Ninth Annual Provost's Teaching & Learning Symposium Posters

Cultivating Critical Hope: Nurturing Transformative Teaching and Learning

Friday, September 19, 2025

University Center Ballroom

Poster Presentations 9:30-10:45 a.m.

Abstracts for each numbered poster appear below. To help locate posters of interest, please see the color-coded strands that each poster falls into from the following:

- *Academic Success*
- *Assessment/Evaluation/Scholarship of Teaching and Learning (Assessment/SoTL)*
- *Course/Curriculum Development*
- *Diversity, Equity, and Inclusion (DEI)*
- *Globalization*
- *Hrabowski Innovation Fund Grant Recipients (HIF)*
- *Teaching with Technology or Generative Artificial Intelligence (Technology)*

1. *The University Seminar Series: Providing Lifecycle Support for Student Success & Transition,* Laila Shishineh, Gavin Gilliland, Abby Hart, and Tim Olivella *(Academic Transition Programs)*

   The University Seminar Series design supports student success at key transition points with a particular focus on the first year on campus while also recognizing the need for support in the middle and at the end of the college student lifecycle. The poster will highlight each iteration of the University Seminar series, (UNIV101: Freshmen Transition Seminar, UNIV201: Second Year Seminar, UNIV301: Transfer Transition Seminar, and UNIV401: Junior/Senior Seminar) including the course outcomes, key deliverables, and assessment efforts. Course outcomes at every level include a focus on academic success, campus engagement, and personal/professional development. Key deliverables include timely projects based on class standing that students can use beyond the seminar like an academic plan, a co-curricular plan, a resume and personal statement, etc. Assessment efforts that will be highlighted include pre and post assessment data for each seminar that has been offered.

   Strands: Academic Success, Assessment/SoTL, Course/Curriculum Development

2. *Impact of Semester Timing on Student Outcomes in the First Course of a General Chemistry Sequence,* Sarah Bass *(Chemistry and Biochemistry)*, Tara Carpenter *(Chemistry and Biochemistry)*, and J. Bryan Henderson *(Science Education, ASU)*

   General chemistry instructors often notice differences in student performance between fall and spring cohorts, but systematic evidence is limited. This study analyzed gradebook data

from the first course in a two-semester general chemistry sequence supported by a digital learning platform to examine the impact of semester timing on student outcomes. Multiple regression revealed a performance gap for off-sequence students, with implications for advising, course sequencing, and targeted support. Strategies are suggested for instructors to address these differences, including review modules and more interactive use of digital learning tools.

Strands: Academic Success, Assessment/SoTL

3. *None of Us is as Smart as All of Us, John Fritz (Instructional Technology)*

This presentation focuses on the use of Team Based Learning (TBL) in UNIV 102, "Academic Success Seminar," recommended for students at risk of dismissal and required for those who have been and seeking reinstatement. Typically, UNIV 102 students lack skill in honest and accurate self-assessment about what they currently know, understand or can do. Also, they're often loners who lack skill and confidence in finding, forming and functioning well in study groups that could (ideally) help develop and reinforce individual members' self-regulated learning. To help, Fritz used TBL in preparation for individual and team weekly textbook chapter quizzes. Over three consecutive semesters, Fritz – and importantly, the students themselves in each semester – found that teams consistently averaged higher weekly reading quiz scores vs. individuals (typically 99% vs. 62%). This has become a reliable "teaching moment" early in the term that may not occur without direct intervention within a course – by design.

Strands: Academic Success, Assessment/SoTL

4. *Lessons That Travel: Arts, Identity, and International Exchange, Cheryl North (Education) and Rita Borromeo Ferri (Mathematics Education, University of Kassel)*

Lessons That Travel: Arts, Identity, and International Exchange is a Collaborative Online Intercultural Learning (COIL) project connecting pre-service teachers from UMBC and Germany. Together, they designed STEAM-integrated lessons—merging Science, Technology, Engineering, the Arts, and Mathematics—to implement in K–12 classrooms. STEAM education encourages inquiry, dialogue, and critical thinking (The Institute for Arts Integration and STEAM, n.d.), and this global partnership allowed participants to build those skills while exploring identity and intercultural understanding through the arts. By collaborating across borders, future educators developed the tools needed to prepare students for an interconnected world. This work supports the belief that learning is holistic and that success in one discipline can support success in others (Brouillette & Graham, 2016), helping to break down both disciplinary and cultural silos in education.

