



NSERC/MITACS Alliance POSTDOCTORAL FELLOWSHIP

Multiple NSERC/MITACS Alliance Postdoctoral Fellowships Fellows will be available to support high-caliber scholars doing postdoctoral research, in alignment with the on-going collaboration between the Laboratory for Industrial and Applied Mathematics (LIAM) and *Sanofi*, and their global networks.

The collaboration aims to develop advanced mathematical technologies for respiratory infection risk assessment and pharmaceutical intervention scenario analyses. The collaborative network, chaired by Jianhong Wu, includes scientists from *Sanofi* and academic members from other universities (Ali Asgary, Michael Chen, Jane Heffernan, Jude Kong, Neal Madras, Seyed Moghadas, Steven Wang) from York University, Julien Arino from University of Manitoba and Nathaniel Osgood from University of Saskatchewan.

Applicants are expected to contribute to at least one of the following thematic research areas:

1. Development and analyses of the next generation modeling framework to consider the systemic risk of viral infections and pandemics.
2. Integration of transmission dynamics models with built-in neural network architectures to estimate parameters and explore unknown mechanisms.
3. Algorithm and dashboard design of nowcasting and nearcasting epidemic trends during an acute phase of an outbreak.
4. Development and implementation of AI and modelling technologies to identify associations of different time series from social media, epidemiological surveillance data.
5. Modeling and evaluating infection risks of mass gathering events.

A candidate must have a doctorate in an area that falls within the NSERC/MITACS Alliance mandate. The applicant must be supported by an academic member and the program Chair as the co-supervisors. The postdoctoral fellows will be expected to interact with the entire team regularly.

The positions can start anytime, initially for one year but can be renewed for up to a total of 3 years. The salary, including a potential course instructorship, is approximately \$58,000. The salary could be complemented by other funds including those from the team members, and those from external sources awarded to the applicants.

Applicants should submit

- One-page summary of proposed research in the aforementioned five areas
- Curriculum vitae;
- Some representative research;
- Two letters of recommendation.

Applications should be submitted to Professor Jianhong Wu at wujh@yorku.ca. Only successful candidates will be contacted.