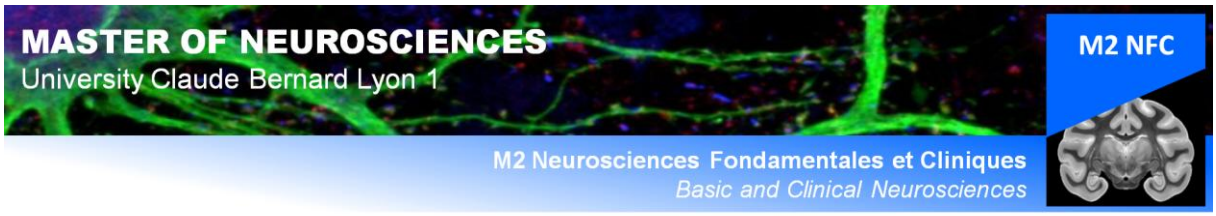

MASTER 2 Neurosciences Fondamentales et Cliniques

Internship proposal 2021-2022

(internship from January to end of May 2022)

Host laboratory:
Centre de Recherche en Neurosciences de Lyon
Inserm U1028 - CNRS UMR5292 - UCBL
Centre Hospitalier Le Vinatier - Bâtiment 462 - Neurocampus
95 boulevard Pinel 69675 Bron Cedex

Host team : NEUROPOP

Internship supervisors :
Bénédicte Ballanger, Chargé de Recherche - benedicte.ballanger@cnrs.fr

Project title :
Investigating the noradrenergic system in the living human brain across the life span: its role on perceptual and motor olfactory capacities.

Project summary : *approx 10 lines*

The goal of the project is to provide, for the first time in humans, a wider understanding of the role of the noradrenergic system in health through the use of ^{11}C-Yohimbine combined with a cutting-edge technology, the hybrid PET/MRI scanner. Indeed, with the rapid growth of aging populations worldwide there is an urgent need to obtain integrated understanding of mechanisms contributing to cognitive and sensorimotor aging as the occurrence of neurodegenerative disorders increases with aging. In particular, decrease of olfactory, cognitive and affective function are very common in elderly. However, direct *in vivo* evidence of the role of the noradrenergic system on these behavioral changes across the life span is still missing. The results of this project should fill this gap

3-5 recent publications :

1. Ballanger B, Bath KG, Mandairon N (2019) Odorants: a tool to provide nonpharmacological intervention to reduce anxiety during normal and pathological aging. Neurobiology of Aging (IF 4.3) 82:18-29. Review.
2. Spay C, Meyer G, Welter ML, Lau B, Boulinguez P, Ballanger B. *(2018)* Functional imaging correlates of akinesia in Parkinson's disease: Still open issues. *Neuroimage Clinical* doi: 10.1016/j.nicl.2018.101644. Review.
3. Spay C, Albares M, Lio G, Thobois S, Broussolle E, Lau B, Ballanger B, Boulinguez P. *(2018)* Clonidine modulates the activity of the subthalamic-supplementary motor loop: evidence from a pharmacological study combining DBS and EEG recordings in Parkinsonian patients. *Journal of Neurochemistry* 146(3):333-347.

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