2019 Provost's Teaching & Learning Symposium Posters

Fostering Communities of Learners In and Beyond the Classroom
September 20, 2019, 11:30 a.m. – 12:15 p.m.

Poster Presentations   UC Ballroom Lounge

Abstracts for each numbered poster appear below.

1. *Using Google Forms to Enhance Student Learning,* Diane Alonso (Psychology)

   Active learning leads to high levels of student engagement, which can lead to improved student learning outcomes. Google Forms, a free online survey tool, are easy to create and disseminate, and can support active learning in areas such as interactive real-time polling, as well as classroom, lab, and homework assignments. By allowing students to participate electronically (and occasionally, anonymously), Google Forms provide a means for all students to engage in discussions – ensuring that those who might otherwise be reluctant to speak up, have a voice. To understand students' perceptions of Google Forms and to learn how to improve their effectiveness in supporting student engagement, this study implemented a satisfaction survey, sent out to all students who had taken one or both of two Research Methods classes over a 5-semester period. Results to be presented, include an analysis of feedback from student users and thoughts on best practices moving forward.

2. *Using Amazon Alexa as a Classroom Teaching Assistant,* Galina Madjaroff (Erickson School)

   A few examples of integrating Alexa into the classroom already exist on other campuses, but we have not yet explored its potential here at UMBC. Alexa can provide a new fresh perspective in the classroom, provide facts, awaken interest and facilitate an interesting discussion. Many new skills have been developed for the university environment that are worth exploring. In my course I informally utilized Alexa as an assistant in the classroom. Students enjoyed the interaction and were excited to utilize her many skills.

3. *Get Ready to Innovate: Blackboard Ultra is Here,* Mariann Hawken (Instructional Technology)

   UMBC faculty have used the classic Blackboard interface for nearly 20 years, yet early adoption of the Ultra Experience increased by more than 900% between spring 2018 and fall 2019 semesters as more faculty opted to teach with the Ultra Course View. Learn how UMBC leverages its data warehouse to identify patterns in course tool usage to prioritize training and support, plan outreach with Ultra Faculty Ambassadors, deliver flexible training to departments, and create constructive course redesign strategies.

4. *Access and Equity: What OERs Can Do for Your Students,* Erin Durham (Library), Sherri Braxton and Susan Biro (Instructional Technology), and Maria Manni (Modern Languages, Linguistics, and Intercultural Communication)

    Learn how the use of Open Educational Resources (OER) and Open Pedagogy can advance UMBC's Vision and commitment to "knowledge, economic prosperity, and social justice." Research has shown that the use of Open Educational Resources (OER) has increased student GPA and graduation rates at other institutions in the country, (Colvard et. al., 2018), and can outline a path forward for increasing student success at UMBC. By highlighting the results of a recent campus OER environmental scan and faculty survey, this presentation details current awareness and use of OER on campus. The presenters will highlight resources available through the UMBC OER working group and the statewide M.O.S.T. (Maryland Open Source Textbook) initiative to further student success, social justice, and transformative teaching and learning at UMBC.

5. *Multicomponent Evaluation of the Grand Challenges Scholars Program,* Maria Sanchez (Engineering and Information Technology) and Kiplyn Jones (Shriver Peaceworker Fellow)

    The UMBC Grand Challenge Scholars Program is designed as an interdisciplinary program for students from all majors that want to help solve important problems facing society. This structured pathways program provides a vibrant community that helps tackle the National Academy of Engineering Grand Challenges, and gives students experience and skills to help create solutions to some of the most pressing challenges of the 21st century.

    The program is designed for each scholar to create a personalized program to engage with the Grand Challenges from research, interdisciplinary, entrepreneurship, global, and service perspectives. They highlight these experiences by creating an electronic portfolio of their accomplishments and activities, addressing both core (shared) learning objectives and personalized (individual) objectives. Assessment of these components is done through the learning outcomes, experience proposals, electronic portfolios and pre- and post- surveys of participating students.

6. The Evolution of the STEM Living-Learning Community at UMBC, Lucie Blauvelt, Laura Ott, and William LaCourse (Natural and Mathematical Sciences)

    The STEM LLC is implementing key initiatives prevalent in learning communities to evaluate if active participation in a STEM residential community correlates to higher STEM academic outcomes. The first two years (n=125) of the STEM LLC served as a control, with no required programming, although optional programming was available. One opportunity was a peer mentoring program. Our data reveals that students who consistently interacted with peer mentors had higher average GPAs. During the third year (n=90), a required practicum was implemented. We also developed an FYE course, where enrollment was optional, but strongly encouraged. We found that the students who participated in the PRAC and/or FYE their first semester at UMBC had higher average fall GPAs than those who did not participate. Based on these positive results, we combined the PRAC and FYE into a single one-credit course the following year (year 4; n=97), and was required for all residents.

