

IMAGING PRINCIPLES OF LIFE



4-5 OCT
Hustopeče

2022

TUESDAY, OCTOBER 4

- 11:00 **Arrival & registration**
- 12:00 **Conference lunch**
- 13:00 **Conference opening**
Pavel Hozák, Director of Czech-Biolmaging RI

SESSION I chaired by Vlada Filimonenko & Daniel Zicha

- 13:15 **Julia Fernandez-Rodriguez, University Gothenburg, Sweden** INVITED LECTURE
The Centre for Cellular Imaging – a Research Infrastructure for Correlated Multimodal Imaging
- 13:45 **Leo Sala, J. Heyrovsky Institute of Physical Chemistry, Prague**
Electron microscopy tools for the characterization of DNA origami nanostructures for radiotherapeutic applications
- 14:00 **Luděk Štěpánek, Institute of Molecular Genetics, Prague**
Studying structure of primary cilium using CLEM
- 14:15 **Daria Khuntsariya, Institute of Biotechnology, BIOCEV, Prague**
Microtubule doublet assembly in vitro and its regulation by MIPs (HPST s.r.o. lecture)
- 14:30 **Meri Eichner, Centre Algatech, Institute of Microbiology, Třeboň**
Coordination of photosynthesis and N₂ fixation in *Trichodesmium*: Insights from Fluorescence Lifetime Imaging Microscopy
- 14:45 **Markéta Šuráňová, CEITEC, University of Technology, Brno**
Methodology of Microscopical Assessment of Tumour Cells Behaviour in 2D or 3D in vitro Environment with Coherence- Controlled Holographic Microscope

15:00 POSTER SESSION Coffee break & Networking

SESSION II chaired by Michal Mikl & Daniel Hadraba

- 16:00 **Martin Hrubý, Institute of Macromolecular Chemistry, Prague**
Collaboration of the Department of Supramolecular Polymer Systems at the IMC with the First Medical Faculty, CUNI, on the Development of Polymers for Medicine
- 16:15 **Ivan Rektor, Masaryk University, Brno**
The lifelong impact of extreme stress on the human brain: a three-generation study of Holocaust survivors
- 16:30 **Martin Mistrík, IMTM, Palacky University, Olomouc**
DNA damage response in the context of long-term mild hyperthermia
- 16:45 **Jakub Horák, Měřicí technika Morava s. r. o.**
Novel methods for correlational bioimaging by Bruker
- 17:00 **Kateřina Štěpánková, Institute of Experimental Medicine, Prague**
Label-free pSHG/THG microscopy for the visualization of axon regeneration after spinal cord injury
- 17:15 **Peter Hoboth, Institute of Molecular Genetics, Prague**
Spatial organization of the gene expression compartments in human cells and tissues revealed by super-resolution imaging
- 17:30 **Vladimír Vinarský, Faculty Hospital of St. Anne in Brno, Brno**
Automating calcium transients signal processing by combining R and ImageJ to describe novel function of YAP1 mechano-sensing protein
- 17:45 **Jana Cimická, Institute of Physiology, Prague**
Vasopressin and oxytocin neurons mapping in cleared brain using digital light sheet microscopy
- 19:00 **Conference dinner**

WEDNESDAY, OCTOBER 5

SESSION III chaired by Milan Ešner & Ondrej Horváth

- 9:00 **Trevor Epp, Institute of Molecular Genetics, Prague**
Visualizing ICF syndrome-associated structural chromatin alterations by STORM super-resolution imaging
- 9:15 **Lucie Crhak-Khaitová, CEITEC Masaryk University, Brno**
Heat stress impairs centromere structure and segregation of meiotic chromosomes in *Arabidopsis*
- 9:30 **Tetiana Kalachová, Institute of Experimental Botany, Prague**
Chasing the intruder: imaging plant interactions with multicellular pathogens
- 9:45 **Martin Kopecký, Pragolab s.r.o. Prague**
Meet Mica - The world's first Microhub and New Era of Cryo-electron tomography with Leica STELLARIS
- 10:00 **Valéria Fabrícioová, Charles University, Prague**
Lightsheet microscopy: Development of the pancreas and inner ear
- 10:15 **Štěpán Čada, Masaryk University, Brno**
Looking into the phenotype and migratory variability of B-cell malignancies
- 10:30 **Coffee break & Networking**

SESSION IV chaired by Zenon Starčuk & Michal Kozubek

- 11:00 **Claus Lamm, University of Vienna, Austria** INVITED LECTURE
Novel multi-method neuroimaging approaches to unravel the complexities of the human social brain
- 11:30 **Eva Syková, Institute of Neuroimmunology, Slovakia**
Transient changes of brain extracellular matrix followed by MRI
- 11:45 **Pavla Linhartová, University Hospital Brno and Masaryk University, Brno**
Neuroimaging in the research and innovative treatments in psychiatric disorders
- 12:00 **Pavel Krist, Carl Zeiss spol. s.r.o., Prague**
ZEISS - X-ray, Electron, Light Microscopy and Much More
- 12:15 **Zuzana Sumbalová Koledová, Masaryk University, Brno**
Deciphering the regulation of epithelial morphogenesis using organoids, light microscopy and mathematical modeling
- 12:30 **Conference lunch**

SESSION V chaired by Aleš Benda & Marie Vancová

- 13:30 **Andreas Nowak, Leica Mikrosysteme Austria**
Advanced (cryo) preparation methods for Cryo-Electron Tomography, live-cell CLEM and for Array Tomography sample preparation
- 13:45 **Eliška Miková, Charles University, BIOCEV, Vestec**
Imaging membrane tension
- 14:00 **Adriana Jelínková, Institute of Experimental Botany, Prague** INVITED LECTURE
Insight into the root inside
- 14:30 **Jan Sabó, Institute of Biotechnology, Charles University, BIOCEV, Vestec**
CKAP5 enables seeding of actin bundles by exploratory microtubules
- 14:45 **Jan Vávra, Abberior Instruments GmbH**
MATRIX STED - Many eyes see clearer: enhancing resolution, signal quality and brightness
- 15:00 **Michal Franěk, CEITEC, Masaryk University, Czech Republic**
CLEM alias STORM on EM cuts
- 15:15 **Martin Strnad, Institute of Parasitology, Biology Centre, Czech Republic**
Borrelia – host interactions: zoom in on the big picture
- 15:30 **Conference closing**
Pavel Hozák, Director of Czech-Biolmaging RI