PROGRAM OVERVIEW

Multidisciplinary Undergraduate Research Projects in Health (MURPH)

2020-2021
INTRODUCTION TO MURPH

MURPH is an undergraduate research program at the University of British Columbia - Okanagan campus that aims to offer a unique cross-disciplinary platform to undergraduate students for engaging in academic research, while also providing professional training through custom-designed workshops. The core component of MURPH includes project teams comprising multiple undergraduate students and faculty members across different disciplines working together on applied (often industry driven) health research projects.

MURPH MANAGEMENT TEAM

Dr. Joan Bottorff  
Professor  
School of Nursing

Dr. Abbas Milani  
Professor  
School of Engineering

Dr. Harry Miller  
Professor  
Psychology, Southern Medical Program

Dr. Neil Eves  
Associate Professor  
School of Health and Exercise Sciences

Dr. Natalie Forssman  
Lecturer  
School of Engineering

Dr. Mahdi Takafolli  
Research Engineer and MURPH Founder  
Materials and Manufacturing Research Institute

GRADUATE MENTORS

Negin Kazemian  
PhD Candidate  
Applied Science

Natasha Haskey  
PhD Candidate  
Biology

“We all have different work habits and can contribute to the team in various ways. Learning how to work together to overcome our differences but still excel in our areas of expertise can lead to a cohesive and well-rounded team.”

- A MURPH Scholar
Multidisciplinary Undergraduate Research Projects in Health (MURPH): Structure

The MURPH program is a multidisciplinary and interdepartmental research hub at University of British Columbia Okanagan (UBCO), fostering collaborations at the edge of basic and applied research between local, national, & international research & development sectors.

**Mission**

To engage undergraduate students in multidisciplinary research and offer learning objectives mainly relevant to collaborative techniques that are not typical outcomes of current undergraduate research programs at universities.

**Core Objectives**

MURPH offers a unique multidisciplinary research setting along with scholarly and professional development training to undergraduates at UBCO, targeting various learning objectives including:

1. Developing skills for collaboration, scientific discussion, and brainstorming with undergraduate/graduate peers, faculty members, and collaborators from other disciplines;
2. Developing and refining research plans and protocols collaboratively; and
3. Engaging in health research activities that are meant to have meaningful impact on communities, hospitals, industries, etc.,

**History & Success Stories**

The 2020-2021 program supported 5 applied health projects encompassing 6 disciplines with a total of 10 faculty members and 11 MURPH Scholars. Below are examples of projects and achievements by students in the program (MURPH Scholars).
MURPH 2020-2021 Highlights

MURPH Launch Event
(Oct 15, 2020)
Introduction to the program, management members, and funded project teams

Workshop #1
(Nov 18, 2020)
Teamwork & Collaboration

Workshop #2
(Jan 20, 2021)
Patient-Oriented Research & Design Thinking

Workshop #3
(Mar 20, 2021)
Research Dissemination

UBC Okanagan Interdisciplinary Student Health Conference
(Mar 9, 2021)

Recognitions

- MURPH funding was awarded by the Office of the Vice-President, Research and Innovation.
- MURPH was featured as a model program at the UBC Board of Governors meeting on Feb 14, 2020.
- One of the six MURPH posters presented at the 2021 virtual UBC Okanagan Interdisciplinary Student Health Conference (Kelowna) was awarded the best poster presentation in its respective category.
- Five students were offered summer employment as a result of the MURPH program.
- All MURPH projects were completed remotely due to COVID-19
Mental Health Impacts of CCE and COVID-19 in Rural Communities

Purpose

The effects of COVID-19 and climate change events (CCEs) on the mental health of those in rural areas is still unknown. Due to the remote nature of these communities, they can be disproportionately affected and the impacts of these events often go unrecognized. Our research project looks at the mental health impacts of COVID-19 and CCEs in 3 rural BC communities: Burns Lake, Ashcroft and Keremeos. This research will be done through a variety of methods including an electronically distributed survey, community consultations, and deliberative dialogues to co-create solutions. Each of these methods is necessary to understand the impact of these events and to foster resilience within these communities.

Research Impact

Our research will contribute to a better understanding of the mental health impacts of COVID-19 and CCEs, and will result in the development of a community-based action plan for mental health services.

MURPH Scholars

Ceyanna Pohl
Sienna Kantymir

Principal Investigators

School of Nursing
Dr. Nelly Oelke

Department of Psychology
Dr. Carolyn Szostak

Research Team Testimonial

“We were honored to be part of the MURPH scholars program. This multidisciplinary program gave us insight into the importance of patient-oriented research and working as a team.”

- Ceyanna & Sienna
Incorporating Cultural Safety in a Diabetes Prevention Train-the-Trainer Program: Building and Testing Inclusivity Content into a Digital Educational Learning Platform

**Purpose**

The purpose of this project is to develop and test a cultural safety component to be included in an online coach training module for Small Steps for Big Changes (SSBC), a diabetes prevention program. SSBC aims to empower individuals with prediabetes to make lifestyle changes to reduce their risk of developing type 2 diabetes. The high prevalence of type 2 diabetes in Indigenous communities, combined with the numerous recent reports of racism within Canadian healthcare, demonstrates the urgency for including cultural safety in all aspects of healthcare. Cultural safety is when healthcare is free of racism and discrimination, and patients are supported to draw strengths from their identity and community. This project aims to bring together multidisciplinary experts and Elder advice to develop impactful and relevant cultural safety training for SSBC coaches, so their clients receive safe and equitable care.