Strands: Academic Success, Globalization, HIF

5. *Contemplative Pedagogy, Mariajosé Castellanos (Chemical, Biochemical, and Environmental Engineering), Gautom Das (Chemical, Biochemical, and Environmental Engineering), Janet Gross (English), Sarah Leupen (Biological Sciences), Louise Murray (Erickson School of Aging Studies), Donald Snyder (Media and Communication Studies) and Pengwang Zhai (Physics)*

This Faculty Learning Community (FLC) explored and practiced teaching methods that integrate meditative and other contemplative practices. We read research which shows incorporating mindful pedagogy in classroom practice can promote increased focus, concentration, and self-knowledge in students and foster students' deep engagement with course material. According to Barbezat and Bush, contemplative practices promote more meaningful and lasting learning. FLC members found it helpful for the instructor as well! Each member incorporated a different contemplative practice into the classroom as well as bringing it to the FLC meetings for members to experience. Whether guided meditations, reflections prior to or after learning, mindful reactions to provocative readings, mindful reading one sentence at a time with reflective pauses, forest bathing or deep breathing exercises, FLC members reported deeper student connections to learning, enhanced understanding of readings and lower anxiety around academic work.

Strands: Academic Success

6. *Lessons Learned from an FLC on Using Gen AI to Enhance and Expedite Teaching,* ***Diane Alonso (Psychology), Neha Raikar (Chemical, Biochemical, and Environmental Engineering), Tomoko Hoogenboom (Modern Languages, Linguistics, and Intercultural Communication), and Abhijit Dutt (Computer Science and Electrical Engineering)***

During AY2024-2025, several UMBC faculty gathered in person, for a Faculty Learning Community (FLC) on "Using Generative AI to Enhance and Expedite Teaching." Topics ranged from discussions about prompt engineering to uses of ChatGPT for course preparation (e.g., syllabi, lesson plans, slides, exams) to better support student success; from teaching students how to use Gen AI for their own learning to leveraging the capacities of more specialized tools (e.g., napkin.ai to create graphics and NotebookLM to generate podcasts from texts). The faculty also considered ethical issues and discussed pros and cons of multiple Gen AIs to determine strengths, weaknesses and best uses of each. The two facilitators of this FLC collected feedback halfway through this experience via a Google form survey, the results of which indicate a desire to learn more about this topic. Finally, this poster will highlight best practices and classroom implementations.

Strands: Course/Curriculum Development, Technology

7. *Cultivating Gen AI Literacy Through Experiential Inquiry: Students Can See for Themselves,* ***John Schumacher (Sociology, Anthropology, and Public Health)***

Most undergraduates still treat web search and Generative Artificial Intelligence (Gen AI) tools as black boxes. This project redesigned an assignment guiding students to progressively differentiate across basic web search through results produced by Gen AI tools. Using Google Gemini, available to all UMBC students, students were asked to interrogate the same research question across a sequence of: 1) web search (Google); 2) web search+AI (Google AI Mode/AI Overview); 3) academic search engine (Google Scholar); 4) indexed scholarly database (Web of Science); 5) base Gen AI model (Gemini 2.5); and, 6) "deep research" Gen AI model (Gemini Deep Research mode). Students critically analyzed the resulting outputs and documented their conclusions. Directly engaging and comparing search processes and Gen AI outputs, students developed understanding of the capabilities, limitations, and biases of each approach. This hands-on, comparative methodology moves beyond theoretical discussion, enabling students to build a critical, authentic AI literacy.

Strands: Academic Success, Technology

8. *Balancing Innovation and Ethics: Incorporating LLMs into ENGL 100 and First-Year Writing Instruction,* ***Tanya Olson, Brian Dunnigan, and Elaine MacDougall (English)***

   The Writing and Rhetoric Division (WARD) seeks to address the burgeoning impact of Generative AI (GAI) and large language models (LLMs) on education, specifically in ENGL 100, the mandatory first-year composition class at UMBC. The primary goal is to bridge the gap in understanding and utilization of LLMs between students and instructors. While students are eager to integrate LLMs into their writing process, they lack guidance on ethical usage, while instructors are hesitant due to concerns about plagiarism. WARD aims to rectify this by equipping its members with basic knowledge of LLMs, creating assignments integrating LLM use, and designing AI literacy tasks suitable for ENGL 100. Three WARD members will lead workshops to train FT and adjunct ENGL 100 instructors on LLM usage and AI literacy. The effectiveness of these initiatives will be evaluated through formative and summative assessments, student and instructor feedback, and by comparing ENGL 100 sections with and without LLM-integrated assignments.

