
BORDEAUX
neurocampus
université
de BORDEAUX

A department of the University of Bordeaux

Bordeaux Neurocampus comprises **pluridisciplinary research teams** stuying brain function and pathologies.

Its 750 scientists improve the **knowledge of brain function** from the molecular to the integrated level, and develop **preventive approaches and new therapeutics** to brain diseases.



Key figures

8 units

6 laboratories

Bordeaux Imaging Center

Bordeaux School of Neuroscience

+ 1 team for the « Institut de l'Audition »

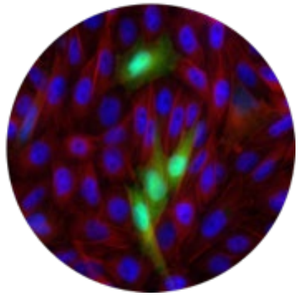
55 teams

780 research staff

30+ different nationalities

250 publications per year

14 ERC (European Research Council grant) since 2009







You want to join us?

Check our job offers on:

Main trustees of our units

Our teams also host staff from

Partners

Bordeaux Neurocampus in a few dates

7 000 m²
200 personnel

1993







30 000 m²
750 personnel

2020



Neuroscience Federation

1993

Major lab reorganization

2011

Bordeaux Neurocampus Department

2019

LabEx BRAIN award

2006

2010

2011

LabEx BRAIN // Bordeaux Neurocampus

2014

2016

GPR BRAIN_2030

2019

2021

European Synapse Summer School, ES³

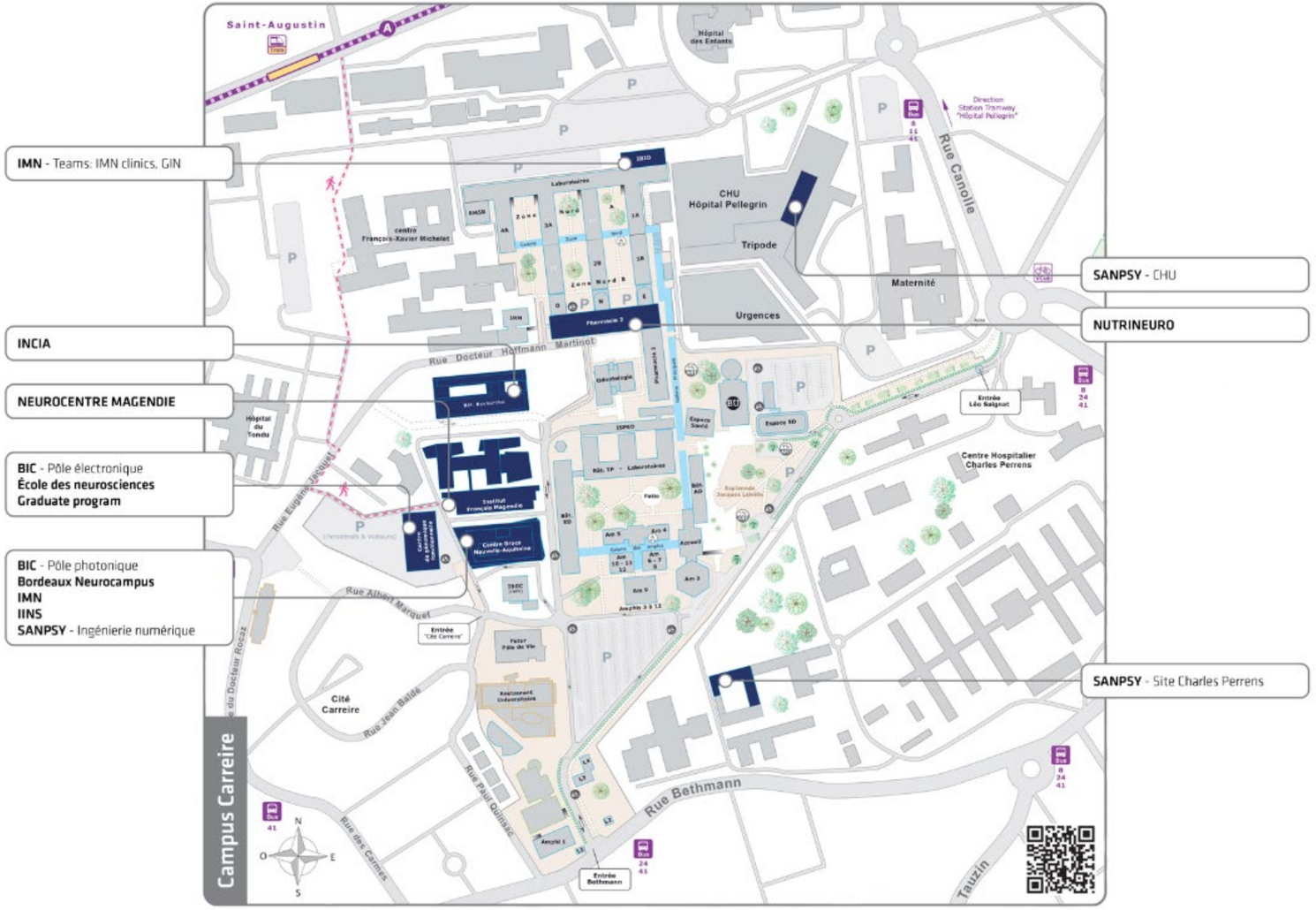
Erasmus Mundus PhD program

Bordeaux School of Neuroscience & Cajal program

Graduate Schools Neuroscience & Light

From 2023: all units on 1 campus



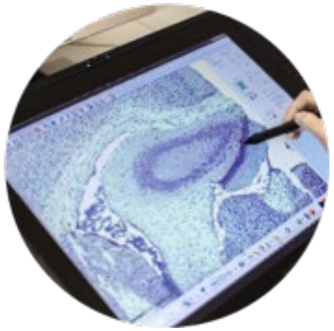


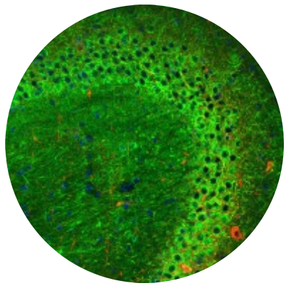
Our missions

- Research
- Training
- Knowledge transfer
- Innovation







Research

Main research topics

Normal brain functions
-
Basic research

- Cellular biology of synapses, neurons and glial cells
- Neuronal network physiology
- Motor systems
- Sensory functions
- Memory and cognition
- Sleep and attention
- Nutrition

Pathologic brain
-
Pathophysiology translational research

- Neurodevelopmental disorders
- Motor and cognitive disorders
- Sensory disorders
- Neuroinflammation and mental diseases
- Psychiatric diseases
- Neurodegenerative disease
- Addiction
- Obesity



