Teaching Symposium Abstracts

Feb 25, 2025

UC SANTA CRUZ | Teaching & Learning Center

POSTERS

Don't Erase Yourself: Lived Experiences and Generative AI in Course Assignments

Author: Allen Riley

Abstract: Teachers can expect students to complete their assignments entirely using generative AI if we only expect them to demonstrate their learning by delivering textual information without creating opportunities for students to situate themselves in relation to our fields. To create the conditions in which students come to value their voice, teachers must create assignments and assessment methods that demonstrate trust, respect, and an authentic interest in learning about students. I will describe how I have approached this in the design of assignments for undergraduate and graduate students in Film & Digital Media.

ARTG 10: Wrapped — Communication Design Methods for Crafting Engaging Course Materials

Author: Kristen Gillette

Abstract: This presentation explores communication design methods and strategies for crafting clear, accessible, and engaging course materials. While this presentation will be applicable to a wide range of disciplinary fields and materials, it will focus on lecture materials, designed primarily for studio-based courses within the Arts Division.

The majority of this presentation will offer examples of different in-person and/or synchronous online lecture materials, as well as interactive websites and pre-recorded materials designed for asynchronous learning. Many of these examples will be discussed in relation to visual-communication design concepts, fundamentals, and strategies, including: accessibility, visual languages / systems, layout / composition, color, “branding”, interaction design, and expressive / persuasive media.

The final example discussed in depth will cover the design and presentation of an “end-of-quarter” acknowledgment and celebration of student projects and learning. This activity also serves as a summary or “wrap-up” of the course themes, topics, and creative output of a ~200-student online course. The visuals for this “wrap-up” lecture are tailored to match the current year's Spotify “Wrapped” theme and animations.

Anecdotally, this activity and lecture is a community-building / community-affirming event. Student input during these lectures has been overwhelmingly positive, and it is also a useful summary tool as an instructor, in terms of raw data and student work. As an instructor, this is also a very helpful and rewarding activity. Finally, given the course focus on visual design, this is an activity and lecture that, while community-building and also celebratory, reinforces many of the visual design concepts and topics discussed and presented throughout the course.

Experience with Designing and Delivering CMPM290A: Visual Design for User Interfaces

Author: Ayesha Khalid

Abstract: In this submission, I share my experience of designing and delivering a new CMPM graduate elective (CMPM 290A: Visual Design for User Interfaces).

Keeping in view student feedback and departmental objectives of better aligning the curriculum with key areas of student interest and professional goals, I designed this Computational Media graduate elective for students in the HCI Professional Masters program and the Doctoral program.

The course was offered in person at the Silicon Valley Campus (SVC) in Spring 2024. Enrollment totaled 20 (15 MS, 5 PhD) with students across both the SVC and the main UCSC campus. The course focused on providing a comprehensive foray into visual design for User Interfaces with emphasis on visual communication. It culminated into a comprehensive final project which entailed a deployable application for the Web / Mobile environments.

In terms of the pedagogical style, the course adopted the Active Learning approach. Students would get paired with their peers in class using a random group generator to ensure cross-pollination of ideas, especially between PhD and MS students. Students then undertook design exercises to solve real-world problems followed by peer and instructor feedback.

Student evaluations from the course were very positive with 80% response rate (16/20 SETS response). Students were especially appreciative of the in-class activities. Following are SETS highlights.

Q: The instructor provided useful feedback on my assigned work: 7/16 students responded Very Frequently and 6/16 responded Frequently for a total of 13/16 students.

Following student anecdote describes in their own words:

“She made some class activities which are really help for team, work. Some Assignments are effective to help remind of the class content. I also really like the way she assign us with different teammates.”

Based on the positive feedback, the course will be offered again for Spring 2025 in both in-person and telecast mode for students from main campus to join easily. Between the in-person and online version, the projected enrollment is 30 students. I look forward to building on the success of the first offering to deliver the upcoming offering.

Building a Community Resource for Teaching Assistants: The UCSC Statistics TA Wiki

Authors: Marcela Alfaro Córdoba, Andrew Le, Antonio Aguirre

Abstract: The UCSC Statistics TA Wiki is a community-driven resource designed to support graduate teaching assistants (TAs) in the Department of Statistics at the University of California, Santa Cruz. Hosted on GitHub, this centralized repository consolidates key resources, pedagogical guidance, and course-specific materials to empower TAs in their teaching roles while fostering inclusive and effective practices.

Funded by the Teaching and Learning Center's Graduate Pedagogy Fellows program, the project began in Summer 2023 with contributions from Andrew Le, Antonio Aguirre, and Professor Marcela Alfaro Córdoba, and has continued improving with feedback from the community. The Wiki provides essential information for TAs, including guidance on preparing for the quarter, managing office hours, grading, communicating with students and professors, and accessing professional development resources. Its modular, live-document format allows for ongoing updates by the department community.

This presentation will showcase the development process, including the initial structure, collaborative workflows on GitHub, and strategies for sustaining contributions. We will highlight how the Wiki saves time for TAs and instructors, promotes collaboration, and enhances professional development opportunities. By sharing the successes and challenges of this project, we aim to inspire similar initiatives in other departments, demonstrating how centralized, collaborative resources can support teaching and learning in academia.