**Research Impact**

Developing a mandatory cultural safety training for SSBC coaches will help prevent harmful experiences for SSBC participants and reduce health inequities between Indigenous and non-Indigenous peoples. Future testing will assess the impact of the training on SSBC coaches, contributing to research on cultural safety training in healthcare.

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**MURPH Scholars**

Jenna Sim  
Bethany Kolisniak

**Principal Investigators**

Health & Exercise Sciences  
Dr. Mary Jung

Community, Culture, & Global Studies  
Dr. Braden Te Hiwi

**Research Team Testimonial**

“The opportunity to work as part of a multidisciplinary team not only allowed us to utilize knowledge and methodologies from different disciplines, but to form meaningful new connections across faculties as well.”

- Jenna & Bethany
All My Relations: Indigenous Youth and Elder Wellness Circle

**Purpose**

The youth and young adults at six Friendship and Metis centers in interior BC have expressed a need for learning traditional knowledge from local Elders surrounding harvesting, land-based activities, gender roles and cultural identity. Only 1/3 of First Nations people living off-reserve have hunted, fished, trapped, and gathered wild plants/berries. Additionally, there is a steady decrease in the percent of Métis youth and young adults aged 15-24 that participate in hunting/gathering. This is unfortunate as these traditional activities are linked with improved mental and physical wellness for Indigenous peoples. The knowledge gained from this project's literature review will be used to guide our conversations with the youth leaders and community liaisons at the partner centers, to implement community-led hunting and gathering programs for youth and young adults.

**Research Impact**

This research project will support the planning of Indigenous-led community-based projects for youth and young adults at the six partner centers.

“The MURPH program allowed us to collaboratively combine our knowledge from our respective Nursing and Psychology backgrounds. We are collectively so thankful for the learning, workshops, and mentorship! Limlimpt, hiy hiy, and thank you.”

- Ethan, Violet, & Caitlin
Maximising the potential of wearable activity trackers and global positioning systems to characterise complex human movement behaviours in health research

**Purpose**

Physical activity is essential for optimal health and well being, however, most Canadians are not meeting physical activity guidelines. To explore this issue, accelerometers can be used to collect data about a person’s movement behaviour while global positioning system (GPS) devices provide additional information regarding the participant’s location. Together, these two devices allow researchers to analyze the time and intensity of movement behaviours at different locations. However, processing and syncing accelerometry data with GPS data is labour intensive and time-consuming. The overall purpose of this project is to streamline this procedure. This will be done using coding software (Python) that can combine, edit, and process large amounts of data, and integration with geographic information systems (GIS) software to map data. Summary data and maps can easily be interpreted and used by health researchers.

**Research Impact**

Human movement research is valuable because it can provide information about trends, behaviour, and general health. These new procedures for data processing will give health researchers a simple and structured way to handle and convey information about human movement behaviour.

Sample map of a walking trip based on clean data produced by the new algorithm.
CLARITY: Community-Led Action for Resiliency Important Throughout Youth

**Purpose**

Suicide is the second-leading cause of death amongst youth in Canada (and globally). Resilience, the ability to bounce back from everyday challenges, can be protective against suicide. Community-Led Action for Resiliency Important Throughout Youth (CLARITY) aims to build and foster environments in which youth can develop factors of resilience that may protect against suicide and suicide ideation. CLARITY also works at developing community-based resources that integrate with resources already available to build community-level resilience for youth in the Central Okanagan. By utilizing future-oriented conversations with community members, this project expands the works of previous research and investigates the ways in which communities can support youth mental wellbeing.

**Research Impact**

The CLARITY Project aims to prevent youth suicide by extending understandings around how communities can contribute to youth resilience, and by developing relevant resources and interventions in the Central Okanagan community. The implementation and evaluation of these efforts will inform further community-level actions to prevent youth suicide and promote youth resilience.

Example of a youth recruitment poster for a deliberative dialogue (future-oriented conversation with community members).
Benefits of Collaborating with MURPH

We have developed a variety of opportunities to meet each industry partner and sponsor’s objectives and needs. Your contribution will greatly strengthen our capacity to deliver high quality programming and allow for the expansion of the MURPH program to train more undergraduate students in our community.

1. **Increase your visibility within the community**

Feature your logo on the MURPH website, as well as its events as a sponsor of the program.

2. **Be a guest speaker**

Become a guest speaker at our upcoming MURPH events and workshops.

3. **Collaborate with UBC laboratories**

Work with a globally respected university and faculty members and gain access to state-of-the-art research facilities.

4. **Receive research support**

Submit your project proposal [here](#) to conduct multidisciplinary research projects by students under your membership for each academic year.

5. **Build world-class talent**

Aid in the training of students and prospective employees by equipping them with job-ready skills.
The MURPH program is continually seeking partnerships with health and medical industry and organizations to enhance the training and educational experience of the undergraduate students at UBC, helping them better transition into productive employees of the Canadian healthcare sector.