

Paris Brain Institute (ICM) is recruiting a
DBS Collective Interest Project (CIP) Post-doctoral fellow (M/F)

Contract start date: October 2024

Contract duration: 1 year, renewable

At Paris 13th district

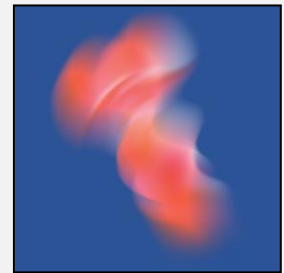
The Paris Brain Institute (ICM) is a private foundation recognized as being of public utility, whose purpose is fundamental and clinical research on the nervous system. On the same site, 850 researchers, engineers and doctors cover all the disciplines of neurology, with the aim of accelerating discoveries on the functioning of the brain and the development of treatments for diseases such as: Alzheimer's, Parkinson's, multiple sclerosis, epilepsy, depression, paraplegia, tetraplegia, etc.

POSTDOCTORAL FELLOW

CONTEXT

DBS: from genetic mutations to motor circuit dysfunctions & recovery

DBS is an exciting new interdisciplinary, collaborative, and multi-model project at the ICM. By bridging approaches across disciplines, the project's goal is to build novel strategies to improve dopaminergic cell survival and deep-brain stimulation of resilient circuits in Parkinson's disease.



Collective Interest Projects - Collaborative, interdisciplinary, innovative & transformative

As part of DBS, we will implement the hiring of post-docs each dedicated to one collective interest project to be co-supervised by two ICM team leaders, experts from different fields. The early-career researchers will receive training in the field that they have not received training on yet, either genetics, cellular physiology, imaging, optogenetics, behavior or modelling.

We aim to attract high level interdisciplinary researchers by offering world class research facilities and double supervision from leaders in the relevant fields. You would be part of a dynamic community of young researchers within a highly collaborative environment.

The **CorticalMLR project**, led by **Alberto Bacci and Nelson Rebola**, focuses on **characterizing the functional diversity of neurons within the mesencephalic locomotor region (MLR)**. Deep brain stimulation (DBS) targeting the MLR has been employed in treating Parkinsonism with varying success rates. Recent hypotheses suggest that the heterogeneous outcomes may stem from the diverse cellular composition within the MLR. Furthermore, the mechanisms linking DBS in the MLR to gait control remain incompletely understood. **This interdisciplinary project employs electrophysiological and optogenetic techniques to comprehensively assess the functional diversity of MLR neurons in vivo. The objective is to elucidate how ascending feedback information from the different MLR nuclei control the emergence of internal states in the neocortex linked to distinct active behavioral states, particularly locomotion.** We expect to contribute to a better understanding of MLR circuit diversity with the potential improvement of the design of new DBS strategies.

MISSIONS

- Perform in vivo electrophysiological experiments from awake animals.
- Manipulate activity of neuronal circuits in vivo using optogenetics.
- Plan experiments, collect data, and analyze results.
- Stereotaxic viral injections.
- Organize tasks and participate in DBS project discussions.
- All equipment and resources are already available in the host teams.

CONDITIONS

- Remuneration scale: 35 000 – 45 000 € (gross annual)
- Fixed-term contract (CDD), renewable

PROFILE

KNOW-HOW

- *Use of tools/equipment: Neuropixel probes, dissection equipment, LED manipulation for optogenetic experiments, brain slicer for histochemical validation of recording sites.*
- *Strongly encouraged to have experience in cellular neurophysiology and or systems neuroscience.*
- *Capable of supervising students.*
- *Minimum of 5 years of professional experience.*
- *Good autonomy within planning experimental protocols, proactive, team player.*
- *Rigorous with data analysis.*
- *Ability to work in a project-based mode.*

KNOWLEDGE

- *Applicants must have a background in neuroscience. They must hold (or are expected to complete soon) a PhD or equivalent degree in biology, medicine, physics or bioengineering.*
- *Excellent verbal and written communication skills in English are required.*
- *Experience with in vivo electrophysiology, imaging and/or computational neuroscience is appreciated but not required.*
- *Coding knowledge is appreciated.*

SOFT SKILLS

- *Accountability and commitment to collective goals.*
- *Integrity, honesty, and steadfast loyalty.*
- *Teamwork and solidarity, actively engaged in team welfare.*
- *Initiative, motivation, and inquisitiveness.*
- *Willingness to impart knowledge and promote good scientific practices with respect for individuals.*
- *Scientific rigor, meticulous attention to detail, excellent organizational skills, precision, and discipline.*

The Paris Brain Institute is committed to combating all forms of discrimination. We guarantee an inclusive and respectful working environment that embraces diversity.

All our positions are open to people with disabilities.

Please send your CV, letter of motivation and 2 reference letters with contact details to nelson.rebola@icm-institute.org , alberto.bacci@icm-institute.org and joana.guedes@icm-institute.org with the subject: “DBS CIP CorticalMLR Post-doc (M/F)”