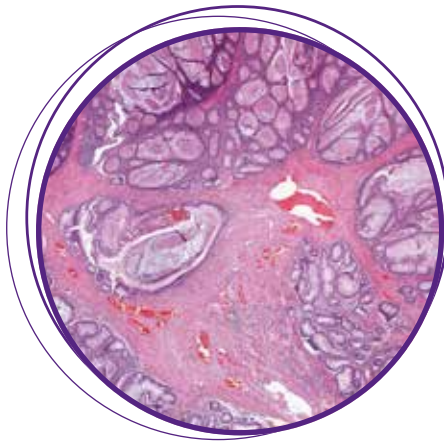


4TH DIGITAL PATHOLOGY CONGRESS: EUROPE

— LONDON, UK —
30 Nov-1 Dec 2017



Platinum Sponsors



Gold Sponsors





Global Engage is pleased to announce the foremost digital pathology congress will return to London on 30 November-1 December 2017. Following on from last year's meeting which attracted over 380 attendees and 30 exhibitors, the congress 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.

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.

This year's congress will feature three pre-conference workshops run by Indica Labs, Definiens and 3D Histech on 29th November before the main congress gets into full flow on the 30th. To complement the latest scientific presentations, 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; and incisive Q&A panel discussions one of which will be hosted by *The Pathologist* and live streamed. Whether looking to hear more about the adoption and integration of digital pathology; seeking collaborations and tools to increase workflow; or uncover the latest developments in automated image analysis; the congress is one not to be missed!

EXPERT SPEAKERS Include:



ANIL PARWANI

Director of Pathology Informatics
and Digital Pathology, The Ohio
State University, USA



DARREN TREANOR

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



JO MARTIN

President Elect,
Royal College of Pathologists



ANDY BECK

CEO,
Path AI

DIGITAL PATHOLOGY – STRATEGY & TECHNOLOGY

- Introduction, benefits & future developments of Digital Pathology
- Analysing the business case for digital pathology
- Collaborations in digital pathology
- Implications on pathology practice
 - ▶ Uses in education and training
- Implications for personalised medicine
- Converting to/ integration of digital pathology
 - ▶ 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 & MACHINE LEARNING

- Acquisition, processing, archiving & retrieval of WSI
- Improving WSI workflow efficiency
- Pathology PACS
- Pathology IT
- Integration with LIMS / LIS
- Computational pathology
- Machine learning algorithms
- Cloud computing, data storage and management

DIGITAL IMAGE ANALYSIS

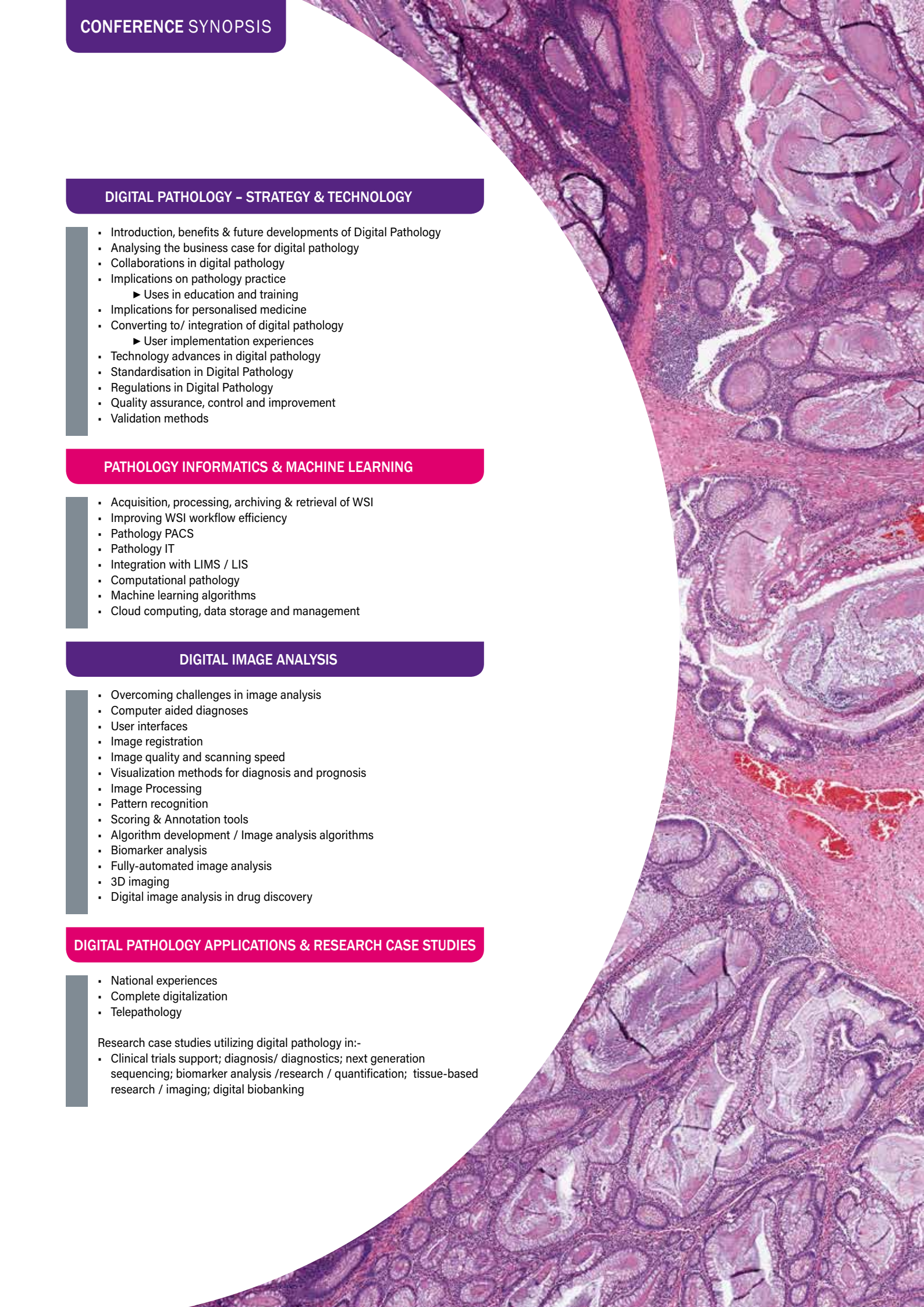
- Overcoming challenges in image analysis
- Computer aided diagnoses
- User interfaces
- Image registration
- Image quality and scanning speed
- Visualization methods for diagnosis and prognosis
- Image Processing
- Pattern recognition
- Scoring & Annotation tools
- Algorithm development / Image analysis algorithms
- Biomarker analysis
- Fully-automated image analysis
- 3D imaging
- Digital image analysis in drug discovery

