



TLEF Project – Final Report

Report Completion Date: (2023/08/31)

1. PROJECT OVERVIEW

1.1. General Information

Project Title:	UPROOT: A Community- Based Approach to Decolonizing and Indigenizing the Pharmacy Curriculum		
Principal Investigators:	Larry Leung and Jason Min		
Report Submitted By:	Larry Leung and Jason Min		
Project Initiation Date:	April 2020	Project Completion Date:	August 2023
Project Type:	<input checked="" type="checkbox"/> Large Transformation <input type="checkbox"/> Small Innovation <input type="checkbox"/> UDL Fellows Program <input type="checkbox"/> Hybrid and Multi-access Course Redesign Project <input type="checkbox"/> Other: [please specify]		

1.2. Project Focus Areas – Please select all the areas that describe your project.

- Resource development (e.g., learning materials, media)
- Infrastructure development (e.g., management tools, repositories, learning spaces)
- Pedagogies for student learning and/or engagement (e.g., active learning)
- Innovative assessments (e.g., two-stage exams, student peer-assessment)
- Teaching roles and training (e.g., teaching practice development, TA roles)
- Curriculum (e.g., program development/implementation, learning communities)
- Student experience outside the classroom (e.g., wellbeing, social inclusion)
- Experiential and work-integrated learning (e.g., co-op, community service learning)
- Indigenous-focused curricula and ways of knowing.
- Diversity and inclusion in teaching and learning contexts
- Open educational resources
- Other: [please specify]



1.3. Final Project Summary – *What did you do/change with this project? Explain how the project contributed toward the enhancement of teaching and learning for UBC students.*

The project addressed the need for decolonization and Indigenization of the Entry-to-Practice PharmD curriculum by building:

- (1) a mandatory pharmacy course on Indigenous health and cultural safety
- (2) an elective course using Indigenous community-based learning and classroom teaching.

Both of these courses were essential in creating the requisite scale to scaffold Indigenous health content throughout the curriculum. In addition, introductory content was developed in a foundational first year pharmacy course and the UBC 23-24 Indigenous Cultural Safety programming was effectively integrated into the program to align with the Indigenous pharmacy curricula.

SCAFFOLDED CURRICULA



The project has had a significant impact on both the enhancement of teaching and learning for UBC students and our community partners. Pharmacy students now have opportunities to engage in Indigenous health and cultural safety content and were also active members in the development, delivery, and evaluation of the project. Our evaluation results have shown improved knowledge and skills related to providing culturally-safe care and shifts in attitudes related to Indigenous health and wellness.

Building relationships and an expectation of reciprocity with our Indigenous partners was crucial in the development and sustainability of Indigenous curricula. UPROOT has created opportunities for lasting reciprocity with partners through the delivery of community-based projects that have had both immediate and long-term impact.



1.4. Team Members – Please fill in the following table and include **students**, undergraduate and/or graduate, who participated in your project.

The project team is fortunate to be based on a deep foundation of collaborative and productive partnerships. The team is composed of a broad range of experts, scholars, community members, and students with diverse connections to Indigenous communities across Canada. Collectively, the team has adopted the name UPROOT, symbolizing what, how, and why we are doing this work.

The UPROOT Team consists of the following team members:

UBC:

Name	Title/Affiliation	Responsibilities/Roles
Larry Leung	Associate Professor of Teaching, Faculty of Pharmaceutical Sciences	Principal Investigator
Jason Min	Assistant Professor of Teaching, Faculty of Pharmaceutical Sciences	Principal Investigator
Brandon Whitmore	Entry-to-Practice PharmD Student	Undergraduate Academic Assistant
Brina Kim	Entry-to-Practice PharmD Student	Undergraduate Academic Assistant
Tia De Groot	Indigenous Teacher Education Program Student	Undergraduate Academic Assistant
Nailah King- Hopkins	Indigenous Teacher Education Program Student	Undergraduate Academic Assistant
Tuskonne Blais	Indigenous Teacher Education Program Student	Undergraduate Academic Assistant
Idaylia Swanson	Entry-to-Practice PharmD Student	Undergraduate Academic Assistant
Jessie Li	Entry-to-Practice PharmD Student	Undergraduate Academic Assistant
Emma Young	Entry-to-Practice PharmD Student	Undergraduate Academic Assistant

Indigenous Advisory Committee:

The Indigenous Advisory Committee (IAC) oversees every aspect of UPROOT and is made up of a diverse group of Indigenous and non-Indigenous expert representatives. These community partners are highly regarded decision-makers and leaders from different Indigenous communities across BC. Importantly, they have established prior collaborations with the principal investigators in the past, further strengthening their relationships and shared understanding. The IAC consists of the following members:

- Doreen Hopkins
- Carolyn MacKinnon



- Glenda Phillips
- Patricia Bobb
- Teresa Ryan
- Lindsay Ellefson
- Lindsay Swanson

