

# 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: Review of the Emerging Use of Activated Carbon or Biochar Media as Stormwater Source Controls

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

The 2010 Integrated Liquid Waste and Resource Management Plan (ILWRMP) states that stormwater should be managed at its source to protect the environment. The ILWRMP also identifies managing stormwater as a municipal responsibility while Metro Vancouver's (MV) role is to facilitate research on watershed-based stormwater management approaches. As such, Metro Vancouver facilitates the Stormwater Interagency Liaison Group (SILG) and the group's work plan which includes the update of the "Stormwater Source Control Design Guidelines 2012" in 2020. MV has also undertaken a Liquid Waste Services Sustainability Innovation Fund research project investigating a wastewater sludge-based activated carbon as a potential method to capture Constituents of Environmental Concern present in stormwater.

This project will support these various initiatives by providing detailed background information on research and the latest technologies in that field. It also supports MV Air Quality and Climate Change's stormwater adaptations to climate change.

### Project description

#### The purpose of the project is:

The goal of this project is to conduct a literature review on emerging stormwater source control technologies that use various forms of activated carbon or biochar, their technology development level, including where and how they have been tested, their effectiveness at removing metals, nutrients and other constituents of environmental concern (CECs) such as PAHs, PFAs, etc, and their costs if applicable.

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

Review of the literature on emerging stormwater source control technologies that use various forms of activated carbon or biochar, including:

- Stormwater management manuals and research papers from other jurisdictions, research foundations, industry associations, government agencies or universities
- Case studies from industry, source control manufacturers, consultants or municipalities, as applicable

Identify and review these source control technologies, and summarize information on:

- Production methods
- Technology development level
- Applications they are used for, implementation approaches and sites including demonstration sites.
- Testing methods including information on the type of stormwater contaminants, including CECs, they have been tested on and under which conditions
- Effectiveness at stormwater contaminants capture (including CECs) and performance measurement techniques and methodologies used
- Operational and maintenance approaches, including estimates of media life
- Regeneration and/or disposal methods of spent media
- Cost information, if available.

Metro Vancouver has undertaken a project that is producing and testing wastewater sludge-based activated carbon to capture contaminants of emerging concern in wastewater. A potential subsequent phase of the project could look at the potential use of that material to capture stormwater contaminants. This literature review would provide some of the background information required to inform that decision process.

**Project Deliverables: (Please use bullet points where possible.)**

- Interim and final literature review report(s)
- Gap analysis and recommendations for future studies
- PowerPoint summary presentation and presentation to Metro Vancouver team
- 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
- Kickoff meeting at MV Head Office in Burnaby
- Bi-weekly update conference calls
- Monthly face-to-face update meetings

**Required/preferred Skills and Background**

- Excellent research and writing skills
- Demonstrated interest in sustainability
- Familiarity with research methodologies and survey techniques
- Strong analytical skills
- Ability to work independently
- Deadline oriented



- ☒ Project management and organizational skills
  - ☒ Familiarity with benchmarking methods and tools
  - ☒ Comfortable interacting with strangers to conduct public/in person surveys
  - ☒ Familiarity with stormwater and green infrastructure
  - ☒ Familiarity with remediation techniques
- Must be able to travel to Metro Vancouver Head Office to attend some meetings and conduct interviews.
  - Access to a computer and internet or a library to complete the literature review.

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.

