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## Postdoctoral Fellowship Opportunity - Laval University - Québec, Canada

**Understanding the impact of chronic stress on the activity of the mPFC excitatory/inhibitory microcircuitry**

The Labonté lab is opening a postdoctoral position for a highly motivated postdoctoral fellow interested in studying the impact of chronic stress on the activity of the medial prefrontal cortical (mPFC) excitatory/inhibitory circuitry in males and females. This project builds on results from our group showing that chronic stress interferes with the inhibitory control of principal cells differently in the mPFC of chronically stressed males and females. The aim of this project is to define how stress impacts the transcriptional programs controlling the activity of the different inhibitory interneuron subclasses in the mPFC and dissect their individual contribution on the disruption of the mPFC excitatory/inhibitory balance required for proper emotional responses to chronic stress in males and females.

The successful candidate should possess a PhD degree in either behavioral or computational neuroscience with an established record of productivity in these fields of research. The lab models complex emotional responses to chronic stress through different paradigms including social defeat stress, chronic variable stress and prolonged social isolation. The project involves combining different trans-sectional viral approaches with single-cell RNAseq, patch clamp electrophysiology and single-cell $Ca^{2+}$ imaging in freely behaving animals during stressful and operant tasks to ultimately dissect and confirm the contribution of cell-type specific gene programs on the maintenance/alteration of the excitatory/inhibitory balance in the mPFC of stressed males and females. Of particular interest, our lab owns unique human molecular profiles which provide highly translational findings relevant to clinical populations. This project is fully funded.

The candidate should have proven expertise with the assessment of mouse behavior and stereotaxic delivery of viral vectors. The candidate should also have a have a strong background with either patch clamp electrophysiology and/or $Ca^{2+}$ imaging. Previous molecular expertise is a plus and proficiency with Matlab, R and Python coding would be ideal. The successful candidate will be responsible to coordinate and perform the experiments, collaborate with MSc and PhD students in the lab, write manuscripts and present its work at national and international scientific meetings. The candidate will integrate a multidisciplinary team of experts in molecular, cellular and integrative neuroscience located at the CERVO Brain Research Center affiliated with Laval University in Quebec City, Canada.

The CERVO Brain Research Center is a leading multi-disciplinary research and training environment with >40 laboratories and over 250 trainees and staff pursuing basic and clinical neuroscience research. It offers transdisciplinary environment with state-of-the-art facilities aiming to understand the central nervous system at the molecular, cellular, systems, and clinical levels in normal and pathological states. The CERVO is located in Quebec City, one of the oldest cities in North America and a UNESCO World Heritage travel destination. As a cultural center of North America, Quebec City is also a truly affordable city with a European flair. The city is embedded in a region rich in nature that offers an abundance of outdoor summer and winter activities. The CERVO is a fully bilingual environment and, while several options to learn French are available, the English language is prioritized in the lab.

Applicants are required to send a motivation letter and their scientific CV with three reference contacts at the following email address: benoit.labonte@fmed.ulaval.ca.

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