14-15 November 2016, London, UK

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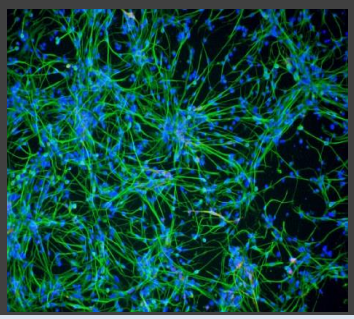


2nd Microscopy Congress

UTILISING MICROSCOPICAL TECHNOLOGIES AS A TOOL FOR PROGRESSING MEDICAL RESEARCH

Building on the success of our 2015 Microscopy Congress in London, Global Engage is pleased to announce the 2nd Microscopy Congress, which will be held on 14-15 November, 2016 in London.

Attracting experts working in all areas of microscopy for biological sciences, including optical, electron and scanning probe microscopy, super-resolution microscopy, 3D imaging, Cryo-EM and CLEM, the conference will examine the latest developments in the technologies and techniques being used for progressing medical research in areas such as diagnostic microscopy, neuroscience, pathology, and developmental biology. The meeting will also focus on image analysis and data handling.

With the significant breakthrough in resolution capabilities brought about by the 2014 Nobel Prize in Chemistry winners, this is an exciting time to be working in microscopy. Not only is it one of the most fundamental techniques used by biologists, but microscopy is also facilitating crucial advances in healthcare and drug discovery, allowing scientists to observe the micro world in ever increasing detail.

Should you be an expert in developing microscopy technologies and platforms, or a scientist using microscopy to further medical research, the conference will be an excellent opportunity to learn, share, discuss and engage with the most current microfluidics research and technology. During the two-day conference, there will be networking breaks to promote interaction with your peers, expert led case study presentations, and a dynamic exhibition room filled with technology providers showcasing their technologies and solutions.

Confirmed Speakers Include:

Peter Friedl
Prof, Dept. Cell Biology, Radboud Univ Nijmegen, Nijmegen, The Netherlands; GU Medical Oncology, The University of Texas, MD Anderson Cancer Center, Houston, TX

Andreas Engel
Professor, Department of Bionanoscience and Kavli Institute of Nanoscience, Delft University of Technology, The Netherlands

Paula da Fonseca
Group Leader, Medical Research Council Laboratory of Molecular Biology, Cambridge, UK

Conference Synopsis

Track One

Instrumentation, Techniques and Developments

- Latest developments in optical and electron microscopy
- Scanning probe microscopy
- TEM/STEM
- Cryo-EM and immersion freezing
- Electron backscatter diffraction (EBSD)
- Advanced fluorescence imaging
- Correlative light electron microscopy (CLEM)
- Confocal microscopy
- Digital / virtual microscopy
- 3D imaging and tomography
- Advances in sample preparation techniques
  - Labelling strategies
- Light sheet microscopy
- High-throughput microscopy
- Holography

Super Resolution Microscopy

- Latest techniques and developments in super resolution microscopy
- Deterministic super-resolution
- STED microscopy
- Stochastic super-resolution – BALM, (d)STORM, PALM, SPDM, FPALM, etc.
- Structured illumination

Track Two

Microscopy Applications in the Biological Sciences

- Diagnostic microscopy and endoscopy
- Live cell imaging / medical imaging / *in vivo* imaging / intravital microscopy
- Neuroscience
- Stem cell biology
- Deep tissue imaging
- Pathology and oncology
- Biomedical engineering
- Developmental biology / monitoring cell growth
- Structural biology
- Single molecule imaging
- Imaging of nuclear nanostructure

Image Processing and Data Analysis

- Quantitative imaging
- Image processing techniques
- Bioimage analysis tools
- Image metadata analysis
- Big data handling
- Image resolution and biomedical information

Confirmed Speakers:

Nadine Peyriéras
Head, BioEmergences Laboratory, CNRS, Gif-sur-Yvette, France

Alberto Diaspro
Director of the Department of Nanophysics Istituto Italiano di Tecnologia, Italy

Christian Eggeling
Professor of Molecular Immunology, MRC Human Immunology Unit & Scientific Director, Wolfson Imaging Centre Oxford, Weatherall Institute of Molecular Medicine, University of Oxford, UK

Niek Van Hulst
ICREA Professor, ICFO – the Institute of Photonic Sciences, Barcelona, Spain

Steven Lee
Royal Society University Research Fellow, Department of Chemistry, University of Cambridge, UK and Fellow of Sidney Sussex College, UK

Gail McConnell
Professor, Chair of Biophotonics, SIPBS, University of Strathclyde, UK

Emmanuel Beaurepaire
Research Director, Laboratory for Optics and Biosciences, École Polytechnique, CNRS, Inserm, University of Paris–Saclay, France

Erik Meijering
Associate Professor of Bioimage Analysis, Erasmus University Medical Center Rotterdam, The Netherlands

Mervyn Miles
Professor of Physics, Director of the Centre for Nanoscience & Quantum Information, University of Bristol, UK

Chi-Kuang Sun
Distinguished Professor, Graduate Institute of Photonics and Optoelectronics and Department of Electrical Engineering, National Taiwan University

Christoph Cremer
Professor, Group Leader, Super Resolution Microscopy, Institute of Molecular Biology, University of Mainz; Institute of Pharmacy and Molecular Biotechnology, Heidelberg University, Germany

Ben Giepmans
Principal Investigator, University Medical Center Groningen, The Netherlands

[CHAIR]
Rodopi Stamatiou
Post Doctorate Researcher, Medical Department, School of Health Science, University of Thessaly, Greece

[CHAIR]
Aneta Gandjeva
Histology Manager, MRC Prion Unit Institute of Neurology, University College London, UK

Christian Colliex
CNRS Emeritus Research Director, Solid State Physics Laboratory, Université Paris-Sud, Orsay, France

Paul French
Professor, Photonics Group, Physics Department & Vice Dean (Research) for the Faculty of Natural Sciences, Imperial College London, UK

Paula da Fonseca
Group Leader, Medical Research Council Laboratory of Molecular Biology, Cambridge, UK

Thomas Huser
Professor of Physics, Biomolecular Photonics, Department of Physics, University of Bielefeld, Germany

James R Smith
Senior Research Fellow, School of Pharmacy and Biomedical Sciences, University of Portsmouth, UK

Musa Mhlanga
Honorary Research Professor, Division of Chemical Systems & Synthetic Biology, Department of Integrative Biomedical Sciences, University of Cape Town, South Africa

Eeva-Liisa Eskelinen
University Lecturer, Adjunct Professor, Department of Biosciences, University of Helsinki, Finland

Andreas Engel
Professor, Department of Bionanoscience and Kavli Institute of Nanoscience, Delft University of Technology, The Netherlands

Alessandra Cambi
Professor, Chair of the Cell Biology Department, Radboud University Medical Center, Nijmegen, The Netherlands

