Teaching Symposium Abstracts

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UC SANTA CRUZ | Teaching & Learning Center

POSTERS

Experiential Learning & Scientific Inquiry in Latin American & Latino Studies

Author: Lily Balloffet

Abstract: LALS183 "Ecologías Hemisféricas" / "Hemispheric Ecologies" is a course that links the guiding theoretical frameworks and conceptual pillars of Latin American & Latino Studies (LALS) to the way we see and interpret beyond-human worlds/ecologies of the American hemisphere. I designed this course to center on experiential learning opportunities intended to deepen students' connection to place in the physical ecological sense, and a cornerstone of the course is the creation of Natural History Field Journals. The course is taught in Spanish, and provides a welcoming and inclusive learning space for a range of linguistic fluencies - from heritage speakers, students who are learning Spanish through college coursework, and native speakers. I personally designed and translated materials to create a tailored Spanish-language textbook for LALS183 that supports a pedagogical environment focused on a dialogic, student-centered structure of class meetings, while simultaneously meeting the key requirements of a "Scientific Inquiry" (SI) G.E. Over the course of the quarter, this combination of intentional engagement with our surrounding natural environments and ongoing activities/conversations that build community among course participants has served as an invitation to feel "at home" - a sense of belonging in the particular ecosystems that surround us in Santa Cruz, and a keen sense of camaraderie in a multilingual classroom.

Creating Belonging in the Classroom

Author: Lindsay Knisely

Abstract: This poster will include information on why belonging matters in higher education and offer instructors methods for designing belonging into the college classroom. The poster will describe elements of belonging and emphasize the importance of creating a sense of belonging in college courses. For example, instructors can address common student concerns through belonging interventions, which will be described on the poster.

Research-supported techniques for fostering belonging by creating a community of care in the classroom will be described. Research has shown that increasing students' sense of belonging builds equity and improves student success, confidence, and retention; this research will be highlighted on the poster. This poster will also offer practical ideas for increasing students' sense of belonging by using collaborative exercises, classroom activities, and reflective writing prompts. Several different interventions to build belonging will be presented, including an assignment for students to create video recommendations for incoming first-years, a hybrid activity to help students name and navigate impostor syndrome, and a think-pair-share exercise in which students are asked to reflect on their adjustment process. Attendees will be given access to a shared folder of in-class activities designed to foster belonging, as well as an introduction to current research on belonging from sources such as Wise's Design For Belonging, Felten & Holden's Relationship-Rich Education, and Walton and Cohen's work.

Creative Technologies: Envisioning and Building for the Future

Author: Dorothy Santos

Abstract: Over the past few years, the Creative Technologies program has been developed through countless conversations, ongoing dialogue, and bringing together artist-scholars and technologists to build a program that has never existed in the UC systems. During this poster presentation, I will focus on the program structure, the course learning outcomes for the courses I have taught and plan on teaching, and the pedagogical approaches I have learned and implemented as a teaching professor focused on art, justice, and digital media. I will also share how I encourage students to learn, develop, adapt, and strengthen their research practices and how this informs their creative processes.

Redefining Knowledge During AI Upheaval – Changing Learning Model Instead of Stricter Surveillance

Author: Somreeta Paul

Abstract: As instructors, we are finding that traditional essay assignments no longer work the way they used to. With easy access to generative AI tools, students can now produce fluent essays without engaging deeply with the reading, the argument, or the writing process itself. For many of us, this has made take-home essays feel frustrating and, at times, pedagogically pointless. My presentation starts from that shared experience and asks a practical question: if students are outsourcing the writing, what should we change about how we teach and assess learning? Rather than focusing on stricter surveillance or punishment, I look at how teaching practices can shift to what we actually want students to learn. It explores why essays are especially vulnerable to AI use and how that vulnerability reveals problems that existed long before AI. For example, overemphasis on accuracy and an underemphasis on thinking and reflection. From there, I will share concrete strategies that I have done previously in classrooms or want to do in the future. For example, breaking writing into smaller, visible steps, using in-class writing and discussion, oral presentation, and assigning reflective or experiential work that connects writing to lived experience. I also discuss ways AI can be used intentionally as a tool for comparison, critique, or revision without letting it replace student thinking. Banning AI at this stage is next to impossible, but what can be done is to design assignments where relying on it alone simply won't work. Ultimately, I argue that AI forces us to get clearer about why we assign writing in the first place. By shifting attention from finished essays to critical thinking, we as instructors can create assignments that are harder to outsource and more meaningful for students.