- Development of neurotechnologies for neuroscience

You want to collaborate?

Check our website:

www.bordeaux-neurocampus.fr

Distinct but complementary expertises

INCIA

- Neuronal networks
- Cognitive science
- Addiction
- Decision making
- Physiology and motor disorders
- Biomechanics
- Aging
- Neurogenetics

IMN

- Research on primates
- Clinical research
- Cell death
- Physiology & behavior
- Neurodegenerative diseases
- Neurofonctional imaging

IINS

- Imaging
- Chemistry
- Development of technologies
- Cell biology and physiology of synapses and networks
- Synaptopathies

BORDEAUX neurocampus

Neurocentre Magendie

- Translational and clinical research
- Behavioral models of psychopathologies
- Network physiology
- Brain plasticity
- Neurodevelopmental diseases
- Psychiatry

SANPSY

- Human models
- E-health
- Clinical research
- Addiction
- Cognition
- Neuropsychiatry
- Sleep

NutriNeuro

- Translational and clinical research
- Nutrition & mental health
- Mood disorders and cognitive decline
- Behavior
- Neuroimmunology
- Psychiatry

IINS
Interdisciplinary institute for neuroscience
Dir.: Daniel Choquet

- Imaging
- Chemistry
- Development of technologies
- Cell biology and physiology of synapses and networks
- Synaptopathies

Teams

Daniel **Choquet** - Dynamic organization and functions of synapses
Jonathan **Elegheert** - Structural biology and engineering of neuronal signalling
Frédéric **Gambino** - Computational and systems neuroscience
Grégory **Giannone** - Temporal and mechanical control of motile structures
Laurent **Groc** - Development and adaptation of neuronal circuits
Yann **Humeau** - Synapse in cognition
Christophe **Mulle** - Synaptic circuits of memory
Valentin **Nägerl** - Synaptic plasticity and super-resolution microscopy
David **Perrais** - Membrane traffic at synapses
Lisa **Roux** - Olfaction and memory
Jean-Baptiste **Sibarita** - Quantitative imaging of the cell
Vincent **Studer** - Organ-izing the cells
Naoya **Takahashi** - Neural basis of perception
Olivier **Thoumine** - Cell adhesion molecules in synapse assembly

