

Earth Science Experiential and Indigenous Learning (EaSEIL) Initiative

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

What is EaSEIL about?

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

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

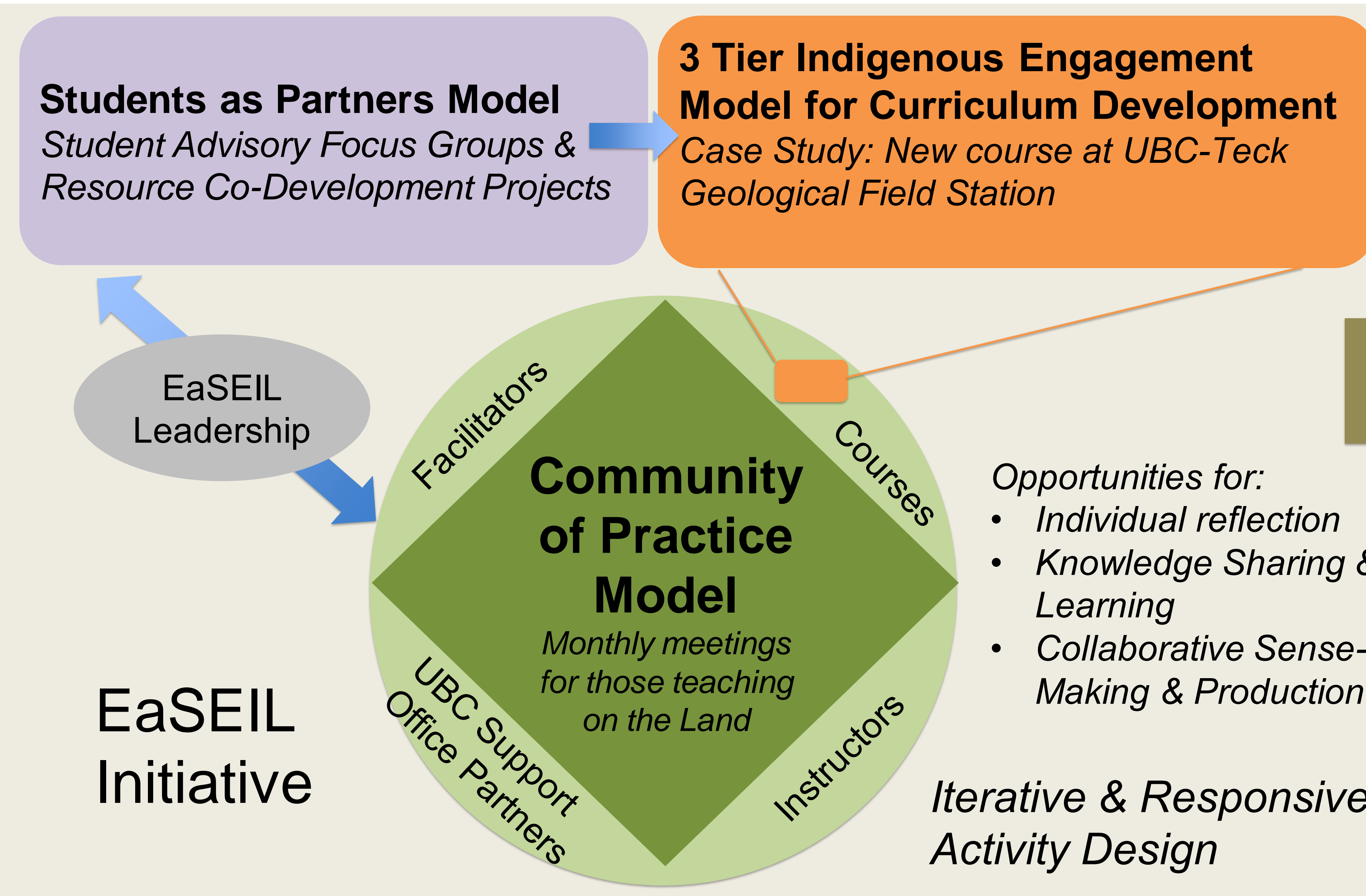
1. Respectfully incorporating Indigenous histories, perspectives, Knowledges and ways of knowing into curriculum
2. Increasing inclusion and accessibility practices in field-based learning opportunities
3. Engaging with the community to integrate interdisciplinary and systems thinking approaches into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

EaSEIL's work supports action on critical elements in the UBC (Strat. 2, 11, 12, 13, 14, 17), Indigenous (Actions 15 and 16), FoS and EOAS Strategic Plans, and advocacy by Syilx elders (Chris Marchand, Eric Mitchell).