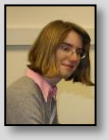
Victoria Birkedal
Associate Professor, Department of Chemistry and Interdisciplinary Nanoscience Center, Aarhus University, Denmark

Philip Tinnefeld
Professor, Institute of Physical and Theoretical Chemistry, TU Braunschweig, Germany

Alberto Luini
Principal Investigator, Institute of Protein Biochemistry, National Research Council of Italy

[CHAIR]
Yves Mely
Professor and Director, Laboratory of Biophotonics and Pharmacology, CNRS, France

Martin Booth
Professor in Engineering Science, University of Oxford, UK



Susan Cox
Royal Society University Research Fellow, Randall Division of Cell and Molecular Biophysics, King's College London, UK

Ardan Patwardhan
Coordinator – cellular structure & PDBe production, European Molecular Biology Laboratory, European Bioinformatics Institute, Wellcome Genome Campus, Hinxton, UK

Deborah Kelly
Assistant Professor, Virginia Tech Carilion Research Institute, USA

Peter Friedl
Professor, Dept. Cell Biology, Radboud Univ Nijmegen, Nijmegen, The Netherlands; GU Medical Oncology, The University of Texas, MD Anderson Cancer Center, Houston, TX, USA

Ralf Jungmann
Group Leader, Molecular Imaging and Bionanotechnology, LMU Munich and MPI of Biochemistry, Germany

Peter Dedecker
Assistant Professor, Department of Chemistry, University of Leuven, Belgium

Peter J. Peters
Director of The Maastricht Multimodal Molecular Imaging institute, Professor of Nanobiology, Maastricht University, The Netherlands

Theo Lasser
Professor, Head of Laboratoire d'Optique Biomedicale, EPFL, Switzerland

Abraham Koster
Professor, Electron Microscopy, Department of Molecular Cell Biology, Leiden University Medical Center, The Netherlands

Rafael Carazo Salas
Professor, School of Cellular and Molecular Medicine, University of Bristol, UK

Grégory Giannone
CNRS Research Director, Interdisciplinary Institute for Neuroscience, University of Bordeaux, France

[CHAIR]
Ida Daniela Perrotta
Chief Technician and Laboratory Manager of Transmission Electron Microscopy (TEM) Unit, Centre for Microscopy and Microanalysis (CM2), Department of Biology, Ecology and Earth Science - University of Calabria, Italy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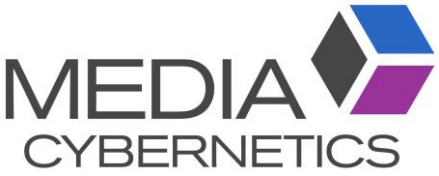
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08.00-09.00	**Registration & Refreshments** Room: AVIATOR LOBBY	
09.00-09.10	**Global Engage Welcome Address** Track Chair's Opening Remarks: **Yves Mely, Professor and Director, Laboratory of Biophotonics and Pharmacology, CNRS** Room: LINDBERGH 1 & 2	
09.10-09.45	Keynote Address: **3DEM: Tool of choice for efficient high-resolution analyses of cellular components** In the past three years the 3DEM community has deposited 1800 structures of which ~500 led to atomic models. Successful 3DEM groups are embedded in molecular- or cell-biological environments and operate state-of-the-art equipment. They use 3DEM methods to solve the structure of protein complexes, or to reveal the molecular anatomy of cells. 3DEM fill gaps in understanding molecular machines that are either too large or too heterogeneous for 3D crystallization. Cryo-electron tomography provides entirely new insights into the working of cells with their complicated compartments. Prerequisites for success concern experience in sample preparation, data acquisition, and data processing. After summarizing these prerequisites, we concentrate on the preparation of cellular substructures, and the correction of the optical artefacts produced when imaging tilted samples. With these developments we anticipate to enrich the toolbox for 3DEM, and to open avenues for efficient studies of close to native cellular components. Confirmed: **Andreas Engel, Professor, Department of Bionanoscience and Kavli Institute of Nanoscience, Delft University of Technology, The Netherlands**	
09.45-10.10	**Multi-signal approaches in STEM for addressing issues of biological interest** in collaboration with Marta de Frutos and Odile Stéphan We describe novel possibilities in high resolution imaging, elemental analysis by electron energy-loss spectroscopy (EELS) and photon emission (cathodoluminescence – CL) simultaneously generated by the angström-sized electron probe in a scanning transmission electron microscope (STEM). They deliver complementary information (structural, compositional, functional) from a biological thin section. As these specimens are generally highly beam-sensitive, several routes are presently explored to reduce the damaging effects of the primary electron dose. Confirmed: **Christian Colliex, CNRS Emeritus Research Director, Solid State Physics Laboratory, Université Paris-Sud, Orsay, France**	
10.10-10.35	**Advances in adaptive optics for high resolution microscopy** Adaptive optics (AO) has been implemented in microscopes to compensate the effects of system imperfections and specimen induced aberrations. This is particularly important when focusing deep into tissue where the cumulative effect of focusing through the refractive index structure of the specimen causes significant wavefront distortion. These AO systems employ a dynamic element to correct aberrations, restoring image quality. Adaptive optics has been demonstrated in a range of microscope modalities including conventional widefield microscopes as well as laser scanning systems with various applications in biomedical imaging and other areas. Adaptive microscopy has most recently been developed for super-resolution microscopes – or nanoscopes – which enable resolutions smaller than the diffraction limit of light. We report on a range of recent advances in this field. Confirmed: **Martin Booth, Professor in Engineering Science, University of Oxford, UK**	
10.35-11.45	**Morning Refreshments** Even Numbered Poster Presentation Sessions One-to-One Partnering Meetings Room: AVIATOR LOBBY	
	Track 1 - Instrumentation, Techniques and Developments Room: LINDBERGH 1 & 2	**Track 2 – Microscopy Applications in the Biological Sciences** Room: BLERIOT
	Morning Track Chair: **Yves Mely, Professor and Director, Laboratory of Biophotonics and Pharmacology, CNRS**	
11.45-12.10	**Multiphoton imaging of developing tissues: multicolor and light-sheet approaches** Modern issues in systems biology require tissue-scale measurements of multiple cell parameters. Multiphoton fluorescence microscopy is invaluable for tissue studies with its ability to provide subcellular resolution in thick/live samples. However, current methods are still limited in terms of speed, depth, non-toxicity, and ability to probe multiple parameters. We will discuss some recent developments, namely efficient combination of fluorescence with coherent contrasts (THG-SHG), multicolor two-photon excitation using wavelength mixing and its application to brainbow imaging, and rapid two-photon imaging using light-sheet excitation. We will illustrate the benefit of these strategies for high-information content imaging of developing tissues. Confirmed: **Emmanuel Beaurepaire, Research Director, Laboratory for Optics and Biosciences, École Polytechnique, CNRS, Inserm, University of Paris–Saclay, France**	**High resolution cryo-EM as a new tool for therapeutic drug discovery** • Current advances are revolutionising cryo-EM, which nowadays can be used to determine protein structures at resolutions until recently only achievable by crystallography or NMR methods. • Our cryo-EM structure of an inhibitor bound human proteasome, where the conformation of the ligand at the different active sites was resolved, serves as proof of principle that cryo-EM is an emerging alternative tool for the structural study of protein/ligand interactions, with advantages compared with other methods. • We determined the cryo-EM structure of the *Plasmodium falciparum* proteasome bound to a prototype anti-malaria drug. This contributed to the validation of the *Plasmodium* proteasome as a viable anti-malaria target, elucidated the molecular basis for its specific targeting and is guiding the development of new ligands with potential as new generation antimalarials. Confirmed: **Paula da Fonseca, Group Leader, Medical Research Council Laboratory of Molecular Biology, Cambridge, UK**

