



Paris Spring School:

Optical imaging and electrophysiological recording in neuroscience

In-depth training for young neuro-scientists

The **Paris Spring School** offers training that revises the **fundamentals** of optics and electronics before building up to the **latest cutting-edge** imaging and electrophysiological techniques applied to neuroscience. Delivered by experts in their fields, including many from the organising Parisian institutions, the lectures include a wealth of practical detail. The course will be organised as a month-long series of lecture pairs (3h in total). The course program [is here](#); participants will be able to attend a sister course in imaging techniques. Registration fee will be 150€, but we plan to offer stipends (see the [application procedure](#)).

Home page: <https://parisneuro.ovh/>

Program: <https://parisneuro.ovh/program2021/>

MONDAY – May 10th

15:30 **Introduction** – David Ogden

16:00 **Basic optics** Noah Russell (MBA Plymouth, UK)

17:35 **Optical principles and problems in microscopy** Brad Amos (LMB Cambridge, UK)

19:00 **Paris Neuro social**

Our famous rooftop cocktail

TUESDAY – May 11th

16:00 **Light sources** Martin Thomas (Cairn Research)

17:35 **Light detectors** Klaus Suhling (Kings College London)

WEDNESDAY – May 12th

16:00 **Fluorescence lifetime imaging (FLIM)** Klaus Suhling (Kings College London)

17:35 **Calcium indicators** Igor Delvendahl (University of Zurich, Switzerland)

THURSDAY – May 13th

16:00 **Lasers for one- and two-photon microscopy and mesoscopy** Gail McConnell (University of Strathclyde, UK)

17:35 **Scanning laser confocal and multi-beam microscopy** Stefanie Reichelt (Cancer Research, UK)

MONDAY – May 17th

16:00 **EMCCD and sCMOS cameras** Jeremy Graham (Cairn Research)

17:35 **Genetically encoded calcium indicators (GECIs)** David DiGregorio (Pasteur Institute, France)

TUESDAY – May 18th

16:00 **Viral expression strategies** Jonathan Bradley (IBENS, France)

17:35 **Transgenic approaches to label neurons** Jean Livet (Institut de la Vision, France)



As the result of an online collaboration, participants of the Paris Spring School will be entitled to attend (free of additional charge) the [All-optical interrogation of neuronal networks in vivo course](#) from May 25 to 28.

MONDAY – May 31st

16:00 **Introduction to optogenetics** Guillaume Dugué (IBENS, France)

17:35 **Photolysis** David Ogden (SPPIN, France)

TUESDAY – June 1st

16:00 **Total Internal Reflection Fluorescence Microscopy TIRF** Martin Oheim (SPPIN, France)

17:35 **Optical measurement of membrane potential** Marco Canepari (Inserm Grenoble, France)

WEDNESDAY – June 2nd

16:00 **Super-resolution microscopy** Marc Guillon (SPPIN, France)

17:35 **Imaging single molecules in live cells** Marianne Renner (IFM, France)

THURSDAY – June 3rd

16:00 **Glutamate sensors** Katalin Török (St Georges's Univ. London, UK)

17:35 **Tissue Clearing and Image Analysis** Nicolas Renier (Intitut du Cerveau, France)

MONDAY – June 7th

16:00 **Miniscopes** Daniel Aharoni (UCLA, USA)

17:35 **Whole-cell patch-clamp** Alain Marty (SPPIN, France)

TUESDAY – June 8th

16:00 **Electronics primer** Boris Barbour (IBENS, France) / Marin Manuel (Univ. Rhode Island, USA)

17:35 **Electronics of patch-clamp amplifiers** Boris Barbour (IBENS, France) / Hubert Affolter (Sutter Instruments)

WEDNESDAY – June 9th

16:00 **Functional roles of neuronal membrane conductances – dynamic clamp** Lyle Graham (Centre Giovanni Borelli CNRS, France)

17:35 **Open Ephys** Josh Siegle (Allen Institute, USA)

THURSDAY – June 10th

16:00 **Extracellular recording** Clément Léna (IBENS, France)

17:35 **Neuropixels – high-density extracellular recordings** Tim Harris (Janelia Farm, USA)