AI Policy as Pedagogy: What Happens When You Let Students Choose the Rules

Author: Lauren Lyons

Abstract: Generative AI has provoked intense anxiety and disagreement in higher education. Some warn of the death of the college essay and ban use outright, while others openly embrace the use of AI in their classrooms. This project proposes a different approach: shifting the question of AI policy from instructor enforcement to student deliberation. In an undergraduate philosophy course, students collectively determined the boundaries of acceptable AI use for core writing assignments through structured, collaborative deliberative activity. Students were first asked to reflect on the purposes of academic writing—developing arguments, revising drafts, and cultivating independent thought—and to consider how different uses of AI might support or undermine those goals. The class examined common AI practices such as brainstorming, outlining, editing, and prose generation, and then evaluated multiple policy models, ranging from unrestricted use to a complete ban. Finally, students voted on a AI policy for the course. The outcome of the deliberative process challenges prevailing assumptions about student preferences. Students overwhelmingly endorsed a restrictive policy, allowing AI only for mechanical tasks such as grammar, clarity, and formatting, while prohibiting its use for generating ideas, arguments, or prose. They also supported limiting use to publicly available models rather than paid premium tools. I am interested in how democratic, collaborative policy-making functions as pedagogy rather than mere governance. By engaging students in deliberation, this approach cultivates critical AI literacy, clarifies the values at stake in academic work, and generates durable buy-in for norms that are difficult to enforce.

Educators Empower Older Adult Learners to Become Lifelong Learners Through Use of Digital Tools & Frameworks

Author: Van Phan

Abstract: As rapid technological change reshapes industries and workforce expectations, educators have a rare privilege—to rethink how learning is designed, delivered, and experienced. This proposal advocates a strength-based, learner-centered approach that leverages frameworks to empower neurodivergent learners to build resilience, agency, and adaptability.

At the core is character: fostering a culture of growth, curiosity, and trust. By cultivating psychological safety, learners are encouraged to experiment, ask questions, and engage in productive struggle. In an era shaped by AI and the creator economy, adaptability, critical thinking, and self-efficacy matter more than rote knowledge. A strength-based model reframes learners not by limitations, but by transferable skills, lived experience, and creative potential—while redefining educators as facilitators of "aha" moments.

Transformation also requires systems that reduce cognitive overload and accelerate learning. Project-based experiences increase relevance and motivation, while scaffolded resources support self-paced exploration and agency.
Digital tools such as Zoom, Discord, and AI-powered systems automate and extend learning—freeing educators to focus on mentorship, feedback, and human connection.

By aligning character, systems, and practice, educators can reduce friction, increase accessibility, and empower learner's agency, producing confident, curious learners equipped to thrive in an uncertain and rapidly evolving world.

Evaluating Student Learning Outcomes Across Three Teaching Modalities Using the Same Set of Flipped Classroom Materials

Author: Anne Sizemore

Abstract: During the 2020-2021 academic year, two colleagues and I developed a shared set of flipped classroom materials for General Chemistry I & II, with each of us contributing one-third of the course content. The course materials were designed to be versatile and applicable to each modality offered: online, hybrid, and traditional face-to-face. This collaborative framework created a natural experiment, allowing us to measure the effects of course modality on student learning outcomes while controlling for instructor influence within the same term. Student performance was evaluated quantitatively by comparing exam grades, and student perceptions were evaluated qualitatively using student survey data. There was no statistically significant difference in exam grades between modalities in both General Chemistry I and II, although students generally preferred hybrid and traditional courses over those delivered fully online.

Optimizing Learning Outcomes in a Compressed Upper-Division Electronics Course

Author: Nathan Ellis

Abstract: “ECE-101: Introduction to Electronic Circuits” is a critical first upper-division course for Electrical, Computer, and Robotics Engineering majors at UC Santa Cruz. The course is highly impacted, covering a full semester’s content in just ten weeks (or five weeks during summer sessions), leaving limited time for student reflection and consolidation. This compressed schedule is frequently cited as a significant factor contributing to extended time-to-degree (up to one year delay), particularly when misaligned with courses offered in subsequent quarters. With a relatively high failure rate, it regularly sees a waitlist of 50+ students each quarter.

There is ongoing discussion regarding a move to split ECE-101 into two courses, mirroring the approach at other University of California campuses. However, degree credit constraints preclude reducing content per course without impacting other degree objectives. Consequently, there has been redoubled effort on optimizing learning within the existing ten-week format.

This study presents data on implementing low-stakes reassessment opportunities, designed to improve overall learning outcomes while remaining cognizant of TA and grader workload constraints. Early results, including student engagement and performance trends, are summarized. Feedback and collaborative discussion on strategies to enhance learning in high-impact, compressed courses are welcome.

Any Questions? A Small Change Amplifies Post-Presentation Voices

Author: Katie Monsen

Abstract: After students give presentations in class, e.g., on case studies or literature reviews, I ask the class if anyone has any questions and am often met with quiet, maybe with a hand raised by a student who frequently contributes. However, asking questions of a speaker is an important skill and one I want my students to practice, even as it means getting out of one's comfort zone. Over the past year I have made a small change that has had a big impact. Before the presentations for the day begin, I divide the class quickly into groups of 3-4. Then I assign each group to one of the upcoming presentations. After the presentation, I give the group time to check in with each other and come up with 1-2 questions to ask. This has greatly changed the post-presentation atmosphere and opened up so many more questions from the class. I will share quotes from students on how this change has impacted their relationship with asking questions of speakers.

Tiny House Design Lab

Author: Thomas Rettenwender

Abstract: The Tiny House Design Lab is an immersive, multidisciplinary course that transforms students from passive learners into proactive problem-solvers. At its core, the program is a direct response to the modern housing affordability crisis, empowering participants to bypass traditional barriers to homeownership through the design and construction of Tiny Houses on Wheels (THOWs).