12.10-12.35	**Three-dimensional optical mesoscopy with a giant objective lens** We have developed a novel lens system called the Mesolens, which achieves an N.A. of nearly 0.5 at a magnification of only 4x. When compared with a standard 4x objective, its lateral resolution is 2.5 to 5 times better and its depth resolution (which is vital for confocal or multi-photon microscopy) is 10x better. This lens provides, for the first time, good optical sectioning of specimens as large as entire 12.5-day mouse embryos (>5 mm long) with subcellular detail in every developing organ. I will present technical information on the Mesolens, and I will show example 2- and 3-D image datasets of large tissue specimens. Confirmed: **Gail McConnell, Professor, Chair of Biophotonics, SIPBS, University of Strathclyde, UK**	**ColorEM at nm-resolution in biomedicine** A spectrum of dyes and probes now enable to localize molecules by fluorescence microscopy. With electron microscopy (EM), cellular ultrastructure is studied. Bridging these two in correlated light microscopy and EM (CLEM) opens new avenues. First, probes for CLEM to highlight proteins that are targeted using affinity, or genetically-encoded strategies are discussed. Next, large scale EM ("nanotomy") to visualize macromolecules and organelles in the context of tissues will be highlighted, including via www.nanotomy.org to open-access the ultrastructure in several projects, including in Type 1 diabetes research. Finally, a new angle to enable color-EM at nm-scale in tissue will be presented, combining determination of localization using the electron beam and detection of photons. These new approaches will help to better understand how molecules (mal)function in biology. Confirmed: **Ben Giepmans, Principal Investigator, University Medical Center Groningen, The Netherlands**
12.35-13.00	**Fluorescence lifetime imaging for high content analysis - from automated microscopy to tomography and endoscopy** Fluorescence lifetime imaging (FLIM) can contrast different molecular species, including fluorophore labels or endogenous autofluorescence that provide label-free readouts, or it can map variations in the local molecular environment of fluorophores. FLIM be utilised in high content analysis (HCA) for automated cell-based assays and FLIM readouts can be utilised in preclinical studies and clinical diagnosis. We are developing an open source FLIM technology platform that spans from high-speed FLIM HCA for assays of protein interactions, e.g. via FRET, in automated optically sectioned multiwell plate readers, through mesoscopic FLIM implemented with optical projection tomography for in vivo longitudinal studies of live disease models such as zebrafish, to FLIM endoscopy and clinical diagnosis using in vivo multiphoton multispectral FLIM tomography. I will present a range of these applications of FLIM and highlight our open source software tools including openFLIM-HCA, a µManager plugin for automated multiwell plate FLIM data acquisition, and FLIMfit which provides rapid global fitting capabilities and is available as an OMERO client. Confirmed: **Paul French, Professor, Photonics Group, Physics Department & Vice Dean (Research) for the Faculty of Natural Sciences, Imperial College London, UK**	**Correlating video- multiplexing immuno-FRET- and electron-microscopy to visualize large multiprotein cellular complexes** 1) Cellular functions depends on the assembly/disassembly of multi-protein complexes at the time and cellular location of interest. We have developed a correlative microscopy approach to detect such complexes. 2) This method involves the: a) characterization of the process of interest by video microscopy, and b) fixation at a time of choice and analysis of the protein complex of interest by multiplexing immuno-FRET. 3) This requires: the labeling of couples of components using Fabs reacted with a single donor/ multiple acceptor system of fluorophores for long-range FRET ('antenna' system); detection of the FRET signal; photodestruction of the acceptor followed by labeling of another acceptor and repetition of the operation (multiplexing). This procedure allows the 'mapping' of complex components during processes such as trafficking, signaling, motility and others. Confirmed: **Alberto Luini, Principal Investigator, Institute of Protein Biochemistry, National Research Council of Italy**
13.00-13.25	**Optical nanoantennas for nanoscale imaging of ultrafast dynamics in single biomolecules** In this presentation I will address some recent nanoscale microscopy technologies: • Optical antennas to enhance and direct the fluorescence of single molecules • Scanning antenna microscopy for few-nanometer resolution optical imaging • Broadband lasers to track femtosecond dynamics in single molecules I will illustrate this with concrete nm-fs imaging on single light harvesting complexes. Confirmed: **Niek F. van Hulst, ICREA Professor, ICFO – the Institute of Photonic Sciences, Barcelona, Spain**	**AFM investigations of brain tumour cells** Glioblastoma multiforme (GBM) is a highly invasive (WHO grade IV) brain tumour that has a very poor prognosis for patients with the condition (median survival 14.2 months). We have used atomic force microscopy (AFM) to investigate the cytoskeleton of GBM cells. In the first study described, CD44, a transmembrane glycoprotein receptor for extracellular matrix molecules, was knocked down in GBM cells and were found to be less migratory than wild type GBMs as well as being less stiff (Young's Modulus = 0.56 ± 0.50 kPa cf. 1.93 ± 2.86 kPa; $p < 0.001$). In a second study, AFM showed the heights of lamellipodia (leading-edge cell peripheries) of GBMs to be greater than those of non-neoplastic astrocytes ($p < 0.001$). A low-grade (WHO grade I) glioma cell line had an equivalent height to the astrocytes ($p > 0.05$). Both studies have implications for monitoring and/or controlling cellular invasion in brain tumours. Confirmed: **James R Smith, Senior Research Fellow, School of Pharmacy and Biomedical Sciences, University of Portsmouth, UK**
13.25-14.25	**Lunch** Room: AVIATOR LOBBY	
	Afternoon Track Chair: **Niek F. van Hulst, ICREA Professor, ICFO – the Institute of Photonic Sciences, Barcelona, Spain** Room: LINDBERGH 1 & 2	Afternoon Track Chair: **Ida Daniela Perrotta, Chief Technician and Laboratory Manager of Transmission Electron Microscopy (TEM) Unit, Centre for Microscopy and Microanalysis (CM2), Department of Biology, Ecology and Earth Science - University of Calabria, Italy** Room: BLERIOT