Indigenous Student Advisory Committee:

The Indigenous Student Advisory Committee (ISAC) reports to the IAC and consists of Indigenous and a select number of non-Indigenous students. As future graduates and care providers from various Indigenous groups across Canada, this committee offers a unique and valuable perspective to the team. The ISAC consist of the following members:

- Brandon Whitmore
- Olivia Burton
- Manrubby Dhillon
- Larry Franzen
- Emma Young
- Cayley Lawrence

We would also like to acknowledge, with gratitude Kerry Wilbur, Associate Professor and Executive Director of the Entry-ot-Practice PharmD Program, Faculty of Pharmaceutical Sciences, our UBC partners from the Centre for Excellence in Indigenous Health, Indigenous Research Support Initiative, Xwi7xwa Library, and Community Engaged Learning, and all our Indigenous community partners who have participated in this project.

1.5. Courses Reached – Please fill in the following table with ***past*** and ***current*** courses (e.g., HIST 101, 2017/2018) that have been reached by your project, including courses not included in your original proposal (you may adapt this section to the context of your project as necessary).

Course	Academic Year
PHRM 100	2020W, 2021W, 2022W
PHRM 261	2021W, 2022W
PHRM 323	2020W, 2021W, 2022W



2. OUTPUTS AND/OR PRODUCTS

2.1. Please list project outputs and/or products (e.g., resources, infrastructure, new courses/programs). Indicate a URL, if applicable.

UPROOT Deliverables for UBC:

Output(s)/Product(s):
<p>An Indigenous Advisory Committee (IAC) with majority membership comprised of Indigenous partners internal and external to UBC. Outputs include a terms of reference, reporting structure, and an Indigenous community partner voting rights policy.</p>
<p>An Indigenous Student Advisory Committee (ISAC) consisting of Indigenous and a select number of non-Indigenous students that report to the IAC. The foundations of ISAC have led to the development of an Indigenous Pharmacy Student Collegium, a student-founded social club for students to explore their personal Indigenous identity. The Collegium also creates opportunities for Indigenous and non-Indigenous students to engage in cultural learning and immersion.</p>
<p>PHRM 261 Indigenous Health and Cultural Safety – a mandatory pharmacy course in program year level 2. Course topics include:</p> <ul style="list-style-type: none"> • Colonialism and Impact on Health, • Identity, Power, and Positionality • Racism, Social Neutrality, and Empowerment • Indigenous and Western Knowledge Systems and Worldviews • Indigenous Story-telling • Traditional Medicines • Indigenous Governance • First Nations Health Benefits • Trauma-Informed Care <p>As part of course development, the following were created:</p> <ul style="list-style-type: none"> • Five curricular pillars • Foundational learning objectives • Summary report and poster on “better practices” for a mandatory Indigenous pharmacy course • Assessments: visual arts reflection, book club, class activities (reflections, quizzes, discussions, and peer evaluations)
<p>PHRM 323 Pharmaceutical Care in Indigenous Health – a re-developed elective in program year level 3 blending Indigenous community-engaged learning and classroom teaching. Course topics include:</p> <ul style="list-style-type: none"> • Ethical Engagement • Indigenous Health and Wellness



- Indigenous Health Service Models
- Indigenous Advocacy

As part of course development, the following were created:

- Six library tutorials from the X̱wi7x̱wa Library on community research protocols, Indigenous research methodologies, and data sovereignty from an Indigenous perspective
- Indigenous community engagement pathway for Indigenous partners participating in community-based projects including: 1) Community Opportunities Survey, 2) Project Scoping, 3) Project Onboarding, 4) Student Projects, 5) Student Assessment, and 6) Evaluation
- A pairing system to match students to their community-based project based on interest, skills, and values.
- Summary poster on “better practices” for an Indigenous community-engaged pharmacy elective
- Assessments: book club, journal club, midterm, class and educational trips, visual arts reflection and community-based projects

UPROOT Deliverables for Community:

Output(s)/Product(s):

Five community-based project domains for student projects in PHRM 323:

- Community Health and Advocacy
- Pharmacy Practice
- Traditional Health and Medicines
- Health Education
- Cultural Teaching and Learning

Sustainable and ethical engagement framework for community-based projects

20 community-based student projects have been developed and delivered in a 3-year period:

- Mobilizing local pharmacy resources to support COVID-19 Education in a remote community
- Community-oriented education on the use of marijuana
- Alcohol Use Disorder Resource Guide
- Designing a Diabetes Self-Management Course
- Community Health Programs Directory
- We Keep All the Goodness
- First Nation Youth Restorative Justice Program Development
- Indigenous Advisory Committee Member Perspectives: Principles for Success
- Healthy Eating Recipe Book
- Comprehensive Resource for Healthy Medication Practices
- Improving Medication Accessibility in a remote First Nations community



- Building a Community-Owned Pharmacy for a BC First Nation
- Mapping Traditional Medicine Workshops
- Visual Summary of Traditional Medicines
- Developing a Traditional Medicine Intake/Referral Form
- The Power of Stories: Examining the Impact of Story-telling on Learners
- Perceptions of Online Community-based Student Projects: Building Sustainability and Reciprocity with Indigenous partners
- Indigenous Medicine Wheel Development
- Preserving and Revitalizing Family Trees
- Developing a Pairing System for Students Participating in Community-based Projects

2.2. Item(s) Not Met – *Please list intended project outputs and/or products that were not completed and the reason(s) for this.*

All intended project outputs and/or products have been completed.

