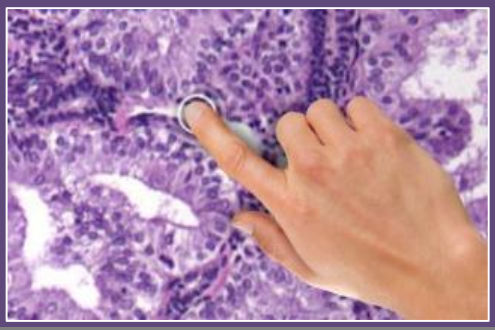
14th-15th July 2016, Philadelphia, PA

Global Engage Ltd

**www.globalengage.co.uk/digital-pathology.html**



# 2nd Digital Pathology Congress: USA

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

Global Engage is pleased to announce the 2nd Digital Pathology Congress USA, which will be held on July 14-15th, 2016 in Philadelphia, USA. The conference is a sister event to the successful Digital Pathology Congress which took place in London last December, attracting over 300 attendees with 35+ exhibitor companies. It is part of the Digital Pathology Series which also includes annual conferences in Kuala Lumpur and Dubai.

With wide ranging applications and benefits including reductions in lab costs, increased workflow efficiency, greater interconnectivity and effective training methods, Digital Pathology is enabling enhanced patient care. As these advantages become apparent, Digital Pathology is gaining momentum worldwide. This year, for the first time, the conference will include a stream focusing on Digital Pathology within a Veterinary setting, exploring its implementation, utility, and future. As the technology improves and its advantages become more apparent, the diversity of applications is becoming greater.

Overcoming the barriers to effectively implementing the technology, as it awaits FDA approval, is vital to ensuring that lab efficiency and patient care are protected and improved. Attracting over 180 industry & academic experts working in all areas of Pathology this two day interactive meeting will provide the opportunity to take home cutting edge strategies, approaches and methods to allow you to fully utilise the technology, informatics and image analysis tools of Digital Pathology. This will be achieved through a vibrant exhibition room full of technology providers showcasing their technologies, networking breaks allowing interaction with your peers, poster presentation sessions, and expert led case study presentations and incisive Q&A panel discussions during three separate tracks which will examine the topics below.

**Liron Pantanowitz,**
Professor Pathology & Biomedical Informatics, Director of Pathology Informatics University of Pittsburgh Medical Centre, USA

**Anant Madabhushi,**
Case Western Reserve, Professor and Director, Centre for Computational Imaging & Personalized Diagnostics

**Marilyn Bui, MD, PhD**
Professor and Senior Member Pathologist, Scientific Director of Analytic Microscopy Core, Chair of Digital Pathology Working Group, Moffitt Cancer Center, Tampa, FL. USA.

## Conference Synopsis

**Digital Pathology - Strategy and Technology**

- Introduction, benefits & future developments of Digital Pathology
- FDA approval and validation
- Implications on pathology practice
  - Uses in education and training
- Converting to/ integration of digital pathology
- Technology advances in digital pathology
- Standardisation in Digital Pathology
- Panel Discussion – Overcoming barriers in adoption of Digital pathology

**Pathology Informatics**

- Acquisition, processing, archiving & retrieval of WSI
- Cloud Computing
- Pathology PACS
- Automation
- Improving WSI workflow efficiency
- Telepathology
  - Virtual networks
  - Use in remote areas
  - Insourcing
- Pathology IT

**Digital Image Analysis**

- Overcoming challenges in image analysis
  - Image standardization
  - Compression techniques
- Analysis software
- Automated image analysis
- Quantitative image analysis research
- Annotation tools
- Pattern recognition
- Algorithm development / Image analysis algorithms

**Digital Pathology Applications and Research Case Studies**

- Veterinary Pathology
- Clinical trials
- Diagnosis
- Cancer Immunotherapy
- Next generation sequencing
- Biomarker analysis /research / quantification
- Tissue-based research / imaging
- Precision / personalised medicine

## Confirmed Speakers

**Liron Pantanowitz,** Professor Pathology & Biomedical Informatics, Director of Pathology Informatics University of Pittsburgh Medical Centre, USA

