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

http://www.globalengage.co.uk/digital-pathology-asia.html

Global Engage is pleased to announce the Digital Pathology Congress Asia, which will be held on September 21-22 2015 in Kuala Lumpur, Malaysia at the Renaissance Kuala Lumpur Hotel. This international conference attracting delegates from not only Malaysia, but the entire region including Singapore, Japan, China, Korea and even as far afield as USA, Europe and UAE is part of their successful Drug Discovery series. The series includes events on precision medicine, synthetic biology, human microbiome and digital PCR as well as being a sister event to their successful European Digital Pathology Congress which attracted over 260 people and 25+ exhibitor companies and the USA Congress which is scheduled to take place in San Diego in June 2015. http://www.globalengage.co.uk/events/

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 150 industry & academic experts working in all areas of Pathology this two 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.

This will be achieved through 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 three separate tracks which will examine the topics below.

## Conference Agenda

**Digital Pathology - Strategy and Technology**

- Introduction, benefits & future developments of Digital Pathology
- Implications on pathology practice
  - Uses in education and training
- Converting to/ integration of digital pathology
- Technology advances in digital pathology
- Digital Pathology project updates
- Standardisation in Digital Pathology
- Quality control and improvement
- Validation
- Panel Discussion – Overcoming barriers in adoption of Digital pathology

**Pathology Informatics**

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

**Digital Image Analysis**

- Overcoming challenges in image analysis
  - Image standardization
  - Compression techniques
- Analysis software
- Automated image analysis
- Quantitative image analysis research
- Visualization methods for diagnosis and prognosis
- Annotation tools
- Pattern recognition
- Scoring
- Algorithm development / Image analysis algorithms

**Digital Pathology Applications and Research Case Studies**

Research case studies utilizing digital pathology in

- Clinical trials
- Diagnosis
- Diagnostics
- Next generation sequencing
- Biomarker analysis /research / quantification
- Tissue-based research / imaging
- Biobanking
- Precision / personalised medicine
- Image analysis

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**For more information please contact Steve Hambrook, Conference Director, Global Engage, steve@globalengage.co.uk +44 (0)1865 849841**

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# Digital Pathology Congress Asia - Confirmed Speakers

- Congress Chair - Dato' Dr Norain Karim, Consultant Pathologist & Head of Pathology Department, Hospital Raja Permaisuri Bainun, Ipoh, Perak. Deputy President of the International Academy of Pathology/Malaysian Division
- Anil Parwani, Professor and Vice Chair-Anatomic Pathology, Department of Pathology, The Ohio State University, USA
- Johan Lundin, Research Director and Professor of Medical Technology, Institute for Molecular Medicine Finland (FIMM), Helsinki, Finland and Karolinska Institute, Sweden
- Afzan Adam, Lecturer and Researcher, Pattern Recognition Research Group, Center For Artificial Intelligence Technology (CAIT), University Kebangsaan Malaysia
- Chen Zhou, Clinical Associate Professor, Department of Pathology, British Columbia Cancer Agency, University of British Columbia, Vancouver, Canada
- Will Howat, Head of Histopathology/ISH, Cancer Research UK
- Ichiro Mori, Professor Department of Pathology, Mita Hospital, International University of Health and Welfare, Japan
- Daniel Racoceanu, Professor, Sorbonne Universités, Université Pierre et Marie Curie (UPMC), France & Adjunct Professor, National University of Singapore (NUS)
- Kazuaki Nakane, Professor, Faculty of Medicine, Osaka University, Japan
- Tomoo Itoh, Professor, Department of Diagnostic Pathology, Kobe University Hospital, Japan
- Hwee Kuan Lee, Head of Division, Senior Principal Investigator, Imaging Informatics division, Bioinformatics Institute, A* Star, Singapore
- Junya Fukuoka, Chair/Professor, Department of Pathology, Nagasaki University Graduate School of Biomedical Sciences, Japan
- Oi Harada, Board Certified Pathologist, Showa University Hospital Breast Center, Japan
- Peter Gardner, School of Chemical Engineering and Analytical Science, Professor of Analytical and Biomedical Spectroscopy, Manchester Institute of Biotechnology (MIB), The University of Manchester, UK
- Ryan Hutchinson, Fellow in Molecular Pathology, University of Melbourne, Raphaël Maree, GIGA Research and Montefiore Institute, University of Liège (Belgium), and Quantitative Image Analysis Unit, Pasteur Institute, Paris (France)
- Nicholas Trahearn, Bioimage Analysis Lab, Department of Computer Science, Warwick University
- Sheng-Lung Huang, Professor, Department of Electrical Engineering, and Graduate Institute of Photonics and Optoelectronics, National Taiwan University, Taiwan
- Raphaël Maree, GIGA Research and Montefiore Institute, University of Liège (Belgium), and Quantitative Image Analysis Unit, Pasteur Institute, Paris, France,
- Hammad Qureshi, Assistant Professor IT University-Punjab, Pakistan & Majmaah University, KSA
- Glenn Edwards, National Medical Director, Pathology, St John of God, Australia
- Matthew Di Franco, Post-doc Research Assistant, Quantitative Hybrid Imaging Group, Center for Medical Physics and Biomedical Engineering, Medical University of Vienna, Austria
- Kate Lillard Tunstall, Chief Scientific Officer, Indica Labs Inc..
- John Wellbank, Philips Digital Pathology Solutions, Global Head of Sales & Service

