

Post-doctoral position with the McGill Sustainability Sciences Initiative (MSSI)

With the goal of creating “*an integrative program of research on urban sustainability that will generate and mobilize the knowledge required to make cities more socially inclusive and less environmentally impactful, while improving the well-being of residents,*” the McGill Sustainable Systems Initiative (MSSI) is seeking a post-doctoral researcher.

We are seeking a post-doctoral researcher to help develop a research project on urban sustainable neighbourhoods across Canada and to create online surveys to comprehend consumption and mobility patterns of residents of diverse neighbourhoods. Additionally, the researcher will develop visualizations of local sustainability metrics to understand urban sustainability in Canada through the measurement and analysis of a variety of data sources, with the goal of developing policy responses to improve livability across the country.

The researcher will be jointly supervised by Nancy Ross (Geography), Mylene Riva (Geography and Institute of Health and Social Policy), and Kevin Manaugh (Geography and McGill School of Environment), and will join a vibrant training environment made up of undergraduate, graduate students and staff. The postdoc will have an academic home within the Department of Geography, with access to data and expertise available from the Geographic Information Centre, and will join an actively growing community of sustainability researchers at McGill.

Background

The concept of urban sustainability implies that we create urban neighbourhoods for now and for the future – places that do not go beyond the capacity of the resources or ecosystem services available to them locally and places that allow people to thrive. This translates to neighbourhoods with structural features that support active living and low-carbon mobility with mixed land use and transportation accessibility, as well as green spaces that act as carbon sinks and provide cooling in warmer seasons. Sustainable neighbourhoods also imply social sustainability – communities that welcome newcomers, provide housing options that are affordable and suitable to families across the life cycle, and provide healthy food options and public infrastructure (e.g. child care centres, schools, community centres) that sustain well-being from early childhood through to advanced age.

There are often trade-offs amongst these features of sustainability that can be best understood by examining neighbourhoods and regions in depth. For example, the creation of a green belt around a city to protect the land from urban sprawl and increased densification may lead to unintended consequences such as increased housing prices within the green belt that force lower income households further afield and necessitate longer car-dependent commutes.

Responsibilities

We are seeking an exceptional individual with the expertise to spearhead the project. Tasks will include collecting, analysing, and developing visualizations of a variety of data. The post-doctoral researcher will collect secondary data sources at the neighbourhood scale in Canada. The data will be used to create an index of urban sustainability using factors such as air pollution, social marginalization, walkability, journey to work, housing affordability, suitability and adequacy, energy use, green space, tree canopy, and built form. Other tasks and activities include attending co-supervisors' lab meetings, participating in the training of undergraduate and graduate students and presenting work at academic conferences.

The ideal candidate will have:

- A PhD in a relevant field of sustainability science (e.g., geography, urban planning, urban ecology, epidemiology, computer science, environmental science). Candidates with experience in visual design or media are welcome.
- Expertise in at least one of the following:
 - GIS spatial analysis and mapping
 - Programming experience in SQL, Matlab, and Python. (C++, Java, Hadoop, PostGIS, MapReduce and other relevant technologies are strong assets.)
- Expertise in handling large datasets, as well as overcoming limited data.
- Excellent communication and organizational skills, self-motivated work ethic.
- Experience working on large multi-disciplinary projects involving multiple stakeholders.
- A strong research publication record in the applicant's relevant field.

The position is for a full-time post-doctoral researcher beginning in the fall of 2018, and offers full funding for one year renewable for up to three years, with a competitive remuneration package.

How to apply

Applications should be sent to mssi@mcgill.ca as a single pdf document, with the subject line: "Sustainable Neighbourhoods Post-Doc", by September 5th 2018. The pdf should include:

1. A one-page cover letter, introducing yourself and highlighting your interest and fit for the position
2. Curriculum Vitae
3. Full-text attachments of 1-3 key relevant publications
4. Names and contact information of 3 referees.