14.25-14.50	**High-speed and 4π holographic AFM** • Atomic force microscopy images the 3D topography of surfaces at the nanoscale, including in liquid environments so that it is capable of following biomolecular and materials-science processes. • Limitations with conventional AFM are its speed and the force imposed by the tip on the sample. Overcoming these will be illustrated with movies of processes occurring on the surface of lipid membranes. • The fact that AFM tip scans essentially in a plane is also an intrinsic limitation. Samples are chosen, therefore, to be generally planar in nature. However, many important structures are complex in three-dimensions. An AFM capable of non-planar scanning from any direction (4π sr) has been developed based on holographic optical trapping. Confirmed: **Mervyn Miles, Professor of Physics, Director of the Centre for Nanoscience & Quantum Information, University of Bristol, UK**	**Nanoscale architecture and mesoscale dynamics of cytoskeletal structures involved in cell adhesion and protrusion.** Podosomes are dynamic integrin- and actomyosin-based multi-molecular assemblies involved in cell adhesion, protrusion, substrate sensing and extracellular matrix degradation. Expressed in a variety of cells, podosomes have an actin core of ~0.5um and organize in different mesoscale spatial arrangements such as circular belts in bone-degrading osteoclasts, rosettes in endothelial cells and well-defined large clusters in antigen-presenting cells. The molecular mechanisms regulating formation and maintenance of these mesoscale arrangements are still poorly defined. This lecture will describe our efforts to exploit super resolution microscopy and image correlation spectroscopy to study the nanoscale architecture of individual podosomes as well as formation and organization of mesoscale podosome clusters. Confirmed: **Alessandra Cambi, Professor, Chair of the Cell Biology Department, Radboud University Medical Center, Nijmegen, The Netherlands**
14.50-15.15	**Zooming in on cells and macromolecules with correlative light-electron microscopy** In correlative light and electron microscopy (CLEM) for life science applications imaging modalities are combined. Fluorescence light microscopy (FM) enables the imaging of dynamic events in relatively large fields of view exploiting the wide range of fluorescent markers available. Complementary information can be obtained with electron microscopy (EM) revealing morphology and structural macromolecular arrangements in their cellular context in relatively narrow fields of view at nm-scale resolution. An overview of CLEM workflows will be illustrated by results obtained on a variety of biological systems, including antibiotics-producing bacteria, and blood-disease related organelles. In addition, new labelling approaches and cryo-EM results obtained at the Netherlands Center of Electron Nanoscopy (NeCEN) will be discussed. Confirmed: **Abraham Koster, Professor, Electron Microscopy, Department of Molecular Cell Biology, Leiden University Medical Center, The Netherlands**	**Super-resolution microscopy in biomedical research: Challenges and Potentials** Understanding the complex interactions of molecular processes underlying the efficient functioning of the human body is one of the main objectives of biomedical research. Scientifically, it is important that the applied observation methods do not influence the biological system during observation. The most suitable tool that can cover all of this is optical far-field fluorescence microscopy. Yet, biomedical applications often demand coverage of a large range of spatial and temporal scales, and/or long acquisition times, which can so far not all be covered by a single microscope and puts some challenges on microscope infrastructure. Taking immune cell responses and plasma membrane organization as examples, we outline these challenges but also give new insights into possible solutions. Confirmed: **Christian Eggeling, Professor of Molecular Immunology, MRC Human Immunology Unit & Scientific Director, Wolfson Imaging Centre Oxford, Weatherall Institute of Molecular Medicine, University of Oxford, UK**
15.15-15.40	**Beauty and benefits of cryo-EM; our new endeavors in vitrification of proteins and cells** We develop new methods for sample application and vitrification and implement them into a novel platform. The apparatus can be fed with pre-mounted autogrids, circumventing the need for postmounting. For single particle analysis (SPA), minute amount of samples can be applied directly onto a supported film. For cellular work, sample carriers with cells grown on them will be exposed to an airknife that removes excess medium. Sample evaporation will be minimized by a feedback loop that maintains the sample near its dewpoint calculated from the ambient temperature and humidity. Vitrification will be accomplished by jet-streaming liquid ethane onto the centre of the grid. I will be happy to share our latest results. Confirmed: **Peter J. Peters, Director The Maastricht Multimodal Molecular Imaging institute, Professor of Nanobiology, Maastricht University, The Netherlands**	**Clinical in vivo higher harmonic generation microscopy for pre-/post-operative imaging with a histopathological accuracy** We have previously developed a virtual biopsy imaging system based on the non-invasive multi-harmonic generation microscopy (HGM) with a femtosecond Cr:frosterite laser. The system aims to histo-pathologically detect subclinical life-threatening disease and to assist diagnostic decision making for clinically evident diseases. In this presentation, I will briefly review our recent clinical trial results on human skin lesions. This system enables 3D subsurface imaging in vivo without the need for surgical approach. High penetration, sub-micron resolution, noninvasiveness, and high sensitivity to melanin make HGM a unique tool for pre-surgical differential diagnosis and therapy monitoring on pigmented lesions. Pre-scanning of the lesion with this system also reduces sampling errors in physical biopsy and helps surgeons to determine the safety margins. Confirmed: **Chi-Kuang Sun, Distinguished Professor, Graduate Institute of Photonics and Optoelectronics and Department of Electrical Engineering, National Taiwan University**
15.40-16.30	**Afternoon Refreshments** Odd Numbered Poster Presentation Sessions Room: AVIATOR LOBBY	

