Schedule-at-a-Glance (Online)

Thursday, June 23, 2022
11:00:00 AM – 12:30:00 PM ET
Opening Session and Welcome Remarks

12:30:00 PM – 1:00:00 PM ET Break

Concurrent Session Block I
1:00:00 PM - 2:00:00 PM ET
Opportunities for Engagement with the Scholarship & Practice of Undergraduate Research (SPUR)

1:00:00 PM - 2:00:00 PM ET
Impact of COVID on Undergraduate Research Mentoring Experiences – The Good, The Bad and the Ugly

Series I
1:00:00 PM - 1:15:00 PM ET
The Impact of Social-Emotional Learning on Self Efficacy in Undergraduate Research
1:15:00 PM - 1:30:00 PM ET
Cultural Compatibility Perceptions and Persistence Intentions: Implications for Course-Based Undergraduate Research Experiences
1:30:00 PM - 1:45:00 PM ET
Supporting Diversity, Equity, and Inclusion in Student-Driven Undergraduate Research Through Higher Education Partnerships and Collaboration
1:45:00 PM - 2:00:00 PM ET Q&A and Discussion

Series II
1:00:00 PM - 1:15:00 PM ET
Building the culture of research in the SFSU College of Liberal and Creative Arts: A Case Study
1:15:00 PM - 1:30:00 PM ET
Art Practice as Research: Undergraduate Research in the Visual Arts
1:30:00 PM - 1:45:00 PM ET
Using a Virtual World Platform to Celebrate and House Student Research
1:45:00 PM - 2:00:00 PM ET Q&A and Discussion
2:00:00 PM – 2:30:00 PM ET Break

Concurrent Session Block II
2:30:00 PM - 3:30:00 PM ET
Implement course-based research in a General Education Capstone course "Children as consumers"

2:30:00 PM - 3:30:00 PM ET
EvaluateUR-CURE: A Way to Connect Learning with Awareness of Knowledge and Workforce Skills

Series III
2:30:00 PM - 2:45:00 PM ET
Understanding By Design In the Undergraduate Literary Research Classroom: Enduring Understandings and Metacognition for Deep Learning
2:45:00 PM - 3:00:00 PM ET
Off the Shelf Components Lead to Effective URE Design, Making Life Easier for Everyone
3:00:00 PM - 3:30:00 PM ET Q&A and Discussion

Series IV
2:30:00 PM - 2:45:00 PM ET
Impacts and Campus Community Building: three strategies for promoting campus-wide undergraduate research with faculty and students
2:45:00 PM - 3:00:00 PM ET
Pathway to Research: Helping Students Find Mentors at Large Campuses
3:00:00 PM - 3:30:00 PM ET Q&A and Discussion
3:30:00 PM – 4:00:00 PM ET Break

Concurrent Session Block III
4:00:00 PM - 5:00:00 PM ET
Organizing for Racial Equity on an Institutional Scale: A Case Study from an Undergraduate Research Program Director at a Large Research University

Series V
4:00:00 PM - 4:15:00 PM ET
Using Tableau to Explore & Report Undergraduate Research Experiences
4:15:00 PM - 4:30:00 PM ET
Case Study on the Impact of a Mentor and Cohort on Students' Academic and Career Decisions
4:30:00 PM – 5:00:00 PM ET Q&A and Discussion
Friday, June 24, 2022

**Concurrent Session Block IV**
11:00:00 AM - 12:00:00 PM ET
A Model for Holistic Assessment of Course-Based Undergraduate Research Experiences

11:00:00 AM - 12:00:00 PM ET
Post-COVID Research and the Application of Virtuality

12:00:00 PM - 12:30:00 PM ET    Break

12:30:00 PM - 1:30:00 PM ET
Special Session: ETAP Bolsters NSF Efforts to Promote Equity

1:30:00 PM - 2:00:00 PM ET    Break

**Concurrent Session Block V**
2:00:00 PM - 3:00:00 PM ET
Helping science department faculty to seize the moment with fresh ideas for undergraduate research

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**Series VI**
4:00:00 PM - 4:15:00 PM ET
A Cautionary Tale: Undergraduate Research Impact on Community and Students
4:15:00 PM - 4:30:00 PM ET
Connecting undergraduate research across countries
4:30:00 PM – 5:00:00 PM ET
Q&A and Discussion

**Series VII**
4:00:00 PM - 4:15:00 PM ET
Using guided reflection to confront failure and build resilience in undergraduate researchers
4:15:00 PM - 4:30:00 PM ET
Recruiting and Maintaining Interdisciplinary Research Teams: Case Study of FSU iGEM
4:30:00 PM - 4:45:00 PM ET
Take the CURE: A Multi-Campus Study of Course-Based, Biology-Related, Virtual Undergraduate Research Experiences
4:30:00 PM – 5:00:00 PM ET
Q&A and Discussion

**Series VIII**
2:00:00 PM - 2:15:00 PM ET
Transformative Experiences: Incorporating Inclusive Undergraduate Research into Community-based Engaged Learning Course Projects
2:15:00 PM - 2:30:00 PM ET
Teaching qualitative research skills to help students make sense of their experiential education: A case study from FSU’s Global Scholars program
2:30:00 PM – 3:00:00 PM ET
Q&A and Discussion

**Series IX**
2:00:00 PM - 2:15:00 PM ET
Development of an Online Course at Kettering University for Preparing Undergraduate Science and Engineering Majors for Research
2:15:00 PM - 2:30:00 PM ET
Developing Online Courses to Expand Undergraduate Research across Campus
2:30:00 PM – 3:00:00 PM ET
Q&A and Discussion

3:00:00 PM – 3:30:00 PM ET    Break

**Plenary II**
3:30:00 PM - 5:00:00 PM ET
Conference Reflections and Wrap-up

**Pre-recorded Flash Talks**
Listed on pages 21-23
Online Program Agenda
Thursday, June 23, 2022

11:00:00 AM – 12:30:00 PM ET
Opening Session and Welcome Remarks

Opening Session: Navigating Difficult Conversations: Skills and Strategies
This session aims to help participants to develop their skills and learn strategies for navigating difficult conversations. The ability to communicate effectively towards achieving desired outcomes is a valued skill that can be learned and practiced. Those who invest in practicing and improving these skills benefit greatly, as well as the teams and communities in which they participate. This session will provide strategies for navigating difficult conversations and present a framework for such conversations towards achieving productive results.

Speaker: Dr. Lily Wang, the Charles W. and Margre H. Durham Distinguished Professor and Director of the Durham School of Architectural Engineering and Construction, University of Nebraska – Lincoln (UNL).

12:30:00 PM – 1:00:00 PM ET Break

Concurrent Session Block I

1:00:00 PM - 2:00:00 PM ET
Opportunities for Engagement with the Scholarship & Practice of Undergraduate Research (SPUR)
Theme: Advocacy and Partnerships/Collaboration and Community

The Scholarship & Practice of Undergraduate Research is the flagship scholarly journal for The Council on Undergraduate Research (CUR). Debuting in 2017, the journal is the successor to CUR Quarterly, CUR’s original newsletter. In summer 2022, SPUR hired a new Editor-in-Chief, adopted a new organizational structure, and brought on board Technica Editorial Services to support the journal’s production. In this session, we will review the purpose and audience for SPUR and discuss how interested scholars and practitioners can engage with SPUR as authors, reviewers, special issue editors, editorial advisory board members, and associate editors to advance knowledge and understanding of effective new approaches to mentored undergraduate research, scholarship, and creative activity (URSCA). An important part of the session will be an open Q&A. The purpose of the session is to educate new and long-standing CUR members about SPUR and to empower more of the membership to engage with and support the journal. There are many opportunities for engagement with SPUR beyond authorship. These include reviewing for the journal, serving as a themed issue editor, joining the editorial advisory board, and serving as an associate editor. These opportunities provide members with opportunities to grow as scholars and leaders advancing their careers, our professional society, and our mission. By expanding our base, we position CUR and SPUR for global leadership in URSCA and ensure the sustainability of both. In informing all our members about the variety of opportunities available to them we demonstrate respect and promote equity, diversity, and inclusion allowing all CUR members the opportunity to achieve their full potentials as scholars and mentors.

Key Takeaways: After attending this session, the audience should be able to 1. Determine whether their scholarship is suitable for the consideration of publication in SPUR 2. Describe three hallmarks of high-quality undergraduate research, scholarship, and creative activity study 3. Identify three different ways to engage with SPUR beyond authorship.

Learning Level: Foundational - Explain ideas or concepts, report out (e.g. introductory)
Speakers: Patricia Mabrouk, Professor, Northeastern University

Series I

1:00:00 PM - 1:15:00 PM ET
The Impact of Social-Emotional Learning on Self Efficacy in Undergraduate Research
Theme: Diversity, Equity, and Inclusion

Social and emotional learning (SEL) is often seen as a critical component in education; it links academics to transferrable life skills. Research on cognitive behavior indicated that journaling positively impacted self-growth, critical thinking skills, and self-introspection (Fogarty and McTighe, 1993; Perkins et al.; 1990, and Clarke et al., 1993). The session’s foundation is built on social cognitive and resiliency theories. A primary focus of social cognitive theory deals with self-efficacy or beliefs about one’s ability to perform a specific behavior. Morales and Trotman (2011) defined academic resilience as “the process and results that are part of the life story of an individual who has been academically successful, despite obstacles” (p. 8). The discussion examines the resiliency of undergraduate business students as they tackle upper level research courses required for program completion. The research proposes the following questions: 1) What effect does social and emotional learning have on business students’ attitudes toward undergraduate research? 2) What effect does social and emotional learning have on...
academic motivation in undergraduate business students? Pilot study results show that the use of video journaling provided a free-form method of self-reflection. The implementation of peer-to-peer and group discussions facilitated deeper learning experiences and personal support systems. Generally, the use of social-emotional learning strategies impacted the undergraduate research process based on the qualitative responses from the case study's participants.