A North Star for Tutors: Using Values and Intention Statements for Growth

Authors: Lexie Tapke, Sharon Castro

Abstract: In 'Theory and Practice of Peer-Guided Learning' (STEV 96), tutor intention statements serve as one of the first assignments, encouraging tutors to reflect on and articulate their values, aspirations, and classroom intentions. The activity prompts students to reflect on their past educational experiences, identifying qualities in educators who were most effective in supporting their learning. Students are then asked to reflect on their core values that will guide their own practice as tutors. The intention statement acts as a personal manifesto and a strategic tool for goal-setting, fostering a sense of intentionality, and accountability in tutoring sessions.

At the end of the course, students are invited to revise their intention statements, allowing students to assess how their values and goals have evolved based on their experiences in their first quarter tutoring, as well as any new knowledge they've acquired through this experiential learning opportunity. Instructors also use this tool to assess student understanding of the pedagogy taught and what teaching practices resonate most with them, giving instructors valuable feedback for future iterations of the course.

The use of tutor intention statements has proven to be an effective way to help students identify a value system that not only guides their tutoring work but also informs their postgraduate career readiness (as described in NACE Career Readiness Competencies). This activity supports students in navigating the complexities of tutoring, offering them a "North Star" to return to when faced with challenges. When educators have an effective teaching statement, they are more likely to be effective in the classroom. We propose that the adoption of intention statements could benefit educators in various instructional contexts, enhancing self-reflection, goal-setting, and pedagogical clarity in diverse teaching environments.

Experiential Learning with Special Collections: Engaging with Primary Sources Through Experimentation and Play

Authors: Sam Regal

Abstract: UCSC Special Collections and Archives (SC&A)'s instructional program centers hands-on, experiential engagement with the Library's distinctive collections of primary sources. During class visits to Special Collections, students are encouraged to use their senses to touch, smell, and otherwise experience material artifacts to more substantively connect with the histories and traditions they represent. This mode of object-based learning cultivates curiosity and effectively models the exploratory nature of scholarly research. In close collaboration with faculty, unique learning outcomes, lesson plans, and curated materials lists are developed to accompany each visit.

SC&A's instructional program encourages students' criticality and senses of experimentation and play through a variety of innovative class sessions designed to empower them as researchers. In 2024, students explored 3D-printed models of historical print technologies while paging through early printed books, providing entry into the material experience of the printing press. Others plumbed through volumes and archival boxes for a chance to win Special Collections Bingo, connecting to collections through playful gamification. Still others made buttons and zines using facsimiles of archival materials, generating new meaning from artifacts of university history. SC&A's exhibitions program creates further opportunities for experiential learning, encouraging student curators to engage deeply in research with primary sources and articulate their findings through visual arrangement and description. Special Collections and Archives seeks collaborations with instructors across disciplines to activate collections and inspire student research, artmaking, curiosity, and confidence in scholarship.

Rubric Development as a Training Tool for Active Learning Facilitators: Assessing Inclusivity, Time Management, Structure, and Facilitation at the Academic Excellence (ACE) Program

Authors: Thelma Perez, Susanna Honig

Abstract: The backward design (Wiggins and McTighe, 1998) framework is an evidence-based curriculum development approach that involves identifying and then assessing learning outcomes prior to creating instructional materials. The Academic Excellence (ACE) Program at UC Santa Cruz is a successful and longstanding supplemental instruction program that trains professional and student educators to utilize active learning facilitation in their mentoring and problem solving sessions. After consulting with leadership at Learning Support Services, another highly successful UC Santa Cruz tutoring center, we learned of their process for observing and evaluating their tutoring sessions. From this we were inspired to create our own iteration of rubrics and standards for what ACE Problem-Solving Sessions should look like. In order to provide training for these educators, we utilized the backward design framework to identify learning outcomes and develop rubrics for four key categories: facilitation, structure, time management, and inclusivity. Over two years, we iteratively developed draft rubrics that included evidence for educator proficiency vs. developing proficiency. These rubrics were then ground-truthed through initial session observations and resulting discussions, additions, and revisions. Future directions for current rubrics involve conducting expanded observations and a session feedback protocol. By implementing assessment-driven training materials as a key component of educator training and combining materials with structured feedback, we believe student and professional staff will improve their overarching competency in inclusive facilitation, thereby increasing our ability to impact student success and equity.

Impacts of Online Instruction in Prerequisite Courses on Student Performance in Postrequisite Courses

Authors: Lalitha Balachandran, Megan McNamara, Herbert Lee, Michael Tassio

Abstract: Previous research on the efficacy of online courses has focused primarily on short-term differences in final grades between students who take the same course in online vs. face-to-face settings, or long-term persistence metrics (e.g., graduation rates) on the basis of online course participation. Less work investigates student outcomes at intermediary stages, including how online course participation affects subsequent, related course performance within a given discipline. Using data gathered between 2019 and 2022 — including the years surrounding the COVID-19 pandemic, a global historical event which prompted an unprecedented shift toward online education — we consider the question of how course modality (online vs. face-to-face) of a prerequisite in a multi-course sequence (an “upstream” course) impacts students' final grades in a postrequisite (“downstream”) course. Results suggest that the effect of upstream course modality on downstream course outcomes is largely insignificant and that, where significant differences do exist, they tend to show a slight advantage for students who took the online or hybrid version of an upstream course. Moreover, participation in an online upstream does not exacerbate downstream equity gaps between dominant and minoritized groups of students; in fact, in two course sequences, online upstream participation closed or reversed downstream equity gaps present in face-to-face offerings. We conclude that online courses, when purposefully designed, yield comparable outcomes to face-to-face courses. In such cases, online courses can play a critical role in producing more equitable educational outcomes and in expanding access to higher education to students who might not otherwise be able to pursue it.

