




Seeking a Passionate Master's Student to Help Restore the American Elm!


Are you fascinated by genomics, conservation and cutting-edge research with real-world impact? We're looking for a motivated student to take part in an exciting Master's project to identify Dutch elm disease (DED)-resistant American elms (*Ulmus americana*) at Université Laval in Quebec City, Canada. This project, funded by Génome Québec in collaboration with the City of Québec, Natural Resources Canada and the Research Chair of Urban Trees and their Environment (CRAUM), is a unique opportunity to combine molecular biology, field work and urban forest pathology to help revive one of North America's most emblematic trees!

Why Join This Project?

 Hands-on genomics training: Learn to measure genetic diversity, population structure and methods for identifying resistance genes.

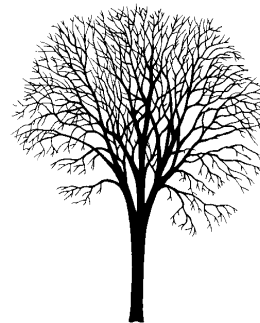
 Real-world impact: Work closely with Quebec City and Natural Resources Canada (federal government) to help develop practical solutions for urban forest resilience.

 Networking and personal growth: Participate in training and conferences. Connect with researchers nationally and internationally via the CRAUM network.

 Fast-track to a PhD: Exceptional candidates may have the opportunity for an accelerated transition to a PhD program.

Project Overview

The majestic American elm once dominated urban and natural landscapes but has been devastated by the DED pandemic since the 1940s. Despite the ongoing epidemic, some elms have survived and grown to remarkable sizes—over 150 cm in diameter and more than 200 years old. Our goal is to leverage genomic tools to identify and promote native elms with natural resistance, ensuring their survival and restoring biodiversity in our cities. The first year will focus on field sampling and laboratory work, including collecting elm samples, producing cuttings, and extracting high-quality DNA, while the second year will be dedicated to genomic analyses to assess genetic diversity and identify potential disease-resistant individuals.



Integration into an expert and diversified research team

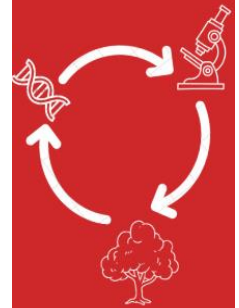
The project will be carried out thanks to the connection of academic, municipal and government partners, offering a diversified and enriching experience. The student will be under the supervision of Prof. Pauline Hessenauer, specialist in forest pathogen genomics, with the co-supervision of Prof. Janani Sivarajah, holder of the research chair on urban trees and their environment (CRAUM) and specialist in urban tree management and tree physiology. The project will be carried out in close collaboration with Jérôme Picard, Environmental Advisor for the City of Quebec. The chosen student will also have the chance to collaborate with other researchers involved in the project, such as Pr. Louis Bernier, professor emeritus and international reference in forest pathology, Pre. Ilga Porth, a specialist in the response of trees to biotic and abiotic stresses, and Dr. Philippe Tanguay, a researcher specializing in forest pathology and genomics.



Come join
an expert
and diverse
team!

What We Are Looking For

- ✓ A highly motivated student with a background in biology, forestry, bioinformatics, or a related field.
- ✓ Interest in population genomics, plant pathology, and conservation.
- ✓ Willingness to engage with municipal partners and contribute to applied research.
- ✓ Strong analytical skills and curiosity to explore innovative solutions.



Start Date & Funding

Ideal Start: June 2025 (or as soon as possible after this date)

Salary: \$22,000 CAD per year for two years

Full Funding Available (including research expenses, workshops, and conference travel)

Join us in shaping the future of urban forestry and making a lasting impact on our environment! To apply, send your CV and a short statement of interest to pauline.hessenauer@sbf.ulaval.ca