## Venue

**Renaissance Kuala Lumpur Hotel**
Corner of Jalan Sultan Ismail and
Jalan Ampang,
Kuala Lumpur
50450
Malaysia

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.



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# Digital Pathology Congress Asia

**Day 1 – Monday, September 21, 2015, Kuala Lumpur, Malaysia**

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| **08.00-08.50** | **Registration & Coffee – Ballroom A** |
| **08.50-08.55** | **Global Engage Welcome Address – Ballroom B** |
| **08.55-09.00** | **Congress Chair Welcome Address – Ballroom B**<br>**Dato' Dr Norain Karim, Consultant Pathologist & Head of Pathology Department, Hospital Raja Permaisuri Bainun, Ipoh, Perak. Deputy President of the International Academy of Pathology/Malaysian Division** |
| **09.00-09.40** | **Keynote Address**<br>**The Emergence of Digital Pathology: Opportunities and Challenges**<br>Digital pathology has grown dramatically in the last 10 years and has created opportunities to not only support the triaging of difficult cases among specialists within an organization, but also enable remote pathology consultations with external organizations across the world. Many applications have emerged and as a result digital pathology is increasingly being used in both clinical and research areas. The focus of this talk will be on the number of exciting developments in this field in recent times and the challenges that lie ahead.<br><br>Confirmed:<br>**Anil Parwani, Professor and Vice Chair-Anatomic Pathology, Department of Pathology, The Ohio State University, USA** |
| **09.40-10.10** | **Keynote Address**<br>**Scalable Semantic Integrative Microscopy Framework for High-Content Imaging in Digital Pathology**<br>Being able to bring justified and traceable responses has become an ethical priority for the patients and the healthcare professionals in modern medicine.<br>After initiating – during the last few years, - a semantic cognitive virtual microscopy approach for routine-pathology-compliant protocols dedicated to mitotic count and nuclear atypia and some pioneer international benchmarking initiatives (Int. Conf. Pattern Recognition ICPR 2012 : MITOS – Tsukuba, Japan and ICPR 2014 : MITOS & ATYPIA – Stockholm, Sweden), our present priority is to design an integrative microscopy framework able to combine reasoning, medical ontologies, knowledge-based WSI (Whole Slide Images) exploration rules with scalable imaging protocols. Therefore, we focus on two families of methods based on a strong mathematical formalism: one inspired by Marked Point Process and on based on Point-set Mathematical Morphology. In addition to be scalable and efficient, these methods are very promising with regard to integrative approaches as the big data challenge, both inherent to the future of Digital Pathology.<br><br>Confirmed:<br>**Daniel Racoceanu, Professor, Sorbonne Universités, Université Pierre et Marie Curie (UPMC), France & Adjunct Professor, National University of Singapore (NUS)** |
| **10.10-10.40** | **Solution Provider Presentation**<br>**Analysis of Immune Cell Populations in Tumours and Whole Tissue Sections Using HALO**<br>Tumour cells are able to escape host immunosurveillance using various molecular mechanisms. Therapies designed to overcome inhibitory mechanisms and boost the host anti-cancer immune cell response are available for a growing number of different cancer types. Increases in immune cell populations, particularly in the invasive tumour margin, have been associated with tumour regression in responding patients. Quantitative analysis data from HALO may be used to investigate new therapeutic targets or to identify patients most likely to respond to specific therapies.<br><br>Confirmed:<br>**Kate Lillard Tunstall, Chief Scientific Officer, Indica Labs Inc.**<br>indica labs<br>informed pathology |
| **10.40-11.40** | **Morning Refreshments – Ballroom A**<br>**Poster Presentation Sessions – Ballroom A** |
| | **Stream Chair – John Wellbank, Philips Digital Pathology Solutions, Global Head of Sales & Service – Ballroom B** |
| **11.40-12.05** | **Primary Diagnosis and Education Using WSI at Sign-out Session**<br>Recent progress of whole slide imaging (WSI) enables the primary diagnosis and also gives us large benefits to ease the discussion and education. We have installed three different WSI systems for day-to-day diagnosis/education covering two separate hospitals. All in-house biopsy and small surgery cases such as EMR of our university and remote hospital and all consultation cases from all over Japan have been scanned, and consultants share the processes of applying diagnosis with pathology residents/fellows and undergraduate students at sign-out session. All preliminary diagnoses given at sign-out session have been further double checked by conventional glass slides to finalize the cases. For remote hospital, all these process have been done through VPN connection. Here, we introduce our trial and talk our future prospects.<br><br>Confirmed:<br>**Junya Fukuoka, Chair/Professor, Department of Pathology, Nagasaki University Graduate School of Biomedical Sciences, Japan** |
| **12.05-12.30** | **Image Analysis of Large Scale Breast Cancer TMA Datasets**<br>The use of image analysis for breast cancer, particularly for ER, PR and HER2, has already been established by many studies on small cohorts of breast cancer. However, as breast cancer has a high degree of heterogeneity, there is a need to stain and analyse for potential markers across larger cohorts obtainable only through multicentre collaborations. The validity of running analysis on multiple cohorts has not been established. We analysed 8267 breast cancers in TMA's from 9 centres for 5 markers; ER, PR, HER2, CK5/6 & EGFR as part of the Breast Cancer Association Consortium (BCAC), and determined the need for standardisation of protocols including TMA design, staining and scoring before the adoption of image analysis for large scale studies can be performed.<br><br>Confirmed:<br>**Will Howat, Head of Histopathology/ISH, Cancer Research UK** |

