Neuronal Circuits and Behavior

CNC Advanced Courses 2021

Doctoral Program in Experimental Biology and Biomedicine (PDBEB)

April 5 - 9, 2021

Location: Online

Coordinator:
João Peça - (jpeca@uc.pt)

Lecturers
João Peça, CNC & FCTUC, University of Coimbra
Ana Luisa Carvalho, CNC & FCTUC, University of Coimbra
Ana Luísa Cardoso, CNC & IIIUC, University of Coimbra
Mónica Santos, CNC & IIIUC, University of Coimbra
Catarina Seabra, CNC & IIIUC, University of Coimbra
Joana Guedes, CNC & IIIUC, University of Coimbra
Emanuel Ferreira Fernandes, CNC & FMUC, Universidade de Coimbra
Carolina Kunicki, CNC & IIIUC, University of Coimbra
Pedro Filipe Martins, DArq, University of Coimbra

Teaching assistants
Tiago Reis, CNC & IIIUC, University of Coimbra
Marcos Gomes, CNC & IIIUC, University of Coimbra
Pedro António Ferreira, CNC & IIIUC, University of Coimbra

Invited Speakers
Ira Milosevic, University of Oxford
Rui Oliveira, Instituto Superior de Psicologia Aplicada
Luisa Pinto, ICVS, University of Minho
Luisa Lopes, IMM, University of Lisbon
Joana Ferreira, University of Bordeaux
Tobias Boeckers, Ulm University

Link for the lectures:
https://videoconf-colibri.zoom.us/j/82787951081

Program

Monday | April 5

09.45h - 10.00h: Structure of the Course; Q&A – João Peça
10:30h - 11.30h: Optogenetics and Neuronal Circuit Manipulation – João Peça
11:30h - 12:30h: Circuit dysfunction in neurodevelopmental disorders – João Peça

14.00h - 16.00h: Electrophysiology Whole-Cell Recordings (Practical lecture) - Joana Guedes
16:15h - 17:15h: Survival Surgery and Craniotomies (Practical lecture) - Marcos Gomes, Tiago Reis, Ana Luisa Cardoso

Tuesday | April 6

9.00h - 10.00h: Principles of in vivo recordings - Emanuel Ferreira Fernandes
10.00h - 11:00h: A Gradient of Hippocampal Inputs to the Medial Mesocortex - Emanuel Ferreira Fernandes
11:00h - 12:00h: Fronto-parieto-occipital cortical circuits in tactile discrimination – Carolina Kunicki

14.00h - 16.00h: Lab talks: Optogenetics and Behavioral analysis using open source
software (Practical lecture) - Pedro Ferreira, Tiago Reis, João Peça
16.15h - 17.15h: Visualising complex data (Practical lecture) - Pedro Filipe Martins

Wednesday | April 7

09:00h - 10.00h: Synaptic dysfunction in neuropsychiatric disorders - Ana Luísa Carvalho
10:00h - 11.00h: NMDA receptors dynamics and nanoscale organization: shaping synaptic
plasticity - Joana Ferreira
11.00h - 12.00h: Neurobiology of Aging - Luísa Lopes

14.00h - 15.30h: Seminar - Tobias Boeckers
15.30h: Work on Grant proposal

Thursday | April 8

09:00h - 10.00h: Stress and neuronal circuits - Luísa Pinto
10:00h - 11.00h: Lab Talks: Brain organoid models in neuropsychiatry research - Catarina Seabra
11.00h - 12.00h: Brain circuitry of anxiety and fear - Mónica Santos

14.00h - 15.30h: Of Fish and Flies: searching for the biological basis of sociality in two model organisms - Rui Oliveira
15.30h: Work on Grant proposal

Friday | April 9

09:30h - 10.30h: Lab Talks: Neuroimmune remodelling of cerebellar circuits - Joana Guedes
10.30h - 11.30h: The influence of early life stress on mPFC circuits and animal behavior - Ana Luísa Cardoso

14.00h -15.30h: Seminar - "Improving synaptic transmisson in failing brain" - Ira Milosevic
15:45h: Grant presentation and discussion

Student Assignments:
Students (in groups) will prepare a grant proposal based on original papers that will be proposed to them. On April 9th, students will present and discuss their proposal. Throughout the course the students will meet with tutors to discuss the grant proposal.

CNC Center for Neuroscience and Cell Biology
CIBB Centre for Innovative Biomedicine and Biotechnology
EEB PhD Programme Experimental Biology and Biomedicine
1290 Instituto de Investigação Interdisciplinar Universidade de Coimbra
FCT Fundação para a Ciência e a Tecnologia