DIGITAL PATHOLOGY APPLICATIONS & RESEARCH CASE STUDIES

- National experiences
- Complete digitalization
- Telepathology

Research case studies utilizing digital pathology in:-

- Clinical trials support; diagnosis/ diagnostics; next generation sequencing; biomarker analysis /research / quantification; tissue-based research / imaging; digital biobanking



WORKSHOP

Pre-Conference Workshop

Sponsored by:

DEFINIENS
the tissue phenomics company

Wednesday 29th November 2017

9am-11:30am GMT

London Heathrow Marriott Hotel, UB3 5AN, UK

Workshop title to be confirmed...

Further details to follow

WORKSHOP

Pre-Conference Workshop

Sponsored by:

indica labs
informed pathology

Wednesday 29th November 2017

12pm-4pm GMT

London Heathrow Marriott Hotel, UB3 5AN, UK

**Indica Labs 2nd Annual European
Quantitative Pathology User Meeting**

Further details to follow

WORKSHOP



3DHISTECH

Wednesday 29th November 2017

5pm-9pm GMT

London Heathrow Marriott Hotel, UB3 5AN, UK

3D HISTECH User Meeting, London 2017

Registration complimentary. To sign up please contact Scott Taylor scott@globalengage.co.uk

Featuring Presentations:

Stoian Alexov, Bulgaria - Application of digital microscopy in the full spectrum of pathology: routine, teleconsultation, FISH, education, TMA, research and international collaboration

Simona Gurzu & Ioan Jung, Romania - The role of digital pathology in evaluation of the invasiveness capacity of gastrointestinal cancers

Asel Kudajbergenova, Russia - Digital FISH in routine: reliability of digital microscopy in the evaluation of breast tumor samples using FISH. (Core topic: "Advance Research")

Isinsu Kuzu, Turkey - Transition to the digital era in the education of pathologist

Johan Lundin & Annabrita Schoonenberg, Finland - Deep learning for tissue analytics and cancer outcome prediction

Lex Makkus, the Netherlands - Experiences in digital pathology and teleconsultation at the Pathology Laboratory of Dordrecht

András Matolcsy, Hungary - Ten years' experience in digital pathology

Marius Nap, The Netherlands - A decade of experience in digital pathology and telepathology

Károly Szuhai, The Netherlands - Advantages of fluorescent whole slide imaging in the evaluation of FISH samples

Kurt Zatloukal, Austria - Our first results with the new Falsh 1000 and the Austrian national digital pathology platform

Inti Zlobec, Switzerland - Application of new generation Tissue Micro Array techniques in translational research

Ümit Ince, Turkey - Operational issues when running a telecytology-telepathology service

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LIRON PANTANOWITZ
Professor of Pathology and
Biomedical Informatics,
University of Pittsburgh, USA



SJOERD STALLINGA
Associate Professor, Department
of Imaging Physics, Delft
University of Technology,
The Netherlands



JEROEN VAN DER LAAK
Professor in Digital Pathology,
Radboud UMC, The Netherlands



BÉLA MOLNÁR
Professor, Semmelweis University
Hospital, Hungary & CEO, 3D
Histech



SABINE LEH
Associate Professor, Department
of Clinical Medicine, Haukeland
University Hospital, Norway



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JIHAD ZALLAT
Professor, University of
Strasbourg, France



**SENIOR
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Indica Labs



ANDY BECK
CEO, Path AI



DOUGLAS HARTMAN
Associate Professor of
Pathology & Associate
Director, Pathology Informatics,
University of Pittsburgh, USA



PETER CAIE
Senior Research Fellow,
University of St Andrews, UK



CLARE VERRILL
Senior Clinical Lecturer in
Pathology, University of Oxford
& Lead for Molecular Pathology,
Oxford University Hospitals
NHS Trust, UK



VIKTOR VARGA
CTO, 3D Histech



**PEDRO SOARES DE
OLIVEIRA**
Consultant in Histopathology,
The Christie NHS Foundation
Trust, UK



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



**SENIOR
REPRESENTATIVE**
Leica Biosystems



CHLOE LOCKWOOD
Leadership Fellow in Digital
Pathology, Leeds Teaching
Hospitals NHS Trust



MARTIN STUMPE
Technical Lead Manager, Google
Research, USA



STEPHEN MCKENNA
Professor & Chair of Computer
Vision, University of Dundee, UK



ANJUM AHMED
Senior Product Marketing
Manager, AGFA Healthcare



MANFREDO ATZORI
Senior Researcher, University
of Applied Sciences Western
Switzerland, Information
Systems Institute, Sierre



NIELS GRABE
Scientific Director, Hamamatsu
Tissue Imaging and Analysis
Center, University Hospital
Heidelberg, Germany



ARRIGO CAPITANO
Senior Consultant Pathologist,
Linköping University Hospital,
Sweden



**SENIOR
REPRESENTATIVE**
Nanostring



RAPHAËL MARÉE
Cytomine Scientific Coordinator,
Montefiore Institute, University
of Liège & Cytomine SCRL FS
Co-Founder, Belgium



MICHA EICHMANN
(Track Chair)
Translational Research Unit,
Digital Image Analysis, University
of Bern, Switzerland



ANIL PARWANI
Director of Pathology Informatics
and Digital Pathology, The Ohio
State University, USA



BETHANY WILLIAMS
Digital Pathology PhD Fellow,
Leeds Teaching Hospitals NHS
Trust, University of Leeds, NHS
Future Leaders Programme



**SENIOR
REPRESENTATIVE**
Corista



**SENIOR
REPRESENTATIVE**
Definiens



SOFIA JARKMAN
Trainee in Pathology, Linköping
University Hospital



JO MARTIN
President Elect, Royal College of
Pathologists



RICHARD HAWORTH
Head of Pathology UK,
GlaxoSmithKline



ISABELLE SALMON
Head of the Surgical Pathology
Department, Erasme Hospital,
ULB, Belgium