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| **12.30-12.55** | **Elucidating EGFR-Mediated Insights in Metastatic Colorectal Cancer Through Pathology Integromics**<br>EGFR IHC has been shown not to be predictive of response to such therapies, and although not routinely performed in clinical practice remains on the cetuximab license. A total of 2,445 patients enrolled in the MRC COIN Trial, the complete series of TMAs were scanned at 40x on an Aperio ScanScope CS2 within the Northern Ireland Molecular Pathology Laboratory. Using Definiens Developer XD an automated workflow was created and an automated, interactive clinical trial data repository was developed. The automated EGFR algorithm was highly concordant with visual scores (r2 0.98 p <0.0001). We have demonstrated the utility of quantitative digital pathology for biomarker evaluation and combining this with clinicopathological and "omic" data for clinical trial translational studies.<br>**This Translational Research Study Was Carried Out Within The Center For Cancer Research And Cell Biology, The Queens University Belfast**<br><br>Confirmed:<br>**Ryan Hutchinson, Fellow in Molecular Pathology, University of Melbourne, Australia** |
| **12.55-14.00** | **Lunch – Ballroom A**<br>**Poster Presentation Sessions – Ballroom A** |
| **14.00-14.25** | **Immunohistochemical Diagnosis and its Informatics**<br>Immunohistochemistry is an essential component of modern pathology, which yields a great deal of information in addition to morphological data. However, the number of antibodies is increasing day by day, making it difficult to fully understand the details of each of these antibodies. I established in 2005 a website named "Immuuno", which contains a database of useful antibodies for diagnostic pathology, end explains their advantages and drawbacks. The database already comprises over 200 kinds of antibodies. In addition, various tips for staining and other useful information are included. This information is currently in Japanese only, but is now being translated into English. I believe this website will be beneficial for pathologists and technicians worldwide.<br><br>Confirmed:<br>**Tomoo Itoh, Professor, Department of Diagnostic Pathology, Kobe University Hospital, Japan** |
| **14.25-14.50** | **Computer Vision and Deep Learning for Image-Based Diagnostics**<br>Digital microscopy and whole-slide imaging opens up possibilities to support the analysis of digitally scanned biological samples with advanced machine learning and computer vision. The paradigm shift from human expert based interpretations to computerized readout has huge implications for clinical medicine and life-science research in general. Substantial improvements of speed, throughput and consistency of image-based analytics is expected in the field of digital microscopy.<br>To meet the extreme increase in the amount of image data available for analysis, there is a need to complement and support the human experts with new tools. Foremost, advances in image analysis based on deep learning and artificial neural networks allow for development of a large number of analytical tools in the form of algorithms for personalized medicine, drug development and point-of-care diagnostics.<br>Examples are presented from analysis of the tumor microenvironment in cancer research and in diagnostic support for infectious diseases.<br><br>Confirmed:<br>**Johan Lundin, Research Director and Professor of Medical Technology, Institute for Molecular Medicine Finland (FIMM), Helsinki, Finland and Karolinska Institutet, Stockholm, Sweden** |
| **14.50-15.15** | **A New Method for Detecting Regions of Interest from the WSI of Colonic Digital Images**<br>Computer-assisted diagnosis, *The Betti numbers*, Histology of Colon. A region of interest (ROI) is a part of tissue that contains important information for diagnosis. Since malignant tumors grow in the innermost layer, most ROIs will be located in the colonic mucosa and will be an accumulation of tumor cells and/or integrated cells with distorted architecture. An area with unusual contact degree is expected to be a potential ROI. Homology is a mathematical concept that can quantify the contact degree. By using this concept, we propose a new method to detect ROIs. Although we have many false positives and there is a possibility of missing undifferentiated types of cancer, this system is very effective for detecting ROIs. Because our method can detect ROIs very quickly, it could be used to screen WSIs.<br><br>Confirmed:<br>**Kazuaki Nakane, Specially Appointed Associate Professor, Faculty of Medicine, Osaka University, Japan** |
| **15.15-15.45** | **Solution Provider Presentation**<br>**Introduction to the implementation of world's first fully digital histopathology lab**<br>An overview of the phased approach to full digitization that was followed at LabPON, Netherlands, including important considerations and ongoing challenges.<br><br>Confirmed:<br>**John Wellbank, Philips Digital Pathology Solutions, Global Head of Sales & Service**<br>PHILIPS |
| **15.45-16.35** | **Afternoon Refreshments – Ballroom A**<br>**Poster Presentation Sessions – Ballroom A** |
| **16.35-17.05** | **Computer Assisted Diagnosis in Digital Pathology: Opportunities and Challenges**<br>Rise of Computerized Decision Support Systems (CDSSs) have started to make an impact on almost all aspects of clinical and non-clinical decision making in the medical field. Healthcare and how medicine is practiced is changing at a very fast pace. Digital pathology offers great opportunities for the use of CDSSs. They can potentially lead to more cost-effective, comprehensive and effective analysis of pathology data. However, there are many challenges that need to be overcome before such systems can be used across the board. The impediments to such systems include technological, social, ethical and cultural. In this talk, I would elaborate on the opportunities and challenges faced by CDSSs in Digital Pathology particularly in their use, adaptation and impact in the developing world.<br><br>Confirmed:<br>**Hammad Qureshi, Assistant Professor IT University-Punjab, Pakistan & Majmaah University, KSA** |