   Strands: Course/Curriculum Development, HIF, Technology

9. *Data-Driven Student-Centered Health Communication and Promotion: Interdisciplinary Collaborative Problem-Solving and Peer-Learning for a Thriving Campus,* ***Karen Chen (Information Systems) and Katie Birger (Sociology, Anthropology, and Public Health)***

   In Fall 2024, we piloted an interdisciplinary collaborative teaching model by aligning two existing UMBC courses: IS 296 (Foundations of Data Science) and PBHL 340 (Health Communication). Through coordinated lesson planning and four joint class sessions, students from both courses engaged in collaborative projects addressing public health challenges at UMBC. Data science students supported health communication students in data collection and analysis, while gaining exposure to communication theory and campaign design. Assessment data include pre/post surveys on cross-disciplinary knowledge, 70+ interim student reflections, final reflections, and observational notes from joint sessions. Projects culminated in team-developed websites. In addition, we introduced new learning resources including UMBC student health survey data from NCHA and a pilot EMA data collection tool via the Bewei server. This poster shares our early findings, instructor reflections, and lessons learned for broader application in public health pedagogy and interdisciplinary data science education.

   Strands: Academic Success, Assessment/SoTL, Course/Curriculum Development, HIF

10. *Personal Informatics in Undergraduate Data Science: Learning by Analyzing the Self,* ***Karen Chen, Jennifer Posada, and Sydnee Angus (Information Systems)***

    Personal informatics is a data-driven, iterative process of self-tracking, reflection, and behavioral change. As wearable technologies grow in popularity, this practice offers a powerful opportunity to cultivate data literacy and self-regulation among college students. In this experience report, we describe a personal informatics project piloted in an

introductory data science course. With scaffolded support, students selected personal goals, formulated testable hypotheses, and collected data from their own lives over five weeks. Subsequent hands-on labs supported data wrangling, visualization, and statistical inference. Students concluded with creative artifacts—such as infographics or memes—designed to communicate insights to peers. Drawing on student work and reflections, we analyze how this project supports core data science competencies and meaningful, student-centered inquiry. Our findings highlight the value of integrating personal informatics into data science education as a means of fostering authentic engagement, critical thinking, and practical skills rooted in students' everyday experiences.

Strands: Technology

11. *Developing Problem-Solving Competency in Data Science: Exploring A Case-Based Approach,* *Karen Chen (Information Systems), Maryam Alomair (Information Systems), Muhammad Ali Yousuf (Computer Science and Electrical Engineering) and Shimei Pan (Information Systems)*

    Data Science Problem Solving (DSPS) competency refers to the ability to make key decisions when tackling real-world data challenges. As generative AI becomes increasingly capable of automating low-level routine tasks, it is critical to focus on developing students' higher-order reasoning and problem-solving skills. To help students develop robust problem solving competency, it is essential to expose them to a wide range of problem-solving scenarios. In this poster, we present our experience piloting Caselets—bite-sized case studies designed to scaffold students in data science problem-solving—in graduate-level data science courses. We describe the rationale, design and implementation of the Caselets tool, analyze student performance and experience using the tool as part of their course, and reflect on the instructional design implications. Drawing from instructors' observations and reflections, we discuss lessons learned and offer recommendations for improving and scaling caselet-based practices to better support the needs of both students and instructors.

    Strands: Academic Success, Assessment/SoTL

12. *Improving Conceptual Understanding in Undergraduate Heat Transfer: The Role of Inquiry-Based and Video-Assisted Homework Modules,* *Liang Zhu (Mechanical Engineering), Ronghui Ma (Mechanical Engineering), and Shuyan Sun (Psychology)*

    In this study, we tested whether participation in optional bonus modules significantly enhanced students' conceptual understanding in an undergraduate heat transfer course. Ten such modules, each comprising a question set, a video, and a submission platform, were introduced. To assess learning, 30 conceptual questions were administered at the beginning and end of each semester. Analysis of 91 students over three semesters demonstrated that those completing bonus modules achieved a 7-point increase in conceptual question scores, compared to a 5.5-point increase in the non-participating group. Notably, the largest score improvement (7.8 points) was observed in students who completed at least seven bonus modules. A survey showed overall satisfaction with the bonus modules from the students due to the connection of the bonus problems to real-life applications. These findings indicate a clear positive influence of bonus problem engagement on students' grasp of heat transfer concepts.

