Fall 2022 Sustainability Scholars Program Internship Opportunity

The UBC Sustainability Hub 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 to confirm your eligibility before applying.

Applications close at midnight on Sunday September 18, 2022.

Project title: Research to understand the GHG benefits of implementing textile recycling at scale in BC

Project Background & Overview:

Apparel waste is estimated to be one of the fastest-growing waste streams in the world and it carries significant GHG emissions across all lifecycle stages of a garment. The fashion industry accounts for 8.1% of total greenhouse gas emissions globally and if no changes are made, by 2050 25% of the world's carbon budget will be taken up by the fashion industry alone. In Canada, an estimated 500,000 tonnes of apparel waste is disposed of in landfills each year and in the Greater Vancouver area, approximately 20,000 tonnes of apparel (2.3% of the total garbage) goes to disposal annually. 95% of that apparel is repairable, reusable or recyclable.

Apparel manufacturing is an economically important manufacturing subsector for our region, with clothing manufacturing being the fourth-largest manufacturing subsector in BC at 8.5% of manufacturing sales. Of the province's 184 clothing manufacturing businesses, over 80% of them are located in the Lower Mainland.

The intersection of economic activity and impact on regional landfills makes improving the end-of-life options for textiles and apparel highly relevant for British Columbia. Initiatives to promote reuse and repair of clothing have been gaining ground across Canada, evidenced locally by Metro Vancouver's "Think Thrice" campaign.

There is mounting pressure for regulators to enact policies that reduce the volume of apparel going to disposal in order to meet their waste reduction and recycling goals. After reducing, reusing, and repairing, ultimately recycling is a required tier in the waste prevention hierarchy. Building on this recycling impetus, there is also increasing consumer demand for recycled materials. It is relevant both to these consumers and to policymakers that the use of recycled fibres reduces water and energy consumption, and potentially reduces GHG emissions. Companies are increasingly pressured from these two driving forces to employ recycled fibres and responsibly manage garments' end of life. This is a very real challenge that needs immediate and sustainable solutions.

Although textile recycling is gaining ground in Europe and Eastern Canada, there are funding, logistics and infrastructure limitations preventing uptake in British Columbia. This project puts a laser focus onto the GHG benefits of implementing textile recycling at scale in BC as a rationale for investment from industry and all levels of government in deploying recycling tactics for textiles and apparel.

Project description

Research on the carbon emission reduction potential of circular strategies for the BC textile industry is an important next step in providing much needed supporting rationale for the implementation and scaling up of textile recycling technologies in Western Canada.

The Textile Lab for Circularity engages with multiple levels of government on the issues surrounding textile waste, including how it relates to greenhouse gas emissions and climate change. This engagement is critically lacking regionally-relevant quantitative data to articulate the current climate change impacts of textile waste so that government policies can be fully informed with industry contextualized data. This project will lay the groundwork for key research to enable a more robust picture of the impacts and GHG savings possible with circular strategies for textile waste by comparing the relative GHG contributions from landfilling or recycling textiles.

By matching the need for textile waste reduction with the beneficial impacts of these interventions on greenhouse gas emissions, we can show municipal and provincial governments how textile recycling integrates into their existing climate and waste reduction targets. The outcomes of this project will also be an important contribution to the TLC's larger research project *Roadmap to Textile Recycling for Western Canada* designed to inform strategic action planning for the textile and apparel industry at large.

During the project, the Scholar will perform an environmental scan to understand best practices for emission modeling in the textile industry in terms of software, datasets and other aspects of the technology unearthed during the study. A method will be selected and applied to available data to generate a comparative GHG estimate of recycling textiles vs. landfilling them. This project will be taking place concurrent to the *Roadmap* project, and there will be relevant research from the Roadmap which feeds into the Scholar's study.

Project scope

The leading question for this project is:

- What is the approximate greenhouse gas emission reduction potential of implementing textile recycling versus landfill for an individual business or the industry as a whole?

The key questions that are raised in pursuing the leading question include:

- What are the key criteria for assessing the suitability of a greenhouse gas emission model or software for applying to the textile & apparel industry?
- Which scope of emissions estimation is sufficient to generate a comparative analysis of end-of-life solutions?
- What greenhouse gas emission models and software are already used in the textile & apparel

industry, and how do they compare for end-of-life management modeling?
- Could this method be used to estimate the reduction potential of other forms of end-of-life management of textiles, such as fibre reclamation and incineration?

In the course of this research project, the Scholar will undertake the following key activities:

- Conduct an environmental scan to identify the criteria that will be used to evaluate and prioritize carbon emission reduction models for their appropriateness for this study (e.g., quality of dataset, data points required to run the model, cost of any associated software, prior application to textiles). This would include both desktop research and interviews with up to 5 industry experts.
- Research carbon emission reduction models and rank them according to the established prioritization criteria, creating an assessment matrix.
- Select at least one model to apply to the regional industry for BC.
- Identify data gathering requirements for the selected model(s).
- Collect data from one or more participating brand partners.
- If time, interest and expertise allows: Implement the estimation model to produce a quantified emission reduction potential for recycling of textiles vs landfilling.
- Report on the work completed.

Deliverables

- Comparison matrix defining and ranking the carbon emissions models reviewed
- A methodology document that describes the steps required to deploy the selected carbon emission modeling technique
- A final report containing a summary of the work completed, a complete bibliography of resources used, and recommendations on next steps
- A final executive summary report for the online public-facing Scholars Project Library.

Time Commitment

- This project is for 250 hours.
- This project must be completed between October 17, 2022 and March 15, 2023
- The scholars are to complete hours between 9 am and 5 pm, Monday to Friday, approximately 10 to 12 hours per week.
- Provide status updates at regularly scheduled team meetings. Typically, these meetings take place Mondays, Tuesdays and Thursdays. Meeting attendance to be discussed with the Scholar and selected depending on Scholar's availability and other commitments.

Required/preferred Skills and Background

☒ Excellent research and writing skills
☒ Proficiency in written and spoken English
☒ Demonstrated interest in sustainability

☒ Familiarity with research methodologies and survey techniques, is an asset
☒ Strong analytical skills
☒ Ability to work independently
☒ Deadline oriented
☒ Comfortable interacting with strangers to conduct interviews
☒ Experience with GHG emissions modelling and analysis, is an asset
☒ Familiarity with or interest in textile reuse/recycling, is an asset

Additional project requirements.
The Scholar will be expected to work primarily remotely, with rare in-person meetings or in-office work on request and dependent on space availability.

Applications close **midnight Sunday September 18, 2022**
Apply here: Click here to apply
Contact Karen Taylor at sustainability.scholars@ubc.ca if you have questions

Useful Resources

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