Rather than viewing a home as a mere collection of walls, the curriculum emphasizes wholistic systems thinking. Students analyze how social, economic, and environmental systems intersect. You won't just learn where to place a window; you will explore how that window affects thermal mass, psychological well-being, and energy autonomy. The course pushes the boundaries of sustainable design innovation, challenging students to integrate reclaimed materials, off-grid utilities, and high-efficiency spatial layouts that minimize a dweller's ecological footprint.

The lab is divided into two primary phases: Design & Theory: Utilizing CAD software and physical modeling to iterate on floor plans that maximize every square inch. The Build: A high-energy, hands-on skills building phase where students master framing, roofing, electrical wiring, and plumbing. Central to this experience is teamwork. Building a mobile dwelling requires intense coordination, communication, and collective grit. Students operate as a design-build firm, navigating the complexities of construction schedules and material logistics.

The "Tiny House Design Lab" is more than a design or construction class; it is a laboratory for housing access. By the end of the semester, students emerge not only with technical proficiency but with a deep understanding of zoning laws, minimalist living, and the power of incremental housing. This course equips the next generation of designers and advocates with the tools to take proactive action, proving that dignified, sustainable living is achievable through intentional design and community effort.

Supporting Success in STEM: How Peer Mentorship and Professional Development Improve Retention for First-Generation, Low-Income Students

Author: Emilia Cline Arellano

Abstract: The Resilient Achievers In Community for Empowerment in STEM (RAICES) is a cohort program that seeks to increase support and retention among first-generation, low-income 2nd year or 1st year transfer students who are majoring in STEM. Data indicates attrition for EOP STEM students during student's declaration year (IRAPS 2013 - 2023). This targeted population undergoes key deadlines in the 2nd year, including the major declaration deadline, where first-generation low income students are disproportionately more likely in need of filing a major appeal due to not meeting major qualification requirements (Infoview Historic Data 2013 - 2025 PBSci, Infoview Historic Data 2013 - 2025 Baskin).

To support students through these key academic deadlines and increase retention, the RAICES program offers students peer mentoring and curriculum focused on professional development. Participants are paired with a peer mentor and meet bi-weekly to build academic skills, community, and increase confidence in STEM as research supports peer mentorship as a key part of retention by improving student learning outcomes (Pilot, Surprise, et al., 2023). The RAICES program also includes the development of social and cultural capital for EOP students within STEM as a means to increase retention (Allen-McCombs, 2022). RAICES provides a structured curriculum that focuses on building social and cultural capital to provide access to high-impact opportunities such as research positions and internships. Early indicators from participants showed 70% of participants felt they had learned something new in how to prepare for STEM career opportunities and 44% of student participants had already increased their applications to research and internships positions at the halfway point of the program (RAICES Mid-Year Assessment 2026).

Card-based Approaches to Collaborative Learning

Author: James Read

Abstract: Teaching in the humanities often involves encouraging norms of thought, discussion and disagreement that are best inculcated through practice rather than theory. In philosophy, as a discipline, training for best practices in thought and reasoning has had a communal, participatory and ultimately inclusive component to it. The Socratic Method decentralizes authority by inviting all members of a group or a classroom to participate and share their voices and perspectives. In today's university setting, there is a risk of losing the democratic character of the Socratic Method in exchange for increasingly centralized classes where students passively absorb information from a lecturer, often in an auditorium with a large class size. The Center for Public Philosophy at UCSC has worked to promote rhizomatic, decentralized approaches to education that provide students with the opportunity to practice skills that are crucial in promoting norms of reasoning and argumentation.
The Center for Public Philosophy's "TEQ Deck: Technology. Ethics. Questions.," co-authored Dr. Jon Ellis, Dr. Emily Robertson, and myself, serves as an instructive example of means by which educators can use simple tools and methods to promote a more inclusive learning environment centered on student voices. TEQ Deck is a collection of cards, each with an imaginative, carefully thought-out question about the ethics of technology. Many of these questions provide either real-life or plausible scenarios to help illustrate the potential real-world consequences behind various abstract ethical positions. Decks such as TEQ Deck have the potential to revolutionize approaches to education by emphasizing the importance of participatory learning, and by fostering a collaborative learning environment between students and instructors. In many cases, instructors may find that they have as much to learn from students as students have to learn from them, impressing upon students the importance and relevance of their own knowledge and agency. In brief, TEQ Deck and similar initiatives have the potential to reshape approaches to education by emphasizing student engagement through active participation and collaboration.

Anatomy Of Engagement: Course Level and Curricular Approaches To Turning Large Lectures Into Engaged Learning Experiences

Author: Robin Dunkin

Abstract: Large lectures have faced considerable criticism over the last two decades as evidence continues to mount that teaching strategies traditionally not associated with large lectures, better serve students. Indeed the evidence is strong that active learning, CUREs and other forms of experiential learning produce a range of benefits for students that go well beyond just learning the material. Yet, simultaneously, financial pressures, space constraints, and increasing enrollments in disciplines such as STEM have meant that class sizes have continued to increase. In this presentation, I argue that there is room for large lectures in a balanced curriculum and that there are numerous evidence-based practices and techniques that can transform a sleepy, disengaged classroom of 600 students into a vibrant community of engaged learners. I will offer a set of examples of both in-classroom strategies and course design considerations to foster engagement and learning in a large lecture. I will also offer suggestions for how we ought to holistically envision curriculum planning to thoughtfully utilize large lecture courses alongside opportunities for engagement in smaller courses, experiential courses, and more. I will emphasize the kinds of logistical and instructional support that is necessary to enable instructors to transform large lectures into high quality learning experiences that can support a diverse community of students.

