Advanced Course

Hands-on the Rodent Brain: from intracellular trafficking to brain connectome

BLOCK 1					
	19 Feb	**20 Feb**	**21 Feb**	**22 Feb**	**23 Feb**
MORNING (09:00-12:30)	- Course introduction - Theory on rodent brain anatomy - Theory on brain atlas & stereotaxic surgeries - Coordinates calculation	- Stereotaxic procedures - Microsurgery - Injection - Cannula implantation	- Theory on optogenetics - Hands on optogenetic control of behavior	Theory and hands on local field potential recording	Hands on local field potential recording
	Ana João Rodrigues Fábio Teixeira (A2.09)		Ana João Rodrigues Carina Cunha João Peça, CNC (A2.09 / I2.04)	Inês Caetano João Oliveira (A2.09 / I2.γ03)	Inês Caetano João Oliveira (I2.γ03)
AFTERNOON (14:00-17:30)	- Stereotaxic procedures - Microsurgery		- Hands on optogenetic control of single-cell activity	Hands on local field potential (LFP) recording	LFP data analysis
	Luisa Pinto Carina Cunha (I2.04)	Luisa Pinto Carina Cunha (I2.04)	Carina Cunha (I2.γ03)	Inês Caetano João Oliveira (I2.γ03)	Inês Caetano João Oliveira (I2.γ03)

BLOCK 2					
	26 Feb	**27-28 Feb**		**01 Mar**	**02 Mar**
MORNING (09:00-12:30)	- Theory on brain slicing and patch clamp technique - Preparation of cutting and recording solutions	- Acute slice preparation - Patch-clamp recording *(Hands on for 3 students)*	- Brain processing - Validation of injection / recording positions *(Hands on for the remaining students)*	- Acute slice preparation - Patch-clamp recording *(Hands on for 3 students)*	Analysis of viral transfection extension by immunofluorescence
	Patrícia Monteiro João Oliveira (A2.09)			Patrícia Monteiro (I2.γ05)	
AFTERNOON (14:00-17:30)	- Preparation of cutting and recording solutions - Preparation of acute brain slices			Data analysis *(All students)*	
	Patrícia Monteiro (I2.γ05)	Patrícia Monteiro (I2.γ05)	Carina Cunha Inês Caetano (I2.γ04 / A2.09)	Patrícia Monteiro (A2.09)	Carina Cunha Ana João Rodrigues (I2.04)

BLOCK 3					
	05 Mar	**06 Mar**	**07 Mar**	**08 Mar**	**09 Mar**
MORNING (09:00-12:30)	Brain macrodissection (with and without brain slicer)	Theory & hands on electron microscopy: - Immunogold technique - Double labeling - Sub-cellular quantifications	Theory and hands on: - Intracellular trafficking and localization neurosynaptosomes - western blot validation	- PSD-extrasynaptic fractions - pre & postsynaptic fractions	Evaluation Final discussion
	Luisa Pinto Patrícia Patrício Ana João Rodrigues (I2.04)				
AFTERNOON (14:00-17:30)	Theory & hands on electron microscopy: - image segmentation - ultrastructure identification - 3D reconstruction				
	Corrado Cali (I2.04)	Corrado Cali Ioannis Sotiropoulos (A2.09 / I2.04)	Ioannis Sotiropoulos (A2.09 / I2.04)	Ioannis Sotiropoulos (I2.04)	Teaching staff (A2.09)