MITKO VETA
Assistant Professor, Department
of Biomedical Engineering,
Eindhoven University of
Technology, The Netherlands



NASIR RAJPOOT
Professor in Computer Science
& Head, Tissue Image Analytics
Lab, University of Warwick, UK



ROBERT PELL
Speciality Registrar
Histopathology, Royal Berkshire
Hospital, UK



ALEXI BAIDOSHVILI
Pathologist in LabPON, Project
Director of Digital Pathology
Team, LabPON, The Netherlands



WILL HOWAT
Team Leader, Molecular
Pathology Group, AstraZeneca,
UK



ERIO BARALE-THOMAS
Senior Principal Scientist,
Pathology, Janssen, Belgium



FRED HUSHER
Chief of R&D, Sino Image



ABHI GHOLAP
Founder & CEO, OptraScan



CORINNE BERCLAZ
Scientist - Imaging Specialist,
F. Hoffmann-La Roche



JEE SHUM
Chief of R&D, Sino Image



PETER HAMILTON
(Reserved)
Group Leader, Image Analytics,
Philips Digital Pathology
Solutions



SIMONA GURZU
Professor of Pathology & Head of
Chair of Pathology - University of
Medicine and Pharmacy, Tirgu-
Mures, Romania



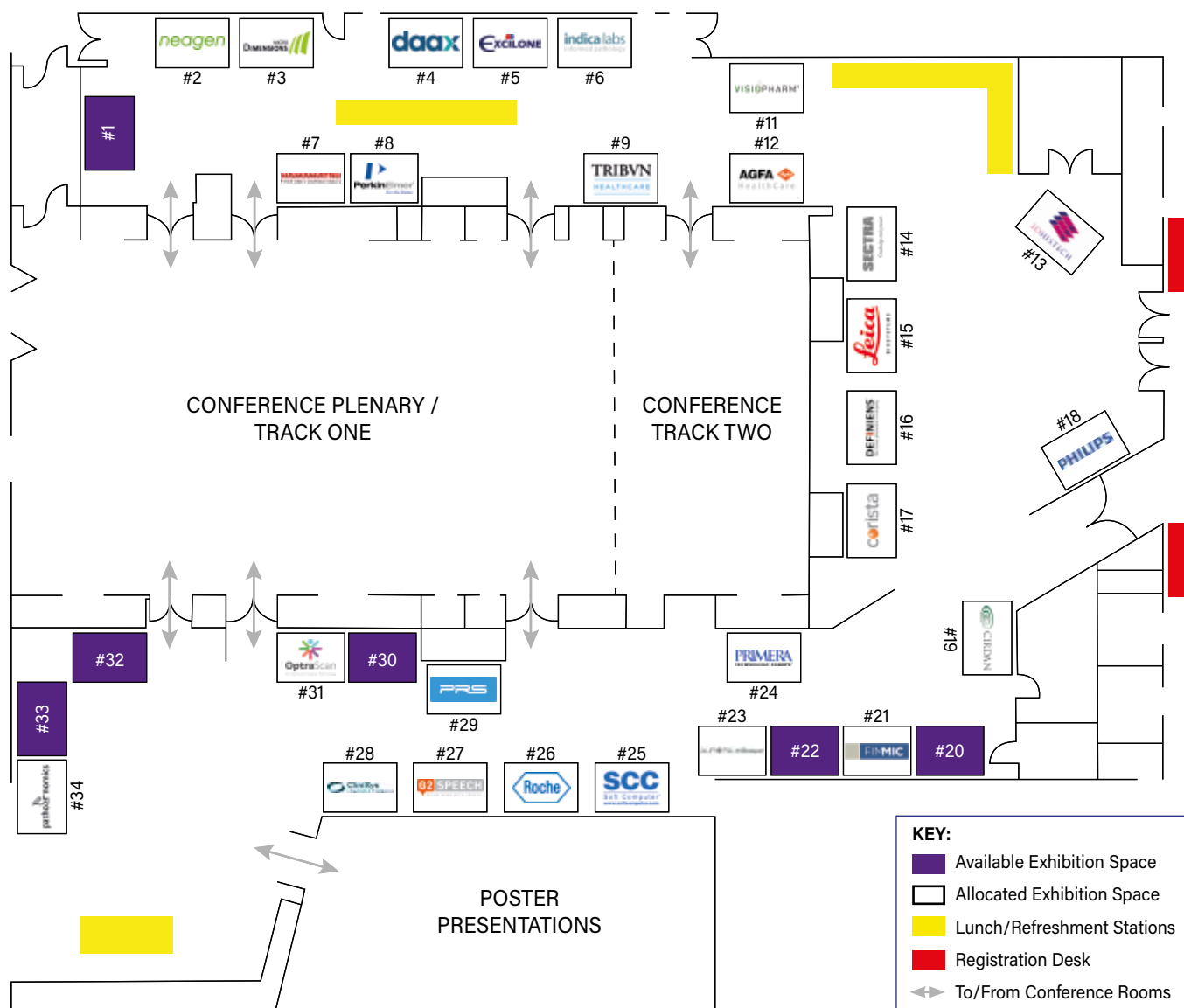
KURT ZATLOUKAL
Professor, Medical University of
Graz, Austria



RICH WHITWORTH
Content Director, Texere
Publishing



EXHIBITION FLOORPLAN



WHO'S EXHIBITING

- | | | |
|----------------------|------------------------------------|----------------------------------|
| 1. Available | 13. 3D Histech | 24. Primera Technology Europe |
| 2. Neagen Oy | 14. Sectra Imaging IT Solutions AB | 25. SCC Soft Computer |
| 3. MicroDimensions | 15. Leica Biosystems | 26. Roche Diagnostics |
| 4. DAAX Ltd | 16. Definiens Inc. | 27. G2 Speech |
| 5. Excilone | 17. Corista | 28. CliniSys |
| 6. Indica Labs | 18. Philips | 29. Process Record Slide Limited |
| 7. Hamamatsu | 19. Cirdan | 30. Available |
| 8. PerkinElmer | 20. Available | 31. OptraSCAN |
| 9. TRIBVN Healthcare | 21. Fimmic Oy | 32. Available |
| 11. Visiopharm | 22. Available | 33. Available |
| 12. Agfa Healthcare | 23. Aurora mScope | 34. Pathognomics |

