tr>
<td>Vanessa Schumacher</td>
<td>Lab Head IHC and Image Analysis, F. Hoffmann-La Roche</td>
</tr>
<tr>
<td>Muhammad Aslam</td>
<td>MBBS FRCPATH - Clinical Lead Histopathology - Betsi Cadwaladr University Local Health Board, UK</td>
</tr>
<tr>
<td>Eva Balslev</td>
<td>Senior Pathologist, Herlev University Hospital, Denmark</td>
</tr>
<tr>
<td>Pablo Zoroquiain</td>
<td>Ocular Pathology Clinical and Research Fellow, The Henry C. Witelson Eye Pathology Laboratory, McGill University, Canada</td>
</tr>
<tr>
<td>Roberto La Ragione</td>
<td>Professor of Veterinary Microbiology and Pathology &amp; Director of the Veterinary Pathology Centre, University of Surrey, UK</td>
</tr>
<tr>
<td>Viktor Varga</td>
<td>Chief Technology Officer, 3D Histech</td>
</tr>
<tr>
<td>Günter Schmidt</td>
<td>Vice President Research, Definiens, Germany [SPEAKER &amp; SESSION CHAIR]</td>
</tr>
<tr>
<td>Will Howat</td>
<td>Team Leader, Molecular Pathology Group, AstraZeneca, UK [SESSION CHAIR]</td>
</tr>
<tr>
<td>Alex Carter</td>
<td>Physician Informaticist – Pathology and Laboratory Medicine, Children’s Healthcare of Atlanta, USA</td>
</tr>
<tr>
<td>Pearl Huey</td>
<td>Cellular Pathology Service Lead - Betsi Cadwaladr University Local Health Board, UK</td>
</tr>
</tbody>
</table>

Accredited for 12 CPD credits by the Royal College of Pathologists.

Venue

London Heathrow Marriott Hotel
Bath Road
Hayes, UB3 5AN
United Kingdom

A discounted group rate is available to all attendees. Details of how to book are available on registration. Space is limited and accommodation is available on a first come basis.
Sponsors

Platinum:

DEFINIENS
the tissue phenomics company

indica labs
informed pathology

Leica
BIOSYSTEMS

nanoString
TECHNOLOGIES

PHILIPS

Gold:

3DHISTECH

Abbott

Sectra

Knowledge and passion

Silver:

Sakura

Exhibitors & Content Sponsors:

CIRDAN

CliniSys
Diagnostics Intelligence

corista
daax

Excilone

WebMicroscope®
By Fimmic

G2 SPEECH
GOING MORE WITH SPEECH

HAMAMATSU
PHOTON IS OUR BUSINESS

Micro Dimensions

Neagen

Objective Imaging

Primera
TECHNOLOGY EUROPE®

PerkinElmer®
For the Better

Roche

SCC
Soft Computer®
www.softcomputer.com

TRIBVN
HEALTHCARE

VISIOPHARM®

Mscope

For more information please contact Steve Hambrook, Conference Director, Global Engage Ltd.

steve@globalengage.co.uk  +44 (0) 1865 849841
Indica Labs First Annual European Quantitative Pathology User Meeting

Indica Labs would like to formally invite you to our European HALO User Group Meeting in London which will be held on Wednesday 30th November from 12:00-5 PM at the London Marriott Heathrow Hotel.

Customer presenters representing diverse organizations, including pharma, biotech, and academic medical centres across Europe will discuss how they are using HALO image analysis to achieve their research objectives with an emphasis on biomarker analysis in oncology, particularly immuno-oncology. Additionally, there will be presentations from Indica Labs introducing new features in HALO and STRATA and a demonstration of our new data management platform, HALO Link.

Lunch is provided.

You do not need to be a current HALO user or Indica Labs customer to attend. We welcome anyone who is interested in learning more about HALO quantitative pathology from their peers to register for the meeting.

Customer Presenters:

- Dr. Arno Doelemeyer, Senior Investigator, Novartis Pharma AG, Basel, Switzerland
- Dr. Joana Senra, Senior Scientist, Adaptimmune UK, Oxford, United Kingdom
- Dr. Karen Pickering, Postdoctoral Researcher, CRUK, Beatson Institute for Cancer Research, Glasgow, UK
- Dr. med. Sebastian Foersch, Pathology Resident and Postdoctoral Researcher, University Medical Center Mainz, Germany
- Leigh-Anne McDuffus, Senior Scientific Associate, CRUK, Cambridge Institute, Cambridge, United Kingdom
- Dr. Will Howat, Team Leader, Molecular Pathology Group AstraZeneca, Cambridge, United Kingdom
Pre-Conference Workshop

**Sponsored by:**

**PHILIPS**

**Wednesday 30th November 2016**

**5.30pm-9pm GMT**

London Heathrow Marriott Hotel, UB3 5AN, UK

**What is needed to create a good business case?**

Writing a business case containing and explaining the value of a digital workflow and the investments involved is not ‘business as usual’ for most pathology labs.

However, a strong business case can help you clarify the ambition of your department for the future, and the return on investments you expect digital pathology to deliver. It can also help you to explain to the hospital board the wider benefits of using digital technology to the pathology lab, but also the oncology team and patients.

Philips would like to invite you to join this 4 hour workshop to help you write the best business case for your department; what will be discussed?

