

## Summer 2023 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 on the Apply page to confirm your eligibility before applying.

**Applications close at midnight on Sunday January 29, 2023.**

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## Project title: Estimating the net health benefits and emissions reductions of preventative interventions in health care

### Project Background & Overview:

In the context of a Code Red for Humanity, preventative health measures must be aimed at Humanity first. Any preventative health measure has an obligation to be beneficial on a population basis before consideration of its effect on a subpopulation at risk of a disease that predates the current era in which we collectively enter the 6<sup>th</sup> mass extinction period in earth's history. Many current and planned preventative population health measures in BC may not have considered this broader perspective and therefore would benefit from a re-examination.

For example:

Chronic kidney disease screening via cystatin C measurement is proposed to be offered to all BC with a serum creatinine estimated eGFR of 45 – 60 mL/min and a normal urine protein analysis.

- Anticipated benefits: better recognition of individuals who would benefit from a referral to a nephrologist to prevent need for dialysis. Avoidance of testing that is the current standard of care (nuclear medicine glomerular filtration rate testing).
- Population health concerns: increased chemistry testing (budget and consumption of test reagents) with consequent increase in pollution and GHG emissions.

Gestational Diabetes Mellitus screening at a highly sensitive rate compared to other provinces since 2010.

- Anticipated benefits: promise of additional health benefits is undocumented but, if accurate, to be realized in 2 – 3 decades.
- Population health concerns: increased use of health care services for gestational diabetes at a rate of 2 to 3 times that of other provinces will contribute to adverse health consequences attributable to pollution and GHG emissions over the same time frame.

Colorectal Cancer Screening: increased rate of positive testing and colonoscopy in BC as compared to other provinces.

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- Anticipated benefits: promise of additional health benefits is undocumented but, if accurate, to be realized in 2 to 3 decades.
- Population health concerns: increased use of colonoscopy services as compared to other provinces will contribute to adverse health consequences attributable to pollution and GHG emissions over the same time frame.

Cardiovascular disease prevention via Lp(a) testing. This biomarker of cardiovascular disease risk has an uncertain role in the health care system yet has been newly recommended for population screening by the Canadian Cardiovascular Society.

- Anticipated benefits: unproven, but in theory, identifying people at increased risk for cardiovascular disease would promote closer adherence to general recommendations for cardiovascular risk reduction.
- Population health concerns: increased pollution and GHG emissions due to added laboratory testing and increased medical appointments, other investigations (eg Cardiac CT for Calcium scoring) and drug recommendations (including PCSK9 inhibitors) which may follow a test result.

## Project description

Based on the skills, background and interest of the Scholar. **The project will focus on one of the two following research areas:**

### Research area 1:

With the above four healthcare examples in mind, develop and pilot a methodology to:

1. estimate the health care benefits from a provincial preventative health care program implemented in BC. Extrapolate the benefits globally if the same program were endorsed and implemented globally. Note this value would likely be stable over the next 3 decades.
2. estimate the global mortality (globally) arising from the pollution and GHG emissions attributable to implementation and/or maintenance of the health care program globally. Note this value is expected to increase linearly or exponentially over the next 3 decades.

### Research area 2

For one of the referenced provincial programs above, estimate the current expectations (and 3 decades down the road expectations) for health benefits on a population basis.

- Look at population screening programs across different international jurisdictions. Determine the age standardized mortality rates from the specific diseases in a given region and the corresponding intensity of the jurisdictional screening program. Extrapolate the real-world impact of the screening program by means of this comparison data.
- Estimate the negative health consequences attributable to pollution and climate change contributions coming from the specific program now and 3 decades down the road.
- Identify all otherwise unnecessary aspects of the screening program (travel, testing, doctors visits, report distribution, fundraising to pay for the various elements of the program including physician compensation) and determine pollution and GHG emissions attributable to the program's implementation. Determine the projected effect on population health (estimated

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increase in climate or pollution related deaths in a rich country with resources to adapt to pollution and climate change) from the proposed implementation of the program globally.

## Project scope

1. Refine project scope as described for Research area 1 or Research area 2.
2. Develop a research methodology and framework to inform the collection and evaluation of the data. This may also involve preliminary research on best practices undertaken in other jurisdictions or health authorities, or engagement with provincial climate scientists (studying the effects of GHG emissions, air pollution and food scarcity on population health) to model the adverse impacts to population health attributable to the environmental damage attributable to the program's implementation and maintenance (in BC) or globally.
3. Engage with representative provincial experts (clinician leaders for the given provincial program under study) to obtain robust data which would provide optimal estimates of health benefits from the provincial program (to citizens in BC, and globally if implemented globally).
4. Apply the data to the framework/model and generate estimates of the health care benefits
5. Time permitting: Based on the research make recommendations on the development of a decision tool which would proactively guide decisions on provincial preventive health care programs that may exist within, or outside, of the traditional health care system.

## Deliverables

- A final report containing a summary of the work completed
- A final report for the online public-facing [Scholars Project Library](#).

## Time Commitment

- This project will take 250 hours to complete
- This project must be completed between May 1 to August 15, 2023
- The Scholar is to complete 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
- Demonstrated interest in sustainability
- Strong analytical skills
- Ability to work independently
- Deadline oriented
- Familiarity with benchmarking methods and tools
- Comfortable interacting with strangers to conduct interviews
- Familiarity preparing feasibility studies
- Experience with emissions modelling and analysis, an asset
- Familiarity with health care policy and practice, an asset

Applications close **midnight Sunday January 29, 2023**

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

Contact Karen Taylor at [sustainability.scholars@ubc.ca](mailto:sustainability.scholars@ubc.ca) if you have questions

## Useful Resources

We are holding a special **resume preparation workshop for prospective Scholars** on January 23, 2023.

[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>