08:00-08:50	Room: Lindbergh & Aviators Lobby	Registration & Refreshments
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08:50-09:00	Room: Lindbergh 2&3	Global Engage Welcome Address and Morning Chair's Opening Remarks
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09:00-09:40


**KEYNOTE ADDRESS:
ANIL PARWANI**

Director of Pathology Informatics and Digital Pathology, The Ohio State University, USA

Implementing Digital Pathology for Clinical Diagnostics: Deciphering Hype from Reality

Digital Pathology including whole slide imaging (WSI) promises to make the pathology workflow and reporting a more robust and dynamic process with many advanced features including incorporation of image analysis and computer-aided diagnosis.

The process of "digitization" should be viewed as an opportunity to truly advance a pathology practice leading to an improvement in the pathology reporting process as well as improving patient care. The objectives of this presentation are to discuss key factors including technology, people, infrastructure and finances to consider when implementing digital pathology for clinical diagnostics. The speaker will provide practical tips in selecting digital pathology systems and specific applications based on digital pathology implementation experience at major academic center. There will be discussion on what works today and what the future directions are for this exciting technology.

09:40-10:20


**KEYNOTE ADDRESS:
DARREN TREANOR**

Consultant Histopathologist & Honorary Clinical Associate Professor/Guest Professor in Digital Pathology, Leeds Teaching Hospitals NHS Trust and University of Leeds/Linköping University


CHLOE LOCKWOOD

Leadership Fellow in Digital Pathology, Leeds Teaching Hospitals NHS Trust

Full Digitalisation of Pathology Services at Leeds - The First Year

- We will describe the results of our research-led deployment of digital pathology at Leeds Teaching Hospitals NHS Trust
- We will present the results of our "meaningful pilot" in breast cancer diagnosis and explain the deployment across the rest of the service, including learning points for others wanting to go digital.

10:20-10:50


**SOLUTION PROVIDER PRESENTATION:
SENIOR REPRESENTATIVE**

Definiens

Title TBC

Definiens is the pioneering provider of Tissue Phenomics® solutions for biomarker and companion diagnostics development and commercialization. Definiens' technology empowers smarter tissue-based diagnostics by leveraging quantitative tissue readouts and other big data sources. By enabling the development of powerful and precise assays for patient stratification and clinical trial enrolment, Definiens aims to dramatically improve patient outcomes.

10:50-11:20	Room: Blériot	Odd Numbered Poster Presentations: Grab a refreshment and head over to view a wide selection of posters. A full poster abstract book can be viewed online prior to the congress and a summary of posters is viewable at the bottom of the agenda
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10:50-12:00	Room: Lindbergh & Aviators Lobby	Morning Refreshments / One-to-One Networking Meetings
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Room: Lindbergh 2&3

PATHOLOGY INFORMATICS & MACHINE LEARNING

12:00-12:25


JEROEN VAN DER LAAK

Professor in Digital Pathology, Radboud UMC, The Netherlands

Computational Pathology for Breast Cancer Diagnostics

In our research we study deep learning, a state-of-the-art pattern recognition technique that has been found extremely powerful for analysis of digitized histopathological slides. Different applications of this technique for improved diagnostics and prognostics of breast cancer patients are pursued. Histopathological assessment of the axillary lymph node status is one of the three components of breast cancer staging. Assessment of the lymph node status is a straightforward yet promising candidate application for deep learning based automation. Our current algorithms for this task perform equally well as trained pathologists, making them suitable for large scale routine validation and implementation. We also developed algorithms for fully automated recognition and counting of mitotic figures, which aids breast cancer grading. As a result of these techniques, routine diagnostics becomes more efficient and reproducible. More advanced automated techniques are developed to identify novel prognostic biomarkers, contributing to the development of personalized medicine. We study the tumor to stroma ratio, the presence of tumor infiltrating lymphocytes and the appearance of the tumor stroma as possible future prognosticators.

Room: Lindbergh 1

DIGITAL PATHOLOGY STRATEGIES & TECHNOLOGIES

JO MARTIN

President-Elect, Royal College of Pathologists

Digital pathology - making a difference

The rapidly developing field of digital pathology is focussing on the digitisation and transmission of scanned images. To make a real difference this process needs to be part of a process that helps patients to get their diagnostic results as soon as possible from the most appropriate specialist. Digital pathology in its wider sense does, however, have the potential to do so much more..simplifying processes during reporting and requesting, integrating quantitation and decision support tools and extending usage beyond that currently being rolled out. Exciting new options and developments have huge potential.

12:00-12:25

12:25-12:50



MARTIN STUMPE

Technical Lead Manager, Google Research, USA
Machine Learning in Digital Pathology - Title TBC

12:25-12:50



ISABELLE SALMON

Head of the Surgical Pathology Department, Erasme Hospital, ULB, Belgium
"Going digital" for surgical pathology second opinion, practical point of view

12:50-13:20



SOLUTION PROVIDER PRESENTATION:

ANDY BECK

CEO, PathAI

Improving Cancer Pathology Using Computer Vision and Artificial Intelligence



Since the 19th century, pathologists have served as the "physician's physician" and have been tasked with analyzing microscopic images of tissue to make definitive diagnoses that serve as the basis for treatment decisions. PathAI, formed in 2016, is an early stage company that uses deep learning to build image recognition solutions for applications in pathology. Their solutions reduce errors, increase efficiency, and aim to match the right patient to the right treatment. PathAI works with partners to apply their technology to solve challenging problems in drug development, clinical medicine, and global health. Andy will share how PathAI is advancing medicine with intelligent pathology and how will this impact medicine and society 10 and 20 years into the future.

12:50-13:20



SOLUTION PROVIDER PRESENTATION:

SENIOR REPRESENTATIVE

Leica Biosystems

Title TBC

Leica Biosystems (LeicaBiosystems.com) is a global leader in workflow solutions and automation, integrating each step in the workflow from biopsy to diagnosis. Our mission of "Advancing Cancer Diagnostics, Improving Lives" is at the heart of our corporate culture. Our easy-to-use and consistently reliable offerings help improve workflow efficiency and diagnostic confidence.