Gamifying Education: Using Card-Based Escape Games to Introduce Students to New Fields

Authors: Vincent Chambouleyron

Abstract: Introducing a new academic field can be challenging, especially when the goal is to engage and unite students from diverse backgrounds. To address this, we developed a card-based escape game as an innovative pedagogical tool. This approach serves multiple educational purposes: it facilitates an icebreaker among students, fostering a collaborative learning environment; it stimulates collective intelligence through teamwork and problem-solving; and it introduces foundational concepts of a specific field in an interactive and enjoyable manner. This methodology was applied to the specialized domain of Astronomy and Astrophysics, with a particular focus on telescope instrumentation. The game was tested in two summer school programs: one at UCSC and the other in the south of France. In both cases, the game was used as one of the initial activities to introduce students to the subject matter. Additionally, it was implemented as an introductory exercise for a class given in the astrophysics department. In this presentation, we will outline the principles of the card-based escape game by showcasing key features of the version we developed. Additionally, we will demonstrate how this game format can be easily adapted to introduce a wide range of academic subjects, making it a versatile tool for diverse educational settings.

From Milestone to Stepping Stone: A Course-Based Community to Demystify the Qualifying Exam

Authors: Paige Kouba

Abstract: As universities continue and expand outreach and recruitment efforts, we must also redouble our efforts to help all students navigate the “hidden curriculum” of higher education. For PhD students, the Qualifying Exam can be the most important challenge on the path to their degree, but the process typically involves vague or confusing requirements. At UC Davis, as a result, some programs have a QE pass rate as low as 67%, causing anxiety among test-takers and slowing degree progress. Informal transfer of knowledge across cohorts can help students prepare for the exam. To meet the urgent need for peer support among the post COVID-19 cohort of test-takers, I designed a seminar course called the QE Support Community, and invited students across all STEM departments to participate for credit in Spring 2024.

The 2024 QE Support Group included 134 members: 87 pre-QE mentees and 47 post-candidacy mentors. Ninety members attended one of the two introductory workshops at the end of Winter Quarter, and an average of 12 participants showed up to weekly practice exams throughout Spring Quarter. We featured 15 students’ practice QEs (after adding a second meeting time due to high demand). Twenty-four group members had taken their QE by the end of Spring Quarter, with another 38 exams scheduled for summer, fall, and beyond. Group members had access to a network of peers and near-peer mentors, whom they could contact via email or through the course Q&A forum on Piazza.

By pairing pre-QE students with post-candidacy mentors, and connecting them within a network of peers, the course fostered more equitable sharing of information about one of the toughest challenges of a doctoral program. The prevailing philosophy was that by connecting with peers, we could turn an unpleasant and stressful experience into a positive and helpful one — turning the QE milestone into a stepping stone to help us reach our goals.

The Physicist's Toolbox: How Much Can Be Done for New Physics Majors in 2 Units?

Authors: David Smith

Abstract: Physics 2, The Physicist's Toolbox, is a 2-unit course offered primarily for proposed physics majors in the fall of their first year. It has been designed as an intervention to improve sense of belonging, math and physics preparation, and study habits for incoming majors before — or as — they begin the introductory physics sequence with Physics 5A, with the primary goal of narrowing equity gaps in that sequence and in retention in the major. Activities include:

1. Practice with physics-relevant pre-calculus topics such as exponential functions, oscillatory functions, solving simultaneous equations, and vectors.
2. Calculus from a purely conceptual and applied perspective, learning to sketch the derivatives and integrals of curves without any use of formulae, and discussing applied scenarios where these concepts are relevant.
3. Hidden curriculum: discussions of effective study habits, interacting with faculty, getting involved in research as an undergraduate, the role of graduate school, and career paths.
4. Practice with active learning and teamwork: Nearly all work is done in class in teams of four students. We hope some partnerships will last through future classes.
5. Introduction to important physics concepts without the pressure of a high-stakes class or problems using substantial calculations.

I will discuss in more detail the motivation and justification of the course design, show examples of activities and specific course topics, and ask for your advice in improving this project.

Using Technology to Streamline the Student Experience in Large Enrollment Classes

Authors: Anne Sizemore

Abstract: Student-centered pedagogies can have positive impacts on learning outcomes, but implementing these approaches in large lecture courses (300–500 students) presents considerable logistical challenges. Although instructors frequently utilize technology platforms to monitor student progress, deliver feedback, and facilitate communication, these solutions can also introduce new barriers. These barriers include substantial time investments for platform familiarization by both faculty and students, inconsistent platform availability across academic terms, and additional costs that may create financial hardship for students. This presentation examines the integration of accessible, no-cost tools that maintain pedagogical objectives and streamline the student experience. I will share how I have utilized Google tools for real-time assessment through polling, content reinforcement via chapter recap videos, and academic support through calendar-based scheduling.