Activities, Processes, Outcomes, Impact (2022-2024)

How do we work?

To accomplish our goals, we use **three models of engagement** to foster **intentional collaborative reflection and action** amongst instructors, students, UBC partnering offices and community members:



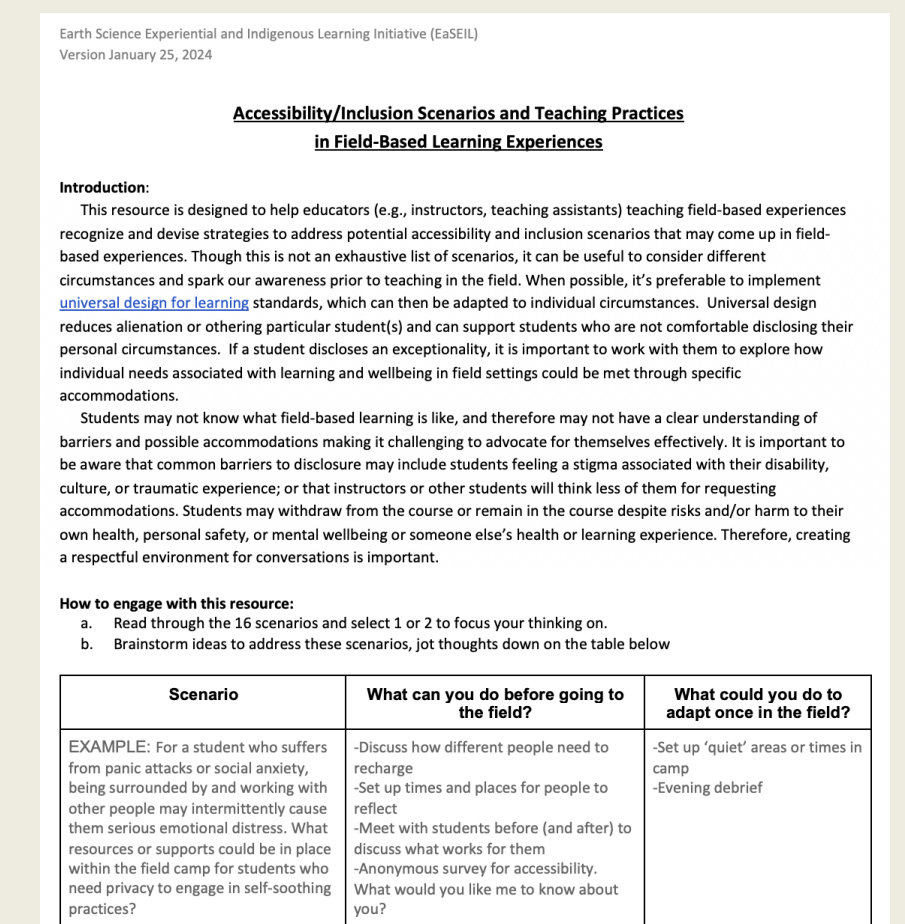
NOTE: EaSEIL is also engaged in research on the efficacy of the Community of Practice and Students as Partners Models

Engaging Beyond UBC: Workshops

- AGU (Jan. 2024). *Taking Students into the Field: Strategies for Creating Inclusive Field-Based Learning Environments*
- POD Conference (Nov. 2023). *Fostering Cultural and Curricular Change through Communities of Practice Models*
- X-DBER Conference (Apr. 2023). *Positionality Statements: Fostering Inclusion in the Classroom and Transparency in STEM Educational Research*