13:20-14:20

Room: Lindbergh & Aviators Lobby

Lunch / One-to-One Networking Meetings

14:20-15:50

PANEL DISCUSSION:

The Benefits of Computational Pathology in Hospitals

- What does computational pathology mean to pathologists?
- Need for computational pathology
- What is the relevance today and how does this impact care delivery?
- Is the technology ready for this change?
- How can computational pathology be used to improve the practice of pathology?



RICH WHITWORTH (Chair)

Content Director, Texere Publishing



JEROEN VAN DER LAAK

Professor in Digital Pathology, Radboud UMC, The Netherlands



PETER HAMILTON

Group Leader, Image Analytics, Philips Digital Pathology Solutions



NASIR RAJPOOT

Professor in Computer Science & Head, Tissue Image Analytics Lab, University of Warwick, UK

Senior Representatives x3

14:20-14:50



SIMONA GURZU

Professor of Pathology & Head of Chair of Pathology - University of Medicine and Pharmacy, Tirgu-Mures, Romania

The role of digital pathology in evaluation of the invasiveness capacity of gastrointestinal cancers

- Digital versus manual budding assessment in colorectal cancer specimens
- Hematoxylin Eosin versus immunohistochemical stains in evaluation of the invasiveness capacity of colorectal cancer cells
- Digital versus manual assessment of epithelial, mesenchymal and stem-like carcinomas of the stomach and colorectal segments
- Research partially sustained by the University of Medicine and Pharmacy of Tirgu-Mures, Romania, in the joint project with Studium Prospero Foundation and Hungarian Science Academy, research projects frame 136/2017.

14:50-15:20



JIHAD ZALLAT

Professor, University of Strasbourg, France

Real time Spectro-polarimetric Optical Biopsy: Application to Dermatology

We developed optical-biopsy diagnosis instrumentation ((DERMAPOL: hardware and diagnosis software) to optimize clinical decisions and patient outcome. DERMAPOL is involved in a clinical test at the Strasbourg University Hospital. In this talk, we will present the instrument DERMAPOL as well as the first experimental results.

15:20-15:50



SJOERD STALLINGA

Associate Professor, Department of Imaging Physics, Delft University of Technology, The Netherlands

Title TBC


**SOLUTION PROVIDER
PRESENTATION:
SENIOR REPRESENTATIVE**

Philips
Title TBC

At Philips, we deliver innovative healthcare technology solutions designed to create value by improving the quality and delivery of care while lowering cost. Our broad and deep clinical expertise and technology leadership across the health continuum and commitment to customer collaboration are core to our business and truly differentiate us. Leveraging decades of Philips' experience in clinical digital transformation, the IntelliSite pathology solution is designed to empower pathologists with a solution that supports optimization of productivity and workflow, and ultimately help to improve patient outcome

15:50-16:20


**SOLUTION PROVIDER
PRESENTATION:
SENIOR REPRESENTATIVE**

Indica Labs
Title TBC

Indica Labs is the first company to offer tissue specific image analysis algorithms in a truly integrated digital pathology environment. Pharmaceutical, healthcare, and research organizations worldwide utilize Indica tools for high-throughput, whole-slide image quantification in areas such as neuroscience, metabolism, oncology, toxicological pathology, and more.

15:50-16:20

16:20-17:10

Room: Lindbergh & Aviators Lobby

Afternoon Refreshments / One-to-One Networking Meetings

SOLUTION PROVIDER PRESENTATION

For sponsorship opportunities please contact
Nick Best / Gavin Hambrook at sponsorship@globalengage.co.uk

17:10-17:25

SOLUTION PROVIDER PRESENTATION

For sponsorship opportunities please contact
Nick Best / Gavin Hambrook at sponsorship@globalengage.co.uk

17:10-17:25


NASIR RAJPOOT

Professor in Computer Science & Head, Tissue Image Analytics Lab, University of Warwick, UK
The Role of Analytics in Computational Pathology
The emerging discipline of Digital Pathology is poised to change the status quo in

pathology practice for the better. I will present some of the recent developments in our group concerning digital pathology image analysis and tissue morphometrics from images of cancerous tissue slides. I will show that morphological motifs extracted from digital pathology image data are likely to lead to novel prognostic data with relevance to precision medicine.

17:25-17:50


KURT ZATLOUKAL

Professor, Medical University of Graz, Austria
Title TBC

17:25-17:50


CLARE VERRILL

Senior Clinical Lecturer in Pathology, University of Oxford & Lead for Molecular Pathology, Oxford University Hospitals NHS Trust, UK


ROBERT PELL

Speciality Registrar Histopathology, Royal Berkshire Hospital, UK

Applications of image analysis in testicular germ cell tumours

There is very little literature on the use of image analysis in testicular germ cell tumours. These are difficult tumours to study by image analysis because of marked morphological heterogeneity. The application of image analysis in 2 testicular tumour projects will be presented:

1. Development of a machine learning algorithm to assess tumour infiltrating lymphocytes (TILs) in H&E sections in collaboration with Prof Johan Lundin and Prof Nina Linder at the Finnish Institute of Molecular Medicine. Proof of principle and application to a cohort of seminoma and non-seminomatous germ cell tumour patients will be discussed.
2. The creation and validation of algorithms using the Visiopharm image analysis platform to study CD3 and CD8 IHC stained slides in a small cohort of seminoma cases.

17:50-18:15


DOUGLAS HARTMAN

Associate Professor of Pathology & Associate Director, Pathology Informatics, University of Pittsburgh, USA

Functional Gaps Within Current Digital Pathology Technology

Digital pathology has made great strides in recent years to become a viable tool for pathologic diagnosis. However, there are still some functional gaps within the digital pathology offerings, most notably within hematopathology. These functional gaps represent opportunities for new technology and software development. This talk will discuss functional gaps within the current digital pathology systems.