Testing to Learn: Two-Stage Exams Promote Learning in Large Lectures

Authors: Robin Dunkin, Nyomi Morris, Maia Smith, Juli Limon

Abstract: Two-stage exams are assessment tools that include an individual and group portion of an exam. Previous work on the two-stage exam format has shown that including a collaborative portion of the exam improves student learning and lowers test anxiety. Yet most work on two-stage exams has focused on small class sizes. In this study, we were interested in how a two-stage exam format could be logistically administered in a large lecture biology course and whether this format could be effective at lowering student anxiety and promoting assessments as opportunities for learning. 78% of students reported that the two-stage exam format lowered their testing anxiety and 84% indicated that it improved their learning experience. Less than 5% of students reported a negative experience with the testing format. Of students with DRC accommodations, 81% reported that the testing format improved their learning experience. Two-stage exams can be administered even in large classes and can positively impact student learning.

Best Practices for Graders to Support Student Success

Authors: Dianne Hendricks, Megna Chalamala, Sage Brill, Aditi Bhat

Abstract: We share our best practices for graders to support student success in a writing course in Biomolecular Engineering. We describe the lessons learned from our experiences as instructor and graders, with a focus on supporting struggling students and fostering an inclusive and equitable learning environment. Our framework emphasizes strategies to reach students who are struggling, improve grader-instructor communication, and promote equitable assessment practices. The grader-focused practices we describe address challenges in assessing student work while striving for consistency, fairness, and student-centered outcomes. Moreover, we provide insights into how faculty can support graders in achieving these goals.

The practices we describe highlight three areas:

1. Reaching Struggling Students. We emphasize strategies to identify struggling students early by analyzing grader feedback and patterns in submissions. Collaboration between graders and instructor plays a key role in adapting course content or offering additional support resources to address student needs effectively.
2. Innovative Peer Review Practices. In a writing course, enhancing the peer review process can significantly improve student engagement and learning outcomes. Additionally, peer review serves as a valuable tool for the instructor and graders to monitor student progress and identify common areas where students may struggle, enabling targeted support.
3. Best Practices and Support for Graders. Ensuring consistency and fairness in grading is essential. Open communication with instructors allows graders to clarify expectations and address challenges, creating a collaborative environment where they feel supported and empowered. Additionally, training faculty to leverage grader insights can drive course improvements and enhance the overall learning experience.

Our innovative approach bridges the gap between grading, student success, and faculty support by emphasizing inclusivity, equitable assessment, and collaboration. These practices not only support positive student outcomes but also enhance the grader experience, creating a more supportive academic environment for all.

Equitable Teaching with Transparency

Authors: Amy Furniss

Abstract: I will summarize a tangible example of how the equitable teaching practice of transparency can be applied in the structure of a course, as well as its specific benefits, through the analogy of teaching someone how to make an omelet. With this simple analogy, I'll cover learning objective transparency and scaffolding, as well as summarize some of the outcomes from applying this transparency in my own large introductory physics courses over the last year.

Implementing a Field-Based Transfer Orientation Program in Ecology and Evolutionary Biology

Authors: Abraham L. Borker, Iris Flores, Niko Kaplanis, Paige Kouba

Abstract: Our campus has pioneered high-impact introductory field experiences as a potent intervention to accelerate student achievement, close equity gaps, and build science identities and networks that propel students in our field. Transfer students face the unique challenge of relative isolation on campus and limited time to thrive at UCSC. Our new initiative, “Field Opportunities for EEB Transfer Students” focused on helping transfer students build a sense of belonging and science identity and jumpstarting transfer students' connections to UCSC’s unique resources and opportunities, with the ultimate goal of increasing retention and on-time graduation for transfer students and setting them on fruitful career paths after graduation. Our fall program in 2024 consisted of three evening meetings and an overnight camping trip to a field station. Twenty-nine new transfer students (49% of the target population) participated in at least one element of the program. All of the five graduate student facilitators were former UC transfer students helping participants build a mentor network across undergraduate and graduate student career stages. The program culminated in a career panel and campfire on Coastal Campus, where students urged us to facilitate continued engagement throughout the year. We are excited to refine the program based on early evidence from evaluators that it increased students sense of belonging in a community of scientists and knowledge of pursuing co-curricular opportunities at UCSC. Participants expressed that the community and activities transformed their outlook on EEB and aspirations; many have already expressed an eagerness to help facilitate next year's program and mentor incoming transfer students.

Prioritizing Access, Agency, and Interdependency in University Courses

Authors: Paulo Tan, Edan Laxama, Nayeli Quezada-Heredia, Natalie Schultz

Abstract: In this presentation we share our experiences as university students and an instructor of a UCSC course that prioritized access, agency, and interdependency. In most university courses, issues of access and accommodations are typically delegated through a University's disability resource center (DRC). However, studies have shown that in many instances, students do not receive necessary accommodations to effectively access coursework. Moreover, for different reasons, some students do not seek DRC support even though they may qualify for services. As with access issues, students often feel they lack agency in their university courses as most instructors impose their course syllabi without direct input from students. Lastly, university courses often adhere to an individualized form of education whereby pedagogy focuses on the individual as a unit of analysis (e.g., individual exams). Such pedagogy counters the aims of society at large and learning theories, in particular, that suggest that robust learning is an outcome of communal activities. To address some of these consequences related to access, agency, and interdependency, the instructor in this presentation implemented various components into his course to more truly center students. We share the logistical and pedagogical details of these components, as well as lessons learned to support others with similar aims.