**Famke Aeffner,** Flagship Bioscience, Associate Director of Pathology

**Jaime Rodriguez – Canales,** MD Anderson Cancer Centre, Assistant Professor, Director Immunohistochemistry and Digital Pathology Laboratory

**Michael Angelo,** Assistant Professor, Stanford University

**George Lee,** Research Assistant Professor, Center for Computational Imaging & Personalized Diagnostics, Department of Biomedical Engineering, Case Western Reserve University

**Ingrid Carlbom** Professor, Department of Information Technology, Uppsala University, Sweden

**Yun-Fu Hu,** Deputy Director, Division of Molecular Genetics and Pathology at CDRH

**Erin Brannick,** University of Delaware, Assistant Professor; Director, CANR Comparative Pathology Laboratory,

**Anant Madabhushi,** Case Western Reserve, Professor & Director, Centre for Computational Imaging & Personalized Diagnostics

**David Gutman,** Assistant Professor, Biomedical Informatics, Emory University School of Medicine

**Scott Binder** Senior Vice Chair and Director of Pathology Clinical Services, UCLA/Geffen School of Medicine, UCLA Health

**Bruce Levy** Associate Professor of Pathology, Associate Chief Health Information Officer, University of Illinois at Chicago

**Anne Martel,** Senior Scientist, Sunnybrook Health Centre, Canada

**Zoya Volynskaya,** University of Toronto, Director of Clinical and Research informatics

**Mark Routbourt,** MD Anderson Cancer Centre, Director of Computational and Integrational Pathology

**Marilyn Bui,** Professor and Senior Member Pathologist, Scientific Director of Analytic Microscopy Core, Chair of Digital Pathology Working Group, Moffitt Cancer Center, Tampa, USA.

**Alexi Baidoshvili** LabPON, Pathologist in LabPON, Project Director of Digital Pathology Team

**Jonathan Bury** Honorary Senior Lecturer, Consultant Histopathologist, Sheffield University

**Andrew Beck,** Harvard Medical School, Assistant Professor, Department of Pathology

**Yang Liu,** Associate Professor, Department of Medicine and Department of Bioengineering, Director, Biomedical Optical Imaging Laboratory (BOIL)

**Michael Feldman** University of Pennsylvania, Perelman Institute, Associate Professor of Pathology and Laboratory Medicine

**James Collins** Professor, Director Diagnostic Pathology Laboratory, University of Minnesota

**Hilton Philadelphia City Avenue**
4200 City Avenue
Philadelphia, PA 19131 USA

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.

## Digital Pathology Series

2nd Digital Pathology Congress USA – July 14-15, 2016, Philadelphia, USA
www.globalengage.co.uk/digitalpathology.html

2nd Digital Pathology Congress Asia - August 22-23, 2016, Kuala Lumpur, Malaysia,
www.globalengage.co.uk/digital-pathology-asia.html

Digital Pathology Congress Middle East – November 1st – 2nd, 2016, Dubai

3nd Digital Pathology Congress Europe – December 1 – 2nd, 2016, London, UK
www.globalengage.co.uk/digital-pathology.html