17:50-18:15

**MANFREDO ATZORI**

Senior Researcher, University of Applied Sciences
Western Switzerland, Information Systems
Institute, Sierre

An Image Retrieval System for Digital Pathology

Thanks to scientific literature and publicly available resources of whole slide images, large amounts of histopathology data are now available. This opens the possibility to develop image analysis and retrieval systems to support pathologists during their clinical routine. This talk presents an image retrieval system based on visual similarity of image regions in combinations with key word search. The tool improves the experience of pathologists by searching for visual similarities between manually selected regions of interest, previous cases and histopathology images of the open access literature, thus allowing an interaction with the available digital knowledge.

18:15-18:40

PANEL DISCUSSION:**Widescale Adoption of Digital Pathology within the National Health Service**

- Embracing a national strategy
- Making a business case
- Data sharing challenges, interoperability & security
- Adoption of technology
- Partnering for success

Invite to:**Senior Representative**

NHS England

Senior Representatives x4

NHS Trusts

18:15-18:40

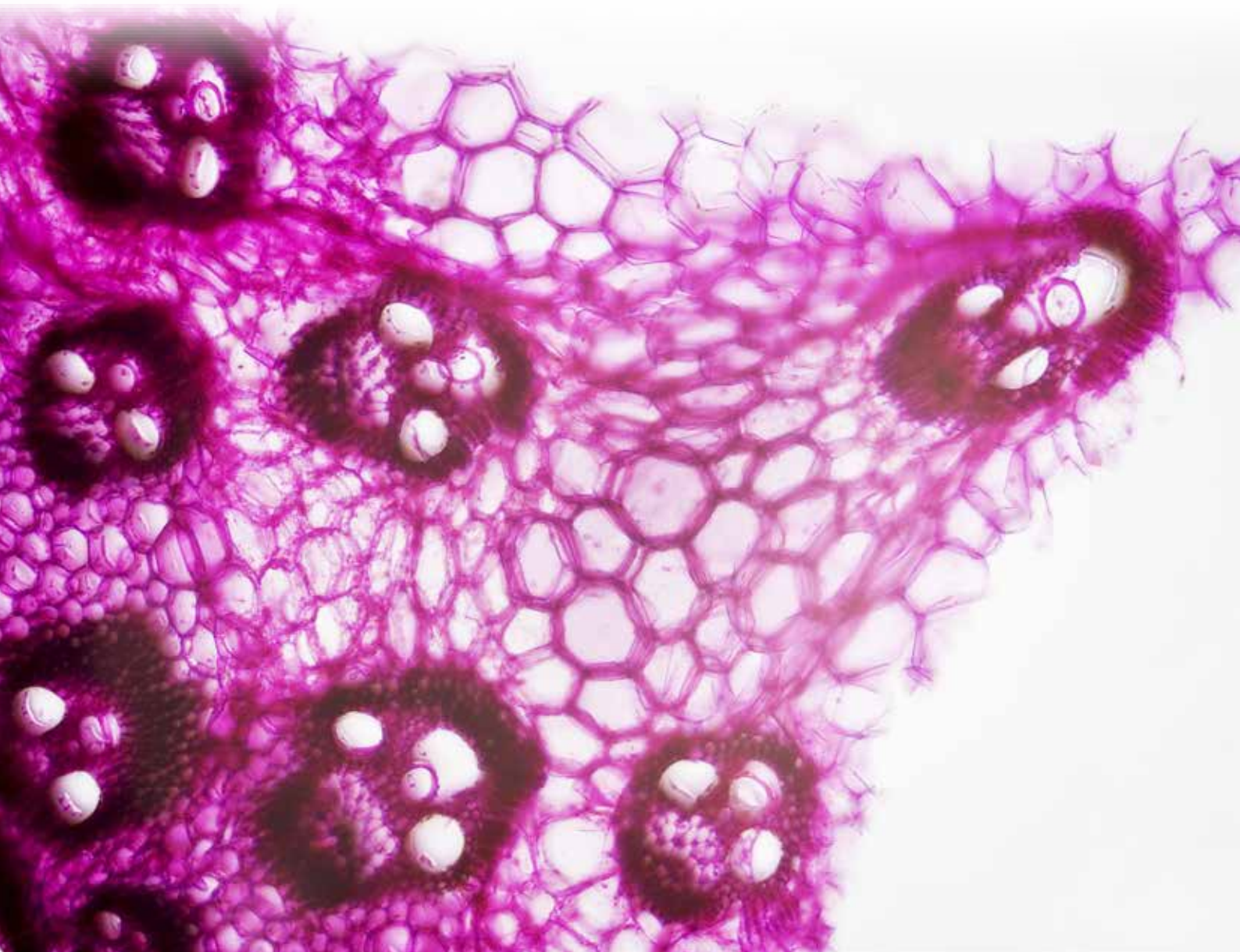
18:40-19:40

Room: Lindbergh & Aviators Lobby

Closing Remarks / Networking Drinks Reception

Drinks Reception: Several evening entertainment options are being considered for the drinks' reception and after.

If you would be interested in sponsoring the drinks reception please contact Nick Best/Gavin Hambrook at sponsorship@globalengage.co.uk



08:00-08:35	Room: Lindbergh & Aviators Lobby	Refreshments
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08:35-08:40	Room: Lindbergh 2&3	Morning Chair's Opening Remarks
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08:40-09:20


**KEYNOTE ADDRESS:
LIRON PANTANOWITZ**

Professor of Pathology and Biomedical Informatics, University of Pittsburgh, USA

College of American Pathologists (CAP) Guideline on Quantitative Image Analysis (QIA)

As digital pathology adoption matures the practice of quantitative image analysis (QIA) has become increasingly popular, especially for breast biomarkers such as ER, PR and HER2. However, a major drawback to employing QIA in clinical practice is lack of standardization. Moreover, QIA algorithms that are inadequately validated and poorly calibrated can result in misleading results. The College of American Pathologists (CAP) has accordingly developed a guideline that addresses these issues related to QIA of HER2 immunohistochemistry for breast cancer. This talk will review these new evidence-based guidelines.