3. PROJECT IMPACT

3.1. Project Impact Areas – Please select all the areas where your project made an impact.

- Student learning and knowledge
- Student engagement and attitudes
- Instructional team-satisfaction
- Teaching practices
- Student wellbeing, social inclusion
- Awareness and capacity around strategic areas (Indigenous, equity and diversity)
- Unit operations and processes
- Other: [please specify]

3.2. Please provide details on each of the impact areas you selected in 3.1. – For example, explain in which ways your teaching practices changed; how student wellbeing was impacted; how students wellbeing benefited from your project, etc.

Student Learning and Knowledge:

The UPROOT Team with oversight from the Indigenous Advisory Committee, developed the Canada's first mandatory Indigenous health and cultural safety course and Indigenous community-engaged elective course in pharmacy. The development and delivery of these courses represent an important step towards reconciliation and better equipped students to understand their personal biases and identities and the impact of this on their role as future health care professionals. Learning occurs across five distinct curricular pillars.



Students are introduced to topics such as impacts of colonialism on health, identity, power, and positionality, racism, social neutrality, and empowerment, implicit bias, Indigenous and western knowledge systems, traditional medicines, indigenous governance, principles of ownership, control, access, and possession, First Nations Health Benefits and trauma-informed care.

The community-based elective, PHRM 323, builds off the mandatory course and dives deeper into Indigenous health in Canada and the role of a pharmacist can have in collaborating with other health professionals and Indigenous communities in providing care and healing. Each year, students enrolled are assigned a community-based project, that provides an opportunity to collaborate respectfully and



effectively with an Indigenous community, and in turn give students skills and confidence to provide cultural safe pharmaceutical care in their future practice.

Student Engagement and Attitudes:

The curricula has been effectively implemented across pharmacy and has students engaging with Indigenous content in the first three years of the Entry-to-Practice PharmD program. Student engagement and attitudes with the content has been overwhelmingly positive, as evident by course and teaching evaluations. We have seen a positive shift in student attitudes related to Indigenous health and cultural safety, with students reporting improvements and increased confidence in working with Indigenous patients and other care providers. There is greater awareness of the systemic racism that is present in our healthcare system and increased interest in participating in positive change. Each year of the elective was also at full capacity, indicating an interest from students to further engage with this learning.

Teaching Practices:

UPROOT has fundamentally changed how we approach Indigenous curricula through the integration of Indigenous ways of knowing and being. In PHRM 261, each lecture is often co-taught with an Indigenous guest speaker and we have found that this co-teaching model allows for students to also see allyship in action between instructor and guest. We have also implemented other forms of teaching including storytelling, podcasts, videos, and breakout conversations. Assessments are based on peer evaluations, class activities, book club and reflection. In PHRM 323, Indigenous partners become the assessors and help evaluate our students based on their community-based projects. This has been very well-received by students and partners, as a meaningful way to deliver on community identified needs and priorities and offer hands-on learning experiences from students. These projects are also delivered online, which helps to maintain sustainability year over year and reduce the capacity and time burden on participating partners.

Student Wellbeing, Social Inclusion:

Indigenous and non-Indigenous student wellbeing benefited from this project through in-class conversations on identity, power, positionality, racism, and implicit bias. Students also have the opportunity to share experiences anonymously with course instructors and guests, including open and safe conversations around racism they may have experienced or witnessed in practice. Students have also been active members on the UPROOT Team across all aspects of the project, which have really supported student understanding of decolonizing and Indigenizing efforts. Fostering better understanding and reflection on Indigeneity of our Indigenous students has been a small, but impactful by-product of this work, that was not expected.

Awareness and Capacity around Strategic Areas:

UPROOT aligns with our Faculty's strategic priorities related to decolonization and Indigenization and our team has provided great insight to both our faculty and other faculties nationally, including conversations around competency and accreditation standards in pharmacy.



3.3. How do you know that the impacts listed in 3.1/3.2 occurred? – Describe how you evaluated changes/impacts (e.g., collected survey data, conducted focus groups/interviews, learning analytics, etc.) and what was learned about your project from the evaluation. You are encouraged to include graphical representations of data and/or scenarios or quotes to represent and illustrate key themes.

