Summer 2023 Sustainability Scholars Program Internship Opportunity

The UBC Sustainability Initiative (USI) is pleased to offer current UBC graduate students the opportunity to work on funded sustainability internship projects. Successful candidates work under the mentorship of a partner organization, and are immersed in real world learning where they can apply their research skills and contribute to advancing sustainability across the region.

- Visit the Sustainability Scholars Program website to learn how the program works and to apply.
- Be sure to review the application guide on the Apply page to confirm your eligibility before applying.

Applications close at midnight on Sunday January 29, 2023.

Project title: Research on improving the health of existing and new street trees surrounded by hardscape infrastructure in the urban environment

Project Background & Overview:
The Streets Design Branch in Engineering Services at the City of Vancouver manages the rehabilitation and reconstruction of the City's street infrastructure. In response to the climate emergency and to address urban areas susceptible to extreme heat due to urban heat island effect, the City is focused on expanding Vancouver's urban tree canopy. As such, the City increasingly needs to look to our streets and other impervious areas for new tree planting locations. The urban forest is not equally distributed across Vancouver and, moving forward, the City is looking to create additional street tree planting sites in neighbourhoods with lower tree canopy cover and higher areas of impervious surface.

Key issues include:

- Street trees are often not given adequate conditions to grow due to limited tree planting opportunities and available space within the street right-of-way.
- Impervious street infrastructure (e.g. asphalt pavements, concrete sidewalks) does not provide the ideal growing conditions for new street trees to thrive.
- With the climate crisis and rapidly changing environmental conditions within the city, tree planting standards may need to be changed and revised.

This Sustainability Scholars project will support the:

- Urban Forestry Strategy – by helping protect and expand the urban forest. Research commissioned by the Park Board shows that our urban forest is shrinking. As we continue to plant new trees in existing or new locations within Engineering street right-of-way, we need to ensure the trees are provided enough support to thrive in that environment.
- Climate Change Adaptation Strategy & Climate Emergency Action Plan – by ensuring the success of the urban tree canopy. Preservation and expansion of trees contributes to both climate change mitigation and adaptation. Studies have shown that the urban forest can dramatically help reduce regional temperatures and keep the city cooler in the summer.
- Equity Framework – Vancouver neighbourhoods with higher populations of equity-denied groups often have a less mature urban forest and higher coverage of impervious surfaces. This

Sustainability Scholars project will work to respond to these systemic inequities by improving the City's approach to street design and street tree placement, expanding the urban tree canopy in communities that are currently underserved by the existing urban forest.

Project description

The purpose of this project is to explore the ways the City can improve the health of existing and new street trees in a harsh and impervious street environment.

Key areas of investigation are:

1. Assess the City's current design standards for street tree planting and tree pits, and propose ways the City may improve these guidelines.
2. Assess the City's current use of planting material as specified in the City's Construction Specifications and provide recommendations if changes should be made to these materials.
3. Review and analyze the City's street tree inventory to determine if there are common themes of trees that are struggling or dying in urban environments compared to ones that are more resilient and in good health.

This project will build on findings from the 2022 Sustainability Scholar report "Rethinking Street Pavement Rehabilitation Practices to Support the Urban Forest", located here: https://sustain.ubc.ca/about/resources/rethinking-street-pavement-rehabilitation-practices-support-urban-forest

Project scope

The primary activities of the project will include:

- Review the City's current design standards for street tree planting and conduct 2-3 short site visits to familiarize the Scholar with the City's typical street cross section, where trees have thrived or have struggled in urban environments
- A limited number of interviews with the City's design and operations staff to identify key successes and failures in supporting and expanding the urban forest
- GIS analysis of existing street/sidewalk condition data overlaid with the street tree inventory data to determine factors that help promote good existing tree health
    - The City will provide these data sets to the Scholar to then analyze. Analysis priority will be given to neighbourhoods with lower existing tree canopy coverage, but a citywide analysis should still be conducted, in order to identify common factors in areas where the tree canopy is robust and thriving.
- Best practices research from 3-5 Canadian and global peers to understand street conditions that have allowed street trees to thrive in urban environments
    - The peer cities for further analysis will be selected based on initial literature review findings and direction from Streets Design & Urban Forestry staff.

This project will be completed in close collaboration between Streets Design and Urban Forestry staff, to advance both well-maintained street infrastructure and a healthy, resilient urban tree canopy.

Deliverables

- An analysis of improvements the City can make to its current street tree planting and tree pit installation practices and design standards
- A summary of the conditions that have allowed street trees to thrive in urban environments in Vancouver
- A final report containing a summary of the work completed with recommendations, complemented by final presentation to key stakeholders
- A final report for the online public-facing Scholars Project Library.

Time Commitment

- This project will take 250 hours to complete
- This project must be completed between May 1 and August 15, 2023
- The Scholar is to complete hours between 9 am and 5 pm, Monday to Friday, approximately 17 to 20 hours per week.

Required/preferred Skills and Background

☒ Excellent research and writing skills
☒ Demonstrated interest in sustainability
☒ Familiarity with research methodologies and survey techniques
☒ Excellent public speaking and presentation skills
☒ Strong analytical skills
☒ Ability to work independently
☒ Deadline oriented
☒ Project management and organizational skills
☒ Strong technical and drafting skills
☒ Demonstrated experience in Urban Forestry, Green Infrastructure, Materials Engineering or Street/Landscape Design
☒ GIS training or experience.

Applications close **midnight Sunday January 29, 2023**
Apply here: Click here to apply
Contact Karen Taylor at sustainability.scholars@ubc.ca if you have questions

Useful Resources

We are holding a special **resume preparation workshop for prospective Scholars** on January 23, 2023. Click here for details and to register.

Below are some links to useful resources to help you with your resume and cover letter (there are many more online). Some of these resources also provide information on preparing for your interview.

https://students.ubc.ca/career/career-resources/resumes-cover-letters-curricula-vitae

https://www.grad.ubc.ca/current-students/graduate-pathways-success

https://www.grad.ubc.ca/cover-letter-cv-resume-templates-ubc-career-services