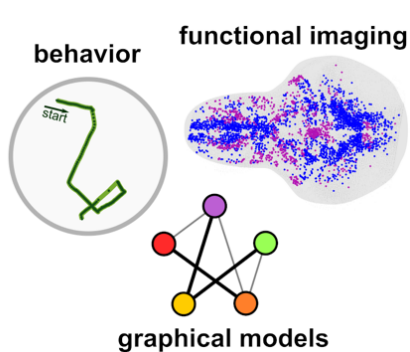


Two open PhD-positions in systems neuroscience in Paris

Two fully funded PhD positions in systems neuroscience, starting September 2021, are available in the Laboratoire Jean Perrin (LJP, <https://www.labojeanperrin.fr/?article6>), a biophysics lab at Sorbonne Université in Paris. The positions are funded by the European Marie Skłodowska Curie Innovative Training Network “SmartNets” (<https://www.smartnets-etn.eu/>) an European graduate school at the interface of computational and experimental neuroscience.



Neuroscience@LJP gather physicists and biologists developing a multidisciplinary research program with the overall objective to unravel principles of neural computations underlying sensory-motor integration in the vertebrate brain. We use the Zebrafish larva and *Danionella translucida* as animal models, combining brain-scale functional imaging (using light-sheet microscopy), quantitative behavioral assays and circuit inference methods.

You will be involved in one of these two projects:

1 – Maturation of locomotor networks in *Danionella translucida*. Experiments will be carried out on *Danionella translucida*, an emerging vertebrate model amenable to whole-brain functional imaging from the larval to the adult age. You will perform behavioral experiments and brain-scale calcium imaging at various ages (from 5 to 28 days post fertilization) in order to link circuit functional maturation and behavioral changes during early development.

2 – Data-driven graphical models for spontaneous neural activity. Extended neuronal circuits display highly structured spontaneous activity even in the absence of sensory stimulation. You will use these endogenous neural dynamics, measured using whole-brain calcium imaging under various sensory contexts, in order to train energy based graphical models such as Restricted Boltzman machines. These functional models will allow to identify attractor states – associated with specific behavioral patterns - as well as the mechanisms underlying the spontaneous transitions between these states.

PhDs will start September 1st 2020, but you may join the lab earlier for a master internship.

Application: Please send a detailed CV, letter of motivation and 3 references to georges.debregeas@sorbonne-universite.fr and volker.bormuth@sorbonne-universite.fr. Application deadline is February 28th 2021 (positions open until filled).

Eligibility and conditions: You must have obtained a Master degree by September 2021. You must not have resided or carried out your main activity in France for more than twelve months during the last 3 years. If selected, you will receive an attractive salary in accordance with the MSCA regulations for early stage researchers. You will be part of national and international collaborations and will receive intense training on cutting edge computational and experimental methods related to systems network science via the “SmartNet” training program.