Post-doctoral or PhD Position on Neurophysiological Effects of Repetitive Transcranial Magnetic Stimulation (rTMS) in Preclinical Models of Stroke

A postdoctoral or PhD position is available in the laboratory of Dr. Numa Dancause at the Université de Montréal, Department of Neurosciences. Our group investigates the mechanisms underlying movement control, neural plasticity involved in motor recovery post-brain injury, and the effects of neuromodulation techniques such as repetitive transcranial magnetic stimulation (rTMS) on the brain. We employ rodent and macaque monkey models, and benefit from collaborations with human-focused research groups through our Canadian platform Can-Stim. Here is a full list of our published work.

The project: The PhD candidate will investigate the effects of rTMS in macaque stroke models, integrating neural and electromyographic recordings while employing an exoskeleton interface, the KINARM. The project will involve:

- Conducting neural recordings in behaving monkeys.
- Implementing and analyzing lesion models and neuro-recovery processes.
- Programming in MATLAB or Python for data analysis.
- Collaborating with interdisciplinary neuroscience, engineering, computational and clinical rehabilitation teams.

Your profile:

- Training in neuroscience, biomedical engineering, behavioral sciences, or a related field.
- Strong programming and electrophysiological data analysis skills, particularly in MATLAB or Python.
- Experience with electrophysiological techniques in vivo AND/OR behavioral shaping in non-human primates or other animals AND/OR neuromodulation techniques.
- Motivation to pursue innovative research in neurobiology and motor rehabilitation.
- Excellent communication skills and ability to work collaboratively in a research team.

Why UdeM?: The Université de Montréal offers a stimulating research environment with access to state-of-the-art facilities and international collaborations. Montréal is renowned for its vibrant neuroscience community. The lab is part of multiple research groups with research interest in fundamental biomedical research (Centre d’innovation biomédicale; CIB), bridging neurosciences and artificial intelligence (Union Neurosciences et Intelligence Artificielle – Québec; UNIQUE), and brain function and learning (Centre Interdisciplinaire de Recherche sur le Cerveau et l’Apprentissage; CIRCA).

Application Process: Interested candidates should submit a cover letter outlining their research interests and career goals, a detailed CV, academic transcripts, and contact information for two references to Numa.Dancause@umontreal.ca.

Applications will be reviewed until the position is filled.