Summer 2024 Sustainability Scholars Program Internship Opportunity

The UBC Sustainability Hub is pleased to offer current UBC graduate students the opportunity to work on sustainability internship projects. Successful candidates work under the guidance of a mentor from the partner organization, and are immersed in real world learning where they can apply their research skills and contribute to advancing sustainability across the region. These opportunities are paid. The pay rate for the summer 2024 program is $27.50/hour or $6,875 for a 250-hour project.

- 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 28, 2024.

Project title: Research and test tools and methods for assessing carbon sequestration in parkland

Project Background & Overview:
The City of Surrey is endowed with many protected areas, open streams, and wetlands, and progressive policies that aim to protect them. Surrey's Biodiversity Conservation Strategy (BCS) created the roadmap to protect and restore ecosystems across the City. At the heart of the BCS, the Green Infrastructure Network outlines the landscape elements needed to connect open spaces and natural areas essential to sustain wildlife and plant diversity. The Urban Forest Management Strategy (UFMS) identifies the actions necessary to increase the City's tree canopy and address heat island and greenspace equity issues over time.

The recently-adopted Climate Change Action Strategy (CCAS) complements these strategies by providing a climate action lens and identifying the goals, shifts and actions to move towards "climate-positive resilient ecosystems". One of the actions identified in this CCAS component is to "explore methods to better quantify and maximize carbon sequestration in Surrey's natural systems and identify opportunities to integrate in City policies and initiatives" (E4.2.). This action aims to equip the City with the tools needed to assess the carbon sequestration potential of natural systems and pursue opportunities to store more carbon within City boundaries.

Through this project, the City hopes to gain a better understanding of the tools and approaches for assessing carbon sequestration potential in various natural assets, and how they could be applied in Surrey's context. Learning outcomes will inform decision-making with respect to management and maintenance of city parkland, species selection for vegetation management, and next steps for advancing carbon sequestration assessment and enhancement as part of BCS and UFMS implementation.

Preliminary analysis to assess carbon sequestration potential for the City's natural assets (e.g., forests, wetlands) was undertaken in 2021 as part of an area-specific pilot project. To complete this required partnering with a third party and extensive analysis of multiple datasets. The City

is seeking an easily adaptable and consistent approach to assess carbon sequestration capacity of the diverse natural assets it manages and maintains. This will be essential for maximizing climate change adaptation and mitigation benefits as part of long-term management, maintenance and restoration of natural areas, open space and other public green infrastructure.

Project description

The purpose of this project is to gain an understanding of the tools available for assessing carbon sequestration potential and how they could be applied to the planning and design of natural areas restoration and green infrastructure enhancement in Surrey's parkland. This project has three primary objectives:

1. Identify and recommend available tools to quantify carbon sequestration potential of tree and plant species, and various types of greenspace
2. Understand the methods used to quantify and enhance carbon sequestration being implemented by other municipalities
3. Identify opportunities to incorporate carbon sequestration potential within City policies and processes

This project will provide valuable insight and guidance for measuring and integrating carbon sequestration potential for the City's natural assets and inform further approaches to assessing and enhancing carbon storage in natural systems.

Project scope

To meet the project objectives, the project will consist of the following six primary tasks:

1. **Context-setting:** In collaboration with the project mentor, review the carbon sequestration assessment work to date and City decision-making processes to identify specific scenarios which would benefit from a better understanding of carbon sequestration potential.
2. **Literature review:** Conduct a scan of current literature to identify methods for assessing carbon sequestration potential of tree and plant species, and types of greenspace found in parkland, as well as impacts of management practices. Particular attention will be given to approaches that can be easily replicated by City staff and applied in Surrey's context.
3. **Best practices review:** Conduct of scan of carbon sequestration initiatives led by municipalities in the region and 5-6 cities outside of BC (identified with project mentor). Interview 4-5 leading jurisdictions identified in the scan to collect additional information about the methods and approaches used and lessons learned. Particular attention will be given to approaches that can be easily replicated by City staff and do not require complex analyses and proprietary software.
4. **Review of City plans and policies:** Review the City's Urban Forest Management Strategy and Coastal Flood Adaptation Strategy to identify opportunities to incorporate carbon sequestration considerations into decision-making.
5. **Case study:** Conduct an assessment of carbon sequestration potential at one parkland site identified by the project mentor using the most suitable tool. Document the methodology, findings and learnings from putting the tool into practice.

Deliverables

- A summary detailing the carbon sequestration assessment tools identified, best practices for utilizing them and examples of how they have been employed (can be included as an attachment to the final report)
- A final report containing a summary of the work completed
- 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 to August 15, 2024
- The Scholars is to complete their 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
☒ Statistical analysis
☒ Strong analytical skills
☒ Ability to work independently
☒ Deadline oriented
☒ Project management and organizational skills
☒ GIS training or experience.
☒ Comfortable interacting with strangers to conduct public/in person surveys
☒ Familiar with carbon sequestration concepts and modelling, an asset

Applications close **midnight Sunday January 28, 2024**
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, 2024.
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