- The relevance of business cases in healthcare; benchmark with other healthcare businesses (presented by business case experts from the Philips innovation groups)
- David Bottoms, Programme Support Manager, North of England Clinical Networks, NHS England and Alexi Baidoshvilli, pathologist LabPON, Hengelo, The Netherlands, will both share their experiences on developing a business case
- Interactive panel discussion
- Presentation of a new tool to guide creating business cases

Food will be provided.

For more information please contact Steve Hambrook, Conference Director, Global Engage Ltd.

steve@globalengage.co.uk  +44 (0) 1865 849841
In 2013, we decided to make a flow analysis to investigate the logistics in our laboratory as well as the diagnostics process by pathologists. We used a flow analysis to investigate the logistics in our laboratory as well as the diagnostics process by pathologists. We compared the microscope with digital diagnostics. After the transition of our diagnostic facility to digital, we began setting up a new, more accurate flow analysis. I expect to finish this analysis before March 2017. My presentation is based on our experience with full digital diagnostics and I have used the results of the current flow analysis to get a good overview of the necessary changes in the flow of a pathology laboratory. Subsequently, the digital diagnostic process becomes faster, more efficient and qualitatively better than the microscope.

CONFIRMED:
Alexi Baidashvili, Pathologist in LabPON, Project Director of Digital Pathology Team, LabPON, The Netherlands

12.20-12.45 A National View of Digital Diagnostic Pathology
This talk will provide a national view of how digital diagnostic pathology might be used to enhance patient management through improved communication within and between organisations, and through facilitating the implementation of personalised medicine. The evolving standards for making large and complex data management are critical for success as is compliance with standards and regulations.

CONFIRMED:
Tim Helliwell, Vice President, Royal College of Pathologists/Consultant Histopathologist, University of Liverpool, UK

12.45-13.15 Sponsored Presentation: Telepathology for Primary Diagnostics – Experience from the Real World
Experience from digital pathology for primary review Telepathology for international consultancy in Europe Possibilities and challenges with digital pathology

CONFIRMED:
Michael Díctor, Medical Director, Telemedicine Clinic

CONFIRMED:
Geert Litjens, Assistant Professor, Diagnostic Image Analysis Group, Radboud University Medical Center, The Netherlands

Digital Pathology and Computer-aided Diagnosis in Clinical Practice
- To increase acceptance and use of digital pathology in routine clinical practice computer-aided diagnosis is a necessity
- Integrating digital pathology and ‘deep learning’ techniques results in image analysis algorithms that can achieve the same diagnostic accuracy as pathologists
- Applying machine learning algorithms for digital pathology in clinical practice can improve workflow efficiency and accuracy

CONFIRMED:
Béla Molnár, Professor, Semmelweis University Hospital, Hungary & CEO, 3D Histech

Viktor Varga, CTO, 3D Histech
14.15-14.40 Incorporating Digital Pathology with Radiology PACS - an Experience Worth Having?
Kuopio University Hospital in Finland has operated a medical imaging PACS archive since 2003. The archive currently holds 1.8 M imaging studies. The decision to digitize histopathology was taken in 2014 and the first scanner was obtained and integrated in late 2015. The radiology PACS was updated to accommodate digital pathology. Required integration to the pathology information system was undertaken in 2016, now providing full integration between the PACS as well as the hospital information system. First multidisciplinary diagnostic meetings utilizing digital pathology and radiology commenced in 05/2016. By 2017 nearly all of the 25.000 annually processed pathology exams will be digitized with simultaneous archival into the local biobank. The presentation will describe the timeline, hurdles, infrastructure, costs and benefits involved.

CONFERMED:
Juhana Hakumäki, Director and Chief Physician, Diagnostic Imaging Center, Kuopio University Hospital (KUH), Finland

14.40-15.05 The NCRI Cellular Molecular Pathology Initiative (CM-Path): Facilitating Uptake of Digital Pathology
- Introduction to the NCRI CM-Path initiative and its aims regarding digital pathology
- CM-Path vision for digital pathology uptake
- CM-Path scopeing work surrounding barriers for uptake and associated recommendations

CONFERMED:
Stefan Dojcinov, Consultant Pathologist/Laboratory Director, Department of Cellular Pathology, University Hospital of Wales, Cardiff and Vale NHS Trust, UK

15.05-15.20 Sponsored Presentation: Collaboration in Digital Pathology
1) EASY Path: A digital collaboration platform to facilitate hospitals working together and get maximum benefit from expert pathology specialists working on different locations with no need to wait for traditional glass slides to be transported to the appropriate specialist. Dr Branko Perunovic will share the issues their pathology group are facing and explain why their team thinks digital pathology will help them to improve their current way of working from different perspectives.

CONFERMED:
Branko Perunovic, Clinical Director of laboratory Medicine at Sheffield Teaching Hospitals NHS Foundation Trust

15.20-15.50 2) Philips IntelliSite Open Pathology Platform: The Philips vision on the future of collaborative digital pathology by using an open platform. Bas Hulsken will explain what is needed to have to create a functional collaborative platform and will discuss the advantages of using an open platform.

