

BARRE Marion-Anne

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Date of birth 27 September 1993
Nationality French



Education and qualifications

- Currently Last year of Master's Degree (M2) of Integrative Biology and Physiology, neuroscience specialization at **Université Pierre et Marie Curie** and **ENS Cachan Paris Saclay** (one of the famous French *Grandes Ecoles*: a higher education establishment outside the main framework of the French university system and research).
- 2014-2015 First year of Master's Degree (M1), neuroscience specialization at **Université d'Orsay Paris Saclay** and **ENS Cachan Paris Saclay**.
Results S1 :15,092 - S2 :13,226 ; Global ranking 3/36
- 2013-2014 Last year of Bachelor science. Graduated in Biology and Health with honors at **Université d'Orsay Paris Saclay** and **ENS Cachan Paris Saclay**.
Results S5 : 12,88 - S6 : 16,158 ; Ranking S5 : 28/135 – S6 : 5/135
- 2011-2013 First years of Bachelor science in life licence at **Université Pierre et Marie Curie**.
Results S1 :15,33 - S2 :15,01 - S3 : 14,5 - S4 : 16,54
Ranking S1 : 17/878 - S2 : 37/921 - S3 : 20/598 - S4 : 3/515
- 2011 Baccalauréat Scientifique (*High School diploma, scientific option, Life Science specialization, equivalent to A Levels*), with high honors, **Institut Notre Dame** (Bourg la Reine, France)

Work Experience

- 2015-2016 10-month internship in György Buzsáki's laboratory at **NYU Neuroscience Institute** (New-York) supervised by Drs. Daniel English and Adrien Peyrache, who had focused their research program on the neuronal dynamics of the brain circuits coding for the head-direction, the building block of the navigation system. The aim of this research was to unravel the fundamental circuit properties that govern the generation of a robust and reliable head-direction signal, properties sometimes referred to as 'attractor dynamics'. The current theories predict that one and only one needle may exist at any time. To this end I became familiar in major survival brain surgeries, high density multi-electrode recordings in vivo and optogenetics. Using specific transgenic mice line and recombinant viruses, we labelled sub-ensembles of neurons coding for the same head-direction. We then monitored and interrogated directly the circuits with a combination of electrode recording and optogenetic manipulation. We then assessed the effects of activating or inhibiting a subset of this neuronal 'compass' on the neurons coding for other directions and tested the theoretical predictions of how this system works.
- 2014 10-week internship at **Université Paris Descartes** (Paris) in the team headed by Vivien Chevalere and Rebecca Piskorowski working on synaptic plasticity in hippocampal neuron circuits. I learned how to record extracellular field potentials in hippocampal slices and to analyse recording sessions' data. I studied the effects of two neuropeptides on the inhibitory transmission in area CA2; I reported that substance P

has a very complex effect and that activation of μ -opioid receptors doesn't induce long term depression in opposition with activation of δ -opioid receptors.

2013 4-week internship at the **Collège de France** (Paris) in Stéphane Germain's laboratory "Role of Matrix Proteins in Hypoxia and Angiogenesis" CIRB CNRS/ UMR 7241 - INSERM U1050, where I participated in an ELISA test development to show angptl4 protein is a biomarker of no-reflow (vascular injuries) and its level in the blood can depend on patients with tumor.

2012 2-week internship for molecular biology experiment introduction at **Institut de la Vision** (Paris) CNRS/UMR 7210 with Adeline Berger (PhD, Deniz Dalkara's team, CR1-INSERM)

Languages French: native speaker; English: professional skills; Spanish: intermediate level.

Other Skills Computer literate: Windows applications, MS Office.
Clean Driving Licence.

References **ENS Cachan Biology Department director :**
Uriel HAZAN ; courriel : uriel.hazan@ens-cachan.fr
ENS Cachan Biology Department Professor, Centre Psychiatrie & Neurosciences
INSERM U894 researcher:
Michel SIMONNEAU ; Email : michel.simonneau@inserm.fr
Principal Investigator at the Brain Physiology laboratory – Paris Descartes:
Vivien CHEVALEYRE ; Email: vivien.chevaleyre@parisdescartes.fr
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