

2025 Science Education Open House: Poster Session / Show & Tell
April 10 2025, 1-2:30 PM

#		Title	Authors	Descriptions
1	table	Study Buddy Learning is Associated with Academic Success in Undergraduate Science Courses	Eden Fussner-Dupas, Warren Williams, James Enns, Patrice Belleville, Bowen Hui, Veronica Dudarev, Gabrielle Reznik, Achol Jones	Show and tell overview of the study buddy project. Learners do better in courses when they are intentionally paired after the first major assessment in a course. We find evidence that both above and below average students benefit when they participate in a learning-by-teaching partnership. We have a manual matching system that is now available for broad use at UBC.
2	table	Ask me Anything with a Paired Teaching Pair	Brett Gilley, Matthew Tarling	We will have a table with a few chairs; people can sit down and ask us questions about our experiences with paired teaching.
3	table	Using a Table Top Role-Playing Game Assignment to Enhance Student Learning	Dave Ng, Allen Sens, Lauryn Rohde, Jennifer Luu, Matthew Langley, Shandin Pete	Does the use of table-top Role-Playing Games (ttRPG) enhance the student learning experience and the achievement of course learning outcomes? Our case study and survey results are drawn from our use of a ttRPG in our second year, team-taught, interdisciplinary course on “Global Issues in the Arts and Sciences”, which integrates climate change and human genomics concepts across the social sciences and humanities and the physical and life sciences.
4	table	Game-Based Learning for Climate Change Education: Using Daybreak as a Teaching Tool for Sustainability Competencies Learning & Self-Reflection	Matthew Langley, David Ng, Kshamta Hunter, Laurel Schut, Kate Thompson, Tamara Van Woezik	Game-based learning is a motivating teaching method where students engage with systems thinking and decision making in a fun, low-stakes environment. Together with collaborators at UBC and beyond, we are investigating how playing the cooperative climate change board game 'Daybreak' affects students' sense of eco-anxiety and agency in the face of climate crisis, and the value of play in developing the sustainability competencies that enable students to take effective and enduring action.
5	table	StatEngage: A Canvas Module for Self-learning Applied Statistics	Kenny Chiu, Joey Hotz, Biljana Jonoska Stojkova	Important skills in applied statistics include formulating statistical problems from research objectives and selecting appropriate methodologies. We developed a Canvas module in which learners self-learn these skills by playing the role of a statistical consultant in a simulated client meeting. An initial version of this module was piloted and evaluated in STAT 450.
6	table	Enhancing Understanding of Bayes' Theorem: Interactive App-Based Learning in STAT 251	Rachel Lobay, Lasantha Premarathna, Flexible Learning in Statistics Team	Bayes' Theorem is a challenge for students to understand when they are introduced to it in an undergraduate statistics course, and many students rely on the formula without understanding its underlying principles. To foster student understanding and engagement, we developed an interactive Bayes' Theorem application that takes a more visual approach and uses a unique Raincoover example. The app gives gentle, guided practice, enabling students to work through problems step-by-step in a low-stakes environment to build understanding so that they can confidently tackle Bayes' Theorem questions on their own.
7	table	Autograded python assignments in math	Katie Faulkner, Patrick Walls	We will demonstrate aspects of our python assignment system, including student and instructor workflows.

