Institut-Hôpital neurologique de Montréal
Montreal Neurological Institute-Hospital

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Postdoctoral researcher position available: Ultra-high field magnetic resonance imaging of autism spectrum disorders

Supervisors: Prof Christine Tardif and Prof Mayada Elsabbagh

Background: The Quebec 1000 families (Q1K) is an initiative of the Transforming Autism Care Consortium (TACC), a network of more than 70 researchers from Québec universities and health institutions. The Q1K aims to engage 1000 autistic people and their families as partners in an innovative, open, and inclusive scientific initiative. **Q1K Database** will include next-generation genetic sequencing data, clinical, behavioural, and cognitive data, as well as electrophysiology and magnetic resonance imaging (MRI). Q1K participants will be scanned at ultra-high field (7 Tesla) at the Montreal Neurological Institute (a.k.a., The Neuro). The multi-modal protocol includes high-resolution anatomical, microstructural, diffusion and functional imaging.

Description of tasks: The postdoctoral fellow will participate in 7T MRI data acquisition and optimization of the image analysis pipeline. The postdoctoral fellow's research will focus on genetic subgroups of the Q1K cohort. They will map alterations in brain microstructure and connectivity using MRI and relate them to cognition and behaviour in these participants. The fellow will also contribute to data QC, database management, and documentation.

The postdoctoral fellow will work under the supervision of Prof Tardif and Prof Elsabbagh. The candidate will work in a highly interdisciplinary and collaborative environment at The Neuro. They will join a team of MR physicists and engineers, computer scientists, neuropsychologists and geneticists with an expertise in autism and related neurodevelopmental disorders.

Required qualifications: Candidates should have a PhD degree (completed no more than 5 years ago) in medical physics, biomedical engineering, computer science, neuroscience, or a related discipline, the ability to work independently, good communication skills, and experience in brain imaging research. Candidates with a strong background in MRI are preferred. Experience with (or a strong desire to learn) bash/shell programming, neuroimaging pipelines (e.g., ANTs, SPM, FSL, FreeSurfer, Mrtrix), statistical modelling in R, MATLAB or Python is a plus, but not required.

Please refer to McGill's requirements on postdoctoral appointments, for conditions and additional information on the status of the position. Please note that non-Canadian postdoctoral fellows must have valid Citizenship or an Immigration Canada (CIC) work permit to legally work in Canada.

This full-time postdoctoral position is for 2 years with the possibility of renewal. Salary will be commensurate with experience.

To apply: Please send a cover letter, CV with publication list, and contact information of 2 referees in a single PDF file to christine.tardif@mcgill.ca.