# 2nd Digital Pathology Congress: USA - Sponsors 2016

## Gold Sponsors

## Sponsors

## Digital Pathology Congress: USA – Sponsors 2015

### Gold and Silver Sponsors

### Sponsors

| | |
|---|---|
| 08.00-08.55 | **Registration & Coffee** |
| 08.55-09.00 | **Global Engage Welcome Address** |
| 09.00-09.30 | **Keynote Address:**<br>**What is the Killer App in Digital Pathology?**<br>Pathologists are investing in digital pathology to reap the benefits of image analysis. Such computer aided diagnostic tools will help pathology transition from a manual and qualitative field to an automated and quantitative science. Unfortunately, very few image analysis tools are available today for actual use in routine clinical practice. There are apps that perform quantitative measurements, help identify rare events, assist with grading, and some that can drive workflow. But, what exactly is the killer app needed in Digital Pathology? This talk will cover the readiness of image analysis and key steps required to meet the demand for current clinical practice.<br>Confirmed:<br>**Liron Pantanowitz, Professor Pathology & Biomedical Informatics, Director of Pathology Informatics and UPMC Shadyside Cytology Divisions, University of Pittsburgh Medical Centre, USA** |
| 09.30-10.00 | **Keynote Address:**<br>**Digital Pathology Is an Enabler to Better Patient Care: An Academic Pathologist's Perspective**<br>Digital pathology (DP) including telepathology, whole slide imaging and image analysis is being more adopted in pathology practice. This talk will address the utility of digital pathology in surgical pathology in US based on literature review, communication with early adopters, as well as institutional and personal perspective. Helpful resources, update in technology, and practical issues such as guidelines, validation and accreditation requirement will be discussed. This presentation will help practicing pathologist to take advantage of what DP has to offer as an enabler of better patient care. This talk will also shed light on the bright future of DP in surgical pathology and the boundless opportunists in education and research.<br>Confirmed:<br>**Marilyn Bui, Scientific Director of Analytic Microscopy Core, Moffitt Cancer Centre** |
| 10.00-10.30 | **Solution Provider Presentation**<br><br>For sponsorship opportunities please contact Steve Hambrook at steve@globalengage.co.uk |
| 10.30-11.40 | **Morning Refreshments**<br>**Poster Presentation Sessions**<br>**One-to-One Meetings** |

| | Digital Pathology Implementation | Digital Image Analysis |
|---|---|---|
| 11.40-12.05 | **"Do you believe in a cost-effective business case for digital pathology?"**<br>**Experience based Overview of Investment and Profits.**<br>Confirmed:<br>**Alexi Baidoshvili, Pathologist in LabPON, Project Director of Digital Pathology Team, Labpon, The Netherlands** | **Multi-modal, Multi-scale Digital Pathology: Applications in Prostate Cancer prognosis**<br>- Field effect: Quantifying cancer-adjacent benign field image-markers to predict treatment outcomes<br>- Active Surveillance: Finding differentiators within Very Low Risk Gleason 6 Biopsy Cases<br>- Combining pathology and omics to predict disease prognosis<br>Confirmed:<br>**George Lee, Research Assistant Professor, Center for Computational Imaging & Personalized Diagnostics, Department of Biomedical Engineering, Case Western Reserve University** |
| 12.05-12.30 | **Creation of an 8-site digital pathology network in California; Challenges and Opportunities**<br>An eight site digital pathology network was created in California to focus on second opinion consults, particularly for renal pathology, neuropathology and dermatopathology cases. The challenges of creating a network in unrelated institutions are addressed. The benefits of such a network are discussed. Of great interest is the fact that the goals and objectives of the network changed and adapted to day-to-day practical considerations and unforeseen variables and opportunities.<br>Confirmed:<br>**Scott Binder M.D., Senior Vice Chair and Director of Pathology Clinical Services, UCLA/Geffen School of Medicine, UCLA Health** | **Machine learning and Computational Pathology for data-driven Predictive Cancer Diagnostics**<br>We are developing methods to integrate advanced microscopy, computer vision, bioinformatics, and machine learning to build data-driven predictive cancer diagnostics. We will present work focused on our development of technologies for: automated analysis of morphology and biomarker expression from the normal breast and breast cancer; automated diagnosis of early breast neoplasia; analysis of advanced 3D microscopy for classification and risk prediction in early breast neoplasia; and the use of tissue expansion and image analysis for archival cancer samples.<br>Confirmed:<br>**Andy Beck, Assistant Professor, Department of Pathology, Harvard University** |
| 12.30-13.00 | **Solution Provider Presentation**<br>indica labs<br>informed pathology | **Solution Provider Presentation**<br><br>For sponsorship opportunities please contact Steve Hambrook at steve@globalengage.co.uk |
| 13.00-14.00 | **Lunch**<br>**Poster Presentation Sessions**<br>**One-to-One Meetings** | |
| 14.00-14.25 | **Operational Impacts of Digital Pathology on the clinical workflow**<br>Confirmed:<br>**Zoya Volynskaya, Director, Clinical and Research informatics, University Health Network, Toronto,** | **Presentation title not yet released**<br>Confirmed:<br>**Michael Feldman, Associate Professor of Pathology and Laboratory Medicine, Perelman Institute** |