Flipping the Digital Classroom: Borrowing Real-World Tools for Asynchronous Research Collaboration to Engage Students in an Online Summer Course

Authors: Alicia Riley

Abstract: Population health is a field of scientific inquiry that happens on a laptop rather than in a traditional lab, making it an ideal entry point for learning about scientific inquiry in an online format. This asynchronous online course, Introduction to Population Health, took a flipped classroom approach, using asynchronous lectures to introduce and reinforce key concepts and while prioritizing class hours for a scaffolded collaborative project that used web-based tools to enable asynchronous online teamwork. A goal of the course was to provide students a simulated experience of population health collaborative research. Population health research is highly collaborative but rarely via in-person collaboration. Instead, researchers collaborate through virtual meetings, online messaging, shared code, and shared writing using online tools. Mirroring the approach of professional population health research teams, students used multiple digital tools, such as Slack, Google Docs, Posit Cloud and Canvas to collaboratively yet asynchronously read and comment on new literature, plan analyses, share code, clean and share data, review results, visualize data, and write up results as a research manuscript. This course was also designed to have the faculty inputs be super responsive to students via these same online tools — Google Docs, Posit Cloud, Slack and Canvas. In addition to pre-recorded orientation videos and pre-recorded substantive lectures, at the end of each week the instructor held a synchronous digest session with students to stimulate further engagement with lecture content, answer questions about assignments, and facilitate progress in teamwork around the team project. During the week, the instructor provided real-time comments on student Personal Handbooks and assignments via Google Docs, code via Posit Cloud, discussion posts via Canvas, and team collaboration via Slack. By flipping the classroom in this way, the traditional assignments are being made into dynamic conversation with the instructor.

Hands-on Training of Core Facility Users

Author: Beverley Rabbitts

Abstract: The UCSC Chemical Screening Center is a core facility that offers trainees the opportunity to learn how to operate high-end instrumentation hands on. We have equipment used in basic biomolecular and drug discovery research, including high-throughput lab automation, acoustic dispensing, and high-content imaging, purchased in 2022. Trainees are usually undergrads, graduate students, and postdocs, who are engaged in wet-lab research in areas of biology, chemistry, or engineering, and who are hoping to expand their skill set, improve their experimental workflows and data quality, or conduct their research more sustainably. After only a few hours of training, they are expected to be able to operate multi-million dollar, highly complex instrumentation independently, and it is the job of the core facility manager to ensure that this is conducted safely and effectively. Here, I present my experiences creating awareness across campus of this astounding opportunity, creating and distributing educational resources, developing a thorough and equitable training curriculum, delivering this curriculum to over 60 trainees (usually one-on-one) and over 20 group workshops and classes, and collecting student evaluations. The unique challenges and rewards of this kind of hands-on teaching make it incredibly exciting to advance using modern teaching theories and technologies.

TALKS

Prompt or Be Prompted?: Oblique Strategies For (and Against) Pedagogical Generative AI

Author: Kyle Parry

Abstract: Prompt or be prompted? In 2022, I undertook a small experiment with generative AI in my course for the Humanizing Technology certificate. Students were in the middle of their final projects when I asked them to make a choice. If their job were to discover something “generative” — as in fruitful, productive, direction-altering — for some aspect of their project, would they turn to ChatGPT or a sleek card deck of mind-bending provocations by Brian Eno and Peter Schmidt called Oblique Strategies? Half chose the AI option and half chose the card deck. The results were broadly positive for both sets of students, and the experience occasioned a rich conversation about process, creativity, intelligence, technology, and learning. I'll discuss the thinking behind the experiment, some lessons, and ideas for modifications. I'll also sketch an overall notion of pedagogical engagements with AI that forgo an obsession with efficiency in favor of unexpected emergence.

Narrating Identity Digitally: The “About Me” Statement in a Capstone e-Portfolio

Author: Laura Beth Bugg

Abstract: Electronic Portfolios — digital collections of students' ideas, values, experiences, and scholarly work — are understood as a “High-Impact Practice” (AACU). They not only make student learning visible, but also facilitate reflection and self-assessment by allowing students to reflect holistically on their learning journey, foster connections across the curriculum, and increase awareness of personal growth and abilities. As part of a standard electronic portfolio, students compose an “About Me” statement for their portfolio home page, which gives viewers a personal introduction to the student, their background, personal interests, and motivations, as well as a narrative summary of their academic journey. This speed talk will look at the use of the “About Me” statement in student e-portfolios in a UCSC Global and Community Health (GCH) capstone course, GCH 195: Global Health Communication, to explore the ways that underrepresented fourth-year students in the GCH BA and BS programs narrate their identities through digital storytelling. Telling stories through the “About Me” statement often allows underrepresented students to recognize their personal and academic growth over time, connect their personal background and experiences to their academic pursuits, and prepares them for future career opportunities by articulating their strengths and goals. At the same time, there are potential challenges when narrating personal identity, particularly for underrepresented students. The talk will examine challenges students face in narrating identity in the “About Me” statement, including uncertainty about how much of their personal background to share, concerns about potential bias or stereotyping based on their identity, and negotiating understandings of “authenticity” and “professionalism”.

