

Pre-leukemic Dynamics – MSc or PhD Studentship

Principal Investigator

Morgan Craig

Assistant Professor, Département de mathématiques et de statistique, Université de Montréal

Researcher, Centre de recherche du CHU Ste-Justine
By September 2020

Starting Date

Research Group

The Quantitative and Translational Medicine Laboratory focuses on the application and implementation of quantitative approaches to study biologically-relevant questions of large medical importance, with a particular emphasis on the optimization of treatment strategies for a variety of diseases. Current projects include understanding pre-leukemic hematopoietic stem cell dynamics, PBPK/PD models of antiretroviral drugs to support the design of a novel sustained-release delivery device for improved HIV treatment design and HIV cure strategies, unravelling immunological networks during rare diseases, and quantifying the impact of heterogeneity in glioblastoma, melanoma, and non-small cell lung cancer tumours on resistance pathways and ultimate therapy success. Dr. Craig's research is highly multidisciplinary and is conducted in close collaboration with experimentalists and clinicians.

Research Project

The selected candidate(s) will work primarily on (pediatric) pre-leukemic and blood cell production dynamics, in collaboration with researchers from hospital research centres.

Candidate Requirements:

- hold or have completed the requirements for appropriate degree (BSc for MSc or MSc for PhD) in applied mathematics or related discipline and have an excellent academic record
- demonstrated mathematical modelling capacities using data-driven quantitative analyses, differential equations, stochastic modelling, gene/biochemical network analysis etc.
- knowledge of physiological processes relevant to hematology/immunology/cancer-related projects (hemato-immune signalling, blood production, functional immune responses, cancer and cell growth including clonal expansions)
- previous experience in pharmaceutical sciences (PK/PD/QSP) an asset
- French language abilities (particularly the ability to read and understand)
- strong English capacities
- have excellent communication and organization skills

Admission and Funding

Interested candidates are asked to contact Dr. Craig (morgan.craig@umontreal.ca) and include a cover letter, transcripts, and the names of two references. The project is funded and additional scholarship opportunities are available.