Funded Research Opportunity: Participatory GIS tool developer:
Project: Residential development Impact Scorecard for the Environment (RISE)
https://uwaterloo.ca/residential-development-impact-scorecard-environment

We seek a **qualified GIS specialist** research assistant to join the RISE project, starting January 2024. Duties will include:

1. Develop a Geographic Information Systems (GIS) tool for participatory modeling to evaluate how changes in residential housing site plans might change terrestrial carbon sequestration and stormwater runoff in residential developments.
2. Assist with participatory site plan scenario modelling using RISE tools for individual developers.
3. Assist with project reports, presentations, and publications as directed.

Required qualifications:

1. Expertise developing simple GIS-based interactive models, ideally within ArcGIS.
2. Understanding of and demonstrated ability to apply best practices for software development.
3. Demonstrated ability to work collaboratively and respectfully in diverse, interdisciplinary research settings.
4. Demonstrated ability to follow directions and complete task in a timely manner.
5. Demonstrated ability to work independently, while seeking feedback and guidance as needed.
6. A strong academic/training record commensurate with these required skills.

Desired qualifications:

1. Experience with participatory modeling using Geographic Information Systems (GIS).
2. Proficiency with AutoCad.
3. Understanding of the residential development site planning process.
4. Basic understanding of the role of natural and engineered green infrastructure to sequester carbon and manage stormwater runoff.
5. Basic training in urban design.

We have flexibility with respect to the type of hire for this position. This position is available as an undergraduate co-op term, graduate internship, research assistantship support for graduate studies, or part-time research scientist position. **Apply by 15 November 2023 for full consideration.** To apply:

1. Send an e-mail to Dawn Parker and Derek Robinson (see websites for e-mail) with the heading "RISE participatory GIS application" followed by your name.
2. Include a short (max 2-page, 12-point font) letter explaining your interest in and preparedness for this position, including your interest in the RISE project (see below for summary). Evidence of preparedness can include previous coursework, work experience, theses, publications, and experience working in interdisciplinary research groups and with professional and stakeholders. Please identify what model of funding you are seeking (co-op, GRS, etc.). In an optional additional half page, please also highlight any relevant lived experience or differential challenges you have faced relevant to your studies and/or this position.

3. Include a recent CV, an unofficial transcript, and a research sample.
4. We will contact you for an interview. When the position is filled, we will notify all unsuccessful applicants. We appreciate the time and effort that you might take to apply.

RISE Project summary

Canada is a highly urbanized country where both intensification and greenfield residential development often reduce green infrastructure (GI). While cities are setting ambitious climate mitigation goals, they are concurrently losing GI's contributions towards these goals. Novel green development standards create some developer incentives to provide GI, but on the whole, as GI on private lands creates public benefits but is financed by private costs, developer GI provision is too low. Further, cities lack complete and cost-feasible information on how greenhouse gas (GHG) profiles of developments evolve temporally. Our proposed research, led by a team of internationally recognized experts in modelling coupled socio-ecological systems, will:

- employ novel scientific methods to quantify urban terrestrial and wetland-based carbon stocks, sequestration and GHG emissions;
- develop a simple, dynamic carbon and GHG scorecard that will complement existing green building standards by tracking the state and trajectory of residential developments; and,
- test the scorecard's potential to induce developer behavioral change by incentivizing GI investments through social norms and status-seeking behaviour.

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 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+.

The University of Waterloo is committed to accessibility for persons with disabilities. If you have any application, interview or workplace accommodation requests please contact Occupational Health (occupationalhealth@uwaterloo.ca or Karen – extension 40538), who will work with the selection committee to secure accommodation while ensuring that the information is safe-guarded and confidentiality is maintained.

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.