



MH&NS



Maastricht Microscopy Meeting (M³) on Advanced Optical Microscopy
Friday, June 19, 2020

Greepzaal, level 4, azM | Maastricht University Medical Center, P. Debyelaan 25, Maastricht

09.30 – 10.00	Arrival & Coffee
10.00 – 10.10	Welcome by Marc van Zandvoort Dept. of Molecular Cell Biology, Maastricht University Medical Center
10.10 – 10.55	Ludwig Dubois Dept. of Precision Medicine, Maastricht University Medical Center <i>Non-invasive imaging from bench to bedside: a role for optical imaging?</i>
10.55 – 11.40	Andreas Walter Biol maging Austria <i>Correlated Multimodality Imaging Across Scales And Institutes</i>
11.40 – 12.25	Birgit Plochberger Dept. of Medical Engineering, University of Applied Sciences Upper Austria, Linz <i>Touch and watch protein-lipid or lipid-lipid interaction - The combined strength of force and light</i>
12.30 – 13.45	Lunch
13.45 – 14.30	Benjamin Balluff Maastricht MultiModal Molecular Imaging institute (M4I), Maastricht University Medical Center <i>The value of Microscopic Information in Mass Spectrometry Imaging</i>
14.30 – 15.15	Anna Sartori-Rupp Institut Pasteur, Paris <i>Correlative cryo-microscopy: a tool for investigating cellular systems at nanometer resolution</i>
15.15 – 16.00	Eva Pereiro Experiments Divison, Mistral beamline, Barcelona <i>Locating specific structures, molecules or events in cells by correlative cryo 3D X-ray imaging</i>
16.00 - 16.45	Closure & Drinks

Participation is free, but please note that registration is obligatory. You can register by sending an e-mail, including your name and department, to the secretary of Molecular Cell Biology, Maastricht University Medical Center.

Email secr-mcb@maastrichtuniversity.nl

Telephone +31-43-3881351

Dr. Ludwig Dubois
Dept. of Precision Medicine,
Maastricht University Medical Center



I graduated as Master in the Biomedical Science in 2003 at the Catholic University of Leuven (KUL), Belgium. I obtained my PhD in Medical Sciences from the Department of Radiation Oncology at Maastricht University, The Netherlands, in 2010 with the subject: "Noninvasive imaging of tumor hypoxia, hypoxia response and drug delivery: a bridge towards individualized patient treatment", under the supervision of Prof. Dr. P. Lambin and Prof. Dr. B.G. Wouters. Following my PhD I worked as a postdoctoral fellow and biology staff member at Mastro Lab and since then as team leader of translational imaging and therapy studies in the Department of Radiation Oncology. In 2014 I was appointed Assistant Professor and in 2017 Associate Professor at Maastricht University. I have also completed several postgraduate courses on radiation protection and imaging and am licensed to work with experimental animals (Art. 9 certificate) and with radioactivity (Stralingshygiëne Niv. 5b). In 2013 I obtained the ICH-GCP certificate (renewed in 2017) allowing me to perform clinical research. Currently, I am deputy head of The M-Lab, Department of Precision Medicine at Maastricht University.

I (co-)authored >100 peer-reviewed scientific publications (h-index 26 - Web of Sciences, 31 - Google Scholar), 2 patents (WO2011098610 and WO2012087115) and have contributed to scientific meetings (with more than 110 first/senior author abstracts). I have authored more than 60 ethically approved animal studies. I am principal or co-investigator on research grants from national (>M€ 4.5), European (k€ 500), international (k\$ 200) and company (k€ 510) supporting bodies. I have obtained funding from the KWF, the main Dutch funding agency within cancer research, the Worldwide Cancer Research, previously known as AI CR as well as from the private sector (Boehringer, Varian).

My main areas of interest are directed towards translational research in radiation biology with a focus on small animal functional imaging of hypoxia and therapies directed to hypoxia and its downstream targets. For my work in the field of imaging and targeting tumor hypoxia, I was awarded the ESTRO-Varian Juliana Denekamp Award at the 14th International Wolfsberg meeting (2015) on Molecular Radiation Biology/Oncology. I have a recent interest in preclinical radiation-induced healthy tissue toxicity, the combination of radiation with targeted immunotherapy and preclinical dose painting based on FDG, hypoxia or drug accumulation using a small animal irradiator. I am a member of ESTRO (European Society for Therapeutic Radiology and Oncology), SMI (Society for Molecular Imaging), NVRB (Dutch Society for Radiation Biology) and EACR (European Association for Cancer Research). In the last 5 years I was a participant in the European Union 7th Framework Project - Metoxia (2010-14), in the H2020 ITN - Radiate and currently I am co-coordinating the H2020 ITN - THERADNET. This, and previous framework projects, have resulted in a thriving network of long-term collaborations with many international partners, leading to many shared peer-reviewed publications. Nationally, I have collaborations with several Dutch universities, while locally, several collaborations to

enhance preclinical non-invasive research have been set up.

I have supervised >30 Masters students and am currently co-promotor of 20 PhD students (12 completed) and am also responsible for the daily supervision of 2 technicians. I am involved as coordinator, planning group member, lecturer, tutor or supervisor in several education block within the medicine and biomedical science track. I am also invited lecturer at the University of Hasselt. In 2015 I obtained my University Teaching Qualification and in 2016 my English level C2 certificate. I am mentor in the biomedical science track and in medicine I TM track.

