

# MRI Physicist/Research Associate Position

## Work environment

The Douglas Cerebral Imaging Centre (CIC), Douglas Mental Health University Institute, Montreal, Canada, was established in 2011 and houses a Siemens 3T MAGNETOM Prisma MRI Scanner for human research, and a Bruker 7T Biospec 70/30 USR MRI Scanner for small animal research, and labs specialized in optogenetics, electroencephalography (EEG), and transcranial magnetic stimulation (TMS).

The Douglas CIC is a vibrant research centre composed of nine research labs that host 40+ student and post-doctoral researchers. The Centre is also composed of core non-academic staff who ensure quality imaging and data management services to researchers and students. Our focus is on clinical and preclinical neuroscience research in the area of mental health and we are actively involved in over 20 academic and industry-sponsored research projects.

With over 55 researchers spanning a full range of mental health research (neuroscience, clinical, services, policy and epidemiology/population health), the Douglas Research Centre has been an international leader in mental health research for more than 30 years. Integrated within the Douglas Institute, a psychiatric hospital, and the much larger Montreal West-Island Integrated University Health and Social Services Centre, the Douglas Research Centre also offers significant opportunities for carrying out research in collaboration with a wide range of nearby mental health services. The Douglas Research Centre is located in the Montreal borough of Verdun, a lively up-and-coming neighbourhood located adjacent to the St. Lawrence River.

## General Job Description

The Douglas CIC is seeking a full-time MR physicist to support our human imaging program on the 3T Siemens Prisma MRI Scanner with a flexible start time. The core responsibility of the candidate will be to enable the optimal operation and use of the 3T Siemens Prisma MRI Scanner, encourage collaboration and sharing between researchers, and facilitate the translation between basic science and clinical research. The successful candidate will work closely with the existing six core staff and three principal investigators of the BIC.

We are seeking a candidate who is a team player with excellent interpersonal, organizational and communication skills, preferably in both French and English, who enjoys helping people and improving their science. The successful candidate will work in a dynamic research environment.

## Responsibilities

Basic:

- Perform quality assurance and control of scanner performance and consistency using existing MRI phantoms

- Assist researchers and trainees in implementing and developing MR sequences on the 3T Siemens Prisma Fit MRI, primarily for neuroscience applications. Current BIC interests include structural, functional (resting state and task-based), spectroscopic MRI, magnetization transfer, diffusion MRI, and next-generation quantitative sequences.
- Stay up-to-date with the development of MRI pulse sequences and propose optimal solutions to researchers interested in pursuing MRI studies.
- Write and review SOPs as needed.
- Deploy Siemens Work-In-Progress (WIP) sequences

With training and advancement:

- Educate the Centre's research community about new MRI methods
- Develop a standardized MRI sequence catalogue for BIC studies
- Develop your own research projects, which could include
  - Setting up an RF lab for MR coil development (in collaboration with other physicists at the Centre)
  - Pulse sequence development
  - Other MR-hardware development (e.g., dedicated gradients)
  - Development of an open source reconstruction pipeline parallel to Siemens proprietary system

## Qualifications

- Required
  - Ph.D. in physics, electrical, biomedical engineering or neuroscience or closely related fields, M.Sc./M. App. Sc. if extensive previous experience can be demonstrated
  - Research experience in neuroscience or medical imaging
  - Experience with MR physics
  - Experience with MR image acquisition
  - Fluency in one of English or French, with basic understanding in the other
- Preferred
  - Familiarity with image analysis software
  - Experience with MRI sequence programming, particularly on Siemens systems
  - Experience with 3D printing and 3D modelling to build peripherals
  - Experience with neuroscience studies
  - Experience with software development
  - Knowledge of Linux and high-performance computing
  - Experience with MRI phantoms

## Job conditions

**Faculty/Department/Unit:** Douglas Research Center, Cerebral Imaging Center

**Employee Title:** Research Associate

**Salary:** Dependent on education and experience, union fringe benefits

**Status:** Full-time (35/h week)

**Start Date:** Flexible based on candidate conditions

**Expected duration:** 1 year contract renewable based on performance

**Reporting to:** Dr. Mallar Chakravarty, BIC director

## Application Details

Submit your application to [louis.theroux.comtl@ssss.gouv.qc.ca](mailto:louis.theroux.comtl@ssss.gouv.qc.ca) via email by October 31st 2021.

As part of your application please ensure the following material is supplied:

- Curriculum Vitae (Resume)
- Cover Letter
  - 1 page maximum
  - Previous experience
  - Why this job is interesting to you
  - Any relevant information for your application not otherwise covered (e.g. gaps in experience etc)
- Names and contact information for 3 references who can attest to your prior experience and work
- A sample of written work produced substantially by the candidate (essay, paper, technical report or computer software)

The Douglas Research Center ascribes to a policy of equal access to job opportunities for indigenous persons, persons with disabilities, ethnic minorities, racialized persons/visible minorities and persons of minority sexual orientation or gender identity (LGBT2SQ\* persons).