

## Postdoctoral Research Fellowship in Modelling of Mpox and other (Re) emerging Zoonotic Threats.

### Background

We are seeking three (3) highly motivated Postdoctoral Researchers to join our research team at York University, Toronto, Canada.

The successful candidates will work on projects related to the prediction, modelling, and risk assessment of mpox and other (re)emerging zoonotic threats using cutting-edge research techniques. Expertise in the use of a) artificial Intelligence for infectious disease prediction, geospatial analysis and risk map assessment; b) the STI impacts of one-health mathematical modelling approaches to Mpox and (re)emerging zoonotic threats; c) modelling and investigating of socio-economic factors, sex/gender, environmental and climate change, and behavioural changes.

This research is chaired by Woldegebriel Assefa Woldegerima ([wassefaw@yorku.ca](mailto:wassefaw@yorku.ca)) and is sponsored by a research grant from the Canadian Institute of Health Research (CIHR). The successful candidates will have the opportunity to be co-supervised by Professors Jianhong Wu, James Orbinski, Ali Asgary, Sarah Flicker, Jude Kong and Nicola Luigi Bragazzi.

### Key Responsibilities:

- Conducting research related to (re)emerging zoonotic threats.
- Collecting and analyzing data related to infectious diseases and their impact.
- Modelling and predicting the spread of infectious diseases using advanced statistical and computational techniques.
- Developing and testing new models and tools for infectious disease prediction and management.
- Communicating research findings to stakeholders and presenting research at conferences.
- Acting as a research associate (project manager) for the research program, including budget management and organization and advance support and task follow-up for weekly or bi-weekly team meetings.
- May also Participate in teaching courses in the Department of Mathematics and Statistics at York University (only if interested).

### Requirements:

- A Ph.D. obtained after **April 2019**, in a relevant field (e.g., epidemiology, biomathematics, computer science, public health, etc.)
- Demonstrated strong research skills and experience in one of the three thematic areas: (1) **Artificial Intelligence for Infectious Disease Prediction, Geospatial Analysis and Risk map assessment, GIS AI**; or (2) **the STI impacts of one-health mathematical modelling approaches to Mpox and (re)emerging zoonotic threats**; or (3) **Clinical public health infectious epidemiology**. For a detailed explanation, see the description of Thematic areas in the next paragraph.
- Knowledge of statistical and computational techniques related to infectious disease modelling and prediction.
- Strong publication record related to their field of expertise.
- Excellent english language communication and presentation skills.
- Ability to work independently and as part of a team. They will work closely with the research team, including graduate students and other postdoctoral researchers, and will have the opportunity to collaborate with other researchers within the department and across institutions.

We offer a competitive salary of \$50,000 Canadian dollars per year before tax, as well as the opportunity to work with world-class researchers and experts in the field. The successful candidates will also have the chance to teach courses related to their area of expertise.

If you are a highly motivated Postdoctoral Researcher with expertise listed in the thematic areas listed below, please apply to join our team at York University.

#### **Application procedure:**

We are looking for applicants who can start as soon as possible. Review of applications and interviews will begin immediately.

To apply, please send your application package as a **single PDF file** to Prof. Woldegebriel Assefa Woldegerima at [wassefaw@yorku.ca](mailto:wassefaw@yorku.ca). This should include:

- a cover letter outlining your research interests and experience,
- your CV,
- a list of all publications related to the job, and
- three reference letters including their contact information (either send us the contact details of the referee or include the references letter in your application)
- Please, use “**Your surname\_Postdoc\_WAW**” as the subject of your email.

#### **Description of Thematic areas:**

We are looking for candidates with expertise in one of the following thematic areas:

1. **Artificial Intelligence for infectious disease prediction, geospatial analysis and risk map assessment, GIS AI.** Experience in developing and applying machine learning algorithms to infectious disease modelling, prediction, geospatial analysis and risk map assessment is required. They will work closely with the research team to design and implement predictive models for infectious disease outbreaks, incorporating data from various sources such as social media, climate, and geospatial data.
2. **One-health mathematical modelling approach to mpox, (re)emerging zoonotic threats and their impact on STIs.** The second position requires significant expertise in the one-health modelling approach. The ideal candidate will have a Ph.D. in Biomathematics, epidemiological modelling, or a related field, and experience to develop and forecast epidemiology, transmission dynamics, immunology, and intervention strategies. They will work closely with the research team to develop and analyze mathematical models for infectious disease transmission by considering pharmaceutical and non-pharmaceutical interventions, incorporating data from epidemiological studies and other relevant sources. explore the scope of potential health, economic and other impacts of proposed public health interventions, and capture the broad range of risks and benefits tied to different mpox and other zoonotic threats prevention and control strategies in Canada and/or globally.
3. **Clinical/public health infectious epidemiology.** The third position requires significant expertise in conducting quantitative and qualitative assessments of socio-economic factors, sex/gender, environmental and climate change, and behavioural changes. Expertise in infectious disease epidemiology and risk factor assessments is required. The candidate will work with the team to instigate the effects of the mpox virus on other sexually transmitted and blood-borne infections (STBBIs) by considering and examining Sex-and Gender-Based Analysis Plus (SGBA+).

York University is an equal opportunity employer and strongly encourages applications from all qualified candidates, including women, persons with disabilities, Indigenous persons, and members of visible minorities.