**Key Takeaways:**
1. Session attendings will be able to re-evaluate course structures to integrate social emotional learning strategies into undergraduate research.
2. After attending this session, participants will be able to articulate the challenges of minority students engaged in research outside the scope of S.T.E.M.-related curriculum.

**Learning Level:** Applied - Use information in new situations, implement, operate, draw connections among ideas (e.g. how-to, case studies)

**Speakers:** Tiffanie Turner-Henderson, Ph.D., Assistant Professor, Johnson C. Smith University

**1:15:00 PM - 1:30:00 PM ET**

**Cultural Compatibility Perceptions and Persistence Intentions: Implications for Course-Based Undergraduate Research Experiences**

**Theme: Diversity, Equity, and Inclusion**

In an interactive mini-workshop using breakouts and Google collaborative tools, our presentation examines ways CUREs might contribute to equity and justice goals. **INTRODUCTION (5 minutes):** Presenter will introduce the idea of funds of knowledge (Moll, 1992) and concisely share the results of our study, answering the following questions: ● In what ways are minoritized students better prepared for CUREs, compared to their privileged peers? ● To what extent do students' sense of belonging in and self-efficacy for research predict persistence intentions? ● To what extent do students' perceptions of their cultural compatibility with research predict persistence intentions? Specifically, we found that minoritized students expressed significantly higher research identity compared to their privileged peers, \( t(648) = 3.06, p = 0.002 \). Research self-efficacy, research identity, and cultural compatibility were positively related to and explained significant variance in persistence intentions, \( F(3, 819) = 96.01, p < .001 \). Collectively, these results affirm the importance of culturally-responsive CUREs that build on students’ funds of knowledge. **ACTIVITY (8 minutes):** Presenter will provide link to a collaborative document that will permit synchronous editing to structure the activity. In breakouts, attendees will work with the funds of knowledge framework to identify research-based strengths minoritized students commonly gain in their cultural and everyday experiences that can serve as a foundation for CUREs. Specifically, we'll draw on our own and Verdín, Smith, & Lucena's (2021) approaches to using surveys to identify research-relevant strengths gained from everyday and cultural experiences. For instance, Verdín, Smith, & Lucena identified skills like perspective-taking, reading people, networking, and mediational skills, all of which are highly valuable for authentic research group functioning. Attendees will plan how to adapt specific research-based strategies for their own contexts: (1) they can adopt or adapt surveys to identify students' funds of knowledge, their research self-efficacy, research identity, cultural compatibility, and intent to persist; (2) they can adopt or adapt specific and easy-to-implement, culturally-responsive strategies that emphasize to minoritized students that certain funds of knowledge are desirable (e.g., explicit whole-class statements, using a team asset-mapping activity, using generative starters that prompt perspective-taking, affirmations that they belong). **DEBRIEF (2 minutes):** Presenter will present a concise, consolidating debrief on the topics and make a tip sheet available for attendees to support them to implement. References Moll, L. C., Amanti, C., Neff, D., & Gonzalez, N. (1992). Funds of knowledge for teaching: Using a qualitative approach to connect homes and classrooms. Theory into Practice, 31(2), 132-141. https://doi.org/10.1080/00405849209543534


**Key Takeaways:**
1. Implement a survey that measures students’ funds of knowledge, their research self-efficacy, research identity, cultural compatibility, and intent to persist.
2. Explain what funds of knowledge are and describe an example of a research fund of knowledge that their students might have.
3. Adapt research-based, culturally-responsive strategies that emphasize to minoritized students that certain funds of knowledge are desirable in their CURE

**Learning Level:** Applied - Use information in new situations, implement, operate, draw connections among ideas (e.g. how-to, case studies)

**Speakers:** Vanessa Svihla, Associate Professor, University of New Mexico

**Author/Contributor:** Tim Schroeder, Jason Moore, Cristyn Elder, Erik Erhardt
This presentation is intended to share best practices and lessons learned through the development of a collaborative, high-impact practice, designed to introduce novice researchers to scholarship. The Summer Research Institute (SRI) serves students and faculty from a public, two-year community college, and a private, four-year university. Both institutions are federally designated as indigenous-serving and were both awarded a joint Title III grant that funds this program. Chaminade University of Honolulu is a private, four-year Catholic Marianist institution. Kapi'olani Community College is a public, two-year college within the ten campus University of Hawaii system. A key objective in the development of the SRI was to develop an inclusive high-impact practice that would introduce original student-driven research to undergraduate students. The goal was to remove students’ apprehension and the negative stigma towards research by humanizing the process through supportive mentoring and allowing them to pursue what they were most passionate about. Past student researchers will share their experiences and attendees will be able to gain insight on the benefits of student-driven research programs. What makes this SRI unique is that this program allows students to be the primary driver in identifying the research question and topics. With guidance from their faculty mentor, students are able to determine the methods and scope to address their research questions through a culturally-relevant lens and potential application to real world challenges. Through this approach, students are able to choose a topic that they are passionate about, which also helps to strengthen their self-efficacy. Students benefit from working closely with their faculty mentor and participate in rich weekly discussions, workshops, and peer-led student-only sessions. Faculty-led workshops cover a range of topics including research methodology, professional growth & development, self-care, and presentation skills, which in turn prepares the undergraduate students for graduate school and/or employment. This presentation will include a short talk describing the program, attendees will be polled on their summer undergraduate research program to get a sense of common practices. There will be a Q&A for participants to ask past student researchers and the program development team for tips on implementing a similar program at their own institution. Attendees will learn of a unique research opportunity that focuses on student development and self-efficacy as a researcher and of rich diversity of research that can be developed when students are the main driver of that research. Additional topics include: -Incorporating cultural sensitivity and respect to support diverse research topics -Ideas for streamlining the IRB process for student-driven research in a 10-week program -How to be intentional in recruiting diverse students and faculty -Best practices for online undergraduate research -How to develop a collaborative and supporting environment for faculty, students, and staff between a community college and 4-year university.

Key Takeaways: After attending this session, the audience should be able to: -Develop a diverse, multi-institutional, interdisciplinary, summer research institute program for novice undergraduate researchers. -Evaluate the efficacy of a summer research program in providing critical experiences needed for admission into graduate programs.

Learning Level: Strategic - Produce new or original work, design, develop, investigate

Speakers: Amber Noguchi, Director of Undergraduate Research and Pre-Professional Programs, Chaminade University of Honolulu; Nainoa Gaspar-Takahashi, Summer Research Institute Alum, Chaminade University of Honolulu; Sarah Coyle, Summer Research Institute Alum, Chaminade University of Honolulu; Li-Anne Delavega, Undergraduate Research Experiences (URE) Coordinator, Kapi'olani Community College; Darren Iwamoto, Associate Professor of Psychology, Chaminade University of Honolulu

Author/Contributor: First Name: Avi Last Name: Gonzalez Email: avi.gonzalez@chaminade.edu Institution: Chaminade University of Honolulu Title: Program Coordinator
Traditionally, these mentored experiences involve close in-person mentoring with frequent meetings and guidance. However, in early 2020 the world shut down and abruptly suspended a great deal of research activity. Thus, the pandemic certainly challenged opportunities for mentored experiences, especially projects that involved community and vulnerable populations or laboratory settings, where COVID prevented in-person contact. To assess the impact of the pandemic on access to mentored research, we surveyed universities to learn how programs changed and how they adapted. Eighty percent of respondents came from predominantly undergraduate institutions. One-third of these universities serve predominantly underserved populations. Two-thirds of institutions that reported on their budgets experienced cuts or reductions. The respondents confirmed fewer opportunities for mentored experiences, especially for certain types. Further, respondents found the quality of the mentored activities compromised. However, what came with adversity and challenges from the pandemic also created opportunities for innovations and re-imagining. Relationship-building, which is a key element in mentorship, continued via virtual formats. Research experiences turned virtual: remote learning increased. Many resourceful faculty created virtual learning environments or communities by utilizing technology, often at no additional expense. These technologies potentially allow more access for underrepresented students who may not otherwise have the opportunity to be mentored due to work schedules, finances, or other obligations. Thus, the pandemic has created a prospect for us to imagine additional paths in delivering high-impact mentored activities, rather than just returning to the status quo. In short, multiple lessons can be learned from the pandemic in creating new paths for a potential budget-friendly and easy access to undergraduate research and mentoring activities. This presentation will share data from research on how mentoring experiences were impacted by the pandemic. More importantly, we wish to discuss how universities adapted, focusing on insights from best practices. The goal of this presentation is to engage the audience in a conversation to rethink new possibilities to implement mentored learning experiences moving forward in higher education.

