

INT Symposium on “Advanced Photonic Imaging in Neuroscience”

11th and 12th July 2019 Marseille, France

Day 1

Foreword **G MASSON - Director of the ‘Institut de Neurosciences de la Timone’ (INT), AMU**

8:30-10:00 **1st Keynote Lecture** – *Pushing the limits of multiphoton imaging*
Chris XU (Cornell University, School of Applied & Engineering Physics, Ithaca, USA)

Session 1 – Optical and microscopy techniques

10:00-10:45 *Large volume multicolor multiphoton microscopy of brain tissue*
Emmanuel BEAUREPAIRE (Ecole Polytechnique, Laboratory for Optics & Biosciences, Palaiseau, France)

10:45-11:15 **Coffee Break**

11:15-12:00 *Fast optical acquisition of neuronal activity in 3D microcircuits of mouse cortex*
Walther AKEMANN (Institut de Biologie de l'ENS, Paris, France)

12:00-12:45 *Photoacoustic imaging in neurobiology*
Thomas CHAIGNE (Aix Marseille Université, Institut Fresnel, Marseille, France)

12:45-13:30 *Imaging with genetically encoded voltage sensitive probes*
Stéphane DIEUDONNE (Institut de Biologie de l'ENS, Paris, France)

13:30-14:30 **Lunch and Poster Session**

Session 2 – Imaging methods, models and fluorescent probes

14:30-15:15 *Actin-based structures in the axon: a nanoscale view*
Christophe LETERRIER (Aix Marseille Université, Institut de NeuroPhysioPathologie, Marseille, France)

15:15-16:00 **Integrated 1 & 2p scanned oblique plane illumination (SOPi) microscopy**
Yevgenia KOZOROVITSKIY (Northwestern University, Department of Neurobiology, USA)

16:00-16:30 **Coffee Break**

16:30-17:15 *Panoptic imaging of intact organs and adult rodent bodies using vDISCO*
Ruiyao CAI (Ludwig Maximilian Universität, Institute for Stroke and Dementia Research, Munich, Germany)

17:15-18:00 *Fluorescent proteins for functional imaging and super-resolution microscopy*
Hideaki MIZUNO (Katholieke Universiteit Leuven, Biochemistry, Molecular and Structural Biology Section, Leuven, Belgium)

18.00-18:45 *Imaging at depth with wavefront shaping: focusing and beyond*
Sylvain GIGAN (Université Pierre et Marie Curie, Ecole Normale Supérieure, Kastler Brossel Laboratory, Paris, France)

From 19:00 **Evening Poster Session**



Day 2

Session 3 - Functional imaging and neuron manipulation to probe neuronal networks

8:30-9:15 *Anatomical and functional deciphering of locomotor neuronal circuits in the mouse brainstem and spinal cord*

Julien BOUVIER (Institut des Neurosciences Paris-Saclay, Paris, France)

9:15-10:00 *Emergence of cell assemblies in the developing hippocampus*

Martin PICARDO (Aix Marseille Université, Institut de Neurosciences de la Méditerranée, Marseille, France)

10:00-10:30 **Coffee Break**

10:30-11:15 *Decoding the activity of the amygdala-frontal circuit during decision-making*

Frédéric GAMBINO (University of Bordeaux, Interdisciplinary Institute for Neuroscience, Bordeaux, France)

11:15-12:00 *Thalamocortical control of skilled movement*

Ian DUGUID (University of Edinburgh, Centre for Discovery Brain Sciences, Edinburgh, Scotland)

12:00-12:45 *Toward an all-optical bi-directional interrogation of topographic population codes in primate visual cortex*

Eyal SEIDEMANN (University of Texas, College of Natural Sciences, Austin, USA)

12:45-13:45 **Lunch and Poster Session**

13:45-15:15: 2nd Keynote Lecture - *In vivo imaging reveals that stalled capillary flow causes cortical perfusion deficits that contribute to impaired memory function in mouse models of Alzheimer's disease*

Chris SCHAFFER (Cornell University, Department of Biomedical Engineering, Ithaca, USA)

Session 4 - Pathologies, translational and clinical approaches

15:15-16:00 *Neuro-immune crosstalk in the inflamed CNS: Lessons learned from in vivo imaging*

Stefan BITTNER (University of Mainz, Experimental Neuroimmunology, Mainz, Germany)

16:00-16:30 **Coffee Break**

16:30-17:15 *Intravital microscopic investigation of demyelination and neurodegeneration in the mouse spinal cord*

Franck DEBARBIEUX (Aix Marseille Université, Institut de Neurosciences de la Timone, Marseille, France)

17:15-18:00 *On-Axis 2-Photon Virtual Light-Sheet Generation for 3-D Imaging*

Martin OHEIM (Université de Paris, Saints-Pères Paris Institute for the Neurosciences, Paris, France)

18:00-18:45 *Mapping the neuro-glio-vascular interactions with multi-modal fMRI*

Xin YU (Max Planck Institute for Biological Cybernetics, Tübingen, Germany)