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| **17.05-17.30** | **Grading Dysplasia in Barrett's Oesophagus Virtual Pathology Slides**<br>Dysplasia grading in Barrett's Oesophagus (BO) has been an issue among pathologists worldwide as the morphological changes in tissue are continuous and there is no clear boundary between grades. Thus, have developed a method for automatically grading displasia using extracted textural and spatial features of BO virtual slides. The whole vitual slides were scanned, analysed and filtered at several magnification. A texture-mapping technique called cluster co-occurrency matrix (ccm); that translates the spatial arrangement of tissue texture within a tissue region on the patch-level was develop and contributed to 87.5%, 75.0% and 81.3% accuracy percentage with kappa score 0.75, 0.5 and 0.63 respectively for grading dysplasia into Grade1, Grade3 and Grade5 with binary decision tree models. The consensus grading for the whole virtual pathology slide is calculated and a high agreement score with 0.80 KVwas achieved.<br>Confirmed:<br>**Afzan Adam, Lecturer and Researcher, Pattern Recognition Research Group, Center For Artificial Intelligence Technology (CAIT), University Kebangsaan Malaysia** |
| **17.30-17.55** | **Knowledge Management, Decision Support And The Clinical Pathologist's Role**<br>• Clinical pathologists play a key role in assuring appropriate use of laboratory tests and their application to clinical decision making<br>• The rise of pathology informatics presents an important new opportunity for pathologists<br>• With the right tools, the clinical pathologist in a busy automated laboratory can support test selection, interpretation and patient management<br>• Effective decision support in a high volume environment requires a flexible, customisable and evolutionary approach to clinical knowledge management<br>• Pathologist-managed decision support, providing patient-specific interpretation, has been shown to be effective in modifying requestor behaviour and clinical outcomes<br>Confirmed:<br>**Glenn Edwards, National Medical Director, Pathology, St John of God, Australia** |
| | **Chairman's Closing Remarks and End of Day 1** |
| **17.55-19.00** | **Drinks Reception – Ballroom A** |