16.30-16.55	**Real-time imaging of biological events using Liquid Cell-Electron Microscopy** A fundamental goal in biomedical research is to improve our understanding of human health and disease processes. An essential component of this goal is developing new technologies that permit us to peer into the active world of cells and molecules. Here, we describe the use of Liquid Cell-Electron Microscopy (LC-EM) to illuminate the behaviors of biological entities enclosed in a liquid environment during EM imaging. Recent applications for LC-EM include the real-time recordings of therapeutic nanoparticles interacting with brain tumor cells and changes in the molecular intricacies of viral pathogens. We expect further applications of LC-EM to open new avenues for studying progressive biological events in liquid at high resolution. Confirmed: **Deborah Kelly, Assistant Professor, Virginia Tech Carilion Research Institute, USA**	**Three-dimensional visualization of forming autophagosomes with high-pressure freezing and freeze substitution** Autophagy is a fundamental housekeeping pathway that recycles organelles and aggregate-prone proteins in eukaryotic cells. Nascent autophagosomes, also called phagophores, nucleate from a subdomain of the endoplasmic reticulum (ER). We showed using electron tomography (ET) of aldehyde-fixed cells that phagophores form membrane contacts with ER, ER exit sites, Golgi cisternae, endosomes/lysosomes, and mitochondria (Biazik et al. 2015a, b). We currently focus on improving the ultrastructural preservation of the samples by using electron tomography (ET) of high-pressure frozen, freeze substituted (HPF-FS) cells. HPF-FS preserves small vesicles better than conventional aldehyde fixation, and we have observed contacts between the phagophore and these vesicles. Further, better preservation of microtubules is achieved with HPF-FS, allowing us to analyze the relationship of the phagophores and cytoskeletal filaments at high resolution. Confirmed: **Eeva-Liisa Eskelinen, University Lecturer, Adjunct Professor, Department of Biosciences, University of Helsinki, Finland**
16.55-17.30	Day 1 Closing Keynote Address: **Multi-parameter intravital microscopy of cancer invasion and therapy response** The tumor microenvironment supports both cancer cell invasion and growth/survival programs, with impact on response to therapy and prognosis. Using intravital near-infrared/infrared multiphoton microscopy, we have established preclinical sarcoma and melanoma models for spontaneous cancer cell invasion and distant metastasis to lymph nodes and lungs. Using multi-color 3D detection with subcellular resolution, we identify the tissue niches enabling growth and invasion, as well as therapy resistance. Once populated by cancer cells, these invasion niches enabled tumor cell survival and relapse of disease even after high-dose hypofractionated radiotherapy. This survival niche was particularly sensitive to adoptive CTL-based therapy, as consequence of particularly high local CTL accumulation and CTL-mediated apoptosis induction in tumor cells. This establishes tumor-stroma interaction niches of overlapping invasion and resistance programs which can be exploited by combinatorial therapy. Confirmed: **Peter Friedl, Professor, Dept. Cell Biology, Radboud Univ Nijmegen, Nijmegen, The Netherlands; GU Medical Oncology, The University of Texas, MD Anderson Cancer Center, Houston, TX, USA**	
17.30	Chair's Closing Remarks and End of Day 1	
17.30-18.30	**Networking Drinks Reception** Room: AVIATOR LOBBY	

Venue

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

A discounted group rate will be 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.

	Morning Track Chair: **Aneta Gandjeva, Histology Manager, MRC Prion Unit Institute of Neurology, University College London, UK** Room: LINDBERGH 1 & 2	
09.00-09.35	Keynote Address: **Super-resolution light microscopy: challenges for medical research** Using super-resolution microscopy (SRM) approaches, both optical resolution (smallest distance measureable between two adjacent point sources) and structural resolution (smallest structural detail determined) can be enhanced very substantially. Here, we shall review some examples of the present state of the art of SRM in medical research and discuss the challenges still to be met to introduce such SRM technologies on a broader scale in medical applications, such as large field of view imaging; long working distances compatible with super-resolution of 3D extended objects; "nanoimaging" of multiple molecular target types ("multicolor SRM"); high throughput SRM to register thousands of cells in a short time, e.g. for tissue diagnostics or pharmaceutical research; as well as the development of fast & reliable data evaluation modes ("Instant Nanoimaging"). Confirmed: **Christoph Cremer, Professor, Group Leader, Super Resolution Microscopy, Institute of Molecular Biology, University of Mainz; Institute of Pharmacy and Molecular Biotechnology, Heidelberg University, Germany**	
	Track 1 - Super-Resolution Microscopy Room: LINDBERGH 1 & 2	**Track 2 - Image Processing and Data Analysis** Room: BLERIOT
	Morning Track Chair: **Aneta Gandjeva, Histology Manager, MRC Prion Unit Institute of Neurology, University College London, UK**	Morning Track Chair: **Rodopi Stamatiou, Post Doctorate Researcher, Medical Department, School of Health Science, University of Thessaly, Greece**
09.40-10.10	**Converging technologies for super resolution microscopy** The motivation of the Nobel Prize in Chemistry 2014 "for the development of fluorescence super resolved microscopy" pushed, more than before, the flowering of variations on the theme (Diaspro A., Il Nuovo Saggiatore, 2015). I will discuss some converging techniques for fluorescence super resolution microscopy in tune with a recently discussed roadmap for developments (Hell SW et al, J.Phys.D, 2015). Both "super-resolved ensemble fluorophore microscopy" and as "super-resolved single fluorophore microscopy", also known as targeted and stochastic read out methods, will be considered. The main focus is related to on imaging techniques that permit direct measurements of the live-cell molecular dynamics at the nanometer scale including the study of thick biological samples from the utilization of liquid lenses to the exploitation of the fluorescence life-time. Light-sheet architectures and original data processing approaches will be discussed (Diaspro A. and Van Zandvoort M.A.M.J., Super-resolution Imaging in Biomedicine, CRC press, 2016). Confirmed: **Alberto Diaspro, Director of the Department of Nanophysics, Istituto Italiano di Tecnologia, Italy**	**Public archiving of bio-imaging data – perspectives, challenges and outlook** The open and public access to structural data is of utmost importance for validation, development, testing and training. The Electron Microscopy Data Bank (EMDB) archive is the authoritative source for 3DEM data. In 2014 PDBe started EMPIAR – the electron microscopy pilot image archive to store raw image data related to EMDB structures. The challenge here has been in dealing with the storage and transfer of large datasets. EMPIAR is now fully functional with routine uploads and downloads in the Terabyte range. The success of EMPIAR has spurred interest in wider bio-imaging circles as a working example of image archiving and possibly even a prototype for a broader bio-imaging archive. I will describe EMPIAR and discuss the prospects for public archiving of bio-imaging data. Confirmed: **Ardan Patwardhan, Coordinator – cellular structure & PDBe production, European Molecular Biology Laboratory, European Bioinformatics Institute, Wellcome Genome Campus, Hinxton, UK**
10.10-10.35	**Super-resolution microscopy with DNA-PAINT** Super-resolution fluorescence microscopy is a powerful tool for biological research, but obtaining multiplexed images for a large number of distinct target species in whole cells and beyond remains challenging. Here we use the transient binding of short fluorescently labeled oligonucleotides (DNA-PAINT, a variation of point accumulation for imaging in nanoscale topography) for simple and easy-to-implement multiplexed super-resolution imaging that achieves sub-5-nm spatial resolution in vitro on synthetic DNA structures. We report a molecular counting approach, called qPAINT, which relies on the predictable kinetics of DNA hybridization to count integer numbers of spatially unresolvable targets. Finally, we demonstrate whole cell imaging using DNA- and Exchange-PAINT and optical sectioning, now allowing DNA-based super-resolution imaging deep inside cells, away from the glass coverslip. Confirmed: **Ralf Jungmann, Group Leader, Molecular Imaging and Bionanotechnology, LMU Munich and MPI of Biochemistry, Germany**	**Structural dynamics of nucleic acids by single molecule FRET microscopy** Single molecule Förster Resonance Energy Transfer (FRET) microscopy is a powerful technique to study conformational changes and dynamics of biomolecules with nanometre and even sub-nanometer resolution. We will present a comprehensive data analysis platform that can be used in conjunction with total internal reflection fluorescence microscopy experiments and discuss our investigations of the structural dynamics of chosen nucleic acid structures. Confirmed: **Victoria Birkedal, Associate Professor, Department of Chemistry and Interdisciplinary Nanoscience Center, Aarhus University, Denmark**
10.35-11.25	**Morning Refreshments** Odd and Even Numbered Poster Presentation Sessions One-to-One Partnering Meetings Room: AVIATOR LOBBY	

