

University of Toronto
JOB POSTING – POSTDOCTORAL FELLOW

Area of Research: Statistics, Mathematics, Computational science, Public Health

Project summaries:

Estimating COVID-19 epidemics in Canada, China, and Low- and Middle-Income Countries (LMICs)

Description of duties:

Dalla Lana School of Public Health (DLSPH) is seeking a highly motivated individual to work on modeling studies to predict the dynamics of outbreaks, and related impact of public health and physical distancing measures on the ongoing epidemic and socioeconomics for Canada, China and LMICs. The candidate will help to collect and compile publicly available data and health authority COVID-19 updates, and then construct infectious disease models to predict COVID-19 epidemics and impacts of complex interventions. The post will be funded through a CIHR grant where we aim to develop clinical guidelines to facilitate COVID-19 control in hospitals and primary care settings in the Philippines and Sri Lanka. The successful candidate will work in a highly dynamic environment with exposure to world-leading academic experts as well as practitioners in the field. His/Her contribution will be to devise state-of-the-art computational tools to investigate using various dynamic simulation modelling techniques to apply large data sets collected from administrative and reported health database, as well as from our interventional studies.

The successful candidate is expected to help formulate his/her research program within the context of related projects. S/he will be supervised by Prof. Xiaolin Wei, the Dalla Lana Chair in Global Health Policy in DLSPH, University of Toronto (<http://www.dlsph.utoronto.ca/faculty-profile/wei-xiaolin/>). The Candidate will also be co-supervised by Prof. Naveen K. Vaidya, Associate Professor of Mathematics in San Diego State University leading the Disease Modeling Lab (DiMoLab, <https://nvaidya.sdsu.edu/DiMoLab.html>). The candidate will be benefited within a network of investigators working on public health, mathematical modeling, computation, and data analysis. The post is available immediately. It is full time on a 12-months fixed-term basis, and renewable for another 12 months based on mutual agreement. Specific tasks will include:

- Collect and compile relevant data from public sites and our existing networks;
- Develop mathematical and computational models using differential equations, stochastic methods, and machine learning approaches;
- Apply dynamic programming and simulation techniques to evaluate complex interventions in areas of Covid-19 transmission, and other infectious diseases (such as tuberculosis care and antibiotic resistance), and publish papers in leading academic journals;
- Assist in developing grant proposals in related areas in collaboration with supervisors and



- other collaborators for CIHR and related competitions;
- Contribute to teaching/supervising of postgraduate students;
- Other research/administrative duties requested by the supervisor.

Salary:

\$40,000-60,000 per annum depending on candidate's skills and experience.

Please note that should the minimum rates stipulated in the collective agreement fall below the rates stated in this posting, the minimum rates stated in the collective agreement shall prevail.

Required qualifications:

Minimum Degree Required: Ph.D.

Preferred Qualifications:

Ph.D. obtained within five years of hiring, preferably in Mathematics, Statistics, Computer Science, Public Health or a related field. The candidate should also have significant experience with mathematical modeling, data analysis and computer simulation, solid skills in at least one programming language (python, MATLAB, R, or C/C++); strong ability to communicate scientific material; high enthusiasm, strong work ethic, and willingness to perform at a high level consistently.

Application instructions

All individuals interested in this position must submit a CV and two letters of references to Prof. Xiaolin Wei (xiaolin.wei@utoronto.ca) by the closing date. Optional application documents include cover letter, dissertation abstract, writing sample/publications and research abstract.

Closing date: Open Until Filled (at least after 17 April 2020)

Supervisor:

Prof Xiaolin Wei, the Dalla Lana Chair in Global Health Policy in DLSPH, University of Toronto (<http://www.dlsph.utoronto.ca/faculty-profile/wei-xiaolin/>)

Expected start date: Immediately upon successful selection of an applicant



Term: This is a one-year position, renewable for a second year subject to availability of funding and performance of the postdoc.

FTE:

The normal hours of work are 40 hours per week for a full-time postdoctoral fellow (pro-rated for those holding a partial appointment) recognizing that the needs of the employee's research and training and the needs of the supervisor's research program may require flexibility in the performance of the employee's duties and hours of work.

Employment as a Postdoctoral Fellow at the University of Toronto is covered by the terms of the CUPE 3902 Unit 5 Collective Agreement.

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The University of Toronto is strongly committed to diversity within its community and especially welcomes applications from racialized persons / persons of color, women, Indigenous / Aboriginal People of North America, persons with disabilities, LGBTQ persons, and others who may contribute to the further diversification of ideas.