# Digital Pathology Congress Asia

**Digital Pathology Congress Asia - Day 2 – Tuesday September 22, 2015, Kuala Lumpur, Malaysia**

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| **08.30-09.00** | **Morning Coffee – Ballroom A** |
| | **Stream Chair- Matthew Di Franco, Post-doc Research Assistant, Quantitative Hybrid Imaging Group, Center for Medical Physics and Biomedical Engineering, Medical University of Vienna, Austria** |
| **09.00-09.35** | **Keynote Address**<br>**Proving Experiments of International Virtual Slide Telepathology Consultation System, Vietnam, China, and Myanmar Trials**<br>• These proving experiments were performed as a part of projects supported by Japanese Ministry of Economy, Trade and Industry<br>• We connected Mita Hospital with Ho-Chi-Minh City/Vietnam, Beijing/China, Yangon/Myanmar, and Hanoi/Vietnam by Teleconference system. Then, observing the same Virtual slide pictures, case conferences were successfully performed.<br>• We are now planning to open the "Ningen-dock", the multiphasic health screening facilities, in these countries using this remote diagnostic imaging system.<br>Confirmed:<br>**Ichiro Mori, Professor, Department of Pathology, Mita Hospital, International University of Health and Welfare, Japan** |
| **09.35-10.05** | **A Nationwide Telepathology Consultation Network in China: Implementation and Result Analysis**<br>• Digital pathology using whole slide imaging could play an important role in pathology consultation, second opinion and quality control for cancer diagnosis in China.<br>• A nationwide telepathology consultation network using internet based telepathology platform (www.mpathology.cn) was implemented in late 2011 in China.<br>• From late 2011 to July 2013, 16,247 pathology cases were submitted using whole slide imaging for consultation and the result were analysed.<br>Confirmed:<br>**Chen Zhou, Clinical Associate Professor, Department of Pathology, British Columbia Cancer Agency, University of British Columbia, Vancouver, Canada** |
| **10.05-10.30** | **Real-Time Remote Consultation/Discussion Beyond the Country Border - Introduction of Our Experience in the Public Seminar in Japan**<br>• We performed the real-time remote consultation/discussions in 2014 and 2015, respectively.<br>• Both were openly held in the public seminar, in front of more than 100 attendees.<br>• Although the distance was more than 5,000km between Japan and Singapore, there was no time lag or delay in practice.<br>Confirmed:<br>**Oi Harada, Board Certified Pathologist, Showa University Hospital Breast Center, Japan** |

