

Postdoctoral Associate in Multi-scale analysis of landfill methane emissions

Period: 18 months; January 2024 - June 2025

Application Deadline: December 4, 2023

Hosting Department: The [Department of Geography and Environment](#) is a research-intensive department that defines four fields of research: Physical Geography, Geographic Information Science; Environment, Health and Development; and Urban Studies. These support doctoral- and masters-level graduate programs with an enrolment of approximately 75 graduate students. At the undergraduate level, we offer both BSc and BA degrees and a range of modules related to our research areas. The Department has identified urban environments as an overarching research theme and is a designated ESRI Canada Centre of Excellence.

Project Overview: This project will measure methane emissions at an active landfill site in London, Ontario at multiple scales using data from the GHGSat satellites, drone-based TDLAS (Tunable Diode Laser Absorption Spectroscopy), and ground-based measurements. The goal is to use these observation systems to characterize the spatiotemporal distribution of methane emission at multiple scales at the landfill site. The data will be used to assess the validity of the current methane generation model used by the City of London and to use the data to help monitor and modify the current landfill gas collection system and monitoring protocols in aid of methane and odour emission mitigation goals. The project partners include multiple Departments at Western University, along with the City of London and Comcor Environmental Limited.

Postdoctoral Role: The postdoctoral associate (PDA) will be responsible for data synthesis and integration from the ground, air- and space-borne platforms. The PDA will also be responsible for analysis and processing of the drone-based methane column data and its relation to meteorological conditions. They will process, integrate, and analyze the data to produce advanced data products in forms that will be useful to the City of London and Comcor Environmental to enable them to make informed decisions regarding optimal methane monitoring and recovery options, improve overall estimates of fugitive methane emissions, and to evaluate the efficacy of their gas collection systems. The PDA will work closely with other team members on the collection, analysis and integration of their datasets.

Salary: \$40,000 – 48,000

Benefits: Postdoctoral Associates at Western are provided a range of [benefits](#) as part of the position.

Required Qualifications:

1. A doctoral degree in a relevant area of research such as environmental science, atmospheric science, remote sensing, physics, engineering, physical geography, biogeochemistry, or a related discipline.

2. Demonstrated experience with remote sensing and data analysis of methane ideally related to use of TDLAS sensors and processing and application of their data streams in conjunction with micrometeorological measurements and theory. Experience working on data analysis over landfill sites will be an asset.
3. Strong analytical and scientific programming skills that can be applied to the integration of multiscale datasets including GIS skills to enable them to combine the various datastreams into a GIS framework.
4. An ability to collaborate with other team members and to work effectively in interdisciplinary teams.
5. A record of scholarly achievement as demonstrated through published/submitted journal articles, conference presentations.
6. Strong communication skills including both written and spoken English.

Required Documentation:

1. Cover letter outlining experience and suitability to the position as well as their personal research goals
2. CV
3. Contact information (name, email, phone) for three persons suitable to act as academic references

How to Apply: Please submit all materials as a single pdf file to:

Courtney Swinden

Administrative Officer, Institute for Earth & Space Exploration

cbarre46@uwo.ca

Further Information: For questions specific to this PDA position please contact James Voogt

javoogt@uwo.ca or Jinfei Wang jfwang@uwo.ca

More information on Post Doctoral Associates at Western University is available from

https://grad.uwo.ca/postdoctoral_services/index.html