

Job Description: Research Associate

Richards lab, Lady Davis Institute, Jewish General Hospital

Dr. Brent Richards is seeking a Research Associate to assist in the creation and management of a research program to improve clinical care through the use of computational genomics. The job will take place at the Lady Davis Institute of the Jewish General Hospital, a McGill University teaching hospital.

The successful candidate will work with Dr. Brent Richards' research team in the Centre for Epidemiology and Community Studies. In collaboration with graduate students and external collaborators, the candidate will ensure the timely execution of a program of research to better understand how genomic information can improve clinical care.

Principle Duties and Responsibilities

Management and execution of multiple computational genomics research studies, including but not limited to:

- Developing mathematical and computational methods to improve genetic risk scores to predict disease
- Using these methods to generate genetic risk scores to identify individuals at risk for disease
- Developing and applying methods to identify genetic determinants of disease
- Developing analytical and data processing pipelines to analyze data that will be entered into a patient's medical record to improve their clinical care
- Undertaking quality control and processing of large-scale genetics data, including data derived from whole genome sequencing including using bioinformatics tools in Picard and GATK.
- Collaborating with other institutions and leading scientists to execute the above work plan.
- Generate and maintain the computational code required for the above work program.
- Writing scientific papers and manuals to describe the results of the work program, document its output and enable others to use the resultant code.
- Supervision of graduate students to complete the above work program.
- Must be comfortable leading a team of graduate students and staff to complete the above work program.
- General administrative tasks related to the above work program.
- Assist in writing grants to secure funding for the research program.
- Participation in the creation of new research programs.

The candidate will be required to execute these experiments with little supervision.

Qualifications:

- PhD in mathematics or computational biology
- Over five years' experience in programming for research programs related to biological problems.
- Programming expertise in Java, Python
- Data analysis expertise in R
- Deep understanding of the files and data arising from genome-wide genotyping, whole genome sequencing and whole exome sequencing
- Bioinformatic tool expertise including: GATK/Picard IGV, samtools, bwa, fgbio and star

- Development and maintenance of computational pipelines using Google Cloud, Docker and AWS.
- Experience in software development will be an asset.

Languages

The applicant will have high-level proficiency in English reading, writing and presentations

Eligibility Requirements

The applicant must be able to work legally in Canada as a citizen, permanent resident, work permit holder, or be able to apply for a valid work permit.

Interested applicants should contact Ms Darin Adra by email: coordinator-richardslab@mcgill.ca