**Key Takeaways:**
1. Identify the benefits of new COVID-adapted mentoring activities that are worth keeping
2. Incorporate COVID-adapted technologies and practices into undergraduate research infrastructure
3. Develop a list of best undergraduate research practices, including virtual components, to create better access, equity, and inclusion

**Learning Level:** Applied - Use information in new situations, implement, operate, draw connections among ideas (e.g., how-to, case studies)

**Speakers:**
- Joanne Altman, Director, Undergraduate Research and Creative Work, High Point University and Tsu-Ming Chiang, Professor of Psychology, Georgia College & State University

**Author/Contributor:** N/A

**Series II**
**Moderator:** To be confirmed
1:00:00 PM - 1:15:00 PM ET
**Building the culture of research in the SFSU College of Liberal and Creative Arts: A Case Study**
**Theme:** Leadership for Undergraduate Research: URG Programs, policies, and infrastructure

Participation in undergraduate research is a high-impact practice that has been successfully implemented across a range of academic contexts. Involvement in research improves students’ performance and increases retention and graduation rates, particularly for traditionally underrepresented groups and low-income students (Ishiyama, 2002; Shanahan et al., 2015). As an institution serving a diverse student body, San Francisco State is particularly well positioned to implement equitable, research-centered high-impact educational practices. In this talk we discuss how the College of Liberal and Creative Arts at SFSU has built a robust program for engaging students in research. We focus on three initiatives that incrementally build students’ confidence and remove barriers for participation for students from traditionally underrepresented groups: the Undergraduate Research Showcase, Research First, a showcase for freshmen, and the Research Skills Workshops. The LCA Annual Undergraduate Research Showcase is our largest event, attracting on average 300 student-participants from 18 out of 21 Departments in the College pre-pandemic. Our assessment shows that this college-wide initiative is highly successful. The results of the before-and-after behavioral studies showed that showcase participation increases students’ confidence, positively affects their perception about the difficulty of doing research, and changes their perception about how successful they will be in the job market. Moreover, the analysis of institutional data revealed that participation in the showcase positively affects graduation and retention rates: among seniors: 97.5% of CURE Showcase participants graduated or returned, compared to 88.4% of non-participants. (The differences are statistically significant). These are great results, but the barriers to...
research participation remain (Haeger et al., 2015; Vieyra et al., 2013). To address this concern, we launched two other research-centered initiatives. Research First is designed to demystify the meaning of research to first year students, for whom the lack of readiness is often a barrier (McCartney et al. 2020; Pierszalowski et al., 2021). Our first event in fall 2019 attracted over 120 participants. In the session we discuss the recruitment strategies, as well as the challenges and successes of holding Research First during the pandemic. Research Skills workshops give students an opportunity to build their research skills toolbox. Our workshops usually focus on applied analytical skills: Data: Where and How to Get It, An Introduction to Practical Statistics, Data? Ta–Da! Tips for Better Data Visualization, and Analyzing Social Media Data with Python. The results of before-and-after behavioral studies showed that the training had positive impact on students: the same quantitative skill was perceived as easier and students had greater confidence that they can apply these skills in a future research project and in their careers after the workshops. We propose that establishing a pipeline of undergraduate research initiatives that incrementally build students’ confidence and remove barriers for participation is an effective way of building the culture of research.

Key Takeaways: After attending this session, the audience should be able to better understand how they might design new initiatives that focus on incrementally building students’ confidence and their research skills and develop methods for the programs’ assessment.

Learning Level: Strategic - Produce new or original work, design, develop, investigate

Speakers: Anastasia Smirnova, Associate Professor, Co-Director of the LCA College Undergraduate Research Experience, San Francisco State University (SFSU); Joshua Singer, Associate Professor, Co-Director of the LCA College Undergraduate Research Experience, San Francisco State University; and Christina Sabee, Interim Associate Dean in the College of Liberal & Creative Arts, San Francisco State University

1:15:00 PM - 1:30:00 PM ET
Art Practice as Research: Undergraduate Research in the Visual Arts
Theme: Leadership for Undergraduate Research: UGR Mentors and Practitioners

Through my engagement with arts-based research in the Department of Art and Design at the University of West Florida, I have come to understand that when my students are engaged in robust contemporary art-making, they are conducting arts-based research—without ever thinking to call or contextualize it as research. To them, it is just making art. However, important distinctions delineate the boundaries of art and research. Can sculpting a bust or painting a still life still be research? No, but also, yes. It depends on the artists’ understanding of history, as well as their context and aim. In a parallel, but opposite way, when students are asked to propose a research project, they often are stumped or want to turn to other forms of knowledge to legitimize and support their work. Through this 15 minute lecture and presentation, I will present several undergraduate research projects from the University of West Florida that were actualized with the support of Undergraduate Research Project awards. The first challenge I will address is working with students to understand the relationship between their creative practices and research, understanding when the word “research” fits and when “practice” might be more relevant. I will unpack the rewarding, and at times, messy process of asking students to contextualize their way of knowing in terms of research. From there, we will move on to the even messier (read: more exciting) actualization of art projects. Conducting research in the contemporary arts classroom is an incredible tool that allows students to model contemporary high-impact practices, but it is also a tool for the mentor. For the professor and mentor, that tool will hopefully enable us to become experts in creating a context for art to flourish in our classrooms, knowing that while that space will be rich with learning, sometimes it will be loose, flirt with failure, and bring us places we never expected to go.

Key Takeaways: After attending this session the audience should be able to: 1) describe the ways in which contemporary art practices align with research practices 2) design research practices within their own art classroom that allows room for new, unpredictable, learning to occur

Learning Level: Applied - Use information in new situations, implement, operate, draw connections among ideas (e.g., how-to, case studies)

Speakers: Carrie Fonder, Associate Professor, University of West Florida

1:30:00 PM - 1:45:00 PM ET
Using a Virtual World Platform to Celebrate and House Student Research
Theme: Leadership for Undergraduate Research: URG Programs, policies, and infrastructure

This session will explore the GatherTown online platform as a possible digital tool to celebrate and house an online environment for research papers, posters, and presentations. GatherTown is an...
In this presentation, I focus on how using an “Understanding by Design” (UbD) template (Wiggins and McTighe 1998) for undergraduate research in literary studies encourages deep learning as students learn to navigate complex discipline-specific processes. Taking as a case study my upper level Literature for Young Adults course, I first describe UbD tenants in relation to undergraduate research and then discuss how I determined Enduring Understandings, designed scaffolded activities and assignments that promoted them, and centered feedback on those concepts in order to invite students into the authentic “doing” of research in literary studies. Included in these scaffolded assignments are a mode of project proposals I label “dual inquiry”, which differentiates between the questions literary researchers ask of other scholars and ask of themselves; a “real talk” peer discussion and interactive lecture about research experience and understandings of source use specific to literary studies; a metacognitive annotated bibliography that requires students to employ a nuanced understanding of discipline-specific source use to their commentary; creation of a live FAQ document that dispels misconceptions or confusions that interfere with Enduring Understandings; and feedback practices that bolster the iterative nature of the instruction/mentorship and emphasize deep learning. Since I wish to present this session virtually in a 15 minute window, I plan to lecture, though I’ll place some interactive questions at key moments so participants can reflect on how they might employ similar strategies in their own courses. Indeed, while the Enduring Understandings I will present are specific to literary studies, the UbD methodology itself, evidenced in concrete ways through my case study, is applicable to every discipline. By the end of my presentation, participants should be able to explain Understanding by Design as a concept applicable to mentoring undergraduate research, describe a case study that carries them out, and consider how to apply these concepts to their own courses or independent studies.

**Key Takeaways:** By the end of my presentation, participants should be able to explain Understanding by Design as a concept applicable to mentoring undergraduate research, describe a case study that carries out this concept to the benefit of undergraduate researchers, and consider how to apply these concepts to their own courses or independent studies.

**Learning Level:** Applied - Use information in new situations, implement, operate, draw connections among ideas (e.g. how-to, case studies)

**Speakers:** Amanda Greenwell, Assistant Professor, Central Connecticut State University

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In this presentation, I focus on how using an “Understanding by Design” (UbD) template (Wiggins and McTighe 1998) for undergraduate research in literary studies encourages deep learning as students learn to navigate complex discipline-specific processes. Taking as a case study my upper level Literature for Young Adults course, I first describe UbD tenants in relation to undergraduate research and then discuss how I determined Enduring Understandings, designed scaffolded activities and assignments that promoted them, and centered feedback on those concepts in order to invite students into the authentic “doing” of research in literary studies. Included in these scaffolded assignments are a mode of project proposals I label “dual inquiry”, which differentiates between the questions literary researchers ask of other scholars and ask of themselves; a “real talk” peer discussion and interactive lecture about research experience and understandings of source use specific to literary studies; a metacognitive annotated bibliography that requires students to employ a nuanced understanding of discipline-specific source use to their commentary; creation of a live FAQ document that dispels misconceptions or confusions that interfere with Enduring Understandings; and feedback practices that bolster the iterative nature of the instruction/mentorship and emphasize deep learning. Since I wish to present this session virtually in a 15 minute window, I plan to lecture, though I’ll place some interactive questions at key moments so participants can reflect on how they might employ similar strategies in their own courses. Indeed, while the Enduring Understandings I will present are specific to literary studies, the UbD methodology itself, evidenced in concrete ways through my case study, is applicable to every discipline. By the end of my presentation, participants should be able to explain Understanding by Design as a concept applicable to mentoring undergraduate research, describe a case study that carries them out, and consider how to apply these concepts to their own courses or independent studies.

**Key Takeaways:** After attending this session, the audience should be comfortable with presenting the GatherTown online platform as a possible tool for events, projects, and virtual spaces. The audience will learn how to move through and interact with the virtual world. The audience will also get first hand experience knowledge of how to run, plan, and troubleshoot a virtual event that uses a digital world platform. The presentation will be a lecture format with learners participating and interacting in the virtual world.

