Université Paris-Saclay

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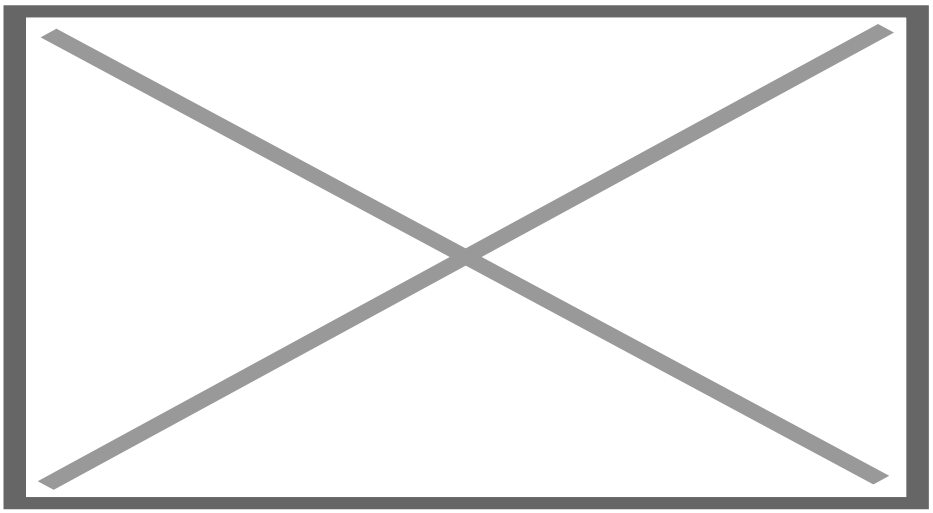
# M2 Cognition, Behavior and Mental Disorders

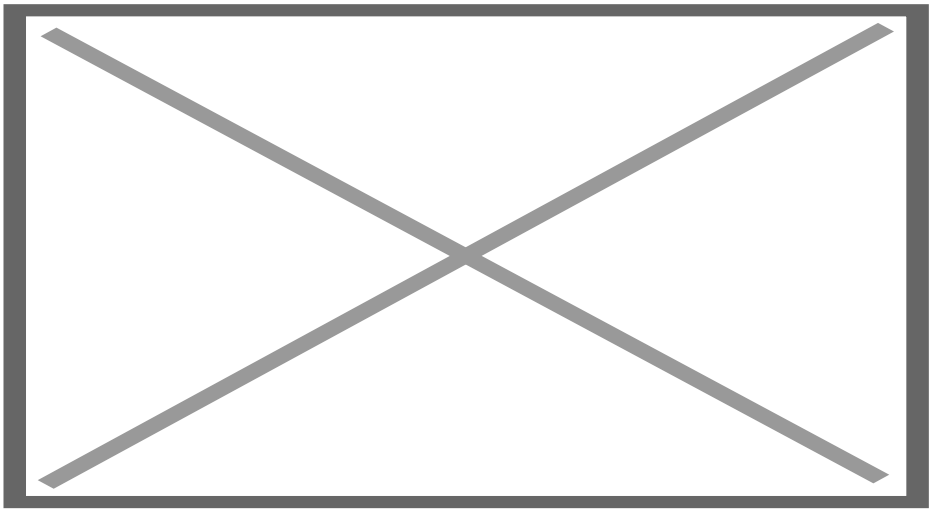
Master
Mention Neurosciences
Langue(s) d'enseignement
Anglais

