

Summer 2025 Sustainability Scholars Program Internship Opportunity

The UBC Sustainability Hub is pleased to offer current UBC graduate students the opportunity to work on sustainability internship projects. Successful candidates work under the guidance of a mentor from the partner organization, and are immersed in real world learning where they can apply their research skills and contribute to advancing sustainability across the region. The pay rate for the summer 2025 program is \$31.25/hour or \$7,812.50 for a 250-hour project.

- Visit the [Sustainability Scholars Program website](#) to learn [how the program works](#) and to [apply](#).
- Be sure to review the application guide on the Apply page to confirm your eligibility before applying.

Applications close at 11:59 pm on Sunday January 26, 2025.

Project title: Data analysis and GIS mapping to assess the impact of indoor wood burning regulation and public education on vulnerable populations in Metro Vancouver

Project Background & Overview:

The Metro Vancouver Residential Indoor Wood Burning Emission Regulation Bylaw 1303 (Bylaw 1303) aims to reduce emissions from residential indoor wood burning and mitigate the impacts of wood smoke on health and the environment. The bylaw regulates the discharge of air contaminants from residential indoor wood burning appliances (devices) such as fireplaces, wood stoves, and furnaces. Implementing Bylaw 1303 is a Big Move in Metro Vancouver's Clean Air Plan, and is expected to make a significant contribution to achieving the 2030 target of reducing PM_{2.5} by 35%, from 2020 levels.

Marginalized groups may experience poorer health outcomes from exposure to degraded air quality than the rest of the population. Residential indoor wood burning is responsible for more than a quarter of emissions of fine particulate matter (PM_{2.5}) within the Metro Vancouver region. This air contaminant is associated with respiratory and cardiac issues, particularly for infants, the elderly, and people with existing heart and lung conditions. Wood smoke also contains toxic air contaminants and the potential for harm may increase depending on the type of material being burned. The health impacts of residential indoor wood burning come with significant costs (the monetized value of total health impacts attributed to home firewood burning has been estimated to be \$18 billion nationally in a recent study by Health Canada).

Metro Vancouver receives enquiries from worried residents who are unable to adequately access information about the requirements of Bylaw 1303. The proposed project will help Metro Vancouver identify potential gaps in the expected community health and environmental protection benefits of Bylaw 1303. The findings of the project are also expected to provide Metro Vancouver's compliance promotion team with insights into how to provide better service to vulnerable populations. These outcomes will contribute to achieving the goals of the Clean Air Plan, Metro Vancouver's air quality and greenhouse gas management plan.

Project description

As climate-related pressures on air quality increase, regulatory actions continue moving forward to reduce controllable emissions of air contaminants. The purpose of this project is to assess gaps in the implementation of the Residential Indoor Wood Burning Emission Regulation (Bylaw 1303), with an emphasis on environmental justice considerations.

Air quality impacts from health-harming air contaminants, such as fine particulate matter, have significant health cost. In addition to poorer health outcomes from exposure to degraded air quality, marginalized groups may have fewer options to access cleaner heating options that improve air quality. This project will involve comparing the geographic distribution of expected emissions from residential indoor wood burning with the regulatory submissions received by Metro Vancouver that are a requirement under Bylaw 1303.

The project will use GIS methods to compare the geographic distribution of expected emissions with submissions received by Metro Vancouver to identify areas of the region at risk of the anticipated community health and environmental protection benefits of Bylaw 1303 not being fully realized. It will help Metro Vancouver assess the effectiveness of Bylaw 1303 and its implementation with a focus on identifying communities and populations that may be underserved by ongoing education and outreach activities. An anticipated outcome of the project is for Metro Vancouver's compliance promotion team to be better positioned to improve service to these communities and populations.

Project scope

The project includes three activities in addition to the completion of a final report. It is expected that the work will rely heavily on anonymized information provided by Metro Vancouver, however that may need to be supplemented by information from additional external sources.

Activities will include:

1. Research to compile maps showing the geographic distribution of areas within the region with a high proportion of the population comprising marginalized or underserved groups.
2. Creating map layers (using anonymized address information from Metro Vancouver) showing the following information overlaid onto maps created in part 1.
 - a. Residential wood smoke complaints received by Metro Vancouver Environmental Regulation and Enforcement (ER&E), including total to date and subdivided into periods before and since bylaw inception
 - b. Expected distribution of residential indoor wood burning emissions
 - c. Bylaw 1303 declaration and registration submissions received (categorized as declaration only or declaration and registration with type of device registered) for
 - i. Locations in which outreach has been performed by ER&E staff (e.g., distribution of rack cards and door hangers, in person conversations with staff, phone calls from staff), and

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- ii. Different time periods representing before and after the fall 2024 public education campaign
3. Assessing
 - a. Whether marginalized populations are disproportionately exposed to wood smoke from residential indoor wood burning
 - b. Whether outreach activities have reached marginalized or underserved populations within the Metro Vancouver region, and what options could be explored to improve it
4. Writing a report presenting the analysis of Metro Vancouver's compliance promotion activities in underserved communities, including the completed maps.

Deliverables

- A final report containing a summary of the work completed
- A final report for the online public-facing [Scholars Project Library](#).
- Maps created during the project, as accessible electronic files

Time Commitment

- This project will take 250 hours to complete
- This project must be completed between May 1 to August 15, 2025
- The Scholar is to complete their hours between 9 am and 5 pm, Monday to Friday, approximately 17 to 20 hours per week.

Required/preferred Skills and Background

- Excellent research and writing skills
- Familiarity with research methodologies and survey techniques
- Statistical analysis
- Strong analytical skills
- Ability to work independently
- Deadline oriented
- Project management and organizational skills
- Programming/coding skills would be an asset (e.g., exposure to R, Matlab or similar)
- Strong technical and drafting skills
- GIS training or experience.
- Experience performing data analysis and working with complex data sets, an asset

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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 21, 2025.

[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>