CONFERMED:
Bas Hulsken, PhD, CTO Philips Digital Pathology Solutions

15.50-16.05

16.05-16.55 Poster Presentation Sessions & One-to-One Meetings

POSTER PRESENTATION SESSIONS & ONE-TO-ONE MEETINGS
16.55-17.20  
**Digital Pathology in Norway - a Nationwide Conceptual Study**
Norway is by area relatively large but by population small with 5.2 million inhabitants and nineteen pathology laboratories (seventeen public and two private) distributed around the country. Small laboratories with few pathologists are vulnerable at vacancies. It is also difficult to obtain and maintain competence in all fields of pathology since many types of specimens are seen only few times by an individual pathologist. Personalized treatment of cancer patients requires integration of several findings as well as standardized reporting of diagnostic parameters and multi-disciplinary discussions. There is also a need for more effective workflows to optimize diagnostic reporting. Digital pathology has the potential to solve these problems. Inspired by implementation of digital pathology in routine diagnostics in Sweden, Canada and The Netherlands, we have in Norway organized digitalization projects to meet the challenges mentioned above. These projects operate both at a national and a regional level and integrate the “one patient-one journal” concept. Aims and working plans of these projects will be presented.

**CONFIRMED:**
Inger Nina Farstad, Professor, Division of Laboratory Medicine, Oslo University Hospital and Institute of Clinical Medicine, Norway

17.20-17.45  
**Considering Complete Digitalization of the Pathology Department**
In such a high impact operation, many are to be convinced this is the step resulting in a better workflow. An extensive budget is needed to digitize the pathology production. A team was formed having experience in: 1.) ICT, 2.) Virtual Microscopy, 3.) Pathology, 4.) Histology lab logistics, 5.) Pathology administration and archiving and 6.) Executive.
To convince work floor to upper management, a roadmap was designed including a SWOT analysis. This roadmap is translated to a business plan dealing with: 1.) Finances – Budget planning keeping the routine diagnostic procedures competitive, 2.) Added value – A) New opportunities: Integrated diagnostics and Image analysis, B) Changes in workflow efficiency and workflow, C) Changes in diagnostic quality, 3.) Acceptance – New work environment, Early acceptor cooperation in a Proof of Concept.

**CONFIRMED:**
Peter Riegeman, Head Erasmus MC Tissue Bank, Erasmus MC, The Netherlands

17.45-18.10  
**Panel Discussion:**
**The Future of Digital Pathology**
- Where will digital pathology be in 10 years’ time?
- Upcoming applications
- Speaker Q&A

18.10-18.35  
**CONFIRMED:**
Chair: Keith Kaplan, Chief Medical Officer, Corista, Practicing Pathologist, Publisher, TissuePathology.com
Paul van Diest, Professor of Pathology, Head of Department, University Medical Center Utrecht, The Netherlands
Tim Helliswell, Vice President, Royal College of Pathologists/Consultant Histopathologist, University of Liverpool, UK
Vanessa Schumacher, Lab Head IHC and Image Analysis, F. Hoffmann-La Roche
Darren Treanor, Consultant Histopathologist & Honorary Clinical Associate Professor, Leeds Teaching Hospitals NHS Trust and University of Leeds, UK & Guest Professor in Digital Pathology, Linköping University, Sweden

**Digital Pathology Algorithms in Diagnostic Histopathology**
- What's available now
- What's needed
- Promising developments
- What's coming next
- The strategy for developing algorithms pathologists need

**CONFIRMED:**
David Snead, Professor, UCHW NHS Trust Coventry, UK

18.35-19.35  
**Chairman’s Closing Remarks and End of Day 1**

18.35-19.35  
**Drinks Reception** [Lindbergh & Aviators Lobby]
If you would like to sponsor the drink’s reception please contact Nick Best/Gavin Hambrook at sponsorship@globalengage.co.uk
### Keynote Address

**PIE, The Dutch National Platform for IT in Pathology**

Ability to exchange whole slide images between pathology labs for rapid revision and consultation is one of the assets of digital pathology. In a collaboration between the Dutch Society of Pathology and PALGA (the national Dutch Pathology Database), a national platform is currently being set up within The Netherlands for image exchange between the Dutch pathology labs: the PIE (Pathology Image Exchange) programme. In this presentation, the ins and outs of PIE will be discussed. The PIE programme may serve as an example for other countries with similar ambitions.

**CONFIRMED:**
Paul van Diest, Professor of Pathology, Head of Department, University Medical Center Utrecht, The Netherlands

### Keynote Address

**Chemical Imaging – a New Technology for Digital Molecular Pathology**

- Chemical imaging is an emerging microscopy technology that combines optical imaging and spectroscopy
- Using computational methods, molecular insight into tissue structure and disease progression can be obtained without the use of stains or dyes
- New advances in technology are permitting high resolution imaging and molecular basis for histopathology, leading to digital molecular analyses

**CONFIRMED:**
Rohit Bhargava, Professor, Department of Bioengineering, University of Illinois at Urbano-Champaign, USA

### New Optical Barcode Chemistries for Digital Biomarker Quantification

Immunohistochemistry is used to assess spatial heterogeneity of proteins but has limitedplex and dynamic range. We developed a spatially resolved approach to quantify up to 800 targets with 5.5 logs dynamic range in a single FFPE slide. Sample is bound with antibody-oligo conjugates and regions of interest are illuminated with UV to release conjugated oligos. Euent is collected and analyzed, resulting in multiplexed, digital readouts of protein expression. This process can be applied to the measurement of DNA, RNA, and protein for spatially resolved 3D Biology™ readouts and may enable discovery of new immune biomarkers and development of novel companion diagnostics.