11.25-11.50	**DNA in new roles: quantifying and improving superresolution** DNA is a programmable polymer with emerging applications beyond genetic information. We use DNA nanostructures to quantify superresolution and to measure displacements in a single-molecule mirage. Finally, DNA is used to optimally exploit the photon budget of single-molecule localizations. Confirmed: **Philip Tinnefeld, Professor, Institute of Physical and Theoretical Chemistry, TU Braunschweig, Germany**	**Imaging dynamics of living cells by super-resolved structured illumination microscopy in real-time** Super-resolved structured illumination microscopy (SR-SIM) images fluorescently labeled cells in 3 dimensions with a resolution approaching half the diffraction limit. Reconstructing images obtained by this method is tedious and time-consuming. I will discuss approaches to overcoming this limitation that enable us to image and observe living cells and their dynamics in real-time. Confirmed: **Thomas Huser, Professor of Physics, Biomolecular Photonics, Department of Physics, University of Bielefeld, Germany**
11.50-12.15	**Super-resolution optical fluctuation imaging** Super-resolution optical fluctuation imaging (SOFI) allows 3D sub-diffraction fluorescence microscopy of living cells. When analyzing the acquired image sequence with an advanced correlation method, i.e. high-order cross-cumulant analysis, super-resolution in all three spatial dimensions can be achieved. In this talk we will introduce the underlying principles of SOFI and point to its differences and shared characteristics with prominent SMLM methods. Novel SOFI 3D imaging for life cell imaging, a combined PALM-SOFI framework used for imaging the dynamics of focal adhesion with additional insights into molecular parameters will be shown to demonstrate the unique potential of SOFI. Confirmed: **Theo Lasser, Professor, Head of Laboratoire d'Optique Biomedicale, EPFL, Switzerland**	**In vivo and in toto imaging for the reconstruction of multilevel dynamics in animal embryonic morphogenesis** We approach the understanding of Deuterostome early embryogenesis through the quantitative analysis and biomechanical modeling of cell dynamics from multiscale *in vivo* imaging data. The automated reconstruction of the cell lineage tree, annotated with nucleus and membrane segmentation, provides measurements for cell behavior: displacement, division, shape and contact changes. This quantitative data is used to derive statistical models for key parameters and calculate descriptors for tissue deformations. Confronting numerical simulations derived from multi-agent based biomechanical models with empirical measurements extracted from the reconstructed digital specimens is the basis for testing biological hypotheses. Further correlating cell behavior, tissue biomechanics and biochemical activities by comparing the patterns revealed by cell fate, kinematic descriptors or gene expression, is a step toward the integration of multi-level dynamics. Confirmed: **Nadine Peyriéras, Head, BioEmergences Laboratory, CNRS, Gif-sur-Yvette, France**
12.15-12.40	**Robust subdiffraction imaging using SOFI and photochromic labels** Sub-diffraction imaging of live cells labeled with genetically-encoded labels continues to be challenging. In this talk I will discuss our work in developing live cell sub-diffraction imaging by combining superresolution optical fluctuation imaging (SOFI) with engineered genetically-encoded probes. We have focused both on improving the itself, but also on developing improved "smart" photochromic fluorescent proteins. In this talk I will discuss our research progress in enhancing the temporal resolution of SOFI imaging while also providing reliability estimates for the obtained images [1]. I will then present our progress in engineering and understanding improved fluorescent proteins with properties specifically tailored to sub-diffraction imaging. In particular I will discuss our recent rsGreens [2], which display robust optical performance while also expressing well in E. coli and HeLa cells. Since our rsGreens are based on EGFP, they should be widely useful in existing constructs. Confirmed: **Peter Dedecker, Assistant Professor, Department of Chemistry, University of Leuven, Belgium**	**Large-scale 3D neuron reconstruction from optical microscopy images** Characterizing the 3D morphology of individual neurons across brain regions and in multiple species is fundamentally important for understanding the connectivity and functionality of neuronal circuits. Research in this area is increasingly relying on microscopic imaging but is hampered by the lack of robust systems for fast and accurate reconstruction of the dendritic and axonal arbors of neurons from the image data. We discuss ongoing efforts in developing advanced solutions for neuron reconstruction from optical microscopy images to enable systematic analysis and comparison of neuronal morphology. In particular we give an update of the BigNeuron project, a worldwide community effort to define and advance the state of the art of neuron reconstruction, including the development of a data resource and benchmark of open-source software tools. Confirmed: **Erik Meijering, Associate Professor of Bioimage Analysis, Erasmus University Medical Center Rotterdam, the Netherlands**

