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SEVERAL POSITIONS FOR GRADUATE STUDENTS Urban forests – toward adaptation to global changes

Despite a large proportion of the population living in cities and the recognized importance of urban forests in providing benefits to people, we still know surprisingly little about them. In a future with more frequent and intense heatwaves, urban trees will be key in ensuring the livability of cities. Urban planning must also account for social inequities. Finally, while most cities across Canada have plans to plant thousands of trees, few have measurable objectives in terms of desired benefits (such as a reduction in air temperatures) and a plan to face global change challenges. Without better guidelines, these noble and expensive planting efforts may fall short of desired outcomes. Our ambitious project will provide working answers to these challenges, while developing novel techniques to sample and track change in urban forests, and knowledge towards adaptation to global change.

The project has identified four main research objectives contributing to the overarching goal of adapting urban forests to global change. We are seeking to train scientists (MSc and PhD mostly, but also undergrads and postdocs) with a passion for people, cities and urban trees to work on:

- 1) Increasing our capacity to survey all urban trees; **(3 positions)**
- 2) Understanding why trees die in the urban environment, how they cope with stress and interact with soil biodiversity, and how they perform in stormwater control measures; **(4 positions)**
- 3) Modelling response and drafting adaptation strategies; **(1-2 positions)**
- 4) Mobilize knowledge to concerned stakeholders. All students and researchers will work together with partners to achieve this very important task.

Selected candidates will contribute to an interdisciplinary project led by an expert team of researchers from different universities, and partners from municipalities, private companies, and non-profits, thus broadening their professional network. Internships with partners and between universities will be strongly encouraged.

Prospective students should contact us (paqlab@uqam.ca) with the following information: **letter of interest, CV, unofficial transcripts, and contact information for three references**. Informal inquiries are welcome. Please don't hesitate to share any career interruptions or personal circumstances that may have had an impact on your career goals. Positions may be at UQAM, Concordia or UdeM in Montreal, or UofT in Toronto. Though UQAM and UdeM are French speaking universities, knowledge of the French language is not mandatory, but a willingness to learn is appreciated. Flexible start dates, but some as early as the Fall 2022 or Winter 2023 terms (others may start later). Full scholarship and support such as French language classes and maternity leave is offered. **We want happy people.**

Think you're out of luck because of your background, a disability, or the way you dress? Relax, we don't care, because innovation is born from diversity. Our team offers an inclusive, equitable, respectful, healthy, and open-minded work environment - because we work there too! **An exceptional opportunity to join a young, dynamic and welcoming research group!**

This project is lead by Alain Paquette, Tanya Handa, and Dan Kneeshaw from UQAM, Carly Ziter from Concordia, Danielle Dagenais and Jacques Brisson from uMontréal, and Danijela Puric-Mladenovic from uToronto, as well as a large team of collaborators.

Ph.D. project on the second objective related to the performance of trees in drainage pits.

DESCRIPTION

Urbanization increases impermeable surfaces, volumes of runoff water and its pollutant load. Green infrastructures, such as bioretentions, swales, constructed wetlands, stormwater tree pits are among the tools available to municipalities to reduce and treat runoff. This project focuses on stormwater tree pits.

GOAL

The impact of runoff on the growth and health of trees remains still unknown. This project mainly aims to elucidate the factors that influence the establishment success of trees in order to be able to design green infrastructures on the street with trees that are the most efficient and resilient to northern urban conditions. From a broader perspective, the knowledge acquired by this project will make it possible to better equip Canadian cities to manage stormwater and increase the urban canopy.

LOCATION

At the Plant Biology Research Institute of Montreal in the laboratory of Jacques Brisson. UdeM research infrastructures located at the Montreal Botanical Garden

FUNDING

Scholarship to be paid each trimester.

DURATION

January 2023 to December 2026

PLEASE CONTACT

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