



Synaptic physiology/brain plasticity position in Victoria B.C.

A postdoctoral research position is available to study cellular and synaptic neurophysiology of Rett Syndrome. We are looking for an energetic, self-motivated individual with an interest in basic neuroscience questions that can be applied to understanding the basis for this debilitating neurodevelopmental disorder.

Our research combines electrophysiology with functional fluorescence imaging to study how cell and synaptic physiology affect the performance of neural networks with an emphasis on the role of short-term activity dependent plasticity or neuromodulators.

Our research is funded by CIHR and International Rett Syndrome Foundation to examine the physiological consequences of mutation in an X-linked transcription factor, MeCP2 for thalamo-cortical connectivity (CIHR) and neuromodulation by nicotinic acetylcholine receptors (Rett Foundation). Of particular interest is the effect of this mutation on use-dependent adaptation within the somatosensory cortex.

These studies are performed using transgenic mice that are a model for the human disorder. Due to random X-inactivation the Rett brain is a mixture of neurons expressing mutant or wild-type MeCP2 and our research model uses a fluorescent nuclear marker to identify the *Mecp2* genotype of recorded neurons to understand the cell autonomous versus non-autonomous consequences of the mutation. The project of the PDF will utilize either slice patch clamp recording combined with optogenetic activation of synapses or in vivo 2-photon fluorescence imaging or both, so a background that includes electrophysiology or functional imaging/optogenetics is necessary.

You will join a highly collaborative group of active researchers who are directly engaged in research training: <https://www.uvic.ca/science/biology/research/researchareas/index.php#neurobiology>

Victoria offers an exceptional quality of life for those with an interest in outdoor activities such as hiking, kayaking, sailing, climbing and simply getting out into nature. <https://www.hellobc.com/places-to-go/victoria/>

Contact Dr. Kerry Delaney, kdelaney@uvic.ca, with a brief resume and a summary of research interests including a general description or ideas for the kinds of projects you would be interested in undertaking.