Evaluation was conducted via two means: 1) UBC Course Evaluations, and 2) our own internal evaluation involving a mix of surveys, interviews, reflections, informal conversations, and focus groups. Iterative changes were implemented to the courses each year based on the evaluation results.

1) UBC Course Evaluations

PHRM 261:

Question	2021 IM (n=116)	2022 IM (n=109)
<i>Learning objectives were clear</i>	4.8	4.6
<i>Instructional methods (lectures, case studies, activities, etc.) facilitated achievement of the learning objectives</i>	4.8	4.7
<i>Assessments of learning were related to the learning objectives</i>	4.8	4.6
<i>Assessments of learning were fair</i>	4.8	4.7
<i>The course was organized in a logical fashion</i>	4.8	4.6
<i>Considering everything, I learned a great deal in this course</i>	4.8	4.6

5 = Strongly agree 4 = Agree 3 = Neither agree nor disagree 2 = Disagree 1 = Strongly disagree

Strengths of the course:

- I like the group discussions and breakdown groups!
- The guest lectures were beneficial and I feel like I learned a lot through a first-person perspective so I really enjoyed that.
- The topics we learn through this course are extremely important to be better future healthcare providers.
- I think that bringing in speakers was very valuable as it gave students a better inside look at Indigenous health and safety, and the repercussions of colonialism.
- Brings in guest speakers that have very impactful stories
- Allows students to hear from the content that was taught in the course firsthand from the individuals who were affected by these issues.
- in-class group discussions



- The book club is the strongest point of this course, the book that I read focused on residential schools and documented the personal experience of a survivor which was enormously impactful for me and I gained a better understanding of how residential schools operated.
- The course brings up important current issues with the indigenous population, and I feel is quite important to recognize. The course's strengths in my opinion lies in the guest
- speakers that are more insiders of the issue itself. Hearing stories from their perspective helps strengthen the learning objectives. I also appreciated the book club activity, as it
- was interesting reading more stories from indigenous authors.
- The course being online made it easy to attend with little struggle of not wanting to attend it.
- Prior to this course and this program, although we knew of the different things that happened to Indigenous/First Nations people, it was all just through books or non indigenous
- people. By explaining and bringing in different people who had real experiences, it really helped us to imagine and to think differently of what really happened to them and how it
- has affected them until now.
- Having different guests come in and share their perspective really opened our eyes.
- I liked that it was online. The breakout rooms and group sessions were really beneficial so that we were able to talk about the content we were learning.
- The classes with the Jason and Larry duo has always been such an engaging experience :)
- I felt like it touched on an aspect of health care not often talked about
- The interactive break out rooms, the discussion during class. I especially liked the special guests that were brought in, learned so much from them.
- The guest speakers—> made the course very real and relatable.
- it was very well structured, the amount of assignments was appropriate and everything was taught very well. Having the guest speakers for many lectures was a very interesting
- concept
- breakout rooms, small group discussions, group book club
- Generating critical conversation on a subject that is hard to approach and understand.
 - organized
 - creative
 - awareness and advocacy for Indigenous communities
- This is a unique course that brings Indigenous issues to the forefront. It is refreshing that people are taking a decolonized course.
- There were no exams which I don't think there should be when teaching many abstract soft skills that would benefit us as health care workers
- Interactive
- Great group discussions
- Conversations are insightful

Areas for improvement:

- Some of the overall flow of the class progression felt a bit choppy, didn't always feel like the lecture topics week to week flowed in a comprehensive way
- Adding more speakers



- I think that this course could have slightly longer class sessions, as sometimes we ran out of time to discuss topics in detail.
- I think overall the course was quite enjoyable. I do not have that many suggestions! Thank you for a great term!
- I wish the books were a bit shorter. I know we had a lot of time during the semester, but still, I found it challenging to put aside my cardio notes and read "medicine walk".
- Same as before – The guest speakers were great but we were on such a time crunch with them, maybe when we have guest speakers we can have a 2 hour time period instead
- and not have class the next week?
- I thought it was amazing
- Amazing course. However, I did not like the book club. some people do not like reading books in general and this course makes them have to read book. Especially with all the
- workload that we get I feel like the book is something that takes a lot of extra time.
- i enjoyed this course a lot, so I do not have any improvements
- have it in-person so we can meet with our groups in person rather than on zoom:)
- Sometimes it's hard to make class and being unable to attend felt extra detrimental because of the team surveys being attached to some lectures.
- no suggestions
- This needs more time!! 1 hour is not enough to go through all the content.
- Reducing the amount of breakout room discussions as it is hard to have people contribute. I believe we should have more time for our large group discussion
- It would be great to make this course more healthcare related so it is more interesting for students to learn. The lectures were very repetitive at times.
- I do not have any ideas on how the course could be improved
- Introducing more integrative/interactive components could possibly improve student learning.
- more book options
- I would have liked to learn more about Indigenous health care as it relates to pharmacy (ex. more about drug coverage, special programs, mental health...)
- Longer class (maybe 1.5–2h per week), as many times it didnt seem as though we had enough time to finish all we were supposed to do!