More details:
www.bordeaux-neurocampus.fr/en/institute-iins/

IMN
Institute of neurodegenerative diseases
Dir.: Thomas Boraud

- Research on primates
- Clinical research
- Cell death
- Physiology & behavior
- Neurodegenerative diseases
- Neurofonctional imaging

Teams

Arne **Battefeld** - Pathophysiology of neuron-oligodendrocyte interactions
Jérôme **Baufreton** ; François **Georges** - Dopamine and neuronal assemblies
Abdelhamid **Benazzouz** ; Pascal **Fossat** - Monoamines Parkinson and pain
Erwan **Bezard** - Physiopathology of proteinopathies
Cédric **Brun** - Neuroscience, humanities and society
Arthur **Leblois** ; Nicolas **Mallet** - Network dynamics underlying function & dysfunction of procedural learning
Wassilios **Meissner** - IMN clinics
Nicolas **Rougier** – Computational Neuroscience
Sandra **Soukup** - Molecular mechanisms of synaptopathies
Michel **Thiebaut de Schotten** - Neurofunctional imagining group
Fabien **Wagner** - Neuromodulation and neuroprosthetics

More details:
www.bordeaux-neurocampus.fr/en/institute-imn/

INCIA
Institute of cognitive and integrative neuroscience
Dir.: Sandrine Bertrand

- Neuronal networks
- Cognitive science
- Addiction
- Decision making
- Physiology and motor disorders
- Biomechanics
- Aging
- Neurogenetics

Teams

Serge **Ahmed** - Choice, Addiction and neurodysfonctions (CANDY)
Arnaud **Badets** ; Thomas **Michelet** - Motor control and cognition (MOCOCO)
Sylvie **Berthoz ;** Igor **Sibon -** Ecological assessment and management of psychiatric disorders (ECOPSY)
B. **Bontempi** ; J-L. **Morel** - Dynamics of neuronal and vascular networks underlying memory processing (MEMORY)
Pascal **Branchereau ;** Didier **Le Ray** - Motoneurons and synaptic partners
Gwenaëlle **Catheline** - Sleep, Wake, Ageing and Neuroimaging (SWAN)
Stéphanie Caillé-Garnier ; Vincent David - Emotion, Motivation and Cognition (E-Motiv)
P. **de Deurwaedère ;** G. **Lucas** - Physiology and preclinical pharmacology of neuropsychiatric disorders (PN3)
Clément **Morgat** ; Jérôme **Mazère** - Multimodal Translational Imaging (IMT)
Aymar **de Rugy** - Hybrid sensorimotor performance (HYBRID)
Giovanni **Stevanin** ; Cyril Goizet - Translational research in neurogenetic diseases (NRGEN)
Muriel **Thoby-Brisson ;** Grégory **Barrière** - Development and Neurobiology of Neural Networks (DN3)
Mathieu **Wolff** - Decision and adaptation (DECAD)

More details:
www.bordeaux-neurocampus.fr/en/institute-incia/

Neurocentre Magendie

Dir.: Stéphane Oliet

- **Translational and clinical research**
- **Behavioral models of psychopathologies**
- **Network physiology**
- **Brain plasticity**
- **Neurodevelopmental diseases**
- **Psychiatry**

Teams

Nora **Abrous** - Neurogenesis and pathophysiology
Anna **Beleyer** - Neural circuits of anxiety
Daniela **Cota** - Energy balance and obesity
Véronique **Deroche-Gamonet** – Psychobiology of drug addiction
Aline **Desmedt** - Pathophysiology of declarative memory
Andreas **Frick** - Cortical plasticity
Cyril **Herry** - Neuronal circuits of associative learning
Giovanni **Marsicano** - Endocannabinoids and neuroadaptation
Mireille **Montcouquiol** ; Nathalie **Sans** - Planar polarity and plasticity
Stéphane **Oliet** - Neuron-glia interactions
Jean-Michel **Revest** - Physiopathology and therapeutic approaches of stress-related diseases

More details:

www.bordeaux-neurocampus.fr/en/neurocentre-magendie/

NutriNeuro
Nutrition and integrated neurobiology

Dir.: Lucile Capuron

- Translational and clinical research
- Nutrition & mental health
- Mood disorders and cognitive decline
- Behavior
- Neuroimmunology
- Psychiatry