**Day 2 – Tuesday, September 21, Kuala Lumpur, Malaysia**

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| **10.30-11.30** | **Morning Refreshments – Ballroom A**<br>**Poster Presentation Sessions – Ballroom A** |
| **11.30-11.55** | **Shedding a Different Light on Disease: An Introduction to Infrared Based Spectral Pathology**<br>Given that the eye is an excellent photon detector and the human brain is one of the most advanced image processing systems known to man it is not surprising that visible light microscopy has been the mainstay of pathological analysis. However significant advances in detector technology and computer processing power make other regions of the electromagnetic spectrum attractive for tissue analysis. In this presentation I will introduce the revolutionary new techniques of infrared based technology that can facilitate detailed tissue analysis. Hyperspectral imaging coupled with sophisticated computer algorithms enable cancerous tissue to be indentified, and graded and in favourable cases and indication of prognosis to be obtained. This techniques lends itself to automation would be particularly useful for screening large numbers of biopsy samples for the common types of cancer.<br><br>Confirmed:<br>**Peter Gardner, Prof & Director of Assessment (CEAS)**<br>**School of Chemical Engineering and Analytical Science, Professor of Analytical and Biomedical Spectroscopy**<br>**Manchester Institute of Biotechnology (MIB), The University of Manchester, UK** |
| **11.55-12.20** | **Automated Prominent Nucleoli Detection**<br>Nucleolar changes in cancer cells are one of the cytologic features important to the tumor pathologist in cancer assessments of tissue biopsies. However, inter-observer variability and the manual approach to this work hamper the accuracy of assessment by pathologists. We propose a computational method for prominent nucleoli pattern detection. Our method is based on a farm of cascades of classifiers similar in design to those used in fact detection.<br><br>Confirmed:<br>**Hwee Kuan Lee, Head of Division, Senior Principal Investigator, Imaging Informatics division, Bioinformatics Institute, A* Star, Singapore** |
| **12.20-12.45** | **Morphometric Profiling for Colorectal Cancer Prognostics**<br>Assessment of colorectal cancer (CRC) tissue slides for prognostic purposes is often done by visual examination by expert histopathologists. However, not only is this process subjective by its very nature, there does not exist a widely accepted system of grading for CRC. I will present our work on the development of an integrated environment for computing tissue morphometric features from whole-slide images of CRC slides. The proposed framework carries tremendous potential for the identification of cancer-related characteristics and provides a more accurate and reproducible means to assess the prognosis of CRC.<br><br>Confirmed:<br>**Nicholas Trahearn, Bioimage Analysis Lab, Department of Computer Science, Warwick University** |
| **12.45-13.45** | **Lunch – Ballroom A**<br>**Poster Presentation Sessions – Ballroom A** |
| **13.45-14.10** | **Collaborative Analysis of Digital Slides Using Cytomine**<br>We will present Cytomine (http://www.cytomine.be/), our web-based software environment for remote and collaborative analysis of gigapixel images.<br>It is an open-source and extensible platform that we are continuously developing since 2010. It is based on modern web and distributed software development methodologies and semantic image analysis using machine learning.<br>We will review its various recent applications to analyze large sets of cytology and histology digital slides in lung, breast, and thyroïd cancer as well as in renal pathology. Recent extensions for education and training will also be presented.<br><br>Confirmed:<br>**Raphaël Maree, GIGA Research and Montefiore Institute, University of Liège (Belgium), and Quantitative Image Analysis Unit, Pasteur Institute, Paris (France)** |
| **14.10-14.35** | **Whole-Slide Imaging Informatics in Clinical Imaging Studies**<br>• Image-based features linking digital histology with in-vivo imaging (e.g. PET, MR)<br>• Detailed tissue annotations for more robust classification and validation<br>• Robust, scalable workflows for generating predictive models in pathology informatics<br><br>Confirmed:<br>**Matthew Di Franco, Post-doc Research Assistant, Quantitative Hybrid Imaging Group, Center for Medical Physics and Biomedical Engineering, Medical University of Vienna, Austria** |
| **14.35-15.00** | **Tissue Segmentation by Quadratic Discriminant Analysis with Cellular Resolution**<br>Full-field optical coherence tomography (FF-OCT) can offer 3D tomogram with submicron resolutions in both the lateral and longitudinal dimensions. After image stitching, tissue, cell as well as organelle information can be viewed in centimeter by centimeter area for histopathological diagnosis. Using the depth dimension (z axis) to extract data features, the lateral 2D tomogram (x-y plane) can be segmented without losing the lateral resolution. As a demonstration, tissues from colorectal cancer and melanoma were adopted for quadratic discriminant analysis. More than 90% of sensitivity and specificity were achieved in general.<br><br>Confirmed:<br>**Sheng-Lung Huang, Professor, Department of Electrical Engineering, and Graduate Institute of Photonics and Optoelectronics, National Taiwan University, Taiwan** |
| **15.00-15.30** | **Afternoon Refreshments – Ballroom A**<br>**Poster Presentation Sessions – Ballroom A** |
| **Conference Close** | |