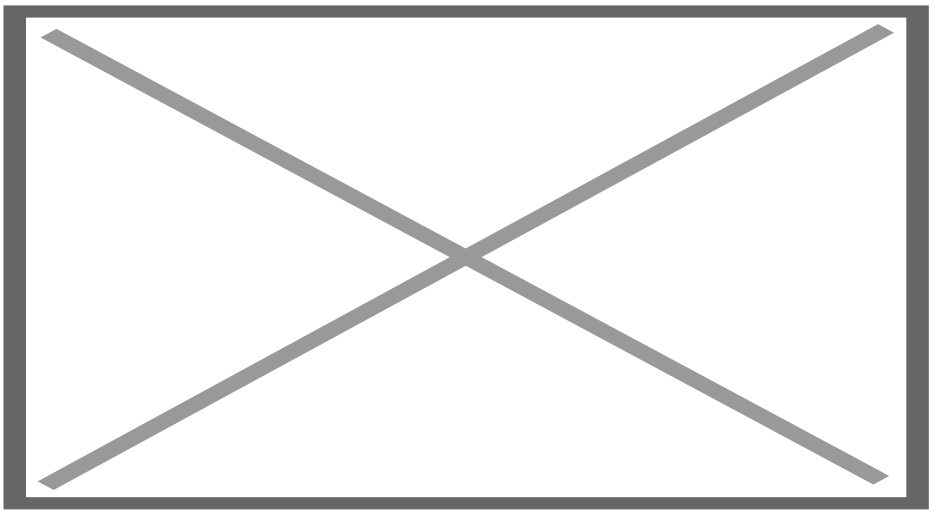
Learning, memory, planning, decision-making, and social interaction are cognitive functions enabled by a functional brain in all animals. How does a healthy brain support the development and maintenance of these complex functions? How do brain cells interact, or how are neurotransmitters involved in these processes? How, when, and why are these functions altered in developmental, neurodegenerative, or psychiatric conditions? These exciting questions will be explored in this Master's program.

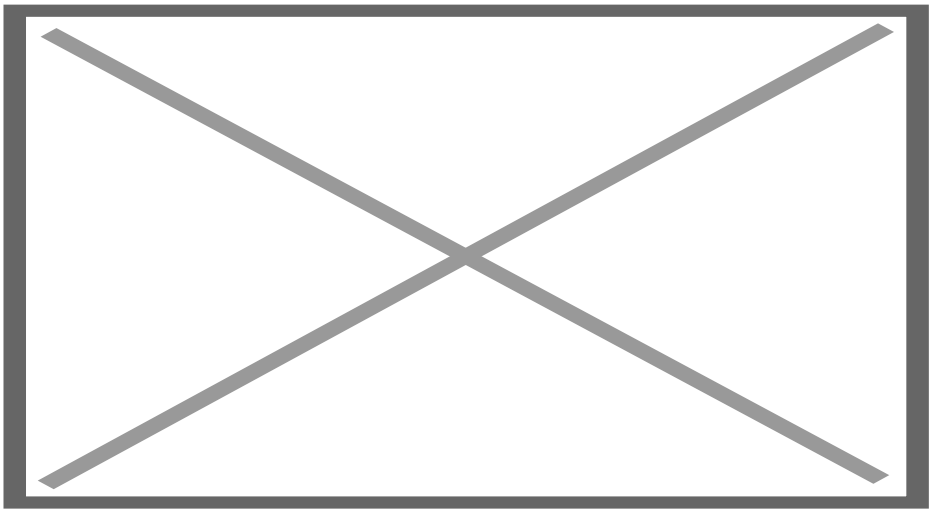
The M2 ***Behavior, Cognition and Mental Disorders*** will provide the opportunity to study cognitive functions and their underlying neural mechanisms in healthy subjects or associated with neurodevelopmental, psychiatric or neurodegenerative diseases. During the first semester, 6 theoretical and practical teaching units are offered: 'Brain plasticity, learnings and memories', 'Psychiatric disorders: translational approaches and treatments', 'Social cognition in normal and pathophysiological conditions', 'Human cognitive neuroscience of development', 'Gut-brain axis in the control of eating behaviors and emotions', and 'Methods in cognition'. Four additional units can be chosen in the '*M2 Systems Neuroscience: from cells to brain functions'* or other units addressing specific topics in neuroscience. During the second semester, a six-month research internship will allow students to deepen their theoretical knowledge and develop advanced technical skills in cognitive and behavioral neuroscience