    Strands: Academic Success, Assessment/SoTL, HIF

13. *Innovation and Equity: Leveraging UMBC's UIA Membership to Support Student Success,* *Ronita Walker (Undergraduate Academic Affairs)* **[DEMO]**

    This poster will explore the array of learning innovations and resources available within the UIA Lab through UMBC's membership in the University Innovation Alliance (UIA). The UIA is the leading national coalition of public research universities dedicated to increasing the number and diversity of college graduates, with a particular focus on supporting low-income students, first-generation students, and students of color across the United States. By joining the UIA in 2021 as the only Maryland institution, UMBC has committed to engaging with member institutions to share and implement innovative student success practices that can significantly impact our student retention. This session will delve into the specific resources available for Faculty and Staff in the UIA Lab that UMBC has adopted through its UIA membership. The presentation will highlight how these innovations can enhance student support, foster academic success, and contribute to a more inclusive educational environment.

    Strands: Academic Success

14. *Bridging Academics and Careers: Leveraging Steppingblocks and Alumni Career Outcome Data to Empower Student Success,* *Stanyell Odom (Institutional Advancement), Christine Routzahn (Career Center), and Rowena Winkler (Career Center)* **[DEMO]**

    This poster and digital demonstration will showcase how the Steppingblocks platform, paired with UMBC's Class of 2024 Career Outcomes Report, supports both student learning and career success. By visualizing real alumni career paths, salary data, and in-demand skills, Steppingblocks empowers students to make informed, goal-oriented decisions about their academic and professional journeys. For faculty, the platform offers insights to inform curriculum design, support program reviews, and align academic offerings with evolving industry needs. Combined with UMBC's outcomes data, this demo highlights how these tools can strengthen advising, enhance career readiness, and build stronger links between coursework and post-graduate success. Attendees will have the opportunity to explore the platform's interactive features and see practical use cases from advising and academic planning. The goal is to offer ideas and strategies for incorporating career data into teaching and advising to better support student outcomes and connect learning with life after UMBC.

    Strands: Academic Success

15. *Advancing Applied Learning at UMBC: Internship & Research Success Practicum Model + Handshake Demo,* *Marykate Conroy and the Internships & Employment Team (Career Center)* **[DEMO]**

    This session highlights UMBC's Internship & Research Success Practicum (PRAC) model, a free, zero-credit structured course designed to intentionally develop and measure the impact of applied learning. PRAC supports student success by building career readiness skills through intentional goal setting, structured reflection, and integration of NACE career competencies. Students learn to articulate their applied learning experiences in ways that directly advance career development. To assess growth, PRAC incorporates employer evaluations and student reflections, offering a balanced view of competency development. Findings demonstrate measurable gains in student learning and professional preparedness.

A key lesson learned is the scalability of PRAC as a model for connecting careers to the classroom, while strengthening partnerships between faculty and experiential learning programs. A live demo of the Handshake platform will showcase how technology streamlines assessment and engagement, expanding access to internships, research, and career pathways while integrating career development into the academic experience.

Strands: Academic Success

16. *Assessing Orientation's Impact on Academic Transition for New Students,* ***László Kőrössy (Academic and Pre-Professional Advising) and Gina King (Undergraduate Admissions and Orientation)*** **[DEMO]**

The success of UMBC's mission of transformative education is possible only within the context of a student body aligned with that mission. Enrollment Management is tasked with the responsibility of creating and perpetuating such a body through recruitment, socialization, and orientation of new students. During their Orientation experience, new students take part in an in-person introduction to the physical campus, complete a number of educational modules online, and attend an intensive one-on-one advising session. These components are not just preparation for a university education, however, but are part of that education themselves. UMBC operationalizes its academic mission for all students through the General Functional Competencies. This presentation will identify how the various aspects of UMBC's Orientation program directly support the various Competencies, show how Orientation programming increases new student perception of belonging and academic readiness, and explain how progress in these areas is regularly assessed.