| | | |
|---|---|---|
| 14.25– 14.50 | **Integrating Digital Pathology into the Electronic Medical Record**<br><br>Confirmed:<br>**Mark Routbort, Director, Computational and Integrational Pathology, Associate Professor Hematopathology, Medical Director, Laboratory Informatics, MD Anderson Cancer Center** | **An Analysis of the CADESS Consensus-Graded Prostate Tissue Dataset**<br>CADESS is a decision support system for the prognostication of prostate cancer from tissue samples under development at Uppsala University. CADESS bases its algorithms on tissue data from whole mount sections comprising 650 small images, each with one dominant pattern. The 650 images were consensus-graded by a panel of thirteen internationally prominent uropathologists At the 2nd Digital Pathology Congress in London we described the consensus-grading process and the resulting intra- and inter-observer grading variations. During a consensus meeting following the grading process, we reached a complete consensus for about 90% of the images, but little or no consensus on the remaining images. In several cases the pathologists were almost evenly divided between Gleason score ≤ 3+4 and ≥ 4+3. In this talk we analyze quantitatively the glandular patterns in the images with little or no consensus, and also report on the intra-observer variations of the major grading divergence.<br><br>Confirmed:<br>**Ingrid Carlbom, Professor, Department of Information Technology, Uppsala University, Sweden** |
| 14.50-15:20 | **Solution Provider Presentation**<br>PHILIPS | **Solution Provider Presentation**<br><br>For sponsorship opportunities please contact Steve Hambrook at steve@globalengage.co.uk |
| 15:20-15:50 | **Scalable Adaptive Graphic Environment: A Simple, Web-Based Collaborative Environment for Visualizing Complex Medical Data**<br>There is increasing demand to collaborate intra and inter-institutionally for patient care, medical education, and translational research while the types and complexity of the data continue to grow. The Scalable Adaptive Graphics Environment (SAGE) is an open-source collaborative windowing environment that runs in a web browser and the cloud, taking advantage of HTML5 and the high-performance graphics and networking capabilities of modern web browsers. We have developed and tested a Whole-Slide Image (WSI) viewer for SAGE, combining very-high resolution microscopic images with other medical data. We have successfully used this system teaching medical students and resident's pathology, conducting multidisciplinary tumor boards, and holding collaborative multi-institutional conferences across a dozen sites simultaneously. We have also demonstrated how this system could be used to revolutionize pathology consultations.<br><br>Confirmed:<br>**Bruce Levy, MD, CPE, Associate Professor of Pathology, Associate Chief Health Information Officer, Director of Clinical Informatics Fellowship, University of Illinois at Chicago** | **Imaging Nanoscale Nuclear Architecture for early Prediction of Cancer Progression**<br>Early cancer detection currently relies on screening the entire at-risk population. Without a proper tool to predict which patients will actually progress into malignancy, frequent, invasive surveillance of patients at risk for developing cancer carries financial, physical, and emotional burdens. We developed a new method to predict cancer progression risk via nanoscale nuclear architecture mapping (nanoNAM) of unstained FFPE tissue sections based on the intrinsic density alteration of nuclear structure rather than the amount of stain uptake. We also demonstrated the great potential for nanoNAM in predicting cancer progression risk, and suggest that further validation in a multi-center study with larger cohorts may eventually advance this method to become a routine clinical test.<br><br>Confirmed:<br>**Yang Liu, Associate Professor, Department of Medicine and Department of Bioengineering Director, Biomedical Optical Imaging Laboratory** |
| 15.50-16.40 | **Afternoon Refreshments**<br>**Poster Presentation Sessions**<br>**One-to-One Meetings** | |
| 16.40-17.10 | **Solution Provider Presentation**<br>faxitron® | **Solution Provider Presentation**<br><br>For sponsorship opportunities please contact Steve Hambrook at steve@globalengage.co.uk |
| 17.10-17.35 | **Presentation title not yet released**<br><br>Reserved:<br>**Ulysses Balis, Professor, Informatics; Director, Division of Informatics; Department of Informatics, University of Michigan** | **Rapid, High Dimensional Immunohistochemistry with Next Generation Instrumentation for Multiplexed Ion Beam Imaging**<br>Multiplexed ion beam imaging (MIBI) is a novel approach to immunohistochemistry (IHC) that uses secondary ion mass spectrometry (SIMS) and antibodies labeled with elemental mass tags to visualize dozens of proteins simultaneously in a single tissue section. MIBI is compatible with formalin-fixed, paraffin-embedded (FFPE) tissue specimens and can achieve single molecule sensitivity across a five log dynamic range. To permit broader use, we have constructed a novel imaging mass spectrometer capable of super resolution imaging and 100-fold faster sample throughput than previously reported. These tools are being used to comprehensively enumerate immune cell populations in normal and neoplastic solid tissues, to construct classifiers for predicting disease progression in pre-invasive cancer lesions, and to develop quantitative IHC assays to be used in a clinical setting.<br><br>Confirmed:<br>**Michael Angelo, Assistant Professor, Stanford University** |

