Emerging Imaging Technologies in Neuroscience

Plenary speakers:
Herwig Baier
Emmanuel Beaurepaire
Randy Bruno
Valentina Emiliani
Florian Engert
Frederic Lesage
François Rousseau
Mickael Tanter
Alipasha Vaziri

Organized by neuroscience students, post-docs and young researchers of the Paris-Saclay area.
Thursday, 4th December

8.30 – 9:00  Registration
9:00 – 9:20  Welcome: Brice Bathellier (UNIC) and Philippe Vernier (NED)
            Chair: Brice Bathellier
9:20 – 10:10  **Plenary speaker:** Herwig Baier (Max Planck Institut, Germany)
             *Neural circuits for zebrafish behavior*
10:10 – 10:25  Arnim Jenett (Tefor Core Facility, Gif-sur-Yvette)
              *Tefor core facility: an electronic atlas of standardized Zebrafish neuroanatomy*
10:25 – 10:40  Eugenia Vilarchao (UNIC, Gif-sur-Yvette)
              *Representation of global motion in the mouse barrel cortex, a voltage sensitive dye (VSD) imaging study*
10:40 – 11:00  *Coffee break and Exhibits*

11:00 – 11:50  **Plenary speaker:** Emmanuel Beaurepaire (École Polytechnique, Palaiseau)
               *Advances in multiphoton imaging of developing tissues*
11:50 – 12:05  Sebastian Romano (ENP, Paris)
              *Spontaneous neuronal network dynamics reveals circuit's functional adaptations for behavior*
12:05 – 12:55  **ENP Lecture:** Florian Engert (Harvard University, USA)
              *A sensory motor circuit for binocular motion integration in larval zebrafish*
12:55 – 14:30  *Lunch Buffet (Cantine, salle Automme)*
14:30 – 16:30  *Poster Session and Exhibits*

16:30 – 17:20  **Plenary speaker:** Valentina Emiliani (Université Paris Descartes, Paris)
               *Optogenetics and Wave front shaping*
17:20 – 17:35  Benjamin Roland (Collège de France, Paris)
              *Processing of odor-evoked neural activity in the olfactory cortex*
17:35 – 18:25  **Plenary speaker:** Randy Bruno (Columbia University, USA)
              *Behavioral correlates of apical dendrite activity*
18:25 – 18:40  Sofya Kulikova (Neurospin, Saclay)
              *Creating an atlas of children brain connectivity*
Friday, 5th December

8:30 – 9:00  
Registration  
Chair: Gabrielle Fournet

9:00 – 9:50  
Plenary speaker: Mickael Tanter (Institut Langevin, Paris)  
*Ultrafast Doppler and fUltrasound Imaging*

9:50 – 10:05  
Olivier Thouvenin (Institut Langevin, Paris)  
*Non invasive detection of action potentials in a bulk neural tissue from intrinsic mechanical properties of neurons*

10:05 – 10:55  
Plenary speaker: Frederic Lesage (Polytechnique Montréal, Canada)  
*Microscopic substrate of MRI imaging and associated consequences for aging studies*

10:55 – 11:15  
*Coffee break and Poster Prize*  
Chair: Jessica Lebenberg

11:15 – 11:30  
Marianne Boucher (Neurospin, Saclay)  
*Genetically functionalized magnetosomes as MRI contrast agent for molecular imaging: in vitro proof of binding and in vivo proof of contrast*

11:30 – 12:20  
Plenary speaker: François Rousseau (ICube, Strasbourg)  
*Fetal brain development study using MRI*

12:20 – 13:00  
*Shuttle bus to Neurospin*

13:00 – 14:30  
*Lunch Buffet and visit of Neurospin*  
Chair: Luisa Ciobanu

14:30 – 14:45  
Presentation of Neurospin: Jean-Robert Deverre

14:45 – 15:00  
Zuzanna Piwkowska (UNIC, Gif-sur-Yvette)  
*Patterned photostimulation of auditory cortical networks drives perceptual discrimination in mice*

15:00 – 15:50  
Neurospin Lecture: Alipasha Vaziri (University of Vienna, Austria)  
*Towards a dynamic map of neuronal circuits*

15:50 – 15:55  
Closing speech: Luisa Ciobanu (Neurospin)

15:55 – 16:35  
*Shuttle bus back to Imagif*