**Learning Level:** Applied - Use information in new situations, implement, operate, draw connections among ideas (e.g. how-to, case studies)

**Speakers:** Lee Xiong, McNair Scholars Director, Northern Michigan University and Lindsay Haukkala, McNair Scholars Coordinator, Northern Michigan University

**Author/Contributor:** Felicia Hokenstad, Adam Klingspion
Faculty are responsible for coming up with the vast majority of research projects for undergraduate students. Faculty training, however, rarely prepares them adequately for the corresponding administrative tasks. They often lack the bandwidth for such activities. Centralized offices of research and college-level personnel can provide valuable services by offering modular program components that faculty can incorporate into their undergraduate research experiences (UREs). This type of work not only increases the likelihood that programs will use evidence-based practices, it also improves efficiency. The Purdue Office of Undergraduate Research and the Purdue College of Liberal Arts will share their perspectives on their collaborative work to create and implement various administrative and educational modular program components for URE design. Components include:

- An online comprehensive, interdisciplinary wrap-around research curriculum for prospective, active, and experienced undergraduate researchers.
- The OURConnect online matching portal that enables recruitment and selection of both students and mentors.
- An extensive, mixed-methods, system-wide IRB-approved assessment protocol with a question bank of hundreds of questions on various aspects of UREs.
- A campus-wide academic year scholarship program that supports up to 100 students a year and employs a cost-share model with all participating colleges.
- An agreement with Summer Session to participate in a summer research scholars program.
- Campus-wide research conferences.
- Central processing of various administrative functions: payroll, scholarship disbursement, research training, etc.

**Key Takeaways:** Through engaging in this session, participants will:
1. Learn about a modular program design model
2. Discover how to incorporate modular programming to increase efficiency.

**Learning Level:** Applied - Use information in new situations, implement, operate, draw connections among ideas (e.g., how-to, case studies)
The Pathway to Research program (PTR) is a peer training module for Responsible Conduct of Research. Contacting and identifying research interests and potential mentors, through completion of program milestones (i.e., assist students in finding suitable research mentors, comprehensive accountability system to support and quality, mentored research), developed the Pathway to Research Program to increase transfer students and historically excluded males and shortened the program length by one week. These modifications increased transfer student representation increased to more than 50%, but percentage of historically excluded males did not change, and the overall percentage of historically excluded students decreased to 33%. For the spring pilot, we modified the program by eliminating one week and increased advisor contact by incorporating more student-advisor interactions and requiring students to complete assignments in "real-time" during the education sessions. This session will outline key facets to the Pathways program, share evaluation of major learning outcomes, and reflect on lessons learned in each of three pilot phases.

Key Takeaways: To learn about MSU’s Pathway to Research Program and its rationale. To learn the strategies taken to recruit historically excluded student populations and retain them in the program. To learn outcomes of the program which include rates of retention and rates of secured research positions. To learn future steps for the program.

Learning Level: Applied - Use information in new situations, implement, operate, draw connections among ideas (e.g., how-to, case studies)

Speakers: Mordecai Harvey, Program Coordinator, Michigan State University and Korine Wawrzynski, Assistant Dean, Academic Initiatives and Director, Undergraduate Research, Michigan State University

3:00:00 PM - 3:30:00 PM ET
Q&A and Discussion

2:30:00 PM - 3:30:00 PM ET
Implement course-based research in a General Education Capstone course “Children as consumers”
Theme: Leadership for Undergraduate Research: UGR Mentors and Practitioners

This presentation is a reflection of how I design and implement blended learning activities that engage undergraduate students in empirical research for strategic communication to a target audience. There are limited opportunities for undergraduate students to conduct empirical research and this is especially so for non-major students. Researchers have found that integrating empirical research into undergraduate education prepares students with enduring tools and experiences for generating new knowledge and solving problems. I have been practicing research informed teaching and learning throughout my teaching career. This is an example of implementing course-based research activities in an interdisciplinary course with mostly non-major students.

Key Takeaways: After attending this session, the audience should be able to *design an assignment with an interviewing component *transform students’ work into teaching materials *execute a mini-research project related to the subject matter *

Learning Level: Strategic - Produce new or original work, design, develop, investigate

Speakers: Kara Chan, Professor and Associate Dean (Teaching & Learning), Hong Kong Baptist University

2:30:00 PM - 3:30:00 PM ET
EvaluatingUR-CURE: A Way to Connect Learning with Awareness of Knowledge and Workforce Skills
Theme: Accountability and Sustainability

E-CURE addresses the need to introduce undergraduates conducting course-based research to a broad range of desirable outcomes that include but go beyond content knowledge, particularly outcomes critically important in the workplace, such as communication skills, creativity, autonomy, ability to overcome obstacles, critical thinking, and problem-solving skills. Students and CURE instructors score the outcomes using the same instrument and a 5-point rubric to indicate the frequency of the outcome (5=always to 1=not yet). The method emphasizes that the scores are less important than the conversations that follow each assessment, when the student and mentor share their rationales for assigning particular scores and discuss the reasons for differences, if any, in their perceptions. These conversations are key to the development and enhancement of student metacognitive skills, as they provide opportunities for students to reflect on their understanding of their strengths and weaknesses, assess the value of the learning strategies they have been employing, and consider what adjustments in substantive focus and/or learning strategies they should make in order to improve their outcomes. Metacognition abilities are also critically important in the workplace, because they are used in forming accurate appraisals of work-related strengths and weaknesses and in identifying needed adjustments. After introducing session participants to the E-CURE features, two faculty members (Professors Joyce Kinkead, who taught a research methods course to English majors, and Jared Ashcroft, who utilized E-CURE in a General Chemistry course where students performed heavy metal remediation on a mixture of water, sand, and salt ions) will describe their experiences using E-CURE. In addition to participating in E-CURE, both faculty members assigned several of the metacognitive activities to their students and will also share experience using these. Session participants will be encouraged to consider how using E-CURE could complement the way(s) feedback is provided to students.

Key Takeaways: At the end of this session participants will: 1. Have an understanding of how the E-CURE method can support students conducting course-based undergraduate research and engineering design projects. 2. Know how the E-CURE method supports CURE instructors to provide feedback to students during the research/design project as well as insights into how they might want to improve students’ learning experiences. 3. Have access to metacognitive lessons to employ in their own CUREs.

Learning Level: Foundational - Explain ideas or concepts, report out (e.g. introductory)

Speakers: Jill Singer, SUNY Distinguished Teaching Professor, SUNY Buffalo State; Joyce Kinkead, Distinguished Professor of English, Utah State University; and Jared Ashcroft, Professor, Chemistry, Pasadena City College

Author/Contributor: Sean Fox, Daniel Weiler, John Draeger, Bridget Zimmerman

3:30:00 PM - 4:00:00 PM ET Break

Concurrent Session Block III

Series V

Moderator: To be confirmed

4:00:00 PM - 4:15:00 PM ET
Using Tableau to Explore & Report Undergraduate Research Experiences
Theme: Accountability and Sustainability

At Purdue University, we conduct assessment, evaluation, and research (AER) covering the experiences of undergraduate researchers and URE.
mentors. For a single program, tracking and AER are fairly easy; however, across multiple programs with thousands of students and prospective mentors, even just the basic tracking gets complicated. This tracking is essential for fundamental uses such as: (1) providing program-level information about students and mentors; (2) summarizing information for college-, school-, or institutional-level uses; (3) justifying funding; (4) identifying a population for AER projects; and so on. We are targeting an audience at the “applied” learning level, who may be struggling with the “how to dos” of data management and reporting in descriptive statistics. Tableau works well to create the visuals about UREs that our campus stakeholders need, but Tableau is only as strong as the data sources available. Hence, our presentation content will cover: (1) what we believe are the essential components (variables and cases) of the data sources; (2) strategies we use to obtain the data; (3) challenges, limitations, and recommendations present within our data sources; (4) the institutional questions we answer using Tableau; and (5) sampling of the reporting that comes from our Tableau dashboards. As a 15-minute presentation, we intend to engage participants with audio, visuals, and references.

Key Takeaways: Through engaging in this session, participants will: Learn about how Tableau may be used to report descriptive statistics about UREs. Consider how to adapt (or start) tracking participation to facilitate use of Tableau at their institutions. Discover components of their current model they can defenestrate, and replace with better options.

Learning Level: Applied - Use information in new situations, implement, operate, draw connections among ideas (e.g. how-to, case studies)

Speakers: Craig Zywicki, Assessment and Data Analyst, Purdue University and Amy Childress, Director, Undergraduate Research, Purdue University

4:15:00 PM - 4:30:00 PM ET
Case Study on the Impact of a Mentor and Cohort on Students’ Academic and Career Decisions
Theme: Leadership for Undergraduate Research: UGR Mentors and Practitioners
This interactive lecture will provide the audience with insight gathered from a unique cohort of students and their mentor and how these lessons can be transferred to a more general population. This research added to the known importance of mentorship of a faculty advisor, but also mentorship from one another. Additionally, this study concluded the impact that early exposure to research allowed students to continue to hold on to their research experience as they moved either deeper into academia or in their careers with similarly high value. Leaning on another another this cohort found community within their research team that was not social but provided support needed.

Key Takeaways: After attending this session the audience should be able to incorporate strategies provided by the presenter to establish relationships with their students based on this cohort’s feedback and current research to strengthen the advisor-student relationship as well as the team relationship.