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8	wall	Earth Science Experiential and Indigenous Learning Initiative: Year 3	Laura Lukes, Silvia Mazabel, Shandin Pete, Bean Sherman, Brett Gilley	Here we provide an overview of a 3 year curriculum and faculty development initiative centred on reimagining how we teach science and engineering courses on the Land. The initiative broadly aims to provide students with more accessible and inclusive experiential field-based learning opportunities that incorporate community-engaged approaches and Indigenous perspectives, histories, and Ways of Knowing, and/or Knowledges.
9	wall	EaSEIL Showcase: Developing Field-Based Experiential Learning Opportunities for Students in Science and Engineering Courses at UBC	R. Beckie, N. Bett, H. Bradbury, W. Cardinal-McTeague, M. D'Arcy, B. Eaton, D. Gabriel, B. Gilley, L. Groat, N. Hewitt, K. Hickey, T. Ivanochko, S. Lavallee, M. Lipsen, S. MacKinnon, M. Maldonado, S. McDougall, S. Peacock, S. Pete, L. Porrit, M. Tarling, J. Saylor, J. Scoates, J. Yeung, J. Young	This display will consist of a collection of mini-poster summaries of curricular development efforts by instructors in science and engineering courses at UBC as part of the Earth Science Experiential and Indigenous Learning (EaSEIL) initiative. Curricular change efforts are centred on creating or enhancing field-based experiential learning opportunities for students.
10	wall	Queering plants: imagining plant biology courses as liberatory spaces for queer, trans, and gender non-conforming students	Drew Hall, Christine Goedhart, Lacey Samuels	Plant biology is full of sexed and gendered language, but plants are anything but binary in contrast to the dominant narrative of cisheteronormativity that pervades society and science. This proposed research aims to understand how queer biology undergrads experience curricula of plant sexual reproduction in relation to their own identity formations, and to collaboratively imagine with students the ways that plants can be a site for exploring the fundamental queerness of biology: its messiness, subversiveness, and refusal to fit into boxes.
11	wall	Integrating Equity, Diversity, Inclusion, and Decolonization in Undergraduate Life Science Curricula	Achol Jones, Charanpreet Mahal	
12	wall	"Micro-comics" Narrative Learning in Microbiology	Karen Smith, Kabir Bhalla, Craig Kornak, Kirsty McIntyre, Evelyn Sun	Narrative-based learning has become a valuable tool in STEM education, helping students tackle complex scientific concepts, connect with the natural world, and make science more accessible (Hadzigeorgiou & Schulz, 2019; Rostek, 2020). In MICB 211, we developed bacterial and human-centric storylines and characters to bring these concepts to life in a way that was accessible, representative, and engaging.
13	wall	Introducing the Data Science Major!	Cinda Heeren, Firas Moosvi, Katie Burak, Meghan Allen, Stephan Koenig, Tiffany Timbers	We are excited to share details of the Data Science major which will accept its first cohort of second-year students for September, 2025.

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14	wall	Specifications Grading to Assess a Course-based Undergraduate Research Experience in Molecular Microbiology	David Oliver, Marcia Graves	A specifications grading approach to CURE assessment has been developed and implemented. Student perceptions of the assessment model will be presented.
15	wall	Computer Science Teaching Development Program	Meghan Allen, Gautam Luhana	We will share details of the CS Teaching Development Program that we launched this year and hope to learn from those who run similar programs or courses across Science.
16	wall	Exploring the Relationship Between Teacher Discourse Moves and Student Engagement, Belonging, and Trust in Introductory Biology	Jacquelina N. DaSilva, Nikita Li, Blaire J. Steinwand, Jaclyn J. Stewart	
17	wall	Redesigning Data Science Curriculum through Collaborative Input	Kirsty McIntyre	
18	wall	Exploring Instructor Implementations and Experiences with Alternative Grading Practices at the University of British Columbia	Serene Rodrigues, Marina Milner-Bolotin, Firas Moosvi	We've conducted a phenomenographic research study of instructor experiences across several disciplines that have implemented alternative grading practices in their classrooms at The University of British Columbia. This poster shows preliminary results and methods of this study.
19	wall	Developing field learning experiences in partnership with students	Dr. Laura Lukes, Alexandra Dolling	This poster describes a collaboration using a co-developer Students as Partners model, that resulted in the creation of a field-based paleontology learning experience. Instructor and student perspectives on the model's impact are discussed, and lessons learned from this partnership are shared.
20	wall	A Gen-AI Approach for Advancing Assessment and Constructive Feedback	Maryam R.Aliabadi, Harshinee Sriram, Arman Moztarzadeh	We present GeniLearn: a Gen-AI-based approach to autograding fill-in-the-blank, short- and long-answer questions. We integrated this support into the PrairieLearn platform and found that it significantly enhances grading accuracy in various dimensions: it achieves 99% accuracy for fill-in-the-blank questions (up from the initial 39%) and maintains 98% accuracy for short and long textual answers. Beyond accuracy, GeniLearn allows for awarding partial credit on short- and long-answer questions, allowing for more nuanced evaluation of student understanding.
21	wall	Student Perspectives on Field Based Offerings in the Geological Engineering Program	Jason Yeung	This will be a traditional poster (48" x 36") sharing results from a survey sent out to geological engineering students asking for their perspectives on their interests, desires, and preferences for field experiences offered in the Geological Engineering program. Results from the survey are being used as reference for curricular design

