

CZECH-BIOIMAGING CONFERENCE

Imaging Principles of Life 2026

FINAL
PROGRAM



Co-funded by
the European Union



Ministry of Education,
Youth and Sports
of the Czech Republic

DAY 1

Wednesday, 30 September 2026

From 08:00	Arrivals & Registration
10:00–10:15	CONFERENCE OPENING
	Updates from Czech-Bioimaging Pavel Hozák, Director of Czech-Bioimaging
10:15–11:55	SESSION I Chaired by: Michaela Blažíková & Zenon Starčuk
10:15–10:45 INVITED	The Scientific Added Value of a Core Facility Dedicated to Bioimage Analysis Services Jean-Yves Tinevez, Institute Pasteur, Paris, France
10:45–11:00	Diffusion Kurtosis Imaging Reveals Early Microstructural Alterations in a Progressive Mouse Model of Parkinson's Disease Amit Khairnar, International Clinical Research Center, St Anne University Hospital Brno, Czech Republic
11:00–11:15	Application of high content microscopy for quantifying nuclear structures Pavla Vašicová, Institute of Molecular Genetics of the Czech Academy of Sciences, Prague, Czech Republic
11:15–11:25 INDUSTRY	Functional Ultrasound Imaging: Connecting Brain Activity, Cerebral Blood Flow and Behaviour Vladimír Žebera, Animalab Czech Republic
11:25–11:40	Assessing Neuroplastic Effects of Psilocybe spp. Tryptamine Alkaloids in Primary Rat Cortical Cultures Eva Filipovská, National Institute of Mental Health, Klecany, Czech Republic
11:40–11:55	Actomyosin-driven embryo cytokinesis Allan Akandwanaho, Institute of Molecular Genetics of the Czech Academy of Sciences, Prague, Czech Republic
11:55–12:00	Group photo
12:00–13:00	Lunch
13:00–14:25	SESSION II Chaired by: Vlada Filimoněnko & Štěpán Kortus
13:00–13:30 INVITED	The Moirai of the bacterial proteome – protein disaggregation and proteolysis Marta Carroni, SciLifeLab, Stockholm University, Sweden
13:30–13:45	Nuclear phosphoinositide signalling regulates transcriptional condensate organization in HPV-associated cancer Martin Sztacho, First Faculty of Medicine, Charles University, Prague, Czech Republic

13:45–14:00	Morphological diagnosis of primary ciliary dyskinesia in patients with “normal” ciliary ultrastructure Dominika Pánska, Second Faculty of Medicine, Charles University, Prague, Czech Republic
14:00–14:10 INDUSTRY	From Cells to Whole Organisms: Bruker's fluorescence microscopes for 3D Biology Jaroslav Icha, Bruker Luxendo GmbH
14:10–14:25	Multimodal in vivo imaging assessment of pericyte-tumor interactions in a mouse model of glioblastoma Ondřej Vaňátko, Institute of Experimental Medicine of the Czech Academy of Sciences, Prague, Czech Republic
14:25–14:55	Coffee break
14:55–16:20	SESSION III Chaired by: Marie Vancová & Daniel Zicha
14:55–15:25 INVITED	Building the Digital Cell at Nanometer Resolution: Cross-Modal Learning for Multiplexed and Live Super-Resolution Microscopy Christian Franke, Friedrich Schiller University Jena, Germany
15:25–15:40	Volume electron microscopy reveals bacterial endosymbiosis within host mitochondria Luise Robbertse, Biology Centre, Czech Academy of Sciences, České Budějovice, Czech Republic
15:40–15:55	Dynamic Morphometric Profiling: Advancing Melanoma Cell Response Tracking via Holographic Incoherent-Light Imaging Michaela Shiotani Marcondes, Brno University of Technology, CEITEC, Brno, Czech Republic
15:55–16:05 INDUSTRY	Holographic microscopy and its application in your lab Kateřina Teznerová, Altium International s.r.o., Prague, Czech Republic
16:05–16:20	Time-Resolved Metabolic Fingerprinting of Bacterial Stress Responses Using Surface-Enhanced Raman Spectroscopy Markéta Benešová, Institute of Scientific Instruments of the Czech Academy of Sciences, Brno, Czech Republic
16:20–16:50	Coffee break
16:50–18:15	SESSION IV Chaired by: Kamila Hrubanová & Michal Mikl
16:50–17:05	Unusual flagellar architecture in a novel trypanosomatid Galina Prokopchuk, Biology Centre of the Czech Academy of Sciences, České Budějovice, Czech Republic
17:05–17:15 INDUSTRY	Advancing Low-Voltage Electron Microscopy for Multimodal Imaging in Life Sciences Jan Vysloužil, Delong Instruments a.s.
17:15–18:30	Kilohertz-Frequency Transcranial Electrical Fields Modulate Deep Brain Activity Martin Lamoš, Masaryk University, CEITEC, Brno, Czech Republic

17:30–17:45	Multimodal microscopy reveals the assembly of a guanine photonic reflector for microbial vision Jana Pilátová, Algatech, Institute of Microbiology of the Czech Academy of Sciences, Třeboň, Czech Republic
17:45–17:55 INDUSTRY	Scalable Automation and High Content Imaging for Reproducible 2D and 3D Cell Workflows Jan Vrána, I.T.A.- Intertact s.r.o.
17:55–18:10	Latent brain-cognition dimension indicative of neuroinflammatory basis of Long COVID Pavel Filip, First Faculty of Medicine, Charles University and General University Hospital, Prague, Czech Republic
18:10–18:15	Closing remarks
18:15–19:00	Transfer arranged by the organizer
19:00–22:00	Social dinner – Vltava River Steamboat Cruise