Exploratory Reading Groups for Belonging, STEM Identity, and Research Pathways

Author: David Lee, Jim Whitehead, Dustin Palea, David Torres-Mendoza

Abstract: This presentation describes the Exploratory Reading Groups (ERG) program, a low time-commitment, relational, student-led reading group program designed to provide students from any background and year with a broad exploration of computing research. Despite the lightweight nature of the program (~2 hours/week), we observed a statistically significant increase in satisfaction with their intellectual development at the university; confidence in reading, presenting, and communicating about their field; sense of belonging for women and minoritized ethnic groups; alignment with faculty goals in joining research labs (greater desire to make a research contribution and publish; decreased desire to join for the purpose of exploration); and engagement in the 'reconsideration' dimension of career identity formation. Over 70% of the participants continued on into group research projects for undergraduate students. The effectiveness of this scalable, lightweight initiative shows the promise of ERGs as a tool to support students in computing when connected to group research projects and points to future research directions on designing other lightweight, relational, scalable learning experiences.

Assembling the Fragments: Teaching Antiquity as a Classroom Mosaic

Author: Amanda Reiterman

Abstract: Scholars working on millennia-old texts and material culture face two related challenges: the incomplete survival of physical remains and gaps in our understanding of cultures so distant. Mosaic-style workshops are effective and honest tools for engaging students with the fragments of the ancient world. In this mode of teaching, the class is divided into small groups, each of which performs an in-depth analysis of an object or text related to a given topic. When the groups come together to present their findings, the classroom collaboratively and organically assembles the pieces to arrive at a more complete picture of the subject than any one part can offer. In this presentation, I discuss several mosaic workshops that I have used successfully in classes across disciplines (history, literature, and history of art) at UCSC. This mode of learning exposes students to the diversity of evidence, allows them to experience the complexity of interpreting material from the deep past, and honors the ambiguity of our data (a feminist practice). Mosaic learning offers modern students different pathways for connecting with the ancient world and, in doing so, allows them to experience the thrill of discovery firsthand.

Gero, J. 2007. “Honoring Ambiguity / Problematizing Certitude,” Journal of Archaeological Method and Theory 14, pp. 311–327.

The Role of Introductory SCUBA Experiences in Enhancing Diversity and Inclusion in Marine Sciences

Author: Iris Flores, Lina Arcila Hernández, Roxanne S. Beltran, Abraham L. Borker, Kristy J. Kroker

Abstract: Field experiences have a critical role in closing demographic gaps in STEM, fostering self-efficacy, a sense of belonging, and stewardship. Scientific diving is a fundamental tool for marine field research and we hypothesized that early experiences could increase students' sense of belonging and self-efficacy in marine biology majors. However, underrepresented minority (URM) students face significant barriers such as high costs, marginalization, and logistical challenges, particularly in activities such as SCUBA diving. To assess the impact of early SCUBA exposure on metrics related to retention in marine science, we conducted a case study in an introductory biology class, offering students the opportunity to try SCUBA in shallow water (5 ft) without any previous experience. 66 students were enrolled into three sections or treatments. Two sections had the opportunity to try SCUBA and one section did not. Data were collected using Self Reflections and PITS (Persistence in the Sciences) surveys to evaluate changes in self-efficacy and sense of belonging, alongside demographic data to compare the performance of URM and non-URM students. Here we present the challenges and highlights from our first year of implementation, and present preliminary findings suggesting that hands-on SCUBA experiences enhanced students' confidence in pursuing SCUBA certifications. These early results, and proven feasibility, highlight the potential of early exposure to SCUBA to improve recruitment and retention of diverse students in EEB, Marine Biology, and scientific diving.

“We Make the Road by Walking”: Embracing the Messiness of Community-Engaged Learning

Author: Amy Argenal

Abstract: Oftentimes doing community-engaged learning can be messy; from the barriers of working on a quarter system, to limitations with the class schedule, to transportation, and many others variables that can prevent us from engaging more outside of the classroom. Pulling from a dialogue between critical pedagogue Paulo Freire and educator Myles Horton (1990), this talk will contextualize the idea of “we make the road by walking” by reflecting on a recent iteration of a community-engaged class taught regularly in the Sociology department. This quarter, I have introduced small projects within a larger curriculum designed to introduce students to community-engaged research, learning and internships. Many of the projects respond to needs that arose from community groups responding to the recent election of Donald Trump, meaning that they are not clearly formulated and have many moving pieces, including constantly shifting needs to respond to the barrage of executive orders. This makes for a challenging pedagogical design, and yet, Freire and Horton's words have been my guide, keeping me grounded in the constant potential of the classroom to remain “the most radical place of possibility in the academy” (bell hooks 1994). This talk will share key groundings from critical pedagogy that allow us to embrace the messiness of moving our classes out of the physical boundaries of the classroom, to engage with the community and be relevant in our students' lives.