Learning Level: Applied - Use information in new situations, implement, operate, draw connections among ideas (e.g. how-to, case studies)

Speakers: Samantha Bowyer, Assistant Professor, Embry-Riddle Aeronautical University
Author/Contributor: Dr. Kevin A. Adkins  Dr. Jorge L.D. Albelo

4:30:00 PM – 5:00:00 PM ET
Q&A and Discussion

Series VI
Moderator: To be confirmed
4:00:00 PM - 4:15:00 PM ET
A Cautionary Tale: Undergraduate Research Impact on Community and Students
Theme: Advocacy and Partnerships/Collaboration and Community

Quality undergraduate research (UR) is expected to expand understanding of societal issues providing college students with a high level of subject knowledge. Allyship with UR students and community partners has produced many positive changes that are inclusive of a diverse population with one goal in common – a fair and just future for all. Marketing Research (MR) students collaborated with faculty and community partners to propose solutions to societal problems. The faculty researchers will present findings from two current research studies conducted across College of Business students (2021) at one liberal arts university. The presenters are highly experienced in conducting and mentoring course-embedded community-based engaged undergraduate research (CE-CBE-UR) studies (more than 300 studies over the last 15 years). They will share examples of incorporating social justice (i.e., inclusion, diversity, and equity) into CE-CBE-UR in a College of Business undergraduate research. The presentation introduces CE-CBE-UR, emphasizing social justice issues (e.g., food insecurity, gentrification) and informs subject-related learning. For business students, empathy is a highly desired leadership skill. Based on a 2019 report, 84% of CEOs believe that empathy is a necessary leadership skill that drives better business outcomes and influences employee
motivation. The presenters will discuss 1) the structuring of CE-CBE-UR social justice research projects and 2) how the two current studies of empathy were conducted and their measurable outcomes. The presenters will share the findings from two studies that inform student outcomes, community, and university benefits. Emphasis on the findings from the two current studies conducted by the presenters will focus on how knowledge or sensitivity to societal issues increases but how students’ level of empathy may not increase. The studies revealed that beyond discipline-specific learning, students might not be driven by empathy for those impacted by a social justice issue, nor may their level of empathy significantly increase upon completion of their research project. The lack of empathy is a significant finding as business students develop into business leaders. The findings of the two studies revealed that personal rewards were drivers of student engagement, and students expressed that they also expected rewards for engaging in future charitable endeavors. Although the primary focus of this presentation is on student learning, the presenters will also provide examples of feedback from community partners as to whether their expectations from CE-CBE-UR projects were met, not met, or exceeded and why. The presentation will also cover benefits to the university from CE-CBE-UR.

Key Takeaways: Identify the impactful benefits to students, community, and university of course-embedded, community-based engaged, undergraduate research (CE-CBE-UR) Identify the limitation as to outcomes from course-embedded, community-based engaged, undergraduate research (CE-CBE-UR)

Learning Level: Applied - Use information in new situations, implement, operate, draw connections among ideas (e.g., how-to, case studies)

Speakers: Doreen (Dee) Sams, Coordinator, Mentored Undergraduate Research & Creative Endeavors, Georgia College & State University and Mary Rickard, Associate Professor, Georgia College & State University

4:15:00 PM - 4:30:00 PM ET
Connecting undergraduate research across countries
Theme: Advocacy and Partnerships/Collaboration and Community

The session will outline two projects that were undertaken by the University of Warwick to create ‘international at home’ undergraduate research opportunities. The session will consist of a lecture presentation (8 minutes) with 7 minutes for discussion, Q&A and close. The rationale of the session is to share experiences and reflections about the benefits and things to learn having undertaken two significant international, cross-institutional research projects with students which may be of interest to others developing work in this area. The projects allowed international experiences to be facilitated despite the travel restrictions imposed by the pandemic and created a model that will be continued even as mobility increases because of the many benefits experienced by participants who may face barriers to international travel but would still value and take value from creating international networks and working within an international team. Many students are restricted by finance, caring responsibilities, support needs from international travel. Many institutions have to cap numbers considerably in light of the costs involved in financing such trips, which often means only high-performing students can participate. The projects I will outline are accessible, low cost and have multiple benefits to staff and students.

Key Takeaways: After this session, the audience should be able to understand and appraise the projects undertaken at University of Warwick, and reflect on how this might translate to their teaching practice.

Learning Level: Applied - Use information in new situations, implement, operate, draw connections among ideas (e.g., how-to, case studies)

Speakers: Jane Bryan, Reader/Dr, University of Warwick

4:30:00 PM – 5:00:00 PM ET
Q&A and Discussion

Series VII
Moderator: To be confirmed

4:00:00 PM - 4:15:00 PM ET
Using guided reflection to confront failure and build resilience in undergraduate researchers
Theme: Leadership for Undergraduate Research: UGR Mentors and Practitioners

The method of presentation for this session will be lecture. The primary purpose is to provide an overview of how guided/facilitated reflection can assist students with learning how to confront failure in research and even use it to mature, develop skills, and build resilience. Topics that will be addressed include an examination of how the advice, “get used to failure,” can lead to problems and unintended consequences; examples of how this type of reflection can be integrated into program models; resources that are available to develop lesson plans; and the theoretical foundation that make reflection a vital component of experiential learning activities such as undergraduate research.
Key Takeaways: After attending this session, the audience should be able to develop plans to integrate guided reflection into undergraduate research programs and/or mentoring relationships. After attending this session, the audience should be able to describe the potential problems and unintended consequences of directing students to get used to failure without providing opportunity for reflection and learning about what this means.

Learning Level: Applied - Use information in new situations, implement, operate, draw connections among ideas (e.g. how-to, case studies)

Speakers: Karl Reasoner, Senior Program Manager, University of Oregon

4:15:00 PM - 4:30:00 PM ET
Recruiting and Maintaining Interdisciplinary Research Teams: Case Study of FSU iGEM
Theme: Leadership for Undergraduate Research: UGR Mentors and Practitioners

In 2004, the International Genetically Engineered Machines (iGEM) competition was launched with just five U.S.-based undergraduate research teams. Initially, the competition focused solely on the designing and building of genetically encoded finite state machines using interchangeable biological parts. Over time, the yearly competition has grown to over 350 teams and 6500 participants from all over the world. Program requirements have also become more complex as organizers realized they needed to take into consideration the ethics of teams’ proposed interventions. These new elements have required teams to develop qualitative research skills in order to better understand how a community experiences their defined problem, in addition to getting feedback on the team’s proposed solution. In addition, to raise the profile of synthetic biology as a field of research and industry, the competition now requires teams to produce video presentations and promotional videos. To fulfill these needs, teams need to either include students studying digital media production or receive training in how to develop video content. These changes to the program require students to better define the problems they hope to solve, engage with those affected by those problems, and ethically consider the implications of their proposed solutions. When implemented appropriately, a university iGEM team will exemplify interdisciplinary research and realize the goal of STEAM education. This presentation will use the case study of the FSU iGEM team to overview how FSU’s Center for Undergraduate Research and Academic Engagement (CRE) and its partners in the College of Medicine and Department of Chemical and Biomedical Engineering are working to realize the program’s potential. It will also highlight how the development of new “Design Leagues” could lower the labor and financial costs of participating in the iGEM competition by not requiring student teams to test their proposed interventions within the lab.

Key Takeaways: * Understand the components of the iGEM competition and what it requires of an institution. * Learn about strategies to recruit and maintain an interdisciplinary undergraduate research team * Identify whether the IGEM competition or its Design League is the right fit for your institution

Learning Level: Applied - Use information in new situations, implement, operate, draw connections among ideas (e.g. how-to, case studies)

Speakers: David Montez, Associate Director, Florida State University and Cesar Rodriguez, Research Faculty I and Entrepreneurship Advocate, Florida State University

4:30:00 PM - 4:45:00 PM ET
Take the CURE: A Multi-Campus Study of Course-Based, Biology-Related, Virtual Undergraduate Research Experiences
Theme: Leadership for Undergraduate Research: UGR Mentors and Practitioners

In 2021, the Council on Undergraduate Research issued a new definition of undergraduate research that placed primary emphasis on its pedagogical benefits. Indeed, the scholarly consensus on the merits of undergraduate research for students (Gilmore et al. 2015; Carter et al., 2016; Lopatto, 2010) has allowed the focus of research to shift from questioning whether or not undergraduate research “works” to focus instead on why it works and how to extend the practice to encompass more inclusive and equitable populations (Shortridge & Brownell, 2016). A corollary to this shift in emphasis is an interest in identifying barriers to participation, whether these stem from (lack of) faculty investment, disciplinary value and/or institutional support, student motivation or related factors (Millem et al., 2005; Bauman et al., 2005). To address a number of these barriers, CUREs (course-based undergraduate research experiences), a practice in which students engage in collaborative research as part of regular course activities, has emerged as a popular alternative to the more individualized and intensive research apprenticeship or internship model. Studies on
the outcomes of CUREs have shown greater inconsistency, however, and the benefits of this modification are more contested than those associated with the apprenticeship model (Brownell & Kloser, 2015; McCartney, 2018).

Scholars and funding agencies have issued clarion calls for more research to identify best practices and align the benefits of different modalities of undergraduate research. In a seminal 2015 article, Corwin, Graham, & Dolan explicate a large-scale research agenda for the study of CUREs, one that integrates outcomes-based assessment (the cognitive), with the affective (e.g., attitudes towards science, efficacy, identity) and the behavioral (e.g., persistence in STEM fields).

Our project contributes to this larger research agenda through a collaborative, mixed methods study (measuring cognitive, affective, and behavioral outcomes) based on the experiences of undergraduates enrolled in four different undergraduate biology and biology-related classes, each of which integrates the CURE model. These CUREs were embedded at three different campuses, each of which have distinctive student populations (DeAngelo et al, 2016), a design which serves to extend the representativeness of our sample while also embracing the mix of instructional modalities in which the courses were offered under the conditions of the global pandemic. Our findings contribute to the growing body of evidence-based practice for CUREs by assessing their impact across different virtual modalities under unprecedented conditions that significantly affected both teaching and learning. Multiple studies attest that the transition to remote learning presented a significant challenge to the design and implementation of hands-on science activities of all kinds (Burmeister et al, 2021; Broussard et al, 2021; Deveau et al, 2020; Wang et al, 2020). The study utilized the well-established CURE survey so that our results could be compared, not only between the courses/campuses included in the study, but also to the collective outcomes of previous studies of largely face-to-face, in person CUREs. We find that the CUREs remained effective pedagogical practices; albeit in different ways than previous iterations, and our analysis of student reflections suggest that there may be emerging challenges and opportunities related to the practice that are not easily captured by current measurement tools. Our session will cover how the CUREs were re-designed for the on-line environment, what the CURE survey results tell us about their effectiveness, and implications for re-imaging CUREs for the post-pandemic future.