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22	wall	Is Tori Seeing Red? Our Activity That De-simplifies Undergraduate Genetics	Ahmad Mohammed Kamal, Si-ah Choi, Aoniya Colynn, Ashleigh Wood, Pamela Kalas	To challenge genetic essentialist beliefs often reinforced by black-and-white pedigree symbols, we developed an in-class activity on protanopia (a form of red CVD) that highlights real-life nuances. We will be presenting a poster that explains our activity, shares student and faculty feedback, and invites colleagues to provide us with further insight and maybe try out the activity in their own classes!
23	wall	Assessing the Influence of ChatGPT on Student Outcomes in a Models of Computing Course	Inaki Blasco, Karina Mochetti	This study investigates the impact of ChatGPT on student performance in a Models of Computing course, foundational for the computer science major. Analysing data from 11 pre-lecture quizzes across four terms, we found a decline in average quiz scores, particularly in the latest term. The results suggest a correlation between increased reliance on ChatGPT and decreased student performance, especially on challenging questions where the AI frequently struggled. These findings highlight both the benefits and challenges of integrating AI in education. Our ongoing research aims to explore this further across multiple courses, ultimately promoting responsible AI use to enhance learning outcomes.
24	wall	Is Tori seeing red? Reimagining Pedigrees in Undergraduate Education	Ahmad Mohammed Kamal, Si-ah Choi, Aoniya Colynn, Ashleigh Wood, Pamela Kalas	
25	wall	TA Experiences Using Plom for Online Grading in Biology	Jessica Li, Angie O'Neill	We created an anonymous feedback survey for TAs in the Biology Program who have recently graded exams using Plom, an online grading tool developed by the UBC Math Team. Most TAs responded that they preferred grading online using Plom compared to grading paper exams or to using SpeedGrader, and in this poster, we present their reasons for this preference.
26	wall	Transforming a physics course through a multilevel partnerships approach	Adele Ruosi, Mike Hasinoff, Marina Litisnkaya, Guy Leckenby, Elizabeth Belskiy, Tyler Wilson, Megan Bingham, Riku Mizuta, Manuel Diaz	This study explores the process of integrating diverse knowledge and perspectives from two undergraduate and two graduate students, a staff member, two educational developers, and two instructors to transform an introductory physics course for 1,000 engineering students. Grounded in scholarly research, including student-centered active learning frameworks, universal design for learning, and principles of inclusive teaching, this project leveraged the unique perspectives of students who had previously taken the course and were serving as teaching assistants. Their dual role as learners and facilitators ensured that the content created and the pedagogies adopted were aligned with the students' learning needs and experiences. All partners contributed to the entire process, from the intellectual direction of the design to content co-production and data collection and analysis and every partner experienced personal growth that extended beyond the course design. This multilevel partnership model addressed long-standing issues such as difficulties with understanding electromagnetism concepts, student engagement, and attendance. Evaluations using the Brief Electricity and Magnetism Assessment, student surveys, and focus groups revealed significant improvements.

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27	<i>wall</i>	Botanical Learning 92 Ways: Impacts of Course Transformation Under the UDL Framework	Jaclyn Dee, Margot Gunning, Natasha Pestonji-Dixon, Christine Goedhart	Examine student responses to course revisions intended to provide more choice, to make the course content more accessible to all, and to enhance group work dynamics.
28	<i>wall</i>	Math 100 Open Textbook for a Redesigned Course	Kelly Paton, Elyse Yeager	We created a single source of information for Math 100 that could be shared widely amongst faculty, TAs, and students, with clear learning objectives and all content clearly marked for relevance. The textbook is hosted on a public website; easily updateable; free; and follows UDL principles. We have a poster, and QR codes for looking at the textbook.