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: State of the Science: Ground-level ozone formation and exposure impacts

1. The purpose of the project is:

The purpose of this project is to prepare a report that synthesizes the state of the science with respect to ground-level ozone.

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

In 2014, Metro Vancouver and partner agencies adopted a Regional Ground-Level Ozone Strategy (RGLOS), which provides strategic directions for reducing ozone precursor emissions and exposure impacts in the region. Ozone is formed through atmospheric chemical reactions between volatile organic compounds (VOCs) and nitrogen oxides (NOx) in the presence of sunlight.

The science and understanding on ozone formation has continued to evolve since the adoption of RGLOS. New considerations include the potential for increased ozone formation due to higher ambient summertime temperatures or wildfires (both exacerbated by climate change), and potential increased VOC emissions from new emission sources in the region. Additional research is needed around ozone formation to inform a renewal of RGLOS, planned for 2019 or 2020.

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

The report would identify and summarize recent research on the following ozone-related topics:

- Ozone formation (including on NOx and VOC transport/emissions) in the Lower Fraser Valley (LFV, i.e., Metro Vancouver and the Fraser Valley Regional District), BC, and the Pacific Northwest;
- Expected impact of increasing temperature on ozone formation (with particular focus, where possible, on the LFV, BC, or the Pacific Northwest);
- Emergent emission sources that could contribute to ozone formation in the future (e.g., wildfires, cannabis production, transboundary flows);
- New techniques or information to identify appropriate ozone background levels (given closing of Ucluelet background station);
- Ability to remain in compliance with more stringent ambient air quality standards for ozone expected in the future; and

- Ozone reduction strategies in other jurisdictions.

The results of this study would be shared with and considered by the RGLOS Steering Committee, whose membership includes Metro Vancouver, Fraser Valley Regional District, BC Ministry of Environment and Climate Change Strategy, Environment and Climate Change Canada and Vancouver Fraser Port Authority.

The report would support potential changes to RGLOS and inform the expected renewal of RGLOS in 2019 or 2020. It would also support new ozone-related actions in the development of Metro Vancouver's new Air Quality Management Plan.

4. Project Deliverables:

The main project deliverable is a report that describes the current state of the science of ground-level ozone formation, with emphasis on policy research, peer-reviewed reports and papers published in the last ten years. The report should be:

- based on recent published reports and academic literature;
- a synthesis of the above reports and literature; and
- written using a report framework provided by Metro Vancouver.

The report should include a list of the references used to produce the report. The scholar is expected to work closely with Metro Vancouver staff in compiling a list of potential research documents and reports for consideration in the review, and finalizing that list.

It is expected that a draft report will be provided for review by Metro Vancouver before the end of the project and prior to completion of the report.

A webinar or in-person presentation of the report to RGLOS Steering Committee representatives may also be requested, depending on the availability of all parties.

5. 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
☒ Demonstrated experience in [air quality and/or ozone chemistry]
☒ Demonstrated interest in sustainability
☒ Familiarity with research methodologies and survey techniques
☒ Excellent presentation skills
☒ A good understanding of air quality
☒ Scholars with an educational background from a wide-range of disciplines, encompassing science or economics, are expected to be able to successfully complete the project.

6. Should the potential Scholar submit a writing sample?

☒ Yes
☐ No

7. Identify specific requirements required for completing this project

- Familiarity with reviewing technical documents.
- Familiarity with air quality and ozone formation.
- Familiarity with air quality issues in the Lower Fraser Valley.

- Excellent written English
- Access to a computer and software capable of producing documents in Microsoft Word format.

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