Building Strong Mathematical Backgrounds in Physics: Re-evaluating Course Structure to Encourage Deeper Learning

Author: Pierce Giffin

Abstract: With the advent of AI tools, graded homework has become outdated as a metric for assessing student knowledge of course material; in practice, graded homework acts as a large percentage buffer on students' overall grades. Furthermore, as students continue to mature as physicists and engage with more complex mathematical concepts, they often struggle to connect previous coursework to new topics that build upon prerequisite material. Graduate students Pierce Giffin and Grant Roberts have spent the past two years re-developing the course structure of the Mathematical Methods in Physics course sequence to meet these modern-day classroom demands.

Building a Better Mathematics Textbook

Author: Grant Roberts

Abstract: An often overlooked part of the learning curriculum of math classes is the textbook each course tends to use. In many such courses, there is a standard text that everyone learns from; in the case of Mathematics for Physics the standard textbook is *Mathematical Methods in the Physical Sciences* by Mary L. Boas. This textbook is notorious for confusing explanations and lack of meaningful examples – but it does cover an impressive range of fundamental topics for all branches of physics – and the textbook does serve its intended purpose. However, why should we accept this as the status quo? It is our belief that a textbook can be written that improves the learning experience for all students while still maintaining a wide range of topics; and this is what we set out to do in our new textbook. From a student perspective, multiple worked out examples of various difficulty levels are illuminating and incredibly instructional, especially if paired with written explanations alongside the calculations. This is a core tenet of our text – one form of explanation is not enough – multiple are necessary. In working with Springer, one reviewer of our initial draft stated "The manuscript reads like a transcription of in-class presentations by an excellent instructor, and reflects a practical approach to teaching; as a result the conversational tone is engaging and student-friendly" and "The examples are well-chosen and clearly presented, helping students follow the application of methods".

Required Readings and Sense of Belonging: Research Findings from UCSC

Author: Sarah Hare

Abstract: Improving students' sense of belonging has been proven to increase student retention, particularly for students historically underserved by higher education. While there is literature on using syllabus and course design to further student belonging, there is little guidance on the role that required readings play and what specifically instructors should prioritize as they select and present course materials to students.

This session will present results from a qualitative research study that asked fourteen UC Santa Cruz undergraduate students to reflect on sample course readings in order to better understand how readings set the tone for a course and impact their sense of belonging in the classroom. Reading excerpts were intentionally chosen to prompt students to reflect on which elements of course readings most impact their sense of belonging (i.e. use of jargon, chunking, a lack of representation in images and citations, and/or outdated language and conceptual frameworks). The study's more open-ended approach also made space for students to articulate challenges that the researchers had not yet considered.

The presentation will provide guiding questions about course reading language, organization, and purpose that faculty might consider as they are assessing readings. The session will also offer suggestions for editing or supplementing readings (when possible) to establish and reinforce students' sense of belonging. This presentation will be useful for any instructor who is wondering what role readings might play in the overall design of their course or is struggling to make readings meaningful for their students.

Control Less. Teach More.

Author: Lexie Tapke

Abstract: STEV-96, the Peer Education Pedagogy course for Learning Support Services tutors at UC Santa Cruz, is a required two-unit course designed to prepare equity-minded peer educators to foster self-directed learning. While enrolled students are often passionate about supporting others and seeing their identities reflected in academia, some enter the course with reservations due to its required nature. This tension presents a unique opportunity to explore how student autonomy and structured choice can promote motivation, equity, and sustained engagement in a required instructional context. Rooted in culturally responsive teaching, this course integrates bound or structured choice as a pedagogical strategy that balances flexibility with consistent academic goals. Drawing on research demonstrating that autonomy enhances motivation and achievement, the course design emphasizes co-production of the learning environment through choices in participation format, assignment topics and formats, scaffolding supports, and classroom norms. Examples include student-generated classroom playlists, options for collaborative or independent problem-solving, creative approaches to portfolio presentation, and opportunities to connect course concepts to outside research aligned with personal interests. Student feedback from Fall 2025, collected through exit tickets and course evaluations, highlights increased attention, participation, and a strong sense of accomplishment. Students consistently reported feeling like active participants in their learning and valued how frequently course content was connected to their lived experiences.These outcomes suggest that structured choice not only enhances engagement but also supports equity by honoring diverse strengths, identities, and learning preferences. Looking ahead, the course will expand autonomy into policy-level choices, including flexible midterm deadlines within a defined window, self-allocated extension days, student-voted discussion topics, and multiple formats for readings and reflections. These practices aim to extend the benefits of autonomy beyond academic motivation to career readiness by helping students practice project management, decision-making, and adaptive learning skills essential for the workforce.