Adreas Walter
Director Biol maging Austria



Dr. Andreas Walter studied physics and biophysics at the University of Heidelberg and in Sankt Petersburg on a Baden-Wuerttemberg Scholarship. He spent his research career developing and applying various imaging techniques for life sciences, including fluorescence, super-resolution, cryo-light, transmission electron and scanning electron microscopy, and correlative soft x-ray tomography. After his tenure as a guest scientist at EMBL in Jan Ellenberg's lab to study chromatin organization with fluorescence microscopy-based methods, he did his PhD at the Max Planck Institute of Biophysics in Frankfurt in Werner Kuehlbrandt's lab on method development in electron microscopy. He finished his studies with distinction (summa con laude). Dr. Walter received a DFG (Deutsche Forschungsgemeinschaft) Fellowship to continue his research in imaging at the University of California San Francisco and at Lawrence Berkeley National Lab to correlate soft x-ray tomography and cryo-light microscopy. He is a fellow of the German Scholars Organization. Dr. Walter started his new position as the Director of Austrian Biol maging (CMI) in October 2016. Currently, he is also Chair of the COST Action COMULIS ('Correlated Multimodal Imaging in Life Sciences') with 36 participating countries. He has substantial expertise in leadership of diverse networks and in management of research infrastructures. He is coordinating more than 35 facilities and research groups for preclinical and biological imaging to develop and establish novel multimodal imaging pipelines and to offer these imaging workflows as a service to international scientists from academia or industry. Austrian Biol maging explicitly goes beyond Correlated Light and Electron Microscopy (CLEM) or preclinical hybrid imaging – and hence significantly advances the field of correlated imaging with truly holistic approaches including data handling strategies.

Birgit Plochberger
Dept. of Medical Engineering
Universität of Applied Sciences Upper Austria, Austria



Birgit Plochberger is a professor at the University of Applied Sciences Upper Austria in Linz. She is group leader of the biophysics group with focus on single-molecule and super resolution techniques for two and three-dimensional imaging and surface structuring. Birgit studied technical physics as an undergraduate student and obtained her PhD in Biophysics at the Johannes Kepler University Linz/Austria. Her research is focused on the interface between medical biology and nanoscience. Current research emphasizes atherosclerosis research and drug delivery systems. She developed the instrumentation for the nanoscopic delivery of substances to living biological cells, and the simultaneous optical detection of cargo transfer in an innovative and competitive environment in the group of Prof. Schütz & Prof. Hinterdorfer. Besides, she joined different laboratories in Europe to gain deeper insight into membrane biophysics and biophysical methods. After her stay abroad at the Arizona State University in the group of Prof. Lindsay she was granted a university assistant position at the Vienna University of Technology. Since September 2014 she received a professorship for Medical Engineering at the University of Applied Sciences Upper Austria and is president of the Biophysics Austria.

Benjamin Balluff
Maastricht MultiModal Molecular Imaging institute (M4I).
Maastricht University Medical Center



Benjamin Balluff is Assistant Professor for Imaging Bioinformatics at the Maastricht MultiModal Molecular Imaging Institute, Maastricht University, Netherlands. He did his Ph.D. at the Institute of Pathology of the Helmholtz Zentrum München, Germany, on the application of mass spectrometry imaging (MSI) in cancer research. Later, at the Center of Proteomics and Metabolomics, Leiden University Medical Center, he focused on the computational analysis of MSI datasets for the study of intratumor heterogeneity.

Anna Sartori-Rupp
Ultrastructural Biol maging (UBI)
Institut Pasteur, Paris



I currently work as a research engineer at the Ultrastructural Biol maging (UBI) of Institut Pasteur in Paris, France, where I am in charge of collaborative scientific projects involving high resolution cryo-tomography, cryo-CLEM & image analysis applied to the study of cellular systems including host-pathogens interactions. In particular, my research interests focus on developing new approaches and workflows for 3D (cryo-)CLEM.

After obtaining a PhD in Physics at Imperial College, London, UK, I turned towards the world of Microscopy. During my first PostDoc at Institut Curie, Paris, I focused on fluorescent videomicroscopy used to model DNA migration in viscous polymer matrices. I was then hired as a PostDoc in the renowned group of Prof. Baumeister at the Max Planck Institute for Biochemistry in Munich, where I successfully established a novel approach, the correlation between fluorescent microscopy in cryogenic conditions and cryo-electron tomography (cryo-CLEM) that was based on my original development of the first cryo-stage for cryo-fluorescence microscopy. In 2007 I joined the Imaging platform of Institut Pasteur where I develop novel strategies/workflows for CLEM focused on cryogenic applications in 3D, including cryo-focused ion beam (cryo-FIB) and cryo-lamellae.

Eva Pereiro
Experiments Divison, Mistral beamline, Barcelona



After my PhD using X-ray imaging techniques in Material Sciences at the European Synchrotron Radiation Facility (Grenoble, France), I focused on using X-ray imaging techniques applied to biological samples. At ALBA, the Spanish synchrotron, we designed and built a dedicated beamline for cryo soft X-ray tomography of cells and we are now focusing on cryo correlative approaches using X-ray fluorescence or super resolution on the same cell.