



McGill

Laboratory Of Cellular And Molecular Neuroscience

Graduate Student/Postdoctoral Positions in Cellular Neuroscience

Three CIHR-funded positions are available immediately for enthusiastic graduate students/postdoctoral fellows with a keen interest in using electrophysiology and imaging techniques to study ligand-gated ion-channels and their role in neuronal circuit behavior.

The first project will focus on the structure-function properties of ionotropic glutamate receptors. The successful applicant will use patch clamp techniques and atomic force microscopy to tease apart the mechanism of channel activation in wildtype and mutant receptors. This work will be part of a multilab collaboration with researchers using computational chemistry and structural biology.

The second project will examine the signaling defects associated with Fragile X syndrome, a prominent neurodevelopmental disorder. The successful applicant will study neuronal circuit connectivity using single and multi-electrode recordings from acutely isolated brain tissue. Imaging and functional experiments will be collected simultaneously using a multiphoton microscope equipped with an electrophysiology rig.

The third project will study the electrophysiology properties of stem cell derived neurons from patients with neurodevelopmental disorders. This project is part of an ongoing collaboration with researchers at the Montreal Neurological Institute and the University of Edinburgh.

Related Publications

Dawe et al (2019) Nanoscale mobility of the apo state and TARP stoichiometry dictate the gating behavior of alternatively-spliced AMPA receptors. *Neuron*

Dawe et al (2016) Distinct structural pathways coordinate the activation of AMPA receptor-auxiliary subunit complexes. *Neuron*.

Accardi et al (2014) Mitochondrial reactive oxygen species regulate the strength of inhibitory GABA-mediated synaptic transmission. *Nature Communications*

Student stipends will be based on the policy recommendations of individual McGill Graduate Programs. Postdoctoral salaries will be based on CIHR recommendations and level of experience

McGill University is one of Canada's leading post-secondary institutions with the main campus located in the heart of the lively downtown area of Montreal. McGill attracts students and researchers from more than 150 countries around the world. Almost half of McGill students claim a first language other than English with more than 6,800 international students making up almost 20 per cent of the student body.

Applicants should send a cover letter, cv and the names of 2-3 referees to:

Dr. Derek Bowie,
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