

Posting Date: November 2018

Department of Civil and Mineral Engineering
Faculty of Applied Science and Engineering
University of Toronto

JOB POSTING – POSTDOCTORAL FELLOW

Areas of Research: Civil engineering construction, sustainability, life cycle assessment, structural engineering, geotechnical engineering, greenhouse gas (GHG) assessment

Overview of the position:

Applications are invited for a postdoctoral fellow (PDF) position in the Reducing GHG Emissions from Large-Scale Infrastructure (InfraGHG) research group at the University of Toronto. The position is available immediately.

The InfraGHG research group is working towards a decision support toolset to drive GHG reductions in the capital emissions associated with design and construction of civil infrastructure. The research program is led by Prof. Heather MacLean and includes four other professors of civil engineering, Prof. Brenda McCabe, Prof. Daman Panesar, Prof. Daniel Posen and Prof. Shoshanna Saxe. The objective of the research is to drive rapid, large-scale reductions in the GHG intensity of the design and construction of infrastructure. A large team of academic researchers are working in collaboration with industrial partners EllisDon, WSP and BASF to address the complex challenge of changing how the built environment is designed and constructed. This position will be supervised by Prof. Shoshanna Saxe with strong collaborations with other researchers on the team including other PDFs and students.

We are seeking one postdoctoral fellow with a research and/or practice background working on the construction of civil engineering structures to work as part of a team in developing this decision support toolset and associated research activities. The candidate will be a lead contributor to peer reviewed publications, technical reports, and conference proceedings; assist in the supervision of students; and participate in meetings with academic, industrial, and government partners.

Description of duties:

The candidate will be responsible for:

- Conducting an extensive literature review on the state of the art in infrastructure design and construction decision support for GHG reductions
- Designing and executing a data collection plan from both ongoing and historical projects - this may include residencies on construction sites
- Analyzing the qualitative and quantitative data collected to determine best practices for forecasting future GHG impacts at different stages of project design and construction
- Assisting with the supervision of PhD and Master's candidates working with the InfraGHG program

Salary: \$57,000/ year

Please note that should the minimum rates stipulated in the collective agreement be higher than rates stated in this posting, the minimum rates stated in the collective agreement shall prevail.

Required qualifications:

- PhD degree in engineering, or related field awarded within the past 5 years
- Experience with construction documents, software programs and construction sites
- Familiarity with Revit, Navisworks, AutoCAD, Microstation and similar software
- Advanced statistics and probability
- Programming, video analysis, or Machine Learning skills are desirable
- Demonstrated awareness of sustainability and GHG emissions
- Experience with LCA/embodied energy/embodied GHG emissions assessment a plus
- Experience managing large datasets containing confidential data
- Excellent verbal and written communication skills in English
- Demonstrated ability to work independently and as part of a team and a drive to create own novel research direction.

Application instructions

All individuals interested in this position must submit a single electronic file consisting of a cover letter, detailed CV, a one-page statement of research interests, and the names and addresses of three references to Mel Duhamel at mel.duhamel@utoronto.ca by the closing date. Please use **InfraGHG Construction PDF Application** as the email subject.

Closing date: January 15, 2018. The search will continue until the position is filled.

Supervisor: Shoshanna Saxe

Expected start date: Immediately

Term: 1 year with potential for renewal

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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 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.

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