Mindfulness in the Classroom

Author: Melissa Sanders-Self

Abstract: The culture in my classroom has radically changed over the past 20 years, mirroring changes in society and it now seems beneficial, and even necessary, to explicitly engage in attention focusing pedagogy. Students returned to in-person classrooms in 2022 triggered by challenging literature, work-load and interpersonal interactions. In response, I developed a mindfulness in the classroom program, and began to experience tremendous value in centering student attention in the room at the start of class, bringing them into the moment, off their phones and screens, channeling their attention. I feel there is a new level of need for the trauma-impacted, attention-challenged students showing up in our classrooms.

Mindfulness allows my students to let go of whatever they had to do to get there that day and invites them to come into the room with attention, so they can focus on what we're about to do together. It works surprisingly well, even for students who resist the practice; they have to acknowledge the transition, and respect that I am creating a space for active, experiential and creative learning. It is also playful and works to build community. Students responded to the vibe of mindful/compassionate/acceptance by being willing to take more risks in their Creative Writing workshops and in their College One small group discussions.

When teaching Creative Writing or College One, I begin my classes with a 3-minute mindfulness exercise themed to the element of craft or concept we are working on that day. For instance, in creative writing classes ‘Settings’ is an element of craft, so the mindfulness exercise asks for imagery work: *picture leaves on a stream, place your thoughts on the leaves, trace their path down the stream, etc.*

My poster shows a variety of mindfulness exercises, thematically connected to teaching Literature/Creative Writing, and College One.

Testing Center Efforts at UCSC and Beyond

Author: Aaron Zachmeier

Abstract: Growing enrollments, online courses, disability accommodations, academic cheating sites, and the emergence of generative artificial intelligence have made it increasingly difficult for individual instructors to administer exams securely and efficiently. This presentation will cover a number of efforts at UC Santa Cruz, in the UC system, and beyond to lift the burden from instructors and strengthen academic integrity, including the UC Assessment Center Consortium Task Force and a summer virtual testing center pilot.

Implementing Peer Feedback in a Discipline-Specific Graduate Pedagogy Course

Author: Jessica Gagliardi

Abstract: As part of my participation in the Teaching & Learning Center's Graduate Pedagogy Fellowship in 2025, I taught the pedagogy course for first-year graduate students in my department, Earth & Planetary Science (EPS). It is a course that has been taught by Graduate Pedagogy Fellows for many years, with each one iterating on past versions of the course to make changes and improvements. For my turn, I wanted to focus on the concepts of servingness and self-reflection; I wanted my course to serve the needs of TAs in EPS, to be informed by the EPS teaching community's reflections, and to encourage the students to develop a practice of reflecting on their own teaching. I sought to implement these principles by seeking peer feedback from current EPS TAs, and designing several new activities for the course based on that feedback combined with my own reflections from when I took the course as a first-year grad student. I sent out a survey to the grad students in EPS and asked them to reflect on which aspects of the course they found more or less helpful throughout their years of experience as TAs, as well as specific teaching advice they'd like to impart to new generations of TAs. One of the biggest themes that emerged from the survey results was a desire for more support in preparing for discipline-specific teaching, as well as a preference for practical skill development over lessons that were heavy on theory. With this feedback in mind, I redesigned several aspects of the class to emphasize practical skills for teaching earth science classes. These included, for example, an activity where the students practiced drawing concept sketches and a reflection activity on balancing research and teaching roles as a grad student.

Experience Design Methods for Crafting Engaging Course Materials + Media

Author: Kristen Gillette

Abstract: This poster explores and proposes ideas and strategies for authoring course materials and developing course media from an interaction and experience design framework, towards the goal of increasing student engagement and understanding while decreasing unnecessary frictions and other barriers to learning. "Friction" is a concept in experience design that can be both positive and negative - with too much friction, the participant might disengage out of frustration or confusion, but with too little friction, the participant might disengage out of boredom.

This concept is then applied to course media materials and other course "interface" components - which students constantly access, view/read, and actively interact and engage with - framing students as the "participants" navigating each course's media-landscape. While focusing on interactive media such as lecture materials and slides, it will also cover several aspects of courses that are "designed" including Canvas site architecture, asynchronous presentation and online classes as a whole, project and assignment designs and class activities.

The final component discusses the theory of "emergent play" connected to student outcomes, where students might shift from participants to authors/designs within a course's established learning space. It then proposes methods for encouraging students to demonstrating their course work via more engaging media forms, including active-presentations and activities, portfolio / project websites, podcasts, games, and other interactive experiences. These types of projects can also be less susceptible to the use of LLMs and Generative AI {although not completely}, and have the potential for positive course-community building.