Teams

Lucile **Capuron** ; Marie-Pierre **Moisan** - NutriPsy
Sophie **Layé** ; Xavier **Fioramonti** - NutriMind
Guillaume **Ferreira** ; Pierre **Trifilieff** - FoodCircus

More details:

www.bordeaux-neurocampus.fr/en/nutrineuro/

Sleep, addiction and neuropsychiatry

Dir.: Marc Auriacombe

- Human models
- E-health
- Clinical research
- Addiction
- Cognition
- Neuropsychiatry
- Sleep

Research axis

Jacques **Taillard** ; Jean-Arthur **Micoulaud-Franchi** - Eveil-Sommeil
Marc **Auriacombe** ; Fuschia **Serre** - Addiction
Pierre **Philip** – Santé numérique

More details:

www.bordeaux-neurocampus.fr/en/sanpsy

Highlights 2010-2020

- Imaging techniques
- Synapse nanoscale dynamic organization
- New molecular mechanisms of synaptic plasticity and memory
- Role of astroglial cells in synaptic plasticity
- Mechanisms controlling food intake and its dysfunction
- New insights into the mechanisms of neurodegenerative diseases
- Mechanisms and treatment of maladaptive behaviors

GPR BRAIN_2030

Cluster of excellence of the university of Bordeaux

The overall objective of BRAIN_2030 for the next decade is to build on the excellence and synergy of the Bordeaux neuroscience teams to increase our understanding of brain function and pathologies, from molecules to behavior.

To achieve this, the BRAIN_2030 project is based on four challenges:

- to develop **new disruptive neurotechnologies** that will enable us to study and better understand the nervous system
- to improve our knowledge of the **fundamental bases of brain function**
- to decipher the **biological basis of neurodegenerative and neurological diseases**
- to decipher the **biological basis of mental illnesses**

Director: Daniel Choquet



Facilities

Cellular and molecular biology

Biochemistry and biophysics of proteins (Bioprot) – ***UB***
Cellular biology – IINS – ***UB***
Analytical chemistry – PUMA* – Neurocentre Magendie
Anatomical exporation and histology – Neurocentre Magendie
Laser microdissection – PUMA – Neurocentre Magendie
Phycell – INCIA
Transcriptomic – PUMA - Neurocentre Magendie – ***UB***
Vectorology – IMN

Informatics

Bioinformatics – PUMA - Neurocentre Magendie

Imaging

Bordeaux Imaging Center (BIC) – ***UB*** – ***IBISA***
TEP – INCIA

***In vivo* experimentation**

Animal facilities
Genotyping – PUMA – Neurocentre Magendie
In vivo pole (PIV) – IINS / IMN
PEPNH – IMN
Aquatic facility - IMN
ZEMA - Neurocentre Magendie

Human behavior

PARCA – SanPsy
Motricity analysis platform (PAM) – INCIA – ***UB*** – ***IBISA***
PRNPP – SanPsy – ***UB*** – ***IBISA***

*PUMA : Plateformes unifiées de Magendie – ***UB***
(United platforms of Magendie)

Our facilities offer long-life trainings and are open to external clients.

Do not hesitate to contact them!

www.bordeaux-neurocampus.fr/en/research/core-facilities/















Knowledge transfer

Knowledge transfer for researchers

Around **100 events** per year

- Friday seminars
- Monthly conferences (PhD seminar series)
- Impromptu seminars
- Lectures in the frame of Cajal courses

A dozen of symposia every year

Bordeaux Neurocampus Day

Doctoral Research Award Day



Next International Brain conferences

2023: NeuroCompare - Comparative Neural Circuits for Adaptive Behavior / 26-28 September

2024: NeuroFood - Nutrition-brain interactions: from metabolic to psychiatric and neurodegenerative diseases / 14-16 October

You want to come to our events?

