MASTER 2 Neurosciences Fondamentales et Cliniques
UCB Lyon 1, Lyon, France

Internship proposal 2020-2021
(internship from January to end of May 2021)

Host laboratory:

Centre de Recherche en Neurosciences de Lyon

INSERM U1028 - CNRS UMR5292 - Université Lyon 1

Centre Hospitalier Le Vinatier - Bâtiment 462 – Neurocampus,

95, boulevard Pinel - 69675 Bron cedex

Host team :

Team CMO : Olfaction from coding to memory (https://crnl.univ-lyon1.fr/index.php/en)

Internship supervisors :

Philippe Litaudon, CR CNRS, philippe.litaudon@cnrs.fr

Nadine Ravel, DR CNRS, nadine.ravel@cnrs.fr

Project title: Recognition memory in aging rodents: an animal model to understand the determinant of successful brain aging.

Project summary :

Among age-related brain disorders, memory difficulties are the most prominent. However, at the same age, while some of us seem to have retained their memory capacities others experience significant difficulties, particularly in everyday life recognition memory. This internship is part of a research project aimed at understanding the functional determinant of successful brain aging. In this approach, it is particularly important to be able to distinguish memory disorders characteristic of normal aging from those associated with pathological aging, but also to focus on the inter-individual variation of cognitive impairments in relation to environmental and intrinsic factors. The study of cognitive aging in rats allows us to focus on normal aging since neurodegenerative disorders do not spontaneously exist in this species. The objective of the internship is to carry out a behavioral study in rodents to evaluate the evolution of recognition memory performance across aging. Three different versions of object recognition task will be tested. In parallel of the behavioral tests, animals brain integrity and function will be evaluated using non-invasive imaging approaches (microPET scan and MRI) designed for small animals.

3-5 recent publications :

Litaudon P, Bouillot C, Zimmer L, Costes N, **Ravel N** (2017) Activity in the rat olfactory cortex is correlated with behavioral response to odor: a microPET study. Brain Struct. Funct., 222, 577-586.

Veyrac A, Allerborn M, Gros A, Michon F, Raguet L, Kenney J, Godinot F, Thevenet M, Garcia, S, Messaoudi B, Laroche S, **Ravel N** (2015) Memory of occasional events in rats: individual episodic memory profiles, flexibility, and neural substrate. J. Neurosci., 35 : 7575-7586.

Martin C, Grenier D, Thévenet M, Vigouroux M, Bertrand B, Janier M, **Ravel N, Litaudon P** (2007) fMRI visualization of transient activations in the rat olfactory bulb using short odor stimulations. Neuroimage, 36 : 1288-1293.

Meunier D, Fonlupt P, Saive A-L, Plailly J, **Ravel N,** Royet J-P (2014) Modular structure of functional networks in olfactory memory. Neuroimage, 95:264-275.

Please send your proposal to emiliano.macaluso@univ-lyon1.fr and marion.richard@univ-lyon1.fr for publication on the website.