

## Optical microscopy: principles and applications to Neuroscience

<b>Monday 11/15</b>	<b>Lectures</b>
<b>Tuesday 11/16</b>	<b>Hands-on workshop</b>
<b>Wednesday 11/17</b>	<b>Hands-on workshop</b>
<b>Thursday 11/18</b>	<b>Lectures</b>
<b>Friday 11/19</b>	<b>Lectures</b>
<b>Monday 11/22</b>	<b>Lectures</b>
<b>Tuesday 11/23</b>	<b>Lectures</b>
<b>Wednesday 11/24</b>	<b>Lab workshops 1-4</b>
<b>Thursday 11/25</b>	<b>Lab workshops 1-4</b>
<b>Friday 11/26</b>	<b>Final exam</b>

### List of lectures

- Introduction to optical microscopy - Laurent Bourdieu - IBENS
- Principles and applications of optogenetics in neuroscience - Vincent Vilette – IBENS
- Super-resolution fluorescence microscopies - Gael Moneron - Institut Pasteur
- Principles of non-linear scanning microscopies - Laurent Bourdieu - IBENS
- Deep Imaging in two-photon fluorescence microscopy - Laurent Bourdieu - IBENS
- Fast scanning in two-photon fluorescence microscopy - Stéphane Dieudonné - IBENS
- Analysis of calcium fluorescence functional recordings – Sébastien Wolf - IBENS
- Optical analysis of spine biophysics - Stéphane Dieudonné - IBENS
- Investigation of brain circuits with sculpted light and optogenetics - Emiliano Ronzitti - Institut de la Vision
- Light sheet microscopy - Willy Supatto - LOB
- Imaging the spatio-temporal dynamics of cortical activity at the mesoscopic scale - Isabelle Ferezou - Paris-Saclay Institute of Neuroscience.
- New methods for the meso-scale analysis of connectomics in the rodent brain - Nicolas Renier - Institut du Cerveau et de la Moelle
- Functional fluorescence imaging and photo-activation in freely behaving rodents - Cathie Ventalon - IBENS
- Imaging and analysis of large-scale neural populations - Brice Bathelier – Institut de la Vision
- Bioimage informatics for neuroimaging - Anatole Chessel - Ecole Polytechnique

### List of workshops

- Hands-on workshop : basic principles of optics and microscopy
- Lab Workshop 1 : Quantitative and dynamic super-resolution microscopy
- Lab Workshop 2 : Light sheet imaging of whole brain activity
- Lab Workshop 3 : Two-photon microscopy using acousto-optic deflectors
- Lab Workshop 4 : Imaging of clarified tissues