**CONFIRMED:**
Niroshan Ramachandran, Senior Director of Product Management for 3D Biology Products, NanoString Technologies

### Virtual Microscopy/Digital Image Analysis

**Combining image-based in situ RNA sequencing with quantitative analysis of cell and tissue morphology**

Typically, tissue samples are profiled on the RNA level using extracts from homogenates, losing the connection to tissue morphology. We have developed a targeted sequencing method based on next-generation sequencing chemistry that enables parallel RNA analysis in morphologically preserved cells and tissue. This means that cell and tissue morphology can be quantitatively analyzed and directly related to the local gene expression. I will present image analysis tools for sequencing and extraction of morphological measurements as well as multi-resolution visualization tools used to search for connections between gene expression and cell morphology.

**CONFIRMED:**
Carolina Wahlby, Professor, Centre for Image Analysis, Uppsala University, Sweden

### Deep Learning for Tumour Classification in IHC Whole-slide Images: Methodology and Potential Applications for Personalised Medicine

- A Deep learning-based approach was developed to detect and score tumour cells in HER2 IHC whole-slide images.
- Fully automated image analysis was validated in a cohort of cases with invasive breast carcinoma and showed good concordance with a pathologist scoring.
- Potential applications are investigated including intra-tumour heterogeneity quantification for patient selection optimization.

**CONFIRMED:**
Michel Vandenberghe, Post-Doctoral Scientist, Personalised Healthcare and Biomarkers - Tissue Diagnostics, AstraZeneca, UK

### How Digitalisation Can Improve Pathology Service - The Danish Experience

Digitalisation of pathology has become synonymous with introduction of advanced computer software algorithm for the reading of biomarker expression or substitution of the microscope with a whole slide scanner and a computer screen. Few pathologists realise that in general, pathology is already highly computerized with computer-controlled running of staining machines and digitalisation of the pathology report and as the most obvious examples. In Denmark, all pathology laboratories use the same laboratory information system, which is linked to nationwide databases containing previous pathology workup and other relevant patient information. This gives Danish pathologists unique opportunities to interact with each other and to study diseases from an epidemiological point-of-view. This talk will focus on the advantages of these national initiatives and will give an overview of computerisation and digitalisation in routine laboratory operations from the clinician’s ordering of a service via tissue sectioning and staining to speech recognition and presentation of the report to the clinician and to research-related national cancer databases.

**CONFIRMED:**
Vera Timmermans, Associate Professor & Head, Department of Pathology, Rigshospitalet, University of Copenhagen, Denmark

### Implementing Digital Pathology for Primary Diagnostic Reporting: the Lean Approach to Maximizing Value

Path Links is a large consolidated histopathology service (workload 62000 cases per year) providing diagnostic services to 5 district general hospitals in greater Lincolnshire from a central laboratory in Lincoln. It has been employing a Lean management system based on the principles of the Toyota Production system for over 10 years to optimize its processes by maximizing value and reducing waste. This presentation describes how Lean management principles have been used to develop a successful business case for a primary diagnostic Digital Pathology system, design the processes required for large scale diagnostic use and roll out implementation (starting June 2016).

**CONFIRMED:**
David Clark, Consultant Histopathologist, Path Links NHS Pathology Services, Northern Lincolnshire & Goole NHS Foundation Trust, UK
Digital Pathology Applications for Preclinical Assessment

Digital pathology offers great potential drive preclinical research, allowing scientists to acquire, collaborate, objectively quantify, and quality control data from tissue-based assessments. Digital slides can be linked with all relevant metadata, and integrated into searchable databases. This talk will outline three key areas for digital pathology in preclinical assessment:

1. Collaboration and consultation: digital pathology offers the opportunity to annotate and share slides, helping colleagues to collaborate easier than ever before. Digitizing slides allows for telepathology, initial slide review or peer review and live consultation.
2. Image Analysis: key points are establishing scientifically driven, observable endpoints to be measured, deciding on the right image analysis tools for the job, opportunities for quality control, and the ability to clearly communicate results in an easily interpretable manner. Other applications include in-silico multiplexing 3D imaging, and automated image recognition.
3. Store and manage: managing metadata and permanent storage, solving problems of misplacing/breaking glass slides and fading of staining over time.

CONFERMED:
Vanessa Schumacher, Lab Head IHC and Image Analysis, F. Hoffmann-La Roché

Pathology Digital Imaging for Primary Diagnosis — “Are we nearly there yet?”

Details are provided of a substantial region-wide Proof of Concept study undertaken across NE England in 2015. It describes the scope, aims and objectives of the study both from a Project Management perspective and also includes a breakdown of the clinical findings presented by one of the key Pathologists involved in the study. The benefits and constraints experienced are highlighted and thoughts on how this technology can/ will be progressed in the future.