DAY 2

Thursday, 1 October 2026

09:00–10:15	SESSION V	Chaired by: Daniel Hadraba & Milan Ešner
9:00–9:15	Imaging the ovule development of Arabidopsis thaliana under heat stress Tereza Paraiso, Masaryk University, CEITEC, Brno, Czech Republic	
9:15–9:30	Multimodal Imaging and Layer-Resolved Mechanical Characterization of Human Deep Fascia Nejc Umek, Institute of Anatomy, Faculty of Medicine, University of Ljubljana, Ljubljana, Slovenia	
9:30–9:45	Live-cell single-molecule imaging reveals the dynamics of telomere-binding proteins Tomáš Janovič, Faculty of Science, Masaryk University, Brno, Czech Republic	
9:45–10:00	Using Raman microscopy to study animal coloration Jindřich Brejcha, Faculty of Science, Charles University, Prague, Czech Republic	
10:00–10:15	Two-photon fluorescence lifetime imaging reveals coating-dependent interactions between silver nanoparticles and microplastics in Allium cepa roots Dorian Loknar, Faculty of Science, University of Zagreb, Croatia	
10:15–11:10	POSTER SESSION & Coffee break	

11:10-12:50		SESSION VI	Chaired by: Eva Dražanová & Aleš Benda
11:10-11:40 INVITED	Whole body magnetic resonance imaging and spectroscopy in translational and clinical metabolic research Martin Krššák, Medical University of Vienna, Austria		
11:40-12:00 HYBRID	From Ultrastructure to Phenotype: Deep Learning-Based Quantitative Analysis of Mitochondrial Cristae in Electron Microscopy Nikol Volfová, Third Faculty of Medicine Charles University & Martin Čapek, Light Microscopy Core Facility at the IMG CAS		
12:00-12:10 INDUSTRY	Live Imaging with Uniform Super-Resolution in All Spatial Dimensions Pavel Krist, ZEISS Research Microscopy Solutions		
12:10-12:30 HYBRID	When Sex Matters: Cardiac MRI Uncovers Distinct Remodelling Patterns in the Rat DOCA/Salt Model Tibor Stračina, Faculty of Medicine, Masaryk University, Brno & Jiří Vitouš, Core Facility Magnetic Resonance at the ISI CAS		
12:30-12:50 HYBRID	Cell Wall Biomechanics and Expansin- Mediated Stress Resistance in Plants Markéta Šámalová, Masaryk University, Brno, Czech Republic & Šimon Vrana, IPHYS Bioimaging Facility		
12:50-13:50	Lunch		
13:50-15:00		SESSION VII	Chaired by: Pavla Molínová & Kateřina Malínská
13:50-14:10 HYBRID	Visualization of T-cell microvilli and their role in the immunological synapse by combined cryo-fluorescence microscopy and FIB-SEM tomography Ondřej Ballek, Institute of Molecular Genetics of the Czech Academy of Sciences & Markéta Dalecká, Electron Microscopy Core Facility at the IMG CAS		
14:10-14:20 INDUSTRY	Label-Free Chemical Imaging of Biological Samples Using Leica STELLARIS CRS Martin Kopecký, Specion s.r.o.		
14:20-14:40 HYBRID	In situ protein crystallography – a light microscopy-guided cryo-FIB pipeline for direct protein structure determination from a single intracellular crystal Vitaly Polovinkin, ELI Beamlines Facility, The Extreme Light Infrastructure ERIC, Dolní Břežany & Dominik Pinkas, Electron Microscopy Core Facility at the IMG CAS		
14:40-15:00 HYBRID	Utilizing 3D STED nanoscopy to study cytoskeletal dynamics during sperm maturation Ondřej Šanovec, Institute of Biotechnology of the Czech Academy of Sciences, Vestec & Ivan Novotný, Light Microscopy Core Facility at the IMG CAS		
15:00-15:30	Coffee break		

15:30–16:45 SESSION VIII

Chaired by: Ondrej Horváth & Luděk Šefc

15:30–15:50 HYBRID	The Epileptic Brain Across Scales: Integrating iEEG and MRI to Map Structural and Electrophysiological Signatures Petr Nejedlý, Institute of Scientific Instruments of the Czech Academy of Sciences & Eva Dražanová, Core Facility Magnetic Resonance at the ISI CAS
15:50–16:00 INDUSTRY	Molecular-Scale Imaging and Tracking with Abberior MINFLUX Jan Vávra, Abberior Instruments GmbH for SVEN BioLabs s.r.o.
16:00–16:20 HYBRID	Non-Invasive Imaging Strategies for Longitudinal Monitoring of Tissue Engineering Biomaterials Kristýna Kolouchová, Ghent University, Belgium & Jana Humajová, Center for Advanced Preclinical Imaging, Prague
16:20–16:40 HYBRID	Learning the structural diversity in random protein sequence space Filip Buchel Faculty of Science, Charles University, Prague, Czech Republic & Aleš Benda, Imaging Methods Core Facility at BIOCEV, Vestec
16:40–16:45	Conference closing

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