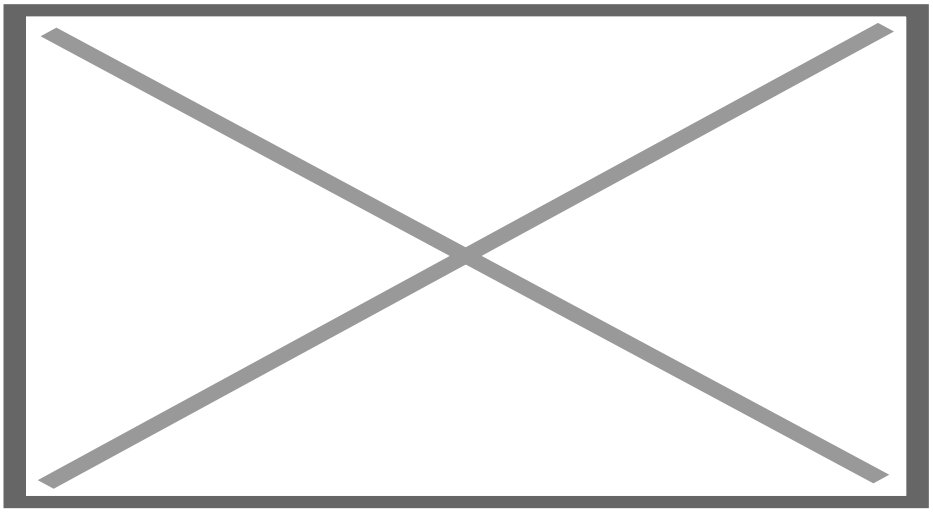
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Je candidate











# Informations

- Présentation
- Admission
- Programme

Présentation

# Compétences

At the end of this program, the students will be able to:

- Define the fundamental principles of cognitive functions and brain structures involved.
- Have a comprehensive overview of the brain anatomy, neurophysiology and neurotransmission of healthy mammals
- Explain the current knowledge concerning brain dysfunctions associated to some neurodevelopmental, psychiatric or neurodegenerative diseases, at different scales (from behavioral to cellular and molecular)
- Assess behavioral, neurochemical and/or cellular dysfunctions associated with specific neuropathologies either investigated in preclinical models or in human populations
- Understand the principle of cutting edge brain imaging methods, in rodents and in humans through the involvement of world-renown brain imaging centers
- Analyze data with appropriate statistical methods
- Analyze, understand and present orally scientific publications in the field of Neuroscience
- Show an ability to work in a team and interact scientifically with colleagues
- Develop autonomy in scientific thinking and work organization
- Develop an ethical thinking of Neuroscience research
- Build and communicate a research project (both orally and in writing) and design experimental protocols to study brain-function relationships in healthy individuals, as well as in preclinical or in clinical populations.

## Objectifs pédagogiques de la formation

The objectives of the M2 are to provide students with a solid knowledge regarding brain functioning (at different scales) allowing the development and implementation of behavior and cognitive functions in healthy subjects, in clinical populations or in preclinical models of psychiatric, neurodevelopmental or neurodegenerative disorders. Relying on their innovative research, neuroscience experts will present current knowledge about how healthy brains develop and function, along with the latest innovative methods used to assess brain activity in humans and animal models. Another central objective of the program is to equip students with the tools to assess brain dysfunction in clinical populations and to evaluate efficiency of innovative therapeutics. This will be explored through examples of pathologies involving social dysfunction, eating disorders, learning developmental issues, and major psychiatric disorders including depression, addiction and post-traumatic stress disorders. All these aspects will rely on the close relationship among clinical, animal, and in silico approaches, offering a unique opportunity for students to question and discuss with experts the strength, ethics and limitations of each approach. The Master courses will be at the edge of current questions in Neuroscience, thus providing students with the knowledge and experience needed to take an active part in the laboratory where they will carry out their internship during the second semester.