CONFIRMED:
Kausik Dasgupta, Consultant Histopathologist, North Tees and Hartlepool NHS Foundation Trust, UK
Dave Bottoms, Programme Support Manager, North of England Clinical Networks, NHS England

Sponsored Presentation:
The Challenge: VisionTek, Live Digital Microscopy in Vivantes Hospital Chain, Berlin

- A fast second opinion
- Time saving
- Workflow optimization
- Security and convenience
- The value of live microscopy with VisionTek

CONFIRMED:
Hermann Herbst, Professor & Director, Department of Pathology, Vivantes Hospitals, Berlin, Germany

13.15-14.15 Lunch [Lindbergh & Aviators Lobby]
Poster Presentation Sessions & One-to-One Meetings

Digital Pathology Case Studies [Lindbergh 1]
Session Chair: Keith Kaplan, Chief Medical Officer, Corista, Practicing Pathologist, Publisher, TissuePathology.com

A Systematic Analysis of Discordant Diagnoses in Digital Pathology Compared to Light Microscopy

We conducted a review to classify and analyse documented instances of discordant diagnoses from direct glass to digital microscopy comparisons. We provide detailed analysis of discordances and their possible causes, and suggest mechanisms to reduce patient risk. Details of discordances were extracted from validation studies identified using a systematic review protocol, and analysed to determine the potential patient harm, the diagnostic mechanisms involved, and the possible root cause. From an initial 1155 publications, 39 validation studies were identified, 23 of which included extractable discordance data. We present an analysis of 335 instances of discordance, highlighting specific diagnostic challenges such as the identification and grading of dysplasia and the identification of lymph node metastases. Many of the “discordances” observed between digital and glass diagnosis result from recognised intra- and inter-observer variation. However, a number of specific challenges exist for which digital may be suboptimal. It is important that pathologists recognise this to ensure patient safety is maintained in digital workflows.

CONFIRMED:
Bethany Williams, Leadership and Management Fellow in Digital Pathology, Leeds Teaching Hospitals NHS Trust, University of Leeds, NHS Future Leaders Programme, UK

Sponsored Presentation:
Optimal Patient Selection for Immuno-Therapies of Cancer using Tissue Phenomics

Current immune-therapies for advanced melanoma and lung cancer show impressive response rates and long survival. The lives of a reasonable number of patients may be saved by modulating their immune system with blockades of immune checkpoints. On the other hand, many patients do not respond to those very expensive treatments which can also cause severe side effects, and can delay the search for alternative therapies. We present how the Tissue Phenomics methodology is used to discover a novel companion diagnostic test for an immuno-therapy for advanced cancer patients enrolled in a clinical trial. Various subpopulations of immune cells are automatically identified by a robust and parameter-free image analysis solution on immunohistochemically stained tissue sections. Virtually multiplexed assays composed by co-registration of consecutive tissue sections enabled the measurement of spatial distributions and co-occurrences of those populations in the tumor region. The numerous measurements were mined for predictive performance in terms of positive predictive value, prevalence and Kaplan-Meier p-value.

CONFIRMED:
Günter Schmidt, Vice President Research, Definiens, Germany

Virtual Microscopy/Digital Image Analysis
[Image 442x387 to 575x420]

14.15-14.45 Sponsored Presentation:
Automated Analysis of In Situ Hybridization as a Novel Tool in Drug Discovery

- Advances in science now afford us the ability to design drugs that target inflammatory pathways upstream of protein expression, namely by targeting knockdown of mRNA before translation.
- Technologies such as in situ hybridization allow us to image mRNA expression in the context of a whole organ system, so that we can explore changes in expression in diseased tissue, and visualize the knockdown of drug targets and resulting reduction in inflammation.
- Here I will demonstrate how we can explore the role of the NF-kB pathway in a mouse model of inflammation and identify potential targets for mRNA knockdown. I will show how this process can be automated with powerful image analysis tools, so that we can rapidly and quantifiably demonstrate efficacy in our models, which will help drive forward the drug development process.

CONFIRMED:
Holly Raymond, Senior Scientist and Head, Quantitative Histopathology, Janssen, USA

14.45-15.10 Automated Analysis of In Situ Hybridization as a Novel Tool in Drug Discovery

[Image 499x537 to 555x591]
From Manual Estimation of ER, HER2 and Ki67 to Automated Image Analysis using TMA

- Purpose – to optimize standardization and minimize workload
- The digital workflow includes
  - Tissue preparation and TMA construction
  - Automated image analysis
- Handling of heterogeneity in carcinomas estimated on immunohistochemical stainings
- How to count Ki67 with or without hotspots
- Results from Breast Pathology Cancer Unit

CONFIRMED:
Eva Balslev, Senior Pathologist, Herlev University Hospital, Denmark

The Use of Digital Pathology in Ocular Pathology

The MUHC – McGill University Ocular Pathology Unit is responsible for all academic missions: clinical (diagnosis), teaching and research. In all of them, digital pathology plays a crucial role. In our process of validation in digital pathology and ocular pathology, we have recently published a comprehensive study on prognostic factors of Retinoblastoma. Currently, we are conducting a prospective study with all cases of ocular pathology in our Laboratory, which will be analyzed topographically: eyelid, conjunctiva, cornea, crystalline lenses, enucleation, exenteration, exenteration and intraocular vitrectomies and biopsies. A case of a conjunctival tumor with orbital invasion will illustrate the advantages of digital pathology over other forms of consultation processes such as pictures being sent by telemedicine. Measurements and automated evaluation of immunohistochemical markers will also be discussed.