7. *In the Neighborhood: UMBC's Interdisciplinary CoLab Explores East Baltimore,* Kate Drabinski (Gender, Women's + Sexuality Studies) and Donald Snyder (Media and Communication Studies)

Interdisciplinary CoLab is a 4-week paid internship on narrative-based research offered to undergraduate UMBC students. Participants work in interdisciplinary teams to create narratives about our campus, our larger communities, and our lives. Their research results in a public-facing product.

During Summer 2019, Dr. Drabinski and Dr. Snyder led six students through a project examining materials related to the 1975-1976 East Baltimore Documentary Photography Project. Students explored various themes including identity, community, and urban transformation. Based on this research, the team produced a website, housed on the Special Collections' homepage, presenting selected works from the collection, along with a series of research essays.

The project promoted interdisciplinary collaboration, working with clients, conducting self-directed research, and writing for a general audience. The poster will present an overview of the project, discuss successes and limitations, and present information about the value of interdisciplinary research at the undergraduate level.

8. *Planning a Teaching as Research Project Course through CIRTL @ UMBC,* Tracy Irish (Education)

UMBC has been a part of the Center for the Integration of Research, Teaching, and Learning (CIRTL) network since 2016. In Fall 2018, one UMBC faculty member co-taught an online course, Planning Your Teaching-as-Research Project, to a group of graduate students across the country. Two of UMBC's graduate students participated in the fall online course.

This poster aims to describe this course as it will be offered to a cohort of UMBC graduate students interested in improving their teaching and learning effectiveness.

This course will give participants an opportunity to work on refining a research question, conducting a literature review, developing student outcomes, and identifying appropriate learning activities and assessments that align with those outcomes. Throughout the course, participants will draft components of their project plan and provide feedback on each other's work. The final product of the course is a complete TAR project plan.

9. *Instilling Cultural Competency in EHS Planning,* Diane Flint (Emergency Health Services)

Students in Emergency Health Services are required to complete a research project that transforms an existing EMS (Emergency Medical Services) system into one that uses the optimal ideals of the EMS Agenda for the Future. In the Spring 2019 project, students were assigned EMS systems that have issue with cultural diversity or minority populations that have specific needs. Students were evaluated on how they addressed the needs of the special populations within the grading rubric. Discussions in class during the oral presentation of the project discussed cultural competency and the importance of population inclusion. It was found that students often focus so much on the medical practice that the personal aspect of medical care can be lost. Students were awed by the plight of the Native American and

rural populations existing in the US. This awareness will hopefully promulgate greater awareness of cultural and populations diversity in EMS.

10. *Internationalization of the Curriculum, Co-Curriculum, Learning Outcomes: From Theory to Practice,* Irina Golubeva (Modern Languages, Linguistics, and Intercultural Communication) and Adam Holden (International Education Services)

Internationalizing the curriculum, co-curriculum, and learning outcomes involves many stakeholder groups and, therefore, the development and implementation of substantive internationalization of the curriculum, co-curriculum, and learning outcomes can become a complex, multi-layered process. An institution's curriculum is the bedrock of global learning which also makes it a crucial piece of the internationalization puzzle. Internationalizing the curriculum is foundational to global learning, it enhances students' employability, and can serve multiple institutional goals.

UMBC is currently participating in the two year ACE Internationalization Laboratory. As a part of this Lab, UMBC has convened six subcommittees including one on internationalizing the curriculum, co-curriculum, and learning outcomes. Over the past year, this subcommittee has completed an interim report which includes benchmarking against UMBC's peer institutions, a SWOT analysis and a set of initial, recommended interventions. Specifics on this subcommittee's progress and recommendations will be shared.

11. *Building the Pillars in my Intercultural Journey: An Online Introduction to Intercultural Communication,* Elisabeth Arevalo-Guerrero (Modern Languages, Linguistics, and Intercultural Communication)

In a rapidly increasing technological and interconnected world, the possibility to learn and experience cultural diversity in meaningful and authentic interactions across cultures is a reality for many in higher education. In this poster I will share the first experiences teaching an intensive 4-week online course. I will include the course design, assessment tools, the most effective activities and assignments, and students' evaluations. The learning outcomes were manifested in the ongoing students' collaboration and engagement in group discussions where they reflected on their learning experience as it relates to their personal intercultural encounters. Thus, online teaching and learning can facilitate an alternative venue for common space where to share about each other, reflect, and experience intercultural communication. This poster relates to the topic of diversity, inclusion, and transformation as it represents a model for experiential learning based on self-awareness and critical thinking to effectively interact in our undeniable global diversity.

