

Systems Approaches for Sustainable Engineering

In 2020, our Canadian Engineering Deans, laid out a grand challenge comprised of six, complex and socially motivated problem areas that inherently require an understanding of multiple perspectives and disciplines, and the pursuit of which should drive fundamental innovations, as well as discovery and transfer of new knowledge for society's wellbeing. Particularly relevant to our department, which includes programs in environmental, geological, civil, and architectural engineering are: (1) resilient infrastructure, (2) access to safe water in all communities, (3) inclusive, safe, and sustainable cities, and (4) inclusive and sustainable industrialization. We seek creative faculty members who will work in novel, collaborative and interdisciplinary ways to solve these grand challenges. In particular, for this position, we seek a candidate with the following skills, experience and interests.

The Department of Civil & Environmental Engineering (CEE) at the University of Waterloo is seeking an exceptional scholar and researcher for one tenure track position at the rank of Assistant Professor in the area of **Systems Approaches for Sustainable Engineering** with an anticipated start date of **January 1, 2022**. In the case of an exceptional candidate, an appointment at the rank of Associate Professor will be considered.

The mission of this position is to advance environmental engineering solutions through the development and use of decision-making tools in support of achieving a sustainable planet. The desired candidate will be expected to draw upon advanced tools such as life cycle analysis (LCA), data science (machine learning and artificial intelligence), statistical and stochastic modelling, data driven methodologies, and risk analysis to develop optimal solutions that address societal challenges while considering technical feasibility, economic, social, public and environmental health outcomes. Evidence of interdisciplinary collaboration in support of the scoping, development, evaluation and implementation of solutions is desirable. Areas of specialization could include:

- The Food-Water-Energy-Climate nexus
- Integrated waste management in a circular economy
- Human health impacts of the natural and built environment
- Energy-greenhouse gas solutions in urban and/or remote environments
- Resilient solutions to climate change impacts on communities
- Green technology design, selection and application
- Sustainable infrastructure development and renewal
- Environmental decision support systems for science-policy integration
- Resilient and sustainable water infrastructure systems

The successful candidate must have a PhD in Engineering or an equivalent discipline. Evidence of an actively developing research program with emphasis on one of the above specializations is required. Duties include research, teaching at the undergraduate and graduate level, supervising graduate students, and service efforts of the Department and the University. The ability to develop and teach an array of traditional and on-line courses in engineering decision making, sustainable development, or resource and waste management is required. Applicants whose research aligns with the strategic plan of the faculty, which constitutes the department's mandate would be especially appealing.

The salary range for this position at the **Assistant Professor** rank is **\$100,000** to \$150,000. Negotiations beyond this salary range will be considered for exceptionally qualified candidates. Applicants are expected to have engineering licenses for practice in Canada or the ability to apply for an engineering license with the Professional Engineers of Ontario within 5 years.

The closing date for applications is **May 15, 2021**. To apply, individuals are to complete an online application form that includes loading a single pdf containing: a cover letter, curriculum vitae, teaching and research statements and up to three reprints of current journal and/or conference articles. Three letters of reference will be requested for applicants invited for an interview.

The link to apply is: <https://uwaterloo.ca/engineering/application-systems-approach-sustainable-engineering-opening>

If you have any questions regarding the position, the application process, assessment process, eligibility, or a request for accommodation during the hiring process, please contact cee.recruiting@uwaterloo.ca.

The CEE Department is one of the largest combined departments of civil, environmental, geological and architectural engineering in Canada. The department is home to more than 45 faculty members, 200 graduate students, and 1,100 undergraduate students. The faculty of Engineering is the largest engineering school in Canada, with almost 10,500 students enrolled in 2019 and is typically ranked among the top 50 engineering schools worldwide and in the top 1 or 2 in Canada. Waterloo Engineering is committed to leading engineering education and research. In 2018/19, external research funding from Canadian and international partners exceeded \$96 million, a strong indication of our extensive industry partnerships and the excellence of our engineering research programs.

The University of Waterloo regards equity and diversity as an integral part of academic excellence and is committed to accessibility for all employees. As such, we encourage applications from women, persons with disabilities, Indigenous peoples, members of visible minorities, and others who may contribute to the further diversification of ideas. At Waterloo, you will have the opportunity to work across disciplines and collaborate with an international community of scholars and a diverse student body, situated in a rapidly growing community that has been termed a “hub of innovation.”

All qualified candidates are encouraged to apply, however Canadians and permanent residents will be given priority.

Three reasons to apply: <https://uwaterloo.ca/faculty-association/why-waterloo>.