JOINT PHD POSITION AVAILABLE
University Of Montreal Hospital Research Center (CRCHUM)
Martine Tétreault and Daniel Kaufmann Laboratories

DESCRIPTION
We are seeking a highly motivated PhD student in bioinformatics to work on collaborative projects on the molecular basis of antiviral immunity against SARS-CoV-2 and HIV. The position involves co-mentoring by two investigators using cutting-edge technologies and analytical approaches and who have complementary expertise. The studies focus on the identification of transcriptional and epigenomic programs of immune cells associated with favorable versus adverse viral disease outcome in humans. Dr Tétreault is an expert in human genetics, analysis of omic data and molecular biology, with a primary focus on neuromuscular and neurodegenerative diseases. Her research projects combine multiple omic approaches with functional genomics. Dr Kaufmann is a physician scientist whose research focuses on the immunovirology of HIV infection and, more recently, COVID-19 disease. He is an expert in CD4 T cell help in viral infection and single-cell characterization of viral reservoirs. He is also a steering committee member of the Québec COVID-19 Biobank (BQC-19).

The main topic of this PhD project is to leverage transcriptomic datasets generated on blood immune cells isolated from well-characterized cohorts of patients with different disease evolutions. The primary goal, focused on COVID-19, is to define innate immune signatures during acute severe COVID-19 that i) correlate with clinical outcome and ii) predict development and durability of adaptive SARS-CoV-2 immunity. Next, the candidate will be involved in the analysis of the transcriptional profiles of SARS-CoV-2 adaptive T cell immunity. There will also be ample synergies with students and postdocs working on similar questions in HIV infection. The overarching goal of these studies is to better understand protective and detrimental immune responses in major viral infections, which could spur development of new therapeutic or prophylactic approaches. These projects are funded by CIHR and NIH.

Under the supervision of their research co-director, the candidate will have to carry out research activities with initiative and commitment. The specific tasks will include:

- Conduct research projects through the design, execution and analysis of experiments
- Maintain detailed documentation of the experimental work
- Present her/his work at meetings, conferences or symposia
- Work closely with colleagues and our network of partners
- Regularly inform their research co-directors of progress made

QUALIFICATIONS
Candidates must hold a MSc degree in bioinformatics or a BSc with the desire to pursue a fast-track admission to PhD and previous exposure to genomic, transcriptomic and/or epigenomic studies and analytical pipelines. The applicant should be highly motivated and must have the capacity to work in a dynamic and collaborative team environment. The candidate should have good organizational skills and strong oral and written communications skills. It should be noted that the research department is bilingual (French and English), however the laboratory is mostly run in English. The position requires occasional weekend and evening flexibility.

RELEVANT PUBLICATIONS AND WEBPAGE
Lists of the publications of the Tétreault and Kaufmann laboratories can be obtained on Pubmed by searching: tetreault martine
Kaufmann D AND (HIV OR Bihl F OR Baxter A OR Sonntag K OR Lapointe R OR COVID)
Webpage of the Tétreault laboratory: https://www.chumontreal.qc.ca/en/crchum/researchers/martine-tetreault
Webpage of the Kaufmann laboratory: https://www.chumontreal.qc.ca/en/crchum/researchers/daniel-kaufmann

HOW TO APPLY
The position is open immediately but can be flexible if needed. Applicants must submit a cover letter, a full curriculum vitae and the name of two references to Dr Martine Tétreault at martine.tetreault@umontreal.ca

Posted on March 17, 2020