TALKS

Training the Next Generation of Students as Researchers, Mentors, and Engaged Community Members

Author: Rebecca London

Abstract: Training for the next generation of sociologists must prepare students to be engaged with stakeholders beyond the academy; to succeed as changemakers and knowledge brokers, students must be facile in community engagement praxis. This paper highlights an intervention across several social sciences classes to examine student experience related to Community-Initiated Student-Engaged Research (CISER) (Greenberg, London and McKay 2020). CISER enables students to take part in a course related to a research project supported through a class, which allows a larger group of students to gain research experience. For this intervention, the community collaboration used youth participatory action research (YPAR). CISER is an inclusive approach to promote undergraduates' views of themselves as knowledge producers and changemakers through actionable research. We examine survey data for 100 undergraduates who participated in at least one CISER class. We examine their instructor and peer experiences, research skill acquisition, and intentions to continue to graduate school and/or with social justice commitments. We note the ways CISER impacts the academic and non-academic experiences of Latine/x and other minoritized undergraduate students at an R1 Hispanic Serving Institution. To serve students multidimensionally for academic and non-academic success, it is crucial for HSIs to engage in equity-based practices rooted in student strengths. In this application, faculty worked to impart institutional change via classroom curriculum to democratize research opportunities for students.

Flipped Classroom Instruction in Learning Japanese

Author: Miyuki Takeuchi

Abstract: This presentation reports the “flipped” classroom instruction that our Japanese program has been implementing for the first and second-year Japanese courses since Fall, 2023. The flipped classroom approach reverses the traditional flow of instruction: Direct, knowledge-delivery teaching is moved outside the classroom, while class time is dedicated to active and application-based learning. It enables teachers to implement learner-centered instruction where students proactively participate in class activities instead of passively listening to the lecture.

In our flipped instruction, students are asked to prepare for class as a homework assignment by viewing lecture videos and taking a brief quiz. Class meeting time is used to apply that knowledge through practical activities, such as interactive communication tasks, hands-on practices, and discussion about efficient reading and listening strategies.

The outcome of the flipped instruction will be reported based on the students’ reflections and comments in Student Experience of Teaching Survey administered in the end of Fall 2025 as well as their performance development that the instructors have witnessed. We will also analyze and discuss existing challenges and ways for improvement. Lastly, suggestions for adoption of the flipped teaching style for various other academic areas will be explored and discussed.

Video Game Quilting: Having 50 Students Collaborate on a Single Game as Active Learning Activities

Author: Markus Eger

Abstract: In the Computer Science: Computer Game Design major, the course “CMPM 120: Game Development Experience” is often the first course students take where developing games is a focus point. While they have all been exposed to programming, making an interactive experience come to life is a novel experience for many. In contrast to typical introductory programming exercises, games revolve around the interaction of a player with the resulting program, requiring particular attention to design questions. The creativity afforded by the medium also allows students to approach games and game design in a wide variety of ways. For the fall 2025 offering of CMPM 120, I developed a custom set of active learning activities, one per week, where students were tasked with implementing a small part of a game corresponding to that week's topic, and upload it to a shared implementation which would combine all uploaded contributions into one playable game live in class. For example, one week students would learn how to add visual effects to their game and the resulting game would use every student's effects in randomized combinations, while during another week we discussed how to create tile-based maps, and the shared game would contain all student-created map-pieces, giving it the appearance of a quilt. These activities gave students hands-on experience with development tasks that were directly applicable to their programming assignments, but they also allowed them to see how other students approached the same design and implementation tasks, showed how players would interact with the resulting game, and proved to be highly engaging at the same time. Custom questions on the SETS also provided additional feedback that suggests that students reacted very positively to these weekly activities.

Oral Exams in Times of Generative AI

Author: Amy Argenal

Abstract: With the increased use of generative AI in written assessments, I explored alternatives to traditional written papers as a form of assessment in a large introduction lecture course. This talk will share experiences using oral exams in a large intro level lecture course, and other alternative assessments to challenge the increased used of generative AI in class assessments. From interactive dialogues to scripted descriptions, the oral exams opened up new ideas and possibilities for thinking about assessments.

Podcasting, for Your Students' (and Your Own) Mental Health

Author: Daniel Story

Abstract: Students are experiencing a mental health crisis. The 2022-2023 *Healthy Minds Study* out of Michigan State University reported that 41% of college students struggled with depression and 36% struggled with anxiety (Healthy Minds Network, 2023). International students, beyond acculturation stressors and marginalization (Johnson et al., 2018; Rose-Redwood & Rose-Redwood, 2017), may have additional layers of stress from fear of being deported. Recent scholarship proposes positive-psychology frameworks to support students emotionally, intellectually, and linguistically (Alrabai, 2022; Shao, Nicholson, Kutuk, & Lei, 2020).

So how can a writing class address these multiple challenges while ensuring multilingual students progress in their writing and language skills? Writing Professor Kim Helmer, in collaboration with Digital Scholarship Librarian Daniel Story, tackled the challenge in a series of Writing 1E classes through an experiential learning framework, utilizing a podcast project in place of a traditional writing assignment. Students collaborated to produce scripted podcasts that incorporated music, sound effects, and student voices. Their source material came from gratitude journals and positive-psychology intervention blogs learners kept throughout the course.

The podcast medium, we found, packed multiple positive effects: opportunity for authentic communication in the target language; collaboration with peers; an outlet to express creativity; pronunciation practice; register awareness; genre analysis and application; the challenge to teach what they have learned to others (and thus deepen learning); not to mention it was fun. We, as collaborators, also learned a lot, improving our approach each course iteration. And though the aim of the course was to support student wellbeing—which students' coded metacognitive data suggest it did—our collaboration improved our own wellbeing as well by fostering experimentation, and creativity.

