



1. Learning objectives

After completion of this course, the students will be able to:

- Understand the key molecular and cellular processes involved in the development of the nervous system
- Understand the use of a particular model (invertebrate, vertebrate, in vitro and organoids) and know its advantages and disadvantages
- Design experimental protocols
- Perform a critical analysis of scientific articles
- Contribute to a scientific discussion

2. Topics

The course will cover the different steps of the nervous system development during prenatal, postnatal and adult life and the pathological consequences of its alterations (Autism Spectrum disorders and Attention Deficit / Hyperactivity Disorder).

3. Teaching

- Seminars by researchers experts followed by discussion
- Scientific papers analysis related to the seminars

4. Examination

Continuous assessment 30% : problem-based learning, pair evaluation, homework. Final exam 70%

5. Speakers/topics

- Karine Massé (neural induction)
- Sandra Soukup (synapse development (Drosophila))
- Marie Gendrel (terminal differentiation (C.elegans))
- Antonny Czarnecki (post-natal neuron development)
- Emilie Pacary, Sepand Rastegar (Adult neurogenesis and brain regeneration (mouse and zebrafish))
- Jerome Ezan (animal models presentation)
- Claire Mazzocco (brain organoids)
- Sepand Rastegar, Jérôme Ezan (neural tube regionalisation)
- Marc Landry, Frédérique Bonnet-Brihault (ADHD and autism)