

Call for applications: PhD in multimodal cerebrovascular imagery

The research team of the Preventive Medicine and Physical Activity Center (EPIC centre) of the Montreal Heart Institute (MHI) is seeking a PhD fellow to work with a team of neuropsychologists, kinesiologists and neuroimaging specialists.

The hosting research environment is highly pluridisciplinary and benefits from high-end infrastructures: a dedicated research gym coupled with a cerebrovascular health platform (Doppler, NIRS, EEG, end-tidal gaz analyzer, pletysmograph) as well as a core imaging lab (MRI and PET).

The successful applicant will develop protocols and data analysis methods to study **cerebral autoregulation in a multimodal setting**. The imaging techniques will involve functional Near Infrared Spectroscopy (fNIRS), TransCranial Doppler, ElectroEncephaloGraphy and peripheral vascular measures. By combining these techniques, the recruited fellow will investigate several essential components of cerebral autoregulation. The obtained metrics will be used to characterize and study the interplay between all components of cerebral autoregulation as it becomes altered by the course of aging and cardiovascular diseases and how it responds to acute physical exercise or long-term exercise interventions. This assessment will take place in the context of several projects, many of which are already funded by NSERC and CIHR grants.

The qualifications of a successful candidate should include:

- A master degree in cerebral physiology, biomedical engineering, or other related neuroscientific fields.
- Strong background in signal processing of physiological signals and quantitative analysis.
- Good programming skills with Matlab.
- Demonstrated good writing skills and autonomy.
- Experience with medical image processing (SPM, FSL, brainstorm) is a plus.

We are seeking candidates with **expertise in at least one of the involved imaging techniques**, as well as a **vivid interest in instrumentation and experimental design**. Cognitive neuroscientists, neurophysiologists, engineers and other candidates with strong experimental skills are particularly encouraged to apply.

The position is for **at least three years** and is expected to start in **fall 2019**.

To apply, please email Dr Louis Bherer (louis.bherer@umontreal.ca) with your **resume** and **cover letter** of your career plans relevant to neuroimaging training and research.