TIGP-INS Neuro-imaging workshop

Time: 10:00-12:00, Thursday

Location: B100, Interdisciplinary Building, Academia Sinica

Credit: 3 credits

Course organizers: Pei-Lin Cheng, Yu-Wei Wu, Ya-Jen Cheng

Objectives:

The purpose of this workshop is to broaden students' knowledge and experience on neuro-imaging technologies. Students are expected to gain imaging technologies applicable to neuroscience and biological research. On the first day, basic knowledge of optics, microscopy and bio-image techniques will be introduced. After the basic bioimaging knowledge introduction, each section will integrate projects of interest and the principle of instrument utilized, aiming to teach "how to" apply bio-imaging technologies on resolving various topics of neuroscience and biological questions.

Evaluation:

20% Performance and Attendance；20% Rotation Report; 60 % Homework Assignment

Lecture Course:

Date	Topic	Lecturer
2023/3/23	**Basic introduction & Advances in Light Microscopy**	**Dr. Jin-Wu Tsai 蔡金吾**
2023/3/30	**Two-photon in vivo microscopy**	**Dr. Kuo-Hua Huang 黃國華**
2023/4/6	**Monitoring cellular events in action with biosensors**	**Dr. Pei-Lin Cheng 鄭珮琳**
2023/4/20	**Real-time monitoring and manipulation of neural circuit activities in rodents (9:00-12:00, including lab visiting)**	**Dr. Yu-Wei Wu 吳玉威**
2023/4/27	**Super-resolution, Light Sheet, and Expansion microscopy (9:00-12:00, including lab visiting)**	**Dr. Bi-Chang Chen 陳壁彰**
2023/5/4	**Ultrastructural analysis by Electron Microscopy and Array Tomography**	**Dr. Hwai-Jong Cheng 程淮榮**
2023/5/18	**Millisecond transformations of population output from postsynaptic perspective (9:30-12:00, including lab visiting)**	**Dr. Ching-Lung Hsu 徐經倫**
2023/5/25	**Preclinical MRI**	**Dr. Dennis W. Hwang 黃聖言**
2023/6/1	**Introduction to imaging analysis**	**Dr. Keng-hui Lin 林耿慧**
2023/6/8	**Commercial and open source software for imaging analysis (3pm；online course)**	**Mr. Cheng-Yu Huang 黃承宇**