CONFIRMED:
Miguel N. Burnier, Jr., Director, The Henry C. Witelson Eye Pathology Laboratory, McGill University, Canada
Pablo Zoroquiain, Ocular Pathology Clinical and Research Fellow, The Henry C. Witelson Eye Pathology Laboratory, McGill University, Canada

Quantitative Tissue Phenotypes for the Systems Genetics of Cancer

Cancer is a disease of the genome and of cellular interactions in the tumour tissue. Integrative approaches to dissect this complexity can improve on the limited snapshots provided by individual experimental techniques. With my group I work on systems genetics approaches to integrate genomic profiles with quantitative measures of tumour tissue phenotypes. I will describe our work to integrate histopathology and radiology images with genomic profiles in breast and brain cancer.

CONFIRMED:
Florian Markowetz, Senior Group Leader, University of Cambridge/ CRUK Cambridge Institute, UK

Update on the Immunoscore and its Implication in Rectal Cancers

- "Immunoscore"; a scoring system created to facilitate the translation of this investigation into clinical practice.
- Rectal tumors: assessment of the immune infiltrate in biopsies could help selecting responders that could benefit from novel therapeutic strategies with minimal or even no surgery

CONFIRMED:
Carine El Sissy, Laboratory of Integrative Cancer Immunology, INSERM/ Georges Pompidou European Hospital (HEGP), France
<table>
<thead>
<tr>
<th>Title</th>
<th>Principal Author(s)</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automated image analysis as a diagnostic tool in discriminating between subgroups of microscopic colitis</td>
<td>Fiehn AMK(^1,2), Kristensson M(^3), Engel U(^4), Munck LK(^5,6), Holck S(^4), Engel PJ(^6)</td>
<td>Department of Pathology, Zealand University Hospital, Roskilde</td>
</tr>
<tr>
<td></td>
<td></td>
<td>🌐 Department of Pathology, Copenhagen University Hospital, Rigshospitalet, 🌐 Digital Pathology, Visiopharm, 🌐 Department of Pathology, Copenhagen University Hospital, Hvidovre 🌐 Department of Gastroenterology, Zealand University Hospital, Koege 🌐 University of Copenhagen, Faculty of Health and Medical Sciences, Denmark</td>
</tr>
<tr>
<td>Automated image analysis in the diagnosis of microscopic colitis: validation and implications for diagnosis and research</td>
<td>Engel P(^{1,2}), Fiehn AMK(^2), Kristensson M(^3), Engel U(^4), Munck LK(^5,6), Holck S(^4)</td>
<td>Department of Pathology, Zealand University Hospital, Roskilde</td>
</tr>
<tr>
<td></td>
<td></td>
<td>🌐 Department of Pathology, Zealand University Hospital, Hvidovre, 🌐 University of Copenhagen, Faculty of Health and Medical Sciences 🌐 Digital Pathology, Visiopharm, 🌐 Department of Pathology, Copenhagen University Hospital, Hvidovre 🌐 Department of Gastroenterology, Zealand University Hospital, Koege, Denmark</td>
</tr>
<tr>
<td>Imaging in cancer immunology: Phenotyping of multiple immune cell subsets in situ in FFPE tissue sections</td>
<td>Roslyn C. Lloyd, ¹ James R. Mansfield, ¹ Clifford C. Hoyt, ¹ Edward Stack, ¹ Michael Feldman, ² Carlo Bifulco, ³ Bernie Fox ³</td>
<td>PerkinElmer</td>
</tr>
<tr>
<td>Automatic grading of breast cancer from whole slide images of Ki67 stained tissue sections</td>
<td>Petter Ranefall, Carolina Wåhlby, Ewert Bengtsson</td>
<td>Centre for Image Analysis, Uppsala University, Sweden</td>
</tr>
<tr>
<td>Computerised image analysis in prostate cancer research</td>
<td>Felicia Marginean, Agnieszka Krzyzanowska, Nicholas Don-Doncow, Rebecka Hellsten, Anders Bjartell</td>
<td>Department of Translational Medicine, Div. Urological Cancers, Lund University, Malmö, Sweden</td>
</tr>
<tr>
<td>Identifying immune biomarkers of response to chemoradiotherapy in rectal cancer using digital image analysis</td>
<td>M J McCoy(^1,4), C Hemmings(^2,3), C Anyaegb(^1), T F Lee-Pullen(^1,3), S J Austin(^1), T J Miller(^1,2), M K Bulsara(^2), A K Nowak(^4,6), R A Lake(^4), C F Platell(^1,2)</td>
<td>¹St John of God Subiaco Hospital, Perth, WA, Australia, ²Australian Clinical Labs (WA), Perth, WA, Australia ³School of Surgery, University of Western Australia, Perth, WA, Australia ⁴School of Medicine and Pharmacology, University of Western Australia, Perth, WA, Australia ⁵Institute for Health Research, University of Notre Dame, Fremantle, WA, Australia ⁶Sir Charles Gairdner Hospital, Perth, WA, Australia</td>