Strands: Academic Success, Assessment/SoTL

17. *Student-Driven AI Policy Recommendations for a Design Classroom,* ***Yasmine Kotturi, Kaoru Seki, and Manisha Vijay (Information Systems)*** **[DEMO]**

Students are often lead users and early adopters of emerging technologies, yet their perspectives are rarely incorporated into institutional AI governance. This project engaged graduate students in Human-Centered Computing to collaboratively develop AI policy recommendations for their course. Through a series of facilitated workshops, students examined generative AI's impact on design education, debated ethical and practical implications, and co-authored policies to guide classroom use. Assessment drew on qualitative coding of workshop discussions, analysis of student-authored policies, and reflective surveys to capture changes in AI literacy, critical thinking, and perceived agency in policy-making. Findings highlight how positioning students as policy co-authors can surface nuanced, context-specific guidelines that address both learning goals and responsible AI use. The demo-poster will feature an interactive digital zine and printed copies containing the policies, workshop activities, and visual summaries, enabling attendees to explore outcomes and adapt the approach for their own educational contexts.

Strands: Assessment/SoTL, HIF, Technology

18. *Intercultural Communicative Competence in Action: A COIL Practice in the Foreign Language Class,* ***Elisabeth Arévalo-Guerrero (Modern Languages, Linguistics, and Intercultural Communication)*** **[DEMO]**

The fastest growing interest in promoting internationalization in higher education curriculum altogether with the limitations that many students face to experience physical mobility, urged teacher's creativity in providing appealing alternatives to experience intercultural interactions in virtual modality. A Collaborative Online International Learning (COIL) methodology brings together international institutions to design a common project for their students to engage in collaboration towards completing a final product. This poster describes a COIL practice that intentionally addressed the development of students' intercultural communicative competence in the Advanced Spanish class by focusing on specific intercultural knowledge, effective and appropriated communicative skills, and the examination of attitudes while experiencing authentic cross-cultural communication in English and Spanish. It also includes information on COIL design, the implementation, and evaluation process to serve as a model for others who wish to embark in an exciting Collaborative Online International Learning opportunity from the comfort of their own home institutions.

Strands: Course/Curriculum Development, Globalization

19. *A New Core Capstone Course for MLLI: Tassels in Our Cap,* *Erin Hogan and Susanne Sutton (Modern Languages, Linguistics, and Intercultural Communication)* **[DEMO]**

Designed with the support of a CAHSS PAT grant, MLLI's new core capstone course (3 credits) is for majors and minors within two semesters of graduation. Students synthesize skills and information gained throughout their courses of study and transfer their knowledge and experience into application in the workplace, citizenship, or graduate study through project-based learning. Specifically, students explore strengths and interests, reflect on skills gained in coursework and study abroad, identify employment resources, prepare employment materials, and compile a portfolio to include previous projects and relevant capstone coursework. We will highlight key features of the course and hope to connect/network with other faculty from other departments involved in capstone course development or teaching. We will demo our first in-class activity using *Steppingblocks Digital Career Insights*. Since we are offering this course for the first time this fall, takeaways will be developing in real time.

Strands: Course/Curriculum Development, Globalization

20. *Gamification in the Classroom: Building Empathy and Motivation for Social Action,* *Kerri Evans (Social Work)* **[DEMO]**

The demo will showcase the board game "Emerging: The Educational Journey of Immigrant Students," designed as part of the Hrabowski Innovation grant a few years ago. I have collected pre and post test survey data from more than 400 participants, and focus group data from about 12 people. The results will discuss participants impressions on emotional and cognitive empathy gain, as well as comments about their desire to engage in social action and advocacy efforts to increase well-being for immigrants. Lessons learned showcase the importance of using gamification in the classroom and engaging students in discussion and applying content to their own lived experiences.

Strands: DEI, HIF

21. *Automatically Assessing and Improving Student Teamwork,* *Simon Stacey (Honors College & Political Science), Robert Carpenter (Division of Information Technology & Economics), Neha Raikar (Chemical, Biochemical, and Environmental Engineering), and Len Mancini (Division of Information Technology)* **[DEMO]**

    Students are increasingly called on to work in teams. Assessing- so as to improve- how well teams and team members perform is important, but challenging. This poster reports on the collection and assessment of data about teamwork in an ENCH class in spring 2025 and an Honors Seminar in fall 2024. The conversations of students working on team assignments were recorded and transcribed. At this proof-of-concept stage of the project, we conduct some preliminary analysis of our data, charting basic team evolution during the semester, and identifying some common features of team member interactions. We describe difficulties encountered so far, steps taken to address them, and our research ambitions- especially correlating (a) features of team interactions with the quality of team output (as measured by project grades) and (b) the features of individual team member contributions and the assessment of that team member by other team members (using CATME ratings).