Resources for Students, Instructors, Faculty and Curriculum Developers, Researchers

- Self-Advocacy Guide for Students with Disabilities at UBC*
- Field-Based Learning Objectives Course Planning Tool
- Teaching in Field Settings Scenario Reflection Tool
- Guide: Teaching Practices for Accessibility & Inclusion in the Field
- Guide: Supporting Students with Disabilities*
- Guide: Safety Practices for Teaching and Learning in Field Settings
- Customizable Impact Assessment Tool
- List of Digital Tools/Technology for Field Teaching and Learning
- Actions & Reflections Tool
- Feedback Surveys
- Goals, Plans, Actions Tracking Tool
- Teaching Beliefs Reflection Questionnaires
- Reflective Teaching Practice Interview
- Pedagogical Coaching Protocols
- ...and others.



Students as Partners

Students as Resource Developers

9 students (8 UG; 1 grad)
~14 projects (e.g., Accessibility Guides for Instructors and Students, UBC-Teck Geological Field Station Virtual Tour and EaSEIL initiative website draft)

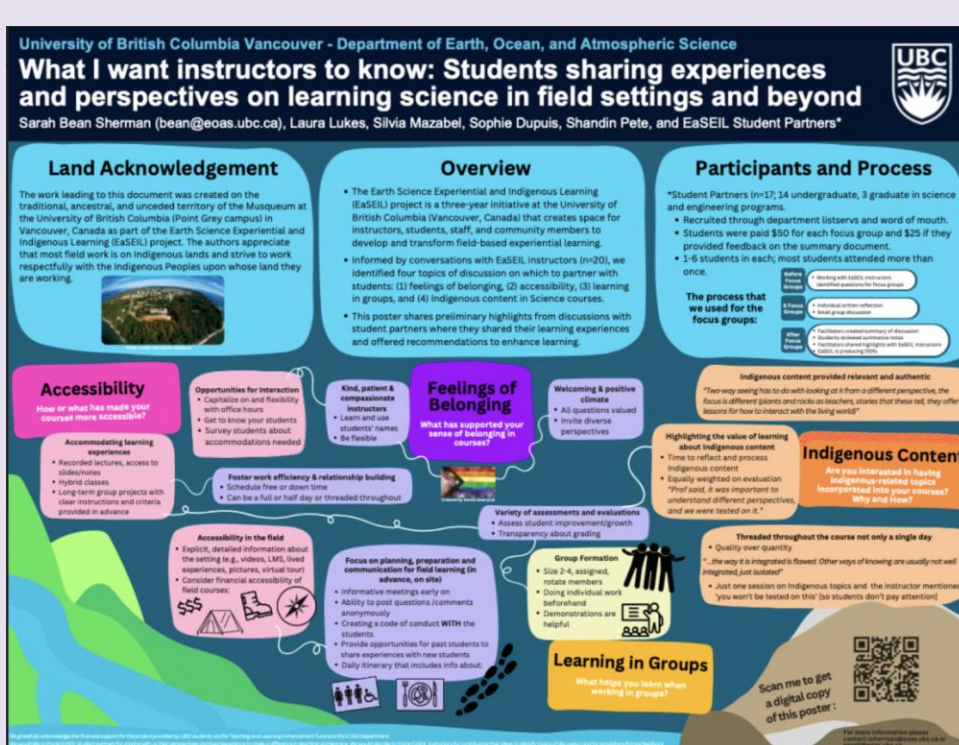


Students as Advisors

Y1: Focus groups - 3 Grad & 14 UG students (Science, Forestry, Engineering); UAA/GAA compensation.