</tr>
<tr>
<td>Virtual Hematoxylin and Eosin Transillumination Microscopy Using GPU-Accelerated Multiphoton Imaging</td>
<td>Michael G. Giacomelli, Lennart Husvogt, Hilde Vardeh, Joachim Hornegger, James L. Connolly, and James G. Fujimoto</td>
<td>MIT</td>
</tr>
<tr>
<td>Posters (continued)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Towards a digital review platform for dysplastic Barrett’s oesophagus</strong></td>
<td>M.J. van der Wel&lt;sup&gt;1,2&lt;/sup&gt;, R.E. Pouw&lt;sup&gt;2&lt;/sup&gt;, C.A. Seldenrijk&lt;sup&gt;3&lt;/sup&gt;, G.J.A. Offerhaus&lt;sup&gt;4&lt;/sup&gt;, M. Visser&lt;sup&gt;5&lt;/sup&gt;, F.J.W. ten Kate&lt;sup&gt;4&lt;/sup&gt;, J.G. Tijssen&lt;sup&gt;6&lt;/sup&gt;, J.J.G.H.M. Bergman&lt;sup&gt;7&lt;/sup&gt;, S.L. Meijer&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td><strong>A model of the spatial tumour heterogeneity in colorectal adenocarcinoma tissue</strong></td>
<td>Violeta N. Kovacheva, David Snead and Nasir M. Rajpoot</td>
<td></td>
</tr>
<tr>
<td><strong>Correlation Between Histopathology and Optical Coherence Tomography in Eyelid Tumors</strong></td>
<td>Denise Miyamoto, Bryan Arthurs, Sabrina Bergeron, Debra-Meghan Sanft, Pablo Zoroquaiin, Aya Siblini, Christina Mastromonaco, Tiffany Porraccio, Evangelina Esposito, Miguel N. Burnier Jr.</td>
<td></td>
</tr>
<tr>
<td><strong>Three Dimensional modelling of a human pulmonary adenocarcinoma on a microscopic scale</strong></td>
<td>E.L. Johnstone&lt;sup&gt;1&lt;/sup&gt;, D.A. Moore&lt;sup&gt;2&lt;/sup&gt;, N Morone&lt;sup&gt;1&lt;/sup&gt;, K Dudek&lt;sup&gt;1&lt;/sup&gt;, C Jones&lt;sup&gt;1&lt;/sup&gt;, R Spriggs&lt;sup&gt;1&lt;/sup&gt;, J.P.C Le Quesne&lt;sup&gt;1,2&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td><strong>Development of comparative image analysis process for the validation of IHC assays across multiple laboratories</strong></td>
<td>Arthur Lewis&lt;sup&gt;1&lt;/sup&gt;, Philip Martin&lt;sup&gt;2&lt;/sup&gt;, Brian Laffin&lt;sup&gt;3&lt;/sup&gt;, Karma Dacosta&lt;sup&gt;2&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td><strong>EcoScore: Quantifying the ecological selective pressure on high-grade serous ovarian cancer</strong></td>
<td>Sidra Nawaz, Andreas Heindl, Carlo C. Maley, Yinyin Yuan</td>
<td></td>
</tr>
<tr>
<td><strong>Digital Pathology &amp; Uveal Melanoma: Diagnostic Challenges</strong></td>
<td>Evangelina Esposito, Pablo Zoroquiain, Denise Miyamoto, Li-Anne Lim, Cristina Miyamoto, Paula Blanco, Silvin Bakalian, Sabrina Bergeron, Miguel N. Burnier.</td>
<td></td>
</tr>
<tr>
<td><strong>OpenEHR archetypes and the Clinical Knowledge Manager: tools to generate and maintain information models for structured pathology reporting</strong></td>
<td>Sabine Leh&lt;sup&gt;1,2&lt;/sup&gt;, Cecilia Norheim&lt;sup&gt;2&lt;/sup&gt;, John Tore Valand&lt;sup&gt;2&lt;/sup&gt;, Silje Ljosland Bakke&lt;sup&gt;3&lt;/sup&gt;, Micaela Thierley&lt;sup&gt;2&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td><strong>Microenvironmnetal diversity in multiple metastases: Critical implications for overall and progression-free survival of high-grade serous ovarian cancer</strong></td>
<td>Heindl, Andreas; Lan, Chunyan; Rodrigues, Daniel Nava; Koebble, Konrad; Yuan, Yinyin</td>
<td></td>
</tr>
<tr>
<td><strong>Roche Diagnostics, pharma research and early development, oncology DTA, Pathology &amp; Tissue analytics</strong></td>
<td>Marta Canamero and Oliver Grimm on behalf of the IRIS team</td>
<td></td>
</tr>
<tr>
<td><strong>A novel approach for the analysis of tumor vascularization to predict treatment outcome using the Roche IRIS platform</strong></td>
<td>Cláudia S. Ferreira&lt;sup&gt;1&lt;/sup&gt;, Suzana Vega-Harring&lt;sup&gt;1&lt;/sup&gt;, Irina Klaman&lt;sup&gt;1&lt;/sup&gt;, Natascha Rieder&lt;sup&gt;1&lt;/sup&gt;, Konstanty Korsky&lt;sup&gt;1&lt;/sup&gt;, Angelika Fuchs&lt;sup&gt;2&lt;/sup&gt;, Fabian Schneider&lt;sup&gt;1&lt;/sup&gt;, Oliver Grimm&lt;sup&gt;1&lt;/sup&gt;, Marta Cañamero&lt;sup&gt;1&lt;/sup&gt;, Fabien Gaire&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td><strong>A web application to analyse and visualize digital images at multiple resolutions</strong></td>
<td>Maxime Bombrun, Petter Ranefall, Carolina Wählby</td>
<td></td>
</tr>
</tbody>
</table>