Key Takeaways: Participants will: • Explore virtual and hybrid models of CUREs in biology and biology-related courses • Gain deeper insight into the student learning experience of virtual and hybrid CUREs • Apply the outcomes of this project to their own teaching and learning practice • Assess the effectiveness of different models of virtual and hybrid CUREs in biology and biology-related courses • Discern the challenges and opportunities inherent in re-thinking the CURE model going forward

Learning Level: Applied - Use information in new situations, implement, operate, draw connections among ideas (e.g. how-to, case studies)

Speakers: Mary Ann Smith, Lecturer of Biology, Pennsylvania State University
Author/Contributor: Laura E. Cruz, PhD, Pennsylvania State University Schreyer Institute for Teaching Excellence

4:30:00 PM – 5:00:00 PM ET
Q&A and Discussion

4:00:00 PM - 5:00:00 PM ET
Organizing for Racial Equity on an Institutional Scale: A Case Study from an Undergraduate Research Program Director at a Large Research University
Theme: Diversity, Equity, and Inclusion

The University of Cincinnati (UC) is a predominantly white institution (PWI) in a predominantly Black community that strives for Inclusive Excellence in all aspects of operation, including research. As UC’s Program Director for Undergraduate Research (UR), I have learned over the years that efforts to "broaden participation in undergraduate research” are challenged in part by a culture of “polite silence” when it comes to calls to action by Black-led organizations. Although calls to action have not been specific to research, unhealed racial trauma affects the degree to which Black students feel comfortable pursuing research at UC, and it affects their access to psychological safety in predominantly white research spaces. As an institution that struggles to concede its long history of anti-Black racism, reconciling it in pursuit of inclusive excellence will require advocacy across colleges, offices, ranks, roles, and identities. In this session, I aim to inspire UR leaders to reflect on how they might better leverage their influence to support their institutional quest for Inclusive Excellence. During the first half of this session, I provide personal testimony to explain what motivated me to write a Pledge to Organize for Racial Equity and explain how I organized 200+ signers into UC’s Coalition for Anti-Racist Action, a “cross-campus network of staff and faculty committed to ... doing
work to support calls to action by Black-led organizations.” I will share challenges faced in doing this work and tactics to keep momentum going. Participants will leave with a framework that allows them to replicate the work at their institution. During the second half of the session, I will facilitate reflection and discussion that allows participants to share personal and administrative efforts to advance Diversity, Equity, and Inclusion initiatives within their institutions, including achievements and challenges. By the end, participations should have a deepened sense of what they can do to leverage their influence to support their institution's trajectory toward Inclusive Excellence.

Key Takeaways: After attending this session, the audience should be able to: (1) Develop a framework for organizing a staff-faculty coalition focused on advancing racial equity within your institution (2) Reflect on the meaning of “inclusive excellence in undergraduate research” (3) Identify policies and practices that may unintentionally exclude particular groups from entering or advancing in research

Learning Level: Applied - Use information in new situations, implement, operate, draw connections among ideas (e.g. how-to, case studies)

Speakers: Megan Lamkin, Assistant Professor-Educator & Program Director for Undergraduate Research, University of Cincinnati

Friday, June 24, 2022

Concurrent Session Block IV

11:00:00 AM - 12:00:00 PM ET
A Model for Holistic Assessment of Course-Based Undergraduate Research Experiences
Theme: Accountability and Sustainability

Course-based Undergraduate Research Experiences (CUREs) increase access to research for more undergraduates than a traditional apprenticeship model alone; however, faculty may lack understanding of how to incorporate research within a course, or lack support through their implementation. CURE – Purdue is a faculty development program using interactive training within the workshop and community of practice. While offering a strong faculty development model is important, equally important is the assessment model covering the workshop and students’ experiences within CUREs. We target audiences at the “applied” learning level, but provide CURE (and related) references for those who seek foundational knowledge. Within the presentation, we will discuss how we assess CURE-Purdue as a faculty development program, and how we assess student learning outcomes in a CURE. Participants will learn about the mixed methods approach we use to gather data to support instructor participants and evaluate the impact the program has had on them and their students. Logistical challenges and strategies will be shared. Some CURE – Purdue faculty pursue studies specific to their CURE/discipline for their own educational research interests, While these are outside the scope of our CURE – Purdue research model, we partner with these faculty to support their data collection and analyses. Presenters will summarize case examples of these studies. If the virtual format enables small groupwork, we will model basic facilitation methods used in CURE – Purdue.

Key Takeaways: Through engaging in this session, participants will: Learn about the CURE – Purdue model for faculty development, including curriculum and assessment models. Consider how to implement new (or adapt existing) assessment of faculty development and/or CUREs at their institutions. References will be provided for participants at the foundational learning level, to further their: Understanding of the student and faculty outcomes of CUREs. Basic knowledge of the CURE-Net model for faculty development, and the CURE-Purdue adaptation of CURE-Net.

Learning Level: Applied - Use information in new situations, implement, operate, draw connections among ideas (e.g. how-to, case studies)

Speakers: Craig Zywicki, Assessment and Data Analyst, Purdue University

Speakers: Stephanie M. Gardner, Associate Professor, Biological Sciences, Purdue University and Amy Childress, Director, Undergraduate Research, Purdue University

11:00:00 AM - 12:00:00 PM ET
Post-COVID Research and the Application of Virtuality
Theme: Leadership for Undergraduate Research: UGR Mentors and Practitioners

Though the idea of a Metaverse is not new, it recently has become a focus of media proprietors such as Mark Zuckerberg. The rapid onset of the COVID-19 pandemic and the global push to move many, if not all, aspects of interpersonal interactions remotely, has nudged us even closer to immersion in a Metaverse reality. College campuses were not immune to this shift to virtual modalities, and educators and mentors were forced to either cease undergraduate research and experiential learning or find new and innovative ways to provide opportunities to their students. Here, we
argue that the shifts we made during the pandemic not only enhanced our undergraduate experiential learning opportunities but advanced us further towards an undergraduate research Metaverse. During the pandemic, first and foremost, all meetings amongst personnel switched to remote meetings. These were awkward at first, but as everyone settled in, remote meeting companies added features such as “meeting-rooms” to give the appearance everyone was in the same room, much in the same way a virtual character may visit a conference room in the Metaverse. During our shift of experiential learning, students were invited to be more involved in the literature review aspects of project design and employed to visit numerous repositories in search of various literature components, often requesting articles as if they were virtually visiting a library. Students often worked together to develop and answer questions based solely on literature-based research, which required them to spend late nights on Teams calls while working independently, much in the same way they might spend nights in each other’s dorms working on specific tasks. All these tasks can be accomplished, and most likely enhanced, by the presence of a Metaverse. While the Metaverse may have its limitations (i.e. students cannot extract DNA from a tissue within the Metaverse), a virtual realm in which experiential learning opportunities can be accomplished in a remote realm eradicates many barriers students face when trying to be involved in experiential learning opportunities, including but not limited to time constraints, access to resources (including mentors), and limitations on a holistic involvement. While the Metaverse may not be an immediately available place to complete experiential learning opportunities, using it to our advantage should be in our Oculus Rifts. Through this open group discussion, we will engage participants in conversations concerning our approach to maintaining and increasing undergraduate research in a virtual realm as well as solicit what others have attempted to achieve continuity in experiential learning post-COVID.

Key Takeaways: After attending this session, the audience should be able to ... 1) describe the challenges of continuing undergraduate research in a virtual realm, 2) evaluate approaches to maintaining contact and engagement with students to further research endeavors virtually, and 3) devise strategies for overcoming post-COVID obstacles to improve the overall experiential learning process for undergraduate research students.

Learning Level: Applied - Use information in new situations, implement, operate, draw connections among ideas (e.g. how-to, case studies)

Speakers: Abby Kalkstein, Assistant Professor of Biology, University of Findlay; Justin Rheubert, Assistant Professor of Teaching in Biology, University of Findlay; and Robert Charvat, Assistant Professor of Biology, University of Findlay

12:00:00 PM – 12:30:00 PM ET Break
12:30:00 PM - 1:30:00 PM ET
Special Session: ETAP Bolsters NSF Efforts to Promote Equity

The NSF’s Education and Training Application (ETAP) is a free, full-fledged, customizable common application system that NSF is pilot testing to support Principal Investigators offering education and training opportunities for students and teachers funded with NSF awards. In this session, NSF will describe ETAP and discuss how it can help diversify participation in NSF programs.