The global objective of the Master degree is to provide students at the same time with technical/methodological understanding as well as a strong conceptual knowledge enabling them to comprehend and perform in multiple Neuroscience domains, from behavioral studies in preclinical models to pathophysiological assessments in healthy human or clinical populations.

The Master provides a unique opportunity for each student to shape her/his own path by choosing four optional units on top of the six mandatory ones. Students will learn how to design a Neuroscience research project, how to conceptualize a scientific question, why choosing specific methods, how to analyze data and appropriately present them to an audience.

# Débouchés

## Professionnels

### Après Master + Doctorat : chercheur ou enseignant-chercheur
### ingénieur de projet en santé
### Ingénieur de recherche ou d'études
### Ingénieur.e recherche et développement
### métiers de la recherche

## Poursuite d’études

### ngénierie études, recherche et développement

# Thèse de doctorat
# Formation d'attaché.e ou assistant.e de Recherche Clinique

## Agenda

Début de la formation (date indicative)
07/09/2026
Fin de la formation (date indicative)
30/09/2027
Admission

## Voie d’accès

Psychologie
Sciences de la vie
Sciences de la vie et de la Terre

## Capacité d’accueil

### Places

15

## Public visé et prérequis

The access in M2 Cognition, Behavior and Mental Disorders is open to:

- Master Students who have obtained the M1 in Neuroscience, or related fields with at least 2-3 units teaching in Neuroscience (basic knowledge in brain anatomy and functioning, at different scales).
- Medical, pharmacy or engineer students (with a specific knowledge in Neuroscience).

The level in English will be assessed during the interview.

## Période(s) de candidature

Plateforme Inception

Du 02/02/2026 au 04/04/2026

Du 04/05/2026 au 21/06/2026

## Pièces justificatives

### Obligatoires

Lettre de motivation.

Lettre de recommandation d'un maÎtre de stage.

Tous les relevés de notes des années/semestres validés depuis le BAC à la date de la candidature.

Curriculum Vitae.

## Facultatives

Dossier VAPP (obligatoire pour toutes les personnes demandant une validation des acquis pour accéder à la formation) https://www.universite-paris-saclay.fr/formation/formation-continue/validation-des-acquis-de-lexperience.

Programme

| Matières | ECTS | Semestre | Cours | TD | TP | Cours-TD | Cours-TP | TD-TP | A distance | Projet Tutorat |
|---|---|---|---|---|---|---|---|---|---|---|
| Fundaments in Neuroscience | | | | | | | | | | |
| Brain plasticity, learnings and memories<br>Charger le détail | 3 | Semester 1 | 20 | | | | | | | |
| In-depth exploration of Cognition, Behavior and Mental Disorders | | | | | | | | | | |
| social cognition in normal and physiopathological conditions<br>Charger le détail | 3 | Semester 1 | 14 | 0 | 6 | | | | | |
| Methods in cognition<br>Charger le détail | 3 | Semester 1 | 2 | 9 | 9 | | | | | |
| Psychiatric disorders: translational approaches and treatments<br>Charger le détail | 3 | Semester 1 | 5 | 15 | | | | | | |
| Human developmental cognitive neurosciences<br>Charger le détail | 3 | Semester 1 | 16 | 4 | | | | | | |
| Microbiota-gut-axis in the control of eating behaviors and emotions<br>Charger le détail | 3 | Semester 1 | 20 | | | | | | | |

