

Call for Applications for a Post-doctoral Fellow in Statistics
Department of Statistics, University of Manitoba

Background:

We are looking for a post-doctoral fellow (PDF) to join our research team in the University of Manitoba Department of Statistics. The project, titled *Implementing the zero-inflated α -folded normal distribution for microbiome modelling*, is led by Prof. Kevin McGregor and Prof. Saman Muthukumarana. The PDF will have (or will soon have) a PhD in statistics, biostatistics, or a closely related field.

In this project, our aim is to develop and test statistical methodologies for modelling microbiome data. The focus will be on extending existing Bayesian methods for modelling zero-inflated, count-based compositional data, which could include microbiome, mycobiome, or single-cell sequencing data. Additionally, the PDF will extend the methodology to measure cross-platform co-occurrences among these different data types. The PDF will implement techniques such as variational inference and linear response variational inference. This project will involve extensive use of computational tools such as R and possibly C/C++. The PDF will also have the opportunity to collaborate with microbiome researchers across Canada to run the newly developed methods on a wide array of real-world microbiome datasets.

Duties:

The PDF will play an integral role in the research project. The PDF will bring expertise in the areas of high-dimensional and Bayesian statistics, which will add to the skills of the research team and provide specific abilities in the analysis of microbiome data. The PDF will also teach statistics courses in the Department of Statistics.

Support:

The total salary for the position will be \$55,000 per year plus. Anticipated start date is July 1, 2025, for a period of two years.

Application:

Please submit an application to either Kevin McGregor (kevin.mcgregor@umanitoba.ca), or to Saman Muthukumarana (saman.muthukumarana@umanitoba.ca) by March 15, 2025. A complete application includes a CV, research statement, and two letters of reference sent directly from the referees.