12. *Engaging Difference and Diversity in Practice: Assessment of Students' Perceptions,* Carolyn Tice and Katie Morris (Social Work)

Social work educators prepare students to engage in inclusive practice across client systems. A diversity statement and corresponding goals were approved by the Social Work Program and mapped throughout the core curriculum. Diversity content was added to the introductory and three practice courses in the form of readings, role plays, guest speakers, community activities, case studies, and videos or films. These content changes were assessed by an end-of-year student evaluation that included 21 questions related to students' ability to confront and diminish biases and work effectively within a multicultural environment.

Aggregated data indicates 75% to 100% of all students "Strongly Agree" they had the ability to engage in difference and diversity in their social work practice. Initial findings support students' active or experiential involvement in the learning process where there are opportunities to practice and apply course concepts. This poster presents these findings and additional data from the evaluation.

13. *Seeing White Independent Study,* M. Nicole Belfiore, Jeanette Hoover, and Angel Jenkins (Social Work)

Seeing White is a Peabody-nominated podcast produced by Duke University that addresses the history and development of structural racism. Two social work instructors guided an innovative, hybrid independent study for 10 students which relied on the podcast to deliver content. To support students as they grappled with the content and their emotions around race issues, students kept journals and attended seminars. Qualitative and quantitative measures explored how the course influenced students' attitudes, knowledge, and skills about racism. Preliminary findings indicate that students developed a new understanding of white privilege, structural racism, and the role of education to address race based injustice. Further, they expressed a commitment to respond. This poster will present the structure and experience of the independent study, research findings, and implications for integrating race issues into undergraduate curriculum. One student reported, "This series has been an incredibly journey." This research was supported by a Hrabowski Innovation Award.

14. *Flipping a Graduate Classroom,* Elissa Abod (Psychology)

This poster presents the research results from a CAHSS Pedagogy and Teaching Grant awarded in spring 2018. As part of the grant, graduate course PSYC 670-Industrial-Organizational Psychology was re-designed using an innovative teaching model. The research methodology was a repeated-measures design, to assess the efficacy of traditional vs. active learning (flipped) teaching models. The effectiveness of the flipped classroom model was assessed using student outcomes (test scores), SEEQ ratings of teacher effectiveness, attitudinal measures of traditional vs. flipped classroom formats, and focus group results. Lessons learned relate to effective course design strategies, student engagement and learning, teaching effectiveness, and student satisfaction under the flipped classroom model. This research also evaluated differences in perceived inclusiveness in the traditional vs. flipped models.

15. *Innovative Teaching Tools: Using "Design Thinking" and "Sprints" in Your Class,* John Schumacher (Sociology, Anthropology, and Health Administration and Policy)

Student engagement remains a key element in successful classroom sessions. Introducing a "design thinking" approach as a creative problem solving method engages students with a framework starting with a problem definition from a user-center perspective followed by brainstorming, prototyping solutions, and testing. Additional tools systematically guide students through the design process toward concrete creative solutions. The method has been applied to address a wide variety of design challenges requiring creative solutions ranging from problems in software development and engineering all the way to public health and society-wide social problems.

16. *Design-Based Lessons Foster Equity When Integrating Engineering Into Biology Classrooms,* Tory Williams, Christopher Rakes, Jonathan Singer, and Jacqueline Krikorian (Education) and Julia Ross (Engineering, Virginia Tech)

The integration of engineering into science education is challenged by limited research-based, engineering instructional materials and aligned instructor preparation. The INSPIRES educative curriculum was developed to infuse engineering ideas into science classrooms through equitable practices. Our study measures students' growth in STEM learning outcomes as a function of the INSPIRES curriculum and professional development. Students' post-assessment scores were analyzed with HLM, accounting for both student- and teacher-specific traits. Students identifying as Black and Hispanic significantly outperformed their White peers on design-focused and knowledge/comprehension-level questions, yet performed disproportionately lower on science-focused and synthesis/evaluation-level questions. Additionally, female students more frequently kept pace with their male peers on design-focused questions. Since instructors utilized more reformed pedagogies in corresponding design-focused lessons, than during science-focused lessons, our findings suggest that reformed, student-centered, design-based, STEM activities foster equity in science classrooms while instructors' intervening steps to 'traditionalize' inquiry lessons may actually widen achievement gaps.

17. *Including Ethics in Data Science Pedagogy: Why, What and How?,* Vandana Janeja, Shimei Pan, and Jimmy Foulds (Information Systems), Lee Boot (Visual Arts and Computer Science and Electrical Engineering)

Ethical thinking must be a critical aspect of any data science education program. Including ethics involves educating our students such that in the future, when they become the decision makers who make decisions based on data, they have what it takes to have positive impact. Given the negative potential of data misuse, we are effectively sending "data firefighters" in the wild. Effective training must build students' capacity the whole data life cycle with thoughtful design and to engage qualitative thought processes in a quantitative setting. As educators we can think of this as slowing down to help students consider the implications of what they do in a fast pace job oriented/ skill building classroom setting. This poster will outline ongoing work on (1) why such training is important? (2) what does such student training look like? and, (3) how do we not only teach, but model this thinking in our data science classrooms? Results and recommendations on this theme will also be shared from a recent NSF funded workshop bringing together over fifty educators.