PHRM 323:

Question	2021 IM (n=12)	2022 IM (n=12)
<i>Learning objectives were clear</i>	4.9	5.0
<i>Instructional methods (lectures, case studies, activities, etc.) facilitated achievement of the learning objectives</i>	4.8	5.0
<i>Assessments of learning were related to the learning objectives</i>	4.9	5.0
<i>Assessments of learning were fair</i>	4.9	5.0
<i>The course was organized in a logical fashion</i>	5.0	5.0
<i>Considering everything, I learned a great deal in this course</i>	4.9	5.0

5 = Strongly agree 4 = Agree 3 = Neither agree nor disagree 2 = Disagree 1 = Strongly disagree

Strengths of the Course:

- I enjoyed the field-trips!
- Really enjoyed the hands-on approach
 - more field-trips
 - visual arts activity
 - book club
- Less written assignments and more creative assignments was a plus for this class.
- The assignments and assessments format is well-suited to the format of this course.
- Field trips were a great way to facilitate learning!
- My favourite part of this course was being able to work with a community and ask them questions in order to see what we can do to help. I really liked learning about their community and being able to collaborate instead of just create something for them. Another strength was the book club and reflection. I really liked doing this a second year in a row as it was a totally different this time around. As I learn more, I was able to really reflect on cultural safety and my learning process.
- the cultural immersion activities provided a way to learn outside of the classroom which is different from how most learning activities are delivered in the PharmD program. students get a chance to connect with Indigenous communities throughout the course and learn how to be a project partner by working on real problems identified by the community.
- The community project, book club and cultural immersion activities
- This course allowed for lots of self-learning and guided learning. The community project was great for getting experience doing a project that actually makes a difference within the community.



- I enjoyed the large amounts of group discussions and learning from other group members. I also enjoyed the group field trips to various locations.
- One thing I appreciated was the effort that Jason and Larry made to organize transportation and make sure all students were able to get there with time to make it to our next class.
- Genuine conversation, and I liked the small class size as it means there is intentionality around those present and a genuine interest in the subject material. Also field trips were awesome.
- The style of the course, with the didactic learning as well as the field trips and activities, really encourages us to take a holistic look at our learning. With such varied activities and perspectives, I had many frames of reference to which I could compare and critically analyze my own views. Part of what makes this course effective is the small class size. I think this contributes to why we can have such meaningful discussions in class and opens up field trip opportunities for us to get a real look at what indigenous people are doing in our community. That's another strength, are the field trips. Each one was unique, and each one deepened my learning and understanding in different ways.
- I feel the strengths are in the opportunity to learn new things in a different way. Doing non-traditional learning experience such as field trips and book clubs help students learn new concepts in methods of teaching outside for powerpoint presentations.
- Community projects allowed real-life applications of the contents of this course. I also enjoyed all of the group discussion

Areas for Improvement:

- It was very balanced!
- Perhaps include a peer evaluation related to the group project in order to obtain a better understanding of how workload has been divided.
- I felt a little stressed for time as I was in a very hard semester already and sometimes trying to read a book, and work on a project was overwhelming therefore I would have liked a bit class time to work on these projects.
- I felt that meeting as a group every week was a bit too much. I think meeting up every other week would have been sufficient especially since my group was quite independent and on task. I would've liked to choose my own book to read for book club as I did not like the one chosen by group. I think we should have our project groups but a separate book club group based on which book we want to read. I would also be interested to learn about what my classmates learned about their books or if they like it or not. So maybe a book club with people who read a different book could be interesting. I'd like to suggest that this class runs on a Friday instead of Wednesday as our medication management exams are always on the Thursday so I don't feel as engaged in the elective on those weeks! Also I would've like to have a couple more in person sessions, I enjoyed spending time with my classmates and getting to know Jason and Larry, zoom isn't quite the same.
- I was happy with all aspects of how this course was run
- I wish I had understood how heavy the community partner project would be in advance, so I could have better planned my semester. I took another elective that I cared about, so I know my performance in the main pharmacy curriculum suffered as a result.
- More field trips and more in-person activities.



2) BREB-Approved Evaluation

In addition to UBC mandated course surveys, UPROOT also ran an internal evaluation to assess for impact.

PHRM 261:

For the mandatory Indigenous course, post-course student feedback was collected to make amendments to course content. After the course concluded, students were invited to complete two evaluation surveys. The first comprehensive survey assessed students' understanding of cultural safety and its relevance to pharmacy. Of note, a modified version of the survey was deployed to self-identified Indigenous students, to better understand if they felt safe while taking the course. The second survey was UBC's mandated course evaluations. Over the two years, 204 survey responses and 228 course evaluations were collected and analyzed. Both evaluations utilized 5-point Likert scales followed by student justification of answers. Feedback was collated and using qualitative analysis, themes were identified.

