

# SUSTAINABILITY SCHOLARS PROGRAM

## Summer 2020

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](#) to confirm your eligibility before applying.
- **Applications close at midnight on Sunday February 2, 2020.**

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## Research project title: Reassessment of the Greater Vancouver Water District Secondary Disinfection Strategy

### How will this project make a contribution to regional sustainability?

This study will contribute information to reinforce and determine the effectiveness of secondary disinfection within the Metro Vancouver region. Currently, there are eight secondary disinfection stations operated by Metro Vancouver. The purpose of these stations is to increase the chlorine residual in the water to meet a target residual based on a number of factors including source water turbidity, the amount of bacterial regrowth detected in the local government distribution system samples and the chlorine demand in the water.

One of the primary services of Metro Vancouver is to provide clean safe drinking water to the residents of the region.

### Project description

A review of the Greater Vancouver Water District Secondary Disinfection Strategy. The information provided by the study may determine whether adjustments to the operational strategy of the secondary stations are required. The study may identify areas which have lower free chlorine residuals within the Metro Vancouver transmission system.

The study will provide additional information, which may provide whether additional secondary disinfection stations will be required/added in locations with historically low residuals or certain existing secondary disinfection stations may be no longer required.

### The purpose of the project is:

As part of this study, the scholar will conduct a review of available background information, historical water quality data and use it to identify areas of vulnerability and potential opportunities for improvement and optimization of water disinfection strategies. A review of historical data for chlorine residual, heterotrophic plate counts and disinfection by-products in the Metro Vancouver and local government distribution systems is also required.

With improvements in water treatment for the past decade (i.e. Filtration and Ultraviolet Treatment), the water quality for the region has vastly improved. Introduction of the Seymour Capilano Filtration Plant (SCFP) now provides residents with world class drinking water. The chlorine dosage applied to achieve the required disinfection levels has decreased throughout the years. The SCFP removes the majority of turbidity, organics and colour from the untreated sources. With the removal of these products from the untreated water, the chlorine demand is decreased in the filtered water as it does not have these products to react with which may decrease the effectiveness of chlorine disinfection in the system. With the filtered source(s), the chlorine demand is more stable which improves the effectiveness of chlorine disinfection throughout the region.

Even though the Coquitlam water reservoir is a non-filtered source, it also provides world class drinking water. The treatment processes at Coquitlam are Ozone, Ultraviolet Light, and chlorine disinfection.

This study may provide additional information on the secondary stations that are associated with the Coquitlam water source. Approaches such as adding more stations within the area or changing the operational strategy may be required.

The results of the study may be presented to local governments and the regional health authorities to provide information on the effectiveness of our current secondary disinfection strategy throughout the region.

**Outline the scope of project, including how Metro Vancouver will use the Scholar's work:**

Metro Vancouver will use the information provided by the study to determine and identify potential vulnerable areas of low free chlorine residuals. Based on the findings, operational changes may be recommended.

The results from the study may encourage further discussions around a potential increase or decrease in the number of secondary disinfection stations required for the region. It may also show that the Greater Vancouver Water District has the appropriate number of stations in place.

**Project Deliverables:**

- A final confidential report containing a summary of completed work with recommendations
- One or more presentations (including a PowerPoint file) to key stakeholders (dates to be determined)
- A final report [or Executive Summary] for the UBC Sustainability Scholars online project library.

**Time Commitment**

- This project will take **250** hours to complete.
- This project must be completed between May 4 and August 14, 2020
- Regular update meetings will be required to determine progress. Frequency of the meetings will be determined at a later date.
- Any work conducted at Metro Vancouver's offices must be completed between 8:30 am and 4:30 pm.
- Hours per week are flexible and will be determined in consultation with the Scholar.

**Required/preferred Skills and Background**

- Excellent research and writing skills
- Statistical analysis



- ☒ Excellent public speaking and presentation skills
- ☒ Strong analytical skills
- ☒ Ability to work independently
- ☒ Deadline oriented
- ☒ Project management and organizational skills
- ☒ knowledge or familiarity with water disinfection/drinking water/water reservoirs/watersheds an asset

If site visits are required, the scholar will be accompanied by Metro Vancouver staff. In such cases, if the scholar uses their own vehicle they will be reimbursed for mileage—details to be confirmed/discussed with the Project Lead in advance.

The scholar will need to use their own laptop for this project.

Applications close **midnight Sunday February 2, 2020.**

Apply here: <http://sustain.ubc.ca/scholarsapply>

Contact Karen Taylor at [sustainability.scholars@ubc.ca](mailto: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>

The Centre for Student Involvement & Careers will host a resume & cover letter webinar tailored for graduate students on Tuesday, January 21, 2020 from 12:00-1:30. Registration will open approximately two weeks before the webinar, and can be accessed at Careers Online.