| Matières | ECTS | Semestre | Cours | TD | TP | Cours-TD | Cours-TP | TD-TP | A distance | Projet Tutorat |
|---|---|---|---|---|---|---|---|---|---|---|
| Advanced Systems Neuroscience | | | | | | | | | | |
| Sensory systems and perception<br>Charger le détail | 3 | Semester 1 | 25 | | | | | | | |
| Neuroethology<br>Charger le détail | 3 | Semester 1 | 16 | 4 | | | | | | |
| Methods in systems neuroscience<br>Charger le détail | 3 | Semester 1 | 5 | | 15 | | | | | |
| Motor systems and actions<br>Charger le détail | 3 | Semester 1 | 13.5 | 6.5 | | | | | | |
| Glia in brain health and disease<br>Charger le détail | 3 | Semester 1 | 15 | 5 | | | | | | |
| Elective courses | | | | | | | | | | |
| Neural stem cells and neurogenesis<br>Charger le détail | 3 | Semestre 1 | 15 | 5 | | | | | | |
| Closed loop neuroscience<br>Charger le détail | 3 | Semester 1 | 25 | | | | | | | |
| Models and ethics in neuroscience<br>Charger le détail | 3 | Semester 1 | 14 | 6 | | | | | | |
| Neurodegenerative diseases<br>Charger le détail | 3 | Semester 1 | 16 | 4 | | | | | | |
| Functional neuroanatomy, development and evolution<br>Charger le détail | 3 | Semester 1 | | | | | | | | |

| Matières | ECTS | Semestre | Cours | TD | TP | Cours-TD | Cours-TP | TD-TP | A distance | Projet Tutorat |
|---|---|---|---|---|---|---|---|---|---|---|
| Internship CBMD | 27 | Semester 2 | | | | | | | | |

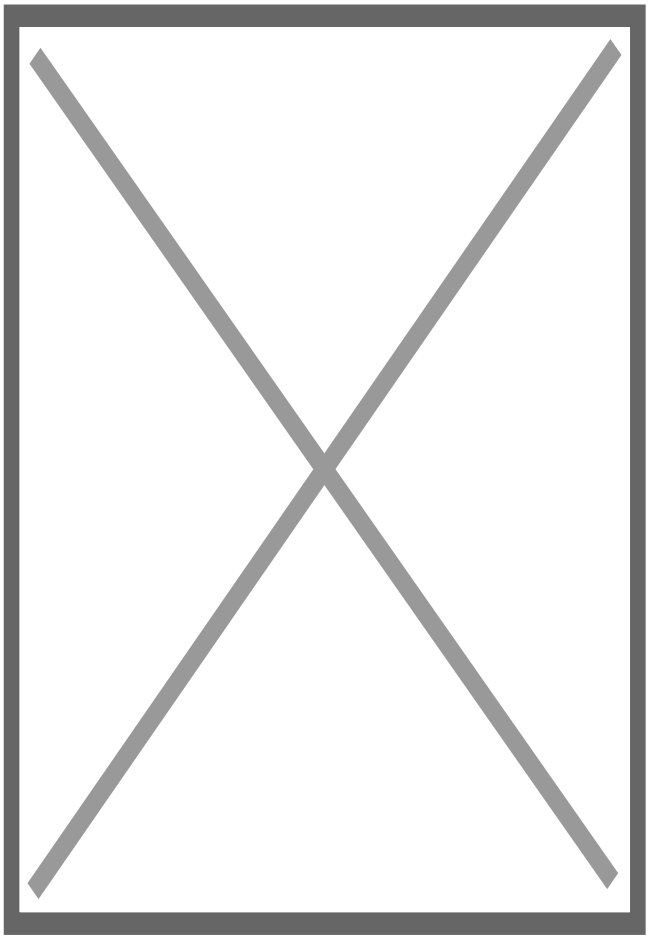
| Matières | ECTS | Semestre | Cours | TD | TP | Cours-TD | Cours-TP | TD-TP | A distance | Projet | Tutorat |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Charger le détail | | | | | | | | | | | |
| Scientific Project CBMD | 3 | Semester 2 | | | | | | | | | |
| Charger le détail | | | | | | | | | | | |

# Lieu(x) d'enseignement

SACLAY

# Campus de la formation

Javascript est requis pour visualiser cette carte.



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Voir
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Bibliothèque
Equipements sportifs
Résidence étudiante

# Contact(s)

- **Arnaud Petitjean**

  secrétaire pédagogique
- **Sylvie Granon**

  PR
- **roseline poirier**

  PR

http://www.universite-paris-saclay.fr/formation/master/neurosciences/m2-cognition-behavior-and-mental-

disorders