Postdoctoral researcher (1) position in the field of applied statistics

Do you want to help solve one of the largest environmental issues facing Canada? Le Labo Yergeau (www.microbialecology.ca) is seeking one postdoctoral researcher to create predictive microbial-based models of the efficiency of contaminant removal from oil sand processed water using constructed wetlands. The successful candidate will integrate a dynamic, gender-balanced and diversified team of 12 researchers led by Dr. Étienne Yergeau, at the Institut national de la recherche scientifique located a stone's throw away from the fantastic city of Montréal. The student will be co-supervised by Dr. Julien Tremblay of the National research council of Canada. The project will be part of a larger Genome Canada-funded multidisciplinary project addressing the decontamination of the oil sand processed water using constructed wetlands.

Project description:
The main objective of this project is to develop an effective method to decontaminate the water used to extract bitumen from the oil sand. This water is contaminated with naphthenic acids and polycyclic aromatic hydrocarbons and cannot be released in the environment. One way to treat this water is to use the combined strength of plants and microorganisms to degrade the pollutants. Our industrial partner has constructed a large-scale wetland where processed water will be flown, and at the same time we are running mesocosms experiments to test various parameters. These multi-year experiments are currently underway and will be sampled at multiple times points to generate a comprehensive shotgun metatranscriptome and metagenome sequencing dataset. This will result in high-dimension data tables containing a few hundred samples and several million genes. Our objectives are to 1) describe the microbial communities and functional genes involved in the degradation of the contaminants, 2) use the metagenomic and metatranscriptomic data to predict remediation efficiency and 3) identify key genes and microorganisms linked to remediation efficiency. The postdoctoral researcher will use statistical learning methods to create the predictive models and to identify the key features of the models.

Requirements: A PhD in statistics, mathematics or informatics is required. Candidates should have experience in large-scale data analysis, statistical learning, high-dimensional datasets, programming, or modeling. We are looking for a creative, highly motivated, autonomous scientist with excellent organizational and communication skills and excellent attention to detail.

Duties and responsibilities: Under the guidance of Dr. Étienne Yergeau and Dr. Julien Tremblay, the post-doc will be responsible for statistical analysis, data management and interpretation, as well as manuscript preparation. The student will work in close collaboration with other students and post-docs on the project.

Appointment and salary: The position is initially for 1 year, renewable for up to 3 years with a salary of 50,000 $CAN plus benefits. Expected starting date is May 1st, 2022 or earlier (to be discussed).

Location: Centre Armand-Frappier Santé Biotechnologie, Laval, QC, Canada

Additional information: For additional information, please contact Dr. Étienne Yergeau (Etienne.Yergeau@inrs.ca).

How to apply: Review of applications will begin on March 1st, 2022 and will continue until the position is filled. Interested persons are requested to submit a complete CV, a statement of the candidate’s interest and suitability for the position and contact information for three references by email to Etienne.Yergeau@inrs.ca. Only the selected candidates will be contacted.