12.40-13.05	**Multidimensional super-resolution imaging** Super-resolution microscopy allows biological systems to be studied at the nanoscale, but has been restricted to providing only positional information. Here, we show that it is possible We have developed a multi-dimensional super-resolution (md-SR) imaging technique to perform multi-dimensional super-resolution imaging to determine both the localization position and the environmental properties of single-molecule single-molecule fluorescent emitters. The method, termed sPAINT, presented here exploits the solvatochromic and fluorogenic properties of nile red to extract both the emission spectrum and the position of each dye molecule simultaneously enabling to enable the mapping of the hydrophobicity of biological structures. We first validated this sPAINT method by studying synthetic lipid vesicles of known composition. We then applied it to both to measure super-resolve the hydrophobicity of amyloid fibrils and oligomersaggregates implicated in neurodegenerative diseases, and of the plasmathe hydrophobic changes in mammalian cell membranes of mammalian cells. Our technique is easily implemented by inserting a transmission diffraction grating into the optical path of a localization-based super-resolution microscope, which enables all the necessary information to be extracted simultaneously from a single image plane. Confirmed: **Steven Lee, Royal Society University Research Fellow, Department of Chemistry, University of Cambridge, UK and Fellow of Sidney Sussex College, UK**	**Wiring the genomic circuits that control cells by microscopy based pheno-genomics & Big Data** Understanding how complex phenotypic traits arise from the genome is both the promise and challenge of modern biology. It has the potential to identify the origin of many diseases and inspire Precision Medicine strategies to combat them. Automated high-throughput microscopy-based technologies and Big Data analytics provide increasingly important tools to understand how genotype engenders phenotype. In this talk, I will present examples of how my group has pioneered those technologies to systematically discover new gene functions and reconstruct cell biological regulatory networks at scale. I will also describe how we have helped generate novel tools and resources to make biological microscopy-derived Big Data accessible by the community, in particular the Image Data Repository, a next-generation community platform for biological image data access, Integration, and dissemination. Confirmed: **Rafael Carazo Salas, Professor, School of Cellular and Molecular Medicine, University of Bristol, UK**
13.05-14.05	**Lunch** Room: AVIATOR LOBBY Afternoon Chair: **Deborah Kelly, Assistant Professor, Virginia Tech Carilion Research Institute, USA**	
14.05-14.30	**Dyp-FISH: Dynamic Patterned FISH to Interrogate mRNA and Protein Subcellular Localization Profiles** A large number of RNAs exhibit tightly controlled localization patterns specific to particular cell types, which can act as determinants of protein localization patterns through processes such as local translation. Here we describe the development of Dyp-FISH, an approach to investigate the relationship between mRNA and corresponding protein distributions over time by combining micropatterning of cells with Nipkow disk confocal microscopy at high resolution. We introduce a range of analytical techniques for the nascent field of spatially resolved "omics" for quantitatively interrogating single molecule RNA FISH data in combination with protein immunolabeling. Strikingly, our results show that micropatterning of cells reduces variation in subcellular mRNA and protein distributions, allowing the characterization of their localization and dynamics with high reproducibility. The method reveals patterns of clustering, strong dependency of mRNA-protein localization on MTOC orientation and interdependent dynamics globally and at specific subcellular locations. We establish a robust approach that is broadly applicable to a wide range of systems. We extend DYP FISH to reveal biologically insightful and novel RNA-protein relationships in muscle development and translational repression. Confirmed: **Musa Mhlanga, Honorary Research Professor, Division of Chemical Systems & Synthetic Biology, Department of Integrative Biomedical Sciences, University of Cape Town, South Africa**	
14.30-14.55	**Super-resolution microscopy: a window for integrin spatiotemporal and mechanical regulation** Integrin-mediated cell adhesion to the extracellular matrix and mechano-transduction are involved in critical cellular functions such as migration, proliferation and differentiation, and their deregulation contributes to pathologies such as cancer. Yet the molecular events controlling integrin biochemical and mechanical activation within adhesion sites (FAs) are still not understood. We unravel the key spatiotemporal molecular events leading to integrins activation by their main activators talin and kindlin in mature FAs. We performed SPT combined with PALM (sptPALM) and super-resolution microscopy to study integrins, talin and kindlin displacements and distributions outside versus inside mature FAs. We demonstrated that FAs are specialized platforms priming integrins immobilization and that talin and kindlin use different mechanisms to reach integrins. Confirmed: **Grégory Giannone, CNRS Research Director, Interdisciplinary Institute for Neuroscience, University of Bordeaux, France**	
14.55-15.20	Closing Address: **Information in localisation microscopy** Localisation microscopy is a powerful tool for imaging structures at the nanoscale, but its utility is limited by the time it takes to acquire the data needed for a super-resolution image. While analysing higher density images can improve the speed at which the data required for a super-resolution reconstruction is acquired, there are limits to the speed which can be achieved. Unlike in conventional fluorescence microscopy, these limits depend on the structure of the sample, which affects how quickly the information necessary to create an image of a certain resolution can be transmitted through the optical system. The theoretical limits will be discussed, and the effect on live cell experiments demonstrated. Confirmed: **Susan Cox, Royal Society University Research Fellow, Randall Division of Cell and Molecular Biophysics, King's College London, UK**	
15.20	**Chair's Closing Remarks and Conference Close**	
15.20	**Afternoon Refreshments**	

	Title	Principal Author(s)	Affiliation
1	Rapid FLIM: the new and innovative method for ultra-fast imaging of biological processes	Sandra Orthaus-Mueller, Ben Kraemer, Astrid Tannert, Tino Roehlicke, Michael Wahl, Hans-Juergen Rahn, Felix Koberling and Rainer Erdmann	PicoQuant GmbH, Rudower Chaussee 29, 12489 Berlin, Germany
2	Studying lipid droplets in human skeletal muscle by immunofluorescence microscopy	Anne Gemmink[1], Sabine Daemen[1], Helma J Kuijpers[2], Gert Schaart[1], Marc AMJ van Zandvoort[2], Patrick Schrauwen[1], Matthijs KC Hesselink[1]	[1]Department of Human Biology and Human Movement Sciences and [2]Department of Genetics and Cell Biology – Molecular Biology, Maastricht University, The Netherlands
3	Charge contrast imaging (CCI) operating mode in a variable pressure scanning electron microscope to document fungal interaction with materials	Flavia Pinzari[1,2], Javier Cuadros[2]	[1]Consiglio per la ricerca in agricoltura e l'analisi dell'economia agraria. Centro Agricoltura Ambiente. Via della Navicella 2-4, 00184 Rome, Italy [2]Natural History Museum, Cromwell Road, SW7 5BD London, UK
4	Visualizing mitochondrial network dynamics with confocal and STED microscopy	Sabine Daemen[1], Anne Gemmink[1], Helma J.H. Kuijpers[2], Gert Schaart[1], Patrick Schrauwen[1], Marc A.M.J. van Zandvoort[2,3], Matthijs K.C. Hesselink[1]	[1]Department of Human Biology and Movement Sciences, [1]NUTRIM School for Nutrition and Translational Research in Metabolism, and [2]Department of Genetics & Cell Biology, division Molecular Cell Biology, Cardiovascular Research Institute Maastricht; Maastricht University Medical Centre+, Maastricht, The Netherlands. [3]Institute for Molecular Cardiovascular Research IMCAR, Universitätsklinikum Aachen, Pauwelstrasse 30, Aachen, Germany.
5	Multiharmonic microscopy using nonlinear nanocrystals	V. Kilin, J. Riporto, A. Demierre, C. Schmidt, A. Rogov, J-P. Wolf, L. Bonacina	University of Geneva, Group of applied physics, Biophotonics, Geneva, Switzerland
6	Confocal microscopy as a promising tool to predict the antimicrobial efficacy of chitosan nanodroplets.	Nicole Finesso[1], Anna Luganini[2],Giuliana Banche[3], Narcisa Mandras[3], Valeria Allizond[3], Monica Argenziano[4], Chiara Magnetto[5], Daniela Scalas[3], Janira Roana[3], Giuliana Giribaldi[1], Caterina Guiot[6], Roberta Cavalli[4], Adriano Troia[5], Vivian Tullio[3], Anna Maria Cuffini[3], Mauro Prato[3,6]	[1]Dipartimento di Oncologia, Università degli Studi di Torino, Torino, Italy [2]Dipartimento di Scienze della Vita e Biologia dei Sistemi, Università degli Studi di Torino, Torino, Italy [3]Dipartimento di Scienze della Sanità Pubblica e Pediatriche, Università degli Studi di Torino, Torino, Italy [4]Dipartimento di Scienza e Tecnologia del Farmaco, Università degli Studi di Torino, Torino, Italy [5]Istituto Nazionale di Ricerca Metrologica, Torino, Italy [6]Dipartimento di Neuroscienze, Università degli Studi di Torino, Torino, Italy

