Location:

Lectures: The Vision Institute, 17 rue Moreau, 75012 Paris
Practical demos: The Vision Institute, 17 rue Moreau, 75012 Paris (1st floor)

PROGRAM 2025

Monday 10 March 2025

9:00 -9:30 *Welcome coffee and opening remarks*
Valentina Emiliani & Eirini Papagiakoumou (The Vision Institute, Paris)

9:30-10:00 *General Introduction: Optical Control of brain functioning*
Valentina Emiliani (The Vision Institute, Paris)

10:00 -11:30 **Lecture:** *Wavefront shaping techniques and computer generated holography*
Emiliano Ronzitti (The Vision Institute, Paris)

11:30 -11:45 *break*

11:45 -12:45 **Lecture:** *Multi-photon excitation*
Eirini Papagiakoumou (The Vision Institute, Paris)?

13:00-14:30 LUNCH

14:30 -16:00 **Lecture:** *Optogenetic tools for excitation and inhibition*
Joahnes Vierock (Charité - Universitätsmedizin Berlin)

16:00 -17:00 **Lecture:** *Optogenetics in zebrafish*
Claire Wyart (Paris Brain Institute, ICM)

17:00 -17:20 *break*

17:20- 18:20 **Introduction to practicals 1 & 2**
Emiliano Ronzitti , Eirini Papagiakoumou (The Vision Institute, Paris)

18:20-19:30 **Poster Presentations**

19:30 -20:30 DINNER at the cafeteria, Lusseyran Hall

Tuesday 11 March 2025

9:00 -9:30 *breakfast*

9:30 -10:30 **Lecture:** *Multi-photon excitation & Temporal focusing*
Dan Oron (Weizmann Institute of Sciences, Rehovot, Israel)

10:30 -11:00 *break*

11:00 -12:45 **Lecture:** *Optical approaches for 2P optogenetics: scanning, spiral scanning, parallel illumination (3D temporal focusing)*
Valentina Emiliani (The Vision Institute, Paris)

12:45 -14:00 LUNCH

14:00 -18:00 **Practical 1:** *Building up a 1P holographic microscope*
Practical 2: *Building up a 2P holographic microscope with Temporal Focusing*

18:00 -20:00 **DINNER at the cafeteria, Lusseyran Hall**

Wednesday 12 March 2025

9:00 -9:30 *breakfast*

09:30 -11:00 **Lecture:** *All optical interrogation of brain circuits*
Eirini Papagiakoumou (The Vision Institute, Paris)

11:00 -11:15 *break*

11:15 -12:45 **Lecture:** *Optogenetic inhibition*
Ofer Yizhar (Weizmann Institute of Sciences, Rehovot, Israel)

12:45 -14:00 **LUNCH**

14:00 -18:00 **Practical 1:** *Building up a 1P holographic microscope*

Practical 2: *Building up a 2P holographic microscope with Temporal Focusing*

Practical 3: *All-optical 2P manipulation of neurons*

18:00 -20:00 **DINNER at the cafeteria, Lusseyran Hall**

Thursday 13 March 2025

9:00 -9:30 *breakfast*

09:30 -11:00 **Lecture:** *Illuminating brain function with optical activity indicators*
Michael Lin (Stanford University, US)

11:10 -11:15 *break*

11:15 -12:45 **Lecture:** *Patterned illumination for functional imaging*
Ruth Sims (The Vision Institute, Paris)

12:45 -14:00 **LUNCH**

14:00 -18:00 **Practical 2:** *Building up a 2P holographic microscope with Temporal Focusing*

Practical 3: *All-optical 2P manipulation of neurons*

Practical 4: *2P patterned microendoscopy*

18:00 -20:00 **DINNER at the cafeteria, Lusseyran Hall**

Friday 14 March 2025

9:00 - 9:30 *breakfast*

09:30 – 11:00 **Lecture:** *2P-Miniscope*
Weijian Zong (Norwegian University of Science and Technology - NTNU)

11:00 -11:15 *break*

11:15 -12:45 **Lecture:** *Patterned Microendoscopy*
Nicolò Accanto or Valentina Emiliani (The Vision Institute, Paris)

12:45 -14:00 **LUNCH**

14:00 -18:00 **Practical 3:** *All-optical 2P manipulation of neurons*

Practical 4: *2P patterned microendoscopy*

Practical 5: *Scanless 2P voltage imaging*

19:00 -21:00 **DINNER at the atrium IDV, 3rd floor**

Monday 17 March 2025

9:00 -9:30 *breakfast*

09:30 - 11:00 **Lecture:** *Viral vector design*
Deniz Dalkara (The Vision Institute, Paris)

11:00 -11:15 *break*

11:15 - 12:45 **Lecture:** *Hight throughput connectivity mapping*
Dimitrii Tanese (The Vision Institute, Paris)

12:45 -14:00 **LUNCH**

14:00 -18:00 **Practical 4:** *2P patterned microendoscopy*

Practical 5: *Scanless 2P voltage imaging*

Data Analysis (1 group)

18:00 -20:00 **DINNER at the cafeteria, Lusseyran Hall**

Tuesday 18 March 2025

9:00 -9:30 *breakfast*

09:30 - 11:00 **Lecture:** *3P excitation microscopy*
Chris Xu (Cornell University, USA)

11:00 -11:15 *break*

11:15 - 12:45 **Lecture:** *Mesoscopy and optogenetics*
Lamiae Abdeladim (University of Berkeley)

12:45 -14:00 **LUNCH**

14:00 -18:00 **Practical 5:** *Scanless 2P voltage imaging*

Data analysis

18:00 -20:00 **SOCIAL DINNER**

Wednesday 19 March 2025

9:00 -9:30 *breakfast*

09:30 - 11:00 **Lecture:** *Optogenetics and photodamage*
Valentina Emiliani/Benoît Forget (The Vision Institute, Paris)

11:00 -11:15 *break*

11:15 - 12:45 **Lecture:** *FliT*
Emiliano Ronzitti (The Vision Institute, Paris))

13:00 -14:00 **LUNCH**

14:00 -18:00 **Presentations from students**