Advancing and Elevating TA Professional Development in the MCDB Graduate Program

Author: Natalie Pedicino, Jillian Porter, Giulia Gurun, Kendra Dority, Roxanna Villalobos

Abstract: Research shows that students leave STEM fields due to inequitable teaching (Seymour and Hewitt, 1997; Kober, 2015; National Research Council, 2013). At UCSC, TAs directly impact undergraduate student education by facilitating discussion / lab sections, supporting students in achieving the course learning outcomes, and assessing student work / providing feedback. And yet, research also shows that TAs are not adequately prepared to teach while in their graduate programs (Gardner and Jones, 2011; Schussler et al., 2015; Goodwin et al., 2018; Connolly et al., 2018). Culture change toward more equitable teaching in the sciences requires the professional development of graduate student educators. A team of MCDB faculty, MCDB TAs, and TLC staff are participating in the NSF-funded "Evolving the Culture of Biology" (“ECB Scholars”) program in AY 2024–2025. The team conducted a program improvement assessment using a Teaching-Centered Systemic Reform Model, with the goal of enhancing TA training and support for first- and second-year MCDB graduate students. We revised the required STEM pedagogy course (offered in Fall) and initiated a new 2-quarter learning community (Winter/Spring) to extend the impact of explicit instruction of equitable teaching practices and community-building peer support, making it a year-long professional development opportunity. The team has begun assessing the impacts of this programming on graduate student teaching self-efficacy, sense of belonging, and professional identity, using validated measures from the literature. Preliminary survey data shows improvement in graduate students' confidence in instructional delivery and classroom management, as well as knowledge of teaching values and strategies. It also shows that MCDB graduate students generally have a strong sense of belonging and value teaching in the department and at UCSC. This project has implications for department-level TA professional development that incorporates needs assessment, collaboration between TAs and teaching faculty, and program evaluation strategies informed by educational literature.

Community-Engaged Learning: The Praxis of Community Studies

Author: Alison Alkon

Abstract: This talk will introduce the “community studies model” for experiential learning by comparing it with other initiatives on campus. The community studies model is grounded in the concept of praxis and emphasizes intellectual rigor, professional development and social/emotional learning all within the context of social movement and social change organizations. It requires a deep level of student support but guides students in imagining new futures for themselves and the world.

Effects of Varying Immersive and Overnight Outdoor Experiences on Student Outcomes in an Introductory Undergraduate Field Biology Course

Author: Lina Arcila Hernández, Abraham L. Borker, Erika Zavaleta, Roxanne Beltran, Ingrid Parker

Abstract: Sense of belonging and science identity are two affective constructs positively correlated with undergraduate persistence in the sciences. Both constructs tend to increase for students who undergo a field experience. However, a major question is which specific elements of field experiences cause these positive effects in undergraduate students. Here, we asked how different exposure to community building experiences (i.e., overnight trips) during field courses impact both constructs. During two quarters, we randomly assigned undergraduate students who applied to participate in a field course to one of 3 versions: no overnight trips, one overnight trip, and two overnight trips. We compared the field course to a lecture-based course. All sections were taught with the same curriculum and instructor each quarter. 267 students answered surveys and reflections with Likert and short-answer questions related to science identity and sense of belonging before, during, and at the end of the course. Both constructs were measured using a validated instrument with Likert questions and they increased in all course versions (χ^2: 117, 4; $p<0.01$). Qualitative analyses of short-answer questions showed that in all versions, students had similar self-perceptions as STEM professionals. Students at the start of the course expressed a growth mindset — they did not necessarily express feeling that they belonged in the sciences, but they expressed excitement to learn more about research and nature. By the end of the course, students highlighted gaining research experience, feeling more comfortable with doing research, and feeling more informed about STEM careers. In conclusion, field courses and exposure to community through outdoor experiences, either as day trips or overnight trips, have a positive effect on both sense of belonging in the sciences and science identity for undergraduate students. Our research supports previous work showing that life science educators should include outdoor experiences in their curriculum.

Students as the Teachers: Positioning Undergraduates as Experts, Role-Models, and Guides to Create Diverse Learning Communities

Author: Tela Favaloro

Abstract: We present a burgeoning program that supports approachable experiential learning for lower-division learners as a series of design-build courses that are largely designed and taught by upper-division undergraduate students. By positioning undergraduate students as teachers of a formal course, we create a more welcoming and accessible learning environment for our first-year students, one that supports their constructive STEM identity work by offering a more diverse representation of what engineering looks like. Here, student-teachers propose the learning outcomes for these First-Year Design courses to target skills — both technical and professional — that they identify as valuable when navigating theory-based coursework and practice-focused extracurricular activities. Student-teachers build their course from a high-structure template centered in active and experiential pedagogy, where learners are initially “set up” with content knowledge and skills practice before being “let go” to navigate the entire engineering design cycle on a team project. In this way, first-year content is created for students by students; learners genuinely value the topics and the enthusiasm with which these topics are offered, which have included: 3D Design & Printing, Rocketry, Cybersecurity, Circuit Design and the EDA Toolchain, and Autonomous Vehicle Control, among others. Qualitative and quantitative data show that learners are more willing to participate in, and direct their learning within, the low-risk and approachable learning environment created by student-teachers. These courses are beginning to organically cultivate mixed-year communities of practice as students form relationships that extend beyond the boundaries of the class, with many returning to enroll in Lead By Design so they may teach their own version of a First-Year Design course.