Check our agenda on:
www.bordeaux-neurocampus.fr

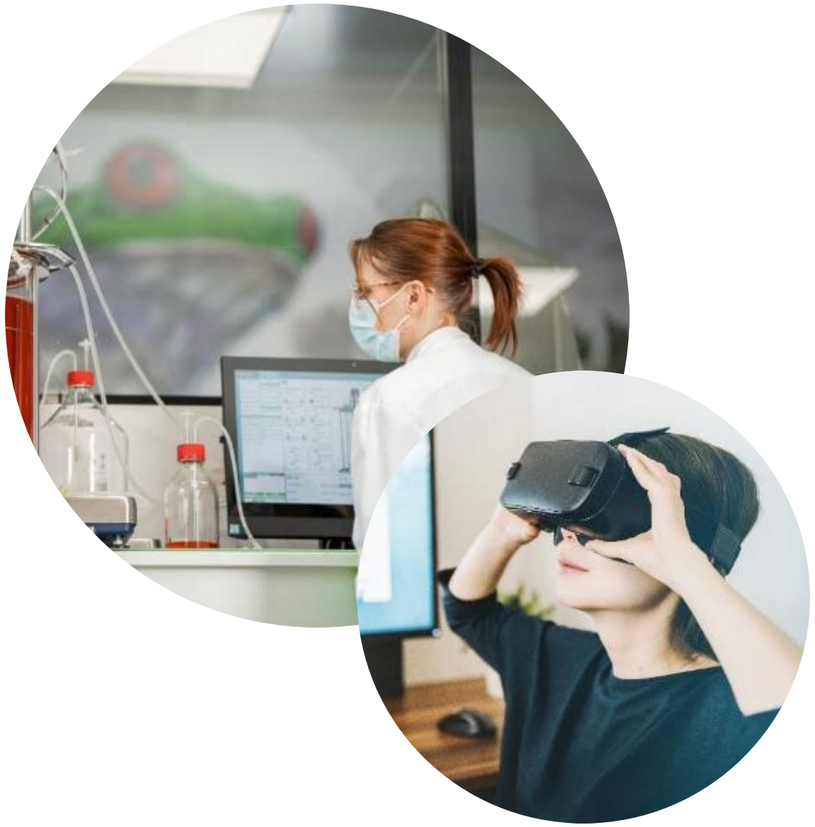
Knowledge transfer for a wide audience

Conferences, debates, workshops in collaboration with the University of Bordeaux, the units' trustees, and the French Neuroscience Society.

Main yearly events :

- **Brain awareness week** (March)
- **Science week** (October)









Innovation

Spin-off for our labs

Companies	Year of arrival	Spin-off BN lab	Topic
motac	2011	IMN	Demonstration of therapeutic efficacy for neurological disorders
AELIS FARMA	2014	Magendie	Pharmacological inhibitors for cannabis-related disorders and cognitive deficits
practeex	2018	IINS	Pedagogical innovation
TreeFrog therapeutics	2018	IMN	Stem cell therapy for Huntington and Parkinson disease
CORLIEVE Therapeutics	2019	IINS	Innovative therapy for resistant epilepsy
alvéole	2020	IINS	Innovation in microscopy – Consumables for microscopy
My-Med-A	2020	SanPsy	Development of virtual medical agents for first-line triage of psychiatry patients

2010-2020 report

Industry collaborations

19 patents
including
12 licences

120 companies
including
50 large companies

Spin-off for our labs

Companies	Year of arrival	Spin-off BN lab	Topic
REFLECT	2021	IINS	Light-Sheet fluorescence microscopy: high throughput screening
RebrAin	2021	IMN	Precise targeting technology for Deep Brain Stimulation
Myotact	2022	INCIA	Muscle activity detection for translating it into virtual movements with sensory vibration feedback

Transfer structure

Companies	lab	Topic
NutriBrain	NutriNeuro	Demonstration of the impact of nutrition on cerebral sphere

LabComs

Labcom	Lab	Comany	Topic
Cell-Organizers	IINS	Alvéole	Precise targeting technology for Deep Brain Stimulation
Meegasafe	Sanpsy	Physip	Muscle activity detection for translating it into virtual movements with sensory vibration feedback

A LabCom brings together a laboratory of a research institution or organisation and a French company









Training

Bordeaux Neurocampus Graduate Program

EUR Neuro

The trainees benefit from a variety of educational programs, cutting-edge research facilities, ambitious training initiatives, partners' network and international conferences in diverse neuroscience disciplines within a vibrant scientific community.

