

Doctoral student position available in the Sephton laboratory at Université Laval: Investigating lipid metabolism in amyotrophic lateral sclerosis (ALS).

Join our innovative research team at the CERVO Brain Research Centre of Université Laval in Québec City, Canada. The Sephton lab is dedicated to uncovering the mechanisms that cause the fatal motor neuron disease, amyotrophic lateral sclerosis (ALS) and developing targeted therapies based on these discoveries. The Sephton lab is pleased to announce a funded postdoctoral fellowship that will investigate the cause and impact of metabolic dysregulation in ALS and how it impacts disease progression.

Project overview:

An early clinical feature of ALS is an imbalance in energy homeostasis, which leads to an overall energy deficit. Due to the high energy demands and impaired glucose metabolism that occurs in ALS, there is a metabolic switch from glucose to lipids for energy production in the central nervous system. The successful candidate will lead a project investigating the cause and impact of this metabolic switch in the brain and spinal cord using animal models and cell-culture models of ALS/FTD. Utilizing methods like immunohistochemistry, confocal microscopy, neuron-glia co-cultures, western blotting and lipid and protein mass-spectrometry, the project aims to elucidate how the central nervous system manages lipids as an energy source and whether it is impaired in familial models of ALS, contributing further to the pathogenesis of disease.

Requirements:

- MSc in Neuroscience or a related field with evidence of expertise and productivity
- Proficiency in one or more of the following: primary cell-culture, immunohistochemistry, western blotting, confocal microscopy, animal handling and data analysis.
- Independence in research, creative problem-solving skills, and a collaborative mindset.
- Strong communication skills in English and the ability to work effectively within a team.

Lab Environment:

The Sephton lab cultivates an atmosphere that encourages collaboration and intellectual stimulation, placing a high value on creativity, scientific rigor, and innovative thinking. We create abundant avenues for professional development and promote independence in research endeavors. We are also strongly committed to supporting diversity, equity and inclusion. Our support extends to diverse career paths, encompassing both academia and industry. Situated in Québec City, renowned for its safety, affordability, and family-friendly surroundings, our lab provides an ideal setting for research and personal growth.

Funding:

The project is funded by a 2-year grant from ALS Canada and Brain Canada and a 5-year grant the Canadian Institute of Health Research (CIHR). Additionally, candidates can apply for several other funding opportunities for international students available through the Québec and Canadian funding systems. The lab is supported by Natural Sciences and Engineering Research Council of Canada (NSERC), Brain Canada, Canadian Foundation for Innovation (CFI).

Interested candidates should submit a cover letter describing research interests, relevant experience and university transcripts, along with a curriculum vitae by **May 1st, 2024** to Dr. Sephton here:

<https://docs.google.com/forms/d/1T4sSrqXMxrFbYByO2drinoqApSksh2VtUAacSyoBw14/edit>