Department of Earth, Ocean, and Atmospheric Sciences - UBC Vancouver Campus

Earth Science Experiential and Indigenous Learning (EaSEIL) Initiative

Laura Lukes, Silvia Mazabel, Shandin Pete, Sarah Bean Sherman & Brett Gilley

Year 3

What is EaSEIL about?

EaSEIL is a 3-year TLEF initiative that creates spaces for instructors, students, staff, and community members to **reimagine, develop, & transform field-based experiential learning** opportunities for science & engineering students.

This **curriculum and professional development initiative** supports instructors in:

1. Respectfully incorporating Indigenous histories, perspectives, Knowledges and ways of knowing into curriculum
2. Increasing inclusion and accessibility practices in field-based learning opportunities
3. Engaging with communities to integrate interdisciplinary and systems thinking approaches into field-based activities

EaSEIL uses three models of engagement (**community of practice**, **students as partners**, **3-Tier Indigenous Engagement**) to foster intentional collaborative reflection and action amongst instructors, students, UBC support office staff, and community members.

Note: EaSEIL's work supports action on critical elements in the UBC (Strat. 2, 11, 12, 13, 14, 17), Indigenous (Actions 15 and 16), Faculty of Science and Earth, Ocean and Atmospheric Sciences Strategic Plans, & advocacy by Syilx elders (Chris Marchand, Eric Mitchell).

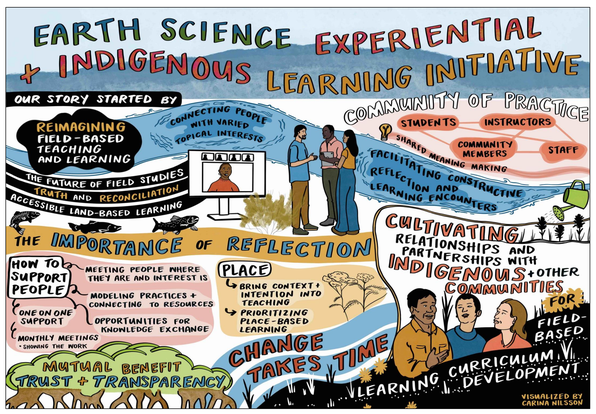


Figure 1. Visual created with Carina Nilsson about EaSEIL

Year 3: Activities, Processes, Outcomes, Impact (2024-2025)

Community of Practice Meetings (4 total) & Support

- Sharing curriculum development progress and experiences implementing plans
- Documenting changes in courses →
- Using & refining EaSEIL collaboratively produced tools and resources
- Reflecting on learning, ideas, & plans

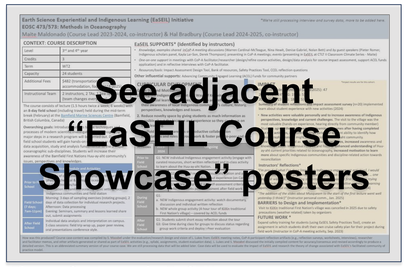


Figure 2. Example EaSEIL course case

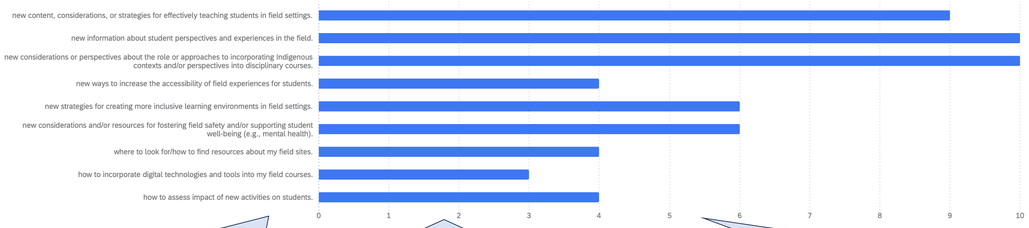
Highlights from Preliminary Impact Assessment of Community of Practice on Instructors (n=15)

Most valuable aspects of EaSEIL reported by instructors:
- Guest **speaker presentations** (100%)
- **Instructor presentations** (93%)
- Reflective **interviews with facilitator** (93%)
- Handouts (93%)
- Having instructors from **multiple disciplines** (93%)
- Personalized handouts, e.g., course case summaries (86%)
- Resources shared during/after meetings (86%)
- Whole group discussions (86%)
- Annual letters for P&T (80%)
- Small group discussions & informal conversations (80%)

Key outcomes reported by instructors:
- 40% have **new collegial relationships** with colleagues
- 67% **developed clarity** about their teaching or course development plans
- 67% modified or created **new activities or course content**
- 73% felt **students in their courses had benefitted** from their participation in EaSEIL
- 60% reported sharing about EaSEIL or EaSEIL resources with **colleagues outside of EaSEIL**
- 40% are "very likely" (and 40% "somewhat likely") to **reach out to EaSEIL partner office** for support within the next year

Time for information & knowledge exchange was seen as most valuable
followed by time for shared meaning making/production, then individual reflection/planning

From my EaSEIL experience, I have learned (check all that apply):



…**many instructors struggling with similar questions** (cost of field experiences, safety, student concerns, partnering with Indigenous peoples and how to sustain these efforts)

I learned to prepare realistically for the **time that it takes** to feel prepared to engage with Indigenous content in the classroom

A lot. It's difficult to list honestly. It really **gave me a place to focus on many ideas** I already had.