The international and integrated Graduate Program includes:

- The **Master of Neuroscience** (MSc)
- The **International Doctoral Program** (PhD)
- **Training activities**
- **Partners' network** through private and academic international collaborations

Some teams are also associated with the
Light Sciences and technologies Graduate Program

More details
neurocampus-graduateprogram.u-bordeaux.fr

Masters in neuroscience

3 international tracks

Neurasmus

Master Erasmus Mundus with :

- Université de Laval (Canada)
- Universitätsmedizin Göttingen Charité (Allemagne)
- Universitätsmedizin Berlin (Allemagne)
- Vrije Universiteit Amsterdam (the Netherlands)

NeuroBim

Bordeaux International Master of Neuroscience
with Tsukuba University (Japon)

EMN-Online

Euro-Mediterranean Master of Neuroscience / master Erasmus + with 13 academic partners in Europe and Mediterranean basin

2 french-speaking tracks

Regular

For life science student

Multipublic

For every student

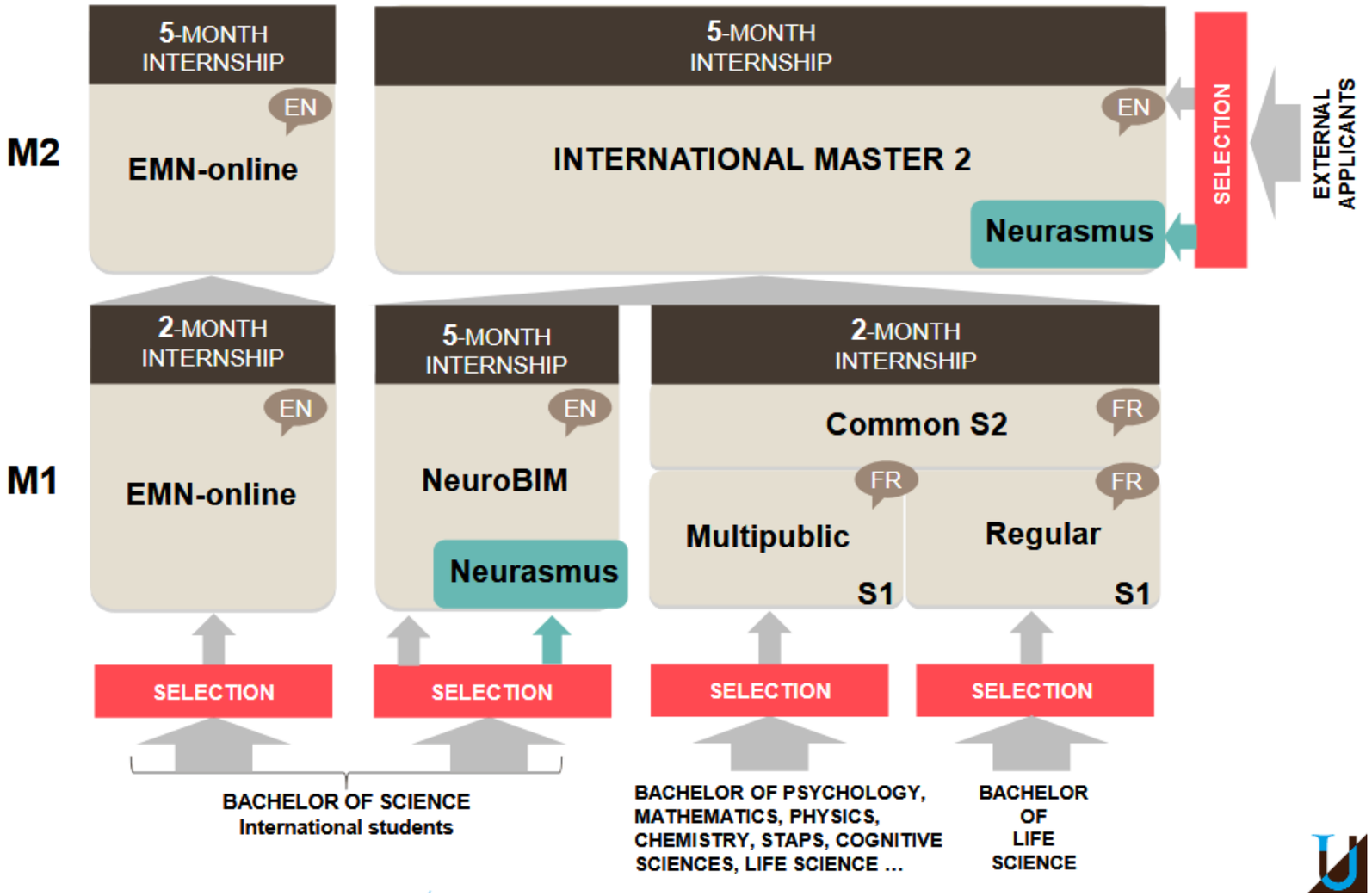




Bordeaux Neurocampus Graduate Program

université de BORDEAUX

Masters in neuroscience



Bordeaux Neurocampus Graduate Program

université de BORDEAUX

An International PhD Program in Neuroscience

within our research laboratories

Selected as a French initiative of Excellence and part of the University of Bordeaux Graduate Research School, the program focuses on cross-disciplinary, high-value and hands-on training in basic and translational neuroscience.
The program also supports international mobility and employability of the students through academic and private collaborations.