    Strands: Academic Success, Assessment/SoTL, HIF

22. *Unlocking Learning: Using Ally for Inclusive Course Design,* *Ada Crutchfield (Instructional Technology)* **[DEMO]**

    This live demonstration will show how Blackboard and Ally can support faculty in creating accessible course materials. Participants will explore Ally's accessibility indicators, course reports, and alternative format options, with examples of common accessibility issues and quick, practical fixes. The session will emphasize how these features help improve clarity, reduce barriers, and provide students with more flexible ways to engage with course content. By seeing the tools in action, faculty can better understand how to use Ally as a guide for building accessible materials from the start, rather than remediating later. The demonstration will highlight easy changes that can make a big difference for student learning, engagement, and overall course quality.

    Strands: DEI, Technology

23. *Beyond Compliance: Designing Accessible Course Materials for Student Success,* *Josh Abrams (Instructional Technology)*

    Digital accessibility is an institutional priority at UMBC, aligning with revised federal guidelines that require proactive preparation and remediation of all course content. Designing materials with accessibility in mind benefits all learners by improving clarity, navigability, and engagement. The poster will feature strategies and examples that faculty can adopt immediately, along with an overview of how tools like Ally's course report can help identify and address accessibility concerns in Blackboard courses. By raising awareness and sharing inclusive design practices, we will encourage a campus-wide culture that values accessibility as essential to high-quality, equitable teaching and learning.

    Strands: DEI, Technology

24. *Next-Gen Video Learning at UMBC: Welcome to YuJa,* *Mariann Hawken, Ben Amudzi, and Peter Ariev (Instructional Technology)* **[DEMO]**

YuJa is a new video capture and management system, offering robust accessibility tools that make video content more inclusive for all learners. This poster and demonstration will share information about the upcoming implementation timeline for Spring 2026, providing key information about about training and support. Faculty will see examples of accessible videos using YuJa's automated captioning and transcript editing. This poster and demonstration will showcase how YuJa's enhanced features can transform video-based teaching and learning. It is ideal for anyone preparing to transition from Panopto and eager to use YuJa's features from day one.

Strands: DEI, Technology

25. *Social Work in Action: Helping Students See their Pathway to the Social Work Profession,* *Katie Morris and Nicki Belfiore (Social Work)*

UMBC's BSW and UMB's MSW programs collaborated with local public schools and community college to launch the Social Work in Action Program. This pathway program exposes high school and community college students to the social work profession through experiential learning, tiered mentoring, and comprehensive support. In the spring of 2025, 12 students participated in 5 in-person events. The SWIA program had a profound effect on students' future plans, as shown in focus group data. Students reported: a sense of belonging and community; feeling motivated and capable of pursuing a social work degree; a greater understanding of social work and the skills needed; and emergent identities as social workers. The pathway program supports students and builds confidence to pursue further education and contributes to robust student enrollment and retention. Fall semester programming will include peer mentoring and support, as recommended by participants, with current students serving as co-facilitators alongside social work faculty.

Strands: Academic Success, Assessment/SoTL, Course/Curriculum Development, DEI, Technology

26. *Scaling Work-Integrated Learning and Microcredentials at UMBC: Building Equity and Infrastructure Across Campus,* *James DeVita (Student Affairs), Stephen Freeland (Individualized Study Program), Jamie Gurganus (Engineering and Computing Education Program), Christine Routzahn (Career Center), and Collin Sullivan (Division of Professional Studies)*

UMBC is one of eight institutions nationwide selected for the Work-Integrated Learning (WIL) Accelerator, receiving two years of consulting and grant support to promote equitable, career-connected learning. Our project aims to expand access to high-impact experiences, including internships, on-campus employment, and research, through coordinated infrastructure, cross-divisional collaboration, and digital tools such as microcredentials. To evaluate our progress, we are analyzing participation data (e.g., PRAC enrollments, Handshake engagement), supervisor and student evaluations linked to NACE competencies, and results from the First Destination Survey. We are facilitating campus discussions with key stakeholders, building on initiatives like Work+ and aligning with broader student success goals. UMBC offers strong WIL opportunities, but structural barriers and limited visibility hinder equitable access. We aim to connect existing resources, empower students

to reflect on and share their experiences, and lay the groundwork for a more integrated WIL ecosystem that supports student success.