09:20-09:50


ALEXI BAIDOSHVILI

Pathologist in LabPON, Project Director of Digital Pathology Team, LabPON, The Netherlands

Improvements and Challenges in a Pathology Laboratory after Digitalization

After the transition to digital diagnostics in July 2015, we found that the quality of our diagnostics and, especially, the logistics at LabPON had improved in many aspects. To study the situation at the beginning (2013) and after completion (2017) of the transition of our diagnostic facility to fully digital we used a flow analysis to investigate the logistics and diagnostics. We also investigated the impact of the digital transition on diagnosis time. The results of the flow analysis, together with all the gained experience, gives a good overview of the improvements and the challenges in digitization. We have noted a significant quality and logistics improvements in the (now digital) diagnostics in our laboratory. We found that the digital diagnostic process is faster, more efficient and qualitatively better than the microscope.

09:50-10:20


**SOLUTION PROVIDER PRESENTATION:
BÉLA MOLNÁR**

Professor, Semelweis University Hospital, Hungary & CEO, 3D HISTECH

VIKTOR VARGA

CTO, 3D HISTECH


Title TBC

3DHISTECH Ltd. is a leading company, developing high-performance hardware and software products for digital pathology since 1996. As the first European manufacturer, 3DHISTECH is one of the market leaders in the world with more than 600 sold systems. Being one of the pioneers in this field, 3DHISTECH develops and manufactures high speed digital slide scanners that create high quality brightfield and fluorescent digital slides, digital histology software and tissue microarray machinery. 3DHISTECH's broader aim is to fully digitalize the traditional pathology workflow so that it can adapt to the ever growing demands of healthcare today. Furthermore, educational programs are also organized to help pathologists learn and master these new technologies easier.



10:50-11:20

Room: Blériot

Even Numbered Poster Presentations:

Grab a refreshment and head over to view a wide selection of posters. A full poster abstract book can be viewed online prior to the congress and a summary of posters is viewable at the bottom of the agenda

10:50-12:00

Room: Lindbergh & Aviators Lobby

Morning Refreshments / One-to-One Networking Meetings

Room: Lindbergh 2&3

DIGITAL IMAGE ANALYSIS

11:30-11:55


NIELS GRABE

Scientific Director, Hamamatsu Tissue Imaging and Analysis Center, University Hospital Heidelberg

Title TBC

Room: Lindbergh 1

DIGITAL PATHOLOGY CASE STUDIES

BETHANY WILLIAMS

Digital Pathology PhD Fellow, Leeds Teaching Hospitals NHS Trust and University of Leeds, UK

Digital Breast Pathology in the NHS - Experience from an Innovative Validation and Training Pilot

- Diagnostic histopathology laboratories are increasingly interested in using digital pathology to improve service quality.
- Safe and successful use of digital microscopy in routine primary diagnosis is reliant on individual pathologists receiving adequate training and gaining sufficient experience of digital cases.
- We designed an innovative training and validation protocol to allow our pathologists to gain competence and confidence in live digital diagnosis, in a real world, risk mitigated environment.
- Absolute concordance between digital and glass diagnoses was greater than 95% for all participants.
- Our pilot validation study demonstrates the importance of individualised training and validation for histopathologists in specialty specific primary digital diagnosis. Our pathologists all reported high rates of satisfaction with digital microscopy, and now report breast cases digitally as standard. Informed by the data from this pilot, full deployment of digital pathology for primary diagnosis in all histopathology subspecialties is under way at Leeds Teaching Hospitals NHS Trust.

11:30-11:55

**CORINNE BERCLAZ**

Scientist - Imaging Specialist, F. Hoffmann-La Roche
Image Analysis for Pre-clinical Assessment
 Getting quantitative readouts from tissue-based assessments can help decision making to be more transparent and less subjective. However, obtaining

a quantitative readout is challenging because of signal fluctuations and the subtlety of the visual cues to be detected. Signal fluctuations originate both from intrinsic biological mechanisms and external factors that can be controlled and minimized using automation and introduction of appropriate controls. Therefore successful quantitative readouts require to go beyond image analysis and to standardize wet lab processes as rigorously as possible. This presentation will highlight our current workflow and the challenges we face in increasing its automation and robustness. We will discuss the benefits and limitations of our approach, as well as examples of image analysis done in our group.

11:55-12:20

**PEDRO SOARES DE OLIVEIRA**

Consultant in Histopathology, The Christie NHS Foundation Trust, UK

Title TBC

11:55-12:20

**MITKO VETA**

Assistant Professor, Department of Biomedical Engineering, Eindhoven University of Technology, The Netherlands

Assessment of breast tumor proliferation by automatic image analysis

- Pathologists routinely assess breast tumor proliferation by counting mitotic figures in H&E stained tissue section. This process is tedious and subjective.
- This talk will focus on deep learning-based image analysis methods for assessment of breast tumor proliferation. Results from a recent competition on this topic will also be discussed.
- Methods for training of robust deep learning models that generalize well across pathology labs will also be covered.

12:20-12:45

**SABINE LEH**

Associate Professor, Department of Clinical Medicine, Haukeland University Hospital, Norway

Start Small - Grow Big? Digital Pathology in Norway

The talk will address both personal experiences as well as local, regional and national implementation

strategies and plans for digital pathology in routine diagnostics in Norway:

- 10 reasons why I prefer digital slides in medical renal biopsy diagnostics
- The perfect digital slide viewer
- Learning by doing: no innovation without problems
- From local experience to nationwide implementation: a strong vision, a goal and a plan
- Start fast, remain flexible and create small achievements

12:20-12:45


**SOLUTION PROVIDER
 PRESENTATION:
 SENIOR REPRESENTATIVE**

Corista
Title TBC

Corista's DP3 is unlocking the scale, reach and utility of digital pathology worldwide. The only digital pathology software natively reading every scanner's image format, DP3 integrates universal image access, complete workflow, collaboration, and search and analysis functionality. DP3 integrates with any LIS, and is accessible, from any web-enabled device. DP3 was awarded Frost & Sullivan's Product Innovation Award in 2014.

12:45-13:15


**SOLUTION PROVIDER
 PRESENTATION:
 ANJUM AHMED**

Senior Product Marketing Manager, AGFA Healthcare

Title TBC

Agfa HealthCare, present in one hospital out of two, is a leading provider of eHealth & Digital Imaging solutions. Care organizations in over 100 countries rely on Agfa HealthCare to optimize their efficiency and improve patient care. Agfa HealthCare's Enterprise Imaging solution provides a completely unified platform that allows "anywhere, anytime" access to and exchange of all medical images, at all stages of the care continuum.