Speaker: Cecilia Speroni, Evaluator, Office of Integrated Activities, Evaluation and Assessment Capability Section, National Science Foundation

1:30:00 PM – 2:00:00 PM ET Break

Concurrent Session Block V

2:00:00 PM - 3:00:00 PM ET
Helping science department faculty to seize the moment with fresh ideas for undergraduate research
Theme: Leadership for Undergraduate Research: URG Programs, policies, and infrastructure

The coronavirus pandemic taught us all a valuable lesson – that our old way of teaching and conducting undergraduate research is fragile and can break down quickly. Like species that are faced with rapid environmental change, those that are adaptable and can seize the moment will survive, while those that can’t do so will likely perish. Both individual faculty members and departments as a whole are subject to the same fate. In the sciences, research is often expensive and time-consuming, and individual projects may continue for many years. Students come and go, with each new cohort recruited to work on (or complete) a specific piece of the project. Most students may never see the endpoint or completion of the research. So when a pandemic or any other external force causes faculty to shut down a research project it may be difficult, or even impossible, to restart it with a fresh cohort of students. And, in the meantime,
students are left without the opportunity to experience genuine research, and faculty may be left without the necessary experiences for promotion or tenure. To overcome this loss for ourselves and for our students, faculty must be willing and encouraged to look in new directions. Research that does not require massive amounts of money and facilities, and which can keep students safe during a pandemic (for instance) is possible if mentors are able to show faculty how to do that and encourage them to seize the moment instead of letting the moment seize them. Examples of biological research that can be individualized and sustained during difficult times include projects that use large, readily available data sets. With these data students can ask a variety of meaningful questions, collect specific data, and statistically analyze their results. Examples of large, freely available databases include the National Health and Nutrition Examination Survey (NHANES) from the US Centers for Disease Control and Prevention, and the US Census Bureau database. Both of these data sets allow thousands of simultaneous research projects to be worked on. Single students can do research with a mentor, or small groups can work together using shared computer linkages at a safe distance. Examples of such projects and comments from student researchers will be shared. Another project that can be individualized for safety during a pandemic, but which may still require some funding, is connecting to the Prevalence of Antibiotic Resistance in the Environment (PARE) program. Students can individually obtain soil samples in the community (with selection help from an advisor) and plate the bacteria on their own (if they have taken a microbiology lab course). Data is fed to a national database and comparisons can be made between communities or locations both nationally and internationally. Examples of these projects and comments from student researchers will also be shared. A final aspect of this challenging revamp is helping established (and sometimes new) investigators to re-direct their UGR efforts rather than abandon them. Examples of approaches that will be shared along with departmental assessment data.

Key Takeaways:
1. Find and appraise examples of sustainable individualized undergraduate research.
2. Analyze feedback and assessment data from student researchers.
3. Execute a program to encourage faculty to re-tool their UGR programs.

Learning Level: Applied - Use information in new situations, implement, operate, draw connections among ideas (e.g., how-to, case studies)

Speakers: Kerry Cheesman, Distinguished Professor, Capital University

Series VIII
Moderator: To be confirmed
2:00:00 PM - 2:15:00 PM ET
Transformative Experiences: Incorporating Inclusive Undergraduate Research into Community-based Engaged Learning Course Projects
Theme: Advocacy and Partnerships/Collaboration and Community

In this 15-minute lecture, I would like to share the development process and outcomes of a general education course I have taught several times during the pandemic that brings together two high-impact practices: Community-based Engaged Learning and Undergraduate Research to further diversity, equity, and inclusion on campus. The impetus for collaborating with the campus Women’s Center was to generate a sense of community for students and campus entities during the pandemic, when in-person community-building was limited. We wanted students to connect with social issues in a hyper-local, empathetic way—and also contribute to virtual DEI programming for the campus Women’s Center. By creating public events around issues such as intersectionality, global feminisms, reproductive justice, and transgender rights, students could engage with issues as advocates for marginalized perspectives. They were also able to achieve a deeper understanding of the underlying factors contributing to gender inequality and marginalization through the course syllabus and the research they conducted on these issues that they published publicly on group websites. As scholars such as Ginwright and Cammarota (2002) suggest, Critical Service-Learning (CSL) tackles community problems “through critical thinking that raises questions about the roots of social inequality.” This course achieved that goal through both the service-project and their supplemental research. The research elements helped solidify the CSL dimension of the course—leading to a more transformative service-learning experience. My primary objective for the session is to provide concrete strategies for incorporating high-impact research activities into service-learning courses to provide students with truly transformative experiences. Furthermore, I want to share my insights to illustrate that innovative, effective high-impact service-oriented research is possible in a remote or hybrid setting. During the presentation, I will walk through the way the collaboration came about as well as the way the course was structured as a High-Impact experience incorporating both undergraduate research and a service-learning project. I will also describe the multi-modal research activities that students undertook as well as student outcomes that I tracked through
students acquire and practice qualitative research skills. Qualitative research (especially narrative inquiry/storytelling and ethnographic skills) are presented to students to further probe students’ interests into the perceptions and lived experiences of community members. In this way, students are able to develop a qualitative Capstone Research Project to inform their independent summer experiences. An overview of class activities to teach qualitative skills during the Theory Course: This presentation explains how group projects and discussions teach students qualitative research methods. During the Spring Course, students engage in two group projects: (1) My Aspirational Global Scholars Story (teaching Narrative Inquiry and Positionality) and (2) The Seminole Symbolism Project (teaching ethnographic research skills). This next section will explain both projects and highlight how these projects support student learning through collaboration.

Development, execution, and reflection on Capstone projects through assignments: This final section will then explain the Capstone Project, which prompts students to apply their qualitative research skills to their planned independent experience during the summer. As a part of this, students will state their interest and conduct a literature review during the Theory Course. Then, after collecting and analyzing data during their summer experience, they will develop their project into a poster presentation during the Reflection Course. This presentation will explain how this process works and provide examples of projects to point towards how these projects benefited previous Global Scholars. Overall, this review of the Global Scholars Program should showcase the importance of qualitative research in the development of meaningful experiences for students interested in better understanding ethical community engagement.

Key Takeaways: By the end of this presentation, audience members should: (1) understand how teaching qualitative research skills can help students make sense of their experiential educational goals as well as examples of how to make this work within a service-learning program. Additionally, by focusing on students’ application of research skills outside of a traditional setting, this presentation will highlight how promoting research skills can benefit undergraduate students beyond traditional academic settings. This 15-minute presentation explores how teaching qualitative research methods can play a critical role in helping students make sense of their experiential educational opportunities while practicing their research skills “in the field”. In particular, this presentation highlights students’ use of qualitative methods within their capstone projects and will be broken into four sections: A program overview: This presentation will highlight how the Global Scholars program’s three-part model (the Theory Course, students’ experiences, and the Reflection Course) is beneficial towards helping students acquire and practice qualitative research skills through ethical community engagement experiences.
The undergraduate student body of Kettering University consists of primarily undergraduate students in science and engineering. All students are required to engage in regular experiential learning via cooperative work experiences with external employers, and they gain much practical knowledge and many useful skills in the process. However, the skills obtained in these experiences are not necessarily the same as those needed for doing rigorous research in an academic environment. In addition, our students are often not fully aware of the careers available that involve research or how research by universities, government, and industry fit into the larger research enterprise. In this course, we aim to expand our students’ view of experiential learning to include research and provide some of the skills needed to be successful in a research project. As such, the course is being designed to form part of the infrastructure needed for students to be prepared for research at our university and elsewhere. Under ideal circumstances students will take the class before or during a research experience with a faculty member. The topics of the course were developed through a faculty learning community where faculty at local colleges and universities met monthly and discussed their research experiences with undergraduates. The community identified the following desired learning outcomes for a course:

- Understand the importance of scientific ethics and acting ethically.
- Understand the monetary and temporal aspects of research.
- Know research practices for effectively working independently and in a team.
- Perform a literature review relevant to research topic.
- Formulate a research question and construct a research hypothesis.
- Design experiments inclusive of appropriate controls.
- Handle data, materials, and equipment appropriately.
- Maintain a high-quality laboratory notebook.
- Choose appropriate methods for effective and comprehensive data analysis.
- Comprehend importance of research results while drawing sound conclusions.
- Communicate results and background information verbally and in writing.
- Suggest ideas for future work in a specific discipline.

We have been organizing these outcomes into six modules. 1. Introduction to Research: Motivation, Ethics, and Process 2. Formulating Research Questions and Hypotheses 3. Literature Review 4. Designing and Conducting Experiments 5. Analyzing Data, Drawing Conclusions, and Suggesting Future Work 6. Understanding the Research Enterprise Each module is divided into sections with each section dedicated to a more detailed learning objective related to the theme of the module. Each section has its own set of learning resources, largely consisting of written documents and videos, many of which are publicly available. Each section also has a set of learning activities which are used to evaluate the students’ engagement with the learning resources. In some sections, additional supplemental resources are provided for instructors. Ethical considerations are also distributed throughout most of the modules including some ethical case studies, discussion of plagiarism, and methods for faithful representation of data. We are looking to share our approach with the CUR community and receive feedback about how to improve its content and assess the outcomes with students.

Key Takeaways: 1. Describe the motivation and method for developing a course on preparing undergraduates for research at Kettering University. 2. Describe the structure and content of a course on preparing undergraduates for research at Kettering University.

Learning Level: Strategic - Produce new or original work, design, develop, investigate

Speakers: Ronald Kumon, Associate Professor, Kettering University

Author/Contributor: Diane Peters, dpeters@kettering.edu, Kettering University, Associate Professor

2:15:00 PM - 2:30:00 PM ET Developing Online Courses to Expand Undergraduate Research across Campus Theme: Leadership for Undergraduate Research: URG Programs, policies, and infrastructure

During this lecture and workshop presentation, the presenters will discuss best practices when creating an online course by using the Purdue Office of Undergraduate Research’s curriculum as its example. COVID-19 highlighted what can be accomplished when we are forced to reconsider our traditional, in-person
presentations and pivot to online offerings. Presenters will highlight two types of online course creation: one with a traditional program created and one where no content had been created to base the online course creation. This presentation takes advantage of what individuals may have learned during various trainings or their own experiences in the past 2 years to guide them into being more intentional about online offerings. Important components of online offerings that will be covered include the theoretical framework(s) they want to utilize, course structure, content delivery and presenters, and student assessment approaches. After attending this presentation, attendees will learn how to begin planning potential online courses and how to embrace the online environment when including research practices. The learning objectives of this session are: Describe the components of developing an online class that includes research practices - Assess educational technologies available at their own institution or online that could support their online courses - Articulate the value of converting traditional, in-person presentations to an online environment

Key Takeaways: Describe the components of developing an online class that includes research practices - Assess educational technologies available at their own institution or online that could support their online courses - Articulate the value of converting traditional, in-person presentations to an online environment