Strands: Academic Success

27. *Empowering Learners with Google Career Certificates: Industry-Aligned, Flexible Credentials for Lifelong Learning,* Collin Sullivan (Division of Professional Studies)

UMBC, in partnership with Google, the University System of Maryland (USM), the National Association of Higher Education Systems (NASH), and the University of Texas System, is expanding access to industry-recognized credentials in high-demand fields such as AI, cybersecurity, and data analytics. These flexible, self-paced courses support learners in building workforce-relevant skills alongside or beyond their degree. UMBC integrates Google's Career Certificates and AI Essentials into FYS 102, ENGL 211, and co-curricular pathways via zero-credit PRAC courses that scaffold reflection, track participation, and promote completion. Assessment methods include progress tracking through Google's learning platform, reflective assignments, and peer collaboration in PRAC courses. Early lessons underscore the importance of embedding credentials into structured contexts to support persistence. This initiative illustrates how digital credentials can promote lifelong learning, support skills-based hiring, and strengthen Maryland's talent pipeline—while empowering students, alumni, faculty, and staff to chart new pathways.

Strands: Academic Success, Technology

28. *From Lecture to Dialogue: Transforming Calculus Discussion Sections to Foster Student Success,* Rebecca Kirvan (Mathematics and Statistics)

Discussion Section—the name implies discussions will happen. However, math discussion leaders typically review material for the first part of the class, and students take a quiz during the second half. There is little time for collaboration, and the students do not engage in much mathematical discourse. To promote mathematical discourse and help students demonstrate mastery, we restructured Calculus 1 discussion sections in the Spring 2025 semester by adding a collaborative workday with a structured activity. We compared DFW rates and looked at TA survey data to assess growth. We found the Spring 2025 rates were lower than recent spring semesters. Additionally, we found that the collaborative day increased attendance, fostered discussion, and helped students review lecture material. We learned some of the activities were too long for students to successfully complete and that activities on exam weeks should be more focused on review to best help students.

Strands: Academic Success, Assessment/SoTL, Course/Curriculum Development

29. *Connecting Mathematics to Experiments: A Multi-Level Approach to Hands-On Learning,* William LaCourse (Natural and Mathematical Sciences), Kathleen Hoffman (Natural and Mathematical Sciences), Christopher Rakes (Education), Brad Peercy (Mathematics and Statistics), Alexis O'Malley (Academic Success Center) and Rebecca Kirvan (Mathematics and Statistics)

Experimentation in a laboratory setting is frequently used in science, technology, and engineering but is seldom found in mathematics courses. We developed and assessed an introductory experimental math course, aimed at students who either have completed a

developmental math course or who have tested out of them on the math placement exam. The mathematical focus of this course is proportional reasoning, taught through experimental modules that include measurement, friction, probability, and financial math. Throughout the course students are required to use spreadsheets for data analysis and graphing.

Strands: Academic Success, Course/Curriculum Development

30. *Boning Up on Forensic Anthropology, Sarah Chard (Sociology, Anthropology, and Public Health & Arts, Humanities, and Social Sciences) and Virginia Estabrook (Sociology, Anthropology, and Public Health)*

The "Boning Up on Forensic Anthropology" project redesigned Anth 322 as an active learning course featuring hands-on exercises with a diverse, ethically sourced collection of casts of human skeletal remains. With funding from a Hrabowski Innovation ADAPT Award, Phase I established a UMBC collection of casts from 30 individuals reflecting age, gender, origin, and cause of death variation. Phase II integrated cast-related activities within Anthropology 322. Students handled, drew, and labeled these casts to deepen understanding of osteology, variation, and pathology—foundations of forensic anthropology—while exploring justice and bias in researching human remains. This poster presentation describes this process and impact on student learning. Assessment involved pre- and post-tests and qualitative feedback. Results indicate improved conceptual mastery, heightened engagement, and a greater awareness of ethical challenges. Key lessons include the transformative impact of tactile active learning on retention and as a mechanism for increasing critical thinking and justice-based inquiry.

Strands: Academic Success, Assessment/SoTL, Course/Curriculum Development, HIF