



Postdoctoral Position in Neural Circuits

Laboratory of Lisa Topolnik, Neuroscience Axis, CRCHU-CHUL, Laval University, Quebec-city, Canada

A postdoctoral position is available in the lab of Dr. Lisa Topolnik to work on the functional organization of hippocampal inhibitory and disinhibitory circuits. The laboratory conducts both basic and translational neuroscience research in the areas of neural circuits, synaptic plasticity, and intracellular signalling. Our current research program is focusing on the cellular diversity and function of cortical disinhibitory circuits formed by the vasoactive intestinal peptide (VIP) and somatostatin-expressing interneurons as well as interneuron dendritic integration and synaptic plasticity. Our research strategy is based on combination of transcriptomic, physiological, optogenetic, pharmacogenetic and imaging approaches applied to *in vitro* and *in vivo* animal models.

A current PDF project will be focusing on exploring the molecular and cellular basis of dendritic integration in GABAergic neurons. We will study the role of inhibition in dendritic input integration in specific types of interneurons in brain slices obtained from transgenic mice *in vitro*. A novel optogenetic approach based on a combinatorial targeting of specific cell types for selective manipulations will be developed. The data obtained *in vitro* will then be integrated for *in vivo* investigation of the network-state dependent recruitment of specific cell types and their functional role in behaving animals. For this part, we will use cognitive and behavioral animal models in combination with calcium imaging and optogenetic cell type-specific interventions.

Candidates should have a PhD in Neurobiology or a related discipline (with a graduation date within the last 4 years), and at least two first-author papers (published or accepted). Prior experience with patch clamp electrophysiology, optogenetics or 2ph imaging *in vitro* or in behaving animals will be an asset. Full funding provided by the Canadian Institutes of Health Research and the Natural Sciences and Engineering Research Council of Canada is available for up to 4 years. Salary will be commensurate with experience and will include standard benefits as per Laval University regulations.

To apply: email your CV and cover letter to Prof. Lisa Topolnik.
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