A Directional Map of Learning for Introductory Physics

Author: Amy Furniss

Abstract: Introductory Physics courses are often built around modules that allow for lesson planning and segmented content review for students. We summarize the motivation behind and process of developing the learning tool, which utilizes lesson and concept compartmentalization to aid in student success. This tool is an interactive learning map with the course modules and learning objectives for an introductory physics course. Treating each learning objective like an information node and connecting it to others with learning tags that describe its connections, we create scaffolded learning maps with modules visibly building on each other or proximity maps that show how closely connected specific concepts are. This map enables students to visualize the relationships between learning objectives, facilitating the creation of review paths. These paths bring the student back to the foundational concepts, which, when lacking, lead to confusion and misconceptions in higher-level concepts. Student-centered applications of this visualization of course content might include creating tracked personalized self-study and homework assignments that can adapt to how a student answers a question and provide review material based on these connections. Curriculum development applications of maps such as this might provide visualizations of how courses are connected and aid in planning of majors and submajors.

An Active Learning Programming Workshop for First-Time Undergraduate Researchers in Astronomy

Author: Aditya Sengupta

Abstract: The Lamat summer research program in computational astrophysics begins with a three-day in-person scientific programming workshop in January. The students are typically either in their early years at UCSC or attend community college. This leads to a high degree of variance in their experience levels and comfort with programming, but also with operating in a university environment. Further, students may or may not work with code in their classes in the intervening months before starting their research projects. These constraints served to determine the main learning goals for the workshop: rather than requiring students to remember the details of how to implement anything in particular, we focus on understanding the kinds of fundamental operations that can be created or combined using code, and how these relate to the novel scientific projects they will carry out. To meet these goals, I was therefore required to go beyond the usual introductory programming problems and to design multiple means of participation as recommended by the Universal Design for Learning framework. Over the past three years of teaching this workshop, I have developed activities to facilitate engagement as students learn programming skills as well as their application to science problems. These include whiteboard activities that link familiar science problems to computational steps, using the class as a "human computer" where each student is responsible for executing one step of a program, and having students read and verbally explain new code and documentation. This culminates in a software design activity, in which students develop plans for implementing actual projects from previous years of the program. Students are empowered by the workshop to apply fundamental computational skills to their future research projects.

LEAI: Listening with LLM-Based Feedback and Reflection Agent

Author: Magy Seif El-Nasr

Abstract: Traditional end-of-quarter surveys in higher education often fail to provide instructors with timely, detailed, and actionable feedback. This lightning talk introduces LEAI (Learning Engagement AI) Agent, a novel system that reimagines the classroom feedback process by leveraging Large Language Models (LLMs) to engage students in reflective, conversational dialogues. LEAI is a three-part system consisting of a PromptDesigner for instructors to create tailored feedback prompts, a FeedbackCollector chatbot for students to provide conversational feedback, and a FeedbackAnalyzer for instructors to gain rich, actionable insights. Our pilot study, conducted in several graduate and undergraduate courses, demonstrated that LEAI provides richer insights, greater contextual relevance, and higher student engagement compared to traditional survey methods. Instructors valued the system's ability to support mid-course adjustments, while students appreciated the conversational format and the opportunity for more detailed expression. This talk will showcase how LEAI can transform classroom feedback from a static, end-of-term event into a dynamic, ongoing dialogue, ultimately fostering a more responsive and student-centered learning environment.

Designing Equitable Data Science Lessons With AI: Learning Trajectories of K–8 Preservice Teachers

Author: Gianna Shields

Abstract: As artificial intelligence (AI) tools become increasingly accessible in educational contexts, mathematics teacher education must prepare preservice teachers (PSTs) to use AI in ways that are pedagogically sound, equitable, and developmentally appropriate. This mixed-methods study examines how K–8 preservice teachers develop AI-mediated data science lessons in mathematics, how their understanding and confidence evolve through this process, and which lesson preparation strategies they find effective. Guided by an AI-Mediated Mathematics Teaching Framework that foregrounds Pedagogical Content Knowledge (PCK), Learner Agency & Access, Applied AI Fluency, and Ethical & Reflexive Practice, the study involved eight K–8 PSTs enrolled in a graduate mathematics methods course.

Data sources included pre- and post-surveys, collaborative planning transcripts, AI decision logs, lesson plans, peer lesson evaluations, and individual reflections. Quantitative findings indicated increased confidence across all framework components, with the largest gains in Ethical & Reflexive Practice and Learner Agency & Access. Qualitative and artifact-based analyses revealed that PSTs used AI as a design partner rather than an authority, critically evaluating and adapting AI-generated suggestions based on mathematical rigor, developmental appropriateness, and equity considerations. Effective lesson preparation strategies included problem-first planning, iterative prompt refinement, explicit accept–adapt–reject reasoning, and collaborative critique.

Together, the findings suggest that AI-mediated lesson planning can support K–8 PSTs' professional judgment when embedded within structured pedagogical frameworks. Implications are discussed for mathematics teacher education programs seeking to integrate AI responsibly while maintaining commitments to equity, sense-making, and disciplinary integrity.