12:45-13:15

13:15-14:15

Room: Lindbergh & Aviators Lobby

Lunch/ One-to-One Networking Meetings

Room: Lindbergh 2&3

DIGITAL IMAGE ANALYSIS

Track Chair: Micha Eichmann, Translational Research Unit, Digital Image Analysis, University of Bern, Switzerland


**SOLUTION PROVIDER
 PRESENTATION:
 SOFIA JARKMAN**

Trainee in Pathology, Linköping University Hospital
The Native Digital Pathologist - Experience from a Pathology Trainee

- A view from a pathology trainee working digitally from start
- Digital workflow in Linköping
- Possibilities and challenges with digital pathology for pathology trainees.

14:15-14:45


**SOLUTION PROVIDER
 PRESENTATION:
 SENIOR REPRESENTATIVE**

NanoString
Title TBC

NanoString Technologies provides life science tools for translational research and molecular diagnostic products. The nCounter Analysis System offers a cost-effective way to easily profile the expression of hundreds of genes, proteins, miRNAs, or copy number variations, simultaneously with high sensitivity and precision, facilitating a wide variety of basic research and translational medicine applications, including biomarker discovery and validation. The Prosigna® Breast Cancer Prognostic Gene Signature Assay together with the nCounter Dx Analysis System is FDA 510(k) cleared for use as a prognostic indicator for distant recurrence of breast cancer.

14:15-14:45

Room: Lindbergh 1

DIGITAL PATHOLOGY CASE STUDIES

Track Chair: TBC

**STEPHEN MCKENNA**

Professor & Chair of Computer Vision, University of Dundee, UK

Image Analysis - Title TBC

14:45-15:10

**PETER CAIE**

Senior Research Fellow, University of St Andrews, UK

Image Analysis - Title TBC

15:10-15:35

**RICHARD HAWORTH**

Head of Pathology UK, GlaxoSmithKline

How Digital Pathology Enables Assessment of Target Expression and Non-Clinical Safety within the Pharmaceutical Industry

A review of how digital pathology is currently being used within the pharmaceutical industry to enable:

- image analysis and quantification of tissue attributes
- peer review of discovery and regulatory toxicology studies
- intercompany sharing of pathology images for training and consultation
- integration of morphology with drug distribution data

The considerations in training of histology staff to enable high quality whole slide scanning and image analysis will also be addressed.

Future applications of machine learning to digital pathology will also be introduced.

14:45-15:10

PANEL DISCUSSION:**Digital Pathology for Pharmaceutical Research**

- Personalized medicine
- Applications for preclinical assessment
- Adoption and implementation of digital pathology within pharma and biotech
- Digital image analysis and image analysis tools

15:10-15:35

**WILL HOWAT**

Team Leader, Molecular Pathology Group, AstraZeneca, UK

**ERIO BARALE-THOMAS**

Senior Principal Scientist, Pathology, Janssen, Belgium

Senior Representatives from Pharma x2

15:35-16:00

Room: Lindbergh & Aviators Lobby

Afternoon Refreshments / Poster Presentations

**SOLUTION PROVIDER PRESENTATION: ABHI GHOLAP**

Founder & CEO, OptraScan

On-Demand Digital Pathology

- How digital pathology has moved from a strategic investment, to an on-demand user-defined model
- How 'On-Demand' Digital Pathology will increase productivity in your lab
- Tactics to stay competitive in a global pathology landscape



16:00-16:30

**SOLUTION PROVIDER PRESENTATION: FRED HUSHER**

Chief of R&D, Sino Image

JEE SHUM

Chief of R&D, Sino Image

PRS - Co-resident Objective Measure of IHC Stain Performance for Process QC and Diagnostic Aid

- The PRS incorporates co-resistant patient tissue and control targets which:
- Records the IHC staining experience
- Target data provides objective QC evaluation of the processing experience
- Target data forms the basis of an antigen concentration ruler
- The ruler supports imaging adjustment for best diagnostic interpretation by the viewing pathologist
- 2nd opinion possible as observer knows what was done to the PRS & tissue section

16:00-16:30



**RAPHAËL MARÉE**

Cytomine Scientific Coordinator, Montefiore Institute, University of Liège & Cytomine SCRL FS Co-Founder, Belgium

Collaborative Digital Pathology using Cytomine

Cytomine is a rich internet application for remote and collaborative analysis of multi-gigapixel images. It is an open-source and extensible platform that we are continuously developing since 2010 and it is now used in various institutes worldwide. It is based on modern web and distributed software development methodologies and machine learning. This talk will focus on our latest research and developments:

- Some notes on the need for careful data collection for effective pattern recognition
- Application of tree-based methods and deep learning for object counting and classification in histology and cytology whole-slide images

16:30-16:55

**ARRIGO CAPITANO**

Senior Consultant Pathologist, Linköping University Hospital, Sweden

Tackling Digital Cytology: An Overview

Compared to histological WSI, cytology has different problems. Cytological smears, cytospins or Liquid Based Cytology samples are three dimensional frameworks of cells lying on different focal planes. For this reason cytological slide must be scanned on multiple z-stack levels to obtain an effective visualization. The immediate consequences are an increased scanning time and larger files to be stored. The performances of modern scanners for microscopy and some software tools allow a partial solution of these problems, but for an effective result a new scanning technology should probably be developed.

16:30-16:55

16:55

Conference Close

POSTER PRESENTATIONS

MAKING A POSTER PRESENTATION

Poster presentation sessions will take place on the mornings of both days. Your presentation will be displayed in a dedicated area, with the other accepted posters from industry and academic presenters. We also issue a poster eBook to all attendees with your full abstract in and can share your poster as a PDF after the meeting if you desire (optional). Whether looking for funding, employment opportunities or simply wanting to share your work with a like-minded and focused group, these are an excellent way to join the heart of this congress.

In order to present a poster at the congress you need to be registered as a delegate. Please note that there is limited space available and poster space is assigned on a first come first served basis (subject to checks and successful registration). We charge an admin fee of £100 to industry delegates to present, that goes towards the shared cost of providing the poster presentation area and display boards, guides etc. This fee is waived for those representing academic institutions and not for profit organisations.





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