Students as Partners (8 total)

Students worked on **curricular impact assessment, knowledge mobilization, and/or research efforts**: Alexandra Dolling, Jasmin Moreno, Hudson Holdcroft, Kitt Peacock, Larissa Rocha, Morrison Tulloch, B.D. Voss, and Sophie Ma Zhu.

3-Tier Indigenous Engagement Model

S. Pete led ongoing dialogue w/potential partners near UBC-Teck Geol. Field Station.

Events (10 total)

NAGT Earth education for all

Dr. Nolan Bett & Dr. Warren Cardinal-Teague webinar w/National Association of Geoscience Teachers-PNW (Mar. 2025): "Accessibility in Field-Based Learning and Indigenous Course Revision"

Dr. Silvia Mazabel leading Owl technology for collaboration training session (Mar. 2025)

Photo by Laura Lukes (2025)

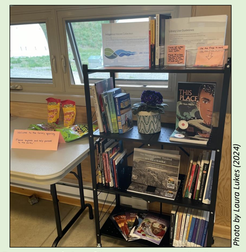


Photo by Laura Lukes (2024)

Opened **Indigenous mini-library at UBC-Teck Geological Field Station w/ X̱wi7x̱wa Library** (May 2024)

Dr. Shandin Pete talk with Skylight (Oct. 2024): "Indigenous perspectives on data, evidence, & uncertainty in science"

Dr. Caitlin Callahan talk with Skylight (May2024)

Indigenous-authored Board Game Night with X̱wi7x̱wa Library (Sept. 2024)

xʷməθkʷəy̓əm TOURS, LECTURES, PROGRAMS www.musqueam.bc.ca

2 on site Musqueam-led cultural tours to learn more about history, culture & priorities (Apr. 2024, Oct. 2024)

2 Visits to UBC-Teck Geological Field Station (& area) during EOSC328 and CONS451 to support new course/ station initiatives and foster instructor dialogue about teaching in field settings (May 2024, Oct. 2024) →

Photo by Laura Lukes (2024)

& Additional Dissemination

EaSEIL-leader led: 1 paper on Students as Partners Model (*in review*); 2 posters (Earth Educator Rendezvous, July 2024) & 1 talk (American Geophysical Union, Dec. 2024) about curr. dev. tools
EaSEIL instructor-led: 1 book chapter (Hewitt+); 1 poster (Scoates+)

Future Work & Supporting Sustainability

- Additional evaluation of Community of Practice (e.g., partners)
- Research (e.g., Theory of change/Community of Practice model) & Scholarship of Teaching and Learning

Sustainability through open-access lessons learned & produced tools
- Create findable open-access collection of curriculum development tools and resources produced through EaSEIL initiative
- Launch EaSEIL website with archive of materials & resource links
- Scholarship of Teaching and Learning: some EaSEIL instructors working towards producing presentations and publications about their curriculum development efforts

Sustainability through networked community
- Some collaborations between UBC support office partners & instructors
- Ongoing unfacilitated community of practice meetings?

Community of Practice Instructors: Roger Beckie[c], Nolan Bett[c], Hal Bradbury[e], Warren Cardinal-McTeague[c], Mitch D'Arcy[a], Jaclyn Dee[a], Denise Gabriel[c], Brett Gilley[c], Lee Groat[c], Lindsey Heagy[c], Nina Hewitt[c], Ken Hickey[c], Tara Ivanochko[c], Suzie Lavallee[a], Michael Lipsen[d], Maite Maldonado[c], Saoirse MacKinnon[d], Scott McDougall[b], Craig Nichol[d], Simon Peacock[c], Shandin Pete[c], Lucy Porrit[c], Joel Saylor[c], James Scoates[c], Abel Rosado Rey[a], Matt Tarling[e], Tonia Welch[d], Jason Yeung[c], Jason Young[e] *Note: a (2022-2023 ; b (2022-2024); c (2022-2025); d (2023-2025); e (2024-2025)*

Community of Practice UBC Support Office Partners: Ashley Welsh[c] *(Skylight & CTLT);* Bruce Moghtader[c] *(CCEL);* Janey Lew[c] *(CTLT Indigenous Initiatives);* Kayla Lar-Son[d] and Karleen Delaurier-Lyle[f] (*X̱wi7x̱wa Library*); Lindsay Nelson[c] *(EOAS Facilities);* Lerato Chondoma[b] and Sam Filipenko[d] *(IRSI); Sandra Fox*[a] *(Indigenous Community Liaison UBC-O)*; and Manuel Dias[c] *(Skylight) Note: a (2022-2023); b (2022-2024); c (2022-2025); d (2023-2025); f (2023-2024)*

Acknowledgements: The work leading to this document primarily takes place on the traditional, ancestral, and unceded territory of the xʷməθkʷəy̓əm (Musqueam) at UBCPoint Grey campus in what today is called Vancouver, Canada. The authors acknowledge the connection that Musqueam have had over time with the lands and waters throughout their territory as essential to their culture, knowledges, ways of being and practices, as well as a source for teaching and learning.
We appreciate the financial support for this project provided by UBC students via the Teaching and Learning Enhancement Fund, EOAS Department, ACEL & CCEL Fellow Programs, Skylight Development Grant, UBC Work Learn Program, UBC Science Strategic Innovation Fund, X̱wi7x̱wa Library book donation.