

Seeing more: Emerging Technologies in Microscopy

IMP, Vienna, Austria 26-28 May 2010

DAY 1 26-May 2010

Session I : **Advanced imaging techniques**

Chair: Alipasha Vaziri

13.00-13.40 Light sheet based fluorescence microscopes (LSFM, SPIM, DSLM) reduce phototoxic effects by several orders of magnitude

Ernst Stelzer, EMBL, Heidelberg

13.40-14.20 Visualization of neuronal networks, mouse embryos and flies by ultramicroscopy

Hans-Ulrich Dodt, TU Vienna

14.20-15.00 The open microscopy environment: Informatics and quantitative analysis for biological microscopy

Jason Swedlow, University of Dundee

Coffee Break

Chair: Katrin Heinze

15.30-16.10 New techniques for out-of-focus background rejection

Jerome Mertz, Boston University

16.10-16.50 High resolution fluorescence microscopy. Structured illumination and image inversion interferometry

Rainer Heintzmann, Kings College London

Break

17.20-18.00 Sculpting light for bio-imaging and more

Alipasha Vaziri, Howard Hughes Medical Institute

**18.00-18.40 Water in the electron microscope: from foe to friend.
An historical perspective**

Jacques Dubochet, University of Lausanne

Welcome Reception at the IMP

19.00 Zeiss presentation



DAY 2 27-May 2010

Session II : Molecular cell biology

Chair: Carrie Cowan

09.00-09.40 Imaging protease activity using fluorescent activity based probes
Matthew S. Bogyo, Stanford Medical School

**09.40-10.20 Mapping protein dynamics and organization in cells with
photoactivatable fluorescence**
Suliana Manley, EPFL, Lausanne

10.20-11.00 New perspectives for *in situ* proteomics
Petra Schwille, TU Dresden

Coffee Break

11.30-12.10 Systems biology of cell migration and Ca²⁺ signaling
Tobias Meyer, Stanford University

12.10-12.50 Spatial organization in intracellular communication
Philippe Bastiaens, MPI of Molecular Physiology

Lunch – Presentation

New developments and applications in STED microscopy
Jochen Sieber, Leica Microsystems CMS GmbH

Chair: Simon Rumpel

14.00-14.40 Microtubule organization by mitotic motors studied *in vitro*
Thomas Surrey, EMBL Heidelberg

14.40-15.20 Reconstitution of kinetochore function *in vitro*
Stefan Westermann, IMP, Vienna

Coffee Break

Session III : Neurobiology I

16.00-16.40 Imaging cellular dynamics in awake behaving animals and humans
Mark J. Schnitzer, Stanford University

16.40-17.20 Probing the brain with fluorescent proteins
Oliver Griesbeck, MPI of Neurobiology, Martinsried



DAY 3 28-May 2010

Session IV : Neurobiology II

Chair: Barry Dickson

09.00-09.40 Connectomics in the developing nervous system
Jeff W. Lichtman, Harvard University

**09.40-10.20 Focussed ion beam milling and scanning electron microscopy for
exploring brain connectivity**
Graham Knott, EPFL Lausanne

Coffee Break

11.00-11.40 Investigating synaptic vesicle recycling by STED microscopy
Silvio O. Rizzoli, Eur. Neuroscience Institute, Göttingen

11.40-12.20 Measuring neuronal signals and making sense of them
Winfried Denk, MPI for Medical Research, Heidelberg

