

## Resilient and Adaptive Environmental 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 exceptional scholars and researchers for **two tenure track positions** at the rank of Assistant Professor with an anticipated start date of **May 1, 2024**. In the case of exceptional candidates, appointments at the rank of Associate Professor will be considered.

The first position is in **Systems Approaches for Sustainable Engineering**, with a mission to advance environmental engineering solutions in water-energy-waste systems 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; and
- Environmental decision support systems for science-policy integration.

The second position is in **Water Quality Engineering**, with a mission to advance sustainable industrialization, the treatment and control of pollution, and the restoration of natural resources to safeguard the resilience of the natural world. This candidate will have demonstrated excellence in studying environmental engineering solutions to water quality problems. Expertise in either applied water chemistry or microbiology is required, and candidates are expected to apply advanced laboratory techniques to topics like water and wastewater treatment, contamination in surface, groundwater and soil, or remediation and restoration techniques. Areas of interest could include:

- Resource and energy recovery;
- Ecological or human health;
- Rehabilitation and restoration of surface or groundwater systems;
- Water treatment and source water contamination, including in remote and northern communities;
- Water quality in integrated water management systems; and
- Mitigation of greenhouse gas emissions.

For each position above, 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. For the first position, the ability to develop and teach courses in engineering decision making, sustainable development, or resource and waste management is required. For the second position, the ability to develop and teach courses in chemistry and microbiology is required. Design experience is an asset, as is the demonstrated ability and interest to teach in open-ended problem-driven course formats. 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 these positions at the **Assistant Professor** rank is **\$100,000** to \$150,000. Negotiations beyond this salary range will be considered for exceptionally qualified candidates. The successful applicants are required to have an engineering license for practice (full) or teaching (limited) in Canada or to apply for a Canadian engineering license within the first year of joining the University. Due to program accreditation requirements, all new faculty members are normally expected to obtain the license before the end of the first probationary term. Re-appointment is conditional upon satisfying this requirement.

The closing date for applications is **November 15, 2023**. Application materials must be submitted online as PDF files through the Online Faculty Application System (<https://ofas.uwaterloo.ca/>). Please include a cover letter, curriculum vitae, teaching and research statements, up to three reprints of current journal and/or conference articles and Contact information for three individuals who will be called upon to provide letters of reference.

The link to apply is: <https://ofas.uwaterloo.ca/>

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](mailto: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 acknowledges that much of our work takes place on the traditional territory of the Neutral, Anishinaabeg and Haudenosaunee peoples. Our main campus is situated on the Haldimand Tract, the land granted to the Six Nations that includes six miles on each side of the Grand River. Our active work toward reconciliation takes place across our campuses through research, learning, teaching, and community building, and is centralized within our [Indigenous Initiatives Office](https://uwaterloo.ca/human-rights-equity-inclusion/indigenousoffices) (<https://uwaterloo.ca/human-rights-equity-inclusion/indigenousoffices>).

The University values the diverse and intersectional identities of its students, faculty, and staff. The University regards equity and diversity as an integral part of academic excellence and is committed to accessibility for all employees. The University of Waterloo seeks applicants who embrace our values of equity, anti-racism and inclusion. As such, we encourage applications from candidates who have been historically disadvantaged and marginalized, including applicants who identify as Indigenous peoples (e.g., First Nations, Métis, Inuit/Inuk), Black, racialized, people with disabilities, women and/or 2SLGBTQ+.

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

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