

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 - UCBL
Centre Hospitalier Le Vinatier - Bâtiment 462 - Neurocampus Michel Jouvét
95 boulevard Pinel, 69675 Bron Cedex

Host team :

NEUROPOP - Neuroplasticité et Neuropathologie de la Perception Olfactive

Internship supervisors :

Marion RICHARD, MCU (marion.richard@univ-lyon1.fr)
Moustafa BENSAFI, DR CNRS (moustafa.bensafi@cnrs.fr)
Arnaud FOURNEL, Post-doc (arnaud.fournel@inserm.fr)

Project title : Digital Olfaction : from diagnosis to remediation

40% of people aged 55 and older are concerned by olfactory deficits (anosmia = complete loss of smell or hyposmia = reduced sense of smell). These alterations have deleterious effects on health and quality of life, notably on food intake, body hygiene, detection of dangers... The medical community is currently hampered by the lack of both diagnostic tools and therapeutic options to restore olfactory perception. Based on our expertise in human olfactory testing, we are developing a connected olfactory testing procedure. During the internship, the M2 student will be in charge of validating this new technology (by comparing it to existing olfactory tests) and of developing new olfactory training strategies, based on the current noradrenergic hypothesis of healthy brain aging.

3-5 recent publications :

1. Forest J, Moreno M, Cavellius M, Chalençon L, Ziesel A, Sacquet J, Richard M, Didier A, Mandairon N. Short-term availability of adult-born neurons for memory encoding. *Nat Commun*. 2019 Dec 6;10(1):5609. doi: 10.1038/s41467-019-13521-7.
2. Fournel A, Sezille C, Licon CC, Sinding C, Gerber J, Ferdenzi C, Hummel T, Bensafi M. Learning to name smells increases activity in heteromodal semantic areas. *Hum Brain Mapp*. 2017 Dec;38(12):5958-5969. doi: 10.1002/hbm.23801. Epub 2017 Sep 12.
3. Jossain P, Ferdenzi C, Djordjevic J, Bensafi M. Relationship Between Psychophysiological Responses to Aversive Odors and Nutritional Status During Normal Aging. *Chem Senses*. 2017 Jul 1;42(6):465-472. doi: 10.1093/chemse/bjx027.
4. Vinera J, Kermen F, Sacquet J, Didier A, Mandairon N, Richard M. Olfactory perceptual learning requires action of noradrenaline in the olfactory bulb: comparison with olfactory associative learning. *Learn Mem*. 2015 Feb 17;22(3):192-6. doi: 10.1101/lm.036608.114.
5. Moreno M, Richard M, Landrein B, Sacquet J, Didier A, Mandairon N. Alteration of olfactory perceptual learning and its cellular basis in aged mice. *Neurobiol Aging*. 2014 Mar;35(3):680-91. doi: 10.1016/j.neurobiolaging.2013.08.034.

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