Funded Master of Planning Studies (MPS) Student

Climate Action and Awareness Fund (CAAF): Development of a Bottom-up, Activity-based Transport Network and Emissions Modelling System

Overview of DalTRAC & Project:

Dalhousie University, located in Halifax, Nova Scotia, is one of Canada's top research-intensive universities, pioneering research in a wide array of disciplines. Dalhousie University houses the Dalhousie Transportation Collaboratory (DalTRAC), a CFI-sponsored multidisciplinary research facility dedicated to advancing transportation engineering and planning research.

DalTRAC is leading a multi-year project sponsored by Climate Action and Awareness Fund (CAAF) that advances a theoretical and empirical foundation for multi-scale integration of transport and emission models within urban systems modelling for multiple Canadian cities. The project will combine cross-cutting expertise from scholars and practitioners to advance data-driven, integrated urban systems modelling techniques for emissions estimation, a critical next step yet to be fully materialized to develop a standardized transport and emission modelling approach. The data, methods and tools developed in this project will provide a geo-temporally resolved understanding of emissions and inform policymaking to achieve Canada's goal of net-zero GHG emissions by 2050. More information on DalTRAC's research projects and publications can be found at: https://www.dal.ca/sites/daltrac.html.

Project Title: Repurposing Office Space for Diverse Housing Options and Climate Action: The Viability of Commercial- Residential Conversion Projects
Supervisor: Dr. Jeffrey Biggar, Assistant Professor, School of Planning & Dr. Ahsan Habib, Professor,

School of Planning, Department of Civil and Resource Engineering (cross)
Commercial real estate vacancy rates across Canada's downtowns increased considerably throughout the COVID-19 pandemic and continue to show few signs of slowing. Meanwhile, Canada has witnessed a slowdown in housing construction in the form of purpose-built rental to meet diverse housing need. The opportunity to repurpose vacant commercial spaces into residential housing units has been raised by housing advocates, city builders, and political leaders alike. Policy and regulatory frameworks, however, to support office conversions that would increase the supply of housing while supporting climate goals (e.g., reduced GHG through embodied carbon in buildings) are nascent. This project will explore the feasibility of conversion projects to meet housing and climate goals in medium-sized cities (cities such as Halifax with populations between 50,000 and 500,000 people) in Canada. The primary objectives are to (1) explore the barriers (e.g., policy, regulatory, financial, market, building) and potential drivers of office conversions to provide market and non-market housing, (2) assess the potential GHG reduction and savings to be had through conversions. The outcomes will contribute to our understanding of how conversions may promote livability and vibrancy of urban communities, in the context of the growing need to decarbonize cities to meet climate change targets. The student will work in collaboration with the supervisor and local partners in Halifax's planning and development community involved with conversion projects.

Required Qualifications:

The ideal student candidate will hold a bachelor's degree in planning, environmental studies, or environmental engineering with knowledge or urban planning and building energy systems. They will also possess strong research, analysis, writing, and project management skills, with an interest to develop and/or build their skills in the following areas:

- Qualitative research skills to review literature, policy and plans, and conduct interviews
- Quantitative research analysis to build and sort data sets (proficiency with MS Excel) Ability to perform GHG emissions analysis considered an asset
- Strong written and oral communication skills to support research outputs **(**student's thesis project, academic and non-academic publications)

We Offer:

1. *Expected start date and duration:* January 2024 for a duration of two years or until program requirements are met
2. *Stipend:* $21,000 for first year with potential for renewal in year 2.
3. A *dedicated workspace* at the School of Planning
4. *Training and professional development* opportunities to support learning and career development

Application Instructions:

Thank you for your interest in joining the Dalhousie University community. Dalhousie University commits to achieving inclusive excellence through continually championing equity, diversity, inclusion, and accessibility. The university encourages applications from Indigenous persons (especially Mi'kmaq), persons with a disability, racialized persons, including persons of Black/African descent (especially African Nova Scotians), women, persons of a minority sexual orientation and/or gender identity, and all candidates who would contribute to the diversity of our community. For more information, please visit www.dal.ca/hiringfordiversity.

Please apply by sending your CV and an expression of interest (1 page max). Send all documents to: **Jeffrey Biggar**, Assistant Professor, School of Planning (jeffrey.biggar@dal.ca). The subject line of your email should be: **MPS Firstname LastName. Review of applications will start on September 15th, 2023, and will continue until the position is filled.** We thank all applicants for their interest; however, only shortlisted candidates will be contacted for interviews.