<sup>1</sup>Dept. of Pathology, Academic Medical Center, Amsterdam, The Netherlands; 2Dept. of Gastroenterology and Hepatology, Academic Medical Center, Amsterdam, The Netherlands; 3Dept. of Pathology, St. Antonius Hospital, Nieuwegein, The Netherlands; 4Dept. of Pathology, University Medical Center, Utrecht, The Netherlands; 5Dept. of Pathology, Zaan Medical Center, Zaandam, The Netherlands; 6Dept. of Cardiology, Academic Medical Center, Amsterdam, The Netherlands
<table>
<thead>
<tr>
<th>Poster</th>
<th>Title</th>
<th>Authors</th>
<th>Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>A Convolutional Neural Network as a Tool for Accurate Prostate Cancer Grading using the New Gleason Grading System</td>
<td>Ilaria Jansen&lt;sup&gt;1,2&lt;/sup&gt;, Marit Lucas&lt;sup&gt;1&lt;/sup&gt;, Sybren L. Meijers&lt;sup&gt;3&lt;/sup&gt;, C. Dilara Savi-Heijink&lt;sup&gt;3&lt;/sup&gt;, Onno J. de Boer&lt;sup&gt;3&lt;/sup&gt;, Ton G. van Leeuwen&lt;sup&gt;1&lt;/sup&gt;, Jean J.M.C.H de la Rosette&lt;sup&gt;2&lt;/sup&gt;, Henk A. Marquering&lt;sup&gt;1,4&lt;/sup&gt;, Daniel M. de Bruin&lt;sup&gt;1,2&lt;/sup&gt;</td>
<td>1 Department of Biomedical Engineering and Physics, Academic Medical Center, Amsterdam, The Netherlands 2 Department of Urology, Academic Medical Center, Amsterdam, The Netherlands 3 Department of Pathology, Academic Medical Center, Amsterdam, The Netherlands 4 Department of Radiology, Academic Medical Center, Amsterdam, The Netherlands</td>
</tr>
<tr>
<td>23</td>
<td>Automated Gleason grading in patients with prostate cancer using a convolutional neural network</td>
<td>Marit Lucas&lt;sup&gt;1&lt;/sup&gt;, Ilaria Jansen&lt;sup&gt;1,2&lt;/sup&gt;, Sybren L. Meijers&lt;sup&gt;3&lt;/sup&gt;, C. Dilara Savi-Heijink&lt;sup&gt;3&lt;/sup&gt;, Onno J. de Boer&lt;sup&gt;3&lt;/sup&gt;, Ton G. van Leeuwen&lt;sup&gt;1&lt;/sup&gt;, Daniel M. de Bruin&lt;sup&gt;1,2&lt;/sup&gt;, Henk A. Marquering&lt;sup&gt;1,4&lt;/sup&gt;</td>
<td>1 Department of Biomedical Engineering and Physics, Academic Medical Center, Amsterdam, The Netherlands 2 Department of Urology, Academic Medical Center, Amsterdam, The Netherlands 3 Department of Pathology, Academic Medical Center, Amsterdam, The Netherlands 4 Department of Radiology, Academic Medical Center, Amsterdam, The Netherlands</td>
</tr>
<tr>
<td>24</td>
<td>Quantum Cascade Laser Spectral Histopathology: Breast Cancer Diagnostics Using High Throughput Chemical Imaging.</td>
<td>Michael J Pilling&lt;sup&gt;1&lt;/sup&gt;, Alex Henderson&lt;sup&gt;1&lt;/sup&gt;, Benjamin Bird&lt;sup&gt;2&lt;/sup&gt;, Peter Gardner&lt;sup&gt;1&lt;/sup&gt;</td>
<td>1. University of Manchester 2. Daylight Solutions</td>
</tr>
<tr>
<td>25</td>
<td>Use of virtual slides for intraoperative frozen-section consultation: the experience of a two-sites academic department of pathology</td>
<td>Astrid Laurent-Bellue, Martine Prsle, Mare-José Redon, Eric Poullier, Eric Adnet, Catherine Guettier</td>
<td>Service d’Anatomie Pathologique Hôpital Bicêtre/Paul Brousse HUPS - APHP, 78 rue du Général Leclerc, 94270, Le Kremlin-Bicêtre, France</td>
</tr>
<tr>
<td>26</td>
<td>CADESS, A cloud-based decision support system for prognostication of prostate cancer</td>
<td>Ingrid Carlbom, Christophe Avenel, Anna Tolf, Christer Busch</td>
<td>Uppsala University</td>
</tr>
<tr>
<td>27</td>
<td>Daily biopsy analysis: Concordant tumoral diagnosis between glass and digital slide.</td>
<td>Irène VILLA (1), Marie-Christine MATHIEU (1), Jacques BOSQ (1), Anne AUPEMIN (2), Jean-François POMEROL (3), Magali LACROIX-TRIKI (1), Jean-Yves SCAOZEC (1) et Peggy DARTIGUES (1)</td>
<td>(1) Gustave Roussy, Département de Biologie et Pathologie Médicales, F-94805, VILLEJUIF France (2) Gustave Roussy, Service de Biostatistique et d’Épidémiologie, F-94805, VILLEJUIF France (3) Tribvn Healthcare, 92320, CHATILLON France</td>
</tr>
</tbody>
</table>