Learning Level: Applied - Use information in new situations, implement, operate, draw connections among ideas (e.g. how-to, case studies)

Speakers: JJ Sadler, Associate Director, Undergraduate Research, Purdue University and Amy Childress, Director, Undergraduate Research, Purdue University; and Tuhin Dey, Instructional Designer, Purdue University

2:30:00 PM – 3:00:00 PM ET
Q&A and Discussion

3:00:00 PM – 3:30:00 PM ET
Break

Plenary II
3:30:00 PM - 5:00:00 PM ET
Conference Reflections and Wrap-up

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Long-term Lessons Learned from Covid-Inspired Changes to Student-Mentor Relationships in Undergraduate Research: A Qualitative Study of Students’ Perceptions

Theme: Accountability and Sustainability

The COVID-19 pandemic forced higher education institutions to switch quickly from in-person to virtual delivery in early 2020. Research activity came to a standstill. Undergraduate student researchers who were allowed to continue with their projects typically had to do so within a virtual environment. When institutions started the return to in-person research operations, COVID restrictions often limited how many undergraduates could participate and for how long. These disruptions required mentors to adjust many aspects of the undergraduate research experience (URE). The advent of the pandemic created uncertainty for every facet of academic activities in all educational institutions. Specifically, the pandemic amplified this uncertainty for undergraduate researchers engaged in research alongside their research mentors and professors. Interpersonal relationships (Bowman, 2010; Demetriou et al., 2017) and perceived institutional support (Pike et al., 2012) are essential aspects of positive college student outcomes. The disruptions in research and academic activities during the pandemic threatened the quality of UREs, especially for undergraduate researchers. However, at present, there are not a lot of studies focused on undergraduate students’ overall research and research mentorship experiences during the COVID-19 pandemic. The current exploratory qualitative study was designed to understand undergraduate researchers’ experiences (i.e., programmatic and mentorship relationships) during the pandemic. The primary goal for this session is sustained accountability in the conduct of undergraduate research in a large public research-intensive university in the Midwest, especially during the COVID-19 pandemic. An approach towards achieving the goal previously outlined is by evaluating existing undergraduate research practices within the university. In conducting a practical assessment of UREs within the university, we decided to glean reporting data directly from the ‘voice’ of the undergraduate researchers about their experiences with undergraduate research during the pandemic. Interviews were conducted for undergraduate researchers willing to detail their research experiences during the pandemic and a qualitative data analysis was performed to examine student perceptions. At the end of this session, the audience will be able to design similar qualitative studies to capture students’ research experiences. Also, the audience will be able to identify the major effects of pandemic-enforced restrictions on

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Assessment and Evaluation of a Novel Online Undergraduate Research Curriculum

Theme: Accountability and Sustainability

The Purdue University Office of Undergraduate Research created these multiple courses with input from a faculty advisory group and based on published literature on undergraduate researcher training. Following their launch, course evaluations were not sufficient to address the various components of the course the instructors wanted. Therefore, a consistent evaluation process was created through Purdue’s institutional research office to help ensure the students find the content relevant, useful, and appropriate. Also, by using in-course evaluation tools such as rubrics. During this session, presenters will briefly introduce the courses’ intended outcomes and share the methods used to assess these outcomes, evaluate the courses, and use data gathered for continuous course improvement. These outcomes and methods may be transferable to any student-orientated program designed to support undergraduate researchers by sharing out how the methods were created and how they are used in improvement.

Key Takeaways: Through engaging in this session, participants will: Understand how to support undergraduate students interested in research, through the curricular learning outcomes of an online course curriculum. Explore components of a “research course” assessment model and consider how to tailor that model to their programming.

Learning Level: Applied - Use information in new situations, implement, operate, draw connections among ideas (e.g. how-to, case studies)

Speakers: Craig Zywicki, Assessment and Data Analyst, Purdue University; JJ Sadler, Associate Director, Undergraduate Research, Purdue University

A Top Down Approach to Accountability: What roles do administration, faculty, and students play in academic success?

Theme: Accountability and Sustainability

As part of undergraduate research at a small community college, our school has observed a decline in accountability of students when it comes to completing research projects. In some cases the same struggles with accountability happen with our faculty as well. This 15-minute presentation will offer specific strategies for administrators, faculty, mentors, and students to improve accountability when it comes to the quality and responsibility of student projects. With a strong tradition of attending conferences such as the National Conference on Undergraduate Research (NCUR), our program strives to not only grow student participation but also expand to other opportunities. Challenges that are not unique to us include providing incentives to our students, keeping students on task, utilizing effective communication, accessing our students to make them aware of opportunities, and motivating instructors to take part in research projects with our students. Specifically, this presentation will look at research on the changing ideas of accountability in higher education and hopefully allow us to open our minds to the possibilities this can offer. We will examine specific strategies as well. Our program has instituted a “pitch party” fundraiser that is open to the college each fall. Students present their topics and ideas in an open forum, and attendees place money in a jar for the student they feel is worthy of representing the school. Most of all the college community gets excited about the projects and student receive valuable feedback. We have also instituted a contract for all of our students who attend or present at a conference. The contract includes responsibilities for both faculty and students as they work together on research projects. In order for our organization to fund a conference, the student and mentor must meet the expectations on the contract. Ideally this session will offer background information on the topic, specific suggestions to improve accountability, and an opportunity for attendees to have a small group discussion about ideas from other schools. The presentation will emphasize the importance of involving an entire college community in research projects and look at the responsibilities of administration, faculty, and students specifically.

Key Takeaways: After attending this session, the attendee should be able to examine accountability in his/her school and institute specific approaches to
Making CUREs accessible for all: development and implementation of a fully online cancer genomics CURE

**Theme:** Accountability and Sustainability

**Key Takeaways:**
1. Design a virtual or remote research project/exercise that can be implemented in the classroom.
2. Describe ways in which online genomics databases can be used to generate novel findings for student research projects.

**Learning Level:** Applied - Use information in new situations, implement, operate, draw connections among ideas (e.g. how-to, case studies)

**Speakers:** Amanda Reamer, Associate Professor, Westmoreland County Community College

**A COVID Benefit: How Virtual Presentation Formats Made Our Annual Student Research Forums More Inclusive**

**Theme:** Accountability and Sustainability

In pre-COVID times, students with class conflicts, religious restrictions, or athletic events frequently were unable to participate in our annual in-person student research forums, because they could not physically be present. These students would withdraw and miss out on valuable presentation opportunities regarding their research or creative works. The sudden need for virtual event spaces in 2020 proved the benefits of offering virtual presentation formats. As we moved forward, we realized that utilizing virtual tools increased inclusivity by making presentation opportunities available to all students and offered a better medium for some students to showcase their work. This presentation will highlight how we incorporated virtual presentations into our in-person student forums, review the benefit of offering multiple presentation modalities, and discuss areas for future growth.

**Key Takeaways:**
- Describe how we incorporated virtual presentations into our in-person student forums
- Review the benefit of offering multiple presentation modalities
- Discuss areas for future growth

**Learning Level:** Applied - Use information in new situations, implement, operate, draw connections among ideas (e.g. how-to, case studies)

**Speakers:** Irene Reed, Associate Professor of Biology, University of Saint Joseph

**How an Undergraduate Research Office can help foster a culture of research mentorship**

**Theme:** Advocacy and Partnerships/Collaboration and Community

**Key Takeaways:**
- Introduce the concept of mentoring to undergraduate in an introductory workshop
- Add a required mentorship question to their student research application form
- Ask students to reflect on their mentoring in post-award research reports

**Learning Level:** Applied - Use information in new situations, implement, operate, draw connections among ideas (e.g. how-to, case studies)

**Speakers:** Margaret Lynch, Director of Undergraduate Faculty Research Partnerships, Brandeis University

**Encouraging diversity, equity and inclusion practices among faculty mentors in undergraduate research mentorships**

**Theme:** Diversity, Equity, and Inclusion

**Key Takeaways:**
1. Describe different ways to engage faculty in learning about DEI practices
2. Define barriers to DEI in institution/organization/department
3. Choose/Design methods to increase DEI institution/organization/department

**Learning Level:** Strategic - Produce new or original work, design, develop, investigate

**Speakers:** Isabella Haang, CSU STEM VISTA Staff, California State Polytechnic University, Pomona

**Gender Discrepancy in George Mason University’s Undergraduate Research Programs**

**Theme:** Diversity, Equity, and Inclusion

**Key Takeaways:**
- Appraise trends within your own program participation
- Recognize the key factors contributing to the discrepancies in student participation

**Learning Level:** Applied - Use information in new situations, implement, operate, draw connections among ideas (e.g. how-to, case studies)

**Speakers:** Jesse Guefford, Director of Curriculum and Initiatives, George Mason University and Parker Hunter, Undergraduate Student Researcher, George Mason University

**Author/Contributor:** Julia Burns, Mason Impact Student Support and Communication Specialist, George Mason University
The Cost of Conferencing
Theme: Leadership for Undergraduate Research: UGR
Mentors and Practitioners
Key Takeaways: After attending this session, the audience should be able to appraise and appreciate the hidden costs to a simple conference presentation. After attending this session, the audience should be able to advocate for and cultivate alternative presentation and funding opportunities for undergraduate students.
Learning Level: Foundational - Explain ideas or concepts, report out (e.g. introductory)
Speakers: Danielle Krusemark, Ms., Instructor, Florida State University
Author/Contributor: Chloe Beck, Ph.D

Supporting student art with a purchase prize award
Theme: Leadership for Undergraduate Research: URG Programs, policies, and infrastructure
Learning Level: Strategic - Produce new or original work, design, develop, investigate
Speakers: Linda Blockus, Director, Office of Undergraduate Research, University of Missouri