| | | |
|---|---|---|
| 17.35-18.00 | **Presentation title not yet released**<br><br>Confirmed:<br>**Jonathan Bury, Consultant Histopathologist, Sheffield Teaching Hospitals NHS Foundation Trust, UK** | **Moving Towards Digital Image Analysis Solutions for Patient Tailoring in Immuno-oncology**<br>Digital tissue image analysis (tIA) is growing in importance in the quantification of immune-oncology (IO) endpoints where it is being used in prospective patient enrollment assays for clinical trials. IO studies often require assessment of tissue endpoints which are difficult, if not impossible, to score via manual pathology evaluation. We will discuss considerations for utilizing IHC-tIA assays for patient enrichment in the CLIA environment for early stage IO trials and beyond. Topics include a discussion of optimized workflow for large retrospective analysis, rapid turn-around workflow within the regulated environment for clinical trials, the potential needs for multiplexing and associated wet assay and analysis considerations, and tIA analysis strategies pertinent to IO studies.<br><br>Confirmed:<br>**Famke Aeffner, DVM PhD DACVP**<br>**Associate Director of Pathology; Flagship Biosciences Inc., Westminster CO, USA.** |
| 18.00-18.30 | **Panel Discussion: 'What are the future directions for Digital Pathology?'**<br><br>**Chair: Keith Kaplan, Chief Medical Officer, Corista**<br>**Invitations to senior representatives x4** | |
| | **Chairman's Closing Remarks and End of Day 1** | |
| 18.30-19.30 | **Drinks Reception** | |

Global Engage Ltd

## Day 2 2nd Digital Pathology Congress – 14-15 July 2016, Philadelphia, PA

| | |
|---|---|
| 08.00-08.40 | **Morning Coffee**<br>**One to One Meetings** |
| 08.40-09.10 | **Keynote Address: Digital Pathology: Bridging Radiology and Molecular "Omics" Worlds**<br>Traditional biology generally looks at only a few aspects of an organism at a time and attempts to molecularly dissect diseases and study them part by part with the hope that the sum of knowledge of parts would help explain the operation of the whole. Rarely has this been a successful strategy to understand the causes and cures for complex diseases. The motivation for a systems based approach to disease understanding aims to understand how large numbers of interrelated health variables, gene expression profiling, its cellular architecture and microenvironment, as seen in its histological image features, its 3 dimensional tissue architecture and vascularization, as seen in dynamic contrast enhanced (DCE) MRI, and its metabolic features, as seen by Magnetic Resonance Spectroscopy (MRS) or Positron Emission Tomography (PET), result in emergence of definable phenotypes. At the Center for Computational Imaging and Personalized Diagnostics at Case Western Reserve University, we have been developing computerized knowledge alignment, representation, and fusion tools for integrating and correlating heterogeneous biological data spanning different spatial and temporal scales, modalities, and functionalities. The long term research objectives are to explore via efficient computational and pattern recognition methods, the existence and correspondence of biological patterns across heterogeneous data scales and modalities. An understanding of the interplays of different hierarchies of biological information from proteins, tissue, metabolites, and imaging will provide conceptual insights and practical innovations that will profoundly transform people's lives.<br><br>Confirmed:<br>**Anant Madabhushi, Professor & Director, Centre for Computational Imaging & Personalized Diagnostics, Departments of Biomedical Engineering, Urology, Pathology, Radiology, General Medical Sciences, Electrical Eng & Computer Sci, Member, Case Comprehensive Cancer Centre, Case Western Reserve University, USA** |
| 09.10-09.40 | **Keynote Address:**<br>**FDA – Regulatory Update**<br><br>Confirmed:<br>**Yun-Fu Hu, Deputy Director, Division of Molecular Genetics and Pathology at CDRH** |
| 9.40- 10.10 | **Solution Provider Presentation** |