18. *Effects of Individualized Active Learning via Simulations on Undergraduate Interest and Performance in Introductory Ecology,* Chris Hawn (Geography and Environmental Systems), Emily Meineke (Organism and Evolutionary Biology, Harvard), Hannah Chaney (Statistics, North Carolina State), and Thomas Wentworth (Plant and Microbial Biology, North Carolina State)

Incorporating active learning in the classroom is an important component in boosting student learning outcomes. However, active learning techniques can be difficult and time consuming for research-focused academics to develop and apply. To fill this gap, education professionals have developed modules for others to implement in the classroom. Here, we assess the use of BioSim active learning modules in a traditional lecture course of introductory ecology through student survey responses, exam scores, and a full-factorial

experiment. We found that the active learning modules did not increase student test course when compared to the control. We also found that student interest and motivation, rather than the modules, were the most influential factors in student performance. In order to truly transform student learning outcomes to all students, it is critical to understand the circumstances by which active learning strategies have a positive impact on learning outcomes.

19. *Factors Influencing Quality of Team Discussion: Discourse Analysis in an Undergraduate Team-Based Learning Biology Course,* Sarah Leupen (Biology), Kerrie Kephart and Linda Hodges (Faculty Development Center)

Group activities as part of active learning pedagogies are thought to be effective in promoting student learning in part because of the quality of discussion they engender. Not much is known, however, about which instructional factors are important in achieving productive conversation. We explored these issues in a physiology course taught using team-based learning (TBL). We were most interested in discussions that evoke disciplinary reasoning. Using transcribed conversations of four randomly selected teams three times throughout the semester, we analyzed three discursive phenomena: conceptual explanations, re-evaluations, and co-construction. We provide examples showing the role of each of these elements in moving students toward conceptual understanding. These phenomena were more likely to occur in response to higher-order questions. Because improving student learning in general, and improved use of team-based pedagogies in particular, have been shown to differentially positively impact traditionally disadvantaged groups in higher education, our work matches the symposium's theme.

20. *Using E-mail to Foster the Faculty-Student Connections in a Large Introductory Course,* Tara Carpenter and Sarah Bass (Chemistry and Biochemistry)

When teaching, especially in a large lecture course, it can seem impossible to reach students on a human level. Students often feel that the instructor does not view them as anything more than a number in the first place. For an introductory course, it is even more important that students make a good connection with their instructor as they transition from high school to college. The instructor-student relationship can have a real impact on their academic success and future career. The enrollment in general chemistry at UMBC is over 1,000 students per year which, like many introductory courses, presents a challenge in connecting with students. An approach to using email to reach hundreds of students at a more personal level will be presented.

21. *How the Use of a Prerequisite Quiz Led to More Informed Advising,* Tiffany Gierasch (Chemistry and Biochemistry)

CHEM 351 and CHEM 352 make up a cumulative two-semester organic chemistry sequence. A prerequisite quiz was administered at the beginning of the CHEM 352 course to help students determine if they had retained the core content and skills from CHEM 351 that are necessary for success in CHEM 352. Low scoring students often had one or more of the following risk factors 1) transferring in any prerequisite course in the sequence, 2) repeating any prerequisite course, or 3) experiencing a gap between the completion of CHEM 351 and the start of CHEM 352. Further analysis revealed two cohorts of students with very different

final letter grade distributions, differentiated by when and where they had completed CHEM 351. These observations were shared with the CNMS advising office, which subsequently updated their materials to share best practices about organic chemistry course sequencing with students and advisors.

22. *Using Assistive Technology Design to Teach Human-Centered Computing,* Foad Hamidi (Information Systems)

Designing Assistive Technologies (ATs) that help people with disabilities can provide valuable learning experiences for undergraduate and graduate students. Over the past two years, I have developed and piloted an AT prototyping platform for teaching human-centered design to 4 students. Students demonstrated both technical skills in helping develop the platform further and research skills in writing and presenting about it at local and international venues. The pilot has shown that using AT platforms for teaching can engage students deeply and encourage them to assume a degree of ownership on the outcomes of their design activities. Additionally, a key component is to ground the design process in the experience of real users. My poster relates to the theme of diversity and inclusion in that it describes a process to increase students' awareness about the diverse needs and desires of people with disabilities.