**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 Luisa Cardoso, CNC & IIIUC, University of Coimbra
- Mónica Santos, CNC & IIIUC, University of Coimbra
- Catarina Seabra, 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
- Luísa Lopes, IMM, University of Lisbon
- Joana Ferreira, University of Bordeaux
- Tobias Boeckers, Ulm University

**Program**

**Monday | April 5**

09.45h - 10.00h: Structure of the Course; Q&A – João Peça
10.00h - 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

**Wednesday | April 7**

09.00h - 10.00h: Synaptic dysfunction in neuropsychiatric disorders - Ana Luisa 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 Luisa Cardoso

14.00h - 15.30h: Seminar - “Improving synaptic transmission 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.