7	Investigation of the nuclear pore complex plasticity by dSTORM super-resolution microscopy	Julien Sellés[1], May Penrad-Mobayed[2], Cyndélia Guillaume[1], Alicia Fuger[1], Florian Fevet[3], Orestis Faklaris[2] and Fabien Montel[1]	1: Laboratoire Matière et Systèmes Complexes - UMR 7057, CNRS/Université Paris Diderot, Paris, France 2: Institut Jacques Monod – UMR 7592, CNRS/Université Paris Diderot, Paris France 3: Institut interdisciplinaire pour les neurosciences – UMR 5297, CNRS/Université de Bordeaux, Bordeaux, France
8	Electron microscopy sample preparation from nanoliter volumes	S. A. Arnold, S. Albiez, A. Syntychaki, N. Opara, A. Bieri, H. Stahlberg, T. Braun	Swiss Nanoscience Institute and Center for Cellular Imaging and NanoAnalytics, University of Basel
9	Application of structured illumination microscopy (SIM) in studying mitochondrial structure and function	Benjamin Gottschalk; Wolfgang Graier	Medical University of Graz; Institute of Molecular Biology and Biochemistry
10	Dynamin-2 Stabilizes the HIV-1 Fusion Pore in Resting CD4+ T-Cells	Rory Nolan, Daniel M. Jones , Raquel Sainz-Urruela, Xènia Massana-Muñoz, Hila Novak Kotzer, Michael L. Dustin and Sergi Padilla-Parra	University of Oxford
11	Screening for protein-protein interactions using Förster resonance energy transfer (FRET) and fluorescence lifetime imaging microscopy (FLIM)	Anca Margineanu[1], Jia Jia Chan[2], Douglas J. Kelly[1], Sean C. Warren[1], Delphine Flatters[3], Sunil Kumar[1], Matilda Katan[2], Christopher W. Dunsby[1], Paul M.W. French[1]	[1]Imperial College London, [2]University College London and [3]Université Paris Diderot
12	Multidimensional functional and structural imaging in intravital two photon fluorescence microscopy	Anca Margineanu[1,2], Ian Munro[2], Kamil S. Rosiewicz[1], Tadhg Crowley[1], Anje Sporbert[1], Christopher Dunsby[2], Paul M.W. French[2], Sean C. Warren[3], Volker Siffrin[1]	[1]Max Delbrück Centrum Berlin, Germany, [2]Imperial College London, UK and [3]Garvan Institute Sydney, Australia
13	Novel photoactivable trilobolide-porphyrin conjugates for live-cell imaging and as a tool for phototherapy	Vladimíra Pavlíčková[1], Silvie Rimpelová[1], Michal Jurášek[2], Kamil Záruba[3], Pavel Drašar[2], Tomáš Ruml[1*]	[1]Department of Biochemistry and Microbiology, [2]Department of Chemistry of Natural Compounds, [3]Department of Analytical Chemistry University of Chemistry and Technology Prague, Technická 3, 166 28, Prague 6, Czech Republic
14	Engineering fluorescent proteins and biosensors for biomedical imaging	Fabienne Mérola[1], Pierre Vincent[2], Olivier Gavet[3], Hélène Pasquier[1], Marie Erard[1]	(1) Laboratoire de Chimie Physique, UMR 8000 CNRS, Univ. Paris Sud, Orsay, France (2) Biological Adaptation and Ageing, UMR 8256 CNRS, Univ. Pierre et Marie Curie, Paris, France (3) Cell division and genomic stability, Gustave Roussy, UMR8200 CNRS, Villejuif, France
15	Morphological and in-vitro biological property characterization of ciprofloxacin loaded lyophilized wafers to heal chronic leg and diabetic foot ulcers.	Asif Ahmed, Giulia Getti, Joshua Boateng	University of Greenwich
16	A versatile luminescent iridium complex for correlative 3D SIM and TEM, with pH sensing capability	Jonathan R. Shewring, Luke K. Mckenzie, Stanley W. Botchway, Helen E. Bryant, Elizabeth Baggaley, Julia A. Weinstein	University of Sheffield

17	Quantitative measurements using fluorescence standards	Max B. Scheible, Carsten Forthmann, Jürgen J. Schmied, and Philip Tinnefeld	GATTAquant, TU Braunschweig
18	FRET-enhanced photo-modulatable fluorophore for improved super-resolution microscopy and single-molecule tracking studies	Lisa-Maria Needham, Srinjan Basu, Edward J. R. Taylor, Kai J. Wohlfahrt, David Lando, B. Christoffer Lagerholm, Christian Eggeling, David Klenerman, Ernest D. Laue, Steven F. Lee	University of Cambridge, Department of Chemistry
19	The Use of Point Spread Function Engineering in Structured Illumination Microscopy	Edward Ward, Robert Pal	Durham University, Department of Chemistry
20	3D characterization of complex self-assembled nanostructures.	J. S. Haataja, N.Houbenov, Nonappa, J. Majoinen, T. Löbling, A. Gröschel, O. Ikkala	Aalto University
21	Automated 3D cell quantification and confocal microscopy screening of mouse epidermis for Infection, Immunity and Immunophenotyping Consortium	Keng Hng, Dmitry S. Ushakov, Susana Caetano, Anna Lorenc, Emma Cambridge, Jacqueline K. White, Lucie Abeler-Dörner, Adrian C. Hayday	King's College London
22	Effect of actomyosin cytoskeleton regulators and environmental factors on neurite outgrowth in human pluripotent cell-derived neural progenitor cells	Zoltán Hegyi[1], Edit Hathy[2], András Málnási-Csizmadia[3], János Réthelyi[2,4], Ágota Apáti[1], László Homolya[1]	[1]Institute of Enzymology, Research Center for Natural Sciences, Hungarian Academy of Sciences, Budapest, Hungary [2]National Brain Research Program (NAP) Molecular Psychiatry Research Group, Hungarian Academy of Sciences and Semmelweis University, Budapest, Hungary [3]Molecular Biophysics Research Group of the Hungarian Academy Sciences, Department of Biochemistry, Eötvös Loránd University, Budapest [4]Department of Psychiatry and Psychotherapy, Semmelweis University, Budapest, Hungary
23	Cells and Stripes: A Robust Striation Measure	Roman Stoklasa, Fedor Nikulenkov, Lumír Krejčí, Petr Matula	Centre for Biomedical Image Analysis, Masaryk University, Brno, Czech Republic

Global Engage – Other Related Events

Mass Spectrometry and Proteomics Congress – 14-15 November, 2016, London, UK
http://globalengage.co.uk/mass-spectrometry.html

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

2nd Microfluidics Congress USA – 25-26 July, 2017, Boston, USA
http://www.globalengage.co.uk/microfluidics.html

3rd Digital Pathology Congress USA – 11-12 July, 2017
http://www.globalengage.co.uk/digitalpathology.html