UBC Sustainability Scholars Program 2019

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 organizational sustainability goals.

For more information about the Sustainability Scholars Program and to apply to work on this project, please visit the Student Opportunities page.

Please review the application guide (PDF) before applying.

Applications close **midnight Monday February 25, 2019**.

Title of Research Project: Microplastics in Drinking Water

1. **The purpose of the project is:**

   This project will examine existing research to evaluate whether Metro Vancouver's drinking water source reservoirs are at risk of contamination by microplastics. The project will also evaluate analytical methods for measurement of microplastics.

   Pollution of aquatic systems by microplastic particles or fibers is an emerging concern that should be examined, to ensure the continued quality of Metro Vancouver's drinking water. Although most research focuses on environmental impacts in receiving waters where microplastics are introduced via runoff and treated wastewater effluent, which are unlikely to impact Metro Vancouver's protected watersheds, there is a possibility that airborne microplastics could enter the drinking water source reservoirs. Metro Vancouver would like to gather existing research information about the airborne occurrence of microplastics, transport via rain and snow, fate in freshwater bodies, removal in drinking water treatment, human exposure and health impacts from microplastics in drinking water, to evaluate the level of concern and to determine whether actions should be considered.

2. **How will this project make a contribution to regional sustainability?**

   This project contributes to Metro Vancouver's Drinking Water Management Plan goal: Provide Clean, Safe Drinking Water.

3. **Outline the scope of project including how the scholar's work will be used by Metro Vancouver:**

   - Complete a literature review of: airborne occurrence of microplastics, transport via rain and snow, fate in freshwater bodies, removal in drinking water treatment, and human exposure and health impacts from microplastics in drinking water.
   - Based on the literature review, assess the potential risk of microplastic occurrence in Metro Vancouver's drinking water source reservoirs (Capilano, Seymour and Coquitlam Lakes).
   - Review various analytical methods for measurement of microplastics in air/water/sediment samples, determine whether they are available in any labs in the Metro Vancouver region, and recommend preferred method(s).

   Metro Vancouver may incorporate the findings into its ongoing sampling programs.

4. **Time Commitment**

- This project will take 250 hours to complete.
- This project should be completed between April 29 and August 31.

5. **Project Deliverables:**

- Draft final report summarizing the findings, for review by Metro Vancouver.
- Final report for Metro Vancouver's internal use.
- Create a PowerPoint presentation summarizing the findings, and deliver presentation to Metro Vancouver staff (if time allows).
- Executive Summary for the UBC Sustainability Scholars online project library.

6. **Identify the required/preferred skill set and knowledge base for the ideal Scholar.**

☒ Excellent research and writing skills
☒ Strong analytical skills
☒ Ability to work independently
☒ Demonstrated time management skills
☒ Deadline oriented
☒ Familiarity with research methodologies including sampling in outdoor environments
☒Statistical analysis
☒ Comfortable presenting to small technical audiences
☒ A good understanding of laboratory analytical methods
☒ Educational background in Earth, Ocean and Atmospheric Sciences or Civil Engineering

7. **Should the potential Scholar submit a writing sample?**

☒ Yes (a literature review or a report)

8. **Identify specific requirements required for completing this project *(if any)***

- Preferably able to travel to Metro Vancouver's head office in Burnaby for two meetings over the course of the project. Virtual meetings may be arranged instead.
- Able to participate in site visit to watershed(s).
- Access to own laptop.

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Apply here:
https://sustain.ubc.ca/student-opportunities

To learn more about the program here:
https://sustain.ubc.ca/ubc-sustainability-scholars-program

Read the application guidelines to confirm your eligibility to participate in the program here:
https://sustain.ubc.ca/student-opportunities

Contact Karen Taylor at sustainability.scholars@ubc.ca if you have questions.