The PhD Program in Neuroscience comprises a combination of coursework, laboratory based research, in-house seminars, and national or international conferences, providing its students with training in neural sciences ranging from the genetic to the behavioural level including molecular, cellular, cognitive, computational neuroscience and neuroprosthetics.

There is close cooperation between our program and the Neuroscience programs of the Universities of Lausanne (UNIL) and Geneva (UNIGE).

More about our PhD Program

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~ 75 PhD students

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The Program Commission

Director, Prof Michael Herzog
Deputy Director, Prof. Ralf Schneggenburger

Prof. Grégoire Courtine
Prof. Wulfram Gerstner
Prof. Diego Ghezzi
Prof. Johannes Gräff
Prof. Sean Hill
Prof. Carl Petersen
Prof. Carmen Sandi
Prof. Felix Schürmann

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Program Administrator

Alice Goodman
edne@epfl.ch

Abelsicher, Patrick – Study of Neurodegeneration
Gene therapy, animal models, Parkinson’s disease, Amyotrophic lateral sclerosis, Alzheimer’s disease, viral vectors, cell encapsulation, RNA interference

Barrandon, Yann – Stem Cell Dynamics
Stem cell, morphogenesis, microenvironment, reprogramming, regenerative medicine, cell & gene therapy

Blanke, Olaf – Cognitive Neuroscience
Body perception, self consciousness, intracranial human electrophysiology, neuroimaging, neuro-psychology, neurology, virtual reality technology

Courtine, Grégoire – Motor control & Neuroprosthetics
Sensory, vestibular, motor control, sensorimotor control, rehabilitation, robotics, anatomical plasticity, electrophysiology

Gastpar, Michael – Information in Networked System
Statistical Neuroscience, Information Measures, Signal Processing

Gerstner, Wulfram – Computational Neuroscience
Computational neuroscience, models of spiking neurons, models of synaptic plasticity and STDP, models of learning

Ghezzi, Diego – Neuroengineering for Vision Restoration
Neuro-optoelectronic interfaces, visual prosthesis, optical stimulation, nanofabrication, polymers, neuroprosthetics, biocompatibility, visual system, sight restoration, sensory perception, artificial photoreceptors

Gräff, Johannes – Neuroepigenetics
Epigenetic mechanisms in long-term memory, PTSD, neurodegeneration, stress and epigenetics

Gruetter, Rolf – Center for Biomedical Imaging
Magnetic resonance imaging, PET, MR spectroscopy, in vivo neurochemistry, hypoglycemia

Herzog, Michael – Vision
Vision, spatio-temporal vision, schizophrenia research, psychophysics, TMS, EEG, modelling

Hess, Bellwald Kathryn – Topology and Neuroscience
Applications of topology in neuroscience, multi-scale analysis of the structural and functional connectomes

Hill, Sean – Thalamocortical Computation & Blue Brain Project
Thalamocortical structure & function, models of wakefulness & sleep, neurosimulation, simulated TMS and EEG, integrated information

Isbert, Auke – Motor Control & Robotics
Models of animal locomotion control, central pattern gene-rator networks, robots as scientific tools in neuroscience

Lashuel, Haili – Molecular Neurobiology & Functional Neuroproteomics
Neurodegeneration, protein misfolding, protein engineering, Parkinson’s disease, Alzheimer’s disease

Magistretti, Pierre – Neuroenergetics & Cellular Dynamics
Neuroenergetics, neuron-glial interactions, brain metabolism, neuronal plasticity, cellular imaging, digital holographic microscopy, functional brain imaging

Markram, Henry – Neural Microcircuitry & Blue Brain Project
Reverse engineering of neocortex, multi-unit patch clamp electrophysiology, computational neuroscience, IBM BlueGene super-computing facility

McCabe, Brian – Molecular and Cellular Neuroscience
Neurogenetics, synapse and circuit development and function, synaptic plasticity, locomotion behaviour, models of neurodegenerative disease

Micera, Silvestro – Translational Neural Engineering
Neural control of movement, implantable neuroprostheses, robot-based neuro-rehabilitation

Millan del R., José – Brain-machine Interfaces
Neuroprosthetics, Statistical machine learning, Human-robot interaction, Cognitive neuroscience

Petersen, Carl – Sensory Processing
Whisker behaviour, sensory perception, barrel cortex, cortical circuits

Sandi, Carmen – Behavioral Genetics
Learning and memory, stress and memory, emotion, neural plasticity, neural cell adhesion molecules, glucocorticoids, animal models of psychiatric disorders

Schneggenburger, Ralf – Synaptic Mechanisms
Synaptic transmission, short-term plasticity, nerve terminal, degeneration, patch-clamp electrophysiology, cellular Ca2+ imaging, Ca2+ uncaging

Schürmann, Félix – Neurosimulation Technology & BBP
In silico neuroscience, simulation, scientific computing

Thiram, Jean-Philippe – Image Processing and Analysis
Image segmentation, multimodal fusion, MRI, quantitative imaging, diffusion MR processing, connectomics

Van de Ville, Dimitri – Medical Image Processing
Computational Neuroimaging functional MRI, signal processing, brain decoding, connectivity, networks, dynamics

Schorderet, Daniel – Genes and vision
IROVISION – http://irovision.ch
Identifying and understanding the genes implicated in the development and the function of the eye

Rainer, Gregor – Visual Cognition
University of Fribourg – http://www.unifr.ch/vph/vclab
Visual Neuroscience, Laminar cortical computations, Primary visual cortex, Visual awareness, Electrophysiology, Attention, Cholinergic Neurromodulation

Selection of courses taught in English
(2016 – 2017)

→ Introduction to practical aspects of animal experimentation and animal facilities

→ Neuroscience and Neurophysiology

→ Brain Bioenergetics

→ Synaptic mechanisms in hearing

→ Neurophysiology for Neural and Biomedical Engineering – Summer School 2016

→ Statistics and Neuroscience upgrade courses (Master)

Application deadlines
May 1 and November 15

phd.epfl.ch/neuroscience-openings

The EPFL campus, in Lausanne, on the shores of Lake Geneva (Switzerland)