

Summer 2021 Sustainability Scholars Program Internship Opportunity

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 March 7, 2021.

Research project title:

Benchmarking the fuel economy of medium- and heavy-duty fleet vehicles to strengthen the business case for adoption of low-carbon vehicles

Project description

Overview:

To support the City of Vancouver's goal of increasing adoption of low-carbon vehicles (compressed natural gas [CNG], hybrid, plug-in hybrid, and electric), this project will benchmark the fuel economy of in-service medium and heavy-duty internal combustion engine vehicles (ICEVs) and create a dataset that will directly support the business case for low-carbon vehicle options.

The City of Vancouver has a fleet of almost two-thousand vehicles, made up of various types of vehicles. While public fuel economy datasets exist for light-duty ICEVs and can be used to support the business case to transition to light-duty EVs, these datasets are lacking for medium-duty, heavy-duty, and other uncommon vehicle types. This makes the business case less robust when assessing low-carbon vehicle options for these vehicles.

Purpose of the Project:

The City of Vancouver actively uses all types of vehicles, including medium-duty, heavy-duty, and other uncommon vehicles such as construction or garbage vehicles. These vehicles generate large amounts of raw fuel economy data, but it exists in disparate, non-cohesive databases. This makes it difficult to present a business case for low-carbon vehicle options when this data is in its unprocessed form.

This is especially true when working on replacements for medium and heavy-duty vehicles, many of which do not have reliable fuel economy datasets; e.g., very little public-domain fuel economy data exists for trucks larger than Ford F-150. The Scholar's goal will be to create a robust dataset that will be an important contribution to strengthening the business case for transitioning to low-carbon medium and heavy-duty vehicles.

Scope of Work:

The Scholar will build a cohesive dataset that will be a key component of presenting a business case for medium and heavy-duty low-carbon vehicle options, which rely on comparative benefits over existing in-service ICEVs. This dataset will be built by processing raw fuel economy data at the unit level, which is obtained through a combination of GPS tracking and unit fuel tags on all City vehicles. The dataset will be built to calculate reduction in greenhouse gas (GHG) emissions when the low-carbon vehicle option is put into service, and which units have the most significant GHG reductions. The Scholar will present a detailed breakdown of the City of Vancouver's fleet along with fuel consumption.

Deliverables

The Scholar will deliver a final report containing a summary of their completed work complemented by a final presentation to key stakeholders. All data for analysis will be provided to the Scholar. The report should include:

- A detailed benchmarking study of different types of vehicles within the City of Vancouver's fleet along with their average fuel consumption
- Recommendations on which medium and heavy-duty ICEVs have the strongest business case for low-carbon fuel vehicle options, detailing which option is best at the unit level
- 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 3 and August 13, 2021
- The Scholar is to complete hours between 9 am and 5 pm Monday to Friday, approximately 20 hours per week.

Required/preferred Skills and Background

- Excellent statistical modelling and benchmarking skills
- Excellent research and writing skills
- Demonstrated interest in sustainability
- Familiarity with fuel economy and emissions reporting an asset
- Familiarity with research methodologies
- Excellent public speaking and presentation skills
- Strong analytical skills, especially with Excel modelling
- Ability to work independently
- Deadline oriented
- Strong project management and organizational skills

SUSTAINABILITY SCHOLARS PROGRAM

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Apply here: [Click here to apply](#)

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

Useful Resources

We are holding a special **resume preparation workshop for prospective Scholars** on January 19. [Click here for details and to register.](#)

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>