Over 90% of the course evaluations reported that the course content successfully met learning objectives, with 89/204 students reported that the lectures significantly improved their understanding of issues specific to Indigenous health. **Five of the noted themes from both Indigenous and non-Indigenous student cohorts included:**

1. Responded enthusiastically to Indigenous voices.

- *"The guest speakers in the course allowed me to reflect on what it means to be an Indigenous person. I think what hit home most was the residential school survivor, it really enhanced the trauma-informed care lecture."*

2. Engaged in self-directed reflection about their learning.

- *"Learning more about indigenous cultures and cultural practices in this way have really impacted my views of what is best for the patients and has made me re-evaluate how I, as part of colonial history of Canadian society, have followed potentially harmful narratives and how I should approach these topics with a larger appreciation for the role culture and heritage plays in a person's life."*

3. "Reported increased knowledge and desire to apply culturally safe care.

- *"As a future pharmacist, taking this course have helped me rethink my patient care approach to patients like not being judgemental and being aware of our own biases. It's not only expanded my knowledge of Indigenous cultures and histories but has given me tools and perspectives that I will be able to apply to any patients with any background or culture to aid in my understanding of them and better the care I am able to give."*

**4. Wanted to dive deeper in course.**

- *“This topic has always been relevant to practice, but there is growing emphasis on the need for this kind of education in many sectors, especially healthcare. I would love to see this become a full-credit course or a year-long course with the 1 hr/week schedule; and would love to see future courses that build upon this one in upper years as well”*

5. Appreciated/ acknowledged the Safe(r)/Brave spaces in the classroom.

- *“[Instructor] incorporated his personal experiences throughout the duration of the course to bring valuable insight that we may not otherwise get to provide another perspective which I appreciated.”*
- *“Great learning environment, I loved small group discussions. Gave us more opportunity to share and learn, since it's harder to share in large group especially for some of the topics in this course.”*

The course evaluations highlighted both the need and students’ desire for more education encompassing pharmacists’ roles in practicing culturally safe care and how they can contribute to decolonizing and indigenizing healthcare.

PHRM 323:

For the community- based elective, 16 of the 19 students enrolled during the winter term of 2021 and 2022, participated in the pre-course survey, 9 in the post-course survey, and 8 in the post-course semi-structured interview. In both the post-course survey and semi-structured interviews, students expressed their enjoyment working on the community-engaged projects, with one student describing it as “the most rewarding and valuable part of the course.”

Qualitative analysis of the post-course data identified two key learning impacts from the community-based projects on students:**1. A shift in perspective as it related to the inclusion of Indigenous viewpoints while working with Indigenous community and individuals:**

- *“The importance of listening to what community members have to say on what their community needs [are], not what we think they need or have been told that they need. Everyone has a unique perspective to offer with extremely valuable information from community or individual perspectives.”*

2. Improved understanding and application of cultural safety:

- *“[The course] helped to foster meaningful reflections on how [students] will approach Indigenous care and has changed how [they] will practice in the future and what [they] will be more cognoscente of.”*



Community partners participated in semi-structured interviews and provided qualitative feedback through talking circles to share their stories and experiences working with students and Faculty on Community projects. They expressed positive experience collaborating with university partners and students and expressed interest in participating in future iterations of the elective.

4. TEACHING PRACTICES – *Please indicate if **your** teaching practices or those of **others** have changed as a result of your project. If so, in what ways. Do you see these changes as sustainable over time? Why or why not?*

A Two-Eyed Seeing Model was implemented when conducting research for better practices. This approach recognizes Indigenous ways of knowing as a distinct knowledge system alongside mainstream Western ways of knowing. By blending Indigenous and Western methodologies in data collection, this helped to ensure the framework created is Indigenous-driven, evidence-based, and honours reciprocal benefits to Indigenous communities. We consulted with the Indigenous Curriculum Advisory Committee which consists of Indigenous PharmD students and Indigenous and non-Indigenous community experts to develop and implement a framework for the two courses.

5 key elements were identified as part of the framework for creating Indigenous health courses in pharmacy:

- 1) Develop and protect Indigenous community partnerships centered on mutual respect and trust.
- 2) Maintain community-university relationships by prioritizing reciprocity.
- 3) Build learning objectives that increase student capacity to work effectively with Indigenous peoples.
- 4) Align course activities with Indigenous pedagogies.
- 5) Pilot innovative assessment models for cultural safety learning that align with Indigenous worldviews.

Due to the nature of course topics and learning objectives, it was challenging to measure and record changes in attitude and behavior when assessing student transformation of ideas and opinions, thus common Western assessment methods were deemed to be ineffective when evaluating students. To address this, formative rather than summative assessments while incorporating Indigenous pedagogies and values were used then student learnings were captured and applied through summative reflections and projects.

