



Costa's Research Group

Systems Design Engineering – University of Waterloo

Are you passionate about using your engineering skills to help society tackle disaster risk?

My research group at the University of Waterloo is seeking Ph.D. candidates with interest in natural hazards engineering and the application of computational simulations to inform regional disaster risk reduction initiatives. My group will tackle this problem from an engineering perspective that integrates concepts from planning, data sciences, and social sciences to understand disaster impacts holistically. Candidates from groups underrepresented in academia are strongly encouraged to apply. Starting date between January and September 2024 will be negotiated.

Priority research areas

- Flood and wildfire risk, including effects of climate change.
- Physical and societal exposure modelling.
- Complex systems modelling.
- Pre- and post-disaster housing issues in Canada (e.g., affordability, recovery);
- Disaster recovery financing.
- Disaster-induced gentrification.
- Managed retreat;

Required Qualifications

- Meet the admission requirements [listed here](#).
- A master's degree in engineering, planning, or related area. Exceptional candidates without a master's degree may be considered.
- Coursework in statistics, probability, and/or risk.
- Demonstrable interest in disaster risk, and computational simulations/modelling.

Benefits

Successful applicants will receive funding for tuition and living expenses, at least one TA-ship per academic year, the opportunity to participate in national and international conferences, and to engage in peer-to-peer learning with students from Canada and the US through the Supervisor's current collaborations. You will receive mentorship to publish your dissertation work as a lead author in high-quality journals and thus be recognized for your contributions.

About the supervisor

I am an engineer passionate about *wicked* societal problems. My research focuses on societal and environmental systems and examines how communities' physical, economic, and social systems interact to exacerbate disaster risk and further socioeconomic and racial inequalities. I work on the interface between engineering, planning, and social sciences and collaborate with practitioners. My goal is to inform targeted interventions to reduce disaster impacts, accelerate recovery, and ensure that all of society participates in the benefits. More information about my research can be found [on my website](#).

Interested candidates

Submit a CV and Cover Letter explaining your interest and research goals, or questions to rodrigo.costa@uwaterloo.ca with subject [Student Application].

Review of applications will start immediately and will continue until a candidate is selected.