Learning Productions: Authentic Project-Based Learning

Author: Allen Riley

Abstract: Learning Productions is Beam Center's framework for authentic project-based learning in which learners collaborate to build ambitious projects incorporating real-world technical and creative skills. I describe the core components of Learning Productions and outline the project design process in which ideas are connected with skills and organized into a scheduled project. I describe how the framework might be applied in higher education arts and humanities.

In Learning Productions, a set of underlying ideas is connected to a set of skills in a community-facing project. The link between idea and skill is informed by the personal knowledge of project hosts (artists, teachers, peers, etc.) who share their practice, and their love for it, with learners. Learners are regarded as full participants and collaborators in the project by the host, giving them a sense of respect, agency, and purpose. Learners develop personal interests, build social skills for communication and collaboration, explore career-aligned technical skills, and build agency through creative technology and artistic expression.

Ideas and skills can be connected in a Learning Productions project in many ways. Projects can be functional, like a garden; they can simulate processes, like a game; they can represent cultures and histories, like a documentary film, and they can make any practice into a medium of creative interpretation, like a sculpture. In each case, the link is informed by the real-world practice of the host, and the results of the project are shared and celebrated.
I codesigned the Learning Productions framework in collaboration with Brian Cohen and colleagues at Beam Center over the past 20 years in the contexts of summer camp, K-12 schools, after school, work-based learning, and professional development for teachers. More than 5000 youth, teachers and creative technologists participate in Learning Productions annually.

GenAI & the Death of the Utilitarian Writing Class

Author: Brett Shanley

Abstract: As of 2025 there is no reason for “College Writing” courses to exist – at least as they have been traditionally imagined. Born from late-19th-century demands for a pragmatic curriculum, the widespread adoption of generative AI technology makes its former utility debatable at best, its long-held raison d'être functionally obsolete. Through a practical-pedagogical examination of the capabilities of AI technology to the rich (and fraught) social dimensions of its use, we can best understand the complex and rapidly evolving relationship between AI and the discipline of comp-rhet from late 2022 to today.

From this sobering reflection on a field I've worked in for 15 years, I propose a post-utility vision of writing studies that neither condemns nor embraces generative AI but rather circumvents its relevance. College writing must abandon the hyper-expedient “service discipline” model for one that draws from both classical- and modern transformative learning theory. By centering holistic personal and intellectual development through multimodal practices that emphasize self-expression, civic engagement, socio-historical knowledge, and ethical awareness, the field can avoid the fate of the Latin and Greek it displaced. This generative AI needn’t be a deathblow to college writing, but the catalyst for its fundamental reinvention as something more impactful than it was before.

A New Platform for Teaching Economics

Author: Kristian López Vargas

Abstract: The Interactive Edu Hub (IEH) is an online platform co-developed with Professor Natalia Lazzati to support this approach in economics courses, beginning with Intermediate Microeconomics (Econ 100A). Leveraging the technical expertise of UCSC's LEEPS Laboratory, which I direct, we designed IEH to pair concise, agile concept delivery and explanations with interactive diagrams and exercises with immediate feedback. We piloted IEH in the Spring of 2024 and have iterated on it since then, based on student feedback which has been largely positive. IEH also includes built-in analytics that track time on task, attempts, and common errors, enabling personalized support and data-informed instruction. Current work focuses on reliability, accessibility, and content coverage; we are expanding item banks. The latest release adds an AI helper, powered by a frontier LLM, that offers a personalized learning assistant with additional examples and alternative explanations for practice questions students miss.

Making Professional Pathways Legible: An Equity-Minded Career Readiness Capstone in Global and Community Health

Author: Laura Beth Bugg

Abstract: Many students approach graduation with strong academic records yet limited access to the "hidden curriculum" of professional pathways: how to translate learning into marketable skills, narrate community-engaged experience, build networks, and imagine themselves as legitimate members of a field. These barriers are especially acute for first-generation students and students from historically underrepresented communities who may be navigating career preparation without inherited professional networks or informal mentoring. This lightning talk examines GCH 195, a senior capstone in Global and Community Health intentionally designed to make post-graduation pathways more visible, navigable, and equitable.

GCH 195 integrates an electronic portfolio (e-portfolio) with scaffolded career-readiness practices. Students curate a digital portfolio that synthesizes coursework, experiential learning, and reflective writing about strengths, values, and professional goals. Alongside the portfolio, students develop tailored resumes, LinkedIn profiles, and concise elevator pitches, with structured peer review and iterative feedback. Rather than treating these artifacts as peripheral "professionalization," the course frames them as an equity strategy: a way to demystify expectations, provide transparent criteria, and create repeated, supported opportunities to practice the language and conventions that shape hiring, internships, and graduate admissions.

To evaluate change over the quarter, students complete pre- and post-course surveys measuring perceived career readiness, confidence articulating skills and goals, and sense of belonging in the field of global and community health. The talk highlights patterns from these surveys and illustrative themes from student reflections to show how integrating reflective e-portfolio pedagogy with explicit career tools can support both concrete competencies (e.g., translating experiences into skills statements) and affective outcomes (e.g., professional identity and belonging). The session concludes with practical design principles that instructors can adapt to make professional pathways more legible for all students.