Director: Christophe Mulle





Call for applications every year in January

Mail: neurocampus.graduateprogram@u-bordeaux.fr
Website: neurocampus-graduateprogram.u-bordeaux.fr

The Bordeaux School of Neuroscience

A training laboratory

This fully equipped laboratory for neuroscience research is exclusively dedicated to training activities.

The school offers all the necessary logistics to international teaching teams wishing to come to Bordeaux to organize workshops on cutting-edge topics.

www.bordeaux-school-of-neuroscience.eu



The Bordeaux School of Neuroscience

CAJAL Advanced Neuroscience Training Courses.

In partnership with FENS, IBRO and the Gatsby Foundation.



Sessions in 2024:

Optogenetics, chemogenetics, and biosensors for neural circuit research
2 - 20 April 2024

Single cell profiling and analysis in neuroscience
17 June – 5 July 2024

Advanced imaging techniques for cellular and systems neuroscience
23 September - 6 October 2024

The Brain Prize Course: Movement and motor control in health and disease
12 November - 7 December 2024

Bordeaux Neurocampus

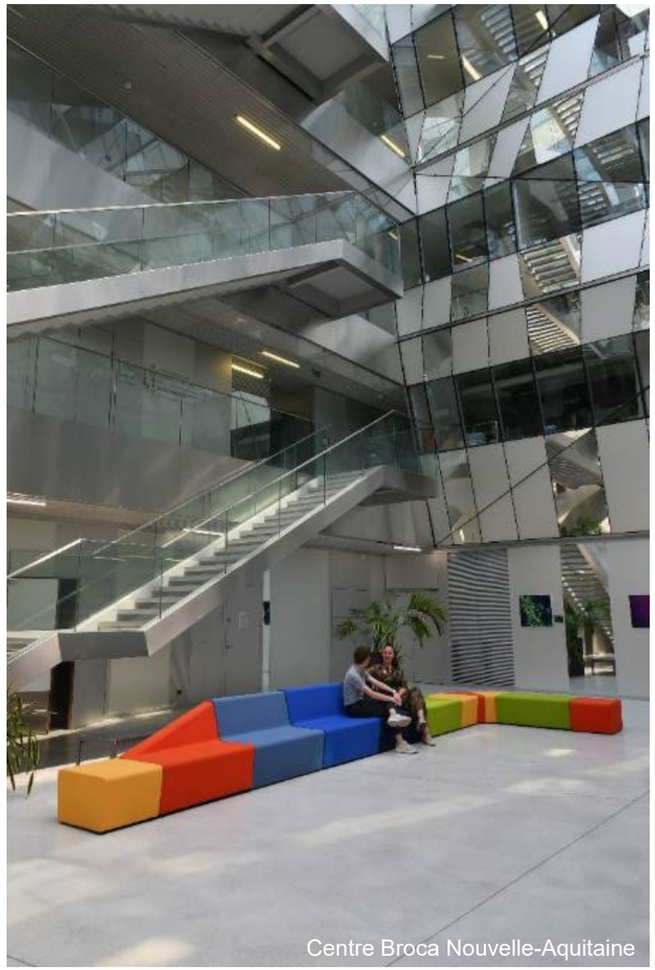
Director: Jérôme Baufreton

Deputy directors: Aude Panatier, Mathieu Wolff

University of Bordeaux
Centre Broca Nouvelle-Aquitaine
146, rue Léo-Saignat
33077 Bordeaux cedex
FRANCE

www.bordeaux-neurocampus.fr
bordeaux-neurocampus@u-bordeaux.fr

Photography credits:
Sharpen, Gautier Dufau / Université de Bordeaux, Bordeaux Neurocampus


Centre Broca Nouvelle-Aquitaine