Additionally, the course incorporated a variety of teaching methodologies that embraced a culturally diverse perspective, transcending traditional Western paradigms. These instructional approaches included:

**Guest Speakers**

A wide range of speakers with diverse experiences were invited as guest lecturers: these included an Indigenous professor, a residential school survivor, and Indigenous healthcare workers familiar with Indigenous settings. A co-teaching model was implemented which involved non-Indigenous faculty facilitating lectures and sessions with Indigenous experts. This model represented a fundamental shift in the way curricula was taught.

Book club

Indigenous voices were also presented through a book club, where students were encouraged to read one of six different novels written by Indigenous authors. Students were asked to explore various topics to stimulate small group discussion and personal reflection.

Visual Arts

At the end of the course students were asked to reflect on what it means to be a pharmacist who embraces/ practices cultural safety and depict it with one to three original visuals, images, drawings, sketches, paintings, clay, or any other art-medium, accompanied by a brief description. Students were then asked to briefly share their images and reflection in small groups.

Weekly Classroom Activities

The class encouraged active participation by incorporating a variety of stimulating activities before and after lectures, such as thought-provoking pre-activities and enriching post-lecture reflections or quizzes. Furthermore, the course promoted a collaborative learning environment by encouraging valuable peer evaluations. Notably, a wide range of reflective activities were purposefully incorporated into the curriculum to improve students' reflection and critical thinking abilities.

Xwi7xwa Library Video Tutorial

To support students with their community-based projects, five video tutorial videos were designed. Each tutorial was carefully crafted to walk students through various aspects of their projects. Each video tutorial had an accompanying quiz. Students were given flexibility to finish the quizzes at any point in the course but was encouraged to complete them earlier in the term.

Community-based Projects

Students in groups of 2-3 were assigned real community-based project on the first day of class. The projects will vary based on Indigenous community-identified needs and priorities for pharmacy and/ or health services. Students co-developed and implemented tangible solutions in collaboration with an Indigenous community partner. Although, in-person community-based learning is difficult to replicate online, this project suggests a positive impact on student learners can be achieved.



Community partner satisfaction and positive feedback demonstrate the effectiveness of our CBPAR framework in implementing projects. Online delivery allows for sustainable engagement with geographically dispersed communities, where travel can be a barrier, and increases project capacity for future interactions. Evaluation of student projects was conducted by both the instructors (50%) and community partners (50%).

Journal Club

In groups of 2-3 students were required to present one scholarly article that pertained to their community-based project. These presentations were each allocated 20 minutes, with 2 minutes for discussion. Students were asked to use current articles (within the last 5 years).

Finally, the aforementioned teaching practices are designed to be sustainable over time, as they are embedded into the course curriculum. Additionally, the course instructors wholeheartedly embrace and uphold these teachings, ensuring a universal understanding and commitment to their implementation. It is essential to highlight that the instructors' dedication to this endeavour extends well into the future. However, in the event of their departure, detailed documentation of the teaching practices will be readily available to guide future instructors.

5. PROJECT SUSTAINMENT – *Please describe the sustainment strategy for the project components. How will this be sustained and potentially expanded (e.g., over the next five years). What challenges do you foresee for project sustainment?*

The project team is fortunate to be based on a deep foundation of collaborative and productive partnership. We hold a commitment to practice in a manner of mutual respect, responsibility, relevance, and reciprocity throughout, prioritizing relationships above all. As a direct result of this partnership engagement, our team's relational approach and sustainable partnership have been successfully implemented. The relationships with community partners allow us to continue to build on the course material, participate in community-based projects and make appropriate changes to lecture material.

To address team member turnover, we have in place terms of references, policies, and protocols. The Indigenous Advisory Committee (IAC) provides oversight and authority on the faculty's decolonization and indigenization efforts in the Entry-to-Practice PharmD (E2P PharmD) Program to ensure the prioritization and respect of Indigenous knowledge, values, and practices. The IAC Terms of Reference is reviewed annually.

All lecture material, activities, and assessments have been clearly documented and organized within the courses. Our approach to building community-based projects for the elective has also ensured student projects for the next 5 years. Challenges with sustainment relate with Indigenous guest speakers and



projects beyond the next 5 years. In both cases, we need to continue working with our partners to ensure that we support their capacity and ability to contribute moving forward.

6. DISSEMINATION – *Please provide a list of scholarly activities (e.g., publications, presentations, invited talks, etc.) in which you or anyone from your team have shared information regarding this project. Be sure to include author names, presentation title, date, and presentation forum (e.g., journal, conference name, event). These will be included on the TLEF scholarly output page.*

Website:

<https://uproot.pharmsci.ubc.ca/>

Articles:

<https://tlef.ubc.ca/stories/uproot-approach-decolonization-pharmacy-education/>

<https://www.ubyssey.ca/science/cultural-roots-the-ethics-of-indigenous-plant-knowledge-and-pharmacology/>

Oral Presentations:

Leung L, Min J. UPROOT: The delivery of a mandatory Indigenous health and cultural safety course in pharmacy. Association of Faculties of Pharmacy of Canada (AFPC) Canadian Pharmacy Education Research Conference (CPERC), Manitoba, Canada, June 14, 2023.