For sponsorship opportunities please contact Steve Hambrook at steve@globalengage.co.uk

| | | |
|---|---|---|
| 10.10– 11.20 | **Morning Refreshments<br>Poster Presentation Sessions<br>One-to-One Meetings** | |
| | **Digital Pathology** | **Veterinary Digital Pathology** |
| 11.20-11.45 | **Presentation title not yet released**<br><br>Confirmed:<br>**Jaime Rodriquez-Canales, Assistant Professor, Director Immunohistochemistry and Digital Pathology Laboratory, MD Anderson Cancer Centre** | **Presentation title not yet released**<br><br>Confirmed:<br>**James Collins, Professor, Director Diagnostic Pathology Laboratory, University of Minnesota** |
| 11.45-12.10 | **Designing an Extensible Viewing and Analysis Platform for Digital Pathology.**<br>Whole slide images (WSIs) are very large and it is not practical to load an entire image into memory. In order to overcome this problem, WSI file formats encode the data as non-overlapping tiles at varying resolutions and viewing software makes use of this structure by determining which part of the image is currently being viewed and at what resolution in order to load the appropriate tiles into memory. In this talk I will discuss the advantages and challenges of integrating WSI analysis algorithms into this dynamic, multiscale framework. As an example I will show how an API for the freely available Sedeen viewer allows a software developer to create plugins with linkages between the user interface, the image data and the analysis algorithm; this API will be further developed as part of an NIH funded project to build a Pathology Image Informatics Platform.<br><br>Confirmed:<br>**Anne Martel, Associate Professor, University of Toronto, Senior Scientist at Sunnybrook Research Institute, Toronto** | **Presentation title not yet released**<br><br>Confirmed:<br>**Erin Brannick, Assistant Professor; Director, CANR Comparative Pathology Laboratory, University of Delaware,** |
| 12.10-12.35 | **Presentation title not yet released**<br><br>Confirmed:<br>**David Gutman, Assistant Professor, Biomedical Informatics, Emory University** | **Veterinary Pathology Presentation** |
| 12.35-13.05 | **Solution Provider Presentation**<br><br>For sponsorship opportunities please contact Steve Hambrook at steve@globalengage.co.uk | **Solution Provider Presentation**<br><br>For sponsorship opportunities please contact Steve Hambrook at steve@globalengage.co.uk |
| 13.05-14.05 | **Lunch<br>Poster Presentation Sessions<br>Scheduled One-to-One Meetings** | |
| 14.05-14.30 | **Presentation title not yet released**<br><br>Reserved:<br>**Nasir Rajpoot, Associate Professor, Head, Bio image Analysis Lab, Warwick University, UK** | |
| 14.30-14.55 | **Presentation title not yet released**<br><br>Reserved:<br>**Doug Bowman, Associate Scientific Fellow, Takeda** | |
| 14.55-15.20 | **Healthcare Presentation** | |
| 15.20-15.45 | **Healthcare Presentation** | |
| 15.45-16.15 | **Afternoon Refreshments** | |
| 16.15 | **Conference Close** | |