Topics: Inclusion, Accessibility, Indigenous Content, Group Work

Y2 Translating focus group data into an OER: "What I want my science instructors to know: Students sharing experiences and perspectives on learning science in field settings and beyond"



Sherman et al. (2023). Poster Earth Educators' Rendezvous

Community of Practice

- 2 orientation meetings plus 16 hybrid meetings
- 26 instructors (EOAS, Geography, Forestry, Mining Engineering, Botany & ISCI)
- 9 optional events for faculty, students and staff
- Curricular changes in at least 9 courses

Topics of Discussion

- Field-Based Learning Competencies and Professionalism
- Ethics of Field Teaching and Learning
- Accessibility, Inclusion and Safety
- Digital Tools and Technology
- Indigenous Sovereignty and Knowledge Keeping Protocols
- Engaging with Indigenous Communities, Content, Context
- Assessing Impact of Curricular Changes

Enhanced collaborations with partners



3 Tier Indigenous Engagement



• 6 students (UG/G)
Conversations about potential course content, pedagogical approaches and desired student experiences.

• Event I (8 students-UG/G); 3 staff; 7 faculty
Expand on Tier 1 feedback and questions

Draft Syllabus #1

• Event II (11 students-UG/G); 6 staff; 6 faculty
Revisit initial questions about course format, content, expectations, and desired outcomes

Draft Syllabus #2

Tier 1 and Tier 2 Recommendations

- Integration of Indigenous Knowledge
- Promoting Equity and Inclusion
- Fostering Community Partnerships
- Ensuring Cultural Safety and Respect
- Embracing Interdisciplinary Approaches
- Upholding Research Ethics and Governance
- Broadening Access and Representation

UBC Partners: Ashley Welsh^{ab} (Skylight & CTLT); Bruce Moghtader^{ab} (CCEL); Janey Lew^{ab} (CTLT Indigenous Initiatives); Kayla Lar-Son^b and Karleen Delaurier-Lyle^b (Xwi7xwa Library); Lindsay Nelson^{ab} (EOAS Facilities); Lerato Chondoma^{ab} and Sam Filipenko^b (IRSJ); Sandra Fox^a (Indigenous Community Liaison UBC-O); and Manuel Dias^{ab} (Skylight)

Community of Practice Instructors: Roger Beckie^{ab}, Nolan Bett^{ab}, Warren Cardinal-McTeague^{ab}, Mitch D'Arcy^a, Jaclyn Dee^a, Denise Gabriel^{ab}, Brett Gilley^{ab}, Lee Groat^{ab}, Lindsey Heagy^{ab}, Nina Hewitt^{ab}, Ken Hickey^{ab}, Tara Ivanochko^{ab}, Suzie Lavallee^a, Michael Lipsen^b, Craig Nichol^b, Maite Maldonado^{ab}, Saoirse MacKinnon^b, Scott McDougall^{ab}, Simon Peacock^{ab}, Lucy Porritt^{ab}, Joel Saylor^{ab}, James Scoates^{ab}, Shandin Pete^{ab}, Abel Rosado Rey^a, Tonia Welch^b, Jason Yeung^{ab}

Note: a (2022-2023); b (2023-2024); ab (2022-2024)

Research and Knowledge Mobilization Efforts

1. Pete, S. et al. (2023). Design and Implementation: A 3-Tiered Model for Engaging with Indigenous Communities in Academic Scholarship, *AGU Fall Meeting*.
2. Fitz-Gerald, W. et al. (2023). Developing a Reflection Toolkit to Empower Current and Future Researchers in Responsible Action Towards Indigenous Reconciliation in Science, *AGU Fall Meeting*.
3. Lukes, L. et al. (2023). Designing a collaborative faculty-student mentoring model in a large, complex science curriculum development team project. *New Directions for Teaching and Learning*, 175, Special Issue: *Nurturing the faculty-student mentoring dynamic in higher Education*, 61-70.
4. Rocha, L. et al. (2023). Impact of an advisory role students-as-partners model in a field-based science learning curriculum development initiative. *Poster GSA, Pittsburgh*.
5. Mazabel, S., et al. (2022). Multiple views, multiple experiences: Integrating Indigenous perspectives in science field-based education courses. *Poster Turtle Island Conference, Manitoba*.
6. Lukes, L. et al. (2022). Developing an initial theory of change for the Earth Science Experiential and Indigenous Learning (EaSEIL) project, a faculty and curriculum development project. *GSA, Denver*.