Flipping Field Studies

Author: Kristen Gillette

Abstract: This presentation explores a new approach to the idea of “field studies” in courses. The new approach “flips” the idea of field studies / field trips, with an emphasis on online courses. As an instructor partially focused on online modalities — especially the learning / teaching opportunities they offer that expand on in-person modalities — I am very excited to present this new teaching approach that focuses on what can be done via online learning that cannot be easily replicated via in-person modalities.

This model, which I implemented in Creative Technologies 10 — Understanding Digital Design — was developed to offer students studio-based perspectives of designers and artists working in creative fields. Ideally, these perspectives would be authentic and experience-based, and yet still mediated by the course frameworks. Classes were held from each of these artists' studios, which vastly expanded the overall learning landscape and introduced a completely new environment to the online learning environment. Expanding on the idea of guest lectures, instead of the guest “leading” the class presentation, a more collaborative, conversational approach was adapted around the course topics and themes. I will also present on adjustments and additional components I hope to incorporate in the future, as well as student outcomes.

AI and Arachne: Utilizing Creative-Critical Projects to Activate Student Learning in the Humanities Classroom

Author: Tara Thomas

Abstract: Over the course of the past two years, students enrolled in cross-cultural classical reception courses in the Department of Literature at UC Santa Cruz have created and presented creative critical projects in lieu of a traditional final essay. Students were encouraged to engage in different genres and artistic mediums to provide a contemporary adaptation or analysis of an ancient text; oftentimes, a specific myth. This talk shares my reflections on the outcomes of this project on student engagement and learning. Although study after study has assessed the power of project-based learning in the classroom, only approximately 20% of studies focused specifically on the university environment; those that did, tend to focus on STEM classrooms ("A review of project-based learning in higher education," Guo et. al.). This talk focuses on the ways in which project-based learning can create a sense of equity among students in the Humanities classroom by allowing students to draw from their strengths and interests to engage in innovative, interdisciplinary projects. For instance, an art history major interested in depictions of race and ethnicity harnessed the power of AI to insert Black and Brown people into classical paintings, then engaged with critical race and ethnic studies texts along with ancient literature discussing ethnicity to explore the importance of diverse representation in the classics. Another student composed and performed a lyrical song on guitar about a modern Arachne bemoaning a culture of sexual violence against women, while another student interested in becoming a playwright wrote and filmed a play adapting ancient myths about Sappho and Phaon. This talk provides a few examples of projects and shares qualitative and quantitative data about how completing these projects empowered students beyond the classroom.

Abiding — The Long Conversation between Learners and Teachers

Author: Johnnie Wilson

Abstract: I mentor beginning teachers in their preparation in our graduate program. In last year's convocation, I presented the useful roles of vulnerability and mistake-making in teacher growth and development. This realization was given to me by my students in discussions during our year-long collegial conversation where we inquire into cases of their teaching.

Early in my work with them, I set out that our talk together will be a 'Long Conversation', an abiding conversation that will change over time as they grow in their teaching and as we inquire, together, what makes for good teaching. This past year's students who pushed me to think about vulnerability and mistake-making wanted to continue this long conversation, our collegial conversation, into their first year of teaching. So we have.

We have met regularly since their school year began. We have considered the trials of establishing oneself as a real teacher, often the youngest among peers. We have shared the realities of being a new teacher in a hard school, teaching kids from neglected and not much loved communities. We have struggled to reconcile what we learned about teaching that matters to kids, that shapes and changes lives, with the real expectations for what schools are supposed to do in California.

This 'Long Conversation' pushes the traditional professional and institutional boundaries of what it means for me to be a teacher at a university and what it means for my students to be learners beyond the strictures of courses and program completion.

I will share how this conversation has sustained their community and moved their learning and development. I will share how our talk outside of formal instruction informs my teaching of my present students. I will push all of us to consider what it means for teaching and learning when, as teachers, we purposefully start our relationship with students as a 'Long Conversation'.

Games and Simulations in Politics

Author: Jenica Moore

Abstract: As a graduate student in politics, I've seen how abstract political concepts can feel distant or inaccessible to undergraduates. Incorporating games and simulations into the classroom bridges that gap, transforming theories into hands-on, memorable experiences. By stepping into roles such as interest group representatives, supreme court justices, etc., students can grapple with the complexities of political processes in ways that encourage active participation and critical reflection.

This presentation focuses on how games and simulations can enhance learning in undergraduate politics courses. From lobbying simulations that demystify the realities of policymaking to crisis management scenarios that highlight the challenges of leadership under pressure, these tools make concepts like collective action, institutional constraints, and political strategy an interactive event.

Beyond the academic benefits, games and simulations also help students develop essential skills like collaboration, negotiation, and problem-solving. They create opportunities for participation that appeal to a range of learning styles and often draw in students who might not engage as much in group discussions.

This session will share practical advice for designing and running games and simulations in undergraduate classrooms, including how to balance this kind of active learning with issues of accessibility, space, and classroom decorum. It will also discuss strategies for assessing these activities in ways that connect directly to course goals.