

LSFM2019

Conference Programme

Wednesday, December 4th

8:00-	Registration
10:00	Opening remarks

Session 1 – Live imaging, screening

10:10	Chris Dunsby Imperial College, London, UK <i>High-speed 3D and high-content light sheet fluorescence microscopy</i>
10:35	Julien Colombelli IRB Barcelona, ES <i>Title TBA</i>
11:00	Giuseppe De Vito LENS, Florence, IT <i>Application of two-photon light-sheet microscopy to high-speed whole-brain functional imaging of zebrafish neuronal physiology and pathology</i>

Session 2 – Tissue Imaging and Pathology 1

11:20	Adam Glaser University of Washington, Seattle, USA <i>A bigger and better picture of clinical specimens: open-to-light-sheet microscopy for 3D pathology</i>
11:45	Ulrich Kubitscheck University of Bonn, DE <i>Light-sheet fluorescence expansion microscopy: fast mapping of neural circuits at super resolution</i>

12:10	Hans-Ulrich Dodt Medical University of Vienna, AT <i>3D pathology of human tumors by Ultramicroscopy</i>
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12:30 Lunch

13:30-14:45 Presentations by LSFM2019 Gold Sponsors

13:30	PCO AG
13:45	Omicron-Laserage Laserprodukte GmbH
14:00	3i – Intelligent Imaging Innovations
14:15	Hamamatsu Deutschland GmbH
14:30	Luxendo-Bruker

14:45 Coffee break

Session 3 – LSFM in Microscopy Facility

15:15	Laura Batti The Wyss Center, Genève, CH <i>Advanced Light sheet Imaging Center (ALICe)</i>
15:40	Gopi Shah EMBL Barcelona, ES <i>Uncovering cell dynamics in developing embryos, embryoids and organoid models</i>
16:05	Marco Marcello, University of Liverpool, UK <i>Light sheet microscope, the Swiss army knife of a Microscopy Core Facility</i>

16:30-17:30 Open Lightsheet Tools

*A moderated session on the latest developments in open access resources presented by **Julien Colombelli** (LEGOLish), **Benedict***

Diederich (UC2), Pavel Tomancak (OpenSPIM), and Emmanuel Reynaud. Session moderator: **Emmanuel Reynaud** (University College Dublin, IR)

17:30-19:00 Coffee break, company demos and poster session

Free evening/Visit of the Frankfurter Weihnachtsmarkt

Thursday, December 5th

Session 4 – Developmental Biology

9:00	Pavel Tomancak MPI-CBG, Dresden, DE <i>Insights into gastrulation morphogenesis of insects enabled by in toto light sheet imaging.</i>
9:25	Karel Riha CEITEC Masaryk University, Brno, CZ <i>Imaging plant germline differentiation in the context of developing flower by light sheet microscopy</i>
9:50	Akanksha Jain MPI-CBG and TU Dresden, DE <i>4-Dimensional imaging reveals tissue fluidisation is necessary for epithelial gap closure during Tribolium gastrulation</i>
10:10	Frederic Strobl BMLS, Goethe Universität Frankfurt, DE <i>TBA</i>

10:30 Coffee break

Session 5 – Image Processing and Data Analysis 1

11:00	Florian Jug MPI-CBG, Dresden, DE <i>Content-Aware Image Restoration for Light and Electron Microscopy – a progress report!</i>
11:25	Peter Horvath Biological Research Center, Szeged, HU <i>Life beyond the pixels: Image analysis and machine learning techniques in single-cell 2D and 3D microscopy</i>
11:50	Yichen Ding University of California, Los Angeles, USA <i>Integrating Light-Sheet imaging with computation to recapitulate developmental cardiac mechanics</i>

Session 6 – Organoids and 3D cultures

12:10	Elena Martinez IBEC, Barcelona, ES
	<i>Biofabrication light-based strategies to generate complex geometries in hydrogels for intestinal tissue modeling</i>
12:30	Gustavo de Medeiros Friedrich Miescher Institute for Biomedical Research, Basel, CH
	<i>Mechanisms driving symmetry-breaking in intestinal organoids</i>
12:55	Till Moreth BMLS, Goethe Universität Frankfurt, DE
	<i>TBA</i>

13:15 Lunch

Session 7 – Tissue Imaging and Pathology 2

14:30	Paola Perin University of Pavia, IT
	<i>Vascular districts in the intact 4th ventricle of the rat: do we have the whole picture on circumventricular organs?</i>
14:55	Reto Fiolka UT Southwestern, Dallas, USA
	<i>Cleared tissue imaging at subcellular resolution</i>
15:20	Monika Pawlowska Nencki Institute of Experimental Biology, Warsaw, PL
	<i>Whole-brain imaging of learning and addiction</i>
15:40	Sebastian Munck VIB-KU Leuven Center for Brain & Disease Research, Leuven, BE
	<i>Towards A Label-free Multicolor Optical Surface Tomography (ALMOST) imaging method for nontransparent 3D samples</i>

15:50 – 18:30 **Coffee break, company demos and poster session**

20:00-23:00 **Conference Party - night cruising on the Main River**

Friday, December 6th

Session 8 – Light Sheet Engineering

9:00	Saiedeh Saghafi Vienna University of Technology, Vienna, AT <i>Non-diffractive light sheets: A novel approach in static light sheet microscopy</i>
9:25	Alexander Rohrbach IMTEK, Freiburg, DE <i>Has guiding of light through biological material in light-sheet microscopy reached its limit?</i>
9:50	James D. Manton MRC Laboratory of Molecular Biology, Cambridge, UK <i>Quantitating light sheet microscopy</i>
10:10	Nikita Vladimirov Max Delbrück Center for Molecular Medicine, Berlin, DE <i>Multiview light-sheet microscopy in microfluidic device using a deformable mirror</i>

10:30 Coffee break

Session 9 – Image Processing and Data Analysis 2

11:00	Sabine Fischer University of Würzburg, DE <i>Image-based mathematical modelling of spatial cell-cell interactions</i>
11:25	Anna Kreshuk EMBL Heidelberg, DE <i>Image segmentation with machine learning</i>

Session 10 – Tissue Imaging and Pathology 3

11:50	Raju Tomer Columbia University, NY (USA) <i>Quantitative imaging of large cleared samples with light sheet microscopy</i>
12:15	Fabian F. Voigt Brain Research Institute, University of Zurich, CH <i>The mesoSPIM initiative: Open hardware light-sheet microscopes for whole-body imaging in cleared mice</i>
12:35	Etsuo A. Susaki University of Tokyo and RIKEN, JP <i>A versatile three-dimensional whole-organ/body staining and imaging with single-cell resolution based on electrolyte-gel properties of biological tissue</i>
12:55	Vladislav Gavryusev LENS, Florence, IT <i>Fast light sheet volumetric mapping of human brain slices</i>

12:55 Closing Remarks, end of the conference, lunch