Min J, Leung L. An UPROOT Approach to Decolonizing Pharmacy Education. UBC Learning Circle. Vancouver, Canada, Sept 27, 2022.

https://www.youtube.com/watch?v=alfdn9Onbfg&ab_channel=UBCLearningCircle

Leung L, Min J. UPROOT – The Building and Delivery of a Mandatory Indigenous Health and Cultural Safety Course in Pharmacy. Association of Faculties of Pharmacy of Canada (AFPC) Canadian Pharmacy Education Research Conference (CPERC), Newfoundland, Canada, June 16, 2022.

Leung L. Prioritizing Reciprocity with Indigenous Partners. Association of Faculties of Pharmacy of Canada (AFPC) Virtual Canadian Pharmacy Education Research Conference (CPERC), Vancouver, Canada, June 7, 2021.

Leung L, Min J. Popular Student Activities in a UBC Indigenous Health Course. Association of Faculties of Pharmacy of Canada (AFPC) Virtual Canadian Pharmacy Education Research Conference (CPERC), Vancouver, Canada, June 7, 2021.

Min J, Leung L. Decolonizing Research. Canadian Society of Pharmaceutical Sciences, The Pharmaceutical Society of Japan and the Canadian Chapter of the Controlled Release Society Joint Symposium: Pharmaceutical Sciences in a Pandemic World (virtual conference), Vancouver, Canada, May 31, 2021.



Min J, Leung L. An Uproot Approach to Decolonizing Research. University of British Columbia Faculty of Pharmaceutical Sciences Graduate Student Seminar Series, Vancouver, Canada, Oct 23, 2020.

Poster Presentations:

Poster Presentations:

Swanson I, Leung L, Min J. Building Community-Based Medication Practices for a Self-Governing Remote Indigenous Community. Canadian Society of Pharmaceutical Sciences Symposium, Virtual, June 2, 2022.

Young E, Leung L, Min J. Perceptions of Online Community-based Student projects: Building Sustainability and Reciprocity with Indigenous Partners. Summer Student Research Program Showcase, Vancouver, Canada, Oct 14, 2021.

King B, Leung L, Min J. Indigenous Advisory Committee Member Perspectives: Principles for Success. Summer Student Research Program Showcase, Vancouver, Canada, Oct 14, 2021.

Li J, Leung L, Min J. A Two-Eyed Seeing Framework for Building Indigenous Health Courses in Pharmacy. Summer Student Research Program Showcase, Vancouver, Canada, Oct 14, 2021.

Leung L, Min J, King B. Indigenous Advisory Committee Members Perspectives: Principles for Success. University of British Columbia Faculty of Medicine 2021 Centre for Health Education Scholarship (CHES) - Celebration of Scholarship (virtual conference), Vancouver, Canada, Oct 6, 2021.

Li J, Min J, Leung L. A Better Practices Framework for Building Indigenous Health Courses. University of British Columbia Faculty of Medicine 2021 Centre for Health Education Scholarship (CHES) - Celebration of Scholarship (virtual conference), Vancouver, Canada, Oct 6, 2021.

Min J, Li J, Leung L. A two-eyed seeing framework for building Indigenous health courses in pharmacy. AFPC CPERC 2022 Abstracts – Oral and Poster Presentations. Can Pharm J (Ott) 2022;155(6):S63.

Leung L, Min J, Young E. Perceptions of Online Community-based Student Projects: Building Sustainability and Reciprocity with Indigenous Partners. AFPC CPERC 2022 Abstracts – Oral and Poster Presentations. Can Pharm J (Ott) 2022;155(6):S81.

Publications:

Fazelipour M, Leung L, Min J, Ryan T. Building practice- informed indigenous health curricula: A systematic review of pharmacy services for indigenous peoples. Curr Pharm Teach Learn. 2022 Nov;14(11):1448-1460. doi: 10.1016/j.cptl.2022.09.019.

Leung L, Min J, Medgyesi N, Soon J. An Indigenous health elective – Perspectives of pharmacy undergraduate students and alumni. Curr Pharm Teach Learn. 2022;14(5):647-654.
<https://doi.org/10.1016/j.cptl.2022.04.007>

Min J, MacNeil K, Zekic F, Leung L. Assessing Indigenous Cultural Safety Learning using Modified Reflexive Visual Arts. Innov Pharm. 2021 Jun 10;12(3):10.24926/iip.v12i3.3692. doi: 10.24926/iip.v12i3.3692